Hypergeometric1F2

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Notations

Traditional name

Generalized hypergeometric function ${}_1F_2$

Traditional notation

${}_1F_2(a_1; b_1, b_2; z)$

Mathematica StandardForm notation

`HypergeometricPFQ[{a1}, {b1, b2}, z]`

Primary definition

07.22.02.0001.01

$${}_1F_2(a_1; b_1, b_2; z) == \sum_{k=0}^{\infty} \frac{(a_1)_k \, z^k}{(b_1)_k \, (b_2)_k \, k!}$$

For $a_1 = -n$, $b_1 == -m$ /; $m \geq n$ being nonpositive integers, the function ${}_1F_2(a_1; b_1, b_2; z)$ cannot be uniquely defined by a limiting procedure based on the above definition because the two variables a_1, b_1 can approach nonpositive integers $-n$, $-m$; $m \geq n$ at different speeds. For nonpositive integers $a_1 = -n$, $b_1 == -m$ /; $m \geq n$ we define:

07.22.02.0002.01

$${}_1F_2(-n; -m, b_2; z) == \sum_{k=0}^{n} \frac{(-n)_k \, z^k}{(-m)_k \, (b_2)_k \, k!} \text{ /; } m \in \mathbb{N} \wedge n \in \mathbb{N} \wedge m \geq n$$

Using the symmetry ${}_1F_2(a_1; b_1, b_2; z) = {}_1F_2(a_1; b_2, b_1; z)$, we have analogously for $a_1 = -n$, $b_2 == -m$ /; $m \geq n$ nonpositive integers:

07.22.02.0003.01

$${}_1F_2(-n; b_1, -m; z) == \sum_{k=0}^{n} \frac{(-n)_k \, z^k}{(b_1)_k \, (-m)_k \, k!} \text{ /; } m \in \mathbb{N} \wedge n \in \mathbb{N} \wedge m \geq n$$

Specific values

Values at $z == 0$

07.22.03.0001.01

${}_1F_2(a_1; b_1, b_2; 0) == 1$

Specialized values

For fixed a_1, b_2, z

07.22.03.0303.01

$$ {}_1F_2(a;\, a-5,\, c;\, z) == \left(z^{\frac{1-c}{2}} \left(\left((a-1)\left(a^4-14\,a^3+71\,a^2-154\,a+5\left(z^2+24\right)\right)-\right.\right.\right.$$
$$ z\left(-10\,a^3+10\,(c+7)\,a^2-5\left(c^2+9\,c+30\right)a+c^3+11\,c^2+2\,c\,(z+23)+4\,(z+24)\right)\Big) I_{c-1}\left(2\sqrt{z}\right)+$$
$$ \sqrt{z}\,\left(5\,a^4-10\,(c+5)\,a^3+5\left(2\,c^2+14\,c+2\,z+35\right)a^2-5\left(c^3+9\,c^2+2\,(z+15)\,c+8\,z+50\right)a+c^4+\right.$$
$$ \left.\left.11\,c^3+z^2+36\,z+c^2\,(3\,z+46)+c\,(19\,z+96)+120\right) I_c\left(2\sqrt{z}\right)\Big)\Gamma(c)\right) \Big/ \left((a-5)\,(a-4)\,(a-3)\,(a-2)\,(a-1)\right) $$

07.22.03.0304.01

$$ {}_1F_2(a;\, a-4,\, c;\, z) == \frac{1}{(a-4)\,(a-3)\,(a-2)\,(a-1)} $$
$$ \left(z^{\frac{1-c}{2}} \left(\left(a^4-10\,a^3+(6\,z+35)\,a^2-2\,((2\,c+11)\,z+25)\,a+z^2+\left(c^2+7\,c+18\right)z+24\right) I_{c-1}\left(2\sqrt{z}\right)+\right.\right.$$
$$ \left.\left.\sqrt{z}\,\left(4\,a^3-24\,a^2+4\,(z+11)\,a-c\left(6\,a^2-2\,(2\,c+11)\,a+c^2+7\,c+18\right)-2\,((c+3)\,z+12)\right) I_c\left(2\sqrt{z}\right)\right)\Gamma(c)\right) $$

07.22.03.0305.01

$$ {}_1F_2(a;\, a-3,\, c;\, z) == $$
$$ \frac{z^{\frac{1-c}{2}}\,\Gamma(c)}{(a-3)\,(a-2)\,(a-1)} \left(\left(a^3-6\,a^2+(3\,z+11)\,a-(c+4)\,z-6\right) I_{c-1}\left(2\sqrt{z}\right)+\sqrt{z}\,\left(3\,a^2-3\,(c+3)\,a+c^2+4\,c+z+6\right) I_c\left(2\sqrt{z}\right)\right) $$

07.22.03.0306.01

$$ {}_1F_2(a;\, a-2,\, c;\, z) == \frac{z^{\frac{1-c}{2}}\,\Gamma(c)}{(a-2)\,(a-1)} \left(\left(a^2-3\,a+z+2\right) I_{c-1}\left(2\sqrt{z}\right)+(2\,a-c-2)\,\sqrt{z}\; I_c\left(2\sqrt{z}\right)\right) $$

07.22.03.0002.01

$$ {}_1F_2(a;\, a-1,\, c;\, z) == \frac{\Gamma(c)}{a-1}\, z^{\frac{1}{2}(1-c)} \left((a-1)\, I_{c-1}\left(2\sqrt{z}\right)+\sqrt{z}\; I_c\left(2\sqrt{z}\right)\right) $$

07.22.03.0003.01

$$ {}_1F_2(a;\, a,\, c;\, z) == {}_0F_1(;\, c;\, z) $$

07.22.03.0004.01

$$ {}_1F_2(a;\, a,\, c;\, z) == \Gamma(c)\, z^{\frac{1-c}{2}}\, I_{c-1}\left(2\sqrt{z}\right) $$

For fixed b_1, b_2, z

07.22.03.0307.01

$$ {}_1F_2(b_1+1;\, b_1,\, b_2;\, z) == \frac{1}{b_1}\, z^{\frac{1}{2}(1-b_2)}\,\Gamma(b_2) \left(\sqrt{z}\; I_{b_2}\left(2\sqrt{z}\right)+b_1\, I_{b_2-1}\left(2\sqrt{z}\right)\right) $$

07.22.03.0308.01

$$ {}_1F_2(b_1+2;\, b_1,\, b_2;\, z) == \frac{1}{b_1\,(b_1+1)}\, z^{\frac{1}{2}(1-b_2)}\,\Gamma(b_2) \left(I_{b_2-1}\left(2\sqrt{z}\right)\left(b_1^2+b_1+z\right)+\sqrt{z}\; I_{b_2}\left(2\sqrt{z}\right)(2\,b_1-b_2+2)\right) $$

07.22.03.0309.01

$${}_1F_2(b_1+3;\, b_1,\, b_2;\, z) == \frac{1}{b_1\,(b_1+1)\,(b_1+2)}$$
$$\left(z^{\frac{1}{2}(1-b_2)}\,\Gamma(b_2)\left(I_{b_2-1}\left(2\sqrt{z}\right)\left(b_1^3+3\,b_1^2+(3\,z+2)\,b_1-z\,(b_2-5)\right)+\sqrt{z}\;I_{b_2}\left(2\sqrt{z}\right)\left(3\,b_1^2-3\,(b_2-3)\,b_1+b_2^2+z-5\,b_2+6\right)\right)\right)$$

07.22.03.0310.01

$${}_1F_2(b_1+4;\, b_1,\, b_2;\, z) == \frac{1}{b_1\,(b_1+1)\,(b_1+2)\,(b_1+3)}$$
$$\left(z^{\frac{1}{2}(1-b_2)}\,\Gamma(b_2)\left(I_{b_2-1}\left(2\sqrt{z}\right)\left(b_1^4+6\,b_1^3+(6\,z+11)\,b_1^2+(-4\,b_2\,z+26\,z+6)\,b_1+z\left(b_2^2-9\,b_2+z+26\right)\right)+\right.$$
$$\left.\sqrt{z}\;I_{b_2}\left(2\sqrt{z}\right)\left(4\,b_1^3-6\,(b_2-4)\,b_1^2+\left(4\,b_2^2-26\,b_2+4\,z+44\right)b_1-b_2^3+9\,b_2^2+10\,z-2\,(z+13)\,b_2+24\right)\right)\right)$$

07.22.03.0311.01

$${}_1F_2(b_1+5;\, b_1,\, b_2;\, z) ==$$
$$\left(z^{\frac{1}{2}(1-b_2)}\,\Gamma(b_2)\left(\sqrt{z}\;I_{b_2}\left(2\sqrt{z}\right)\left(5\,(b_1+5)^4-10\,(b_2+5)\,(b_1+5)^3+5\left(2\,b_2^2+14\,b_2+2\,z+35\right)(b_1+5)^2-5\right.\right.\right.$$
$$\left.\left.\left.\left(b_2^3+9\,b_2^2+2\,(z+15)\,b_2+8\,z+50\right)(b_1+5)+b_2^4+11\,b_2^3+z^2+(3\,z+46)\,b_2^2+36\,z+(19\,z+96)\,b_2+120\right)+\right.\right.$$
$$I_{b_2-1}\left(2\sqrt{z}\right)\left(b_1^5+10\,b_1^4+5\,(2\,z+7)\,b_1^3-10\,(b_2\,z-8\,z-5)\,b_1^2+\left(5\,z^2+5\,b_2^2\,z-55\,b_2\,z+200\,z+24\right)b_1-\right.$$
$$\left.\left.\left.z\left(b_2^3-14\,b_2^2+(2\,z+71)\,b_2-2\,(8\,z+77)\right)\right)\right)\right)\Big/\left(b_1\,(b_1+1)\,(b_1+2)\,(b_1+3)\,(b_1+4)\right)$$

07.22.03.0005.01

$${}_1F_2(-2;\, b_1,\, b_2;\, z) == 1-\frac{2\,z}{b_1\,b_2}+\frac{z^2}{b_1\,(1+b_1)\,b_2\,(1+b_2)}$$

07.22.03.0006.01

$${}_1F_2(-1;\, b_1,\, b_2;\, z) == 1-\frac{z}{b_1\,b_2}$$

07.22.03.0007.01

$${}_1F_2(0;\, b_1,\, b_2;\, z) == 1$$

07.22.03.0008.01

$${}_1F_2(-n;\, b_1,\, b_2;\, z) == \sum_{k=0}^{n}\frac{(-n)_k\,z^k}{(b_1)_k\,(b_2)_k\,k!}\;/;\; n\in\mathbb{N}$$

For fixed a_1, z

07.22.03.0009.01

$${}_1F_2\left(a;\, a-\frac{1}{2},\, 2\,a-3;\, z\right) == \frac{2^{2\,(a-3)}}{a-1}\,\Gamma\left(a-\frac{3}{2}\right)^2\,(2\,a-3)\,z^{\frac{3}{2}-a}\left(z\,I_{a-\frac{1}{2}}\left(\sqrt{z}\right)^2-5\sqrt{z}\;I_{a-\frac{3}{2}}\left(\sqrt{z}\right)I_{a-\frac{1}{2}}\left(\sqrt{z}\right)+\right.$$
$$\left.(z+6)\,I_{a-\frac{3}{2}}\left(\sqrt{z}\right)^2+4\,a^2\,I_{a-\frac{3}{2}}\left(\sqrt{z}\right)^2+2\,a\left(2\sqrt{z}\;I_{a-\frac{1}{2}}\left(\sqrt{z}\right)-5\,I_{a-\frac{3}{2}}\left(\sqrt{z}\right)\right)I_{a-\frac{3}{2}}\left(\sqrt{z}\right)\right)$$

07.22.03.0010.01

$${}_1F_2\left(a;\, a-\frac{1}{2},\, 2\,a-2;\, z\right) == \frac{2^{2\,a-3}}{a-1}\,\Gamma\left(a-\frac{1}{2}\right)^2\,z^{\frac{3}{2}-a}\,I_{a-\frac{3}{2}}\left(\sqrt{z}\right)\left(\sqrt{z}\;I_{a-\frac{1}{2}}\left(\sqrt{z}\right)+(a-1)\,I_{a-\frac{3}{2}}\left(\sqrt{z}\right)\right)$$

07.22.03.0011.01

$${}_1F_2\left(a;\, a-\frac{1}{2},\, 2\,a-1;\, z\right) == 2^{2\,a-3}\,z^{\frac{3}{2}-a}\,\Gamma\left(a-\frac{1}{2}\right)^2\left(I_{a-\frac{1}{2}}\left(\sqrt{z}\right)^2+I_{a-\frac{3}{2}}\left(\sqrt{z}\right)^2\right)$$

07.22.03.0012.01

$${}_1F_2\left(a;\, a-\frac{1}{2},\, 2\,a;\, z\right) == 2^{2\,a-3}\,\Gamma\left(a-\frac{1}{2}\right)^2\,(2\,a-1)\,z^{\frac{1}{2}-a}\,I_{a-\frac{1}{2}}\left(\sqrt{z}\right)\left(2\,\sqrt{z}\;I_{a-\frac{3}{2}}\left(\sqrt{z}\right)+I_{a-\frac{1}{2}}\left(\sqrt{z}\right)(1-2\,a)\right)$$

07.22.03.0013.01

$${}_1F_2\left(a;\, a-\frac{1}{2},\, 2\,a+1;\, z\right) == 2^{2\,a-3}\,z^{\frac{1}{2}-a}\,\Gamma\left(a-\frac{1}{2}\right)^2\,(2\,a-1)\left((2\,a-1)\,I_{a-\frac{1}{2}}\left(\sqrt{z}\right)^2+(2\,a+1)\,I_{a+\frac{1}{2}}\left(\sqrt{z}\right)^2\right)$$

07.22.03.0014.01

$${}_1F_2\left(a;\, a+\frac{1}{2},\, 2\,a-1;\, z\right) == 2^{2\,a-3}\,z^{1-a}\,\Gamma\left(a-\frac{1}{2}\right)^2\,(2\,a-1)\,I_{a-\frac{3}{2}}\left(\sqrt{z}\right)I_{a-\frac{1}{2}}\left(\sqrt{z}\right)$$

07.22.03.0015.01

$${}_1F_2\left(a;\, a+\frac{1}{2},\, 2\,a;\, z\right) == 2^{2\,a-1}\,z^{\frac{1}{2}-a}\,\Gamma\left(a+\frac{1}{2}\right)^2\,I_{a-\frac{1}{2}}\left(\sqrt{z}\right)^2$$

07.22.03.0016.01

$${}_1F_2\left(a;\, a+\frac{1}{2},\, 2\,a+1;\, z\right) == 2^{2\,a-1}\,\Gamma\left(a+\frac{1}{2}\right)^2\,z^{\frac{1}{2}-a}\left(I_{a-\frac{1}{2}}\left(\sqrt{z}\right)^2-I_{a+\frac{1}{2}}\left(\sqrt{z}\right)^2\right)$$

07.22.03.0017.01

$${}_1F_2\left(a;\, a+\frac{3}{2},\, 2\,a;\, z\right) == 4^{a-1}\,z^{\frac{1}{2}-a}\,\Gamma\left(a+\frac{1}{2}\right)^2\,(2\,a+1)\left(I_{a-\frac{1}{2}}\left(\sqrt{z}\right)^2-I_{a-\frac{3}{2}}\left(\sqrt{z}\right)I_{a+\frac{1}{2}}\left(\sqrt{z}\right)\right)$$

07.22.03.0018.01

$${}_1F_2\left(a;\, a+\frac{3}{2},\, 2\,a+1;\, z\right) == -2^{2\,a-1}\;\Gamma\left(a+\frac{1}{2}\right)^2\,(2\,a+1)\,z^{-a}\left(\sqrt{z}\left(I_{a+\frac{1}{2}}\left(\sqrt{z}\right)^2-I_{a-\frac{1}{2}}\left(\sqrt{z}\right)^2\right)+2\,\mathrm{a}I_{a+\frac{1}{2}}\left(\sqrt{z}\right)I_{a-\frac{1}{2}}\left(\sqrt{z}\right)\right)$$

For fixed b_1, z

07.22.03.0019.01

$${}_1F_2\left(\frac{1}{2};\, b,\, -b;\, z\right) == -\frac{\pi\csc(\pi\,b)}{4\,b}\,z\,\left(I_{-b-1}\left(\sqrt{z}\right)I_{b-1}\left(\sqrt{z}\right)+2\,I_{-b}\left(\sqrt{z}\right)I_{b}\left(\sqrt{z}\right)+I_{1-b}\left(\sqrt{z}\right)I_{b+1}\left(\sqrt{z}\right)\right)$$

07.22.03.0020.01

$${}_1F_2\left(\frac{1}{2};\, b,\, 1-b;\, z\right) == \frac{\pi\csc(\pi\,b)}{2}\,\sqrt{z}\,\left(I_{b-1}\left(\sqrt{z}\right)I_{-b}\left(\sqrt{z}\right)+I_{1-b}\left(\sqrt{z}\right)I_{b}\left(\sqrt{z}\right)\right)$$

07.22.03.0021.01

$${}_1F_2\left(\frac{1}{2};\, b,\, 2-b;\, z\right) == \pi\,(1-b)\csc(\pi\,b)\,I_{1-b}\left(\sqrt{z}\right)I_{b-1}\left(\sqrt{z}\right)$$

07.22.03.0022.01

$${}_1F_2\left(\frac{1}{2};\, b,\, 3-b;\, z\right) \equiv \frac{\pi\,\csc(\pi\,b)\,(b-2)\,(b-1)}{2\,b-3}\left(I_{2-b}\left(\sqrt{z}\right)I_{b-2}\left(\sqrt{z}\right)-I_{1-b}\left(\sqrt{z}\right)I_{b-1}\left(\sqrt{z}\right)\right)$$

07.22.03.0023.01

$$\frac{\pi\csc(\pi\,b)\,(b-3)\,(b-2)\,(b-1)}{z\,(2\,b-5)\,(2\,b-3)}\left(\sqrt{z}\;(3-2\,b)\left(I_{1-b}\left(\sqrt{z}\right)I_{b-2}\left(\sqrt{z}\right)+I_{2-b}\left(\sqrt{z}\right)I_{b-1}\left(\sqrt{z}\right)\right)-\right.$$
$$\left.2\,z\,I_{1-b}\left(\sqrt{z}\right)I_{b-1}\left(\sqrt{z}\right)+2\,\left(-2\,b^2+7\,b+z-6\right)I_{2-b}\left(\sqrt{z}\right)I_{b-2}\left(\sqrt{z}\right)\right)$$

07.22.03.0024.01

$${}_1F_2\left(\frac{3}{2}; b, 1-b; z\right) == \frac{\pi \csc(\pi b)}{2} \sqrt{z} \left(\sqrt{z}\, I_{-b-1}\left(\sqrt{z}\right) I_{b-1}\left(\sqrt{z}\right) + (2b+1)\, I_{-b}\left(\sqrt{z}\right) I_{b-1}\left(\sqrt{z}\right) + 2\sqrt{z}\, I_{-b}\left(\sqrt{z}\right) I_{b}\left(\sqrt{z}\right) + \sqrt{z}\, I_{1-b}\left(\sqrt{z}\right) I_{b+1}\left(\sqrt{z}\right) + (2b+1)\, I_{1-b}\left(\sqrt{z}\right) I_{b}\left(\sqrt{z}\right)\right)$$

07.22.03.0025.01

$${}_1F_2\left(\frac{3}{2}; b, 2-b; z\right) == \pi \csc(\pi b)\,(1-b)\left((2b-1)\, I_{1-b}\left(\sqrt{z}\right) I_{b-1}\left(\sqrt{z}\right) + \sqrt{z}\, I_{-b}\left(\sqrt{z}\right) I_{b-1}\left(\sqrt{z}\right) + \sqrt{z}\, I_{1-b}\left(\sqrt{z}\right) I_{b}\left(\sqrt{z}\right)\right)$$

07.22.03.0026.01

$${}_1F_2\left(\frac{3}{2}; b, 3-b; z\right) == \pi \csc(\pi b)\,(b-2)\,(b-1)\left(I_{2-b}\left(\sqrt{z}\right) I_{b-2}\left(\sqrt{z}\right) + I_{1-b}\left(\sqrt{z}\right) I_{b-1}\left(\sqrt{z}\right)\right)$$

07.22.03.0027.01

$${}_1F_2\left(\frac{5}{2}; b, 4-b; z\right) == -\frac{\pi \csc(\pi b)\,(b-3)\,(b-2)\,(b-1)}{3z\,(2b-9)\,(2b-7)} \left(2z\,(2b-9)\,(2b-7)\, I_{1-b}\left(\sqrt{z}\right) I_{b-1}\left(\sqrt{z}\right) + \sqrt{z}\,(2b-9)\,(2b-3)\,(2b-7)\left(I_{1-b}\left(\sqrt{z}\right) I_{b-2}\left(\sqrt{z}\right) + I_{2-b}\left(\sqrt{z}\right) I_{b-1}\left(\sqrt{z}\right)\right) + 2\,(2b-9)\left(2b^2-7b+z+6\right)(2b-7)\, I_{2-b}\left(\sqrt{z}\right) I_{b-2}\left(\sqrt{z}\right)\right)$$

For fixed b_2, z

07.22.03.0028.01

$${}_1F_2\left(1; \frac{3}{2}, c; z\right) == \frac{\sqrt{\pi}}{2}\, z^{\frac{1-2c}{4}}\, \Gamma(c)\, \boldsymbol{L}_{c-\frac{3}{2}}\left(2\sqrt{z}\right)$$

07.22.03.0029.01

$${}_1F_2\left(1; \frac{3}{2}, c; z\right) == \frac{\sqrt{\pi}}{2}\, (-z)^{\frac{1-2c}{4}}\, \Gamma(c)\, \boldsymbol{H}_{c-\frac{3}{2}}\left(2\sqrt{-z}\right)$$

07.22.03.0030.01

$${}_1F_2(1; 2, c; z)\, 1 == 1\, I_{c-2}\left(2\sqrt{z}\right) \Gamma(c)\, z^{-\frac{c}{2}} + \frac{1-c}{z}$$

For fixed z and with symbolical integers in parameters

For fixed z and $a_1 = -m$, $b_1 = \frac{1}{2} - n$, $b_2 = -p$

07.22.03.0031.01

$${}_1F_2\left(-n; \frac{1}{2} - n, -2n; z\right) == \frac{2^{2n-1}\, \pi\, n!^2}{(2n)!^2}\, z^{n+\frac{1}{2}} \left(I_{-n-\frac{1}{2}}\left(\sqrt{z}\right)^2 - I_{n+\frac{1}{2}}\left(\sqrt{z}\right)^2\right) /; n \in \mathbb{N}$$

For fixed z and $a_1 = m$, $b_1 = \frac{1}{2} + n$, $b_2 = \frac{1}{2} + p$

07.22.03.0312.01

$${}_1F_2\left(j+1; m+\frac{1}{2}, n+\frac{1}{2}; z\right) = \frac{(-1)^j \left(\frac{1}{2}\right)_m \left(\frac{1}{2}\right)_n}{4\,j!} \sum_{k=0}^{m} \frac{(-1)^k}{(m-k)!}$$

$$\sum_{i=0}^{k} \frac{(-1)^i z^{-i-1}}{(k-i)!} \left(\frac{(-2\,i+2\,m-1)\,(-2\,i+2\,m+1)\,i!}{(i-j)!\,(-2\,i+2\,k+1)\left(-\frac{1}{2}\right)_{n-i}} + \sum_{p=0}^{j} (-1)^p \binom{j}{p} \left(-j+n-\frac{1}{2}\right)_{j-p} \left(4\pi \left(\sqrt{z}\,((i-m)\,(i-m+1)+z) \right.\right.\right.$$

$$\left.\left.\left. \boldsymbol{L}_{-i+n-p}\left(2\sqrt{z}\right) - (i-m)\left((i-m+1)\,(i-n+p+1)+2\,z\right) \boldsymbol{L}_{-i+n-p-1}\left(2\sqrt{z}\right) \right) z^{\frac{i-n+p}{2}} + \right.\right.$$

$$\left.\left. \frac{12\,i^2+2\,(-8\,m-4\,n+4\,p+5)\,i-2\,n+2\,p+4\,m\,(m+2\,n-2\,p-2)+4\,z+1}{\left(\frac{1}{2}\right)_{-i+n-p}} \right) \right) /;\ j \in$$

$\mathbb{N} \bigwedge m \in \mathbb{N} \bigwedge n \in \mathbb{N}$

Brychkov Yu.A. (2006)

For fixed z and $a_1 = m$, $b_1 = \frac{1}{2} - n$, $b_2 = \frac{1}{2} + p$

07.22.03.0313.01

$${}_1F_2\left(j+1; \frac{1}{2}-m, n+\frac{1}{2}; z\right) =$$

$$\frac{(-1)^j \left(\frac{1}{2}\right)_n}{j!\left(\frac{1}{2}\right)_m} \sum_{i=0}^{j} \binom{j}{i} \left(\frac{1}{2}-j-m\right)_{j-i} \sum_{k=0}^{i+m} (-1)^k \binom{i+m}{k} (n-1)_{i-k+m} \left(-m\pi\, z^{\frac{k-n}{2}} \boldsymbol{L}_{-k+n+1}\left(2\sqrt{z}\right) + \pi\,(k\,m-n\,m+z) \right.$$

$$\left. z^{\frac{1}{2}(k-n-1)} \boldsymbol{L}_{n-k}\left(2\sqrt{z}\right) + \frac{1-2\,k-2\,m+2\,n}{2\left(\frac{1}{2}\right)_{1-k+n}} \right) /;\ j \in \mathbb{N} \bigwedge m \in \mathbb{N} \bigwedge n \in \mathbb{N}$$

Brychkov Yu.A. (2006)

For fixed z and $a_1 = m$, $b_1 = \frac{1}{2} - n$, $b_2 = \frac{1}{2} - p$

07.22.03.0314.01

$${}_1F_2\left(j+1; \frac{1}{2}-m, \frac{1}{2}-n; z\right) =$$

$$\frac{(-1)^{j+n}}{j!\left(\frac{1}{2}\right)_n \left(\frac{1}{2}\right)_m} \sum_{i=0}^{j} \binom{j}{i} \left(\frac{1}{2}-j-m\right)_{j-i} \sum_{k=0}^{i+m} \binom{i+m}{k} (-n-1)_{i-k+m} \left(-(-1)^k\, m\,\pi\, z^{\frac{k+n}{2}} \boldsymbol{L}_{-k-n+1}\left(2\sqrt{z}\right) + (-1)^k\,\pi\,(k\,m+n\,m+z) \right.$$

$$\left. z^{\frac{1}{2}(k+n-1)} \boldsymbol{L}_{-k-n}\left(2\sqrt{z}\right) + (-1)^n\,(-2\,k-2\,m-2\,n+1)\left(-\frac{1}{2}\right)_{k+n} \right) /;\ j \in \mathbb{N} \bigwedge m \in \mathbb{N} \bigwedge n \in \mathbb{N}$$

Brychkov Yu.A. (2006)

For integer and half-integer parameters and fixed z

For fixed z and $a_1 = -\frac{11}{2}$, $b_1 \geq -\frac{11}{2}$

For fixed z and $a_1 = -\frac{11}{2}$, $b_1 = -\frac{11}{2}$

07.22.03.0315.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, -\frac{11}{2}; z\right) = \left(\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} + \frac{20\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16\,z^2 + 240\,z + 495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.0316.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, -\frac{11}{2}; -z\right) = \left(-\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} - \frac{20\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(16\,z^2 - 240\,z + 495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.0317.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, -\frac{9}{2}; z\right) = \left(\frac{16\,z^2}{63} + \frac{16\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.0318.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, -\frac{9}{2}; -z\right) = \left(\frac{16\,z^2}{63} - \frac{16\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.0319.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, -\frac{7}{2}; z\right) = \left(\frac{16\,z^2}{105} + \frac{12\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,(8\,z + 21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.0320.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, -\frac{7}{2}; -z\right) = \left(\frac{16\,z^2}{105} - \frac{12\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}(21 - 8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.0321.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, -\frac{5}{2}; z\right) = \left(\frac{8\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,(4\,z + 15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.0322.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, -\frac{5}{2}; -z\right) = \left(1 - \frac{8\,z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}(15 - 4\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.0323.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, -\frac{3}{2}; z\right) = \left(\frac{4\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.0324.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, -\frac{3}{2}; -z\right) = \left(1 - \frac{4\,z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.0325.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, -\frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.0326.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, -\frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.0327.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, \frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.0328.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, \frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.0329.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, 1; z\right) = I_0\left(2\sqrt{z}\right)$$

07.22.03.0330.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, 1; -z\right) = J_0\left(2\sqrt{z}\right)$$

07.22.03.0331.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, \frac{3}{2}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.0332.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, \frac{3}{2}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.0333.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, 2; z\right) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.0334.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, 2; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.0335.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, \frac{5}{2}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.0336.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, \frac{5}{2}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}}$$

07.22.03.0337.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, 3; z\right) = \frac{2I_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.0338.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, 3; -z\right) = \frac{2J_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.0339.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{11}{2}, \frac{7}{2}; z\right) = \frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.0340.01

$${}_1F_2\left(-\frac{11}{2};-\frac{11}{2},\frac{7}{2};-z\right)=-\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.0341.01

$${}_1F_2\left(-\frac{11}{2};-\frac{11}{2},4;z\right)=\frac{6\,I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.0342.01

$${}_1F_2\left(-\frac{11}{2};-\frac{11}{2},4;-z\right)=\frac{6\,J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.0343.01

$${}_1F_2\left(-\frac{11}{2};-\frac{11}{2},\frac{9}{2};z\right)=\frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right)-3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.0344.01

$${}_1F_2\left(-\frac{11}{2};-\frac{11}{2},\frac{9}{2};-z\right)=\frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right)+3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.0345.01

$${}_1F_2\left(-\frac{11}{2};-\frac{11}{2},5;z\right)=\frac{24\,I_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.0346.01

$${}_1F_2\left(-\frac{11}{2};-\frac{11}{2},5;-z\right)=\frac{24\,J_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.0347.01

$${}_1F_2\left(-\frac{11}{2};-\frac{11}{2},\frac{11}{2};z\right)=\frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.0348.01

$${}_1F_2\left(-\frac{11}{2};-\frac{11}{2},\frac{11}{2};-z\right)=\frac{945\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.0349.01

$${}_1F_2\left(-\frac{11}{2};-\frac{11}{2},6;z\right)=\frac{120\,I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.0350.01

$${}_1F_2\left(-\frac{11}{2};-\frac{11}{2},6;-z\right)=\frac{120\,J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1=-\frac{11}{2}$, $b_1=-\frac{9}{2}$

07.22.03.0351.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, -\frac{9}{2}; z\right) =$$
$$\frac{1}{893\,025}\left(2048\,\mathrm{Shi}\left(2\sqrt{z}\right) z^{11/2} - 2\left(256\,z^4 + 384\,z^3 + 1920\,z^2 + 352\,800\,z + 893\,025\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \right.$$
$$\left.\left(-1024\,z^5 - 512\,z^4 - 1536\,z^3 + 154\,800\,z^2 + 1\,543\,500\,z + 893\,025\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0352.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, -\frac{9}{2}; -z\right) = \frac{1}{893\,025}\left(2048\,\mathrm{Si}\left(2\sqrt{z}\right) z^{11/2} + 2\left(256\,z^4 - 384\,z^3 + 1920\,z^2 - 352\,800\,z + 893\,025\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \right.$$
$$\left.\left(1024\,z^5 - 512\,z^4 + 1536\,z^3 + 154\,800\,z^2 - 1\,543\,500\,z + 893\,025\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0353.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, -\frac{7}{2}; z\right) = \frac{1}{99\,225}\left(-1024\,\mathrm{Shi}\left(2\sqrt{z}\right) z^{11/2} + 2\left(128\,z^4 + 192\,z^3 + 960\,z^2 - 31\,500\,z - 99\,225\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \right.$$
$$\left.\left(512\,z^5 + 256\,z^4 + 768\,z^3 + 5760\,z^2 + 163\,800\,z + 99\,225\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0354.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, -\frac{7}{2}; -z\right) = \frac{1}{99\,225}\left(-1024\,\mathrm{Si}\left(2\sqrt{z}\right) z^{11/2} - 2\left(128\,z^4 - 192\,z^3 + 960\,z^2 + 31\,500\,z - 99\,225\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \right.$$
$$\left.\left(-512\,z^5 + 256\,z^4 - 768\,z^3 + 5760\,z^2 - 163\,800\,z + 99\,225\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0355.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, -\frac{5}{2}; z\right) = \frac{1}{14\,175}\left(256\,\mathrm{Shi}\left(2\sqrt{z}\right) z^{11/2} - 2\left(32\,z^4 + 48\,z^3 + 240\,z^2 + 2520\,z + 14\,175\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} - \right.$$
$$\left.\left(128\,z^5 + 64\,z^4 + 192\,z^3 + 1440\,z^2 - 21\,420\,z - 14\,175\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0356.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, -\frac{5}{2}; -z\right) = \frac{1}{14\,175}\left(256\,\mathrm{Si}\left(2\sqrt{z}\right) z^{11/2} + 2\left(32\,z^4 - 48\,z^3 + 240\,z^2 - 2520\,z + 14\,175\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \right.$$
$$\left.\left(128\,z^5 - 64\,z^4 + 192\,z^3 - 1440\,z^2 - 21\,420\,z + 14\,175\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0357.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, -\frac{3}{2}; z\right) = \frac{1}{8505}\left(-128\,\mathrm{Shi}\left(2\sqrt{z}\right) z^{11/2} + 2\left(16\,z^4 + 24\,z^3 + 120\,z^2 + 1260\,z - 8505\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \right.$$
$$\left.\left(64\,z^5 + 32\,z^4 + 96\,z^3 + 720\,z^2 + 10\,080\,z + 8505\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0358.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, -\frac{3}{2}; -z\right) = \frac{1}{8505}\left(-128\,\mathrm{Si}\left(2\sqrt{z}\right) z^{11/2} + 2\left(-16\,z^4 + 24\,z^3 - 120\,z^2 + 1260\,z + 8505\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \right.$$
$$\left.\left(-64\,z^5 + 32\,z^4 - 96\,z^3 + 720\,z^2 - 10\,080\,z + 8505\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0359.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, -\frac{1}{2}; z\right) = \frac{1}{2835}\left(16\,\mathrm{Shi}\left(2\sqrt{z}\right) z^{11/2} - \right.$$
$$\left.\left(4\,z^4 + 6\,z^3 + 30\,z^2 + 315\,z + 5670\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} - \left(8\,z^5 + 4\,z^4 + 12\,z^3 + 90\,z^2 + 1260\,z - 2835\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0360.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, -\frac{1}{2}; -z\right) = \frac{1}{2835}\left(16\,\mathrm{Si}\left(2\sqrt{z}\right) z^{11/2} + \left(4z^4 - 6z^3 + 30z^2 - 315z + 5670\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(8z^5 - 4z^4 + 12z^3 - 90z^2 + 1260z + 2835\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0361.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, \frac{1}{2}; z\right) = \frac{1}{28\,350}\left(-16\,\mathrm{Shi}\left(2\sqrt{z}\right) z^{11/2} + \left(4z^4 + 6z^3 + 30z^2 + 315z + 5670\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + 2\left(4z^5 + 2z^4 + 6z^3 + 45z^2 + 630z + 14\,175\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0362.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, \frac{1}{2}; -z\right) = \frac{1}{28\,350}\left(-16\,\mathrm{Si}\left(2\sqrt{z}\right) z^{11/2} + \left(-4z^4 + 6z^3 - 30z^2 + 315z - 5670\right)\sin\left(2\sqrt{z}\right)\sqrt{z} - 2\left(4z^5 - 2z^4 + 6z^3 - 45z^2 + 630z - 14\,175\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0363.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, 1; z\right) = \frac{1}{9\,823\,275}\left(2\sqrt{z}\, I_1\left(2\sqrt{z}\right)\left(1024\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{11/2} + 1024z^5 + 256z^4 + 576z^3 + 3600z^2 + 44\,100z + 893\,025\right) + I_0\left(2\sqrt{z}\right)\left(-2048\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right) z^6 - 4096z^6 + 1024z^5 + 768z^4 + 2880z^3 + 25\,200z^2 + 396\,900z + 9\,823\,275\right)\right)$$

07.22.03.0364.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, 1; -z\right) = \frac{1}{9\,823\,275}\left(J_0\left(2\sqrt{z}\right)\left(2048\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right) z^6 - 4096z^6 - 1024z^5 + 768z^4 - 2880z^3 + 25\,200z^2 - 396\,900z + 9\,823\,275\right) - 2\sqrt{z}\, J_1\left(2\sqrt{z}\right)\left(1024\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{11/2} - 1024z^5 + 256z^4 - 576z^3 + 3600z^2 - 44\,100z + 893\,025\right)\right)$$

07.22.03.0365.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, \frac{3}{2}; z\right) = \frac{1}{340\,200\sqrt{z}}\left(-16\,\mathrm{Shi}\left(2\sqrt{z}\right) z^6 + 2\left(4z^5 + 2z^4 + 6z^3 + 45z^2 + 630z + 14\,175\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^5 + 6z^4 + 30z^3 + 315z^2 + 5670z + 155\,925\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0366.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, \frac{3}{2}; -z\right) = \frac{1}{340\,200\sqrt{z}}\left(-16\,\mathrm{Si}\left(2\sqrt{z}\right) z^6 - 2\left(4z^5 - 2z^4 + 6z^3 - 45z^2 + 630z - 14\,175\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(-4z^5 + 6z^4 - 30z^3 + 315z^2 - 5670z + 155\,925\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0367.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, 2; z\right) = \frac{1}{127\,702\,575}\left(\frac{1}{\sqrt{z}}\left(I_1\left(2\sqrt{z}\right)\left(4096\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{13/2} + 4096z^6 + 1024z^5 + 2304z^4 + 14\,400z^3 + 176\,400z^2 + 3\,572\,100z + 108\,056\,025\right)\right) - 2\, I_0\left(2\sqrt{z}\right)\left(2048\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right) z^6 + 4096z^6 - 1024z^5 - 768z^4 - 2880z^3 - 25\,200z^2 - 396\,900z - 9\,823\,275\right)\right)$$

07.22.03.0368.01

$${}_1F_2\left(-\frac{11}{2};-\frac{9}{2},2;-z\right)=\frac{1}{127\,702\,575}\left(\frac{1}{\sqrt{z}}\left(J_1\left(2\sqrt{z}\right)\right.\right.$$
$$\left.\left(-4096\,\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{13/2}+4096\,z^6-1024\,z^5+2304\,z^4-14\,400\,z^3+176\,400\,z^2-3\,572\,100\,z+108\,056\,025\right)\right)+$$
$$\left.2\,J_0\left(2\sqrt{z}\right)\left(2048\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^6-4096\,z^6-1024\,z^5+768\,z^4-2880\,z^3+25\,200\,z^2-396\,900\,z+9\,823\,275\right)\right)$$

07.22.03.0369.01

$${}_1F_2\left(-\frac{11}{2};-\frac{9}{2},\frac{5}{2};z\right)=$$
$$\frac{1}{1\,587\,600\,z^{3/2}}\left(-16\,\mathrm{Shi}\left(2\sqrt{z}\right)z^7+2\left(4\,z^6+2\,z^5+6\,z^4+45\,z^3+630\,z^2+14\,175\,z+467\,775\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\;+\right.$$
$$\left.\left(4\,z^6+6\,z^5+30\,z^4+315\,z^3+5670\,z^2+155\,925\,z-467\,775\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0370.01

$${}_1F_2\left(-\frac{11}{2};-\frac{9}{2},\frac{5}{2};-z\right)=$$
$$\frac{1}{1\,587\,600\,z^{3/2}}\left(-16\,\mathrm{Si}\left(2\sqrt{z}\right)z^7-2\left(4\,z^6-2\,z^5+6\,z^4-45\,z^3+630\,z^2-14\,175\,z+467\,775\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+\right.$$
$$\left.\left(-4\,z^6+6\,z^5-30\,z^4+315\,z^3-5670\,z^2+155\,925\,z+467\,775\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0371.01

$${}_1F_2\left(-\frac{11}{2};-\frac{9}{2},3;z\right)=$$
$$\frac{1}{1\,915\,538\,625\,z^{3/2}}\left(2\left(I_1\left(2\sqrt{z}\right)\left(8192\,\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{15/2}+8192\,z^7+2048\,z^6+4608\,z^5+28\,800\,z^4+352\,800\,z^3+\right.\right.\right.$$
$$\left.\left.7\,144\,200\,z^2+216\,112\,050\,z-1\,404\,728\,325\right)-\sqrt{z}\;I_0\left(2\sqrt{z}\right)\left(8192\,\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^7+16\,384\,z^7-\right.\right.$$
$$\left.\left.\left.4096\,z^6-3072\,z^5-11\,520\,z^4-100\,800\,z^3-1\,587\,600\,z^2-39\,293\,100\,z-1\,404\,728\,325\right)\right)\right)$$

07.22.03.0372.01

$${}_1F_2\left(-\frac{11}{2};-\frac{9}{2},3;-z\right)=$$
$$\frac{1}{1\,915\,538\,625\,z^{3/2}}\left(2\left(\sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(8192\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^7-16\,384\,z^7-4096\,z^6+3072\,z^5-11\,520\,z^4+100\,800\,z^3-\right.\right.\right.$$
$$\left.\left.1\,587\,600\,z^2+39\,293\,100\,z-1\,404\,728\,325\right)-J_1\left(2\sqrt{z}\right)\left(8192\,\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{15/2}-8192\,z^7+\right.\right.$$
$$\left.\left.\left.2048\,z^6-4608\,z^5+28\,800\,z^4-352\,800\,z^3+7\,144\,200\,z^2-216\,112\,050\,z-1\,404\,728\,325\right)\right)\right)$$

07.22.03.0373.01

$${}_1F_2\left(-\frac{11}{2};-\frac{9}{2},\frac{7}{2};z\right)=\frac{1}{10\,160\,640\,z^{5/2}}$$
$$\left(-32\,\mathrm{Shi}\left(2\sqrt{z}\right)z^8+2\left(8\,z^7+4\,z^6+12\,z^5+90\,z^4+1260\,z^3+28\,350\,z^2+935\,550\,z-9\,823\,275\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\;+\right.$$
$$\left.\left(8\,z^7+12\,z^6+60\,z^5+630\,z^4+11\,340\,z^3+311\,850\,z^2+12\,162\,150\,z+9\,823\,275\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0374.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, \frac{7}{2}; -z\right) = \frac{1}{10\,160\,640\,z^{5/2}}$$
$$\left(-32\,\text{Si}\left(2\sqrt{z}\right)z^8 - 2\left(8z^7 - 4z^6 + 12z^5 - 90z^4 + 1260z^3 - 28\,350z^2 + 935\,550z + 9\,823\,275\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \right.$$
$$\left.\left(-8z^7 + 12z^6 - 60z^5 + 630z^4 - 11\,340z^3 + 311\,850z^2 - 12\,162\,150z + 9\,823\,275\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0375.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, 4; z\right) = \frac{1}{10\,854\,718\,875\,z^{5/2}}$$
$$\left(2\left(I_1\left(2\sqrt{z}\right)\left(16\,384\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{17/2} + 16\,384z^8 + 4096z^7 + 9216z^6 + 57\,600z^5 + 705\,600z^4 + 14\,288\,400z^3 + \right.\right.\right.$$
$$\left.\left.\left.432\,224\,100z^2 + 18\,261\,468\,225z + 42\,141\,849\,750\right) - 2\sqrt{z}\,I_0\left(2\sqrt{z}\right)\left(8192\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^8 + 16\,384z^8 - \right.\right.\right.$$
$$\left.\left.\left.4096z^7 - 3072z^6 - 11\,520z^5 - 100\,800z^4 - 1\,587\,600z^3 - 39\,293\,100z^2 - 1\,404\,728\,325z + 21\,070\,924\,875\right)\right)\right)$$

07.22.03.0376.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, 4; -z\right) = \frac{1}{10\,854\,718\,875\,z^{5/2}}$$
$$\left(2\left(2\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(8192\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^8 - 16\,384z^8 - 4096z^7 + 3072z^6 - 11\,520z^5 + 100\,800z^4 - 1\,587\,600z^3 + \right.\right.\right.$$
$$\left.\left.\left.39\,293\,100z^2 - 1\,404\,728\,325z - 21\,070\,924\,875\right) - J_1\left(2\sqrt{z}\right)\left(16\,384\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{17/2} - 16\,384z^8 + 4096z^7 - \right.\right.\right.$$
$$\left.\left.\left.9216z^6 + 57\,600z^5 - 705\,600z^4 + 14\,288\,400z^3 - 432\,224\,100z^2 + 18\,261\,468\,225z - 42\,141\,849\,750\right)\right)\right)$$

07.22.03.0377.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, \frac{9}{2}; z\right) = \frac{1}{26\,127\,360\,z^{7/2}}\left(-32\,\text{Shi}\left(2\sqrt{z}\right)z^9 + \right.$$
$$2\left(8z^8 + 4z^7 + 12z^6 + 90z^5 + 1260z^4 + 28\,350z^3 + 935\,550z^2 + 42\,567\,525z + 196\,465\,500\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + $$
$$\left.\left(8z^8 + 12z^7 + 60z^6 + 630z^5 + 11\,340z^4 + 311\,850z^3 + 12\,162\,150z^2 - 304\,521\,525z - 196\,465\,500\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0378.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, \frac{9}{2}; -z\right) = \frac{1}{26\,127\,360\,z^{7/2}}\left(-32\,\text{Si}\left(2\sqrt{z}\right)z^9 - \right.$$
$$2\left(8z^8 - 4z^7 + 12z^6 - 90z^5 + 1260z^4 - 28\,350z^3 + 935\,550z^2 - 42\,567\,525z + 196\,465\,500\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + $$
$$\left.\left(-8z^8 + 12z^7 - 60z^6 + 630z^5 - 11\,340z^4 + 311\,850z^3 - 12\,162\,150z^2 - 304\,521\,525z + 196\,465\,500\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0379.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, 5; z\right) =$$
$$\frac{1}{206\,239\,658\,625\,z^{7/2}}\left(8\left(2\,I_1\left(2\sqrt{z}\right)\left(16\,384\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{19/2} + 16\,384z^9 + 4096z^8 + 9216z^7 + 57\,600z^6 + 705\,600z^5 + \right.\right.\right.$$
$$\left.\left.\left.14\,288\,400z^4 + 432\,224\,100z^3 + 18\,261\,468\,225z^2 - 674\,269\,596\,000z - 1\,074\,617\,168\,625\right) - \right.$$
$$\left.\left.\sqrt{z}\,I_0\left(2\sqrt{z}\right)\left(32\,768\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^9 + 65\,536z^9 - 16\,384z^8 - 12\,288z^7 - 46\,080z^6 - 403\,200z^5 - \right.\right.\right.$$
$$\left.\left.\left.6\,350\,400z^4 - 157\,172\,400z^3 - 5\,618\,913\,300z^2 - 273\,922\,023\,375z - 2\,149\,234\,337\,250\right)\right)\right)$$

07.22.03.0380.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, 5; -z\right) = \frac{1}{206\,239\,658\,625\, z^{7/2}} \left(8\left(\sqrt{z}\, J_0\left(2\sqrt{z}\right)\left(32\,768\,\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right) z^9 - 65\,536\, z^9 - 16\,384\, z^8 + 12\,288\, z^7 - 46\,080\, z^6 + 403\,200\, z^5 - 6\,350\,400\, z^4 + 157\,172\,400\, z^3 - 5\,618\,913\,300\, z^2 + 273\,922\,023\,375\, z - 2\,149\,234\,337\,250\right) - 2\, J_1\left(2\sqrt{z}\right)\left(16\,384\,\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{19/2} - 16\,384\, z^9 + 4096\, z^8 - 9216\, z^7 + 57\,600\, z^6 - 705\,600\, z^5 + 14\,288\,400\, z^4 - 432\,224\,100\, z^3 + 18\,261\,468\,225\, z^2 + 674\,269\,596\,000\, z - 1\,074\,617\,168\,625\right)\right)\right) $$

07.22.03.0381.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, \frac{11}{2}; z\right) = \frac{1}{58\,060\,800\, z^{9/2}} \left(-32\,\mathrm{Shi}\left(2\sqrt{z}\right) z^{10} + 2\left(8\, z^9 + 4\, z^8 + 12\, z^7 + 90\, z^6 + 1260\, z^5 + 28\,350\, z^4 + 935\,550\, z^3 + 42\,567\,525\, z^2 - 2\,161\,120\,500\, z - 6\,188\,663\,250\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(8\, z^9 + 12\, z^8 + 60\, z^7 + 630\, z^6 + 11\,340\, z^5 + 311\,850\, z^4 + 12\,162\,150\, z^3 + 638\,512\,875\, z^2 + 10\,412\,671\,500\, z + 6\,188\,663\,250\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0382.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, \frac{11}{2}; -z\right) = \frac{1}{58\,060\,800\, z^{9/2}} \left(-32\,\mathrm{Si}\left(2\sqrt{z}\right) z^{10} - 2\left(8\, z^9 - 4\, z^8 + 12\, z^7 - 90\, z^6 + 1260\, z^5 - 28\,350\, z^4 + 935\,550\, z^3 - 42\,567\,525\, z^2 - 2\,161\,120\,500\, z + 6\,188\,663\,250\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(-8\, z^9 + 12\, z^8 - 60\, z^7 + 630\, z^6 - 11\,340\, z^5 + 311\,850\, z^4 - 12\,162\,150\, z^3 + 638\,512\,875\, z^2 - 10\,412\,671\,500\, z + 6\,188\,663\,250\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0383.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, 6; z\right) = \frac{1}{866\,206\,566\,225\, z^{9/2}} \left(8\left(I_1\left(2\sqrt{z}\right)\left(65\,536\,\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{21/2} + 65\,536\, z^{10} + 16\,384\, z^9 + 36\,864\, z^8 + 230\,400\, z^7 + 2\,822\,400\, z^6 + 57\,153\,600\, z^5 + 1\,728\,896\,400\, z^4 + 73\,045\,872\,900\, z^3 + 4\,108\,830\,350\,625\, z^2 + 118\,207\,888\,548\,750\, z + 163\,341\,809\,631\,000\right) - 2\sqrt{z}\, I_0\left(2\sqrt{z}\right)\left(32\,768\,\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{10} + 65\,536\, z^{10} - 16\,384\, z^9 - 12\,288\, z^8 - 46\,080\, z^7 - 403\,200\, z^6 - 6\,350\,400\, z^5 - 157\,172\,400\, z^4 - 5\,618\,913\,300\, z^3 - 273\,922\,023\,375\, z^2 + 18\,268\,491\,866\,625\, z + 81\,670\,904\,815\,500\right)\right)\right) $$

07.22.03.0384.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{9}{2}, 6; -z\right) = \frac{1}{866\,206\,566\,225\, z^{9/2}} \left(8\left(2\sqrt{z}\, J_0\left(2\sqrt{z}\right)\left(32\,768\,\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{10} - 65\,536\, z^{10} - 16\,384\, z^9 + 12\,288\, z^8 - 46\,080\, z^7 + 403\,200\, z^6 - 6\,350\,400\, z^5 + 157\,172\,400\, z^4 - 5\,618\,913\,300\, z^3 + 273\,922\,023\,375\, z^2 + 18\,268\,491\,866\,625\, z - 81\,670\,904\,815\,500\right) - J_1\left(2\sqrt{z}\right)\left(65\,536\,\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{21/2} - 65\,536\, z^{10} + 16\,384\, z^9 - 36\,864\, z^8 + 230\,400\, z^7 - 2\,822\,400\, z^6 + 57\,153\,600\, z^5 - 1\,728\,896\,400\, z^4 + 73\,045\,872\,900\, z^3 - 4\,108\,830\,350\,625\, z^2 + 118\,207\,888\,548\,750\, z - 163\,341\,809\,631\,000\right)\right)\right) $$

For fixed z and $a_1 = -\frac{11}{2}$, $b_1 = -\frac{7}{2}$

07.22.03.0385.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, -\frac{7}{2}; z\right) = \frac{1}{11\,025}\left(256\,(2\,z-11)\,\mathrm{Shi}\left(2\sqrt{z}\right) z^{9/2} - 2\left(64\,z^4 - 256\,z^3 - 48\,z^2 + 2400\,z + 11\,025\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \left(-256\,z^5 + 1280\,z^4 + 320\,z^3 - 768\,z^2 + 17\,100\,z + 11\,025\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0386.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, -\frac{7}{2}; -z\right) = \frac{1}{11\,025}\left(256\,(2\,z+11)\,\mathrm{Si}\left(2\sqrt{z}\right) z^{9/2} + 2\left(64\,z^4 + 256\,z^3 - 48\,z^2 - 2400\,z + 11\,025\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(256\,z^5 + 1280\,z^4 - 320\,z^3 - 768\,z^2 - 17\,100\,z + 11\,025\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0387.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, -\frac{5}{2}; z\right) = \frac{1}{1575}\left(-128\,(z-11)\,\mathrm{Shi}\left(2\sqrt{z}\right) z^{9/2} + 2\left(16\,z^4 - 152\,z^3 - 144\,z^2 - 60\,z - 1575\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \left(64\,z^5 - 672\,z^4 - 256\,z^3 - 336\,z^2 + 2160\,z + 1575\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0388.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, -\frac{5}{2}; -z\right) = \frac{1}{1575}\left(-128\,(z+11)\,\mathrm{Si}\left(2\sqrt{z}\right) z^{9/2} - 2\left(16\,z^4 + 152\,z^3 - 144\,z^2 + 60\,z - 1575\right)\sin\left(2\sqrt{z}\right)\sqrt{z} - \left(64\,z^5 + 672\,z^4 - 256\,z^3 + 336\,z^2 + 2160\,z - 1575\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0389.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, -\frac{3}{2}; z\right) = \frac{1}{945}\left(32\,(2\,z-33)\,\mathrm{Shi}\left(2\sqrt{z}\right) z^{9/2} + 2\left(-8\,z^4 + 120\,z^3 + 138\,z^2 + 360\,z - 945\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \left(-32\,z^5 + 512\,z^4 + 216\,z^3 + 432\,z^2 + 900\,z + 945\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0390.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, -\frac{3}{2}; -z\right) = \frac{1}{945}\left(32\,(2\,z+33)\,\mathrm{Si}\left(2\sqrt{z}\right) z^{9/2} + 2\left(8\,z^4 + 120\,z^3 - 138\,z^2 + 360\,z + 945\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(32\,z^5 + 512\,z^4 - 216\,z^3 + 432\,z^2 - 900\,z + 945\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0391.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, -\frac{1}{2}; z\right) = \frac{1}{630}\left(-16\,(z-22)\,\mathrm{Shi}\left(2\sqrt{z}\right) z^{9/2} + \left(4\,z^4 - 82\,z^3 - 102\,z^2 - 345\,z - 1260\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + 2\left(4\,z^5 - 86\,z^4 - 38\,z^3 - 87\,z^2 - 360\,z + 315\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0392.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, -\frac{1}{2}; -z\right) = \frac{1}{630}\left(-16\,(z+22)\,\mathrm{Si}\left(2\sqrt{z}\right) z^{9/2} + \left(-4\,z^4 - 82\,z^3 + 102\,z^2 - 345\,z + 1260\right)\sin\left(2\sqrt{z}\right)\sqrt{z} - 2\left(4\,z^5 + 86\,z^4 - 38\,z^3 + 87\,z^2 - 360\,z - 315\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0393.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, \frac{1}{2}; z\right) = \frac{1}{12\,600}\left(16\,(2\,z-55)\,\mathrm{Shi}\left(2\sqrt{z}\right) z^{9/2} + \left(-8\,z^4 + 208\,z^3 + 270\,z^2 + 1020\,z + 5985\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + 2\left(-8\,z^5 + 216\,z^4 + 98\,z^3 + 240\,z^2 + 1215\,z + 6300\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0394.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, \frac{1}{2}; -z\right) = \frac{1}{12\,600}\left(16\,(2\,z+55)\,\mathrm{Si}\left(2\sqrt{z}\right) z^{9/2} + \left(8\,z^4 + 208\,z^3 - 270\,z^2 + 1020\,z - 5985\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + 2\left(8\,z^5 + 216\,z^4 - 98\,z^3 + 240\,z^2 - 1215\,z + 6300\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0395.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, 1; z\right) = \frac{1}{1\,091\,475} \left(I_0\left(2\sqrt{z}\right)\left(2048 z^6 + 256\pi(4z-121)\boldsymbol{L}_1\left(2\sqrt{z}\right) z^5 - 62\,464 z^5 + 15\,104 z^4 + 10\,176 z^3 + 30\,960 z^2 + 182\,700 z + 1\,091\,475\right) - 8\sqrt{z}\, I_1\left(2\sqrt{z}\right)\left(128 z^5 + 32\pi(4z-121)\boldsymbol{L}_0\left(2\sqrt{z}\right) z^{9/2} - 3840 z^4 - 896 z^3 - 1728 z^2 - 8100 z - 55\,125\right)\right) $$

07.22.03.0396.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, 1; -z\right) = \frac{1}{1\,091\,475} \left(8\sqrt{z}\, J_1\left(2\sqrt{z}\right)\left(-128 z^5 + 32\pi(4z+121)\boldsymbol{H}_0\left(2\sqrt{z}\right) z^{9/2} - 3840 z^4 + 896 z^3 - 1728 z^2 + 8100 z - 55\,125\right) + J_0\left(2\sqrt{z}\right)\left(2048 z^6 - 256\pi(4z+121)\boldsymbol{H}_1\left(2\sqrt{z}\right) z^5 + 62\,464 z^5 + 15\,104 z^4 - 10\,176 z^3 + 30\,960 z^2 - 182\,700 z + 1\,091\,475\right)\right) $$

07.22.03.0397.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, \frac{3}{2}; z\right) = \frac{1}{75\,600\sqrt{z}} \left(16(z-33)\,\mathrm{Shi}\left(2\sqrt{z}\right) z^5 - 2\left(4z^5 - 130 z^4 - 60 z^3 - 153 z^2 - 855 z - 6615\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(-4 z^5 + 126 z^4 + 168 z^3 + 675 z^2 + 4725 z + 31\,185\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0398.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, \frac{3}{2}; -z\right) = \frac{1}{75\,600\sqrt{z}} \left(16(z+33)\,\mathrm{Si}\left(2\sqrt{z}\right) z^5 + 2\left(4z^5 + 130 z^4 - 60 z^3 + 153 z^2 - 855 z + 6615\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(4 z^5 + 126 z^4 - 168 z^3 + 675 z^2 - 4725 z + 31\,185\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0399.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, 2; z\right) = \frac{1}{14\,189\,175} \left(4 I_0\left(2\sqrt{z}\right)\left(1024 z^6 + 128\pi(4z-143)\boldsymbol{L}_1\left(2\sqrt{z}\right) z^5 - 36\,864 z^5 + 8960 z^4 + 6144 z^3 + 19\,440 z^2 + 126\,000 z + 1\,091\,475\right) - \frac{1}{\sqrt{z}}\left(I_1\left(2\sqrt{z}\right)\left(2048 z^6 + 512\pi(4z-143)\boldsymbol{L}_0\left(2\sqrt{z}\right) z^{11/2} - 72\,704 z^5 - 17\,152 z^4 - 33\,984 z^3 - 169\,200 z^2 - 1\,367\,100 z - 9\,823\,275\right)\right)\right) $$

07.22.03.0400.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, 2; -z\right) = \frac{1}{14\,189\,175} \left(\frac{1}{\sqrt{z}}\left(J_1\left(2\sqrt{z}\right)\left(-2048 z^6 + 512\pi(4z+143)\boldsymbol{H}_0\left(2\sqrt{z}\right) z^{11/2} - 72\,704 z^5 + 17\,152 z^4 - 33\,984 z^3 + 169\,200 z^2 - 1\,367\,100 z + 9\,823\,275\right)\right) - 4 J_0\left(2\sqrt{z}\right)\left(-1024 z^6 + 128\pi(4z+143)\boldsymbol{H}_1\left(2\sqrt{z}\right) z^5 - 36\,864 z^5 - 8960 z^4 + 6144 z^3 - 19\,440 z^2 + 126\,000 z - 1\,091\,475\right)\right) $$

07.22.03.0401.01

$${}_1F_2\left(-\frac{11}{2};-\frac{7}{2},\frac{5}{2};z\right)=$$
$$\frac{1}{705\,600\,z^{3/2}}\left(16\,(2\,z-77)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^6-2\left(8\,z^6-304\,z^5-142\,z^4-372\,z^3-2205\,z^2-20\,160\,z-155\,925\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\,+\right.$$
$$\left.\left(-8\,z^6+296\,z^5+402\,z^4+1680\,z^3+12\,915\,z^2+124\,740\,z-155\,925\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0402.01

$${}_1F_2\left(-\frac{11}{2};-\frac{7}{2},\frac{5}{2};-z\right)=$$
$$\frac{1}{705\,600\,z^{3/2}}\left(16\,(2\,z+77)\,\mathrm{Si}\left(2\sqrt{z}\right)z^6+2\left(8\,z^6+304\,z^5-142\,z^4+372\,z^3-2205\,z^2+20\,160\,z-155\,925\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,+\right.$$
$$\left.\left(8\,z^6+296\,z^5-402\,z^4+1680\,z^3-12\,915\,z^2+124\,740\,z+155\,925\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0403.01

$${}_1F_2\left(-\frac{11}{2};-\frac{7}{2},3;z\right)=\frac{1}{212\,837\,625\,z^{3/2}}$$
$$\left(2\left(\sqrt{z}\;I_0\left(2\sqrt{z}\right)\left(8192\,z^7+1024\,\pi\,(4\,z-165)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^6-339\,968\,z^6+82\,944\,z^5+57\,600\,z^4+187\,200\,z^3+\right.\right.\right.$$
$$\left.\left.\left.1\,285\,200\,z^2+13\,097\,700\,z+108\,056\,025\right)-I_1\left(2\sqrt{z}\right)\left(4096\,z^7+1024\,\pi\,(4\,z-165)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{13/2}-\right.\right.\right.$$
$$\left.\left.\left.167\,936\,z^6-39\,936\,z^5-80\,640\,z^4-417\,600\,z^3-3\,704\,400\,z^2-39\,293\,100\,z+108\,056\,025\right)\right)\right)$$

07.22.03.0404.01

$${}_1F_2\left(-\frac{11}{2};-\frac{7}{2},3;-z\right)=\frac{1}{212\,837\,625\,z^{3/2}}$$
$$\left(2\left(J_1\left(2\sqrt{z}\right)\left(-4096\,z^7+1024\,\pi\,(4\,z+165)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{13/2}-167\,936\,z^6+39\,936\,z^5-80\,640\,z^4+417\,600\,z^3-\right.\right.\right.$$
$$\left.\left.\left.3\,704\,400\,z^2+39\,293\,100\,z+108\,056\,025\right)-\sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(-8192\,z^7+1024\,\pi\,(4\,z+165)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^6-\right.\right.\right.$$
$$\left.\left.\left.339\,968\,z^6-82\,944\,z^5+57\,600\,z^4-187\,200\,z^3+1\,285\,200\,z^2-13\,097\,700\,z+108\,056\,025\right)\right)\right)$$

07.22.03.0405.01

$${}_1F_2\left(-\frac{11}{2};-\frac{7}{2},\frac{7}{2};z\right)=$$
$$\frac{1}{2\,257\,920\,z^{5/2}}\left(32\,(z-44)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^7-2\left(8\,z^7-348\,z^6-164\,z^5-438\,z^4-2700\,z^3-27\,090\,z^2-311\,850\,z+1\,403\,325\right)\right.$$
$$\left.\cosh\left(2\sqrt{z}\right)\sqrt{z}\,+\left(-8\,z^7+340\,z^6+468\,z^5+2010\,z^4+16\,380\,z^3+187\,110\,z^2+1\,559\,250\,z+1\,403\,325\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0406.01

$${}_1F_2\left(-\frac{11}{2};-\frac{7}{2},\frac{7}{2};-z\right)=\frac{1}{2\,257\,920\,z^{5/2}}$$
$$\left(32\,(z+44)\,\mathrm{Si}\left(2\sqrt{z}\right)z^7+2\left(8\,z^7+348\,z^6-164\,z^5+438\,z^4-2700\,z^3+27\,090\,z^2-311\,850\,z-1\,403\,325\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,+\right.$$
$$\left.\left(8\,z^7+340\,z^6-468\,z^5+2010\,z^4-16\,380\,z^3+187\,110\,z^2-1\,559\,250\,z+1\,403\,325\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0407.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, 4; z\right) = \frac{1}{1\,206\,079\,875\, z^{5/2}} \left(2\left(2\sqrt{z}\, I_0\left(2\sqrt{z}\right)\left(8192 z^8 + 1024\pi(4z-187)\boldsymbol{L}_1\left(2\sqrt{z}\right) z^7 - 385\,024 z^7 + 94\,208 z^6 + 66\,048 z^5 + 218\,880 z^4 + 1\,562\,400 z^3 + 17\,463\,600 z^2 + 216\,112\,050 z - 1\,404\,728\,325\right) - I_1\left(2\sqrt{z}\right)\left(8192 z^8 + 2048\pi(4z-187)\boldsymbol{L}_0\left(2\sqrt{z}\right) z^{15/2} - 380\,928 z^7 - 91\,136 z^6 - 186\,624 z^5 - 993\,600 z^4 - 9\,349\,200 z^3 - 117\,879\,300 z^2 - 972\,504\,225 z - 2\,809\,456\,650\right)\right)\right) $$

07.22.03.0408.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, 4; -z\right) = \frac{1}{1\,206\,079\,875\, z^{5/2}} \left(2\left(J_1\left(2\sqrt{z}\right)\left(-8192 z^8 + 2048\pi(4z+187)\boldsymbol{H}_0\left(2\sqrt{z}\right) z^{15/2} - 380\,928 z^7 + 91\,136 z^6 - 186\,624 z^5 + 993\,600 z^4 - 9\,349\,200 z^3 + 117\,879\,300 z^2 - 972\,504\,225 z + 2\,809\,456\,650\right) - 2\sqrt{z}\, J_0\left(2\sqrt{z}\right)\left(-8192 z^8 + 1024\pi(4z+187)\boldsymbol{H}_1\left(2\sqrt{z}\right) z^7 - 385\,024 z^7 - 94\,208 z^6 + 66\,048 z^5 - 218\,880 z^4 + 1\,562\,400 z^3 - 17\,463\,600 z^2 + 216\,112\,050 z + 1\,404\,728\,325\right)\right)\right) $$

07.22.03.0409.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, \frac{9}{2}; z\right) = \frac{1}{11\,612\,160\, z^{7/2}} \left(32(2z-99)\,\mathrm{Shi}\left(2\sqrt{z}\right) z^8 - 2\left(16 z^8 - 784 z^7 - 372 z^6 - 1008 z^5 - 6390 z^4 - 68\,040 z^3 - 935\,550 z^2 - 7\,484\,400 z - 49\,116\,375\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(-16 z^8 + 768 z^7 + 1068 z^6 + 4680 z^5 + 39\,690 z^4 + 498\,960 z^3 + 6\,548\,850 z^2 - 72\,972\,900 z - 49\,116\,375\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0410.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, \frac{9}{2}; -z\right) = \frac{1}{11\,612\,160\, z^{7/2}} \left(32(2z+99)\,\mathrm{Si}\left(2\sqrt{z}\right) z^8 + 2\left(16 z^8 + 784 z^7 - 372 z^6 + 1008 z^5 - 6390 z^4 + 68\,040 z^3 - 935\,550 z^2 + 7\,484\,400 z - 49\,116\,375\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(16 z^8 + 768 z^7 - 1068 z^6 + 4680 z^5 - 39\,690 z^4 + 498\,960 z^3 - 6\,548\,850 z^2 - 72\,972\,900 z + 49\,116\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0411.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, 5; z\right) = \frac{1}{22\,915\,517\,625\, z^{7/2}} \left(8\left(\sqrt{z}\, I_0\left(2\sqrt{z}\right)\left(32\,768 z^9 + 4096\pi(4z-209)\boldsymbol{L}_1\left(2\sqrt{z}\right) z^8 - 1\,720\,320 z^8 + 421\,888 z^7 + 297\,984 z^6 + 1\,002\,240 z^5 + 7\,358\,400 z^4 + 87\,318\,000 z^3 + 1\,296\,672\,300 z^2 + 9\,833\,098\,275 z + 126\,425\,549\,250\right) - 2 I_1\left(2\sqrt{z}\right)\left(8192 z^9 + 2048\pi(4z-209)\boldsymbol{L}_0\left(2\sqrt{z}\right) z^{17/2} - 425\,984 z^8 - 102\,400 z^7 - 211\,968 z^6 - 1\,152\,000 z^5 - 11\,289\,600 z^4 - 157\,172\,400 z^3 - 2\,161\,120\,500 z^2 + 36\,522\,936\,450 z + 63\,212\,774\,625\right)\right)\right) $$

07.22.03.0412.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, 5; -z\right) = \frac{1}{22\,915\,517\,625\, z^{7/2}} \left(8 \left(2\, J_1\left(2\sqrt{z}\right)\left(-8192\, z^9 + 2048\, \pi\, (4\, z + 209)\, \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{17/2} - 425\,984\, z^8 + 102\,400\, z^7 - 211\,968\, z^6 + 1\,152\,000\, z^5 - 11\,289\,600\, z^4 + 157\,172\,400\, z^3 - 2\,161\,120\,500\, z^2 - 36\,522\,936\,450\, z + 63\,212\,774\,625\right) - \sqrt{z}\; J_0\left(2\sqrt{z}\right)\left(-32\,768\, z^9 + 4096\, \pi\, (4\, z + 209)\, \boldsymbol{H}_1\left(2\sqrt{z}\right) z^8 - 1\,720\,320\, z^8 - 421\,888\, z^7 + 297\,984\, z^6 - 1\,002\,240\, z^5 + 7\,358\,400\, z^4 - 87\,318\,000\, z^3 + 1\,296\,672\,300\, z^2 - 9\,833\,098\,275\, z + 126\,425\,549\,250\right)\right) $$

07.22.03.0413.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, \frac{11}{2}; z\right) = \frac{1}{12\,902\,400\, z^{9/2}} \left(32\, (z - 55)\, \mathrm{Shi}\left(2\sqrt{z}\right) z^9 - 2\left(8\, z^9 - 436\, z^8 - 208\, z^7 - 570\, z^6 - 3690\, z^5 - 40\,950\, z^4 - 623\,700\, z^3 - 8\,887\,725\, z^2 + 212\,837\,625\, z + 687\,629\,250\right) \cosh\left(2\sqrt{z}\right) \sqrt{z} + \left(-8\, z^9 + 428\, z^8 + 600\, z^7 + 2670\, z^6 + 23\,310\, z^5 + 311\,850\, z^4 + 4\,989\,600\, z^3 + 30\,405\,375\, z^2 + 1\,129\,676\,625\, z + 687\,629\,250\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0414.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, \frac{11}{2}; -z\right) = \frac{1}{12\,902\,400\, z^{9/2}} \left(32\, (z + 55)\, \mathrm{Si}\left(2\sqrt{z}\right) z^9 + 2\left(8\, z^9 + 436\, z^8 - 208\, z^7 + 570\, z^6 - 3690\, z^5 + 40\,950\, z^4 - 623\,700\, z^3 + 8\,887\,725\, z^2 + 212\,837\,625\, z - 687\,629\,250\right) \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(8\, z^9 + 428\, z^8 - 600\, z^7 + 2670\, z^6 - 23\,310\, z^5 + 311\,850\, z^4 - 4\,989\,600\, z^3 + 30\,405\,375\, z^2 - 1\,129\,676\,625\, z + 687\,629\,250\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0415.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, 6; z\right) = \frac{1}{96\,245\,174\,025\, z^{9/2}} \left(8 \left(2\sqrt{z}\; I_0\left(2\sqrt{z}\right)\left(32\,768\, z^{10} + 4096\, \pi\, (4\, z - 231)\, \boldsymbol{L}_1\left(2\sqrt{z}\right) z^9 - 1\,900\,544\, z^9 + 466\,944\, z^8 + 331\,776\, z^7 + 1\,128\,960\, z^6 + 8\,467\,200\, z^5 + 104\,781\,600\, z^4 + 1\,728\,896\,400\, z^3 + 25\,285\,109\,850\, z^2 - 821\,766\,070\,125\, z - 4\,298\,468\,674\,500\right) - I_1\left(2\sqrt{z}\right)\left(32\,768\, z^{10} + 8192\, \pi\, (4\, z - 231)\, \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{19/2} - 1\,884\,160\, z^9 - 454\,656\, z^8 - 949\,248\, z^7 - 5\,241\,600\, z^6 - 52\,920\,000\, z^5 - 785\,862\,000\, z^4 - 13\,398\,947\,100\, z^3 - 54\,784\,404\,675\, z^2 - 5\,942\,000\,814\,750\, z - 8\,596\,937\,349\,000\right)\right) $$

07.22.03.0416.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{7}{2}, 6; -z\right) = \frac{1}{96\,245\,174\,025\, z^{9/2}} \left(8 \left(J_1\left(2\sqrt{z}\right)\left(-32\,768\, z^{10} + 8192\, \pi\, (4\, z + 231)\, \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{19/2} - 1\,884\,160\, z^9 + 454\,656\, z^8 - 949\,248\, z^7 + 5\,241\,600\, z^6 - 52\,920\,000\, z^5 + 785\,862\,000\, z^4 - 13\,398\,947\,100\, z^3 + 54\,784\,404\,675\, z^2 - 5\,942\,000\,814\,750\, z + 8\,596\,937\,349\,000\right) - 2\sqrt{z}\; J_0\left(2\sqrt{z}\right)\left(-32\,768\, z^{10} + 4096\, \pi\, (4\, z + 231)\, \boldsymbol{H}_1\left(2\sqrt{z}\right) z^9 - 1\,900\,544\, z^9 - 466\,944\, z^8 + 331\,776\, z^7 - 1\,128\,960\, z^6 + 8\,467\,200\, z^5 - 104\,781\,600\, z^4 + 1\,728\,896\,400\, z^3 - 25\,285\,109\,850\, z^2 - 821\,766\,070\,125\, z + 4\,298\,468\,674\,500\right)\right) $$

For fixed z and $a_1 = -\frac{11}{2}$, $b_1 = -\frac{5}{2}$

07.22.03.0417.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, -\frac{5}{2}; z\right) = \frac{1}{225}\left(16\left(2z^2 - 44z + 99\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^{7/2} - 2\left(4z^4 - 82z^3 + 96z^2 - 48z + 225\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \left(-16z^5 + 344z^4 - 640z^3 - 48z^2 + 252z + 225\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.0418.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, -\frac{5}{2}; -z\right) = \frac{1}{225}\left(16\left(2z^2 + 44z + 99\right)\operatorname{Si}\left(2\sqrt{z}\right)z^{7/2} + 2\left(4z^4 + 82z^3 + 96z^2 + 48z + 225\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(16z^5 + 344z^4 + 640z^3 - 48z^2 - 252z + 225\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.0419.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, -\frac{3}{2}; z\right) = \frac{1}{135}\left(-8\left(2z^2 - 66z + 297\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^{7/2} + 2\left(2z^4 - 63z^3 + 213z^2 + 108z - 135\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \left(8z^5 - 260z^4 + 1068z^3 + 288z^2 + 72z + 135\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.0420.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, -\frac{3}{2}; -z\right) = \frac{1}{135}\left(-8\left(2z^2 + 66z + 297\right)\operatorname{Si}\left(2\sqrt{z}\right)z^{7/2} - 2\left(2z^4 + 63z^3 + 213z^2 - 108z - 135\right)\sin\left(2\sqrt{z}\right)\sqrt{z} - \left(8z^5 + 260z^4 + 1068z^3 - 288z^2 + 72z - 135\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.0421.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, -\frac{1}{2}; z\right) = \frac{1}{360}\left(16\left(z^2 - 44z + 297\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^{7/2} - \left(4z^4 - 170z^3 + 954z^2 + 777z + 720\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} - 2\left(4z^5 - 174z^4 + 1106z^3 + 375z^2 + 432z - 180\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.0422.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, -\frac{1}{2}; -z\right) = \frac{1}{360}\left(16\left(z^2 + 44z + 297\right)\operatorname{Si}\left(2\sqrt{z}\right)z^{7/2} + \left(4z^4 + 170z^3 + 954z^2 - 777z + 720\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(8z^5 + 348z^4 + 2212z^3 - 750z^2 + 864z + 360\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.0423.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, \frac{1}{2}; z\right) = \frac{1}{3600}\left(-16\left(z^2 - 55z + 495\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^{7/2} + \left(4z^4 - 214z^3 + 1680z^2 + 1635z + 3195\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + 2\left(4z^5 - 218z^4 + 1876z^3 + 705z^2 + 1125z + 1800\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.0424.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, \frac{1}{2}; -z\right) = \frac{1}{3600}\left(-16\left(z^2 + 55z + 495\right)\operatorname{Si}\left(2\sqrt{z}\right)z^{7/2} - \left(4z^4 + 214z^3 + 1680z^2 - 1635z + 3195\right)\sin\left(2\sqrt{z}\right)\sqrt{z} - 2\left(4z^5 + 218z^4 + 1876z^3 - 705z^2 + 1125z - 1800\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.0425.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, 1; z\right) = \frac{1}{155\,925} \left(2\sqrt{z}\, I_1\left(2\sqrt{z}\right)\left(128 z^5 - 7712 z^4 + 8\pi\left(16 z^2 - 968 z + 9801\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{7/2} + 76\,544 z^3 + 15\,696 z^2 + 22\,392 z + 53\,775\right) + I_0\left(2\sqrt{z}\right)\left(-512 z^6 + 31\,104 z^5 - 16\pi\left(16 z^2 - 968 z + 9801\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^4 - 321\,280 z^4 + 72\,960 z^3 + 40\,176 z^2 + 79\,560 z + 155\,925\right)\right) $$

07.22.03.0426.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, 1; -z\right) = \frac{1}{155\,925} \left(J_0\left(2\sqrt{z}\right)\left(-512 z^6 - 31\,104 z^5 + 16\pi\left(16 z^2 + 968 z + 9801\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^4 - 321\,280 z^4 - 72\,960 z^3 + 40\,176 z^2 - 79\,560 z + 155\,925\right) - 2\sqrt{z}\, J_1\left(2\sqrt{z}\right)\left(-128 z^5 - 7712 z^4 + 8\pi\left(16 z^2 + 968 z + 9801\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{7/2} - 76\,544 z^3 + 15\,696 z^2 - 22\,392 z + 53\,775\right)\right) $$

07.22.03.0427.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, \frac{3}{2}; z\right) = \frac{1}{86\,400\sqrt{z}} \left(-16\left(2 z^2 - 132 z + 1485\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^4 + 2\left(8 z^5 - 524 z^4 + 5688 z^3 + 2268 z^2 + 4230 z + 12\,015\right) \cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(8 z^5 - 516 z^4 + 5208 z^3 + 5580 z^2 + 14\,310 z + 31\,185\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0428.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, \frac{3}{2}; -z\right) = \frac{1}{86\,400\sqrt{z}} \left(-16\left(2 z^2 + 132 z + 1485\right) \mathrm{Si}\left(2\sqrt{z}\right) z^4 - 2\left(8 z^5 + 524 z^4 + 5688 z^3 - 2268 z^2 + 4230 z - 12\,015\right) \cos\left(2\sqrt{z}\right)\sqrt{z} - \left(8 z^5 + 516 z^4 + 5208 z^3 - 5580 z^2 + 14\,310 z - 31\,185\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0429.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, 2; z\right) = \frac{1}{2\,027\,025} \left(\frac{1}{\sqrt{z}} \left(I_1\left(2\sqrt{z}\right)\left(512 z^6 - 36\,480 z^5 + 32\pi\left(16 z^2 - 1144 z + 14\,157\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{9/2} + 444\,160 z^4 + 94\,464 z^3 + 148\,176 z^2 + 462\,600 z + 1\,091\,475\right)\right) - 2 I_0\left(2\sqrt{z}\right)\left(512 z^6 - 36\,736 z^5 + 16\pi\left(16 z^2 - 1144 z + 14\,157\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^4 + 462\,080 z^4 - 106\,752 z^3 - 62\,352 z^2 - 142\,920 z - 467\,775\right)\right) $$

07.22.03.0430.01

$${}_1F_2\left(-\frac{11}{2};-\frac{5}{2},2;-z\right)=$$
$$\frac{1}{2\,027\,025}\left(2\,J_0\left(2\sqrt{z}\right)\left(-512\,z^6-36\,736\,z^5+16\,\pi\left(16\,z^2+1144\,z+14\,157\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^4-462\,080\,z^4-\right.\right.$$
$$\left.106\,752\,z^3+62\,352\,z^2-142\,920\,z+467\,775\right)-\frac{1}{\sqrt{z}}\left(J_1\left(2\sqrt{z}\right)\left(-512\,z^6-36\,480\,z^5+\right.\right.$$
$$\left.\left.\left.32\,\pi\left(16\,z^2+1144\,z+14\,157\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{9/2}-444\,160\,z^4+94\,464\,z^3-148\,176\,z^2+462\,600\,z-1\,091\,475\right)\right)\right)$$

07.22.03.0431.01

$${}_1F_2\left(-\frac{11}{2};-\frac{5}{2},\frac{5}{2};z\right)=$$
$$\frac{1}{403\,200\,z^{3/2}}\left(-16\left(2\,z^2-154\,z+2079\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^5+2\left(8\,z^6-612\,z^5+8020\,z^4+3324\,z^3+6804\,z^2+24\,885\,z+62\,370\right)\right.$$
$$\left.\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(8\,z^6-604\,z^5+7452\,z^4+8484\,z^3+25\,200\,z^2+93\,555\,z-62\,370\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0432.01

$${}_1F_2\left(-\frac{11}{2};-\frac{5}{2},\frac{5}{2};-z\right)=$$
$$\frac{1}{403\,200\,z^{3/2}}\left(-16\left(2\,z^2+154\,z+2079\right)\mathrm{Si}\left(2\sqrt{z}\right)z^5-2\left(8\,z^6+612\,z^5+8020\,z^4-3324\,z^3+6804\,z^2-24\,885\,z+62\,370\right)\right.$$
$$\left.\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-8\,z^6-604\,z^5-7452\,z^4+8484\,z^3-25\,200\,z^2+93\,555\,z+62\,370\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0433.01

$${}_1F_2\left(-\frac{11}{2};-\frac{5}{2},3;z\right)=$$
$$\frac{1}{30\,405\,375\,z^{3/2}}\left(2\left(I_1\left(2\sqrt{z}\right)\left(1024\,z^7-84\,224\,z^6+64\,\pi\left(16\,z^2-1320\,z+19\,305\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{11/2}+1\,214\,976\,z^5+\right.\right.\right.$$
$$\left.264\,960\,z^4+442\,080\,z^3+1\,598\,400\,z^2+6\,548\,850\,z-9\,823\,275\right)-$$
$$\sqrt{z}\,I_0\left(2\sqrt{z}\right)\left(2048\,z^7-169\,472\,z^6+64\,\pi\left(16\,z^2-1320\,z+19\,305\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^5+2\,512\,896\,z^5-\right.$$
$$\left.\left.\left.587\,520\,z^4-357\,120\,z^3-896\,400\,z^2-3\,742\,200\,z-9\,823\,275\right)\right)\right)$$

07.22.03.0434.01

$${}_1F_2\left(-\frac{11}{2};-\frac{5}{2},3;-z\right)=$$
$$\frac{1}{30\,405\,375\,z^{3/2}}\left(2\left(\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(-2048\,z^7-169\,472\,z^6+64\,\pi\left(16\,z^2+1320\,z+19\,305\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^5-\right.\right.\right.$$
$$\left.2\,512\,896\,z^5-587\,520\,z^4+357\,120\,z^3-896\,400\,z^2+3\,742\,200\,z-9\,823\,275\right)-$$
$$J_1\left(2\sqrt{z}\right)\left(-1024\,z^7-84\,224\,z^6+64\,\pi\left(16\,z^2+1320\,z+19\,305\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{11/2}-1\,214\,976\,z^5+\right.$$
$$\left.\left.\left.264\,960\,z^4-442\,080\,z^3+1\,598\,400\,z^2-6\,548\,850\,z-9\,823\,275\right)\right)\right)$$

07.22.03.0435.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, \frac{7}{2}; z\right) = \frac{1}{1\,290\,240\,z^{5/2}} \left(-32\left(z^2 - 88\,z + 1386\right)\operatorname{Shi}\left(2\sqrt{z}\right) z^6 + 2\left(8\,z^7 - 700\,z^6 + 10\,748\,z^5 + 4578\,z^4 + 9972\,z^3 + 42\,210\,z^2 + 187\,110\,z - 467\,775\right) \cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(8\,z^7 - 692\,z^6 + 10\,092\,z^5 + 11\,982\,z^4 + 39\,060\,z^3 + 187\,110\,z^2 + 436\,590\,z + 467\,775\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0436.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, \frac{7}{2}; -z\right) = \frac{1}{1\,290\,240\,z^{5/2}} \left(-32\left(z^2 + 88\,z + 1386\right)\operatorname{Si}\left(2\sqrt{z}\right) z^6 - 2\left(8\,z^7 + 700\,z^6 + 10\,748\,z^5 - 4578\,z^4 + 9972\,z^3 - 42\,210\,z^2 + 187\,110\,z + 467\,775\right) \cos\left(2\sqrt{z}\right)\sqrt{z} - \left(8\,z^7 + 692\,z^6 + 10\,092\,z^5 - 11\,982\,z^4 + 39\,060\,z^3 - 187\,110\,z^2 + 436\,590\,z - 467\,775\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0437.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, 4; z\right) = \frac{1}{172\,297\,125\,z^{5/2}} \left(2\left(I_1\left(2\sqrt{z}\right)\left(2048\,z^8 - 190\,976\,z^7 + 128\,\pi\left(16\,z^2 - 1496\,z + 25\,245\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) z^{13/2} + 3\,184\,640\,z^6 + 707\,328\,z^5 + 1\,232\,640\,z^4 + 4\,899\,600\,z^3 + 26\,195\,400\,z^2 + 49\,116\,375\,z + 216\,112\,050\right) - 2\sqrt{z}\; I_0\left(2\sqrt{z}\right)\left(2048\,z^8 - 192\,000\,z^7 + 64\,\pi\left(16\,z^2 - 1496\,z + 25\,245\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) z^6 + 3\,278\,848\,z^6 - 773\,376\,z^5 - 483\,840\,z^4 - 1\,292\,400\,z^3 - 6\,237\,000\,z^2 - 29\,469\,825\,z + 108\,056\,025\right)\right)\right) $$

07.22.03.0438.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, 4; -z\right) = \frac{1}{172\,297\,125\,z^{5/2}} \left(2\left(2\sqrt{z}\; J_0\left(2\sqrt{z}\right)\left(-2048\,z^8 - 192\,000\,z^7 + 64\,\pi\left(16\,z^2 + 1496\,z + 25\,245\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) z^6 - 3\,278\,848\,z^6 - 773\,376\,z^5 + 483\,840\,z^4 - 1\,292\,400\,z^3 + 6\,237\,000\,z^2 - 29\,469\,825\,z - 108\,056\,025\right) - J_1\left(2\sqrt{z}\right)\left(-2048\,z^8 - 190\,976\,z^7 + 128\,\pi\left(16\,z^2 + 1496\,z + 25\,245\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) z^{13/2} - 3\,184\,640\,z^6 + 707\,328\,z^5 - 1\,232\,640\,z^4 + 4\,899\,600\,z^3 - 26\,195\,400\,z^2 + 49\,116\,375\,z - 216\,112\,050\right)\right)\right) $$

07.22.03.0439.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, \frac{9}{2}; z\right) = \frac{1}{3\,317\,760\,z^{7/2}} \left(-32\left(z^2 - 99\,z + 1782\right)\operatorname{Shi}\left(2\sqrt{z}\right) z^7 + 2\left(8\,z^8 - 788\,z^7 + 13\,872\,z^6 + 6030\,z^5 + 13\,734\,z^4 + 63\,990\,z^3 + 374\,220\,z^2 + 467\,775\,z + 7\,016\,625\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(8\,z^8 - 780\,z^7 + 13\,128\,z^6 + 16\,074\,z^5 + 55\,890\,z^4 + 311\,850\,z^3 + 1\,496\,880\,z^2 - 9\,823\,275\,z - 7\,016\,625\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0440.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, \frac{9}{2}; -z\right) = \frac{1}{3\,317\,760\,z^{7/2}} \left(-32\left(z^2 + 99\,z + 1782\right)\operatorname{Si}\left(2\sqrt{z}\right) z^7 - 2\left(8\,z^8 + 788\,z^7 + 13\,872\,z^6 - 6030\,z^5 + 13\,734\,z^4 - 63\,990\,z^3 + 374\,220\,z^2 - 467\,775\,z + 7\,016\,625\right)\cos\left(2\sqrt{z}\right)\sqrt{z} - \left(8\,z^8 + 780\,z^7 + 13\,128\,z^6 - 16\,074\,z^5 + 55\,890\,z^4 - 311\,850\,z^3 + 1\,496\,880\,z^2 + 9\,823\,275\,z - 7\,016\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0441.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, 5; z\right) = \frac{1}{3\,273\,645\,375\, z^{7/2}} \left(8\left(2\, I_1\left(2\sqrt{z}\right)\left(2048 z^9 - 213\,504 z^8 + 128\,\pi\left(16 z^2 - 1672 z + 31\,977\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{15/2} + 4\,040\,704 z^7 + 910\,080 z^6 + 1\,638\,144 z^5 + 6\,958\,800 z^4 + 43\,659\,000 z^3 + 206\,288\,775 z^2 - 2\,161\,120\,500 z - 4\,214\,184\,975\right) - \sqrt{z}\, I_0\left(2\sqrt{z}\right)\left(8192 z^9 - 858\,112 z^8 + 256\,\pi\left(16 z^2 - 1672 z + 31\,977\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^7 + 16\,584\,704 z^7 - 3\,938\,304 z^6 - 2\,518\,272 z^5 - 7\,038\,720 z^4 - 37\,422\,000 z^3 - 235\,758\,600 z^2 - 108\,056\,025 z - 8\,428\,369\,950\right)\right)\right) $$

07.22.03.0442.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, 5; -z\right) = \frac{1}{3\,273\,645\,375\, z^{7/2}} \left(8\left(\sqrt{z}\, J_0\left(2\sqrt{z}\right)\left(-8192 z^9 - 858\,112 z^8 + 256\,\pi\left(16 z^2 + 1672 z + 31\,977\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^7 - 16\,584\,704 z^7 - 3\,938\,304 z^6 + 2\,518\,272 z^5 - 7\,038\,720 z^4 + 37\,422\,000 z^3 - 235\,758\,600 z^2 + 108\,056\,025 z - 8\,428\,369\,950\right) - 2\, J_1\left(2\sqrt{z}\right)\left(-2048 z^9 - 213\,504 z^8 + 128\,\pi\left(16 z^2 + 1672 z + 31\,977\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{15/2} - 4\,040\,704 z^7 + 910\,080 z^6 - 1\,638\,144 z^5 + 6\,958\,800 z^4 - 43\,659\,000 z^3 + 206\,288\,775 z^2 + 2\,161\,120\,500 z - 4\,214\,184\,975\right)\right)\right) $$

07.22.03.0443.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, \frac{11}{2}; z\right) = \frac{1}{14\,745\,600\, z^{9/2}} \left(-32\left(2 z^2 - 220 z + 4455\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^8 + 2\left(16 z^9 - 1752 z^8 + 34\,784 z^7 + 15\,360 z^6 + 36\,180 z^5 + 180\,450 z^4 + 1\,247\,400 z^3 + 5\,613\,300 z^2 - 88\,877\,250 z - 343\,814\,625\right) \cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(16 z^9 - 1736 z^8 + 33\,120 z^7 + 41\,520 z^6 + 151\,380 z^5 + 935\,550 z^4 + 6\,237\,000 z^3 - 9\,355\,500 z^2 + 547\,296\,750 z + 343\,814\,625\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0444.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, \frac{11}{2}; -z\right) = \frac{1}{14\,745\,600\, z^{9/2}} \left(-32\left(2 z^2 + 220 z + 4455\right) \mathrm{Si}\left(2\sqrt{z}\right) z^8 - 2\left(16 z^9 + 1752 z^8 + 34\,784 z^7 - 15\,360 z^6 + 36\,180 z^5 - 180\,450 z^4 + 1\,247\,400 z^3 - 5\,613\,300 z^2 - 88\,877\,250 z + 343\,814\,625\right) \cos\left(2\sqrt{z}\right)\sqrt{z} - \left(16 z^9 + 1736 z^8 + 33\,120 z^7 - 41\,520 z^6 + 151\,380 z^5 - 935\,550 z^4 + 6\,237\,000 z^3 + 9\,355\,500 z^2 + 547\,296\,750 z - 343\,814\,625\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0445.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, 6; z\right) =$$
$$\frac{1}{13\,749\,310\,575\,z^{9/2}}\left(8\left(I_1\left(2\sqrt{z}\right)\left(8192\,z^{10} - 944\,128\,z^9 + 512\,\pi\left(16\,z^2 - 1848\,z + 39\,501\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{17/2} + \right.\right.\right.$$
$$19\,992\,576\,z^8 + 4\,552\,704\,z^7 + 8\,402\,688\,z^6 + 37\,497\,600\,z^5 + 261\,954\,000\,z^4 +$$
$$\left.1\,807\,482\,600\,z^3 - 7\,455\,865\,725\,z^2 + 328\,706\,428\,050\,z + 505\,702\,197\,000\right) - 2\sqrt{z}\;I_0\left(2\sqrt{z}\right)$$
$$\left(8192\,z^{10} - 948\,224\,z^9 + 256\,\pi\left(16\,z^2 - 1848\,z + 39\,501\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^8 + 20\,459\,520\,z^8 - 4\,884\,480\,z^7 - 3\,177\,216\right.$$
$$\left.\left.z^6 - 9\,192\,960\,z^5 - 52\,390\,800\,z^4 - 392\,931\,000\,z^3 - 1\,620\,840\,375\,z^2 + 37\,927\,664\,775\,z + 252\,851\,098\,500\right)\right)\right)$$

07.22.03.0446.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{5}{2}, 6; -z\right) =$$
$$\frac{1}{13\,749\,310\,575\,z^{9/2}}\left(8\left(2\sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(-8192\,z^{10} - 948\,224\,z^9 + 256\,\pi\left(16\,z^2 + 1848\,z + 39\,501\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^8 - \right.\right.\right.$$
$$20\,459\,520\,z^8 - 4\,884\,480\,z^7 + 3\,177\,216\,z^6 - 9\,192\,960\,z^5 + 52\,390\,800\,z^4 - 392\,931\,000\,z^3 +$$
$$1\,620\,840\,375\,z^2 + 37\,927\,664\,775\,z - 252\,851\,098\,500\Big) - J_1\left(2\sqrt{z}\right)\left(-8192\,z^{10} - 944\,128\,z^9 + \right.$$
$$512\,\pi\left(16\,z^2 + 1848\,z + 39\,501\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{17/2} - 19\,992\,576\,z^8 + 4\,552\,704\,z^7 - 8\,402\,688\,z^6 +$$
$$\left.\left.\left.37\,497\,600\,z^5 - 261\,954\,000\,z^4 + 1\,807\,482\,600\,z^3 + 7\,455\,865\,725\,z^2 + 328\,706\,428\,050\,z - 505\,702\,197\,000\right)\right)\right)$$

For fixed z and $a_1 = -\frac{11}{2}$, $b_1 = -\frac{3}{2}$

07.22.03.0447.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, -\frac{3}{2}; z\right) =$$
$$\frac{1}{162}\left(4\left(4\,z^3 - 198\,z^2 + 1782\,z - 2079\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^{5/2} + \left(-4\,z^4 + 192\,z^3 - 1515\,z^2 + 576\,z - 324\right)\sinh\left(2\sqrt{z}\right)\sqrt{z}\; + \right.$$
$$\left.\left(-8\,z^5 + 392\,z^4 - 3378\,z^3 + 2880\,z^2 - 72\,z + 162\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0448.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, -\frac{3}{2}; -z\right) =$$
$$\frac{1}{162}\left(4\left(4\,z^3 + 198\,z^2 + 1782\,z + 2079\right)\mathrm{Si}\left(2\sqrt{z}\right)z^{5/2} + \left(4\,z^4 + 192\,z^3 + 1515\,z^2 + 576\,z + 324\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\; + \right.$$
$$\left.2\left(4\,z^5 + 196\,z^4 + 1689\,z^3 + 1440\,z^2 + 36\,z + 81\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0449.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, -\frac{1}{2}; z\right) =$$
$$\frac{1}{432}\left(-16\left(z^3 - 66\,z^2 + 891\,z - 2079\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^{5/2} + \left(4\,z^4 - 258\,z^3 + 3198\,z^2 - 4635\,z - 864\right)\sinh\left(2\sqrt{z}\right)\sqrt{z}\; + \right.$$
$$\left.2\left(4\,z^5 - 262\,z^4 + 3438\,z^3 - 6885\,z^2 - 1152\,z + 216\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0450.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, -\frac{1}{2}; -z\right) =$$
$$\frac{1}{432}\left(-16\left(z^3+66\,z^2+891\,z+2079\right)\text{Si}\left(2\sqrt{z}\right)z^{5/2}-\left(4\,z^4+258\,z^3+3198\,z^2+4635\,z-864\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\,-\right.$$
$$\left.2\left(4\,z^5+262\,z^4+3438\,z^3+6885\,z^2-1152\,z-216\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0451.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, \frac{1}{2}; z\right) =$$
$$\frac{1}{8640}\left(16\left(2\,z^3-165\,z^2+2970\,z-10\,395\right)\text{Shi}\left(2\sqrt{z}\right)z^{5/2}+\left(-8\,z^4+648\,z^3-10\,950\,z^2+28\,080\,z+13\,905\right)\sinh\left(2\sqrt{z}\right)\sqrt{z}\,+\right.$$
$$\left.2\left(-8\,z^5+656\,z^4-11\,562\,z^3+36\,540\,z^2+9135\,z+4320\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0452.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, \frac{1}{2}; -z\right) =$$
$$\frac{1}{8640}\left(16\left(2\,z^3+165\,z^2+2970\,z+10\,395\right)\text{Si}\left(2\sqrt{z}\right)z^{5/2}+\left(8\,z^4+648\,z^3+10\,950\,z^2+28\,080\,z-13\,905\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\,+\right.$$
$$\left.2\left(8\,z^5+656\,z^4+11\,562\,z^3+36\,540\,z^2-9135\,z+4320\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0453.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, 1; z\right) =$$
$$\frac{1}{93\,555}\left(I_0\left(2\sqrt{z}\right)\left(256\,z^6-23\,296\,z^5+476\,208\,z^4+2\,\pi\left(64\,z^3-5808\,z^2+117\,612\,z-480\,249\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^3-\right.\right.$$
$$\left.2\,034\,432\,z^3+406\,800\,z^2+147\,528\,z+93\,555\right)-2\sqrt{z}\;I_1\left(2\sqrt{z}\right)\left(64\,z^5-5792\,z^4+116\,196\,z^3+\right.$$
$$\left.\left.\pi\left(64\,z^3-5808\,z^2+117\,612\,z-480\,249\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}-453\,888\,z^2-71\,568\,z-50\,976\right)\right)$$

07.22.03.0454.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, 1; -z\right) = \frac{1}{93\,555}\left(2\sqrt{z}\;J_1\left(2\sqrt{z}\right)\left(\pi\,z^{5/2}\left(64\,z^3+5808\,z^2+117\,612\,z+480\,249\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.4\left(16\,z^5+1448\,z^4+29\,049\,z^3+113\,472\,z^2-17\,892\,z+12\,744\right)\right)+$$
$$J_0\left(2\sqrt{z}\right)\left(256\,z^6+23\,296\,z^5+476\,208\,z^4-2\,\pi\left(64\,z^3+5808\,z^2+117\,612\,z+480\,249\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^3+\right.$$
$$\left.\left.2\,034\,432\,z^3+406\,800\,z^2-147\,528\,z+93\,555\right)\right)$$

07.22.03.0455.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, \frac{3}{2}; z\right) =$$
$$\frac{1}{103\,680\sqrt{z}}\left(16\left(2\,z^3-198\,z^2+4455\,z-20\,790\right)\text{Shi}\left(2\sqrt{z}\right)z^3-2\left(8\,z^5-788\,z^4+17\,436\,z^3-75\,348\,z^2-22\,500\,z-20\,655\right)\right.$$
$$\left.\cosh\left(2\sqrt{z}\right)\sqrt{z}\,+\left(-8\,z^5+780\,z^4-16\,692\,z^3+61\,740\,z^2+42\,120\,z+31\,185\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0456.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, \frac{3}{2}; -z\right) =$$
$$\frac{1}{103\,680\sqrt{z}}\left(16\left(2z^3+198z^2+4455z+20\,790\right)\mathrm{Si}\left(2\sqrt{z}\right)z^3+2\left(8z^5+788z^4+17\,436z^3+75\,348z^2-22\,500z+20\,655\right)\right.$$
$$\left.\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8z^5+780z^4+16\,692z^3+61\,740z^2-42\,120z+31\,185\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0457.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, 2; z\right) = \frac{1}{1\,216\,215}\left(4I_0\left(2\sqrt{z}\right)\left(\pi\left(64z^3-6864z^2+169\,884z-891\,891\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^3+\right.\right.$$
$$\left.2\left(64z^6-6880z^5+171\,588z^4-933\,120z^3+195\,552z^2+83\,808z+93\,555\right)\right)-$$
$$\frac{1}{\sqrt{z}}\left(I_1\left(2\sqrt{z}\right)\left(256z^6-27\,392z^5+672\,816z^4+4\pi\left(64z^3-6864z^2+169\,884z-891\,891\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2}-\right.\right.$$
$$\left.\left.3\,412\,224z^3-595\,152z^2-576\,936z-467\,775\right)\right)\Bigg)$$

07.22.03.0458.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, 2; -z\right) =$$
$$\frac{1}{1\,216\,215}\left(\frac{1}{\sqrt{z}}\left(J_1\left(2\sqrt{z}\right)\left(-256z^6-27\,392z^5-672\,816z^4+4\pi\left(64z^3+6864z^2+169\,884z+891\,891\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2}-\right.\right.\right.$$
$$\left.\left.\left.3\,412\,224z^3+595\,152z^2-576\,936z+467\,775\right)\right)-4J_0\left(2\sqrt{z}\right)\left(\pi z^3\left(64z^3+6864z^2+169\,884z+891\,891\right)\right.\right.$$
$$\left.\left.\boldsymbol{H}_1\left(2\sqrt{z}\right)-2\left(64z^6+6880z^5+171\,588z^4+933\,120z^3+195\,552z^2-83\,808z+93\,555\right)\right)\right)$$

07.22.03.0459.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, \frac{5}{2}; z\right) = \frac{1}{967\,680z^{3/2}}\left(16\left(4z^3-462z^2+12\,474z-72\,765\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^4-\right.$$
$$2\left(16z^6-1840z^5+48\,996z^4-268\,704z^3-88\,956z^2-109\,620z-93\,555\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left.\left(-16z^6+1824z^5-47\,244z^4+228\,816z^3+185\,220z^2+249\,480z-93\,555\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0460.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, \frac{5}{2}; -z\right) = \frac{1}{967\,680z^{3/2}}\left(16\left(4z^3+462z^2+12\,474z+72\,765\right)\mathrm{Si}\left(2\sqrt{z}\right)z^4+\right.$$
$$2\left(16z^6+1840z^5+48\,996z^4+268\,704z^3-88\,956z^2+109\,620z-93\,555\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left.\left(16z^6+1824z^5+47\,244z^4+228\,816z^3-185\,220z^2+249\,480z+93\,555\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0461.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, 3; z\right) = \frac{1}{18\,243\,225\, z^{3/2}} \left(2\left(\sqrt{z}\ I_0\left(2\sqrt{z}\right)\left(1024 z^7 - 126\,976 z^6 + 3\,738\,048 z^5 + 8\pi\left(64 z^3 - 7920 z^2 + 231\,660 z - 1\,486\,485\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^4 - 24\,687\,360 z^4 + 5\,333\,760 z^3 + 2\,533\,680 z^2 + 3\,742\,200 z + 3\,274\,425\right) - I_1\left(2\sqrt{z}\right)\left(512 z^7 - 63\,232 z^6 + 1\,837\,728 z^5 + 8\pi\left(64 z^3 - 7920 z^2 + 231\,660 z - 1\,486\,485\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{9/2} - 11\,462\,400 z^4 - 2\,131\,200 z^3 - 2\,455\,920 z^2 - 3\,742\,200 z + 3\,274\,425\right)\right)\right) $$

07.22.03.0462.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, 3; -z\right) = \frac{1}{18\,243\,225\, z^{3/2}} \left(2\left(J_1\left(2\sqrt{z}\right)\left(-512 z^7 - 63\,232 z^6 - 1\,837\,728 z^5 + 8\pi\left(64 z^3 + 7920 z^2 + 231\,660 z + 1\,486\,485\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{9/2} - 11\,462\,400 z^4 + 2\,131\,200 z^3 - 2\,455\,920 z^2 + 3\,742\,200 z + 3\,274\,425\right) - \sqrt{z}\ J_0\left(2\sqrt{z}\right)\left(-1024 z^7 - 126\,976 z^6 - 3\,738\,048 z^5 + 8\pi\left(64 z^3 + 7920 z^2 + 231\,660 z + 1\,486\,485\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^4 - 24\,687\,360 z^4 - 5\,333\,760 z^3 + 2\,533\,680 z^2 - 3\,742\,200 z + 3\,274\,425\right)\right)\right) $$

07.22.03.0463.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, \frac{7}{2}; z\right) = \frac{1}{1\,548\,288\, z^{5/2}} \left(32\left(z^3 - 132 z^2 + 4158 z - 29\,106\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^5 - 2\left(8 z^7 - 1052 z^6 + 32\,748 z^5 - 217\,710 z^4 - 77\,148 z^3 - 113\,022 z^2 - 187\,110 z + 280\,665\right) \cosh\left(2\sqrt{z}\right) \sqrt{z} + \left(-8 z^7 + 1044 z^6 - 31\,740 z^5 + 190\,242 z^4 + 171\,612 z^3 + 311\,850 z^2 + 187\,110 z + 280\,665\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0464.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, \frac{7}{2}; -z\right) = \frac{1}{1\,548\,288\, z^{5/2}} \left(32\left(z^3 + 132 z^2 + 4158 z + 29\,106\right) \mathrm{Si}\left(2\sqrt{z}\right) z^5 + 2\left(8 z^7 + 1052 z^6 + 32\,748 z^5 + 217\,710 z^4 - 77\,148 z^3 + 113\,022 z^2 - 187\,110 z - 280\,665\right) \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(8 z^7 + 1044 z^6 + 31\,740 z^5 + 190\,242 z^4 - 171\,612 z^3 + 311\,850 z^2 - 187\,110 z + 280\,665\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0465.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, 4; z\right) = \frac{1}{103\,378\,275\, z^{5/2}} \left(2\left(2\sqrt{z}\ I_0\left(2\sqrt{z}\right)\left(1024 z^8 - 143\,872 z^7 + 4\,882\,752 z^6 + 8\pi\left(64 z^3 - 8976 z^2 + 302\,940 z - 2\,297\,295\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^5 - 37\,942\,272 z^5 + 8\,375\,040 z^4 + 4\,268\,160 z^3 + 7\,484\,400 z^2 + 13\,097\,700 z - 29\,469\,825\right) - I_1\left(2\sqrt{z}\right)\left(1024 z^8 - 143\,360 z^7 + 4\,811\,712 z^6 + 16\pi\left(64 z^3 - 8976 z^2 + 302\,940 z - 2\,297\,295\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{11/2} - 35\,622\,144 z^5 - 6\,923\,520 z^4 - 8\,927\,280 z^3 - 18\,711\,000 z^2 - 3\,274\,425 z - 58\,939\,650\right)\right)\right) $$

07.22.03.0466.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, 4; -z\right) = \frac{1}{103\,378\,275\,z^{5/2}} \left(2\left(J_1\left(2\sqrt{z}\right)\left(-1024\,z^8 - 143\,360\,z^7 - 4\,811\,712\,z^6 + 16\,\pi\left(64\,z^3 + 8976\,z^2 + 302\,940\,z + 2\,297\,295\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{11/2} - 35\,622\,144\,z^5 + 6\,923\,520\,z^4 - 8\,927\,280\,z^3 + 18\,711\,000\,z^2 - 3\,274\,425\,z + 58\,939\,650\right) - 2\sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(-1024\,z^8 - 143\,872\,z^7 - 4\,882\,752\,z^6 + 8\,\pi\left(64\,z^3 + 8976\,z^2 + 302\,940\,z + 2\,297\,295\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^5 - 37\,942\,272\,z^5 - 8\,375\,040\,z^4 + 4\,268\,160\,z^3 - 7\,484\,400\,z^2 + 13\,097\,700\,z + 29\,469\,825\right)\right)\right)$$

07.22.03.0467.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, \frac{9}{2}; z\right) = \frac{1}{7\,962\,624\,z^{7/2}} \left(32\left(2\,z^3 - 297\,z^2 + 10\,692\,z - 87\,318\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^6 - 2\left(16\,z^8 - 2368\,z^7 + 84\,372\,z^6 - 659\,160\,z^5 - 245\,178\,z^4 - 403\,056\,z^3 - 935\,550\,z^2 + 374\,220\,z - 7\,016\,625\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(-16\,z^8 + 2352\,z^7 - 82\,092\,z^6 + 586\,800\,z^5 + 570\,726\,z^4 + 1\,247\,400\,z^3 + 2\,058\,210\,z^2 - 8\,981\,280\,z - 7\,016\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0468.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, \frac{9}{2}; -z\right) = \frac{1}{7\,962\,624\,z^{7/2}} \left(32\left(2\,z^3 + 297\,z^2 + 10\,692\,z + 87\,318\right)\mathrm{Si}\left(2\sqrt{z}\right)z^6 + 2\left(16\,z^8 + 2368\,z^7 + 84\,372\,z^6 + 659\,160\,z^5 + 245\,178\,z^4 + 403\,056\,z^3 - 935\,550\,z^2 - 374\,220\,z - 7\,016\,625\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(16\,z^8 + 2352\,z^7 + 82\,092\,z^6 + 586\,800\,z^5 - 570\,726\,z^4 + 1\,247\,400\,z^3 - 2\,058\,210\,z^2 - 8\,981\,280\,z + 7\,016\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0469.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, 5; z\right) = \frac{1}{1\,964\,187\,225\,z^{7/2}} \left(8\left(\sqrt{z}\;I_0\left(2\sqrt{z}\right)\left(4096\,z^9 - 643\,072\,z^8 + 24\,718\,080\,z^7 + 32\,\pi\left(64\,z^3 - 10\,032\,z^2 + 383\,724\,z - 3\,357\,585\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^6 - 220\,907\,520\,z^6 + 49\,542\,912\,z^5 + 26\,576\,640\,z^4 + 52\,390\,800\,z^3 + 130\,977\,000\,z^2 - 147\,349\,125\,z + 1\,945\,008\,450\right) - 2\,I_1\left(2\sqrt{z}\right)\left(1024\,z^9 - 160\,256\,z^8 + 6\,100\,032\,z^7 + 16\,\pi\left(64\,z^3 - 10\,032\,z^2 + 383\,724\,z - 3\,357\,585\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{13/2} - 52\,273\,152\,z^6 - 10\,497\,024\,z^5 - 14\,653\,440\,z^4 - 37\,422\,000\,z^3 - 52\,390\,800\,z^2 + 412\,577\,550\,z + 972\,504\,225\right)\right)\right)$$

07.22.03.0470.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, 5; -z\right) = \frac{1}{1\,964\,187\,225\,z^{7/2}} \left(8\left(2\,J_1\left(2\sqrt{z}\right)\left(-1024\,z^9 - 160\,256\,z^8 - 6\,100\,032\,z^7 + 16\,\pi\left(64\,z^3 + 10\,032\,z^2 + 383\,724\,z + 3\,357\,585\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{13/2} - 52\,273\,152\,z^6 + 10\,497\,024\,z^5 - 14\,653\,440\,z^4 + 37\,422\,000\,z^3 - 52\,390\,800\,z^2 - 412\,577\,550\,z + 972\,504\,225\right) - \sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(-4096\,z^9 - 643\,072\,z^8 - 24\,718\,080\,z^7 + 32\,\pi\left(64\,z^3 + 10\,032\,z^2 + 383\,724\,z + 3\,357\,585\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^6 - 220\,907\,520\,z^6 - 49\,542\,912\,z^5 + 26\,576\,640\,z^4 - 52\,390\,800\,z^3 + 130\,977\,000\,z^2 + 147\,349\,125\,z + 1\,945\,008\,450\right)\right)\right)$$

07.22.03.0471.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, \frac{11}{2}; z\right) = \frac{1}{17\,694\,720\, z^{9/2}} \left(32\left(2z^3 - 330z^2 + 13\,365z - 124\,740\right)\operatorname{Shi}\left(2\sqrt{z}\right) z^7 - 2\left(16z^9 - 2632z^8 + 105\,624z^7 - 948\,240z^6 - 365\,760z^5 - 653\,130z^4 - 1\,871\,100z^3 - 1\,871\,100z^2 + 28\,066\,500z + 147\,349\,125\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(-16z^9 + 2616z^8 - 103\,080z^7 + 856\,080z^6 + 880\,200z^5 + 2\,182\,950z^4 + 5\,613\,300z^3 - 16\,839\,900z^2 + 224\,532\,000z + 147\,349\,125\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0472.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, \frac{11}{2}; -z\right) = \frac{1}{17\,694\,720\, z^{9/2}} \left(32\left(2z^3 + 330z^2 + 13\,365z + 124\,740\right)\operatorname{Si}\left(2\sqrt{z}\right) z^7 + 2\left(16z^9 + 2632z^8 + 105\,624z^7 + 948\,240z^6 - 365\,760z^5 + 653\,130z^4 - 1\,871\,100z^3 + 1\,871\,100z^2 + 28\,066\,500z - 147\,349\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(16z^9 + 2616z^8 + 103\,080z^7 + 856\,080z^6 - 880\,200z^5 + 2\,182\,950z^4 - 5\,613\,300z^3 - 16\,839\,900z^2 - 224\,532\,000z + 147\,349\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0473.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, 6; z\right) = \frac{1}{8\,249\,586\,345\, z^{9/2}} \left(8\left(2\sqrt{z}\, I_0\left(2\sqrt{z}\right)\left(4096z^{10} - 710\,656z^9 + 30\,513\,408z^8 + 32\pi\left(64z^3 - 11\,088z^2 + 474\,012z - 4\,700\,619\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) z^7 - 308\,293\,632z^7 + 69\,995\,520z^6 + 39\,045\,888z^5 + 83\,825\,280z^4 + 261\,954\,000z^3 + 117\,879\,300z^2 - 4\,862\,521\,125z - 50\,570\,219\,700\right) - I_1\left(2\sqrt{z}\right)\left(4096z^{10} - 708\,608z^9 + 30\,161\,664z^8 + 64\pi\left(64z^3 - 11\,088z^2 + 474\,012z - 4\,700\,619\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) z^{15/2} - 293\,640\,192z^7 - 60\,463\,872z^6 - 89\,558\,784z^5 - 261\,954\,000z^4 - 654\,885\,000z^3 + 3\,801\,607\,425z^2 - 60\,295\,261\,950z - 101\,140\,439\,400\right)\right)\right) $$

07.22.03.0474.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{3}{2}, 6; -z\right) = \frac{1}{8\,249\,586\,345\, z^{9/2}} \left(8\left(J_1\left(2\sqrt{z}\right)\left(-4096z^{10} - 708\,608z^9 - 30\,161\,664z^8 + 64\pi\left(64z^3 + 11\,088z^2 + 474\,012z + 4\,700\,619\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) z^{15/2} - 293\,640\,192z^7 + 60\,463\,872z^6 - 89\,558\,784z^5 + 261\,954\,000z^4 - 654\,885\,000z^3 - 3\,801\,607\,425z^2 - 60\,295\,261\,950z + 101\,140\,439\,400\right) - 2\sqrt{z}\, J_0\left(2\sqrt{z}\right)\left(-4096z^{10} - 710\,656z^9 - 30\,513\,408z^8 + 32\pi\left(64z^3 + 11\,088z^2 + 474\,012z + 4\,700\,619\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) z^7 - 308\,293\,632z^7 - 69\,995\,520z^6 + 39\,045\,888z^5 - 83\,825\,280z^4 + 261\,954\,000z^3 - 117\,879\,300z^2 - 4\,862\,521\,125z + 50\,570\,219\,700\right)\right)\right) $$

For fixed z and $a_1 = -\frac{11}{2}$, $b_1 = -\frac{1}{2}$

07.22.03.0475.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, -\frac{1}{2}; z\right) =$$
$$\frac{1}{1152}\left(8\left(2z^4 - 176z^3 + 3564z^2 - 16\,632z + 10\,395\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^{3/2} + \left(-4z^4 + 346z^3 - 6630z^2 + 24\,897z - 2304\right)\right.$$
$$\left.\sinh\left(2\sqrt{z}\right)\sqrt{z} - 2\left(4z^5 - 350z^4 + 6958z^3 - 30\,183z^2 + 11\,520z - 576\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0476.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, -\frac{1}{2}; -z\right) = \frac{1}{1152}$$
$$\left(8\left(2z^4 + 176z^3 + 3564z^2 + 16\,632z + 10\,395\right)\operatorname{Si}\left(2\sqrt{z}\right)z^{3/2} + \left(4z^4 + 346z^3 + 6630z^2 + 24\,897z + 2304\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \right.$$
$$\left.2\left(4z^5 + 350z^4 + 6958z^3 + 30\,183z^2 + 11\,520z + 576\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0477.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, \frac{1}{2}; z\right) =$$
$$\frac{1}{11\,520}\left(-8\left(2z^4 - 220z^3 + 5940z^2 - 41\,580z + 51\,975\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^{3/2} + \left(4z^4 - 434z^3 + 11\,250z^2 - 68\,325z + 39\,330\right)\right.$$
$$\left.\sinh\left(2\sqrt{z}\right)\sqrt{z} + 2\left(4z^5 - 438z^4 + 11\,666z^3 - 77\,835z^2 + 75\,870z + 5760\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0478.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, \frac{1}{2}; -z\right) =$$
$$\frac{1}{11\,520}\left(-8\left(2z^4 + 220z^3 + 5940z^2 + 41\,580z + 51\,975\right)\operatorname{Si}\left(2\sqrt{z}\right)z^{3/2} - \left(4z^4 + 434z^3 + 11\,250z^2 + 68\,325z + 39\,330\right)\right.$$
$$\left.\sin\left(2\sqrt{z}\right)\sqrt{z} - 2\left(4z^5 + 438z^4 + 11\,666z^3 + 77\,835z^2 + 75\,870z - 5760\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0479.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, 1; z\right) = \frac{1}{498\,960}\left(\pi\left(256z^4 - 30\,976z^3 + 940\,896z^2 - 7\,683\,984z + 12\,006\,225\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^2 + \right.$$
$$\pi\left(-256z^4 + 30\,976z^3 - 940\,896z^2 + 7\,683\,984z - 12\,006\,225\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^2 +$$
$$4\left(\sqrt{z}\left(64z^5 - 7728z^4 + 233\,324z^3 - 1\,866\,321z^2 + 2\,629\,152z + 219\,096\right)I_1\left(2\sqrt{z}\right) - \right.$$
$$\left.\left.2\left(64z^6 - 7760z^5 + 237\,148z^4 - 1\,978\,395z^3 + 3\,442\,752z^2 - 514\,152z - 62\,370\right)I_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0480.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, 1; -z\right) = \frac{1}{498\,960}\left(-\pi\left(256z^4 + 30\,976z^3 + 940\,896z^2 + 7\,683\,984z + 12\,006\,225\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^2 + \right.$$
$$\pi\left(256z^4 + 30\,976z^3 + 940\,896z^2 + 7\,683\,984z + 12\,006\,225\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^2 -$$
$$4\left(2\left(64z^6 + 7760z^5 + 237\,148z^4 + 1\,978\,395z^3 + 3\,442\,752z^2 + 514\,152z - 62\,370\right)J_0\left(2\sqrt{z}\right) - \right.$$
$$\left.\left.\sqrt{z}\left(64z^5 + 7728z^4 + 233\,324z^3 + 1\,866\,321z^2 + 2\,629\,152z - 219\,096\right)J_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0481.01

$${}_1F_2\left(-\frac{11}{2};-\frac{1}{2},\frac{3}{2};z\right)=\frac{1}{138\,240\sqrt{z}}\left(-8\left(2z^4-264z^3+8910z^2-83\,160z+155\,925\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^2+\right.$$
$$2\left(4z^5-526z^4+17\,562z^3-158\,157z^2+250\,110z+37\,935\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left.\left(4z^5-522z^4+17\,058z^3-143\,235z^2+160\,110z+31\,185\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0482.01

$${}_1F_2\left(-\frac{11}{2};-\frac{1}{2},\frac{3}{2};-z\right)=\frac{1}{138\,240\sqrt{z}}\left(-8\left(2z^4+264z^3+8910z^2+83\,160z+155\,925\right)\mathrm{Si}\left(2\sqrt{z}\right)z^2-\right.$$
$$2\left(4z^5+526z^4+17\,562z^3+158\,157z^2+250\,110z-37\,935\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-$$
$$\left.\left(4z^5+522z^4+17\,058z^3+143\,235z^2+160\,110z-31\,185\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0483.01

$${}_1F_2\left(-\frac{11}{2};-\frac{1}{2},2;z\right)=$$
$$\frac{1}{3\,243\,240\sqrt{z}}\left(\pi\left(256z^4-36\,608z^3+1\,359\,072z^2-14\,270\,256z+31\,216\,185\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}+\right.$$
$$\pi\left(-256z^4+36\,608z^3-1\,359\,072z^2+14\,270\,256z-31\,216\,185\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{5/2}-$$
$$4\left(2\sqrt{z}\left(64z^6-9168z^5+342\,044z^4-3\,650\,835z^3+8\,638\,272z^2-1\,470\,888z-311\,850\right)I_0\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left(64z^6-9136z^5+337\,516z^4-3\,487\,545z^3+7\,073\,856z^2+800\,424z+187\,110\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0484.01

$${}_1F_2\left(-\frac{11}{2};-\frac{1}{2},2;-z\right)=$$
$$\frac{1}{3\,243\,240\sqrt{z}}\left(-\pi\left(256z^4+36\,608z^3+1\,359\,072z^2+14\,270\,256z+31\,216\,185\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}+\right.$$
$$\pi\left(256z^4+36\,608z^3+1\,359\,072z^2+14\,270\,256z+31\,216\,185\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{5/2}-$$
$$4\left(2\sqrt{z}\left(64z^6+9168z^5+342\,044z^4+3\,650\,835z^3+8\,638\,272z^2+1\,470\,888z-311\,850\right)J_0\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left(64z^6+9136z^5+337\,516z^4+3\,487\,545z^3+7\,073\,856z^2-800\,424z+187\,110\right)J_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0485.01

$${}_1F_2\left(-\frac{11}{2};-\frac{1}{2},\frac{5}{2};z\right)=\frac{1}{645\,120z^{3/2}}\left(-8\left(2z^4-308z^3+12\,474z^2-145\,530z+363\,825\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^3+\right.$$
$$2\left(4z^6-614z^5+24\,646z^4-279\,465z^3+613\,242z^2+125\,055z+31\,185\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left.\left(4z^6-610z^5+24\,054z^4-257\,943z^3+435\,330z^2+155\,925z-31\,185\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0486.01

$${}_1F_2\left(-\frac{11}{2};-\frac{1}{2},\frac{5}{2};-z\right)=\frac{1}{645\,120z^{3/2}}\left(-8\left(2z^4+308z^3+12\,474z^2+145\,530z+363\,825\right)\mathrm{Si}\left(2\sqrt{z}\right)z^3-\right.$$
$$2\left(4z^6+614z^5+24\,646z^4+279\,465z^3+613\,242z^2-125\,055z+31\,185\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-$$
$$\left.\left(4z^6+610z^5+24\,054z^4+257\,943z^3+435\,330z^2-155\,925z-31\,185\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0487.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, 3; z\right) = \frac{1}{12\,162\,150\,z^{3/2}}\left(\pi\left(256\,z^4 - 42\,240\,z^3 + 1\,853\,280\,z^2 - 23\,783\,760\,z + 66\,891\,825\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{7/2} + \pi\left(-256\,z^4 + 42\,240\,z^3 - 1\,853\,280\,z^2 + 23\,783\,760\,z - 66\,891\,825\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{7/2} - 4\left(\sqrt{z}\,\left(128\,z^7 - 21\,152\,z^6 + 931\,896\,z^5 - 12\,119\,670\,z^4 + 36\,259\,200\,z^3 - 6\,665\,760\,z^2 - 1\,871\,100\,z - 467\,775\right) I_0\left(2\sqrt{z}\right) - \left(64\,z^7 - 10\,544\,z^6 + 460\,716\,z^5 - 5\,835\,825\,z^4 + 15\,462\,720\,z^3 + 2\,066\,040\,z^2 + 935\,550\,z - 467\,775\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0488.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, 3; -z\right) = \frac{1}{12\,162\,150\,z^{3/2}}\left(-\pi\left(256\,z^4 + 42\,240\,z^3 + 1\,853\,280\,z^2 + 23\,783\,760\,z + 66\,891\,825\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{7/2} + \pi\left(256\,z^4 + 42\,240\,z^3 + 1\,853\,280\,z^2 + 23\,783\,760\,z + 66\,891\,825\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{7/2} - 4\left(\sqrt{z}\,\left(128\,z^7 + 21\,152\,z^6 + 931\,896\,z^5 + 12\,119\,670\,z^4 + 36\,259\,200\,z^3 + 6\,665\,760\,z^2 - 1\,871\,100\,z + 467\,775\right) J_0\left(2\sqrt{z}\right) - \left(64\,z^7 + 10\,544\,z^6 + 460\,716\,z^5 + 5\,835\,825\,z^4 + 15\,462\,720\,z^3 - 2\,066\,040\,z^2 + 935\,550\,z + 467\,775\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0489.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, \frac{7}{2}; z\right) = \frac{1}{4\,128\,768\,z^{5/2}}\left(-32\left(z^4 - 176\,z^3 + 8316\,z^2 - 116\,424\,z + 363\,825\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^4 + 2\left(8\,z^7 - 1404\,z^6 + 65\,836\,z^5 - 900\,150\,z^4 + 2\,530\,116\,z^3 + 613\,242\,z^2 + 311\,850\,z - 280\,665\right) \cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(8\,z^7 - 1396\,z^6 + 64\,476\,z^5 - 841\,530\,z^4 + 1\,912\,932\,z^3 + 935\,550\,z^2 + 62\,370\,z + 280\,665\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0490.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, \frac{7}{2}; -z\right) = \frac{1}{4\,128\,768\,z^{5/2}}\left(-32\left(z^4 + 176\,z^3 + 8316\,z^2 + 116\,424\,z + 363\,825\right) \mathrm{Si}\left(2\sqrt{z}\right) z^4 - 2\left(8\,z^7 + 1404\,z^6 + 65\,836\,z^5 + 900\,150\,z^4 + 2\,530\,116\,z^3 - 613\,242\,z^2 + 311\,850\,z + 280\,665\right) \cos\left(2\sqrt{z}\right)\sqrt{z} - \left(8\,z^7 + 1396\,z^6 + 64\,476\,z^5 + 841\,530\,z^4 + 1\,912\,932\,z^3 - 935\,550\,z^2 + 62\,370\,z - 280\,665\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0491.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, 4; z\right) = \frac{1}{34\,459\,425\,z^{5/2}}\left(\pi\left(256\,z^4 - 47\,872\,z^3 + 2\,423\,520\,z^2 - 36\,756\,720\,z + 126\,351\,225\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{9/2} + \pi\left(-256\,z^4 + 47\,872\,z^3 - 2\,423\,520\,z^2 + 36\,756\,720\,z - 126\,351\,225\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{9/2} + 2\left(2\sqrt{z}\,\left(-128\,z^8 + 23\,968\,z^7 - 1\,217\,720\,z^6 + 18\,676\,902\,z^5 - 67\,559\,040\,z^4 + 13\,065\,120\,z^3 + 4\,365\,900\,z^2 + 2\,338\,875\,z - 3\,274\,425\right) I_0\left(2\sqrt{z}\right) + \left(128\,z^8 - 23\,904\,z^7 + 1\,205\,848\,z^6 - 18\,088\,434\,z^5 + 59\,184\,000\,z^4 + 8\,796\,960\,z^3 + 5\,613\,300\,z^2 - 1\,403\,325\,z + 6\,548\,850\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0492.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, 4; -z\right) = \frac{1}{34\,459\,425\,z^{5/2}}\left(-\pi\left(256\,z^4+47\,872\,z^3+2\,423\,520\,z^2+36\,756\,720\,z+126\,351\,225\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{9/2}+\pi\left(256\,z^4+47\,872\,z^3+2\,423\,520\,z^2+36\,756\,720\,z+126\,351\,225\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{9/2}-2\left(2\sqrt{z}\,\left(128\,z^8+23\,968\,z^7+1\,217\,720\,z^6+18\,676\,902\,z^5+67\,559\,040\,z^4+13\,065\,120\,z^3-4\,365\,900\,z^2+2\,338\,875\,z+3\,274\,425\right)J_0\left(2\sqrt{z}\right)-\left(128\,z^8+23\,904\,z^7+1\,205\,848\,z^6+18\,088\,434\,z^5+59\,184\,000\,z^4-8\,796\,960\,z^3+5\,613\,300\,z^2+1\,403\,325\,z+6\,548\,850\right)J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0493.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, \frac{9}{2}; z\right) = \frac{1}{10\,616\,832\,z^{7/2}}\left(-32\left(z^4-198\,z^3+10\,692\,z^2-174\,636\,z+654\,885\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^5+2\left(8\,z^8-1580\,z^7+84\,756\,z^6-1\,356\,606\,z^5+4\,652\,280\,z^4+1\,265\,058\,z^3+935\,550\,z^2-654\,885\,z+2\,806\,650\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(8\,z^8-1572\,z^7+83\,220\,z^6-1\,280\,034\,z^5+3\,671\,568\,z^4+2\,182\,950\,z^3+935\,550\,z^2-3\,087\,315\,z-2\,806\,650\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0494.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, \frac{9}{2}; -z\right) = \frac{1}{10\,616\,832\,z^{7/2}}\left(-32\left(z^4+198\,z^3+10\,692\,z^2+174\,636\,z+654\,885\right)\mathrm{Si}\left(2\sqrt{z}\right)z^5-2\left(8\,z^8+1580\,z^7+84\,756\,z^6+1\,356\,606\,z^5+4\,652\,280\,z^4-1\,265\,058\,z^3+935\,550\,z^2+654\,885\,z+2\,806\,650\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(8\,z^8+1572\,z^7+83\,220\,z^6+1\,280\,034\,z^5+3\,671\,568\,z^4-2\,182\,950\,z^3+935\,550\,z^2+3\,087\,315\,z-2\,806\,650\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0495.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, 5; z\right) = \frac{1}{654\,729\,075\,z^{7/2}}\left(8\left(I_1\left(2\sqrt{z}\right)\left(256\,z^9-53\,440\,z^8+3\,056\,560\,z^7-52\,983\,108\,z^6+\pi\left(256\,z^4-53\,504\,z^3+3\,069\,792\,z^2-53\,721\,360\,z+218\,243\,025\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{11/2}+206\,362\,368\,z^5+33\,053\,760\,z^4+26\,195\,400\,z^3+4\,677\,750\,z^2-52\,390\,800\,z-176\,818\,950\right)-\sqrt{z}\,I_0\left(2\sqrt{z}\right)\left(512\,z^9-107\,136\,z^8+6\,166\,240\,z^7-108\,957\,912\,z^6+\pi\left(256\,z^4-53\,504\,z^3+3\,069\,792\,z^2-53\,721\,360\,z+218\,243\,025\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^5+462\,267\,648\,z^5-92\,684\,160\,z^4-34\,927\,200\,z^3-28\,066\,500\,z^2+36\,018\,675\,z-176\,818\,950\right)\right)\right) $$

07.22.03.0496.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, 5; -z\right) = \frac{1}{654\,729\,075\, z^{7/2}} \left(8\left(\sqrt{z}\, J_0\left(2\sqrt{z}\right)\left(-512 z^9 - 107\,136 z^8 - 6\,166\,240 z^7 - 108\,957\,912 z^6 + \pi\left(256 z^4 + 53\,504 z^3 + 3\,069\,792 z^2 + 53\,721\,360 z + 218\,243\,025\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^5 - 462\,267\,648 z^5 - 92\,684\,160 z^4 + 34\,927\,200 z^3 - 28\,066\,500 z^2 - 36\,018\,675 z - 176\,818\,950\right) - J_1\left(2\sqrt{z}\right)\left(\pi z^{11/2}\left(256 z^4 + 53\,504 z^3 + 3\,069\,792 z^2 + 53\,721\,360 z + 218\,243\,025\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - 2\left(128 z^9 + 26\,720 z^8 + 1\,528\,280 z^7 + 26\,491\,554 z^6 + 103\,181\,184 z^5 - 16\,526\,880 z^4 + 13\,097\,700 z^3 - 2\,338\,875 z^2 - 26\,195\,400 z + 88\,409\,475\right)\right)\right)\right) $$

07.22.03.0497.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, \frac{11}{2}; z\right) = \frac{1}{23\,592\,960\, z^{9/2}} \left(-32\left(z^4 - 220 z^3 + 13\,365 z^2 - 249\,480 z + 1\,091\,475\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^6 + 2\left(8 z^9 - 1756 z^8 + 106\,052 z^7 - 1\,944\,930 z^6 + 7\,875\,720 z^5 + 2\,326\,140 z^4 + 2\,182\,950 z^3 - 467\,775 z^2 - 4\,677\,750 z - 49\,116\,375\right) \cosh\left(2\sqrt{z}\right) \sqrt{z} + \left(8 z^9 - 1748 z^8 + 104\,340 z^7 - 1\,848\,030 z^6 + 6\,412\,680 z^5 + 4\,365\,900 z^4 + 3\,430\,350 z^3 - 10\,758\,825 z^2 + 70\,166\,250 z + 49\,116\,375\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0498.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, \frac{11}{2}; -z\right) = \frac{1}{23\,592\,960\, z^{9/2}} \left(-32\left(z^4 + 220 z^3 + 13\,365 z^2 + 249\,480 z + 1\,091\,475\right) \mathrm{Si}\left(2\sqrt{z}\right) z^6 - 2\left(8 z^9 + 1756 z^8 + 106\,052 z^7 + 1\,944\,930 z^6 + 7\,875\,720 z^5 - 2\,326\,140 z^4 + 2\,182\,950 z^3 + 467\,775 z^2 - 4\,677\,750 z + 49\,116\,375\right) \cos\left(2\sqrt{z}\right) \sqrt{z} - \left(8 z^9 + 1748 z^8 + 104\,340 z^7 + 1\,848\,030 z^6 + 6\,412\,680 z^5 - 4\,365\,900 z^4 + 3\,430\,350 z^3 + 10\,758\,825 z^2 + 70\,166\,250 z - 49\,116\,375\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0499.01

$$ {}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, 6; z\right) = \frac{1}{2\,749\,862\,115\, z^{9/2}} \left(8\left(I_1\left(2\sqrt{z}\right)\left(512 z^{10} - 118\,144 z^9 + 7\,554\,912 z^8 - 148\,588\,488 z^7 + 2\pi\left(256 z^4 - 59\,136 z^3 + 3\,792\,096 z^2 - 75\,209\,904 z + 352\,546\,425\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{13/2} + 671\,360\,256 z^6 + 113\,678\,208 z^5 + 104\,781\,600 z^4 + 65\,488\,500 z^3 - 461\,693\,925 z^2 + 4\,066\,835\,850 z + 7\,780\,033\,800\right) - 2\sqrt{z}\, I_0\left(2\sqrt{z}\right)\left(512 z^{10} - 118\,400 z^9 + 7\,613\,664 z^8 - 152\,294\,040 z^7 + \pi\left(256 z^4 - 59\,136 z^3 + 3\,792\,096 z^2 - 75\,209\,904 z + 352\,546\,425\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^6 + 741\,355\,776 z^6 - 152\,724\,096 z^5 - 62\,868\,960 z^4 - 65\,488\,500 z^3 + 49\,116\,375 z^2 + 88\,409\,475 z + 3\,890\,016\,900\right)\right)\right) $$

07.22.03.0500.01

$${}_1F_2\left(-\frac{11}{2}; -\frac{1}{2}, 6; -z\right) =$$
$$\frac{1}{2\,749\,862\,115\,z^{9/2}}\left(8\left(2\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(-512\,z^{10}-118\,400\,z^9-7\,613\,664\,z^8-152\,294\,040\,z^7+\pi\left(256\,z^4+\right.\right.\right.$$
$$\left.\left.\left.59\,136\,z^3+3\,792\,096\,z^2+75\,209\,904\,z+352\,546\,425\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^6-741\,355\,776\,z^6-\right.\right.$$
$$\left.\left.152\,724\,096\,z^5+62\,868\,960\,z^4-65\,488\,500\,z^3-49\,116\,375\,z^2+88\,409\,475\,z-3\,890\,016\,900\right)-\right.$$
$$J_1\left(2\sqrt{z}\right)\left(-512\,z^{10}-118\,144\,z^9-7\,554\,912\,z^8-148\,588\,488\,z^7+\right.$$
$$\left.2\,\pi\left(256\,z^4+59\,136\,z^3+3\,792\,096\,z^2+75\,209\,904\,z+352\,546\,425\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{13/2}-671\,360\,256\,z^6+\right.$$
$$\left.\left.113\,678\,208\,z^5-104\,781\,600\,z^4+65\,488\,500\,z^3+461\,693\,925\,z^2+4\,066\,835\,850\,z-7\,780\,033\,800\right)\right)\right)$$

For fixed z and $a_1 = -\frac{11}{2}$, $b_1 = \frac{1}{2}$

07.22.03.0501.01

$${}_1F_2\left(-\frac{11}{2}; \frac{1}{2}, \frac{1}{2}; z\right) = \frac{1}{230\,400}\left(-2\left(8\,z^5-1096\,z^4+39\,062\,z^3-397\,560\,z^2+879\,885\,z-115\,200\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\sqrt{z}\left(-8\,z^4+1088\,z^3-38\,010\,z^2+364\,020\,z-637\,515\right)\sinh\left(2\sqrt{z}\right)+$$
$$\left.8\sqrt{z}\left(4\,z^5-550\,z^4+19\,800\,z^3-207\,900\,z^2+519\,750\,z-155\,925\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.0502.01

$${}_1F_2\left(-\frac{11}{2}; \frac{1}{2}, \frac{1}{2}; -z\right) = \frac{1}{230\,400}\left(2\left(8\,z^5+1096\,z^4+39\,062\,z^3+397\,560\,z^2+879\,885\,z+115\,200\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\sqrt{z}\left(8\,z^4+1088\,z^3+38\,010\,z^2+364\,020\,z+637\,515\right)\sin\left(2\sqrt{z}\right)+$$
$$\left.8\sqrt{z}\left(4\,z^5+550\,z^4+19\,800\,z^3+207\,900\,z^2+519\,750\,z+155\,925\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)$$

07.22.03.0503.01

$${}_1F_2\left(-\frac{11}{2}; \frac{1}{2}, 1; z\right) =$$
$$\frac{1}{19\,958\,400}\left(4\left(2\left(256\,z^6-38\,784\,z^5+1\,577\,792\,z^4-19\,594\,920\,z^3+64\,565\,235\,z^2-39\,309\,120\,z+2\,494\,800\right)I_0\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{z}\left(-256\,z^5+38\,656\,z^4-1\,558\,624\,z^3+18\,838\,800\,z^2-55\,985\,625\,z+18\,743\,040\right)I_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\,z\left(-1024\,z^5+154\,880\,z^4-6\,272\,640\,z^3+76\,839\,840\,z^2-240\,124\,500\,z+108\,056\,025\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\,z\left(1024\,z^5-154\,880\,z^4+6\,272\,640\,z^3-76\,839\,840\,z^2+240\,124\,500\,z-108\,056\,025\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0504.01

$${}_1F_2\left(-\frac{11}{2}; \frac{1}{2}, 1; -z\right) =$$
$$\frac{1}{19\,958\,400}\left(4\left(2\left(256\,z^6+38\,784\,z^5+1\,577\,792\,z^4+19\,594\,920\,z^3+64\,565\,235\,z^2+39\,309\,120\,z+2\,494\,800\right)J_0\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\sqrt{z}\left(256\,z^5+38\,656\,z^4+1\,558\,624\,z^3+18\,838\,800\,z^2+55\,985\,625\,z+18\,743\,040\right)J_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\,z\left(1024\,z^5+154\,880\,z^4+6\,272\,640\,z^3+76\,839\,840\,z^2+240\,124\,500\,z+108\,056\,025\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\pi\,z\left(1024\,z^5+154\,880\,z^4+6\,272\,640\,z^3+76\,839\,840\,z^2+240\,124\,500\,z+108\,056\,025\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0505.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{1}{2}, \frac{3}{2}; z\right) = \frac{1}{1\,382\,400\sqrt{z}}\left(-2\sqrt{z}\left(4z^5 - 658z^4 + 29\,376z^3 - 401\,895z^2 + 1\,389\,105z - 535\,275\right)\cosh\left(2\sqrt{z}\right) + \left(-4z^5 + 654z^4 - 28\,740z^3 + 375\,885z^2 - 1\,111\,995z + 155\,925\right)\sinh\left(2\sqrt{z}\right) + 8z\left(2z^5 - 330z^4 + 14\,850z^3 - 207\,900z^2 + 779\,625z - 467\,775\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.0506.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{1}{2}, \frac{3}{2}; -z\right) = \frac{1}{1\,382\,400\sqrt{z}}\left(2\sqrt{z}\left(4z^5 + 658z^4 + 29\,376z^3 + 401\,895z^2 + 1\,389\,105z + 535\,275\right)\cos\left(2\sqrt{z}\right) + \left(4z^5 + 654z^4 + 28\,740z^3 + 375\,885z^2 + 1\,111\,995z + 155\,925\right)\sin\left(2\sqrt{z}\right) + 8z\left(2z^5 + 330z^4 + 14\,850z^3 + 207\,900z^2 + 779\,625z + 467\,775\right)\mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.0507.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{1}{2}, 2; z\right) = \frac{1}{129\,729\,600\sqrt{z}} \left(\pi\left(-1024z^5 + 183\,040z^4 - 9\,060\,480z^3 + 142\,702\,560z^2 - 624\,323\,700z + 468\,242\,775\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2} + \pi\left(1024z^5 - 183\,040z^4 + 9\,060\,480z^3 - 142\,702\,560z^2 + 624\,323\,700z - 468\,242\,775\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2} + 4\left(2\sqrt{z}\left(256z^6 - 45\,824z^5 + 2\,276\,512z^4 - 36\,233\,520z^3 + 164\,605\,725z^2 - 150\,727\,680z + 14\,968\,800\right)I_0\left(2\sqrt{z}\right) + \left(-256z^6 + 45\,696z^5 - 2\,253\,824z^4 + 35\,134\,200z^3 - 148\,286\,295z^2 + 91\,892\,160z + 2\,494\,800\right)I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0508.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{1}{2}, 2; -z\right) = \frac{1}{129\,729\,600\sqrt{z}} \left(\pi\left(1024z^5 + 183\,040z^4 + 9\,060\,480z^3 + 142\,702\,560z^2 + 624\,323\,700z + 468\,242\,775\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2} - \pi\left(1024z^5 + 183\,040z^4 + 9\,060\,480z^3 + 142\,702\,560z^2 + 624\,323\,700z + 468\,242\,775\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{3/2} + 4\left(2\sqrt{z}\left(256z^6 + 45\,824z^5 + 2\,276\,512z^4 + 36\,233\,520z^3 + 164\,605\,725z^2 + 150\,727\,680z + 14\,968\,800\right)J_0\left(2\sqrt{z}\right) - \left(256z^6 + 45\,696z^5 + 2\,253\,824z^4 + 35\,134\,200z^3 + 148\,286\,295z^2 + 91\,892\,160z - 2\,494\,800\right)J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0509.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{1}{2}, \frac{5}{2}; z\right) = \frac{1}{12\,902\,400z^{3/2}}\left(8\left(4z^5 - 770z^4 + 41\,580z^3 - 727\,650z^2 + 3\,638\,250z - 3\,274\,425\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^2 - 2\left(8z^6 - 1536z^5 + 82\,402z^4 - 1\,415\,940z^3 + 6\,657\,525z^2 - 4\,372\,200z - 155\,925\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(-8z^6 + 1528z^5 - 80\,910z^4 + 1\,341\,480z^3 - 5\,607\,315z^2 + 1\,871\,100z - 155\,925\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0510.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{1}{2}, \frac{5}{2}; -z\right) = \frac{1}{12\,902\,400z^{3/2}}\left(8\left(4z^5 + 770z^4 + 41\,580z^3 + 727\,650z^2 + 3\,638\,250z + 3\,274\,425\right)\mathrm{Si}\left(2\sqrt{z}\right)z^2 + 2\left(8z^6 + 1536z^5 + 82\,402z^4 + 1\,415\,940z^3 + 6\,657\,525z^2 + 4\,372\,200z - 155\,925\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(8z^6 + 1528z^5 + 80\,910z^4 + 1\,341\,480z^3 + 5\,607\,315z^2 + 1\,871\,100z + 155\,925\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0511.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{1}{2}, 3; z\right) = \frac{1}{486\,486\,000\, z^{3/2}} \left(\pi \left(-1024 z^5 + 211\,200 z^4 - 12\,355\,200 z^3 + 237\,837\,600 z^2 - 1\,337\,836\,500 z + 1\,404\,728\,325\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{5/2} + \pi \left(1024 z^5 - 211\,200 z^4 + 12\,355\,200 z^3 - 237\,837\,600 z^2 + 1\,337\,836\,500 z - 1\,404\,728\,325\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{5/2} + 4\left(2\sqrt{z}\, \left(256 z^7 - 52\,864 z^6 + 3\,101\,952 z^5 - 60\,221\,880 z^4 + 348\,780\,375 z^3 - 425\,520\,000 z^2 + 52\,390\,800 z + 1\,871\,100\right) I_0\left(2\sqrt{z}\right) + \left(-256 z^7 + 52\,736 z^6 - 3\,075\,744 z^5 + 58\,716\,000 z^4 - 321\,157\,125 z^3 + 292\,204\,800 z^2 + 14\,968\,800 z - 3\,742\,200\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0512.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{1}{2}, 3; -z\right) = \frac{1}{486\,486\,000\, z^{3/2}} \left(\pi \left(1024 z^5 + 211\,200 z^4 + 12\,355\,200 z^3 + 237\,837\,600 z^2 + 1\,337\,836\,500 z + 1\,404\,728\,325\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{5/2} - \pi \left(1024 z^5 + 211\,200 z^4 + 12\,355\,200 z^3 + 237\,837\,600 z^2 + 1\,337\,836\,500 z + 1\,404\,728\,325\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{5/2} + 4\left(2\sqrt{z}\, \left(256 z^7 + 52\,864 z^6 + 3\,101\,952 z^5 + 60\,221\,880 z^4 + 348\,780\,375 z^3 + 425\,520\,000 z^2 + 52\,390\,800 z - 1\,871\,100\right) J_0\left(2\sqrt{z}\right) - \left(256 z^7 + 52\,736 z^6 + 3\,075\,744 z^5 + 58\,716\,000 z^4 + 321\,157\,125 z^3 + 292\,204\,800 z^2 - 14\,968\,800 z - 3\,742\,200\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0513.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{1}{2}, \frac{7}{2}; z\right) = \frac{1}{41\,287\,680\, z^{5/2}} \left(32\left(z^5 - 220 z^4 + 13\,860 z^3 - 291\,060 z^2 + 1\,819\,125 z - 2\,182\,950\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^3 - 2\left(8 z^7 - 1756 z^6 + 110\,012 z^5 - 2\,275\,590 z^4 + 13\,536\,540 z^3 - 12\,681\,270 z^2 - 935\,550 z + 467\,775\right) \cosh\left(2\sqrt{z}\right) \sqrt{z} + \left(-8 z^7 + 1748 z^6 - 108\,300 z^5 + 2\,174\,730 z^4 - 11\,764\,620 z^3 + 6\,548\,850 z^2 - 311\,850 z + 467\,775\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0514.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{1}{2}, \frac{7}{2}; -z\right) = \frac{1}{41\,287\,680\, z^{5/2}} \left(32\left(z^5 + 220 z^4 + 13\,860 z^3 + 291\,060 z^2 + 1\,819\,125 z + 2\,182\,950\right) \mathrm{Si}\left(2\sqrt{z}\right) z^3 + 2\left(8 z^7 + 1756 z^6 + 110\,012 z^5 + 2\,275\,590 z^4 + 13\,536\,540 z^3 + 12\,681\,270 z^2 - 935\,550 z - 467\,775\right) \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(8 z^7 + 1748 z^6 + 108\,300 z^5 + 2\,174\,730 z^4 + 11\,764\,620 z^3 + 6\,548\,850 z^2 + 311\,850 z + 467\,775\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0515.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{1}{2}, 4; z\right) = \frac{1}{1\,378\,377\,000\, z^{5/2}} \left(\pi \left(-1024 z^5 + 239\,360 z^4 - 16\,156\,800 z^3 + 367\,567\,200 z^2 - 2\,527\,024\,500 z + 3\,411\,483\,075\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{7/2} + \pi \left(1024 z^5 - 239\,360 z^4 + 16\,156\,800 z^3 - 367\,567\,200 z^2 + 2\,527\,024\,500 z - 3\,411\,483\,075\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{7/2} + 4\left(2\sqrt{z}\, \left(256 z^8 - 59\,904 z^7 + 4\,054\,112 z^6 - 92\,890\,560 z^5 + 654\,012\,225 z^4 - 996\,076\,800 z^3 + 139\,708\,800 z^2 + 11\,226\,600 z - 9\,355\,500\right) I_0\left(2\sqrt{z}\right) + \left(-256 z^8 + 59\,776 z^7 - 4\,024\,384 z^6 + 90\,914\,760 z^5 - 610\,855\,875 z^4 + 734\,774\,400 z^3 + 52\,390\,800 z^2 - 13\,097\,700 z + 18\,711\,000\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0516.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{1}{2},4;-z\right)=\frac{1}{1\,378\,377\,000\,z^{5/2}}\left(\pi\left(1024z^5+239\,360z^4+16\,156\,800z^3+367\,567\,200z^2+2\,527\,024\,500z+3\,411\,483\,075\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2}-\pi\left(1024z^5+239\,360z^4+16\,156\,800z^3+367\,567\,200z^2+2\,527\,024\,500z+3\,411\,483\,075\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{7/2}+4\left(2\sqrt{z}\left(256z^8+59\,904z^7+4\,054\,112z^6+92\,890\,560z^5+654\,012\,225z^4+996\,076\,800z^3+139\,708\,800z^2-11\,226\,600z-9\,355\,500\right)J_0\left(2\sqrt{z}\right)-\left(256z^8+59\,776z^7+4\,024\,384z^6+90\,914\,760z^5+610\,855\,875z^4+734\,774\,400z^3-52\,390\,800z^2-13\,097\,700z-18\,711\,000\right)J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0517.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{1}{2},\frac{9}{2};z\right)=\frac{1}{212\,336\,640\,z^{7/2}}\left(32\left(2z^5-495z^4+35\,640z^3-873\,180z^2+6\,548\,850z-9\,823\,275\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^4-2\left(16z^8-3952z^7+283\,164z^6-6\,848\,640z^5+49\,283\,730z^4-60\,228\,360z^3-6\,548\,850z^2+3\,742\,200z-7\,016\,625\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(-16z^8+3936z^7-279\,300z^6+6\,586\,200z^5-43\,761\,870z^4+34\,927\,200z^3+935\,550z^2-5\,613\,300z-7\,016\,625\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0518.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{1}{2},\frac{9}{2};-z\right)=\frac{1}{212\,336\,640\,z^{7/2}}\left(32\left(2z^5+495z^4+35\,640z^3+873\,180z^2+6\,548\,850z+9\,823\,275\right)\operatorname{Si}\left(2\sqrt{z}\right)z^4+2\left(16z^8+3952z^7+283\,164z^6+6\,848\,640z^5+49\,283\,730z^4+60\,228\,360z^3-6\,548\,850z^2-3\,742\,200z-7\,016\,625\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(16z^8+3936z^7+279\,300z^6+6\,586\,200z^5+43\,761\,870z^4+34\,927\,200z^3-935\,550z^2-5\,613\,300z+7\,016\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0519.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{1}{2},5;z\right)=\frac{1}{3\,273\,645\,375\,z^{7/2}}\left(\pi\left(-1024z^5+267\,520z^4-20\,465\,280z^3+537\,213\,600z^2-4\,364\,860\,500z+7\,202\,019\,825\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{9/2}+\pi\left(1024z^5-267\,520z^4+20\,465\,280z^3-537\,213\,600z^2+4\,364\,860\,500z-7\,202\,019\,825\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{9/2}+4\left(2\sqrt{z}\left(256z^9-66\,944z^8+5\,132\,992z^7-135\,570\,120z^6+1\,123\,877\,115z^5-2\,051\,337\,600z^4+314\,344\,800z^3+39\,293\,100z^2-39\,760\,875z+98\,232\,750\right)I_0\left(2\sqrt{z}\right)-\left(256z^9-66\,816z^8+5\,099\,744z^7-133\,061\,040z^6+1\,060\,293\,105z^5-1\,587\,916\,800z^4-139\,708\,800z^3+22\,453\,200z^2+18\,711\,000z+196\,465\,500\right)I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0520.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{1}{2},5;-z\right)=\frac{1}{3\,273\,645\,375\,z^{7/2}}\left(\pi\left(1024z^5+267\,520z^4+20\,465\,280z^3+537\,213\,600z^2+4\,364\,860\,500z+7\,202\,019\,825\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{9/2}-\pi\left(1024z^5+267\,520z^4+20\,465\,280z^3+537\,213\,600z^2+4\,364\,860\,500z+7\,202\,019\,825\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{9/2}+4\left(2\sqrt{z}\left(256z^9+66\,944z^8+5\,132\,992z^7+135\,570\,120z^6+1\,123\,877\,115z^5+2\,051\,337\,600z^4+314\,344\,800z^3-39\,293\,100z^2-39\,760\,875z-98\,232\,750\right)J_0\left(2\sqrt{z}\right)-\left(256z^9+66\,816z^8+5\,099\,744z^7+133\,061\,040z^6+1\,060\,293\,105z^5+1\,587\,916\,800z^4-139\,708\,800z^3-22\,453\,200z^2+18\,711\,000z-196\,465\,500\right)J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0521.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{1}{2},\frac{11}{2};z\right) = \frac{1}{235\,929\,600\,z^{9/2}}\left(32\left(z^5-275\,z^4+22\,275\,z^3-623\,700\,z^2+5\,457\,375\,z-9\,823\,275\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^5-2\left(8\,z^9-2196\,z^8+177\,112\,z^7-4\,903\,710\,z^6+41\,408\,010\,z^5-62\,554\,500\,z^4-8\,731\,800\,z^3+4\,209\,975\,z^2-2\,338\,875\,z+49\,116\,375\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(-8\,z^9+2188\,z^8-174\,960\,z^7+4\,738\,170\,z^6-37\,349\,190\,z^5+39\,293\,100\,z^4+4\,365\,900\,z^3-16\,372\,125\,z^2+63\,149\,625\,z+49\,116\,375\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0522.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{1}{2},\frac{11}{2};-z\right) = \frac{1}{235\,929\,600\,z^{9/2}}\left(32\left(z^5+275\,z^4+22\,275\,z^3+623\,700\,z^2+5\,457\,375\,z+9\,823\,275\right)\operatorname{Si}\left(2\sqrt{z}\right)z^5+2\left(8\,z^9+2196\,z^8+177\,112\,z^7+4\,903\,710\,z^6+41\,408\,010\,z^5+62\,554\,500\,z^4-8\,731\,800\,z^3-4\,209\,975\,z^2-2\,338\,875\,z-49\,116\,375\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8\,z^9+2188\,z^8+174\,960\,z^7+4\,738\,170\,z^6+37\,349\,190\,z^5+39\,293\,100\,z^4-4\,365\,900\,z^3-16\,372\,125\,z^2-63\,149\,625\,z+49\,116\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0523.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{1}{2},6;z\right) = \frac{1}{13\,749\,310\,575\,z^{9/2}}\left(2\left(\pi\left(-1024\,z^5+295\,680\,z^4-25\,280\,640\,z^3+752\,099\,040\,z^2-7\,050\,928\,500\,z+13\,749\,310\,575\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{11/2}+\pi\left(1024\,z^5-295\,680\,z^4+25\,280\,640\,z^3-752\,099\,040\,z^2+7\,050\,928\,500\,z-13\,749\,310\,575\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{11/2}+4\left(2\sqrt{z}\left(256\,z^{10}-73\,984\,z^9+6\,338\,592\,z^8-189\,591\,120\,z^7+1\,808\,603\,685\,z^6-3\,846\,769\,920\,z^5+628\,689\,600\,z^4+104\,781\,600\,z^3-98\,232\,750\,z^2+147\,349\,125\,z-1\,768\,189\,500\right)I_0\left(2\sqrt{z}\right)+\left(-256\,z^{10}+73\,856\,z^9-6\,301\,824\,z^8+186\,485\,400\,z^7-1\,719\,032\,175\,z^6+3\,083\,149\,440\,z^5+314\,344\,800\,z^4-13\,097\,700\,z^3-245\,581\,875\,z^2+1\,473\,491\,250\,z+3\,536\,379\,000\right)I_1\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.0524.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{1}{2},6;-z\right) = -\frac{1}{13\,749\,310\,575\,z^{9/2}}\left(2\left(-\pi\left(1024\,z^5+295\,680\,z^4+25\,280\,640\,z^3+752\,099\,040\,z^2+7\,050\,928\,500\,z+13\,749\,310\,575\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{11/2}+\pi\left(1024\,z^5+295\,680\,z^4+25\,280\,640\,z^3+752\,099\,040\,z^2+7\,050\,928\,500\,z+13\,749\,310\,575\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{11/2}-4\left(2\sqrt{z}\left(256\,z^{10}+73\,984\,z^9+6\,338\,592\,z^8+189\,591\,120\,z^7+1\,808\,603\,685\,z^6+3\,846\,769\,920\,z^5+628\,689\,600\,z^4-104\,781\,600\,z^3-98\,232\,750\,z^2-147\,349\,125\,z-1\,768\,189\,500\right)J_0\left(2\sqrt{z}\right)-\left(256\,z^{10}+73\,856\,z^9+6\,301\,824\,z^8+186\,485\,400\,z^7+1\,719\,032\,175\,z^6+3\,083\,149\,440\,z^5-314\,344\,800\,z^4-13\,097\,700\,z^3+245\,581\,875\,z^2+1\,473\,491\,250\,z-3\,536\,379\,000\right)J_1\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = -\frac{11}{2}$, $b_1 = 1$

07.22.03.0525.01

$$ {}_1F_2\left(-\frac{11}{2};\,1,\,1;\,z\right)=\frac{1}{108\,056\,025}$$
$$\left(\left(2048\,z^6-341\,504\,z^5+15\,651\,840\,z^4-227\,580\,192\,z^3+944\,937\,648\,z^2-851\,288\,130\,z+108\,056\,025\right)I_0\left(\sqrt{z}\right)^2-\right.$$
$$8\sqrt{z}\left(256\,z^5-42\,496\,z^4+1\,924\,896\,z^3-27\,049\,608\,z^2+99\,683\,334\,z-50\,737\,995\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+$$
$$\left.2\,z\left(-1024\,z^5+170\,240\,z^4-7\,741\,312\,z^3+110\,002\,032\,z^2-420\,944\,760\,z+255\,001\,671\right)I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.0526.01

$$ {}_1F_2\left(-\frac{11}{2};\,1,\,1;\,-z\right)=\frac{1}{108\,056\,025}$$
$$\left(\left(2048\,z^6+341\,504\,z^5+15\,651\,840\,z^4+227\,580\,192\,z^3+944\,937\,648\,z^2+851\,288\,130\,z+108\,056\,025\right)J_0\left(\sqrt{z}\right)^2-\right.$$
$$8\sqrt{z}\left(256\,z^5+42\,496\,z^4+1\,924\,896\,z^3+27\,049\,608\,z^2+99\,683\,334\,z+50\,737\,995\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+$$
$$\left.2\,z\left(1024\,z^5+170\,240\,z^4+7\,741\,312\,z^3+110\,002\,032\,z^2+420\,944\,760\,z+255\,001\,671\right)J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.0527.01

$$ {}_1F_2\left(-\frac{11}{2};\,1,\,\frac{3}{2};\,z\right)=\frac{1}{958\,003\,200}$$
$$\left(4\left(2\left(1024\,z^6-186\,112\,z^5+9\,455\,232\,z^4-155\,997\,792\,z^3+757\,153\,620\,z^2-805\,186\,035\,z+119\,750\,400\right)I_0\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\sqrt{z}\left(-1024\,z^5+185\,600\,z^4-9\,363\,072\,z^3+151\,428\,384\,z^2-686\,636\,820\,z+528\,720\,345\right)I_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(-4096\,z^6+743\,424\,z^5-37\,635\,840\,z^4+614\,718\,720\,z^3-2\,881\,494\,000\,z^2+2\,593\,344\,600\,z-108\,056\,025\right)$$
$$I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(4096\,z^6-743\,424\,z^5+37\,635\,840\,z^4-614\,718\,720\,z^3+\right.$$
$$\left.\left.2\,881\,494\,000\,z^2-2\,593\,344\,600\,z+108\,056\,025\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0528.01

$$ {}_1F_2\left(-\frac{11}{2};\,1,\,\frac{3}{2};\,-z\right)=\frac{1}{958\,003\,200}$$
$$\left(4\left(2\left(1024\,z^6+186\,112\,z^5+9\,455\,232\,z^4+155\,997\,792\,z^3+757\,153\,620\,z^2+805\,186\,035\,z+119\,750\,400\right)J_0\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\sqrt{z}\left(1024\,z^5+185\,600\,z^4+9\,363\,072\,z^3+151\,428\,384\,z^2+686\,636\,820\,z+528\,720\,345\right)J_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(4096\,z^6+743\,424\,z^5+37\,635\,840\,z^4+614\,718\,720\,z^3+2\,881\,494\,000\,z^2+2\,593\,344\,600\,z+108\,056\,025\right)$$
$$J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\left(4096\,z^6+743\,424\,z^5+37\,635\,840\,z^4+614\,718\,720\,z^3+\right.$$
$$\left.\left.2\,881\,494\,000\,z^2+2\,593\,344\,600\,z+108\,056\,025\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0529.01

$$ {}_1F_2\left(-\frac{11}{2};\,1,\,2;\,z\right)=\frac{1}{1\,404\,728\,325}$$
$$\left(\left(4096\,z^6-806\,912\,z^5+45\,149\,952\,z^4-840\,648\,960\,z^3+4\,801\,286\,304\,z^2-6\,528\,392\,640\,z+1\,404\,728\,325\right)I_0\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(-1024\,z^5+200\,960\,z^4-11\,137\,920\,z^3+202\,026\,672\,z^2-1\,059\,834\,744\,z+995\,019\,795\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+$$
$$\left.\left(-4096\,z^6+804\,864\,z^5-44\,749\,568\,z^4+818\,666\,496\,z^3-4\,412\,447\,136\,z^2+4\,640\,003\,856\,z-108\,056\,025\right)I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.0530.01

$$ {}_1F_2\left(-\frac{11}{2}; 1, 2; -z\right) = \frac{1}{1\,404\,728\,325}$$
$$\left(\left(4096 z^6 + 806\,912 z^5 + 45\,149\,952 z^4 + 840\,648\,960 z^3 + 4\,801\,286\,304 z^2 + 6\,528\,392\,640 z + 1\,404\,728\,325\right) J_0\left(\sqrt{z}\right)^2 - \right.$$
$$4\sqrt{z}\left(1024 z^5 + 200\,960 z^4 + 11\,137\,920 z^3 + 202\,026\,672 z^2 + 1\,059\,834\,744 z + 995\,019\,795\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) +$$
$$\left.\left(4096 z^6 + 804\,864 z^5 + 44\,749\,568 z^4 + 818\,666\,496 z^3 + 4\,412\,447\,136 z^2 + 4\,640\,003\,856 z + 108\,056\,025\right) J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.0531.01

$$ {}_1F_2\left(-\frac{11}{2}; 1, \frac{5}{2}; z\right) = \frac{1}{17\,882\,726\,400 z}$$
$$\left(4\left(2 z\left(4096 z^6 - 868\,352 z^5 + 52\,906\,240 z^4 - 1\,088\,770\,560 z^3 + 6\,983\,130\,672 z^2 - 10\,587\,981\,600 z + 2\,271\,359\,475\right)\right.\right.$$
$$I_0\left(2\sqrt{z}\right) + \sqrt{z}\left(-4096 z^6 + 866\,304 z^5 - 52\,475\,648 z^4 + 1\,063\,058\,688 z^3 - \right.$$
$$\left.\left.6\,481\,311\,984 z^2 + 7\,849\,490\,040 z - 108\,056\,025\right) I_1\left(2\sqrt{z}\right)\right) +$$
$$\pi\left(-16\,384 z^7 + 3\,469\,312 z^6 - 210\,760\,704 z^5 + 4\,303\,031\,040 z^4 - 26\,893\,944\,000 z^3 + \right.$$
$$\left.36\,306\,824\,400 z^2 - 3\,025\,568\,700 z + 108\,056\,025\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) +$$
$$\pi\left(16\,384 z^7 - 3\,469\,312 z^6 + 210\,760\,704 z^5 - 4\,303\,031\,040 z^4 + 26\,893\,944\,000 z^3 - \right.$$
$$\left.\left.36\,306\,824\,400 z^2 + 3\,025\,568\,700 z - 108\,056\,025\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0532.01

$$ {}_1F_2\left(-\frac{11}{2}; 1, \frac{5}{2}; -z\right) = \frac{1}{17\,882\,726\,400 z}$$
$$\left(4\left(2 z\left(4096 z^6 + 868\,352 z^5 + 52\,906\,240 z^4 + 1\,088\,770\,560 z^3 + 6\,983\,130\,672 z^2 + 10\,587\,981\,600 z + 2\,271\,359\,475\right)\right.\right.$$
$$J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(4096 z^6 + 866\,304 z^5 + 52\,475\,648 z^4 + 1\,063\,058\,688 z^3 + \right.$$
$$\left.\left.6\,481\,311\,984 z^2 + 7\,849\,490\,040 z + 108\,056\,025\right) J_1\left(2\sqrt{z}\right)\right) +$$
$$\pi\left(16\,384 z^7 + 3\,469\,312 z^6 + 210\,760\,704 z^5 + 4\,303\,031\,040 z^4 + 26\,893\,944\,000 z^3 + 36\,306\,824\,400 z^2 + \right.$$
$$\left.3\,025\,568\,700 z + 108\,056\,025\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) -$$
$$\pi\left(16\,384 z^7 + 3\,469\,312 z^6 + 210\,760\,704 z^5 + 4\,303\,031\,040 z^4 + 26\,893\,944\,000 z^3 + \right.$$
$$\left.\left.36\,306\,824\,400 z^2 + 3\,025\,568\,700 z + 108\,056\,025\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0533.01

$$ {}_1F_2\left(-\frac{11}{2}; 1, 3; z\right) = \frac{1}{21\,070\,924\,875 z}$$
$$\left(4\left(z\left(4096 z^6 - 930\,816 z^5 + 61\,505\,280 z^4 - 1\,396\,126\,080 z^3 + 10\,152\,440\,640 z^2 - 18\,430\,335\,000 z + 5\,294\,745\,225\right)\right.\right.$$
$$I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-4096 z^6 + 927\,744 z^5 - 60\,814\,080 z^4 + 1\,351\,526\,400 z^3 - 9\,200\,230\,560 z^2 + \right.$$
$$12\,656\,120\,400 z - 108\,056\,025\left) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-4096 z^7 + 928\,768 z^6 - 61\,042\,944 z^5 + \right.\right.$$
$$\left.\left.\left.1\,366\,058\,880 z^4 - 9\,497\,746\,080 z^3 + 14\,235\,984\,360 z^2 - 756\,392\,175 z + 108\,056\,025\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.0534.01

$$ {}_1F_2\left(-\frac{11}{2};\,1,\,3;\,-z\right)=\frac{1}{21\,070\,924\,875\,z}\left(4\left(z\left(4096\,z^6+930\,816\,z^5+61\,505\,280\,z^4+1\,396\,126\,080\,z^3+10\,152\,440\,640\,z^2+18\,430\,335\,000\,z+5\,294\,745\,225\right)\right.\right.$$
$$ J_0\left(\sqrt{z}\right)^2-\sqrt{z}\left(4096\,z^6+927\,744\,z^5+60\,814\,080\,z^4+1\,351\,526\,400\,z^3+9\,200\,230\,560\,z^2+\right.$$
$$ \left.12\,656\,120\,400\,z+108\,056\,025\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(4096\,z^7+928\,768\,z^6+61\,042\,944\,z^5+\right.$$
$$ \left.\left.\left.1\,366\,058\,880\,z^4+9\,497\,746\,080\,z^3+14\,235\,984\,360\,z^2+756\,392\,175\,z+108\,056\,025\right)J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0535.01

$$ {}_1F_2\left(-\frac{11}{2};\,1,\,\frac{7}{2};\,z\right)=\frac{1}{228\,898\,897\,920\,z^2}\left(4\left(2\,z\left(16\,384\,z^7-3\,969\,024\,z^6+282\,002\,432\,z^5-6\,954\,371\,328\,z^4+55\,459\,097\,280\,z^3-109\,149\,043\,248\,z^2+\right.\right.\right.$$
$$ \left.29\,678\,515\,020\,z-324\,168\,075\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\left(-16\,384\,z^7+3\,960\,832\,z^6-280\,032\,256\,z^5+\right.$$
$$ \left.\left.6\,816\,768\,768\,z^4-52\,211\,512\,512\,z^3+86\,412\,480\,336\,z^2-3\,025\,568\,700\,z+972\,504\,225\right)I_1\left(2\sqrt{z}\right)\right)+$$
$$ \pi\left(-65\,536\,z^8+15\,859\,712\,z^7-1\,124\,057\,088\,z^6+27\,539\,398\,656\,z^5-215\,151\,552\,000\,z^4+\right.$$
$$ \left.387\,272\,793\,600\,z^3-48\,409\,099\,200\,z^2+3\,457\,792\,800\,z-972\,504\,225\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$ \pi\left(65\,536\,z^8-15\,859\,712\,z^7+1\,124\,057\,088\,z^6-27\,539\,398\,656\,z^5+215\,151\,552\,000\,z^4-\right.$$
$$ \left.\left.387\,272\,793\,600\,z^3+48\,409\,099\,200\,z^2-3\,457\,792\,800\,z+972\,504\,225\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0536.01

$$ {}_1F_2\left(-\frac{11}{2};\,1,\,\frac{7}{2};\,-z\right)=\frac{1}{228\,898\,897\,920\,z^2}\left(4\left(2\,z\left(16\,384\,z^7+3\,969\,024\,z^6+282\,002\,432\,z^5+6\,954\,371\,328\,z^4+55\,459\,097\,280\,z^3+109\,149\,043\,248\,z^2+\right.\right.\right.$$
$$ \left.29\,678\,515\,020\,z+324\,168\,075\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\left(16\,384\,z^7+3\,960\,832\,z^6+280\,032\,256\,z^5+\right.$$
$$ \left.\left.6\,816\,768\,768\,z^4+52\,211\,512\,512\,z^3+86\,412\,480\,336\,z^2+3\,025\,568\,700\,z+972\,504\,225\right)J_1\left(2\sqrt{z}\right)\right)+$$
$$ \pi\left(65\,536\,z^8+15\,859\,712\,z^7+1\,124\,057\,088\,z^6+27\,539\,398\,656\,z^5+215\,151\,552\,000\,z^4+\right.$$
$$ \left.387\,272\,793\,600\,z^3+48\,409\,099\,200\,z^2+3\,457\,792\,800\,z+972\,504\,225\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$ \pi\left(65\,536\,z^8+15\,859\,712\,z^7+1\,124\,057\,088\,z^6+27\,539\,398\,656\,z^5+215\,151\,552\,000\,z^4+\right.$$
$$ \left.\left.387\,272\,793\,600\,z^3+48\,409\,099\,200\,z^2+3\,457\,792\,800\,z+972\,504\,225\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0537.01

$$ {}_1F_2\left(-\frac{11}{2};\,1,\,4;\,z\right)=$$
$$ \frac{1}{119\,401\,907\,625\,z^2}\left(4\left(2\,z\left(4096\,z^7-1\,054\,720\,z^6+80\,369\,664\,z^5-2\,152\,327\,680\,z^4+19\,011\,412\,080\,z^3-43\,142\,576\,400\,z^2+\right.\right.\right.$$
$$ \left.15\,127\,843\,500\,z-108\,056\,025\right)I_0\left(\sqrt{z}\right)^2-2\sqrt{z}\left(4096\,z^7-1\,051\,648\,z^6+79\,585\,536\,z^5-\right.$$
$$ \left.2\,093\,788\,800\,z^4+17\,522\,629\,920\,z^3-31\,824\,916\,200\,z^2+756\,392\,175\,z-432\,224\,100\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+$$
$$ \left(-8192\,z^8+2\,105\,344\,z^7-159\,690\,752\,z^6+4\,225\,842\,432\,z^5-35\,984\,763\,360\,z^4+\right.$$
$$ \left.\left.\left.70\,062\,272\,640\,z^3-6\,051\,137\,400\,z^2+1\,404\,728\,325\,z-864\,448\,200\right)I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0538.01

$$ {}_1F_2\left(-\frac{11}{2};\,1,\,4;\,-z\right) = \frac{1}{119\,401\,907\,625\,z^2}\left(4\left(2\,z\left(4096\,z^7+1\,054\,720\,z^6+80\,369\,664\,z^5+2\,152\,327\,680\,z^4+19\,011\,412\,080\,z^3+43\,142\,576\,400\,z^2+15\,127\,843\,500\,z+108\,056\,025\right)J_0\left(\sqrt{z}\right)^2-2\sqrt{z}\left(4096\,z^7+1\,051\,648\,z^6+79\,585\,536\,z^5+2\,093\,788\,800\,z^4+17\,522\,629\,920\,z^3+31\,824\,916\,200\,z^2+756\,392\,175\,z+432\,224\,100\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(8192\,z^8+2\,105\,344\,z^7+159\,690\,752\,z^6+4\,225\,842\,432\,z^5+35\,984\,763\,360\,z^4+70\,062\,272\,640\,z^3+6\,051\,137\,400\,z^2+1\,404\,728\,325\,z+864\,448\,200\right)J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0539.01

$$ {}_1F_2\left(-\frac{11}{2};\,1,\,\frac{9}{2};\,z\right) = \frac{1}{2\,354\,388\,664\,320\,z^3}\left(4\left(2\,z\left(65\,536\,z^8-17\,858\,560\,z^7+1\,449\,664\,512\,z^6-41\,667\,102\,720\,z^5+397\,341\,232\,128\,z^4-961\,349\,275\,008\,z^3+312\,180\,311\,520\,z^2-9\,508\,930\,200\,z+8\,104\,201\,875\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\left(-65\,536\,z^8+17\,825\,792\,z^7-1\,440\,792\,576\,z^6+40\,957\,599\,744\,z^5-377\,698\,549\,248\,z^4+793\,412\,361\,216\,z^3-48\,409\,099\,200\,z^2+24\,204\,549\,600\,z-24\,312\,605\,625\right)I_1\left(2\sqrt{z}\right)\right)+\pi\left(-262\,144\,z^9+71\,368\,704\,z^8-5\,780\,865\,024\,z^7+165\,236\,391\,936\,z^6-1\,549\,091\,174\,400\,z^5+3\,485\,455\,142\,400\,z^4-580\,909\,190\,400\,z^3+62\,240\,270\,400\,z^2-35\,010\,152\,100\,z+24\,312\,605\,625\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(262\,144\,z^9-71\,368\,704\,z^8+5\,780\,865\,024\,z^7-165\,236\,391\,936\,z^6+1\,549\,091\,174\,400\,z^5-3\,485\,455\,142\,400\,z^4+580\,909\,190\,400\,z^3-62\,240\,270\,400\,z^2+35\,010\,152\,100\,z-24\,312\,605\,625\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0540.01

$$ {}_1F_2\left(-\frac{11}{2};\,1,\,\frac{9}{2};\,-z\right) = \frac{1}{2\,354\,388\,664\,320\,z^3}\left(4\left(2\,z\left(65\,536\,z^8+17\,858\,560\,z^7+1\,449\,664\,512\,z^6+41\,667\,102\,720\,z^5+397\,341\,232\,128\,z^4+961\,349\,275\,008\,z^3+312\,180\,311\,520\,z^2+9\,508\,930\,200\,z+8\,104\,201\,875\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\left(65\,536\,z^8+17\,825\,792\,z^7+1\,440\,792\,576\,z^6+40\,957\,599\,744\,z^5+377\,698\,549\,248\,z^4+793\,412\,361\,216\,z^3+48\,409\,099\,200\,z^2+24\,204\,549\,600\,z+24\,312\,605\,625\right)J_1\left(2\sqrt{z}\right)\right)+\pi\left(262\,144\,z^9+71\,368\,704\,z^8+5\,780\,865\,024\,z^7+165\,236\,391\,936\,z^6+1\,549\,091\,174\,400\,z^5+3\,485\,455\,142\,400\,z^4+580\,909\,190\,400\,z^3+62\,240\,270\,400\,z^2+35\,010\,152\,100\,z+24\,312\,605\,625\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\left(262\,144\,z^9+71\,368\,704\,z^8+5\,780\,865\,024\,z^7+165\,236\,391\,936\,z^6+1\,549\,091\,174\,400\,z^5+3\,485\,455\,142\,400\,z^4+580\,909\,190\,400\,z^3+62\,240\,270\,400\,z^2+35\,010\,152\,100\,z+24\,312\,605\,625\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0541.01

$$
{}_1F_2\left(-\frac{11}{2};\,1,\,5;\,z\right)=
$$

$$
\frac{1}{2\,268\,636\,244\,875\,z^3}\left(16\left(z\left(16\,384\,z^8-4\,714\,496\,z^7+406\,972\,416\,z^6-12\,559\,958\,784\,z^5+130\,553\,496\,000\,z^4-\right.\right.\right.
$$

$$
\left.\left.\left.355\,394\,239\,200\,z^3+145\,227\,297\,600\,z^2-3\,133\,624\,725\,z+3\,890\,016\,900\right)I_0\left(\sqrt{z}\right)^2-\right.
$$

$$
2\sqrt{z}\,\left(8192\,z^8-2\,351\,104\,z^7+201\,732\,096\,z^6-6\,131\,259\,648\,z^5+60\,887\,316\,960\,z^4-\right.
$$

$$
\left.137\,553\,292\,800\,z^3+6\,051\,137\,400\,z^2-5\,294\,745\,225\,z+7\,780\,033\,800\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+
$$

$$
\left(-16\,384\,z^9+4\,706\,304\,z^8-404\,627\,456\,z^7+12\,359\,957\,760\,z^6-124\,564\,637\,376\,z^5+298\,407\,471\,840\,z^4-\right.
$$

$$
\left.\left.36\,306\,824\,400\,z^3+10\,697\,546\,475\,z^2-8\,644\,482\,000\,z+15\,560\,067\,600\right)I_1\left(\sqrt{z}\right)^2\right)\Big)
$$

07.22.03.0542.01

$$
{}_1F_2\left(-\frac{11}{2};\,1,\,5;\,-z\right)=
$$

$$
\frac{1}{2\,268\,636\,244\,875\,z^3}\left(16\left(z\left(16\,384\,z^8+4\,714\,496\,z^7+406\,972\,416\,z^6+12\,559\,958\,784\,z^5+130\,553\,496\,000\,z^4+\right.\right.\right.
$$

$$
\left.\left.\left.355\,394\,239\,200\,z^3+145\,227\,297\,600\,z^2+3\,133\,624\,725\,z+3\,890\,016\,900\right)J_0\left(\sqrt{z}\right)^2-\right.
$$

$$
2\sqrt{z}\,\left(8192\,z^8+2\,351\,104\,z^7+201\,732\,096\,z^6+6\,131\,259\,648\,z^5+60\,887\,316\,960\,z^4+\right.
$$

$$
\left.137\,553\,292\,800\,z^3+6\,051\,137\,400\,z^2+5\,294\,745\,225\,z+7\,780\,033\,800\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+
$$

$$
\left(16\,384\,z^9+4\,706\,304\,z^8+404\,627\,456\,z^7+12\,359\,957\,760\,z^6+124\,564\,637\,376\,z^5+298\,407\,471\,840\,z^4+\right.
$$

$$
\left.\left.36\,306\,824\,400\,z^3+10\,697\,546\,475\,z^2+8\,644\,482\,000\,z+15\,560\,067\,600\right)J_1\left(\sqrt{z}\right)^2\right)\Big)
$$

07.22.03.0543.01

$$
{}_1F_2\left(-\frac{11}{2};\,1,\,\frac{11}{2};\,z\right)=\frac{1}{20\,927\,899\,238\,400\,z^4}
$$

$$
\left(4\left(2\,z\left(262\,144\,z^9-79\,364\,096\,z^8+7\,245\,856\,768\,z^7-237\,843\,824\,640\,z^6+2\,639\,530\,874\,880\,z^5-7\,576\,723\,560\,960\,z^4+\right.\right.\right.
$$

$$
\left.\left.\left.2\,839\,481\,568\,000\,z^3-159\,058\,468\,800\,z^2+218\,273\,170\,500\,z-397\,105\,891\,875\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\right.
$$

$$
\left(-262\,144\,z^9+79\,233\,024\,z^8-7\,206\,404\,096\,z^7+234\,289\,152\,000\,z^6-2\,526\,602\,803\,200\,z^5+6\,436\,017\,169\,920\right.
$$

$$
\left.\left.z^4-580\,909\,190\,400\,z^3+352\,694\,865\,600\,z^2-443\,029\,702\,500\,z+1\,191\,317\,675\,625\right)I_1\left(2\sqrt{z}\right)\right)+
$$

$$
\pi\left(-1\,048\,576\,z^{10}+317\,194\,240\,z^9-28\,904\,325\,120\,z^8+944\,207\,953\,920\,z^7-10\,327\,274\,496\,000\,z^6+\right.
$$

$$
27\,883\,641\,139\,200\,z^5-5\,809\,091\,904\,000\,z^4+829\,870\,272\,000\,z^3-
$$

$$
\left.700\,203\,042\,000\,z^2+972\,504\,225\,000\,z-1\,191\,317\,675\,625\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+
$$

$$
\pi\left(1\,048\,576\,z^{10}-317\,194\,240\,z^9+28\,904\,325\,120\,z^8-944\,207\,953\,920\,z^7+10\,327\,274\,496\,000\,z^6-\right.
$$

$$
27\,883\,641\,139\,200\,z^5+5\,809\,091\,904\,000\,z^4-829\,870\,272\,000\,z^3+
$$

$$
\left.700\,203\,042\,000\,z^2-972\,504\,225\,000\,z+1\,191\,317\,675\,625\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\Big)
$$

07.22.03.0544.01

$$ {}_1F_2\left(-\frac{11}{2}; 1, \frac{11}{2}; -z\right) = \frac{1}{20\,927\,899\,238\,400\,z^4} $$
$$ \left(4\left(2\,z\left(262\,144\,z^9 + 79\,364\,096\,z^8 + 7\,245\,856\,768\,z^7 + 237\,843\,824\,640\,z^6 + 2\,639\,530\,874\,880\,z^5 + 7\,576\,723\,560\,960\,z^4 + 2\,839\,481\,568\,000\,z^3 + 159\,058\,468\,800\,z^2 + 218\,273\,170\,500\,z + 397\,105\,891\,875\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(262\,144\,z^9 + 79\,233\,024\,z^8 + 7\,206\,404\,096\,z^7 + 234\,289\,152\,000\,z^6 + 2\,526\,602\,803\,200\,z^5 + 6\,436\,017\,169\,920\,z^4 + 580\,909\,190\,400\,z^3 + 352\,694\,865\,600\,z^2 + 443\,029\,702\,500\,z + 1\,191\,317\,675\,625\right) J_1\left(2\sqrt{z}\right)\right) + $$
$$ \pi\left(1\,048\,576\,z^{10} + 317\,194\,240\,z^9 + 28\,904\,325\,120\,z^8 + 944\,207\,953\,920\,z^7 + 10\,327\,274\,496\,000\,z^6 + 27\,883\,641\,139\,200\,z^5 + 5\,809\,091\,904\,000\,z^4 + 829\,870\,272\,000\,z^3 + 700\,203\,042\,000\,z^2 + 972\,504\,225\,000\,z + 1\,191\,317\,675\,625\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - $$
$$ \pi\left(1\,048\,576\,z^{10} + 317\,194\,240\,z^9 + 28\,904\,325\,120\,z^8 + 944\,207\,953\,920\,z^7 + 10\,327\,274\,496\,000\,z^6 + 27\,883\,641\,139\,200\,z^5 + 5\,809\,091\,904\,000\,z^4 + 829\,870\,272\,000\,z^3 + 700\,203\,042\,000\,z^2 + 972\,504\,225\,000\,z + 1\,191\,317\,675\,625\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\Big) $$

07.22.03.0545.01

$$ {}_1F_2\left(-\frac{11}{2}; 1, 6; z\right) = $$
$$ \frac{1}{9\,528\,272\,228\,475\,z^4}\left(32\left(2\,z\left(8192\,z^9 - 2\,605\,056\,z^8 + 251\,251\,200\,z^7 - 8\,779\,696\,128\,z^6 + 104\,971\,198\,752\,z^5 - 333\,226\,444\,320\,z^4 + 154\,304\,003\,700\,z^3 - 6\,483\,361\,500\,z^2 + 12\,642\,554\,925\,z - 31\,120\,135\,200\right) I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-16\,384\,z^9 + 5\,197\,824\,z^8 - 498\,622\,464\,z^7 + 17\,191\,141\,632\,z^6 - 197\,570\,149\,056\,z^5 + 534\,155\,640\,480\,z^4 - 36\,306\,824\,400\,z^3 + 37\,927\,664\,775\,z^2 - 70\,020\,304\,200\,z + 248\,961\,081\,600\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - 2\left(8192\,z^{10} - 2\,600\,960\,z^9 + 249\,954\,816\,z^8 - 8\,655\,998\,976\,z^7 + 100\,761\,968\,160\,z^6 - 286\,620\,063\,408\,z^5 + 45\,383\,530\,500\,z^4 - 15\,560\,067\,600\,z^3 + 13\,939\,227\,225\,z^2 - 19\,450\,084\,500\,z + 124\,480\,540\,800\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0546.01

$$ {}_1F_2\left(-\frac{11}{2}; 1, 6; -z\right) = $$
$$ \frac{1}{9\,528\,272\,228\,475\,z^4}\left(32\left(2\,z\left(8192\,z^9 + 2\,605\,056\,z^8 + 251\,251\,200\,z^7 + 8\,779\,696\,128\,z^6 + 104\,971\,198\,752\,z^5 + 333\,226\,444\,320\,z^4 + 154\,304\,003\,700\,z^3 + 6\,483\,361\,500\,z^2 + 12\,642\,554\,925\,z + 31\,120\,135\,200\right) J_0\left(\sqrt{z}\right)^2 - \sqrt{z}\left(16\,384\,z^9 + 5\,197\,824\,z^8 + 498\,622\,464\,z^7 + 17\,191\,141\,632\,z^6 + 197\,570\,149\,056\,z^5 + 534\,155\,640\,480\,z^4 + 36\,306\,824\,400\,z^3 + 37\,927\,664\,775\,z^2 + 70\,020\,304\,200\,z + 248\,961\,081\,600\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + 2\left(8192\,z^{10} + 2\,600\,960\,z^9 + 249\,954\,816\,z^8 + 8\,655\,998\,976\,z^7 + 100\,761\,968\,160\,z^6 + 286\,620\,063\,408\,z^5 + 45\,383\,530\,500\,z^4 + 15\,560\,067\,600\,z^3 + 13\,939\,227\,225\,z^2 + 19\,450\,084\,500\,z + 124\,480\,540\,800\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

For fixed z and $a_1 = -\frac{11}{2}$, $b_1 = \frac{3}{2}$

07.22.03.0547.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{3}{2},\frac{3}{2};z\right)= \frac{1}{33\,177\,600\sqrt{z}}\left(-2\sqrt{z}\left(8z^5-1580z^4+88\,320z^3-1\,620\,936z^2+8\,640\,990z-8\,262\,405\right)\cosh\left(2\sqrt{z}\right)+ \left(-8z^5+1572z^4-86\,784z^3+1\,540\,800z^2-7\,415\,550z+4\,584\,195\right)\sinh\left(2\sqrt{z}\right)+ 8\left(4z^6-792z^5+44\,550z^4-831\,600z^3+4\,677\,750z^2-5\,613\,300z+467\,775\right)\operatorname{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.0548.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{3}{2},\frac{3}{2};-z\right)= \frac{1}{33\,177\,600\sqrt{z}}\left(2\sqrt{z}\left(8z^5+1580z^4+88\,320z^3+1\,620\,936z^2+8\,640\,990z+8\,262\,405\right)\cos\left(2\sqrt{z}\right)+ \left(8z^5+1572z^4+86\,784z^3+1\,540\,800z^2+7\,415\,550z+4\,584\,195\right)\sin\left(2\sqrt{z}\right)+ 8\left(4z^6+792z^5+44\,550z^4+831\,600z^3+4\,677\,750z^2+5\,613\,300z+467\,775\right)\operatorname{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.0549.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{3}{2},2;z\right)= \frac{1}{6\,227\,020\,800\sqrt{z}} \left(4\left(2\sqrt{z}\left(1024z^6-219\,904z^5+13\,645\,440z^4-288\,762\,336z^3+1\,941\,922\,260z^2-3\,232\,489\,815z+838\,252\,800\right) I_0\left(2\sqrt{z}\right)+\left(-1024z^6+219\,392z^5-13\,536\,384z^4+282\,127\,392z^3- 1\,808\,536\,500z^2+2\,462\,540\,805z-119\,750\,400\right)I_1\left(2\sqrt{z}\right)\right)+ \pi\sqrt{z}\left(-4096z^6+878\,592z^5-54\,362\,880z^4+1\,141\,620\,480z^3-7\,491\,884\,400z^2+11\,237\,826\,600z-1\,404\,728\,325\right) I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\sqrt{z}\left(4096z^6-878\,592z^5+54\,362\,880z^4-1\,141\,620\,480z^3+ 7\,491\,884\,400z^2-11\,237\,826\,600z+1\,404\,728\,325\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0550.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{3}{2},2;-z\right)= \frac{1}{6\,227\,020\,800\sqrt{z}} \left(4\left(2\sqrt{z}\left(1024z^6+219\,904z^5+13\,645\,440z^4+288\,762\,336z^3+1\,941\,922\,260z^2+3\,232\,489\,815z+838\,252\,800\right) J_0\left(2\sqrt{z}\right)-\left(1024z^6+219\,392z^5+13\,536\,384z^4+282\,127\,392z^3+ 1\,808\,536\,500z^2+2\,462\,540\,805z+119\,750\,400\right)J_1\left(2\sqrt{z}\right)\right)+ \pi\sqrt{z}\left(4096z^6+878\,592z^5+54\,362\,880z^4+1\,141\,620\,480z^3+7\,491\,884\,400z^2+11\,237\,826\,600z+1\,404\,728\,325\right) J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\sqrt{z}\left(4096z^6+878\,592z^5+54\,362\,880z^4+1\,141\,620\,480z^3+ 7\,491\,884\,400z^2+11\,237\,826\,600z+1\,404\,728\,325\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0551.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{3}{2},\frac{5}{2};z\right)= \frac{1}{154\,828\,800z^{3/2}}\left(-2\sqrt{z}\left(8z^6-1844z^5+123\,828z^4-2\,850\,912z^3+20\,541\,780z^2-31\,603\,635z+935\,550\right)\cosh\left(2\sqrt{z}\right)+ \left(-8z^6+1836z^5-122\,028z^4+2\,736\,720z^3-18\,264\,960z^2+20\,862\,765z+935\,550\right)\sinh\left(2\sqrt{z}\right)+ 8z\left(4z^6-924z^5+62\,370z^4-1\,455\,300z^3+10\,914\,750z^2-19\,646\,550z+3\,274\,425\right)\operatorname{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.0552.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{3}{2},\frac{5}{2};-z\right)= \frac{1}{154\,828\,800\,z^{3/2}}\left(2\sqrt{z}\,\left(8\,z^6+1844\,z^5+123\,828\,z^4+2\,850\,912\,z^3+20\,541\,780\,z^2+31\,603\,635\,z+935\,550\right)\cos\left(2\sqrt{z}\right)+\left(8\,z^6+1836\,z^5+122\,028\,z^4+2\,736\,720\,z^3+18\,264\,960\,z^2+20\,862\,765\,z-935\,550\right)\sin\left(2\sqrt{z}\right)+8\,z\left(4\,z^6+924\,z^5+62\,370\,z^4+1\,455\,300\,z^3+10\,914\,750\,z^2+19\,646\,550\,z+3\,274\,425\right)\mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.0553.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{3}{2},3;z\right)= \frac{1}{23\,351\,328\,000\,z^{3/2}}\left(\pi\left(-4096\,z^6+1\,013\,760\,z^5-74\,131\,200\,z^4+1\,902\,700\,800\,z^3-16\,054\,038\,000\,z^2+33\,713\,479\,800\,z-7\,023\,641\,625\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+\pi\left(4096\,z^6-1\,013\,760\,z^5+74\,131\,200\,z^4-1\,902\,700\,800\,z^3+16\,054\,038\,000\,z^2-33\,713\,479\,800\,z+7\,023\,641\,625\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2}+4\left(2\sqrt{z}\,\left(1024\,z^7-253\,696\,z^6+18\,595\,968\,z^5-480\,261\,600\,z^4+4\,129\,125\,300\,z^3-9\,354\,129\,075\,z^2+3\,353\,011\,200\,z-29\,937\,600\right)I_0\left(2\sqrt{z}\right)+\left(-1024\,z^7+253\,184\,z^6-18\,470\,016\,z^5+471\,180\,960\,z^4-3\,904\,168\,500\,z^3+7\,637\,427\,225\,z^2-838\,252\,800\,z+59\,875\,200\right)I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0554.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{3}{2},3;-z\right)= \frac{1}{23\,351\,328\,000\,z^{3/2}}\left(\pi\left(4096\,z^6+1\,013\,760\,z^5+74\,131\,200\,z^4+1\,902\,700\,800\,z^3+16\,054\,038\,000\,z^2+33\,713\,479\,800\,z+7\,023\,641\,625\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}-\pi\left(4096\,z^6+1\,013\,760\,z^5+74\,131\,200\,z^4+1\,902\,700\,800\,z^3+16\,054\,038\,000\,z^2+33\,713\,479\,800\,z+7\,023\,641\,625\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{3/2}+4\left(2\sqrt{z}\,\left(1024\,z^7+253\,696\,z^6+18\,595\,968\,z^5+480\,261\,600\,z^4+4\,129\,125\,300\,z^3+9\,354\,129\,075\,z^2+3\,353\,011\,200\,z+29\,937\,600\right)J_0\left(2\sqrt{z}\right)-\left(1024\,z^7+253\,184\,z^6+18\,470\,016\,z^5+471\,180\,960\,z^4+3\,904\,168\,500\,z^3+7\,637\,427\,225\,z^2+838\,252\,800\,z+59\,875\,200\right)J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0555.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{3}{2},\frac{7}{2};z\right)= \frac{1}{495\,452\,160\,z^{5/2}}\left(32\left(z^6-264\,z^5+20\,790\,z^4-582\,120\,z^3+5\,457\,375\,z^2-13\,097\,700\,z+3\,274\,425\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^2-2\left(8\,z^7-2108\,z^6+165\,276\,z^5-4\,576\,878\,z^4+41\,557\,500\,z^3-88\,370\,730\,z^2+6\,548\,850\,z-1\,403\,325\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(-8\,z^7+2100\,z^6-163\,212\,z^5+4\,422\,690\,z^4-37\,765\,980\,z^3+63\,804\,510\,z^2+4\,677\,750\,z-1\,403\,325\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0556.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{3}{2},\frac{7}{2};-z\right)= \frac{1}{495\,452\,160\,z^{5/2}}\left(32\left(z^6+264\,z^5+20\,790\,z^4+582\,120\,z^3+5\,457\,375\,z^2+13\,097\,700\,z+3\,274\,425\right)\mathrm{Si}\left(2\sqrt{z}\right)z^2+ 2\left(8\,z^7+2108\,z^6+165\,276\,z^5+4\,576\,878\,z^4+41\,557\,500\,z^3+88\,370\,730\,z^2+6\,548\,850\,z+1\,403\,325\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+ \left(8\,z^7+2100\,z^6+163\,212\,z^5+4\,422\,690\,z^4+37\,765\,980\,z^3+63\,804\,510\,z^2-4\,677\,750\,z-1\,403\,325\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0557.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{3}{2},4;z\right)= \frac{1}{66\,162\,096\,000\,z^{5/2}}\left(\pi\left(-4096\,z^6+1\,148\,928\,z^5-96\,940\,800\,z^4+2\,940\,537\,600\,z^3-30\,324\,294\,000\,z^2+81\,875\,593\,800\,z-23\,880\,381\,525\right) I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}+\pi\left(4096\,z^6-1\,148\,928\,z^5+96\,940\,800\,z^4-2\,940\,537\,600\,z^3+ 30\,324\,294\,000\,z^2-81\,875\,593\,800\,z+23\,880\,381\,525\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{5/2}+ 4\left(2\sqrt{z}\,\left(1024\,z^8-287\,488\,z^7+24\,306\,816\,z^6-741\,140\,064\,z^5+7\,760\,508\,660\,z^4-22\,241\,701\,575\,z^3+10\,059\,033\,600 z^2-209\,563\,200\,z+89\,812\,800\right)I_0\left(2\sqrt{z}\right)+\left(-1024\,z^8+286\,976\,z^7-24\,163\,968\,z^6+729\,233\,568\,z^5- 7\,409\,956\,500\,z^4+18\,913\,418\,325\,z^3-3\,353\,011\,200\,z^2+329\,313\,600\,z-179\,625\,600\right)I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0558.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{3}{2},4;-z\right)= \frac{1}{66\,162\,096\,000\,z^{5/2}}\left(\pi\left(4096\,z^6+1\,148\,928\,z^5+96\,940\,800\,z^4+2\,940\,537\,600\,z^3+30\,324\,294\,000\,z^2+81\,875\,593\,800\,z+23\,880\,381\,525\right) J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-\pi\left(4096\,z^6+1\,148\,928\,z^5+96\,940\,800\,z^4+2\,940\,537\,600\,z^3+ 30\,324\,294\,000\,z^2+81\,875\,593\,800\,z+23\,880\,381\,525\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{5/2}+ 4\left(2\sqrt{z}\,\left(1024\,z^8+287\,488\,z^7+24\,306\,816\,z^6+741\,140\,064\,z^5+7\,760\,508\,660\,z^4+22\,241\,701\,575\,z^3+10\,059\,033\,600 z^2+209\,563\,200\,z+89\,812\,800\right)J_0\left(2\sqrt{z}\right)-\left(1024\,z^8+286\,976\,z^7+24\,163\,968\,z^6+729\,233\,568\,z^5+ 7\,409\,956\,500\,z^4+18\,913\,418\,325\,z^3+3\,353\,011\,200\,z^2+329\,313\,600\,z+179\,625\,600\right)J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0559.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{3}{2},\frac{9}{2};z\right)= \frac{1}{1\,274\,019\,840\,z^{7/2}}\left(32\left(z^6-297\,z^5+26\,730\,z^4-873\,180\,z^3+9\,823\,275\,z^2-29\,469\,825\,z+9\,823\,275\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^3- 2\left(8\,z^8-2372\,z^7+212\,664\,z^6-6\,881\,994\,z^5+75\,388\,770\,z^4-204\,883\,830\,z^3+26\,195\,400\,z^2-7\,952\,175\,z+7\,016\,625\right) \cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(-8\,z^8+2364\,z^7-210\,336\,z^6+6\,681\,870\,z^5-69\,536\,070\,z^4+ 156\,486\,330\,z^3+13\,097\,700\,z^2+1\,403\,325\,z+7\,016\,625\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0560.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{3}{2},\frac{9}{2};-z\right)= \frac{1}{1\,274\,019\,840\,z^{7/2}}\left(32\left(z^6+297\,z^5+26\,730\,z^4+873\,180\,z^3+9\,823\,275\,z^2+29\,469\,825\,z+9\,823\,275\right)\mathrm{Si}\left(2\sqrt{z}\right)z^3+2\left(8\,z^8+2372\,z^7+212\,664\,z^6+6\,881\,994\,z^5+75\,388\,770\,z^4+204\,883\,830\,z^3+26\,195\,400\,z^2+7\,952\,175\,z+7\,016\,625\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8\,z^8+2364\,z^7+210\,336\,z^6+6\,681\,870\,z^5+69\,536\,070\,z^4+156\,486\,330\,z^3-13\,097\,700\,z^2+1\,403\,325\,z-7\,016\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0561.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{3}{2},5;z\right)= \frac{1}{157\,134\,978\,000\,z^{7/2}}\left(\pi\left(-4096\,z^6+1\,284\,096\,z^5-122\,791\,680\,z^4+4\,297\,708\,800\,z^3-52\,378\,326\,000\,z^2+172\,848\,475\,800\,z-64\,818\,178\,425\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2}+\pi\left(4096\,z^6-1\,284\,096\,z^5+122\,791\,680\,z^4-4\,297\,708\,800\,z^3+52\,378\,326\,000\,z^2-172\,848\,475\,800\,z+64\,818\,178\,425\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{7/2}+4\left(2\sqrt{z}\left(1024\,z^9-321\,280\,z^8+30\,777\,984\,z^7-1\,082\,042\,208\,z^6+13\,357\,651\,860\,z^5-46\,304\,017\,875\,z^4+25\,147\,584\,000\,z^3-838\,252\,800\,z^2+516\,423\,600\,z-673\,596\,000\right)I_0\left(2\sqrt{z}\right)+\left(-1024\,z^9+320\,768\,z^8-30\,618\,240\,z^7+1\,066\,929\,696\,z^6-12\,842\,157\,780\,z^5+40\,447\,848\,825\,z^4-10\,059\,033\,600\,z^3+1\,047\,816\,000\,z^2-359\,251\,200\,z+1\,347\,192\,000\right)I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0562.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{3}{2},5;-z\right)= \frac{1}{157\,134\,978\,000\,z^{7/2}}\left(\pi\left(4096\,z^6+1\,284\,096\,z^5+122\,791\,680\,z^4+4\,297\,708\,800\,z^3+52\,378\,326\,000\,z^2+172\,848\,475\,800\,z+64\,818\,178\,425\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2}-\pi\left(4096\,z^6+1\,284\,096\,z^5+122\,791\,680\,z^4+4\,297\,708\,800\,z^3+52\,378\,326\,000\,z^2+172\,848\,475\,800\,z+64\,818\,178\,425\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{7/2}+4\left(2\sqrt{z}\left(1024\,z^9+321\,280\,z^8+30\,777\,984\,z^7+1\,082\,042\,208\,z^6+13\,357\,651\,860\,z^5+46\,304\,017\,875\,z^4+25\,147\,584\,000\,z^3+838\,252\,800\,z^2+516\,423\,600\,z+673\,596\,000\right)J_0\left(2\sqrt{z}\right)-\left(1024\,z^9+320\,768\,z^8+30\,618\,240\,z^7+1\,066\,929\,696\,z^6+12\,842\,157\,780\,z^5+40\,447\,848\,825\,z^4+10\,059\,033\,600\,z^3+1\,047\,816\,000\,z^2+359\,251\,200\,z+1\,347\,192\,000\right)J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0563.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{3}{2},\frac{11}{2};z\right)= \frac{1}{5\,662\,310\,400\,z^{9/2}}\left(32\left(2\,z^6-660\,z^5+66\,825\,z^4-2\,494\,800\,z^3+32\,744\,250\,z^2-117\,879\,300\,z+49\,116\,375\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^4-2\left(16\,z^9-5272\,z^8+531\,984\,z^7-19\,698\,840\,z^6+252\,719\,820\,z^5-836\,755\,650\,z^4+157\,172\,400\,z^3-52\,390\,800\,z^2+42\,099\,750\,z-147\,349\,125\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(-16\,z^9+5256\,z^8-526\,800\,z^7+19\,194\,840\,z^6-235\,632\,780\,z^5+664\,552\,350\,z^4+52\,390\,800\,z^3+56\,133\,000\,z^2-154\,365\,750\,z-147\,349\,125\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0564.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{3}{2}, \frac{11}{2}; -z\right) = \frac{1}{5\,662\,310\,400\,z^{9/2}} \left(32\left(2\,z^6 + 660\,z^5 + 66\,825\,z^4 + 2\,494\,800\,z^3 + 32\,744\,250\,z^2 + 117\,879\,300\,z + 49\,116\,375\right) \mathrm{Si}\left(2\sqrt{z}\right) z^4 + 2\left(16\,z^9 + 5272\,z^8 + 531\,984\,z^7 + 19\,698\,840\,z^6 + 252\,719\,820\,z^5 + 836\,755\,650\,z^4 + 157\,172\,400\,z^3 + 52\,390\,800\,z^2 + 42\,099\,750\,z + 147\,349\,125\right) \cos\left(2\sqrt{z}\right)\sqrt{z} + \left(16\,z^9 + 5256\,z^8 + 526\,800\,z^7 + 19\,194\,840\,z^6 + 235\,632\,780\,z^5 + 664\,552\,350\,z^4 - 52\,390\,800\,z^3 + 56\,133\,000\,z^2 + 154\,365\,750\,z - 147\,349\,125\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0565.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{3}{2}, 6; z\right) = \frac{1}{329\,983\,453\,800\,z^{9/2}} \left(\pi\left(-4096\,z^6 + 1\,419\,264\,z^5 - 151\,683\,840\,z^4 + 6\,016\,792\,320\,z^3 - 84\,611\,142\,000\,z^2 + 329\,983\,453\,800\,z - 151\,242\,416\,325\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{9/2} + \pi\left(4096\,z^6 - 1\,419\,264\,z^5 + 151\,683\,840\,z^4 - 6\,016\,792\,320\,z^3 + 84\,611\,142\,000\,z^2 - 329\,983\,453\,800\,z + 151\,242\,416\,325\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{9/2} + 4\left(2\sqrt{z}\,\left(1024\,z^{10} - 355\,072\,z^9 + 38\,009\,472\,z^8 - 1\,513\,612\,512\,z^7 + 21\,521\,968\,020\,z^6 - 87\,526\,602\,135\,z^5 + 55\,324\,684\,800\,z^4 - 2\,514\,758\,400\,z^3 + 1\,728\,896\,400\,z^2 - 2\,357\,586\,000\,z + 9\,430\,344\,000\right) I_0\left(2\sqrt{z}\right) + \left(-1024\,z^{10} + 354\,560\,z^9 - 37\,832\,832\,z^8 + 1\,494\,913\,824\,z^7 - 20\,796\,863\,220\,z^6 + 77\,934\,850\,245\,z^5 - 25\,147\,584\,000\,z^4 + 2\,514\,758\,400\,z^3 + 471\,517\,200\,z^2 - 4\,715\,172\,000\,z - 18\,860\,688\,000\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0566.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{3}{2}, 6; -z\right) = \frac{1}{329\,983\,453\,800\,z^{9/2}} \left(\pi\left(4096\,z^6 + 1\,419\,264\,z^5 + 151\,683\,840\,z^4 + 6\,016\,792\,320\,z^3 + 84\,611\,142\,000\,z^2 + 329\,983\,453\,800\,z + 151\,242\,416\,325\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{9/2} - \pi\left(4096\,z^6 + 1\,419\,264\,z^5 + 151\,683\,840\,z^4 + 6\,016\,792\,320\,z^3 + 84\,611\,142\,000\,z^2 + 329\,983\,453\,800\,z + 151\,242\,416\,325\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{9/2} + 4\left(2\sqrt{z}\,\left(1024\,z^{10} + 355\,072\,z^9 + 38\,009\,472\,z^8 + 1\,513\,612\,512\,z^7 + 21\,521\,968\,020\,z^6 + 87\,526\,602\,135\,z^5 + 55\,324\,684\,800\,z^4 + 2\,514\,758\,400\,z^3 + 1\,728\,896\,400\,z^2 + 2\,357\,586\,000\,z + 9\,430\,344\,000\right) J_0\left(2\sqrt{z}\right) - \left(1024\,z^{10} + 354\,560\,z^9 + 37\,832\,832\,z^8 + 1\,494\,913\,824\,z^7 + 20\,796\,863\,220\,z^6 + 77\,934\,850\,245\,z^5 + 25\,147\,584\,000\,z^4 + 2\,514\,758\,400\,z^3 - 471\,517\,200\,z^2 - 4\,715\,172\,000\,z + 18\,860\,688\,000\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{11}{2}$, $b_1 = 2$

07.22.03.0567.01

$$ {}_1F_2\left(-\frac{11}{2};\,2,\,2;\,z\right) = \frac{1}{18\,261\,468\,225\,\sqrt{z}} $$
$$ \left(2\left(\sqrt{z}\,\left(4096\,z^6 - 953\,344\,z^5 + 65\,137\,920\,z^4 - 1\,554\,450\,048\,z^3 + 12\,270\,334\,176\,z^2 - 25\,913\,238\,120\,z + 9\,833\,098\,275\right)\right.\right. $$
$$ I_0\left(\sqrt{z}\right)^2 + \left(-4096\,z^6 + 950\,272\,z^5 - 64\,429\,824\,z^4 + 1\,507\,163\,904\,z^3 - 11\,205\,283\,104\,z^2 + \right. $$
$$ \left. 18\,783\,848\,160\,z - 1\,404\,728\,325\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \sqrt{z}\,\left(-4096\,z^6 + 951\,296\,z^5 - 64\,664\,320\,z^4 + \right. $$
$$ \left.\left. 1\,522\,583\,424\,z^3 - 11\,539\,132\,416\,z^2 + 20\,768\,100\,984\,z - 2\,746\,431\,765\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0568.01

$$ {}_1F_2\left(-\frac{11}{2};\,2,\,2;\,-z\right) = \frac{1}{18\,261\,468\,225\,\sqrt{z}} $$
$$ \left(2\left(\sqrt{z}\,\left(4096\,z^6 + 953\,344\,z^5 + 65\,137\,920\,z^4 + 1\,554\,450\,048\,z^3 + 12\,270\,334\,176\,z^2 + 25\,913\,238\,120\,z + 9\,833\,098\,275\right)\right.\right. $$
$$ J_0\left(\sqrt{z}\right)^2 - \left(4096\,z^6 + 950\,272\,z^5 + 64\,429\,824\,z^4 + 1\,507\,163\,904\,z^3 + 11\,205\,283\,104\,z^2 + \right. $$
$$ \left. 18\,783\,848\,160\,z + 1\,404\,728\,325\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\,\left(4096\,z^6 + 951\,296\,z^5 + 64\,664\,320\,z^4 + \right. $$
$$ \left.\left. 1\,522\,583\,424\,z^3 + 11\,539\,132\,416\,z^2 + 20\,768\,100\,984\,z + 2\,746\,431\,765\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0569.01

$$ {}_1F_2\left(-\frac{11}{2};\,2,\,\frac{5}{2};\,z\right) = \frac{1}{116\,237\,721\,600\,z} $$
$$ \left(4\left(2\,z\left(4096\,z^6 - 1\,026\,048\,z^5 + 76\,363\,520\,z^4 - 2\,016\,673\,536\,z^3 + 17\,966\,947\,824\,z^2 - 43\,375\,668\,840\,z + 17\,414\,483\,625\right)\right.\right. $$
$$ I_0\left(2\,\sqrt{z}\right) + \sqrt{z}\,\left(-4096\,z^6 + 1\,024\,000\,z^5 - 75\,854\,080\,z^4 + 1\,979\,371\,008\,z^3 - \right. $$
$$ \left.\left. 17\,020\,988\,208\,z^2 + 35\,858\,914\,560\,z - 5\,301\,294\,075\right) I_1\left(2\,\sqrt{z}\right)\right) - $$
$$ \pi\left(16\,384\,z^7 - 4\,100\,096\,z^6 + 304\,432\,128\,z^5 - 7\,991\,343\,360\,z^4 + 69\,924\,254\,400\,z^3 - 157\,329\,572\,400\,z^2 + \right. $$
$$ \left. 39\,332\,393\,100\,z + 1\,404\,728\,325\right) I_1\left(2\,\sqrt{z}\right) \boldsymbol{L}_0\left(2\,\sqrt{z}\right) + $$
$$ \pi\left(16\,384\,z^7 - 4\,100\,096\,z^6 + 304\,432\,128\,z^5 - 7\,991\,343\,360\,z^4 + 69\,924\,254\,400\,z^3 - \right. $$
$$ \left. 157\,329\,572\,400\,z^2 + 39\,332\,393\,100\,z + 1\,404\,728\,325\right) I_0\left(2\,\sqrt{z}\right) \boldsymbol{L}_1\left(2\,\sqrt{z}\right)\Big) $$

07.22.03.0570.01

$$ {}_1F_2\left(-\frac{11}{2};\,2,\,\frac{5}{2};\,-z\right) = \frac{1}{116\,237\,721\,600\,z} $$
$$ \left(4\left(2\,z\left(4096\,z^6 + 1\,026\,048\,z^5 + 76\,363\,520\,z^4 + 2\,016\,673\,536\,z^3 + 17\,966\,947\,824\,z^2 + 43\,375\,668\,840\,z + 17\,414\,483\,625\right)\right.\right. $$
$$ J_0\left(2\,\sqrt{z}\right) - \sqrt{z}\,\left(4096\,z^6 + 1\,024\,000\,z^5 + 75\,854\,080\,z^4 + 1\,979\,371\,008\,z^3 + \right. $$
$$ \left.\left. 17\,020\,988\,208\,z^2 + 35\,858\,914\,560\,z + 5\,301\,294\,075\right) J_1\left(2\,\sqrt{z}\right)\right) + $$
$$ \pi\left(16\,384\,z^7 + 4\,100\,096\,z^6 + 304\,432\,128\,z^5 + 7\,991\,343\,360\,z^4 + 69\,924\,254\,400\,z^3 + 157\,329\,572\,400\,z^2 + \right. $$
$$ \left. 39\,332\,393\,100\,z - 1\,404\,728\,325\right) J_1\left(2\,\sqrt{z}\right) \boldsymbol{H}_0\left(2\,\sqrt{z}\right) - $$
$$ \pi\left(16\,384\,z^7 + 4\,100\,096\,z^6 + 304\,432\,128\,z^5 + 7\,991\,343\,360\,z^4 + 69\,924\,254\,400\,z^3 + \right. $$
$$ \left. 157\,329\,572\,400\,z^2 + 39\,332\,393\,100\,z - 1\,404\,728\,325\right) J_0\left(2\,\sqrt{z}\right) \boldsymbol{H}_1\left(2\,\sqrt{z}\right)\Big) $$

07.22.03.0571.01

$$ {}_1F_2\left(-\frac{11}{2};\,2,\,3;\,z\right)=\frac{1}{273\,922\,023\,375\,z}\left(4\left(8\,z\left(1024\,z^6-274\,944\,z^5+22\,187\,520\,z^4-645\,888\,960\,z^3+6\,509\,160\,540\,z^2-18\,638\,027\,100\,z+9\,833\,098\,275\right)\right.\right.$$
$$ I_0\left(\sqrt{z}\right)^2-2\sqrt{z}\left(4096\,z^6-1\,096\,704\,z^5+87\,932\,160\,z^4-2\,518\,807\,680\,z^3+24\,238\,124\,640\,z^2-\right.$$
$$ \left.58\,614\,078\,600\,z+9\,833\,098\,275\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\left(8192\,z^7-2\,195\,456\,z^6+176\,406\,528\,z^5-\right.$$
$$ \left.\left.\left.5\,079\,985\,920\,z^4+49\,616\,287\,200\,z^3-126\,453\,718\,080\,z^2+31\,363\,378\,200\,z+1\,404\,728\,325\right)I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0572.01

$$ {}_1F_2\left(-\frac{11}{2};\,2,\,3;\,-z\right)=\frac{1}{273\,922\,023\,375\,z}\left(4\left(8\,z\left(1024\,z^6+274\,944\,z^5+22\,187\,520\,z^4+645\,888\,960\,z^3+6\,509\,160\,540\,z^2+18\,638\,027\,100\,z+9\,833\,098\,275\right)\right.\right.$$
$$ J_0\left(\sqrt{z}\right)^2-2\sqrt{z}\left(4096\,z^6+1\,096\,704\,z^5+87\,932\,160\,z^4+2\,518\,807\,680\,z^3+24\,238\,124\,640\,z^2+\right.$$
$$ \left.58\,614\,078\,600\,z+9\,833\,098\,275\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(8192\,z^7+2\,195\,456\,z^6+176\,406\,528\,z^5+\right.$$
$$ \left.\left.\left.5\,079\,985\,920\,z^4+49\,616\,287\,200\,z^3+126\,453\,718\,080\,z^2+31\,363\,378\,200\,z-1\,404\,728\,325\right)J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0573.01

$$ {}_1F_2\left(-\frac{11}{2};\,2,\,\frac{7}{2};\,z\right)=\frac{1}{1\,487\,842\,836\,480\,z^2}\left(4\left(2\,z\left(16\,384\,z^7-4\,689\,920\,z^6+407\,077\,888\,z^5-12\,886\,759\,680\,z^4+142\,972\,132\,032\,z^3-452\,368\,414\,512\,z^2+\right.\right.\right.$$
$$ \left.242\,902\,085\,580\,z+1\,404\,728\,325\right)I_0\left(2\sqrt{z}\right)-\sqrt{z}\left(16\,384\,z^7-4\,681\,728\,z^6+404\,747\,264\,z^5-\right.$$
$$ \left.\left.12\,687\,250\,176\,z^4+136\,864\,527\,552\,z^3-390\,536\,095\,824\,z^2+99\,983\,475\,900\,z+4\,214\,184\,975\right)I_1\left(2\sqrt{z}\right)\right)+$$
$$ \pi\left(-65\,536\,z^8+18\,743\,296\,z^7-1\,623\,638\,016\,z^6+51\,144\,597\,504\,z^5-559\,394\,035\,200\,z^4+\right.$$
$$ \left.1\,678\,182\,105\,600\,z^3-629\,318\,289\,600\,z^2-44\,951\,306\,400\,z+4\,214\,184\,975\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$ \pi\left(65\,536\,z^8-18\,743\,296\,z^7+1\,623\,638\,016\,z^6-51\,144\,597\,504\,z^5+559\,394\,035\,200\,z^4-\right.$$
$$ \left.\left.1\,678\,182\,105\,600\,z^3+629\,318\,289\,600\,z^2+44\,951\,306\,400\,z-4\,214\,184\,975\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0574.01

$$ {}_1F_2\left(-\frac{11}{2};\,2,\,\frac{7}{2};\,-z\right)=\frac{1}{1\,487\,842\,836\,480\,z^2}\left(4\left(2\,z\left(16\,384\,z^7+4\,689\,920\,z^6+407\,077\,888\,z^5+12\,886\,759\,680\,z^4+142\,972\,132\,032\,z^3+452\,368\,414\,512\,z^2+\right.\right.\right.$$
$$ \left.242\,902\,085\,580\,z-1\,404\,728\,325\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\left(16\,384\,z^7+4\,681\,728\,z^6+404\,747\,264\,z^5+\right.$$
$$ \left.\left.12\,687\,250\,176\,z^4+136\,864\,527\,552\,z^3+390\,536\,095\,824\,z^2+99\,983\,475\,900\,z-4\,214\,184\,975\right)J_1\left(2\sqrt{z}\right)\right)+$$
$$ \pi\left(65\,536\,z^8+18\,743\,296\,z^7+1\,623\,638\,016\,z^6+51\,144\,597\,504\,z^5+559\,394\,035\,200\,z^4+\right.$$
$$ \left.1\,678\,182\,105\,600\,z^3+629\,318\,289\,600\,z^2-44\,951\,306\,400\,z-4\,214\,184\,975\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$ \pi\left(65\,536\,z^8+18\,743\,296\,z^7+1\,623\,638\,016\,z^6+51\,144\,597\,504\,z^5+559\,394\,035\,200\,z^4+\right.$$
$$ \left.\left.1\,678\,182\,105\,600\,z^3+629\,318\,289\,600\,z^2-44\,951\,306\,400\,z-4\,214\,184\,975\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0575.01

$$ {}_1F_2\left(-\frac{11}{2};\, 2,\, 4;\, z\right) = \frac{1}{1\,552\,224\,799\,125\, z^2} \left(4\left(z\left(16\,384\, z^7 - 4\,984\,832\, z^6 + 463\,945\,728\, z^5 - 15\,940\,189\,440\, z^4 + 195\,474\,559\,680\, z^3 - 706\,532\,349\,600\, z^2 + 471\,988\,717\,200\, z + 1\,404\,728\,325\right) I_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(4096\, z^7 - 1\,243\,136\, z^6 + 115\,058\,688\, z^5 - 3\,900\,119\,040\, z^4 + 46\,063\,482\,480\, z^3 - 145\,678\,856\,400\, z^2 + 39\,332\,393\,100\, z + 1\,404\,728\,325\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-16\,384\, z^8 + 4\,976\,640\, z^7 - 461\,465\,600\, z^6 + 15\,711\,904\,512\, z^5 - 187\,837\,479\,360\, z^4 + 619\,451\,831\,520\, z^3 - 227\,256\,321\,600\, z^2 - 21\,070\,924\,875\, z + 5\,618\,913\,300\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0576.01

$$ {}_1F_2\left(-\frac{11}{2};\, 2,\, 4;\, -z\right) = \frac{1}{1\,552\,224\,799\,125\, z^2} \left(4\left(z\left(16\,384\, z^7 + 4\,984\,832\, z^6 + 463\,945\,728\, z^5 + 15\,940\,189\,440\, z^4 + 195\,474\,559\,680\, z^3 + 706\,532\,349\,600\, z^2 + 471\,988\,717\,200\, z - 1\,404\,728\,325\right) J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(4096\, z^7 + 1\,243\,136\, z^6 + 115\,058\,688\, z^5 + 3\,900\,119\,040\, z^4 + 46\,063\,482\,480\, z^3 + 145\,678\,856\,400\, z^2 + 39\,332\,393\,100\, z - 1\,404\,728\,325\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(16\,384\, z^8 + 4\,976\,640\, z^7 + 461\,465\,600\, z^6 + 15\,711\,904\,512\, z^5 + 187\,837\,479\,360\, z^4 + 619\,451\,831\,520\, z^3 + 227\,256\,321\,600\, z^2 - 21\,070\,924\,875\, z - 5\,618\,913\,300\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0577.01

$$ {}_1F_2\left(-\frac{11}{2};\, 2,\, \frac{9}{2};\, z\right) = \frac{1}{15\,303\,526\,318\,080\, z^3} \left(4\left(2\, z\left(65\,536\, z^8 - 21\,102\,592\, z^7 + 2\,092\,793\,856\, z^6 - 77\,234\,872\,320\, z^5 + 1\,025\,711\,497\,728\, z^4 - 4\,014\,597\,053\,952\, z^3 + 2\,686\,121\,222\,400\, z^2 + 44\,951\,306\,400\, z - 21\,070\,924\,875\right) I_0\left(2\sqrt{z}\right) + \sqrt{z}\,\left(-65\,536\, z^8 + 21\,069\,824\, z^7 - 2\,082\,299\,904\, z^6 + 76\,206\,643\,200\, z^5 - 988\,832\,968\,704\, z^4 + 3\,560\,847\,640\,704\, z^3 - 1\,313\,898\,395\,040\, z^2 - 123\,616\,092\,600\, z + 63\,212\,774\,625\right) I_1\left(2\sqrt{z}\right)\right) - \pi\left(262\,144\, z^9 - 84\,344\,832\, z^8 + 8\,350\,138\,368\, z^7 - 306\,867\,585\,024\, z^6 + 4\,027\,637\,053\,440\, z^5 - 15\,103\,638\,950\,400\, z^4 + 7\,551\,819\,475\,200\, z^3 + 809\,123\,515\,200\, z^2 - 151\,710\,659\,100\, z + 63\,212\,774\,625\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(262\,144\, z^9 - 84\,344\,832\, z^8 + 8\,350\,138\,368\, z^7 - 306\,867\,585\,024\, z^6 + 4\,027\,637\,053\,440\, z^5 - 15\,103\,638\,950\,400\, z^4 + 7\,551\,819\,475\,200\, z^3 + 809\,123\,515\,200\, z^2 - 151\,710\,659\,100\, z + 63\,212\,774\,625\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0578.01

$$
{}_1F_2\left(-\frac{11}{2};\, 2,\, \frac{9}{2};\, -z\right) =
$$

$$
\frac{1}{15\,303\,526\,318\,080\,z^3}\left(4\left(2\,z\left(65\,536\,z^8+21\,102\,592\,z^7+2\,092\,793\,856\,z^6+77\,234\,872\,320\,z^5+1\,025\,711\,497\,728\,z^4+\right.\right.\right.
$$

$$
\left.\left.\left.4\,014\,597\,053\,952\,z^3+2\,686\,121\,222\,400\,z^2-44\,951\,306\,400\,z-21\,070\,924\,875\right)J_0\left(2\sqrt{z}\right)-\right.
$$

$$
\sqrt{z}\,\left(65\,536\,z^8+21\,069\,824\,z^7+2\,082\,299\,904\,z^6+76\,206\,643\,200\,z^5+988\,832\,968\,704\,z^4+\right.
$$

$$
\left.\left.3\,560\,847\,640\,704\,z^3+1\,313\,898\,395\,040\,z^2-123\,616\,092\,600\,z-63\,212\,774\,625\right)J_1\left(2\sqrt{z}\right)\right)+
$$

$$
\pi\left(262\,144\,z^9+84\,344\,832\,z^8+8\,350\,138\,368\,z^7+306\,867\,585\,024\,z^6+4\,027\,637\,053\,440\,z^5+15\,103\,638\,950\,400\,z^4+\right.
$$

$$
\left.7\,551\,819\,475\,200\,z^3-809\,123\,515\,200\,z^2-151\,710\,659\,100\,z-63\,212\,774\,625\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-
$$

$$
\pi\left(262\,144\,z^9+84\,344\,832\,z^8+8\,350\,138\,368\,z^7+306\,867\,585\,024\,z^6+4\,027\,637\,053\,440\,z^5+15\,103\,638\,950\,400\,z^4+\right.
$$

$$
\left.\left.7\,551\,819\,475\,200\,z^3-809\,123\,515\,200\,z^2-151\,710\,659\,100\,z-63\,212\,774\,625\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)
$$

07.22.03.0579.01

$$
{}_1F_2\left(-\frac{11}{2};\, 2,\, 5;\, z\right) =
$$

$$
\frac{1}{29\,492\,271\,183\,375\,z^3}\left(32\left(2\,z\left(8192\,z^8-2\,785\,280\,z^7+293\,693\,952\,z^6-11\,632\,011\,264\,z^5+168\,068\,432\,160\,z^4-\right.\right.\right.
$$

$$
\left.\left.\left.733\,665\,794\,400\,z^3+589\,985\,896\,500\,z^2+5\,618\,913\,300\,z-4\,214\,184\,975\right)I_0\left(\sqrt{z}\right)^2+\right.
$$

$$
\sqrt{z}\,\left(-16\,384\,z^8+5\,558\,272\,z^7-583\,237\,632\,z^6+22\,832\,716\,032\,z^5-319\,625\,737\,920\,z^4+\right.
$$

$$
\left.1\,249\,201\,245\,600\,z^3-471\,988\,717\,200\,z^2-40\,737\,121\,425\,z+33\,713\,479\,800\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-
$$

$$
2\left(8192\,z^9-2\,781\,184\,z^8+292\,307\,456\,z^7-11\,487\,227\,904\,z^6+162\,464\,318\,496\,z^5-657\,523\,972\,080\,z^4+\right.
$$

$$
\left.\left.320\,490\,116\,100\,z^3+44\,951\,306\,400\,z^2-18\,261\,468\,225\,z+16\,856\,739\,900\right)I_1\left(\sqrt{z}\right)^2\right)\right)
$$

07.22.03.0580.01

$$
{}_1F_2\left(-\frac{11}{2};\, 2,\, 5;\, -z\right) =
$$

$$
\frac{1}{29\,492\,271\,183\,375\,z^3}\left(32\left(2\,z\left(8192\,z^8+2\,785\,280\,z^7+293\,693\,952\,z^6+11\,632\,011\,264\,z^5+168\,068\,432\,160\,z^4+\right.\right.\right.
$$

$$
\left.\left.\left.733\,665\,794\,400\,z^3+589\,985\,896\,500\,z^2-5\,618\,913\,300\,z-4\,214\,184\,975\right)J_0\left(\sqrt{z}\right)^2-\right.
$$

$$
\sqrt{z}\,\left(16\,384\,z^8+5\,558\,272\,z^7+583\,237\,632\,z^6+22\,832\,716\,032\,z^5+319\,625\,737\,920\,z^4+\right.
$$

$$
\left.1\,249\,201\,245\,600\,z^3+471\,988\,717\,200\,z^2-40\,737\,121\,425\,z-33\,713\,479\,800\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+
$$

$$
2\left(8192\,z^9+2\,781\,184\,z^8+292\,307\,456\,z^7+11\,487\,227\,904\,z^6+162\,464\,318\,496\,z^5+657\,523\,972\,080\,z^4+\right.
$$

$$
\left.\left.320\,490\,116\,100\,z^3-44\,951\,306\,400\,z^2-18\,261\,468\,225\,z-16\,856\,739\,900\right)J_1\left(\sqrt{z}\right)^2\right)\right)
$$

07.22.03.0581.01

$$
{}_1F_2\left(-\frac{11}{2};\, 2,\, \frac{11}{2};\, z\right) = \frac{1}{136\,031\,345\,049\,600\, z^4}
\left(4\left(2\, z\left(262\,144\, z^9 - 93\,782\,016\, z^8 + 10\,461\,052\,928\, z^7 - 440\,974\,295\,040\, z^6 + 6\,820\,431\,206\,400\, z^5 - 31\,810\,051\,146\,240\, z^4 + 25\,425\,205\,344\,000\, z^3 + 809\,123\,515\,200\, z^2 - 646\,175\,029\,500\, z + 737\,482\,370\,625\right) I_0\left(2\sqrt{z}\right) - \sqrt{z}\left(262\,144\, z^9 - 93\,650\,944\, z^8 + 10\,414\,391\,296\, z^7 - 435\,824\,640\,000\, z^6 + 6\,608\,685\,864\,960\, z^5 - 28\,742\,798\,292\,480\, z^4 + 13\,937\,150\,304\,000\, z^3 + 2\,067\,760\,094\,400\, z^2 - 1\,545\,201\,157\,500\, z + 2\,212\,447\,111\,875\right) I_1\left(2\sqrt{z}\right)\right) +
\pi\left(-1\,048\,576\, z^{10} + 374\,865\,920\, z^9 - 41\,750\,691\,840\, z^8 + 1\,753\,529\,057\,280\, z^7 - 26\,850\,913\,689\,600\, z^6 + 120\,829\,111\,603\,200\, z^5 - 75\,518\,194\,752\,000\, z^4 - 10\,788\,313\,536\,000\, z^3 + 3\,034\,213\,182\,000\, z^2 - 2\,528\,510\,985\,000\, z + 2\,212\,447\,111\,875\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) +
\pi\left(1\,048\,576\, z^{10} - 374\,865\,920\, z^9 + 41\,750\,691\,840\, z^8 - 1\,753\,529\,057\,280\, z^7 + 26\,850\,913\,689\,600\, z^6 - 120\,829\,111\,603\,200\, z^5 + 75\,518\,194\,752\,000\, z^4 + 10\,788\,313\,536\,000\, z^3 - 3\,034\,213\,182\,000\, z^2 + 2\,528\,510\,985\,000\, z - 2\,212\,447\,111\,875\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)
$$

07.22.03.0582.01

$$
{}_1F_2\left(-\frac{11}{2};\, 2,\, \frac{11}{2};\, -z\right) = \frac{1}{136\,031\,345\,049\,600\, z^4}
\left(4\left(2\, z\left(262\,144\, z^9 + 93\,782\,016\, z^8 + 10\,461\,052\,928\, z^7 + 440\,974\,295\,040\, z^6 + 6\,820\,431\,206\,400\, z^5 + 31\,810\,051\,146\,240\, z^4 + 25\,425\,205\,344\,000\, z^3 - 809\,123\,515\,200\, z^2 - 646\,175\,029\,500\, z - 737\,482\,370\,625\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(262\,144\, z^9 + 93\,650\,944\, z^8 + 10\,414\,391\,296\, z^7 + 435\,824\,640\,000\, z^6 + 6\,608\,685\,864\,960\, z^5 + 28\,742\,798\,292\,480\, z^4 + 13\,937\,150\,304\,000\, z^3 - 2\,067\,760\,094\,400\, z^2 - 1\,545\,201\,157\,500\, z - 2\,212\,447\,111\,875\right) J_1\left(2\sqrt{z}\right)\right) +
\pi\left(1\,048\,576\, z^{10} + 374\,865\,920\, z^9 + 41\,750\,691\,840\, z^8 + 1\,753\,529\,057\,280\, z^7 + 26\,850\,913\,689\,600\, z^6 + 120\,829\,111\,603\,200\, z^5 + 75\,518\,194\,752\,000\, z^4 - 10\,788\,313\,536\,000\, z^3 - 3\,034\,213\,182\,000\, z^2 - 2\,528\,510\,985\,000\, z - 2\,212\,447\,111\,875\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) -
\pi\left(1\,048\,576\, z^{10} + 374\,865\,920\, z^9 + 41\,750\,691\,840\, z^8 + 1\,753\,529\,057\,280\, z^7 + 26\,850\,913\,689\,600\, z^6 + 120\,829\,111\,603\,200\, z^5 + 75\,518\,194\,752\,000\, z^4 - 10\,788\,313\,536\,000\, z^3 - 3\,034\,213\,182\,000\, z^2 - 2\,528\,510\,985\,000\, z - 2\,212\,447\,111\,875\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)
$$

07.22.03.0583.01

$$
{}_1F_2\left(-\frac{11}{2};\, 2,\, 6;\, z\right) = \frac{1}{123\,867\,538\,970\,175\, z^4}
\left(32\left(2\, z\left(16\,384\, z^9 - 6\,156\,288\, z^8 + 725\,326\,848\, z^7 - 32\,534\,046\,720\, z^6 + 541\,202\,872\,896\, z^5 - 2\,768\,759\,476\,560\, z^4 + 2\,595\,937\,944\,600\, z^3 + 50\,570\,219\,700\, z^2 - 63\,212\,774\,625\, z + 101\,140\,439\,400\right) I_0\left(\sqrt{z}\right)^2 - 16\sqrt{z}\left(2048\, z^9 - 768\,000\, z^8 + 90\,092\,160\, z^7 - 4\,000\,034\,304\, z^6 + 64\,745\,758\,728\, z^5 - 301\,393\,794\,240\, z^4 + 147\,496\,474\,125\, z^3 + 21\,070\,924\,875\, z^2 - 25\,285\,109\,850\, z + 50\,570\,219\,700\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-32\,768\, z^{10} + 12\,296\,192\, z^9 - 1\,444\,521\,984\, z^8 + 64\,351\,899\,648\, z^7 - 1\,050\,922\,551\,168\, z^6 + 5\,040\,971\,294\,688\, z^5 - 3\,070\,153\,270\,800\, z^4 - 573\,129\,156\,600\, z^3 + 282\,350\,393\,325\, z^2 - 303\,421\,318\,200\, z + 809\,123\,515\,200\right) I_1\left(\sqrt{z}\right)^2\right)
$$

07.22.03.0584.01

$$ {}_1F_2\left(-\frac{11}{2}; 2, 6; -z\right) = \frac{1}{123\,867\,538\,970\,175\,z^4} \left(32\left(2\,z\left(16\,384\,z^9 + 6\,156\,288\,z^8 + 725\,326\,848\,z^7 + 32\,534\,046\,720\,z^6 + 541\,202\,872\,896\,z^5 + 2\,768\,759\,476\,560\,z^4 + 2\,595\,937\,944\,600\,z^3 - 50\,570\,219\,700\,z^2 - 63\,212\,774\,625\,z - 101\,140\,439\,400\right) J_0\left(\sqrt{z}\right)^2 - 16\sqrt{z}\left(2048\,z^9 + 768\,000\,z^8 + 90\,092\,160\,z^7 + 4\,000\,034\,304\,z^6 + 64\,745\,758\,728\,z^5 + 301\,393\,794\,240\,z^4 + 147\,496\,474\,125\,z^3 - 21\,070\,924\,875\,z^2 - 25\,285\,109\,850\,z - 50\,570\,219\,700\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(32\,768\,z^{10} + 12\,296\,192\,z^9 + 1\,444\,521\,984\,z^8 + 64\,351\,899\,648\,z^7 + 1\,050\,922\,551\,168\,z^6 + 5\,040\,971\,294\,688\,z^5 + 3\,070\,153\,270\,800\,z^4 - 573\,129\,156\,600\,z^3 - 282\,350\,393\,325\,z^2 - 303\,421\,318\,200\,z - 809\,123\,515\,200\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

For fixed z and $a_1 = -\frac{11}{2}$, $b_1 = \frac{5}{2}$

07.22.03.0585.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{5}{2}, \frac{5}{2}; z\right) = \frac{1}{1\,445\,068\,800\,z^{3/2}} \left(-2\sqrt{z}\left(16\,z^6 - 4304\,z^5 + 347\,140\,z^4 - 10\,018\,752\,z^3 + 97\,255\,368\,z^2 - 236\,089\,980\,z + 33\,960\,465\right)\cosh\left(2\sqrt{z}\right) + \left(-16\,z^6 + 4288\,z^5 - 342\,924\,z^4 + 9\,694\,272\,z^3 - 88\,893\,000\,z^2 + 176\,631\,840\,z + 7\,765\,065\right)\sinh\left(2\sqrt{z}\right) + 8\left(8\,z^7 - 2156\,z^6 + 174\,636\,z^5 - 5\,093\,550\,z^4 + 50\,935\,500\,z^3 - 137\,525\,850\,z^2 + 45\,841\,950\,z + 3\,274\,425\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.0586.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{5}{2}, \frac{5}{2}; -z\right) = \frac{1}{1\,445\,068\,800\,z^{3/2}} \left(2\sqrt{z}\left(16\,z^6 + 4304\,z^5 + 347\,140\,z^4 + 10\,018\,752\,z^3 + 97\,255\,368\,z^2 + 236\,089\,980\,z + 33\,960\,465\right)\cos\left(2\sqrt{z}\right) + \left(16\,z^6 + 4288\,z^5 + 342\,924\,z^4 + 9\,694\,272\,z^3 + 88\,893\,000\,z^2 + 176\,631\,840\,z - 7\,765\,065\right)\sin\left(2\sqrt{z}\right) + 8\left(8\,z^7 + 2156\,z^6 + 174\,636\,z^5 + 5\,093\,550\,z^4 + 50\,935\,500\,z^3 + 137\,525\,850\,z^2 + 45\,841\,950\,z - 3\,274\,425\right)\mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.0587.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{5}{2}, 3; z\right) = \frac{1}{435\,891\,456\,000\,z^{3/2}} \left(4\left(2\sqrt{z}\left(4096\,z^7 - 1\,183\,744\,z^6 + 104\,078\,592\,z^5 - 3\,355\,453\,440\,z^4 + 38\,273\,200\,560\,z^3 - 126\,803\,804\,400\,z^2 + 73\,448\,627\,175\,z + 1\,676\,505\,600\right) I_0\left(2\sqrt{z}\right) - \left(4096\,z^7 - 1\,181\,696\,z^6 + 103\,490\,304\,z^5 - 3\,304\,431\,360\,z^4 + 36\,681\,387\,120\,z^3 - 110\,187\,793\,800\,z^2 + 32\,577\,254\,325\,z + 3\,353\,011\,200\right) I_1\left(2\sqrt{z}\right)\right) - \pi\sqrt{z}\left(16\,384\,z^7 - 4\,730\,880\,z^6 + 415\,134\,720\,z^5 - 13\,318\,905\,600\,z^4 + 149\,837\,688\,000\,z^3 - 471\,988\,717\,200\,z^2 + 196\,661\,965\,500\,z + 21\,070\,924\,875\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\sqrt{z}\left(16\,384\,z^7 - 4\,730\,880\,z^6 + 415\,134\,720\,z^5 - 13\,318\,905\,600\,z^4 + 149\,837\,688\,000\,z^3 - 471\,988\,717\,200\,z^2 + 196\,661\,965\,500\,z + 21\,070\,924\,875\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0588.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{5}{2}, 3; -z\right) = \frac{1}{435\,891\,456\,000\, z^{3/2}} \left(4\left(2\sqrt{z}\,\left(4096 z^7 + 1\,183\,744 z^6 + 104\,078\,592 z^5 + 3\,355\,453\,440 z^4 + 38\,273\,200\,560 z^3 + 126\,803\,804\,400 z^2 + 73\,448\,627\,175 z - 1\,676\,505\,600\right) J_0\left(2\sqrt{z}\right) - \left(4096 z^7 + 1\,181\,696 z^6 + 103\,490\,304 z^5 + 3\,304\,431\,360 z^4 + 36\,681\,387\,120 z^3 + 110\,187\,793\,800 z^2 + 32\,577\,254\,325 z - 3\,353\,011\,200\right) J_1\left(2\sqrt{z}\right)\right) + \pi\sqrt{z}\,\left(16\,384 z^7 + 4\,730\,880 z^6 + 415\,134\,720 z^5 + 13\,318\,905\,600 z^4 + 149\,837\,688\,000 z^3 + 471\,988\,717\,200 z^2 + 196\,661\,965\,500 z - 21\,070\,924\,875\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\sqrt{z}\,\left(16\,384 z^7 + 4\,730\,880 z^6 + 415\,134\,720 z^5 + 13\,318\,905\,600 z^4 + 149\,837\,688\,000 z^3 + 471\,988\,717\,200 z^2 + 196\,661\,965\,500 z - 21\,070\,924\,875\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0589.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{5}{2}, \frac{7}{2}; z\right) = \frac{1}{2\,312\,110\,080\, z^{5/2}} \left(-2\sqrt{z}\,\left(8 z^7 - 2460 z^6 + 231\,628 z^5 - 8\,036\,862 z^4 + 98\,118\,972 z^3 - 325\,764\,810 z^2 + 89\,999\,910 z + 9\,823\,275\right) \cosh\left(2\sqrt{z}\right) + \left(-8 z^7 + 2452 z^6 - 229\,212 z^5 + 7\,818\,258 z^4 - 91\,210\,140 z^3 + 259\,895\,790 z^2 - 1\,683\,990 z + 9\,823\,275\right) \sinh\left(2\sqrt{z}\right) + 32 z \left(z^7 - 308 z^6 + 29\,106 z^5 - 1\,018\,710 z^4 + 12\,733\,875 z^3 - 45\,841\,950 z^2 + 22\,920\,975 z + 3\,274\,425\right) \mathrm{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.0590.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{5}{2}, \frac{7}{2}; -z\right) = \frac{1}{2\,312\,110\,080\, z^{5/2}} \left(2\sqrt{z}\,\left(8 z^7 + 2460 z^6 + 231\,628 z^5 + 8\,036\,862 z^4 + 98\,118\,972 z^3 + 325\,764\,810 z^2 + 89\,999\,910 z - 9\,823\,275\right) \cos\left(2\sqrt{z}\right) + \left(8 z^7 + 2452 z^6 + 229\,212 z^5 + 7\,818\,258 z^4 + 91\,210\,140 z^3 + 259\,895\,790 z^2 + 1\,683\,990 z + 9\,823\,275\right) \sin\left(2\sqrt{z}\right) + 32 z \left(z^7 + 308 z^6 + 29\,106 z^5 + 1\,018\,710 z^4 + 12\,733\,875 z^3 + 45\,841\,950 z^2 + 22\,920\,975 z - 3\,274\,425\right) \mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.0591.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{5}{2}, 4; z\right) = \frac{1}{1\,235\,025\,792\,000\, z^{5/2}} \left(-\pi\left(16\,384 z^7 - 5\,361\,664 z^6 + 542\,868\,480 z^5 - 20\,583\,763\,200 z^4 + 283\,026\,744\,000 z^3 - 1\,146\,258\,313\,200 z^2 + 668\,650\,682\,700 z + 119\,401\,907\,625\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{3/2} + \pi\left(16\,384 z^7 - 5\,361\,664 z^6 + 542\,868\,480 z^5 - 20\,583\,763\,200 z^4 + 283\,026\,744\,000 z^3 - 1\,146\,258\,313\,200 z^2 + 668\,650\,682\,700 z + 119\,401\,907\,625\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{3/2} + 4\left(2\sqrt{z}\,\left(4096 z^8 - 1\,341\,440 z^7 + 136\,051\,456 z^6 - 5\,179\,621\,632 z^5 + 72\,018\,641\,520 z^4 - 303\,376\,462\,200 z^3 + 228\,440\,260\,125 z^2 + 13\,412\,044\,800 z - 1\,676\,505\,600\right) I_0\left(2\sqrt{z}\right) + \left(-4096 z^8 + 1\,339\,392 z^7 - 135\,384\,320 z^6 + 5\,112\,751\,104 z^5 - 69\,542\,005\,680 z^4 + 271\,347\,022\,800 z^3 - 122\,014\,898\,775 z^2 - 25\,147\,584\,000 z + 3\,353\,011\,200\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0592.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{5}{2}, 4; -z\right) = \frac{1}{1\,235\,025\,792\,000\,z^{5/2}} \left(\pi \left(16\,384\,z^7 + 5\,361\,664\,z^6 + 542\,868\,480\,z^5 + 20\,583\,763\,200\,z^4 + 283\,026\,744\,000\,z^3 + 1\,146\,258\,313\,200\,z^2 + 668\,650\,682\,700\,z - 119\,401\,907\,625\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{3/2} - \pi \left(16\,384\,z^7 + 5\,361\,664\,z^6 + 542\,868\,480\,z^5 + 20\,583\,763\,200\,z^4 + 283\,026\,744\,000\,z^3 + 1\,146\,258\,313\,200\,z^2 + 668\,650\,682\,700\,z - 119\,401\,907\,625\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{3/2} + 4\left(2\sqrt{z}\,\left(4096\,z^8 + 1\,341\,440\,z^7 + 136\,051\,456\,z^6 + 5\,179\,621\,632\,z^5 + 72\,018\,641\,520\,z^4 + 303\,376\,462\,200\,z^3 + 228\,440\,260\,125\,z^2 - 13\,412\,044\,800\,z - 1\,676\,505\,600\right) J_0\left(2\sqrt{z}\right) - \left(4096\,z^8 + 1\,339\,392\,z^7 + 135\,384\,320\,z^6 + 5\,112\,751\,104\,z^5 + 69\,542\,005\,680\,z^4 + 271\,347\,022\,800\,z^3 + 122\,014\,898\,775\,z^2 - 25\,147\,584\,000\,z - 3\,353\,011\,200\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0593.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{5}{2}, \frac{9}{2}; z\right) = \frac{1}{11\,890\,851\,840\,z^{7/2}} \left(32\left(2\,z^7 - 693\,z^6 + 74\,844\,z^5 - 3\,056\,130\,z^4 + 45\,841\,950\,z^3 - 206\,288\,775\,z^2 + 137\,525\,850\,z + 29\,469\,825\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^2 - 2\left(16\,z^8 - 5536\,z^7 + 596\,004\,z^6 - 24\,157\,800\,z^5 + 355\,349\,358\,z^4 - 1\,497\,696\,480\,z^3 + 626\,631\,390\,z^2 + 144\,074\,700\,z - 49\,116\,375\right) \cosh\left(2\sqrt{z}\right) \sqrt{z} + \left(-16\,z^8 + 5520\,z^7 - 590\,556\,z^6 + 23\,591\,232\,z^5 - 334\,138\,770\,z^4 + 1\,243\,657\,800\,z^3 - 106\,839\,810\,z^2 + 78\,586\,200\,z - 49\,116\,375\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0594.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{5}{2}, \frac{9}{2}; -z\right) = \frac{1}{11\,890\,851\,840\,z^{7/2}} \left(32\left(2\,z^7 + 693\,z^6 + 74\,844\,z^5 + 3\,056\,130\,z^4 + 45\,841\,950\,z^3 + 206\,288\,775\,z^2 + 137\,525\,850\,z - 29\,469\,825\right) \mathrm{Si}\left(2\sqrt{z}\right) z^2 + 2\left(16\,z^8 + 5536\,z^7 + 596\,004\,z^6 + 24\,157\,800\,z^5 + 355\,349\,358\,z^4 + 1\,497\,696\,480\,z^3 + 626\,631\,390\,z^2 - 144\,074\,700\,z - 49\,116\,375\right) \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(16\,z^8 + 5520\,z^7 + 590\,556\,z^6 + 23\,591\,232\,z^5 + 334\,138\,770\,z^4 + 1\,243\,657\,800\,z^3 + 106\,839\,810\,z^2 + 78\,586\,200\,z + 49\,116\,375\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0595.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{5}{2}, 5; z\right) = \frac{1}{2\,933\,186\,256\,000\,z^{7/2}} \left(-\pi \left(16\,384\,z^7 - 5\,992\,448\,z^6 + 687\,633\,408\,z^5 - 30\,083\,961\,600\,z^4 + 488\,864\,376\,000\,z^3 - 2\,419\,878\,661\,200\,z^2 + 1\,814\,908\,995\,900\,z + 453\,727\,248\,975\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{5/2} + \pi \left(16\,384\,z^7 - 5\,992\,448\,z^6 + 687\,633\,408\,z^5 - 30\,083\,961\,600\,z^4 + 488\,864\,376\,000\,z^3 - 2\,419\,878\,661\,200\,z^2 + 1\,814\,908\,995\,900\,z + 453\,727\,248\,975\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{5/2} + 4\left(2\sqrt{z}\,\left(4096\,z^9 - 1\,499\,136\,z^8 + 172\,282\,112\,z^7 - 7\,563\,689\,472\,z^6 + 124\,065\,136\,944\,z^5 - 634\,225\,556\,160\,z^4 + 586\,420\,047\,675\,z^3 + 60\,354\,201\,600\,z^2 - 12\,154\,665\,600\,z + 7\,544\,275\,200\right) I_0\left(2\sqrt{z}\right) - \left(4096\,z^9 - 1\,497\,088\,z^8 + 171\,536\,128\,z^7 - 7\,478\,841\,600\,z^6 + 120\,427\,454\,448\,z^5 - 578\,102\,779\,800\,z^4 + 350\,995\,439\,025\,z^3 + 107\,296\,358\,400\,z^2 - 16\,765\,056\,000\,z + 15\,088\,550\,400\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0596.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{5}{2}, 5; -z\right) = \frac{1}{2\,933\,186\,256\,000\, z^{7/2}} \left(\pi \left(16\,384\, z^7 + 5\,992\,448\, z^6 + 687\,633\,408\, z^5 + 30\,083\,961\,600\, z^4 + 488\,864\,376\,000\, z^3 + 2\,419\,878\,661\,200\, z^2 + 1\,814\,908\,995\,900\, z - 453\,727\,248\,975\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{5/2} - \pi \left(16\,384\, z^7 + 5\,992\,448\, z^6 + 687\,633\,408\, z^5 + 30\,083\,961\,600\, z^4 + 488\,864\,376\,000\, z^3 + 2\,419\,878\,661\,200\, z^2 + 1\,814\,908\,995\,900\, z - 453\,727\,248\,975\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{5/2} + 4\left(2\sqrt{z}\, \left(4096\, z^9 + 1\,499\,136\, z^8 + 172\,282\,112\, z^7 + 7\,563\,689\,472\, z^6 + 124\,065\,136\,944\, z^5 + 634\,225\,556\,160\, z^4 + 586\,420\,047\,675\, z^3 - 60\,354\,201\,600\, z^2 - 12\,154\,665\,600\, z - 7\,544\,275\,200\right) J_0\left(2\sqrt{z}\right) - \left(4096\, z^9 + 1\,497\,088\, z^8 + 171\,536\,128\, z^7 + 7\,478\,841\,600\, z^6 + 120\,427\,454\,448\, z^5 + 578\,102\,779\,800\, z^4 + 350\,995\,439\,025\, z^3 - 107\,296\,358\,400\, z^2 - 16\,765\,056\,000\, z - 15\,088\,550\,400\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0597.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{5}{2}, \frac{11}{2}; z\right) = \frac{1}{26\,424\,115\,200\, z^{9/2}} \left(32\left(2\, z^7 - 770\, z^6 + 93\,555\, z^5 - 4\,365\,900\, z^4 + 76\,403\,250\, z^3 - 412\,577\,550\, z^2 + 343\,814\,625\, z + 98\,232\,750\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^3 - 2\left(16\, z^9 - 6152\, z^8 + 745\,384\, z^7 - 34\,562\,040\, z^6 + 594\,818\,280\, z^5 - 3\,039\,891\,750\, z^4 + 1\,722\,035\,700\, z^3 - 602\,494\,200\, z^2 - 261\,954\,000\, z + 343\,814\,625\right) \cosh\left(2\sqrt{z}\right) \sqrt{z} + \left(-16\, z^9 + 6136\, z^8 - 739\,320\, z^7 + 33\,849\,480\, z^6 - 563\,986\,080\, z^5 + 2\,594\,903\,850\, z^4 - 478\,377\,900\, z^3 + 130\,977\,000\, z^2 + 196\,465\,500\, z + 343\,814\,625\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0598.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{5}{2}, \frac{11}{2}; -z\right) = \frac{1}{26\,424\,115\,200\, z^{9/2}} \left(32\left(2\, z^7 + 770\, z^6 + 93\,555\, z^5 + 4\,365\,900\, z^4 + 76\,403\,250\, z^3 + 412\,577\,550\, z^2 + 343\,814\,625\, z - 98\,232\,750\right) \mathrm{Si}\left(2\sqrt{z}\right) z^3 + 2\left(16\, z^9 + 6152\, z^8 + 745\,384\, z^7 + 34\,562\,040\, z^6 + 594\,818\,280\, z^5 + 3\,039\,891\,750\, z^4 + 1\,722\,035\,700\, z^3 - 602\,494\,200\, z^2 - 261\,954\,000\, z - 343\,814\,625\right) \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(16\, z^9 + 6136\, z^8 + 739\,320\, z^7 + 33\,849\,480\, z^6 + 563\,986\,080\, z^5 + 2\,594\,903\,850\, z^4 + 478\,377\,900\, z^3 + 130\,977\,000\, z^2 - 196\,465\,500\, z + 343\,814\,625\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0599.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{5}{2}, 6; z\right) = \frac{1}{6\,159\,691\,137\,600\, z^{9/2}} \left(-\pi \left(16\,384\, z^7 - 6\,623\,232\, z^6 + 849\,429\,504\, z^5 - 42\,117\,546\,240\, z^4 + 789\,703\,992\,000\, z^3 - 4\,619\,768\,353\,200\, z^2 + 4\,234\,787\,657\,100\, z + 1\,361\,181\,746\,925\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{7/2} + \pi \left(16\,384\, z^7 - 6\,623\,232\, z^6 + 849\,429\,504\, z^5 - 42\,117\,546\,240\, z^4 + 789\,703\,992\,000\, z^3 - 4\,619\,768\,353\,200\, z^2 + 4\,234\,787\,657\,100\, z + 1\,361\,181\,746\,925\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{7/2} + 4\left(2\sqrt{z}\, \left(4096\, z^{10} - 1\,656\,832\, z^9 + 212\,770\,560\, z^8 - 10\,582\,168\,320\, z^7 + 200\,019\,666\,672\, z^6 - 1\,202\,463\,851\,400\, z^5 + 1\,316\,662\,664\,625\, z^4 + 201\,180\,672\,000\, z^3 - 50\,295\,168\,000\, z^2 + 41\,493\,513\,600\, z - 75\,442\,752\,000\right) I_0\left(2\sqrt{z}\right) + \left(-4096\, z^{10} + 1\,654\,784\, z^9 - 211\,945\,728\, z^8 + 10\,477\,214\,208\, z^7 - 194\,907\,457\,584\, z^6 + 1\,110\,829\,537\,440\, z^5 - 851\,805\,645\,075\, z^4 - 342\,007\,142\,400\, z^3 + 46\,523\,030\,400\, z^2 - 7\,544\,275\,200\, z + 150\,885\,504\,000\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0600.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{5}{2}, 6; -z\right) = \frac{1}{6\,159\,691\,137\,600\, z^{9/2}} \left(\pi \left(16\,384\, z^7 + 6\,623\,232\, z^6 + 849\,429\,504\, z^5 + 42\,117\,546\,240\, z^4 + 789\,703\,992\,000\, z^3 + 4\,619\,768\,353\,200\, z^2 + 4\,234\,787\,657\,100\, z - 1\,361\,181\,746\,925\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{7/2} - \pi \left(16\,384\, z^7 + 6\,623\,232\, z^6 + 849\,429\,504\, z^5 + 42\,117\,546\,240\, z^4 + 789\,703\,992\,000\, z^3 + 4\,619\,768\,353\,200\, z^2 + 4\,234\,787\,657\,100\, z - 1\,361\,181\,746\,925\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{7/2} + 4\left(2\sqrt{z}\, \left(4096\, z^{10} + 1\,656\,832\, z^9 + 212\,770\,560\, z^8 + 10\,582\,168\,320\, z^7 + 200\,019\,666\,672\, z^6 + 1\,202\,463\,851\,400\, z^5 + 1\,316\,662\,664\,625\, z^4 - 201\,180\,672\,000\, z^3 - 50\,295\,168\,000\, z^2 - 41\,493\,513\,600\, z - 75\,442\,752\,000\right) J_0\left(2\sqrt{z}\right) - \left(4096\, z^{10} + 1\,654\,784\, z^9 + 211\,945\,728\, z^8 + 10\,477\,214\,208\, z^7 + 194\,907\,457\,584\, z^6 + 1\,110\,829\,537\,440\, z^5 + 851\,805\,645\,075\, z^4 - 342\,007\,142\,400\, z^3 - 46\,523\,030\,400\, z^2 - 7\,544\,275\,200\, z - 150\,885\,504\,000\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{11}{2}$, $b_1 = 3$

07.22.03.0601.01

$$ {}_1F_2\left(-\frac{11}{2}; 3, 3; z\right) = \frac{1}{4\,108\,830\,350\,625\, z^{3/2}} \left(8\left(\sqrt{z}\, \left(16\,384\, z^7 - 5\,074\,944\, z^6 + 483\,747\,840\, z^5 - 17\,184\,326\,400\, z^4 + 221\,439\,614\,400\, z^3 - 866\,349\,237\,600\, z^2 + 652\,968\,993\,600\, z + 21\,070\,924\,875\right) I_0\left(\sqrt{z}\right)^2 - 2\left(8192\, z^7 - 2\,531\,328\, z^6 + 239\,984\,640\, z^5 - 8\,414\,956\,800\, z^4 + 104\,659\,192\,800\, z^3 - 362\,484\,460\,800\, z^2 + 125\,966\,194\,200\, z + 21\,070\,924\,875\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \sqrt{z}\, \left(16\,384\, z^7 - 5\,066\,752\, z^6 + 481\,222\,656\, z^5 - 16\,946\,208\,000\, z^4 + 213\,195\,038\,400\, z^3 - 767\,160\,655\,200\, z^2 + 344\,484\,478\,800\, z + 64\,131\,484\,725\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0602.01

$$ {}_1F_2\left(-\frac{11}{2}; 3, 3; -z\right) = \frac{1}{4\,108\,830\,350\,625\,z^{3/2}}\left(8\left(\sqrt{z}\,\left(16\,384\,z^7 + 5\,074\,944\,z^6 + 483\,747\,840\,z^5 + 17\,184\,326\,400\,z^4 + 221\,439\,614\,400\,z^3 + 866\,349\,237\,600\,z^2 + 652\,968\,993\,600\,z - 21\,070\,924\,875\right) J_0\left(\sqrt{z}\right)^2 - 2\left(8192\,z^7 + 2\,531\,328\,z^6 + 239\,984\,640\,z^5 + 8\,414\,956\,800\,z^4 + 104\,659\,192\,800\,z^3 + 362\,484\,460\,800\,z^2 + 125\,966\,194\,200\,z - 21\,070\,924\,875\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\,\left(16\,384\,z^7 + 5\,066\,752\,z^6 + 481\,222\,656\,z^5 + 16\,946\,208\,000\,z^4 + 213\,195\,038\,400\,z^3 + 767\,160\,655\,200\,z^2 + 344\,484\,478\,800\,z - 64\,131\,484\,725\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0603.01

$$ {}_1F_2\left(-\frac{11}{2}; 3, \frac{7}{2}; z\right) = \frac{1}{5\,579\,410\,636\,800\,z^2}\left(4\left(2\,z\left(16\,384\,z^7 - 5\,410\,816\,z^6 + 554\,861\,568\,z^5 - 21\,447\,624\,960\,z^4 + 304\,902\,855\,360\,z^3 - 1\,329\,917\,263\,920\,z^2 + 1\,057\,180\,855\,500\,z + 86\,225\,433\,525\right) I_0\left(2\sqrt{z}\right) - \sqrt{z}\,\left(16\,384\,z^7 - 5\,402\,624\,z^6 + 552\,170\,496\,z^5 - 21\,174\,854\,400\,z^4 + 294\,640\,862\,400\,z^3 - 1\,193\,977\,365\,840\,z^2 + 585\,192\,138\,300\,z + 151\,379\,942\,175\right) I_1\left(2\sqrt{z}\right)\right) - \pi\left(65\,536\,z^8 - 21\,626\,880\,z^7 + 2\,214\,051\,840\,z^6 - 85\,240\,995\,840\,z^5 + 1\,198\,701\,504\,000\,z^4 - 5\,034\,546\,316\,800\,z^3 + 3\,146\,591\,448\,000\,z^2 + 674\,269\,596\,000\,z + 63\,212\,774\,625\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(65\,536\,z^8 - 21\,626\,880\,z^7 + 2\,214\,051\,840\,z^6 - 85\,240\,995\,840\,z^5 + 1\,198\,701\,504\,000\,z^4 - 5\,034\,546\,316\,800\,z^3 + 3\,146\,591\,448\,000\,z^2 + 674\,269\,596\,000\,z + 63\,212\,774\,625\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0604.01

$$ {}_1F_2\left(-\frac{11}{2}; 3, \frac{7}{2}; -z\right) = \frac{1}{5\,579\,410\,636\,800\,z^2}\left(4\left(2\,z\left(16\,384\,z^7 + 5\,410\,816\,z^6 + 554\,861\,568\,z^5 + 21\,447\,624\,960\,z^4 + 304\,902\,855\,360\,z^3 + 1\,329\,917\,263\,920\,z^2 + 1\,057\,180\,855\,500\,z - 86\,225\,433\,525\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\,\left(16\,384\,z^7 + 5\,402\,624\,z^6 + 552\,170\,496\,z^5 + 21\,174\,854\,400\,z^4 + 294\,640\,862\,400\,z^3 + 1\,193\,977\,365\,840\,z^2 + 585\,192\,138\,300\,z - 151\,379\,942\,175\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(65\,536\,z^8 + 21\,626\,880\,z^7 + 2\,214\,051\,840\,z^6 + 85\,240\,995\,840\,z^5 + 1\,198\,701\,504\,000\,z^4 + 5\,034\,546\,316\,800\,z^3 + 3\,146\,591\,448\,000\,z^2 - 674\,269\,596\,000\,z + 63\,212\,774\,625\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(65\,536\,z^8 + 21\,626\,880\,z^7 + 2\,214\,051\,840\,z^6 + 85\,240\,995\,840\,z^5 + 1\,198\,701\,504\,000\,z^4 + 5\,034\,546\,316\,800\,z^3 + 3\,146\,591\,448\,000\,z^2 - 674\,269\,596\,000\,z + 63\,212\,774\,625\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0605.01

$$
{}_1F_2\left(-\frac{11}{2};\,3,\,4;\,z\right)=
\frac{1}{23\,283\,371\,986\,875\,z^2}\left(16\left(8\,z\left(2048\,z^7-718\,848\,z^6+79\,032\,960\,z^5-3\,314\,419\,200\,z^4+52\,022\,190\,600\,z^3-\right.\right.\right.
$$
$$
\left.\left.258\,121\,987\,200\,z^2+251\,290\,133\,325\,z+21\,070\,924\,875\right)I_0\left(\sqrt{z}\right)^2-
$$
$$
\sqrt{z}\left(16\,384\,z^7-5\,738\,496\,z^6+627\,978\,240\,z^5-26\,050\,694\,400\,z^4+397\,301\,803\,200\,z^3-\right.
$$
$$
\left.1\,791\,870\,141\,600\,z^2+961\,453\,508\,400\,z+316\,063\,873\,125\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-
$$
$$
2\left(8192\,z^8-2\,871\,296\,z^7+314\,700\,288\,z^6-13\,101\,742\,080\,z^5+201\,688\,365\,600\,z^4-\right.
$$
$$
\left.\left.\left.937\,488\,416\,400\,z^3+611\,847\,828\,900\,z^2+193\,542\,841\,800\,z+21\,070\,924\,875\right)I_1\left(\sqrt{z}\right)^2\right)\right)
$$

07.22.03.0606.01

$$
{}_1F_2\left(-\frac{11}{2};\,3,\,4;\,-z\right)=
\frac{1}{23\,283\,371\,986\,875\,z^2}\left(16\left(8\,z\left(2048\,z^7+718\,848\,z^6+79\,032\,960\,z^5+3\,314\,419\,200\,z^4+52\,022\,190\,600\,z^3+\right.\right.\right.
$$
$$
\left.\left.258\,121\,987\,200\,z^2+251\,290\,133\,325\,z-21\,070\,924\,875\right)J_0\left(\sqrt{z}\right)^2-
$$
$$
\sqrt{z}\left(16\,384\,z^7+5\,738\,496\,z^6+627\,978\,240\,z^5+26\,050\,694\,400\,z^4+397\,301\,803\,200\,z^3+\right.
$$
$$
\left.1\,791\,870\,141\,600\,z^2+961\,453\,508\,400\,z-316\,063\,873\,125\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+
$$
$$
2\left(8192\,z^8+2\,871\,296\,z^7+314\,700\,288\,z^6+13\,101\,742\,080\,z^5+201\,688\,365\,600\,z^4+\right.
$$
$$
\left.\left.\left.937\,488\,416\,400\,z^3+611\,847\,828\,900\,z^2-193\,542\,841\,800\,z+21\,070\,924\,875\right)J_1\left(\sqrt{z}\right)^2\right)\right)
$$

07.22.03.0607.01

$$
{}_1F_2\left(-\frac{11}{2};\,3,\,\frac{9}{2};\,z\right)=
\frac{1}{57\,388\,223\,692\,800\,z^3}\left(4\left(2\,z\left(65\,536\,z^8-24\,346\,624\,z^7+2\,852\,708\,352\,z^6-128\,568\,637\,440\,z^5+2\,189\,111\,040\,000\,z^4-\right.\right.\right.
$$
$$
\left.\left.11\,845\,029\,064\,320\,z^3+11\,941\,734\,420\,000\,z^2+1\,844\,653\,872\,600\,z+105\,354\,624\,375\right)I_0\left(2\sqrt{z}\right)-
$$
$$
\sqrt{z}\left(65\,536\,z^8-24\,313\,856\,z^7+2\,840\,592\,384\,z^6-127\,163\,289\,600\,z^5+2\,127\,215\,854\,080\,z^4-\right.
$$
$$
\left.\left.10\,851\,218\,576\,640\,z^3+7\,475\,119\,344\,000\,z^2+3\,015\,038\,149\,200\,z+316\,063\,873\,125\right)I_1\left(2\sqrt{z}\right)\right)-
$$
$$
\pi\left(262\,144\,z^9-97\,320\,960\,z^8+11\,386\,552\,320\,z^7-511\,445\,975\,040\,z^6+8\,630\,650\,828\,800\,z^5-45\,310\,916\,851\,200\,z^4+\right.
$$
$$
\left.37\,759\,097\,376\,000\,z^3+12\,136\,852\,728\,000\,z^2+2\,275\,659\,886\,500\,z-316\,063\,873\,125\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+
$$
$$
\pi\left(262\,144\,z^9-97\,320\,960\,z^8+11\,386\,552\,320\,z^7-511\,445\,975\,040\,z^6+8\,630\,650\,828\,800\,z^5-45\,310\,916\,851\,200\,z^4+\right.
$$
$$
\left.\left.37\,759\,097\,376\,000\,z^3+12\,136\,852\,728\,000\,z^2+2\,275\,659\,886\,500\,z-316\,063\,873\,125\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)
$$

07.22.03.0608.01

$$
{}_1F_2\left(-\frac{11}{2};\, 3,\, \frac{9}{2};\, -z\right) =
\frac{1}{57\,388\,223\,692\,800\, z^3}\left(4\left(2\, z\left(65\,536\, z^8 + 24\,346\,624\, z^7 + 2\,852\,708\,352\, z^6 + 128\,568\,637\,440\, z^5 + 2\,189\,111\,040\,000\, z^4 + 11\,845\,029\,064\,320\, z^3 + 11\,941\,734\,420\,000\, z^2 - 1\,844\,653\,872\,600\, z + 105\,354\,624\,375\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(65\,536\, z^8 + 24\,313\,856\, z^7 + 2\,840\,592\,384\, z^6 + 127\,163\,289\,600\, z^5 + 2\,127\,215\,854\,080\, z^4 + 10\,851\,218\,576\,640\, z^3 + 7\,475\,119\,344\,000\, z^2 - 3\,015\,038\,149\,200\, z + 316\,063\,873\,125\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(262\,144\, z^9 + 97\,320\,960\, z^8 + 11\,386\,552\,320\, z^7 + 511\,445\,975\,040\, z^6 + 8\,630\,650\,828\,800\, z^5 + 45\,310\,916\,851\,200\, z^4 + 37\,759\,097\,376\,000\, z^3 - 12\,136\,852\,728\,000\, z^2 + 2\,275\,659\,886\,500\, z + 316\,063\,873\,125\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(262\,144\, z^9 + 97\,320\,960\, z^8 + 11\,386\,552\,320\, z^7 + 511\,445\,975\,040\, z^6 + 8\,630\,650\,828\,800\, z^5 + 45\,310\,916\,851\,200\, z^4 + 37\,759\,097\,376\,000\, z^3 - 12\,136\,852\,728\,000\, z^2 + 2\,275\,659\,886\,500\, z + 316\,063\,873\,125\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\Big)
$$

07.22.03.0609.01

$$
{}_1F_2\left(-\frac{11}{2};\, 3,\, 5;\, z\right) =
\frac{1}{442\,384\,067\,750\,625\, z^3}\left(64\left(z\left(32\,768\, z^8 - 12\,853\,248\, z^7 + 1\,601\,095\,680\, z^6 - 77\,415\,690\,240\, z^5 + 1\,432\,660\,003\,200\, z^4 - 8\,612\,284\,111\,200\, z^3 + 10\,248\,261\,685\,200\, z^2 + 1\,517\,106\,591\,000\, z + 63\,212\,774\,625\right) I_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(8192\, z^8 - 3\,207\,168\, z^7 + 397\,877\,760\, z^6 - 19\,059\,056\,640\, z^5 + 344\,293\,524\,000\, z^4 - 1\,913\,439\,250\,800\, z^3 + 1\,398\,473\,237\,700\, z^2 + 674\,269\,596\,000\, z + 63\,212\,774\,625\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - 4\left(8192\, z^9 - 3\,209\,216\, z^8 + 398\,673\,408\, z^7 - 19\,156\,170\,240\, z^6 + 348\,778\,542\,240\, z^5 - 1\,987\,355\,082\,600\, z^4 + 1\,704\,439\,251\,900\, z^3 + 750\,761\,099\,550\, z^2 + 168\,567\,399\,000\, z - 63\,212\,774\,625\right) I_1\left(\sqrt{z}\right)^2\Big)\Big)
$$

07.22.03.0610.01

$$
{}_1F_2\left(-\frac{11}{2};\, 3,\, 5;\, -z\right) =
\frac{1}{442\,384\,067\,750\,625\, z^3}\left(64\left(z\left(32\,768\, z^8 + 12\,853\,248\, z^7 + 1\,601\,095\,680\, z^6 + 77\,415\,690\,240\, z^5 + 1\,432\,660\,003\,200\, z^4 + 8\,612\,284\,111\,200\, z^3 + 10\,248\,261\,685\,200\, z^2 - 1\,517\,106\,591\,000\, z + 63\,212\,774\,625\right) J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(8192\, z^8 + 3\,207\,168\, z^7 + 397\,877\,760\, z^6 + 19\,059\,056\,640\, z^5 + 344\,293\,524\,000\, z^4 + 1\,913\,439\,250\,800\, z^3 + 1\,398\,473\,237\,700\, z^2 - 674\,269\,596\,000\, z + 63\,212\,774\,625\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + 4\left(8192\, z^9 + 3\,209\,216\, z^8 + 398\,673\,408\, z^7 + 19\,156\,170\,240\, z^6 + 348\,778\,542\,240\, z^5 + 1\,987\,355\,082\,600\, z^4 + 1\,704\,439\,251\,900\, z^3 - 750\,761\,099\,550\, z^2 + 168\,567\,399\,000\, z + 63\,212\,774\,625\right) J_1\left(\sqrt{z}\right)^2\Big)\Big)
$$

07.22.03.0611.01

$$ {}_1F_2\left(-\frac{11}{2}; 3, \frac{11}{2}; z\right) = \frac{1}{510\,117\,543\,936\,000\,z^4} $$
$$ \left(4\left(2\,z\left(262\,144\,z^9 - 108\,199\,936\,z^8 + 14\,260\,174\,848\,z^7 - 734\,175\,313\,920\,z^6 + 14\,564\,483\,020\,800\,z^5 - 94\,090\,311\,590\,400\right.\right.\right. $$
$$ \left.\left.\left. z^4 + 114\,792\,134\,688\,000\,z^3 + 27\,087\,091\,416\,000\,z^2 + 3\,624\,199\,078\,500\,z - 2\,212\,447\,111\,875\right) I_0\left(2\sqrt{z}\right) - \right. $$
$$ \left.\sqrt{z}\,\left(262\,144\,z^9 - 108\,068\,864\,z^8 + 14\,206\,304\,256\,z^7 - 727\,138\,713\,600\,z^6 + 14\,209\,396\,070\,400\,z^5 - \right.\right. $$
$$ \left.\left. 87\,391\,102\,348\,800\,z^4 + 77\,790\,458\,592\,000\,z^3 + 42\,037\,330\,104\,000\,z^2 + \right.\right. $$
$$ \left.\left. 9\,692\,625\,442\,500\,z - 6\,637\,341\,335\,625\right) I_1\left(2\sqrt{z}\right)\right) - $$
$$ \pi\left(1\,048\,576\,z^{10} - 432\,537\,600\,z^9 + 56\,932\,761\,600\,z^8 - 2\,922\,548\,428\,800\,z^7 + 57\,537\,672\,192\,000\,z^6 - \right. $$
$$ 362\,487\,334\,809\,600\,z^5 + 377\,590\,973\,760\,000\,z^4 + 161\,824\,703\,040\,000\,z^3 + $$
$$ \left. 45\,513\,197\,730\,000\,z^2 - 12\,642\,554\,925\,000\,z + 6\,637\,341\,335\,625\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + $$
$$ \pi\left(1\,048\,576\,z^{10} - 432\,537\,600\,z^9 + 56\,932\,761\,600\,z^8 - 2\,922\,548\,428\,800\,z^7 + 57\,537\,672\,192\,000\,z^6 - \right. $$
$$ 362\,487\,334\,809\,600\,z^5 + 377\,590\,973\,760\,000\,z^4 + 161\,824\,703\,040\,000\,z^3 + $$
$$ \left. 45\,513\,197\,730\,000\,z^2 - 12\,642\,554\,925\,000\,z + 6\,637\,341\,335\,625\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\Big) $$

07.22.03.0612.01

$$ {}_1F_2\left(-\frac{11}{2}; 3, \frac{11}{2}; -z\right) = \frac{1}{510\,117\,543\,936\,000\,z^4} $$
$$ \left(4\left(2\,z\left(262\,144\,z^9 + 108\,199\,936\,z^8 + 14\,260\,174\,848\,z^7 + 734\,175\,313\,920\,z^6 + 14\,564\,483\,020\,800\,z^5 + 94\,090\,311\,590\,400\right.\right.\right. $$
$$ \left.\left.\left. z^4 + 114\,792\,134\,688\,000\,z^3 - 27\,087\,091\,416\,000\,z^2 + 3\,624\,199\,078\,500\,z + 2\,212\,447\,111\,875\right) J_0\left(2\sqrt{z}\right) - \right. $$
$$ \left.\sqrt{z}\,\left(262\,144\,z^9 + 108\,068\,864\,z^8 + 14\,206\,304\,256\,z^7 + 727\,138\,713\,600\,z^6 + 14\,209\,396\,070\,400\,z^5 + \right.\right. $$
$$ \left.\left. 87\,391\,102\,348\,800\,z^4 + 77\,790\,458\,592\,000\,z^3 - 42\,037\,330\,104\,000\,z^2 + \right.\right. $$
$$ \left.\left. 9\,692\,625\,442\,500\,z + 6\,637\,341\,335\,625\right) J_1\left(2\sqrt{z}\right)\right) + $$
$$ \pi\left(1\,048\,576\,z^{10} + 432\,537\,600\,z^9 + 56\,932\,761\,600\,z^8 + 2\,922\,548\,428\,800\,z^7 + 57\,537\,672\,192\,000\,z^6 + \right. $$
$$ 362\,487\,334\,809\,600\,z^5 + 377\,590\,973\,760\,000\,z^4 - 161\,824\,703\,040\,000\,z^3 + $$
$$ \left. 45\,513\,197\,730\,000\,z^2 + 12\,642\,554\,925\,000\,z + 6\,637\,341\,335\,625\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - $$
$$ \pi\left(1\,048\,576\,z^{10} + 432\,537\,600\,z^9 + 56\,932\,761\,600\,z^8 + 2\,922\,548\,428\,800\,z^7 + 57\,537\,672\,192\,000\,z^6 + \right. $$
$$ 362\,487\,334\,809\,600\,z^5 + 377\,590\,973\,760\,000\,z^4 - 161\,824\,703\,040\,000\,z^3 + $$
$$ \left. 45\,513\,197\,730\,000\,z^2 + 12\,642\,554\,925\,000\,z + 6\,637\,341\,335\,625\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\Big) $$

07.22.03.0613.01

$$ {}_1F_2\left(-\frac{11}{2}; 3, 6; z\right) = \frac{1}{1\,858\,013\,084\,552\,625\,z^4} $$
$$ \left(64\left(z\left(65\,536\,z^9 - 28\,409\,856\,z^8 + 3\,954\,401\,280\,z^7 - 216\,569\,364\,480\,z^6 + 4\,616\,591\,293\,440\,z^5 - 32\,598\,394\,012\,800\,z^4 + \right.\right.\right. $$
$$ \left.\left.\left. 45\,778\,452\,350\,400\,z^3 + 10\,114\,043\,940\,000\,z^2 + 1\,074\,617\,168\,625\,z - 1\,011\,404\,394\,000\right) I_0\left(\sqrt{z}\right)^2 - \right. $$
$$ \left. 4\sqrt{z}\,\left(16\,384\,z^9 - 7\,090\,176\,z^8 + 983\,301\,120\,z^7 - 53\,412\,710\,400\,z^6 + 1\,115\,139\,493\,440\,z^5 - 7\,366\,198\,870\,800\,z^4 + \right.\right. $$
$$ \left.\left. 6\,839\,383\,181\,400\,z^3 + 4\,298\,468\,674\,500\,z^2 + 948\,191\,619\,375\,z - 1\,011\,404\,394\,000\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \right. $$
$$ \left.\left(65\,536\,z^{10} - 28\,377\,088\,z^9 + 3\,940\,245\,504\,z^8 - 214\,613\,268\,480\,z^7 + 4\,511\,186\,426\,880\,z^6 - \right.\right. $$
$$ \left.\left. 30\,441\,085\,839\,360\,z^5 + 32\,373\,532\,699\,200\,z^4 + 18\,155\,665\,004\,400\,z^3 + \right.\right. $$
$$ \left.\left. 6\,131\,639\,138\,625\,z^2 - 3\,287\,064\,280\,500\,z + 4\,045\,617\,576\,000\right) I_1\left(\sqrt{z}\right)^2\right)\Big) $$

07.22.03.0614.01

$$ {}_1F_2\left(-\frac{11}{2}; 3, 6; -z\right) = \frac{1}{1\,858\,013\,084\,552\,625\,z^4} $$
$$ \left(64\left(z\left(65\,536\,z^9 + 28\,409\,856\,z^8 + 3\,954\,401\,280\,z^7 + 216\,569\,364\,480\,z^6 + 4\,616\,591\,293\,440\,z^5 + 32\,598\,394\,012\,800\,z^4 + \right.\right.\right. $$
$$ \left.\left.\left. 45\,778\,452\,350\,400\,z^3 - 10\,114\,043\,940\,000\,z^2 + 1\,074\,617\,168\,625\,z + 1\,011\,404\,394\,000\right) J_0\left(\sqrt{z}\right)^2 - \right. $$
$$ \left. 4\sqrt{z}\left(16\,384\,z^9 + 7\,090\,176\,z^8 + 983\,301\,120\,z^7 + 53\,412\,710\,400\,z^6 + 1\,115\,139\,493\,440\,z^5 + 7\,366\,198\,870\,800\,z^4 + \right.\right. $$
$$ \left.\left. 6\,839\,383\,181\,400\,z^3 - 4\,298\,468\,674\,500\,z^2 + 948\,191\,619\,375\,z + 1\,011\,404\,394\,000\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \right. $$
$$ \left(65\,536\,z^{10} + 28\,377\,088\,z^9 + 3\,940\,245\,504\,z^8 + 214\,613\,268\,480\,z^7 + 4\,511\,186\,426\,880\,z^6 + \right. $$
$$ 30\,441\,085\,839\,360\,z^5 + 32\,373\,532\,699\,200\,z^4 - 18\,155\,665\,004\,400\,z^3 + $$
$$ \left.\left. 6\,131\,639\,138\,625\,z^2 + 3\,287\,064\,280\,500\,z + 4\,045\,617\,576\,000\right) J_1\left(\sqrt{z}\right)^2\right)\Big) $$

For fixed z and $a_1 = -\frac{11}{2}$, $b_1 = \frac{7}{2}$

07.22.03.0615.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{7}{2}, \frac{7}{2}; z\right) = \frac{1}{7\,398\,752\,256\,z^{5/2}} $$
$$ \left(-2\sqrt{z}\left(8\,z^7 - 2812\,z^6 + 309\,068\,z^5 - 12\,888\,390\,z^4 + 197\,657\,532\,z^3 - 892\,572\,282\,z^2 + 443\,263\,590\,z + 161\,195\,265\right)\right. $$
$$ \cosh\left(2\sqrt{z}\right) + \left(-8\,z^7 + 2804\,z^6 - 306\,300\,z^5 + 12\,594\,282\,z^4 - 186\,300\,828\,z^3 + 749\,375\,550\,z^2 - \right. $$
$$ \left. 110\,207\,790\,z + 4\,022\,865\right)\sinh\left(2\sqrt{z}\right) + 16\left(2\,z^8 - 704\,z^7 + 77\,616\,z^6 - 3\,259\,872\,z^5 + \right. $$
$$ \left.\left. 50\,935\,500\,z^4 - 244\,490\,400\,z^3 + 183\,367\,800\,z^2 + 52\,390\,800\,z + 9\,823\,275\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.0616.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{7}{2}, \frac{7}{2}; -z\right) = \frac{1}{7\,398\,752\,256\,z^{5/2}} $$
$$ \left(2\sqrt{z}\left(8\,z^7 + 2812\,z^6 + 309\,068\,z^5 + 12\,888\,390\,z^4 + 197\,657\,532\,z^3 + 892\,572\,282\,z^2 + 443\,263\,590\,z - 161\,195\,265\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + $$
$$ \left(8\,z^7 + 2804\,z^6 + 306\,300\,z^5 + 12\,594\,282\,z^4 + 186\,300\,828\,z^3 + 749\,375\,550\,z^2 + 110\,207\,790\,z + 4\,022\,865\right)\sin\left(2\sqrt{z}\right) + $$
$$ 16\left(2\,z^8 + 704\,z^7 + 77\,616\,z^6 + 3\,259\,872\,z^5 + 50\,935\,500\,z^4 + 244\,490\,400\,z^3 + 183\,367\,800\,z^2 - 52\,390\,800\,z + 9\,823\,275\right) $$
$$ \left.\mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.0617.01

$$
{}_1F_2\left(-\frac{11}{2};\frac{7}{2},4;z\right)=
\frac{1}{15\,808\,330\,137\,600\,z^{5/2}}\left(4\left(2\sqrt{z}\,\left(16\,384\,z^8-6\,131\,712\,z^7+725\,353\,472\,z^6-33\,113\,839\,872\,z^5+574\,155\,483\,840\,z^4-\right.\right.\right.
$$
$$
\left.\left.3\,192\,499\,905\,840\,z^3+3\,351\,897\,895\,500\,z^2+607\,461\,502\,725\,z+107\,296\,358\,400\right)I_0\left(2\sqrt{z}\right)-
$$
$$
\left(16\,384\,z^8-6\,123\,520\,z^7+722\,301\,952\,z^6-32\,756\,454\,144\,z^5+558\,206\,297\,280\,z^4-\right.
$$
$$
\left.\left.2\,931\,405\,760\,080\,z^3+2\,139\,312\,829\,500\,z^2+964\,013\,640\,975\,z+214\,592\,716\,800\right)I_1\left(2\sqrt{z}\right)\right)-
$$
$$
\pi\sqrt{z}\,\left(65\,536\,z^8-24\,510\,464\,z^7+2\,895\,298\,560\,z^6-131\,736\,084\,480\,z^5+2\,264\,213\,952\,000\,z^4-\right.
$$
$$
\left.12\,226\,755\,340\,800\,z^3+10\,698\,410\,923\,200\,z^2+3\,820\,861\,044\,000\,z+1\,074\,617\,168\,625\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+
$$
$$
\pi\sqrt{z}\,\left(65\,536\,z^8-24\,510\,464\,z^7+2\,895\,298\,560\,z^6-131\,736\,084\,480\,z^5+2\,264\,213\,952\,000\,z^4-\right.
$$
$$
\left.\left.12\,226\,755\,340\,800\,z^3+10\,698\,410\,923\,200\,z^2+3\,820\,861\,044\,000\,z+1\,074\,617\,168\,625\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)
$$

07.22.03.0618.01

$$
{}_1F_2\left(-\frac{11}{2};\frac{7}{2},4;-z\right)=
\frac{1}{15\,808\,330\,137\,600\,z^{5/2}}\left(4\left(2\sqrt{z}\,\left(16\,384\,z^8+6\,131\,712\,z^7+725\,353\,472\,z^6+33\,113\,839\,872\,z^5+574\,155\,483\,840\,z^4+\right.\right.\right.
$$
$$
\left.\left.3\,192\,499\,905\,840\,z^3+3\,351\,897\,895\,500\,z^2-607\,461\,502\,725\,z+107\,296\,358\,400\right)J_0\left(2\sqrt{z}\right)-
$$
$$
\left(16\,384\,z^8+6\,123\,520\,z^7+722\,301\,952\,z^6+32\,756\,454\,144\,z^5+558\,206\,297\,280\,z^4+\right.
$$
$$
\left.\left.2\,931\,405\,760\,080\,z^3+2\,139\,312\,829\,500\,z^2-964\,013\,640\,975\,z+214\,592\,716\,800\right)J_1\left(2\sqrt{z}\right)\right)+
$$
$$
\pi\sqrt{z}\,\left(65\,536\,z^8+24\,510\,464\,z^7+2\,895\,298\,560\,z^6+131\,736\,084\,480\,z^5+2\,264\,213\,952\,000\,z^4+\right.
$$
$$
\left.12\,226\,755\,340\,800\,z^3+10\,698\,410\,923\,200\,z^2-3\,820\,861\,044\,000\,z+1\,074\,617\,168\,625\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-
$$
$$
\pi\sqrt{z}\,\left(65\,536\,z^8+24\,510\,464\,z^7+2\,895\,298\,560\,z^6+131\,736\,084\,480\,z^5+2\,264\,213\,952\,000\,z^4+\right.
$$
$$
\left.\left.12\,226\,755\,340\,800\,z^3+10\,698\,410\,923\,200\,z^2-3\,820\,861\,044\,000\,z+1\,074\,617\,168\,625\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)
$$

07.22.03.0619.01

$$
{}_1F_2\left(-\frac{11}{2};\frac{7}{2},\frac{9}{2};z\right)=
\frac{1}{19\,025\,362\,944\,z^{7/2}}\left(-2\sqrt{z}\,\left(8\,z^8-3164\,z^7+397\,596\,z^6-19\,364\,310\,z^5+357\,520\,356\,z^4-2\,042\,364\,618\,z^3+\right.\right.
$$
$$
\left.1\,482\,846\,750\,z^2+874\,458\,585\,z+196\,465\,500\right)\cosh\left(2\sqrt{z}\right)+
$$
$$
\left(-8\,z^8+3156\,z^7-394\,476\,z^6+18\,983\,610\,z^5-340\,152\,372\,z^4+1\,769\,748\,750\,z^3-564\,510\,870\,z^2-\right.
$$
$$
\left.278\,139\,015\,z+196\,465\,500\right)\sinh\left(2\sqrt{z}\right)+16\,z\left(2\,z^8-792\,z^7+99\,792\,z^6-4\,889\,808\,z^5+\right.
$$
$$
\left.\left.91\,683\,900\,z^4-550\,103\,400\,z^3+550\,103\,400\,z^2+235\,758\,600\,z+88\,409\,475\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)
$$

07.22.03.0620.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{7}{2},\frac{9}{2};-z\right)= \frac{1}{19\,025\,362\,944\,z^{7/2}}\left(2\sqrt{z}\,\left(8\,z^8+3164\,z^7+397\,596\,z^6+19\,364\,310\,z^5+357\,520\,356\,z^4+2\,042\,364\,618\,z^3+1\,482\,846\,750\,z^2-874\,458\,585\,z+196\,465\,500\right)\cos\left(2\sqrt{z}\right)+\left(8\,z^8+3156\,z^7+394\,476\,z^6+18\,983\,610\,z^5+340\,152\,372\,z^4+1\,769\,748\,750\,z^3+564\,510\,870\,z^2-278\,139\,015\,z-196\,465\,500\right)\sin\left(2\sqrt{z}\right)+16\,z\left(2\,z^8+792\,z^7+99\,792\,z^6+4\,889\,808\,z^5+91\,683\,900\,z^4+550\,103\,400\,z^3+550\,103\,400\,z^2-235\,758\,600\,z+88\,409\,475\right)\mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.0621.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{7}{2},5;z\right)= \frac{1}{37\,544\,784\,076\,800\,z^{7/2}}\left(-\pi\left(65\,536\,z^8-27\,394\,048\,z^7+3\,667\,378\,176\,z^6-192\,537\,354\,240\,z^5+3\,910\,915\,008\,000\,z^4-25\,812\,039\,052\,800\,z^3+29\,038\,543\,934\,400\,z^2+14\,519\,271\,967\,200\,z+6\,805\,908\,734\,625\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+\pi\left(65\,536\,z^8-27\,394\,048\,z^7+3\,667\,378\,176\,z^6-192\,537\,354\,240\,z^5+3\,910\,915\,008\,000\,z^4-25\,812\,039\,052\,800\,z^3+29\,038\,543\,934\,400\,z^2+14\,519\,271\,967\,200\,z+6\,805\,908\,734\,625\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2}+4\left(2\sqrt{z}\,\left(16\,384\,z^9-6\,852\,608\,z^8+918\,553\,600\,z^7-48\,362\,277\,120\,z^6+989\,595\,142\,848\,z^5-6\,689\,020\,872\,240\,z^4+8\,718\,392\,321\,100\,z^3+2\,559\,699\,883\,125\,z^2+938\,843\,136\,000\,z-160\,944\,537\,600\right)I_0\left(2\sqrt{z}\right)-\left(16\,384\,z^9-6\,844\,416\,z^8+915\,141\,632\,z^7-47\,908\,922\,112\,z^6+966\,187\,521\,216\,z^5-6\,232\,710\,511\,440\,z^4+6\,061\,078\,554\,300\,z^3+3\,816\,430\,746\,975\,z^2+1\,716\,741\,734\,400\,z-321\,889\,075\,200\right)I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0622.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{7}{2},5;-z\right)= \frac{1}{37\,544\,784\,076\,800\,z^{7/2}}\left(\pi\left(65\,536\,z^8+27\,394\,048\,z^7+3\,667\,378\,176\,z^6+192\,537\,354\,240\,z^5+3\,910\,915\,008\,000\,z^4+25\,812\,039\,052\,800\,z^3+29\,038\,543\,934\,400\,z^2-14\,519\,271\,967\,200\,z+6\,805\,908\,734\,625\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}-\pi\left(65\,536\,z^8+27\,394\,048\,z^7+3\,667\,378\,176\,z^6+192\,537\,354\,240\,z^5+3\,910\,915\,008\,000\,z^4+25\,812\,039\,052\,800\,z^3+29\,038\,543\,934\,400\,z^2-14\,519\,271\,967\,200\,z+6\,805\,908\,734\,625\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{3/2}+4\left(2\sqrt{z}\,\left(16\,384\,z^9+6\,852\,608\,z^8+918\,553\,600\,z^7+48\,362\,277\,120\,z^6+989\,595\,142\,848\,z^5+6\,689\,020\,872\,240\,z^4+8\,718\,392\,321\,100\,z^3-2\,559\,699\,883\,125\,z^2+938\,843\,136\,000\,z+160\,944\,537\,600\right)J_0\left(2\sqrt{z}\right)-\left(16\,384\,z^9+6\,844\,416\,z^8+915\,141\,632\,z^7+47\,908\,922\,112\,z^6+966\,187\,521\,216\,z^5+6\,232\,710\,511\,440\,z^4+6\,061\,078\,554\,300\,z^3-3\,816\,430\,746\,975\,z^2+1\,716\,741\,734\,400\,z+321\,889\,075\,200\right)J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0623.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{7}{2}, \frac{11}{2}; z\right) = \frac{1}{42\,278\,584\,320\,z^{9/2}} \left(16\left(2\,z^8 - 880\,z^7 + 124\,740\,z^6 - 6\,985\,440\,z^5 + 152\,806\,500\,z^4 - 1\,100\,206\,800\,z^3 + 1\,375\,258\,500\,z^2 + 785\,862\,000\,z + 442\,047\,375\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^2 - 2\left(8\,z^9 - 3516\,z^8 + 497\,212\,z^7 - 27\,697\,470\,z^6 + 597\,965\,220\,z^5 - 4\,132\,039\,590\,z^4 + 3\,970\,162\,350\,z^3 + 3\,167\,304\,525\,z^2 + 1\,506\,235\,500\,z - 687\,629\,250\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} - \left(8\,z^9 - 3508\,z^8 + 493\,740\,z^7 - 27\,219\,090\,z^6 + 572\,789\,700\,z^5 - 3\,658\,936\,050\,z^4 + 1\,865\,798\,550\,z^3 + 1\,652\,649\,075\,z^2 - 589\,396\,500\,z + 687\,629\,250\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0624.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{7}{2}, \frac{11}{2}; -z\right) = \frac{1}{42\,278\,584\,320\,z^{9/2}} \left(16\left(2\,z^8 + 880\,z^7 + 124\,740\,z^6 + 6\,985\,440\,z^5 + 152\,806\,500\,z^4 + 1\,100\,206\,800\,z^3 + 1\,375\,258\,500\,z^2 - 785\,862\,000\,z + 442\,047\,375\right)\mathrm{Si}\left(2\sqrt{z}\right)z^2 + 2\left(8\,z^9 + 3516\,z^8 + 497\,212\,z^7 + 27\,697\,470\,z^6 + 597\,965\,220\,z^5 + 4\,132\,039\,590\,z^4 + 3\,970\,162\,350\,z^3 - 3\,167\,304\,525\,z^2 + 1\,506\,235\,500\,z + 687\,629\,250\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(8\,z^9 + 3508\,z^8 + 493\,740\,z^7 + 27\,219\,090\,z^6 + 572\,789\,700\,z^5 + 3\,658\,936\,050\,z^4 + 1\,865\,798\,550\,z^3 - 1\,652\,649\,075\,z^2 - 589\,396\,500\,z - 687\,629\,250\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0625.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{7}{2}, 6; z\right) = \frac{1}{78\,844\,046\,561\,280\,z^{9/2}} \left(-\pi\left(65\,536\,z^8 - 30\,277\,632\,z^7 + 4\,530\,290\,688\,z^6 - 269\,552\,295\,936\,z^5 + 6\,317\,631\,936\,000\,z^4 - 49\,277\,529\,100\,800\,z^3 + 67\,756\,602\,513\,600\,z^2 + 43\,557\,815\,901\,600\,z + 28\,584\,816\,685\,425\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2} + \pi\left(65\,536\,z^8 - 30\,277\,632\,z^7 + 4\,530\,290\,688\,z^6 - 269\,552\,295\,936\,z^5 + 6\,317\,631\,936\,000\,z^4 - 49\,277\,529\,100\,800\,z^3 + 67\,756\,602\,513\,600\,z^2 + 43\,557\,815\,901\,600\,z + 28\,584\,816\,685\,425\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{5/2} + 4\left(2\sqrt{z}\left(16\,384\,z^{10} - 7\,573\,504\,z^9 + 1\,134\,461\,952\,z^8 - 67\,669\,809\,408\,z^7 + 1\,596\,047\,866\,560\,z^6 - 12\,702\,350\,365\,488\,z^5 + 19\,763\,965\,641\,420\,z^4 + 8\,175\,626\,907\,525\,z^3 + 4\,586\,919\,321\,600\,z^2 - 1\,207\,084\,032\,000\,z + 965\,667\,225\,600\right)I_0\left(2\sqrt{z}\right) - \left(16\,384\,z^{10} - 7\,565\,312\,z^9 + 1\,130\,689\,536\,z^8 - 67\,109\,131\,008\,z^7 + 1\,563\,172\,132\,032\,z^6 - 11\,958\,766\,068\,816\,z^5 + 14\,553\,417\,671\,100\,z^4 + 11\,651\,317\,714\,575\,z^3 + 7\,805\,810\,073\,600\,z^2 - 1\,448\,500\,838\,400\,z + 1\,931\,334\,451\,200\right)I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0626.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{7}{2}, 6; -z\right) = \frac{1}{78\,844\,046\,561\,280\,z^{9/2}} \left(\pi \left(65\,536\,z^8 + 30\,277\,632\,z^7 + 4\,530\,290\,688\,z^6 + 269\,552\,295\,936\,z^5 + 6\,317\,631\,936\,000\,z^4 + 49\,277\,529\,100\,800\,z^3 + 67\,756\,602\,513\,600\,z^2 - 43\,557\,815\,901\,600\,z + 28\,584\,816\,685\,425\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{5/2} - \pi \left(65\,536\,z^8 + 30\,277\,632\,z^7 + 4\,530\,290\,688\,z^6 + 269\,552\,295\,936\,z^5 + 6\,317\,631\,936\,000\,z^4 + 49\,277\,529\,100\,800\,z^3 + 67\,756\,602\,513\,600\,z^2 - 43\,557\,815\,901\,600\,z + 28\,584\,816\,685\,425\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{5/2} + 4\left(2\sqrt{z}\left(16\,384\,z^{10} + 7\,573\,504\,z^9 + 1\,134\,461\,952\,z^8 + 67\,669\,809\,408\,z^7 + 1\,596\,047\,866\,560\,z^6 + 12\,702\,350\,365\,488\,z^5 + 19\,763\,965\,641\,420\,z^4 - 8\,175\,626\,907\,525\,z^3 + 4\,586\,919\,321\,600\,z^2 + 1\,207\,084\,032\,000\,z + 965\,667\,225\,600\right) J_0\left(2\sqrt{z}\right) - \left(16\,384\,z^{10} + 7\,565\,312\,z^9 + 1\,130\,689\,536\,z^8 + 67\,109\,131\,008\,z^7 + 1\,563\,172\,132\,032\,z^6 + 11\,958\,766\,068\,816\,z^5 + 14\,553\,417\,671\,100\,z^4 - 11\,651\,317\,714\,575\,z^3 + 7\,805\,810\,073\,600\,z^2 + 1\,448\,500\,838\,400\,z + 1\,931\,334\,451\,200\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{11}{2}$, $b_1 = 4$

07.22.03.0627.01

$$ {}_1F_2\left(-\frac{11}{2}; 4, 4; z\right) = \frac{1}{131\,939\,107\,925\,625\,z^{5/2}} \left(16\left(2\sqrt{z}\left(16\,384\,z^8 - 6\,516\,736\,z^7 + 826\,432\,512\,z^6 - 40\,922\,910\,720\,z^5 + 782\,850\,715\,200\,z^4 - 4\,939\,846\,203\,600\,z^3 + 6\,293\,171\,669\,400\,z^2 + 1\,239\,280\,049\,700\,z + 358\,205\,722\,875\right) I_0\left(\sqrt{z}\right)^2 - 4\left(8192\,z^8 - 3\,252\,224\,z^7 + 410\,786\,304\,z^6 - 20\,156\,958\,720\,z^5 + 376\,744\,615\,200\,z^4 - 2\,207\,089\,684\,800\,z^3 + 1\,791\,785\,942\,100\,z^2 + 1\,045\,737\,207\,900\,z + 358\,205\,722\,875\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \sqrt{z}\left(32\,768\,z^8 - 13\,017\,088\,z^7 + 1\,646\,372\,864\,z^6 - 81\,029\,062\,656\,z^5 + 1\,525\,978\,800\,000\,z^4 - 9\,153\,475\,596\,000\,z^3 + 8\,609\,627\,149\,200\,z^2 + 4\,488\,982\,205\,400\,z + 1\,906\,548\,457\,275\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0628.01

$$ {}_1F_2\left(-\frac{11}{2}; 4, 4; -z\right) = \frac{1}{131\,939\,107\,925\,625\,z^{5/2}} \left(16\left(2\sqrt{z}\left(16\,384\,z^8 + 6\,516\,736\,z^7 + 826\,432\,512\,z^6 + 40\,922\,910\,720\,z^5 + 782\,850\,715\,200\,z^4 + 4\,939\,846\,203\,600\,z^3 + 6\,293\,171\,669\,400\,z^2 - 1\,239\,280\,049\,700\,z + 358\,205\,722\,875\right) J_0\left(\sqrt{z}\right)^2 - 4\left(8192\,z^8 + 3\,252\,224\,z^7 + 410\,786\,304\,z^6 + 20\,156\,958\,720\,z^5 + 376\,744\,615\,200\,z^4 + 2\,207\,089\,684\,800\,z^3 + 1\,791\,785\,942\,100\,z^2 - 1\,045\,737\,207\,900\,z + 358\,205\,722\,875\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\left(32\,768\,z^8 + 13\,017\,088\,z^7 + 1\,646\,372\,864\,z^6 + 81\,029\,062\,656\,z^5 + 1\,525\,978\,800\,000\,z^4 + 9\,153\,475\,596\,000\,z^3 + 8\,609\,627\,149\,200\,z^2 - 4\,488\,982\,205\,400\,z + 1\,906\,548\,457\,275\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0629.01

$$
{}_1F_2\left(-\frac{11}{2};\, 4,\, \frac{9}{2};\, z\right) =
\frac{1}{162\,599\,967\,129\,600\, z^3}\left(4\left(2\, z\left(65\,536\, z^8 - 27\,590\,656\, z^7 + 3\,729\,408\,000\, z^6 - 198\,529\,634\,304\, z^5 + 4\,124\,307\,156\,480\, z^4 - \right.\right.\right.
$$
$$
\left.\left.\left. 28\,494\,499\,127\,040\, z^3 + 38\,327\,163\,336\,000\, z^2 + 12\,378\,112\,362\,000\, z + 5\,934\,309\,190\,425\right) I_0\left(2\sqrt{z}\right) - \right.
$$
$$
\left.\sqrt{z}\,\left(65\,536\, z^8 - 27\,557\,888\, z^7 + 3\,715\,670\,016\, z^6 - 196\,688\,775\,168\, z^5 + 4\,028\,183\,884\,800\, z^4 - \right.\right.
$$
$$
\left.\left. 26\,590\,498\,922\,880\, z^3 + 26\,953\,494\,876\,000\, z^2 + 18\,153\,333\,613\,800\, z + 10\,077\,589\,766\,475\right) I_1\left(2\sqrt{z}\right)\right) -
$$
$$
\pi\left(262\,144\, z^9 - 110\,297\,088\, z^8 + 14\,890\,106\,880\, z^7 - 790\,416\,506\,880\, z^6 + 16\,302\,340\,454\,400\, z^5 - \right.
$$
$$
110\,040\,798\,067\,200\, z^4 + 128\,380\,931\,078\,400\, z^3 + 68\,775\,498\,792\,000\, z^2 +
$$
$$
\left. 38\,686\,218\,070\,500\, z + 5\,373\,085\,843\,125\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) +
$$
$$
\pi\left(262\,144\, z^9 - 110\,297\,088\, z^8 + 14\,890\,106\,880\, z^7 - 790\,416\,506\,880\, z^6 + 16\,302\,340\,454\,400\, z^5 - \right.
$$
$$
110\,040\,798\,067\,200\, z^4 + 128\,380\,931\,078\,400\, z^3 + 68\,775\,498\,792\,000\, z^2 +
$$
$$
\left. 38\,686\,218\,070\,500\, z + 5\,373\,085\,843\,125\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\Big)
$$

07.22.03.0630.01

$$
{}_1F_2\left(-\frac{11}{2};\, 4,\, \frac{9}{2};\, -z\right) =
\frac{1}{162\,599\,967\,129\,600\, z^3}\left(4\left(2\, z\left(65\,536\, z^8 + 27\,590\,656\, z^7 + 3\,729\,408\,000\, z^6 + 198\,529\,634\,304\, z^5 + 4\,124\,307\,156\,480\, z^4 + \right.\right.\right.
$$
$$
\left.\left.\left. 28\,494\,499\,127\,040\, z^3 + 38\,327\,163\,336\,000\, z^2 - 12\,378\,112\,362\,000\, z + 5\,934\,309\,190\,425\right) J_0\left(2\sqrt{z}\right) - \right.
$$
$$
\left.\sqrt{z}\,\left(65\,536\, z^8 + 27\,557\,888\, z^7 + 3\,715\,670\,016\, z^6 + 196\,688\,775\,168\, z^5 + 4\,028\,183\,884\,800\, z^4 + \right.\right.
$$
$$
\left.\left. 26\,590\,498\,922\,880\, z^3 + 26\,953\,494\,876\,000\, z^2 - 18\,153\,333\,613\,800\, z + 10\,077\,589\,766\,475\right) J_1\left(2\sqrt{z}\right)\right) +
$$
$$
\pi\left(262\,144\, z^9 + 110\,297\,088\, z^8 + 14\,890\,106\,880\, z^7 + 790\,416\,506\,880\, z^6 + 16\,302\,340\,454\,400\, z^5 + \right.
$$
$$
110\,040\,798\,067\,200\, z^4 + 128\,380\,931\,078\,400\, z^3 - 68\,775\,498\,792\,000\, z^2 +
$$
$$
\left. 38\,686\,218\,070\,500\, z - 5\,373\,085\,843\,125\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) -
$$
$$
\pi\left(262\,144\, z^9 + 110\,297\,088\, z^8 + 14\,890\,106\,880\, z^7 + 790\,416\,506\,880\, z^6 + 16\,302\,340\,454\,400\, z^5 + \right.
$$
$$
110\,040\,798\,067\,200\, z^4 + 128\,380\,931\,078\,400\, z^3 - 68\,775\,498\,792\,000\, z^2 +
$$
$$
\left. 38\,686\,218\,070\,500\, z - 5\,373\,085\,843\,125\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\Big)
$$

07.22.03.0631.01

$$
{}_1F_2\left(-\frac{11}{2};\, 4,\, 5;\, z\right) =
\frac{1}{2\,506\,843\,050\,586\,875\, z^3}\left(64\left(z\left(65\,536\, z^8 - 29\,130\,752\, z^7 + 4\,185\,808\,896\, z^6 - 239\,003\,873\,280\, z^5 + 5\,393\,107\,123\,200\, z^4 - \right.\right.\right.
$$
$$
\left.\left.\left. 41\,305\,325\,846\,400\, z^3 + 64\,920\,074\,788\,800\, z^2 + 21\,301\,829\,841\,600\, z + 12\,537\,200\,300\,625\right) I_0\left(\sqrt{z}\right)^2 - \right.
$$
$$
16\sqrt{z}\,\left(4096\, z^8 - 1\,817\,600\, z^7 + 260\,254\,464\, z^6 - 14\,744\,563\,200\, z^5 + 326\,289\,445\,200\, z^4 - \right.
$$
$$
2\,351\,559\,186\,900\, z^3 + 2\,567\,471\,964\,750\, z^2 + 2\,101\,605\,954\,525\, z + 1\,432\,822\,891\,500\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) -
$$
$$
\left(65\,536\, z^9 - 29\,097\,984\, z^8 + 4\,171\,292\,672\, z^7 - 236\,932\,614\,144\, z^6 + 5\,276\,656\,327\,680\, z^5 - 38\,775\,890\,707\,200\, z^4 + \right.
$$
$$
\left. \left. 47\,681\,046\,705\,600\, z^3 + 34\,238\,907\,133\,200\, z^2 + 24\,761\,837\,556\,225\, z + 4\,298\,468\,674\,500\right) I_1\left(\sqrt{z}\right)^2\right)\Big)
$$

07.22.03.0632.01

$$
{}_1F_2\left(-\frac{11}{2};\,4,\,5;\,-z\right)=
\frac{1}{2\,506\,843\,050\,586\,875\,z^3}\left(64\left(z\left(65\,536\,z^8+29\,130\,752\,z^7+4\,185\,808\,896\,z^6+239\,003\,873\,280\,z^5+5\,393\,107\,123\,200\,z^4+\right.\right.\right.
$$
$$
\left.\left.41\,305\,325\,846\,400\,z^3+64\,920\,074\,788\,800\,z^2-21\,301\,829\,841\,600\,z+12\,537\,200\,300\,625\right)J_0\left(\sqrt{z}\right)^2-
$$
$$
16\sqrt{z}\left(4096\,z^8+1\,817\,600\,z^7+260\,254\,464\,z^6+14\,744\,563\,200\,z^5+326\,289\,445\,200\,z^4+\right.
$$
$$
\left.2\,351\,559\,186\,900\,z^3+2\,567\,471\,964\,750\,z^2-2\,101\,605\,954\,525\,z+1\,432\,822\,891\,500\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+
$$
$$
\left(65\,536\,z^9+29\,097\,984\,z^8+4\,171\,292\,672\,z^7+236\,932\,614\,144\,z^6+5\,276\,656\,327\,680\,z^5+38\,775\,890\,707\,200\,z^4+\right.
$$
$$
\left.\left.\left.47\,681\,046\,705\,600\,z^3-34\,238\,907\,133\,200\,z^2+24\,761\,837\,556\,225\,z-4\,298\,468\,674\,500\right)J_1\left(\sqrt{z}\right)^2\right)\right)
$$

07.22.03.0633.01

$$
{}_1F_2\left(-\frac{11}{2};\,4,\,\frac{11}{2};\,z\right)=\frac{1}{1\,445\,333\,041\,152\,000\,z^4}
$$
$$
\left(4\left(2\,z\left(262\,144\,z^9-122\,617\,856\,z^8+18\,643\,222\,528\,z^7-1\,133\,796\,802\,560\,z^6+27\,449\,453\,721\,600\,z^5-226\,674\,877\,708\,800\right.\right.\right.
$$
$$
\left.\left.z^4+371\,568\,925\,728\,000\,z^3+176\,589\,478\,296\,000\,z^2+137\,711\,116\,966\,500\,z+12\,537\,200\,300\,625\right)
$$
$$
I_0\left(2\sqrt{z}\right)-\sqrt{z}\left(262\,144\,z^9-122\,486\,784\,z^8+18\,582\,142\,976\,z^7-1\,124\,581\,294\,080\,z^6+\right.
$$
$$
26\,898\,325\,862\,400\,z^5-213\,863\,724\,633\,600\,z^4+277\,947\,264\,672\,000\,z^3+
$$
$$
\left.\left.245\,877\,359\,112\,000\,z^2+213\,810\,849\,598\,500\,z+37\,611\,600\,901\,875\right)I_1\left(2\sqrt{z}\right)\right)-
$$
$$
\pi\left(1\,048\,576\,z^{10}-490\,209\,280\,z^9+74\,450\,534\,400\,z^8-4\,516\,665\,753\,600\,z^7+108\,682\,269\,696\,000\,z^6-\right.
$$
$$
880\,326\,384\,537\,600\,z^5+1\,283\,809\,310\,784\,000\,z^4+917\,006\,650\,560\,000\,z^3+
$$
$$
\left.773\,724\,361\,410\,000\,z^2+214\,923\,433\,725\,000\,z-37\,611\,600\,901\,875\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+
$$
$$
\pi\left(1\,048\,576\,z^{10}-490\,209\,280\,z^9+74\,450\,534\,400\,z^8-4\,516\,665\,753\,600\,z^7+108\,682\,269\,696\,000\,z^6-\right.
$$
$$
880\,326\,384\,537\,600\,z^5+1\,283\,809\,310\,784\,000\,z^4+917\,006\,650\,560\,000\,z^3+
$$
$$
\left.773\,724\,361\,410\,000\,z^2+214\,923\,433\,725\,000\,z-37\,611\,600\,901\,875\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\Big)
$$

07.22.03.0634.01

$$
{}_1F_2\left(-\frac{11}{2};\,4,\,\frac{11}{2};\,-z\right)=\frac{1}{1\,445\,333\,041\,152\,000\,z^4}
$$
$$
\left(4\left(2\,z\left(262\,144\,z^9+122\,617\,856\,z^8+18\,643\,222\,528\,z^7+1\,133\,796\,802\,560\,z^6+27\,449\,453\,721\,600\,z^5+226\,674\,877\,708\,800\right.\right.\right.
$$
$$
\left.\left.z^4+371\,568\,925\,728\,000\,z^3-176\,589\,478\,296\,000\,z^2+137\,711\,116\,966\,500\,z-12\,537\,200\,300\,625\right)
$$
$$
J_0\left(2\sqrt{z}\right)-\sqrt{z}\left(262\,144\,z^9+122\,486\,784\,z^8+18\,582\,142\,976\,z^7+1\,124\,581\,294\,080\,z^6+\right.
$$
$$
26\,898\,325\,862\,400\,z^5+213\,863\,724\,633\,600\,z^4+277\,947\,264\,672\,000\,z^3-
$$
$$
\left.\left.245\,877\,359\,112\,000\,z^2+213\,810\,849\,598\,500\,z-37\,611\,600\,901\,875\right)J_1\left(2\sqrt{z}\right)\right)+
$$
$$
\pi\left(1\,048\,576\,z^{10}+490\,209\,280\,z^9+74\,450\,534\,400\,z^8+4\,516\,665\,753\,600\,z^7+108\,682\,269\,696\,000\,z^6+\right.
$$
$$
880\,326\,384\,537\,600\,z^5+1\,283\,809\,310\,784\,000\,z^4-917\,006\,650\,560\,000\,z^3+
$$
$$
\left.773\,724\,361\,410\,000\,z^2-214\,923\,433\,725\,000\,z-37\,611\,600\,901\,875\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-
$$
$$
\pi\left(1\,048\,576\,z^{10}+490\,209\,280\,z^9+74\,450\,534\,400\,z^8+4\,516\,665\,753\,600\,z^7+108\,682\,269\,696\,000\,z^6+\right.
$$
$$
880\,326\,384\,537\,600\,z^5+1\,283\,809\,310\,784\,000\,z^4-917\,006\,650\,560\,000\,z^3+
$$
$$
\left.773\,724\,361\,410\,000\,z^2-214\,923\,433\,725\,000\,z-37\,611\,600\,901\,875\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\Big)
$$

07.22.03.0635.01

$$ {}_1F_2\left(-\frac{11}{2}; 4, 6; z\right) = \frac{1}{10\,528\,740\,812\,464\,875\,z^4} \left(128\left(z\left(65\,536\,z^9 - 32\,194\,560\,z^8 + 5\,169\,291\,264\,z^7 - 334\,350\,535\,680\,z^6 + 8\,693\,299\,399\,680\,z^5 - 78\,309\,786\,139\,200\,z^4 + 146\,271\,970\,152\,000\,z^3 + 68\,849\,919\,923\,400\,z^2 + 61\,253\,178\,611\,625\,z + 4\,298\,468\,674\,500\right) I_0\left(\sqrt{z}\right)^2 - \sqrt{z}\left(65\,536\,z^9 - 32\,145\,408\,z^8 + 5\,145\,255\,936\,z^7 - 330\,527\,232\,000\,z^6 + 8\,450\,942\,008\,320\,z^5 - 72\,305\,590\,896\,000\,z^4 + 99\,398\,130\,955\,200\,z^3 + 103\,460\,932\,713\,600\,z^2 + 104\,237\,865\,356\,625\,z + 17\,193\,874\,698\,000\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \left(65\,536\,z^{10} - 32\,161\,792\,z^9 + 5\,153\,243\,136\,z^8 - 331\,789\,833\,216\,z^7 + 8\,529\,903\,406\,080\,z^6 - 74\,198\,811\,395\,520\,z^5 + 112\,737\,981\,232\,800\,z^4 + 102\,592\,686\,180\,600\,z^3 + 103\,940\,180\,831\,025\,z^2 + 36\,536\,983\,733\,250\,z - 17\,193\,874\,698\,000\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0636.01

$$ {}_1F_2\left(-\frac{11}{2}; 4, 6; -z\right) = \frac{1}{10\,528\,740\,812\,464\,875\,z^4} \left(128\left(z\left(65\,536\,z^9 + 32\,194\,560\,z^8 + 5\,169\,291\,264\,z^7 + 334\,350\,535\,680\,z^6 + 8\,693\,299\,399\,680\,z^5 + 78\,309\,786\,139\,200\,z^4 + 146\,271\,970\,152\,000\,z^3 - 68\,849\,919\,923\,400\,z^2 + 61\,253\,178\,611\,625\,z - 4\,298\,468\,674\,500\right) J_0\left(\sqrt{z}\right)^2 - \sqrt{z}\left(65\,536\,z^9 + 32\,145\,408\,z^8 + 5\,145\,255\,936\,z^7 + 330\,527\,232\,000\,z^6 + 8\,450\,942\,008\,320\,z^5 + 72\,305\,590\,896\,000\,z^4 + 99\,398\,130\,955\,200\,z^3 - 103\,460\,932\,713\,600\,z^2 + 104\,237\,865\,356\,625\,z - 17\,193\,874\,698\,000\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(65\,536\,z^{10} + 32\,161\,792\,z^9 + 5\,153\,243\,136\,z^8 + 331\,789\,833\,216\,z^7 + 8\,529\,903\,406\,080\,z^6 + 74\,198\,811\,395\,520\,z^5 + 112\,737\,981\,232\,800\,z^4 - 102\,592\,686\,180\,600\,z^3 + 103\,940\,180\,831\,025\,z^2 - 36\,536\,983\,733\,250\,z - 17\,193\,874\,698\,000\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

For fixed z and $a_1 = -\frac{11}{2}$, $b_1 = \frac{9}{2}$

07.22.03.0637.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{9}{2}, \frac{9}{2}; z\right) = \frac{1}{97\,844\,723\,712\,z^{7/2}} \left(-2\sqrt{z}\left(16\,z^8 - 7120\,z^7 + 1\,022\,892\,z^6 - 58\,174\,992\,z^5 + 1\,292\,371\,290\,z^4 - 9\,319\,272\,264\,z^3 + 9\,710\,073\,450\,z^2 + 8\,735\,791\,680\,z + 6\,232\,166\,325\right)\cosh\left(2\sqrt{z}\right) - \left(16\,z^8 - 7104\,z^7 + 1\,015\,860\,z^6 - 57\,190\,248\,z^5 + 1\,239\,391\,206\,z^4 - 8\,290\,220\,400\,z^3 + 4\,832\,115\,750\,z^2 + 5\,273\,134\,020\,z + 840\,591\,675\right)\sinh\left(2\sqrt{z}\right) + 16\left(4\,z^9 - 1782\,z^8 + 256\,608\,z^7 - 14\,669\,424\,z^6 + 330\,062\,040\,z^5 - 2\,475\,465\,300\,z^4 + 3\,300\,620\,400\,z^3 + 2\,121\,827\,400\,z^2 + 1\,591\,370\,550\,z + 442\,047\,375\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.0638.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{9}{2},\frac{9}{2};-z\right)= \frac{1}{97\,844\,723\,712\,z^{7/2}}\left(2\sqrt{z}\,\left(16\,z^8+7120\,z^7+1\,022\,892\,z^6+58\,174\,992\,z^5+1\,292\,371\,290\,z^4+9\,319\,272\,264\,z^3+9\,710\,073\,450\,z^2-8\,735\,791\,680\,z+6\,232\,166\,325\right)\cos\left(2\sqrt{z}\right)+\left(16\,z^8+7104\,z^7+1\,015\,860\,z^6+57\,190\,248\,z^5+1\,239\,391\,206\,z^4+8\,290\,220\,400\,z^3+4\,832\,115\,750\,z^2-5\,273\,134\,020\,z+840\,591\,675\right)\sin\left(2\sqrt{z}\right)+16\left(4\,z^9+1782\,z^8+256\,608\,z^7+14\,669\,424\,z^6+330\,062\,040\,z^5+2\,475\,465\,300\,z^4+3\,300\,620\,400\,z^3-2\,121\,827\,400\,z^2+1\,591\,370\,550\,z-442\,047\,375\right)\mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.0639.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{9}{2},5;z\right)= \frac{1}{386\,174\,921\,932\,800\,z^{7/2}}\left(4\left(2\sqrt{z}\,\left(65\,536\,z^9-30\,834\,688\,z^8+4\,722\,892\,800\,z^7-289\,979\,099\,136\,z^6+7\,110\,985\,688\,064\,z^5-59\,785\,980\,612\,480\,z^4+100\,491\,856\,264\,800\,z^3+50\,885\,743\,293\,000\,z^2+45\,155\,168\,826\,075\,z+11\,588\,006\,707\,200\right)I_0\left(2\sqrt{z}\right)-\left(65\,536\,z^9-30\,801\,920\,z^8+4\,707\,532\,800\,z^7-287\,644\,336\,128\,z^6+6\,969\,992\,283\,648\,z^5-56\,464\,322\,711\,040\,z^4+75\,718\,746\,734\,400\,z^3+70\,130\,324\,880\,000\,z^2+67\,868\,800\,686\,225\,z+23\,176\,013\,414\,400\right)I_1\left(2\sqrt{z}\right)\right)-\pi\sqrt{z}\,\left(262\,144\,z^9-123\,273\,216\,z^8+18\,860\,802\,048\,z^7-1\,155\,224\,125\,440\,z^6+28\,158\,588\,057\,600\,z^5-232\,308\,351\,475\,200\,z^4+348\,462\,527\,212\,800\,z^3+261\,346\,895\,409\,600\,z^2+245\,012\,714\,446\,500\,z+102\,088\,631\,019\,375\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\sqrt{z}\,\left(262\,144\,z^9-123\,273\,216\,z^8+18\,860\,802\,048\,z^7-1\,155\,224\,125\,440\,z^6+28\,158\,588\,057\,600\,z^5-232\,308\,351\,475\,200\,z^4+348\,462\,527\,212\,800\,z^3+261\,346\,895\,409\,600\,z^2+245\,012\,714\,446\,500\,z+102\,088\,631\,019\,375\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0640.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{9}{2},5;-z\right)= \frac{1}{386\,174\,921\,932\,800\,z^{7/2}}\left(4\left(2\sqrt{z}\,\left(65\,536\,z^9+30\,834\,688\,z^8+4\,722\,892\,800\,z^7+289\,979\,099\,136\,z^6+7\,110\,985\,688\,064\,z^5+59\,785\,980\,612\,480\,z^4+100\,491\,856\,264\,800\,z^3-50\,885\,743\,293\,000\,z^2+45\,155\,168\,826\,075\,z-11\,588\,006\,707\,200\right)J_0\left(2\sqrt{z}\right)-\left(65\,536\,z^9+30\,801\,920\,z^8+4\,707\,532\,800\,z^7+287\,644\,336\,128\,z^6+6\,969\,992\,283\,648\,z^5+56\,464\,322\,711\,040\,z^4+75\,718\,746\,734\,400\,z^3-70\,130\,324\,880\,000\,z^2+67\,868\,800\,686\,225\,z-23\,176\,013\,414\,400\right)J_1\left(2\sqrt{z}\right)\right)+\pi\sqrt{z}\,\left(262\,144\,z^9+123\,273\,216\,z^8+18\,860\,802\,048\,z^7+1\,155\,224\,125\,440\,z^6+28\,158\,588\,057\,600\,z^5+232\,308\,351\,475\,200\,z^4+348\,462\,527\,212\,800\,z^3-261\,346\,895\,409\,600\,z^2+245\,012\,714\,446\,500\,z-102\,088\,631\,019\,375\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\sqrt{z}\,\left(262\,144\,z^9+123\,273\,216\,z^8+18\,860\,802\,048\,z^7+1\,155\,224\,125\,440\,z^6+28\,158\,588\,057\,600\,z^5+232\,308\,351\,475\,200\,z^4+348\,462\,527\,212\,800\,z^3-261\,346\,895\,409\,600\,z^2+245\,012\,714\,446\,500\,z-102\,088\,631\,019\,375\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0641.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{9}{2},\frac{11}{2};z\right) = \frac{1}{108\,716\,359\,680\,z^{9/2}}\left(-2\sqrt{z}\,\left(8z^9-3956z^8+639\,552z^7-41\,597\,730z^6+1\,080\,169\,470z^5-9\,408\,005\,010z^4+12\,818\,906\,100z^3+15\,173\,217\,675z^2+17\,604\,712\,125z+6\,188\,663\,250\right)\cosh\left(2\sqrt{z}\right)-\left(8z^9-3948z^8+635\,640z^7-40\,979\,430z^6+1\,041\,848\,730z^5-8\,520\,677\,550z^4+7\,368\,391\,800z^3+11\,491\,828\,425z^2+9\,507\,526\,875z-6\,188\,663\,250\right)\sinh\left(2\sqrt{z}\right)+16z\left(2z^9-990z^8+160\,380z^7-10\,478\,160z^6+275\,051\,700z^5-2\,475\,465\,300z^4+4\,125\,775\,500z^3+3\,536\,379\,000z^2+3\,978\,426\,375z+2\,210\,236\,875\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.0642.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{9}{2},\frac{11}{2};-z\right) = \frac{1}{108\,716\,359\,680\,z^{9/2}}\left(2\sqrt{z}\,\left(8z^9+3956z^8+639\,552z^7+41\,597\,730z^6+1\,080\,169\,470z^5+9\,408\,005\,010z^4+12\,818\,906\,100z^3-15\,173\,217\,675z^2+17\,604\,712\,125z-6\,188\,663\,250\right)\cos\left(2\sqrt{z}\right)+\left(8z^9+3948z^8+635\,640z^7+40\,979\,430z^6+1\,041\,848\,730z^5+8\,520\,677\,550z^4+7\,368\,391\,800z^3-11\,491\,828\,425z^2+9\,507\,526\,875z+6\,188\,663\,250\right)\sin\left(2\sqrt{z}\right)+16z\left(2z^9+990z^8+160\,380z^7+10\,478\,160z^6+275\,051\,700z^5+2\,475\,465\,300z^4+4\,125\,775\,500z^3-3\,536\,379\,000z^2+3\,978\,426\,375z-2\,210\,236\,875\right)\mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.0643.01

$$ {}_1F_2\left(-\frac{11}{2};\frac{9}{2},6;z\right) = \frac{1}{810\,967\,336\,058\,880\,z^{9/2}}\left(-\pi\left(262\,144z^9-136\,249\,344z^8+23\,298\,637\,824z^7-1\,617\,313\,775\,616z^6+45\,486\,949\,939\,200z^5-443\,497\,761\,907\,200z^4+813\,079\,230\,163\,200z^3+784\,040\,686\,228\,800z^2+1\,029\,053\,400\,675\,300z+714\,620\,417\,135\,625\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+\pi\left(262\,144z^9-136\,249\,344z^8+23\,298\,637\,824z^7-1\,617\,313\,775\,616z^6+45\,486\,949\,939\,200z^5-443\,497\,761\,907\,200z^4+813\,079\,230\,163\,200z^3+784\,040\,686\,228\,800z^2+1\,029\,053\,400\,675\,300z+714\,620\,417\,135\,625\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2}+4\left(2\sqrt{z}\,\left(65\,536z^{10}-34\,078\,720z^9+5\,833\,162\,752z^8-405\,778\,268\,160z^7+11\,471\,751\,019\,008z^6-113\,645\,455\,515\,648z^5+229\,107\,818\,459\,520z^4+159\,985\,157\,270\,400z^3+206\,000\,118\,064\,125z^2+110\,086\,063\,718\,400z-23\,176\,013\,414\,400\right)I_0\left(2\sqrt{z}\right)-\left(65\,536z^{10}-34\,045\,952z^9+5\,816\,180\,736z^8-402\,891\,208\,704z^7+11\,273\,814\,816\,768z^6-108\,239\,873\,325\,696z^5+180\,749\,203\,034\,400z^4+211\,280\,649\,010\,200z^3+287\,742\,163\,037\,175z^2+196\,996\,114\,022\,400z-46\,352\,026\,828\,800\right)I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0644.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{9}{2}, 6; -z\right) = \frac{1}{810\,967\,336\,058\,880\, z^{9/2}} $$
$$ \left(\pi\left(262\,144 z^9 + 136\,249\,344 z^8 + 23\,298\,637\,824 z^7 + 1\,617\,313\,775\,616 z^6 + 45\,486\,949\,939\,200 z^5 + 443\,497\,761\,907\,200 z^4 + 813\,079\,230\,163\,200 z^3 - 784\,040\,686\,228\,800 z^2 + 1\,029\,053\,400\,675\,300 z - 714\,620\,417\,135\,625\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{3/2} - \pi\left(262\,144 z^9 + 136\,249\,344 z^8 + 23\,298\,637\,824 z^7 + 1\,617\,313\,775\,616 z^6 + 45\,486\,949\,939\,200 z^5 + 443\,497\,761\,907\,200 z^4 + 813\,079\,230\,163\,200 z^3 - 784\,040\,686\,228\,800 z^2 + 1\,029\,053\,400\,675\,300 z - 714\,620\,417\,135\,625\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{3/2} + 4\left(2\sqrt{z}\left(65\,536 z^{10} + 34\,078\,720 z^9 + 5\,833\,162\,752 z^8 + 405\,778\,268\,160 z^7 + 11\,471\,751\,019\,008 z^6 + 113\,645\,455\,515\,648 z^5 + 229\,107\,818\,459\,520 z^4 - 159\,985\,157\,270\,400 z^3 + 206\,000\,118\,064\,125 z^2 - 110\,086\,063\,718\,400 z - 23\,176\,013\,414\,400\right) J_0\left(2\sqrt{z}\right) - \left(65\,536 z^{10} + 34\,045\,952 z^9 + 5\,816\,180\,736 z^8 + 402\,891\,208\,704 z^7 + 11\,273\,814\,816\,768 z^6 + 108\,239\,873\,325\,696 z^5 + 180\,749\,203\,034\,400 z^4 - 211\,280\,649\,010\,200 z^3 + 287\,742\,163\,037\,175 z^2 - 196\,996\,114\,022\,400 z - 46\,352\,026\,828\,800\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{11}{2}$, $b_1 = 5$

07.22.03.0645.01

$$ {}_1F_2\left(-\frac{11}{2}; 5, 5; z\right) = $$
$$ \left(512\left(\sqrt{z}\left(65\,536 z^9 - 32\,555\,008 z^8 + 5\,300\,404\,224 z^7 - 349\,011\,735\,552 z^6 + 9\,292\,354\,513\,920 z^5 - 86\,485\,684\,824\,000 z^4 + 168\,764\,822\,503\,200 z^3 + 89\,389\,695\,641\,400 z^2 + 99\,367\,856\,089\,425 z + 40\,835\,452\,407\,750\right) I_0\left(\sqrt{z}\right)^2 - \left(65\,536 z^9 - 32\,505\,856 z^8 + 5\,276\,098\,560 z^7 - 345\,090\,705\,408 z^6 + 9\,039\,218\,826\,240 z^5 - 80\,055\,657\,158\,400 z^4 + 116\,637\,159\,038\,400 z^3 + 131\,603\,406\,858\,000 z^2 + 159\,264\,618\,645\,825 z + 81\,670\,904\,815\,500\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \sqrt{z}\left(65\,536 z^9 - 32\,522\,240 z^8 + 5\,284\,175\,872 z^7 - 346\,385\,746\,944 z^6 + 9\,121\,725\,139\,968 z^5 - 82\,085\,783\,284\,800 z^4 + 131\,550\,454\,728\,000 z^3 + 129\,733\,957\,168\,200 z^2 + 155\,605\,147\,461\,225 z + 99\,359\,913\,269\,925\right) I_1\left(\sqrt{z}\right)^2\right)\right) \Big/ \left(47\,630\,017\,961\,150\,625\, z^{7/2}\right) $$

07.22.03.0646.01

$$ {}_1F_2\left(-\frac{11}{2}; 5, 5; -z\right) = $$
$$ \left(512\left(\sqrt{z}\left(65\,536 z^9 + 32\,555\,008 z^8 + 5\,300\,404\,224 z^7 + 349\,011\,735\,552 z^6 + 9\,292\,354\,513\,920 z^5 + 86\,485\,684\,824\,000 z^4 + 168\,764\,822\,503\,200 z^3 - 89\,389\,695\,641\,400 z^2 + 99\,367\,856\,089\,425 z - 40\,835\,452\,407\,750\right) J_0\left(\sqrt{z}\right)^2 - \left(65\,536 z^9 + 32\,505\,856 z^8 + 5\,276\,098\,560 z^7 + 345\,090\,705\,408 z^6 + 9\,039\,218\,826\,240 z^5 + 80\,055\,657\,158\,400 z^4 + 116\,637\,159\,038\,400 z^3 - 131\,603\,406\,858\,000 z^2 + 159\,264\,618\,645\,825 z - 81\,670\,904\,815\,500\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\left(65\,536 z^9 + 32\,522\,240 z^8 + 5\,284\,175\,872 z^7 + 346\,385\,746\,944 z^6 + 9\,121\,725\,139\,968 z^5 + 82\,085\,783\,284\,800 z^4 + 131\,550\,454\,728\,000 z^3 - 129\,733\,957\,168\,200 z^2 + 155\,605\,147\,461\,225 z - 99\,359\,913\,269\,925\right) J_1\left(\sqrt{z}\right)^2\right)\right) \Big/ \left(47\,630\,017\,961\,150\,625\, z^{7/2}\right) $$

07.22.03.0647.01

$$
{}_1F_2\left(-\frac{11}{2};\,5,\,\frac{11}{2};\,z\right)=\frac{1}{3\,432\,665\,972\,736\,000\,z^4}
$$
$$
\left(4\left(2\,z\left(262\,144\,z^9-137\,035\,776\,z^8+23\,610\,195\,968\,z^7-1\,656\,188\,682\,240\,z^6+47\,339\,234\,334\,720\,z^5-476\,055\,772\,531\,200\right.\right.\right.
$$
$$
\left.\left.\left.z^4+979\,538\,912\,352\,000\,z^3+715\,659\,375\,816\,000\,z^2+995\,902\,283\,722\,500\,z+688\,833\,730\,864\,125\right)\right.\right.
$$
$$
\left.\left.I_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(262\,144\,z^9-136\,904\,704\,z^8+23\,541\,907\,456\,z^7-1\,644\,502\,302\,720\,z^6+\right.\right.\right.
$$
$$
\left.\left.\left.46\,531\,191\,306\,240\,z^5-453\,735\,048\,844\,800\,z^4+776\,501\,709\,984\,000\,z^3+\right.\right.\right.
$$
$$
\left.\left.\left.938\,756\,167\,272\,000\,z^2+1\,367\,097\,912\,526\,500\,z+1\,139\,460\,656\,016\,375\right)I_1\left(2\sqrt{z}\right)\right)-
$$
$$
\pi\left(1\,048\,576\,z^{10}-547\,880\,960\,z^9+94\,304\,010\,240\,z^8-6\,601\,280\,716\,800\,z^7+187\,723\,920\,384\,000\,z^6-\right.
$$
$$
1\,858\,466\,811\,801\,600\,z^5+3\,484\,625\,272\,128\,000\,z^4+3\,484\,625\,272\,128\,000\,z^3+
$$
$$
\left.4\,900\,254\,288\,930\,000\,z^2+4\,083\,545\,240\,775\,000\,z+714\,620\,417\,135\,625\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+
$$
$$
\pi\left(1\,048\,576\,z^{10}-547\,880\,960\,z^9+94\,304\,010\,240\,z^8-6\,601\,280\,716\,800\,z^7+187\,723\,920\,384\,000\,z^6-\right.
$$
$$
1\,858\,466\,811\,801\,600\,z^5+3\,484\,625\,272\,128\,000\,z^4+3\,484\,625\,272\,128\,000\,z^3+
$$
$$
\left.4\,900\,254\,288\,930\,000\,z^2+4\,083\,545\,240\,775\,000\,z+714\,620\,417\,135\,625\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\Big)
$$

07.22.03.0648.01

$$
{}_1F_2\left(-\frac{11}{2};\,5,\,\frac{11}{2};\,-z\right)=\frac{1}{3\,432\,665\,972\,736\,000\,z^4}
$$
$$
\left(4\left(2\,z\left(262\,144\,z^9+137\,035\,776\,z^8+23\,610\,195\,968\,z^7+1\,656\,188\,682\,240\,z^6+47\,339\,234\,334\,720\,z^5+476\,055\,772\,531\,200\right.\right.\right.
$$
$$
\left.\left.\left.z^4+979\,538\,912\,352\,000\,z^3-715\,659\,375\,816\,000\,z^2+995\,902\,283\,722\,500\,z-688\,833\,730\,864\,125\right)\right.\right.
$$
$$
\left.\left.J_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(262\,144\,z^9+136\,904\,704\,z^8+23\,541\,907\,456\,z^7+1\,644\,502\,302\,720\,z^6+\right.\right.\right.
$$
$$
\left.\left.\left.46\,531\,191\,306\,240\,z^5+453\,735\,048\,844\,800\,z^4+776\,501\,709\,984\,000\,z^3-\right.\right.\right.
$$
$$
\left.\left.\left.938\,756\,167\,272\,000\,z^2+1\,367\,097\,912\,526\,500\,z-1\,139\,460\,656\,016\,375\right)J_1\left(2\sqrt{z}\right)\right)+
$$
$$
\pi\left(1\,048\,576\,z^{10}+547\,880\,960\,z^9+94\,304\,010\,240\,z^8+6\,601\,280\,716\,800\,z^7+187\,723\,920\,384\,000\,z^6+\right.
$$
$$
1\,858\,466\,811\,801\,600\,z^5+3\,484\,625\,272\,128\,000\,z^4-3\,484\,625\,272\,128\,000\,z^3+
$$
$$
\left.4\,900\,254\,288\,930\,000\,z^2-4\,083\,545\,240\,775\,000\,z+714\,620\,417\,135\,625\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-
$$
$$
\pi\left(1\,048\,576\,z^{10}+547\,880\,960\,z^9+94\,304\,010\,240\,z^8+6\,601\,280\,716\,800\,z^7+187\,723\,920\,384\,000\,z^6+\right.
$$
$$
1\,858\,466\,811\,801\,600\,z^5+3\,484\,625\,272\,128\,000\,z^4-3\,484\,625\,272\,128\,000\,z^3+
$$
$$
\left.4\,900\,254\,288\,930\,000\,z^2-4\,083\,545\,240\,775\,000\,z+714\,620\,417\,135\,625\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\Big)
$$

07.22.03.0649.01

$$
{}_1F_2\left(-\frac{11}{2};\,5,\,6;\,z\right)=
$$
$$
\left(512\left(2\,z\left(65\,536\,z^9-35\,979\,264\,z^8+6\,545\,977\,344\,z^7-488\,293\,134\,336\,z^6+14\,983\,378\,099\,200\,z^5-164\,156\,722\,329\,600\,z^4+\right.\right.\right.
$$
$$
\left.\left.\left.382\,446\,919\,839\,600\,z^3+284\,517\,564\,962\,400\,z^2+461\,457\,292\,128\,525\,z+387\,936\,797\,873\,625\right)I_0\left(\sqrt{z}\right)^2-\right.\right.
$$
$$
\left.\left.2\sqrt{z}\,\left(65\,536\,z^9-35\,930\,112\,z^8+6\,519\,103\,488\,z^7-483\,443\,702\,784\,z^6+14\,627\,848\,596\,480\,z^5-\right.\right.\right.
$$
$$
\left.\left.\left.153\,681\,286\,651\,200\,z^4+280\,407\,925\,828\,800\,z^3+398\,956\,911\,229\,800\,z^2+\right.\right.\right.
$$
$$
\left.\left.\left.682\,018\,774\,893\,225\,z+694\,202\,690\,931\,750\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\right.\right.
$$
$$
\left.\left.\left(131\,072\,z^{10}-71\,892\,992\,z^9+13\,056\,073\,728\,z^8-970\,093\,854\,720\,z^7+29\,488\,063\,223\,808\,z^6-\right.\right.\right.
$$
$$
\left.\left.\left.314\,024\,032\,465\,920\,z^5+620\,537\,905\,864\,800\,z^4+775\,152\,063\,100\,800\,z^3+1\,292\,844\,660\,896\,250\,z^2+\right.\right.\right.
$$
$$
\left.\left.\left.1\,392\,355\,487\,736\,675\,z+326\,683\,619\,262\,000\right)I_1\left(\sqrt{z}\right)^2\right)\right)\Big/\left(200\,046\,075\,436\,832\,625\,z^4\right)
$$

07.22.03.0650.01

$$ {}_1F_2\left(-\frac{11}{2}; 5, 6; -z\right) = \left(512\left(2z\left(65\,536z^9 + 35\,979\,264z^8 + 6\,545\,977\,344z^7 + 488\,293\,134\,336z^6 + 14\,983\,378\,099\,200z^5 + 164\,156\,722\,329\,600z^4 + 382\,446\,919\,839\,600z^3 - 284\,517\,564\,962\,400z^2 + 461\,457\,292\,128\,525z - 387\,936\,797\,873\,625\right) J_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(65\,536z^9 + 35\,930\,112z^8 + 6\,519\,103\,488z^7 + 483\,443\,702\,784z^6 + 14\,627\,848\,596\,480z^5 + 153\,681\,286\,651\,200z^4 + 280\,407\,925\,828\,800z^3 - 398\,956\,911\,229\,800z^2 + 682\,018\,774\,893\,225z - 694\,202\,690\,931\,750\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(131\,072z^{10} + 71\,892\,992z^9 + 13\,056\,073\,728z^8 + 970\,093\,854\,720z^7 + 29\,488\,063\,223\,808z^6 + 314\,024\,032\,465\,920z^5 + 620\,537\,905\,864\,800z^4 - 775\,152\,063\,100\,800z^3 + 1\,292\,844\,660\,896\,250z^2 - 1\,392\,355\,487\,736\,675z + 326\,683\,619\,262\,000\right) J_1\left(\sqrt{z}\right)^2\right)\Big/\left(200\,046\,075\,436\,832\,625z^4\right) $$

For fixed z and $a_1 = -\frac{11}{2}$, $b_1 = \frac{11}{2}$

07.22.03.0651.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{11}{2}, \frac{11}{2}; z\right) = \frac{1}{483\,183\,820\,800z^{9/2}}\left(-2\sqrt{z}\left(16z^9 - 8792z^8 + 1\,599\,424z^7 - 118\,961\,520z^6 + 3\,609\,790\,020z^5 - 37\,936\,678\,950z^4 + 67\,088\,914\,200z^3 + 103\,286\,591\,100z^2 + 183\,559\,587\,750z + 195\,139\,357\,875\right)\cosh\left(2\sqrt{z}\right) - \left(16z^9 - 8776z^8 + 1\,590\,720z^7 - 117\,409\,440z^6 + 3\,499\,088\,580z^5 - 34\,890\,089\,850z^4 + 43\,133\,844\,600z^3 + 90\,495\,751\,500z^2 + 153\,509\,721\,750z + 52\,407\,172\,125\right)\sinh\left(2\sqrt{z}\right) + 16\left(4z^{10} - 2200z^9 + 400\,950z^8 - 29\,937\,600z^7 + 916\,839\,000z^6 - 9\,901\,861\,200z^5 + 20\,628\,877\,500z^4 + 23\,575\,860\,000z^3 + 39\,784\,263\,750z^2 + 44\,204\,737\,500z + 15\,471\,658\,125\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.0652.01

$$ {}_1F_2\left(-\frac{11}{2}; \frac{11}{2}, \frac{11}{2}; -z\right) = \frac{1}{483\,183\,820\,800z^{9/2}}\left(2\sqrt{z}\left(16z^9 + 8792z^8 + 1\,599\,424z^7 + 118\,961\,520z^6 + 3\,609\,790\,020z^5 + 37\,936\,678\,950z^4 + 67\,088\,914\,200z^3 - 103\,286\,591\,100z^2 + 183\,559\,587\,750z - 195\,139\,357\,875\right)\cos\left(2\sqrt{z}\right) + \left(16z^9 + 8776z^8 + 1\,590\,720z^7 + 117\,409\,440z^6 + 3\,499\,088\,580z^5 + 34\,890\,089\,850z^4 + 43\,133\,844\,600z^3 - 90\,495\,751\,500z^2 + 153\,509\,721\,750z - 52\,407\,172\,125\right)\sin\left(2\sqrt{z}\right) + 16\left(4z^{10} + 2200z^9 + 400\,950z^8 + 29\,937\,600z^7 + 916\,839\,000z^6 + 9\,901\,861\,200z^5 + 20\,628\,877\,500z^4 - 23\,575\,860\,000z^3 + 39\,784\,263\,750z^2 - 44\,204\,737\,500z + 15\,471\,658\,125\right)\mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.0653.01

$$
{}_1F_2\left(-\frac{11}{2};\frac{11}{2},6;z\right)=
\left(4\left(2\sqrt{z}\,\left(262\,144\,z^{10}-151\,453\,696\,z^9+29\,161\,095\,168\,z^8-2\,317\,700\,874\,240\,z^7+76\,383\,839\,508\,480\,z^6-\right.\right.\right.
$$
$$
\left.\left.\left.905\,534\,781\,903\,360\,z^5+2\,241\,691\,682\,630\,400\,z^4+2\,230\,034\,310\,504\,000\,z^3+\right.\right.\right.
$$
$$
\left.\left.\left.4\,433\,938\,513\,042\,500\,z^2+5\,658\,623\,250\,674\,625\,z+1\,854\,081\,073\,152\,000\right)I_0\left(2\sqrt{z}\right)-\right.
$$
$$
\left.\left(262\,144\,z^{10}-151\,322\,624\,z^9+29\,085\,597\,696\,z^8-2\,303\,251\,660\,800\,z^7+75\,249\,832\,089\,600\,z^6-\right.\right.
$$
$$
\left.\left.869\,246\,159\,685\,120\,z^5+1\,846\,599\,666\,912\,000\,z^4+2\,811\,427\,591\,896\,000\,z^3+\right.\right.
$$
$$
\left.\left.5\,689\,683\,120\,082\,500\,z^2+8\,168\,984\,654\,551\,875\,z+3\,708\,162\,146\,304\,000\right)I_1\left(2\sqrt{z}\right)\right)-
$$
$$
\pi\sqrt{z}\,\left(1\,048\,576\,z^{10}-605\,552\,640\,z^9+116\,493\,189\,120\,z^8-9\,241\,793\,003\,520\,z^7+303\,246\,332\,928\,000\,z^6-\right.
$$
$$
3\,547\,982\,095\,257\,600\,z^5+8\,130\,792\,301\,632\,000\,z^4+10\,453\,875\,816\,384\,000\,z^3+
$$
$$
\left.20\,581\,068\,013\,506\,000\,z^2+28\,584\,816\,685\,425\,000\,z+15\,007\,028\,759\,848\,125\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+
$$
$$
\pi\sqrt{z}\,\left(1\,048\,576\,z^{10}-605\,552\,640\,z^9+116\,493\,189\,120\,z^8-9\,241\,793\,003\,520\,z^7+303\,246\,332\,928\,000\,z^6-\right.
$$
$$
3\,547\,982\,095\,257\,600\,z^5+8\,130\,792\,301\,632\,000\,z^4+10\,453\,875\,816\,384\,000\,z^3+20\,581\,068\,013\,506\,000\,z^2+
$$
$$
\left.28\,584\,816\,685\,425\,000\,z+15\,007\,028\,759\,848\,125\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\Big)\Big/\left(7\,208\,598\,542\,745\,600\,z^{9/2}\right)
$$

07.22.03.0654.01

$$
{}_1F_2\left(-\frac{11}{2};\frac{11}{2},6;-z\right)=
\left(4\left(2\sqrt{z}\,\left(262\,144\,z^{10}+151\,453\,696\,z^9+29\,161\,095\,168\,z^8+2\,317\,700\,874\,240\,z^7+76\,383\,839\,508\,480\,z^6+\right.\right.\right.
$$
$$
\left.\left.\left.905\,534\,781\,903\,360\,z^5+2\,241\,691\,682\,630\,400\,z^4-2\,230\,034\,310\,504\,000\,z^3+\right.\right.\right.
$$
$$
\left.\left.\left.4\,433\,938\,513\,042\,500\,z^2-5\,658\,623\,250\,674\,625\,z+1\,854\,081\,073\,152\,000\right)J_0\left(2\sqrt{z}\right)-\right.
$$
$$
\left.\left(262\,144\,z^{10}+151\,322\,624\,z^9+29\,085\,597\,696\,z^8+2\,303\,251\,660\,800\,z^7+75\,249\,832\,089\,600\,z^6+\right.\right.
$$
$$
\left.\left.869\,246\,159\,685\,120\,z^5+1\,846\,599\,666\,912\,000\,z^4-2\,811\,427\,591\,896\,000\,z^3+\right.\right.
$$
$$
\left.\left.5\,689\,683\,120\,082\,500\,z^2-8\,168\,984\,654\,551\,875\,z+3\,708\,162\,146\,304\,000\right)J_1\left(2\sqrt{z}\right)\right)+
$$
$$
\pi\sqrt{z}\,\left(1\,048\,576\,z^{10}+605\,552\,640\,z^9+116\,493\,189\,120\,z^8+9\,241\,793\,003\,520\,z^7+303\,246\,332\,928\,000\,z^6+\right.
$$
$$
3\,547\,982\,095\,257\,600\,z^5+8\,130\,792\,301\,632\,000\,z^4-10\,453\,875\,816\,384\,000\,z^3+
$$
$$
\left.20\,581\,068\,013\,506\,000\,z^2-28\,584\,816\,685\,425\,000\,z+15\,007\,028\,759\,848\,125\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-
$$
$$
\pi\sqrt{z}\,\left(1\,048\,576\,z^{10}+605\,552\,640\,z^9+116\,493\,189\,120\,z^8+9\,241\,793\,003\,520\,z^7+303\,246\,332\,928\,000\,z^6+\right.
$$
$$
3\,547\,982\,095\,257\,600\,z^5+8\,130\,792\,301\,632\,000\,z^4-10\,453\,875\,816\,384\,000\,z^3+20\,581\,068\,013\,506\,000\,z^2-
$$
$$
\left.28\,584\,816\,685\,425\,000\,z+15\,007\,028\,759\,848\,125\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\Big)\Big/\left(7\,208\,598\,542\,745\,600\,z^{9/2}\right)
$$

For fixed z and $a_1 = -\frac{11}{2}$, $b_1 = 6$

07.22.03.0655.01

$${}_1F_2\left(-\frac{11}{2}; 6, 6; z\right) =$$
$$\left(512\left(\sqrt{z}\,\left(262\,144 z^{10} - 159\,055\,872 z^9 + 32\,337\,838\,080 z^8 - 2\,732\,842\,377\,216 z^7 + 96\,662\,086\,262\,784 z^6 - \right.\right.\right.$$
$$\left.\left.\left.1\,247\,361\,073\,136\,640 z^5 + 3\,481\,017\,641\,640\,000 z^4 + 3\,587\,450\,599\,656\,000 z^3 + \right.\right.\right.$$
$$\left.\left.\left.8\,363\,867\,929\,470\,900 z^2 + 13\,243\,204\,094\,568\,525 z + 6\,860\,356\,004\,502\,000\right) I_0\left(\sqrt{z}\right)^2 - \right.$$
$$4\left(65\,536 z^{10} - 39\,714\,816 z^9 + 8\,054\,747\,136 z^8 - 677\,213\,687\,808 z^7 + 23\,666\,361\,836\,544 z^6 - \right.$$
$$294\,792\,050\,488\,320 z^5 + 671\,158\,787\,468\,400 z^4 + 1\,200\,032\,335\,101\,600 z^3 + $$
$$\left.2\,855\,198\,759\,507\,325 z^2 + 5\,096\,531\,339\,222\,400 z + 3\,430\,178\,002\,251\,000\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - $$
$$\sqrt{z}\,\left(262\,144 z^{10} - 158\,924\,800 z^9 + 32\,258\,506\,752 z^8 - 2\,716\,791\,939\,072 z^7 + 95\,319\,434\,004\,480 z^6 - \right.$$
$$1\,200\,984\,116\,161\,536 z^5 + 2\,922\,244\,612\,056\,000 z^4 + 4\,626\,042\,884\,971\,200 z^3 + 10\,719\,670\,179\,903\,300 z^2 + $$
$$\left.\left.19\,046\,402\,564\,025\,375 z + 15\,630\,743\,666\,745\,900\right) I_1\left(\sqrt{z}\right)^2\right)\Big/\left(840\,193\,516\,834\,697\,025 z^{9/2}\right)$$

07.22.03.0656.01

$${}_1F_2\left(-\frac{11}{2}; 6, 6; -z\right) =$$
$$\left(512\left(\sqrt{z}\,\left(262\,144 z^{10} + 159\,055\,872 z^9 + 32\,337\,838\,080 z^8 + 2\,732\,842\,377\,216 z^7 + 96\,662\,086\,262\,784 z^6 + \right.\right.\right.$$
$$\left.\left.\left.1\,247\,361\,073\,136\,640 z^5 + 3\,481\,017\,641\,640\,000 z^4 - 3\,587\,450\,599\,656\,000 z^3 + \right.\right.\right.$$
$$\left.\left.\left.8\,363\,867\,929\,470\,900 z^2 - 13\,243\,204\,094\,568\,525 z + 6\,860\,356\,004\,502\,000\right) J_0\left(\sqrt{z}\right)^2 - \right.$$
$$4\left(65\,536 z^{10} + 39\,714\,816 z^9 + 8\,054\,747\,136 z^8 + 677\,213\,687\,808 z^7 + 23\,666\,361\,836\,544 z^6 + \right.$$
$$294\,792\,050\,488\,320 z^5 + 671\,158\,787\,468\,400 z^4 - 1\,200\,032\,335\,101\,600 z^3 + $$
$$\left.2\,855\,198\,759\,507\,325 z^2 - 5\,096\,531\,339\,222\,400 z + 3\,430\,178\,002\,251\,000\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + $$
$$\sqrt{z}\,\left(262\,144 z^{10} + 158\,924\,800 z^9 + 32\,258\,506\,752 z^8 + 2\,716\,791\,939\,072 z^7 + 95\,319\,434\,004\,480 z^6 + \right.$$
$$1\,200\,984\,116\,161\,536 z^5 + 2\,922\,244\,612\,056\,000 z^4 - 4\,626\,042\,884\,971\,200 z^3 + 10\,719\,670\,179\,903\,300 z^2 - $$
$$\left.\left.19\,046\,402\,564\,025\,375 z + 15\,630\,743\,666\,745\,900\right) J_1\left(\sqrt{z}\right)^2\right)\Big/\left(840\,193\,516\,834\,697\,025 z^{9/2}\right)$$

For fixed z and $a_1 = -\frac{9}{2}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = -\frac{9}{2}$, $b_1 = -\frac{11}{2}$

07.22.03.0657.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, -\frac{11}{2}; z\right) =$$
$$\frac{1}{114\,345}\left(\left(1664 z^3 + 43\,680 z^2 + 211\,680 z + 114\,345\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(64 z^3 + 5376 z^2 + 59\,220 z + 114\,345\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0658.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, -\frac{11}{2}; -z\right) =$$
$$\frac{1}{114\,345}\left(\left(-1664 z^3 + 43\,680 z^2 - 211\,680 z + 114\,345\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-64 z^3 + 5376 z^2 - 59\,220 z + 114\,345\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0659.01

$${}_1F_2\left(-\frac{9}{2};-\frac{11}{2},-\frac{9}{2};z\right)=\left(\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}+\frac{20\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{495}\sqrt{z}\left(16\,z^2+240\,z+495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.0660.01

$${}_1F_2\left(-\frac{9}{2};-\frac{11}{2},-\frac{9}{2};-z\right)=\left(-\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}-\frac{20\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.0661.01

$${}_1F_2\left(-\frac{9}{2};-\frac{11}{2},-\frac{7}{2};z\right)=\frac{\left(272\,z^2+2040\,z+1155\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(16\,z^2+500\,z+1155\right)\sinh\left(2\sqrt{z}\right)}{1155}$$

07.22.03.0662.01

$${}_1F_2\left(-\frac{9}{2};-\frac{11}{2},-\frac{7}{2};-z\right)=\frac{\left(272\,z^2-2040\,z+1155\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(16\,z^2-500\,z+1155\right)\sin\left(2\sqrt{z}\right)}{1155}$$

07.22.03.0663.01

$${}_1F_2\left(-\frac{9}{2};-\frac{11}{2},-\frac{5}{2};z\right)=\left(\frac{16\,z^2}{165}+\frac{92\,z}{55}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{165}\sqrt{z}\left(56\,z+165\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.0664.01

$${}_1F_2\left(-\frac{9}{2};-\frac{11}{2},-\frac{5}{2};-z\right)=\left(\frac{16\,z^2}{165}-\frac{92\,z}{55}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{165}\left(165-56\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.0665.01

$${}_1F_2\left(-\frac{9}{2};-\frac{11}{2},-\frac{3}{2};z\right)=\left(\frac{16\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{33}\sqrt{z}\left(4\,z+33\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.0666.01

$${}_1F_2\left(-\frac{9}{2};-\frac{11}{2},-\frac{3}{2};-z\right)=\left(1-\frac{16\,z}{11}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{33}\left(33-4\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.0667.01

$${}_1F_2\left(-\frac{9}{2};-\frac{11}{2},-\frac{1}{2};z\right)=\left(\frac{4\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.0668.01

$${}_1F_2\left(-\frac{9}{2};-\frac{11}{2},-\frac{1}{2};-z\right)=\left(1-\frac{4\,z}{11}\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.0669.01

$${}_1F_2\left(-\frac{9}{2};-\frac{11}{2},\frac{1}{2};z\right)=\cosh\left(2\sqrt{z}\right)-\frac{2}{11}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.0670.01

$${}_1F_2\left(-\frac{9}{2};-\frac{11}{2},\frac{1}{2};-z\right)=\cos\left(2\sqrt{z}\right)+\frac{2}{11}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.0671.01

$${}_1F_2\left(-\frac{9}{2};-\frac{11}{2},1;z\right)=I_0\left(2\sqrt{z}\right)-\frac{2}{11}\sqrt{z}\,I_1\left(2\sqrt{z}\right)$$

07.22.03.0672.01

$${}_1F_2\left(-\frac{9}{2};-\frac{11}{2},1;-z\right)=J_0\left(2\sqrt{z}\right)+\frac{2}{11}\sqrt{z}\,J_1\left(2\sqrt{z}\right)$$

07.22.03.0673.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, \frac{3}{2}; z\right) = \frac{1}{11}\left(\frac{6\sinh\left(2\sqrt{z}\right)}{\sqrt{z}} - \cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0674.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, \frac{3}{2}; -z\right) = \frac{1}{11}\left(\frac{6\sin\left(2\sqrt{z}\right)}{\sqrt{z}} - \cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0675.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, 2; z\right) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - \frac{2}{11} I_2\left(2\sqrt{z}\right)$$

07.22.03.0676.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, 2; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + \frac{2}{11} J_2\left(2\sqrt{z}\right)$$

07.22.03.0677.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, \frac{5}{2}; z\right) = \frac{42\sqrt{z}\,\cosh\left(2\sqrt{z}\right) - 3\,(2z+7)\sinh\left(2\sqrt{z}\right)}{44\,z^{3/2}}$$

07.22.03.0678.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, \frac{5}{2}; -z\right) = \frac{3\,(7-2z)\sin\left(2\sqrt{z}\right) - 42\sqrt{z}\,\cos\left(2\sqrt{z}\right)}{44\,z^{3/2}}$$

07.22.03.0679.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, 3; z\right) = \frac{2\,I_2\left(2\sqrt{z}\right)}{z} - \frac{4\,I_3\left(2\sqrt{z}\right)}{11\sqrt{z}}$$

07.22.03.0680.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, 3; -z\right) = \frac{2\,J_2\left(2\sqrt{z}\right)}{z} + \frac{4\,J_3\left(2\sqrt{z}\right)}{11\sqrt{z}}$$

07.22.03.0681.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, \frac{7}{2}; z\right) = -\frac{15\left(2\sqrt{z}\,(z+12)\cosh\left(2\sqrt{z}\right) - (17z+12)\sinh\left(2\sqrt{z}\right)\right)}{88\,z^{5/2}}$$

07.22.03.0682.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, \frac{7}{2}; -z\right) = \frac{15\left(2\,(z-12)\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (12-17z)\sin\left(2\sqrt{z}\right)\right)}{88\,z^{5/2}}$$

07.22.03.0683.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, 4; z\right) = \frac{6\,I_3\left(2\sqrt{z}\right)}{z^{3/2}} - \frac{12\,I_4\left(2\sqrt{z}\right)}{11\,z}$$

07.22.03.0684.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, 4; -z\right) = \frac{6\,J_3\left(2\sqrt{z}\right)}{z^{3/2}} + \frac{12\,J_4\left(2\sqrt{z}\right)}{11\,z}$$

07.22.03.0685.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, \frac{9}{2}; z\right) = -\frac{105\left(\left(8z^2+222z+135\right)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,(14z+45)\cosh\left(2\sqrt{z}\right)\right)}{704\,z^{7/2}}$$

07.22.03.0686.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, \frac{9}{2}; -z\right) = \frac{105\left(6\sqrt{z}\,(14z-45)\cos\left(2\sqrt{z}\right) + \left(8z^2-222z+135\right)\sin\left(2\sqrt{z}\right)\right)}{704\,z^{7/2}}$$

07.22.03.0687.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, 5; z\right) = \frac{24\,I_4\left(2\sqrt{z}\right)}{z^2} - \frac{48\,I_5\left(2\sqrt{z}\right)}{11\,z^{3/2}}$$

07.22.03.0688.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, 5; -z\right) = \frac{24\,J_4\left(2\sqrt{z}\right)}{z^2} + \frac{48\,J_5\left(2\sqrt{z}\right)}{11\,z^{3/2}}$$

07.22.03.0689.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, \frac{11}{2}; z\right) = -\frac{945\left(2\sqrt{z}\,\left(4z^2+215z+525\right)\cosh\left(2\sqrt{z}\right) - \left(104z^2+915z+525\right)\sinh\left(2\sqrt{z}\right)\right)}{1408\,z^{9/2}}$$

07.22.03.0690.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, \frac{11}{2}; -z\right) = -\frac{945\left(2\sqrt{z}\,\left(4z^2-215z+525\right)\cos\left(2\sqrt{z}\right) + \left(-104z^2+915z-525\right)\sin\left(2\sqrt{z}\right)\right)}{1408\,z^{9/2}}$$

07.22.03.0691.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, 6; z\right) = \frac{120\,I_5\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{240\,I_6\left(2\sqrt{z}\right)}{11\,z^2}$$

07.22.03.0692.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{11}{2}, 6; -z\right) = \frac{120\,J_5\left(2\sqrt{z}\right)}{z^{5/2}} + \frac{240\,J_6\left(2\sqrt{z}\right)}{11\,z^2}$$

For fixed z and $a_1 = -\frac{9}{2}$, $b_1 = -\frac{9}{2}$

07.22.03.0693.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, -\frac{9}{2}; z\right) = \left(\frac{16z^2}{63} + \frac{16z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\,\left(16z^2+420z+945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.0694.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, -\frac{9}{2}; -z\right) = \left(\frac{16z^2}{63} - \frac{16z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\,\left(16z^2-420z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.0695.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, -\frac{7}{2}; z\right) = \left(\frac{16z^2}{105} + \frac{12z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,(8z+21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.0696.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, -\frac{7}{2}; -z\right) = \left(\frac{16\,z^2}{105} - \frac{12\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}\,(21 - 8\,z)\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.0697.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, -\frac{5}{2}; z\right) = \left(\frac{8\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\,\sqrt{z}\,(4\,z + 15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.0698.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, -\frac{5}{2}; -z\right) = \left(1 - \frac{8\,z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\,(15 - 4\,z)\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.0699.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, -\frac{3}{2}; z\right) = \left(\frac{4\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\,\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.0700.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, -\frac{3}{2}; -z\right) = \left(1 - \frac{4\,z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.0701.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, -\frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\,\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.0702.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, -\frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.0703.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, \frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.0704.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, \frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.0705.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, 1; z\right) = I_0\left(2\sqrt{z}\right)$$

07.22.03.0706.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, 1; -z\right) = J_0\left(2\sqrt{z}\right)$$

07.22.03.0707.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, \frac{3}{2}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.0708.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, \frac{3}{2}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.0709.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, 2; z\right) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.0710.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, 2; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.0711.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, \frac{5}{2}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.0712.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, \frac{5}{2}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}}$$

07.22.03.0713.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, 3; z\right) = \frac{2I_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.0714.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, 3; -z\right) = \frac{2J_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.0715.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, \frac{7}{2}; z\right) = \frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.0716.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, \frac{7}{2}; -z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4z-3)\sin\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.0717.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, 4; z\right) = \frac{6I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.0718.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, 4; -z\right) = \frac{6J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.0719.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, \frac{9}{2}; z\right) = \frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right) - 3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.0720.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, \frac{9}{2}; -z\right) = \frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right) + 3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.0721.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, 5; z\right) = \frac{24\, I_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.0722.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, 5; -z\right) = \frac{24\, J_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.0723.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, \frac{11}{2}; z\right) = \frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\,\left(8z+21\right)\cosh\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}}$$

07.22.03.0724.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, \frac{11}{2}; -z\right) = \frac{945\left(10\sqrt{z}\,\left(8z-21\right)\cos\left(2\sqrt{z}\right) + \left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}}$$

07.22.03.0725.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, 6; z\right) = \frac{120\, I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.0726.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{9}{2}, 6; -z\right) = \frac{120\, J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = -\frac{9}{2}$, $b_1 = -\frac{7}{2}$

07.22.03.0727.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, -\frac{7}{2}; z\right) = \frac{1}{11\,025}\left(-512\,\mathrm{Shi}\left(2\sqrt{z}\right)z^{9/2} + 2\left(64z^3+96z^2-3300z-11\,025\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \left(256z^4+128z^3+384z^2+18\,000z+11\,025\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0728.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, -\frac{7}{2}; -z\right) = \frac{1}{11\,025}\left(512\,\mathrm{Si}\left(2\sqrt{z}\right)z^{9/2} + 2\left(64z^3-96z^2-3300z+11\,025\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(256z^4-128z^3+384z^2-18\,000z+11\,025\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0729.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, -\frac{5}{2}; z\right) = \frac{1}{1575}\left(256\,\mathrm{Shi}\left(2\sqrt{z}\right)z^{9/2} - 2\left(32z^3+48z^2+240z+1575\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \left(-128z^4-64z^3-192z^2+2340z+1575\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0730.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, -\frac{5}{2}; -z\right) = \frac{1}{1575}\left(-256\,\mathrm{Si}\left(2\sqrt{z}\right)z^{9/2} + 2\left(-32z^3+48z^2-240z+1575\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-128z^4+64z^3-192z^2-2340z+1575\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0731.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, -\frac{3}{2}; z\right) =$$
$$\frac{1}{315}\left(-64\,\text{Shi}\left(2\sqrt{z}\right) z^{9/2} + 2\left(8z^3 + 12z^2 + 60z - 315\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \left(32z^4 + 16z^3 + 48z^2 + 360z + 315\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0732.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, -\frac{3}{2}; -z\right) =$$
$$\frac{1}{315}\left(64\,\text{Si}\left(2\sqrt{z}\right) z^{9/2} + 2\left(8z^3 - 12z^2 + 60z + 315\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(32z^4 - 16z^3 + 48z^2 - 360z + 315\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0733.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, -\frac{1}{2}; z\right) =$$
$$\frac{1}{315}\left(32\,\text{Shi}\left(2\sqrt{z}\right) z^{9/2} - 2\left(4z^3 + 6z^2 + 30z + 315\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} - \left(16z^4 + 8z^3 + 24z^2 + 180z - 315\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0734.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, -\frac{1}{2}; -z\right) =$$
$$\frac{1}{315}\left(-32\,\text{Si}\left(2\sqrt{z}\right) z^{9/2} + 2\left(-4z^3 + 6z^2 - 30z + 315\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-16z^4 + 8z^3 - 24z^2 + 180z + 315\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0735.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, \frac{1}{2}; z\right) =$$
$$\frac{1}{1260}\left(-16\,\text{Shi}\left(2\sqrt{z}\right) z^{9/2} + \left(4z^3 + 6z^2 + 30z + 315\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + 2\left(4z^4 + 2z^3 + 6z^2 + 45z + 630\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0736.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, \frac{1}{2}; -z\right) =$$
$$\frac{1}{1260}\left(16\,\text{Si}\left(2\sqrt{z}\right) z^{9/2} + \left(4z^3 - 6z^2 + 30z - 315\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + 2\left(4z^4 - 2z^3 + 6z^2 - 45z + 630\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0737.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, 1; z\right) = \frac{1}{99\,225}\left(2\sqrt{z}\, I_1\left(2\sqrt{z}\right)\left(256\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{9/2} + 256z^4 + 64z^3 + 144z^2 + 900z + 11\,025\right) + I_0\left(2\sqrt{z}\right)\left(-512\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right) z^5 - 1024z^5 + 256z^4 + 192z^3 + 720z^2 + 6300z + 99\,225\right)\right)$$

07.22.03.0738.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, 1; -z\right) = \frac{1}{99\,225}\left(2\sqrt{z}\, J_1\left(2\sqrt{z}\right)\left(256\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{9/2} - 256z^4 + 64z^3 - 144z^2 + 900z - 11\,025\right) + J_0\left(2\sqrt{z}\right)\left(-512\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right) z^5 + 1024z^5 + 256z^4 - 192z^3 + 720z^2 - 6300z + 99\,225\right)\right)$$

07.22.03.0739.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, \frac{3}{2}; z\right) = \frac{1}{12\,600\sqrt{z}}$$
$$\left(-16\,\text{Shi}\left(2\sqrt{z}\right) z^5 + 2\left(4z^4 + 2z^3 + 6z^2 + 45z + 630\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^4 + 6z^3 + 30z^2 + 315z + 5670\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0740.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, \frac{3}{2}; -z\right) = \frac{1}{12\,600\sqrt{z}}$$
$$\left(16\,\mathrm{Si}\left(2\sqrt{z}\right)z^5 + 2\left(4z^4 - 2z^3 + 6z^2 - 45z + 630\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^4 - 6z^3 + 30z^2 - 315z + 5670\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0741.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, 2; z\right) =$$
$$\frac{1}{1\,091\,475}\left(\frac{I_1\left(2\sqrt{z}\right)\left(1024\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{11/2} + 1024z^5 + 256z^4 + 576z^3 + 3600z^2 + 44\,100z + 893\,025\right)}{\sqrt{z}} - \right.$$
$$\left. 2\,I_0\left(2\sqrt{z}\right)\left(512\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^5 + 1024z^5 - 256z^4 - 192z^3 - 720z^2 - 6300z - 99\,225\right)\right)$$

07.22.03.0742.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, 2; -z\right) =$$
$$\frac{1}{1\,091\,475}\left(\frac{J_1\left(2\sqrt{z}\right)\left(1024\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{11/2} - 1024z^5 + 256z^4 - 576z^3 + 3600z^2 - 44\,100z + 893\,025\right)}{\sqrt{z}} - \right.$$
$$\left. 2\,J_0\left(2\sqrt{z}\right)\left(512\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^5 - 1024z^5 - 256z^4 + 192z^3 - 720z^2 + 6300z - 99\,225\right)\right)$$

07.22.03.0743.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, \frac{5}{2}; z\right) = \frac{1}{50\,400\,z^{3/2}}\left(-16\,\mathrm{Shi}\left(2\sqrt{z}\right)z^6 + 2\left(4z^5 + 2z^4 + 6z^3 + 45z^2 + 630z + 14\,175\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \right.$$
$$\left.\left(4z^5 + 6z^4 + 30z^3 + 315z^2 + 5670z - 14\,175\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0744.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, \frac{5}{2}; -z\right) = \frac{1}{50\,400\,z^{3/2}}\left(16\,\mathrm{Si}\left(2\sqrt{z}\right)z^6 + \right.$$
$$\left. 2\left(4z^5 - 2z^4 + 6z^3 - 45z^2 + 630z - 14\,175\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^5 - 6z^4 + 30z^3 - 315z^2 + 5670z + 14\,175\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0745.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, 3; z\right) = \frac{1}{14\,189\,175\,z^{3/2}}$$
$$\left(2\left(I_1\left(2\sqrt{z}\right)\left(2048\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{13/2} + 2048z^6 + 512z^5 + 1152z^4 + 7200z^3 + 88\,200z^2 + 1\,786\,050z - 9\,823\,275\right) - \right.\right.$$
$$\left.\left.\sqrt{z}\;I_0\left(2\sqrt{z}\right)\left(2048\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^6 + 4096z^6 - 1024z^5 - 768z^4 - 2880z^3 - 25\,200z^2 - 396\,900z - 9\,823\,275\right)\right)\right)$$

07.22.03.0746.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, 3; -z\right) = \frac{1}{14\,189\,175\,z^{3/2}}$$
$$\left(2\left(J_1\left(2\sqrt{z}\right)\left(2048\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{13/2} - 2048z^6 + 512z^5 - 1152z^4 + 7200z^3 - 88\,200z^2 + 1\,786\,050z + 9\,823\,275\right) - \right.\right.$$
$$\left.\left.\sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(2048\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^6 - 4096z^6 - 1024z^5 + 768z^4 - 2880z^3 + 25\,200z^2 - 396\,900z + 9\,823\,275\right)\right)\right)$$

07.22.03.0747.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, \frac{7}{2}; z\right) =$$
$$\frac{1}{141\,120\,z^{5/2}}\left(-16\,\mathrm{Shi}\left(2\sqrt{z}\right)z^7 + 2\left(4\,z^6 + 2\,z^5 + 6\,z^4 + 45\,z^3 + 630\,z^2 + 14\,175\,z - 127\,575\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\ +\right.$$
$$\left.\left(4\,z^6 + 6\,z^5 + 30\,z^4 + 315\,z^3 + 5670\,z^2 + 155\,925\,z + 127\,575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0748.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, \frac{7}{2}; -z\right) =$$
$$\frac{1}{141\,120\,z^{5/2}}\left(16\,\mathrm{Si}\left(2\sqrt{z}\right)z^7 + 2\left(4\,z^6 - 2\,z^5 + 6\,z^4 - 45\,z^3 + 630\,z^2 - 14\,175\,z - 127\,575\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\ +\right.$$
$$\left.\left(4\,z^6 - 6\,z^5 + 30\,z^4 - 315\,z^3 + 5670\,z^2 - 155\,925\,z + 127\,575\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0749.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, 4; z\right) =$$
$$\frac{1}{70\,945\,875\,z^{5/2}}\left(2\left(I_1\left(2\sqrt{z}\right)\left(4096\,\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{15/2} + 4096\,z^7 + 1024\,z^6 + 2304\,z^5 + 14\,400\,z^4 + 176\,400\,z^3 +\right.\right.\right.$$
$$\left.\left.\left.3\,572\,100\,z^2 + 108\,056\,025\,z + 255\,405\,150\right) - 2\sqrt{z}\ I_0\left(2\sqrt{z}\right)\right.\right.$$
$$\left.\left.\left(2048\,\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^7 + 4096\,z^7 - 1024\,z^6 - 768\,z^5 - 2880\,z^4 - 25\,200\,z^3 - 396\,900\,z^2 - 9\,823\,275\,z + 127\,702\,575\right)\right)\right)$$

07.22.03.0750.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, 4; -z\right) =$$
$$\frac{1}{70\,945\,875\,z^{5/2}}\left(2\left(J_1\left(2\sqrt{z}\right)\left(4096\,\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{15/2} - 4096\,z^7 + 1024\,z^6 - 2304\,z^5 + 14\,400\,z^4 - 176\,400\,z^3 +\right.\right.\right.$$
$$\left.\left.\left.3\,572\,100\,z^2 - 108\,056\,025\,z + 255\,405\,150\right) - 2\sqrt{z}\ J_0\left(2\sqrt{z}\right)\right.\right.$$
$$\left.\left.\left(2048\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^7 - 4096\,z^7 - 1024\,z^6 + 768\,z^5 - 2880\,z^4 + 25\,200\,z^3 - 396\,900\,z^2 + 9\,823\,275\,z + 127\,702\,575\right)\right)\right)$$

07.22.03.0751.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, \frac{9}{2}; z\right) = \frac{1}{645\,120\,z^{7/2}}$$
$$\left(-32\,\mathrm{Shi}\left(2\sqrt{z}\right)z^8 + 2\left(8\,z^7 + 4\,z^6 + 12\,z^5 + 90\,z^4 + 1260\,z^3 + 28\,350\,z^2 + 935\,550\,z + 4\,465\,125\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\ +\right.$$
$$\left.\left(8\,z^7 + 12\,z^6 + 60\,z^5 + 630\,z^4 + 11\,340\,z^3 + 311\,850\,z^2 - 6\,889\,050\,z - 4\,465\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0752.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, \frac{9}{2}; -z\right) =$$
$$\frac{1}{645\,120\,z^{7/2}}\left(32\,\mathrm{Si}\left(2\sqrt{z}\right)z^8 + 2\left(8\,z^7 - 4\,z^6 + 12\,z^5 - 90\,z^4 + 1260\,z^3 - 28\,350\,z^2 + 935\,550\,z - 4\,465\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\ +\right.$$
$$\left.\left(8\,z^7 - 12\,z^6 + 60\,z^5 - 630\,z^4 + 11\,340\,z^3 - 311\,850\,z^2 - 6\,889\,050\,z + 4\,465\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0753.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, 5; z\right) = \frac{1}{1\,206\,079\,875\, z^{7/2}} \left(8\left(2\, I_1\left(2\sqrt{z}\right)\left(4096\,\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{17/2} + 4096\, z^8 + 1024\, z^7 + 2304\, z^6 + 14\,400\, z^5 + 176\,400\, z^4 + 3\,572\,100\, z^3 + 108\,056\,025\, z^2 - 3\,575\,672\,100\, z - 5\,746\,615\,875\right) - \sqrt{z}\; I_0\left(2\sqrt{z}\right)\left(8192\,\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right) z^8 + 16\,384\, z^8 - 4096\, z^7 - 3072\, z^6 - 11\,520\, z^5 - 100\,800\, z^4 - 1\,587\,600\, z^3 - 39\,293\,100\, z^2 - 1\,404\,728\,325\, z - 11\,493\,231\,750\right)\right)\right) $$

07.22.03.0754.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, 5; -z\right) = \frac{1}{1\,206\,079\,875\, z^{7/2}} \left(8\left(2\, J_1\left(2\sqrt{z}\right)\left(4096\,\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{17/2} - 4096\, z^8 + 1024\, z^7 - 2304\, z^6 + 14\,400\, z^5 - 176\,400\, z^4 + 3\,572\,100\, z^3 - 108\,056\,025\, z^2 - 3\,575\,672\,100\, z + 5\,746\,615\,875\right) - \sqrt{z}\; J_0\left(2\sqrt{z}\right)\left(8192\,\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right) z^8 - 16\,384\, z^8 - 4096\, z^7 + 3072\, z^6 - 11\,520\, z^5 + 100\,800\, z^4 - 1\,587\,600\, z^3 + 39\,293\,100\, z^2 - 1\,404\,728\,325\, z + 11\,493\,231\,750\right)\right)\right) $$

07.22.03.0755.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, \frac{11}{2}; z\right) = \frac{1}{1\,290\,240\, z^{9/2}} \left(-32\,\mathrm{Shi}\left(2\sqrt{z}\right) z^9 + 2\left(8\, z^8 + 4\, z^7 + 12\, z^6 + 90\, z^5 + 1260\, z^4 + 28\,350\, z^3 + 935\,550\, z^2 - 43\,162\,875\, z - 125\,023\,500\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(8\, z^8 + 12\, z^7 + 60\, z^6 + 630\, z^5 + 11\,340\, z^4 + 311\,850\, z^3 + 12\,162\,150\, z^2 + 209\,860\,875\, z + 125\,023\,500\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0756.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, \frac{11}{2}; -z\right) = \frac{1}{1\,290\,240\, z^{9/2}} \left(32\,\mathrm{Si}\left(2\sqrt{z}\right) z^9 + 2\left(8\, z^8 - 4\, z^7 + 12\, z^6 - 90\, z^5 + 1260\, z^4 - 28\,350\, z^3 + 935\,550\, z^2 + 43\,162\,875\, z - 125\,023\,500\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(8\, z^8 - 12\, z^7 + 60\, z^6 - 630\, z^5 + 11\,340\, z^4 - 311\,850\, z^3 + 12\,162\,150\, z^2 - 209\,860\,875\, z + 125\,023\,500\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0757.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, 6; z\right) = \frac{1}{4\,583\,103\,525\, z^{9/2}} \left(8\left(I_1\left(2\sqrt{z}\right)\left(16\,384\,\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{19/2} + 16\,384\, z^9 + 4096\, z^8 + 9216\, z^7 + 57\,600\, z^6 + 705\,600\, z^5 + 14\,288\,400\, z^4 + 432\,224\,100\, z^3 + 18\,261\,468\,225\, z^2 + 563\,168\,355\,750\, z + 781\,539\,759\,000\right) - 2\sqrt{z}\; I_0\left(2\sqrt{z}\right)\left(8192\,\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right) z^9 + 16\,384\, z^9 - 4096\, z^8 - 3072\, z^7 - 11\,520\, z^6 - 100\,800\, z^5 - 1\,587\,600\, z^4 - 39\,293\,100\, z^3 - 1\,404\,728\,325\, z^2 + 86\,199\,238\,125\, z + 390\,769\,879\,500\right)\right)\right) $$

07.22.03.0758.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{7}{2}, 6; -z\right) = \frac{1}{4\,583\,103\,525\, z^{9/2}} \left(8\left(J_1\left(2\sqrt{z}\right)\left(16\,384\,\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{19/2} - 16\,384\, z^9 + 4096\, z^8 - 9216\, z^7 + 57\,600\, z^6 - 705\,600\, z^5 + 14\,288\,400\, z^4 - 432\,224\,100\, z^3 + 18\,261\,468\,225\, z^2 - 563\,168\,355\,750\, z + 781\,539\,759\,000\right) - 2\sqrt{z}\; J_0\left(2\sqrt{z}\right)\left(8192\,\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right) z^9 - 16\,384\, z^9 - 4096\, z^8 + 3072\, z^7 - 11\,520\, z^6 + 100\,800\, z^5 - 1\,587\,600\, z^4 + 39\,293\,100\, z^3 - 1\,404\,728\,325\, z^2 - 86\,199\,238\,125\, z + 390\,769\,879\,500\right)\right)\right) $$

For fixed z and $a_1 = -\frac{9}{2}$, $b_1 = -\frac{5}{2}$

07.22.03.0759.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, -\frac{5}{2}; z\right) = \frac{1}{225}\left(-64\,(2z-9)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^{7/2} + 2\left(16z^3-48z^2+12z-225\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \left(64z^4-256z^3-48z^2+288z+225\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.0760.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, -\frac{5}{2}; -z\right) = \frac{1}{225}\left(64\,(2z+9)\,\mathrm{Si}\left(2\sqrt{z}\right)z^{7/2} + 2\left(16z^3+48z^2+12z+225\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(64z^4+256z^3-48z^2-288z+225\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.0761.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, -\frac{3}{2}; z\right) = \frac{1}{45}\left(32\,(z-9)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^{7/2} + 2\left(-4z^3+30z^2+24z-45\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \left(-16z^4+136z^3+48z^2+36z+45\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.0762.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, -\frac{3}{2}; -z\right) = \frac{1}{45}\left(-32\,(z+9)\,\mathrm{Si}\left(2\sqrt{z}\right)z^{7/2} + 2\left(-4z^3-30z^2+24z+45\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-16z^4-136z^3+48z^2-36z+45\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.0763.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, -\frac{1}{2}; z\right) = \frac{1}{45}\left(-8\,(2z-27)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^{7/2} + \left(4z^3-48z^2-51z-90\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \left(8z^4-104z^3-42z^2-72z+45\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.0764.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, -\frac{1}{2}; -z\right) = \frac{1}{45}\left(8\,(2z+27)\,\mathrm{Si}\left(2\sqrt{z}\right)z^{7/2} + \left(4z^3+48z^2-51z+90\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(8z^4+104z^3-42z^2+72z+45\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.0765.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, \frac{1}{2}; z\right) = \frac{1}{360}\left(16\,(z-18)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^{7/2} + \left(-4z^3+66z^2+78z+225\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \left(-8z^4+140z^3+60z^2+126z+360\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.0766.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, \frac{1}{2}; -z\right) = \frac{1}{360}\left(-16\,(z+18)\,\mathrm{Si}\left(2\sqrt{z}\right)z^{7/2} - \left(4z^3+66z^2-78z+225\right)\sin\left(2\sqrt{z}\right)\sqrt{z} - 2\left(4z^4+70z^3-30z^2+63z-180\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.0767.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, 1; z\right) =$$
$$\frac{1}{14\,175}\left(I_0\left(2\sqrt{z}\right)\left(512\,z^5 + 64\,\pi\,(4\,z-81)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^4 - 10\,496\,z^4 + 2496\,z^3 + 1584\,z^2 + 4140\,z + 14\,175\right) - \right.$$
$$\left. 32\sqrt{z}\;I_1\left(2\sqrt{z}\right)\left(8\,z^4 + 2\,\pi\,(4\,z-81)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2} - 160\,z^3 - 36\,z^2 - 63\,z - 225\right)\right)$$

07.22.03.0768.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, 1; -z\right) =$$
$$\frac{1}{14\,175}\left(J_0\left(2\sqrt{z}\right)\left(-512\,z^5 + 64\,\pi\,(4\,z+81)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^4 - 10\,496\,z^4 - 2496\,z^3 + 1584\,z^2 - 4140\,z + 14\,175\right) - \right.$$
$$\left. 32\sqrt{z}\;J_1\left(2\sqrt{z}\right)\left(-8\,z^4 + 2\,\pi\,(4\,z+81)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2} - 160\,z^3 + 36\,z^2 - 63\,z + 225\right)\right)$$

07.22.03.0769.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, \frac{3}{2}; z\right) = \frac{1}{7200\sqrt{z}}\left(16\,(2\,z-45)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^4 - \right.$$
$$\left. 2\left(8\,z^4 - 176\,z^3 - 78\,z^2 - 180\,z - 765\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(-8\,z^4 + 168\,z^3 + 210\,z^2 + 720\,z + 2835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0770.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, \frac{3}{2}; -z\right) = \frac{1}{7200\sqrt{z}}\left(-16\,(2\,z+45)\,\mathrm{Si}\left(2\sqrt{z}\right)z^4 - \right.$$
$$\left. 2\left(8\,z^4 + 176\,z^3 - 78\,z^2 + 180\,z - 765\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(-8\,z^4 - 168\,z^3 + 210\,z^2 - 720\,z + 2835\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0771.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, 2; z\right) =$$
$$\frac{1}{155\,925}\left(4\,I_0\left(2\sqrt{z}\right)\left(256\,z^5 + 32\,\pi\,(4\,z-99)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^4 - 6400\,z^4 + 1536\,z^3 + 1008\,z^2 + 2880\,z + 14\,175\right) - \right.$$
$$\left. \frac{1}{\sqrt{z}}\left(I_1\left(2\sqrt{z}\right)\left(512\,z^5 + 128\,\pi\,(4\,z-99)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{9/2} - 12\,544\,z^4 - 2880\,z^3 - 5328\,z^2 - 22\,500\,z - 99\,225\right)\right)\right)$$

07.22.03.0772.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, 2; -z\right) =$$
$$\frac{1}{155\,925}\left(4\,J_0\left(2\sqrt{z}\right)\left(-256\,z^5 + 32\,\pi\,(4\,z+99)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^4 - 6400\,z^4 - 1536\,z^3 + 1008\,z^2 - 2880\,z + 14\,175\right) - \right.$$
$$\left. \frac{1}{\sqrt{z}}\left(J_1\left(2\sqrt{z}\right)\left(-512\,z^5 + 128\,\pi\,(4\,z+99)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{9/2} - 12\,544\,z^4 + 2880\,z^3 - 5328\,z^2 + 22\,500\,z - 99\,225\right)\right)\right)$$

07.22.03.0773.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, \frac{5}{2}; z\right) =$$
$$\frac{1}{14\,400\,z^{3/2}}\left(16\,(z-27)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^5 - 2\left(4\,z^5 - 106\,z^4 - 48\,z^3 - 117\,z^2 - 585\,z - 2835\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\,+\right.$$
$$\left.\left(-4\,z^5 + 102\,z^4 + 132\,z^3 + 495\,z^2 + 2835\,z - 2835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0774.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, \frac{5}{2}; -z\right) =$$
$$\frac{1}{14\,400\,z^{3/2}}\left(-16\,(z+27)\,\mathrm{Si}\left(2\sqrt{z}\right)z^5 - 2\left(4\,z^5 + 106\,z^4 - 48\,z^3 + 117\,z^2 - 585\,z + 2835\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,+\right.$$
$$\left.\left(-4\,z^5 - 102\,z^4 + 132\,z^3 - 495\,z^2 + 2835\,z + 2835\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0775.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, 3; z\right) =$$
$$\frac{1}{2\,027\,025\,z^{3/2}}\left(2\left(\sqrt{z}\;I_0\left(2\sqrt{z}\right)\left(2048\,z^6 + 256\,\pi\,(4\,z-117)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^5 - 60\,416\,z^5 + 14\,592\,z^4 + 9792\,z^3 + \right.\right.\right.$$
$$\left.\left.\left.29\,520\,z^2 + 170\,100\,z + 893\,025\right) - I_1\left(2\sqrt{z}\right)\right.\right.$$
$$\left.\left.\left(1024\,z^6 + 256\,\pi\,(4\,z-117)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{11/2} - 29\,696\,z^5 - 6912\,z^4 - 13\,248\,z^3 - 61\,200\,z^2 - 396\,900\,z + 893\,025\right)\right)\right)$$

07.22.03.0776.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, 3; -z\right) =$$
$$\frac{1}{2\,027\,025\,z^{3/2}}\left(2\left(\sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(-2048\,z^6 + 256\,\pi\,(4\,z+117)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^5 - 60\,416\,z^5 - 14\,592\,z^4 + 9792\,z^3 - \right.\right.\right.$$
$$\left.\left.\left.29\,520\,z^2 + 170\,100\,z - 893\,025\right) - J_1\left(2\sqrt{z}\right)\right.\right.$$
$$\left.\left.\left(-1024\,z^6 + 256\,\pi\,(4\,z+117)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{11/2} - 29\,696\,z^5 + 6912\,z^4 - 13\,248\,z^3 + 61\,200\,z^2 - 396\,900\,z - 893\,025\right)\right)\right)$$

07.22.03.0777.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, \frac{7}{2}; z\right) =$$
$$\frac{1}{80\,640\,z^{5/2}}\left(16\,(2\,z-63)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^6 - 2\left(8\,z^6 - 248\,z^5 - 114\,z^4 - 288\,z^3 - 1575\,z^2 - 11\,340\,z + 42\,525\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\,+\right.$$
$$\left.\left(-8\,z^6 + 240\,z^5 + 318\,z^4 + 1260\,z^3 + 8505\,z^2 + 45\,360\,z + 42\,525\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0778.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, \frac{7}{2}; -z\right) =$$
$$\frac{1}{80\,640\,z^{5/2}}\left(-16\,(2\,z+63)\,\mathrm{Si}\left(2\sqrt{z}\right)z^6 - 2\left(8\,z^6 + 248\,z^5 - 114\,z^4 + 288\,z^3 - 1575\,z^2 + 11\,340\,z + 42\,525\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,+\right.$$
$$\left.\left(-8\,z^6 - 240\,z^5 + 318\,z^4 - 1260\,z^3 + 8505\,z^2 - 45\,360\,z + 42\,525\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0779.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, 4; z\right) = \frac{1}{10\,135\,125\, z^{5/2}} \left(2\left(2\sqrt{z}\ I_0\left(2\sqrt{z}\right)\left(2048 z^7 + 256\pi(4z-135)\boldsymbol{L}_1\left(2\sqrt{z}\right) z^6 - 69\,632 z^6 + 16\,896 z^5 + 11\,520 z^4 + 36\,000 z^3 + 226\,800 z^2 + 1\,786\,050 z - 9\,823\,275\right) - I_1\left(2\sqrt{z}\right)\left(2048 z^7 + 512\pi(4z-135)\boldsymbol{L}_0\left(2\sqrt{z}\right) z^{13/2} - 68\,608 z^6 - 16\,128 z^5 - 31\,680 z^4 - 154\,800 z^3 - 1\,190\,700 z^2 - 6\,251\,175 z - 19\,646\,550\right)\right)\right) $$

07.22.03.0780.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, 4; -z\right) = \frac{1}{10\,135\,125\, z^{5/2}} \left(2\left(2\sqrt{z}\ J_0\left(2\sqrt{z}\right)\left(-2048 z^7 + 256\pi(4z+135)\boldsymbol{H}_1\left(2\sqrt{z}\right) z^6 - 69\,632 z^6 - 16\,896 z^5 + 11\,520 z^4 - 36\,000 z^3 + 226\,800 z^2 - 1\,786\,050 z - 9\,823\,275\right) - J_1\left(2\sqrt{z}\right)\left(-2048 z^7 + 512\pi(4z+135)\boldsymbol{H}_0\left(2\sqrt{z}\right) z^{13/2} - 68\,608 z^6 + 16\,128 z^5 - 31\,680 z^4 + 154\,800 z^3 - 1\,190\,700 z^2 + 6\,251\,175 z - 19\,646\,550\right)\right)\right) $$

07.22.03.0781.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, \frac{9}{2}; z\right) = \frac{1}{184\,320\, z^{7/2}} \left(32(z-36)\,\mathrm{Shi}\left(2\sqrt{z}\right) z^7 - 2\left(8 z^7 - 284 z^6 - 132 z^5 - 342 z^4 - 1980 z^3 - 17\,010 z^2 - 85\,050 z - 637\,875\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(-8 z^7 + 276 z^6 + 372 z^5 + 1530 z^4 + 11\,340 z^3 + 96\,390 z^2 - 935\,550 z - 637\,875\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0782.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, \frac{9}{2}; -z\right) = \frac{1}{184\,320\, z^{7/2}} \left(-32(z+36)\,\mathrm{Si}\left(2\sqrt{z}\right) z^7 - 2\left(8 z^7 + 284 z^6 - 132 z^5 + 342 z^4 - 1980 z^3 + 17\,010 z^2 - 85\,050 z + 637\,875\right)\cos\left(2\sqrt{z}\right)\sqrt{z} - \left(8 z^7 + 276 z^6 - 372 z^5 + 1530 z^4 - 11\,340 z^3 + 96\,390 z^2 + 935\,550 z - 637\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0783.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, 5; z\right) = \frac{1}{172\,297\,125\, z^{7/2}} \left(8\left(\sqrt{z}\ I_0\left(2\sqrt{z}\right)\left(8192 z^8 + 1024\pi(4z-153)\boldsymbol{L}_1\left(2\sqrt{z}\right) z^7 - 315\,392 z^7 + 76\,800 z^6 + 52\,992 z^5 + 169\,920 z^4 + 1\,134\,000 z^3 + 10\,716\,300 z^2 + 49\,116\,375 z + 766\,215\,450\right) - 2 I_1\left(2\sqrt{z}\right)\left(2048 z^8 + 512\pi(4z-153)\boldsymbol{L}_0\left(2\sqrt{z}\right) z^{15/2} - 77\,824 z^7 - 18\,432 z^6 - 36\,864 z^5 - 187\,200 z^4 - 1\,587\,600 z^3 - 14\,288\,400 z^2 + 216\,112\,050 z + 383\,107\,725\right)\right)\right) $$

07.22.03.0784.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, 5; -z\right) = \frac{1}{172\,297\,125\,z^{7/2}}\left(8\left(\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(-8192\,z^8+1024\,\pi\,(4\,z+153)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^7-315\,392\,z^7-76\,800\,z^6+52\,992\,z^5-169\,920\,z^4+1\,134\,000\,z^3-10\,716\,300\,z^2+49\,116\,375\,z-766\,215\,450\right)-2\,J_1\left(2\sqrt{z}\right)\left(-2048\,z^8+512\,\pi\,(4\,z+153)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{15/2}-77\,824\,z^7+18\,432\,z^6-36\,864\,z^5+187\,200\,z^4-1\,587\,600\,z^3+14\,288\,400\,z^2+216\,112\,050\,z-383\,107\,725\right)\right)\right) $$

07.22.03.0785.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, \frac{11}{2}; z\right) = \frac{1}{737\,280\,z^{9/2}}\left(32\,(2\,z-81)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^8-2\left(16\,z^8-640\,z^7-300\,z^6-792\,z^5-4770\,z^4-45\,360\,z^3-425\,250\,z^2+9\,355\,500\,z+31\,255\,875\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(-16\,z^8+624\,z^7+852\,z^6+3600\,z^5+28\,350\,z^4+294\,840\,z^3+935\,550\,z^2+51\,030\,000\,z+31\,255\,875\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0786.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, \frac{11}{2}; -z\right) = \frac{1}{737\,280\,z^{9/2}}\left(-32\,(2\,z+81)\,\mathrm{Si}\left(2\sqrt{z}\right)z^8-2\left(16\,z^8+640\,z^7-300\,z^6+792\,z^5-4770\,z^4+45\,360\,z^3-425\,250\,z^2-9\,355\,500\,z+31\,255\,875\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-16\,z^8-624\,z^7+852\,z^6-3600\,z^5+28\,350\,z^4-294\,840\,z^3+935\,550\,z^2-51\,030\,000\,z+31\,255\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0787.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, 6; z\right) = \frac{1}{654\,729\,075\,z^{9/2}}\left(8\left(2\sqrt{z}\,I_0\left(2\sqrt{z}\right)\left(8192\,z^9+1024\,\pi\,(4\,z-171)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^8-352\,256\,z^8+86\,016\,z^7+59\,904\,z^6+195\,840\,z^5+1\,360\,800\,z^4+14\,288\,400\,z^3+137\,525\,850\,z^2-4\,214\,184\,975\,z-22\,986\,463\,500\right)-I_1\left(2\sqrt{z}\right)\left(8192\,z^9+2048\,\pi\,(4\,z-171)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{17/2}-348\,160\,z^8-82\,944\,z^7-168\,192\,z^6-878\,400\,z^5-7\,938\,000\,z^4-89\,302\,500\,z^3-108\,056\,025\,z^2-31\,414\,833\,450\,z-45\,972\,927\,000\right)\right)\right) $$

07.22.03.0788.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{5}{2}, 6; -z\right) = \frac{1}{654\,729\,075\,z^{9/2}}\left(8\left(2\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(-8192\,z^9+1024\,\pi\,(4\,z+171)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^8-352\,256\,z^8-86\,016\,z^7+59\,904\,z^6-195\,840\,z^5+1\,360\,800\,z^4-14\,288\,400\,z^3+137\,525\,850\,z^2+4\,214\,184\,975\,z-22\,986\,463\,500\right)-J_1\left(2\sqrt{z}\right)\left(-8192\,z^9+2048\,\pi\,(4\,z+171)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{17/2}-348\,160\,z^8+82\,944\,z^7-168\,192\,z^6+878\,400\,z^5-7\,938\,000\,z^4+89\,302\,500\,z^3-108\,056\,025\,z^2+31\,414\,833\,450\,z-45\,972\,927\,000\right)\right)\right) $$

For fixed z and $a_1 = -\frac{9}{2}$, $b_1 = -\frac{3}{2}$

07.22.03.0789.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, -\frac{3}{2}; z\right) =$$
$$\frac{1}{9}\left(-4\left(2z^2-36z+63\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^{5/2}+\left(2z^3-33z^2+24z-18\right)\sinh\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^4-70z^3+96z^2+9\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0790.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, -\frac{3}{2}; -z\right) =$$
$$\frac{1}{9}\left(4\left(2z^2+36z+63\right)\operatorname{Si}\left(2\sqrt{z}\right)z^{5/2}+\left(2z^3+33z^2+24z+18\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^4+70z^3+96z^2+9\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0791.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, -\frac{1}{2}; z\right) = \frac{1}{18}\left(4\left(2z^2-54z+189\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^{5/2}-\right.$$
$$\left.\left(2z^3-51z^2+123z+36\right)\sinh\left(2\sqrt{z}\right)\sqrt{z}-2\left(2z^4-53z^3+165z^2+36z-9\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0792.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, -\frac{1}{2}; -z\right) = \frac{1}{18}\left(-4\left(2z^2+54z+189\right)\operatorname{Si}\left(2\sqrt{z}\right)z^{5/2}-\right.$$
$$\left.\left(2z^3+51z^2+123z-36\right)\sin\left(2\sqrt{z}\right)\sqrt{z}-2\left(2z^4+53z^3+165z^2-36z-9\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0793.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, \frac{1}{2}; z\right) = \frac{1}{288}\left(-16\left(z^2-36z+189\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^{5/2}+\right.$$
$$\left.\left(4z^3-138z^2+570z+369\right)\sinh\left(2\sqrt{z}\right)\sqrt{z}+2\left(4z^4-142z^3+690z^2+207z+144\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0794.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, \frac{1}{2}; -z\right) = \frac{1}{288}\left(16\left(z^2+36z+189\right)\operatorname{Si}\left(2\sqrt{z}\right)z^{5/2}+\right.$$
$$\left.\left(4z^3+138z^2+570z-369\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+2\left(4z^4+142z^3+690z^2-207z+144\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0795.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, 1; z\right) =$$
$$\frac{1}{2835}\left(2\sqrt{z}\,I_1\left(2\sqrt{z}\right)\left(32z^4-1288z^3+2\pi\left(16z^2-648z+3969\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}+7632z^2+1368z+1287\right)+\right.$$
$$\left.I_0\left(2\sqrt{z}\right)\left(-128z^5+5216z^4-4\pi\left(16z^2-648z+3969\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^3-33\,024z^3+7056z^2+3096z+2835\right)\right)$$

07.22.03.0796.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, 1; -z\right) =$$
$$\frac{1}{2835}\left(2\sqrt{z}\,J_1\left(2\sqrt{z}\right)\left(-32z^4-1288z^3+2\pi\left(16z^2+648z+3969\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-7632z^2+1368z-1287\right)+\right.$$
$$\left.J_0\left(2\sqrt{z}\right)\left(128z^5+5216z^4-4\pi\left(16z^2+648z+3969\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^3+33\,024z^3+7056z^2-3096z+2835\right)\right)$$

07.22.03.0797.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, \frac{3}{2}; z\right) = \frac{1}{2880\sqrt{z}}\left(-16\left(z^2-45z+315\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^3 + 2\left(4z^4-178z^3+1176z^2+405z+495\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^4-174z^3+1020z^2+855z+945\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0798.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, \frac{3}{2}; -z\right) = \frac{1}{2880\sqrt{z}}\left(16\left(z^2+45z+315\right)\operatorname{Si}\left(2\sqrt{z}\right)z^3 + 2\left(4z^4+178z^3+1176z^2-405z+495\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^4+174z^3+1020z^2-855z+945\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0799.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, 2; z\right) = \frac{1}{31\,185}\left(\frac{1}{\sqrt{z}}\left(I_1\left(2\sqrt{z}\right)\left(128z^5-6304z^4+8\pi\left(16z^2-792z+6237\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2}+48\,384z^3+9360z^2+11\,304z+14\,175\right)\right) - 2I_0\left(2\sqrt{z}\right)\left(128z^5-6368z^4+4\pi\left(16z^2-792z+6237\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^3+51\,456z^3-11\,376z^2-5688z-8505\right)\right)$$

07.22.03.0800.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, 2; -z\right) = \frac{1}{31\,185}\left(\frac{1}{\sqrt{z}}\left(J_1\left(2\sqrt{z}\right)\left(-128z^5-6304z^4+8\pi\left(16z^2+792z+6237\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2}-48\,384z^3+9360z^2-11\,304z+14\,175\right)\right) - 2J_0\left(2\sqrt{z}\right)\left(-128z^5-6368z^4+4\pi\left(16z^2+792z+6237\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^3-51\,456z^3-11\,376z^2+5688z-8505\right)\right)$$

07.22.03.0801.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, \frac{5}{2}; z\right) = \frac{1}{23\,040z^{3/2}}\left(-16\left(2z^2-108z+945\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^4 + 2\left(8z^5-428z^4+3576z^3+1332z^2+2070z+2835\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(8z^5-420z^4+3192z^3+3060z^2+5670z-2835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0802.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, \frac{5}{2}; -z\right) = \frac{1}{23\,040z^{3/2}}\left(16\left(2z^2+108z+945\right)\operatorname{Si}\left(2\sqrt{z}\right)z^4 + 2\left(8z^5+428z^4+3576z^3-1332z^2+2070z-2835\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(8z^5+420z^4+3192z^3-3060z^2+5670z+2835\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0803.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, 3; z\right) = \frac{1}{405\,405\, z^{3/2}} \left(2\left(I_1\left(2\sqrt{z}\right)\left(256 z^6 - 14\,912 z^5 + 16\pi\left(16 z^2 - 936 z + 9009\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{9/2} + 140\,544 z^4 + 28\,512 z^3 + 39\,456 z^2 + 85\,050 z - 99\,225\right) - \sqrt{z}\ I_0\left(2\sqrt{z}\right)\left(512 z^6 - 30\,080 z^5 + 16\pi\left(16 z^2 - 936 z + 9009\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^4 + 295\,680 z^4 - 66\,816 z^3 - 36\,144 z^2 - 68\,040 z - 99\,225\right)\right)\right) $$

07.22.03.0804.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, 3; -z\right) = \frac{1}{405\,405\, z^{3/2}} \left(2\left(J_1\left(2\sqrt{z}\right)\left(-256 z^6 - 14\,912 z^5 + 16\pi\left(16 z^2 + 936 z + 9009\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{9/2} - 140\,544 z^4 + 28\,512 z^3 - 39\,456 z^2 + 85\,050 z + 99\,225\right) - \sqrt{z}\ J_0\left(2\sqrt{z}\right)\left(-512 z^6 - 30\,080 z^5 + 16\pi\left(16 z^2 + 936 z + 9009\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^4 - 295\,680 z^4 - 66\,816 z^3 + 36\,144 z^2 - 68\,040 z + 99\,225\right)\right)\right) $$

07.22.03.0805.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, \frac{7}{2}; z\right) = \frac{1}{64\,512\, z^{5/2}} \left(-16\left(2 z^2 - 126 z + 1323\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^5 + 2\left(8 z^6 - 500 z^5 + 5052 z^4 + 1980 z^3 + 3528 z^2 + 8505 z - 17\,010\right) \cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(8 z^6 - 492 z^5 + 4596 z^4 + 4788 z^3 + 11\,340 z^2 + 14\,175 z + 17\,010\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0806.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, \frac{7}{2}; -z\right) = \frac{1}{64\,512\, z^{5/2}} \left(16\left(2 z^2 + 126 z + 1323\right) \mathrm{Si}\left(2\sqrt{z}\right) z^5 + 2\left(8 z^6 + 500 z^5 + 5052 z^4 - 1980 z^3 + 3528 z^2 - 8505 z - 17\,010\right) \cos\left(2\sqrt{z}\right)\sqrt{z} + \left(8 z^6 + 492 z^5 + 4596 z^4 - 4788 z^3 + 11\,340 z^2 - 14\,175 z + 17\,010\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0807.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, 4; z\right) = \frac{1}{2\,027\,025\, z^{5/2}} \left(2\left(I_1\left(2\sqrt{z}\right)\left(512 z^7 - 34\,432 z^6 + 32\pi\left(16 z^2 - 1080 z + 12\,285\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{11/2} + 384\,768 z^5 + 80\,640 z^4 + 121\,680 z^3 + 340\,200 z^2 + 297\,675 z + 1\,786\,050\right) - 2\sqrt{z}\ I_0\left(2\sqrt{z}\right)\left(512 z^7 - 34\,688 z^6 + 16\pi\left(16 z^2 - 1080 z + 12\,285\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^5 + 401\,664 z^5 - 92\,160 z^4 - 52\,560 z^3 - 113\,400 z^2 - 297\,675 z + 893\,025\right)\right)\right) $$

07.22.03.0808.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, 4; -z\right) = \frac{1}{2\,027\,025\,z^{5/2}}\left(2\left(J_1\left(2\sqrt{z}\right)\left(-512\,z^7 - 34\,432\,z^6 + 32\,\pi\left(16\,z^2 + 1080\,z + 12\,285\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{11/2} - 384\,768\,z^5 + 80\,640\,z^4 - 121\,680\,z^3 + 340\,200\,z^2 - 297\,675\,z + 1\,786\,050\right) - 2\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(-512\,z^7 - 34\,688\,z^6 + 16\,\pi\left(16\,z^2 + 1080\,z + 12\,285\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^5 - 401\,664\,z^5 - 92\,160\,z^4 + 52\,560\,z^3 - 113\,400\,z^2 + 297\,675\,z + 893\,025\right)\right)\right) $$

07.22.03.0809.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, \frac{9}{2}; z\right) = \frac{1}{147\,456\,z^{7/2}}\left(-32\left(z^2 - 72\,z + 882\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^6 + 2\left(8\,z^7 - 572\,z^6 + 6780\,z^5 + 2754\,z^4 + 5364\,z^3 + 17\,010\,z^2 + 5670\,z + 212\,625\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(8\,z^7 - 564\,z^6 + 6252\,z^5 + 6894\,z^4 + 18\,900\,z^3 + 51\,030\,z^2 - 289\,170\,z - 212\,625\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0810.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, \frac{9}{2}; -z\right) = \frac{1}{147\,456\,z^{7/2}}\left(32\left(z^2 + 72\,z + 882\right)\mathrm{Si}\left(2\sqrt{z}\right)z^6 + 2\left(8\,z^7 + 572\,z^6 + 6780\,z^5 - 2754\,z^4 + 5364\,z^3 - 17\,010\,z^2 + 5670\,z - 212\,625\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(8\,z^7 + 564\,z^6 + 6252\,z^5 - 6894\,z^4 + 18\,900\,z^3 - 51\,030\,z^2 - 289\,170\,z + 212\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0811.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, 5; z\right) = \frac{1}{34\,459\,425\,z^{7/2}}\left(8\left(2\,I_1\left(2\sqrt{z}\right)\left(512\,z^8 - 39\,040\,z^7 + 32\,\pi\left(16\,z^2 - 1224\,z + 16\,065\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{13/2} + 504\,576\,z^6 + 108\,288\,z^5 + 173\,520\,z^4 + 567\,000\,z^3 + 1\,488\,375\,z^2 - 14\,288\,400\,z - 29\,469\,825\right) - \sqrt{z}\,I_0\left(2\sqrt{z}\right)\left(2048\,z^8 - 157\,184\,z^7 + 64\,\pi\left(16\,z^2 - 1224\,z + 16\,065\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^6 + 2\,095\,104\,z^6 - 486\,144\,z^5 - 288\,000\,z^4 - 680\,400\,z^3 - 2\,381\,400\,z^2 + 893\,025\,z - 58\,939\,650\right)\right)\right) $$

07.22.03.0812.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{3}{2}, 5; -z\right) = \frac{1}{34\,459\,425\,z^{7/2}}\left(8\left(2\,J_1\left(2\sqrt{z}\right)\left(-512\,z^8 - 39\,040\,z^7 + 32\,\pi\left(16\,z^2 + 1224\,z + 16\,065\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{13/2} - 504\,576\,z^6 + 108\,288\,z^5 - 173\,520\,z^4 + 567\,000\,z^3 - 1\,488\,375\,z^2 - 14\,288\,400\,z + 29\,469\,825\right) - \sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(-2048\,z^8 - 157\,184\,z^7 + 64\,\pi\left(16\,z^2 + 1224\,z + 16\,065\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^6 - 2\,095\,104\,z^6 - 486\,144\,z^5 + 288\,000\,z^4 - 680\,400\,z^3 + 2\,381\,400\,z^2 + 893\,025\,z + 58\,939\,650\right)\right)\right) $$

07.22.03.0813.01

$${}_1F_2\left(-\frac{9}{2};-\frac{3}{2},\frac{11}{2};z\right)=\frac{1}{294\,912\,z^{9/2}}\left(-32\left(z^2-81\,z+1134\right)\text{Shi}\left(2\sqrt{z}\right)z^7+\right.$$
$$2\left(8\,z^8-644\,z^7+8760\,z^6+3654\,z^5+7578\,z^4+28\,350\,z^3+68\,040\,z^2-1\,063\,125\,z-4\,465\,125\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\,+$$
$$\left.\left(8\,z^8-636\,z^7+8160\,z^6+9378\,z^5+28\,350\,z^4+107\,730\,z^3-238\,140\,z^2+7\,016\,625\,z+4\,465\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0814.01

$${}_1F_2\left(-\frac{9}{2};-\frac{3}{2},\frac{11}{2};-z\right)=\frac{1}{294\,912\,z^{9/2}}\left(32\left(z^2+81\,z+1134\right)\text{Si}\left(2\sqrt{z}\right)z^7+\right.$$
$$2\left(8\,z^8+644\,z^7+8760\,z^6-3654\,z^5+7578\,z^4-28\,350\,z^3+68\,040\,z^2+1\,063\,125\,z-4\,465\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,+$$
$$\left.\left(8\,z^8+636\,z^7+8160\,z^6-9378\,z^5+28\,350\,z^4-107\,730\,z^3-238\,140\,z^2-7\,016\,625\,z+4\,465\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0815.01

$${}_1F_2\left(-\frac{9}{2};-\frac{3}{2},6;z\right)=$$
$$\frac{1}{130\,945\,815\,z^{9/2}}\left(8\left(I_1\left(2\sqrt{z}\right)\left(2048\,z^9-174\,592\,z^8+128\,\pi\left(16\,z^2-1368\,z+20\,349\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{15/2}+2\,562\,048\,z^7+\right.\right.\right.$$
$$\left.\left.559\,872\,z^6+937\,728\,z^5+3\,402\,000\,z^4+13\,494\,600\,z^3-65\,190\,825\,z^2+1\,945\,008\,450\,z+3\,064\,861\,800\right)-$$
$$2\sqrt{z}\;I_0\left(2\sqrt{z}\right)\left(2048\,z^9-175\,616\,z^8+64\,\pi\left(16\,z^2-1368\,z+20\,349\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^7+2\,648\,064\,z^7-\right.$$
$$\left.\left.\left.619\,776\,z^6-377\,856\,z^5-952\,560\,z^4-3\,969\,000\,z^3-8\,037\,225\,z^2+206\,288\,775\,z+1\,532\,430\,900\right)\right)\right)$$

07.22.03.0816.01

$${}_1F_2\left(-\frac{9}{2};-\frac{3}{2},6;-z\right)=$$
$$\frac{1}{130\,945\,815\,z^{9/2}}\left(8\left(J_1\left(2\sqrt{z}\right)\left(-2048\,z^9-174\,592\,z^8+128\,\pi\left(16\,z^2+1368\,z+20\,349\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{15/2}-2\,562\,048\,z^7+\right.\right.\right.$$
$$\left.\left.559\,872\,z^6-937\,728\,z^5+3\,402\,000\,z^4-13\,494\,600\,z^3-65\,190\,825\,z^2-1\,945\,008\,450\,z+3\,064\,861\,800\right)-$$
$$2\sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(-2048\,z^9-175\,616\,z^8+64\,\pi\left(16\,z^2+1368\,z+20\,349\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^7-2\,648\,064\,z^7-\right.$$
$$\left.\left.\left.619\,776\,z^6+377\,856\,z^5-952\,560\,z^4+3\,969\,000\,z^3-8\,037\,225\,z^2-206\,288\,775\,z+1\,532\,430\,900\right)\right)\right)$$

For fixed z and $a_1=-\frac{9}{2}$, $b_1=-\frac{1}{2}$

07.22.03.0817.01

$${}_1F_2\left(-\frac{9}{2};-\frac{1}{2},-\frac{1}{2};z\right)=\frac{1}{72}\left(-4\left(4\,z^3-162\,z^2+1134\,z-945\right)\text{Shi}\left(2\sqrt{z}\right)z^{3/2}+\right.$$
$$\left.\left(4\,z^3-156\,z^2+921\,z-144\right)\sinh\left(2\sqrt{z}\right)\sqrt{z}\,+2\left(4\,z^4-160\,z^3+1059\,z^2-576\,z+36\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0818.01

$${}_1F_2\left(-\frac{9}{2};-\frac{1}{2},-\frac{1}{2};-z\right)=\frac{1}{72}\left(4\left(4\,z^3+162\,z^2+1134\,z+945\right)\text{Si}\left(2\sqrt{z}\right)z^{3/2}+\right.$$
$$\left.\left(4\,z^3+156\,z^2+921\,z+144\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\,+2\left(4\,z^4+160\,z^3+1059\,z^2+576\,z+36\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0819.01

$${}_1F_2\left(-\frac{9}{2};-\frac{1}{2},\frac{1}{2};z\right)=\frac{1}{576}\left(16\left(z^3-54\,z^2+567\,z-945\right)\text{Shi}\left(2\sqrt{z}\right)z^{3/2}+\right.$$
$$\left.\left(-4\,z^3+210\,z^2-1974\,z+1683\right)\sinh\left(2\sqrt{z}\right)\sqrt{z}+\left(-8\,z^4+428\,z^3-4332\,z^2+5850\,z+576\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.0820.01

$${}_1F_2\left(-\frac{9}{2};-\frac{1}{2},\frac{1}{2};-z\right)=\frac{1}{576}\left(-16\left(z^3+54\,z^2+567\,z+945\right)\text{Si}\left(2\sqrt{z}\right)z^{3/2}-\right.$$
$$\left.\left(4\,z^3+210\,z^2+1974\,z+1683\right)\sin\left(2\sqrt{z}\right)\sqrt{z}-2\left(4\,z^4+214\,z^3+2166\,z^2+2925\,z-288\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.0821.01

$${}_1F_2\left(-\frac{9}{2};-\frac{1}{2},1;z\right)=\frac{1}{5670}\left(\sqrt{z}\,I_1\left(2\sqrt{z}\right)\right.$$
$$\left(-64\,z^4+3872\,z^3-46\,692\,z^2+\pi\left(-64\,z^3+3888\,z^2-47\,628\,z+99\,225\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+89\,280\,z+8928\right)+I_0\left(2\sqrt{z}\right)$$
$$\left.\left(128\,z^5-7808\,z^4+97\,176\,z^3+\pi\left(64\,z^3-3888\,z^2+47\,628\,z-99\,225\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^2-220\,896\,z^2+36\,432\,z+5670\right)\right)$$

07.22.03.0822.01

$${}_1F_2\left(-\frac{9}{2};-\frac{1}{2},1;-z\right)=$$
$$\frac{1}{5670}\left(\sqrt{z}\,J_1\left(2\sqrt{z}\right)\left(64\,z^4+3872\,z^3+46\,692\,z^2-\pi\left(64\,z^3+3888\,z^2+47\,628\,z+99\,225\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}+89\,280\,z-8928\right)+\right.$$
$$J_0\left(2\sqrt{z}\right)\left(\pi\,z^2\left(64\,z^3+3888\,z^2+47\,628\,z+99\,225\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.2\left(64\,z^5+3904\,z^4+48\,588\,z^3+110\,448\,z^2+18\,216\,z-2835\right)\right)\right)$$

07.22.03.0823.01

$${}_1F_2\left(-\frac{9}{2};-\frac{1}{2},\frac{3}{2};z\right)=\frac{1}{11\,520\sqrt{z}}\left(16\left(2\,z^3-135\,z^2+1890\,z-4725\right)\text{Shi}\left(2\sqrt{z}\right)z^2-\right.$$
$$\left.2\left(8\,z^4-536\,z^3+7302\,z^2-15\,840\,z-2925\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(-8\,z^4+528\,z^3-6810\,z^2+10\,980\,z+2835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0824.01

$${}_1F_2\left(-\frac{9}{2};-\frac{1}{2},\frac{3}{2};-z\right)=\frac{1}{11\,520\sqrt{z}}\left(-16\left(2\,z^3+135\,z^2+1890\,z+4725\right)\text{Si}\left(2\sqrt{z}\right)z^2-\right.$$
$$\left.2\left(8\,z^4+536\,z^3+7302\,z^2+15\,840\,z-2925\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(8\,z^4+528\,z^3+6810\,z^2+10\,980\,z-2835\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0825.01

$${}_1F_2\left(-\frac{9}{2};-\frac{1}{2},2;z\right)=\frac{1}{31\,185}\left(I_0\left(2\sqrt{z}\right)\right.$$
$$\left(\pi\left(64\,z^3-4752\,z^2+74\,844\,z-218\,295\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^2+8\left(16\,z^5-1192\,z^4+19\,005\,z^3-59\,040\,z^2+10\,872\,z+2835\right)\right)-$$
$$\frac{1}{\sqrt{z}}\left(I_1\left(2\sqrt{z}\right)\left(64\,z^5-4736\,z^4+73\,692\,z^3+\pi\left(64\,z^3-4752\,z^2+74\,844\,z-218\,295\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}-\right.\right.$$
$$\left.\left.\left.202\,032\,z^2-26\,424\,z-8505\right)\right)\right)$$

07.22.03.0826.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{1}{2}, 2; -z\right) = \frac{1}{31\,185}\left(J_0\left(2\sqrt{z}\right)\right.$$
$$\left(\pi z^2\left(64z^3 + 4752z^2 + 74\,844z + 218\,295\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) - 8\left(16z^5 + 1192z^4 + 19\,005z^3 + 59\,040z^2 + 10\,872z - 2835\right)\right) -$$
$$\frac{1}{\sqrt{z}}\left(J_1\left(2\sqrt{z}\right)\left(-64z^5 - 4736z^4 - 73\,692z^3 + \pi\left(64z^3 + 4752z^2 + 74\,844z + 218\,295\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2} -\right.\right.$$
$$\left.\left.\left.202\,032z^2 + 26\,424z - 8505\right)\right)\right)$$

07.22.03.0827.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{1}{2}, \frac{5}{2}; z\right) =$$
$$\frac{1}{46\,080z^{3/2}}\left(16\left(2z^3 - 162z^2 + 2835z - 9450\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^3 - 2\left(8z^5 - 644z^4 + 11\,028z^3 - 33\,012z^2 - 7920z - 2835\right)\right.$$
$$\left.\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(-8z^5 + 636z^4 - 10\,428z^3 + 25\,020z^2 + 11\,340z - 2835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0828.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{1}{2}, \frac{5}{2}; -z\right) =$$
$$\frac{1}{46\,080z^{3/2}}\left(-16\left(2z^3 + 162z^2 + 2835z + 9450\right)\mathrm{Si}\left(2\sqrt{z}\right)z^3 - 2\left(8z^5 + 644z^4 + 11\,028z^3 + 33\,012z^2 - 7920z + 2835\right)\right.$$
$$\left.\cos\left(2\sqrt{z}\right)\sqrt{z} - \left(8z^5 + 636z^4 + 10\,428z^3 + 25\,020z^2 - 11\,340z - 2835\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0829.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{1}{2}, 3; z\right) =$$
$$\frac{1}{405\,405z^{3/2}}\left(2\left(\sqrt{z}\,I_0\left(2\sqrt{z}\right)\left(256z^6 - 22\,528z^5 + 438\,000z^4 + 2\pi\left(64z^3 - 5616z^2 + 108\,108z - 405\,405\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^3 -\right.\right.\right.$$
$$\left.\left.1\,725\,696z^3 + 338\,544z^2 + 113\,400z + 42\,525\right) - I_1\left(2\sqrt{z}\right)\left(128z^6 - 11\,200z^5 + 213\,480z^4 +\right.$$
$$\left.\left.\left.2\pi\left(64z^3 - 5616z^2 + 108\,108z - 405\,405\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2} - 762\,624z^3 - 115\,056z^2 - 68\,040z + 42\,525\right)\right)\right)$$

07.22.03.0830.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{1}{2}, 3; -z\right) =$$
$$\frac{1}{405\,405z^{3/2}}\left(2\left(\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(-256z^6 - 22\,528z^5 - 438\,000z^4 + 2\pi\left(64z^3 + 5616z^2 + 108\,108z + 405\,405\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^3 -\right.\right.\right.$$
$$\left.\left.1\,725\,696z^3 - 338\,544z^2 + 113\,400z - 42\,525\right) - J_1\left(2\sqrt{z}\right)\left(-128z^6 - 11\,200z^5 - 213\,480z^4 +\right.$$
$$\left.\left.\left.2\pi\left(64z^3 + 5616z^2 + 108\,108z + 405\,405\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2} - 762\,624z^3 + 115\,056z^2 - 68\,040z - 42\,525\right)\right)\right)$$

07.22.03.0831.01

$${}_1F_2\left(-\frac{9}{2}; -\frac{1}{2}, \frac{7}{2}; z\right) = \frac{1}{258\,048z^{5/2}}\left(16\left(4z^3 - 378z^2 + 7938z - 33\,075\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^4 -\right.$$
$$2\left(16z^6 - 1504z^5 + 31\,020z^4 - 118\,512z^3 - 33\,012z^2 - 22\,680z + 25\,515\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} +$$
$$\left.\left(-16z^6 + 1488z^5 - 29\,604z^4 + 94\,752z^3 + 56\,700z^2 + 11\,340z + 25\,515\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0832.01

$${}_1F_2\left(-\frac{9}{2};-\frac{1}{2},\frac{7}{2};-z\right)=\frac{1}{258\,048\,z^{5/2}}\left(-16\left(4\,z^3+378\,z^2+7938\,z+33\,075\right)\mathrm{Si}\left(2\sqrt{z}\right)z^4-\right.$$
$$2\left(16\,z^6+1504\,z^5+31\,020\,z^4+118\,512\,z^3-33\,012\,z^2+22\,680\,z+25\,515\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\;-$$
$$\left.\left(16\,z^6+1488\,z^5+29\,604\,z^4+94\,752\,z^3-56\,700\,z^2+11\,340\,z-25\,515\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0833.01

$${}_1F_2\left(-\frac{9}{2};-\frac{1}{2},4;z\right)=$$
$$\frac{1}{2\,027\,025\,z^{5/2}}\left(2\left(2\sqrt{z}\;I_0\left(2\sqrt{z}\right)\left(256\,z^7-25\,984\,z^6+596\,112\,z^5+2\,\pi\left(64\,z^3-6480\,z^2+147\,420\,z-675\,675\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^4-\right.\right.$$
$$\left.2\,845\,440\,z^4+581\,760\,z^3+226\,800\,z^2+170\,100\,z-297\,675\right)-$$
$$I_1\left(2\sqrt{z}\right)\left(256\,z^7-25\,856\,z^6+583\,344\,z^5+4\,\pi\left(64\,z^3-6480\,z^2+147\,420\,z-675\,675\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{9/2}-$$
$$\left.\left.2\,568\,960\,z^4-424\,080\,z^3-340\,200\,z^2+42\,525\,z-595\,350\right)\right)\right)$$

07.22.03.0834.01

$${}_1F_2\left(-\frac{9}{2};-\frac{1}{2},4;-z\right)=\frac{1}{2\,027\,025\,z^{5/2}}$$
$$\left(2\left(2\sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(-256\,z^7-25\,984\,z^6-596\,112\,z^5+2\,\pi\left(64\,z^3+6480\,z^2+147\,420\,z+675\,675\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^4-\right.\right.\right.$$
$$\left.2\,845\,440\,z^4-581\,760\,z^3+226\,800\,z^2-170\,100\,z-297\,675\right)-$$
$$J_1\left(2\sqrt{z}\right)\left(-256\,z^7-25\,856\,z^6-583\,344\,z^5+4\,\pi\left(64\,z^3+6480\,z^2+147\,420\,z+675\,675\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{9/2}-$$
$$\left.\left.\left.2\,568\,960\,z^4+424\,080\,z^3-340\,200\,z^2-42\,525\,z-595\,350\right)\right)\right)$$

07.22.03.0835.01

$${}_1F_2\left(-\frac{9}{2};-\frac{1}{2},\frac{9}{2};z\right)=\frac{1}{294\,912\,z^{7/2}}\left(32\left(z^3-108\,z^2+2646\,z-13\,230\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^5-\right.$$
$$2\left(8\,z^7-860\,z^6+20\,748\,z^5-96\,462\,z^4-29\,628\,z^3-28\,350\,z^2+17\,010\,z-127\,575\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\;+$$
$$\left.\left(-8\,z^7+852\,z^6-19\,932\,z^5+79\,938\,z^4+56\,700\,z^3+39\,690\,z^2-153\,090\,z-127\,575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0836.01

$${}_1F_2\left(-\frac{9}{2};-\frac{1}{2},\frac{9}{2};-z\right)=\frac{1}{294\,912\,z^{7/2}}\left(-32\left(z^3+108\,z^2+2646\,z+13\,230\right)\mathrm{Si}\left(2\sqrt{z}\right)z^5-\right.$$
$$2\left(8\,z^7+860\,z^6+20\,748\,z^5+96\,462\,z^4-29\,628\,z^3+28\,350\,z^2+17\,010\,z+127\,575\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\;-$$
$$\left.\left(8\,z^7+852\,z^6+19\,932\,z^5+79\,938\,z^4-56\,700\,z^3+39\,690\,z^2+153\,090\,z-127\,575\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0837.01

$${}_1F_2\left(-\frac{9}{2};-\frac{1}{2},5;z\right)=\frac{1}{34\,459\,425\,z^{7/2}}$$
$$\left(8\left(\sqrt{z}\;I_0\left(2\sqrt{z}\right)\left(1024\,z^8-117\,760\,z^7+3\,113\,664\,z^6+8\,\pi\left(64\,z^3-7344\,z^2+192\,780\,z-1\,044\,225\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^5-\right.\right.\right.$$
$$\left.17\,457\,408\,z^5+3\,674\,880\,z^4+1\,587\,600\,z^3+1\,701\,000\,z^2-2\,083\,725\,z+16\,074\,450\right)-$$
$$2\,I_1\left(2\sqrt{z}\right)\left(256\,z^8-29\,312\,z^7+763\,920\,z^6+4\,\pi\left(64\,z^3-7344\,z^2+192\,780\,z-1\,044\,225\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{11/2}-$$
$$\left.\left.\left.3\,999\,744\,z^5-702\,720\,z^4-680\,400\,z^3-340\,200\,z^2+2\,976\,750\,z+8\,037\,225\right)\right)\right)$$

07.22.03.0838.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{1}{2}, 5; -z\right) = \frac{1}{34\,459\,425\,z^{7/2}} \left(8\left(\sqrt{z}\, J_0\left(2\sqrt{z}\right)\left(-1024\,z^8 - 117\,760\,z^7 - 3\,113\,664\,z^6 + 8\pi\left(64\,z^3 + 7344\,z^2 + 192\,780\,z + 1\,044\,225\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^5 - 17\,457\,408\,z^5 - 3\,674\,880\,z^4 + 1\,587\,600\,z^3 - 1\,701\,000\,z^2 - 2\,083\,725\,z - 16\,074\,450\right) - 2\,J_1\left(2\sqrt{z}\right)\left(-256\,z^8 - 29\,312\,z^7 - 763\,920\,z^6 + 4\pi\left(64\,z^3 + 7344\,z^2 + 192\,780\,z + 1\,044\,225\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{11/2} - 3\,999\,744\,z^5 + 702\,720\,z^4 - 680\,400\,z^3 + 340\,200\,z^2 + 2\,976\,750\,z - 8\,037\,225\right)\right)\right) $$

07.22.03.0839.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{1}{2}, \frac{11}{2}; z\right) = \frac{1}{1\,179\,648\,z^{9/2}} \left(32\left(2\,z^3 - 243\,z^2 + 6804\,z - 39\,690\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^6 - 2\left(16\,z^8 - 1936\,z^7 + 53\,484\,z^6 - 293\,040\,z^5 - 96\,462\,z^4 - 113\,400\,z^3 - 17\,010\,z^2 + 680\,400\,z + 4\,465\,125\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(-16\,z^8 + 1920\,z^7 - 51\,636\,z^6 + 249\,192\,z^5 + 198\,450\,z^4 + 226\,800\,z^3 - 697\,410\,z^2 + 6\,633\,900\,z + 4\,465\,125\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0840.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{1}{2}, \frac{11}{2}; -z\right) = \frac{1}{1\,179\,648\,z^{9/2}} \left(-32\left(2\,z^3 + 243\,z^2 + 6804\,z + 39\,690\right)\mathrm{Si}\left(2\sqrt{z}\right)z^6 - 2\left(16\,z^8 + 1936\,z^7 + 53\,484\,z^6 + 293\,040\,z^5 + 96\,462\,z^4 + 113\,400\,z^3 - 17\,010\,z^2 - 680\,400\,z + 4\,465\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z} - \left(16\,z^8 + 1920\,z^7 + 51\,636\,z^6 + 249\,192\,z^5 - 198\,450\,z^4 + 226\,800\,z^3 + 697\,410\,z^2 + 6\,633\,900\,z - 4\,465\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0841.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{1}{2}, 6; z\right) = \frac{1}{130\,945\,815\,z^{9/2}} \left(8\left(2\sqrt{z}\, I_0\left(2\sqrt{z}\right)\left(1024\,z^9 - 131\,584\,z^8 + 3\,939\,648\,z^7 + 8\pi\left(64\,z^3 - 8208\,z^2 + 244\,188\,z - 1\,526\,175\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^6 - 25\,371\,648\,z^6 + 5\,458\,176\,z^5 + 2\,540\,160\,z^4 + 3\,402\,000\,z^3 - 1\,190\,700\,z^2 - 24\,111\,675\,z - 353\,637\,900\right) - I_1\left(2\sqrt{z}\right)\left(1024\,z^9 - 131\,072\,z^8 + 3\,874\,752\,z^7 + 16\pi\left(64\,z^3 - 8208\,z^2 + 244\,188\,z - 1\,526\,175\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{13/2} - 23\,512\,320\,z^6 - 4\,324\,608\,z^5 - 4\,762\,800\,z^4 - 5\,103\,000\,z^3 + 32\,446\,575\,z^2 - 401\,861\,250\,z - 707\,275\,800\right)\right)\right) $$

07.22.03.0842.01

$$ {}_1F_2\left(-\frac{9}{2}; -\frac{1}{2}, 6; -z\right) = \frac{1}{130\,945\,815\,z^{9/2}} \left(8\left(2\sqrt{z}\, J_0\left(2\sqrt{z}\right)\left(-1024\,z^9 - 131\,584\,z^8 - 3\,939\,648\,z^7 + 8\pi\left(64\,z^3 + 8208\,z^2 + 244\,188\,z + 1\,526\,175\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^6 - 25\,371\,648\,z^6 - 5\,458\,176\,z^5 + 2\,540\,160\,z^4 - 3\,402\,000\,z^3 - 1\,190\,700\,z^2 + 24\,111\,675\,z - 353\,637\,900\right) - J_1\left(2\sqrt{z}\right)\left(-1024\,z^9 - 131\,072\,z^8 - 3\,874\,752\,z^7 + 16\pi\left(64\,z^3 + 8208\,z^2 + 244\,188\,z + 1\,526\,175\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{13/2} - 23\,512\,320\,z^6 + 4\,324\,608\,z^5 - 4\,762\,800\,z^4 + 5\,103\,000\,z^3 + 32\,446\,575\,z^2 + 401\,861\,250\,z - 707\,275\,800\right)\right)\right) $$

For fixed z and $a_1 = -\frac{9}{2}$, $b_1 = \frac{1}{2}$

07.22.03.0843.01

$${}_1F_2\left(-\frac{9}{2};\frac{1}{2},\frac{1}{2};z\right)=\frac{1}{4608}\left(\left(8z^4-572z^3+8796z^2-26\,478z+4608\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.\sqrt{z}\left(4z^3-282z^2+4134z-10\,161\right)\sinh\left(2\sqrt{z}\right)-8\sqrt{z}\left(2z^4-144z^3+2268z^2-7560z+2835\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.0844.01

$${}_1F_2\left(-\frac{9}{2};\frac{1}{2},\frac{1}{2};-z\right)=\frac{1}{4608}\left(\left(8z^4+572z^3+8796z^2+26\,478z+4608\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\sqrt{z}\left(4z^3+282z^2+4134z+10\,161\right)\sin\left(2\sqrt{z}\right)+8\sqrt{z}\left(2z^4+144z^3+2268z^2+7560z+2835\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)$$

07.22.03.0845.01

$${}_1F_2\left(-\frac{9}{2};\frac{1}{2},1;z\right)=\frac{1}{181\,440}\left(-4\left(2\left(64z^5-5200z^4+96\,540z^3-419\,787z^2+307\,872z-22\,680\right)I_0\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\sqrt{z}\left(-64z^4+5168z^3-93\,996z^2+375\,777z-162\,144\right)I_1\left(2\sqrt{z}\right)\right)+$$
$$\pi z\left(256z^4-20\,736z^3+381\,024z^2-1\,587\,600z+893\,025\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi z\left(-256z^4+20\,736z^3-381\,024z^2+1\,587\,600z-893\,025\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0846.01

$${}_1F_2\left(-\frac{9}{2};\frac{1}{2},1;-z\right)=\frac{1}{181\,440}\left(4\left(2\left(64z^5+5200z^4+96\,540z^3+419\,787z^2+307\,872z+22\,680\right)J_0\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\sqrt{z}\left(64z^4+5168z^3+93\,996z^2+375\,777z+162\,144\right)J_1\left(2\sqrt{z}\right)\right)+$$
$$\pi z\left(256z^4+20\,736z^3+381\,024z^2+1\,587\,600z+893\,025\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\pi z\left(256z^4+20\,736z^3+381\,024z^2+1\,587\,600z+893\,025\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0847.01

$${}_1F_2\left(-\frac{9}{2};\frac{1}{2},\frac{3}{2};z\right)=\frac{1}{46\,080\sqrt{z}}\left(2\sqrt{z}\left(4z^4-358z^3+7386z^2-34\,515z+17\,370\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(4z^4-354z^3+7050z^2-28\,845z+5670\right)\sinh\left(2\sqrt{z}\right)-8z\left(2z^4-180z^3+3780z^2-18\,900z+14\,175\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.0848.01

$${}_1F_2\left(-\frac{9}{2};\frac{1}{2},\frac{3}{2};-z\right)=\frac{1}{46\,080\sqrt{z}}\left(2\sqrt{z}\left(4z^4+358z^3+7386z^2+34\,515z+17\,370\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(4z^4+354z^3+7050z^2+28\,845z+5670\right)\sin\left(2\sqrt{z}\right)+8z\left(2z^4+180z^3+3780z^2+18\,900z+14\,175\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)$$

07.22.03.0849.01

$${}_1F_2\left(-\frac{9}{2};\frac{1}{2},2;z\right)=\frac{1}{997\,920\sqrt{z}}\left(\pi\left(256z^4-25\,344z^3+598\,752z^2-3\,492\,720z+3\,274\,425\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+\right.$$
$$\pi\left(-256z^4+25\,344z^3-598\,752z^2+3\,492\,720z-3\,274\,425\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2}+$$
$$4\left(\left(64z^5-6320z^4+148\,140z^3-839\,097z^2+664\,992z+22\,680\right)I_1\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.2\sqrt{z}\left(64z^5-6352z^4+151\,260z^3-909\,459z^2+1\,012\,896z-113\,400\right)I_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0850.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{1}{2}, 2; -z\right) = \frac{1}{997\,920\sqrt{z}}\left(\pi\left(256z^4 + 25\,344z^3 + 598\,752z^2 + 3\,492\,720z + 3\,274\,425\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{3/2} - \right.$$
$$ \pi\left(256z^4 + 25\,344z^3 + 598\,752z^2 + 3\,492\,720z + 3\,274\,425\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{3/2} +$$
$$ 4\left(2\sqrt{z}\,\left(64z^5 + 6352z^4 + 151\,260z^3 + 909\,459z^2 + 1\,012\,896z + 113\,400\right) J_0\left(2\sqrt{z}\right) - \right.$$
$$ \left.\left.\left(64z^5 + 6320z^4 + 148\,140z^3 + 839\,097z^2 + 664\,992z - 22\,680\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0851.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{1}{2}, \frac{5}{2}; z\right) = \frac{1}{184\,320\,z^{3/2}} $$
$$ \left(-8\left(2z^4 - 216z^3 + 5670z^2 - 37\,800z + 42\,525\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^2 + 2\left(4z^5 - 430z^4 + 11\,130z^3 - 70\,533z^2 + 60\,030z + 2835\right)\right. $$
$$ \left.\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^5 - 426z^4 + 10\,722z^3 - 61\,515z^2 + 28\,350z - 2835\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0852.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{1}{2}, \frac{5}{2}; -z\right) = \frac{1}{184\,320\,z^{3/2}} $$
$$ \left(8\left(2z^4 + 216z^3 + 5670z^2 + 37\,800z + 42\,525\right) \mathrm{Si}\left(2\sqrt{z}\right) z^2 + 2\left(4z^5 + 430z^4 + 11\,130z^3 + 70\,533z^2 + 60\,030z - 2835\right)\right. $$
$$ \left.\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^5 + 426z^4 + 10\,722z^3 + 61\,515z^2 + 28\,350z + 2835\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0853.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{1}{2}, 3; z\right) = \frac{1}{3\,243\,240\,z^{3/2}}\left(\pi\left(256z^4 - 29\,952z^3 + 864\,864z^2 - 6\,486\,480z + 8\,513\,505\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{5/2} + \right.$$
$$ \pi\left(-256z^4 + 29\,952z^3 - 864\,864z^2 + 6\,486\,480z - 8\,513\,505\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{5/2} -$$
$$ 4\left(2\sqrt{z}\,\left(64z^6 - 7504z^5 + 218\,076z^4 - 1\,674\,315z^3 + 2\,498\,112z^2 - 340\,200z - 17\,010\right) I_0\left(2\sqrt{z}\right) + \right.$$
$$ \left.\left.\left(-64z^6 + 7472z^5 - 214\,380z^4 + 1\,571\,553z^3 - 1\,821\,024z^2 - 113\,400z + 34\,020\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0854.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{1}{2}, 3; -z\right) = \frac{1}{3\,243\,240\,z^{3/2}}\left(\pi\left(256z^4 + 29\,952z^3 + 864\,864z^2 + 6\,486\,480z + 8\,513\,505\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{5/2} - \right.$$
$$ \pi\left(256z^4 + 29\,952z^3 + 864\,864z^2 + 6\,486\,480z + 8\,513\,505\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{5/2} +$$
$$ 4\left(2\sqrt{z}\,\left(64z^6 + 7504z^5 + 218\,076z^4 + 1\,674\,315z^3 + 2\,498\,112z^2 + 340\,200z - 17\,010\right) J_0\left(2\sqrt{z}\right) - \right.$$
$$ \left.\left.\left(64z^6 + 7472z^5 + 214\,380z^4 + 1\,571\,553z^3 + 1\,821\,024z^2 - 113\,400z - 34\,020\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0855.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{1}{2}, \frac{7}{2}; z\right) = \frac{1}{516\,096\,z^{5/2}}\left(-8\left(2z^4 - 252z^3 + 7938z^2 - 66\,150z + 99\,225\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^3 + \right.$$
$$ 2\left(4z^6 - 502z^5 + 15\,630z^4 - 125\,073z^3 + 151\,074z^2 + 14\,175z - 8505\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} +$$
$$ \left.\left(4z^6 - 498z^5 + 15\,150z^4 - 111\,951z^3 + 85\,050z^2 - 2835z + 8505\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0856.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{1}{2},\frac{7}{2};-z\right)=\frac{1}{516\,096\,z^{5/2}}\left(8\left(2z^4+252z^3+7938z^2+66\,150z+99\,225\right)\operatorname{Si}\left(2\sqrt{z}\right)z^3+2\left(4z^6+502z^5+15\,630z^4+125\,073z^3+151\,074z^2-14\,175z-8505\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^6+498z^5+15\,150z^4+111\,951z^3+85\,050z^2+2835z+8505\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0857.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{1}{2},4;z\right)=\frac{1}{8\,108\,100\,z^{5/2}}\left(\pi\left(256z^4-34\,560z^3+1\,179\,360z^2-10\,810\,800z+18\,243\,225\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2}+\pi\left(-256z^4+34\,560z^3-1\,179\,360z^2+10\,810\,800z-18\,243\,225\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{7/2}-4\left(2\sqrt{z}\left(64z^7-8656z^6+296\,988z^5-2\,774\,835z^4+5\,186\,880z^3-793\,800z^2-85\,050z+85\,050\right)I_0\left(2\sqrt{z}\right)-\left(64z^7-8624z^6+292\,716z^5-2\,633\,625z^4+4\,023\,360z^3+340\,200z^2-85\,050z+170\,100\right)I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0858.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{1}{2},4;-z\right)=\frac{1}{8\,108\,100\,z^{5/2}}\left(\pi\left(256z^4+34\,560z^3+1\,179\,360z^2+10\,810\,800z+18\,243\,225\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2}-\pi\left(256z^4+34\,560z^3+1\,179\,360z^2+10\,810\,800z+18\,243\,225\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{7/2}+4\left(2\sqrt{z}\left(64z^7+8656z^6+296\,988z^5+2\,774\,835z^4+5\,186\,880z^3+793\,800z^2-85\,050z-85\,050\right)J_0\left(2\sqrt{z}\right)-\left(64z^7+8624z^6+292\,716z^5+2\,633\,625z^4+4\,023\,360z^3-340\,200z^2-85\,050z-170\,100\right)J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0859.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{1}{2},\frac{9}{2};z\right)=\frac{1}{2\,359\,296\,z^{7/2}}\left(-32\left(z^4-144z^3+5292z^2-52\,920z+99\,225\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^4+2\left(8z^7-1148z^6+41\,772z^5-403\,830z^4+633\,924z^3+85\,050z^2-51\,030z+127\,575\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(8z^7-1140z^6+40\,668z^5-367\,866z^4+396\,900z^3+28\,350z^2-119\,070z-127\,575\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0860.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{1}{2},\frac{9}{2};-z\right)=\frac{1}{2\,359\,296\,z^{7/2}}\left(32\left(z^4+144z^3+5292z^2+52\,920z+99\,225\right)\operatorname{Si}\left(2\sqrt{z}\right)z^4+2\left(8z^7+1148z^6+41\,772z^5+403\,830z^4+633\,924z^3-85\,050z^2-51\,030z-127\,575\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8z^7+1140z^6+40\,668z^5+367\,866z^4+396\,900z^3-28\,350z^2-119\,070z+127\,575\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0861.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{1}{2},5;z\right)= $$

$$ \frac{1}{34\,459\,425\,z^{7/2}}\left(2\left(\pi\left(256z^4-39\,168z^3+1\,542\,240z^2-16\,707\,600z+34\,459\,425\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{9/2}+\pi\left(-256z^4+39\,168z^3-1\,542\,240z^2+16\,707\,600z-34\,459\,425\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{9/2}-4\left(\sqrt{z}\left(128z^8-19\,616z^7+775\,992z^6-8\,542\,998z^5+19\,186\,560z^4-3\,175\,200z^3-510\,300z^2+552\,825z-1\,786\,050\right)I_0\left(2\sqrt{z}\right)+\left(-64z^8+9776z^7-383\,148z^6+4\,085\,793z^5-7\,755\,840z^4-793\,800z^3+85\,050z^2+340\,200z+1\,786\,050\right)I_1\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.0862.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{1}{2},5;-z\right)= \frac{1}{34\,459\,425\,z^{7/2}}\left(2\left(\pi\left(256\,z^4+39\,168\,z^3+1\,542\,240\,z^2+16\,707\,600\,z+34\,459\,425\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{9/2}-\right.\right. \pi\left(256\,z^4+39\,168\,z^3+1\,542\,240\,z^2+16\,707\,600\,z+34\,459\,425\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{9/2}+ 4\left(\sqrt{z}\,\left(128\,z^8+19\,616\,z^7+775\,992\,z^6+8\,542\,998\,z^5+19\,186\,560\,z^4+3\,175\,200\,z^3-\right.\right. 510\,300\,z^2-552\,825\,z-1\,786\,050\right)J_0\left(2\sqrt{z}\right)-\left(64\,z^8+9776\,z^7+383\,148\,z^6+ \left.\left.\left.\left.4\,085\,793\,z^5+7\,755\,840\,z^4-793\,800\,z^3-85\,050\,z^2+340\,200\,z-1\,786\,050\right)J_1\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.0863.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{1}{2},\frac{11}{2};z\right)= \frac{1}{4\,718\,592\,z^{9/2}}\left(-32\left(z^4-162\,z^3+6804\,z^2-79\,380\,z+178\,605\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^5+2\left(8\,z^8-1292\,z^7+53\,796\,z^6-\right.\right. 609\,678\,z^5+1\,179\,648\,z^4+198\,450\,z^3-85\,050\,z^2-42\,525\,z-1\,786\,050\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+ \left.\left.\left(8\,z^8-1284\,z^7+52\,548\,z^6-562\,482\,z^5+793\,800\,z^4+141\,750\,z^3-493\,290\,z^2+2\,423\,925\,z+1\,786\,050\right)\sinh\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0864.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{1}{2},\frac{11}{2};-z\right)= \frac{1}{4\,718\,592\,z^{9/2}}\left(32\left(z^4+162\,z^3+6804\,z^2+79\,380\,z+178\,605\right)\mathrm{Si}\left(2\sqrt{z}\right)z^5+2\left(8\,z^8+1292\,z^7+53\,796\,z^6+\right.\right. 609\,678\,z^5+1\,179\,648\,z^4-198\,450\,z^3-85\,050\,z^2+42\,525\,z-1\,786\,050\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+ \left.\left.\left(8\,z^8+1284\,z^7+52\,548\,z^6+562\,482\,z^5+793\,800\,z^4-141\,750\,z^3-493\,290\,z^2-2\,423\,925\,z+1\,786\,050\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0865.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{1}{2},6;z\right)= \frac{1}{130\,945\,815\,z^{9/2}}\left(4\left(\pi\left(256\,z^4-43\,776\,z^3+1\,953\,504\,z^2-24\,418\,800\,z+59\,520\,825\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{11/2}+\right.\right. \pi\left(-256\,z^4+43\,776\,z^3-1\,953\,504\,z^2+24\,418\,800\,z-59\,520\,825\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{11/2}+ 2\left(\left(128\,z^9-21\,856\,z^8+971\,352\,z^7-11\,977\,074\,z^6+27\,186\,048\,z^5+3\,175\,200\,z^4+170\,100\,z^3-4\,124\,925\,z^2+\right.\right. 30\,362\,850\,z+64\,297\,800\right)I_1\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(128\,z^9-21\,920\,z^8+982\,200\,z^7-12\,449\,574\,z^6+ \left.\left.\left.\left.32\,644\,224\,z^5-5\,715\,360\,z^4-1\,190\,700\,z^3+1\,063\,125\,z^2-893\,025\,z+32\,148\,900\right)I_0\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.0866.01

$${}_1F_2\left(-\frac{9}{2};\frac{1}{2},6;-z\right)=$$
$$-\frac{1}{130\,945\,815\,z^{9/2}}\left(4\left(-\pi\left(256\,z^4+43\,776\,z^3+1\,953\,504\,z^2+24\,418\,800\,z+59\,520\,825\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{11/2}+\right.\right.$$
$$\pi\left(256\,z^4+43\,776\,z^3+1\,953\,504\,z^2+24\,418\,800\,z+59\,520\,825\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{11/2}+$$
$$2\left(\left(128\,z^9+21\,856\,z^8+971\,352\,z^7+11\,977\,074\,z^6+27\,186\,048\,z^5-3\,175\,200\,z^4+170\,100\,z^3+4\,124\,925\,z^2+\right.\right.$$
$$\left.\left.30\,362\,850\,z-64\,297\,800\right)J_1\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(128\,z^9+21\,920\,z^8+982\,200\,z^7+12\,449\,574\,z^6+\right.\right.$$
$$\left.\left.\left.\left.32\,644\,224\,z^5+5\,715\,360\,z^4-1\,190\,700\,z^3-1\,063\,125\,z^2-893\,025\,z-32\,148\,900\right)J_0\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1=-\frac{9}{2}$, $b_1=1$

07.22.03.0867.01

$${}_1F_2\left(-\frac{9}{2};1,1;z\right)=\frac{1}{893\,025}\left(\left(-512\,z^5+46\,848\,z^4-1\,017\,504\,z^3+5\,568\,768\,z^2-6\,061\,230\,z+893\,025\right)I_0\left(\sqrt{z}\right)^2+\right.$$
$$2\sqrt{z}\,\left(256\,z^4-23\,232\,z^3+491\,616\,z^2-2\,439\,756\,z+1\,596\,105\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+$$
$$\left.2\,z\left(256\,z^4-23\,296\,z^3+497\,232\,z^2-2\,546\,784\,z+1\,954\,971\right)I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.0868.01

$${}_1F_2\left(-\frac{9}{2};1,1;-z\right)=\frac{1}{893\,025}\left(\left(512\,z^5+46\,848\,z^4+1\,017\,504\,z^3+5\,568\,768\,z^2+6\,061\,230\,z+893\,025\right)J_0\left(\sqrt{z}\right)^2-\right.$$
$$2\sqrt{z}\,\left(256\,z^4+23\,232\,z^3+491\,616\,z^2+2\,439\,756\,z+1\,596\,105\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+$$
$$\left.2\,z\left(256\,z^4+23\,296\,z^3+497\,232\,z^2+2\,546\,784\,z+1\,954\,971\right)J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.0869.01

$${}_1F_2\left(-\frac{9}{2};1,\frac{3}{2};z\right)=\frac{1}{7\,257\,600}\left(-4\left(2\left(256\,z^5-25\,984\,z^4+641\,472\,z^3-4\,123\,080\,z^2+5\,354\,955\,z-907\,200\right)I_0\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\sqrt{z}\,\left(-256\,z^4+25\,856\,z^3-628\,704\,z^2+3\,823\,920\,z-3\,749\,985\right)I_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(1024\,z^5-103\,680\,z^4+2\,540\,160\,z^3-15\,876\,000\,z^2+17\,860\,500\,z-893\,025\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(-1024\,z^5+103\,680\,z^4-2\,540\,160\,z^3+15\,876\,000\,z^2-17\,860\,500\,z+893\,025\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0870.01

$${}_1F_2\left(-\frac{9}{2};1,\frac{3}{2};-z\right)=\frac{1}{7\,257\,600}\left(4\left(2\left(256\,z^5+25\,984\,z^4+641\,472\,z^3+4\,123\,080\,z^2+5\,354\,955\,z+907\,200\right)J_0\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\sqrt{z}\,\left(256\,z^4+25\,856\,z^3+628\,704\,z^2+3\,823\,920\,z+3\,749\,985\right)J_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(1024\,z^5+103\,680\,z^4+2\,540\,160\,z^3+15\,876\,000\,z^2+17\,860\,500\,z+893\,025\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\pi\left(1024\,z^5+103\,680\,z^4+2\,540\,160\,z^3+15\,876\,000\,z^2+17\,860\,500\,z+893\,025\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0871.01

$$ {}_1F_2\left(-\frac{9}{2};\,1,\,2;\,z\right) = \frac{1}{9\,823\,275}\left(\left(-1024\,z^5+114\,432\,z^4-3\,185\,856\,z^3+24\,061\,248\,z^2-39\,882\,780\,z+9\,823\,275\right) I_0\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(256\,z^4-28\,416\,z^3+775\,440\,z^2-5\,463\,648\,z+6\,546\,015\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(1024\,z^5-113\,920\,z^4+3\,129\,408\,z^3-22\,550\,976\,z^2+29\,917\,332\,z-893\,025\right) I_1\left(\sqrt{z}\right)^2\right) $$

07.22.03.0872.01

$$ {}_1F_2\left(-\frac{9}{2};\,1,\,2;\,-z\right) = \frac{1}{9\,823\,275}\left(\left(1024\,z^5+114\,432\,z^4+3\,185\,856\,z^3+24\,061\,248\,z^2+39\,882\,780\,z+9\,823\,275\right) J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(256\,z^4+28\,416\,z^3+775\,440\,z^2+5\,463\,648\,z+6\,546\,015\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(1024\,z^5+113\,920\,z^4+3\,129\,408\,z^3+22\,550\,976\,z^2+29\,917\,332\,z+893\,025\right) J_1\left(\sqrt{z}\right)^2\right) $$

07.22.03.0873.01

$$ {}_1F_2\left(-\frac{9}{2};\,1,\,\frac{5}{2};\,z\right) = \frac{1}{116\,121\,600\,z}\left(-4\left(2\,z\left(1024\,z^5-124\,672\,z^4+3\,841\,152\,z^3-32\,681\,952\,z^2+60\,886\,260\,z-14\,812\,875\right) I_0\left(2\sqrt{z}\right) + \sqrt{z}\left(-1024\,z^5+124\,160\,z^4-3\,779\,712\,z^3+30\,865\,824\,z^2-47\,393\,460\,z+893\,025\right) I_1\left(2\sqrt{z}\right)\right) + \pi\left(4096\,z^6-497\,664\,z^5+15\,240\,960\,z^4-127\,008\,000\,z^3+214\,326\,000\,z^2-21\,432\,600\,z+893\,025\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(-4096\,z^6+497\,664\,z^5-15\,240\,960\,z^4+127\,008\,000\,z^3-214\,326\,000\,z^2+21\,432\,600\,z-893\,025\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0874.01

$$ {}_1F_2\left(-\frac{9}{2};\,1,\,\frac{5}{2};\,-z\right) = \frac{1}{116\,121\,600\,z}\left(4\left(2\,z\left(1024\,z^5+124\,672\,z^4+3\,841\,152\,z^3+32\,681\,952\,z^2+60\,886\,260\,z+14\,812\,875\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(1024\,z^5+124\,160\,z^4+3\,779\,712\,z^3+30\,865\,824\,z^2+47\,393\,460\,z+893\,025\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(4096\,z^6+497\,664\,z^5+15\,240\,960\,z^4+127\,008\,000\,z^3+214\,326\,000\,z^2+21\,432\,600\,z+893\,025\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(4096\,z^6+497\,664\,z^5+15\,240\,960\,z^4+127\,008\,000\,z^3+214\,326\,000\,z^2+21\,432\,600\,z+893\,025\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0875.01

$$ {}_1F_2\left(-\frac{9}{2};\,1,\,3;\,z\right) = -\frac{1}{127\,702\,575\,z}\left(4\left(4\,z\left(256\,z^5-33\,792\,z^4+1\,147\,680\,z^3-11\,056\,104\,z^2+24\,590\,790\,z-8\,037\,225\right) I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-1024\,z^5+134\,400\,z^4-4\,491\,072\,z^3+40\,999\,104\,z^2-71\,702\,820\,z+893\,025\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-1024\,z^6+134\,656\,z^5-4\,523\,904\,z^4+42\,027\,264\,z^3-79\,305\,624\,z^2+5\,358\,150\,z-893\,025\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0876.01

$$ {}_1F_2\left(-\frac{9}{2}; 1, 3; -z\right) = \frac{1}{127\,702\,575\,z}\left(4\left(4\,z\left(256\,z^5+33\,792\,z^4+1\,147\,680\,z^3+11\,056\,104\,z^2+24\,590\,790\,z+8\,037\,225\right)J_0\left(\sqrt{z}\right)^2-\sqrt{z}\left(1024\,z^5+134\,400\,z^4+4\,491\,072\,z^3+40\,999\,104\,z^2+71\,702\,820\,z+893\,025\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(1024\,z^6+134\,656\,z^5+4\,523\,904\,z^4+42\,027\,264\,z^3+79\,305\,624\,z^2+5\,358\,150\,z+893\,025\right)J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0877.01

$$ {}_1F_2\left(-\frac{9}{2}; 1, \frac{7}{2}; z\right) = \frac{1}{1\,300\,561\,920\,z^2}\left(-4\left(2\,z\left(4096\,z^6-581\,632\,z^5+21\,481\,728\,z^4-227\,492\,352\,z^3+552\,042\,288\,z^2-170\,190\,720\,z+2\,679\,075\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\left(-4096\,z^6+579\,584\,z^5-21\,194\,496\,z^4+217\,241\,856\,z^3-454\,665\,456\,z^2+21\,432\,600\,z-8\,037\,225\right)I_1\left(2\sqrt{z}\right)\right)+\pi\left(16\,384\,z^7-2\,322\,432\,z^6+85\,349\,376\,z^5-889\,056\,000\,z^4+2\,000\,376\,000\,z^3-300\,056\,400\,z^2+25\,004\,700\,z-8\,037\,225\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(-16\,384\,z^7+2\,322\,432\,z^6-85\,349\,376\,z^5+889\,056\,000\,z^4-2\,000\,376\,000\,z^3+300\,056\,400\,z^2-25\,004\,700\,z+8\,037\,225\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0878.01

$$ {}_1F_2\left(-\frac{9}{2}; 1, \frac{7}{2}; -z\right) = \frac{1}{1\,300\,561\,920\,z^2}\left(4\left(2\,z\left(4096\,z^6+581\,632\,z^5+21\,481\,728\,z^4+227\,492\,352\,z^3+552\,042\,288\,z^2+170\,190\,720\,z+2\,679\,075\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\left(4096\,z^6+579\,584\,z^5+21\,194\,496\,z^4+217\,241\,856\,z^3+454\,665\,456\,z^2+21\,432\,600\,z+8\,037\,225\right)J_1\left(2\sqrt{z}\right)\right)+\pi\left(16\,384\,z^7+2\,322\,432\,z^6+85\,349\,376\,z^5+889\,056\,000\,z^4+2\,000\,376\,000\,z^3+300\,056\,400\,z^2+25\,004\,700\,z+8\,037\,225\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\left(16\,384\,z^7+2\,322\,432\,z^6+85\,349\,376\,z^5+889\,056\,000\,z^4+2\,000\,376\,000\,z^3+300\,056\,400\,z^2+25\,004\,700\,z+8\,037\,225\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0879.01

$$ {}_1F_2\left(-\frac{9}{2}; 1, 4; z\right) = -\frac{1}{638\,512\,875\,z^2}\left(4\left(2\,z\left(1024\,z^6-155\,904\,z^5+6\,249\,600\,z^4-73\,214\,640\,z^3+204\,233\,400\,z^2-81\,265\,275\,z+893\,025\right)I_0\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512\,z^6-77\,568\,z^5+3\,067\,200\,z^4-34\,390\,080\,z^3+79\,209\,900\,z^2-2\,679\,075\,z+1\,786\,050\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(-2048\,z^7+310\,784\,z^6-12\,344\,832\,z^5+140\,407\,200\,z^4-343\,721\,520\,z^3+37\,507\,050\,z^2-9\,823\,275\,z+7\,144\,200\right)I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0880.01

$$ {}_1F_2\left(-\frac{9}{2}; 1, 4; -z\right) = \frac{1}{638\,512\,875\,z^2} \left(4\left(2\,z\left(1024\,z^6 + 155\,904\,z^5 + 6\,249\,600\,z^4 + 73\,214\,640\,z^3 + 204\,233\,400\,z^2 + 81\,265\,275\,z + 893\,025\right) J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512\,z^6 + 77\,568\,z^5 + 3\,067\,200\,z^4 + 34\,390\,080\,z^3 + 79\,209\,900\,z^2 + 2\,679\,075\,z + 1\,786\,050\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(2048\,z^7 + 310\,784\,z^6 + 12\,344\,832\,z^5 + 140\,407\,200\,z^4 + 343\,721\,520\,z^3 + 37\,507\,050\,z^2 + 9\,823\,275\,z + 7\,144\,200\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0881.01

$$ {}_1F_2\left(-\frac{9}{2}; 1, \frac{9}{2}; z\right) = \frac{1}{11\,890\,851\,840\,z^3} \left(-4\left(2\,z\left(16\,384\,z^7 - 2\,658\,304\,z^6 + 114\,459\,648\,z^5 - 1\,450\,453\,248\,z^4 + 4\,336\,802\,496\,z^3 - 1\,598\,894\,640\,z^2 + 67\,869\,900\,z - 66\,976\,875\right) I_0\left(2\sqrt{z}\right) + \sqrt{z}\left(-16\,384\,z^7 + 2\,650\,112\,z^6 - 113\,144\,832\,z^5 + 1\,395\,475\,200\,z^4 - 3\,700\,516\,032\,z^3 + 300\,056\,400\,z^2 - 167\,888\,700\,z + 200\,930\,625\right) I_1\left(2\sqrt{z}\right)\right) + \pi\left(65\,536\,z^8 - 10\,616\,832\,z^7 + 455\,196\,672\,z^6 - 5\,689\,958\,400\,z^5 + 16\,003\,008\,000\,z^4 - 3\,200\,601\,600\,z^3 + 400\,075\,200\,z^2 - 257\,191\,200\,z + 200\,930\,625\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(-65\,536\,z^8 + 10\,616\,832\,z^7 - 455\,196\,672\,z^6 + 5\,689\,958\,400\,z^5 - 16\,003\,008\,000\,z^4 + 3\,200\,601\,600\,z^3 - 400\,075\,200\,z^2 + 257\,191\,200\,z - 200\,930\,625\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0882.01

$$ {}_1F_2\left(-\frac{9}{2}; 1, \frac{9}{2}; -z\right) = \frac{1}{11\,890\,851\,840\,z^3} \left(4\left(2\,z\left(16\,384\,z^7 + 2\,658\,304\,z^6 + 114\,459\,648\,z^5 + 1\,450\,453\,248\,z^4 + 4\,336\,802\,496\,z^3 + 1\,598\,894\,640\,z^2 + 67\,869\,900\,z + 66\,976\,875\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(16\,384\,z^7 + 2\,650\,112\,z^6 + 113\,144\,832\,z^5 + 1\,395\,475\,200\,z^4 + 3\,700\,516\,032\,z^3 + 300\,056\,400\,z^2 + 167\,888\,700\,z + 200\,930\,625\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(65\,536\,z^8 + 10\,616\,832\,z^7 + 455\,196\,672\,z^6 + 5\,689\,958\,400\,z^5 + 16\,003\,008\,000\,z^4 + 3\,200\,601\,600\,z^3 + 400\,075\,200\,z^2 + 257\,191\,200\,z + 200\,930\,625\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(65\,536\,z^8 + 10\,616\,832\,z^7 + 455\,196\,672\,z^6 + 5\,689\,958\,400\,z^5 + 16\,003\,008\,000\,z^4 + 3\,200\,601\,600\,z^3 + 400\,075\,200\,z^2 + 257\,191\,200\,z + 200\,930\,625\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0883.01

$$ {}_1F_2\left(-\frac{9}{2}; 1, 5; z\right) = -\frac{1}{10\,854\,718\,875\,z^3} \left(16\left(z\left(4096\,z^7 - 706\,560\,z^6 + 32\,649\,984\,z^5 - 450\,478\,080\,z^4 + 1\,510\,941\,600\,z^3 - 700\,131\,600\,z^2 + 22\,325\,625\,z - 32\,148\,900\right) I_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(2048\,z^7 - 351\,744\,z^6 + 16\,063\,488\,z^5 - 213\,570\,720\,z^4 + 610\,772\,400\,z^3 - 37\,507\,050\,z^2 + 36\,614\,025\,z - 64\,297\,800\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-4096\,z^8 + 704\,512\,z^7 - 32\,299\,776\,z^6 + 434\,670\,336\,z^5 - 1\,308\,123\,360\,z^4 + 200\,037\,600\,z^3 - 65\,190\,825\,z^2 + 57\,153\,600\,z - 128\,595\,600\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0884.01

$$ {}_1F_2\left(-\frac{9}{2}; 1, 5; -z\right) = \frac{1}{10\,854\,718\,875\,z^3} $$
$$ \left(16\left(z\left(4096\,z^7 + 706\,560\,z^6 + 32\,649\,984\,z^5 + 450\,478\,080\,z^4 + 1\,510\,941\,600\,z^3 + 700\,131\,600\,z^2 + 22\,325\,625\,z + \right.\right.\right. $$
$$ 32\,148\,900\Big) J_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\,\left(2048\,z^7 + 351\,744\,z^6 + 16\,063\,488\,z^5 + 213\,570\,720\,z^4 + 610\,772\,400\,z^3 + \right. $$
$$ 37\,507\,050\,z^2 + 36\,614\,025\,z + 64\,297\,800\Big) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(4096\,z^8 + 704\,512\,z^7 + 32\,299\,776\,z^6 + \right. $$
$$ \left.\left.\left. 434\,670\,336\,z^5 + 1\,308\,123\,360\,z^4 + 200\,037\,600\,z^3 + 65\,190\,825\,z^2 + 57\,153\,600\,z + 128\,595\,600\Big) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0885.01

$$ {}_1F_2\left(-\frac{9}{2}; 1, \frac{11}{2}; z\right) = $$
$$ \frac{1}{95\,126\,814\,720\,z^4}\left(-4\left(2\,z\left(65\,536\,z^8 - 11\,960\,320\,z^7 + 588\,226\,560\,z^6 - 8\,679\,057\,408\,z^5 + 30\,837\,408\,768\,z^4 - \right.\right. $$
$$ 13\,146\,779\,520\,z^3 + 1\,000\,188\,000\,z^2 - 1\,536\,003\,000\,z + 3\,281\,866\,875\Big) I_0\left(2\sqrt{z}\right) + $$
$$ \sqrt{z}\,\left(-65\,536\,z^8 + 11\,927\,552\,z^7 - 582\,303\,744\,z^6 + 8\,395\,112\,448\,z^5 - 26\,961\,716\,736\,z^4 + \right. $$
$$ \left.\left. 3\,200\,601\,600\,z^3 - 2\,114\,683\,200\,z^2 + 2\,857\,680\,000\,z - 9\,845\,600\,625\Big) I_1\left(2\sqrt{z}\right)\right) + $$
$$ \pi\left(262\,144\,z^9 - 47\,775\,744\,z^8 + 2\,341\,011\,456\,z^7 - 34\,139\,750\,400\,z^6 + 115\,221\,657\,600\,z^5 - 28\,805\,414\,400\,z^4 + \right. $$
$$ 4\,800\,902\,400\,z^3 - 4\,629\,441\,600\,z^2 + 7\,233\,502\,500\,z - 9\,845\,600\,625\Big) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + $$
$$ \pi\left(-262\,144\,z^9 + 47\,775\,744\,z^8 - 2\,341\,011\,456\,z^7 + 34\,139\,750\,400\,z^6 - 115\,221\,657\,600\,z^5 + 28\,805\,414\,400\,z^4 - \right. $$
$$ \left. 4\,800\,902\,400\,z^3 + 4\,629\,441\,600\,z^2 - 7\,233\,502\,500\,z + 9\,845\,600\,625\Big) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0886.01

$$ {}_1F_2\left(-\frac{9}{2}; 1, \frac{11}{2}; -z\right) = $$
$$ \frac{1}{95\,126\,814\,720\,z^4}\left(4\left(2\,z\left(65\,536\,z^8 + 11\,960\,320\,z^7 + 588\,226\,560\,z^6 + 8\,679\,057\,408\,z^5 + 30\,837\,408\,768\,z^4 + \right.\right. $$
$$ 13\,146\,779\,520\,z^3 + 1\,000\,188\,000\,z^2 + 1\,536\,003\,000\,z + 3\,281\,866\,875\Big) J_0\left(2\sqrt{z}\right) - $$
$$ \sqrt{z}\,\left(65\,536\,z^8 + 11\,927\,552\,z^7 + 582\,303\,744\,z^6 + 8\,395\,112\,448\,z^5 + 26\,961\,716\,736\,z^4 + \right. $$
$$ \left.\left. 3\,200\,601\,600\,z^3 + 2\,114\,683\,200\,z^2 + 2\,857\,680\,000\,z + 9\,845\,600\,625\Big) J_1\left(2\sqrt{z}\right)\right) + $$
$$ \pi\left(262\,144\,z^9 + 47\,775\,744\,z^8 + 2\,341\,011\,456\,z^7 + 34\,139\,750\,400\,z^6 + 115\,221\,657\,600\,z^5 + 28\,805\,414\,400\,z^4 + \right. $$
$$ 4\,800\,902\,400\,z^3 + 4\,629\,441\,600\,z^2 + 7\,233\,502\,500\,z + 9\,845\,600\,625\Big) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - $$
$$ \pi\left(262\,144\,z^9 + 47\,775\,744\,z^8 + 2\,341\,011\,456\,z^7 + 34\,139\,750\,400\,z^6 + 115\,221\,657\,600\,z^5 + 28\,805\,414\,400\,z^4 + \right. $$
$$ \left. 4\,800\,902\,400\,z^3 + 4\,629\,441\,600\,z^2 + 7\,233\,502\,500\,z + 9\,845\,600\,625\Big) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0887.01

$$ {}_1F_2\left(-\frac{9}{2}; 1, 6; z\right) = -\frac{1}{41\,247\,931\,725\,z^4}\left(32\left(z\left(4096\,z^8 - 789\,504\,z^7 + 41\,317\,632\,z^6 - 656\,106\,624\,z^5 + 2\,570\,732\,640\,z^4 - 1\,350\,253\,800\,z^3 + 81\,265\,275\,z^2 - 176\,818\,950\,z + 514\,382\,400\right) I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-4096\,z^8 + 786\,432\,z^7 - 40\,732\,416\,z^6 + 626\,409\,216\,z^5 - 2\,140\,901\,280\,z^4 + 200\,037\,600\,z^3 - 225\,935\,325\,z^2 + 450\,084\,600\,z - 2\,057\,529\,600\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-4096\,z^9 + 787\,456\,z^8 - 40\,925\,952\,z^7 + 636\,027\,264\,z^6 - 2\,271\,344\,256\,z^5 + 450\,084\,600\,z^4 - 168\,781\,725\,z^3 + 158\,958\,450\,z^2 - 192\,893\,400\,z + 2\,057\,529\,600\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0888.01

$$ {}_1F_2\left(-\frac{9}{2}; 1, 6; -z\right) = \frac{1}{41\,247\,931\,725\,z^4}\left(32\left(z\left(4096\,z^8 + 789\,504\,z^7 + 41\,317\,632\,z^6 + 656\,106\,624\,z^5 + 2\,570\,732\,640\,z^4 + 1\,350\,253\,800\,z^3 + 81\,265\,275\,z^2 + 176\,818\,950\,z + 514\,382\,400\right) J_0\left(\sqrt{z}\right)^2 - \sqrt{z}\left(4096\,z^8 + 786\,432\,z^7 + 40\,732\,416\,z^6 + 626\,409\,216\,z^5 + 2\,140\,901\,280\,z^4 + 200\,037\,600\,z^3 + 225\,935\,325\,z^2 + 450\,084\,600\,z + 2\,057\,529\,600\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(4096\,z^9 + 787\,456\,z^8 + 40\,925\,952\,z^7 + 636\,027\,264\,z^6 + 2\,271\,344\,256\,z^5 + 450\,084\,600\,z^4 + 168\,781\,725\,z^3 + 158\,958\,450\,z^2 + 192\,893\,400\,z + 2\,057\,529\,600\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

For fixed z and $a_1 = -\frac{9}{2}$, $b_1 = \frac{3}{2}$

07.22.03.0889.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{3}{2}, \frac{3}{2}; z\right) = \frac{1}{921\,600\,\sqrt{z}}\left(2\sqrt{z}\left(8\,z^4 - 896\,z^3 + 24\,762\,z^2 - 177\,660\,z + 217\,935\right)\cosh\left(2\sqrt{z}\right) + \left(8\,z^4 - 888\,z^3 + 23\,910\,z^2 - 157\,320\,z + 129\,465\right)\sinh\left(2\sqrt{z}\right) - 8\left(4\,z^5 - 450\,z^4 + 12\,600\,z^3 - 94\,500\,z^2 + 141\,750\,z - 14\,175\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.0890.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{3}{2}, \frac{3}{2}; -z\right) = \frac{1}{921\,600\,\sqrt{z}}\left(2\sqrt{z}\left(8\,z^4 + 896\,z^3 + 24\,762\,z^2 + 177\,660\,z + 217\,935\right)\cos\left(2\sqrt{z}\right) + \left(8\,z^4 + 888\,z^3 + 23\,910\,z^2 + 157\,320\,z + 129\,465\right)\sin\left(2\sqrt{z}\right) + 8\left(4\,z^5 + 450\,z^4 + 12\,600\,z^3 + 94\,500\,z^2 + 141\,750\,z + 14\,175\right)\mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.0891.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{3}{2}, 2; z\right) = \frac{1}{39\,916\,800\sqrt{z}}\left(-4\left(2\sqrt{z}\left(256z^5 - 31\,744z^4 + 1\,005\,792z^3 - 8\,975\,520z^2 + 18\,388\,665z - 5\,443\,200\right)I_0\left(2\sqrt{z}\right) + \left(-256z^5 + 31\,616z^4 - 990\,144z^3 + 8\,499\,240z^2 - 14\,650\,155z + 907\,200\right)I_1\left(2\sqrt{z}\right)\right) + \pi\sqrt{z}\left(1024z^5 - 126\,720z^4 + 3\,991\,680z^3 - 34\,927\,200z^2 + 65\,488\,500z - 9\,823\,275\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\sqrt{z}\left(-1024z^5 + 126\,720z^4 - 3\,991\,680z^3 + 34\,927\,200z^2 - 65\,488\,500z + 9\,823\,275\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0892.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{3}{2}, 2; -z\right) = \frac{1}{39\,916\,800\sqrt{z}}\left(4\left(2\sqrt{z}\left(256z^5 + 31\,744z^4 + 1\,005\,792z^3 + 8\,975\,520z^2 + 18\,388\,665z + 5\,443\,200\right)J_0\left(2\sqrt{z}\right) - \left(256z^5 + 31\,616z^4 + 990\,144z^3 + 8\,499\,240z^2 + 14\,650\,155z + 907\,200\right)J_1\left(2\sqrt{z}\right)\right) + \pi\sqrt{z}\left(1024z^5 + 126\,720z^4 + 3\,991\,680z^3 + 34\,927\,200z^2 + 65\,488\,500z + 9\,823\,275\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\sqrt{z}\left(1024z^5 + 126\,720z^4 + 3\,991\,680z^3 + 34\,927\,200z^2 + 65\,488\,500z + 9\,823\,275\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0893.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{3}{2}, \frac{5}{2}; z\right) = \frac{1}{1\,843\,200z^{3/2}}\left(2\sqrt{z}\left(4z^5 - 538z^4 + 18\,636z^3 - 180\,315z^2 + 353\,655z - 14\,175\right)\cosh\left(2\sqrt{z}\right) + \left(4z^5 - 534z^4 + 18\,120z^3 - 164\,385z^2 + 246\,645z + 14\,175\right)\sinh\left(2\sqrt{z}\right) - 8z\left(2z^5 - 270z^4 + 9450z^3 - 94\,500z^2 + 212\,625z - 42\,525\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.0894.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{3}{2}, \frac{5}{2}; -z\right) = \frac{1}{1\,843\,200z^{3/2}}\left(2\sqrt{z}\left(4z^5 + 538z^4 + 18\,636z^3 + 180\,315z^2 + 353\,655z + 14\,175\right)\cos\left(2\sqrt{z}\right) + \left(4z^5 + 534z^4 + 18\,120z^3 + 164\,385z^2 + 246\,645z - 14\,175\right)\sin\left(2\sqrt{z}\right) + 8z\left(2z^5 + 270z^4 + 9450z^3 + 94\,500z^2 + 212\,625z + 42\,525\right)\mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.0895.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{3}{2}, 3; z\right) = \frac{1}{129\,729\,600z^{3/2}}\left(\pi\left(1024z^5 - 149\,760z^4 + 5\,765\,760z^3 - 64\,864\,800z^2 + 170\,270\,100z - 42\,567\,525\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2} + \pi\left(-1024z^5 + 149\,760z^4 - 5\,765\,760z^3 + 64\,864\,800z^2 - 170\,270\,100z + 42\,567\,525\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2} - 4\left(2\sqrt{z}\left(256z^6 - 37\,504z^5 + 1\,450\,752z^4 - 16\,569\,720z^3 + 46\,376\,055z^2 - 19\,051\,200z + 226\,800\right)I_0\left(2\sqrt{z}\right) + \left(-256z^6 + 37\,376z^5 - 1\,432\,224z^4 + 15\,876\,000z^3 - 39\,203\,685z^2 + 5\,443\,200z - 453\,600\right)I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0896.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{3}{2}, 3; -z\right) = \frac{1}{129\,729\,600\, z^{3/2}} \left(\pi \left(1024 z^5 + 149\,760 z^4 + 5\,765\,760 z^3 + 64\,864\,800 z^2 + 170\,270\,100 z + 42\,567\,525\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{3/2} - \pi \left(1024 z^5 + 149\,760 z^4 + 5\,765\,760 z^3 + 64\,864\,800 z^2 + 170\,270\,100 z + 42\,567\,525\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{3/2} + 4\left(2\sqrt{z}\, \left(256 z^6 + 37\,504 z^5 + 1\,450\,752 z^4 + 16\,569\,720 z^3 + 46\,376\,055 z^2 + 19\,051\,200 z + 226\,800\right) J_0\left(2\sqrt{z}\right) - \left(256 z^6 + 37\,376 z^5 + 1\,432\,224 z^4 + 15\,876\,000 z^3 + 39\,203\,685 z^2 + 5\,443\,200 z + 453\,600\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0897.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{3}{2}, \frac{7}{2}; z\right) = \frac{1}{10\,321\,920\, z^{5/2}} \left(-8\left(4 z^5 - 630 z^4 + 26\,460 z^3 - 330\,750 z^2 + 992\,250 z - 297\,675\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^2 + 2\left(8 z^6 - 1256 z^5 + 52\,302 z^4 - 636\,840 z^3 + 1\,720\,215 z^2 - 170\,100 z + 42\,525\right) \cosh\left(2\sqrt{z}\right) \sqrt{z} + \left(8 z^6 - 1248 z^5 + 51\,090 z^4 - 590\,940 z^3 + 1\,301\,265 z^2 + 113\,400 z - 42\,525\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0898.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{3}{2}, \frac{7}{2}; -z\right) = \frac{1}{10\,321\,920\, z^{5/2}} \left(8\left(4 z^5 + 630 z^4 + 26\,460 z^3 + 330\,750 z^2 + 992\,250 z + 297\,675\right) \mathrm{Si}\left(2\sqrt{z}\right) z^2 + 2\left(8 z^6 + 1256 z^5 + 52\,302 z^4 + 636\,840 z^3 + 1\,720\,215 z^2 + 170\,100 z + 42\,525\right) \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(8 z^6 + 1248 z^5 + 51\,090 z^4 + 590\,940 z^3 + 1\,301\,265 z^2 - 113\,400 z - 42\,525\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0899.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{3}{2}, 4; z\right) = \frac{1}{324\,324\,000\, z^{5/2}} \left(\pi \left(1024 z^5 - 172\,800 z^4 + 7\,862\,400 z^3 - 108\,108\,000 z^2 + 364\,864\,500 z - 127\,702\,575\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{5/2} + \pi \left(-1024 z^5 + 172\,800 z^4 - 7\,862\,400 z^3 + 108\,108\,000 z^2 - 364\,864\,500 z + 127\,702\,575\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{5/2} - 4\left(2\sqrt{z}\, \left(256 z^7 - 43\,264 z^6 + 1\,976\,352 z^5 - 27\,510\,480 z^4 + 97\,633\,125 z^3 - 50\,803\,200 z^2 + 1\,360\,800 z - 680\,400\right) I_0\left(2\sqrt{z}\right) + \left(-256 z^7 + 43\,136 z^6 - 1\,954\,944 z^5 + 26\,559\,000 z^4 - 85\,424\,175 z^3 + 19\,051\,200 z^2 - 2\,041\,200 z + 1\,360\,800\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0900.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{3}{2}, 4; -z\right) = \frac{1}{324\,324\,000\, z^{5/2}} \left(\pi \left(1024 z^5 + 172\,800 z^4 + 7\,862\,400 z^3 + 108\,108\,000 z^2 + 364\,864\,500 z + 127\,702\,575\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{5/2} - \pi \left(1024 z^5 + 172\,800 z^4 + 7\,862\,400 z^3 + 108\,108\,000 z^2 + 364\,864\,500 z + 127\,702\,575\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{5/2} + 4\left(2\sqrt{z}\, \left(256 z^7 + 43\,264 z^6 + 1\,976\,352 z^5 + 27\,510\,480 z^4 + 97\,633\,125 z^3 + 50\,803\,200 z^2 + 1\,360\,800 z + 680\,400\right) J_0\left(2\sqrt{z}\right) - \left(256 z^7 + 43\,136 z^6 + 1\,954\,944 z^5 + 26\,559\,000 z^4 + 85\,424\,175 z^3 + 19\,051\,200 z^2 + 2\,041\,200 z + 1\,360\,800\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0901.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{3}{2},\frac{9}{2};z\right)=\frac{1}{23\,592\,960\,z^{7/2}}\left(-32\left(z^5-180\,z^4+8820\,z^3-132\,300\,z^2+496\,125\,z-198\,450\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^3+2\left(8\,z^7-1436\,z^6+69\,852\,z^5-1\,025\,190\,z^4+3\,530\,700\,z^3-595\,350\,z^2+198\,450\,z-212\,625\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(8\,z^7-1428\,z^6+68\,460\,z^5-962\,730\,z^4+2\,808\,540\,z^3+255\,150\,z^2+85\,050\,z+212\,625\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0902.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{3}{2},\frac{9}{2};-z\right)=\frac{1}{23\,592\,960\,z^{7/2}}\left(32\left(z^5+180\,z^4+8820\,z^3+132\,300\,z^2+496\,125\,z+198\,450\right)\operatorname{Si}\left(2\sqrt{z}\right)z^3+2\left(8\,z^7+1436\,z^6+69\,852\,z^5+1\,025\,190\,z^4+3\,530\,700\,z^3+595\,350\,z^2+198\,450\,z+212\,625\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8\,z^7+1428\,z^6+68\,460\,z^5+962\,730\,z^4+2\,808\,540\,z^3-255\,150\,z^2+85\,050\,z-212\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0903.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{3}{2},5;z\right)=\frac{1}{689\,188\,500\,z^{7/2}}\left(\pi\left(1024\,z^5-195\,840\,z^4+10\,281\,600\,z^3-167\,076\,000\,z^2+689\,188\,500\,z-310\,134\,825\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2}+\pi\left(-1024\,z^5+195\,840\,z^4-10\,281\,600\,z^3+167\,076\,000\,z^2-689\,188\,500\,z+310\,134\,825\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{7/2}-4\left(2\sqrt{z}\left(256\,z^8-49\,024\,z^7+2\,582\,592\,z^6-42\,402\,600\,z^5+182\,290\,275\,z^4-114\,307\,200\,z^3+4\,762\,800\,z^2-3\,231\,900\,z+5\,103\,000\right)I_0\left(2\sqrt{z}\right)+\left(-256\,z^8+48\,896\,z^7-2\,558\,304\,z^6+41\,153\,040\,z^5-163\,139\,625\,z^4+50\,803\,200\,z^3-5\,443\,200\,z^2+1\,360\,800\,z-10\,206\,000\right)I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0904.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{3}{2},5;-z\right)=\frac{1}{689\,188\,500\,z^{7/2}}\left(\pi\left(1024\,z^5+195\,840\,z^4+10\,281\,600\,z^3+167\,076\,000\,z^2+689\,188\,500\,z+310\,134\,825\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2}-\pi\left(1024\,z^5+195\,840\,z^4+10\,281\,600\,z^3+167\,076\,000\,z^2+689\,188\,500\,z+310\,134\,825\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{7/2}+4\left(2\sqrt{z}\left(256\,z^8+49\,024\,z^7+2\,582\,592\,z^6+42\,402\,600\,z^5+182\,290\,275\,z^4+114\,307\,200\,z^3+4\,762\,800\,z^2+3\,231\,900\,z+5\,103\,000\right)J_0\left(2\sqrt{z}\right)-\left(256\,z^8+48\,896\,z^7+2\,558\,304\,z^6+41\,153\,040\,z^5+163\,139\,625\,z^4+50\,803\,200\,z^3+5\,443\,200\,z^2+1\,360\,800\,z+10\,206\,000\right)J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0905.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{3}{2},\frac{11}{2};z\right)=\frac{1}{94\,371\,840\,z^{9/2}}\left(-32\left(2\,z^5-405\,z^4+22\,680\,z^3-396\,900\,z^2+1\,786\,050\,z-893\,025\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^4+2\left(16\,z^8-3232\,z^7+179\,844\,z^6-3\,089\,160\,z^5+12\,939\,030\,z^4-3\,175\,200\,z^3+1\,105\,650\,z^2-850\,500\,z+4\,465\,125\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(16\,z^8-3216\,z^7+176\,700\,z^6-2\,926\,080\,z^5+10\,653\,930\,z^4+793\,800\,z^3+1\,615\,950\,z^2-5\,103\,000\,z-4\,465\,125\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0906.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{3}{2}, \frac{11}{2}; -z\right) = \frac{1}{94\,371\,840\, z^{9/2}} \left(32\left(2 z^5 + 405 z^4 + 22\,680 z^3 + 396\,900 z^2 + 1\,786\,050 z + 893\,025\right) \mathrm{Si}\left(2\sqrt{z}\right) z^4 + 2\left(16 z^8 + 3232 z^7 + 179\,844 z^6 + 3\,089\,160 z^5 + 12\,939\,030 z^4 + 3\,175\,200 z^3 + 1\,105\,650 z^2 + 850\,500 z + 4\,465\,125\right) \cos\left(2\sqrt{z}\right)\sqrt{z} + \left(16 z^8 + 3216 z^7 + 176\,700 z^6 + 2\,926\,080 z^5 + 10\,653\,930 z^4 - 793\,800 z^3 + 1\,615\,950 z^2 + 5\,103\,000 z - 4\,465\,125\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0907.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{3}{2}, 6; z\right) = \frac{1}{1\,309\,458\,150\, z^{9/2}} \left(\pi\left(1024 z^5 - 218\,880 z^4 + 13\,023\,360 z^3 - 244\,188\,000 z^2 + 1\,190\,416\,500 z - 654\,729\,075\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{9/2} + \pi\left(-1024 z^5 + 218\,880 z^4 - 13\,023\,360 z^3 + 244\,188\,000 z^2 - 1\,190\,416\,500 z + 654\,729\,075\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{9/2} - 4\left(2\sqrt{z}\left(256 z^9 - 54\,784 z^8 + 3\,269\,472 z^7 - 61\,850\,880 z^6 + 312\,292\,305 z^5 - 228\,614\,400 z^4 + 12\,700\,800 z^3 - 9\,185\,400 z^2 + 12\,757\,500 z - 71\,442\,000\right) I_0\left(2\sqrt{z}\right) + \left(-256 z^9 + 54\,656 z^8 - 3\,242\,304 z^7 + 60\,262\,920 z^6 - 283\,992\,435 z^5 + 114\,307\,200 z^4 - 11\,113\,200 z^3 - 6\,293\,700 z^2 + 45\,927\,000 z + 142\,884\,000\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0908.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{3}{2}, 6; -z\right) = \frac{1}{1\,309\,458\,150\, z^{9/2}} \left(\pi\left(1024 z^5 + 218\,880 z^4 + 13\,023\,360 z^3 + 244\,188\,000 z^2 + 1\,190\,416\,500 z + 654\,729\,075\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{9/2} - \pi\left(1024 z^5 + 218\,880 z^4 + 13\,023\,360 z^3 + 244\,188\,000 z^2 + 1\,190\,416\,500 z + 654\,729\,075\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{9/2} + 4\left(2\sqrt{z}\left(256 z^9 + 54\,784 z^8 + 3\,269\,472 z^7 + 61\,850\,880 z^6 + 312\,292\,305 z^5 + 228\,614\,400 z^4 + 12\,700\,800 z^3 + 9\,185\,400 z^2 + 12\,757\,500 z + 71\,442\,000\right) J_0\left(2\sqrt{z}\right) - \left(256 z^9 + 54\,656 z^8 + 3\,242\,304 z^7 + 60\,262\,920 z^6 + 283\,992\,435 z^5 + 114\,307\,200 z^4 + 11\,113\,200 z^3 - 6\,293\,700 z^2 - 45\,927\,000 z + 142\,884\,000\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{9}{2}$, $b_1 = 2$

07.22.03.0909.01

$$ {}_1F_2\left(-\frac{9}{2}; 2, 2; z\right) = -\frac{1}{108\,056\,025\sqrt{z}} \left(2\left(2\sqrt{z}\left(512 z^5 - 69\,888 z^4 + 2\,495\,808 z^3 - 26\,115\,552 z^2 + 67\,779\,180 z - 29\,469\,825\right) I_0\left(\sqrt{z}\right)^2 + \left(-1024 z^5 + 139\,008 z^4 - 4\,888\,512 z^3 + 48\,712\,896 z^2 - 103\,522\,860 z + 9\,823\,275\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - 4\sqrt{z}\left(256 z^5 - 34\,816 z^4 + 1\,230\,624 z^3 - 12\,459\,240 z^2 + 28\,195\,974 z - 4\,612\,545\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0910.01

$$ {}_1F_2\left(-\frac{9}{2}; 2, 2; -z\right) = \frac{1}{108\,056\,025\sqrt{z}}\left(2\left(2\sqrt{z}\left(512z^5+69\,888z^4+2\,495\,808z^3+26\,115\,552z^2+67\,779\,180z+29\,469\,825\right)J_0\left(\sqrt{z}\right)^2-\left(1024z^5+139\,008z^4+4\,888\,512z^3+48\,712\,896z^2+103\,522\,860z+9\,823\,275\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+4\sqrt{z}\left(256z^5+34\,816z^4+1\,230\,624z^3+12\,459\,240z^2+28\,195\,974z+4\,612\,545\right)J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0911.01

$$ {}_1F_2\left(-\frac{9}{2}; 2, \frac{5}{2}; z\right) = \frac{1}{638\,668\,800z}\left(-4\left(2z\left(1024z^5-152\,320z^4+6\,025\,344z^3-71\,323\,488z^2+212\,907\,060z-98\,331\,975\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\left(-1024z^5+151\,808z^4-5\,950\,080z^3+68\,439\,456z^2-181\,879\,380z+33\,722\,325\right)I_1\left(2\sqrt{z}\right)\right)+\pi\left(4096z^6-608\,256z^5+23\,950\,080z^4-279\,417\,600z^3+785\,862\,000z^2-235\,758\,600z-9\,823\,275\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(-4096z^6+608\,256z^5-23\,950\,080z^4+279\,417\,600z^3-785\,862\,000z^2+235\,758\,600z+9\,823\,275\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0912.01

$$ {}_1F_2\left(-\frac{9}{2}; 2, \frac{5}{2}; -z\right) = \frac{1}{638\,668\,800z}\left(4\left(2z\left(1024z^5+152\,320z^4+6\,025\,344z^3+71\,323\,488z^2+212\,907\,060z+98\,331\,975\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\left(1024z^5+151\,808z^4+5\,950\,080z^3+68\,439\,456z^2+181\,879\,380z+33\,722\,325\right)J_1\left(2\sqrt{z}\right)\right)+\pi\left(4096z^6+608\,256z^5+23\,950\,080z^4+279\,417\,600z^3+785\,862\,000z^2+235\,758\,600z-9\,823\,275\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\left(4096z^6+608\,256z^5+23\,950\,080z^4+279\,417\,600z^3+785\,862\,000z^2+235\,758\,600z-9\,823\,275\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0913.01

$$ {}_1F_2\left(-\frac{9}{2}; 2, 3; z\right) = -\frac{1}{1\,404\,728\,325z}\left(4\left(2z\left(1024z^5-165\,120z^4+7\,196\,544z^3-96\,267\,888z^2+340\,131\,960z-206\,288\,775\right)I_0\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^5-82\,176z^4+3\,537\,216z^3-45\,569\,376z^2+139\,266\,540z-29\,469\,825\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(-2048z^6+329\,216z^5-14\,229\,504z^4+185\,580\,576z^3-593\,828\,784z^2+180\,912\,690z+9\,823\,275\right)I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0914.01

$$ {}_1F_2\left(-\frac{9}{2}; 2, 3; -z\right) = \frac{1}{1\,404\,728\,325\,z}\left(4\left(2\,z\left(1024\,z^5 + 165\,120\,z^4 + 7\,196\,544\,z^3 + 96\,267\,888\,z^2 + 340\,131\,960\,z + 206\,288\,775\right) J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512\,z^5 + 82\,176\,z^4 + 3\,537\,216\,z^3 + 45\,569\,376\,z^2 + 139\,266\,540\,z + 29\,469\,825\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(2048\,z^6 + 329\,216\,z^5 + 14\,229\,504\,z^4 + 185\,580\,576\,z^3 + 593\,828\,784\,z^2 + 180\,912\,690\,z - 9\,823\,275\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0915.01

$$ {}_1F_2\left(-\frac{9}{2}; 2, \frac{7}{2}; z\right) = \frac{1}{7\,153\,090\,560\,z^2}\left(-4\left(2\,z\left(4096\,z^6 - 710\,656\,z^5 + 33\,706\,752\,z^4 - 497\,233\,152\,z^3 + 1\,950\,110\,064\,z^2 - 1\,211\,497\,560\,z - 9\,823\,275\right) I_0\left(2\sqrt{z}\right) + \sqrt{z}\left(-4096\,z^6 + 708\,608\,z^5 - 33\,355\,008\,z^4 + 480\,983\,040\,z^3 - 1\,727\,975\,088\,z^2 + 550\,897\,200\,z + 29\,469\,825\right) I_1\left(2\sqrt{z}\right)\right) + \pi\left(16\,384\,z^7 - 2\,838\,528\,z^6 + 134\,120\,448\,z^5 - 1\,955\,923\,200\,z^4 + 7\,334\,712\,000\,z^3 - 3\,300\,620\,400\,z^2 - 275\,051\,700\,z + 29\,469\,825\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(-16\,384\,z^7 + 2\,838\,528\,z^6 - 134\,120\,448\,z^5 + 1\,955\,923\,200\,z^4 - 7\,334\,712\,000\,z^3 + 3\,300\,620\,400\,z^2 + 275\,051\,700\,z - 29\,469\,825\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0916.01

$$ {}_1F_2\left(-\frac{9}{2}; 2, \frac{7}{2}; -z\right) = \frac{1}{7\,153\,090\,560\,z^2}\left(4\left(2\,z\left(4096\,z^6 + 710\,656\,z^5 + 33\,706\,752\,z^4 + 497\,233\,152\,z^3 + 1\,950\,110\,064\,z^2 + 1\,211\,497\,560\,z - 9\,823\,275\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(4096\,z^6 + 708\,608\,z^5 + 33\,355\,008\,z^4 + 480\,983\,040\,z^3 + 1\,727\,975\,088\,z^2 + 550\,897\,200\,z - 29\,469\,825\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(16\,384\,z^7 + 2\,838\,528\,z^6 + 134\,120\,448\,z^5 + 1\,955\,923\,200\,z^4 + 7\,334\,712\,000\,z^3 + 3\,300\,620\,400\,z^2 - 275\,051\,700\,z - 29\,469\,825\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(16\,384\,z^7 + 2\,838\,528\,z^6 + 134\,120\,448\,z^5 + 1\,955\,923\,200\,z^4 + 7\,334\,712\,000\,z^3 + 3\,300\,620\,400\,z^2 - 275\,051\,700\,z - 29\,469\,825\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0917.01

$$ {}_1F_2\left(-\frac{9}{2}; 2, 4; z\right) = -\frac{1}{7\,023\,641\,625\,z^2}\left(4\left(z\left(4096\,z^6 - 761\,856\,z^5 + 39\,202\,560\,z^4 - 638\,657\,280\,z^3 + 2\,855\,412\,000\,z^2 - 2\,200\,413\,600\,z - 9\,823\,275\right) I_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024\,z^6 - 189\,696\,z^5 + 9\,659\,520\,z^4 - 152\,624\,880\,z^3 + 608\,844\,600\,z^2 - 206\,288\,775\,z - 9\,823\,275\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-4096\,z^7 + 759\,808\,z^6 - 38\,824\,704\,z^5 + 619\,614\,720\,z^4 - 2\,563\,247\,520\,z^3 + 1\,150\,556\,400\,z^2 + 127\,702\,575\,z - 39\,293\,100\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0918.01

$$ {}_1F_2\left(-\frac{9}{2}; 2, 4; -z\right) = \frac{1}{7\,023\,641\,625\,z^2} $$
$$ \left(4\left(z\left(4096\,z^6 + 761\,856\,z^5 + 39\,202\,560\,z^4 + 638\,657\,280\,z^3 + 2\,855\,412\,000\,z^2 + 2\,200\,413\,600\,z - 9\,823\,275\right) J_0\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z}\left(1024\,z^6 + 189\,696\,z^5 + 9\,659\,520\,z^4 + 152\,624\,880\,z^3 + 608\,844\,600\,z^2 + 206\,288\,775\,z - 9\,823\,275\right) $$
$$ J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(4096\,z^7 + 759\,808\,z^6 + 38\,824\,704\,z^5 + 619\,614\,720\,z^4 + \right. $$
$$ \left.\left. \left. 2\,563\,247\,520\,z^3 + 1\,150\,556\,400\,z^2 - 127\,702\,575\,z - 39\,293\,100\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0919.01

$$ {}_1F_2\left(-\frac{9}{2}; 2, \frac{9}{2}; z\right) = \frac{1}{65\,399\,685\,120\,z^3} $$
$$ \left(-4\left(2\,z\left(16\,384\,z^7 - 3\,248\,128\,z^6 + 179\,635\,200\,z^5 - 3\,173\,587\,200\,z^4 + 15\,420\,443\,328\,z^3 - 11\,989\,600\,560\,z^2 - \right.\right. $$
$$ 275\,051\,700\,z + 147\,349\,125\left) I_0\left(2\sqrt{z}\right) + \sqrt{z}\left(-16\,384\,z^7 + 3\,239\,936\,z^6 - 178\,025\,472\,z^5 + \right. $$
$$ \left.\left. 3\,086\,537\,472\,z^4 - 13\,976\,945\,856\,z^3 + 6\,391\,360\,080\,z^2 + 746\,568\,900\,z - 442\,047\,375\right) I_1\left(2\sqrt{z}\right)\right) + $$
$$ \pi\left(65\,536\,z^8 - 12\,976\,128\,z^7 + 715\,309\,056\,z^6 - 12\,517\,908\,480\,z^5 + 58\,677\,696\,000\,z^4 - 35\,206\,617\,600\,z^3 - \right. $$
$$ \left. 4\,400\,827\,200\,z^2 + 943\,034\,400\,z - 442\,047\,375\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + $$
$$ \pi\left(-65\,536\,z^8 + 12\,976\,128\,z^7 - 715\,309\,056\,z^6 + 12\,517\,908\,480\,z^5 - 58\,677\,696\,000\,z^4 + \right. $$
$$ \left. 35\,206\,617\,600\,z^3 + 4\,400\,827\,200\,z^2 - 943\,034\,400\,z + 442\,047\,375\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\Big) $$

07.22.03.0920.01

$$ {}_1F_2\left(-\frac{9}{2}; 2, \frac{9}{2}; -z\right) = \frac{1}{65\,399\,685\,120\,z^3} $$
$$ \left(4\left(2\,z\left(16\,384\,z^7 + 3\,248\,128\,z^6 + 179\,635\,200\,z^5 + 3\,173\,587\,200\,z^4 + 15\,420\,443\,328\,z^3 + 11\,989\,600\,560\,z^2 - \right.\right. $$
$$ 275\,051\,700\,z - 147\,349\,125\left) J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(16\,384\,z^7 + 3\,239\,936\,z^6 + 178\,025\,472\,z^5 + \right. $$
$$ \left.\left. 3\,086\,537\,472\,z^4 + 13\,976\,945\,856\,z^3 + 6\,391\,360\,080\,z^2 - 746\,568\,900\,z - 442\,047\,375\right) J_1\left(2\sqrt{z}\right)\right) + $$
$$ \pi\left(65\,536\,z^8 + 12\,976\,128\,z^7 + 715\,309\,056\,z^6 + 12\,517\,908\,480\,z^5 + 58\,677\,696\,000\,z^4 + 35\,206\,617\,600\,z^3 - \right. $$
$$ \left. 4\,400\,827\,200\,z^2 - 943\,034\,400\,z - 442\,047\,375\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - $$
$$ \pi\left(65\,536\,z^8 + 12\,976\,128\,z^7 + 715\,309\,056\,z^6 + 12\,517\,908\,480\,z^5 + 58\,677\,696\,000\,z^4 + \right. $$
$$ \left. 35\,206\,617\,600\,z^3 - 4\,400\,827\,200\,z^2 - 943\,034\,400\,z - 442\,047\,375\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\Big) $$

07.22.03.0921.01

$$ {}_1F_2\left(-\frac{9}{2}; 2, 5; z\right) = $$
$$ -\frac{1}{119\,401\,907\,625\,z^3}\left(32\left(z\left(4096\,z^7 - 863\,232\,z^6 + 51\,215\,616\,z^5 - 983\,652\,480\,z^4 + 5\,320\,274\,400\,z^3 - 4\,950\,930\,600\,z^2 - \right.\right. $$
$$ 68\,762\,925\,z + 58\,939\,650\left) I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-4096\,z^7 + 860\,160\,z^6 - 50\,575\,104\,z^5 + 946\,656\,000\,z^4 - \right. $$
$$ 4\,660\,740\,000\,z^3 + 2\,200\,413\,600\,z^2 + 245\,581\,875\,z - 235\,758\,600\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + $$
$$ \left(-4096\,z^8 + 861\,184\,z^7 - 50\,787\,072\,z^6 + 958\,679\,424\,z^5 - 4\,864\,308\,480\,z^4 + 2\,893\,174\,200\,z^3 + \right. $$
$$ \left.\left. 481\,340\,475\,z^2 - 216\,112\,050\,z + 235\,758\,600\right) I_1\left(\sqrt{z}\right)^2\right)\Big) $$

07.22.03.0922.01

$$
{}_1F_2\left(-\frac{9}{2}; 2, 5; -z\right) =
\frac{1}{119\,401\,907\,625\,z^3}\left(32\left(z\left(4096\,z^7 + 863\,232\,z^6 + 51\,215\,616\,z^5 + 983\,652\,480\,z^4 + 5\,320\,274\,400\,z^3 + 4\,950\,930\,600\,z^2 - \right.\right.\right.
$$
$$
\left.\left.\left. 68\,762\,925\,z - 58\,939\,650\right) J_0\left(\sqrt{z}\right)^2 - \sqrt{z}\,\left(4096\,z^7 + 860\,160\,z^6 + 50\,575\,104\,z^5 + 946\,656\,000\,z^4 + \right.\right.\right.
$$
$$
\left.\left.\left. 4\,660\,740\,000\,z^3 + 2\,200\,413\,600\,z^2 - 245\,581\,875\,z - 235\,758\,600\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \right.\right.
$$
$$
\left.\left(4096\,z^8 + 861\,184\,z^7 + 50\,787\,072\,z^6 + 958\,679\,424\,z^5 + 4\,864\,308\,480\,z^4 + 2\,893\,174\,200\,z^3 - \right.\right.
$$
$$
\left.\left. 481\,340\,475\,z^2 - 216\,112\,050\,z - 235\,758\,600\right) J_1\left(\sqrt{z}\right)^2\right)\Big)
$$

07.22.03.0923.01

$$
{}_1F_2\left(-\frac{9}{2}; 2, \frac{11}{2}; z\right) =
\frac{1}{523\,197\,480\,960\,z^4}\left(-4\left(2\,z\left(65\,536\,z^8 - 14\,614\,528\,z^7 + 923\,320\,320\,z^6 - 19\,004\,092\,416\,z^5 + 110\,151\,489\,024\,z^4 - \right.\right.\right.
$$
$$
\left.\left.\left. 102\,662\,380\,800\,z^3 - 4\,400\,827\,200\,z^2 + 3\,929\,310\,000\,z - 5\,157\,219\,375\right) I_0\left(2\sqrt{z}\right) + \right.\right.
$$
$$
\left.\sqrt{z}\,\left(-65\,536\,z^8 + 14\,581\,760\,z^7 - 916\,070\,400\,z^6 + 18\,554\,923\,008\,z^5 - 101\,394\,459\,648\,z^4 + \right.\right.
$$
$$
\left.\left. 60\,710\,186\,880\,z^3 + 11\,002\,068\,000\,z^2 - 9\,037\,413\,000\,z + 15\,471\,658\,125\right) I_1\left(2\sqrt{z}\right)\right) +
$$
$$
\pi\left(262\,144\,z^9 - 58\,392\,576\,z^8 + 3\,678\,732\,288\,z^7 - 75\,107\,450\,880\,z^6 + 422\,479\,411\,200\,z^5 - 316\,859\,558\,400\,z^4 - \right.
$$
$$
\left. 52\,809\,926\,400\,z^3 + 16\,974\,619\,200\,z^2 - 15\,913\,705\,500\,z + 15\,471\,658\,125\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) +
$$
$$
\pi\left(-262\,144\,z^9 + 58\,392\,576\,z^8 - 3\,678\,732\,288\,z^7 + 75\,107\,450\,880\,z^6 - 422\,479\,411\,200\,z^5 + 316\,859\,558\,400\,z^4 + \right.
$$
$$
\left. 52\,809\,926\,400\,z^3 - 16\,974\,619\,200\,z^2 + 15\,913\,705\,500\,z - 15\,471\,658\,125\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\Big)
$$

07.22.03.0924.01

$$
{}_1F_2\left(-\frac{9}{2}; 2, \frac{11}{2}; -z\right) =
\frac{1}{523\,197\,480\,960\,z^4}\left(4\left(2\,z\left(65\,536\,z^8 + 14\,614\,528\,z^7 + 923\,320\,320\,z^6 + 19\,004\,092\,416\,z^5 + 110\,151\,489\,024\,z^4 + \right.\right.\right.
$$
$$
\left.\left.\left. 102\,662\,380\,800\,z^3 - 4\,400\,827\,200\,z^2 - 3\,929\,310\,000\,z - 5\,157\,219\,375\right) J_0\left(2\sqrt{z}\right) - \right.\right.
$$
$$
\left.\sqrt{z}\,\left(65\,536\,z^8 + 14\,581\,760\,z^7 + 916\,070\,400\,z^6 + 18\,554\,923\,008\,z^5 + 101\,394\,459\,648\,z^4 + \right.\right.
$$
$$
\left.\left. 60\,710\,186\,880\,z^3 - 11\,002\,068\,000\,z^2 - 9\,037\,413\,000\,z - 15\,471\,658\,125\right) J_1\left(2\sqrt{z}\right)\right) +
$$
$$
\pi\left(262\,144\,z^9 + 58\,392\,576\,z^8 + 3\,678\,732\,288\,z^7 + 75\,107\,450\,880\,z^6 + 422\,479\,411\,200\,z^5 + 316\,859\,558\,400\,z^4 - \right.
$$
$$
\left. 52\,809\,926\,400\,z^3 - 16\,974\,619\,200\,z^2 - 15\,913\,705\,500\,z - 15\,471\,658\,125\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) -
$$
$$
\pi\left(262\,144\,z^9 + 58\,392\,576\,z^8 + 3\,678\,732\,288\,z^7 + 75\,107\,450\,880\,z^6 + 422\,479\,411\,200\,z^5 + 316\,859\,558\,400\,z^4 - \right.
$$
$$
\left. 52\,809\,926\,400\,z^3 - 16\,974\,619\,200\,z^2 - 15\,913\,705\,500\,z - 15\,471\,658\,125\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\Big)
$$

07.22.03.0925.01

$$ {}_1F_2\left(-\frac{9}{2}; 2, 6; z\right) = -\frac{1}{453\,727\,248\,975\,z^4}\left(32\left(2z\left(4096z^8 - 964\,608z^7 + 64\,825\,344z^6 - 1\,434\,028\,032z^5 + 9\,100\,894\,320z^4 - 9\,901\,861\,200z^3 - 275\,051\,700z^2 + 383\,107\,725z - 707\,275\,800\right) I_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(4096z^8 - 961\,536z^7 + 64\,108\,800z^6 - 1\,386\,995\,328z^5 + 8\,125\,518\,240z^4 - 4\,950\,930\,600z^3 - 893\,918\,025z^2 + 1\,178\,793\,000z - 2\,829\,103\,200\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-8192z^9 + 1\,925\,120z^8 - 128\,692\,224z^7 + 2\,804\,652\,288z^6 - 16\,859\,268\,576z^5 + 12\,504\,844\,800z^4 + 2\,750\,517\,000z^3 - 1\,463\,667\,975z^2 + 1\,650\,310\,200z - 5\,658\,206\,400\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0926.01

$$ {}_1F_2\left(-\frac{9}{2}; 2, 6; -z\right) = \frac{1}{453\,727\,248\,975\,z^4}\left(32\left(2z\left(4096z^8 + 964\,608z^7 + 64\,825\,344z^6 + 1\,434\,028\,032z^5 + 9\,100\,894\,320z^4 + 9\,901\,861\,200z^3 - 275\,051\,700z^2 - 383\,107\,725z - 707\,275\,800\right) J_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(4096z^8 + 961\,536z^7 + 64\,108\,800z^6 + 1\,386\,995\,328z^5 + 8\,125\,518\,240z^4 + 4\,950\,930\,600z^3 - 893\,918\,025z^2 - 1\,178\,793\,000z - 2\,829\,103\,200\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(8192z^9 + 1\,925\,120z^8 + 128\,692\,224z^7 + 2\,804\,652\,288z^6 + 16\,859\,268\,576z^5 + 12\,504\,844\,800z^4 - 2\,750\,517\,000z^3 - 1\,463\,667\,975z^2 - 1\,650\,310\,200z - 5\,658\,206\,400\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

For fixed z and $a_1 = -\frac{9}{2}$, $b_1 = \frac{5}{2}$

07.22.03.0927.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{5}{2}, \frac{5}{2}; z\right) = \frac{1}{14\,745\,600\,z^{3/2}}\left(2\sqrt{z}\left(8z^5 - 1292z^4 + 56\,064z^3 - 729\,504z^2 + 2\,245\,230z - 416\,745\right)\cosh\left(2\sqrt{z}\right) + \left(8z^5 - 1284z^4 + 54\,816z^3 - 680\,040z^2 + 1\,752\,030z + 76\,545\right)\sinh\left(2\sqrt{z}\right) - 8\left(4z^6 - 648z^5 + 28\,350z^4 - 378\,000z^3 + 1\,275\,750z^2 - 510\,300z - 42\,525\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.0928.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{5}{2}, \frac{5}{2}; -z\right) = \frac{1}{14\,745\,600\,z^{3/2}}\left(2\sqrt{z}\left(8z^5 + 1292z^4 + 56\,064z^3 + 729\,504z^2 + 2\,245\,230z + 416\,745\right)\cos\left(2\sqrt{z}\right) + \left(8z^5 + 1284z^4 + 54\,816z^3 + 680\,040z^2 + 1\,752\,030z - 76\,545\right)\sin\left(2\sqrt{z}\right) + 8\left(4z^6 + 648z^5 + 28\,350z^4 + 378\,000z^3 + 1\,275\,750z^2 + 510\,300z - 42\,525\right)\mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.0929.01

$$
{}_1F_2\left(-\frac{9}{2};\frac{5}{2},3;z\right)=\frac{1}{2\,075\,673\,600\,z^{3/2}}
\left(-4\left(2\sqrt{z}\,\left(1024\,z^6-179\,968\,z^5+8\,693\,376\,z^4-131\,858\,784\,z^3+541\,741\,140\,z^2-363\,858\,075\,z-10\,886\,400\right)I_0\left(2\sqrt{z}\right)+\right.\right.
\left.\left.\left(-1024\,z^6+179\,456\,z^5-8\,604\,288\,z^4+127\,664\,928\,z^3-482\,655\,060\,z^2+177\,116\,625\,z+21\,772\,800\right)I_1\left(2\sqrt{z}\right)\right)+
\pi\sqrt{z}\,\left(4096\,z^6-718\,848\,z^5+34\,594\,560\,z^4-518\,918\,400\,z^3+2\,043\,241\,200\,z^2-1\,021\,620\,600\,z-127\,702\,575\right)
I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\sqrt{z}\,\left(-4096\,z^6+718\,848\,z^5-34\,594\,560\,z^4+518\,918\,400\,z^3-\right.
\left.\left.2\,043\,241\,200\,z^2+1\,021\,620\,600\,z+127\,702\,575\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)
$$

07.22.03.0930.01

$$
{}_1F_2\left(-\frac{9}{2};\frac{5}{2},3;-z\right)=\frac{1}{2\,075\,673\,600\,z^{3/2}}
\left(4\left(2\sqrt{z}\,\left(1024\,z^6+179\,968\,z^5+8\,693\,376\,z^4+131\,858\,784\,z^3+541\,741\,140\,z^2+363\,858\,075\,z-10\,886\,400\right)J_0\left(2\sqrt{z}\right)-\right.\right.
\left.\left.\left(1024\,z^6+179\,456\,z^5+8\,604\,288\,z^4+127\,664\,928\,z^3+482\,655\,060\,z^2+177\,116\,625\,z-21\,772\,800\right)J_1\left(2\sqrt{z}\right)\right)+
\pi\sqrt{z}\,\left(4096\,z^6+718\,848\,z^5+34\,594\,560\,z^4+518\,918\,400\,z^3+2\,043\,241\,200\,z^2+1\,021\,620\,600\,z-127\,702\,575\right)
J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\sqrt{z}\,\left(4096\,z^6+718\,848\,z^5+34\,594\,560\,z^4+518\,918\,400\,z^3+\right.
\left.\left.2\,043\,241\,200\,z^2+1\,021\,620\,600\,z-127\,702\,575\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)
$$

07.22.03.0931.01

$$
{}_1F_2\left(-\frac{9}{2};\frac{5}{2},\frac{7}{2};z\right)=
\frac{1}{41\,287\,680\,z^{5/2}}\left(2\sqrt{z}\,\left(8\,z^6-1508\,z^5+78\,636\,z^4-1\,285\,488\,z^3+5\,395\,320\,z^2-1\,896\,615\,z-255\,150\right)\cosh\left(2\sqrt{z}\right)+
\left(8\,z^6-1500\,z^5+77\,172\,z^4-1\,214\,640\,z^3+4\,456\,620\,z^2-144\,585\,z+255\,150\right)\sinh\left(2\sqrt{z}\right)-
8\,z\left(4\,z^6-756\,z^5+39\,690\,z^4-661\,500\,z^3+2\,976\,750\,z^2-1\,786\,050\,z-297\,675\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)
$$

07.22.03.0932.01

$$
{}_1F_2\left(-\frac{9}{2};\frac{5}{2},\frac{7}{2};-z\right)=
\frac{1}{41\,287\,680\,z^{5/2}}\left(2\sqrt{z}\,\left(8\,z^6+1508\,z^5+78\,636\,z^4+1\,285\,488\,z^3+5\,395\,320\,z^2+1\,896\,615\,z-255\,150\right)\cos\left(2\sqrt{z}\right)+
\left(8\,z^6+1500\,z^5+77\,172\,z^4+1\,214\,640\,z^3+4\,456\,620\,z^2+144\,585\,z+255\,150\right)\sin\left(2\sqrt{z}\right)+
8\,z\left(4\,z^6+756\,z^5+39\,690\,z^4+661\,500\,z^3+2\,976\,750\,z^2+1\,786\,050\,z-297\,675\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)
$$

07.22.03.0933.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{5}{2},4;z\right)=\frac{1}{5\,189\,184\,000\,z^{5/2}}$$
$$\left(\pi\left(4096\,z^6-829\,440\,z^5+47\,174\,400\,z^4-864\,864\,000\,z^3+4\,378\,374\,000\,z^2-3\,064\,861\,800\,z-638\,512\,875\right)\right.$$
$$I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+$$
$$\pi\left(-4096\,z^6+829\,440\,z^5-47\,174\,400\,z^4+864\,864\,000\,z^3-4\,378\,374\,000\,z^2+3\,064\,861\,800\,z+638\,512\,875\right)$$
$$I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2}+4\left(2\sqrt{z}\,\left(-1024\,z^7+207\,616\,z^6-11\,845\,248\,z^5+219\,126\,240\,z^4-1\,146\,575\,700\,z^3+\right.\right.$$
$$\left.1\,006\,439\,175\,z^2+76\,204\,800\,z-10\,886\,400\right)I_0\left(2\sqrt{z}\right)+\left(1024\,z^7-207\,104\,z^6+11\,742\,336\,z^5-\right.$$
$$\left.\left.\left.213\,380\,640\,z^4+1\,046\,488\,500\,z^3-580\,763\,925\,z^2-141\,523\,200\,z+21\,772\,800\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0934.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{5}{2},4;-z\right)=\frac{1}{5\,189\,184\,000\,z^{5/2}}$$
$$\left(\pi\left(4096\,z^6+829\,440\,z^5+47\,174\,400\,z^4+864\,864\,000\,z^3+4\,378\,374\,000\,z^2+3\,064\,861\,800\,z-638\,512\,875\right)\right.$$
$$J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}-$$
$$\pi\left(4096\,z^6+829\,440\,z^5+47\,174\,400\,z^4+864\,864\,000\,z^3+4\,378\,374\,000\,z^2+3\,064\,861\,800\,z-638\,512\,875\right)$$
$$J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{3/2}+4\left(2\sqrt{z}\,\left(1024\,z^7+207\,616\,z^6+11\,845\,248\,z^5+219\,126\,240\,z^4+1\,146\,575\,700\,z^3+\right.\right.$$
$$\left.1\,006\,439\,175\,z^2-76\,204\,800\,z-10\,886\,400\right)J_0\left(2\sqrt{z}\right)-\left(1024\,z^7+207\,104\,z^6+11\,742\,336\,z^5+\right.$$
$$\left.\left.\left.213\,380\,640\,z^4+1\,046\,488\,500\,z^3+580\,763\,925\,z^2-141\,523\,200\,z-21\,772\,800\right)J_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0935.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{5}{2},\frac{9}{2};z\right)=$$
$$\frac{1}{94\,371\,840\,z^{7/2}}\left(-32\left(z^6-216\,z^5+13\,230\,z^4-264\,600\,z^3+1\,488\,375\,z^2-1\,190\,700\,z-297\,675\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^2+\right.$$
$$2\left(8\,z^7-1724\,z^6+104\,988\,z^5-2\,066\,382\,z^4+10\,989\,180\,z^3-5\,800\,410\,z^2-1\,615\,950\,z+637\,875\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\,+$$
$$\left.\left(8\,z^7-1716\,z^6+103\,308\,z^5-1\,970\,370\,z^4+9\,400\,860\,z^3-1\,343\,790\,z^2+765\,450\,z-637\,875\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.0936.01

$$ {}_1F_2\left(-\frac{9}{2};\frac{5}{2},\frac{9}{2};-z\right)=$$
$$\frac{1}{94\,371\,840\,z^{7/2}}\left(32\left(z^6+216\,z^5+13\,230\,z^4+264\,600\,z^3+1\,488\,375\,z^2+1\,190\,700\,z-297\,675\right)\mathrm{Si}\left(2\sqrt{z}\right)z^2+\right.$$
$$2\left(8\,z^7+1724\,z^6+104\,988\,z^5+2\,066\,382\,z^4+10\,989\,180\,z^3+5\,800\,410\,z^2-1\,615\,950\,z-637\,875\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,+$$
$$\left.\left(8\,z^7+1716\,z^6+103\,308\,z^5+1\,970\,370\,z^4+9\,400\,860\,z^3+1\,343\,790\,z^2+765\,450\,z+637\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.0937.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{5}{2}, 5; z\right) = \frac{1}{11\,027\,016\,000\, z^{7/2}} $$
$$ \left(\pi\left(4096 z^6 - 940\,032 z^5 + 61\,689\,600 z^4 - 1\,336\,608\,000 z^3 + 8\,270\,262\,000 z^2 - 7\,443\,235\,800 z - 2\,170\,943\,775\right)\right. $$
$$ I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{5/2} + \pi\left(-4096 z^6 + 940\,032 z^5 - 61\,689\,600 z^4 + 1\,336\,608\,000 z^3 - \right. $$
$$ \left. 8\,270\,262\,000 z^2 + 7\,443\,235\,800 z + 2\,170\,943\,775\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{5/2} - $$
$$ 4\left(2\sqrt{z}\,\left(1024 z^8 - 235\,264 z^7 + 15\,480\,960 z^6 - 337\,964\,256 z^5 + 2\,148\,370\,740 z^4 - 2\,324\,544\,075 z^3 - \right.\right. $$
$$ 304\,819\,200 z^2 + 68\,040\,000 z - 48\,988\,800\big) I_0\left(2\sqrt{z}\right) + \left(-1024 z^8 + 234\,752 z^7 - 15\,364\,224 z^6 + \right. $$
$$ \left.\left. 330\,424\,992 z^5 - 1\,991\,920\,500 z^4 + 1\,486\,886\,625 z^3 + 533\,433\,600 z^2 - 87\,091\,200 z + 97\,977\,600\right) I_1\left(2\sqrt{z}\right)\right)\Big) $$

07.22.03.0938.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{5}{2}, 5; -z\right) = \frac{1}{11\,027\,016\,000\, z^{7/2}} $$
$$ \left(\pi\left(4096 z^6 + 940\,032 z^5 + 61\,689\,600 z^4 + 1\,336\,608\,000 z^3 + 8\,270\,262\,000 z^2 + 7\,443\,235\,800 z - 2\,170\,943\,775\right)\right. $$
$$ J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{5/2} - \pi\left(4096 z^6 + 940\,032 z^5 + 61\,689\,600 z^4 + 1\,336\,608\,000 z^3 + \right. $$
$$ \left. 8\,270\,262\,000 z^2 + 7\,443\,235\,800 z - 2\,170\,943\,775\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{5/2} + $$
$$ 4\left(2\sqrt{z}\,\left(1024 z^8 + 235\,264 z^7 + 15\,480\,960 z^6 + 337\,964\,256 z^5 + 2\,148\,370\,740 z^4 + 2\,324\,544\,075 z^3 - \right.\right. $$
$$ 304\,819\,200 z^2 - 68\,040\,000 z - 48\,988\,800\big) J_0\left(2\sqrt{z}\right) - \left(1024 z^8 + 234\,752 z^7 + 15\,364\,224 z^6 + \right. $$
$$ \left.\left. 330\,424\,992 z^5 + 1\,991\,920\,500 z^4 + 1\,486\,886\,625 z^3 - 533\,433\,600 z^2 - 87\,091\,200 z - 97\,977\,600\right) J_1\left(2\sqrt{z}\right)\right)\Big) $$

07.22.03.0939.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{5}{2}, \frac{11}{2}; z\right) = $$
$$ \frac{1}{188\,743\,680\, z^{9/2}}\left(-32\left(z^6 - 243 z^5 + 17\,010 z^4 - 396\,900 z^3 + 2\,679\,075 z^2 - 2\,679\,075 z - 893\,025\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^3 + \right. $$
$$ 2\left(8 z^8 - 1940 z^7 + 135\,120 z^6 - 3\,109\,986 z^5 + 20\,028\,510 z^4 - 14\,226\,030 z^3 - 5\,953\,500 z^2 + 2\,764\,125 z - 4\,465\,125\right) $$
$$ \cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(8 z^8 - 1932 z^7 + 133\,224 z^6 - 2\,985\,030 z^5 + \right. $$
$$ \left.\left. 17\,548\,650 z^4 - 4\,825\,170 z^3 + 680\,400 z^2 + 3\,189\,375 z + 4\,465\,125\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0940.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{5}{2}, \frac{11}{2}; -z\right) = $$
$$ \frac{1}{188\,743\,680\, z^{9/2}}\left(32\left(z^6 + 243 z^5 + 17\,010 z^4 + 396\,900 z^3 + 2\,679\,075 z^2 + 2\,679\,075 z - 893\,025\right) \mathrm{Si}\left(2\sqrt{z}\right) z^3 + \right. $$
$$ 2\left(8 z^8 + 1940 z^7 + 135\,120 z^6 + 3\,109\,986 z^5 + 20\,028\,510 z^4 + 14\,226\,030 z^3 - 5\,953\,500 z^2 - 2\,764\,125 z - 4\,465\,125\right) $$
$$ \cos\left(2\sqrt{z}\right)\sqrt{z} + \left(8 z^8 + 1932 z^7 + 133\,224 z^6 + 2\,985\,030 z^5 + \right. $$
$$ \left.\left. 17\,548\,650 z^4 + 4\,825\,170 z^3 + 680\,400 z^2 - 3\,189\,375 z + 4\,465\,125\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0941.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{5}{2}, 6; z\right) = \frac{1}{20\,951\,330\,400\, z^{9/2}} $$
$$ \left(\pi\left(4096 z^6 - 1\,050\,624 z^5 + 78\,140\,160 z^4 - 1\,953\,504\,000 z^3 + 14\,284\,998\,000 z^2 - 15\,713\,497\,800 z - 5\,892\,561\,675\right)\right. $$
$$ I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{7/2} + $$
$$ \pi\left(-4096 z^6 + 1\,050\,624 z^5 - 78\,140\,160 z^4 + 1\,953\,504\,000 z^3 - 14\,284\,998\,000 z^2 + 15\,713\,497\,800 z + 5\,892\,561\,675\right) $$
$$ I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{7/2} - 4\left(2\sqrt{z}\,\left(1024 z^9 - 262\,912 z^8 + 19\,600\,512 z^7 - 493\,211\,232 z^6 + 3\,689\,859\,060 z^5 - \right.\right. $$
$$ 4\,741\,835\,175 z^4 - 914\,457\,600 z^3 + 247\,665\,600 z^2 - 220\,449\,600 z + 489\,888\,000\right) I_0\left(2\sqrt{z}\right) - $$
$$ \left(1024 z^9 - 262\,400 z^8 + 19\,469\,952 z^7 - 483\,636\,384 z^6 + 3\,459\,264\,660 z^5 - 3\,252\,014\,325 z^4 - \right. $$
$$ \left.\left.\left. 1\,524\,096\,000 z^3 + 193\,233\,600 z^2 + 48\,988\,800 z + 979\,776\,000\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0942.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{5}{2}, 6; -z\right) = \frac{1}{20\,951\,330\,400\, z^{9/2}} $$
$$ \left(\pi\left(4096 z^6 + 1\,050\,624 z^5 + 78\,140\,160 z^4 + 1\,953\,504\,000 z^3 + 14\,284\,998\,000 z^2 + 15\,713\,497\,800 z - 5\,892\,561\,675\right)\right. $$
$$ J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{7/2} - $$
$$ \pi\left(4096 z^6 + 1\,050\,624 z^5 + 78\,140\,160 z^4 + 1\,953\,504\,000 z^3 + 14\,284\,998\,000 z^2 + 15\,713\,497\,800 z - 5\,892\,561\,675\right) $$
$$ J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{7/2} + 4\left(2\sqrt{z}\,\left(1024 z^9 + 262\,912 z^8 + 19\,600\,512 z^7 + 493\,211\,232 z^6 + 3\,689\,859\,060 z^5 + \right.\right. $$
$$ 4\,741\,835\,175 z^4 - 914\,457\,600 z^3 - 247\,665\,600 z^2 - 220\,449\,600 z - 489\,888\,000\right) J_0\left(2\sqrt{z}\right) - $$
$$ \left(1024 z^9 + 262\,400 z^8 + 19\,469\,952 z^7 + 483\,636\,384 z^6 + 3\,459\,264\,660 z^5 + 3\,252\,014\,325 z^4 - \right. $$
$$ \left.\left.\left. 1\,524\,096\,000 z^3 - 193\,233\,600 z^2 + 48\,988\,800 z - 979\,776\,000\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{9}{2}$, $b_1 = 3$

07.22.03.0943.01

$$ {}_1F_2\left(-\frac{9}{2}; 3, 3; z\right) = -\frac{1}{18\,261\,468\,225\, z^{3/2}} $$
$$ \left(8\left(\sqrt{z}\,\left(4096 z^6 - 780\,288 z^5 + 41\,515\,776 z^4 - 710\,866\,944 z^3 + 3\,443\,277\,600 z^2 - 3\,003\,875\,280 z - 127\,702\,575\right)\right.\right. $$
$$ I_0\left(\sqrt{z}\right)^2 + 2\left(-2048 z^6 + 388\,608 z^5 - 20\,468\,736 z^4 + 340\,502\,688 z^3 - 1\,486\,401\,840 z^2 + \right. $$
$$ 644\,242\,410 z + 127\,702\,575\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \sqrt{z}\,\left(-4096 z^6 + 778\,240 z^5 - \right. $$
$$ \left.\left.\left. 41\,128\,704 z^4 + 690\,681\,600 z^3 - 3\,116\,686\,176 z^2 + 1\,707\,622\,560 z + 371\,648\,655\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0944.01

$$ {}_1F_2\left(-\frac{9}{2}; 3, 3; -z\right) = \frac{1}{18\,261\,468\,225\,z^{3/2}} $$
$$ \left(8\left(\sqrt{z}\,\left(4096\,z^6 + 780\,288\,z^5 + 41\,515\,776\,z^4 + 710\,866\,944\,z^3 + 3\,443\,277\,600\,z^2 + 3\,003\,875\,280\,z - 127\,702\,575\right)\right.\right. $$
$$ J_0\left(\sqrt{z}\right)^2 - 2\left(2048\,z^6 + 388\,608\,z^5 + 20\,468\,736\,z^4 + 340\,502\,688\,z^3 + 1\,486\,401\,840\,z^2 + \right. $$
$$ \left. 644\,242\,410\,z - 127\,702\,575\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\,\left(4096\,z^6 + 778\,240\,z^5 + 41\,128\,704\,z^4 + \right. $$
$$ \left.\left. 690\,681\,600\,z^3 + 3\,116\,686\,176\,z^2 + 1\,707\,622\,560\,z - 371\,648\,655\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0945.01

$$ {}_1F_2\left(-\frac{9}{2}; 3, \frac{7}{2}; z\right) = \frac{1}{23\,247\,544\,320\,z^2} $$
$$ \left(-4\left(2\,z\left(4096\,z^6 - 839\,680\,z^5 + 48\,641\,280\,z^4 - 920\,060\,928\,z^3 + 4\,986\,073\,008\,z^2 - 4\,626\,583\,920\,z - 481\,935\,825\right)\right.\right. $$
$$ I_0\left(2\sqrt{z}\right) + \sqrt{z}\,\left(-4096\,z^6 + 837\,632\,z^5 - 48\,225\,024\,z^4 + 896\,456\,448\,z^3 - \right. $$
$$ \left. 4\,565\,007\,216\,z^2 + 2\,756\,867\,400\,z + 836\,169\,075\right) I_1\left(2\sqrt{z}\right)\Big) + $$
$$ \pi\left(16\,384\,z^7 - 3\,354\,624\,z^6 + 193\,729\,536\,z^5 - 3\,632\,428\,800\,z^4 + 19\,070\,251\,200\,z^3 - 14\,302\,688\,400\,z^2 - \right. $$
$$ \left. 3\,575\,672\,100\,z - 383\,107\,725\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + $$
$$ \pi\left(-16\,384\,z^7 + 3\,354\,624\,z^6 - 193\,729\,536\,z^5 + 3\,632\,428\,800\,z^4 - 19\,070\,251\,200\,z^3 + \right. $$
$$ \left. \left. 14\,302\,688\,400\,z^2 + 3\,575\,672\,100\,z + 383\,107\,725\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0946.01

$$ {}_1F_2\left(-\frac{9}{2}; 3, \frac{7}{2}; -z\right) = \frac{1}{23\,247\,544\,320\,z^2} $$
$$ \left(4\left(2\,z\left(4096\,z^6 + 839\,680\,z^5 + 48\,641\,280\,z^4 + 920\,060\,928\,z^3 + 4\,986\,073\,008\,z^2 + 4\,626\,583\,920\,z - 481\,935\,825\right) J_0\left(2\sqrt{z}\right) - \right.\right. $$
$$ \sqrt{z}\,\left(4096\,z^6 + 837\,632\,z^5 + 48\,225\,024\,z^4 + 896\,456\,448\,z^3 + 4\,565\,007\,216\,z^2 + 2\,756\,867\,400\,z - 836\,169\,075\right) $$
$$ J_1\left(2\sqrt{z}\right)\Big) + \pi\left(16\,384\,z^7 + 3\,354\,624\,z^6 + 193\,729\,536\,z^5 + 3\,632\,428\,800\,z^4 + \right. $$
$$ \left. 19\,070\,251\,200\,z^3 + 14\,302\,688\,400\,z^2 - 3\,575\,672\,100\,z + 383\,107\,725\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - $$
$$ \pi\left(16\,384\,z^7 + 3\,354\,624\,z^6 + 193\,729\,536\,z^5 + 3\,632\,428\,800\,z^4 + 19\,070\,251\,200\,z^3 + \right. $$
$$ \left. \left. 14\,302\,688\,400\,z^2 - 3\,575\,672\,100\,z + 383\,107\,725\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0947.01

$$ {}_1F_2\left(-\frac{9}{2}; 3, 4; z\right) = -\frac{1}{91\,307\,341\,125\,z^2} $$
$$ \left(16\left(z\left(4096\,z^6 - 900\,096\,z^5 + 56\,551\,680\,z^4 - 1\,180\,229\,760\,z^3 + 7\,264\,404\,000\,z^2 - 8\,226\,376\,200\,z - 893\,918\,025\right)\right.\right. $$
$$ I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\,\left(-4096\,z^6 + 897\,024\,z^5 - 55\,883\,520\,z^4 + 1\,139\,293\,440\,z^3 - 6\,466\,068\,000\,z^2 + \right. $$
$$ \left. 4\,300\,128\,000\,z + 1\,660\,133\,475\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-4096\,z^7 + 898\,048\,z^6 - 56\,104\,704\,z^5 + \right. $$
$$ \left.\left. 1\,152\,616\,320\,z^4 - 6\,714\,037\,440\,z^3 + 5\,328\,552\,600\,z^2 + 1\,957\,298\,175\,z + 255\,405\,150\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0948.01

$$ {}_1F_2\left(-\frac{9}{2}; 3, 4; -z\right) = \frac{1}{91\,307\,341\,125\,z^2} \left(16\left(z\left(4096\,z^6 + 900\,096\,z^5 + 56\,551\,680\,z^4 + 1\,180\,229\,760\,z^3 + 7\,264\,404\,000\,z^2 + 8\,226\,376\,200\,z - 893\,918\,025\right)\right.\right. $$
$$ J_0\left(\sqrt{z}\right)^2 - \sqrt{z}\,\left(4096\,z^6 + 897\,024\,z^5 + 55\,883\,520\,z^4 + 1\,139\,293\,440\,z^3 + 6\,466\,068\,000\,z^2 + \right. $$
$$ \left. 4\,300\,128\,000\,z - 1\,660\,133\,475\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(4096\,z^7 + 898\,048\,z^6 + 56\,104\,704\,z^5 + \right. $$
$$ \left.\left. 1\,152\,616\,320\,z^4 + 6\,714\,037\,440\,z^3 + 5\,328\,552\,600\,z^2 - 1\,957\,298\,175\,z + 255\,405\,150\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0949.01

$$ {}_1F_2\left(-\frac{9}{2}; 3, \frac{9}{2}; z\right) = \frac{1}{212\,548\,976\,640\,z^3} \left(-4\left(2\,z\left(16\,384\,z^7 - 3\,837\,952\,z^6 + 259\,261\,440\,z^5 - 5\,875\,755\,264\,z^4 + 39\,547\,636\,416\,z^3 - 46\,745\,521\,200\,z^2 - \right.\right.\right. $$
$$ \left. 9\,089\,406\,900\,z - 638\,512\,875\right) I_0\left(2\sqrt{z}\right) + \sqrt{z}\,\left(-16\,384\,z^7 + 3\,829\,760\,z^6 - 257\,356\,800\,z^5 + \right. $$
$$ \left.\left. 5\,749\,408\,512\,z^4 - 36\,820\,055\,232\,z^3 + 31\,117\,277\,520\,z^2 + 14\,603\,141\,700\,z + 1\,915\,538\,625\right) I_1\left(2\sqrt{z}\right)\right) + $$
$$ \pi\left(65\,536\,z^8 - 15\,335\,424\,z^7 + 1\,033\,224\,192\,z^6 - 23\,247\,544\,320\,z^5 + 152\,562\,009\,600\,z^4 - 152\,562\,009\,600\,z^3 - \right. $$
$$ \left. 57\,210\,753\,600\,z^2 - 12\,259\,447\,200\,z + 1\,915\,538\,625\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + $$
$$ \pi\left(-65\,536\,z^8 + 15\,335\,424\,z^7 - 1\,033\,224\,192\,z^6 + 23\,247\,544\,320\,z^5 - 152\,562\,009\,600\,z^4 + \right. $$
$$ \left. \left. 152\,562\,009\,600\,z^3 + 57\,210\,753\,600\,z^2 + 12\,259\,447\,200\,z - 1\,915\,538\,625\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0950.01

$$ {}_1F_2\left(-\frac{9}{2}; 3, \frac{9}{2}; -z\right) = \frac{1}{212\,548\,976\,640\,z^3} \left(4\left(2\,z\left(16\,384\,z^7 + 3\,837\,952\,z^6 + 259\,261\,440\,z^5 + 5\,875\,755\,264\,z^4 + 39\,547\,636\,416\,z^3 + 46\,745\,521\,200\,z^2 - \right.\right.\right. $$
$$ \left. 9\,089\,406\,900\,z - 638\,512\,875\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\,\left(16\,384\,z^7 + 3\,829\,760\,z^6 + 257\,356\,800\,z^5 + \right. $$
$$ \left.\left. 5\,749\,408\,512\,z^4 + 36\,820\,055\,232\,z^3 + 31\,117\,277\,520\,z^2 - 14\,603\,141\,700\,z + 1\,915\,538\,625\right) J_1\left(2\sqrt{z}\right)\right) + $$
$$ \pi\left(65\,536\,z^8 + 15\,335\,424\,z^7 + 1\,033\,224\,192\,z^6 + 23\,247\,544\,320\,z^5 + 152\,562\,009\,600\,z^4 + 152\,562\,009\,600\,z^3 - \right. $$
$$ \left. 57\,210\,753\,600\,z^2 + 12\,259\,447\,200\,z + 1\,915\,538\,625\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - $$
$$ \pi\left(65\,536\,z^8 + 15\,335\,424\,z^7 + 1\,033\,224\,192\,z^6 + 23\,247\,544\,320\,z^5 + 152\,562\,009\,600\,z^4 + \right. $$
$$ \left. 152\,562\,009\,600\,z^3 - 57\,210\,753\,600\,z^2 + 12\,259\,447\,200\,z + 1\,915\,538\,625\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0951.01

$$ {}_1F_2\left(-\frac{9}{2}; 3, 5; z\right) = $$
$$ -\frac{1}{1\,552\,224\,799\,125\,z^3} \left(64\left(z\left(8192\,z^7 - 2\,039\,808\,z^6 + 147\,787\,776\,z^5 - 3\,638\,211\,840\,z^4 + 27\,165\,650\,400\,z^3 - \right.\right.\right. $$
$$ \left. 37\,743\,148\,800\,z^2 - 7\,151\,344\,200\,z - 383\,107\,725\right) I_0\left(\sqrt{z}\right)^2 + $$
$$ 2\sqrt{z}\,\left(-4096\,z^7 + 1\,016\,832\,z^6 - 73\,135\,872\,z^5 + 1\,765\,365\,120\,z^4 - 12\,333\,384\,000\,z^3 + 11\,124\,199\,800\,z^2 + \right. $$
$$ \left. 6\,257\,426\,175\,z + 766\,215\,450\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - 4\left(2048\,z^8 - 508\,928\,z^7 + 36\,693\,504\,z^6 - 891\,455\,616\,z^5 + \right. $$
$$ \left.\left. 6\,362\,828\,280\,z^4 - 6\,621\,766\,200\,z^3 - 3\,377\,080\,350\,z^2 - 893\,918\,025\,z + 383\,107\,725\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0952.01

$$
{}_1F_2\left(-\frac{9}{2}; 3, 5; -z\right) =
\frac{1}{1\,552\,224\,799\,125\,z^3}\left(64\left(z\left(8192\,z^7 + 2\,039\,808\,z^6 + 147\,787\,776\,z^5 + 3\,638\,211\,840\,z^4 + 27\,165\,650\,400\,z^3 + 37\,743\,148\,800\,z^2 - 7\,151\,344\,200\,z + 383\,107\,725\right) J_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(4096\,z^7 + 1\,016\,832\,z^6 + 73\,135\,872\,z^5 + 1\,765\,365\,120\,z^4 + 12\,333\,384\,000\,z^3 + 11\,124\,199\,800\,z^2 - 6\,257\,426\,175\,z + 766\,215\,450\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + 4\left(2048\,z^8 + 508\,928\,z^7 + 36\,693\,504\,z^6 + 891\,455\,616\,z^5 + 6\,362\,828\,280\,z^4 + 6\,621\,766\,200\,z^3 - 3\,377\,080\,350\,z^2 + 893\,918\,025\,z + 383\,107\,725\right) J_1\left(\sqrt{z}\right)^2\right)\right)
$$

07.22.03.0953.01

$$
{}_1F_2\left(-\frac{9}{2}; 3, \frac{11}{2}; z\right) =
\frac{1}{1\,700\,391\,813\,120\,z^4}\left(-4\left(2\,z\left(65\,536\,z^8 - 17\,268\,736\,z^7 + 1\,332\,731\,904\,z^6 - 35\,200\,235\,520\,z^5 + 283\,092\,092\,928\,z^4 - 406\,213\,315\,200\,z^3 - 119\,445\,308\,640\,z^2 - 19\,410\,791\,400\,z + 13\,408\,770\,375\right) I_0\left(2\sqrt{z}\right) + \sqrt{z}\left(-65\,536\,z^8 + 17\,235\,968\,z^7 - 1\,324\,154\,880\,z^6 + 34\,548\,682\,752\,z^5 - 266\,583\,200\,256\,z^4 + 290\,242\,310\,400\,z^3 + 181\,679\,863\,680\,z^2 + 51\,081\,030\,000\,z - 40\,226\,311\,125\right) I_1\left(2\sqrt{z}\right)\right) + \pi\left(262\,144\,z^9 - 69\,009\,408\,z^8 + 5\,313\,724\,416\,z^7 - 139\,485\,265\,920\,z^6 + 1\,098\,446\,469\,120\,z^5 - 1\,373\,058\,086\,400\,z^4 - 686\,529\,043\,200\,z^3 - 220\,670\,049\,600\,z^2 + 68\,959\,390\,500\,z - 40\,226\,311\,125\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(-262\,144\,z^9 + 69\,009\,408\,z^8 - 5\,313\,724\,416\,z^7 + 139\,485\,265\,920\,z^6 - 1\,098\,446\,469\,120\,z^5 + 1\,373\,058\,086\,400\,z^4 + 686\,529\,043\,200\,z^3 + 220\,670\,049\,600\,z^2 - 68\,959\,390\,500\,z + 40\,226\,311\,125\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)
$$

07.22.03.0954.01

$$
{}_1F_2\left(-\frac{9}{2}; 3, \frac{11}{2}; -z\right) =
\frac{1}{1\,700\,391\,813\,120\,z^4}\left(4\left(2\,z\left(65\,536\,z^8 + 17\,268\,736\,z^7 + 1\,332\,731\,904\,z^6 + 35\,200\,235\,520\,z^5 + 283\,092\,092\,928\,z^4 + 406\,213\,315\,200\,z^3 - 119\,445\,308\,640\,z^2 + 19\,410\,791\,400\,z + 13\,408\,770\,375\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(65\,536\,z^8 + 17\,235\,968\,z^7 + 1\,324\,154\,880\,z^6 + 34\,548\,682\,752\,z^5 + 266\,583\,200\,256\,z^4 + 290\,242\,310\,400\,z^3 - 181\,679\,863\,680\,z^2 + 51\,081\,030\,000\,z + 40\,226\,311\,125\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(262\,144\,z^9 + 69\,009\,408\,z^8 + 5\,313\,724\,416\,z^7 + 139\,485\,265\,920\,z^6 + 1\,098\,446\,469\,120\,z^5 + 1\,373\,058\,086\,400\,z^4 - 686\,529\,043\,200\,z^3 + 220\,670\,049\,600\,z^2 + 68\,959\,390\,500\,z + 40\,226\,311\,125\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(262\,144\,z^9 + 69\,009\,408\,z^8 + 5\,313\,724\,416\,z^7 + 139\,485\,265\,920\,z^6 + 1\,098\,446\,469\,120\,z^5 + 1\,373\,058\,086\,400\,z^4 - 686\,529\,043\,200\,z^3 + 220\,670\,049\,600\,z^2 + 68\,959\,390\,500\,z + 40\,226\,311\,125\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)
$$

07.22.03.0955.01

$$
{}_1F_2\left(-\frac{9}{2};\,3,\,6;\,z\right) =
$$
$$
-\frac{1}{5\,898\,454\,236\,675\,z^4}\left(64\left(z\left(16\,384\,z^8-4\,558\,848\,z^7+374\,169\,600\,z^6-10\,613\,765\,376\,z^5+93\,174\,701\,760\,z^4-\right.\right.\right.
$$
$$
\left.\left.\left.153\,223\,812\,000\,z^3-42\,908\,065\,200\,z^2-5\,746\,615\,875\,z+6\,129\,723\,600\right)I_0\left(\sqrt{z}\right)^2-\right.\right.
$$
$$
\left.\left.4\sqrt{z}\left(4096\,z^8-1\,136\,640\,z^7+92\,694\,528\,z^6-2\,585\,166\,336\,z^5+21\,450\,426\,480\,z^4-\right.\right.\right.
$$
$$
\left.\left.\left.24\,499\,616\,400\,z^3-17\,878\,360\,500\,z^2-4\,980\,400\,425\,z+6\,129\,723\,600\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\right.\right.
$$
$$
\left.\left.\left(-16\,384\,z^9+4\,550\,656\,z^8-371\,902\,464\,z^7+10\,430\,049\,024\,z^6-88\,134\,819\,264\,z^5+113\,563\,749\,600\,z^4+\right.\right.\right.
$$
$$
\left.\left.\left.73\,633\,795\,200\,z^3+28\,988\,484\,525\,z^2-16\,856\,739\,900\,z+24\,518\,894\,400\right)I_1\left(\sqrt{z}\right)^2\right)\right)
$$

07.22.03.0956.01

$$
{}_1F_2\left(-\frac{9}{2};\,3,\,6;\,-z\right) =
$$
$$
\frac{1}{5\,898\,454\,236\,675\,z^4}\left(64\left(z\left(16\,384\,z^8+4\,558\,848\,z^7+374\,169\,600\,z^6+10\,613\,765\,376\,z^5+93\,174\,701\,760\,z^4+\right.\right.\right.
$$
$$
\left.\left.\left.153\,223\,812\,000\,z^3-42\,908\,065\,200\,z^2+5\,746\,615\,875\,z+6\,129\,723\,600\right)J_0\left(\sqrt{z}\right)^2-\right.\right.
$$
$$
\left.\left.4\sqrt{z}\left(4096\,z^8+1\,136\,640\,z^7+92\,694\,528\,z^6+2\,585\,166\,336\,z^5+21\,450\,426\,480\,z^4+\right.\right.\right.
$$
$$
\left.\left.\left.24\,499\,616\,400\,z^3-17\,878\,360\,500\,z^2+4\,980\,400\,425\,z+6\,129\,723\,600\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\right.\right.
$$
$$
\left.\left.\left(16\,384\,z^9+4\,550\,656\,z^8+371\,902\,464\,z^7+10\,430\,049\,024\,z^6+88\,134\,819\,264\,z^5+113\,563\,749\,600\,z^4-\right.\right.\right.
$$
$$
\left.\left.\left.73\,633\,795\,200\,z^3+28\,988\,484\,525\,z^2+16\,856\,739\,900\,z+24\,518\,894\,400\right)J_1\left(\sqrt{z}\right)^2\right)\right)
$$

For fixed z and $a_1 = -\frac{9}{2}$, $b_1 = \frac{7}{2}$

07.22.03.0957.01

$$
{}_1F_2\left(-\frac{9}{2};\,\frac{7}{2},\,\frac{7}{2};\,z\right) =
$$
$$
\frac{1}{231\,211\,008\,z^{5/2}}\left(2\sqrt{z}\left(16\,z^6-3520\,z^5+220\,524\,z^4-4\,524\,480\,z^3+25\,763\,976\,z^2-16\,057\,440\,z-6\,880\,545\right)\cosh\left(2\sqrt{z}\right)+\right.
$$
$$
\left.\left(16\,z^6-3504\,z^5+217\,092\,z^4-4\,322\,304\,z^3+22\,249\,080\,z^2-4\,932\,900\,z-263\,655\right)\sinh\left(2\sqrt{z}\right)-\right.
$$
$$
\left.8\left(8\,z^7-1764\,z^6+111\,132\,z^5-2\,315\,250\,z^4+13\,891\,500\,z^3-12\,502\,350\,z^2-4\,167\,450\,z-893\,025\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)
$$

07.22.03.0958.01

$$
{}_1F_2\left(-\frac{9}{2};\,\frac{7}{2},\,\frac{7}{2};\,-z\right) =
$$
$$
\frac{1}{231\,211\,008\,z^{5/2}}\left(2\sqrt{z}\left(16\,z^6+3520\,z^5+220\,524\,z^4+4\,524\,480\,z^3+25\,763\,976\,z^2+16\,057\,440\,z-6\,880\,545\right)\cos\left(2\sqrt{z}\right)+\right.
$$
$$
\left.\left(16\,z^6+3504\,z^5+217\,092\,z^4+4\,322\,304\,z^3+22\,249\,080\,z^2+4\,932\,900\,z-263\,655\right)\sin\left(2\sqrt{z}\right)+\right.
$$
$$
\left.8\left(8\,z^7+1764\,z^6+111\,132\,z^5+2\,315\,250\,z^4+13\,891\,500\,z^3+12\,502\,350\,z^2-4\,167\,450\,z+893\,025\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)
$$

07.22.03.0959.01

$${}_1F_2\left(-\frac{9}{2};\frac{7}{2},4;z\right)=$$
$$\frac{1}{58\,118\,860\,800\,z^{5/2}}\left(-4\left(2\sqrt{z}\,\left(4096\,z^7-968\,704\,z^6+66\,285\,312\,z^5-1\,529\,844\,480\,z^4+10\,582\,855\,920\,z^3-\right.\right.\right.$$
$$\left.\left.\left.13\,038\,165\,000\,z^2-2\,961\,568\,575\,z-609\,638\,400\right)I_0\left(2\sqrt{z}\right)+\left(-4096\,z^7+966\,656\,z^6-65\,804\,544\,z^5+\right.\right.\right.$$
$$\left.\left.\left.1\,497\,530\,880\,z^4-9\,871\,752\,240\,z^3+8\,830\,231\,200\,z^2+4\,617\,236\,925\,z+1\,219\,276\,800\right)I_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\sqrt{z}\,\left(16\,384\,z^7-3\,870\,720\,z^6+264\,176\,640\,z^5-6\,054\,048\,000\,z^4+40\,864\,824\,000\,z^3-\right.$$
$$\left.42\,908\,065\,200\,z^2-17\,878\,360\,500\,z-5\,746\,615\,875\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\pi\sqrt{z}\,\left(-16\,384\,z^7+3\,870\,720\,z^6-264\,176\,640\,z^5+6\,054\,048\,000\,z^4-40\,864\,824\,000\,z^3+\right.$$
$$\left.42\,908\,065\,200\,z^2+17\,878\,360\,500\,z+5\,746\,615\,875\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\Big)$$

07.22.03.0960.01

$${}_1F_2\left(-\frac{9}{2};\frac{7}{2},4;-z\right)=$$
$$\frac{1}{58\,118\,860\,800\,z^{5/2}}\left(4\left(2\sqrt{z}\,\left(4096\,z^7+968\,704\,z^6+66\,285\,312\,z^5+1\,529\,844\,480\,z^4+10\,582\,855\,920\,z^3+\right.\right.\right.$$
$$\left.\left.\left.13\,038\,165\,000\,z^2-2\,961\,568\,575\,z+609\,638\,400\right)J_0\left(2\sqrt{z}\right)-\left(4096\,z^7+966\,656\,z^6+65\,804\,544\,z^5+\right.\right.\right.$$
$$\left.\left.\left.1\,497\,530\,880\,z^4+9\,871\,752\,240\,z^3+8\,830\,231\,200\,z^2-4\,617\,236\,925\,z+1\,219\,276\,800\right)J_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\sqrt{z}\,\left(16\,384\,z^7+3\,870\,720\,z^6+264\,176\,640\,z^5+6\,054\,048\,000\,z^4+40\,864\,824\,000\,z^3+\right.$$
$$\left.42\,908\,065\,200\,z^2-17\,878\,360\,500\,z+5\,746\,615\,875\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\pi\sqrt{z}\,\left(16\,384\,z^7+3\,870\,720\,z^6+264\,176\,640\,z^5+6\,054\,048\,000\,z^4+40\,864\,824\,000\,z^3+\right.$$
$$\left.42\,908\,065\,200\,z^2-17\,878\,360\,500\,z+5\,746\,615\,875\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\Big)$$

07.22.03.0961.01

$${}_1F_2\left(-\frac{9}{2};\frac{7}{2},\frac{9}{2};z\right)=\frac{1}{264\,241\,152\,z^{7/2}}$$
$$\left(2\sqrt{z}\,\left(8\,z^7-2012\,z^6+147\,180\,z^5-3\,633\,246\,z^4+26\,131\,644\,z^3-23\,626\,890\,z^2-16\,210\,530\,z-4\,465\,125\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left(8\,z^7-2004\,z^6+145\,212\,z^5-3\,496\,626\,z^4+23\,190\,300\,z^3-10\,325\,070\,z^2-6\,412\,770\,z+4\,465\,125\right)\sinh\left(2\sqrt{z}\right)-$$
$$\left.32\,z\left(z^7-252\,z^6+18\,522\,z^5-463\,050\,z^4+3\,472\,875\,z^3-4\,167\,450\,z^2-2\,083\,725\,z-893\,025\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.0962.01

$${}_1F_2\left(-\frac{9}{2};\frac{7}{2},\frac{9}{2};-z\right)=\frac{1}{264\,241\,152\,z^{7/2}}$$
$$\left(2\sqrt{z}\,\left(8\,z^7+2012\,z^6+147\,180\,z^5+3\,633\,246\,z^4+26\,131\,644\,z^3+23\,626\,890\,z^2-16\,210\,530\,z+4\,465\,125\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left(8\,z^7+2004\,z^6+145\,212\,z^5+3\,496\,626\,z^4+23\,190\,300\,z^3+10\,325\,070\,z^2-6\,412\,770\,z-4\,465\,125\right)\sin\left(2\sqrt{z}\right)+$$
$$\left.32\,z\left(z^7+252\,z^6+18\,522\,z^5+463\,050\,z^4+3\,472\,875\,z^3+4\,167\,450\,z^2-2\,083\,725\,z+893\,025\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)$$

07.22.03.0963.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{7}{2}, 5; z\right) = \frac{1}{123\,502\,579\,200\, z^{7/2}} $$
$$ \left(\pi\left(16\,384\, z^7 - 4\,386\,816\, z^6 + 345\,461\,760\, z^5 - 9\,356\,256\,000\, z^4 + 77\,189\,112\,000\, z^3 - 104\,205\,301\,200\, z^2 - 60\,786\,425\,700\, z - 32\,564\,156\,625\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{3/2} + \pi\left(-16\,384\, z^7 + 4\,386\,816\, z^6 - 345\,461\,760\, z^5 + 9\,356\,256\,000\, z^4 - 77\,189\,112\,000\, z^3 + 104\,205\,301\,200\, z^2 + 60\,786\,425\,700\, z + 32\,564\,156\,625\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{3/2} - 4\left(2\sqrt{z}\,\left(4096\, z^8 - 1\,097\,728\, z^7 + 86\,638\,848\, z^6 - 2\,360\,452\,608\, z^5 + 19\,866\,596\,400\, z^4 - 30\,491\,445\,600\, z^3 - 11\,092\,263\,525\, z^2 - 4\,724\,697\,600\, z + 914\,457\,600\right) I_0\left(2\sqrt{z}\right) + \left(-4096\, z^8 + 1\,095\,680\, z^7 - 86\,093\,568\, z^6 + 2\,318\,075\,136\, z^5 - 18\,757\,413\,360\, z^4 + 22\,282\,759\,800\, z^3 + 16\,206\,915\,375\, z^2 + 8\,534\,937\,600\, z - 1\,828\,915\,200\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0964.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{7}{2}, 5; -z\right) = \frac{1}{123\,502\,579\,200\, z^{7/2}} $$
$$ \left(\pi\left(16\,384\, z^7 + 4\,386\,816\, z^6 + 345\,461\,760\, z^5 + 9\,356\,256\,000\, z^4 + 77\,189\,112\,000\, z^3 + 104\,205\,301\,200\, z^2 - 60\,786\,425\,700\, z + 32\,564\,156\,625\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{3/2} - \pi\left(16\,384\, z^7 + 4\,386\,816\, z^6 + 345\,461\,760\, z^5 + 9\,356\,256\,000\, z^4 + 77\,189\,112\,000\, z^3 + 104\,205\,301\,200\, z^2 - 60\,786\,425\,700\, z + 32\,564\,156\,625\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{3/2} + 4\left(2\sqrt{z}\,\left(4096\, z^8 + 1\,097\,728\, z^7 + 86\,638\,848\, z^6 + 2\,360\,452\,608\, z^5 + 19\,866\,596\,400\, z^4 + 30\,491\,445\,600\, z^3 - 11\,092\,263\,525\, z^2 + 4\,724\,697\,600\, z + 914\,457\,600\right) J_0\left(2\sqrt{z}\right) - \left(4096\, z^8 + 1\,095\,680\, z^7 + 86\,093\,568\, z^6 + 2\,318\,075\,136\, z^5 + 18\,757\,413\,360\, z^4 + 22\,282\,759\,800\, z^3 - 16\,206\,915\,375\, z^2 + 8\,534\,937\,600\, z + 1\,828\,915\,200\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0965.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{7}{2}, \frac{11}{2}; z\right) = \frac{1}{1\,056\,964\,608\, z^{9/2}} $$
$$ \left(-32\left(2\, z^7 - 567\, z^6 + 47\,628\, z^5 - 1\,389\,150\, z^4 + 12\,502\,350\, z^3 - 18\,753\,525\, z^2 - 12\,502\,350\, z - 8\,037\,225\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^2 + 2\left(16\, z^8 - 4528\, z^7 + 378\,780\, z^6 - 10\,929\,312\, z^5 + 94\,985\,226\, z^4 - 113\,059\,800\, z^3 - 104\,220\,270\, z^2 - 59\,535\,000\, z + 31\,255\,875\right) \cosh\left(2\sqrt{z}\right) \sqrt{z} + \left(16\, z^8 - 4512\, z^7 + 374\,340\, z^6 - 10\,574\,424\, z^5 + 85\,872\,150\, z^4 - 59\,149\,440\, z^3 - 62\,477\,730\, z^2 + 17\,860\,500\, z - 31\,255\,875\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.0966.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{7}{2}, \frac{11}{2}; -z\right) = \frac{1}{1\,056\,964\,608\, z^{9/2}} $$
$$ \left(32\left(2\, z^7 + 567\, z^6 + 47\,628\, z^5 + 1\,389\,150\, z^4 + 12\,502\,350\, z^3 + 18\,753\,525\, z^2 - 12\,502\,350\, z + 8\,037\,225\right) \mathrm{Si}\left(2\sqrt{z}\right) z^2 + 2\left(16\, z^8 + 4528\, z^7 + 378\,780\, z^6 + 10\,929\,312\, z^5 + 94\,985\,226\, z^4 + 113\,059\,800\, z^3 - 104\,220\,270\, z^2 - 59\,535\,000\, z + 31\,255\,875\right) \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(16\, z^8 + 4512\, z^7 + 374\,340\, z^6 + 10\,574\,424\, z^5 + 85\,872\,150\, z^4 + 59\,149\,440\, z^3 - 62\,477\,730\, z^2 - 17\,860\,500\, z - 31\,255\,875\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.0967.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{7}{2}, 6; z\right) = \frac{1}{234\,654\,900\,480\, z^{9/2}} \left(\pi \left(16\,384\, z^7 - 4\,902\,912\, z^6 + 437\,584\,896\, z^5 - 13\,674\,528\,000\, z^4 + 133\,326\,648\,000\, z^3 - 219\,988\,969\,200\, z^2 - 164\,991\,726\,900\, z - 123\,743\,795\,175\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{5/2} + \pi \left(-16\,384\, z^7 + 4\,902\,912\, z^6 - 437\,584\,896\, z^5 + 13\,674\,528\,000\, z^4 - 133\,326\,648\,000\, z^3 + 219\,988\,969\,200\, z^2 + 164\,991\,726\,900\, z + 123\,743\,795\,175\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{5/2} - 4\left(2\sqrt{z}\, \left(4096\, z^9 - 1\,226\,752\, z^8 + 109\,701\,888\, z^7 - 3\,445\,754\,112\, z^6 + 34\,166\,644\,848\, z^5 - 62\,758\,939\,320\, z^4 - 31\,908\,676\,275\, z^3 - 20\,727\,705\,600\, z^2 + 5\,943\,974\,400\, z - 5\,486\,745\,600\right) I_0\left(2\sqrt{z}\right) + \left(-4096\, z^9 + 1\,224\,704\, z^8 - 109\,092\,096\, z^7 + 3\,391\,958\,016\, z^6 - 32\,534\,406\,576\, z^5 + 48\,251\,926\,800\, z^4 + 44\,516\,403\,225\, z^3 + 34\,596\,979\,200\, z^2 - 6\,401\,203\,200\, z + 10\,973\,491\,200\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0968.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{7}{2}, 6; -z\right) = \frac{1}{234\,654\,900\,480\, z^{9/2}} \left(\pi \left(16\,384\, z^7 + 4\,902\,912\, z^6 + 437\,584\,896\, z^5 + 13\,674\,528\,000\, z^4 + 133\,326\,648\,000\, z^3 + 219\,988\,969\,200\, z^2 - 164\,991\,726\,900\, z + 123\,743\,795\,175\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{5/2} - \pi \left(16\,384\, z^7 + 4\,902\,912\, z^6 + 437\,584\,896\, z^5 + 13\,674\,528\,000\, z^4 + 133\,326\,648\,000\, z^3 + 219\,988\,969\,200\, z^2 - 164\,991\,726\,900\, z + 123\,743\,795\,175\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{5/2} + 4\left(2\sqrt{z}\, \left(4096\, z^9 + 1\,226\,752\, z^8 + 109\,701\,888\, z^7 + 3\,445\,754\,112\, z^6 + 34\,166\,644\,848\, z^5 + 62\,758\,939\,320\, z^4 - 31\,908\,676\,275\, z^3 + 20\,727\,705\,600\, z^2 + 5\,943\,974\,400\, z + 5\,486\,745\,600\right) J_0\left(2\sqrt{z}\right) - \left(4096\, z^9 + 1\,224\,704\, z^8 + 109\,092\,096\, z^7 + 3\,391\,958\,016\, z^6 + 32\,534\,406\,576\, z^5 + 48\,251\,926\,800\, z^4 - 44\,516\,403\,225\, z^3 + 34\,596\,979\,200\, z^2 + 6\,401\,203\,200\, z + 10\,973\,491\,200\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{9}{2}$, $b_1 = 4$

07.22.03.0969.01

$$ {}_1F_2\left(-\frac{9}{2}; 4, 4; z\right) = -\frac{1}{456\,536\,705\,625\, z^{5/2}} \left(16\left(2\sqrt{z}\, \left(4096\, z^7 - 1\,038\,336\, z^6 + 77\,045\,760\, z^5 - 1\,960\,819\,200\, z^4 + 15\,373\,638\,000\, z^3 - 22\,902\,944\,400\, z^2 - 5\,725\,736\,100\, z - 1\,915\,538\,625\right) I_0\left(\sqrt{z}\right)^2 + 2\left(-4096\, z^7 + 1\,035\,264\, z^6 - 76\,273\,920\, z^5 + 1\,904\,745\,600\, z^4 - 14\,023\,044\,000\, z^3 + 14\,022\,023\,400\, z^2 + 9\,494\,174\,025\, z + 3\,831\,077\,250\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \sqrt{z}\, \left(-8192\, z^7 + 2\,072\,576\, z^6 - 153\,059\,328\, z^5 + 3\,846\,124\,800\, z^4 - 28\,895\,839\,200\, z^3 + 32\,953\,132\,800\, z^2 + 19\,865\,298\,600\, z + 9\,744\,731\,325\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0970.01

$$ {}_1F_2\left(-\frac{9}{2}; 4, 4; -z\right) = \frac{1}{456\,536\,705\,625\, z^{5/2}} \left(16 \left(2\sqrt{z}\, \left(4096 z^7 + 1\,038\,336 z^6 + 77\,045\,760 z^5 + 1\,960\,819\,200 z^4 + 15\,373\,638\,000 z^3 + 22\,902\,944\,400 z^2 - 5\,725\,736\,100 z + 1\,915\,538\,625\right) J_0\left(\sqrt{z}\right)^2 - 2 \left(4096 z^7 + 1\,035\,264 z^6 + 76\,273\,920 z^5 + 1\,904\,745\,600 z^4 + 14\,023\,044\,000 z^3 + 14\,022\,023\,400 z^2 - 9\,494\,174\,025 z + 3\,831\,077\,250\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\, \left(8192 z^7 + 2\,072\,576 z^6 + 153\,059\,328 z^5 + 3\,846\,124\,800 z^4 + 28\,895\,839\,200 z^3 + 32\,953\,132\,800 z^2 - 19\,865\,298\,600 z + 9\,744\,731\,325\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0971.01

$$ {}_1F_2\left(-\frac{9}{2}; 4, \frac{9}{2}; z\right) = \frac{1}{531\,372\,441\,600\, z^3} \left(-4 \left(2 z \left(16\,384 z^7 - 4\,427\,776 z^6 + 353\,338\,368 z^5 - 9\,773\,717\,760 z^4 + 84\,088\,232\,640 z^3 - 133\,259\,742\,000 z^2 - 53\,199\,285\,300 z - 29\,439\,164\,475\right) I_0\left(2\sqrt{z}\right) + \sqrt{z}\, \left(-16\,384 z^7 + 4\,419\,584 z^6 - 351\,138\,816 z^5 + 9\,600\,848\,640 z^4 - 79\,491\,314\,880 z^3 + 98\,375\,634\,000 z^2 + 76\,456\,037\,700 z + 49\,300\,635\,825\right) I_1\left(2\sqrt{z}\right)\right) + \pi \left(65\,536 z^8 - 17\,694\,720 z^7 + 1\,408\,942\,080 z^6 - 38\,745\,907\,200 z^5 + 326\,918\,592\,000 z^4 - 457\,686\,028\,800 z^3 - 286\,053\,768\,000 z^2 - 183\,891\,708\,000 z - 28\,733\,079\,375\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi \left(-65\,536 z^8 + 17\,694\,720 z^7 - 1\,408\,942\,080 z^6 + 38\,745\,907\,200 z^5 - 326\,918\,592\,000 z^4 + 457\,686\,028\,800 z^3 + 286\,053\,768\,000 z^2 + 183\,891\,708\,000 z + 28\,733\,079\,375\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0972.01

$$ {}_1F_2\left(-\frac{9}{2}; 4, \frac{9}{2}; -z\right) = \frac{1}{531\,372\,441\,600\, z^3} \left(4 \left(2 z \left(16\,384 z^7 + 4\,427\,776 z^6 + 353\,338\,368 z^5 + 9\,773\,717\,760 z^4 + 84\,088\,232\,640 z^3 + 133\,259\,742\,000 z^2 - 53\,199\,285\,300 z + 29\,439\,164\,475\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\, \left(16\,384 z^7 + 4\,419\,584 z^6 + 351\,138\,816 z^5 + 9\,600\,848\,640 z^4 + 79\,491\,314\,880 z^3 + 98\,375\,634\,000 z^2 - 76\,456\,037\,700 z + 49\,300\,635\,825\right) J_1\left(2\sqrt{z}\right)\right) + \pi \left(65\,536 z^8 + 17\,694\,720 z^7 + 1\,408\,942\,080 z^6 + 38\,745\,907\,200 z^5 + 326\,918\,592\,000 z^4 + 457\,686\,028\,800 z^3 - 286\,053\,768\,000 z^2 + 183\,891\,708\,000 z - 28\,733\,079\,375\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi \left(65\,536 z^8 + 17\,694\,720 z^7 + 1\,408\,942\,080 z^6 + 38\,745\,907\,200 z^5 + 326\,918\,592\,000 z^4 + 457\,686\,028\,800 z^3 - 286\,053\,768\,000 z^2 + 183\,891\,708\,000 z - 28\,733\,079\,375\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0973.01

$$ {}_1F_2\left(-\frac{9}{2}; 4, 5; z\right) = $$
$$ -\frac{1}{7\,761\,123\,995\,625\,z^3}\left(64\left(z\left(16\,384\,z^7 - 4\,706\,304\,z^6 + 402\,739\,200\,z^5 - 12\,094\,675\,200\,z^4 + 115\,218\,936\,000\,z^3 - \right.\right.\right. $$
$$ \left.\left.\left. 212\,552\,877\,600\,z^2 - 87\,404\,864\,400\,z - 59\,381\,697\,375\right) I_0\left(\sqrt{z}\right)^2 - \right. $$
$$ 8\sqrt{z}\left(2048\,z^7 - 586\,752\,z^6 + 49\,904\,640\,z^5 - 1\,475\,049\,600\,z^4 + 13\,347\,747\,000\,z^3 - \right. $$
$$ \left. 17\,877\,850\,200\,z^2 - 16\,884\,891\,450\,z - 13\,408\,770\,375\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + $$
$$ \left(-16\,384\,z^8 + 4\,698\,112\,z^7 - 400\,398\,336\,z^6 + 11\,896\,784\,640\,z^5 - 109\,459\,569\,600\,z^4 + 162\,897\,285\,600\,z^3 + \right. $$
$$ \left.\left. 135\,085\,255\,200\,z^2 + 112\,025\,351\,025\,z + 22\,986\,463\,500\right) I_1\left(\sqrt{z}\right)^2\right)\Big) $$

07.22.03.0974.01

$$ {}_1F_2\left(-\frac{9}{2}; 4, 5; -z\right) = \frac{1}{7\,761\,123\,995\,625\,z^3} $$
$$ \left(64\left(z\left(16\,384\,z^7 + 4\,706\,304\,z^6 + 402\,739\,200\,z^5 + 12\,094\,675\,200\,z^4 + 115\,218\,936\,000\,z^3 + 212\,552\,877\,600\,z^2 - \right.\right. $$
$$ \left. 87\,404\,864\,400\,z + 59\,381\,697\,375\right) J_0\left(\sqrt{z}\right)^2 - 8\sqrt{z}\left(2048\,z^7 + 586\,752\,z^6 + 49\,904\,640\,z^5 + 1\,475\,049\,600\,z^4 + \right. $$
$$ \left. 13\,347\,747\,000\,z^3 + 17\,877\,850\,200\,z^2 - 16\,884\,891\,450\,z + 13\,408\,770\,375\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + $$
$$ \left(16\,384\,z^8 + 4\,698\,112\,z^7 + 400\,398\,336\,z^6 + 11\,896\,784\,640\,z^5 + 109\,459\,569\,600\,z^4 + \right. $$
$$ \left.\left. 162\,897\,285\,600\,z^3 - 135\,085\,255\,200\,z^2 + 112\,025\,351\,025\,z - 22\,986\,463\,500\right) J_1\left(\sqrt{z}\right)^2\right)\Big) $$

07.22.03.0975.01

$$ {}_1F_2\left(-\frac{9}{2}; 4, \frac{11}{2}; z\right) = $$
$$ \frac{1}{4\,250\,979\,532\,800\,z^4}\left(-4\left(2\,z\left(65\,536\,z^8 - 19\,922\,944\,z^7 + 1\,816\,461\,312\,z^6 - 58\,568\,048\,640\,z^5 + 602\,657\,118\,720\,z^4 - \right.\right.\right. $$
$$ \left.\left.\left. 1\,167\,167\,232\,000\,z^3 - 679\,556\,304\,000\,z^2 - 609\,485\,990\,400\,z - 67\,043\,851\,875\right) I_0\left(2\sqrt{z}\right) + \right. $$
$$ \sqrt{z}\left(-65\,536\,z^8 + 19\,890\,176\,z^7 - 1\,806\,557\,184\,z^6 + 57\,676\,953\,600\,z^5 - 574\,875\,555\,840\,z^4 + \right. $$
$$ \left.\left. 909\,803\,664\,000\,z^3 + 926\,545\,586\,400\,z^2 + 927\,810\,109\,800\,z + 201\,131\,555\,625\right) I_1\left(2\sqrt{z}\right)\right) + $$
$$ \pi\left(262\,144\,z^9 - 79\,626\,240\,z^8 + 7\,245\,987\,840\,z^7 - 232\,475\,443\,200\,z^6 + 2\,353\,813\,862\,400\,z^5 - 4\,119\,174\,259\,200\,z^4 - \right. $$
$$ \left. 3\,432\,645\,216\,000\,z^3 - 3\,310\,050\,744\,000\,z^2 - 1\,034\,390\,857\,500\,z + 201\,131\,555\,625\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + $$
$$ \pi\left(-262\,144\,z^9 + 79\,626\,240\,z^8 - 7\,245\,987\,840\,z^7 + 232\,475\,443\,200\,z^6 - 2\,353\,813\,862\,400\,z^5 + 4\,119\,174\,259\,200\,z^4 + \right. $$
$$ \left. 3\,432\,645\,216\,000\,z^3 + 3\,310\,050\,744\,000\,z^2 + 1\,034\,390\,857\,500\,z - 201\,131\,555\,625\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\Big) $$

07.22.03.0976.01

$$ {}_1F_2\left(-\frac{9}{2}; 4, \frac{11}{2}; -z\right) = \frac{1}{4\,250\,979\,532\,800\,z^4}\left(4\left(2\,z\left(65\,536\,z^8 + 19\,922\,944\,z^7 + 1\,816\,461\,312\,z^6 + 58\,568\,048\,640\,z^5 + 602\,657\,118\,720\,z^4 + 1\,167\,167\,232\,000\,z^3 - 679\,556\,304\,000\,z^2 + 609\,485\,990\,400\,z - 67\,043\,851\,875\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(65\,536\,z^8 + 19\,890\,176\,z^7 + 1\,806\,557\,184\,z^6 + 57\,676\,953\,600\,z^5 + 574\,875\,555\,840\,z^4 + 909\,803\,664\,000\,z^3 - 926\,545\,586\,400\,z^2 + 927\,810\,109\,800\,z - 201\,131\,555\,625\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(262\,144\,z^9 + 79\,626\,240\,z^8 + 7\,245\,987\,840\,z^7 + 232\,475\,443\,200\,z^6 + 2\,353\,813\,862\,400\,z^5 + 4\,119\,174\,259\,200\,z^4 - 3\,432\,645\,216\,000\,z^3 + 3\,310\,050\,744\,000\,z^2 - 1\,034\,390\,857\,500\,z - 201\,131\,555\,625\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(262\,144\,z^9 + 79\,626\,240\,z^8 + 7\,245\,987\,840\,z^7 + 232\,475\,443\,200\,z^6 + 2\,353\,813\,862\,400\,z^5 + 4\,119\,174\,259\,200\,z^4 - 3\,432\,645\,216\,000\,z^3 + 3\,310\,050\,744\,000\,z^2 - 1\,034\,390\,857\,500\,z - 201\,131\,555\,625\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\Big) $$

07.22.03.0977.01

$$ {}_1F_2\left(-\frac{9}{2}; 4, 6; z\right) = -\frac{1}{29\,492\,271\,183\,375\,z^4}\left(128\left(4\,z\left(4096\,z^8 - 1\,314\,816\,z^7 + 127\,468\,800\,z^6 - 4\,412\,021\,760\,z^5 + 49\,471\,203\,600\,z^4 - 108\,759\,218\,400\,z^3 - 63\,566\,965\,350\,z^2 - 65\,128\,313\,250\,z - 5\,746\,615\,875\right) I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-16\,384\,z^8 + 5\,246\,976\,z^7 - 505\,958\,400\,z^6 + 17\,274\,389\,760\,z^5 - 185\,457\,988\,800\,z^4 + 311\,864\,061\,600\,z^3 + 373\,450\,467\,600\,z^2 + 434\,827\,267\,875\,z + 91\,945\,854\,000\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + 2\left(-8192\,z^9 + 2\,625\,536\,z^8 - 253\,628\,928\,z^7 + 8\,698\,521\,600\,z^6 - 94\,713\,691\,680\,z^5 + 173\,949\,022\,800\,z^4 + 182\,764\,115\,100\,z^3 + 211\,706\,800\,200\,z^2 + 86\,199\,238\,125\,z - 45\,972\,927\,000\right) I_1\left(\sqrt{z}\right)^2\Big)\Big) $$

07.22.03.0978.01

$$ {}_1F_2\left(-\frac{9}{2}; 4, 6; -z\right) = \frac{1}{29\,492\,271\,183\,375\,z^4}\left(128\left(4\,z\left(4096\,z^8 + 1\,314\,816\,z^7 + 127\,468\,800\,z^6 + 4\,412\,021\,760\,z^5 + 49\,471\,203\,600\,z^4 + 108\,759\,218\,400\,z^3 - 63\,566\,965\,350\,z^2 + 65\,128\,313\,250\,z - 5\,746\,615\,875\right) J_0\left(\sqrt{z}\right)^2 - \sqrt{z}\left(16\,384\,z^8 + 5\,246\,976\,z^7 + 505\,958\,400\,z^6 + 17\,274\,389\,760\,z^5 + 185\,457\,988\,800\,z^4 + 311\,864\,061\,600\,z^3 - 373\,450\,467\,600\,z^2 + 434\,827\,267\,875\,z - 91\,945\,854\,000\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + 2\left(8192\,z^9 + 2\,625\,536\,z^8 + 253\,628\,928\,z^7 + 8\,698\,521\,600\,z^6 + 94\,713\,691\,680\,z^5 + 173\,949\,022\,800\,z^4 - 182\,764\,115\,100\,z^3 + 211\,706\,800\,200\,z^2 - 86\,199\,238\,125\,z - 45\,972\,927\,000\right) J_1\left(\sqrt{z}\right)^2\Big)\Big) $$

For fixed z and $a_1 = -\frac{9}{2}$, $b_1 = \frac{9}{2}$

07.22.03.0979.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{9}{2}, \frac{9}{2}; z\right) = \frac{1}{603\,979\,776\, z^{7/2}} \left(2\sqrt{z}\,\left(8 z^7 - 2300 z^6 + 196\,428 z^5 - 5\,831\,622 z^4 + 52\,874\,172 z^3 - 68\,125\,050 z^2 - 70\,574\,490 z - 58\,982\,175\right)\cosh\left(2\sqrt{z}\right) + \left(8 z^7 - 2292 z^6 + 194\,172 z^5 - 5\,647\,338 z^4 + 47\,987\,100 z^3 - 37\,404\,990 z^2 - 47\,645\,010 z - 12\,459\,825\right)\sinh\left(2\sqrt{z}\right) - 16\left(2 z^8 - 576 z^7 + 49\,392 z^6 - 1\,481\,760 z^5 + 13\,891\,500 z^4 - 22\,226\,400 z^3 - 16\,669\,800 z^2 - 14\,288\,400 z - 4\,465\,125\right) \mathrm{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.0980.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{9}{2}, \frac{9}{2}; -z\right) = \frac{1}{603\,979\,776\, z^{7/2}} \left(2\sqrt{z}\,\left(8 z^7 + 2300 z^6 + 196\,428 z^5 + 5\,831\,622 z^4 + 52\,874\,172 z^3 + 68\,125\,050 z^2 - 70\,574\,490 z + 58\,982\,175\right)\cos\left(2\sqrt{z}\right) + \left(8 z^7 + 2292 z^6 + 194\,172 z^5 + 5\,647\,338 z^4 + 47\,987\,100 z^3 + 37\,404\,990 z^2 - 47\,645\,010 z + 12\,459\,825\right)\sin\left(2\sqrt{z}\right) + 16\left(2 z^8 + 576 z^7 + 49\,392 z^6 + 1\,481\,760 z^5 + 13\,891\,500 z^4 + 22\,226\,400 z^3 - 16\,669\,800 z^2 + 14\,288\,400 z - 4\,465\,125\right) \mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.0981.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{9}{2}, 5; z\right) = \frac{1}{1\,129\,166\,438\,400\, z^{7/2}} \left(-4\left(2\sqrt{z}\,\left(16\,384 z^8 - 5\,017\,600 z^7 + 461\,865\,984 z^6 - 15\,084\,235\,008 z^5 + 158\,037\,785\,280 z^4 - 313\,963\,095\,600 z^3 - 194\,482\,984\,500 z^2 - 198\,085\,149\,675 z - 58\,525\,286\,400\right) I_0\left(2\sqrt{z}\right) + \left(-16\,384 z^8 + 5\,009\,408 z^7 - 459\,371\,520 z^6 + 14\,857\,618\,176 z^5 - 150\,877\,897\,920 z^4 + 246\,289\,150\,800 z^3 + 262\,510\,056\,900 z^2 + 291\,874\,802\,625 z + 117\,050\,572\,800\right) I_1\left(2\sqrt{z}\right)\right) + \pi\sqrt{z}\,\left(65\,536 z^8 - 20\,054\,016 z^7 + 1\,842\,462\,720 z^6 - 59\,880\,038\,400 z^5 + 617\,512\,896\,000 z^4 - 1\,111\,523\,212\,800 z^3 - 972\,582\,811\,200 z^2 - 1\,042\,053\,012\,000 z - 488\,462\,349\,375\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\sqrt{z}\,\left(-65\,536 z^8 + 20\,054\,016 z^7 - 1\,842\,462\,720 z^6 + 59\,880\,038\,400 z^5 - 617\,512\,896\,000 z^4 + 1\,111\,523\,212\,800 z^3 + 972\,582\,811\,200 z^2 + 1\,042\,053\,012\,000 z + 488\,462\,349\,375\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0982.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{9}{2}, 5; -z\right) = \frac{1}{1\,129\,166\,438\,400\, z^{7/2}} \left(4\left(2\sqrt{z}\,\left(16\,384 z^8 + 5\,017\,600 z^7 + 461\,865\,984 z^6 + 15\,084\,235\,008 z^5 + 158\,037\,785\,280 z^4 + 313\,963\,095\,600 z^3 - 194\,482\,984\,500 z^2 + 198\,085\,149\,675 z - 58\,525\,286\,400\right) J_0\left(2\sqrt{z}\right) - \left(16\,384 z^8 + 5\,009\,408 z^7 + 459\,371\,520 z^6 + 14\,857\,618\,176 z^5 + 150\,877\,897\,920 z^4 + 246\,289\,150\,800 z^3 - 262\,510\,056\,900 z^2 + 291\,874\,802\,625 z - 117\,050\,572\,800\right) J_1\left(2\sqrt{z}\right)\right) + \pi\sqrt{z}\,\left(65\,536 z^8 + 20\,054\,016 z^7 + 1\,842\,462\,720 z^6 + 59\,880\,038\,400 z^5 + 617\,512\,896\,000 z^4 + 1\,111\,523\,212\,800 z^3 - 972\,582\,811\,200 z^2 + 1\,042\,053\,012\,000 z - 488\,462\,349\,375\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\sqrt{z}\,\left(65\,536 z^8 + 20\,054\,016 z^7 + 1\,842\,462\,720 z^6 + 59\,880\,038\,400 z^5 + 617\,512\,896\,000 z^4 + 1\,111\,523\,212\,800 z^3 - 972\,582\,811\,200 z^2 + 1\,042\,053\,012\,000 z - 488\,462\,349\,375\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.0983.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{9}{2}, \frac{11}{2}; z\right) = \frac{1}{1\,207\,959\,552\, z^{9/2}} \left(2\sqrt{z}\,\left(8 z^8 - 2588 z^7 + 252\,732 z^6 - 8\,767\,350 z^5 + 95\,926\,644 z^4 - 160\,886\,250 z^3 - 218\,289\,330 z^2 - 292\,699\,575 z - 125\,023\,500\right)\cosh\left(2\sqrt{z}\right) + \left(8 z^8 - 2580 z^7 + 250\,188 z^6 - 8\,528\,346 z^5 + 88\,395\,300 z^4 - 100\,047\,150 z^3 - 178\,894\,170 z^2 - 183\,580\,425 z + 125\,023\,500\right)\sinh\left(2\sqrt{z}\right) - 16 z \left(2 z^8 - 648 z^7 + 63\,504 z^6 - 2\,222\,640 z^5 + 25\,004\,700 z^4 - 50\,009\,400 z^3 - 50\,009\,400 z^2 - 64\,297\,800 z - 40\,186\,125\right) \mathrm{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.0984.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{9}{2}, \frac{11}{2}; -z\right) = \frac{1}{1\,207\,959\,552\, z^{9/2}} \left(2\sqrt{z}\,\left(8 z^8 + 2588 z^7 + 252\,732 z^6 + 8\,767\,350 z^5 + 95\,926\,644 z^4 + 160\,886\,250 z^3 - 218\,289\,330 z^2 + 292\,699\,575 z - 125\,023\,500\right)\cos\left(2\sqrt{z}\right) + \left(8 z^8 + 2580 z^7 + 250\,188 z^6 + 8\,528\,346 z^5 + 88\,395\,300 z^4 + 100\,047\,150 z^3 - 178\,894\,170 z^2 + 183\,580\,425 z + 125\,023\,500\right)\sin\left(2\sqrt{z}\right) + 16 z \left(2 z^8 + 648 z^7 + 63\,504 z^6 + 2\,222\,640 z^5 + 25\,004\,700 z^4 + 50\,009\,400 z^3 - 50\,009\,400 z^2 + 64\,297\,800 z - 40\,186\,125\right) \mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.0985.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{9}{2}, 6; z\right) = \frac{1}{2\,145\,416\,232\,960\, z^{9/2}} \left(\pi\left(65\,536 z^8 - 22\,413\,312 z^7 + 2\,333\,786\,112 z^6 - 87\,516\,979\,200 z^5 + 1\,066\,613\,184\,000 z^4 - 2\,346\,549\,004\,800 z^3 - 2\,639\,867\,630\,400 z^2 - 3\,959\,801\,445\,600 z - 3\,093\,594\,879\,375\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{3/2} + \pi\left(-65\,536 z^8 + 22\,413\,312 z^7 - 2\,333\,786\,112 z^6 + 87\,516\,979\,200 z^5 - 1\,066\,613\,184\,000 z^4 + 2\,346\,549\,004\,800 z^3 + 2\,639\,867\,630\,400 z^2 + 3\,959\,801\,445\,600 z + 3\,093\,594\,879\,375\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{3/2} - 4\left(2\sqrt{z}\,\left(16\,384 z^9 - 5\,607\,424 z^8 + 584\,844\,288 z^7 - 22\,024\,067\,328 z^6 + 272\,017\,550\,016 z^5 - 649\,575\,566\,640 z^4 - 551\,007\,141\,300 z^3 - 812\,348\,228\,475 z^2 - 497\,464\,934\,400 z + 117\,050\,572\,800\right) I_0\left(2\sqrt{z}\right) + \left(-16\,384 z^9 + 5\,599\,232 z^8 - 582\,054\,912 z^7 + 21\,736\,477\,440 z^6 - 261\,492\,679\,872 z^5 + 530\,456\,850\,000 z^4 + 712\,880\,424\,900 z^3 + 1\,110\,471\,527\,025 z^2 + 877\,879\,296\,000 z - 234\,101\,145\,600\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.0986.01

$$ {}_1F_2\left(-\frac{9}{2}; \frac{9}{2}, 6; -z\right) = \frac{1}{2\,145\,416\,232\,960\, z^{9/2}} \left(\pi \left(65\,536\, z^8 + 22\,413\,312\, z^7 + 2\,333\,786\,112\, z^6 + 87\,516\,979\,200\, z^5 + 1\,066\,613\,184\,000\, z^4 + 2\,346\,549\,004\,800\, z^3 - 2\,639\,867\,630\,400\, z^2 + 3\,959\,801\,445\,600\, z - 3\,093\,594\,879\,375\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{3/2} - \pi \left(65\,536\, z^8 + 22\,413\,312\, z^7 + 2\,333\,786\,112\, z^6 + 87\,516\,979\,200\, z^5 + 1\,066\,613\,184\,000\, z^4 + 2\,346\,549\,004\,800\, z^3 - 2\,639\,867\,630\,400\, z^2 + 3\,959\,801\,445\,600\, z - 3\,093\,594\,879\,375\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{3/2} + 4\left(2\sqrt{z}\, \left(16\,384\, z^9 + 5\,607\,424\, z^8 + 584\,844\,288\, z^7 + 22\,024\,067\,328\, z^6 + 272\,017\,550\,016\, z^5 + 649\,575\,566\,640\, z^4 - 551\,007\,141\,300\, z^3 + 812\,348\,228\,475\, z^2 - 497\,464\,934\,400\, z - 117\,050\,572\,800\right) J_0\left(2\sqrt{z}\right) - \left(16\,384\, z^9 + 5\,599\,232\, z^8 + 582\,054\,912\, z^7 + 21\,736\,477\,440\, z^6 + 261\,492\,679\,872\, z^5 + 530\,456\,850\,000\, z^4 - 712\,880\,424\,900\, z^3 + 1\,110\,471\,527\,025\, z^2 - 877\,879\,296\,000\, z - 234\,101\,145\,600\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{9}{2}$, $b_1 = 5$

07.22.03.0987.01

$$ {}_1F_2\left(-\frac{9}{2}; 5, 5; z\right) = -\frac{1}{131\,939\,107\,925\,625\, z^{7/2}} \left(512\left(2\sqrt{z}\, \left(8192\, z^8 - 2\,666\,496\, z^7 + 263\,176\,704\, z^6 - 9\,328\,343\,040\, z^5 + 108\,086\,983\,200\, z^4 - 248\,432\,410\,800\, z^3 - 162\,889\,631\,100\, z^2 - 207\,728\,841\,600\, z - 97\,692\,469\,875\right) I_0\left(\sqrt{z}\right)^2 + \left(-16\,384\, z^8 + 5\,320\,704\, z^7 - 522\,381\,312\, z^6 + 18\,270\,754\,560\, z^5 - 203\,017\,752\,000\, z^4 + 361\,519\,653\,600\, z^3 + 468\,792\,878\,400\, z^2 + 652\,341\,877\,425\, z + 390\,769\,879\,500\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \sqrt{z}\, \left(-16\,384\, z^8 + 5\,324\,800\, z^7 - 523\,699\,200\, z^6 + 18\,397\,458\,432\, z^5 - 207\,224\,366\,400\, z^4 + 401\,289\,033\,600\, z^3 + 456\,914\,115\,000\, z^2 + 626\,044\,545\,000\, z + 454\,839\,447\,825\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0988.01

$$ {}_1F_2\left(-\frac{9}{2}; 5, 5; -z\right) = \frac{1}{131\,939\,107\,925\,625\, z^{7/2}} \left(512\left(2\sqrt{z}\, \left(8192\, z^8 + 2\,666\,496\, z^7 + 263\,176\,704\, z^6 + 9\,328\,343\,040\, z^5 + 108\,086\,983\,200\, z^4 + 248\,432\,410\,800\, z^3 - 162\,889\,631\,100\, z^2 + 207\,728\,841\,600\, z - 97\,692\,469\,875\right) J_0\left(\sqrt{z}\right)^2 - \left(16\,384\, z^8 + 5\,320\,704\, z^7 + 522\,381\,312\, z^6 + 18\,270\,754\,560\, z^5 + 203\,017\,752\,000\, z^4 + 361\,519\,653\,600\, z^3 - 468\,792\,878\,400\, z^2 + 652\,341\,877\,425\, z - 390\,769\,879\,500\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\, \left(16\,384\, z^8 + 5\,324\,800\, z^7 + 523\,699\,200\, z^6 + 18\,397\,458\,432\, z^5 + 207\,224\,366\,400\, z^4 + 401\,289\,033\,600\, z^3 - 456\,914\,115\,000\, z^2 + 626\,044\,545\,000\, z - 454\,839\,447\,825\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.0989.01

$$
{}_1F_2\left(-\frac{9}{2}; 5, \frac{11}{2}; z\right) =
\frac{1}{9\,033\,331\,507\,200\,z^4}\left(-4\left(2\,z\left(65\,536\,z^8 - 22\,577\,152\,z^7 + 2\,374\,508\,544\,z^6 - 90\,408\,093\,696\,z^5 + 1\,133\,549\,521\,920\,z^4 - \right.\right.\right.
\left.\left.\left.2\,763\,499\,939\,200\,z^3 - 2\,450\,317\,716\,000\,z^2 - 3\,900\,868\,939\,800\,z - 3\,074\,075\,138\,925\right) I_0\left(2\sqrt{z}\right) +
\sqrt{z}\left(-65\,536\,z^8 + 22\,544\,384\,z^7 - 2\,363\,277\,312\,z^6 + 89\,240\,297\,472\,z^5 - 1\,090\,324\,200\,960\,z^4 + \right.\right.
\left.\left.2\,266\,156\,569\,600\,z^3 + 3\,149\,449\,128\,000\,z^2 + 5\,242\,213\,922\,400\,z + 5\,008\,404\,795\,975\right) I_1\left(2\sqrt{z}\right)\right) +
\pi\left(262\,144\,z^9 - 90\,243\,072\,z^8 + 9\,475\,522\,560\,z^7 - 359\,280\,230\,400\,z^6 + 4\,446\,092\,851\,200\,z^5 - 10\,003\,708\,915\,200\,z^4 - \right.
\left.11\,670\,993\,734\,400\,z^3 - 18\,756\,954\,216\,000\,z^2 - 17\,584\,644\,577\,500\,z - 3\,419\,236\,445\,625\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) +
\pi\left(-262\,144\,z^9 + 90\,243\,072\,z^8 - 9\,475\,522\,560\,z^7 + 359\,280\,230\,400\,z^6 - 4\,446\,092\,851\,200\,z^5 + 10\,003\,708\,915\,200\,z^4 + \right.
\left.\left.11\,670\,993\,734\,400\,z^3 + 18\,756\,954\,216\,000\,z^2 + 17\,584\,644\,577\,500\,z + 3\,419\,236\,445\,625\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)
$$

07.22.03.0990.01

$$
{}_1F_2\left(-\frac{9}{2}; 5, \frac{11}{2}; -z\right) =
\frac{1}{9\,033\,331\,507\,200\,z^4}\left(4\left(2\,z\left(65\,536\,z^8 + 22\,577\,152\,z^7 + 2\,374\,508\,544\,z^6 + 90\,408\,093\,696\,z^5 + 1\,133\,549\,521\,920\,z^4 + \right.\right.\right.
\left.\left.\left.2\,763\,499\,939\,200\,z^3 - 2\,450\,317\,716\,000\,z^2 + 3\,900\,868\,939\,800\,z - 3\,074\,075\,138\,925\right) J_0\left(2\sqrt{z}\right) -
\sqrt{z}\left(65\,536\,z^8 + 22\,544\,384\,z^7 + 2\,363\,277\,312\,z^6 + 89\,240\,297\,472\,z^5 + 1\,090\,324\,200\,960\,z^4 + \right.\right.
\left.\left.2\,266\,156\,569\,600\,z^3 - 3\,149\,449\,128\,000\,z^2 + 5\,242\,213\,922\,400\,z - 5\,008\,404\,795\,975\right) J_1\left(2\sqrt{z}\right)\right) +
\pi\left(262\,144\,z^9 + 90\,243\,072\,z^8 + 9\,475\,522\,560\,z^7 + 359\,280\,230\,400\,z^6 + 4\,446\,092\,851\,200\,z^5 + 10\,003\,708\,915\,200\,z^4 - \right.
\left.11\,670\,993\,734\,400\,z^3 + 18\,756\,954\,216\,000\,z^2 - 17\,584\,644\,577\,500\,z + 3\,419\,236\,445\,625\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) -
\pi\left(262\,144\,z^9 + 90\,243\,072\,z^8 + 9\,475\,522\,560\,z^7 + 359\,280\,230\,400\,z^6 + 4\,446\,092\,851\,200\,z^5 + 10\,003\,708\,915\,200\,z^4 - \right.
\left.\left.11\,670\,993\,734\,400\,z^3 + 18\,756\,954\,216\,000\,z^2 - 17\,584\,644\,577\,500\,z + 3\,419\,236\,445\,625\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)
$$

07.22.03.0991.01

$$
{}_1F_2\left(-\frac{9}{2}; 5, 6; z\right) =
-\frac{1}{501\,368\,610\,117\,375\,z^4}\left(512\left(2\,z\left(16\,384\,z^8 - 5\,959\,680\,z^7 + 666\,418\,176\,z^6 - 27\,229\,777\,920\,z^5 + 371\,631\,758\,400\,z^4 - \right.\right.\right.
\left.\left.\left.1\,022\,402\,379\,600\,z^3 - 933\,626\,169\,000\,z^2 - 1\,732\,485\,339\,900\,z - 1\,660\,771\,987\,875\right) I_0\left(\sqrt{z}\right)^2 -
4\sqrt{z}\left(8192\,z^8 - 2\,973\,696\,z^7 + 330\,988\,032\,z^6 - 13\,369\,927\,680\,z^5 + 176\,137\,869\,600\,z^4 - \right.\right.
\left.\left.391\,796\,092\,800\,z^3 - 639\,601\,685\,100\,z^2 - 1\,250\,608\,029\,300\,z - 1\,465\,387\,048\,125\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) +
\left(-32\,768\,z^9 + 11\,902\,976\,z^8 - 1\,326\,901\,248\,z^7 + 53\,801\,975\,808\,z^6 - 716\,997\,444\,480\,z^5 + 1\,710\,224\,863\,200\,z^4 + \right.
\left.\left.2\,467\,388\,271\,600\,z^3 + 4\,696\,815\,148\,200\,z^2 + 5\,711\,175\,412\,425\,z + 1\,563\,079\,518\,000\right) I_1\left(\sqrt{z}\right)^2\right)\right)
$$

07.22.03.0992.01

$${}_1F_2\left(-\frac{9}{2}; 5, 6; -z\right) =$$
$$\frac{1}{501\,368\,610\,117\,375\,z^4}\left(512\left(2\,z\left(16\,384\,z^8+5\,959\,680\,z^7+666\,418\,176\,z^6+27\,229\,777\,920\,z^5+371\,631\,758\,400\,z^4+\right.\right.\right.$$
$$\left.\left.\left.1\,022\,402\,379\,600\,z^3-933\,626\,169\,000\,z^2+1\,732\,485\,339\,900\,z-1\,660\,771\,987\,875\right)J_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.4\sqrt{z}\left(8192\,z^8+2\,973\,696\,z^7+330\,988\,032\,z^6+13\,369\,927\,680\,z^5+176\,137\,869\,600\,z^4+\right.\right.\right.$$
$$\left.\left.\left.391\,796\,092\,800\,z^3-639\,601\,685\,100\,z^2+1\,250\,608\,029\,300\,z-1\,465\,387\,048\,125\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(32\,768\,z^9+11\,902\,976\,z^8+1\,326\,901\,248\,z^7+53\,801\,975\,808\,z^6+716\,997\,444\,480\,z^5+1\,710\,224\,863\,200\,z^4-\right.\right.\right.$$
$$\left.\left.\left.2\,467\,388\,271\,600\,z^3+4\,696\,815\,148\,200\,z^2-5\,711\,175\,412\,425\,z+1\,563\,079\,518\,000\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = -\frac{9}{2}$, $b_1 = \frac{11}{2}$

07.22.03.0993.01

$${}_1F_2\left(-\frac{9}{2}; \frac{11}{2}, \frac{11}{2}; z\right) =$$
$$\frac{1}{4\,831\,838\,208\,z^{9/2}}\left(2\sqrt{z}\left(16\,z^8-5824\,z^7+650\,292\,z^6-26\,353\,656\,z^5+347\,648\,526\,z^4-753\,656\,400\,z^3-\right.\right.$$
$$\left.\left.1\,326\,184\,650\,z^2-2\,697\,275\,700\,z-3\,322\,946\,025\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(16\,z^8-5808\,z^7+644\,556\,z^6-25\,734\,384\,z^5+324\,522\,450\,z^4-516\,310\,200\,z^3-1\,227\,492\,630\,z^2-\right.\right.$$
$$\left.\left.2\,445\,357\,600\,z-1\,177\,899\,975\right)\sinh\left(2\sqrt{z}\right)-16\left(4\,z^9-1458\,z^8+163\,296\,z^7-6\,667\,920\,z^6+\right.\right.$$
$$\left.\left.90\,016\,920\,z^5-225\,042\,300\,z^4-300\,056\,400\,z^3-578\,680\,200\,z^2-723\,350\,250\,z-281\,302\,875\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.0994.01

$${}_1F_2\left(-\frac{9}{2}; \frac{11}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{4\,831\,838\,208\,z^{9/2}}\left(2\sqrt{z}\left(16\,z^8+5824\,z^7+650\,292\,z^6+26\,353\,656\,z^5+347\,648\,526\,z^4+753\,656\,400\,z^3-\right.\right.$$
$$\left.\left.1\,326\,184\,650\,z^2+2\,697\,275\,700\,z-3\,322\,946\,025\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(16\,z^8+5808\,z^7+644\,556\,z^6+25\,734\,384\,z^5+324\,522\,450\,z^4+516\,310\,200\,z^3-1\,227\,492\,630\,z^2+\right.\right.$$
$$\left.\left.2\,445\,357\,600\,z-1\,177\,899\,975\right)\sin\left(2\sqrt{z}\right)+16\left(4\,z^9+1458\,z^8+163\,296\,z^7+6\,667\,920\,z^6+\right.\right.$$
$$\left.\left.90\,016\,920\,z^5+225\,042\,300\,z^4-300\,056\,400\,z^3+578\,680\,200\,z^2-723\,350\,250\,z+281\,302\,875\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)$$

07.22.03.0995.01

$$
{}_1F_2\left(-\frac{9}{2};\frac{11}{2},6;z\right)=\frac{1}{17\,163\,329\,863\,680\,z^{9/2}}
$$
$$
\left(-4\left(2\sqrt{z}\,\left(65\,536\,z^9-25\,231\,360\,z^8+3\,006\,873\,600\,z^7-132\,020\,932\,608\,z^6+1\,952\,177\,315\,328\,z^5-5\,737\,058\,046\,720\,z^4-\right.\right.\right.
$$
$$
\left.\left.\left.6\,883\,522\,430\,400\,z^3-15\,627\,437\,406\,000\,z^2-22\,589\,952\,362\,775\,z-8\,427\,641\,241\,600\right)I_0\left(2\sqrt{z}\right)+\right.\right.
$$
$$
\left.\left(-65\,536\,z^9+25\,198\,592\,z^8-2\,994\,315\,264\,z^7+130\,539\,276\,288\,z^6-1\,888\,686\,867\,456\,z^5+4\,864\,081\,622\,400\,z^4+\right.\right.
$$
$$
\left.\left.8\,512\,142\,839\,200\,z^3+19\,648\,114\,579\,800\,z^2+31\,952\,381\,811\,525\,z+16\,855\,282\,483\,200\right)I_1\left(2\sqrt{z}\right)\right)+
$$
$$
\pi\sqrt{z}\,\left(262\,144\,z^9-100\,859\,904\,z^8+12\,002\,328\,576\,z^7-525\,101\,875\,200\,z^6+7\,679\,614\,924\,800\,z^5-\right.
$$
$$
21\,118\,941\,043\,200\,z^4-31\,678\,411\,564\,800\,z^3-71\,276\,426\,020\,800\,z^2-
$$
$$
\left.111\,369\,415\,657\,500\,z-64\,965\,492\,466\,875\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+
$$
$$
\pi\sqrt{z}\,\left(-262\,144\,z^9+100\,859\,904\,z^8-12\,002\,328\,576\,z^7+525\,101\,875\,200\,z^6-7\,679\,614\,924\,800\,z^5+\right.
$$
$$
21\,118\,941\,043\,200\,z^4+31\,678\,411\,564\,800\,z^3+71\,276\,426\,020\,800\,z^2+
$$
$$
\left.111\,369\,415\,657\,500\,z+64\,965\,492\,466\,875\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\Big)
$$

07.22.03.0996.01

$$
{}_1F_2\left(-\frac{9}{2};\frac{11}{2},6;-z\right)=\frac{1}{17\,163\,329\,863\,680\,z^{9/2}}
$$
$$
\left(4\left(2\sqrt{z}\,\left(65\,536\,z^9+25\,231\,360\,z^8+3\,006\,873\,600\,z^7+132\,020\,932\,608\,z^6+1\,952\,177\,315\,328\,z^5+5\,737\,058\,046\,720\,z^4-\right.\right.\right.
$$
$$
\left.\left.\left.6\,883\,522\,430\,400\,z^3+15\,627\,437\,406\,000\,z^2-22\,589\,952\,362\,775\,z+8\,427\,641\,241\,600\right)J_0\left(2\sqrt{z}\right)-\right.\right.
$$
$$
\left.\left(65\,536\,z^9+25\,198\,592\,z^8+2\,994\,315\,264\,z^7+130\,539\,276\,288\,z^6+1\,888\,686\,867\,456\,z^5+4\,864\,081\,622\,400\,z^4-\right.\right.
$$
$$
\left.\left.8\,512\,142\,839\,200\,z^3+19\,648\,114\,579\,800\,z^2-31\,952\,381\,811\,525\,z+16\,855\,282\,483\,200\right)J_1\left(2\sqrt{z}\right)\right)+
$$
$$
\pi\sqrt{z}\,\left(262\,144\,z^9+100\,859\,904\,z^8+12\,002\,328\,576\,z^7+525\,101\,875\,200\,z^6+7\,679\,614\,924\,800\,z^5+\right.
$$
$$
21\,118\,941\,043\,200\,z^4-31\,678\,411\,564\,800\,z^3+71\,276\,426\,020\,800\,z^2-
$$
$$
\left.111\,369\,415\,657\,500\,z+64\,965\,492\,466\,875\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\sqrt{z}
$$
$$
\left(262\,144\,z^9+100\,859\,904\,z^8+12\,002\,328\,576\,z^7+525\,101\,875\,200\,z^6+7\,679\,614\,924\,800\,z^5+21\,118\,941\,043\,200\,z^4-\right.
$$
$$
\left.31\,678\,411\,564\,800\,z^3+71\,276\,426\,020\,800\,z^2-111\,369\,415\,657\,500\,z+64\,965\,492\,466\,875\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\Big)
$$

For fixed z and $a_1 = -\frac{9}{2}$, $b_1 = 6$

07.22.03.0997.01

$$
{}_1F_2\left(-\frac{9}{2};6,6;z\right)=
$$
$$
-\Big(512\left(\sqrt{z}\,\left(65\,536\,z^9-26\,640\,384\,z^8+3\,375\,194\,112\,z^7-158\,998\,155\,264\,z^6+2\,557\,290\,839\,040\,z^5-8\,446\,882\,953\,600\,z^4-\right.\right.
$$
$$
\left.\left.10\,603\,378\,094\,400\,z^3-28\,216\,618\,012\,800\,z^2-50\,612\,367\,545\,775\,z-29\,698\,510\,842\,000\right)I_0\left(\sqrt{z}\right)^2-\right.
$$
$$
8\left(8192\,z^9-3\,323\,904\,z^8+419\,415\,552\,z^7-19\,563\,881\,472\,z^6+305\,434\,553\,760\,z^5-845\,781\,085\,800\,z^4-\right.
$$
$$
\left.1\,733\,929\,488\,900\,z^3-4\,703\,852\,780\,550\,z^2-9\,528\,849\,888\,075\,z-7\,424\,627\,710\,500\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+
$$
$$
\sqrt{z}\,\left(-65\,536\,z^9+26\,607\,616\,z^8-3\,361\,923\,072\,z^7+157\,330\,335\,744\,z^6-2\,480\,242\,646\,016\,z^5+\right.
$$
$$
7\,277\,787\,014\,400\,z^4+13\,314\,886\,401\,600\,z^3+35\,212\,038\,346\,800\,z^2+
$$
$$
\left.\left.70\,396\,933\,283\,775\,z+64\,837\,127\,394\,900\right)I_1\left(\sqrt{z}\right)^2\right)\Big)\Big/\left(1\,905\,200\,718\,446\,025\,z^{9/2}\right)
$$

07.22.03.0998.01

$${}_1F_2\left(-\frac{9}{2}; 6, 6; -z\right) =$$
$$\left(512\left(\sqrt{z}\,\left(65\,536\,z^9 + 26\,640\,384\,z^8 + 3\,375\,194\,112\,z^7 + 158\,998\,155\,264\,z^6 + 2\,557\,290\,839\,040\,z^5 + 8\,446\,882\,953\,600\,z^4 - 10\,603\,378\,094\,400\,z^3 + 28\,216\,618\,012\,800\,z^2 - 50\,612\,367\,545\,775\,z + 29\,698\,510\,842\,000\right) J_0\left(\sqrt{z}\right)^2 - 8\left(8192\,z^9 + 3\,323\,904\,z^8 + 419\,415\,552\,z^7 + 19\,563\,881\,472\,z^6 + 305\,434\,553\,760\,z^5 + 845\,781\,085\,800\,z^4 - 1\,733\,929\,488\,900\,z^3 + 4\,703\,852\,780\,550\,z^2 - 9\,528\,849\,888\,075\,z + 7\,424\,627\,710\,500\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\,\left(65\,536\,z^9 + 26\,607\,616\,z^8 + 3\,361\,923\,072\,z^7 + 157\,330\,335\,744\,z^6 + 2\,480\,242\,646\,016\,z^5 + 7\,277\,787\,014\,400\,z^4 - 13\,314\,886\,401\,600\,z^3 + 35\,212\,038\,346\,800\,z^2 - 70\,396\,933\,283\,775\,z + 64\,837\,127\,394\,900\right) J_1\left(\sqrt{z}\right)^2\right)\right) \Big/ \left(1\,905\,200\,718\,446\,025\,z^{9/2}\right)$$

For fixed z and $a_1 = -\frac{7}{2}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = -\frac{7}{2}$, $b_1 = -\frac{11}{2}$

07.22.03.0999.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{11}{2}, -\frac{11}{2}; z\right) = \frac{1}{1\,029\,105}\left(\left(256\,z^4 + 26\,496\,z^3 + 455\,280\,z^2 + 1\,939\,140\,z + 1\,029\,105\right)\cosh\left(2\sqrt{z}\right) - 14\sqrt{z}\,\left(256\,z^3 + 9312\,z^2 + 81\,000\,z + 147\,015\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1000.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{11}{2}, -\frac{11}{2}; -z\right) = \frac{1}{1\,029\,105}\left(\left(256\,z^4 - 26\,496\,z^3 + 455\,280\,z^2 - 1\,939\,140\,z + 1\,029\,105\right)\cos\left(2\sqrt{z}\right) - 14\sqrt{z}\,\left(256\,z^3 - 9312\,z^2 + 81\,000\,z - 147\,015\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1001.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{11}{2}, -\frac{9}{2}; z\right) = \left(\frac{512\,z^3}{31\,185} + \frac{32\,z^2}{81} + \frac{184\,z}{99} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(64\,z^3 + 4704\,z^2 + 49\,140\,z + 93\,555\right)\sinh\left(2\sqrt{z}\right)}{93\,555}$$

07.22.03.1002.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{11}{2}, -\frac{9}{2}; -z\right) =$$
$$\left(-\frac{512\,z^3}{31\,185} + \frac{32\,z^2}{81} - \frac{184\,z}{99} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(-64\,z^3 + 4704\,z^2 - 49\,140\,z + 93\,555\right)\sin\left(2\sqrt{z}\right)}{93\,555}$$

07.22.03.1003.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{11}{2}, -\frac{7}{2}; z\right) = \left(\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} + \frac{20\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\,\left(16\,z^2 + 240\,z + 495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1004.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{11}{2}, -\frac{7}{2}; -z\right) = \left(-\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} - \frac{20\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\,\left(16\,z^2 - 240\,z + 495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.1005.01

$${}_1F_2\left(-\frac{7}{2};-\frac{11}{2},-\frac{5}{2};z\right)=\left(\frac{304\,z^2}{1485}+\frac{96\,z}{55}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(16\,z^2+612\,z+1485\right)\sinh\left(2\sqrt{z}\right)}{1485}$$

07.22.03.1006.01

$${}_1F_2\left(-\frac{7}{2};-\frac{11}{2},-\frac{5}{2};-z\right)=\left(\frac{304\,z^2}{1485}-\frac{96\,z}{55}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(16\,z^2-612\,z+1485\right)\sin\left(2\sqrt{z}\right)}{1485}$$

07.22.03.1007.01

$${}_1F_2\left(-\frac{7}{2};-\frac{11}{2},-\frac{3}{2};z\right)=\left(\frac{16\,z^2}{297}+\frac{52\,z}{33}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{33}\sqrt{z}\,\left(8\,z+33\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1008.01

$${}_1F_2\left(-\frac{7}{2};-\frac{11}{2},-\frac{3}{2};-z\right)=\left(\frac{16\,z^2}{297}-\frac{52\,z}{33}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{33}\left(33-8\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1009.01

$${}_1F_2\left(-\frac{7}{2};-\frac{11}{2},-\frac{1}{2};z\right)=\left(\frac{8\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{99}\sqrt{z}\,\left(4\,z+99\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1010.01

$${}_1F_2\left(-\frac{7}{2};-\frac{11}{2},-\frac{1}{2};-z\right)=\left(1-\frac{8\,z}{11}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{99}\left(99-4\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1011.01

$${}_1F_2\left(-\frac{7}{2};-\frac{11}{2},\frac{1}{2};z\right)=\left(\frac{4\,z}{99}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{38}{99}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.1012.01

$${}_1F_2\left(-\frac{7}{2};-\frac{11}{2},\frac{1}{2};-z\right)=\left(1-\frac{4\,z}{99}\right)\cos\left(2\sqrt{z}\right)+\frac{38}{99}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1013.01

$${}_1F_2\left(-\frac{7}{2};-\frac{11}{2},1;z\right)=\frac{1}{99}\left(\left(4\,z+99\right)I_0\left(2\sqrt{z}\right)-40\sqrt{z}\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1014.01

$${}_1F_2\left(-\frac{7}{2};-\frac{11}{2},1;-z\right)=\frac{1}{99}\left(\left(99-4\,z\right)J_0\left(2\sqrt{z}\right)+40\sqrt{z}\,J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1015.01

$${}_1F_2\left(-\frac{7}{2};-\frac{11}{2},\frac{3}{2};z\right)=\frac{2\left(z+30\right)\sinh\left(2\sqrt{z}\right)-21\sqrt{z}\,\cosh\left(2\sqrt{z}\right)}{99\sqrt{z}}$$

07.22.03.1016.01

$${}_1F_2\left(-\frac{7}{2};-\frac{11}{2},\frac{3}{2};-z\right)=\frac{-21\sqrt{z}\,\cos\left(2\sqrt{z}\right)-2\left(z-30\right)\sin\left(2\sqrt{z}\right)}{99\sqrt{z}}$$

07.22.03.1017.01

$${}_1F_2\left(-\frac{7}{2};-\frac{11}{2},2;z\right)=\frac{\left(4\,z+99\right)I_1\left(2\sqrt{z}\right)}{99\sqrt{z}}-\frac{4}{9}I_2\left(2\sqrt{z}\right)$$

07.22.03.1018.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{11}{2}, 2; -z\right) = \frac{(99-4z)\,J_1\left(2\sqrt{z}\right)}{99\sqrt{z}} + \frac{4}{9}J_2\left(2\sqrt{z}\right)$$

07.22.03.1019.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{11}{2}, \frac{5}{2}; z\right) = \frac{\sqrt{z}\,(z+42)\cosh\left(2\sqrt{z}\right) - 3\,(4z+7)\sinh\left(2\sqrt{z}\right)}{33\,z^{3/2}}$$

07.22.03.1020.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{11}{2}, \frac{5}{2}; -z\right) = \frac{(z-42)\sqrt{z}\,\cos\left(2\sqrt{z}\right) + 3\,(7-4z)\sin\left(2\sqrt{z}\right)}{33\,z^{3/2}}$$

07.22.03.1021.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{11}{2}, 3; z\right) = \frac{2\,(4z+99)\,I_2\left(2\sqrt{z}\right) - 96\sqrt{z}\,I_3\left(2\sqrt{z}\right)}{99\,z}$$

07.22.03.1022.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{11}{2}, 3; -z\right) = \frac{(198-8z)\,J_2\left(2\sqrt{z}\right) + 96\sqrt{z}\,J_3\left(2\sqrt{z}\right)}{99\,z}$$

07.22.03.1023.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{11}{2}, \frac{7}{2}; z\right) = \frac{5\left(\left(z^2+63z+42\right)\sinh\left(2\sqrt{z}\right) - 14\sqrt{z}\,(z+6)\cosh\left(2\sqrt{z}\right)\right)}{66\,z^{5/2}}$$

07.22.03.1024.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{11}{2}, \frac{7}{2}; -z\right) = \frac{5\left(14\,(z-6)\sqrt{z}\,\cos\left(2\sqrt{z}\right) + \left(z^2-63z+42\right)\sin\left(2\sqrt{z}\right)\right)}{66\,z^{5/2}}$$

07.22.03.1025.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{11}{2}, 4; z\right) = \frac{2\left((4z+99)\,I_3\left(2\sqrt{z}\right) - 52\sqrt{z}\,I_4\left(2\sqrt{z}\right)\right)}{33\,z^{3/2}}$$

07.22.03.1026.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{11}{2}, 4; -z\right) = \frac{(198-8z)\,J_3\left(2\sqrt{z}\right) + 104\sqrt{z}\,J_4\left(2\sqrt{z}\right)}{33\,z^{3/2}}$$

07.22.03.1027.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{11}{2}, \frac{9}{2}; z\right) = \frac{35\left(2\sqrt{z}\,\left(z^2+96z+270\right)\cosh\left(2\sqrt{z}\right) - 3\left(11z^2+152z+90\right)\sinh\left(2\sqrt{z}\right)\right)}{264\,z^{7/2}}$$

07.22.03.1028.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{11}{2}, \frac{9}{2}; -z\right) = -\frac{35\left(2\sqrt{z}\,\left(z^2-96z+270\right)\cos\left(2\sqrt{z}\right) - 3\left(11z^2-152z+90\right)\sin\left(2\sqrt{z}\right)\right)}{264\,z^{7/2}}$$

07.22.03.1029.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{11}{2}, 5; z\right) = \frac{8\left((4z+99)\,I_4\left(2\sqrt{z}\right) - 56\sqrt{z}\,I_5\left(2\sqrt{z}\right)\right)}{33\,z^2}$$

07.22.03.1030.01

$${}_1F_2\left(-\frac{7}{2};-\frac{11}{2},5;-z\right)=\frac{8\left((99-4z)\,J_4\left(2\sqrt{z}\right)+56\sqrt{z}\;J_5\left(2\sqrt{z}\right)\right)}{33\,z^2}$$

07.22.03.1031.01

$${}_1F_2\left(-\frac{7}{2};-\frac{11}{2},\frac{11}{2};z\right)=\frac{105\left(\left(8z^3+1158z^2+8370z+4725\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\;\left(26z^2+690z+1575\right)\cosh\left(2\sqrt{z}\right)\right)}{704\,z^{9/2}}$$

07.22.03.1032.01

$${}_1F_2\left(-\frac{7}{2};-\frac{11}{2},\frac{11}{2};-z\right)=-\frac{105\left(6\sqrt{z}\;\left(26z^2-690z+1575\right)\cos\left(2\sqrt{z}\right)+\left(8z^3-1158z^2+8370z-4725\right)\sin\left(2\sqrt{z}\right)\right)}{704\,z^{9/2}}$$

07.22.03.1033.01

$${}_1F_2\left(-\frac{7}{2};-\frac{11}{2},6;z\right)=\frac{40\left((4z+99)\,I_5\left(2\sqrt{z}\right)-60\sqrt{z}\;I_6\left(2\sqrt{z}\right)\right)}{33\,z^{5/2}}$$

07.22.03.1034.01

$${}_1F_2\left(-\frac{7}{2};-\frac{11}{2},6;-z\right)=-\frac{40\left((4z-99)\,J_5\left(2\sqrt{z}\right)-60\sqrt{z}\;J_6\left(2\sqrt{z}\right)\right)}{33\,z^{5/2}}$$

For fixed z and $a_1=-\frac{7}{2}$, $b_1=-\frac{9}{2}$

07.22.03.1035.01

$${}_1F_2\left(-\frac{7}{2};-\frac{9}{2},-\frac{9}{2};z\right)=\left(\frac{64z^3}{8505}+\frac{64z^2}{189}+\frac{148z}{81}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\;\left(304z^2+4200z+8505\right)\sinh\left(2\sqrt{z}\right)}{8505}$$

07.22.03.1036.01

$${}_1F_2\left(-\frac{7}{2};-\frac{9}{2},-\frac{9}{2};-z\right)=\left(-\frac{64z^3}{8505}+\frac{64z^2}{189}-\frac{148z}{81}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\;\left(304z^2-4200z+8505\right)\sin\left(2\sqrt{z}\right)}{8505}$$

07.22.03.1037.01

$${}_1F_2\left(-\frac{7}{2};-\frac{9}{2},-\frac{7}{2};z\right)=\left(\frac{16z^2}{63}+\frac{16z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{945}\sqrt{z}\;\left(16z^2+420z+945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1038.01

$${}_1F_2\left(-\frac{7}{2};-\frac{9}{2},-\frac{7}{2};-z\right)=\left(\frac{16z^2}{63}-\frac{16z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\;\left(16z^2-420z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.1039.01

$${}_1F_2\left(-\frac{7}{2};-\frac{9}{2},-\frac{5}{2};z\right)=\left(\frac{16z^2}{135}+\frac{76z}{45}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{45}\sqrt{z}\;(16z+45)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1040.01

$${}_1F_2\left(-\frac{7}{2};-\frac{9}{2},-\frac{5}{2};-z\right)=\left(\frac{16z^2}{135}-\frac{76z}{45}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{45}(45-16z)\sqrt{z}\;\sin\left(2\sqrt{z}\right)$$

07.22.03.1041.01

$${}_1F_2\left(-\frac{7}{2};-\frac{9}{2},-\frac{3}{2};z\right)=\left(\frac{40z}{27}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{27}\sqrt{z}\;(4z+27)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1042.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, -\frac{3}{2}; -z\right) = \left(1 - \frac{40\,z}{27}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{27}(27 - 4\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1043.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, -\frac{1}{2}; z\right) = \left(\frac{4\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.1044.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, -\frac{1}{2}; -z\right) = \left(1 - \frac{4\,z}{9}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1045.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, \frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right) - \frac{2}{9}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.1046.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, \frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right) + \frac{2}{9}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1047.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, 1; z\right) = I_0\left(2\sqrt{z}\right) - \frac{2}{9}\sqrt{z}\,I_1\left(2\sqrt{z}\right)$$

07.22.03.1048.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, 1; -z\right) = J_0\left(2\sqrt{z}\right) + \frac{2}{9}\sqrt{z}\,J_1\left(2\sqrt{z}\right)$$

07.22.03.1049.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, \frac{3}{2}; z\right) = \frac{5\sinh\left(2\sqrt{z}\right)}{9\sqrt{z}} - \frac{1}{9}\cosh\left(2\sqrt{z}\right)$$

07.22.03.1050.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, \frac{3}{2}; -z\right) = \frac{5\sin\left(2\sqrt{z}\right)}{9\sqrt{z}} - \frac{1}{9}\cos\left(2\sqrt{z}\right)$$

07.22.03.1051.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, 2; z\right) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - \frac{2}{9}I_2\left(2\sqrt{z}\right)$$

07.22.03.1052.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, 2; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + \frac{2}{9}J_2\left(2\sqrt{z}\right)$$

07.22.03.1053.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, \frac{5}{2}; z\right) = \frac{6\sqrt{z}\,\cosh\left(2\sqrt{z}\right) - (z+3)\sinh\left(2\sqrt{z}\right)}{6\,z^{3/2}}$$

07.22.03.1054.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, \frac{5}{2}; -z\right) = \frac{-6\sqrt{z}\,\cos\left(2\sqrt{z}\right) - (z-3)\sin\left(2\sqrt{z}\right)}{6\,z^{3/2}}$$

07.22.03.1055.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, 3; z\right) = \frac{2\,I_2\left(2\sqrt{z}\right)}{z} - \frac{4\,I_3\left(2\sqrt{z}\right)}{9\sqrt{z}}$$

07.22.03.1056.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, 3; -z\right) = \frac{2\,J_2\left(2\sqrt{z}\right)}{z} + \frac{4\,J_3\left(2\sqrt{z}\right)}{9\sqrt{z}}$$

07.22.03.1057.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, \frac{7}{2}; z\right) = -\frac{5\left(2\sqrt{z}\,(2z+21)\cosh\left(2\sqrt{z}\right) - 3\,(10z+7)\sinh\left(2\sqrt{z}\right)\right)}{48\,z^{5/2}}$$

07.22.03.1058.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, \frac{7}{2}; -z\right) = \frac{5\left(2\sqrt{z}\,(2z-21)\cos\left(2\sqrt{z}\right) + 3\,(7-10z)\sin\left(2\sqrt{z}\right)\right)}{48\,z^{5/2}}$$

07.22.03.1059.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, 4; z\right) = \frac{6\,I_3\left(2\sqrt{z}\right)}{z^{3/2}} - \frac{4\,I_4\left(2\sqrt{z}\right)}{3z}$$

07.22.03.1060.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, 4; -z\right) = \frac{6\,J_3\left(2\sqrt{z}\right)}{z^{3/2}} + \frac{4\,J_4\left(2\sqrt{z}\right)}{3z}$$

07.22.03.1061.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, \frac{9}{2}; z\right) = -\frac{35\left(\left(4z^2+99z+60\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,(19z+60)\cosh\left(2\sqrt{z}\right)\right)}{96\,z^{7/2}}$$

07.22.03.1062.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, \frac{9}{2}; -z\right) = \frac{35\left(2\sqrt{z}\,(19z-60)\cos\left(2\sqrt{z}\right) + \left(4z^2-99z+60\right)\sin\left(2\sqrt{z}\right)\right)}{96\,z^{7/2}}$$

07.22.03.1063.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, 5; z\right) = \frac{8\left(9\,I_4\left(2\sqrt{z}\right) - 2\sqrt{z}\,I_5\left(2\sqrt{z}\right)\right)}{3z^2}$$

07.22.03.1064.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, 5; -z\right) = \frac{8\left(9\,J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,J_5\left(2\sqrt{z}\right)\right)}{3z^2}$$

07.22.03.1065.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, \frac{11}{2}; z\right) = -\frac{105\left(2\sqrt{z}\,\left(8z^2+390z+945\right)\cosh\left(2\sqrt{z}\right) - 3\left(64z^2+550z+315\right)\sinh\left(2\sqrt{z}\right)\right)}{256\,z^{9/2}}$$

07.22.03.1066.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, \frac{11}{2}; -z\right) = -\frac{105\left(2\sqrt{z}\,\left(8z^2-390z+945\right)\cos\left(2\sqrt{z}\right) - 3\left(64z^2-550z+315\right)\sin\left(2\sqrt{z}\right)\right)}{256\,z^{9/2}}$$

07.22.03.1067.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, 6; z\right) = \frac{120\, I_5\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{80\, I_6\left(2\sqrt{z}\right)}{3\, z^2}$$

07.22.03.1068.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{9}{2}, 6; -z\right) = \frac{120\, J_5\left(2\sqrt{z}\right)}{z^{5/2}} + \frac{80\, J_6\left(2\sqrt{z}\right)}{3\, z^2}$$

For fixed z and $a_1 = -\frac{7}{2}$, $b_1 = -\frac{7}{2}$

07.22.03.1069.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, -\frac{7}{2}; z\right) = \left(\frac{16\, z^2}{105} + \frac{12\, z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,(8\, z + 21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1070.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, -\frac{7}{2}; -z\right) = \left(\frac{16\, z^2}{105} - \frac{12\, z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}(21 - 8\, z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1071.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, -\frac{5}{2}; z\right) = \left(\frac{8\, z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,(4\, z + 15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1072.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, -\frac{5}{2}; -z\right) = \left(1 - \frac{8\, z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}(15 - 4\, z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1073.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, -\frac{3}{2}; z\right) = \left(\frac{4\, z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.1074.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, -\frac{3}{2}; -z\right) = \left(1 - \frac{4\, z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1075.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, -\frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.1076.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, -\frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1077.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, \frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.1078.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, \frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.1079.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, 1; z\right) = I_0\left(2\sqrt{z}\right)$$

07.22.03.1080.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, 1; -z\right) = J_0\left(2\sqrt{z}\right)$$

07.22.03.1081.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, \frac{3}{2}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.1082.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, \frac{3}{2}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.1083.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, 2; z\right) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.1084.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, 2; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.1085.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, \frac{5}{2}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.1086.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, \frac{5}{2}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}}$$

07.22.03.1087.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, 3; z\right) = \frac{2I_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.1088.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, 3; -z\right) = \frac{2J_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.1089.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, \frac{7}{2}; z\right) = \frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.1090.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, \frac{7}{2}; -z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4z-3)\sin\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.1091.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, 4; z\right) = \frac{6I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.1092.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, 4; -z\right) = \frac{6\, J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.1093.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, \frac{9}{2}; z\right) = \frac{105\left(2\sqrt{z}\ (4z+15)\cosh\left(2\sqrt{z}\right) - 3\,(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.1094.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, \frac{9}{2}; -z\right) = \frac{105\left(2\sqrt{z}\ (4z-15)\cos\left(2\sqrt{z}\right) + 3\,(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.1095.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, 5; z\right) = \frac{24\, I_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.1096.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, 5; -z\right) = \frac{24\, J_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.1097.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, \frac{11}{2}; z\right) = \frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\ (8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}}$$

07.22.03.1098.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, \frac{11}{2}; -z\right) = \frac{945\left(10\sqrt{z}\ (8z-21)\cos\left(2\sqrt{z}\right) + \left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}}$$

07.22.03.1099.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, 6; z\right) = \frac{120\, I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.1100.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{7}{2}, 6; -z\right) = \frac{120\, J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = -\frac{7}{2}$, $b_1 = -\frac{5}{2}$

07.22.03.1101.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{5}{2}, -\frac{5}{2}; z\right) =$$

$$\frac{1}{225}\left(128\,\mathrm{Shi}\left(2\sqrt{z}\right)z^{7/2} - 2\left(16z^2+24z+225\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \left(-64z^3-32z^2+324z+225\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.1102.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{5}{2}, -\frac{5}{2}; -z\right) =$$
$$\frac{1}{225}\left(128\,\mathrm{Si}\left(2\sqrt{z}\right) z^{7/2} + 2\left(16z^2 - 24z + 225\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(64z^3 - 32z^2 - 324z + 225\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.1103.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{5}{2}, -\frac{3}{2}; z\right) = \frac{1}{45}\left(-64\,\mathrm{Shi}\left(2\sqrt{z}\right) z^{7/2} + 2\left(8z^2 + 12z - 45\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \left(32z^3 + 16z^2 + 48z + 45\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.1104.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{5}{2}, -\frac{3}{2}; -z\right) =$$
$$\frac{1}{45}\left(-64\,\mathrm{Si}\left(2\sqrt{z}\right) z^{7/2} + 2\left(-8z^2 + 12z + 45\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-32z^3 + 16z^2 - 48z + 45\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.1105.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{5}{2}, -\frac{1}{2}; z\right) = \frac{1}{15}\left(16\,\mathrm{Shi}\left(2\sqrt{z}\right) z^{7/2} - 2\left(2z^2 + 3z + 15\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} - \left(8z^3 + 4z^2 + 12z - 15\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.1106.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{5}{2}, -\frac{1}{2}; -z\right) = \frac{1}{15}\left(16\,\mathrm{Si}\left(2\sqrt{z}\right) z^{7/2} + 2\left(2z^2 - 3z + 15\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(8z^3 - 4z^2 + 12z + 15\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.1107.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{5}{2}, \frac{1}{2}; z\right) = \frac{1}{45}\left(-8\,\mathrm{Shi}\left(2\sqrt{z}\right) z^{7/2} + \left(2z^2 + 3z + 15\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^3 + 2z^2 + 6z + 45\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.1108.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{5}{2}, \frac{1}{2}; -z\right) = \frac{1}{45}\left(-8\,\mathrm{Si}\left(2\sqrt{z}\right) z^{7/2} + \left(-2z^2 + 3z - 15\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-4z^3 + 2z^2 - 6z + 45\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.1109.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{5}{2}, 1; z\right) = \frac{1}{1575}\left(2\sqrt{z}\, I_1\left(2\sqrt{z}\right)\left(64\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{7/2} + 64z^3 + 16z^2 + 36z + 225\right) + I_0\left(2\sqrt{z}\right)\left(-128\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right) z^4 - 256z^4 + 64z^3 + 48z^2 + 180z + 1575\right)\right)$$

07.22.03.1110.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{5}{2}, 1; -z\right) = \frac{1}{1575}\left(J_0\left(2\sqrt{z}\right)\left(128\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right) z^4 - 256z^4 - 64z^3 + 48z^2 - 180z + 1575\right) - 2\sqrt{z}\, J_1\left(2\sqrt{z}\right)\left(64\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{7/2} - 64z^3 + 16z^2 - 36z + 225\right)\right)$$

07.22.03.1111.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{5}{2}, \frac{3}{2}; z\right) =$$
$$\frac{1}{720\sqrt{z}}\left(-16\,\mathrm{Shi}\left(2\sqrt{z}\right) z^4 + 2\left(4z^3 + 2z^2 + 6z + 45\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^3 + 6z^2 + 30z + 315\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1112.01

$${}_1F_2\left(-\frac{7}{2};-\frac{5}{2},\frac{3}{2};-z\right)=$$
$$\frac{1}{720\sqrt{z}}\left(-16\,\mathrm{Si}\left(2\sqrt{z}\right)z^4-2\left(4z^3-2z^2+6z-45\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-4z^3+6z^2-30z+315\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1113.01

$${}_1F_2\left(-\frac{7}{2};-\frac{5}{2},2;z\right)=\frac{1}{14\,175}\left(\frac{I_1\left(2\sqrt{z}\right)\left(256\pi\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{9/2}+256z^4+64z^3+144z^2+900z+11\,025\right)}{\sqrt{z}}-\right.$$
$$\left.2\,I_0\left(2\sqrt{z}\right)\left(128\pi\boldsymbol{L}_1\left(2\sqrt{z}\right)z^4+256z^4-64z^3-48z^2-180z-1575\right)\right)$$

07.22.03.1114.01

$${}_1F_2\left(-\frac{7}{2};-\frac{5}{2},2;-z\right)=\frac{1}{14\,175}\left(\frac{J_1\left(2\sqrt{z}\right)\left(-256\pi\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{9/2}+256z^4-64z^3+144z^2-900z+11\,025\right)}{\sqrt{z}}+\right.$$
$$\left.2\,J_0\left(2\sqrt{z}\right)\left(128\pi\boldsymbol{H}_1\left(2\sqrt{z}\right)z^4-256z^4-64z^3+48z^2-180z+1575\right)\right)$$

07.22.03.1115.01

$${}_1F_2\left(-\frac{7}{2};-\frac{5}{2},\frac{5}{2};z\right)=\frac{1}{2400\,z^{3/2}}$$
$$\left(-16\,\mathrm{Shi}\left(2\sqrt{z}\right)z^5+2\left(4z^4+2z^3+6z^2+45z+630\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^4+6z^3+30z^2+315z-630\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1116.01

$${}_1F_2\left(-\frac{7}{2};-\frac{5}{2},\frac{5}{2};-z\right)=\frac{1}{2400\,z^{3/2}}$$
$$\left(-16\,\mathrm{Si}\left(2\sqrt{z}\right)z^5-2\left(4z^4-2z^3+6z^2-45z+630\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-4z^4+6z^3-30z^2+315z+630\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1117.01

$${}_1F_2\left(-\frac{7}{2};-\frac{5}{2},3;z\right)=$$
$$\frac{1}{155\,925\,z^{3/2}}\left(2\left(I_1\left(2\sqrt{z}\right)\left(512\pi\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{11/2}+512z^5+128z^4+288z^3+1800z^2+22\,050z-99\,225\right)-\right.\right.$$
$$\left.\left.\sqrt{z}\,I_0\left(2\sqrt{z}\right)\left(512\pi\boldsymbol{L}_1\left(2\sqrt{z}\right)z^5+1024z^5-256z^4-192z^3-720z^2-6300z-99\,225\right)\right)\right)$$

07.22.03.1118.01

$${}_1F_2\left(-\frac{7}{2};-\frac{5}{2},3;-z\right)=$$
$$\frac{1}{155\,925\,z^{3/2}}\left(2\left(\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(512\pi\boldsymbol{H}_1\left(2\sqrt{z}\right)z^5-1024z^5-256z^4+192z^3-720z^2+6300z-99\,225\right)-\right.\right.$$
$$\left.\left.J_1\left(2\sqrt{z}\right)\left(512\pi\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{11/2}-512z^5+128z^4-288z^3+1800z^2-22\,050z-99\,225\right)\right)\right)$$

07.22.03.1119.01

$${}_1F_2\left(-\frac{7}{2};-\frac{5}{2},\frac{7}{2};z\right)=\frac{1}{5760\,z^{5/2}}\left(-16\,\mathrm{Shi}\left(2\sqrt{z}\right)z^6+\right.$$
$$\left.2\left(4z^5+2z^4+6z^3+45z^2+630z-4725\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^5+6z^4+30z^3+315z^2+5670z+4725\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1120.01

$${}_1F_2\left(-\frac{7}{2};-\frac{5}{2},\frac{7}{2};-z\right)=\frac{1}{5760\,z^{5/2}}\left(-16\,\mathrm{Si}\left(2\sqrt{z}\right)z^6-\right.$$
$$\left.2\left(4z^5-2z^4+6z^3-45z^2+630z+4725\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-4z^5+6z^4-30z^3+315z^2-5670z+4725\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1121.01

$${}_1F_2\left(-\frac{7}{2};-\frac{5}{2},4;z\right)=$$
$$\frac{1}{675\,675\,z^{5/2}}\left(2\left(I_1\left(2\sqrt{z}\right)\left(1024\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{13/2}+1024z^6+256z^5+576z^4+3600z^3+44\,100z^2+893\,025z+2\,182\,950\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\;I_0\left(2\sqrt{z}\right)\left(512\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^6+1024z^6-256z^5-192z^4-720z^3-6300z^2-99\,225z+1\,091\,475\right)\right)\right)$$

07.22.03.1122.01

$${}_1F_2\left(-\frac{7}{2};-\frac{5}{2},4;-z\right)=$$
$$\frac{1}{675\,675\,z^{5/2}}\left(2\left(2\sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(512\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^6-1024z^6-256z^5+192z^4-720z^3+6300z^2-99\,225z-1\,091\,475\right)-\right.\right.$$
$$\left.\left.J_1\left(2\sqrt{z}\right)\left(1024\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{13/2}-1024z^6+256z^5-576z^4+3600z^3-44\,100z^2+893\,025z-2\,182\,950\right)\right)\right)$$

07.22.03.1123.01

$${}_1F_2\left(-\frac{7}{2};-\frac{5}{2},\frac{9}{2};z\right)=$$
$$\frac{1}{11\,520\,z^{7/2}}\left(-16\,\mathrm{Shi}\left(2\sqrt{z}\right)z^7+2\left(4z^6+2z^5+6z^4+45z^3+630z^2+14\,175z+70\,875\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(4z^6+6z^5+30z^4+315z^3+5670z^2-108\,675z-70\,875\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1124.01

$${}_1F_2\left(-\frac{7}{2};-\frac{5}{2},\frac{9}{2};-z\right)=$$
$$\frac{1}{11\,520\,z^{7/2}}\left(-16\,\mathrm{Si}\left(2\sqrt{z}\right)z^7-2\left(4z^6-2z^5+6z^4-45z^3+630z^2-14\,175z+70\,875\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(-4z^6+6z^5-30z^4+315z^3-5670z^2-108\,675z+70\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1125.01

$${}_1F_2\left(-\frac{7}{2};-\frac{5}{2},5;z\right)=$$
$$\frac{1}{10\,135\,125\,z^{7/2}}\left(8\left(2\,I_1\left(2\sqrt{z}\right)\left(1024\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{15/2}+1024z^7+256z^6+576z^5+3600z^4+44\,100z^3+893\,025z^2-\right.\right.\right.$$
$$\left.\left.\left.26\,195\,400z-42\,567\,525\right)-\sqrt{z}\;I_0\left(2\sqrt{z}\right)\right.\right.$$
$$\left.\left.\left(2048\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^7+4096z^7-1024z^6-768z^5-2880z^4-25\,200z^3-396\,900z^2-9\,823\,275z-85\,135\,050\right)\right)\right)$$

07.22.03.1126.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{5}{2}, 5; -z\right) =$$
$$\frac{1}{10\,135\,125\,z^{7/2}}\left(8\left(\sqrt{z}\ J_0\left(2\sqrt{z}\right)\left(2048\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^7 - 4096\,z^7 - 1024\,z^6 + 768\,z^5 - 2880\,z^4 + 25\,200\,z^3 - 396\,900\,z^2 + 9\,823\,275\,z - 85\,135\,050\right) - 2\,J_1\left(2\sqrt{z}\right)\left(1024\,\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{15/2} - 1024\,z^7 + 256\,z^6 - 576\,z^5 + 3600\,z^4 - 44\,100\,z^3 + 893\,025\,z^2 + 26\,195\,400\,z - 42\,567\,525\right)\right)\right)$$

07.22.03.1127.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{5}{2}, \frac{11}{2}; z\right) = \frac{1}{40\,960\,z^{9/2}}$$
$$\left(-32\,\mathrm{Shi}\left(2\sqrt{z}\right)z^8 + 2\left(8\,z^7 + 4\,z^6 + 12\,z^5 + 90\,z^4 + 1260\,z^3 + 28\,350\,z^2 - 1\,181\,250\,z - 3\,472\,875\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(8\,z^7 + 12\,z^6 + 60\,z^5 + 630\,z^4 + 11\,340\,z^3 + 311\,850\,z^2 + 5\,811\,750\,z + 3\,472\,875\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1128.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{5}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{40\,960\,z^{9/2}}\left(-32\,\mathrm{Si}\left(2\sqrt{z}\right)z^8 - 2\left(8\,z^7 - 4\,z^6 + 12\,z^5 - 90\,z^4 + 1260\,z^3 - 28\,350\,z^2 - 1\,181\,250\,z + 3\,472\,875\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(-8\,z^7 + 12\,z^6 - 60\,z^5 + 630\,z^4 - 11\,340\,z^3 + 311\,850\,z^2 - 5\,811\,750\,z + 3\,472\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1129.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{5}{2}, 6; z\right) =$$
$$\frac{1}{34\,459\,425\,z^{9/2}}\left(8\left(I_1\left(2\sqrt{z}\right)\left(4096\,\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{17/2} + 4096\,z^8 + 1024\,z^7 + 2304\,z^6 + 14\,400\,z^5 + 176\,400\,z^4 + 3\,572\,100\,z^3 + 108\,056\,025\,z^2 + 3\,660\,807\,150\,z + 5\,108\,103\,000\right) - 2\sqrt{z}\ I_0\left(2\sqrt{z}\right)\left(2048\,\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^8 + 4096\,z^8 - 1024\,z^7 - 768\,z^6 - 2880\,z^5 - 25\,200\,z^4 - 396\,900\,z^3 - 9\,823\,275\,z^2 + 553\,377\,825\,z + 2\,554\,051\,500\right)\right)\right)$$

07.22.03.1130.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{5}{2}, 6; -z\right) =$$
$$\frac{1}{34\,459\,425\,z^{9/2}}\left(8\left(2\sqrt{z}\ J_0\left(2\sqrt{z}\right)\left(2048\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^8 - 4096\,z^8 - 1024\,z^7 + 768\,z^6 - 2880\,z^5 + 25\,200\,z^4 - 396\,900\,z^3 + 9\,823\,275\,z^2 + 553\,377\,825\,z - 2\,554\,051\,500\right) - J_1\left(2\sqrt{z}\right)\left(4096\,\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{17/2} - 4096\,z^8 + 1024\,z^7 - 2304\,z^6 + 14\,400\,z^5 - 176\,400\,z^4 + 3\,572\,100\,z^3 - 108\,056\,025\,z^2 + 3\,660\,807\,150\,z - 5\,108\,103\,000\right)\right)\right)$$

For fixed z and $a_1 = -\frac{7}{2}$, $b_1 = -\frac{3}{2}$

07.22.03.1131.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, -\frac{3}{2}; z\right) =$$
$$\frac{1}{9}\left(16\,(2\,z-7)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^{5/2} - 2\left(4\,z^2 - 8\,z + 9\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \left(-16\,z^3 + 48\,z^2 + 4\,z + 9\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.1132.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, -\frac{3}{2}; -z\right) = \frac{1}{9}\left(16\,(2\,z+7)\,\mathrm{Si}\left(2\sqrt{z}\right)z^{5/2} + 2\left(4\,z^2+8\,z+9\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(16\,z^3+48\,z^2-4\,z+9\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.1133.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, -\frac{1}{2}; z\right) = \frac{1}{3}\left((2\,z+1)\left(\left(2\,z^2-14\,z+3\right)\cosh\left(2\sqrt{z}\right) + (z-6)\sqrt{z}\,\sinh\left(2\sqrt{z}\right)\right) - 8\,(z-7)\,z^{5/2}\,\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.1134.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, -\frac{1}{2}; -z\right) = \frac{1}{3}\left(-8\,(z+7)\,\mathrm{Si}\left(2\sqrt{z}\right)z^{5/2} - (2\,z-1)\left(\left(2\,z^2+14\,z+3\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\,(z+6)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1135.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, \frac{1}{2}; z\right) =$$

$$\frac{1}{36}\left(8\,(2\,z-21)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^{5/2} + \left(-4\,z^2+36\,z+33\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + \left(-8\,z^3+80\,z^2+30\,z+36\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.1136.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, \frac{1}{2}; -z\right) = \frac{1}{36}\left(8\,(2\,z+21)\,\mathrm{Si}\left(2\sqrt{z}\right)z^{5/2} + \left(4\,z^2+36\,z-33\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(8\,z^3+80\,z^2-30\,z+36\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.1137.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, 1; z\right) = \frac{1}{315}\left(I_0\left(2\sqrt{z}\right)\left(128\,z^4+16\,\pi\,(4\,z-49)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^3-1600\,z^3+368\,z^2+204\,z+315\right) - 8\sqrt{z}\,I_1\left(2\sqrt{z}\right)\left(8\,z^3+2\,\pi\,(4\,z-49)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}-96\,z^2-20\,z-27\right)\right)$$

07.22.03.1138.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, 1; -z\right) = \frac{1}{315}\left(8\sqrt{z}\,J_1\left(2\sqrt{z}\right)\left(-8\,z^3+2\,\pi\,(4\,z+49)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-96\,z^2+20\,z-27\right) + J_0\left(2\sqrt{z}\right)\left(128\,z^4-16\,\pi\,(4\,z+49)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^3+1600\,z^3+368\,z^2-204\,z+315\right)\right)$$

07.22.03.1139.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, \frac{3}{2}; z\right) =$$

$$\frac{1}{288\sqrt{z}}\left(16\,(z-14)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^3 - 2\left(4\,z^3-54\,z^2-22\,z-39\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(-4\,z^3+50\,z^2+54\,z+105\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1140.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, \frac{3}{2}; -z\right) =$$

$$\frac{1}{288\sqrt{z}}\left(16\,(z+14)\,\mathrm{Si}\left(2\sqrt{z}\right)z^3 + 2\left(4\,z^3+54\,z^2-22\,z+39\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(4\,z^3+50\,z^2-54\,z+105\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1141.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, 2; z\right) = \frac{1}{2835}\left(4\,I_0\left(2\sqrt{z}\right)\left(64\,z^4+8\,\pi\,(4\,z-63)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^3-1024\,z^3+240\,z^2+144\,z+315\right) - \frac{I_1\left(2\sqrt{z}\right)\left(128\,z^4+32\,\pi\,(4\,z-63)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2}-1984\,z^3-432\,z^2-684\,z-1575\right)}{\sqrt{z}}\right)$$

07.22.03.1142.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, 2; -z\right) = \frac{1}{2835}\left(\frac{J_1\left(2\sqrt{z}\right)\left(-128z^4 + 32\pi(4z+63)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2} - 1984z^3 + 432z^2 - 684z + 1575\right)}{\sqrt{z}} - 4J_0\left(2\sqrt{z}\right)\left(-64z^4 + 8\pi(4z+63)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^3 - 1024z^3 - 240z^2 + 144z - 315\right)\right)$$

07.22.03.1143.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, \frac{5}{2}; z\right) = \frac{1}{1920z^{3/2}}\left(16(2z-35)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^4 - 2\left(8z^4 - 136z^3 - 58z^2 - 120z - 315\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(-8z^4 + 128z^3 + 150z^2 + 420z - 315\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1144.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, \frac{5}{2}; -z\right) = \frac{1}{1920z^{3/2}}\left(16(2z+35)\,\mathrm{Si}\left(2\sqrt{z}\right)z^4 + 2\left(8z^4 + 136z^3 - 58z^2 + 120z - 315\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(8z^4 + 128z^3 - 150z^2 + 420z + 315\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1145.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, 3; z\right) = \frac{1}{31\,185z^{3/2}}\left(2\left(\sqrt{z}\,I_0\left(2\sqrt{z}\right)\left(512z^5 + 64\pi(4z-77)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^4 - 9984z^4 + 2368z^3 + 1488z^2 + 3780z + 11\,025\right) - I_1\left(2\sqrt{z}\right)\left(256z^5 + 64\pi(4z-77)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{9/2} - 4864z^4 - 1088z^3 - 1872z^2 - 6300z + 11\,025\right)\right)\right)$$

07.22.03.1146.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, 3; -z\right) = \frac{1}{31\,185z^{3/2}}\left(2\left(J_1\left(2\sqrt{z}\right)\left(-256z^5 + 64\pi(4z+77)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{9/2} - 4864z^4 + 1088z^3 - 1872z^2 + 6300z + 11\,025\right) - \sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(-512z^5 + 64\pi(4z+77)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^4 - 9984z^4 - 2368z^3 + 1488z^2 - 3780z + 11\,025\right)\right)\right)$$

07.22.03.1147.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, \frac{7}{2}; z\right) = \frac{1}{2304z^{5/2}}\left(16(z-21)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^5 - 2\left(4z^5 - 82z^4 - 36z^3 - 81z^2 - 315z + 945\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(-4z^5 + 78z^4 + 96z^3 + 315z^2 + 945z + 945\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1148.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, \frac{7}{2}; -z\right) = \frac{1}{2304z^{5/2}}\left(16(z+21)\,\mathrm{Si}\left(2\sqrt{z}\right)z^5 + 2\left(4z^5 + 82z^4 - 36z^3 + 81z^2 - 315z - 945\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^5 + 78z^4 - 96z^3 + 315z^2 - 945z + 945\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1149.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, 4; z\right) = \frac{1}{135\,135\,z^{5/2}}$$
$$\left(2\left(2\sqrt{z}\ I_0\left(2\sqrt{z}\right)\left(512\,z^6 + 64\,\pi\,(4\,z-91)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^5 - 11\,776\,z^5 + 2816\,z^4 + 1824\,z^3 + 5040\,z^2 + 22\,050\,z - 99\,225\right) - I_1\left(2\sqrt{z}\right)\left(512\,z^6 + 128\,\pi\,(4\,z-91)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{11/2} - 11\,520\,z^5 - 2624\,z^4 - 4752\,z^3 - 18\,900\,z^2 - 55\,125\,z - 198\,450\right)\right)\right)$$

07.22.03.1150.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, 4; -z\right) = \frac{1}{135\,135\,z^{5/2}}$$
$$\left(2\left(J_1\left(2\sqrt{z}\right)\left(-512\,z^6 + 128\,\pi\,(4\,z+91)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{11/2} - 11\,520\,z^5 + 2624\,z^4 - 4752\,z^3 + 18\,900\,z^2 - 55\,125\,z + 198\,450\right) - 2\sqrt{z}\ J_0\left(2\sqrt{z}\right)\left(-512\,z^6 + 64\,\pi\,(4\,z+91)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^5 - 11\,776\,z^5 - 2816\,z^4 + 1824\,z^3 - 5040\,z^2 + 22\,050\,z + 99\,225\right)\right)\right)$$

07.22.03.1151.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, \frac{9}{2}; z\right) =$$
$$\frac{1}{9216\,z^{7/2}}\left(16\,(2\,z-49)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^6 - 2\left(8\,z^6 - 192\,z^5 - 86\,z^4 - 204\,z^3 - 945\,z^2 - 2520\,z - 23\,625\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(-8\,z^6 + 184\,z^5 + 234\,z^4 + 840\,z^3 + 4095\,z^2 - 34\,020\,z - 23\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1152.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, \frac{9}{2}; -z\right) =$$
$$\frac{1}{9216\,z^{7/2}}\left(16\,(2\,z+49)\,\mathrm{Si}\left(2\sqrt{z}\right)z^6 + 2\left(8\,z^6 + 192\,z^5 - 86\,z^4 + 204\,z^3 - 945\,z^2 + 2520\,z - 23\,625\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(8\,z^6 + 184\,z^5 - 234\,z^4 + 840\,z^3 - 4095\,z^2 - 34\,020\,z + 23\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1153.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, 5; z\right) =$$
$$\frac{1}{2\,027\,025\,z^{7/2}}\left(8\left(\sqrt{z}\ I_0\left(2\sqrt{z}\right)\left(2048\,z^7 + 256\,\pi\,(4\,z-105)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^6 - 54\,272\,z^6 + 13\,056\,z^5 + 8640\,z^4 + 25\,200\,z^3 + 132\,300\,z^2 + 297\,675\,z + 6\,548\,850\right) - 2\,I_1\left(2\sqrt{z}\right)\left(512\,z^7 + 128\,\pi\,(4\,z-105)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{13/2} - 13\,312\,z^6 - 3072\,z^5 - 5760\,z^4 - 25\,200\,z^3 - 132\,300\,z^2 + 1\,786\,050\,z + 3\,274\,425\right)\right)\right)$$

07.22.03.1154.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, 5; -z\right) =$$
$$\frac{1}{2\,027\,025\,z^{7/2}}\left(8\left(2\,J_1\left(2\sqrt{z}\right)\left(-512\,z^7 + 128\,\pi\,(4\,z+105)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{13/2} - 13\,312\,z^6 + 3072\,z^5 - 5760\,z^4 + 25\,200\,z^3 - 132\,300\,z^2 - 1\,786\,050\,z + 3\,274\,425\right) - \sqrt{z}\ J_0\left(2\sqrt{z}\right)\left(-2048\,z^7 + 256\,\pi\,(4\,z+105)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^6 - 54\,272\,z^6 - 13\,056\,z^5 + 8640\,z^4 - 25\,200\,z^3 + 132\,300\,z^2 - 297\,675\,z + 6\,548\,850\right)\right)\right)$$

07.22.03.1155.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, \frac{11}{2}; z\right) = \frac{1}{16\,384\,z^{9/2}}$$
$$\left(32\,(z-28)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^7 - 2\left(8\,z^7 - 220\,z^6 - 100\,z^5 - 246\,z^4 - 1260\,z^3 - 6930\,z^2 + 141\,750\,z + 496\,125\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(-8\,z^7 + 212\,z^6 + 276\,z^5 + 1050\,z^4 + 6300\,z^3 + 5670\,z^2 + 803\,250\,z + 496\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1156.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, \frac{11}{2}; -z\right) = \frac{1}{16\,384\,z^{9/2}}$$
$$\left(32\,(z+28)\,\mathrm{Si}\left(2\sqrt{z}\right)z^7 + 2\left(8\,z^7 + 220\,z^6 - 100\,z^5 + 246\,z^4 - 1260\,z^3 + 6930\,z^2 + 141\,750\,z - 496\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(8\,z^7 + 212\,z^6 - 276\,z^5 + 1050\,z^4 - 6300\,z^3 + 5670\,z^2 - 803\,250\,z + 496\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1157.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, 6; z\right) =$$
$$\frac{1}{6\,891\,885\,z^{9/2}}\left(8\left(2\sqrt{z}\,I_0\left(2\sqrt{z}\right)\left(2048\,z^8 + 256\,\pi\,(4\,z-119)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^7 - 61\,440\,z^7 + 14\,848\,z^6 + 9984\,z^5 + 30\,240\,z^4 + 176\,400\,z^3 + 992\,250\,z^2 - 29\,469\,825\,z - 170\,270\,100\right) - I_1\left(2\sqrt{z}\right)\left(2048\,z^8 + 512\,\pi\,(4\,z-119)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{15/2} - 60\,416\,z^7 - 14\,080\,z^6 - 27\,072\,z^5 - 126\,000\,z^4 - 837\,900\,z^3 + 893\,025\,z^2 - 229\,209\,750\,z - 340\,540\,200\right)\right)\right)$$

07.22.03.1158.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{3}{2}, 6; -z\right) = \frac{1}{6\,891\,885\,z^{9/2}}$$
$$\left(8\left(J_1\left(2\sqrt{z}\right)\left(-2048\,z^8 + 512\,\pi\,(4\,z+119)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{15/2} - 60\,416\,z^7 + 14\,080\,z^6 - 27\,072\,z^5 + 126\,000\,z^4 - 837\,900\,z^3 - 893\,025\,z^2 - 229\,209\,750\,z + 340\,540\,200\right) - 2\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(-2048\,z^8 + 256\,\pi\,(4\,z+119)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^7 - 61\,440\,z^7 - 14\,848\,z^6 + 9984\,z^5 - 30\,240\,z^4 + 176\,400\,z^3 - 992\,250\,z^2 - 29\,469\,825\,z + 170\,270\,100\right)\right)\right)$$

For fixed z and $a_1 = -\frac{7}{2}$, $b_1 = -\frac{1}{2}$

07.22.03.1159.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, -\frac{1}{2}; z\right) =$$
$$\left(2\,z^2 - 28\,z + 35\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^{3/2} + \frac{1}{4}\left(\left(-4\,z^3 + 54\,z^2 - 48\,z + 4\right)\cosh\left(2\sqrt{z}\right) + \sqrt{z}\,\left(-2\,z^2 + 25\,z - 8\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1160.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, -\frac{1}{2}; -z\right) =$$
$$\left(2\,z^2 + 28\,z + 35\right)\mathrm{Si}\left(2\sqrt{z}\right)z^{3/2} + \frac{1}{4}\left(2\,z^2 + 25\,z + 8\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(z^3 + \frac{27\,z^2}{2} + 12\,z + 1\right)\cos\left(2\sqrt{z}\right)$$

07.22.03.1161.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, \frac{1}{2}; z\right) =$$
$$\frac{1}{24}\left(-4\left(2\,z^2 - 42\,z + 105\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^{3/2} + \left(2\,z^2 - 39\,z + 57\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + 2\left(2\,z^3 - 41\,z^2 + 87\,z + 12\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.1162.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, \frac{1}{2}; -z\right) =$$
$$\frac{1}{24}\left(-4\left(2z^2+42z+105\right)\text{Si}\left(2\sqrt{z}\right)z^{3/2} - \left(2z^2+39z+57\right)\sin\left(2\sqrt{z}\right)\sqrt{z} - 2\left(2z^3+41z^2+87z-12\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.1163.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, 1; z\right) = \frac{1}{105}\left(\sqrt{z}\, I_1\left(2\sqrt{z}\right)\left(\pi\left(16z^2-392z+1225\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2} + 2\left(8z^3-194z^2+568z+71\right)\right) + I_0\left(2\sqrt{z}\right)\left(-32z^4+792z^3+\pi\left(-16z^2+392z-1225\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^2 - 2640z^2+488z+105\right)\right)$$

07.22.03.1164.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, 1; -z\right) = \frac{1}{105}\left(\sqrt{z}\, J_1\left(2\sqrt{z}\right)\left(2\left(8z^3+194z^2+568z-71\right) - \pi z^{3/2}\left(16z^2+392z+1225\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)\right) + J_0\left(2\sqrt{z}\right)\left(-32z^4-792z^3+\pi\left(16z^2+392z+1225\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^2 - 2640z^2-488z+105\right)\right)$$

07.22.03.1165.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, \frac{3}{2}; z\right) = \frac{1}{384\sqrt{z}}\left(-16\left(z^2-28z+105\right)\text{Shi}\left(2\sqrt{z}\right)z^2 + 2\left(4z^3-110z^2+370z+87\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^3-106z^2+282z+105\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1166.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, \frac{3}{2}; -z\right) = \frac{1}{384\sqrt{z}}$$
$$\left(-16\left(z^2+28z+105\right)\text{Si}\left(2\sqrt{z}\right)z^2 - 2\left(4z^3+110z^2+370z-87\right)\cos\left(2\sqrt{z}\right)\sqrt{z} - \left(4z^3+106z^2+282z-105\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1167.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, 2; z\right) =$$
$$\frac{1}{945}\left(\frac{1}{\sqrt{z}}\left(I_1\left(2\sqrt{z}\right)\left(32z^4-1000z^3+2\pi\left(16z^2-504z+2205\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}+4176z^2+648z+315\right)\right) - 2\, I_0\left(2\sqrt{z}\right)\left(32z^4-1016z^3+\pi\left(16z^2-504z+2205\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^2+4656z^2-936z-315\right)\right)$$

07.22.03.1168.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, 2; -z\right) = \frac{1}{945}\left(2\, J_0\left(2\sqrt{z}\right)\left(-32z^4-1016z^3+\pi\left(16z^2+504z+2205\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^2-4656z^2-936z+315\right) - \frac{1}{\sqrt{z}}\left(J_1\left(2\sqrt{z}\right)\left(-32z^4-1000z^3+2\pi\left(16z^2+504z+2205\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-4176z^2+648z-315\right)\right)\right)$$

07.22.03.1169.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, \frac{5}{2}; z\right) = \frac{1}{1280z^{3/2}}\left(-16\left(z^2-35z+175\right)\text{Shi}\left(2\sqrt{z}\right)z^3 + 2\left(4z^4-138z^3+636z^2+185z+105\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^4-134z^3+520z^2+315z-105\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1170.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, \frac{5}{2}; -z\right) = \frac{1}{1280\, z^{3/2}}\left(-16\left(z^2+35\,z+175\right)\mathrm{Si}\left(2\sqrt{z}\right)z^3 - 2\left(4\,z^4+138\,z^3+636\,z^2-185\,z+105\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(-4\,z^4-134\,z^3-520\,z^2+315\,z+105\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1171.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, 3; z\right) = \frac{1}{10\,395\, z^{3/2}}\left(2\left(I_1\left(2\sqrt{z}\right)\left(64\,z^5-2448\,z^4+4\,\pi\left(16\,z^2-616\,z+3465\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2}+13\,280\,z^3+2304\,z^2+1890\,z-1575\right) - \sqrt{z}\, I_0\left(2\sqrt{z}\right)\left(128\,z^5-4960\,z^4+4\,\pi\left(16\,z^2-616\,z+3465\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^3+28\,928\,z^3-6096\,z^2-2520\,z-1575\right)\right)\right)$$

07.22.03.1172.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, 3; -z\right) = \frac{1}{10\,395\, z^{3/2}}\left(2\left(\sqrt{z}\, J_0\left(2\sqrt{z}\right)\left(-128\,z^5-4960\,z^4+4\,\pi\left(16\,z^2+616\,z+3465\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^3-28\,928\,z^3-6096\,z^2+2520\,z-1575\right) - J_1\left(2\sqrt{z}\right)\left(-64\,z^5-2448\,z^4+4\,\pi\left(16\,z^2+616\,z+3465\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2}-13\,280\,z^3+2304\,z^2-1890\,z-1575\right)\right)\right)$$

07.22.03.1173.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, \frac{7}{2}; z\right) = \frac{1}{6144\, z^{5/2}}\left(-16\left(2\,z^2-84\,z+525\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^4+2\left(8\,z^5-332\,z^4+1944\,z^3+636\,z^2+630\,z-945\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(8\,z^5-324\,z^4+1656\,z^3+1260\,z^2+630\,z+945\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1174.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, \frac{7}{2}; -z\right) = \frac{1}{6144\, z^{5/2}}\left(-16\left(2\,z^2+84\,z+525\right)\mathrm{Si}\left(2\sqrt{z}\right)z^4-2\left(8\,z^5+332\,z^4+1944\,z^3-636\,z^2+630\,z+945\right)\cos\left(2\sqrt{z}\right)\sqrt{z} - \left(8\,z^5+324\,z^4+1656\,z^3-1260\,z^2+630\,z-945\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1175.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, 4; z\right) = \frac{1}{45\,045\, z^{5/2}}\left(2\left(I_1\left(2\sqrt{z}\right)\left(128\,z^6-5792\,z^5+8\,\pi\left(16\,z^2-728\,z+5005\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{9/2}+38\,656\,z^4+7184\,z^3+7560\,z^2+1575\,z+22\,050\right)-2\sqrt{z}\, I_0\left(2\sqrt{z}\right)\left(128\,z^6-5856\,z^5+4\,\pi\left(16\,z^2-728\,z+5005\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^4+41\,472\,z^4-9008\,z^3-4200\,z^2-4725\,z+11\,025\right)\right)\right)$$

07.22.03.1176.01

$$ {}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, 4; -z\right) = \frac{1}{45\,045\, z^{5/2}} \left(2\left(2\sqrt{z}\, J_0\left(2\sqrt{z}\right)\left(-128 z^6 - 5856 z^5 + 4\pi\left(16 z^2 + 728 z + 5005\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^4 - 41\,472 z^4 - 9008 z^3 + 4200 z^2 - 4725 z - 11\,025\right) - J_1\left(2\sqrt{z}\right)\left(-128 z^6 - 5792 z^5 + 8\pi\left(16 z^2 + 728 z + 5005\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{9/2} - 38\,656 z^4 + 7184 z^3 - 7560 z^2 + 1575 z - 22\,050\right)\right)\right) $$

07.22.03.1177.01

$$ {}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, \frac{9}{2}; z\right) = \frac{1}{12\,288\, z^{7/2}} \left(-16\left(2 z^2 - 98 z + 735\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^5 + 2\left(8 z^6 - 388 z^5 + 2756 z^4 + 972 z^3 + 1260 z^2 - 315 z + 9450\right) \cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(8 z^6 - 380 z^5 + 2412 z^4 + 2100 z^3 + 2520 z^2 - 12\,285 z - 9450\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.1178.01

$$ {}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, \frac{9}{2}; -z\right) = \frac{1}{12\,288\, z^{7/2}} \left(-16\left(2 z^2 + 98 z + 735\right) \mathrm{Si}\left(2\sqrt{z}\right) z^5 - 2\left(8 z^6 + 388 z^5 + 2756 z^4 - 972 z^3 + 1260 z^2 + 315 z + 9450\right) \cos\left(2\sqrt{z}\right)\sqrt{z} - \left(8 z^6 + 380 z^5 + 2412 z^4 - 2100 z^3 + 2520 z^2 + 12\,285 z - 9450\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.1179.01

$$ {}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, 5; z\right) = \frac{1}{675\,675\, z^{7/2}} \left(8\left(2 I_1\left(2\sqrt{z}\right)\left(128 z^7 - 6688 z^6 + 8\pi\left(16 z^2 - 840 z + 6825\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{11/2} + 52\,992 z^5 + 10\,320 z^4 + 12\,600 z^3 + 14\,175 z^2 - 132\,300 z - 297\,675\right) - \sqrt{z}\, I_0\left(2\sqrt{z}\right)\left(512 z^7 - 27\,008 z^6 + 16\pi\left(16 z^2 - 840 z + 6825\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^5 + 225\,024 z^5 - 49\,920 z^4 - 25\,200 z^3 - 37\,800 z^2 + 33\,075 z - 595\,350\right)\right)\right) $$

07.22.03.1180.01

$$ {}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, 5; -z\right) = \frac{1}{675\,675\, z^{7/2}} \left(8\left(\sqrt{z}\, J_0\left(2\sqrt{z}\right)\left(-512 z^7 - 27\,008 z^6 + 16\pi\left(16 z^2 + 840 z + 6825\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^5 - 225\,024 z^5 - 49\,920 z^4 + 25\,200 z^3 - 37\,800 z^2 - 33\,075 z - 595\,350\right) - 2 J_1\left(2\sqrt{z}\right)\left(-128 z^7 - 6688 z^6 + 8\pi\left(16 z^2 + 840 z + 6825\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{11/2} - 52\,992 z^5 + 10\,320 z^4 - 12\,600 z^3 + 14\,175 z^2 + 132\,300 z - 297\,675\right)\right)\right) $$

07.22.03.1181.01

$$ {}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, \frac{11}{2}; z\right) = \frac{1}{65\,536\, z^{9/2}} \left(3\left(-32\left(z^2 - 56 z + 490\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^6 + 2\left(8 z^7 - 444 z^6 + 3708 z^5 + 1378 z^4 + 2100 z^3 + 1890 z^2 - 34\,650 z - 165\,375\right) \cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(8 z^7 - 436 z^6 + 3308 z^5 + 3150 z^4 + 5460 z^3 - 14\,490 z^2 + 255\,150 z + 165\,375\right) \sinh\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1182.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, \frac{11}{2}; -z\right) = -\frac{1}{65\,536\,z^{9/2}}$$
$$\left(3\left(32\left(z^2+56z+490\right)\mathrm{Si}\left(2\sqrt{z}\right)z^6+2\left(8z^7+444z^6+3708z^5-1378z^4+2100z^3-1890z^2-34\,650z+165\,375\right)\right.\right.$$
$$\left.\left.\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8z^7+436z^6+3308z^5-3150z^4+5460z^3+14\,490z^2+255\,150z-165\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1183.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, 6; z\right) =$$
$$\frac{1}{2\,297\,295\,z^{9/2}}\left(8\left(I_1\left(2\sqrt{z}\right)\left(512z^8-30\,336z^7+32\pi\left(16z^2-952z+8925\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{13/2}+278\,272z^6+56\,064z^5+\right.\right.\right.$$
$$\left.\left.75\,600z^4+138\,600z^3-760\,725z^2+16\,074\,450z+26\,195\,400\right)-$$
$$2\sqrt{z}\,I_0\left(2\sqrt{z}\right)\left(512z^8-30\,592z^7+16\pi\left(16z^2-952z+8925\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^6+293\,120z^6-\right.$$
$$\left.\left.\left.66\,048z^5-35\,280z^4-63\,000z^3-33\,075z^2+1\,488\,375z+13\,097\,700\right)\right)\right)$$

07.22.03.1184.01

$${}_1F_2\left(-\frac{7}{2}; -\frac{1}{2}, 6; -z\right) =$$
$$\frac{1}{2\,297\,295\,z^{9/2}}\left(8\left(2\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(-512z^8-30\,592z^7+16\pi\left(16z^2+952z+8925\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^6-293\,120z^6-\right.\right.\right.$$
$$\left.\left.66\,048z^5+35\,280z^4-63\,000z^3+33\,075z^2+1\,488\,375z-13\,097\,700\right)-$$
$$J_1\left(2\sqrt{z}\right)\left(-512z^8-30\,336z^7+32\pi\left(16z^2+952z+8925\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{13/2}-278\,272z^6+\right.$$
$$\left.\left.\left.56\,064z^5-75\,600z^4+138\,600z^3+760\,725z^2+16\,074\,450z-26\,195\,400\right)\right)\right)$$

For fixed z and $a_1 = -\frac{7}{2}$, $b_1 = \frac{1}{2}$

07.22.03.1185.01

$${}_1F_2\left(-\frac{7}{2}; \frac{1}{2}, \frac{1}{2}; z\right) = \frac{1}{288}\left(\left(-8z^3+248z^2-1146z+288\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.\sqrt{z}\left(-4z^2+120z-471\right)\sinh\left(2\sqrt{z}\right)+4\sqrt{z}\left(4z^3-126z^2+630z-315\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.1186.01

$${}_1F_2\left(-\frac{7}{2}; \frac{1}{2}, \frac{1}{2}; -z\right) = \frac{1}{288}\left(2\left(4z^3+124z^2+573z+144\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\sqrt{z}\left(4z^2+120z+471\right)\sin\left(2\sqrt{z}\right)+4\sqrt{z}\left(4z^3+126z^2+630z+315\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)$$

07.22.03.1187.01

$${}_1F_2\left(-\frac{7}{2}; \frac{1}{2}, 1; z\right) =$$
$$\frac{1}{2520}\left(4\left(2\left(16z^4-592z^3+3819z^2-3576z+315\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\left(-16z^3+584z^2-3537z+2112\right)I_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi z\left(-64z^3+2352z^2-14\,700z+11\,025\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi z\left(64z^3-2352z^2+14\,700z-11\,025\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1188.01

$${}_1F_2\left(-\frac{7}{2};\frac{1}{2},1;-z\right)=$$
$$\frac{1}{2520}\left(4\left(2\left(16z^4+592z^3+3819z^2+3576z+315\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\left(16z^3+584z^2+3537z+2112\right)J_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi z\left(64z^3+2352z^2+14\,700z+11\,025\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\pi z\left(64z^3+2352z^2+14\,700z+11\,025\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1189.01

$${}_1F_2\left(-\frac{7}{2};\frac{1}{2},\frac{3}{2};z\right)=\frac{1}{2304\sqrt{z}}\left(-2\sqrt{z}\left(4z^3-166z^2+1182z-837\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(-4z^3+162z^2-1038z+315\right)\sinh\left(2\sqrt{z}\right)+16z\left(z^3-42z^2+315z-315\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.1190.01

$${}_1F_2\left(-\frac{7}{2};\frac{1}{2},\frac{3}{2};-z\right)=\frac{1}{2304\sqrt{z}}\left(2\sqrt{z}\left(4z^3+166z^2+1182z+837\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(4z^3+162z^2+1038z+315\right)\sin\left(2\sqrt{z}\right)+16z\left(z^3+42z^2+315z+315\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)$$

07.22.03.1191.01

$${}_1F_2\left(-\frac{7}{2};\frac{1}{2},2;z\right)=\frac{1}{11\,340\sqrt{z}}\left(\pi\left(-64z^3+3024z^2-26\,460z+33\,075\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+\right.$$
$$\pi\left(64z^3-3024z^2+26\,460z-33\,075\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2}+$$
$$\left.4\left(2\sqrt{z}\left(16z^4-760z^3+6801z^2-9792z+1260\right)I_0\left(2\sqrt{z}\right)+\left(-16z^4+752z^3-6435z^2+6984z+315\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1192.01

$${}_1F_2\left(-\frac{7}{2};\frac{1}{2},2;-z\right)=\frac{1}{11\,340\sqrt{z}}\left(\pi\left(64z^3+3024z^2+26\,460z+33\,075\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}-\right.$$
$$\pi\left(64z^3+3024z^2+26\,460z+33\,075\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{3/2}+$$
$$\left.4\left(2\sqrt{z}\left(16z^4+760z^3+6801z^2+9792z+1260\right)J_0\left(2\sqrt{z}\right)-\left(16z^4+752z^3+6435z^2+6984z-315\right)J_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1193.01

$${}_1F_2\left(-\frac{7}{2};\frac{1}{2},\frac{5}{2};z\right)=\frac{1}{15\,360z^{3/2}}\left(16\left(2z^3-105z^2+1050z-1575\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^2-\right.$$
$$\left.2\left(8z^4-416z^3+4002z^2-4740z-315\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(-8z^4+408z^3-3630z^2+2520z-315\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1194.01

$${}_1F_2\left(-\frac{7}{2};\frac{1}{2},\frac{5}{2};-z\right)=\frac{1}{15\,360z^{3/2}}\left(16\left(2z^3+105z^2+1050z+1575\right)\mathrm{Si}\left(2\sqrt{z}\right)z^2+\right.$$
$$\left.2\left(8z^4+416z^3+4002z^2+4740z-315\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8z^4+408z^3+3630z^2+2520z+315\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1195.01

$$ {}_1F_2\left(-\frac{7}{2};\frac{1}{2},3;z\right)= \frac{1}{31\,185\,z^{3/2}}\left(\pi\left(-64z^3+3696z^2-41\,580z+72\,765\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}+\pi\left(64z^3-3696z^2+41\,580z-72\,765\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{5/2}+2\left(\sqrt{z}\left(64z^5-3712z^4+42\,492z^3-82\,512z^2+12\,600z+945\right)I_0\left(2\sqrt{z}\right)+\left(-32z^5+1840z^4-20\,346z^3+32\,112z^2+2520z-945\right)I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1196.01

$$ {}_1F_2\left(-\frac{7}{2};\frac{1}{2},3;-z\right)= \frac{1}{31\,185\,z^{3/2}}\left(\pi\left(64z^3+3696z^2+41\,580z+72\,765\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-\pi\left(64z^3+3696z^2+41\,580z+72\,765\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{5/2}+2\left(\sqrt{z}\left(64z^5+3712z^4+42\,492z^3+82\,512z^2+12\,600z-945\right)J_0\left(2\sqrt{z}\right)-\left(32z^5+1840z^4+20\,346z^3+32\,112z^2-2520z-945\right)J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1197.01

$$ {}_1F_2\left(-\frac{7}{2};\frac{1}{2},\frac{7}{2};z\right)= \frac{1}{36\,864\,z^{5/2}}\left(16\left(2z^3-126z^2+1575z-3150\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^3-2\left(8z^5-500z^4+6060z^3-10\,116z^2-1260z+945\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(-8z^5+492z^4-5604z^3+6300z^2+945\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.1198.01

$$ {}_1F_2\left(-\frac{7}{2};\frac{1}{2},\frac{7}{2};-z\right)= \frac{1}{36\,864\,z^{5/2}}\left(16\left(2z^3+126z^2+1575z+3150\right)\mathrm{Si}\left(2\sqrt{z}\right)z^3+2\left(8z^5+500z^4+6060z^3+10\,116z^2-1260z-945\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8z^5+492z^4+5604z^3+6300z^2+945\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.1199.01

$$ {}_1F_2\left(-\frac{7}{2};\frac{1}{2},4;z\right)= \frac{1}{135\,135\,z^{5/2}}\left(2\left(\sqrt{z}\,I_0\left(2\sqrt{z}\right)\left(\pi\left(64z^3-4368z^2+60\,060z-135\,135\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^3+2\left(64z^6-4384z^5+61\,140z^4-149\,376z^3+25\,200z^2+3780z-4725\right)\right)-I_1\left(2\sqrt{z}\right)\left(64z^6-4352z^5+59\,004z^4+\pi\left(64z^3-4368z^2+60\,060z-135\,135\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2}-122\,352z^3-12\,600z^2+2835z-9450\right)\right)\right) $$

07.22.03.1200.01

$$ {}_1F_2\left(-\frac{7}{2};\frac{1}{2},4;-z\right)= \frac{1}{135\,135\,z^{5/2}}\left(2\left(J_1\left(2\sqrt{z}\right)\left(-64z^6-4352z^5-59\,004z^4+\pi\left(64z^3+4368z^2+60\,060z+135\,135\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2}-122\,352z^3+12\,600z^2+2835z+9450\right)-\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(\pi z^3\left(64z^3+4368z^2+60\,060z+135\,135\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)-2\left(64z^6+4384z^5+61\,140z^4+149\,376z^3+25\,200z^2-3780z-4725\right)\right)\right)\right) $$

07.22.03.1201.01

$${}_1F_2\left(-\frac{7}{2};\frac{1}{2},\frac{9}{2};z\right)=\frac{1}{147\,456\,z^{7/2}}$$
$$\left(16\left(4z^3-294z^2+4410z-11\,025\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^4-2\left(16z^6-1168z^5+17\,076z^4-36\,864z^3-6300z^2+3780z-14\,175\right)\right.$$
$$\left.\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(-16z^6+1152z^5-15\,996z^4+25\,200z^3+3780z^2-15\,120z-14\,175\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1202.01

$${}_1F_2\left(-\frac{7}{2};\frac{1}{2},\frac{9}{2};-z\right)=\frac{1}{147\,456\,z^{7/2}}$$
$$\left(16\left(4z^3+294z^2+4410z+11\,025\right)\operatorname{Si}\left(2\sqrt{z}\right)z^4+2\left(16z^6+1168z^5+17\,076z^4+36\,864z^3-6300z^2-3780z-14\,175\right)\right.$$
$$\left.\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(16z^6+1152z^5+15\,996z^4+25\,200z^3-3780z^2-15\,120z+14\,175\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1203.01

$${}_1F_2\left(-\frac{7}{2};\frac{1}{2},5;z\right)=$$
$$\frac{1}{2\,027\,025\,z^{7/2}}\left(8\left(\sqrt{z}\,I_0\left(2\sqrt{z}\right)\left(256z^7-20\,224z^6+332\,592z^5+2\pi\left(64z^3-5040z^2+81\,900z-225\,225\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^4-\right.\right.\right.$$
$$\left.\left.979\,200z^4+176\,400z^3+37\,800z^2-42\,525z+198\,450\right)-2\,I_1\left(2\sqrt{z}\right)\left(64z^7-5024z^6+80\,676z^5+\right.\right.$$
$$\left.\left.\left.\pi\left(64z^3-5040z^2+81\,900z-225\,225\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{9/2}-207\,360z^4-25\,200z^3+28\,350z+99\,225\right)\right)\right)$$

07.22.03.1204.01

$${}_1F_2\left(-\frac{7}{2};\frac{1}{2},5;-z\right)=$$
$$\frac{1}{2\,027\,025\,z^{7/2}}\left(8\left(2\,J_1\left(2\sqrt{z}\right)\left(-64z^7-5024z^6-80\,676z^5+\pi\left(64z^3+5040z^2+81\,900z+225\,225\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{9/2}-\right.\right.\right.$$
$$\left.\left.207\,360z^4+25\,200z^3-28\,350z+99\,225\right)-$$
$$\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(-256z^7-20\,224z^6-332\,592z^5+2\pi\left(64z^3+5040z^2+81\,900z+225\,225\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^4-\right.$$
$$\left.\left.\left.979\,200z^4-176\,400z^3+37\,800z^2+42\,525z+198\,450\right)\right)\right)$$

07.22.03.1205.01

$${}_1F_2\left(-\frac{7}{2};\frac{1}{2},\frac{11}{2};z\right)=\frac{1}{131\,072\,z^{9/2}}\left(32\left(z^3-84z^2+1470z-4410\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^5-\right.$$
$$2\left(8z^7-668z^6+11\,436z^5-30\,318z^4-6300z^3+1890z^2+9450z+99\,225\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left.\left(-8z^7+660z^6-10\,812z^5+22\,050z^4+6300z^3-20\,790z^2+141\,750z+99\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1206.01

$${}_1F_2\left(-\frac{7}{2};\frac{1}{2},\frac{11}{2};-z\right)=\frac{1}{131\,072\,z^{9/2}}$$
$$\left(32\left(z^3+84z^2+1470z+4410\right)\operatorname{Si}\left(2\sqrt{z}\right)z^5+2\left(8z^7+668z^6+11\,436z^5+30\,318z^4-6300z^3-1890z^2+9450z-99\,225\right)\right.$$
$$\left.\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8z^7+660z^6+10\,812z^5+22\,050z^4-6300z^3-20\,790z^2-141\,750z+99\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1207.01

$${}_1F_2\left(-\frac{7}{2};\frac{1}{2},6;z\right)=$$
$$\frac{1}{6\,891\,885\,z^{9/2}}\left(8\left(2\sqrt{z}\;I_0\left(2\sqrt{z}\right)\left(256\,z^8-22\,912\,z^7+434\,064\,z^6+2\,\pi\left(64\,z^3-5712\,z^2+107\,100\,z-348\,075\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^5-\right.\right.\right.$$
$$\left.\left.\left.1\,495\,296\,z^5+282\,240\,z^4+75\,600\,z^3-56\,700\,z^2-99\,225\,z-3\,572\,100\right)-\right.$$
$$\left.I_1\left(2\sqrt{z}\right)\left(256\,z^8-22\,784\,z^7+422\,832\,z^6+4\,\pi\left(64\,z^3-5712\,z^2+107\,100\,z-348\,075\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{11/2}-\right.\right.$$
$$\left.\left.1\,297\,152\,z^5-176\,400\,z^4-37\,800\,z^3+382\,725\,z^2-3\,770\,550\,z-7\,144\,200\right)\right)\right)$$

07.22.03.1208.01

$${}_1F_2\left(-\frac{7}{2};\frac{1}{2},6;-z\right)=$$
$$\frac{1}{6\,891\,885\,z^{9/2}}\left(8\left(J_1\left(2\sqrt{z}\right)\left(-256\,z^8-22\,784\,z^7-422\,832\,z^6+4\,\pi\left(64\,z^3+5712\,z^2+107\,100\,z+348\,075\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{11/2}-\right.\right.\right.$$
$$\left.\left.\left.1\,297\,152\,z^5+176\,400\,z^4-37\,800\,z^3-382\,725\,z^2-3\,770\,550\,z+7\,144\,200\right)-\right.$$
$$\left.2\sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(-256\,z^8-22\,912\,z^7-434\,064\,z^6+2\,\pi\left(64\,z^3+5712\,z^2+107\,100\,z+348\,075\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^5-\right.\right.$$
$$\left.\left.1\,495\,296\,z^5-282\,240\,z^4+75\,600\,z^3+56\,700\,z^2-99\,225\,z+3\,572\,100\right)\right)\right)$$

For fixed z and $a_1 = -\frac{7}{2}$, $b_1 = 1$

07.22.03.1209.01

$${}_1F_2\left(-\frac{7}{2};1,1;z\right)=\frac{1}{11\,025}\left(\left(128\,z^4-5536\,z^3+44\,888\,z^2-62\,580\,z+11\,025\right)I_0\left(\sqrt{z}\right)^2-\right.$$
$$\left.8\sqrt{z}\;\left(16\,z^3-680\,z^2+5119\,z-4620\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+4\,z\left(-32\,z^3+1368\,z^2-10\,554\,z+10\,973\right)I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.1210.01

$${}_1F_2\left(-\frac{7}{2};1,1;-z\right)=\frac{1}{11\,025}\left(\left(128\,z^4+5536\,z^3+44\,888\,z^2+62\,580\,z+11\,025\right)J_0\left(\sqrt{z}\right)^2-\right.$$
$$\left.8\sqrt{z}\;\left(16\,z^3+680\,z^2+5119\,z+4620\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+4\,z\left(32\,z^3+1368\,z^2+10\,554\,z+10\,973\right)J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.1211.01

$${}_1F_2\left(-\frac{7}{2};1,\frac{3}{2};z\right)=\frac{1}{80\,640}$$
$$\left(4\left(2\left(64\,z^4-3152\,z^3+30\,172\,z^2-50\,907\,z+10\,080\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\;\left(-64\,z^3+3120\,z^2-28\,652\,z+38\,289\right)I_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\left(-256\,z^4+12\,544\,z^3-117\,600\,z^2+176\,400\,z-11\,025\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(256\,z^4-12\,544\,z^3+117\,600\,z^2-176\,400\,z+11\,025\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1212.01

$${}_1F_2\left(-\frac{7}{2};1,\frac{3}{2};-z\right)=\frac{1}{80\,640}$$
$$\left(4\left(2\left(64\,z^4+3152\,z^3+30\,172\,z^2+50\,907\,z+10\,080\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\;\left(64\,z^3+3120\,z^2+28\,652\,z+38\,289\right)J_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\left(256\,z^4+12\,544\,z^3+117\,600\,z^2+176\,400\,z+11\,025\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\pi\left(256\,z^4+12\,544\,z^3+117\,600\,z^2+176\,400\,z+11\,025\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1213.01

$${}_1F_2\left(-\frac{7}{2};\,1,\,2;\,z\right)=$$
$$\frac{1}{99\,225}\left(\left(256\,z^4-14\,208\,z^3+159\,552\,z^2-342\,720\,z+99\,225\right)I_0\left(\sqrt{z}\right)^2-8\sqrt{z}\,\left(32\,z^3-1752\,z^2+18\,666\,z-30\,555\right)\right.$$
$$\left.I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(-256\,z^4+14\,080\,z^3-152\,640\,z^2+272\,808\,z-11\,025\right)I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.1214.01

$${}_1F_2\left(-\frac{7}{2};\,1,\,2;\,-z\right)=$$
$$\frac{1}{99\,225}\left(\left(256\,z^4+14\,208\,z^3+159\,552\,z^2+342\,720\,z+99\,225\right)J_0\left(\sqrt{z}\right)^2-8\sqrt{z}\,\left(32\,z^3+1752\,z^2+18\,666\,z+30\,555\right)\right.$$
$$\left.J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(256\,z^4+14\,080\,z^3+152\,640\,z^2+272\,808\,z+11\,025\right)J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.1215.01

$${}_1F_2\left(-\frac{7}{2};\,1,\,\frac{5}{2};\,z\right)=\frac{1}{1\,075\,200\,z}\left(4\left(2\,z\left(256\,z^4-15\,744\,z^3+199\,872\,z^2-487\,240\,z+138\,075\right)I_0\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\sqrt{z}\,\left(-256\,z^4+15\,616\,z^3-192\,224\,z^2+399\,920\,z-11\,025\right)I_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(-1024\,z^5+62\,720\,z^4-784\,000\,z^3+1\,764\,000\,z^2-220\,500\,z+11\,025\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(1024\,z^5-62\,720\,z^4+784\,000\,z^3-1\,764\,000\,z^2+220\,500\,z-11\,025\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1216.01

$${}_1F_2\left(-\frac{7}{2};\,1,\,\frac{5}{2};\,-z\right)=\frac{1}{1\,075\,200\,z}\left(4\left(2\,z\left(256\,z^4+15\,744\,z^3+199\,872\,z^2+487\,240\,z+138\,075\right)J_0\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\sqrt{z}\,\left(256\,z^4+15\,616\,z^3+192\,224\,z^2+399\,920\,z+11\,025\right)J_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(1024\,z^5+62\,720\,z^4+784\,000\,z^3+1\,764\,000\,z^2+220\,500\,z+11\,025\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\pi\left(1024\,z^5+62\,720\,z^4+784\,000\,z^3+1\,764\,000\,z^2+220\,500\,z+11\,025\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1217.01

$${}_1F_2\left(-\frac{7}{2};\,1,\,3;\,z\right)=\frac{1}{1\,091\,475\,z}$$
$$\left(4\left(z\left(256\,z^4-17\,344\,z^3+248\,928\,z^2-721\,980\,z+275\,625\right)I_0\left(\sqrt{z}\right)^2+\sqrt{z}\,\left(-256\,z^4+17\,152\,z^3-236\,352\,z^2+561\,960\,z-\right.\right.\right.$$
$$\left.\left.\left.11\,025\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(-256\,z^5+17\,216\,z^4-240\,448\,z^3+609\,732\,z^2-55\,125\,z+11\,025\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1218.01

$${}_1F_2\left(-\frac{7}{2};\,1,\,3;\,-z\right)=\frac{1}{1\,091\,475\,z}$$
$$\left(4\left(z\left(256\,z^4+17\,344\,z^3+248\,928\,z^2+721\,980\,z+275\,625\right)J_0\left(\sqrt{z}\right)^2-\sqrt{z}\,\left(256\,z^4+17\,152\,z^3+236\,352\,z^2+561\,960\,z+\right.\right.\right.$$
$$\left.\left.\left.11\,025\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(256\,z^5+17\,216\,z^4+240\,448\,z^3+609\,732\,z^2+55\,125\,z+11\,025\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1219.01

$$
{}_1F_2\left(-\frac{7}{2}; 1, \frac{7}{2}; z\right) =
$$

$$
\frac{1}{10\,321\,920\,z^2}\left(4\left(2\,z\left(1024\,z^5 - 75\,520\,z^4 + 1\,194\,624\,z^3 - 3\,808\,608\,z^2 + 1\,369\,620\,z - 33\,075\right) I_0\left(2\sqrt{z}\right) + \sqrt{z}\right.\right.
$$

$$
\left.\left(-1024\,z^5 + 75\,008\,z^4 - 1\,157\,760\,z^3 + 3\,272\,736\,z^2 - 220\,500\,z + 99\,225\right) I_1\left(2\sqrt{z}\right)\right) +
$$

$$
\pi\left(-4096\,z^6 + 301\,056\,z^5 - 4\,704\,000\,z^4 + 14\,112\,000\,z^3 - 2\,646\,000\,z^2 + 264\,600\,z - 99\,225\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) +
$$

$$
\left.\pi\left(4096\,z^6 - 301\,056\,z^5 + 4\,704\,000\,z^4 - 14\,112\,000\,z^3 + 2\,646\,000\,z^2 - 264\,600\,z + 99\,225\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)
$$

07.22.03.1220.01

$$
{}_1F_2\left(-\frac{7}{2}; 1, \frac{7}{2}; -z\right) =
$$

$$
\frac{1}{10\,321\,920\,z^2}\left(4\left(2\,z\left(1024\,z^5 + 75\,520\,z^4 + 1\,194\,624\,z^3 + 3\,808\,608\,z^2 + 1\,369\,620\,z + 33\,075\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\right.\right.
$$

$$
\left.\left(1024\,z^5 + 75\,008\,z^4 + 1\,157\,760\,z^3 + 3\,272\,736\,z^2 + 220\,500\,z + 99\,225\right) J_1\left(2\sqrt{z}\right)\right) +
$$

$$
\pi\left(4096\,z^6 + 301\,056\,z^5 + 4\,704\,000\,z^4 + 14\,112\,000\,z^3 + 2\,646\,000\,z^2 + 264\,600\,z + 99\,225\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) -
$$

$$
\left.\pi\left(4096\,z^6 + 301\,056\,z^5 + 4\,704\,000\,z^4 + 14\,112\,000\,z^3 + 2\,646\,000\,z^2 + 264\,600\,z + 99\,225\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)
$$

07.22.03.1221.01

$$
{}_1F_2\left(-\frac{7}{2}; 1, 4; z\right) = \frac{1}{4\,729\,725\,z^2}\left(4\left(2\,z\left(256\,z^5 - 20\,480\,z^4 + 357\,904\,z^3 - 1\,307\,040\,z^2 + 606\,375\,z - 11\,025\right) I_0\left(\sqrt{z}\right)^2 +\right.\right.
$$

$$
2\sqrt{z}\left(-256\,z^5 + 20\,288\,z^4 - 342\,976\,z^3 + 1\,070\,580\,z^2 - 55\,125\,z + 44\,100\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) +
$$

$$
\left.\left.\left(-512\,z^6 + 40\,704\,z^5 - 695\,712\,z^4 + 2\,285\,312\,z^3 - 330\,750\,z^2 + 99\,225\,z - 88\,200\right) I_1\left(\sqrt{z}\right)^2\right)\right)
$$

07.22.03.1222.01

$$
{}_1F_2\left(-\frac{7}{2}; 1, 4; -z\right) = \frac{1}{4\,729\,725\,z^2}\left(4\left(2\,z\left(256\,z^5 + 20\,480\,z^4 + 357\,904\,z^3 + 1\,307\,040\,z^2 + 606\,375\,z + 11\,025\right) J_0\left(\sqrt{z}\right)^2 -\right.\right.
$$

$$
2\sqrt{z}\left(256\,z^5 + 20\,288\,z^4 + 342\,976\,z^3 + 1\,070\,580\,z^2 + 55\,125\,z + 44\,100\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) +
$$

$$
\left.\left.\left(512\,z^6 + 40\,704\,z^5 + 695\,712\,z^4 + 2\,285\,312\,z^3 + 330\,750\,z^2 + 99\,225\,z + 88\,200\right) J_1\left(\sqrt{z}\right)^2\right)\right)
$$

07.22.03.1223.01

$$
{}_1F_2\left(-\frac{7}{2}; 1, \frac{9}{2}; z\right) =
$$

$$
\frac{1}{82\,575\,360\,z^3}\left(4\left(2\,z\left(4096\,z^6 - 352\,256\,z^5 + 6\,672\,640\,z^4 - 26\,279\,424\,z^3 + 11\,334\,960\,z^2 - 705\,600\,z + 826\,875\right) I_0\left(2\sqrt{z}\right) +\right.\right.
$$

$$
\left.\sqrt{z}\left(-4096\,z^6 + 350\,208\,z^5 - 6\,500\,096\,z^4 + 23\,232\,768\,z^3 - 2\,646\,000\,z^2 + 1\,675\,800\,z - 2\,480\,625\right) I_1\left(2\sqrt{z}\right)\right) +
$$

$$
\pi\left(-16\,384\,z^7 + 1\,404\,928\,z^6 - 26\,342\,400\,z^5 + 98\,784\,000\,z^4 - 24\,696\,000\,z^3 + 3\,704\,400\,z^2 - 2\,778\,300\,z + 2\,480\,625\right)
$$

$$
I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(16\,384\,z^7 - 1\,404\,928\,z^6 + 26\,342\,400\,z^5 - 98\,784\,000\,z^4 +\right.
$$

$$
\left.\left.24\,696\,000\,z^3 - 3\,704\,400\,z^2 + 2\,778\,300\,z - 2\,480\,625\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)
$$

07.22.03.1224.01

$$ {}_1F_2\left(-\frac{7}{2}; 1, \frac{9}{2}; -z\right) = \frac{1}{82\,575\,360\,z^3}\left(4\left(2\,z\left(4096\,z^6+352\,256\,z^5+6\,672\,640\,z^4+26\,279\,424\,z^3+11\,334\,960\,z^2+705\,600\,z+826\,875\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\left(4096\,z^6+350\,208\,z^5+6\,500\,096\,z^4+23\,232\,768\,z^3+2\,646\,000\,z^2+1\,675\,800\,z+2\,480\,625\right)J_1\left(2\sqrt{z}\right)\right)+\pi\left(16\,384\,z^7+1\,404\,928\,z^6+26\,342\,400\,z^5+98\,784\,000\,z^4+24\,696\,000\,z^3+3\,704\,400\,z^2+2\,778\,300\,z+2\,480\,625\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\left(16\,384\,z^7+1\,404\,928\,z^6+26\,342\,400\,z^5+98\,784\,000\,z^4+24\,696\,000\,z^3+3\,704\,400\,z^2+2\,778\,300\,z+2\,480\,625\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\Big) $$

07.22.03.1225.01

$$ {}_1F_2\left(-\frac{7}{2}; 1, 5; z\right) = \frac{1}{70\,945\,875\,z^3}\left(16\left(z\left(1024\,z^6-94\,464\,z^5+1\,945\,920\,z^4-8\,568\,000\,z^3+4\,630\,500\,z^2-231\,525\,z+396\,900\right)I_0\left(\sqrt{z}\right)^2-2\sqrt{z}\left(512\,z^6-46\,848\,z^5+938\,400\,z^4-3\,628\,800\,z^3+330\,750\,z^2-363\,825\,z+793\,800\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(-1024\,z^7+93\,952\,z^6-1\,899\,456\,z^5+7\,662\,720\,z^4-1\,543\,500\,z^3+562\,275\,z^2-529\,200\,z+1\,587\,600\right)I_1\left(\sqrt{z}\right)^2\right)\Big) $$

07.22.03.1226.01

$$ {}_1F_2\left(-\frac{7}{2}; 1, 5; -z\right) = \frac{1}{70\,945\,875\,z^3}\left(16\left(z\left(1024\,z^6+94\,464\,z^5+1\,945\,920\,z^4+8\,568\,000\,z^3+4\,630\,500\,z^2+231\,525\,z+396\,900\right)J_0\left(\sqrt{z}\right)^2-2\sqrt{z}\left(512\,z^6+46\,848\,z^5+938\,400\,z^4+3\,628\,800\,z^3+330\,750\,z^2+363\,825\,z+793\,800\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(1024\,z^7+93\,952\,z^6+1\,899\,456\,z^5+7\,662\,720\,z^4+1\,543\,500\,z^3+562\,275\,z^2+529\,200\,z+1\,587\,600\right)J_1\left(\sqrt{z}\right)^2\right)\Big) $$

07.22.03.1227.01

$$ {}_1F_2\left(-\frac{7}{2}; 1, \frac{11}{2}; z\right) = \frac{1}{587\,202\,560\,z^4}\left(4\left(2\,z\left(16\,384\,z^7-1\,609\,728\,z^6+35\,521\,536\,z^5-166\,545\,664\,z^4+83\,348\,160\,z^3-8\,996\,400\,z^2+15\,655\,500\,z-40\,516\,875\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\left(-16\,384\,z^7+1\,601\,536\,z^6-34\,731\,008\,z^5+150\,119\,168\,z^4-24\,696\,000\,z^3+17\,816\,400\,z^2-25\,357\,500\,z+121\,550\,625\right)I_1\left(2\sqrt{z}\right)\right)+\pi\left(-65\,536\,z^8+6\,422\,528\,z^7-140\,492\,800\,z^6+632\,217\,600\,z^5-197\,568\,000\,z^4+39\,513\,600\,z^3-44\,452\,800\,z^2+79\,380\,000\,z-121\,550\,625\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(65\,536\,z^8-6\,422\,528\,z^7+140\,492\,800\,z^6-632\,217\,600\,z^5+197\,568\,000\,z^4-39\,513\,600\,z^3+44\,452\,800\,z^2-79\,380\,000\,z+121\,550\,625\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\Big) $$

07.22.03.1228.01

$$ {}_1F_2\left(-\frac{7}{2}; 1, \frac{11}{2}; -z\right) = \frac{1}{587\,202\,560\,z^4} $$
$$ \left(4\left(2\,z\left(16\,384\,z^7 + 1\,609\,728\,z^6 + 35\,521\,536\,z^5 + 166\,545\,664\,z^4 + 83\,348\,160\,z^3 + 8\,996\,400\,z^2 + 15\,655\,500\,z + 40\,516\,875\right)\right.\right. $$
$$ J_0\left(2\sqrt{z}\right) - \sqrt{z}\,\left(16\,384\,z^7 + 1\,601\,536\,z^6 + 34\,731\,008\,z^5 + 150\,119\,168\,z^4 + \right. $$
$$ \left.\left. 24\,696\,000\,z^3 + 17\,816\,400\,z^2 + 25\,357\,500\,z + 121\,550\,625\right) J_1\left(2\sqrt{z}\right)\right) + $$
$$ \pi\left(65\,536\,z^8 + 6\,422\,528\,z^7 + 140\,492\,800\,z^6 + 632\,217\,600\,z^5 + 197\,568\,000\,z^4 + 39\,513\,600\,z^3 + \right. $$
$$ \left. 44\,452\,800\,z^2 + 79\,380\,000\,z + 121\,550\,625\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - $$
$$ \pi\left(65\,536\,z^8 + 6\,422\,528\,z^7 + 140\,492\,800\,z^6 + 632\,217\,600\,z^5 + 197\,568\,000\,z^4 + 39\,513\,600\,z^3 + \right. $$
$$ \left. \left. 44\,452\,800\,z^2 + 79\,380\,000\,z + 121\,550\,625\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1229.01

$$ {}_1F_2\left(-\frac{7}{2}; 1, 6; z\right) = \frac{1}{241\,215\,975\,z^4} $$
$$ \left(32\left(2\,z\left(512\,z^7 - 53\,504\,z^6 + 1\,269\,312\,z^5 - 6\,541\,920\,z^4 + 4\,013\,100\,z^3 - 363\,825\,z^2 + 893\,025\,z - 3\,175\,200\right) I_0\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \sqrt{z}\,\left(-1024\,z^7 + 106\,240\,z^6 - 2\,460\,096\,z^5 + 11\,350\,080\,z^4 - 1\,543\,500\,z^3 + 1\,885\,275\,z^2 - 3\,969\,000\,z + 25\,401\,600\right) $$
$$ I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - 2\left(512\,z^8 - 53\,248\,z^7 + 1\,242\,944\,z^6 - 5\,945\,808\,z^5 + \right. $$
$$ \left.\left. 1\,543\,500\,z^4 - 639\,450\,z^3 + 628\,425\,z^2 - 396\,900\,z + 12\,700\,800\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1230.01

$$ {}_1F_2\left(-\frac{7}{2}; 1, 6; -z\right) = \frac{1}{241\,215\,975\,z^4} $$
$$ \left(32\left(2\,z\left(512\,z^7 + 53\,504\,z^6 + 1\,269\,312\,z^5 + 6\,541\,920\,z^4 + 4\,013\,100\,z^3 + 363\,825\,z^2 + 893\,025\,z + 3\,175\,200\right) J_0\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ \sqrt{z}\,\left(1024\,z^7 + 106\,240\,z^6 + 2\,460\,096\,z^5 + 11\,350\,080\,z^4 + 1\,543\,500\,z^3 + 1\,885\,275\,z^2 + 3\,969\,000\,z + 25\,401\,600\right) $$
$$ J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + 2\left(512\,z^8 + 53\,248\,z^7 + 1\,242\,944\,z^6 + 5\,945\,808\,z^5 + \right. $$
$$ \left.\left. 1\,543\,500\,z^4 + 639\,450\,z^3 + 628\,425\,z^2 + 396\,900\,z + 12\,700\,800\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

For fixed z and $a_1 = -\frac{7}{2}$, $b_1 = \frac{3}{2}$

07.22.03.1231.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{3}{2}, \frac{3}{2}; z\right) = \frac{1}{18\,432\,\sqrt{z}}\left(-2\sqrt{z}\,\left(4\,z^3 - 222\,z^2 + 2414\,z - 4071\right)\cosh\left(2\sqrt{z}\right) + \right. $$
$$ \left. \left(-4\,z^3 + 218\,z^2 - 2214\,z + 2625\right)\sinh\left(2\sqrt{z}\right) + 8\left(2\,z^4 - 112\,z^3 + 1260\,z^2 - 2520\,z + 315\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.1232.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{3}{2}, \frac{3}{2}; -z\right) = \frac{1}{18\,432\,\sqrt{z}}\left(2\sqrt{z}\,\left(4\,z^3 + 222\,z^2 + 2414\,z + 4071\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. \left(4\,z^3 + 218\,z^2 + 2214\,z + 2625\right)\sin\left(2\sqrt{z}\right) + 8\left(2\,z^4 + 112\,z^3 + 1260\,z^2 + 2520\,z + 315\right)\mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.1233.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{3}{2}, 2; z\right) = \frac{1}{362\,880\sqrt{z}} \left(4\left(2\sqrt{z}\,\left(64z^4 - 4048z^3 + 53\,916z^2 - 144\,819z + 50\,400\right) I_0\left(2\sqrt{z}\right) + \left(-64z^4 + 4016z^3 - 51\,948z^2 + 121\,113z - 10\,080\right) I_1\left(2\sqrt{z}\right)\right) + \pi\sqrt{z}\,\left(-256z^4 + 16\,128z^3 - 211\,680z^2 + 529\,200z - 99\,225\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\sqrt{z}\,\left(256z^4 - 16\,128z^3 + 211\,680z^2 - 529\,200z + 99\,225\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1234.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{3}{2}, 2; -z\right) = \frac{1}{362\,880\sqrt{z}} \left(4\left(2\sqrt{z}\,\left(64z^4 + 4048z^3 + 53\,916z^2 + 144\,819z + 50\,400\right) J_0\left(2\sqrt{z}\right) - \left(64z^4 + 4016z^3 + 51\,948z^2 + 121\,113z + 10\,080\right) J_1\left(2\sqrt{z}\right)\right) + \pi\sqrt{z}\,\left(256z^4 + 16\,128z^3 + 211\,680z^2 + 529\,200z + 99\,225\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\sqrt{z}\,\left(256z^4 + 16\,128z^3 + 211\,680z^2 + 529\,200z + 99\,225\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1235.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{3}{2}, \frac{5}{2}; z\right) = \frac{1}{61\,440z^{3/2}} \left(-2\sqrt{z}\,\left(4z^4 - 278z^3 + 4066z^2 - 10\,875z + 630\right)\cosh\left(2\sqrt{z}\right) + \left(-4z^4 + 274z^3 - 3810z^2 + 8085z + 630\right)\sinh\left(2\sqrt{z}\right) + 8z\left(2z^4 - 140z^3 + 2100z^2 - 6300z + 1575\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.1236.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{3}{2}, \frac{5}{2}; -z\right) = \frac{1}{61\,440z^{3/2}} \left(2\sqrt{z}\,\left(4z^4 + 278z^3 + 4066z^2 + 10\,875z + 630\right)\cos\left(2\sqrt{z}\right) + \left(4z^4 + 274z^3 + 3810z^2 + 8085z - 630\right)\sin\left(2\sqrt{z}\right) + 8z\left(2z^4 + 140z^3 + 2100z^2 + 6300z + 1575\right)\mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.1237.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{3}{2}, 3; z\right) = \frac{1}{997\,920z^{3/2}} \left(\pi\left(-256z^4 + 19\,712z^3 - 332\,640z^2 + 1\,164\,240z - 363\,825\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{3/2} + \pi\left(256z^4 - 19\,712z^3 + 332\,640z^2 - 1\,164\,240z + 363\,825\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{3/2} + 4\left(2\sqrt{z}\,\left(64z^5 - 4944z^4 + 84\,380z^3 - 310\,971z^2 + 151\,200z - 2520\right) I_0\left(2\sqrt{z}\right) + \left(-64z^5 + 4912z^4 - 81\,964z^3 + 272\,817z^2 - 50\,400z + 5040\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1238.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{3}{2}, 3; -z\right) = \frac{1}{997\,920z^{3/2}} \left(\pi\left(256z^4 + 19\,712z^3 + 332\,640z^2 + 1\,164\,240z + 363\,825\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{3/2} - \pi\left(256z^4 + 19\,712z^3 + 332\,640z^2 + 1\,164\,240z + 363\,825\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{3/2} + 4\left(2\sqrt{z}\,\left(64z^5 + 4944z^4 + 84\,380z^3 + 310\,971z^2 + 151\,200z + 2520\right) J_0\left(2\sqrt{z}\right) - \left(64z^5 + 4912z^4 + 81\,964z^3 + 272\,817z^2 + 50\,400z + 5040\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1239.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{3}{2}, \frac{7}{2}; z\right) = \frac{1}{147\,456z^{5/2}} \left(8\left(2z^4 - 168z^3 + 3150z^2 - 12\,600z + 4725\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^2 - 2\left(4z^5 - 334z^4 + 6138z^3 - 22\,509z^2 + 3150z - 945\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(-4z^5 + 330z^4 - 5826z^3 + 17\,955z^2 + 1890z - 945\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.1240.01

$${}_1F_2\left(-\frac{7}{2};\frac{3}{2},\frac{7}{2};-z\right)=$$
$$\frac{1}{147\,456\,z^{5/2}}\left(8\left(2z^4+168z^3+3150z^2+12\,600z+4725\right)\mathrm{Si}\left(2\sqrt{z}\right)z^2+2\left(4z^5+334z^4+6138z^3+22\,509z^2+3150z+945\right)\right.$$
$$\left.\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^5+330z^4+5826z^3+17\,955z^2-1890z-945\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1241.01

$${}_1F_2\left(-\frac{7}{2};\frac{3}{2},4;z\right)=\frac{1}{2\,162\,160\,z^{5/2}}\left(\pi\left(-256z^4+23\,296z^3-480\,480z^2+2\,162\,160z-945\,945\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}+\right.$$
$$\pi\left(256z^4-23\,296z^3+480\,480z^2-2\,162\,160z+945\,945\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{5/2}+$$
$$4\left(2\sqrt{z}\left(64z^6-5840z^5+121\,564z^4-569\,523z^3+352\,800z^2-12\,600z+7560\right)I_0\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(-64z^6+5808z^5-118\,700z^4+513\,561z^3-151\,200z^2+17\,640z-15\,120\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1242.01

$${}_1F_2\left(-\frac{7}{2};\frac{3}{2},4;-z\right)=\frac{1}{2\,162\,160\,z^{5/2}}\left(\pi\left(256z^4+23\,296z^3+480\,480z^2+2\,162\,160z+945\,945\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-\right.$$
$$\pi\left(256z^4+23\,296z^3+480\,480z^2+2\,162\,160z+945\,945\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{5/2}+$$
$$4\left(2\sqrt{z}\left(64z^6+5840z^5+121\,564z^4+569\,523z^3+352\,800z^2+12\,600z+7560\right)J_0\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left(64z^6+5808z^5+118\,700z^4+513\,561z^3+151\,200z^2+17\,640z+15\,120\right)J_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1243.01

$${}_1F_2\left(-\frac{7}{2};\frac{3}{2},\frac{9}{2};z\right)=\frac{1}{294\,912\,z^{7/2}}\left(8\left(2z^4-196z^3+4410z^2-22\,050z+11\,025\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^3-\right.$$
$$2\left(4z^6-390z^5+8630z^4-40\,233z^3+9450z^2-3465z+4725\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left.\left(-4z^6+386z^5-8262z^4+33\,495z^3+3150z^2+2835z+4725\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1244.01

$${}_1F_2\left(-\frac{7}{2};\frac{3}{2},\frac{9}{2};-z\right)=\frac{1}{294\,912\,z^{7/2}}\left(8\left(2z^4+196z^3+4410z^2+22\,050z+11\,025\right)\mathrm{Si}\left(2\sqrt{z}\right)z^3+\right.$$
$$2\left(4z^6+390z^5+8630z^4+40\,233z^3+9450z^2+3465z+4725\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left.\left(4z^6+386z^5+8262z^4+33\,495z^3-3150z^2+2835z-4725\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1245.01

$${}_1F_2\left(-\frac{7}{2};\frac{3}{2},5;z\right)=\frac{1}{4\,054\,050\,z^{7/2}}\left(\pi\left(-256z^4+26\,880z^3-655\,200z^2+3\,603\,600z-2\,027\,025\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2}+\right.$$
$$\pi\left(256z^4-26\,880z^3+655\,200z^2-3\,603\,600z+2\,027\,025\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{7/2}+$$
$$4\left(2\sqrt{z}\left(64z^7-6736z^6+165\,468z^5-940\,635z^4+705\,600z^3-37\,800z^2+28\,350z-56\,700\right)I_0\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(-64z^7+6704z^6-162\,156z^5+863\,505z^4-352\,800z^3+37\,800z^2+113\,400\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1246.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{3}{2}, 5; -z\right) = \frac{1}{4\,054\,050\,z^{7/2}}\left(\pi\left(256\,z^4 + 26\,880\,z^3 + 655\,200\,z^2 + 3\,603\,600\,z + 2\,027\,025\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{7/2} - \right.$$
$$ \pi\left(256\,z^4 + 26\,880\,z^3 + 655\,200\,z^2 + 3\,603\,600\,z + 2\,027\,025\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{7/2} + $$
$$ 4\left(2\sqrt{z}\left(64\,z^7 + 6736\,z^6 + 165\,468\,z^5 + 940\,635\,z^4 + 705\,600\,z^3 + 37\,800\,z^2 + 28\,350\,z + 56\,700\right) J_0\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.\left(64\,z^7 + 6704\,z^6 + 162\,156\,z^5 + 863\,505\,z^4 + 352\,800\,z^3 + 37\,800\,z^2 + 113\,400\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1247.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{3}{2}, \frac{11}{2}; z\right) = \frac{1}{1\,048\,576\,z^{9/2}}\left(32\left(z^4 - 112\,z^3 + 2940\,z^2 - 17\,640\,z + 11\,025\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^4 - \right. $$
$$ 2\left(8\,z^7 - 892\,z^6 + 23\,084\,z^5 - 130\,614\,z^4 + 44\,100\,z^3 - 15\,750\,z^2 + 9450\,z - 99\,225\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + $$
$$ \left.\left(-8\,z^7 + 884\,z^6 - 22\,236\,z^5 + 111\,930\,z^4 + 6300\,z^3 + 32\,130\,z^2 - 122\,850\,z - 99\,225\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.1248.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{3}{2}, \frac{11}{2}; -z\right) = \frac{1}{1\,048\,576\,z^{9/2}}\left(32\left(z^4 + 112\,z^3 + 2940\,z^2 + 17\,640\,z + 11\,025\right) \mathrm{Si}\left(2\sqrt{z}\right) z^4 + \right. $$
$$ 2\left(8\,z^7 + 892\,z^6 + 23\,084\,z^5 + 130\,614\,z^4 + 44\,100\,z^3 + 15\,750\,z^2 + 9450\,z + 99\,225\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + $$
$$ \left.\left(8\,z^7 + 884\,z^6 + 22\,236\,z^5 + 111\,930\,z^4 - 6300\,z^3 + 32\,130\,z^2 + 122\,850\,z - 99\,225\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.1249.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{3}{2}, 6; z\right) = \frac{1}{6\,891\,885\,z^{9/2}}\left(\pi\left(-256\,z^4 + 30\,464\,z^3 - 856\,800\,z^2 + 5\,569\,200\,z - 3\,828\,825\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{9/2} + \right. $$
$$ \pi\left(256\,z^4 - 30\,464\,z^3 + 856\,800\,z^2 - 5\,569\,200\,z + 3\,828\,825\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{9/2} + $$
$$ 4\left(2\sqrt{z}\left(64\,z^8 - 7632\,z^7 + 216\,092\,z^6 - 1\,444\,467\,z^5 + 1\,270\,080\,z^4 - 88\,200\,z^3 + 66\,150\,z^2 - 85\,050\,z + 793\,800\right)\right. $$
$$ I_0\left(2\sqrt{z}\right) + \left(-64\,z^8 + 7600\,z^7 - 212\,332\,z^6 + 1\,342\,809\,z^5 - \right. $$
$$ \left.\left.\left.705\,600\,z^4 + 63\,000\,z^3 + 85\,050\,z^2 - 623\,700\,z - 1\,587\,600\right) I_1\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.1250.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{3}{2}, 6; -z\right) = \frac{1}{6\,891\,885\,z^{9/2}}\left(\pi\left(256\,z^4 + 30\,464\,z^3 + 856\,800\,z^2 + 5\,569\,200\,z + 3\,828\,825\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{9/2} - \right. $$
$$ \pi\left(256\,z^4 + 30\,464\,z^3 + 856\,800\,z^2 + 5\,569\,200\,z + 3\,828\,825\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{9/2} + $$
$$ 4\left(2\sqrt{z}\left(64\,z^8 + 7632\,z^7 + 216\,092\,z^6 + 1\,444\,467\,z^5 + 1\,270\,080\,z^4 + 88\,200\,z^3 + 66\,150\,z^2 + 85\,050\,z + 793\,800\right)\right. $$
$$ J_0\left(2\sqrt{z}\right) - \left(64\,z^8 + 7600\,z^7 + 212\,332\,z^6 + 1\,342\,809\,z^5 + 705\,600\,z^4 + \right. $$
$$ \left.\left.\left.63\,000\,z^3 - 85\,050\,z^2 - 623\,700\,z + 1\,587\,600\right) J_1\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = -\frac{7}{2}$, $b_1 = 2$

07.22.03.1251.01

$$ {}_1F_2\left(-\frac{7}{2}; 2, 2; z\right) = \frac{1}{893\,025\sqrt{z}}\left(2\left(\sqrt{z}\left(256z^4 - 18\,240z^3 + 284\,544z^2 - 966\,420z + 496\,125\right)I_0\left(\sqrt{z}\right)^2 + \left(-256z^4 + 18\,048z^3 - 271\,296z^2 + 781\,200z - 99\,225\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) + \sqrt{z}\left(-256z^4 + 18\,112z^3 - 275\,616z^2 + 837\,036z - 177\,345\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1252.01

$$ {}_1F_2\left(-\frac{7}{2}; 2, 2; -z\right) = \frac{1}{893\,025\sqrt{z}}\left(2\left(\sqrt{z}\left(256z^4 + 18\,240z^3 + 284\,544z^2 + 966\,420z + 496\,125\right)J_0\left(\sqrt{z}\right)^2 - \left(256z^4 + 18\,048z^3 + 271\,296z^2 + 781\,200z + 99\,225\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + \sqrt{z}\left(256z^4 + 18\,112z^3 + 275\,616z^2 + 837\,036z + 177\,345\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1253.01

$$ {}_1F_2\left(-\frac{7}{2}; 2, \frac{5}{2}; z\right) = \frac{1}{4\,838\,400z}\left(4\left(2z\left(256z^4 - 20\,224z^3 + 357\,792z^2 - 1\,407\,600z + 773\,325\right)I_0\left(2\sqrt{z}\right) + \sqrt{z}\left(-256z^4 + 20\,096z^3 - 347\,904z^2 + 1\,245\,240z - 303\,975\right)I_1\left(2\sqrt{z}\right)\right) - \pi\left(1024z^5 - 80\,640z^4 + 1\,411\,200z^3 - 5\,292\,000z^2 + 1\,984\,500z + 99\,225\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(1024z^5 - 80\,640z^4 + 1\,411\,200z^3 - 5\,292\,000z^2 + 1\,984\,500z + 99\,225\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1254.01

$$ {}_1F_2\left(-\frac{7}{2}; 2, \frac{5}{2}; -z\right) = \frac{1}{4\,838\,400z}\left(4\left(2z\left(256z^4 + 20\,224z^3 + 357\,792z^2 + 1\,407\,600z + 773\,325\right)J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(256z^4 + 20\,096z^3 + 347\,904z^2 + 1\,245\,240z + 303\,975\right)J_1\left(2\sqrt{z}\right)\right) + \pi\left(1024z^5 + 80\,640z^4 + 1\,411\,200z^3 + 5\,292\,000z^2 + 1\,984\,500z - 99\,225\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(1024z^5 + 80\,640z^4 + 1\,411\,200z^3 + 5\,292\,000z^2 + 1\,984\,500z - 99\,225\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1255.01

$$ {}_1F_2\left(-\frac{7}{2}; 2, 3; z\right) = \frac{1}{9\,823\,275z}\left(4\left(2z\left(256z^4 - 22\,272z^3 + 444\,816z^2 - 2\,066\,400z + 1\,488\,375\right)I_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(256z^4 - 22\,080z^3 + 428\,544z^2 - 1\,767\,780z + 496\,125\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) - \left(512z^5 - 44\,288z^4 + 867\,744z^3 - 3\,719\,808z^2 + 1\,454\,670z + 99\,225\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1256.01

$$ {}_1F_2\left(-\frac{7}{2}; 2, 3; -z\right) = \frac{1}{9\,823\,275z}\left(4\left(2z\left(256z^4 + 22\,272z^3 + 444\,816z^2 + 2\,066\,400z + 1\,488\,375\right)J_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(256z^4 + 22\,080z^3 + 428\,544z^2 + 1\,767\,780z + 496\,125\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + \left(512z^5 + 44\,288z^4 + 867\,744z^3 + 3\,719\,808z^2 + 1\,454\,670z - 99\,225\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1257.01

$$ {}_1F_2\left(-\frac{7}{2}; 2, \frac{7}{2}; z\right) = \frac{1}{46\,448\,640\,z^2}\left(4\left(2\,z\left(1024\,z^5 - 97\,024\,z^4 + 2\,140\,800\,z^3 - 11\,095\,776\,z^2 + 8\,264\,340\,z + 99\,225\right) I_0\left(2\sqrt{z}\right) - \sqrt{z}\left(1024\,z^5 - 96\,512\,z^4 + 2\,093\,184\,z^3 - 10\,105\,632\,z^2 + 4\,202\,100\,z + 297\,675\right) I_1\left(2\sqrt{z}\right)\right) + \pi\left(-4096\,z^6 + 387\,072\,z^5 - 8\,467\,200\,z^4 + 42\,336\,000\,z^3 - 23\,814\,000\,z^2 - 2\,381\,400\,z + 297\,675\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(4096\,z^6 - 387\,072\,z^5 + 8\,467\,200\,z^4 - 42\,336\,000\,z^3 + 23\,814\,000\,z^2 + 2\,381\,400\,z - 297\,675\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1258.01

$$ {}_1F_2\left(-\frac{7}{2}; 2, \frac{7}{2}; -z\right) = \frac{1}{46\,448\,640\,z^2}\left(4\left(2\,z\left(1024\,z^5 + 97\,024\,z^4 + 2\,140\,800\,z^3 + 11\,095\,776\,z^2 + 8\,264\,340\,z - 99\,225\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(1024\,z^5 + 96\,512\,z^4 + 2\,093\,184\,z^3 + 10\,105\,632\,z^2 + 4\,202\,100\,z - 297\,675\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(4096\,z^6 + 387\,072\,z^5 + 8\,467\,200\,z^4 + 42\,336\,000\,z^3 + 23\,814\,000\,z^2 - 2\,381\,400\,z - 297\,675\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(4096\,z^6 + 387\,072\,z^5 + 8\,467\,200\,z^4 + 42\,336\,000\,z^3 + 23\,814\,000\,z^2 - 2\,381\,400\,z - 297\,675\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1259.01

$$ {}_1F_2\left(-\frac{7}{2}; 2, 4; z\right) = \frac{1}{42\,567\,525\,z^2}\left(4\left(z\left(1024\,z^5 - 105\,216\,z^4 + 2\,561\,472\,z^3 - 15\,099\,840\,z^2 + 13\,891\,500\,z + 99\,225\right) I_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(256\,z^5 - 26\,112\,z^4 + 621\,072\,z^3 - 3\,336\,480\,z^2 + 1\,488\,375\,z + 99\,225\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-1024\,z^6 + 104\,704\,z^5 - 2\,509\,632\,z^4 + 13\,894\,848\,z^3 - 7\,966\,980\,z^2 - 1\,091\,475\,z + 396\,900\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1260.01

$$ {}_1F_2\left(-\frac{7}{2}; 2, 4; -z\right) = \frac{1}{42\,567\,525\,z^2}\left(4\left(z\left(1024\,z^5 + 105\,216\,z^4 + 2\,561\,472\,z^3 + 15\,099\,840\,z^2 + 13\,891\,500\,z - 99\,225\right) J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(256\,z^5 + 26\,112\,z^4 + 621\,072\,z^3 + 3\,336\,480\,z^2 + 1\,488\,375\,z - 99\,225\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(1024\,z^6 + 104\,704\,z^5 + 2\,509\,632\,z^4 + 13\,894\,848\,z^3 + 7\,966\,980\,z^2 - 1\,091\,475\,z - 396\,900\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1261.01

$$ {}_1F_2\left(-\frac{7}{2}; 2, \frac{9}{2}; z\right) = \frac{1}{371\,589\,120\,z^3}\left(4\left(2\,z\left(4096\,z^6 - 452\,608\,z^5 + 11\,966\,208\,z^4 - 76\,969\,728\,z^3 + 72\,157\,680\,z^2 + 2\,381\,400\,z - 1\,488\,375\right) I_0\left(2\sqrt{z}\right) + \sqrt{z}\left(-4096\,z^6 + 450\,560\,z^5 - 11\,743\,488\,z^4 + 71\,364\,096\,z^3 - 42\,300\,720\,z^2 - 6\,350\,400\,z + 4\,465\,125\right) I_1\left(2\sqrt{z}\right)\right) - \pi\left(16\,384\,z^7 - 1\,806\,336\,z^6 + 47\,416\,320\,z^5 - 296\,352\,000\,z^4 + 222\,264\,000\,z^3 + 33\,339\,600\,z^2 - 8\,334\,900\,z + 4\,465\,125\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(16\,384\,z^7 - 1\,806\,336\,z^6 + 47\,416\,320\,z^5 - 296\,352\,000\,z^4 + 222\,264\,000\,z^3 + 33\,339\,600\,z^2 - 8\,334\,900\,z + 4\,465\,125\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1262.01

$$ {}_1F_2\left(-\frac{7}{2}; 2, \frac{9}{2}; -z\right) = \frac{1}{371\,589\,120\,z^3} $$
$$ \left(4\left(2z\left(4096z^6 + 452\,608z^5 + 11\,966\,208z^4 + 76\,969\,728z^3 + 72\,157\,680z^2 - 2\,381\,400z - 1\,488\,375\right)J_0\left(2\sqrt{z}\right) - \right.\right. $$
$$ \left.\sqrt{z}\left(4096z^6 + 450\,560z^5 + 11\,743\,488z^4 + 71\,364\,096z^3 + 42\,300\,720z^2 - 6\,350\,400z - 4\,465\,125\right)J_1\left(2\sqrt{z}\right)\right) + $$
$$ \pi\left(16\,384z^7 + 1\,806\,336z^6 + 47\,416\,320z^5 + 296\,352\,000z^4 + 222\,264\,000z^3 - 33\,339\,600z^2 - 8\,334\,900z - 4\,465\,125\right) $$
$$ J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(16\,384z^7 + 1\,806\,336z^6 + 47\,416\,320z^5 + 296\,352\,000z^4 + \right. $$
$$ \left.\left.222\,264\,000z^3 - 33\,339\,600z^2 - 8\,334\,900z - 4\,465\,125\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1263.01

$$ {}_1F_2\left(-\frac{7}{2}; 2, 5; z\right) = \frac{1}{638\,512\,875\,z^3} $$
$$ \left(32\left(2z\left(512z^6 - 60\,672z^5 + 1\,742\,400z^4 - 12\,448\,800z^3 + 13\,891\,500z^2 + 297\,675z - 297\,675\right)I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\right.\right. $$
$$ \left(-1024z^6 + 120\,576z^5 - 3\,395\,520z^4 + 22\,478\,400z^3 - 13\,891\,500z^2 - 2\,083\,725z + 2\,381\,400\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) - $$
$$ \left.\left.2\left(512z^7 - 60\,416z^6 + 1\,712\,448z^5 - 11\,621\,520z^4 + 8\,801\,100z^3 + 1\,786\,050z^2 - 893\,025z + 1\,190\,700\right)I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1264.01

$$ {}_1F_2\left(-\frac{7}{2}; 2, 5; -z\right) = $$
$$ \frac{1}{638\,512\,875\,z^3}\left(32\left(2z\left(512z^6 + 60\,672z^5 + 1\,742\,400z^4 + 12\,448\,800z^3 + 13\,891\,500z^2 - 297\,675z - 297\,675\right)J_0\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ \sqrt{z}\left(1024z^6 + 120\,576z^5 + 3\,395\,520z^4 + 22\,478\,400z^3 + 13\,891\,500z^2 - 2\,083\,725z - 2\,381\,400\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + $$
$$ \left.\left.2\left(512z^7 + 60\,416z^6 + 1\,712\,448z^5 + 11\,621\,520z^4 + 8\,801\,100z^3 - 1\,786\,050z^2 - 893\,025z - 1\,190\,700\right)J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1265.01

$$ {}_1F_2\left(-\frac{7}{2}; 2, \frac{11}{2}; z\right) = $$
$$ \frac{1}{2\,642\,411\,520\,z^4}\left(4\left(2z\left(16\,384z^7 - 2\,068\,480z^6 + 63\,734\,784z^5 - 489\,593\,088z^4 + 552\,565\,440z^3 + 33\,339\,600z^2 - \right.\right.\right. $$
$$ \left.\left.33\,736\,500z + 52\,093\,125\right)I_0\left(2\sqrt{z}\right) - \sqrt{z}\left(16\,384z^7 - 2\,060\,288z^6 + 62\,714\,880z^5 - \right.\right. $$
$$ \left.\left.\left.459\,461\,376z^4 + 354\,997\,440z^3 + 80\,967\,600z^2 - 73\,426\,500z + 156\,279\,375\right)I_1\left(2\sqrt{z}\right)\right) + \right. $$
$$ \pi\left(-65\,536z^8 + 8\,257\,536z^7 - 252\,887\,040z^6 + 1\,896\,652\,800z^5 - 1\,778\,112\,000z^4 - 355\,622\,400z^3 + \right. $$
$$ \left.133\,358\,400z^2 - 142\,884\,000z + 156\,279\,375\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + $$
$$ \pi\left(65\,536z^8 - 8\,257\,536z^7 + 252\,887\,040z^6 - 1\,896\,652\,800z^5 + 1\,778\,112\,000z^4 + 355\,622\,400z^3 - \right. $$
$$ \left.\left.133\,358\,400z^2 + 142\,884\,000z - 156\,279\,375\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1266.01

$$ {}_1F_2\left(-\frac{7}{2}; 2, \frac{11}{2}; -z\right) = \frac{1}{2\,642\,411\,520\,z^4}\left(4\left(2\,z\left(16\,384\,z^7 + 2\,068\,480\,z^6 + 63\,734\,784\,z^5 + 489\,593\,088\,z^4 + 552\,565\,440\,z^3 - 33\,339\,600\,z^2 - 33\,736\,500\,z - 52\,093\,125\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(16\,384\,z^7 + 2\,060\,288\,z^6 + 62\,714\,880\,z^5 + 459\,461\,376\,z^4 + 354\,997\,440\,z^3 - 80\,967\,600\,z^2 - 73\,426\,500\,z - 156\,279\,375\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(65\,536\,z^8 + 8\,257\,536\,z^7 + 252\,887\,040\,z^6 + 1\,896\,652\,800\,z^5 + 1\,778\,112\,000\,z^4 - 355\,622\,400\,z^3 - 133\,358\,400\,z^2 - 142\,884\,000\,z - 156\,279\,375\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) + \pi\left(-65\,536\,z^8 - 8\,257\,536\,z^7 - 252\,887\,040\,z^6 - 1\,896\,652\,800\,z^5 - 1\,778\,112\,000\,z^4 + 355\,622\,400\,z^3 + 133\,358\,400\,z^2 + 142\,884\,000\,z + 156\,279\,375\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1267.01

$$ {}_1F_2\left(-\frac{7}{2}; 2, 6; z\right) = \frac{1}{2\,170\,943\,775\,z^4}\left(32\left(2\,z\left(1024\,z^7 - 137\,472\,z^6 + 4\,549\,248\,z^5 - 38\,188\,080\,z^4 + 50\,009\,400\,z^3 + 2\,083\,725\,z^2 - 3\,274\,425\,z + 7\,144\,200\right) I_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512\,z^7 - 68\,352\,z^6 + 2\,223\,936\,z^5 - 17\,498\,880\,z^4 + 13\,891\,500\,z^3 + 3\,274\,425\,z^2 - 4\,762\,800\,z + 14\,288\,400\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-2048\,z^8 + 273\,920\,z^7 - 8\,962\,560\,z^6 + 72\,026\,784\,z^5 - 67\,863\,600\,z^4 - 18\,058\,950\,z^3 + 10\,418\,625\,z^2 - 11\,907\,000\,z + 57\,153\,600\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1268.01

$$ {}_1F_2\left(-\frac{7}{2}; 2, 6; -z\right) = \frac{1}{2\,170\,943\,775\,z^4}\left(32\left(2\,z\left(1024\,z^7 + 137\,472\,z^6 + 4\,549\,248\,z^5 + 38\,188\,080\,z^4 + 50\,009\,400\,z^3 - 2\,083\,725\,z^2 - 3\,274\,425\,z - 7\,144\,200\right) J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512\,z^7 + 68\,352\,z^6 + 2\,223\,936\,z^5 + 17\,498\,880\,z^4 + 13\,891\,500\,z^3 - 3\,274\,425\,z^2 - 4\,762\,800\,z - 14\,288\,400\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(2048\,z^8 + 273\,920\,z^7 + 8\,962\,560\,z^6 + 72\,026\,784\,z^5 + 67\,863\,600\,z^4 - 18\,058\,950\,z^3 - 10\,418\,625\,z^2 - 11\,907\,000\,z - 57\,153\,600\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

For fixed z and $a_1 = -\frac{7}{2}$, $b_1 = \frac{5}{2}$

07.22.03.1269.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{5}{2}, \frac{5}{2}; z\right) = \frac{1}{409\,600\,z^{3/2}}\left(-2\sqrt{z}\left(8\,z^4 - 696\,z^3 + 13\,662\,z^2 - 56\,960\,z + 14\,385\right)\cosh\left(2\sqrt{z}\right) + \left(-8\,z^4 + 688\,z^3 - 13\,010\,z^2 + 46\,620\,z + 1785\right) \sinh\left(2\sqrt{z}\right) + 8\left(4\,z^5 - 350\,z^4 + 7000\,z^3 - 31\,500\,z^2 + 15\,750\,z + 1575\right) \mathrm{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.1270.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{5}{2}, \frac{5}{2}; -z\right) = \frac{1}{409\,600\, z^{3/2}} \left(2\sqrt{z}\,\left(8z^4 + 696z^3 + 13\,662z^2 + 56\,960z + 14\,385\right)\cos\left(2\sqrt{z}\right) + \left(8z^4 + 688z^3 + 13\,010z^2 + 46\,620z - 1785\right)\sin\left(2\sqrt{z}\right) + 8\left(4z^5 + 350z^4 + 7000z^3 + 31\,500z^2 + 15\,750z - 1575\right)\mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.1271.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{5}{2}, 3; z\right) = \frac{1}{13\,305\,600\, z^{3/2}} \left(4\left(2\sqrt{z}\,\left(256z^5 - 24\,704z^4 + 560\,512z^3 - 3\,044\,760z^2 + 2\,458\,575z + 100\,800\right) I_0\left(2\sqrt{z}\right) - \left(256z^5 - 24\,576z^4 + 548\,384z^3 - 2\,784\,960z^2 + 1\,327\,725z + 201\,600\right) I_1\left(2\sqrt{z}\right)\right) - \pi\sqrt{z}\,\left(1024z^5 - 98\,560z^4 + 2\,217\,600z^3 - 11\,642\,400z^2 + 7\,276\,500z + 1\,091\,475\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\sqrt{z}\,\left(1024z^5 - 98\,560z^4 + 2\,217\,600z^3 - 11\,642\,400z^2 + 7\,276\,500z + 1\,091\,475\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1272.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{5}{2}, 3; -z\right) = \frac{1}{13\,305\,600\, z^{3/2}} \left(4\left(2\sqrt{z}\,\left(256z^5 + 24\,704z^4 + 560\,512z^3 + 3\,044\,760z^2 + 2\,458\,575z - 100\,800\right) J_0\left(2\sqrt{z}\right) - \left(256z^5 + 24\,576z^4 + 548\,384z^3 + 2\,784\,960z^2 + 1\,327\,725z - 201\,600\right) J_1\left(2\sqrt{z}\right)\right) + \pi\sqrt{z}\,\left(1024z^5 + 98\,560z^4 + 2\,217\,600z^3 + 11\,642\,400z^2 + 7\,276\,500z - 1\,091\,475\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\sqrt{z}\,\left(1024z^5 + 98\,560z^4 + 2\,217\,600z^3 + 11\,642\,400z^2 + 7\,276\,500z - 1\,091\,475\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1273.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{5}{2}, \frac{7}{2}; z\right) = \frac{1}{491\,520\, z^{5/2}} \left(-2\sqrt{z}\,\left(4z^5 - 418z^4 + 10\,296z^3 - 58\,335z^2 + 27\,405z + 4725\right)\cosh\left(2\sqrt{z}\right) + \left(-4z^5 + 414z^4 - 9900z^3 + 50\,085z^2 - 4095z + 4725\right)\sinh\left(2\sqrt{z}\right) + 8z\left(2z^5 - 210z^4 + 5250z^3 - 31\,500z^2 + 23\,625z + 4725\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.1274.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{5}{2}, \frac{7}{2}; -z\right) = \frac{1}{491\,520\, z^{5/2}} \left(2\sqrt{z}\,\left(4z^5 + 418z^4 + 10\,296z^3 + 58\,335z^2 + 27\,405z - 4725\right)\cos\left(2\sqrt{z}\right) + \left(4z^5 + 414z^4 + 9900z^3 + 50\,085z^2 + 4095z + 4725\right)\sin\left(2\sqrt{z}\right) + 8z\left(2z^5 + 210z^4 + 5250z^3 + 31\,500z^2 + 23\,625z - 4725\right)\mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.1275.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{5}{2}, 4; z\right) = \frac{1}{28\,828\,800\, z^{5/2}} \left(-\pi \left(1024 z^5 - 116\,480 z^4 + 3\,203\,200 z^3 - 21\,621\,600 z^2 + 18\,918\,900 z + 4\,729\,725\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{3/2} + \pi \left(1024 z^5 - 116\,480 z^4 + 3\,203\,200 z^3 - 21\,621\,600 z^2 + 18\,918\,900 z + 4\,729\,725\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{3/2} + 4\left(2\sqrt{z}\, \left(256 z^6 - 29\,184 z^5 + 808\,032 z^4 - 5\,600\,320 z^3 + 5\,949\,825 z^2 + 604\,800 z - 100\,800\right) I_0\left(2\sqrt{z}\right) + \left(-256 z^6 + 29\,056 z^5 - 793\,664 z^4 + 5\,220\,680 z^3 - 3\,737\,475 z^2 - 1\,108\,800 z + 201\,600\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1276.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{5}{2}, 4; -z\right) = \frac{1}{28\,828\,800\, z^{5/2}} \left(\pi \left(1024 z^5 + 116\,480 z^4 + 3\,203\,200 z^3 + 21\,621\,600 z^2 + 18\,918\,900 z - 4\,729\,725\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{3/2} - \pi \left(1024 z^5 + 116\,480 z^4 + 3\,203\,200 z^3 + 21\,621\,600 z^2 + 18\,918\,900 z - 4\,729\,725\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{3/2} + 4\left(2\sqrt{z}\, \left(256 z^6 + 29\,184 z^5 + 808\,032 z^4 + 5\,600\,320 z^3 + 5\,949\,825 z^2 - 604\,800 z - 100\,800\right) J_0\left(2\sqrt{z}\right) - \left(256 z^6 + 29\,056 z^5 + 793\,664 z^4 + 5\,220\,680 z^3 + 3\,737\,475 z^2 - 1\,108\,800 z - 201\,600\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1277.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{5}{2}, \frac{9}{2}; z\right) = \frac{1}{1\,966\,080\, z^{7/2}} \left(8\left(4 z^5 - 490 z^4 + 14\,700 z^3 - 110\,250 z^2 + 110\,250 z + 33\,075\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^2 - 2\left(8 z^6 - 976 z^5 + 28\,922 z^4 - 207\,180 z^3 + 144\,585 z^2 + 50\,400 z - 23\,625\right) \cosh\left(2\sqrt{z}\right) \sqrt{z} + \left(-8 z^6 + 968 z^5 - 27\,990 z^4 + 183\,120 z^3 - 44\,415 z^2 + 18\,900 z - 23\,625\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.1278.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{5}{2}, \frac{9}{2}; -z\right) = \frac{1}{1\,966\,080\, z^{7/2}} \left(8\left(4 z^5 + 490 z^4 + 14\,700 z^3 + 110\,250 z^2 + 110\,250 z - 33\,075\right) \mathrm{Si}\left(2\sqrt{z}\right) z^2 + 2\left(8 z^6 + 976 z^5 + 28\,922 z^4 + 207\,180 z^3 + 144\,585 z^2 - 50\,400 z - 23\,625\right) \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(8 z^6 + 968 z^5 + 27\,990 z^4 + 183\,120 z^3 + 44\,415 z^2 + 18\,900 z + 23\,625\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.1279.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{5}{2}, 5; z\right) = \frac{1}{54\,054\,000\, z^{7/2}} \left(-\pi \left(1024 z^5 - 134\,400 z^4 + 4\,368\,000 z^3 - 36\,036\,000 z^2 + 40\,540\,500 z + 14\,189\,175\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{5/2} + \pi \left(1024 z^5 - 134\,400 z^4 + 4\,368\,000 z^3 - 36\,036\,000 z^2 + 40\,540\,500 z + 14\,189\,175\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{5/2} + 4\left(2\sqrt{z}\, \left(256 z^7 - 33\,664 z^6 + 1\,100\,352 z^5 - 9\,275\,880 z^4 + 12\,204\,675 z^3 + 2\,116\,800 z^2 - 529\,200 z + 453\,600\right) I_0\left(2\sqrt{z}\right) - \left(256 z^7 - 33\,536 z^6 + 1\,083\,744 z^5 - 8\,754\,000 z^4 + 8\,390\,025 z^3 + 3\,628\,800 z^2 - 604\,800 z + 907\,200\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1280.01

$$ {}_1F_2\left(-\frac{7}{2};\frac{5}{2},5;-z\right)= $$
$$ \frac{1}{54\,054\,000\,z^{7/2}}\left(\pi\left(1024\,z^5+134\,400\,z^4+4\,368\,000\,z^3+36\,036\,000\,z^2+40\,540\,500\,z-14\,189\,175\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-\right. $$
$$ \pi\left(1024\,z^5+134\,400\,z^4+4\,368\,000\,z^3+36\,036\,000\,z^2+40\,540\,500\,z-14\,189\,175\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{5/2}+ $$
$$ 4\left(2\sqrt{z}\left(256\,z^7+33\,664\,z^6+1\,100\,352\,z^5+9\,275\,880\,z^4+\right.\right. $$
$$ 12\,204\,675\,z^3-2\,116\,800\,z^2-529\,200\,z-453\,600\right)J_0\left(2\sqrt{z}\right)- $$
$$ \left.\left.\left.\left(256\,z^7+33\,536\,z^6+1\,083\,744\,z^5+8\,754\,000\,z^4+8\,390\,025\,z^3-3\,628\,800\,z^2-604\,800\,z-907\,200\right)J_1\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.1281.01

$$ {}_1F_2\left(-\frac{7}{2};\frac{5}{2},\frac{11}{2};z\right)=\frac{1}{10\,485\,760\,z^{9/2}}\left(3\left(32\left(z^5-140\,z^4+4900\,z^3-44\,100\,z^2+55\,125\,z+22\,050\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^3-\right.\right. $$
$$ 2\left(8\,z^7-1116\,z^6+38\,652\,z^5-334\,790\,z^4+312\,060\,z^3+160\,650\,z^2-78\,750\,z+165\,375\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+ $$
$$ \left.\left.\left(-8\,z^7+1108\,z^6-37\,580\,z^5+301\,770\,z^4-128\,940\,z^3-3150\,z^2+141\,750\,z+165\,375\right)\sinh\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1282.01

$$ {}_1F_2\left(-\frac{7}{2};\frac{5}{2},\frac{11}{2};-z\right)=\frac{1}{10\,485\,760\,z^{9/2}}\left(3\left(32\left(z^5+140\,z^4+4900\,z^3+44\,100\,z^2+55\,125\,z-22\,050\right)\mathrm{Si}\left(2\sqrt{z}\right)z^3+\right.\right. $$
$$ 2\left(8\,z^7+1116\,z^6+38\,652\,z^5+334\,790\,z^4+312\,060\,z^3-160\,650\,z^2-78\,750\,z-165\,375\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+ $$
$$ \left.\left.\left(8\,z^7+1108\,z^6+37\,580\,z^5+301\,770\,z^4+128\,940\,z^3-3150\,z^2-141\,750\,z+165\,375\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1283.01

$$ {}_1F_2\left(-\frac{7}{2};\frac{5}{2},6;z\right)=\frac{1}{91\,891\,800\,z^{9/2}} $$
$$ \left(-\pi\left(1024\,z^5-152\,320\,z^4+5\,712\,000\,z^3-55\,692\,000\,z^2+76\,576\,500\,z+34\,459\,425\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2}+\right. $$
$$ \pi\left(1024\,z^5-152\,320\,z^4+5\,712\,000\,z^3-55\,692\,000\,z^2+76\,576\,500\,z+34\,459\,425\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{7/2}+ $$
$$ 4\left(2\sqrt{z}\left(256\,z^8-38\,144\,z^7+1\,437\,472\,z^6-14\,273\,040\,z^5+22\,382\,325\,z^4+5\,644\,800\,z^3-\right.\right. $$
$$ 1\,663\,200\,z^2+1\,587\,600\,z-4\,536\,000\right)I_0\left(2\sqrt{z}\right)+\left(-256\,z^8+38\,016\,z^7-1\,418\,624\,z^6+\right. $$
$$ \left.\left.\left.\left.13\,586\,520\,z^5-16\,343\,775\,z^4-9\,172\,800\,z^3+982\,800\,z^2+1\,360\,800\,z+9\,072\,000\right)I_1\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.1284.01

$$ {}_1F_2\left(-\frac{7}{2};\frac{5}{2},6;-z\right)= $$
$$ \frac{1}{91\,891\,800\,z^{9/2}}\left(\pi\left(1024\,z^5+152\,320\,z^4+5\,712\,000\,z^3+55\,692\,000\,z^2+76\,576\,500\,z-34\,459\,425\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2}-\right. $$
$$ \pi\left(1024\,z^5+152\,320\,z^4+5\,712\,000\,z^3+55\,692\,000\,z^2+76\,576\,500\,z-34\,459\,425\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{7/2}+ $$
$$ 4\left(2\sqrt{z}\left(256\,z^8+38\,144\,z^7+1\,437\,472\,z^6+14\,273\,040\,z^5+22\,382\,325\,z^4-5\,644\,800\,z^3-\right.\right. $$
$$ 1\,663\,200\,z^2-1\,587\,600\,z-4\,536\,000\right)J_0\left(2\sqrt{z}\right)-\left(256\,z^8+38\,016\,z^7+1\,418\,624\,z^6+\right. $$
$$ \left.\left.\left.\left.13\,586\,520\,z^5+16\,343\,775\,z^4-9\,172\,800\,z^3-982\,800\,z^2+1\,360\,800\,z-9\,072\,000\right)J_1\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = -\frac{7}{2}$, $b_1 = 3$

07.22.03.1285.01

$$ {}_1F_2\left(-\frac{7}{2}; 3, 3; z\right) = \frac{1}{108\,056\,025\, z^{3/2}} \left(8\left(\sqrt{z}\,\left(1024 z^5 - 108\,800 z^4 + 2\,784\,576 z^3 - 17\,801\,280 z^2 + 18\,621\,540 z + 1\,091\,475\right) I_0\left(\sqrt{z}\right)^2 - 2\left(512 z^5 - 54\,016 z^4 + 1\,352\,352 z^3 - 7\,943\,040 z^2 + 4\,498\,830 z + 1\,091\,475\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \sqrt{z}\,\left(1024 z^5 - 108\,288 z^4 + 2\,730\,944 z^3 - 16\,487\,424 z^2 + 11\,502\,540 z + 3\,008\,565\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1286.01

$$ {}_1F_2\left(-\frac{7}{2}; 3, 3; -z\right) = \frac{1}{108\,056\,025\, z^{3/2}} \left(8\left(\sqrt{z}\,\left(1024 z^5 + 108\,800 z^4 + 2\,784\,576 z^3 + 17\,801\,280 z^2 + 18\,621\,540 z - 1\,091\,475\right) J_0\left(\sqrt{z}\right)^2 - 2\left(512 z^5 + 54\,016 z^4 + 1\,352\,352 z^3 + 7\,943\,040 z^2 + 4\,498\,830 z - 1\,091\,475\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\,\left(1024 z^5 + 108\,288 z^4 + 2\,730\,944 z^3 + 16\,487\,424 z^2 + 11\,502\,540 z - 3\,008\,565\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1287.01

$$ {}_1F_2\left(-\frac{7}{2}; 3, \frac{7}{2}; z\right) = \frac{1}{127\,733\,760 z^2} \left(4\left(2 z\left(1024 z^5 - 118\,528 z^4 + 3\,355\,776 z^3 - 24\,094\,944 z^2 + 27\,103\,860 z + 3\,746\,925\right) I_0\left(2\sqrt{z}\right) - \sqrt{z}\,\left(1024 z^5 - 118\,016 z^4 + 3\,297\,408 z^3 - 22\,516\,128 z^2 + 17\,507\,700 z + 6\,402\,375\right) I_1\left(2\sqrt{z}\right)\right) - \pi\left(4096 z^6 - 473\,088 z^5 + 13\,305\,600 z^4 - 93\,139\,200 z^3 + 87\,318\,000 z^2 + 26\,195\,400 z + 3\,274\,425\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(4096 z^6 - 473\,088 z^5 + 13\,305\,600 z^4 - 93\,139\,200 z^3 + 87\,318\,000 z^2 + 26\,195\,400 z + 3\,274\,425\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1288.01

$$ {}_1F_2\left(-\frac{7}{2}; 3, \frac{7}{2}; -z\right) = \frac{1}{127\,733\,760 z^2} \left(4\left(2 z\left(1024 z^5 + 118\,528 z^4 + 3\,355\,776 z^3 + 24\,094\,944 z^2 + 27\,103\,860 z - 3\,746\,925\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\,\left(1024 z^5 + 118\,016 z^4 + 3\,297\,408 z^3 + 22\,516\,128 z^2 + 17\,507\,700 z - 6\,402\,375\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(4096 z^6 + 473\,088 z^5 + 13\,305\,600 z^4 + 93\,139\,200 z^3 + 87\,318\,000 z^2 - 26\,195\,400 z + 3\,274\,425\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(4096 z^6 + 473\,088 z^5 + 13\,305\,600 z^4 + 93\,139\,200 z^3 + 87\,318\,000 z^2 - 26\,195\,400 z + 3\,274\,425\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1289.01

$$
{}_1F_2\left(-\frac{7}{2}; 3, 4; z\right) =
\frac{1}{468\,242\,775\,z^2}\left(16\left(2\,z\left(512\,z^5-64\,256\,z^4+2\,005\,824\,z^3-16\,329\,600\,z^2+22\,318\,380\,z+3\,274\,425\right)I_0\left(\sqrt{z}\right)^2-\right.\right.
\sqrt{z}\,\left(1024\,z^5-127\,744\,z^4+3\,916\,992\,z^3-29\,856\,960\,z^2+25\,740\,540\,z+12\,006\,225\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-
\left.\left.2\left(512\,z^6-64\,000\,z^5+1\,974\,080\,z^4-15\,373\,296\,z^3+15\,474\,060\,z^2+6\,776\,280\,z+1\,091\,475\right)I_1\left(\sqrt{z}\right)^2\right)\right)
$$

07.22.03.1290.01

$$
{}_1F_2\left(-\frac{7}{2}; 3, 4; -z\right) =
\frac{1}{468\,242\,775\,z^2}\left(16\left(2\,z\left(512\,z^5+64\,256\,z^4+2\,005\,824\,z^3+16\,329\,600\,z^2+22\,318\,380\,z-3\,274\,425\right)J_0\left(\sqrt{z}\right)^2-\right.\right.
\sqrt{z}\,\left(1024\,z^5+127\,744\,z^4+3\,916\,992\,z^3+29\,856\,960\,z^2+25\,740\,540\,z-12\,006\,225\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+
\left.\left.2\left(512\,z^6+64\,000\,z^5+1\,974\,080\,z^4+15\,373\,296\,z^3+15\,474\,060\,z^2-6\,776\,280\,z+1\,091\,475\right)J_1\left(\sqrt{z}\right)^2\right)\right)
$$

07.22.03.1291.01

$$
{}_1F_2\left(-\frac{7}{2}; 3, \frac{9}{2}; z\right) = \frac{1}{1\,021\,870\,080\,z^3}
\left(4\left(2\,z\left(4096\,z^6-552\,960\,z^5+18\,765\,056\,z^4-167\,549\,952\,z^3+241\,360\,560\,z^2+61\,210\,800\,z+5\,457\,375\right)I_0\left(2\sqrt{z}\right)-\sqrt{z}\right.\right.
\left.\left(4096\,z^6-550\,912\,z^5+18\,492\,160\,z^4-158\,632\,704\,z^3+171\,707\,760\,z^2+96\,226\,200\,z+16\,372\,125\right)I_1\left(2\sqrt{z}\right)\right)-
\pi\left(16\,384\,z^7-2\,207\,744\,z^6+74\,511\,360\,z^5-651\,974\,400\,z^4+814\,968\,000\,z^3+366\,735\,600\,z^2+\right.
91\,683\,900\,z-16\,372\,125\left.\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(16\,384\,z^7-2\,207\,744\,z^6+74\,511\,360\,z^5-\right.
\left.\left.651\,974\,400\,z^4+814\,968\,000\,z^3+366\,735\,600\,z^2+91\,683\,900\,z-16\,372\,125\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)
$$

07.22.03.1292.01

$$
{}_1F_2\left(-\frac{7}{2}; 3, \frac{9}{2}; -z\right) = \frac{1}{1\,021\,870\,080\,z^3}
\left(4\left(2\,z\left(4096\,z^6+552\,960\,z^5+18\,765\,056\,z^4+167\,549\,952\,z^3+241\,360\,560\,z^2-61\,210\,800\,z+5\,457\,375\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\right.\right.
\left.\left(4096\,z^6+550\,912\,z^5+18\,492\,160\,z^4+158\,632\,704\,z^3+171\,707\,760\,z^2-96\,226\,200\,z+16\,372\,125\right)J_1\left(2\sqrt{z}\right)\right)+
\pi\left(16\,384\,z^7+2\,207\,744\,z^6+74\,511\,360\,z^5+651\,974\,400\,z^4+814\,968\,000\,z^3-366\,735\,600\,z^2+\right.
91\,683\,900\,z+16\,372\,125\left.\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\left(16\,384\,z^7+2\,207\,744\,z^6+74\,511\,360\,z^5+\right.
\left.\left.651\,974\,400\,z^4+814\,968\,000\,z^3-366\,735\,600\,z^2+91\,683\,900\,z+16\,372\,125\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)
$$

07.22.03.1293.01

$$
{}_1F_2\left(-\frac{7}{2}; 3, 5; z\right) = \frac{1}{7\,023\,641\,625\,z^3}
\left(64\left(z\left(2048\,z^6-296\,448\,z^5+10\,920\,960\,z^4-108\,007\,200\,z^3+181\,969\,200\,z^2+45\,841\,950\,z+3\,274\,425\right)I_0\left(\sqrt{z}\right)^2-\right.\right.
4\sqrt{z}\,\left(512\,z^6-73\,728\,z^5+2\,675\,520\,z^4-25\,074\,000\,z^3+29\,162\,700\,z^2+19\,646\,550\,z+3\,274\,425\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-
2\left(1024\,z^7-147\,712\,z^6+5\,387\,136\,z^5-51\,381\,360\,z^4+\right.
\left.\left.\left.67\,649\,400\,z^3+40\,998\,825\,z^2+13\,097\,700\,z-6\,548\,850\right)I_1\left(\sqrt{z}\right)^2\right)\right)
$$

07.22.03.1294.01

$$ {}_1F_2\left(-\frac{7}{2}; 3, 5; -z\right) = \frac{1}{7\,023\,641\,625\,z^3} \left(64\left(z\left(2048\,z^6 + 296\,448\,z^5 + 10\,920\,960\,z^4 + 108\,007\,200\,z^3 + 181\,969\,200\,z^2 - 45\,841\,950\,z + 3\,274\,425\right) J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512\,z^6 + 73\,728\,z^5 + 2\,675\,520\,z^4 + 25\,074\,000\,z^3 + 29\,162\,700\,z^2 - 19\,646\,550\,z + 3\,274\,425\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + 2\left(1024\,z^7 + 147\,712\,z^6 + 5\,387\,136\,z^5 + 51\,381\,360\,z^4 + 67\,649\,400\,z^3 - 40\,998\,825\,z^2 + 13\,097\,700\,z + 6\,548\,850\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1295.01

$$ {}_1F_2\left(-\frac{7}{2}; 3, \frac{11}{2}; z\right) = \frac{1}{7\,266\,631\,680\,z^4} \left(4\left(2\,z\left(16\,384\,z^7 - 2\,527\,232\,z^6 + 99\,976\,192\,z^5 - 1\,067\,534\,592\,z^4 + 1\,873\,771\,200\,z^3 + 710\,151\,120\,z^2 + 144\,074\,700\,z - 114\,604\,875\right) I_0\left(2\sqrt{z}\right) - \sqrt{z}\left(16\,384\,z^7 - 2\,519\,040\,z^6 + 98\,726\,912\,z^5 - 1\,019\,683\,584\,z^4 + 1\,416\,864\,960\,z^3 + 1\,053\,566\,640\,z^2 + 371\,101\,500\,z - 343\,814\,625\right) I_1\left(2\sqrt{z}\right)\right) - \pi\left(65\,536\,z^8 - 10\,092\,544\,z^7 + 397\,393\,920\,z^6 - 4\,172\,636\,160\,z^5 + 6\,519\,744\,000\,z^4 + 3\,911\,846\,400\,z^3 + 1\,466\,942\,400\,z^2 - 523\,908\,000\,z + 343\,814\,625\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(65\,536\,z^8 - 10\,092\,544\,z^7 + 397\,393\,920\,z^6 - 4\,172\,636\,160\,z^5 + 6\,519\,744\,000\,z^4 + 3\,911\,846\,400\,z^3 + 1\,466\,942\,400\,z^2 - 523\,908\,000\,z + 343\,814\,625\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1296.01

$$ {}_1F_2\left(-\frac{7}{2}; 3, \frac{11}{2}; -z\right) = \frac{1}{7\,266\,631\,680\,z^4} \left(4\left(2\,z\left(16\,384\,z^7 + 2\,527\,232\,z^6 + 99\,976\,192\,z^5 + 1\,067\,534\,592\,z^4 + 1\,873\,771\,200\,z^3 - 710\,151\,120\,z^2 + 144\,074\,700\,z + 114\,604\,875\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(16\,384\,z^7 + 2\,519\,040\,z^6 + 98\,726\,912\,z^5 + 1\,019\,683\,584\,z^4 + 1\,416\,864\,960\,z^3 - 1\,053\,566\,640\,z^2 + 371\,101\,500\,z + 343\,814\,625\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(65\,536\,z^8 + 10\,092\,544\,z^7 + 397\,393\,920\,z^6 + 4\,172\,636\,160\,z^5 + 6\,519\,744\,000\,z^4 - 3\,911\,846\,400\,z^3 + 1\,466\,942\,400\,z^2 + 523\,908\,000\,z + 343\,814\,625\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(65\,536\,z^8 + 10\,092\,544\,z^7 + 397\,393\,920\,z^6 + 4\,172\,636\,160\,z^5 + 6\,519\,744\,000\,z^4 - 3\,911\,846\,400\,z^3 + 1\,466\,942\,400\,z^2 + 523\,908\,000\,z + 343\,814\,625\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1297.01

$$ {}_1F_2\left(-\frac{7}{2}; 3, 6; z\right) = \frac{1}{23\,880\,381\,525\,z^4} \left(64\left(z\left(4096\,z^7 - 671\,744\,z^6 + 28\,524\,288\,z^5 - 331\,994\,880\,z^4 + 664\,423\,200\,z^3 + 244\,490\,400\,z^2 + 42\,567\,525\,z - 52\,390\,800\right) I_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024\,z^7 - 167\,168\,z^6 + 7\,006\,848\,z^5 - 77\,923\,440\,z^4 + 114\,319\,800\,z^3 + 99\,324\,225\,z^2 + 36\,018\,675\,z - 52\,390\,800\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \left(4096\,z^8 - 669\,696\,z^7 + 28\,191\,488\,z^6 - 318\,223\,872\,z^5 + 517\,860\,000\,z^4 + 398\,437\,200\,z^3 + 186\,642\,225\,z^2 - 117\,879\,300\,z + 209\,563\,200\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1298.01

$${}_1F_2\left(-\frac{7}{2}; 3, 6; -z\right) = \frac{1}{23\,880\,381\,525\,z^4}$$
$$\left(64\left(z\left(4096\,z^7 + 671\,744\,z^6 + 28\,524\,288\,z^5 + 331\,994\,880\,z^4 + 664\,423\,200\,z^3 - 244\,490\,400\,z^2 + 42\,567\,525\,z + 52\,390\,800\right)\right.\right.$$
$$J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024\,z^7 + 167\,168\,z^6 + 7\,006\,848\,z^5 + 77\,923\,440\,z^4 + 114\,319\,800\,z^3 - 99\,324\,225\,z^2 + \right.$$
$$36\,018\,675\,z + 52\,390\,800\left) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(4096\,z^8 + 669\,696\,z^7 + 28\,191\,488\,z^6 + 318\,223\,872\,z^5 + \right.\right.$$
$$\left.\left.\left.517\,860\,000\,z^4 - 398\,437\,200\,z^3 + 186\,642\,225\,z^2 + 117\,879\,300\,z + 209\,563\,200\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = -\frac{7}{2}$, $b_1 = \frac{7}{2}$

07.22.03.1299.01

$${}_1F_2\left(-\frac{7}{2}; \frac{7}{2}, \frac{7}{2}; z\right) = \frac{1}{2\,359\,296\,z^{5/2}}\left(-2\sqrt{z}\left(8\,z^5 - 1004\,z^4 + 31\,008\,z^3 - 237\,672\,z^2 + 194\,670\,z + 101\,115\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left(8\,z^5 - 996\,z^4 + 30\,048\,z^3 - 211\,680\,z^2 + 73\,710\,z + 12\,285\right)\sinh\left(2\sqrt{z}\right) +$$
$$\left.8\left(4\,z^6 - 504\,z^5 + 15\,750\,z^4 - 126\,000\,z^3 + 141\,750\,z^2 + 56\,700\,z + 14\,175\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.1300.01

$${}_1F_2\left(-\frac{7}{2}; \frac{7}{2}, \frac{7}{2}; -z\right) = \frac{1}{2\,359\,296\,z^{5/2}}\left(2\sqrt{z}\left(8\,z^5 + 1004\,z^4 + 31\,008\,z^3 + 237\,672\,z^2 + 194\,670\,z - 101\,115\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left(8\,z^5 + 996\,z^4 + 30\,048\,z^3 + 211\,680\,z^2 + 73\,710\,z - 12\,285\right)\sin\left(2\sqrt{z}\right) +$$
$$\left.8\left(4\,z^6 + 504\,z^5 + 15\,750\,z^4 + 126\,000\,z^3 + 141\,750\,z^2 - 56\,700\,z + 14\,175\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)$$

07.22.03.1301.01

$${}_1F_2\left(-\frac{7}{2}; \frac{7}{2}, 4; z\right) = \frac{1}{276\,756\,480\,z^{5/2}}$$
$$\left(4\left(2\sqrt{z}\left(1024\,z^6 - 140\,032\,z^5 + 4\,839\,552\,z^4 - 44\,418\,912\,z^3 + 66\,758\,580\,z^2 + 19\,679\,625\,z + 4\,838\,400\right) I_0\left(2\sqrt{z}\right) - \right.\right.$$
$$\left.\left(1024\,z^6 - 139\,520\,z^5 + 4\,770\,432\,z^4 - 42\,117\,024\,z^3 + 48\,201\,300\,z^2 + 30\,008\,475\,z + 9\,676\,800\right) I_1\left(2\sqrt{z}\right)\right) -$$
$$\pi\sqrt{z}\left(4096\,z^6 - 559\,104\,z^5 + 19\,219\,200\,z^4 - 172\,972\,800\,z^3 + 227\,026\,800\,z^2 + 113\,513\,400\,z + 42\,567\,525\right)$$
$$I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\sqrt{z}\left(4096\,z^6 - 559\,104\,z^5 + 19\,219\,200\,z^4 - \right.$$
$$\left.\left.172\,972\,800\,z^3 + 227\,026\,800\,z^2 + 113\,513\,400\,z + 42\,567\,525\right) I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1302.01

$${}_1F_2\left(-\frac{7}{2}; \frac{7}{2}, 4; -z\right) = \frac{1}{276\,756\,480\,z^{5/2}}$$
$$\left(4\left(2\sqrt{z}\left(1024\,z^6 + 140\,032\,z^5 + 4\,839\,552\,z^4 + 44\,418\,912\,z^3 + 66\,758\,580\,z^2 - 19\,679\,625\,z + 4\,838\,400\right) J_0\left(2\sqrt{z}\right) - \right.\right.$$
$$\left.\left(1024\,z^6 + 139\,520\,z^5 + 4\,770\,432\,z^4 + 42\,117\,024\,z^3 + 48\,201\,300\,z^2 - 30\,008\,475\,z + 9\,676\,800\right) J_1\left(2\sqrt{z}\right)\right) +$$
$$\pi\sqrt{z}\left(4096\,z^6 + 559\,104\,z^5 + 19\,219\,200\,z^4 + 172\,972\,800\,z^3 + 227\,026\,800\,z^2 - 113\,513\,400\,z + 42\,567\,525\right)$$
$$J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\sqrt{z}\left(4096\,z^6 + 559\,104\,z^5 + 19\,219\,200\,z^4 + \right.$$
$$\left.\left.172\,972\,800\,z^3 + 227\,026\,800\,z^2 - 113\,513\,400\,z + 42\,567\,525\right) J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1303.01

$${}_1F_2\left(-\frac{7}{2};\frac{7}{2},\frac{9}{2};z\right)=$$
$$\frac{1}{4\,718\,592\,z^{7/2}}\left(-2\sqrt{z}\,\left(8\,z^6-1172\,z^5+43\,524\,z^4-420\,624\,z^3+495\,180\,z^2+405\,405\,z+141\,750\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left(-8\,z^6+1164\,z^5-42\,396\,z^4+383\,040\,z^3-249\,480\,z^2-199\,395\,z+141\,750\right)\sinh\left(2\sqrt{z}\right)+$$
$$\left.8\,z\left(4\,z^6-588\,z^5+22\,050\,z^4-220\,500\,z^3+330\,750\,z^2+198\,450\,z+99\,225\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.1304.01

$${}_1F_2\left(-\frac{7}{2};\frac{7}{2},\frac{9}{2};-z\right)=$$
$$\frac{1}{4\,718\,592\,z^{7/2}}\left(2\sqrt{z}\,\left(8\,z^6+1172\,z^5+43\,524\,z^4+420\,624\,z^3+495\,180\,z^2-405\,405\,z+141\,750\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left(8\,z^6+1164\,z^5+42\,396\,z^4+383\,040\,z^3+249\,480\,z^2-199\,395\,z-141\,750\right)\sin\left(2\sqrt{z}\right)+$$
$$\left.8\,z\left(4\,z^6+588\,z^5+22\,050\,z^4+220\,500\,z^3+330\,750\,z^2-198\,450\,z+99\,225\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)$$

07.22.03.1305.01

$${}_1F_2\left(-\frac{7}{2};\frac{7}{2},5;z\right)=$$
$$\frac{1}{518\,918\,400\,z^{7/2}}\left(-\pi\left(4096\,z^6-645\,120\,z^5+26\,208\,000\,z^4-288\,288\,000\,z^3+486\,486\,000\,z^2+340\,540\,200\,z+212\,837\,625\right)\right.$$
$$I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+$$
$$\pi\left(4096\,z^6-645\,120\,z^5+26\,208\,000\,z^4-288\,288\,000\,z^3+486\,486\,000\,z^2+340\,540\,200\,z+212\,837\,625\right)$$
$$I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2}+4\left(2\sqrt{z}\,\left(1024\,z^7-161\,536\,z^6+6\,592\,128\,z^5-73\,680\,480\,z^4+138\,518\,100\,z^3+\right.\right.$$
$$64\,529\,325\,z^2+32\,659\,200\,z-7\,257\,600\right)I_0\left(2\sqrt{z}\right)-\left(1024\,z^7-161\,024\,z^6+6\,512\,256\,z^5-$$
$$\left.\left.70\,521\,120\,z^4+106\,766\,100\,z^3+91\,981\,575\,z^2+58\,060\,800\,z-14\,515\,200\right)I_1\left(2\sqrt{z}\right)\right)\Big)$$

07.22.03.1306.01

$${}_1F_2\left(-\frac{7}{2};\frac{7}{2},5;-z\right)=$$
$$\frac{1}{518\,918\,400\,z^{7/2}}\left(\pi\left(4096\,z^6+645\,120\,z^5+26\,208\,000\,z^4+288\,288\,000\,z^3+486\,486\,000\,z^2-340\,540\,200\,z+212\,837\,625\right)\right.$$
$$J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}-$$
$$\pi\left(4096\,z^6+645\,120\,z^5+26\,208\,000\,z^4+288\,288\,000\,z^3+486\,486\,000\,z^2-340\,540\,200\,z+212\,837\,625\right)$$
$$J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{3/2}+4\left(2\sqrt{z}\,\left(1024\,z^7+161\,536\,z^6+6\,592\,128\,z^5+73\,680\,480\,z^4+138\,518\,100\,z^3-\right.\right.$$
$$64\,529\,325\,z^2+32\,659\,200\,z+7\,257\,600\right)J_0\left(2\sqrt{z}\right)-\left(1024\,z^7+161\,024\,z^6+6\,512\,256\,z^5+$$
$$\left.\left.70\,521\,120\,z^4+106\,766\,100\,z^3-91\,981\,575\,z^2+58\,060\,800\,z+14\,515\,200\right)J_1\left(2\sqrt{z}\right)\right)\Big)$$

07.22.03.1307.01

$${}_1F_2\left(-\frac{7}{2};\frac{7}{2},\frac{11}{2};z\right)=\frac{1}{8\,388\,608\,z^{9/2}}\left(32\left(z^6-168\,z^5+7350\,z^4-88\,200\,z^3+165\,375\,z^2+132\,300\,z+99\,225\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^2-\right.$$
$$2\left(8\,z^7-1340\,z^6+58\,140\,z^5-678\,126\,z^4+1\,044\,540\,z^3+1\,139\,670\,z^2+803\,250\,z-496\,125\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\,-$$
$$\left.\left(8\,z^7-1332\,z^6+56\,844\,z^5-626\,850\,z^4+611\,100\,z^3+788\,130\,z^2-141\,750\,z+496\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1308.01

$$ {}_1F_2\left(-\frac{7}{2};\frac{7}{2},\frac{11}{2};-z\right)=\frac{1}{8\,388\,608\,z^{9/2}}\left(32\left(z^6+168\,z^5+7350\,z^4+88\,200\,z^3+165\,375\,z^2-132\,300\,z+99\,225\right)\mathrm{Si}\left(2\sqrt{z}\right)z^2+2\left(8\,z^7+1340\,z^6+58\,140\,z^5+678\,126\,z^4+1\,044\,540\,z^3-1\,139\,670\,z^2+803\,250\,z+496\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8\,z^7+1332\,z^6+56\,844\,z^5+626\,850\,z^4+611\,100\,z^3-788\,130\,z^2-141\,750\,z-496\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.1309.01

$$ {}_1F_2\left(-\frac{7}{2};\frac{7}{2},6;z\right)= \frac{1}{882\,161\,280\,z^{9/2}}\left(-\pi\left(4096\,z^6-731\,136\,z^5+34\,272\,000\,z^4-445\,536\,000\,z^3+918\,918\,000\,z^2+827\,026\,200\,z+723\,647\,925\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}+\pi\left(4096\,z^6-731\,136\,z^5+34\,272\,000\,z^4-445\,536\,000\,z^3+918\,918\,000\,z^2+827\,026\,200\,z+723\,647\,925\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{5/2}+4\left(2\sqrt{z}\left(1024\,z^8-183\,040\,z^7+8\,613\,504\,z^6-113\,492\,448\,z^5+256\,091\,220\,z^4+165\,209\,625\,z^3+127\,008\,000\,z^2-39\,916\,800\,z+43\,545\,600\right)I_0\left(2\sqrt{z}\right)-\left(1024\,z^8-182\,528\,z^7+8\,522\,880\,z^6-109\,341\,216\,z^5+206\,104\,500\,z^4+224\,678\,475\,z^3+206\,841\,600\,z^2-36\,288\,000\,z+87\,091\,200\right)I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1310.01

$$ {}_1F_2\left(-\frac{7}{2};\frac{7}{2},6;-z\right)= \frac{1}{882\,161\,280\,z^{9/2}}\left(\pi\left(4096\,z^6+731\,136\,z^5+34\,272\,000\,z^4+445\,536\,000\,z^3+918\,918\,000\,z^2-827\,026\,200\,z+723\,647\,925\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-\pi\left(4096\,z^6+731\,136\,z^5+34\,272\,000\,z^4+445\,536\,000\,z^3+918\,918\,000\,z^2-827\,026\,200\,z+723\,647\,925\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{5/2}+4\left(2\sqrt{z}\left(1024\,z^8+183\,040\,z^7+8\,613\,504\,z^6+113\,492\,448\,z^5+256\,091\,220\,z^4-165\,209\,625\,z^3+127\,008\,000\,z^2+39\,916\,800\,z+43\,545\,600\right)J_0\left(2\sqrt{z}\right)-\left(1024\,z^8+182\,528\,z^7+8\,522\,880\,z^6+109\,341\,216\,z^5+206\,104\,500\,z^4-224\,678\,475\,z^3+206\,841\,600\,z^2+36\,288\,000\,z+87\,091\,200\right)J_1\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{7}{2}$, $b_1 = 4$

07.22.03.1311.01

$$ {}_1F_2\left(-\frac{7}{2};4,4;z\right)=\frac{1}{2\,029\,052\,025\,z^{5/2}} \left(16\left(2\sqrt{z}\left(1024\,z^6-151\,808\,z^5+5\,782\,144\,z^4-60\,068\,400\,z^3+108\,715\,320\,z^2+35\,791\,245\,z+14\,189\,175\right)I_0\left(\sqrt{z}\right)^2-4\left(512\,z^6-75\,520\,z^5+2\,835\,008\,z^4-27\,988\,800\,z^3+36\,007\,020\,z^2+29\,014\,965\,z+14\,189\,175\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\sqrt{z}\left(2048\,z^6-302\,592\,z^5+11\,414\,016\,z^4-114\,576\,032\,z^3+165\,155\,760\,z^2+118\,153\,350\,z+68\,399\,415\right)I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1312.01

$$ {}_1F_2\left(-\frac{7}{2};\,4,\,4;\,-z\right)=\frac{1}{2\,029\,052\,025\,z^{5/2}}$$
$$\left(16\left(2\sqrt{z}\,\left(1024\,z^6+151\,808\,z^5+5\,782\,144\,z^4+60\,068\,400\,z^3+108\,715\,320\,z^2-35\,791\,245\,z+14\,189\,175\right)J_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\left(512\,z^6+75\,520\,z^5+2\,835\,008\,z^4+27\,988\,800\,z^3+36\,007\,020\,z^2-29\,014\,965\,z+14\,189\,175\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+$$
$$\left.\left.\sqrt{z}\,\left(2048\,z^6+302\,592\,z^5+11\,414\,016\,z^4+114\,576\,032\,z^3+165\,155\,760\,z^2-118\,153\,350\,z+68\,399\,415\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1313.01

$$ {}_1F_2\left(-\frac{7}{2};\,4,\,\frac{9}{2};\,z\right)=\frac{1}{2\,214\,051\,840\,z^3}$$
$$\left(4\left(2\,z\left(4096\,z^6-653\,312\,z^5+27\,069\,184\,z^4-309\,309\,696\,z^3+600\,793\,200\,z^2+306\,318\,600\,z+200\,004\,525\right)I_0\left(2\sqrt{z}\right)-\right.\right.$$
$$\sqrt{z}\,\left(4096\,z^6-651\,264\,z^5+26\,746\,112\,z^4-296\,328\,192\,z^3+467\,071\,920\,z^2+429\,534\,000\,z+329\,063\,175\right)$$
$$I_1\left(2\sqrt{z}\right)\Big)-\pi\left(16\,384\,z^7-2\,609\,152\,z^6+107\,627\,520\,z^5-1\,210\,809\,600\,z^4+\right.$$
$$\left.2\,118\,916\,800\,z^3+1\,589\,187\,600\,z^2+1\,191\,890\,700\,z+212\,837\,625\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\pi\left(16\,384\,z^7-2\,609\,152\,z^6+107\,627\,520\,z^5-1\,210\,809\,600\,z^4+2\,118\,916\,800\,z^3+\right.$$
$$\left.\left.1\,589\,187\,600\,z^2+1\,191\,890\,700\,z+212\,837\,625\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1314.01

$$ {}_1F_2\left(-\frac{7}{2};\,4,\,\frac{9}{2};\,-z\right)=\frac{1}{2\,214\,051\,840\,z^3}$$
$$\left(4\left(2\,z\left(4096\,z^6+653\,312\,z^5+27\,069\,184\,z^4+309\,309\,696\,z^3+600\,793\,200\,z^2-306\,318\,600\,z+200\,004\,525\right)J_0\left(2\sqrt{z}\right)-\right.\right.$$
$$\sqrt{z}\,\left(4096\,z^6+651\,264\,z^5+26\,746\,112\,z^4+296\,328\,192\,z^3+467\,071\,920\,z^2-429\,534\,000\,z+329\,063\,175\right)$$
$$J_1\left(2\sqrt{z}\right)\Big)+\pi\left(16\,384\,z^7+2\,609\,152\,z^6+107\,627\,520\,z^5+1\,210\,809\,600\,z^4+\right.$$
$$\left.2\,118\,916\,800\,z^3-1\,589\,187\,600\,z^2+1\,191\,890\,700\,z-212\,837\,625\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\pi\left(16\,384\,z^7+2\,609\,152\,z^6+107\,627\,520\,z^5+1\,210\,809\,600\,z^4+2\,118\,916\,800\,z^3-\right.$$
$$\left.\left.1\,589\,187\,600\,z^2+1\,191\,890\,700\,z-212\,837\,625\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1315.01

$$ {}_1F_2\left(-\frac{7}{2};\,4,\,5;\,z\right)=\frac{1}{30\,435\,780\,375\,z^3}$$
$$\left(64\left(z\left(4096\,z^6-700\,416\,z^5+31\,491\,840\,z^4-397\,958\,400\,z^3+895\,860\,000\,z^2+477\,792\,000\,z+383\,107\,725\right)I_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\,\left(1024\,z^6-174\,336\,z^5+7\,743\,360\,z^4-93\,870\,000\,z^3+160\,990\,200\,z^2+179\,819\,325\,z+170\,270\,100\right)$$
$$I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\left(4096\,z^7-698\,368\,z^6+31\,144\,704\,z^5-382\,725\,120\,z^4+\right.$$
$$\left.\left.\left.718\,452\,000\,z^3+706\,330\,800\,z^2+685\,451\,025\,z+170\,270\,100\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1316.01

$$ {}_1F_2\left(-\frac{7}{2}; 4, 5; -z\right) = \frac{1}{30\,435\,780\,375\,z^3} \left(64\left(z\left(4096\,z^6 + 700\,416\,z^5 + 31\,491\,840\,z^4 + 397\,958\,400\,z^3 + 895\,860\,000\,z^2 - 477\,792\,000\,z + 383\,107\,725\right) J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024\,z^6 + 174\,336\,z^5 + 7\,743\,360\,z^4 + 93\,870\,000\,z^3 + 160\,990\,200\,z^2 - 179\,819\,325\,z + 170\,270\,100\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(4096\,z^7 + 698\,368\,z^6 + 31\,144\,704\,z^5 + 382\,725\,120\,z^4 + 718\,452\,000\,z^3 - 706\,330\,800\,z^2 + 685\,451\,025\,z - 170\,270\,100\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1317.01

$$ {}_1F_2\left(-\frac{7}{2}; 4, \frac{11}{2}; z\right) = \frac{1}{15\,744\,368\,640\,z^4} \left(4\left(2\,z\left(16\,384\,z^7 - 2\,985\,984\,z^6 + 144\,245\,760\,z^5 - 1\,972\,623\,616\,z^4 + 4\,697\,246\,400\,z^3 + 3\,457\,475\,280\,z^2 + 3\,642\,439\,500\,z + 496\,621\,125\right) I_0\left(2\sqrt{z}\right) - \sqrt{z}\left(16\,384\,z^7 - 2\,977\,792\,z^6 + 142\,767\,104\,z^5 - 1\,903\,039\,232\,z^4 + 3\,824\,452\,800\,z^3 + 4\,597\,936\,560\,z^2 + 5\,411\,907\,900\,z + 1\,489\,863\,375\right) I_1\left(2\sqrt{z}\right)\right) - \pi\left(65\,536\,z^8 - 11\,927\,552\,z^7 + 574\,013\,440\,z^6 - 7\,749\,181\,440\,z^5 + 16\,951\,334\,400\,z^4 + 16\,951\,334\,400\,z^3 + 19\,070\,251\,200\,z^2 + 6\,810\,804\,000\,z - 1\,489\,863\,375\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(65\,536\,z^8 - 11\,927\,552\,z^7 + 574\,013\,440\,z^6 - 7\,749\,181\,440\,z^5 + 16\,951\,334\,400\,z^4 + 16\,951\,334\,400\,z^3 + 19\,070\,251\,200\,z^2 + 6\,810\,804\,000\,z - 1\,489\,863\,375\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1318.01

$$ {}_1F_2\left(-\frac{7}{2}; 4, \frac{11}{2}; -z\right) = \frac{1}{15\,744\,368\,640\,z^4} \left(4\left(2\,z\left(16\,384\,z^7 + 2\,985\,984\,z^6 + 144\,245\,760\,z^5 + 1\,972\,623\,616\,z^4 + 4\,697\,246\,400\,z^3 - 3\,457\,475\,280\,z^2 + 3\,642\,439\,500\,z - 496\,621\,125\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(16\,384\,z^7 + 2\,977\,792\,z^6 + 142\,767\,104\,z^5 + 1\,903\,039\,232\,z^4 + 3\,824\,452\,800\,z^3 - 4\,597\,936\,560\,z^2 + 5\,411\,907\,900\,z - 1\,489\,863\,375\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(65\,536\,z^8 + 11\,927\,552\,z^7 + 574\,013\,440\,z^6 + 7\,749\,181\,440\,z^5 + 16\,951\,334\,400\,z^4 - 16\,951\,334\,400\,z^3 + 19\,070\,251\,200\,z^2 - 6\,810\,804\,000\,z - 1\,489\,863\,375\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(65\,536\,z^8 + 11\,927\,552\,z^7 + 574\,013\,440\,z^6 + 7\,749\,181\,440\,z^5 + 16\,951\,334\,400\,z^4 - 16\,951\,334\,400\,z^3 + 19\,070\,251\,200\,z^2 - 6\,810\,804\,000\,z - 1\,489\,863\,375\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1319.01

$$ {}_1F_2\left(-\frac{7}{2}; 4, 6; z\right) = \frac{1}{103\,481\,653\,275\,z^4} \left(128\left(z\left(4096\,z^7 - 793\,600\,z^6 + 41\,136\,384\,z^5 - 612\,339\,840\,z^4 + 1\,648\,029\,600\,z^3 + 1\,236\,022\,200\,z^2 + 1\,489\,863\,375\,z + 170\,270\,100\right) I_0\left(\sqrt{z}\right)^2 - \sqrt{z}\left(4096\,z^7 - 790\,528\,z^6 + 40\,548\,096\,z^5 - 582\,785\,280\,z^4 + 1\,250\,676\,000\,z^3 + 1\,765\,713\,600\,z^2 + 2\,426\,348\,925\,z + 681\,080\,400\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \left(4096\,z^8 - 791\,552\,z^7 + 40\,742\,656\,z^6 - 592\,354\,176\,z^5 + 1\,370\,376\,000\,z^4 + 1\,706\,985\,000\,z^3 + 2\,306\,579\,625\,z^2 + 1\,106\,755\,650\,z - 681\,080\,400\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1320.01

$${}_1F_2\left(-\frac{7}{2}; 4, 6; -z\right) =$$
$$\frac{1}{103\,481\,653\,275\,z^4}\left(128\left(z\left(4096\,z^7+793\,600\,z^6+41\,136\,384\,z^5+612\,339\,840\,z^4+1\,648\,029\,600\,z^3-1\,236\,022\,200\,z^2+\right.\right.\right.$$
$$\left.\left.\left.1\,489\,863\,375\,z-170\,270\,100\right)J_0\left(\sqrt{z}\right)^2-\sqrt{z}\left(4096\,z^7+790\,528\,z^6+40\,548\,096\,z^5+582\,785\,280\,z^4+\right.\right.\right.$$
$$\left.\left.\left.1\,250\,676\,000\,z^3-1\,765\,713\,600\,z^2+2\,426\,348\,925\,z-681\,080\,400\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096\,z^8+791\,552\,z^7+40\,742\,656\,z^6+592\,354\,176\,z^5+1\,370\,376\,000\,z^4-1\,706\,985\,000\,z^3+\right.\right.\right.$$
$$\left.\left.\left.2\,306\,579\,625\,z^2-1\,106\,755\,650\,z-681\,080\,400\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = -\frac{7}{2}$, $b_1 = \frac{9}{2}$

07.22.03.1321.01

$${}_1F_2\left(-\frac{7}{2}; \frac{9}{2}, \frac{9}{2}; z\right) =$$
$$\frac{1}{18\,874\,368\,z^{7/2}}\left(-2\sqrt{z}\left(16\,z^6-2736\,z^5+122\,132\,z^4-1\,485\,696\,z^3+2\,472\,120\,z^2+3\,020\,220\,z+3\,028\,725\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left(16\,z^6-2720\,z^5+119\,484\,z^4-1\,377\,600\,z^3+1\,504\,440\,z^2+2\,290\,680\,z+940\,275\right)\sinh\left(2\sqrt{z}\right)+$$
$$\left.8\left(8\,z^7-1372\,z^6+61\,740\,z^5-771\,750\,z^4+1\,543\,500\,z^3+1\,389\,150\,z^2+1\,389\,150\,z+496\,125\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.1322.01

$${}_1F_2\left(-\frac{7}{2}; \frac{9}{2}, \frac{9}{2}; -z\right) =$$
$$\frac{1}{18\,874\,368\,z^{7/2}}\left(2\sqrt{z}\left(16\,z^6+2736\,z^5+122\,132\,z^4+1\,485\,696\,z^3+2\,472\,120\,z^2-3\,020\,220\,z+3\,028\,725\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left(16\,z^6+2720\,z^5+119\,484\,z^4+1\,377\,600\,z^3+1\,504\,440\,z^2-2\,290\,680\,z+940\,275\right)\sin\left(2\sqrt{z}\right)+$$
$$\left.8\left(8\,z^7+1372\,z^6+61\,740\,z^5+771\,750\,z^4+1\,543\,500\,z^3-1\,389\,150\,z^2+1\,389\,150\,z-496\,125\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)$$

07.22.03.1323.01

$${}_1F_2\left(-\frac{7}{2}; \frac{9}{2}, 5; z\right) =$$
$$\frac{1}{4\,151\,347\,200\,z^{7/2}}\left(4\left(2\sqrt{z}\left(4096\,z^7-753\,664\,z^6+36\,878\,592\,z^5-513\,538\,560\,z^4+1\,254\,884\,400\,z^3+981\,136\,800\,z^2+\right.\right.\right.$$
$$\left.\left.\left.1\,171\,152\,675\,z+406\,425\,600\right)I_0\left(2\sqrt{z}\right)-\left(4096\,z^7-751\,616\,z^6+36\,505\,344\,z^5-\right.\right.\right.$$
$$\left.\left.\left.495\,740\,160\,z^4+1\,027\,177\,200\,z^3+1\,292\,041\,800\,z^2+1\,684\,542\,825\,z+812\,851\,200\right)I_1\left(2\sqrt{z}\right)\right)-\right.$$
$$\pi\sqrt{z}\left(16\,384\,z^7-3\,010\,560\,z^6+146\,764\,800\,z^5-2\,018\,016\,000\,z^4+4\,540\,536\,000\,z^3+\right.$$
$$\left.4\,767\,562\,800\,z^2+5\,959\,453\,500\,z+3\,192\,564\,375\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\pi\sqrt{z}\left(16\,384\,z^7-3\,010\,560\,z^6+146\,764\,800\,z^5-2\,018\,016\,000\,z^4+4\,540\,536\,000\,z^3+\right.$$
$$\left.\left.4\,767\,562\,800\,z^2+5\,959\,453\,500\,z+3\,192\,564\,375\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1324.01

$$
{}_1F_2\left(-\frac{7}{2};\frac{9}{2},5;-z\right)=
$$
$$
\frac{1}{4\,151\,347\,200\,z^{7/2}}\left(4\left(2\sqrt{z}\,\left(4096\,z^7+753\,664\,z^6+36\,878\,592\,z^5+513\,538\,560\,z^4+1\,254\,884\,400\,z^3-981\,136\,800\,z^2+\right.\right.\right.
$$
$$
\left.\left.\left.1\,171\,152\,675\,z-406\,425\,600\right)J_0\left(2\sqrt{z}\right)-\left(4096\,z^7+751\,616\,z^6+36\,505\,344\,z^5+\right.\right.\right.
$$
$$
\left.\left.\left.495\,740\,160\,z^4+1\,027\,177\,200\,z^3-1\,292\,041\,800\,z^2+1\,684\,542\,825\,z-812\,851\,200\right)J_1\left(2\sqrt{z}\right)\right)+\right.
$$
$$
\pi\sqrt{z}\,\left(16\,384\,z^7+3\,010\,560\,z^6+146\,764\,800\,z^5+2\,018\,016\,000\,z^4+4\,540\,536\,000\,z^3-\right.
$$
$$
\left.4\,767\,562\,800\,z^2+5\,959\,453\,500\,z-3\,192\,564\,375\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-
$$
$$
\left.\pi\sqrt{z}\,\left(16\,384\,z^7+3\,010\,560\,z^6+146\,764\,800\,z^5+2\,018\,016\,000\,z^4+4\,540\,536\,000\,z^3-\right.\right.
$$
$$
\left.\left.4\,767\,562\,800\,z^2+5\,959\,453\,500\,z-3\,192\,564\,375\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)
$$

07.22.03.1325.01

$$
{}_1F_2\left(-\frac{7}{2};\frac{9}{2},\frac{11}{2};z\right)=\frac{1}{16\,777\,216\,z^{9/2}}
$$
$$
\left(-2\sqrt{z}\,\left(8\,z^7-1564\,z^6+81\,548\,z^5-1\,195\,902\,z^4+2\,576\,700\,z^3+4\,103\,190\,z^2+6\,492\,150\,z+3\,472\,875\right)\cosh\left(2\sqrt{z}\right)-\right.
$$
$$
\left(8\,z^7-1556\,z^6+80\,028\,z^5-1\,122\,450\,z^4+1\,740\,060\,z^3+3\,645\,810\,z^2+4\,753\,350\,z-3\,472\,875\right)\sinh\left(2\sqrt{z}\right)+
$$
$$
\left.32\,z\left(z^7-196\,z^6+10\,290\,z^5-154\,350\,z^4+385\,875\,z^3+463\,050\,z^2+694\,575\,z+496\,125\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)
$$

07.22.03.1326.01

$$
{}_1F_2\left(-\frac{7}{2};\frac{9}{2},\frac{11}{2};-z\right)=\frac{1}{16\,777\,216\,z^{9/2}}
$$
$$
\left(2\sqrt{z}\,\left(8\,z^7+1564\,z^6+81\,548\,z^5+1\,195\,902\,z^4+2\,576\,700\,z^3-4\,103\,190\,z^2+6\,492\,150\,z-3\,472\,875\right)\cos\left(2\sqrt{z}\right)+\right.
$$
$$
\left(8\,z^7+1556\,z^6+80\,028\,z^5+1\,122\,450\,z^4+1\,740\,060\,z^3-3\,645\,810\,z^2+4\,753\,350\,z+3\,472\,875\right)\sin\left(2\sqrt{z}\right)+
$$
$$
\left.32\,z\left(z^7+196\,z^6+10\,290\,z^5+154\,350\,z^4+385\,875\,z^3-463\,050\,z^2+694\,575\,z-496\,125\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)
$$

07.22.03.1327.01

$$
{}_1F_2\left(-\frac{7}{2};\frac{9}{2},6;z\right)=\frac{1}{7\,057\,290\,240\,z^{9/2}}
$$
$$
\left(-\pi\left(16\,384\,z^7-3\,411\,968\,z^6+191\,923\,200\,z^5-3\,118\,752\,000\,z^4+8\,576\,568\,000\,z^3+11\,578\,366\,800\,z^2+20\,262\,141\,900\,z+\right.\right.
$$
$$
\left.\left.18\,091\,198\,125\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+\pi\left(16\,384\,z^7-3\,411\,968\,z^6+191\,923\,200\,z^5-3\,118\,752\,000\,z^4+\right.\right.
$$
$$
\left.\left.8\,576\,568\,000\,z^3+11\,578\,366\,800\,z^2+20\,262\,141\,900\,z+18\,091\,198\,125\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2}+\right.
$$
$$
4\left(2\sqrt{z}\,\left(4096\,z^8-854\,016\,z^7+48\,193\,280\,z^6-791\,526\,144\,z^5+2\,330\,642\,160\,z^4+2\,475\,862\,200\,z^3+4\,265\,715\,825\,z^2+\right.\right.
$$
$$
\left.\left.3\,048\,192\,000\,z-812\,851\,200\right)I_0\left(2\sqrt{z}\right)-\left(4096\,z^8-851\,968\,z^7+47\,769\,856\,z^6-768\,158\,208\,z^5+\right.\right.
$$
$$
\left.\left.\left.1\,973\,386\,800\,z^4+3\,127\,572\,000\,z^3+5\,684\,699\,475\,z^2+5\,283\,532\,800\,z-1\,625\,702\,400\right)I_1\left(2\sqrt{z}\right)\right)\right)
$$

07.22.03.1328.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{9}{2}, 6; -z\right) = \frac{1}{7\,057\,290\,240\, z^{9/2}} $$
$$ \left(\pi\left(16\,384\, z^7 + 3\,411\,968\, z^6 + 191\,923\,200\, z^5 + 3\,118\,752\,000\, z^4 + 8\,576\,568\,000\, z^3 - 11\,578\,366\,800\, z^2 + 20\,262\,141\,900\, z - 18\,091\,198\,125\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{3/2} - \pi\left(16\,384\, z^7 + 3\,411\,968\, z^6 + 191\,923\,200\, z^5 + 3\,118\,752\,000\, z^4 + 8\,576\,568\,000\, z^3 - 11\,578\,366\,800\, z^2 + 20\,262\,141\,900\, z - 18\,091\,198\,125\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{3/2} + 4\left(2\sqrt{z}\,\left(4096\, z^8 + 854\,016\, z^7 + 48\,193\,280\, z^6 + 791\,526\,144\, z^5 + 2\,330\,642\,160\, z^4 - 2\,475\,862\,200\, z^3 + 4\,265\,715\,825\, z^2 - 3\,048\,192\,000\, z - 812\,851\,200\right) J_0\left(2\sqrt{z}\right) - \left(4096\, z^8 + 851\,968\, z^7 + 47\,769\,856\, z^6 + 768\,158\,208\, z^5 + 1\,973\,386\,800\, z^4 - 3\,127\,572\,000\, z^3 + 5\,684\,699\,475\, z^2 - 5\,283\,532\,800\, z - 1\,625\,702\,400\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{7}{2}$, $b_1 = 5$

07.22.03.1329.01

$$ {}_1F_2\left(-\frac{7}{2}; 5, 5; z\right) = $$
$$ \frac{1}{456\,536\,705\,625\, z^{7/2}} \left(512\left(\sqrt{z}\,\left(4096\, z^7 - 807\,936\, z^6 + 42\,888\,960\, z^5 - 659\,836\,800\, z^4 + 1\,858\,248\,000\, z^3 + 1\,558\,002\,600\, z^2 + 2\,327\,294\,025\, z + 1\,277\,025\,750\right) I_0\left(\sqrt{z}\right)^2 - \left(4096\, z^7 - 804\,864\, z^6 + 42\,289\,920\, z^5 - 628\,992\,000\, z^4 + 1\,428\,084\,000\, z^3 + 2\,181\,135\,600\, z^2 + 3\,562\,560\,225\, z + 2\,554\,051\,500\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \sqrt{z}\,\left(4096\, z^7 - 805\,888\, z^6 + 42\,488\,064\, z^5 - 638\,985\,600\, z^4 + 1\,558\,116\,000\, z^3 + 2\,103\,456\,600\, z^2 + 3\,359\,602\,575\, z + 2\,822\,568\,525\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1330.01

$$ {}_1F_2\left(-\frac{7}{2}; 5, 5; -z\right) = $$
$$ \frac{1}{456\,536\,705\,625\, z^{7/2}} \left(512\left(\sqrt{z}\,\left(4096\, z^7 + 807\,936\, z^6 + 42\,888\,960\, z^5 + 659\,836\,800\, z^4 + 1\,858\,248\,000\, z^3 - 1\,558\,002\,600\, z^2 + 2\,327\,294\,025\, z - 1\,277\,025\,750\right) J_0\left(\sqrt{z}\right)^2 - \left(4096\, z^7 + 804\,864\, z^6 + 42\,289\,920\, z^5 + 628\,992\,000\, z^4 + 1\,428\,084\,000\, z^3 - 2\,181\,135\,600\, z^2 + 3\,562\,560\,225\, z - 2\,554\,051\,500\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\,\left(4096\, z^7 + 805\,888\, z^6 + 42\,488\,064\, z^5 + 638\,985\,600\, z^4 + 1\,558\,116\,000\, z^3 - 2\,103\,456\,600\, z^2 + 3\,359\,602\,575\, z - 2\,822\,568\,525\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1331.01

$$ {}_1F_2\left(-\frac{7}{2}; 5, \frac{11}{2}; z\right) = \frac{1}{29\,520\,691\,200\,z^4}\left(4\left(2\,z\left(16\,384\,z^7 - 3\,444\,736\,z^6 + 196\,543\,488\,z^5 - 3\,277\,113\,600\,z^4 + 9\,853\,905\,600\,z^3 + 10\,930\,626\,000\,z^2 + 20\,317\,178\,700\,z + 18\,561\,921\,525\right) I_0\left(2\sqrt{z}\right) - \sqrt{z}\left(16\,384\,z^7 - 3\,436\,544\,z^6 + 194\,835\,456\,z^5 - 3\,181\,781\,760\,z^4 + 8\,372\,548\,800\,z^3 + 13\,721\,626\,800\,z^2 + 26\,632\,122\,300\,z + 29\,674\,526\,175\right) I_1\left(2\sqrt{z}\right)\right) - \pi\left(65\,536\,z^8 - 13\,762\,560\,z^7 + 782\,745\,600\,z^6 - 12\,915\,302\,400\,z^5 + 36\,324\,288\,000\,z^4 + 50\,854\,003\,200\,z^3 + 95\,351\,256\,000\,z^2 + 102\,162\,060\,000\,z + 22\,347\,950\,625\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(65\,536\,z^8 - 13\,762\,560\,z^7 + 782\,745\,600\,z^6 - 12\,915\,302\,400\,z^5 + 36\,324\,288\,000\,z^4 + 50\,854\,003\,200\,z^3 + 95\,351\,256\,000\,z^2 + 102\,162\,060\,000\,z + 22\,347\,950\,625\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1332.01

$$ {}_1F_2\left(-\frac{7}{2}; 5, \frac{11}{2}; -z\right) = \frac{1}{29\,520\,691\,200\,z^4}\left(4\left(2\,z\left(16\,384\,z^7 + 3\,444\,736\,z^6 + 196\,543\,488\,z^5 + 3\,277\,113\,600\,z^4 + 9\,853\,905\,600\,z^3 - 10\,930\,626\,000\,z^2 + 20\,317\,178\,700\,z - 18\,561\,921\,525\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(16\,384\,z^7 + 3\,436\,544\,z^6 + 194\,835\,456\,z^5 + 3\,181\,781\,760\,z^4 + 8\,372\,548\,800\,z^3 - 13\,721\,626\,800\,z^2 + 26\,632\,122\,300\,z - 29\,674\,526\,175\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(65\,536\,z^8 + 13\,762\,560\,z^7 + 782\,745\,600\,z^6 + 12\,915\,302\,400\,z^5 + 36\,324\,288\,000\,z^4 - 50\,854\,003\,200\,z^3 + 95\,351\,256\,000\,z^2 - 102\,162\,060\,000\,z + 22\,347\,950\,625\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(65\,536\,z^8 + 13\,762\,560\,z^7 + 782\,745\,600\,z^6 + 12\,915\,302\,400\,z^5 + 36\,324\,288\,000\,z^4 - 50\,854\,003\,200\,z^3 + 95\,351\,256\,000\,z^2 - 102\,162\,060\,000\,z + 22\,347\,950\,625\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1333.01

$$ {}_1F_2\left(-\frac{7}{2}; 5, 6; z\right) = \frac{1}{1\,552\,224\,799\,125\,z^4}\left(512\left(2\,z\left(4096\,z^7 - 915\,456\,z^6 + 56\,033\,280\,z^5 - 1\,016\,064\,000\,z^4 + 3\,434\,886\,000\,z^3 + 3\,972\,855\,600\,z^2 + 8\,608\,023\,900\,z + 9\,577\,693\,125\right) I_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(4096\,z^7 - 912\,384\,z^6 + 55\,353\,600\,z^5 - 975\,542\,400\,z^4 + 2\,758\,644\,000\,z^3 + 5\,296\,800\,600\,z^2 + 12\,084\,144\,975\,z + 16\,601\,334\,750\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \left(8192\,z^8 - 1\,826\,816\,z^7 + 111\,157\,248\,z^6 - 1\,977\,442\,560\,z^5 + 5\,932\,332\,000\,z^4 + 10\,153\,987\,200\,z^3 + 22\,514\,549\,400\,z^2 + 31\,382\,330\,175\,z + 10\,216\,206\,000\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1334.01

$$ {}_1F_2\left(-\frac{7}{2}; 5, 6; -z\right) = \frac{1}{1\,552\,224\,799\,125\,z^4}\left(512\left(2\,z\left(4096\,z^7 + 915\,456\,z^6 + 56\,033\,280\,z^5 + 1\,016\,064\,000\,z^4 + 3\,434\,886\,000\,z^3 - 3\,972\,855\,600\,z^2 + 8\,608\,023\,900\,z - 9\,577\,693\,125\right) J_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(4096\,z^7 + 912\,384\,z^6 + 55\,353\,600\,z^5 + 975\,542\,400\,z^4 + 2\,758\,644\,000\,z^3 - 5\,296\,800\,600\,z^2 + 12\,084\,144\,975\,z - 16\,601\,334\,750\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(8192\,z^8 + 1\,826\,816\,z^7 + 111\,157\,248\,z^6 + 1\,977\,442\,560\,z^5 + 5\,932\,332\,000\,z^4 - 10\,153\,987\,200\,z^3 + 22\,514\,549\,400\,z^2 - 31\,382\,330\,175\,z + 10\,216\,206\,000\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

For fixed z and $a_1 = -\frac{7}{2}$, $b_1 = \frac{11}{2}$

07.22.03.1335.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{11}{2}, \frac{11}{2}; z\right) = -\frac{1}{268\,435\,456\,z^{9/2}}\left(9\left(2\sqrt{z}\left(8\,z^7 - 1788\,z^6 + 108\,876\,z^5 - 1\,923\,398\,z^4 + 5\,331\,900\,z^3 + 10\,982\,790\,z^2 + 26\,072\,550\,z + 37\,937\,025\right)\cosh\left(2\sqrt{z}\right) + \left(8\,z^7 - 1780\,z^6 + 107\,132\,z^5 - 1\,823\,850\,z^4 + 3\,903\,900\,z^3 + 10\,737\,090\,z^2 + 25\,656\,750\,z + 17\,628\,975\right)\sinh\left(2\sqrt{z}\right) - 16\left(2\,z^8 - 448\,z^7 + 27\,440\,z^6 - 493\,920\,z^5 + 1\,543\,500\,z^4 + 2\,469\,600\,z^3 + 5\,556\,600\,z^2 + 7\,938\,000\,z + 3\,472\,875\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1336.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{11}{2}, \frac{11}{2}; -z\right) = \frac{1}{268\,435\,456\,z^{9/2}}\left(9\left(2\sqrt{z}\left(8\,z^7 + 1788\,z^6 + 108\,876\,z^5 + 1\,923\,398\,z^4 + 5\,331\,900\,z^3 - 10\,982\,790\,z^2 + 26\,072\,550\,z - 37\,937\,025\right)\cos\left(2\sqrt{z}\right) + \left(8\,z^7 + 1780\,z^6 + 107\,132\,z^5 + 1\,823\,850\,z^4 + 3\,903\,900\,z^3 - 10\,737\,090\,z^2 + 25\,656\,750\,z - 17\,628\,975\right)\sin\left(2\sqrt{z}\right) + 16\left(2\,z^8 + 448\,z^7 + 27\,440\,z^6 + 493\,920\,z^5 + 1\,543\,500\,z^4 - 2\,469\,600\,z^3 + 5\,556\,600\,z^2 - 7\,938\,000\,z + 3\,472\,875\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1337.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{11}{2}, 6; z\right) = \frac{1}{50\,185\,175\,040\,z^{9/2}}\left(4\left(2\sqrt{z}\left(16\,384\,z^8 - 3\,903\,488\,z^7 + 256\,869\,376\,z^6 - 5\,053\,257\,984\,z^5 + 18\,355\,296\,960\,z^4 + 27\,365\,461\,200\,z^3 + 72\,386\,225\,100\,z^2 + 120\,468\,377\,925\,z + 52\,022\,476\,800\right) I_0\left(2\sqrt{z}\right) - \left(16\,384\,z^8 - 3\,895\,296\,z^7 + 254\,931\,968\,z^6 - 4\,928\,164\,608\,z^5 + 16\,036\,574\,400\,z^4 + 33\,103\,047\,600\,z^3 + 88\,925\,312\,700\,z^2 + 166\,320\,845\,775\,z + 104\,044\,953\,600\right) I_1\left(2\sqrt{z}\right)\right) - \pi\sqrt{z}\left(65\,536\,z^8 - 15\,597\,568\,z^7 + 1\,023\,590\,400\,z^6 - 19\,960\,012\,800\,z^5 + 68\,612\,544\,000\,z^4 + 123\,502\,579\,200\,z^3 + 324\,194\,270\,400\,z^2 + 578\,918\,340\,000\,z + 379\,915\,160\,625\right) I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\sqrt{z}\left(65\,536\,z^8 - 15\,597\,568\,z^7 + 1\,023\,590\,400\,z^6 - 19\,960\,012\,800\,z^5 + 68\,612\,544\,000\,z^4 + 123\,502\,579\,200\,z^3 + 324\,194\,270\,400\,z^2 + 578\,918\,340\,000\,z + 379\,915\,160\,625\right) I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1338.01

$$ {}_1F_2\left(-\frac{7}{2}; \frac{11}{2}, 6; -z\right) = \frac{1}{50\,185\,175\,040\, z^{9/2}} \left(4\left(2\sqrt{z}\,\left(16\,384 z^8 + 3\,903\,488 z^7 + 256\,869\,376 z^6 + 5\,053\,257\,984 z^5 + 18\,355\,296\,960 z^4 - 27\,365\,461\,200 z^3 + 72\,386\,225\,100 z^2 - 120\,468\,377\,925 z + 52\,022\,476\,800\right) J_0\left(2\sqrt{z}\right) - \left(16\,384 z^8 + 3\,895\,296 z^7 + 254\,931\,968 z^6 + 4\,928\,164\,608 z^5 + 16\,036\,574\,400 z^4 - 33\,103\,047\,600 z^3 + 88\,925\,312\,700 z^2 - 166\,320\,845\,775 z + 104\,044\,953\,600\right) J_1\left(2\sqrt{z}\right)\right) + \pi\sqrt{z}\,\left(65\,536 z^8 + 15\,597\,568 z^7 + 1\,023\,590\,400 z^6 + 19\,960\,012\,800 z^5 + 68\,612\,544\,000 z^4 - 123\,502\,579\,200 z^3 + 324\,194\,270\,400 z^2 - 578\,918\,340\,000 z + 379\,915\,160\,625\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\sqrt{z}\,\left(65\,536 z^8 + 15\,597\,568 z^7 + 1\,023\,590\,400 z^6 + 19\,960\,012\,800 z^5 + 68\,612\,544\,000 z^4 - 123\,502\,579\,200 z^3 + 324\,194\,270\,400 z^2 - 578\,918\,340\,000 z + 379\,915\,160\,625\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

For fixed z and $a_1 = -\frac{7}{2}$, $b_1 = 6$

07.22.03.1339.01

$$ {}_1F_2\left(-\frac{7}{2}; 6, 6; z\right) = \frac{1}{5\,277\,564\,317\,025\, z^{9/2}} \left(512\left(\sqrt{z}\,\left(16\,384 z^8 - 4\,149\,248 z^7 + 292\,859\,904 z^6 - 6\,261\,776\,640 z^5 + 25\,481\,131\,200 z^4 + 40\,168\,850\,400 z^3 + 124\,483\,489\,200 z^2 + 257\,130\,290\,025 z + 173\,675\,502\,000\right) I_0\left(\sqrt{z}\right)^2 - 16\left(1024 z^8 - 258\,560 z^7 + 18\,110\,976 z^6 - 378\,060\,480 z^5 + 1\,327\,441\,500 z^4 + 3\,199\,788\,900 z^3 + 10\,097\,206\,875 z^2 + 23\,577\,376\,725 z + 21\,709\,437\,750\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \sqrt{z}\,\left(16\,384 z^8 - 4\,141\,056 z^7 + 290\,797\,568 z^6 - 6\,118\,407\,936 z^5 + 22\,557\,528\,000 z^4 + 49\,006\,490\,400 z^3 + 150\,984\,842\,400 z^2 + 344\,880\,599\,175 z + 360\,882\,855\,900\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1340.01

$$ {}_1F_2\left(-\frac{7}{2}; 6, 6; -z\right) = \frac{1}{5\,277\,564\,317\,025\, z^{9/2}} \left(512\left(\sqrt{z}\,\left(16\,384 z^8 + 4\,149\,248 z^7 + 292\,859\,904 z^6 + 6\,261\,776\,640 z^5 + 25\,481\,131\,200 z^4 - 40\,168\,850\,400 z^3 + 124\,483\,489\,200 z^2 - 257\,130\,290\,025 z + 173\,675\,502\,000\right) J_0\left(\sqrt{z}\right)^2 - 16\left(1024 z^8 + 258\,560 z^7 + 18\,110\,976 z^6 + 378\,060\,480 z^5 + 1\,327\,441\,500 z^4 - 3\,199\,788\,900 z^3 + 10\,097\,206\,875 z^2 - 23\,577\,376\,725 z + 21\,709\,437\,750\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\,\left(16\,384 z^8 + 4\,141\,056 z^7 + 290\,797\,568 z^6 + 6\,118\,407\,936 z^5 + 22\,557\,528\,000 z^4 - 49\,006\,490\,400 z^3 + 150\,984\,842\,400 z^2 - 344\,880\,599\,175 z + 360\,882\,855\,900\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

For fixed z and $a_1 = -\frac{5}{2}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = -\frac{5}{2}$, $b_1 = -\frac{11}{2}$

07.22.03.1341.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},-\frac{11}{2};z\right)=\frac{1}{7\,203\,735}\left(3\left(2304\,z^4+95\,744\,z^3+1\,211\,280\,z^2+4\,604\,040\,z+2\,401\,245\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(256\,z^4+26\,496\,z^3+585\,648\,z^2+4\,207\,140\,z+7\,203\,735\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1342.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},-\frac{11}{2};-z\right)=\frac{1}{7\,203\,735}\left(3\left(2304\,z^4-95\,744\,z^3+1\,211\,280\,z^2-4\,604\,040\,z+2\,401\,245\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(256\,z^4-26\,496\,z^3+585\,648\,z^2-4\,207\,140\,z+7\,203\,735\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1343.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},-\frac{9}{2};z\right)=\frac{1}{654\,885}\left(\left(256\,z^4+20\,352\,z^3+307\,440\,z^2+1\,243\,620\,z+654\,885\right)\cosh\left(2\sqrt{z}\right)-6\sqrt{z}\left(512\,z^3+15\,456\,z^2+123\,480\,z+218\,295\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1344.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},-\frac{9}{2};-z\right)=\frac{1}{654\,885}\left(\left(256\,z^4-20\,352\,z^3+307\,440\,z^2-1\,243\,620\,z+654\,885\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\left(-512\,z^3+15\,456\,z^2-123\,480\,z+218\,295\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1345.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},-\frac{7}{2};z\right)=\left(\frac{128\,z^3}{6615}+\frac{32\,z^2}{77}+\frac{144\,z}{77}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(64\,z^3+4032\,z^2+39\,060\,z+72\,765\right)\sinh\left(2\sqrt{z}\right)}{72\,765}$$

07.22.03.1346.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},-\frac{7}{2};-z\right)=$$

$$\left(-\frac{128\,z^3}{6615}+\frac{32\,z^2}{77}-\frac{144\,z}{77}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-64\,z^3+4032\,z^2-39\,060\,z+72\,765\right)\sin\left(2\sqrt{z}\right)}{72\,765}$$

07.22.03.1347.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},-\frac{5}{2};z\right)=\left(\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}+\frac{20\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{495}\sqrt{z}\left(16\,z^2+240\,z+495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1348.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},-\frac{5}{2};-z\right)=\left(-\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}-\frac{20\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.1349.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},-\frac{3}{2};z\right)=\frac{1}{99}\left(16\,z^2+168\,z+99\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(16\,z^2+756\,z+2079\right)\sinh\left(2\sqrt{z}\right)}{2079}$$

07.22.03.1350.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},-\frac{3}{2};-z\right)=\frac{1}{99}\left(16\,z^2-168\,z+99\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(16\,z^2-756\,z+2079\right)\sin\left(2\sqrt{z}\right)}{2079}$$

07.22.03.1351.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{11}{2}, -\frac{1}{2}; z\right) = \left(\frac{16\,z^2}{693} + \frac{12\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{63}\sqrt{z}\,(8\,z+63)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1352.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{11}{2}, -\frac{1}{2}; -z\right) = \left(\frac{16\,z^2}{693} - \frac{12\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{63}(63-8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1353.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{11}{2}, \frac{1}{2}; z\right) = \frac{1}{693}\left((96\,z+693)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,(4\,z+213)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1354.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{11}{2}, \frac{1}{2}; -z\right) = \frac{1}{693}\left((693-96\,z)\cos\left(2\sqrt{z}\right) + 2\,(213-4\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1355.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{11}{2}, 1; z\right) = \frac{1}{693}\left((100\,z+693)\,I_0\left(2\sqrt{z}\right) - 2\sqrt{z}\,(4\,z+239)\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1356.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{11}{2}, 1; -z\right) = \frac{1}{693}\left((693-100\,z)\,J_0\left(2\sqrt{z}\right) + 2\,(239-4\,z)\sqrt{z}\,J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1357.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{11}{2}, \frac{3}{2}; z\right) = \frac{6\,(9\,z+80)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\,(4\,z+267)\cosh\left(2\sqrt{z}\right)}{693\sqrt{z}}$$

07.22.03.1358.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{11}{2}, \frac{3}{2}; -z\right) = \frac{\sqrt{z}\,(4\,z-267)\cos\left(2\sqrt{z}\right) + 6\,(80-9\,z)\sin\left(2\sqrt{z}\right)}{693\sqrt{z}}$$

07.22.03.1359.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{11}{2}, 2; z\right) = \frac{1}{693}\left(\frac{9\,(12\,z+77)\,I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 2\,(4\,z+297)\,I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.1360.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{11}{2}, 2; -z\right) = \frac{1}{693}\left(2\,(297-4\,z)\,J_2\left(2\sqrt{z}\right) - \frac{9\,(12\,z-77)\,J_1\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.1361.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{11}{2}, \frac{5}{2}; z\right) = \frac{\sqrt{z}\,(31\,z+420)\cosh\left(2\sqrt{z}\right) - 2\left(z^2+90\,z+105\right)\sinh\left(2\sqrt{z}\right)}{231\,z^{3/2}}$$

07.22.03.1362.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{11}{2}, \frac{5}{2}; -z\right) = \frac{\sqrt{z}\,(31\,z-420)\cos\left(2\sqrt{z}\right) + 2\left(z^2-90\,z+105\right)\sin\left(2\sqrt{z}\right)}{231\,z^{3/2}}$$

07.22.03.1363.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},3;z\right)=\frac{2\left((116z+693)I_2\left(2\sqrt{z}\right)-2\sqrt{z}\,(4z+363)I_3\left(2\sqrt{z}\right)\right)}{693z}$$

07.22.03.1364.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},3;-z\right)=-\frac{2\left((116z-693)J_2\left(2\sqrt{z}\right)+2\sqrt{z}\,(4z-363)J_3\left(2\sqrt{z}\right)\right)}{693z}$$

07.22.03.1365.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},\frac{7}{2};z\right)=-\frac{5\left(\sqrt{z}\,\left(z^2+126z+504\right)\cosh\left(2\sqrt{z}\right)-3\left(6z^2+133z+84\right)\sinh\left(2\sqrt{z}\right)\right)}{231z^{5/2}}$$

07.22.03.1366.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},\frac{7}{2};-z\right)=-\frac{5\left(\sqrt{z}\,\left(z^2-126z+504\right)\cos\left(2\sqrt{z}\right)-3\left(6z^2-133z+84\right)\sin\left(2\sqrt{z}\right)\right)}{231z^{5/2}}$$

07.22.03.1367.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},4;z\right)=\frac{2\left((124z+693)I_3\left(2\sqrt{z}\right)-2\sqrt{z}\,(4z+437)I_4\left(2\sqrt{z}\right)\right)}{231z^{3/2}}$$

07.22.03.1368.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},4;-z\right)=-\frac{2\left((124z-693)J_3\left(2\sqrt{z}\right)+2\sqrt{z}\,(4z-437)J_4\left(2\sqrt{z}\right)\right)}{231z^{3/2}}$$

07.22.03.1369.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},\frac{9}{2};z\right)=-\frac{5\left(\left(2z^3+357z^2+3276z+1890\right)\sinh\left(2\sqrt{z}\right)-42\sqrt{z}\,\left(z^2+36z+90\right)\cosh\left(2\sqrt{z}\right)\right)}{132z^{7/2}}$$

07.22.03.1370.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},\frac{9}{2};-z\right)=-\frac{5\left(42\sqrt{z}\,\left(z^2-36z+90\right)\cos\left(2\sqrt{z}\right)+\left(2z^3-357z^2+3276z-1890\right)\sin\left(2\sqrt{z}\right)\right)}{132z^{7/2}}$$

07.22.03.1371.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},5;z\right)=\frac{8\left(33(4z+21)I_4\left(2\sqrt{z}\right)-2\sqrt{z}\,(4z+519)I_5\left(2\sqrt{z}\right)\right)}{231z^2}$$

07.22.03.1372.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},5;-z\right)=-\frac{8\left(33(4z-21)J_4\left(2\sqrt{z}\right)+2\sqrt{z}\,(4z-519)J_5\left(2\sqrt{z}\right)\right)}{231z^2}$$

07.22.03.1373.01

$${}_1F_2\left(-\frac{5}{2};-\frac{11}{2},\frac{11}{2};z\right)=$$

$$-\frac{1}{88z^{9/2}}\left(15\left(2\sqrt{z}\,\left(z^3+252z^2+4410z+9450\right)\cosh\left(2\sqrt{z}\right)-7\left(7z^3+396z^2+2430z+1350\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1374.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{11}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{88\, z^{9/2}}\left(15\left(2\sqrt{z}\,\left(z^3 - 252\, z^2 + 4410\, z - 9450\right)\cos\left(2\sqrt{z}\right) + 7\left(-7\, z^3 + 396\, z^2 - 2430\, z + 1350\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1375.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{11}{2}, 6; z\right) = \frac{40\left(7\,(20\, z + 99)\, I_5\left(2\sqrt{z}\right) - 2\sqrt{z}\,\,(4\, z + 609)\, I_6\left(2\sqrt{z}\right)\right)}{231\, z^{5/2}}$$

07.22.03.1376.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{11}{2}, 6; -z\right) = -\frac{40\left(7\,(20\, z - 99)\, J_5\left(2\sqrt{z}\right) + 2\sqrt{z}\,\,(4\, z - 609)\, J_6\left(2\sqrt{z}\right)\right)}{231\, z^{5/2}}$$

For fixed z and $a_1 = -\frac{5}{2}$, $b_1 = -\frac{9}{2}$

07.22.03.1377.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, -\frac{9}{2}; z\right) =$$
$$\frac{1}{59\,535}\left(5\left(256\, z^3 + 5088\, z^2 + 22\,344\, z + 11\,907\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(64\, z^3 + 3488\, z^2 + 32\,340\, z + 59\,535\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1378.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, -\frac{9}{2}; -z\right) =$$
$$\frac{1}{59\,535}\left(2\sqrt{z}\,\left(-64\, z^3 + 3488\, z^2 - 32\,340\, z + 59\,535\right)\sin\left(2\sqrt{z}\right) - 5\left(256\, z^3 - 5088\, z^2 + 22\,344\, z - 11\,907\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.1379.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, -\frac{7}{2}; z\right) = \frac{\left(64\, z^3 + 2400\, z^2 + 12\,180\, z + 6615\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(272\, z^2 + 3360\, z + 6615\right)\sinh\left(2\sqrt{z}\right)}{6615}$$

07.22.03.1380.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, -\frac{7}{2}; -z\right) = \left(-\frac{64\, z^3}{6615} + \frac{160\, z^2}{441} - \frac{116\, z}{63} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(272\, z^2 - 3360\, z + 6615\right)\sin\left(2\sqrt{z}\right)}{6615}$$

07.22.03.1381.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, -\frac{5}{2}; z\right) = \left(\frac{16\, z^2}{63} + \frac{16\, z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\,\left(16\, z^2 + 420\, z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1382.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, -\frac{5}{2}; -z\right) = \left(\frac{16\, z^2}{63} - \frac{16\, z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\,\left(16\, z^2 - 420\, z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.1383.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, -\frac{3}{2}; z\right) = \left(\frac{16\, z^2}{189} + \frac{44\, z}{27} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{27}\sqrt{z}\,\left(8\, z + 27\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1384.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, -\frac{3}{2}; -z\right) = \left(\frac{16\,z^2}{189} - \frac{44\,z}{27} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{27}(27 - 8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1385.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, -\frac{1}{2}; z\right) = \left(\frac{8\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{63}\sqrt{z}\,(4\,z + 63)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1386.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, -\frac{1}{2}; -z\right) = \left(1 - \frac{8\,z}{9}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{63}(63 - 4\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1387.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, \frac{1}{2}; z\right) = \left(\frac{4\,z}{63} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{10}{21}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.1388.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, \frac{1}{2}; -z\right) = \left(1 - \frac{4\,z}{63}\right)\cos\left(2\sqrt{z}\right) + \frac{10}{21}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1389.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, 1; z\right) = \frac{1}{63}\left((4\,z + 63)\,I_0\left(2\sqrt{z}\right) - 32\sqrt{z}\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1390.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, 1; -z\right) = \frac{1}{63}\left((63 - 4\,z)\,J_0\left(2\sqrt{z}\right) + 32\sqrt{z}\,J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1391.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, \frac{3}{2}; z\right) = \frac{2\,(z + 20)\sinh\left(2\sqrt{z}\right) - 17\sqrt{z}\,\cosh\left(2\sqrt{z}\right)}{63\sqrt{z}}$$

07.22.03.1392.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, \frac{3}{2}; -z\right) = \frac{-17\sqrt{z}\,\cos\left(2\sqrt{z}\right) - 2\,(z - 20)\sin\left(2\sqrt{z}\right)}{63\sqrt{z}}$$

07.22.03.1393.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, 2; z\right) = \frac{(4\,z + 63)\,I_1\left(2\sqrt{z}\right)}{63\sqrt{z}} - \frac{4}{7}I_2\left(2\sqrt{z}\right)$$

07.22.03.1394.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, 2; -z\right) = \frac{(63 - 4\,z)\,J_1\left(2\sqrt{z}\right)}{63\sqrt{z}} + \frac{4}{7}J_2\left(2\sqrt{z}\right)$$

07.22.03.1395.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, \frac{5}{2}; z\right) = \frac{\sqrt{z}\,(z + 30)\cosh\left(2\sqrt{z}\right) - 5\,(2\,z + 3)\sinh\left(2\sqrt{z}\right)}{21\,z^{3/2}}$$

07.22.03.1396.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, \frac{5}{2}; -z\right) = \frac{(z - 30)\sqrt{z}\,\cos\left(2\sqrt{z}\right) + 5\,(3 - 2\,z)\sin\left(2\sqrt{z}\right)}{21\,z^{3/2}}$$

07.22.03.1397.01

$${}_1F_2\left(-\frac{5}{2};-\frac{9}{2},3;z\right)=\frac{2\,(4\,z+63)\,I_2\left(2\sqrt{z}\right)-80\sqrt{z}\;I_3\left(2\sqrt{z}\right)}{63\,z}$$

07.22.03.1398.01

$${}_1F_2\left(-\frac{5}{2};-\frac{9}{2},3;-z\right)=\frac{(126-8\,z)\,J_2\left(2\sqrt{z}\right)+80\sqrt{z}\;J_3\left(2\sqrt{z}\right)}{63\,z}$$

07.22.03.1399.01

$${}_1F_2\left(-\frac{5}{2};-\frac{9}{2},\frac{7}{2};z\right)=\frac{5\left(\left(2\,z^2+96\,z+63\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\;(4\,z+21)\cosh\left(2\sqrt{z}\right)\right)}{84\,z^{5/2}}$$

07.22.03.1400.01

$${}_1F_2\left(-\frac{5}{2};-\frac{9}{2},\frac{7}{2};-z\right)=\frac{5\left(6\sqrt{z}\;(4\,z-21)\cos\left(2\sqrt{z}\right)+\left(2\,z^2-96\,z+63\right)\sin\left(2\sqrt{z}\right)\right)}{84\,z^{5/2}}$$

07.22.03.1401.01

$${}_1F_2\left(-\frac{5}{2};-\frac{9}{2},4;z\right)=\frac{2\left((4\,z+63)\,I_3\left(2\sqrt{z}\right)-44\sqrt{z}\;I_4\left(2\sqrt{z}\right)\right)}{21\,z^{3/2}}$$

07.22.03.1402.01

$${}_1F_2\left(-\frac{5}{2};-\frac{9}{2},4;-z\right)=\frac{(126-8\,z)\,J_3\left(2\sqrt{z}\right)+88\sqrt{z}\;J_4\left(2\sqrt{z}\right)}{21\,z^{3/2}}$$

07.22.03.1403.01

$${}_1F_2\left(-\frac{5}{2};-\frac{9}{2},\frac{9}{2};z\right)=\frac{5\left(2\sqrt{z}\;\left(z^2+77\,z+210\right)\cosh\left(2\sqrt{z}\right)-\left(29\,z^2+357\,z+210\right)\sinh\left(2\sqrt{z}\right)\right)}{24\,z^{7/2}}$$

07.22.03.1404.01

$${}_1F_2\left(-\frac{5}{2};-\frac{9}{2},\frac{9}{2};-z\right)=-\frac{5\left(2\sqrt{z}\;\left(z^2-77\,z+210\right)\cos\left(2\sqrt{z}\right)+\left(-29\,z^2+357\,z-210\right)\sin\left(2\sqrt{z}\right)\right)}{24\,z^{7/2}}$$

07.22.03.1405.01

$${}_1F_2\left(-\frac{5}{2};-\frac{9}{2},5;z\right)=\frac{8\left((4\,z+63)\,I_4\left(2\sqrt{z}\right)-48\sqrt{z}\;I_5\left(2\sqrt{z}\right)\right)}{21\,z^2}$$

07.22.03.1406.01

$${}_1F_2\left(-\frac{5}{2};-\frac{9}{2},5;-z\right)=\frac{8\left((63-4\,z)\,J_4\left(2\sqrt{z}\right)+48\sqrt{z}\;J_5\left(2\sqrt{z}\right)\right)}{21\,z^2}$$

07.22.03.1407.01

$${}_1F_2\left(-\frac{5}{2};-\frac{9}{2},\frac{11}{2};z\right)=\frac{15\left(\left(4\,z^3+483\,z^2+3360\,z+1890\right)\sinh\left(2\sqrt{z}\right)-70\sqrt{z}\;\left(z^2+24\,z+54\right)\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{9/2}}$$

07.22.03.1408.01

$${}_1F_2\left(-\frac{5}{2};-\frac{9}{2},\frac{11}{2};-z\right)=-\frac{15\left(70\sqrt{z}\;\left(z^2-24\,z+54\right)\cos\left(2\sqrt{z}\right)+\left(4\,z^3-483\,z^2+3360\,z-1890\right)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{9/2}}$$

07.22.03.1409.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, 6; z\right) = \frac{40\left((4z+63)\, I_5\left(2\sqrt{z}\right) - 52\sqrt{z}\; I_6\left(2\sqrt{z}\right)\right)}{21\, z^{5/2}}$$

07.22.03.1410.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{9}{2}, 6; -z\right) = -\frac{40\left((4z-63)\, J_5\left(2\sqrt{z}\right) - 52\sqrt{z}\; J_6\left(2\sqrt{z}\right)\right)}{21\, z^{5/2}}$$

For fixed z and $a_1 = -\frac{5}{2}$, $b_1 = -\frac{7}{2}$

07.22.03.1411.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, -\frac{7}{2}; z\right) = \frac{1}{735}\left(\left(208z^2 + 1320z + 735\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(16z^2 + 340z + 735\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1412.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, -\frac{7}{2}; -z\right) = \frac{1}{735}\left(\left(208z^2 - 1320z + 735\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16z^2 - 340z + 735\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1413.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, -\frac{5}{2}; z\right) = \left(\frac{16z^2}{105} + \frac{12z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,(8z+21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1414.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, -\frac{5}{2}; -z\right) = \left(\frac{16z^2}{105} - \frac{12z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}(21-8z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1415.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, -\frac{3}{2}; z\right) = \left(\frac{32z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,(4z+21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1416.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, -\frac{3}{2}; -z\right) = \left(1 - \frac{32z}{21}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}(21-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1417.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, -\frac{1}{2}; z\right) = \left(\frac{4z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.1418.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, -\frac{1}{2}; -z\right) = \left(1 - \frac{4z}{7}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1419.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, \frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right) - \frac{2}{7}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.1420.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, \frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right) + \frac{2}{7}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1421.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, 1; z\right) = I_0\left(2\sqrt{z}\right) - \frac{2}{7}\sqrt{z}\, I_1\left(2\sqrt{z}\right)$$

07.22.03.1422.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, 1; -z\right) = J_0\left(2\sqrt{z}\right) + \frac{2}{7}\sqrt{z}\, J_1\left(2\sqrt{z}\right)$$

07.22.03.1423.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, \frac{3}{2}; z\right) = \frac{4\sinh\left(2\sqrt{z}\right)}{7\sqrt{z}} - \frac{1}{7}\cosh\left(2\sqrt{z}\right)$$

07.22.03.1424.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, \frac{3}{2}; -z\right) = \frac{4\sin\left(2\sqrt{z}\right)}{7\sqrt{z}} - \frac{1}{7}\cos\left(2\sqrt{z}\right)$$

07.22.03.1425.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, 2; z\right) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - \frac{2}{7}I_2\left(2\sqrt{z}\right)$$

07.22.03.1426.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, 2; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + \frac{2}{7}J_2\left(2\sqrt{z}\right)$$

07.22.03.1427.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, \frac{5}{2}; z\right) = \frac{30\sqrt{z}\,\cosh\left(2\sqrt{z}\right) - 3\,(2z+5)\sinh\left(2\sqrt{z}\right)}{28\,z^{3/2}}$$

07.22.03.1428.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, \frac{5}{2}; -z\right) = \frac{3\,(5-2z)\sin\left(2\sqrt{z}\right) - 30\sqrt{z}\,\cos\left(2\sqrt{z}\right)}{28\,z^{3/2}}$$

07.22.03.1429.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, 3; z\right) = \frac{2\,I_2\left(2\sqrt{z}\right)}{z} - \frac{4\,I_3\left(2\sqrt{z}\right)}{7\sqrt{z}}$$

07.22.03.1430.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, 3; -z\right) = \frac{2\,J_2\left(2\sqrt{z}\right)}{z} + \frac{4\,J_3\left(2\sqrt{z}\right)}{7\sqrt{z}}$$

07.22.03.1431.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, \frac{7}{2}; z\right) = -\frac{15\left(2\sqrt{z}\,(z+9)\cosh\left(2\sqrt{z}\right) - (13z+9)\sinh\left(2\sqrt{z}\right)\right)}{56\,z^{5/2}}$$

07.22.03.1432.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, \frac{7}{2}; -z\right) = \frac{15\left(2\,(z-9)\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (9-13z)\sin\left(2\sqrt{z}\right)\right)}{56\,z^{5/2}}$$

07.22.03.1433.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, 4; z\right) = \frac{6\, I_3\left(2\sqrt{z}\right)}{z^{3/2}} - \frac{12\, I_4\left(2\sqrt{z}\right)}{7\, z}$$

07.22.03.1434.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, 4; -z\right) = \frac{6\, J_3\left(2\sqrt{z}\right)}{z^{3/2}} + \frac{12\, J_4\left(2\sqrt{z}\right)}{7\, z}$$

07.22.03.1435.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, \frac{9}{2}; z\right) = -\frac{15\left(\left(8\, z^2 + 174\, z + 105\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\ (34\, z + 105)\cosh\left(2\sqrt{z}\right)\right)}{64\, z^{7/2}}$$

07.22.03.1436.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, \frac{9}{2}; -z\right) = \frac{15\left(2\sqrt{z}\ (34\, z - 105)\cos\left(2\sqrt{z}\right) + \left(8\, z^2 - 174\, z + 105\right)\sin\left(2\sqrt{z}\right)\right)}{64\, z^{7/2}}$$

07.22.03.1437.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, 5; z\right) = \frac{24\, I_4\left(2\sqrt{z}\right)}{z^2} - \frac{48\, I_5\left(2\sqrt{z}\right)}{7\, z^{3/2}}$$

07.22.03.1438.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, 5; -z\right) = \frac{24\left(7\, J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\ J_5\left(2\sqrt{z}\right)\right)}{7\, z^2}$$

07.22.03.1439.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, \frac{11}{2}; z\right) = -\frac{135\left(2\sqrt{z}\ \left(4\, z^2 + 175\, z + 420\right)\cosh\left(2\sqrt{z}\right) - \left(88\, z^2 + 735\, z + 420\right)\sinh\left(2\sqrt{z}\right)\right)}{128\, z^{9/2}}$$

07.22.03.1440.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, \frac{11}{2}; -z\right) = -\frac{135\left(2\sqrt{z}\ \left(4\, z^2 - 175\, z + 420\right)\cos\left(2\sqrt{z}\right) + \left(-88\, z^2 + 735\, z - 420\right)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{9/2}}$$

07.22.03.1441.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, 6; z\right) = \frac{120\, I_5\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{240\, I_6\left(2\sqrt{z}\right)}{7\, z^2}$$

07.22.03.1442.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{7}{2}, 6; -z\right) = \frac{120\, J_5\left(2\sqrt{z}\right)}{z^{5/2}} + \frac{240\, J_6\left(2\sqrt{z}\right)}{7\, z^2}$$

For fixed z and $a_1 = -\frac{5}{2}$, $b_1 = -\frac{5}{2}$

07.22.03.1443.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, -\frac{5}{2}; z\right) = \left(\frac{8\, z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\ (4\, z + 15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1444.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, -\frac{5}{2}; -z\right) = \left(1 - \frac{8z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}(15 - 4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1445.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, -\frac{3}{2}; z\right) = \left(\frac{4z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.1446.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, -\frac{3}{2}; -z\right) = \left(1 - \frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1447.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, -\frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.1448.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, -\frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1449.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, \frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.1450.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, \frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.1451.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, 1; z\right) = I_0\left(2\sqrt{z}\right)$$

07.22.03.1452.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, 1; -z\right) = J_0\left(2\sqrt{z}\right)$$

07.22.03.1453.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, \frac{3}{2}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.1454.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, \frac{3}{2}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.1455.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, 2; z\right) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.1456.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, 2; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.1457.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, \frac{5}{2}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.1458.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, \frac{5}{2}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}}$$

07.22.03.1459.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, 3; z\right) = \frac{2I_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.1460.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, 3; -z\right) = \frac{2J_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.1461.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, \frac{7}{2}; z\right) = \frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.1462.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, \frac{7}{2}; -z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4z-3)\sin\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.1463.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, 4; z\right) = \frac{6I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.1464.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, 4; -z\right) = \frac{6J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.1465.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, \frac{9}{2}; z\right) = \frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right) - 3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.1466.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, \frac{9}{2}; -z\right) = \frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right) + 3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.1467.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, 5; z\right) = \frac{24I_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.1468.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{5}{2}, 5; -z\right) = \frac{24J_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.1469.01

$${}_1F_2\left(-\frac{5}{2};-\frac{5}{2},\frac{11}{2};z\right)=\frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\ (8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.1470.01

$${}_1F_2\left(-\frac{5}{2};-\frac{5}{2},\frac{11}{2};-z\right)=\frac{945\left(10\sqrt{z}\ (8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.1471.01

$${}_1F_2\left(-\frac{5}{2};-\frac{5}{2},6;z\right)=\frac{120\,I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.1472.01

$${}_1F_2\left(-\frac{5}{2};-\frac{5}{2},6;-z\right)=\frac{120\,J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1=-\frac{5}{2}$, $b_1=-\frac{3}{2}$

07.22.03.1473.01

$${}_1F_2\left(-\frac{5}{2};-\frac{3}{2},-\frac{3}{2};z\right)=\frac{1}{9}\left(-32\,\mathrm{Shi}\left(2\sqrt{z}\right)z^{5/2}+2\,(4z-9)\sinh\left(2\sqrt{z}\right)\sqrt{z}\ +\left(16z^2+8z+9\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.1474.01

$${}_1F_2\left(-\frac{5}{2};-\frac{3}{2},-\frac{3}{2};-z\right)=\frac{1}{9}\left(32\,\mathrm{Si}\left(2\sqrt{z}\right)z^{5/2}+2\,(4z+9)\sin\left(2\sqrt{z}\right)\sqrt{z}\ +\left(16z^2-8z+9\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.1475.01

$${}_1F_2\left(-\frac{5}{2};-\frac{3}{2},-\frac{1}{2};z\right)=\frac{1}{3}\left(16\,\mathrm{Shi}\left(2\sqrt{z}\right)z^{5/2}-2\,(2z+3)\sinh\left(2\sqrt{z}\right)\sqrt{z}\ +\left(-8z^2-4z+3\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.1476.01

$${}_1F_2\left(-\frac{5}{2};-\frac{3}{2},-\frac{1}{2};-z\right)=\frac{1}{3}\left(-16\,\mathrm{Si}\left(2\sqrt{z}\right)z^{5/2}+2\,(3-2z)\sin\left(2\sqrt{z}\right)\sqrt{z}\ +\left(-8z^2+4z+3\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.1477.01

$${}_1F_2\left(-\frac{5}{2};-\frac{3}{2},\frac{1}{2};z\right)=\frac{1}{6}\left(-8\,\mathrm{Shi}\left(2\sqrt{z}\right)z^{5/2}+(2z+3)\sinh\left(2\sqrt{z}\right)\sqrt{z}\ +2\left(2z^2+z+3\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.1478.01

$${}_1F_2\left(-\frac{5}{2};-\frac{3}{2},\frac{1}{2};-z\right)=\frac{1}{6}\left(8\,\mathrm{Si}\left(2\sqrt{z}\right)z^{5/2}+(2z-3)\sin\left(2\sqrt{z}\right)\sqrt{z}\ +\left(4z^2-2z+6\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.1479.01

$${}_1F_2\left(-\frac{5}{2};-\frac{3}{2},1;z\right)=$$

$$\frac{1}{45}\left(2\sqrt{z}\ I_1\left(2\sqrt{z}\right)\left(16\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}+16z^2+4z+9\right)+I_0\left(2\sqrt{z}\right)\left(-32\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^3-64z^3+16z^2+12z+45\right)\right)$$

07.22.03.1480.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, 1; -z\right) =$$

$$\frac{1}{45}\left(2\sqrt{z}\ J_1\left(2\sqrt{z}\right)\left(16\pi \boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2} - 16z^2 + 4z - 9\right) + J_0\left(2\sqrt{z}\right)\left(-32\pi \boldsymbol{H}_1\left(2\sqrt{z}\right)z^3 + 64z^3 + 16z^2 - 12z + 45\right)\right)$$

07.22.03.1481.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, \frac{3}{2}; z\right) = \frac{-8\,\mathrm{Shi}\left(2\sqrt{z}\right)z^3 + 2\left(2z^2 + z + 3\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(2z^2 + 3z + 15\right)\sinh\left(2\sqrt{z}\right)}{36\sqrt{z}}$$

07.22.03.1482.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, \frac{3}{2}; -z\right) = \frac{8\,\mathrm{Si}\left(2\sqrt{z}\right)z^3 + 2\left(2z^2 - z + 3\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(2z^2 - 3z + 15\right)\sin\left(2\sqrt{z}\right)}{36\sqrt{z}}$$

07.22.03.1483.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, 2; z\right) =$$

$$\frac{1}{315}\left(\frac{I_1\left(2\sqrt{z}\right)\left(64\pi \boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2} + 64z^3 + 16z^2 + 36z + 225\right)}{\sqrt{z}} - 2\,I_0\left(2\sqrt{z}\right)\left(32\pi \boldsymbol{L}_1\left(2\sqrt{z}\right)z^3 + 64z^3 - 16z^2 - 12z - 45\right)\right)$$

07.22.03.1484.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, 2; -z\right) = \frac{1}{315}$$

$$\left(\frac{J_1\left(2\sqrt{z}\right)\left(64\pi \boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2} - 64z^3 + 16z^2 - 36z + 225\right)}{\sqrt{z}} - 2\,J_0\left(2\sqrt{z}\right)\left(32\pi \boldsymbol{H}_1\left(2\sqrt{z}\right)z^3 - 64z^3 - 16z^2 + 12z - 45\right)\right)$$

07.22.03.1485.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, \frac{5}{2}; z\right) =$$

$$\frac{1}{192z^{3/2}}\left(-16\,\mathrm{Shi}\left(2\sqrt{z}\right)z^4 + 2\left(4z^3 + 2z^2 + 6z + 45\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^3 + 6z^2 + 30z - 45\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1486.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, \frac{5}{2}; -z\right) = \frac{16\,\mathrm{Si}\left(2\sqrt{z}\right)z^4 + 2\left(4z^3 - 2z^2 + 6z - 45\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^3 - 6z^2 + 30z + 45\right)\sin\left(2\sqrt{z}\right)}{192z^{3/2}}$$

07.22.03.1487.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, 3; z\right) = \frac{1}{2835z^{3/2}}\left(2\left(I_1\left(2\sqrt{z}\right)\left(128\pi \boldsymbol{L}_0\left(2\sqrt{z}\right)z^{9/2} + 128z^4 + 32z^3 + 72z^2 + 450z - 1575\right) - \right.\right.$$
$$\left.\left.\sqrt{z}\ I_0\left(2\sqrt{z}\right)\left(128\pi \boldsymbol{L}_1\left(2\sqrt{z}\right)z^4 + 256z^4 - 64z^3 - 48z^2 - 180z - 1575\right)\right)\right)$$

07.22.03.1488.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, 3; -z\right) = \frac{1}{2835z^{3/2}}\left(2\left(J_1\left(2\sqrt{z}\right)\left(128\pi \boldsymbol{H}_0\left(2\sqrt{z}\right)z^{9/2} - 128z^4 + 32z^3 - 72z^2 + 450z + 1575\right) - \right.\right.$$
$$\left.\left.\sqrt{z}\ J_0\left(2\sqrt{z}\right)\left(128\pi \boldsymbol{H}_1\left(2\sqrt{z}\right)z^4 - 256z^4 - 64z^3 + 48z^2 - 180z + 1575\right)\right)\right)$$

07.22.03.1489.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, \frac{7}{2}; z\right) = \frac{1}{384\, z^{5/2}}$$
$$\left(-16\,\text{Shi}\left(2\sqrt{z}\right) z^5 + 2\left(4\,z^4 + 2\,z^3 + 6\,z^2 + 45\,z - 270\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(4\,z^4 + 6\,z^3 + 30\,z^2 + 315\,z + 270\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1490.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, \frac{7}{2}; -z\right) =$$
$$\frac{1}{384\, z^{5/2}}\left(16\,\text{Si}\left(2\sqrt{z}\right) z^5 + 2\left(4\,z^4 - 2\,z^3 + 6\,z^2 - 45\,z - 270\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(4\,z^4 - 6\,z^3 + 30\,z^2 - 315\,z + 270\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1491.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, 4; z\right) =$$
$$\frac{1}{10\,395\, z^{5/2}}\left(2\left(I_1\left(2\sqrt{z}\right)\left(256\,\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{11/2} + 256\,z^5 + 64\,z^4 + 144\,z^3 + 900\,z^2 + 11\,025\,z + 28\,350\right) - 2\sqrt{z}\right.\right.$$
$$\left.\left. I_0\left(2\sqrt{z}\right)\left(128\,\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right) z^5 + 256\,z^5 - 64\,z^4 - 48\,z^3 - 180\,z^2 - 1575\,z + 14\,175\right)\right)\right)$$

07.22.03.1492.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, 4; -z\right) =$$
$$\frac{1}{10\,395\, z^{5/2}}\left(2\left(J_1\left(2\sqrt{z}\right)\left(256\,\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{11/2} - 256\,z^5 + 64\,z^4 - 144\,z^3 + 900\,z^2 - 11\,025\,z + 28\,350\right) - 2\right.\right.$$
$$\left.\left. \sqrt{z}\, J_0\left(2\sqrt{z}\right)\left(128\,\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right) z^5 - 256\,z^5 - 64\,z^4 + 48\,z^3 - 180\,z^2 + 1575\,z + 14\,175\right)\right)\right)$$

07.22.03.1493.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, \frac{9}{2}; z\right) = \frac{1}{4608\, z^{7/2}}\left(7\left(-16\,\text{Shi}\left(2\sqrt{z}\right) z^6 + 2\left(4\,z^5 + 2\,z^4 + 6\,z^3 + 45\,z^2 + 630\,z + 3375\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \right.\right.$$
$$\left.\left.\left(4\,z^5 + 6\,z^4 + 30\,z^3 + 315\,z^2 - 5130\,z - 3375\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1494.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, \frac{9}{2}; -z\right) = \frac{1}{4608\, z^{7/2}}\left(7\left(16\,\text{Si}\left(2\sqrt{z}\right) z^6 + 2\left(4\,z^5 - 2\,z^4 + 6\,z^3 - 45\,z^2 + 630\,z - 3375\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \right.\right.$$
$$\left.\left.\left(4\,z^5 - 6\,z^4 + 30\,z^3 - 315\,z^2 - 5130\,z + 3375\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1495.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, 5; z\right) =$$
$$\frac{1}{135\,135\, z^{7/2}}\left(8\left(2\, I_1\left(2\sqrt{z}\right)\left(256\,\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{13/2} + 256\,z^6 + 64\,z^5 + 144\,z^4 + 900\,z^3 + 11\,025\,z^2 - 283\,500\,z - 467\,775\right) - \right.\right.$$
$$\left.\left. \sqrt{z}\, I_0\left(2\sqrt{z}\right)\left(512\,\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right) z^6 + 1024\,z^6 - 256\,z^5 - 192\,z^4 - 720\,z^3 - 6300\,z^2 - 99\,225\,z - 935\,550\right)\right)\right)$$

07.22.03.1496.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, 5; -z\right) =$$
$$\frac{1}{135\,135\,z^{7/2}}\left(8\left(2\,J_1\left(2\sqrt{z}\right)\left(256\,\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{13/2} - 256\,z^6 + 64\,z^5 - 144\,z^4 + 900\,z^3 - 11\,025\,z^2 - 283\,500\,z + 467\,775\right) - \right.\right.$$
$$\left.\left.\sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(512\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^6 - 1024\,z^6 - 256\,z^5 + 192\,z^4 - 720\,z^3 + 6300\,z^2 - 99\,225\,z + 935\,550\right)\right)\right)$$

07.22.03.1497.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, \frac{11}{2}; z\right) =$$
$$\frac{1}{1024\,z^{9/2}}\left(-16\,\mathrm{Shi}\left(2\sqrt{z}\right)z^7 + 2\left(4\,z^6 + 2\,z^5 + 6\,z^4 + 45\,z^3 + 630\,z^2 - 23\,625\,z - 70\,875\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\;+\right.$$
$$\left.\left(4\,z^6 + 6\,z^5 + 30\,z^4 + 315\,z^3 + 5670\,z^2 + 118\,125\,z + 70\,875\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1498.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, \frac{11}{2}; -z\right) = \frac{1}{1024\,z^{9/2}}\left(16\,\mathrm{Si}\left(2\sqrt{z}\right)z^7 + 2\left(4\,z^6 - 2\,z^5 + 6\,z^4 - 45\,z^3 + 630\,z^2 + 23\,625\,z - 70\,875\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+\right.$$
$$\left.\left(4\,z^6 - 6\,z^5 + 30\,z^4 - 315\,z^3 + 5670\,z^2 - 118\,125\,z + 70\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1499.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, 6; z\right) =$$
$$\frac{1}{405\,405\,z^{9/2}}\left(8\left(I_1\left(2\sqrt{z}\right)\left(1024\,\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{15/2} + 1024\,z^7 + 256\,z^6 + 576\,z^5 + 3600\,z^4 + 44\,100\,z^3 + 893\,025\,z^2 + \right.\right.\right.$$
$$\left.\left.\left.34\,615\,350\,z + 48\,648\,600\right) - 2\sqrt{z}\;I_0\left(2\sqrt{z}\right)\right.\right.$$
$$\left.\left.\left(512\,\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^7 + 1024\,z^7 - 256\,z^6 - 192\,z^5 - 720\,z^4 - 6300\,z^3 - 99\,225\,z^2 + 5\,145\,525\,z + 24\,324\,300\right)\right)\right)$$

07.22.03.1500.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{3}{2}, 6; -z\right) =$$
$$\frac{1}{405\,405\,z^{9/2}}\left(8\left(J_1\left(2\sqrt{z}\right)\left(1024\,\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{15/2} - 1024\,z^7 + 256\,z^6 - 576\,z^5 + 3600\,z^4 - 44\,100\,z^3 + 893\,025\,z^2 - \right.\right.\right.$$
$$\left.\left.\left.34\,615\,350\,z + 48\,648\,600\right) - 2\sqrt{z}\;J_0\left(2\sqrt{z}\right)\right.\right.$$
$$\left.\left.\left(512\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^7 - 1024\,z^7 - 256\,z^6 + 192\,z^5 - 720\,z^4 + 6300\,z^3 - 99\,225\,z^2 - 5\,145\,525\,z + 24\,324\,300\right)\right)\right)$$

For fixed z and $a_1 = -\frac{5}{2}$, $b_1 = -\frac{1}{2}$

07.22.03.1501.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{1}{2}, -\frac{1}{2}; z\right) = 4\,(5 - 2\,z)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^{3/2} + 2\,(z-1)\sinh\left(2\sqrt{z}\right)\sqrt{z}\;+\left(4\,z^2 - 8\,z + 1\right)\cosh\left(2\sqrt{z}\right)$$

07.22.03.1502.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{1}{2}, -\frac{1}{2}; -z\right) = 4\,(2\,z + 5)\,\mathrm{Si}\left(2\sqrt{z}\right)z^{3/2} + 2\,(z+1)\sin\left(2\sqrt{z}\right)\sqrt{z}\;+\left(4\,z^2 + 8\,z + 1\right)\cos\left(2\sqrt{z}\right)$$

07.22.03.1503.01

$${}_1F_2\left(-\frac{5}{2};-\frac{1}{2},\frac{1}{2};z\right)=\frac{1}{4}\left(8\,(z-5)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^{3/2}+(7-2\,z)\sinh\left(2\sqrt{z}\right)\sqrt{z}\,+\left(-4\,z^2+18\,z+4\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.1504.01

$${}_1F_2\left(-\frac{5}{2};-\frac{1}{2},\frac{1}{2};-z\right)=\frac{1}{4}\left(-8\,(z+5)\,\mathrm{Si}\left(2\sqrt{z}\right)z^{3/2}-(2\,z+7)\sin\left(2\sqrt{z}\right)\sqrt{z}\,-2\left(2\,z^2+9\,z-2\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.1505.01

$${}_1F_2\left(-\frac{5}{2};-\frac{1}{2},1;z\right)=\frac{1}{15}\left(I_0\left(2\sqrt{z}\right)\left(32\,z^3+4\,\pi\,(4\,z-25)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^2-208\,z^2+44\,z+15\right)-\right.$$
$$\left.4\sqrt{z}\,I_1\left(2\sqrt{z}\right)\left(\pi\,(4\,z-25)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+4\left(z^2-6\,z-1\right)\right)\right)$$

07.22.03.1506.01

$${}_1F_2\left(-\frac{5}{2};-\frac{1}{2},1;-z\right)=\frac{1}{15}\left(J_0\left(2\sqrt{z}\right)\left(-32\,z^3+4\,\pi\,(4\,z+25)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^2-208\,z^2-44\,z+15\right)-\right.$$
$$\left.4\sqrt{z}\,J_1\left(2\sqrt{z}\right)\left(\pi\,z^{3/2}\,(4\,z+25)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)-4\left(z^2+6\,z-1\right)\right)\right)$$

07.22.03.1507.01

$${}_1F_2\left(-\frac{5}{2};-\frac{1}{2},\frac{3}{2};z\right)=\frac{8\,(2\,z-15)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^2-2\left(4\,z^2-28\,z-9\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\,+\left(-4\,z^2+24\,z+15\right)\sinh\left(2\sqrt{z}\right)}{48\sqrt{z}}$$

07.22.03.1508.01

$${}_1F_2\left(-\frac{5}{2};-\frac{1}{2},\frac{3}{2};-z\right)=\frac{-8\,(2\,z+15)\,\mathrm{Si}\left(2\sqrt{z}\right)z^2-2\left(4\,z^2+28\,z-9\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,+\left(-4\,z^2-24\,z+15\right)\sin\left(2\sqrt{z}\right)}{48\sqrt{z}}$$

07.22.03.1509.01

$${}_1F_2\left(-\frac{5}{2};-\frac{1}{2},2;z\right)=\frac{1}{105}\left(4\,I_0\left(2\sqrt{z}\right)\left(16\,z^3+2\,\pi\,(4\,z-35)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^2-144\,z^2+32\,z+15\right)-\right.$$
$$\left.\frac{I_1\left(2\sqrt{z}\right)\left(32\,z^3+8\,\pi\,(4\,z-35)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}-272\,z^2-52\,z-45\right)}{\sqrt{z}}\right)$$

07.22.03.1510.01

$${}_1F_2\left(-\frac{5}{2};-\frac{1}{2},2;-z\right)=\frac{1}{105}\left(4\,J_0\left(2\sqrt{z}\right)\left(-16\,z^3+2\,\pi\,(4\,z+35)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^2-144\,z^2-32\,z+15\right)-\right.$$
$$\left.\frac{J_1\left(2\sqrt{z}\right)\left(-32\,z^3+8\,\pi\,(4\,z+35)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-272\,z^2+52\,z-45\right)}{\sqrt{z}}\right)$$

07.22.03.1511.01

$${}_1F_2\left(-\frac{5}{2};-\frac{1}{2},\frac{5}{2};z\right)=$$
$$\frac{1}{128\,z^{3/2}}\left(16\,(z-10)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^3-2\left(4\,z^3-38\,z^2-14\,z-15\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\,+\left(-4\,z^3+34\,z^2+30\,z-15\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1512.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{1}{2}, \frac{5}{2}; -z\right) =$$
$$\frac{1}{128\, z^{3/2}}\left(-16\,(z+10)\,\mathrm{Si}\left(2\sqrt{z}\right) z^3 - 2\left(4\,z^3+38\,z^2-14\,z+15\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(-4\,z^3-34\,z^2+30\,z+15\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1513.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{1}{2}, 3; z\right) =$$
$$\frac{1}{945\, z^{3/2}}\left(2\left(\sqrt{z}\; I_0\left(2\sqrt{z}\right)\left(128\,z^4+16\,\pi\,(4\,z-45)\,\boldsymbol{L}_1\left(2\sqrt{z}\right) z^3-1472\,z^3+336\,z^2+180\,z+225\right) - I_1\left(2\sqrt{z}\right)\right.\right.$$
$$\left.\left.\left(64\,z^4+16\,\pi\,(4\,z-45)\,\boldsymbol{L}_0\left(2\sqrt{z}\right) z^{7/2}-704\,z^3-144\,z^2-180\,z+225\right)\right)\right)$$

07.22.03.1514.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{1}{2}, 3; -z\right) =$$
$$\frac{1}{945\, z^{3/2}}\left(2\left(\sqrt{z}\; J_0\left(2\sqrt{z}\right)\left(-128\,z^4+16\,\pi\,(4\,z+45)\,\boldsymbol{H}_1\left(2\sqrt{z}\right) z^3-1472\,z^3-336\,z^2+180\,z-225\right) - J_1\left(2\sqrt{z}\right)\right.\right.$$
$$\left.\left.\left(-64\,z^4+16\,\pi\,(4\,z+45)\,\boldsymbol{H}_0\left(2\sqrt{z}\right) z^{7/2}-704\,z^3+144\,z^2-180\,z-225\right)\right)\right)$$

07.22.03.1515.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{1}{2}, \frac{7}{2}; z\right) = \frac{1}{512\, z^{5/2}}\left(16\,(2\,z-25)\,\mathrm{Shi}\left(2\sqrt{z}\right) z^4 -\right.$$
$$\left. 2\left(8\,z^4-96\,z^3-38\,z^2-60\,z+135\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(-8\,z^4+88\,z^3+90\,z^2+120\,z+135\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1516.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{1}{2}, \frac{7}{2}; -z\right) = \frac{1}{512\, z^{5/2}}\left(-16\,(2\,z+25)\,\mathrm{Si}\left(2\sqrt{z}\right) z^4 -\right.$$
$$\left. 2\left(8\,z^4+96\,z^3-38\,z^2+60\,z+135\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(-8\,z^4-88\,z^3+90\,z^2-120\,z+135\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1517.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{1}{2}, 4; z\right) =$$
$$\frac{1}{3465\, z^{5/2}}\left(2\left(2\sqrt{z}\; I_0\left(2\sqrt{z}\right)\left(128\,z^5+16\,\pi\,(4\,z-55)\,\boldsymbol{L}_1\left(2\sqrt{z}\right) z^4-1792\,z^4+416\,z^3+240\,z^2+450\,z-1575\right) -\right.\right.$$
$$\left.\left. I_1\left(2\sqrt{z}\right)\left(128\,z^5+32\,\pi\,(4\,z-55)\,\boldsymbol{L}_0\left(2\sqrt{z}\right) z^{9/2}-1728\,z^4-368\,z^3-540\,z^2-675\,z-3150\right)\right)\right)$$

07.22.03.1518.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{1}{2}, 4; -z\right) =$$
$$\frac{1}{3465\, z^{5/2}}\left(2\left(2\sqrt{z}\; J_0\left(2\sqrt{z}\right)\left(-128\,z^5+16\,\pi\,(4\,z+55)\,\boldsymbol{H}_1\left(2\sqrt{z}\right) z^4-1792\,z^4-416\,z^3+240\,z^2-450\,z-1575\right) -\right.\right.$$
$$\left.\left. J_1\left(2\sqrt{z}\right)\left(-128\,z^5+32\,\pi\,(4\,z+55)\,\boldsymbol{H}_0\left(2\sqrt{z}\right) z^{9/2}-1728\,z^4+368\,z^3-540\,z^2+675\,z-3150\right)\right)\right)$$

07.22.03.1519.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{1}{2}, \frac{9}{2}; z\right) = \frac{1}{3072\, z^{7/2}}\left(7\left(16\,(z-15)\,\mathrm{Shi}\left(2\sqrt{z}\right) z^5 - 2\left(4\,z^5 - 58\,z^4 - 24\,z^3 - 45\,z^2 - 45\,z - 675\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\, + \left(-4\,z^5 + 54\,z^4 + 60\,z^3 + 135\,z^2 - 945\,z - 675\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1520.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{1}{2}, \frac{9}{2}; -z\right) = -\frac{1}{3072\, z^{7/2}}\left(7\left(16\,(z+15)\,\mathrm{Si}\left(2\sqrt{z}\right) z^5 + 2\left(4\,z^5 + 58\,z^4 - 24\,z^3 + 45\,z^2 - 45\,z + 675\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\, + \left(4\,z^5 + 54\,z^4 - 60\,z^3 + 135\,z^2 + 945\,z - 675\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1521.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{1}{2}, 5; z\right) = \frac{1}{45\,045\, z^{7/2}}$$
$$\left(8\left(\sqrt{z}\; I_0\left(2\sqrt{z}\right)\left(512\,z^6 + 64\,\pi\,(4\,z-65)\,\boldsymbol{L}_1\left(2\sqrt{z}\right) z^5 - 8448\,z^5 + 1984\,z^4 + 1200\,z^3 + 2700\,z^2 + 1575\,z + 85\,050\right) - 2\, I_1\left(2\sqrt{z}\right)\left(128\,z^6 + 32\,\pi\,(4\,z-65)\,\boldsymbol{L}_0\left(2\sqrt{z}\right) z^{11/2} - 2048\,z^5 - 448\,z^4 - 720\,z^3 - 1800\,z^2 + 22\,050\,z + 42\,525\right)\right)\right)$$

07.22.03.1522.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{1}{2}, 5; -z\right) = \frac{1}{45\,045\, z^{7/2}}$$
$$\left(8\left(\sqrt{z}\; J_0\left(2\sqrt{z}\right)\left(-512\,z^6 + 64\,\pi\,(4\,z+65)\,\boldsymbol{H}_1\left(2\sqrt{z}\right) z^5 - 8448\,z^5 - 1984\,z^4 + 1200\,z^3 - 2700\,z^2 + 1575\,z - 85\,050\right) - 2\, J_1\left(2\sqrt{z}\right)\left(-128\,z^6 + 32\,\pi\,(4\,z+65)\,\boldsymbol{H}_0\left(2\sqrt{z}\right) z^{11/2} - 2048\,z^5 + 448\,z^4 - 720\,z^3 + 1800\,z^2 + 22\,050\,z - 42\,525\right)\right)\right)$$

07.22.03.1523.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{1}{2}, \frac{11}{2}; z\right) =$$
$$\frac{1}{4096\, z^{9/2}}\left(3\left(16\,(2\,z-35)\,\mathrm{Shi}\left(2\sqrt{z}\right) z^6 - 2\left(8\,z^6 - 136\,z^5 - 58\,z^4 - 120\,z^3 - 315\,z^2 + 6300\,z + 23\,625\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\, + \left(-8\,z^6 + 128\,z^5 + 150\,z^4 + 420\,z^3 - 315\,z^2 + 37\,800\,z + 23\,625\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1524.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{1}{2}, \frac{11}{2}; -z\right) =$$
$$-\frac{1}{4096\, z^{9/2}}\left(3\left(16\,(2\,z+35)\,\mathrm{Si}\left(2\sqrt{z}\right) z^6 + 2\left(8\,z^6 + 136\,z^5 - 58\,z^4 + 120\,z^3 - 315\,z^2 - 6300\,z + 23\,625\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\, + \left(8\,z^6 + 128\,z^5 - 150\,z^4 + 420\,z^3 + 315\,z^2 + 37\,800\,z - 23\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1525.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{1}{2}, 6; z\right) =$$
$$\frac{1}{135\,135\, z^{9/2}}\left(8\left(2\sqrt{z}\; I_0\left(2\sqrt{z}\right)\left(512\,z^7 + 64\,\pi\,(4\,z-75)\,\boldsymbol{L}_1\left(2\sqrt{z}\right) z^6 - 9728\,z^6 + 2304\,z^5 + 1440\,z^4 + 3600\,z^3 + 9450\,z^2 - 297\,675\,z - 1\,871\,100\right) - I_1\left(2\sqrt{z}\right)\left(512\,z^7 + 128\,\pi\,(4\,z-75)\,\boldsymbol{L}_0\left(2\sqrt{z}\right) z^{13/2} - 9472\,z^6 - 2112\,z^5 - 3600\,z^4 - 11\,700\,z^3 + 33\,075\,z^2 - 2\,466\,450\,z - 3\,742\,200\right)\right)\right)$$

07.22.03.1526.01

$${}_1F_2\left(-\frac{5}{2}; -\frac{1}{2}, 6; -z\right) =$$
$$\frac{1}{135\,135\,z^{9/2}}\left(8\left(2\sqrt{z}\ J_0\left(2\sqrt{z}\right)\left(-512\,z^7+64\,\pi\,(4\,z+75)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^6-9728\,z^6-2304\,z^5+1440\,z^4-3600\,z^3+\right.\right.\right.$$
$$\left.\left.\left.9450\,z^2+297\,675\,z-1\,871\,100\right)-J_1\left(2\sqrt{z}\right)\left(-512\,z^7+128\,\pi\,(4\,z+75)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{13/2}-\right.\right.\right.$$
$$\left.\left.\left.9472\,z^6+2112\,z^5-3600\,z^4+11\,700\,z^3+33\,075\,z^2+2\,466\,450\,z-3\,742\,200\right)\right)\right)$$

For fixed z and $a_1 = -\frac{5}{2}$, $b_1 = \frac{1}{2}$

07.22.03.1527.01

$${}_1F_2\left(-\frac{5}{2}; \frac{1}{2}, \frac{1}{2}; z\right) = \frac{1}{16}\left(2\left(2\,z^2-19\,z+8\right)\cosh\left(2\sqrt{z}\right)+\sqrt{z}\ (2\,z-17)\sinh\left(2\sqrt{z}\right)-4\sqrt{z}\ \left(2\,z^2-20\,z+15\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.1528.01

$${}_1F_2\left(-\frac{5}{2}; \frac{1}{2}, \frac{1}{2}; -z\right) = \frac{1}{16}\left(2\left(2\,z^2+19\,z+8\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\ (2\,z+17)\sin\left(2\sqrt{z}\right)+4\sqrt{z}\ \left(2\,z^2+20\,z+15\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)$$

07.22.03.1529.01

$${}_1F_2\left(-\frac{5}{2}; \frac{1}{2}, 1; z\right) = \frac{1}{60}\left(4\left(\left(-8\,z^3+102\,z^2-136\,z+15\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\ \left(4\,z^2-49\,z+46\right)I_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.\pi\,z\left(16\,z^2-200\,z+225\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\,z\left(-16\,z^2+200\,z-225\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1530.01

$${}_1F_2\left(-\frac{5}{2}; \frac{1}{2}, 1; -z\right) = \frac{1}{60}\left(4\left(\left(8\,z^3+102\,z^2+136\,z+15\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\ \left(4\,z^2+49\,z+46\right)J_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.\pi\,z\left(16\,z^2+200\,z+225\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\,z\left(16\,z^2+200\,z+225\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1531.01

$${}_1F_2\left(-\frac{5}{2}; \frac{1}{2}, \frac{3}{2}; z\right) =$$
$$\frac{1}{96\sqrt{z}}\left(2\sqrt{z}\ \left(2\,z^2-29\,z+33\right)\cosh\left(2\sqrt{z}\right)+\left(2\,z^2-27\,z+15\right)\sinh\left(2\sqrt{z}\right)-4\,z\left(2\,z^2-30\,z+45\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.1532.01

$${}_1F_2\left(-\frac{5}{2}; \frac{1}{2}, \frac{3}{2}; -z\right) = \frac{2\sqrt{z}\ \left(2\,z^2+29\,z+33\right)\cos\left(2\sqrt{z}\right)+\left(2\,z^2+27\,z+15\right)\sin\left(2\sqrt{z}\right)+4\,z\left(2\,z^2+30\,z+45\right)\mathrm{Si}\left(2\sqrt{z}\right)}{96\sqrt{z}}$$

07.22.03.1533.01

$${}_1F_2\left(-\frac{5}{2}; \frac{1}{2}, 2; z\right) =$$
$$\frac{1}{210\sqrt{z}}\left(\pi\left(16\,z^2-280\,z+525\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+\pi\left(-16\,z^2+280\,z-525\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2}+\right.$$
$$\left.2\left(2\sqrt{z}\ \left(-8\,z^3+142\,z^2-296\,z+45\right)I_0\left(2\sqrt{z}\right)+\left(8\,z^3-138\,z^2+232\,z+15\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1534.01

$${}_1F_2\left(-\frac{5}{2};\frac{1}{2},2;-z\right)=$$
$$\frac{1}{210\sqrt{z}}\left(\pi\left(16z^2+280z+525\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}-\pi\left(16z^2+280z+525\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{3/2}+\right.$$
$$\left.2\left(2\sqrt{z}\left(8z^3+142z^2+296z+45\right)J_0\left(2\sqrt{z}\right)-\left(8z^3+138z^2+232z-15\right)J_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1535.01

$${}_1F_2\left(-\frac{5}{2};\frac{1}{2},\frac{5}{2};z\right)=\frac{1}{512z^{3/2}}$$
$$\left(-16\left(z^2-20z+45\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^2+2\left(4z^3-78z^2+146z+15\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^3-74z^2+90z-15\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1536.01

$${}_1F_2\left(-\frac{5}{2};\frac{1}{2},\frac{5}{2};-z\right)=$$
$$\frac{1}{512z^{3/2}}\left(16\left(z^2+20z+45\right)\mathrm{Si}\left(2\sqrt{z}\right)z^2+2\left(4z^3+78z^2+146z-15\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^3+74z^2+90z+15\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1537.01

$${}_1F_2\left(-\frac{5}{2};\frac{1}{2},3;z\right)=$$
$$\frac{1}{945z^{3/2}}\left(2\left(I_1\left(2\sqrt{z}\right)\left(16z^4-356z^3+\pi\left(16z^2-360z+945\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}+864z^2+90z-45\right)-\sqrt{z}\,I_0\left(2\sqrt{z}\right)\right.\right.$$
$$\left.\left.\left(32z^4-728z^3+\pi\left(16z^2-360z+945\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^2+2064z^2-360z-45\right)\right)\right)$$

07.22.03.1538.01

$${}_1F_2\left(-\frac{5}{2};\frac{1}{2},3;-z\right)=$$
$$\frac{1}{945z^{3/2}}\left(2\left(J_1\left(2\sqrt{z}\right)\left(-16z^4-356z^3+\pi\left(16z^2+360z+945\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-864z^2+90z+45\right)-\sqrt{z}\right.\right.$$
$$\left.\left.J_0\left(2\sqrt{z}\right)\left(-32z^4-728z^3+\pi\left(16z^2+360z+945\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^2-2064z^2-360z+45\right)\right)\right)$$

07.22.03.1539.01

$${}_1F_2\left(-\frac{5}{2};\frac{1}{2},\frac{7}{2};z\right)=\frac{1}{1024z^{5/2}}\left(-16\left(z^2-25z+75\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^3+\right.$$
$$\left.2\left(4z^4-98z^3+256z^2+45z-45\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^4-94z^3+180z^2+15z+45\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1540.01

$${}_1F_2\left(-\frac{5}{2};\frac{1}{2},\frac{7}{2};-z\right)=\frac{1}{1024z^{5/2}}\left(16\left(z^2+25z+75\right)\mathrm{Si}\left(2\sqrt{z}\right)z^3+\right.$$
$$\left.2\left(4z^4+98z^3+256z^2-45z-45\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^4+94z^3+180z^2-15z+45\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1541.01

$${}_1F_2\left(-\frac{5}{2};\frac{1}{2},4;z\right)=$$
$$\frac{1}{3465\,z^{5/2}}\left(2\left(I_1\left(2\sqrt{z}\right)\left(32z^5-872z^4+2\pi\left(16z^2-440z+1485\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2}+2768z^3+360z^2-45z+450\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\;I_0\left(2\sqrt{z}\right)\left(32z^5-888z^4+\pi\left(16z^2-440z+1485\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^3+3184z^3-600z^2-135z+225\right)\right)\right)$$

07.22.03.1542.01

$${}_1F_2\left(-\frac{5}{2};\frac{1}{2},4;-z\right)=$$
$$\frac{1}{3465\,z^{5/2}}\left(2\left(J_1\left(2\sqrt{z}\right)\left(-32z^5-872z^4+2\pi\left(16z^2+440z+1485\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2}-2768z^3+360z^2+45z+450\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(-32z^5-888z^4+\pi\left(16z^2+440z+1485\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^3-3184z^3-600z^2+135z+225\right)\right)\right)$$

07.22.03.1543.01

$${}_1F_2\left(-\frac{5}{2};\frac{1}{2},\frac{9}{2};z\right)=$$
$$\frac{1}{24\,576\,z^{7/2}}\left(7\left(-16\left(2z^2-60z+225\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^4+2\left(8z^5-236z^4+792z^3+180z^2-90z+675\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\;+\right.\right.$$
$$\left.\left.\left(8z^5-228z^4+600z^3+180z^2-810z-675\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1544.01

$${}_1F_2\left(-\frac{5}{2};\frac{1}{2},\frac{9}{2};-z\right)=$$
$$\frac{1}{24\,576\,z^{7/2}}\left(7\left(16\left(2z^2+60z+225\right)\mathrm{Si}\left(2\sqrt{z}\right)z^4+2\left(8z^5+236z^4+792z^3-180z^2-90z-675\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+\right.\right.$$
$$\left.\left.\left(8z^5+228z^4+600z^3-180z^2-810z+675\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1545.01

$${}_1F_2\left(-\frac{5}{2};\frac{1}{2},5;z\right)=\frac{1}{45\,045\,z^{7/2}}$$
$$\left(8\left(2\,I_1\left(2\sqrt{z}\right)\left(32z^6-1032z^5+2\pi\left(16z^2-520z+2145\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{9/2}+4048z^4+600z^3+135z^2-1800z-4725\right)-\right.\right.$$
$$\sqrt{z}\;I_0\left(2\sqrt{z}\right)$$
$$\left.\left.\left(128z^6-4192z^5+4\pi\left(16z^2-520z+2145\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^4+18\,176z^4-3600z^3-1080z^2+1125z-9450\right)\right)\right)$$

07.22.03.1546.01

$${}_1F_2\left(-\frac{5}{2};\frac{1}{2},5;-z\right)=\frac{1}{45\,045\,z^{7/2}}$$
$$\left(8\left(2\,J_1\left(2\sqrt{z}\right)\left(-32z^6-1032z^5+2\pi\left(16z^2+520z+2145\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{9/2}-4048z^4+600z^3-135z^2-1800z+4725\right)-\right.\right.$$
$$\sqrt{z}\;J_0\left(2\sqrt{z}\right)$$
$$\left.\left.\left(-128z^6-4192z^5+4\pi\left(16z^2+520z+2145\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^4-18\,176z^4-3600z^3+1080z^2+1125z+9450\right)\right)\right)$$

07.22.03.1547.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{1}{2}, \frac{11}{2}; z\right) = \frac{1}{16\,384\, z^{9/2}} \left(3\left(-16\left(2z^2-70z+315\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^5+2\left(8z^6-276z^5+1132z^4+300z^3-1575z-9450\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(8z^6-268z^5+900z^4+420z^3-1260z^2+14\,175z+9450\right)\sinh\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1548.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{1}{2}, \frac{11}{2}; -z\right) = \frac{1}{16\,384\, z^{9/2}} \left(3\left(16\left(2z^2+70z+315\right)\operatorname{Si}\left(2\sqrt{z}\right)z^5+2\left(8z^6+276z^5+1132z^4-300z^3+1575z-9450\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8z^6+268z^5+900z^4-420z^3-1260z^2-14\,175z+9450\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1549.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{1}{2}, 6; z\right) = \frac{1}{135\,135\, z^{9/2}} \left(8\left(I_1\left(2\sqrt{z}\right)\left(128z^7-4768z^6+8\pi\left(16z^2-600z+2925\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{11/2}+22\,272z^5+3600z^4+1800z^3-12\,825z^2+198\,450z+340\,200\right)-2\sqrt{z}\, I_0\left(2\sqrt{z}\right)\left(128z^7-4832z^6+4\pi\left(16z^2-600z+2925\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^5+24\,576z^5-5040z^4-1800z^3+675z^2+14\,175z+170\,100\right)\right)\right) $$

07.22.03.1550.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{1}{2}, 6; -z\right) = \frac{1}{135\,135\, z^{9/2}} \left(8\left(J_1\left(2\sqrt{z}\right)\left(-128z^7-4768z^6+8\pi\left(16z^2+600z+2925\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{11/2}-22\,272z^5+3600z^4-1800z^3-12\,825z^2-198\,450z+340\,200\right)-2\sqrt{z}\, J_0\left(2\sqrt{z}\right)\left(-128z^7-4832z^6+4\pi\left(16z^2+600z+2925\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^5-24\,576z^5-5040z^4+1800z^3+675z^2-14\,175z+170\,100\right)\right)\right) $$

For fixed z and $a_1 = -\frac{5}{2}$, $b_1 = 1$

07.22.03.1551.01

$$ {}_1F_2\left(-\frac{5}{2}; 1, 1; z\right) = \frac{1}{225} \left(\left(-32z^3+512z^2-1020z+225\right)I_0\left(\sqrt{z}\right)^2+2\sqrt{z}\,\left(16z^2-244z+345\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+4z\left(8z^2-124z+197\right)I_1\left(\sqrt{z}\right)^2\right) $$

07.22.03.1552.01

$$ {}_1F_2\left(-\frac{5}{2}; 1, 1; -z\right) = \frac{1}{225} \left(\left(32z^3+512z^2+1020z+225\right)J_0\left(\sqrt{z}\right)^2-2\sqrt{z}\,\left(16z^2+244z+345\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+4z\left(8z^2+124z+197\right)J_1\left(\sqrt{z}\right)^2\right) $$

07.22.03.1553.01

$$ {}_1F_2\left(-\frac{5}{2};\,1,\,\frac{3}{2};\,z\right) = \frac{1}{1440}\left(-4\left(2\left(16\,z^3-304\,z^2+747\,z-180\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-16\,z^2+296\,z-609\right)I_1\left(2\sqrt{z}\right)\right)+ \right.$$
$$ \left. \pi\left(64\,z^3-1200\,z^2+2700\,z-225\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(-64\,z^3+1200\,z^2-2700\,z+225\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1554.01

$$ {}_1F_2\left(-\frac{5}{2};\,1,\,\frac{3}{2};\,-z\right) = \frac{1}{1440}\left(4\left(2\left(16\,z^3+304\,z^2+747\,z+180\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(16\,z^2+296\,z+609\right)J_1\left(2\sqrt{z}\right)\right)+ \right.$$
$$ \left. \pi\left(64\,z^3+1200\,z^2+2700\,z+225\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\left(64\,z^3+1200\,z^2+2700\,z+225\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1555.01

$$ {}_1F_2\left(-\frac{5}{2};\,1,\,2;\,z\right) = \frac{1}{1575}\left(\left(-64\,z^3+1424\,z^2-4440\,z+1575\right)I_0\left(\sqrt{z}\right)^2+ \right.$$
$$ \left. 8\sqrt{z}\,\left(8\,z^2-172\,z+435\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(64\,z^3-1392\,z^2+3776\,z-225\right)I_1\left(\sqrt{z}\right)^2\right) $$

07.22.03.1556.01

$$ {}_1F_2\left(-\frac{5}{2};\,1,\,2;\,-z\right) = \frac{1}{1575}\left(\left(64\,z^3+1424\,z^2+4440\,z+1575\right)J_0\left(\sqrt{z}\right)^2- \right.$$
$$ \left. 8\sqrt{z}\,\left(8\,z^2+172\,z+435\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(64\,z^3+1392\,z^2+3776\,z+225\right)J_1\left(\sqrt{z}\right)^2\right) $$

07.22.03.1557.01

$$ {}_1F_2\left(-\frac{5}{2};\,1,\,\frac{5}{2};\,z\right) = $$
$$ \frac{1}{15\,360\,z}\left(-4\left(2\,z\left(64\,z^3-1616\,z^2+5788\,z-1995\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-64\,z^3+1584\,z^2-5036\,z+225\right)I_1\left(2\sqrt{z}\right)\right)+ \right.$$
$$ \pi\left(256\,z^4-6400\,z^3+21\,600\,z^2-3600\,z+225\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+ $$
$$ \left. \pi\left(-256\,z^4+6400\,z^3-21\,600\,z^2+3600\,z-225\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1558.01

$$ {}_1F_2\left(-\frac{5}{2};\,1,\,\frac{5}{2};\,-z\right) = $$
$$ \frac{1}{15\,360\,z}\left(4\left(2\,z\left(64\,z^3+1616\,z^2+5788\,z+1995\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(64\,z^3+1584\,z^2+5036\,z+225\right)J_1\left(2\sqrt{z}\right)\right)+ \right.$$
$$ \pi\left(256\,z^4+6400\,z^3+21\,600\,z^2+3600\,z+225\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)- $$
$$ \left. \pi\left(256\,z^4+6400\,z^3+21\,600\,z^2+3600\,z+225\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1559.01

$$ {}_1F_2\left(-\frac{5}{2};\,1,\,3;\,z\right) = $$
$$ -\frac{1}{14\,175\,z}\left(4\left(4\,z\left(16\,z^3-456\,z^2+1935\,z-900\right)I_0\left(\sqrt{z}\right)^2+\sqrt{z}\,\left(-64\,z^3+1776\,z^2-6480\,z+225\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+ \right.\right.$$
$$ \left.\left. \left(-64\,z^4+1792\,z^3-6876\,z^2+900\,z-225\right)I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1560.01

$${}_1F_2\left(-\frac{5}{2};\,1,\,3;\,-z\right)=$$
$$\frac{1}{14\,175\,z}\left(4\left(4\,z\left(16\,z^3+456\,z^2+1935\,z+900\right)J_0\left(\sqrt{z}\right)^2-\sqrt{z}\,\left(64\,z^3+1776\,z^2+6480\,z+225\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(64\,z^4+1792\,z^3+6876\,z^2+900\,z+225\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1561.01

$${}_1F_2\left(-\frac{5}{2};\,1,\,\frac{7}{2};\,z\right)=\frac{1}{122\,880\,z^2}$$
$$\left(-4\left(2\,z\left(256\,z^4-8064\,z^3+37\,952\,z^2-16\,680\,z+675\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-256\,z^4+7936\,z^3-34\,144\,z^2+3600\,z-2025\right)\right.\right.$$
$$\left.I_1\left(2\sqrt{z}\right)\right)+\pi\left(1024\,z^5-32\,000\,z^4+144\,000\,z^3-36\,000\,z^2+4500\,z-2025\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(-1024\,z^5+32\,000\,z^4-144\,000\,z^3+36\,000\,z^2-4500\,z+2025\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1562.01

$${}_1F_2\left(-\frac{5}{2};\,1,\,\frac{7}{2};\,-z\right)=\frac{1}{122\,880\,z^2}$$
$$\left(4\left(2\,z\left(256\,z^4+8064\,z^3+37\,952\,z^2+16\,680\,z+675\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(256\,z^4+7936\,z^3+34\,144\,z^2+3600\,z+2025\right)\right.\right.$$
$$\left.J_1\left(2\sqrt{z}\right)\right)+\pi\left(1024\,z^5+32\,000\,z^4+144\,000\,z^3+36\,000\,z^2+4500\,z+2025\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\pi\left(1024\,z^5+32\,000\,z^4+144\,000\,z^3+36\,000\,z^2+4500\,z+2025\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1563.01

$${}_1F_2\left(-\frac{5}{2};\,1,\,4;\,z\right)=$$
$$-\frac{1}{51\,975\,z^2}\left(4\left(2\,z\left(64\,z^4-2224\,z^3+11\,940\,z^2-6750\,z+225\right)I_0\left(\sqrt{z}\right)^2-8\sqrt{z}\,\left(16\,z^4-544\,z^3+2595\,z^2-225\,z+225\right)\right.\right.$$
$$\left.\left.I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(-128\,z^5+4384\,z^4-21\,752\,z^3+4500\,z^2-1575\,z+1800\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1564.01

$${}_1F_2\left(-\frac{5}{2};\,1,\,4;\,-z\right)=$$
$$\frac{1}{51\,975\,z^2}\left(4\left(2\,z\left(64\,z^4+2224\,z^3+11\,940\,z^2+6750\,z+225\right)J_0\left(\sqrt{z}\right)^2-8\sqrt{z}\,\left(16\,z^4+544\,z^3+2595\,z^2+225\,z+225\right)\right.\right.$$
$$\left.\left.J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(128\,z^5+4384\,z^4+21\,752\,z^3+4500\,z^2+1575\,z+1800\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1565.01

$${}_1F_2\left(-\frac{5}{2};\,1,\,\frac{9}{2};\,z\right)=\frac{1}{5\,898\,240\,z^3}\left(7\left(-4\left(2\,z\left(1024\,z^5-38\,656\,z^4+225\,408\,z^3-119\,520\,z^2+11\,700\,z-16\,875\right)I_0\left(2\sqrt{z}\right)+\right.\right.\right.$$
$$\left.\sqrt{z}\,\left(-1024\,z^5+38\,144\,z^4-206\,976\,z^3+36\,000\,z^2-26\,100\,z+50\,625\right)I_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(4096\,z^6-153\,600\,z^5+864\,000\,z^4-288\,000\,z^3+54\,000\,z^2-48\,600\,z+50\,625\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\left.\pi\left(-4096\,z^6+153\,600\,z^5-864\,000\,z^4+288\,000\,z^3-54\,000\,z^2+48\,600\,z-50\,625\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1566.01

$$ {}_1F_2\left(-\frac{5}{2}; 1, \frac{9}{2}; -z\right) = \frac{1}{5\,898\,240\,z^3}\left(7\left(4\left(2\,z\left(1024\,z^5+38\,656\,z^4+225\,408\,z^3+119\,520\,z^2+11\,700\,z+16\,875\right)J_0\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\sqrt{z}\left(1024\,z^5+38\,144\,z^4+206\,976\,z^3+36\,000\,z^2+26\,100\,z+50\,625\right)J_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(4096\,z^6+153\,600\,z^5+864\,000\,z^4+288\,000\,z^3+54\,000\,z^2+48\,600\,z+50\,625\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\left.\pi\left(4096\,z^6+153\,600\,z^5+864\,000\,z^4+288\,000\,z^3+54\,000\,z^2+48\,600\,z+50\,625\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1567.01

$$ {}_1F_2\left(-\frac{5}{2}; 1, 5; z\right) = -\frac{1}{675\,675\,z^3}\left(16\left(z\left(256\,z^5-10\,496\,z^4+68\,160\,z^3-45\,000\,z^2+3825\,z-8100\right)I_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$2\sqrt{z}\left(128\,z^5-5152\,z^4+30\,360\,z^3-4500\,z^2+5625\,z-16\,200\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-256\,z^6+10\,368\,z^5-63\,104\,z^4+18\,000\,z^3-7425\,z^2+7200\,z-32\,400\right)I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1568.01

$$ {}_1F_2\left(-\frac{5}{2}; 1, 5; -z\right) = \frac{1}{675\,675\,z^3}\left(16\left(z\left(256\,z^5+10\,496\,z^4+68\,160\,z^3+45\,000\,z^2+3825\,z+8100\right)J_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$2\sqrt{z}\left(128\,z^5+5152\,z^4+30\,360\,z^3+4500\,z^2+5625\,z+16\,200\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+$$
$$\left.\left.\left(256\,z^6+10\,368\,z^5+63\,104\,z^4+18\,000\,z^3+7425\,z^2+7200\,z+32\,400\right)J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1569.01

$$ {}_1F_2\left(-\frac{5}{2}; 1, \frac{11}{2}; z\right) = $$
$$\frac{1}{5\,242\,880\,z^4}\left(-4\left(2\,z\left(4096\,z^6-180\,224\,z^5+1\,253\,632\,z^4-775\,680\,z^3+126\,000\,z^2-252\,000\,z+826\,875\right)I_0\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\sqrt{z}\left(-4096\,z^6+178\,176\,z^5-1\,167\,104\,z^4+288\,000\,z^3-226\,800\,z^2+315\,000\,z-2\,480\,625\right)I_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(16\,384\,z^7-716\,800\,z^6+4\,838\,400\,z^5-2\,016\,000\,z^4+504\,000\,z^3-680\,400\,z^2+1\,417\,500\,z-2\,480\,625\right)$$
$$I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(-16\,384\,z^7+716\,800\,z^6-4\,838\,400\,z^5+2\,016\,000\,z^4-\right.$$
$$\left.\left.504\,000\,z^3+680\,400\,z^2-1\,417\,500\,z+2\,480\,625\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1570.01

$$ {}_1F_2\left(-\frac{5}{2}; 1, \frac{11}{2}; -z\right) = $$
$$\frac{1}{5\,242\,880\,z^4}\left(4\left(2\,z\left(4096\,z^6+180\,224\,z^5+1\,253\,632\,z^4+775\,680\,z^3+126\,000\,z^2+252\,000\,z+826\,875\right)J_0\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\sqrt{z}\left(4096\,z^6+178\,176\,z^5+1\,167\,104\,z^4+288\,000\,z^3+226\,800\,z^2+315\,000\,z+2\,480\,625\right)J_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(16\,384\,z^7+716\,800\,z^6+4\,838\,400\,z^5+2\,016\,000\,z^4+504\,000\,z^3+680\,400\,z^2+1\,417\,500\,z+2\,480\,625\right)$$
$$J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\left(16\,384\,z^7+716\,800\,z^6+4\,838\,400\,z^5+2\,016\,000\,z^4+\right.$$
$$\left.\left.504\,000\,z^3+680\,400\,z^2+1\,417\,500\,z+2\,480\,625\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1571.01

$${}_1F_2\left(-\frac{5}{2}; 1, 6; z\right) =$$
$$-\frac{1}{2\,027\,025\,z^4}\left(32\left(z\left(256\,z^6-12\,096\,z^5+92\,160\,z^4-69\,300\,z^3+10\,125\,z^2-28\,350\,z+129\,600\right)I_0\left(\sqrt{z}\right)^2+\sqrt{z}\right.\right.$$
$$\left(-256\,z^6+11\,904\,z^5-83\,520\,z^4+18\,000\,z^3-23\,625\,z^2+48\,600\,z-518\,400\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-256\,z^7+11\,968\,z^6-86\,304\,z^5+31\,500\,z^4-14\,625\,z^3+14\,850\,z^2+16\,200\,z+518\,400\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1572.01

$${}_1F_2\left(-\frac{5}{2}; 1, 6; -z\right) =$$
$$\frac{1}{2\,027\,025\,z^4}\left(32\left(z\left(256\,z^6+12\,096\,z^5+92\,160\,z^4+69\,300\,z^3+10\,125\,z^2+28\,350\,z+129\,600\right)J_0\left(\sqrt{z}\right)^2-\sqrt{z}\right.\right.$$
$$\left(256\,z^6+11\,904\,z^5+83\,520\,z^4+18\,000\,z^3+23\,625\,z^2+48\,600\,z+518\,400\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+$$
$$\left.\left.\left(256\,z^7+11\,968\,z^6+86\,304\,z^5+31\,500\,z^4+14\,625\,z^3+14\,850\,z^2-16\,200\,z+518\,400\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = -\frac{5}{2}$, $b_1 = \frac{3}{2}$

07.22.03.1573.01

$${}_1F_2\left(-\frac{5}{2}; \frac{3}{2}, \frac{3}{2}; z\right) =$$
$$\frac{1}{1152\sqrt{z}}\left(2\sqrt{z}\left(4z^2-88z+231\right)\cosh\left(2\sqrt{z}\right)+\left(4z^2-84z+165\right)\sinh\left(2\sqrt{z}\right)-4\left(4z^3-90z^2+270z-45\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.1574.01

$${}_1F_2\left(-\frac{5}{2}; \frac{3}{2}, \frac{3}{2}; -z\right) =$$
$$\frac{1}{1152\sqrt{z}}\left(2\sqrt{z}\left(4z^2+88z+231\right)\cos\left(2\sqrt{z}\right)+\left(4z^2+84z+165\right)\sin\left(2\sqrt{z}\right)+4\left(4z^3+90z^2+270z+45\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)$$

07.22.03.1575.01

$${}_1F_2\left(-\frac{5}{2}; \frac{3}{2}, 2; z\right) =$$
$$\frac{1}{5040\sqrt{z}}\left(-4\left(2\sqrt{z}\left(16z^3-424z^2+1677z-720\right)I_0\left(2\sqrt{z}\right)+\left(-16z^3+416z^2-1479z+180\right)I_1\left(2\sqrt{z}\right)\right)+\pi\sqrt{z}\right.$$
$$\left.\left(64z^3-1680z^2+6300z-1575\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\sqrt{z}\left(-64z^3+1680z^2-6300z+1575\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1576.01

$${}_1F_2\left(-\frac{5}{2}; \frac{3}{2}, 2; -z\right) =$$
$$\frac{1}{5040\sqrt{z}}\left(4\left(2\sqrt{z}\left(16z^3+424z^2+1677z+720\right)J_0\left(2\sqrt{z}\right)-\left(16z^3+416z^2+1479z+180\right)J_1\left(2\sqrt{z}\right)\right)+\pi\sqrt{z}\right.$$
$$\left.\left(64z^3+1680z^2+6300z+1575\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\sqrt{z}\left(64z^3+1680z^2+6300z+1575\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1577.01

$${}_1F_2\left(-\frac{5}{2};\frac{3}{2},\frac{5}{2};z\right)=\frac{1}{3072\,z^{3/2}}\left(2\sqrt{z}\,\left(4z^3-118z^2+486z-45\right)\cosh\left(2\sqrt{z}\right)+\left(4z^3-114z^2+390z+45\right)\sinh\left(2\sqrt{z}\right)-16z\left(z^3-30z^2+135z-45\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.1578.01

$${}_1F_2\left(-\frac{5}{2};\frac{3}{2},\frac{5}{2};-z\right)=\frac{1}{3072\,z^{3/2}}\left(2\sqrt{z}\,\left(4z^3+118z^2+486z+45\right)\cos\left(2\sqrt{z}\right)+\left(4z^3+114z^2+390z-45\right)\sin\left(2\sqrt{z}\right)+16z\left(z^3+30z^2+135z+45\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)$$

07.22.03.1579.01

$${}_1F_2\left(-\frac{5}{2};\frac{3}{2},3;z\right)=\frac{1}{11\,340\,z^{3/2}}\left(\pi\left(64z^3-2160z^2+11\,340z-4725\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+\pi\left(-64z^3+2160z^2-11\,340z+4725\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2}-4\left(2\sqrt{z}\,\left(16z^4-544z^3+2967z^2-1800z+45\right)I_0\left(2\sqrt{z}\right)+\left(-16z^4+536z^3-2709z^2+720z-90\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1580.01

$${}_1F_2\left(-\frac{5}{2};\frac{3}{2},3;-z\right)=\frac{1}{11\,340\,z^{3/2}}\left(\pi\left(64z^3+2160z^2+11\,340z+4725\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}-\pi\left(64z^3+2160z^2+11\,340z+4725\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{3/2}+4\left(2\sqrt{z}\,\left(16z^4+544z^3+2967z^2+1800z+45\right)J_0\left(2\sqrt{z}\right)-\left(16z^4+536z^3+2709z^2+720z+90\right)J_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1581.01

$${}_1F_2\left(-\frac{5}{2};\frac{3}{2},\frac{7}{2};z\right)=\frac{1}{12\,288\,z^{5/2}}\left(-16\left(2z^3-75z^2+450z-225\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^2+2\left(8z^4-296z^3+1662z^2-360z+135\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(8z^4-288z^3+1410z^2+180z-135\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1582.01

$${}_1F_2\left(-\frac{5}{2};\frac{3}{2},\frac{7}{2};-z\right)=\frac{1}{12\,288\,z^{5/2}}\left(16\left(2z^3+75z^2+450z+225\right)\mathrm{Si}\left(2\sqrt{z}\right)z^2+2\left(8z^4+296z^3+1662z^2+360z+135\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8z^4+288z^3+1410z^2-180z-135\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1583.01

$${}_1F_2\left(-\frac{5}{2};\frac{3}{2},4;z\right)=\frac{1}{20\,790\,z^{5/2}}\left(\pi\left(64z^3-2640z^2+17\,820z-10\,395\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}+\pi\left(-64z^3+2640z^2-17\,820z+10\,395\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{5/2}-4\left(2\sqrt{z}\,\left(16z^5-664z^4+4617z^3-3600z^2+180z-135\right)I_0\left(2\sqrt{z}\right)+\left(-16z^5+656z^4-4299z^3+1800z^2-225z+270\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1584.01

$${}_1F_2\left(-\frac{5}{2};\frac{3}{2},4;-z\right)=$$
$$\frac{1}{20\,790\,z^{5/2}}\left(\pi\left(64z^3+2640z^2+17\,820z+10\,395\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-\pi\left(64z^3+2640z^2+17\,820z+10\,395\right)\right.$$
$$J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{5/2}+4\left(2\sqrt{z}\left(16z^5+664z^4+4617z^3+3600z^2+180z+135\right)J_0\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left(16z^5+656z^4+4299z^3+1800z^2+225z+270\right)J_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1585.01

$${}_1F_2\left(-\frac{5}{2};\frac{3}{2},\frac{9}{2};z\right)=\frac{1}{147\,456\,z^{7/2}}$$
$$\left(7\left(-16\left(2z^3-90z^2+675z-450\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^3+2\left(8z^5-356z^4+2532z^3-900z^2+360z-675\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\right.\right.$$
$$\left.\left.\left(8z^5-348z^4+2220z^3+180z^2+540z+675\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1586.01

$${}_1F_2\left(-\frac{5}{2};\frac{3}{2},\frac{9}{2};-z\right)=\frac{1}{147\,456\,z^{7/2}}$$
$$\left(7\left(16\left(2z^3+90z^2+675z+450\right)\mathrm{Si}\left(2\sqrt{z}\right)z^3+2\left(8z^5+356z^4+2532z^3+900z^2+360z+675\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.\right.$$
$$\left.\left.\left(8z^5+348z^4+2220z^3-180z^2+540z-675\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1587.01

$${}_1F_2\left(-\frac{5}{2};\frac{3}{2},5;z\right)=$$
$$\frac{1}{135\,135\,z^{7/2}}\left(4\left(\pi\left(64z^3-3120z^2+25\,740z-19\,305\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2}+\pi\left(-64z^3+3120z^2-25\,740z+19\,305\right)\right.\right.$$
$$I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{7/2}+2\left(\sqrt{z}\left(-64z^6+3136z^5-26\,508z^4+25\,200z^3-1800z^2+1485z-4050\right)I_0\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.2\left(16z^6-776z^5+6249z^4-3600z^3+360z^2+270z+2025\right)I_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.1588.01

$${}_1F_2\left(-\frac{5}{2};\frac{3}{2},5;-z\right)=$$
$$\frac{1}{135\,135\,z^{7/2}}\left(4\left(\pi\left(64z^3+3120z^2+25\,740z+19\,305\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2}-\pi\left(64z^3+3120z^2+25\,740z+19\,305\right)\right.\right.$$
$$J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{7/2}+2\left(\sqrt{z}\left(64z^6+3136z^5+26\,508z^4+25\,200z^3+1800z^2+1485z+4050\right)J_0\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left.2\left(16z^6+776z^5+6249z^4+3600z^3+360z^2-270z+2025\right)J_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.1589.01

$${}_1F_2\left(-\frac{5}{2};\frac{3}{2},\frac{11}{2};z\right)=$$
$$\frac{1}{65\,536\,z^{9/2}}\left(-16\left(4z^3-210z^2+1890z-1575\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^4+2\left(16z^6-832z^5+7164z^4-3600z^3+1260z^2+14\,175\right)\right.$$
$$\left.\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(16z^6-816z^5+6420z^4+3780z^2-18\,900z-14\,175\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1590.01

$$ {}_1F_2\left(-\frac{5}{2};\frac{3}{2},\frac{11}{2};-z\right)=\frac{1}{65\,536\,z^{9/2}}$$
$$\left(16\left(4z^3+210z^2+1890z+1575\right)\mathrm{Si}\left(2\sqrt{z}\right)z^4+2\left(16z^6+832z^5+7164z^4+3600z^3+1260z^2+14\,175\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(16z^6+816z^5+6420z^4+3780z^2+18\,900z-14\,175\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1591.01

$$ {}_1F_2\left(-\frac{5}{2};\frac{3}{2},6;z\right)=$$
$$\frac{1}{405\,405\,z^{9/2}}\left(8\left(I_1\left(2\sqrt{z}\right)\left(64z^7-3584z^6+34\,236z^5+\pi\left(64z^3-3600z^2+35\,100z-32\,175\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{9/2}-25\,200z^4+\right.\right.\right.$$
$$\left.\left.\left.1800z^3+6075z^2-52\,650z-113\,400\right)-\sqrt{z}\;I_0\left(2\sqrt{z}\right)\left(\pi\left(64z^3-3600z^2+35\,100z-32\,175\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^4+\right.\right.\right.$$
$$\left.\left.\left.2\left(64z^7-3616z^6+35\,988z^5-40\,320z^4+3600z^3-2700z^2+2025z-56\,700\right)\right)\right)\right)$$

07.22.03.1592.01

$$ {}_1F_2\left(-\frac{5}{2};\frac{3}{2},6;-z\right)=\frac{1}{405\,405\,z^{9/2}}$$
$$\left(8\left(J_1\left(2\sqrt{z}\right)\left(-64z^7-3584z^6-34\,236z^5+\pi\left(64z^3+3600z^2+35\,100z+32\,175\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{9/2}-25\,200z^4-1800z^3+\right.\right.\right.$$
$$\left.\left.\left.6075z^2+52\,650z-113\,400\right)-\sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(\pi z^4\left(64z^3+3600z^2+35\,100z+32\,175\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)-\right.\right.\right.$$
$$\left.\left.\left.2\left(64z^7+3616z^6+35\,988z^5+40\,320z^4+3600z^3+2700z^2+2025z+56\,700\right)\right)\right)\right)$$

For fixed z and $a_1=-\frac{5}{2}$, $b_1=2$

07.22.03.1593.01

$$ {}_1F_2\left(-\frac{5}{2};2,2;z\right)=$$
$$-\frac{1}{11\,025\sqrt{z}}\left(2\left(4\sqrt{z}\left(16z^3-496z^2+2475z-1575\right)I_0\left(\sqrt{z}\right)^2+\left(-64z^3+1936z^2-8520z+1575\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\sqrt{z}\left(-16z^3+488z^2-2239z+660\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1594.01

$$ {}_1F_2\left(-\frac{5}{2};2,2;-z\right)=$$
$$\frac{1}{11\,025}\left(2\left(4\left(16z^3+496z^2+2475z+1575\right)J_0\left(\sqrt{z}\right)^2-\frac{\left(64z^3+1936z^2+8520z+1575\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)}{\sqrt{z}}+\right.\right.$$
$$\left.\left.4\left(16z^3+488z^2+2239z+660\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1595.01

$${}_1F_2\left(-\frac{5}{2};\,2,\,\frac{5}{2};\,z\right)=$$
$$\frac{1}{53\,760\,z}\left(-4\left(2\,z\left(64\,z^3-2256\,z^2+13\,148\,z-9075\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-64\,z^3+2224\,z^2-12\,076\,z+4185\right)I_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\left(256\,z^4-8960\,z^3+50\,400\,z^2-25\,200\,z-1575\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(-256\,z^4+8960\,z^3-50\,400\,z^2+25\,200\,z+1575\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1596.01

$${}_1F_2\left(-\frac{5}{2};\,2,\,\frac{5}{2};\,-z\right)=$$
$$\frac{1}{53\,760\,z}\left(4\left(2\,z\left(64\,z^3+2256\,z^2+13\,148\,z+9075\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(64\,z^3+2224\,z^2+12\,076\,z+4185\right)J_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\left(256\,z^4+8960\,z^3+50\,400\,z^2+25\,200\,z-1575\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\pi\left(256\,z^4+8960\,z^3+50\,400\,z^2+25\,200\,z-1575\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1597.01

$${}_1F_2\left(-\frac{5}{2};\,2,\,3;\,z\right)=$$
$$-\frac{1}{99\,225\,z}\left(4\left(4\,z\left(32\,z^3-1272\,z^2+8730\,z-7875\right)I_0\left(\sqrt{z}\right)^2-8\sqrt{z}\,\left(16\,z^3-624\,z^2+3915\,z-1575\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-128\,z^4+5024\,z^3-32\,472\,z^2+17\,460\,z+1575\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1598.01

$${}_1F_2\left(-\frac{5}{2};\,2,\,3;\,-z\right)=$$
$$\frac{1}{99\,225\,z}\left(4\left(4\,z\left(32\,z^3+1272\,z^2+8730\,z+7875\right)J_0\left(\sqrt{z}\right)^2-8\sqrt{z}\,\left(16\,z^3+624\,z^2+3915\,z+1575\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(128\,z^4+5024\,z^3+32\,472\,z^2+17\,460\,z-1575\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1599.01

$${}_1F_2\left(-\frac{5}{2};\,2,\,\frac{7}{2};\,z\right)=\frac{1}{430\,080\,z^2}\left(-4\left(2\,z\left(256\,z^4-11\,264\,z^3+86\,752\,z^2-82\,080\,z-1575\right)I_0\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\sqrt{z}\,\left(-256\,z^4+11\,136\,z^3-81\,344\,z^2+47\,400\,z+4725\right)I_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(1024\,z^5-44\,800\,z^4+336\,000\,z^3-252\,000\,z^2-31\,500\,z+4725\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(-1024\,z^5+44\,800\,z^4-336\,000\,z^3+252\,000\,z^2+31\,500\,z-4725\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1600.01

$${}_1F_2\left(-\frac{5}{2};\,2,\,\frac{7}{2};\,-z\right)=\frac{1}{430\,080\,z^2}$$
$$\left(4\left(2\,z\left(256\,z^4+11\,264\,z^3+86\,752\,z^2+82\,080\,z-1575\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(256\,z^4+11\,136\,z^3+81\,344\,z^2+47\,400\,z-4725\right)\right.\right.$$
$$\left.\left.J_1\left(2\sqrt{z}\right)\right)+\pi\left(1024\,z^5+44\,800\,z^4+336\,000\,z^3+252\,000\,z^2-31\,500\,z-4725\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\right.$$
$$\left.\pi\left(1024\,z^5+44\,800\,z^4+336\,000\,z^3+252\,000\,z^2-31\,500\,z-4725\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1601.01

$${}_1F_2\left(-\frac{5}{2};\,2,\,4;\,z\right)=-\frac{1}{363\,825\,z^2}$$
$$\left(4\left(z\left(256\,z^4-12\,416\,z^3+108\,480\,z^2-126\,000\,z-1575\right)I_0\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(-64\,z^4+3056\,z^3-24\,900\,z^2+15\,750\,z+\right.\right.\right.$$
$$\left.\left.\left.1575\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(-256\,z^5+12\,288\,z^4-102\,464\,z^3+80\,280\,z^2+14\,175\,z-6300\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1602.01

$${}_1F_2\left(-\frac{5}{2};\,2,\,4;\,-z\right)=\frac{1}{363\,825\,z^2}$$
$$\left(4\left(z\left(256\,z^4+12\,416\,z^3+108\,480\,z^2+126\,000\,z-1575\right)J_0\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(64\,z^4+3056\,z^3+24\,900\,z^2+15\,750\,z-1575\right)\right.\right.$$
$$\left.\left.J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(256\,z^5+12\,288\,z^4+102\,464\,z^3+80\,280\,z^2-14\,175\,z-6300\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1603.01

$${}_1F_2\left(-\frac{5}{2};\,2,\,\frac{9}{2};\,z\right)=\frac{1}{2\,949\,120\,z^3}\left(-4\left(2\,z\left(1024\,z^5-54\,016\,z^4+517\,248\,z^3-620\,640\,z^2-31\,500\,z+23\,625\right)I_0\left(2\sqrt{z}\right)+\right.\right.$$
$$\sqrt{z}\,\left(-1024\,z^5+53\,504\,z^4-491\,136\,z^3+404\,640\,z^2+81\,900\,z-70\,875\right)I_1\left(2\sqrt{z}\right)\Big)+$$
$$\pi\left(4096\,z^6-215\,040\,z^5+2\,016\,000\,z^4-2\,016\,000\,z^3-378\,000\,z^2+113\,400\,z-70\,875\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(-4096\,z^6+215\,040\,z^5-2\,016\,000\,z^4+2\,016\,000\,z^3+378\,000\,z^2-113\,400\,z+70\,875\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1604.01

$${}_1F_2\left(-\frac{5}{2};\,2,\,\frac{9}{2};\,-z\right)=\frac{1}{2\,949\,120\,z^3}\left(4\left(2\,z\left(1024\,z^5+54\,016\,z^4+517\,248\,z^3+620\,640\,z^2-31\,500\,z-23\,625\right)J_0\left(2\sqrt{z}\right)-\right.\right.$$
$$\sqrt{z}\,\left(1024\,z^5+53\,504\,z^4+491\,136\,z^3+404\,640\,z^2-81\,900\,z-70\,875\right)J_1\left(2\sqrt{z}\right)\Big)+$$
$$\pi\left(4096\,z^6+215\,040\,z^5+2\,016\,000\,z^4+2\,016\,000\,z^3-378\,000\,z^2-113\,400\,z-70\,875\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(-4096\,z^6-215\,040\,z^5-2\,016\,000\,z^4-2\,016\,000\,z^3+378\,000\,z^2+113\,400\,z+70\,875\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1605.01

$${}_1F_2\left(-\frac{5}{2};\,2,\,5;\,z\right)=-\frac{1}{4\,729\,725\,z^3}\left(32\left(z\left(256\,z^5-14\,656\,z^4+155\,520\,z^3-220\,500\,z^2-7875\,z+9450\right)I_0\left(\sqrt{z}\right)^2+\right.\right.$$
$$\sqrt{z}\,\left(-256\,z^5+14\,464\,z^4-144\,960\,z^3+126\,000\,z^2+26\,775\,z-37\,800\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-256\,z^6+14\,528\,z^5-148\,384\,z^4+152\,940\,z^3+39\,375\,z^2-22\,050\,z+37\,800\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1606.01

$${}_1F_2\left(-\frac{5}{2};\,2,\,5;\,-z\right)=\frac{1}{4\,729\,725\,z^3}\left(32\left(z\left(256\,z^5+14\,656\,z^4+155\,520\,z^3+220\,500\,z^2-7875\,z-9450\right)J_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$\sqrt{z}\,\left(256\,z^5+14\,464\,z^4+144\,960\,z^3+126\,000\,z^2-26\,775\,z-37\,800\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+$$
$$\left.\left.\left(256\,z^6+14\,528\,z^5+148\,384\,z^4+152\,940\,z^3-39\,375\,z^2-22\,050\,z-37\,800\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1607.01

$${}_1F_2\left(-\frac{5}{2}; 2, \frac{11}{2}; z\right) =$$
$$\frac{1}{18\,350\,080\,z^4}\left(-4\left(2\,z\left(4096\,z^6-251\,904\,z^5+2\,884\,352\,z^4-4\,189\,440\,z^3-378\,000\,z^2+441\,000\,z-826\,875\right)I_0\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\sqrt{z}\left(-4096\,z^6+249\,856\,z^5-2\,761\,984\,z^4+2\,949\,120\,z^3+882\,000\,z^2-882\,000\,z+2\,480\,625\right)I_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(16\,384\,z^7-1\,003\,520\,z^6+11\,289\,600\,z^5-14\,112\,000\,z^4-3\,528\,000\,z^3+1\,587\,600\,z^2-1\,984\,500\,z+2\,480\,625\right)$$
$$I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(-16\,384\,z^7+1\,003\,520\,z^6-11\,289\,600\,z^5+14\,112\,000\,z^4+\right.$$
$$\left.\left.3\,528\,000\,z^3-1\,587\,600\,z^2+1\,984\,500\,z-2\,480\,625\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1608.01

$${}_1F_2\left(-\frac{5}{2}; 2, \frac{11}{2}; -z\right) =$$
$$\frac{1}{18\,350\,080\,z^4}\left(4\left(2\,z\left(4096\,z^6+251\,904\,z^5+2\,884\,352\,z^4+4\,189\,440\,z^3-378\,000\,z^2-441\,000\,z-826\,875\right)J_0\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\sqrt{z}\left(-4096\,z^6-249\,856\,z^5-2\,761\,984\,z^4-2\,949\,120\,z^3+882\,000\,z^2+882\,000\,z+2\,480\,625\right)J_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(16\,384\,z^7+1\,003\,520\,z^6+11\,289\,600\,z^5+14\,112\,000\,z^4-3\,528\,000\,z^3-1\,587\,600\,z^2-1\,984\,500\,z-2\,480\,625\right)$$
$$J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+\pi\left(-16\,384\,z^7-1\,003\,520\,z^6-11\,289\,600\,z^5-14\,112\,000\,z^4+\right.$$
$$\left.\left.3\,528\,000\,z^3+1\,587\,600\,z^2+1\,984\,500\,z+2\,480\,625\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1609.01

$${}_1F_2\left(-\frac{5}{2}; 2, 6; z\right) =$$
$$-\frac{1}{14\,189\,175\,z^4}\left(32\left(2\,z\left(256\,z^6-16\,896\,z^5+210\,960\,z^4-352\,800\,z^3-23\,625\,z^2+42\,525\,z-113\,400\right)I_0\left(\sqrt{z}\right)^2+\right.\right.$$
$$2\sqrt{z}\left(-256\,z^6+16\,704\,z^5-198\,720\,z^4+220\,500\,z^3+70\,875\,z^2-113\,400\,z+453\,600\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-512\,z^7+33\,536\,z^6-405\,408\,z^5+518\,400\,z^4+173\,250\,z^3-108\,675\,z^2+113\,400\,z-907\,200\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1610.01

$${}_1F_2\left(-\frac{5}{2}; 2, 6; -z\right) =$$
$$\frac{1}{14\,189\,175\,z^4}\left(32\left(2\,z\left(256\,z^6+16\,896\,z^5+210\,960\,z^4+352\,800\,z^3-23\,625\,z^2-42\,525\,z-113\,400\right)J_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$2\sqrt{z}\left(256\,z^6+16\,704\,z^5+198\,720\,z^4+220\,500\,z^3-70\,875\,z^2-113\,400\,z-453\,600\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+$$
$$\left.\left.\left(512\,z^7+33\,536\,z^6+405\,408\,z^5+518\,400\,z^4-173\,250\,z^3-108\,675\,z^2-113\,400\,z-907\,200\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = -\frac{5}{2}$, $b_1 = \frac{5}{2}$

07.22.03.1611.01

$${}_1F_2\left(-\frac{5}{2}; \frac{5}{2}, \frac{5}{2}; z\right) = \frac{1}{8192\,z^{3/2}}\left(2\sqrt{z}\left(4\,z^3-158\,z^2+1006\,z-375\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(4\,z^3-154\,z^2+870\,z+15\right)\sinh\left(2\sqrt{z}\right)-8\left(2\,z^4-80\,z^3+540\,z^2-360\,z-45\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.1612.01

$${}_1F_2\left(-\frac{5}{2};\frac{5}{2},\frac{5}{2};-z\right)=\frac{1}{8192\,z^{3/2}}\left(2\sqrt{z}\,\left(4z^3+158z^2+1006z+375\right)\cos\left(2\sqrt{z}\right)+\left(4z^3+154z^2+870z-15\right)\sin\left(2\sqrt{z}\right)+8\left(2z^4+80z^3+540z^2+360z-45\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)$$

07.22.03.1613.01

$${}_1F_2\left(-\frac{5}{2};\frac{5}{2},3;z\right)=\frac{1}{120\,960\,z^{3/2}}\left(-4\left(2\sqrt{z}\,\left(64z^4-2896z^3+23\,388z^2-24\,075z-1440\right)I_0\left(2\sqrt{z}\right)+\left(-64z^4+2864z^3-21\,996z^2+14\,625z+2880\right)I_1\left(2\sqrt{z}\right)\right)+\pi\sqrt{z}\,\left(256z^4-11\,520z^3+90\,720z^2-75\,600z-14\,175\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\sqrt{z}\,\left(-256z^4+11\,520z^3-90\,720z^2+75\,600z+14\,175\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1614.01

$${}_1F_2\left(-\frac{5}{2};\frac{5}{2},3;-z\right)=\frac{1}{120\,960\,z^{3/2}}\left(4\left(2\sqrt{z}\,\left(64z^4+2896z^3+23\,388z^2+24\,075z-1440\right)J_0\left(2\sqrt{z}\right)-\left(64z^4+2864z^3+21\,996z^2+14\,625z-2880\right)J_1\left(2\sqrt{z}\right)\right)+\pi\sqrt{z}\,\left(256z^4+11\,520z^3+90\,720z^2+75\,600z-14\,175\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\sqrt{z}\,\left(256z^4+11\,520z^3+90\,720z^2+75\,600z-14\,175\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1615.01

$${}_1F_2\left(-\frac{5}{2};\frac{5}{2},\frac{7}{2};z\right)=\frac{1}{16\,384\,z^{5/2}}\left(2\sqrt{z}\,\left(4z^4-198z^3+1706z^2-1155z-270\right)\cosh\left(2\sqrt{z}\right)+\left(4z^4-194z^3+1530z^2-285z+270\right)\sinh\left(2\sqrt{z}\right)-8z\left(2z^4-100z^3+900z^2-900z-225\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.1616.01

$${}_1F_2\left(-\frac{5}{2};\frac{5}{2},\frac{7}{2};-z\right)=\frac{1}{16\,384\,z^{5/2}}\left(2\sqrt{z}\,\left(4z^4+198z^3+1706z^2+1155z-270\right)\cos\left(2\sqrt{z}\right)+\left(4z^4+194z^3+1530z^2+285z+270\right)\sin\left(2\sqrt{z}\right)+8z\left(2z^4+100z^3+900z^2+900z-225\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)$$

07.22.03.1617.01

$${}_1F_2\left(-\frac{5}{2};\frac{5}{2},4;z\right)=\frac{1}{221\,760\,z^{5/2}}\left(\pi\left(256z^4-14\,080z^3+142\,560z^2-166\,320z-51\,975\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+\pi\left(-256z^4+14\,080z^3-142\,560z^2+166\,320z+51\,975\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2}-4\left(2\sqrt{z}\,\left(64z^5-3536z^4+36\,508z^3-49\,875z^2-7200z+1440\right)I_0\left(2\sqrt{z}\right)+\left(-64z^5+3504z^4-34\,796z^3+34\,425z^2+12\,960z-2880\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1618.01

$${}_1F_2\left(-\frac{5}{2};\frac{5}{2},4;-z\right)=\frac{1}{221\,760\,z^{5/2}}\left(\pi\left(256z^4+14\,080z^3+142\,560z^2+166\,320z-51\,975\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}-\pi\left(256z^4+14\,080z^3+142\,560z^2+166\,320z-51\,975\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{3/2}+4\left(2\sqrt{z}\,\left(64z^5+3536z^4+36\,508z^3+49\,875z^2-7200z-1440\right)J_0\left(2\sqrt{z}\right)-\left(64z^5+3504z^4+34\,796z^3+34\,425z^2-12\,960z-2880\right)J_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1619.01

$${}_1F_2\left(-\frac{5}{2};\frac{5}{2},\frac{9}{2};z\right)=\frac{1}{196\,608\,z^{7/2}}$$
$$\left(7\left(-8\left(2z^4-120z^3+1350z^2-1800z-675\right)\text{Shi}\left(2\sqrt{z}\right)z^2+2\left(4z^5-238z^4+2586z^3-2565z^2-1170z+675\right)\right.\right.$$
$$\left.\left.\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^5-234z^4+2370z^3-1035z^2+270z-675\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1620.01

$${}_1F_2\left(-\frac{5}{2};\frac{5}{2},\frac{9}{2};-z\right)=$$
$$\frac{1}{196\,608\,z^{7/2}}\left(7\left(8\left(2z^4+120z^3+1350z^2+1800z-675\right)\text{Si}\left(2\sqrt{z}\right)z^2+2\left(4z^5+238z^4+2586z^3+2565z^2-1170z-675\right)\right.\right.$$
$$\left.\left.\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^5+234z^4+2370z^3+1035z^2+270z+675\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1621.01

$${}_1F_2\left(-\frac{5}{2};\frac{5}{2},5;z\right)=\frac{1}{360\,360\,z^{7/2}}\left(\pi\left(256z^4-16\,640z^3+205\,920z^2-308\,880z-135\,135\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}+\right.$$
$$\pi\left(-256z^4+16\,640z^3-205\,920z^2+308\,880z+135\,135\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{5/2}-$$
$$4\left(2\sqrt{z}\left(64z^6-4176z^5+52\,508z^4-89\,355z^3-21\,600z^2+6120z-6480\right)I_0\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(-64z^6+4144z^5-50\,476z^4+66\,465z^3+36\,000z^2-5760z+12\,960\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1622.01

$${}_1F_2\left(-\frac{5}{2};\frac{5}{2},5;-z\right)=\frac{1}{360\,360\,z^{7/2}}\left(\pi\left(256z^4+16\,640z^3+205\,920z^2+308\,880z-135\,135\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-\right.$$
$$\pi\left(256z^4+16\,640z^3+205\,920z^2+308\,880z-135\,135\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{5/2}+$$
$$4\left(2\sqrt{z}\left(64z^6+4176z^5+52\,508z^4+89\,355z^3-21\,600z^2-6120z-6480\right)J_0\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(-64z^6-4144z^5-50\,476z^4-66\,465z^3+36\,000z^2+5760z+12\,960\right)J_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1623.01

$${}_1F_2\left(-\frac{5}{2};\frac{5}{2},\frac{11}{2};z\right)=$$
$$\frac{1}{131\,072\,z^{9/2}}\left(3\left(-8\left(2z^4-140z^3+1890z^2-3150z-1575\right)\text{Shi}\left(2\sqrt{z}\right)z^3+2\left(4z^6-278z^5+3646z^4-4785z^3-3150z^2+\right.\right.\right.$$
$$\left.\left.\left.1575z-4725\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^6-274z^5+3390z^4-2415z^3-630z^2+4725z+4725\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1624.01

$${}_1F_2\left(-\frac{5}{2};\frac{5}{2},\frac{11}{2};-z\right)=\frac{1}{131\,072\,z^{9/2}}$$
$$\left(3\left(8\left(2z^4+140z^3+1890z^2+3150z-1575\right)\text{Si}\left(2\sqrt{z}\right)z^3+2\left(4z^6+278z^5+3646z^4+4785z^3-3150z^2-1575z-4725\right)\right.\right.$$
$$\left.\left.\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^6+274z^5+3390z^4+2415z^3-630z^2-4725z+4725\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1625.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{5}{2}, 6; z\right) = \frac{1}{540\,540\, z^{9/2}} \left(\pi \left(256 z^4 - 19\,200 z^3 + 280\,800 z^2 - 514\,800 z - 289\,575\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{7/2} + \right.$$
$$ \pi \left(-256 z^4 + 19\,200 z^3 - 280\,800 z^2 + 514\,800 z + 289\,575\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{7/2} - $$
$$ 4\left(2\sqrt{z}\left(64 z^7 - 4816 z^6 + 71\,388 z^5 - 145\,395 z^4 - 50\,400 z^3 + 16\,200 z^2 - 16\,200 z + 64\,800\right) I_0\left(2\sqrt{z}\right) - \right.$$
$$ \left.\left.\left(64 z^7 - 4784 z^6 + 69\,036 z^5 - 113\,625 z^4 - 79\,200 z^3 + 5400 z^2 + 32\,400 z + 129\,600\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1626.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{5}{2}, 6; -z\right) = \frac{1}{540\,540\, z^{9/2}} \left(\pi \left(256 z^4 + 19\,200 z^3 + 280\,800 z^2 + 514\,800 z - 289\,575\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{7/2} - \right.$$
$$ \pi \left(256 z^4 + 19\,200 z^3 + 280\,800 z^2 + 514\,800 z - 289\,575\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{7/2} + $$
$$ 4\left(2\sqrt{z}\left(64 z^7 + 4816 z^6 + 71\,388 z^5 + 145\,395 z^4 - 50\,400 z^3 - 16\,200 z^2 - 16\,200 z - 64\,800\right) J_0\left(2\sqrt{z}\right) - \right.$$
$$ \left.\left.\left(64 z^7 + 4784 z^6 + 69\,036 z^5 + 113\,625 z^4 - 79\,200 z^3 - 5400 z^2 + 32\,400 z - 129\,600\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{5}{2}$, $b_1 = 3$

07.22.03.1627.01

$$ {}_1F_2\left(-\frac{5}{2}; 3, 3; z\right) = $$
$$ -\frac{1}{893\,025\, z^{3/2}} \left(8\left(\sqrt{z}\left(256 z^4 - 13\,056 z^3 + 123\,840 z^2 - 164\,520 z - 14\,175\right) I_0\left(\sqrt{z}\right)^2 + 2\left(-128 z^4 + 6432 z^3 - 57\,240 z^2 + \right.\right.\right. $$
$$ \left.\left.\left. 45\,540 z + 14\,175\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \sqrt{z}\left(-256 z^4 + 12\,928 z^3 - 117\,504 z^2 + 111\,600 z + 36\,495\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1628.01

$$ {}_1F_2\left(-\frac{5}{2}; 3, 3; -z\right) = $$
$$ \frac{1}{893\,025\, z^{3/2}} \left(8\left(\sqrt{z}\left(256 z^4 + 13\,056 z^3 + 123\,840 z^2 + 164\,520 z - 14\,175\right) J_0\left(\sqrt{z}\right)^2 - 2\left(128 z^4 + 6432 z^3 + 57\,240 z^2 + \right.\right.\right. $$
$$ \left.\left.\left. 45\,540 z - 14\,175\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\left(256 z^4 + 12\,928 z^3 + 117\,504 z^2 + 111\,600 z - 36\,495\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1629.01

$$ {}_1F_2\left(-\frac{5}{2}; 3, \frac{7}{2}; z\right) = \frac{1}{967\,680\, z^2} \left(-4\left(2 z\left(256 z^4 - 14\,464 z^3 + 154\,752 z^2 - 224\,280 z - 43\,425\right) I_0\left(2\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. \sqrt{z}\left(-256 z^4 + 14\,336 z^3 - 147\,744 z^2 + 158\,400 z + 72\,675\right) I_1\left(2\sqrt{z}\right)\right) + \right. $$
$$ \pi \left(1024 z^5 - 57\,600 z^4 + 604\,800 z^3 - 756\,000 z^2 - 283\,500 z - 42\,525\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + $$
$$ \left. \pi \left(-1024 z^5 + 57\,600 z^4 - 604\,800 z^3 + 756\,000 z^2 + 283\,500 z + 42\,525\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1630.01

$$ {}_1F_2\left(-\frac{5}{2}; 3, \frac{7}{2}; -z\right) = \frac{1}{967\,680\,z^2}\left(4\left(2\,z\left(256\,z^4+14\,464\,z^3+154\,752\,z^2+224\,280\,z-43\,425\right)J_0\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\sqrt{z}\left(256\,z^4+14\,336\,z^3+147\,744\,z^2+158\,400\,z-72\,675\right)J_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(1024\,z^5+57\,600\,z^4+604\,800\,z^3+756\,000\,z^2-283\,500\,z+42\,525\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\pi\left(1024\,z^5+57\,600\,z^4+604\,800\,z^3+756\,000\,z^2-283\,500\,z+42\,525\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1631.01

$$ {}_1F_2\left(-\frac{5}{2}; 3, 4; z\right) = -\frac{1}{3\,274\,425\,z^2}\left(16\left(z\left(256\,z^4-15\,936\,z^3+192\,960\,z^2-337\,860\,z-70\,875\right)I_0\left(\sqrt{z}\right)^2+\right.\right.$$
$$\sqrt{z}\left(-256\,z^4+15\,744\,z^3-181\,440\,z^2+217\,440\,z+127\,575\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-256\,z^5+15\,808\,z^4-185\,184\,z^3+252\,540\,z^2+136\,935\,z+28\,350\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1632.01

$$ {}_1F_2\left(-\frac{5}{2}; 3, 4; -z\right) = \frac{1}{3\,274\,425\,z^2}$$
$$\left(16\left(z\left(256\,z^4+15\,936\,z^3+192\,960\,z^2+337\,860\,z-70\,875\right)J_0\left(\sqrt{z}\right)^2-\sqrt{z}\left(256\,z^4+15\,744\,z^3+181\,440\,z^2+217\,440\,z-\right.\right.\right.$$
$$\left.\left.\left.127\,575\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(256\,z^5+15\,808\,z^4+185\,184\,z^3+252\,540\,z^2-136\,935\,z+28\,350\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1633.01

$$ {}_1F_2\left(-\frac{5}{2}; 3, \frac{9}{2}; z\right) = \frac{1}{6\,635\,520\,z^3}\left(-4\left(2\,z\left(1024\,z^5-69\,376\,z^4+924\,288\,z^3-1\,726\,560\,z^2-600\,300\,z-70\,875\right)I_0\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\sqrt{z}\left(-1024\,z^5+68\,864\,z^4-890\,496\,z^3+1\,320\,480\,z^2+917\,100\,z+212\,625\right)I_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(4096\,z^6-276\,480\,z^5+3\,628\,800\,z^4-6\,048\,000\,z^3-3\,402\,000\,z^2-1\,020\,600\,z+212\,625\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(-4096\,z^6+276\,480\,z^5-3\,628\,800\,z^4+6\,048\,000\,z^3+3\,402\,000\,z^2+1\,020\,600\,z-212\,625\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1634.01

$$ {}_1F_2\left(-\frac{5}{2}; 3, \frac{9}{2}; -z\right) = \frac{1}{6\,635\,520\,z^3}\left(4\left(2\,z\left(1024\,z^5+69\,376\,z^4+924\,288\,z^3+1\,726\,560\,z^2-600\,300\,z+70\,875\right)J_0\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\sqrt{z}\left(1024\,z^5+68\,864\,z^4+890\,496\,z^3+1\,320\,480\,z^2-917\,100\,z+212\,625\right)J_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(4096\,z^6+276\,480\,z^5+3\,628\,800\,z^4+6\,048\,000\,z^3-3\,402\,000\,z^2+1\,020\,600\,z+212\,625\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\pi\left(4096\,z^6+276\,480\,z^5+3\,628\,800\,z^4+6\,048\,000\,z^3-3\,402\,000\,z^2+1\,020\,600\,z+212\,625\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1635.01

$$ {}_1F_2\left(-\frac{5}{2}; 3, 5; z\right) = -\frac{1}{42\,567\,525\,z^3}\left(64\left(z\left(512\,z^5-37\,632\,z^4+554\,400\,z^3-1\,203\,840\,z^2-425\,250\,z-42\,525\right)I_0\left(\sqrt{z}\right)^2+\right.\right.$$
$$2\sqrt{z}\left(-256\,z^5+18\,624\,z^4-263\,520\,z^3+423\,180\,z^2+354\,375\,z+85\,050\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+$$
$$\left.\left.2\left(-256\,z^6+18\,688\,z^5-267\,984\,z^4+476\,640\,z^3+356\,445\,z^2+141\,750\,z-85\,050\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1636.01

$$ {}_1F_2\left(-\frac{5}{2}; 3, 5; -z\right) = \frac{1}{42\,567\,525\,z^3}\left(64\left(z\left(512\,z^5+37\,632\,z^4+554\,400\,z^3+1\,203\,840\,z^2-425\,250\,z+42\,525\right)J_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$ 2\sqrt{z}\left(256\,z^5+18\,624\,z^4+263\,520\,z^3+423\,180\,z^2-354\,375\,z+85\,050\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+$$
$$ \left.\left.2\left(256\,z^6+18\,688\,z^5+267\,984\,z^4+476\,640\,z^3-356\,445\,z^2+141\,750\,z+85\,050\right)J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1637.01

$$ {}_1F_2\left(-\frac{5}{2}; 3, \frac{11}{2}; z\right) = \frac{1}{41\,287\,680\,z^4} $$
$$ \left(-4\left(2\,z\left(4096\,z^6-323\,584\,z^5+5\,160\,192\,z^4-11\,796\,480\,z^3-6\,042\,960\,z^2-1\,587\,600\,z+1\,488\,375\right)I_0\left(2\sqrt{z}\right)+\right.\right.$$
$$ \left.\sqrt{z}\left(-4096\,z^6+321\,536\,z^5-5\,001\,984\,z^4+9\,480\,960\,z^3+8\,683\,920\,z^2+3\,969\,000\,z-4\,465\,125\right)I_1\left(2\sqrt{z}\right)\right)+$$
$$ \pi\left(16\,384\,z^7-1\,290\,240\,z^6+20\,321\,280\,z^5-42\,336\,000\,z^4-31\,752\,000\,z^3-14\,288\,400\,z^2+5\,953\,500\,z-4\,465\,125\right)$$
$$ I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(-16\,384\,z^7+1\,290\,240\,z^6-20\,321\,280\,z^5+42\,336\,000\,z^4+\right.$$
$$ \left.\left.31\,752\,000\,z^3+14\,288\,400\,z^2-5\,953\,500\,z+4\,465\,125\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1638.01

$$ {}_1F_2\left(-\frac{5}{2}; 3, \frac{11}{2}; -z\right) = $$
$$ \frac{1}{41\,287\,680\,z^4}\left(4\left(2\,z\left(4096\,z^6+323\,584\,z^5+5\,160\,192\,z^4+11\,796\,480\,z^3-6\,042\,960\,z^2+1\,587\,600\,z+1\,488\,375\right)J_0\left(2\sqrt{z}\right)-\right.\right.$$
$$ \left.\sqrt{z}\left(4096\,z^6+321\,536\,z^5+5\,001\,984\,z^4+9\,480\,960\,z^3-8\,683\,920\,z^2+3\,969\,000\,z+4\,465\,125\right)J_1\left(2\sqrt{z}\right)\right)+$$
$$ \pi\left(16\,384\,z^7+1\,290\,240\,z^6+20\,321\,280\,z^5+42\,336\,000\,z^4-31\,752\,000\,z^3+14\,288\,400\,z^2+5\,953\,500\,z+4\,465\,125\right)$$
$$ J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\left(16\,384\,z^7+1\,290\,240\,z^6+20\,321\,280\,z^5+42\,336\,000\,z^4-\right.$$
$$ \left.\left.31\,752\,000\,z^3+14\,288\,400\,z^2+5\,953\,500\,z+4\,465\,125\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1639.01

$$ {}_1F_2\left(-\frac{5}{2}; 3, 6; z\right) = -\frac{1}{127\,702\,575\,z^4} $$
$$ \left(64\left(z\left(1024\,z^6-86\,784\,z^5+1\,506\,240\,z^4-3\,902\,400\,z^3-1\,984\,500\,z^2-467\,775\,z+680\,400\right)I_0\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$ \left(256\,z^6-21\,504\,z^5+360\,720\,z^4-727\,200\,z^3-779\,625\,z^2-382\,725\,z+680\,400\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(-1024\,z^7+\right.$$
$$ \left.\left.\left.86\,272\,z^6-1\,463\,616\,z^5+3\,211\,200\,z^4+3\,044\,700\,z^3+1\,743\,525\,z^2-1\,190\,700\,z+2\,721\,600\right)I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1640.01

$$ {}_1F_2\left(-\frac{5}{2}; 3, 6; -z\right) = $$
$$ \frac{1}{127\,702\,575\,z^4}\left(64\left(z\left(1024\,z^6+86\,784\,z^5+1\,506\,240\,z^4+3\,902\,400\,z^3-1\,984\,500\,z^2+467\,775\,z+680\,400\right)J_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$ 4\sqrt{z}\left(256\,z^6+21\,504\,z^5+360\,720\,z^4+727\,200\,z^3-779\,625\,z^2+382\,725\,z+680\,400\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+$$
$$ \left.\left.\left(1024\,z^7+86\,272\,z^6+1\,463\,616\,z^5+3\,211\,200\,z^4-3\,044\,700\,z^3+1\,743\,525\,z^2+1\,190\,700\,z+2\,721\,600\right)J_1\left(\sqrt{z}\right)^2\right)\right) $$

For fixed z and $a_1 = -\frac{5}{2}$, $b_1 = \frac{7}{2}$

07.22.03.1641.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{7}{2}, \frac{7}{2}; z\right) = \frac{1}{65\,536\, z^{5/2}} \left(2\sqrt{z}\,\left(8z^4 - 496z^3 + 5762z^2 - 6660z - 4365\right)\cosh\left(2\sqrt{z}\right) + \left(8z^4 - 488z^3 + 5310z^2 - 3120z - 1035\right)\sinh\left(2\sqrt{z}\right) - 8\left(4z^5 - 250z^4 + 3000z^3 - 4500z^2 - 2250z - 675\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right) $$

07.22.03.1642.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{7}{2}, \frac{7}{2}; -z\right) = \frac{1}{65\,536\, z^{5/2}} \left(2\sqrt{z}\,\left(8z^4 + 496z^3 + 5762z^2 + 6660z - 4365\right)\cos\left(2\sqrt{z}\right) + \left(8z^4 + 488z^3 + 5310z^2 + 3120z - 1035\right)\sin\left(2\sqrt{z}\right) + 8\left(4z^5 + 250z^4 + 3000z^3 + 4500z^2 - 2250z + 675\right)\mathrm{Si}\left(2\sqrt{z}\right)\right) $$

07.22.03.1643.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{7}{2}, 4; z\right) = \frac{1}{1\,774\,080\, z^{5/2}} \left(-4\left(2\sqrt{z}\,\left(256z^5 - 17\,664z^4 + 241\,952z^3 - 472\,080z^2 - 189\,675z - 57\,600\right)I_0\left(2\sqrt{z}\right) + \left(-256z^5 + 17\,536z^4 - 233\,344z^3 + 365\,400z^2 + 281\,025z + 115\,200\right)I_1\left(2\sqrt{z}\right)\right) + \pi\sqrt{z}\,\left(1024z^5 - 70\,400z^4 + 950\,400z^3 - 1\,663\,200z^2 - 1\,039\,500z - 467\,775\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\sqrt{z}\,\left(-1024z^5 + 70\,400z^4 - 950\,400z^3 + 1\,663\,200z^2 + 1\,039\,500z + 467\,775\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1644.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{7}{2}, 4; -z\right) = \frac{1}{1\,774\,080\, z^{5/2}} \left(4\left(2\sqrt{z}\,\left(256z^5 + 17\,664z^4 + 241\,952z^3 + 472\,080z^2 - 189\,675z + 57\,600\right)J_0\left(2\sqrt{z}\right) - \left(256z^5 + 17\,536z^4 + 233\,344z^3 + 365\,400z^2 - 281\,025z + 115\,200\right)J_1\left(2\sqrt{z}\right)\right) + \pi\sqrt{z}\,\left(1024z^5 + 70\,400z^4 + 950\,400z^3 + 1\,663\,200z^2 - 1\,039\,500z + 467\,775\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\sqrt{z}\,\left(1024z^5 + 70\,400z^4 + 950\,400z^3 + 1\,663\,200z^2 - 1\,039\,500z + 467\,775\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1645.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{7}{2}, \frac{9}{2}; z\right) = \frac{1}{393\,216\, z^{7/2}} \left(7\left(2\sqrt{z}\,\left(4z^5 - 298z^4 + 4356z^3 - 7155z^2 - 7245z - 3375\right)\cosh\left(2\sqrt{z}\right) + \left(4z^5 - 294z^4 + 4080z^3 - 4185z^2 - 4455z + 3375\right)\sinh\left(2\sqrt{z}\right) - 8z\left(2z^5 - 150z^4 + 2250z^3 - 4500z^2 - 3375z - 2025\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1646.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{7}{2}, \frac{9}{2}; -z\right) = \frac{1}{393\,216\, z^{7/2}} \left(7\left(2\sqrt{z}\,\left(4z^5 + 298z^4 + 4356z^3 + 7155z^2 - 7245z + 3375\right)\cos\left(2\sqrt{z}\right) + \left(4z^5 + 294z^4 + 4080z^3 + 4185z^2 - 4455z - 3375\right)\sin\left(2\sqrt{z}\right) + 8z\left(2z^5 + 150z^4 + 2250z^3 + 4500z^2 - 3375z + 2025\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1647.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{7}{2}, 5; z\right) = $$
$$ \frac{1}{2\,882\,880\,z^{7/2}}\left(\pi\left(1024\,z^5 - 83\,200\,z^4 + 1\,372\,800\,z^3 - 3\,088\,800\,z^2 - 2\,702\,700\,z - 2\,027\,025\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{3/2} + \right. $$
$$ \pi\left(-1024\,z^5 + 83\,200\,z^4 - 1\,372\,800\,z^3 + 3\,088\,800\,z^2 + 2\,702\,700\,z + 2\,027\,025\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{3/2} - $$
$$ 4\left(2\sqrt{z}\,\left(256\,z^6 - 20\,864\,z^5 + 348\,352\,z^4 - 854\,280\,z^3 - 533\,925\,z^2 - 331\,200\,z + 86\,400\right) I_0\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left(-256\,z^6 + 20\,736\,z^5 - 338\,144\,z^4 + 697\,200\,z^3 + 737\,775\,z^2 + 576\,000\,z - 172\,800\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1648.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{7}{2}, 5; -z\right) = $$
$$ \frac{1}{2\,882\,880\,z^{7/2}}\left(\pi\left(1024\,z^5 + 83\,200\,z^4 + 1\,372\,800\,z^3 + 3\,088\,800\,z^2 - 2\,702\,700\,z + 2\,027\,025\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{3/2} - \right. $$
$$ \pi\left(1024\,z^5 + 83\,200\,z^4 + 1\,372\,800\,z^3 + 3\,088\,800\,z^2 - 2\,702\,700\,z + 2\,027\,025\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{3/2} + $$
$$ 4\left(2\sqrt{z}\,\left(256\,z^6 + 20\,864\,z^5 + 348\,352\,z^4 + 854\,280\,z^3 - 533\,925\,z^2 + 331\,200\,z + 86\,400\right) J_0\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.\left(256\,z^6 + 20\,736\,z^5 + 338\,144\,z^4 + 697\,200\,z^3 - 737\,775\,z^2 + 576\,000\,z + 172\,800\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1649.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{7}{2}, \frac{11}{2}; z\right) = \frac{1}{524\,288\,z^{9/2}}\left(3\left(-8\left(4\,z^5 - 350\,z^4 + 6300\,z^3 - 15\,750\,z^2 - 15\,750\,z - 14\,175\right) \operatorname{Shi}\left(2\sqrt{z}\right) z^2 + \right. $$
$$ 2\left(8\,z^6 - 696\,z^5 + 12\,262\,z^4 - 26\,160\,z^3 - 34\,965\,z^2 - 31\,500\,z + 23\,625\right) \cosh\left(2\sqrt{z}\right) \sqrt{z} + $$
$$ \left.\left.\left(8\,z^6 - 688\,z^5 + 11\,610\,z^4 - 17\,220\,z^3 - 28\,035\,z^2 - 23\,625\right) \sinh\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1650.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{7}{2}, \frac{11}{2}; -z\right) = \frac{1}{524\,288\,z^{9/2}}\left(3\left(8\left(4\,z^5 + 350\,z^4 + 6300\,z^3 + 15\,750\,z^2 - 15\,750\,z + 14\,175\right) \operatorname{Si}\left(2\sqrt{z}\right) z^2 + \right. $$
$$ 2\left(8\,z^6 + 696\,z^5 + 12\,262\,z^4 + 26\,160\,z^3 - 34\,965\,z^2 + 31\,500\,z + 23\,625\right) \cos\left(2\sqrt{z}\right) \sqrt{z} + $$
$$ \left.\left.\left(8\,z^6 + 688\,z^5 + 11\,610\,z^4 + 17\,220\,z^3 - 28\,035\,z^2 - 23\,625\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1651.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{7}{2}, 6; z\right) = $$
$$ \frac{1}{4\,324\,320\,z^{9/2}}\left(\pi\left(1024\,z^5 - 96\,000\,z^4 + 1\,872\,000\,z^3 - 5\,148\,000\,z^2 - 5\,791\,500\,z - 6\,081\,075\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{5/2} + \right. $$
$$ \pi\left(-1024\,z^5 + 96\,000\,z^4 - 1\,872\,000\,z^3 + 5\,148\,000\,z^2 + 5\,791\,500\,z + 6\,081\,075\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{5/2} - $$
$$ 4\left(2\sqrt{z}\,\left(256\,z^7 - 24\,064\,z^6 + 473\,952\,z^5 - 1\,399\,680\,z^4 - 1\,198\,575\,z^3 - 1\,123\,200\,z^2 + 388\,800\,z - 518\,400\right) I_0\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left(-256\,z^7 + 23\,936\,z^6 - 462\,144\,z^5 + 1\,182\,600\,z^4 + 1\,579\,725\,z^3 + 1\,771\,200\,z^2 - 259\,200\,z + 1\,036\,800\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1652.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{7}{2}, 6; -z\right) = \frac{1}{4\,324\,320\,z^{9/2}}\left(\pi\left(1024\,z^5 + 96\,000\,z^4 + 1\,872\,000\,z^3 + 5\,148\,000\,z^2 - 5\,791\,500\,z + 6\,081\,075\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{5/2} - \pi\left(1024\,z^5 + 96\,000\,z^4 + 1\,872\,000\,z^3 + 5\,148\,000\,z^2 - 5\,791\,500\,z + 6\,081\,075\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{5/2} + 4\left(2\sqrt{z}\left(256\,z^7 + 24\,064\,z^6 + 473\,952\,z^5 + 1\,399\,680\,z^4 - 1\,198\,575\,z^3 + 1\,123\,200\,z^2 + 388\,800\,z + 518\,400\right) J_0\left(2\sqrt{z}\right) - \left(256\,z^7 + 23\,936\,z^6 + 462\,144\,z^5 + 1\,182\,600\,z^4 - 1\,579\,725\,z^3 + 1\,771\,200\,z^2 + 259\,200\,z + 1\,036\,800\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{5}{2}$, $b_1 = 4$

07.22.03.1653.01

$$ {}_1F_2\left(-\frac{5}{2}; 4, 4; z\right) = -\frac{1}{12\,006\,225\,z^{5/2}}\left(16\left(2\sqrt{z}\left(256\,z^5 - 19\,456\,z^4 + 301\,200\,z^3 - 704\,160\,z^2 - 321\,345\,z - 155\,925\right) I_0\left(\sqrt{z}\right)^2 + 2\left(-256\,z^5 + 19\,264\,z^4 - 287\,040\,z^3 + 508\,500\,z^2 + 505\,755\,z + 311\,850\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \sqrt{z}\left(-512\,z^5 + 38\,656\,z^4 - 583\,328\,z^3 + 1\,134\,720\,z^2 + 1\,000\,530\,z + 703\,665\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1654.01

$$ {}_1F_2\left(-\frac{5}{2}; 4, 4; -z\right) = \frac{1}{12\,006\,225\,z^{5/2}}\left(16\left(2\sqrt{z}\left(256\,z^5 + 19\,456\,z^4 + 301\,200\,z^3 + 704\,160\,z^2 - 321\,345\,z + 155\,925\right) J_0\left(\sqrt{z}\right)^2 - 2\left(256\,z^5 + 19\,264\,z^4 + 287\,040\,z^3 + 508\,500\,z^2 - 505\,755\,z + 311\,850\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\left(512\,z^5 + 38\,656\,z^4 + 583\,328\,z^3 + 1\,134\,720\,z^2 - 1\,000\,530\,z + 703\,665\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1655.01

$$ {}_1F_2\left(-\frac{5}{2}; 4, \frac{9}{2}; z\right) = \frac{1}{12\,165\,120\,z^3}\left(-4\left(2\,z\left(1024\,z^5 - 84\,736\,z^4 + 1\,446\,528\,z^3 - 3\,667\,680\,z^2 - 2\,501\,100\,z - 1\,985\,175\right) I_0\left(2\sqrt{z}\right) + \sqrt{z}\left(-1024\,z^5 + 84\,224\,z^4 - 1\,405\,056\,z^3 + 3\,013\,920\,z^2 + 3\,401\,100\,z + 3\,190\,725\right) I_1\left(2\sqrt{z}\right)\right) + \pi\left(4096\,z^6 - 337\,920\,z^5 + 5\,702\,400\,z^4 - 13\,305\,600\,z^3 - 12\,474\,000\,z^2 - 11\,226\,600\,z - 2\,338\,875\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(-4096\,z^6 + 337\,920\,z^5 - 5\,702\,400\,z^4 + 13\,305\,600\,z^3 + 12\,474\,000\,z^2 + 11\,226\,600\,z + 2\,338\,875\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1656.01

$${}_1F_2\left(-\frac{5}{2}; 4, \frac{9}{2}; -z\right) =$$
$$\frac{1}{12\,165\,120\,z^3}\left(4\left(2\,z\left(1024\,z^5+84\,736\,z^4+1\,446\,528\,z^3+3\,667\,680\,z^2-2\,501\,100\,z+1\,985\,175\right)J_0\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\sqrt{z}\left(1024\,z^5+84\,224\,z^4+1\,405\,056\,z^3+3\,013\,920\,z^2-3\,401\,100\,z+3\,190\,725\right)J_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\left(4096\,z^6+337\,920\,z^5+5\,702\,400\,z^4+13\,305\,600\,z^3-12\,474\,000\,z^2+11\,226\,600\,z-2\,338\,875\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\pi\left(4096\,z^6+337\,920\,z^5+5\,702\,400\,z^4+13\,305\,600\,z^3-12\,474\,000\,z^2+11\,226\,600\,z-2\,338\,875\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1657.01

$${}_1F_2\left(-\frac{5}{2}; 4, 5; z\right) =$$
$$-\frac{1}{156\,080\,925\,z^3}\left(64\left(z\left(1024\,z^5-91\,904\,z^4+1\,732\,800\,z^3-5\,065\,920\,z^2-3\,677\,220\,z-3\,586\,275\right)I_0\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(-256\,z^5+22\,784\,z^4-416\,400\,z^3+977\,760\,z^2+1\,338\,345\,z+1\,559\,250\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-1024\,z^6+91\,392\,z^5-1\,687\,616\,z^4+4\,265\,280\,z^3+5\,165\,100\,z^2+6\,029\,145\,z+1\,871\,100\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1658.01

$${}_1F_2\left(-\frac{5}{2}; 4, 5; -z\right) =$$
$$\frac{1}{156\,080\,925\,z^3}\left(64\left(z\left(1024\,z^5+91\,904\,z^4+1\,732\,800\,z^3+5\,065\,920\,z^2-3\,677\,220\,z+3\,586\,275\right)J_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(256\,z^5+22\,784\,z^4+416\,400\,z^3+977\,760\,z^2-1\,338\,345\,z+1\,559\,250\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+$$
$$\left.\left.\left(1024\,z^6+91\,392\,z^5+1\,687\,616\,z^4+4\,265\,280\,z^3-5\,165\,100\,z^2+6\,029\,145\,z-1\,871\,100\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1659.01

$${}_1F_2\left(-\frac{5}{2}; 4, \frac{11}{2}; z\right) = \frac{1}{75\,694\,080\,z^4}$$
$$\left(-4\left(2\,z\left(4096\,z^6-395\,264\,z^5+8\,081\,152\,z^4-25\,209\,600\,z^3-24\,529\,680\,z^2-31\,235\,400\,z-5\,457\,375\right)I_0\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{z}\left(-4096\,z^6+393\,216\,z^5-7\,887\,104\,z^4+21\,496\,320\,z^3+31\,646\,160\,z^2+45\,007\,200\,z+16\,372\,125\right)I_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\left(16\,384\,z^7-1\,576\,960\,z^6+31\,933\,440\,z^5-93\,139\,200\,z^4-116\,424\,000\,z^3-157\,172\,400\,z^2-\right.$$
$$65\,488\,500\,z+16\,372\,125\left.\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(-16\,384\,z^7+1\,576\,960\,z^6-31\,933\,440\,z^5+\right.$$
$$\left.\left.93\,139\,200\,z^4+116\,424\,000\,z^3+157\,172\,400\,z^2+65\,488\,500\,z-16\,372\,125\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1660.01

$$ {}_1F_2\left(-\frac{5}{2}; 4, \frac{11}{2}; -z\right) = \frac{1}{75\,694\,080\,z^4} \left(4\left(2\,z\left(4096\,z^6 + 395\,264\,z^5 + 8\,081\,152\,z^4 + 25\,209\,600\,z^3 - 24\,529\,680\,z^2 + 31\,235\,400\,z - 5\,457\,375\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(4096\,z^6 + 393\,216\,z^5 + 7\,887\,104\,z^4 + 21\,496\,320\,z^3 - 31\,646\,160\,z^2 + 45\,007\,200\,z - 16\,372\,125\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(16\,384\,z^7 + 1\,576\,960\,z^6 + 31\,933\,440\,z^5 + 93\,139\,200\,z^4 - 116\,424\,000\,z^3 + 157\,172\,400\,z^2 - 65\,488\,500\,z - 16\,372\,125\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(16\,384\,z^7 + 1\,576\,960\,z^6 + 31\,933\,440\,z^5 + 93\,139\,200\,z^4 - 116\,424\,000\,z^3 + 157\,172\,400\,z^2 - 65\,488\,500\,z - 16\,372\,125\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1661.01

$$ {}_1F_2\left(-\frac{5}{2}; 4, 6; z\right) = -\frac{1}{468\,242\,775\,z^4} \left(128\left(2\,z\left(512\,z^6 - 52\,992\,z^5 + 1\,177\,920\,z^4 - 4\,132\,800\,z^3 - 4\,166\,100\,z^2 - 6\,081\,075\,z - 935\,550\right) I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-1024\,z^6 + 105\,216\,z^5 - 2\,278\,080\,z^4 + 6\,667\,200\,z^3 + 11\,499\,300\,z^2 + 19\,178\,775\,z + 7\,484\,400\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + 2\left(-512\,z^7 + 52\,736\,z^6 - 1\,151\,808\,z^5 + 3\,582\,000\,z^4 + 5\,498\,100\,z^3 + 8\,907\,300\,z^2 + 5\,145\,525\,z - 3\,742\,200\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1662.01

$$ {}_1F_2\left(-\frac{5}{2}; 4, 6; -z\right) = \frac{1}{468\,242\,775\,z^4} \left(128\left(2\,z\left(512\,z^6 + 52\,992\,z^5 + 1\,177\,920\,z^4 + 4\,132\,800\,z^3 - 4\,166\,100\,z^2 + 6\,081\,075\,z - 935\,550\right) J_0\left(\sqrt{z}\right)^2 - \sqrt{z}\left(1024\,z^6 + 105\,216\,z^5 + 2\,278\,080\,z^4 + 6\,667\,200\,z^3 - 11\,499\,300\,z^2 + 19\,178\,775\,z - 7\,484\,400\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + 2\left(512\,z^7 + 52\,736\,z^6 + 1\,151\,808\,z^5 + 3\,582\,000\,z^4 - 5\,498\,100\,z^3 + 8\,907\,300\,z^2 - 5\,145\,525\,z - 3\,742\,200\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

For fixed z and $a_1 = -\frac{5}{2}$, $b_1 = \frac{9}{2}$

07.22.03.1663.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{9}{2}, \frac{9}{2}; z\right) = \frac{1}{9\,437\,184\,z^{7/2}} \left(49\left(2\sqrt{z}\left(8\,z^5 - 716\,z^4 + 13\,152\,z^3 - 30\,240\,z^2 - 45\,090\,z - 56\,025\right)\cosh\left(2\sqrt{z}\right) + \left(8\,z^5 - 708\,z^4 + 12\,480\,z^3 - 20\,520\,z^2 - 38\,610\,z - 24\,975\right)\sinh\left(2\sqrt{z}\right) - 8\left(4\,z^6 - 360\,z^5 + 6750\,z^4 - 18\,000\,z^3 - 20\,250\,z^2 - 24\,300\,z - 10\,125\right)\operatorname{Shi}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1664.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{9}{2}, \frac{9}{2}; -z\right) = \frac{1}{9\,437\,184\,z^{7/2}} \left(49\left(2\sqrt{z}\left(8\,z^5 + 716\,z^4 + 13\,152\,z^3 + 30\,240\,z^2 - 45\,090\,z + 56\,025\right)\cos\left(2\sqrt{z}\right) + \left(8\,z^5 + 708\,z^4 + 12\,480\,z^3 + 20\,520\,z^2 - 38\,610\,z + 24\,975\right)\sin\left(2\sqrt{z}\right) + 8\left(4\,z^6 + 360\,z^5 + 6750\,z^4 + 18\,000\,z^3 - 20\,250\,z^2 + 24\,300\,z - 10\,125\right)\operatorname{Si}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1665.01

$$
{}_1F_2\left(-\frac{5}{2};\frac{9}{2},5;z\right)=\frac{1}{19\,768\,320\,z^{7/2}}
\left(-4\left(2\sqrt{z}\,\left(1024z^6-100\,096z^5+2\,083\,968z^4-6\,674\,400z^3-6\,885\,900z^2-9\,909\,675z-4\,147\,200\right)I_0\left(2\sqrt{z}\right)+\right.\right.
\left.\left.\left(-1024z^6+99\,584z^5-2\,034\,816z^4+5\,715\,360z^3+8\,801\,100z^2+13\,831\,425z+8\,294\,400\right)I_1\left(2\sqrt{z}\right)\right)+
\pi\sqrt{z}\,\left(4096z^6-399\,360z^5+8\,236\,800z^4-24\,710\,400z^3-32\,432\,400z^2-48\,648\,600z-30\,405\,375\right)
I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\sqrt{z}
\left(-4096z^6+399\,360z^5-8\,236\,800z^4+24\,710\,400z^3+32\,432\,400z^2+48\,648\,600z+30\,405\,375\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\Big)
$$

07.22.03.1666.01

$$
{}_1F_2\left(-\frac{5}{2};\frac{9}{2},5;-z\right)=\frac{1}{19\,768\,320\,z^{7/2}}
\left(4\left(2\sqrt{z}\,\left(1024z^6+100\,096z^5+2\,083\,968z^4+6\,674\,400z^3-6\,885\,900z^2+9\,909\,675z-4\,147\,200\right)J_0\left(2\sqrt{z}\right)-\right.\right.
\left.\left.\left(1024z^6+99\,584z^5+2\,034\,816z^4+5\,715\,360z^3-8\,801\,100z^2+13\,831\,425z-8\,294\,400\right)J_1\left(2\sqrt{z}\right)\right)+
\pi\sqrt{z}\,\left(4096z^6+399\,360z^5+8\,236\,800z^4+24\,710\,400z^3-32\,432\,400z^2+48\,648\,600z-30\,405\,375\right)
J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\sqrt{z}
\left(4096z^6+399\,360z^5+8\,236\,800z^4+24\,710\,400z^3-32\,432\,400z^2+48\,648\,600z-30\,405\,375\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\Big)
$$

07.22.03.1667.01

$$
{}_1F_2\left(-\frac{5}{2};\frac{9}{2},\frac{11}{2};z\right)=
\frac{1}{2\,097\,152\,z^{9/2}}\left(7\left(2\sqrt{z}\,\left(8z^6-836z^5+18\,492z^4-54\,720z^3-105\,840z^2-203\,175z-141\,750\right)\cosh\left(2\sqrt{z}\right)+\right.\right.
\left.\left.\left(8z^6-828z^5+17\,700z^4-40\,320z^3-102\,060z^2-174\,825z+141\,750\right)\sinh\left(2\sqrt{z}\right)-
8z\left(4z^6-420z^5+9450z^4-31\,500z^3-47\,250z^2-85\,050z-70\,875\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)\right)
$$

07.22.03.1668.01

$$
{}_1F_2\left(-\frac{5}{2};\frac{9}{2},\frac{11}{2};-z\right)=
\frac{1}{2\,097\,152\,z^{9/2}}\left(7\left(2\sqrt{z}\,\left(8z^6+836z^5+18\,492z^4+54\,720z^3-105\,840z^2+203\,175z-141\,750\right)\cos\left(2\sqrt{z}\right)+\right.\right.
\left.\left.\left(8z^6+828z^5+17\,700z^4+40\,320z^3-102\,060z^2+174\,825z+141\,750\right)\sin\left(2\sqrt{z}\right)+
8z\left(4z^6+420z^5+9450z^4+31\,500z^3-47\,250z^2+85\,050z-70\,875\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)\right)
$$

07.22.03.1669.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{9}{2}, 6; z\right) = \frac{1}{29\,652\,480\, z^{9/2}} $$
$$ \left(\pi\left(4096 z^6 - 460\,800 z^5 + 11\,232\,000 z^4 - 41\,184\,000 z^3 - 69\,498\,000 z^2 - 145\,945\,800 z - 152\,026\,875\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right)\right. $$
$$ z^{3/2} + \pi\left(-4096 z^6 + 460\,800 z^5 - 11\,232\,000 z^4 + 41\,184\,000 z^3 + 69\,498\,000 z^2 + 145\,945\,800 z + 152\,026\,875\right) $$
$$ I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{3/2} - $$
$$ 4\left(2\sqrt{z}\,\left(1024 z^7 - 115\,456 z^6 + 2\,836\,608 z^5 - 10\,977\,120 z^4 - 15\,252\,300 z^3 - 31\,577\,175 z^2 - 26\,956\,800 z + 8\,294\,400\right)\right. $$
$$ I_0\left(2\sqrt{z}\right) + \left(-1024 z^7 + 114\,944 z^6 - 2\,779\,776 z^5 + 9\,655\,200 z^4 + \right. $$
$$ \left.\left.\left. 18\,729\,900 z^3 + 40\,817\,925 z^2 + 45\,619\,200 z - 16\,588\,800\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1670.01

$$ {}_1F_2\left(-\frac{5}{2}; \frac{9}{2}, 6; -z\right) = \frac{1}{29\,652\,480\, z^{9/2}} $$
$$ \left(\pi\left(4096 z^6 + 460\,800 z^5 + 11\,232\,000 z^4 + 41\,184\,000 z^3 - 69\,498\,000 z^2 + 145\,945\,800 z - 152\,026\,875\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right)\right. $$
$$ z^{3/2} - \pi\left(4096 z^6 + 460\,800 z^5 + 11\,232\,000 z^4 + 41\,184\,000 z^3 - 69\,498\,000 z^2 + 145\,945\,800 z - 152\,026\,875\right) $$
$$ J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{3/2} + $$
$$ 4\left(2\sqrt{z}\,\left(1024 z^7 + 115\,456 z^6 + 2\,836\,608 z^5 + 10\,977\,120 z^4 - 15\,252\,300 z^3 + 31\,577\,175 z^2 - 26\,956\,800 z - 8\,294\,400\right)\right. $$
$$ J_0\left(2\sqrt{z}\right) - \left(1024 z^7 + 114\,944 z^6 + 2\,779\,776 z^5 + 9\,655\,200 z^4 - \right. $$
$$ \left.\left.\left. 18\,729\,900 z^3 + 40\,817\,925 z^2 - 45\,619\,200 z - 16\,588\,800\right) J_1\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{5}{2}$, $b_1 = 5$

07.22.03.1671.01

$$ {}_1F_2\left(-\frac{5}{2}; 5, 5; z\right) = -\frac{1}{2\,029\,052\,025\, z^{7/2}} $$
$$ \left(512\left(2\sqrt{z}\,\left(512 z^6 - 54\,272 z^5 + 1\,247\,040 z^4 - 4\,582\,800 z^3 - 5\,143\,860 z^2 - 9\,258\,030 z - 6\,081\,075\right) I_0\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(-1024 z^6 + 107\,776 z^5 - 2\,414\,400 z^4 + 7\,467\,840 z^3 + 13\,922\,460 z^2 + 27\,442\,665 z + 24\,324\,300\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + $$
$$ \left.\left.\sqrt{z}\,\left(-1024 z^6 + 108\,032 z^5 - 2\,440\,576 z^4 + 7\,996\,800 z^3 + 13\,305\,960 z^2 + 25\,468\,110 z + 25\,259\,985\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1672.01

$$ {}_1F_2\left(-\frac{5}{2}; 5, 5; -z\right) = \frac{1}{2\,029\,052\,025\, z^{7/2}} $$
$$ \left(512\left(2\sqrt{z}\,\left(512 z^6 + 54\,272 z^5 + 1\,247\,040 z^4 + 4\,582\,800 z^3 - 5\,143\,860 z^2 + 9\,258\,030 z - 6\,081\,075\right) J_0\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ \left(1024 z^6 + 107\,776 z^5 + 2\,414\,400 z^4 + 7\,467\,840 z^3 - 13\,922\,460 z^2 + 27\,442\,665 z - 24\,324\,300\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + $$
$$ \left.\left.\sqrt{z}\,\left(1024 z^6 + 108\,032 z^5 + 2\,440\,576 z^4 + 7\,996\,800 z^3 - 13\,305\,960 z^2 + 25\,468\,110 z - 25\,259\,985\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1673.01

$$ {}_1F_2\left(-\frac{5}{2}; 5, \frac{11}{2}; z\right) = \frac{1}{123\,002\,880\,z^4} \left(-4\left(2\,z\left(4096\,z^6 - 466\,944\,z^5 + 11\,647\,232\,z^4 - 46\,041\,600\,z^3 - 66\,724\,560\,z^2 - 148\,881\,600\,z - 161\,297\,325\right) I_0\left(2\sqrt{z}\right) + \sqrt{z}\left(-4096\,z^6 + 464\,896\,z^5 - 11\,417\,344\,z^4 + 40\,608\,000\,z^3 + 81\,461\,520\,z^2 + 189\,466\,200\,z + 251\,648\,775\right) I_1\left(2\sqrt{z}\right)\right) + \pi\left(16\,384\,z^7 - 1\,863\,680\,z^6 + 46\,126\,080\,z^5 - 172\,972\,800\,z^4 - 302\,702\,400\,z^3 - 681\,080\,400\,z^2 - 851\,350\,500\,z - 212\,837\,625\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(-16\,384\,z^7 + 1\,863\,680\,z^6 - 46\,126\,080\,z^5 + 172\,972\,800\,z^4 + 302\,702\,400\,z^3 + 681\,080\,400\,z^2 + 851\,350\,500\,z + 212\,837\,625\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1674.01

$$ {}_1F_2\left(-\frac{5}{2}; 5, \frac{11}{2}; -z\right) = \frac{1}{123\,002\,880\,z^4} \left(4\left(2\,z\left(4096\,z^6 + 466\,944\,z^5 + 11\,647\,232\,z^4 + 46\,041\,600\,z^3 - 66\,724\,560\,z^2 + 148\,881\,600\,z - 161\,297\,325\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(4096\,z^6 + 464\,896\,z^5 + 11\,417\,344\,z^4 + 40\,608\,000\,z^3 - 81\,461\,520\,z^2 + 189\,466\,200\,z - 251\,648\,775\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(16\,384\,z^7 + 1\,863\,680\,z^6 + 46\,126\,080\,z^5 + 172\,972\,800\,z^4 - 302\,702\,400\,z^3 + 681\,080\,400\,z^2 - 851\,350\,500\,z + 212\,837\,625\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(16\,384\,z^7 + 1\,863\,680\,z^6 + 46\,126\,080\,z^5 + 172\,972\,800\,z^4 - 302\,702\,400\,z^3 + 681\,080\,400\,z^2 - 851\,350\,500\,z + 212\,837\,625\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1675.01

$$ {}_1F_2\left(-\frac{5}{2}; 5, 6; z\right) = -\frac{1}{6\,087\,156\,075\,z^4} \left(512\left(2\,z\left(1024\,z^6 - 125\,184\,z^5 + 3\,392\,640\,z^4 - 15\,015\,600\,z^3 - 22\,998\,600\,z^2 - 59\,816\,475\,z - 79\,053\,975\right) I_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512\,z^6 - 62\,208\,z^5 + 1\,650\,240\,z^4 - 6\,336\,000\,z^3 - 14\,836\,500\,z^2 - 40\,578\,975\,z - 66\,891\,825\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-2048\,z^7 + 249\,344\,z^6 - 6\,661\,632\,z^5 + 26\,820\,000\,z^4 + 56\,638\,800\,z^3 + 150\,431\,850\,z^2 + 245\,116\,125\,z + 97\,297\,200\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1676.01

$$ {}_1F_2\left(-\frac{5}{2}; 5, 6; -z\right) = \frac{1}{6\,087\,156\,075\,z^4} \left(512\left(2\,z\left(1024\,z^6 + 125\,184\,z^5 + 3\,392\,640\,z^4 + 15\,015\,600\,z^3 - 22\,998\,600\,z^2 + 59\,816\,475\,z - 79\,053\,975\right) J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512\,z^6 + 62\,208\,z^5 + 1\,650\,240\,z^4 + 6\,336\,000\,z^3 - 14\,836\,500\,z^2 + 40\,578\,975\,z - 66\,891\,825\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(2048\,z^7 + 249\,344\,z^6 + 6\,661\,632\,z^5 + 26\,820\,000\,z^4 - 56\,638\,800\,z^3 + 150\,431\,850\,z^2 - 245\,116\,125\,z + 97\,297\,200\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

For fixed z and $a_1 = -\frac{5}{2}$, $b_1 = \frac{11}{2}$

07.22.03.1677.01

$$ {}_1F_2\left(-\frac{5}{2};\frac{11}{2},\frac{11}{2};z\right) = $$
$$ -\frac{1}{8\,388\,608\,z^{9/2}}\left(9\left(-2\sqrt{z}\,\left(16\,z^6-1952\,z^5+51\,964\,z^4-196\,800\,z^3-491\,400\,z^2-1\,398\,600\,z-2\,461\,725\right)\cosh\left(2\sqrt{z}\right)+\right.\right. $$
$$ \left(-16\,z^6+1936\,z^5-50\,100\,z^4+154\,560\,z^3+506\,520\,z^2+1\,493\,100\,z+1\,507\,275\right)\sinh\left(2\sqrt{z}\right)+ $$
$$ \left.\left.8\left(8\,z^7-980\,z^6+26\,460\,z^5-110\,250\,z^4-220\,500\,z^3-595\,350\,z^2-992\,250\,z-496\,125\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1678.01

$$ {}_1F_2\left(-\frac{5}{2};\frac{11}{2},\frac{11}{2};-z\right) = $$
$$ \frac{1}{8\,388\,608\,z^{9/2}}\left(9\left(2\sqrt{z}\,\left(16\,z^6+1952\,z^5+51\,964\,z^4+196\,800\,z^3-491\,400\,z^2+1\,398\,600\,z-2\,461\,725\right)\cos\left(2\sqrt{z}\right)+\right.\right. $$
$$ \left(16\,z^6+1936\,z^5+50\,100\,z^4+154\,560\,z^3-506\,520\,z^2+1\,493\,100\,z-1\,507\,275\right)\sin\left(2\sqrt{z}\right)+ $$
$$ \left.\left.8\left(8\,z^7+980\,z^6+26\,460\,z^5+110\,250\,z^4-220\,500\,z^3+595\,350\,z^2-992\,250\,z+496\,125\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1679.01

$$ {}_1F_2\left(-\frac{5}{2};\frac{11}{2},6;z\right) = $$
$$ \frac{1}{184\,504\,320\,z^{9/2}}\left(-4\left(2\sqrt{z}\,\left(4096\,z^7-538\,624\,z^6+15\,858\,432\,z^5-75\,905\,280\,z^4-146\,739\,600\,z^3-464\,902\,200\,z^2-\right.\right.\right. $$
$$ \left.\left.909\,879\,075\,z-464\,486\,400\right)I_0\left(2\sqrt{z}\right)+\left(-4096\,z^7+536\,576\,z^6-15\,592\,704\,z^5+\right.\right. $$
$$ \left.\left.\left.68\,428\,800\,z^4+173\,048\,400\,z^3+556\,189\,200\,z^2+1\,220\,056\,425\,z+928\,972\,800\right)I_1\left(2\sqrt{z}\right)\right)+ $$
$$ \pi\sqrt{z}\,\left(16\,384\,z^7-2\,150\,400\,z^6+62\,899\,200\,z^5-288\,288\,000\,z^4-648\,648\,000\,z^3-2\,043\,241\,200\,z^2-\right. $$
$$ \left.4\,256\,752\,500\,z-3\,192\,564\,375\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+ $$
$$ \pi\sqrt{z}\,\left(-16\,384\,z^7+2\,150\,400\,z^6-62\,899\,200\,z^5+288\,288\,000\,z^4+648\,648\,000\,z^3+\right. $$
$$ \left.\left.2\,043\,241\,200\,z^2+4\,256\,752\,500\,z+3\,192\,564\,375\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1680.01

$$ {}_1F_2\left(-\frac{5}{2};\frac{11}{2},6;-z\right) = $$
$$ \frac{1}{184\,504\,320\,z^{9/2}}\left(4\left(2\sqrt{z}\,\left(4096\,z^7+538\,624\,z^6+15\,858\,432\,z^5+75\,905\,280\,z^4-146\,739\,600\,z^3+464\,902\,200\,z^2-\right.\right.\right. $$
$$ \left.\left.909\,879\,075\,z+464\,486\,400\right)J_0\left(2\sqrt{z}\right)-\left(4096\,z^7+536\,576\,z^6+15\,592\,704\,z^5+\right.\right. $$
$$ \left.\left.\left.68\,428\,800\,z^4-173\,048\,400\,z^3+556\,189\,200\,z^2-1\,220\,056\,425\,z+928\,972\,800\right)J_1\left(2\sqrt{z}\right)\right)+ $$
$$ \pi\sqrt{z}\,\left(16\,384\,z^7+2\,150\,400\,z^6+62\,899\,200\,z^5+288\,288\,000\,z^4-648\,648\,000\,z^3+2\,043\,241\,200\,z^2-\right. $$
$$ \left.4\,256\,752\,500\,z+3\,192\,564\,375\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)- $$
$$ \pi\sqrt{z}\,\left(16\,384\,z^7+2\,150\,400\,z^6+62\,899\,200\,z^5+288\,288\,000\,z^4-648\,648\,000\,z^3+\right. $$
$$ \left.\left.2\,043\,241\,200\,z^2-4\,256\,752\,500\,z+3\,192\,564\,375\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

For fixed z and $a_1 = -\frac{5}{2}$, $b_1 = 6$

07.22.03.1681.01

$${}_1F_2\left(-\frac{5}{2}; 6, 6; z\right) =$$
$$-\frac{1}{18\,261\,468\,225\,z^{9/2}}\left(512\left(\sqrt{z}\,\left(4096\,z^7 - 577\,536\,z^6 + 18\,466\,560\,z^5 - 98\,668\,800\,z^4 - 204\,012\,000\,z^3 - 756\,734\,400\,z^2 - 1\,838\,819\,475\,z - 1\,459\,458\,000\right) I_0\left(\sqrt{z}\right)^2 + 4\left(-1024\,z^7 + 143\,616\,z^6 - 4\,510\,080\,z^5 + 21\,438\,000\,z^4 + 63\,045\,000\,z^3 + 237\,854\,475\,z^2 + 653\,009\,850\,z + 729\,729\,000\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \sqrt{z}\,\left(-4096\,z^7 + 575\,488\,z^6 - 18\,180\,864\,z^5 + 89\,856\,000\,z^4 + 241\,164\,000\,z^3 + 890\,384\,400\,z^2 + 2\,370\,722\,175\,z + 2\,860\,928\,100\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1682.01

$${}_1F_2\left(-\frac{5}{2}; 6, 6; -z\right) =$$
$$\frac{1}{18\,261\,468\,225\,z^{9/2}}\left(512\left(\sqrt{z}\,\left(4096\,z^7 + 577\,536\,z^6 + 18\,466\,560\,z^5 + 98\,668\,800\,z^4 - 204\,012\,000\,z^3 + 756\,734\,400\,z^2 - 1\,838\,819\,475\,z + 1\,459\,458\,000\right) J_0\left(\sqrt{z}\right)^2 - 4\left(1024\,z^7 + 143\,616\,z^6 + 4\,510\,080\,z^5 + 21\,438\,000\,z^4 - 63\,045\,000\,z^3 + 237\,854\,475\,z^2 - 653\,009\,850\,z + 729\,729\,000\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\,\left(4096\,z^7 + 575\,488\,z^6 + 18\,180\,864\,z^5 + 89\,856\,000\,z^4 - 241\,164\,000\,z^3 + 890\,384\,400\,z^2 - 2\,370\,722\,175\,z + 2\,860\,928\,100\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = -\frac{3}{2}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = -\frac{3}{2}$, $b_1 = -\frac{11}{2}$

07.22.03.1683.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, -\frac{11}{2}; z\right) =$$
$$\frac{1}{36\,018\,675}\left(\left(1024\,z^5 + 85\,248\,z^4 + 2\,055\,360\,z^3 + 20\,462\,400\,z^2 + 70\,251\,300\,z + 36\,018\,675\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(5888\,z^4 + 234\,240\,z^3 + 3\,633\,840\,z^2 + 22\,226\,400\,z + 36\,018\,675\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1684.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, -\frac{11}{2}; -z\right) =$$
$$\frac{1}{36\,018\,675}\left(\left(-1024\,z^5 + 85\,248\,z^4 - 2\,055\,360\,z^3 + 20\,462\,400\,z^2 - 70\,251\,300\,z + 36\,018\,675\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(5888\,z^4 - 234\,240\,z^3 + 3\,633\,840\,z^2 - 22\,226\,400\,z + 36\,018\,675\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1685.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, -\frac{9}{2}; z\right) = \frac{1}{3\,274\,425}\left(3\left(1792\,z^4 + 55\,040\,z^3 + 596\,400\,z^2 + 2\,116\,800\,z + 1\,091\,475\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(256\,z^4 + 17\,280\,z^3 + 307\,440\,z^2 + 1\,984\,500\,z + 3\,274\,425\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1686.01

$${}_1F_2\left(-\frac{3}{2};-\frac{11}{2},-\frac{9}{2};-z\right)=\frac{1}{3\,274\,425}\left(3\left(1792\,z^4-55\,040\,z^3+596\,400\,z^2-2\,116\,800\,z+1\,091\,475\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(256\,z^4-17\,280\,z^3+307\,440\,z^2-1\,984\,500\,z+3\,274\,425\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1687.01

$${}_1F_2\left(-\frac{3}{2};-\frac{11}{2},-\frac{7}{2};z\right)=\frac{1}{363\,825}\left(\left(256\,z^4+14\,720\,z^3+186\,480\,z^2+699\,300\,z+363\,825\right)\cosh\left(2\sqrt{z}\right)-10\sqrt{z}\left(256\,z^3+6048\,z^2+42\,840\,z+72\,765\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1688.01

$${}_1F_2\left(-\frac{3}{2};-\frac{11}{2},-\frac{7}{2};-z\right)=\frac{1}{363\,825}\left(\left(256\,z^4-14\,720\,z^3+186\,480\,z^2-699\,300\,z+363\,825\right)\cos\left(2\sqrt{z}\right)+10\sqrt{z}\left(-256\,z^3+6048\,z^2-42\,840\,z+72\,765\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1689.01

$${}_1F_2\left(-\frac{3}{2};-\frac{11}{2},-\frac{5}{2};z\right)=\left(\frac{256\,z^3}{10\,395}+\frac{224\,z^2}{495}+\frac{104\,z}{55}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(64\,z^3+3360\,z^2+28\,980\,z+51\,975\right)\sinh\left(2\sqrt{z}\right)}{51\,975}$$

07.22.03.1690.01

$${}_1F_2\left(-\frac{3}{2};-\frac{11}{2},-\frac{5}{2};-z\right)=$$

$$\left(-\frac{256\,z^3}{10\,395}+\frac{224\,z^2}{495}-\frac{104\,z}{55}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-64\,z^3+3360\,z^2-28\,980\,z+51\,975\right)\sin\left(2\sqrt{z}\right)}{51\,975}$$

07.22.03.1691.01

$${}_1F_2\left(-\frac{3}{2};-\frac{11}{2},-\frac{3}{2};z\right)=\left(\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}+\frac{20\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{495}\sqrt{z}\left(16\,z^2+240\,z+495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1692.01

$${}_1F_2\left(-\frac{3}{2};-\frac{11}{2},-\frac{3}{2};-z\right)=\left(-\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}-\frac{20\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.1693.01

$${}_1F_2\left(-\frac{3}{2};-\frac{11}{2},-\frac{1}{2};z\right)=\frac{\left(368\,z^2+5040\,z+3465\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(16\,z^2+932\,z+3465\right)\sinh\left(2\sqrt{z}\right)}{3465}$$

07.22.03.1694.01

$${}_1F_2\left(-\frac{3}{2};-\frac{11}{2},-\frac{1}{2};-z\right)=\frac{\left(368\,z^2-5040\,z+3465\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(16\,z^2-932\,z+3465\right)\sin\left(2\sqrt{z}\right)}{3465}$$

07.22.03.1695.01

$${}_1F_2\left(-\frac{3}{2};-\frac{11}{2},\frac{1}{2};z\right)=\frac{\left(16\,z^2+1140\,z+3465\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(104\,z+1545\right)\sinh\left(2\sqrt{z}\right)}{3465}$$

07.22.03.1696.01

$${}_1F_2\left(-\frac{3}{2};-\frac{11}{2},\frac{1}{2};-z\right)=\frac{\left(16\,z^2-1140\,z+3465\right)\cos\left(2\sqrt{z}\right)+2\left(1545-104\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)}{3465}$$

07.22.03.1697.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, 1; z\right) = \frac{\left(16 z^2 + 1256 z + 3465\right) I_0\left(2\sqrt{z}\right) - 32\sqrt{z}\ (7 z + 118)\, I_1\left(2\sqrt{z}\right)}{3465}$$

07.22.03.1698.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, 1; -z\right) = \frac{\left(16 z^2 - 1256 z + 3465\right) J_0\left(2\sqrt{z}\right) + 32\,(118 - 7 z)\sqrt{z}\ J_1\left(2\sqrt{z}\right)}{3465}$$

07.22.03.1699.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, \frac{3}{2}; z\right) = \frac{2\left(4 z^2 + 375 z + 1440\right)\sinh\left(2\sqrt{z}\right) - 15\sqrt{z}\ (8 z + 153)\cosh\left(2\sqrt{z}\right)}{3465\sqrt{z}}$$

07.22.03.1700.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, \frac{3}{2}; -z\right) = \frac{15\sqrt{z}\ (8 z - 153)\cos\left(2\sqrt{z}\right) + 2\left(4 z^2 - 375 z + 1440\right)\sin\left(2\sqrt{z}\right)}{3465\sqrt{z}}$$

07.22.03.1701.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, 2; z\right) = \frac{\frac{\left(16 z^2 + 1512 z + 3465\right) I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 8\,(32 z + 693)\, I_2\left(2\sqrt{z}\right)}{3465}$$

07.22.03.1702.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, 2; -z\right) = \frac{\frac{\left(16 z^2 - 1512 z + 3465\right) J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 8\,(693 - 32 z)\, J_2\left(2\sqrt{z}\right)}{3465}$$

07.22.03.1703.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, \frac{5}{2}; z\right) = \frac{\sqrt{z}\ \left(4 z^2 + 515 z + 3360\right)\cosh\left(2\sqrt{z}\right) - 10\left(7 z^2 + 192 z + 168\right)\sinh\left(2\sqrt{z}\right)}{1155\, z^{3/2}}$$

07.22.03.1704.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, \frac{5}{2}; -z\right) = \frac{10\left(7 z^2 - 192 z + 168\right)\sin\left(2\sqrt{z}\right) - \sqrt{z}\ \left(4 z^2 - 515 z + 3360\right)\cos\left(2\sqrt{z}\right)}{1155\, z^{3/2}}$$

07.22.03.1705.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, 3; z\right) = \frac{\left(32 z^2 + 3600 z + 6930\right) I_2\left(2\sqrt{z}\right) - 288\sqrt{z}\ (2 z + 55)\, I_3\left(2\sqrt{z}\right)}{3465 z}$$

07.22.03.1706.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, 3; -z\right) = \frac{\left(32 z^2 - 3600 z + 6930\right) J_2\left(2\sqrt{z}\right) + 288\,(55 - 2 z)\sqrt{z}\ J_3\left(2\sqrt{z}\right)}{3465 z}$$

07.22.03.1707.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, \frac{7}{2}; z\right) = \frac{2\left(z^3 + 180 z^2 + 2100 z + 1260\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\ \left(41 z^2 + 1680 z + 5040\right)\cosh\left(2\sqrt{z}\right)}{231\, z^{5/2}}$$

07.22.03.1708.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, \frac{7}{2}; -z\right) = \frac{-\sqrt{z}\ \left(41 z^2 - 1680 z + 5040\right)\cos\left(2\sqrt{z}\right) - 2\left(z^3 - 180 z^2 + 2100 z - 1260\right)\sin\left(2\sqrt{z}\right)}{231\, z^{5/2}}$$

07.22.03.1709.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, 4; z\right) = \frac{\left(32\,z^2 + 4240\,z + 6930\right) I_3\left(2\sqrt{z}\right) - 80\sqrt{z}\,\left(8\,z + 275\right) I_4\left(2\sqrt{z}\right)}{1155\,z^{3/2}}$$

07.22.03.1710.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, 4; -z\right) = \frac{\left(32\,z^2 - 4240\,z + 6930\right) J_3\left(2\sqrt{z}\right) + 80\,(275 - 8\,z)\sqrt{z}\,J_4\left(2\sqrt{z}\right)}{1155\,z^{3/2}}$$

07.22.03.1711.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, \frac{9}{2}; z\right) = \frac{\sqrt{z}\,\left(z^3 + 252\,z^2 + 5040\,z + 11\,340\right)\cosh\left(2\sqrt{z}\right) - 6\left(4\,z^3 + 245\,z^2 + 1680\,z + 945\right)\sinh\left(2\sqrt{z}\right)}{33\,z^{7/2}}$$

07.22.03.1712.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, \frac{9}{2}; -z\right) = \frac{\sqrt{z}\,\left(z^3 - 252\,z^2 + 5040\,z - 11\,340\right)\cos\left(2\sqrt{z}\right) - 6\left(4\,z^3 - 245\,z^2 + 1680\,z - 945\right)\sin\left(2\sqrt{z}\right)}{33\,z^{7/2}}$$

07.22.03.1713.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, 5; z\right) = \frac{8\left(\left(16\,z^2 + 2472\,z + 3465\right) I_4\left(2\sqrt{z}\right) - 32\sqrt{z}\,\left(11\,z + 465\right) I_5\left(2\sqrt{z}\right)\right)}{1155\,z^2}$$

07.22.03.1714.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, 5; -z\right) = \frac{8\left(\left(16\,z^2 - 2472\,z + 3465\right) J_4\left(2\sqrt{z}\right) + 32\,(465 - 11\,z)\sqrt{z}\,J_5\left(2\sqrt{z}\right)\right)}{1155\,z^2}$$

07.22.03.1715.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, \frac{11}{2}; z\right) =$$
$$\frac{1}{22\,z^{9/2}}\left(3\left(\left(z^4 + 350\,z^3 + 11\,340\,z^2 + 60\,480\,z + 33\,075\right)\sinh\left(2\sqrt{z}\right) - 14\sqrt{z}\,\left(2\,z^3 + 180\,z^2 + 2340\,z + 4725\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1716.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{22\,z^{9/2}}\left(3\left(14\sqrt{z}\,\left(2\,z^3 - 180\,z^2 + 2340\,z - 4725\right)\cos\left(2\sqrt{z}\right) + \left(z^4 - 350\,z^3 + 11\,340\,z^2 - 60\,480\,z + 33\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1717.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, 6; z\right) = \frac{8\left(\left(16\,z^2 + 2856\,z + 3465\right) I_5\left(2\sqrt{z}\right) - 24\sqrt{z}\,\left(16\,z + 819\right) I_6\left(2\sqrt{z}\right)\right)}{231\,z^{5/2}}$$

07.22.03.1718.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{11}{2}, 6; -z\right) = \frac{8\left(\left(16\,z^2 - 2856\,z + 3465\right) J_5\left(2\sqrt{z}\right) + 24\,(819 - 16\,z)\sqrt{z}\,J_6\left(2\sqrt{z}\right)\right)}{231\,z^{5/2}}$$

For fixed z and $a_1 = -\frac{3}{2}$, $b_1 = -\frac{9}{2}$

07.22.03.1719.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, -\frac{9}{2}; z\right) = \frac{1}{297\,675}\left(\left(256\,z^4 + 12\,672\,z^3 + 154\,800\,z^2 + 573\,300\,z + 297\,675\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(384\,z^3 + 8480\,z^2 + 58\,800\,z + 99\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1720.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, -\frac{9}{2}; -z\right) = \frac{1}{297\,675}\left(\left(256\,z^4 - 12\,672\,z^3 + 154\,800\,z^2 - 573\,300\,z + 297\,675\right)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\left(384\,z^3 - 8480\,z^2 + 58\,800\,z - 99\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1721.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, -\frac{7}{2}; z\right) = \left(\frac{1024\,z^3}{33\,075} + \frac{352\,z^2}{735} + \frac{40\,z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(64\,z^3 + 2400\,z^2 + 18\,900\,z + 33\,075\right)\sinh\left(2\sqrt{z}\right)}{33\,075}$$

07.22.03.1722.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, -\frac{7}{2}; -z\right) = \left(-\frac{1024\,z^3}{33\,075} + \frac{352\,z^2}{735} - \frac{40\,z}{21} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-64\,z^3 + 2400\,z^2 - 18\,900\,z + 33\,075\right)\sin\left(2\sqrt{z}\right)}{33\,075}$$

07.22.03.1723.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, -\frac{5}{2}; z\right) = \frac{\left(64\,z^3 + 1920\,z^2 + 8820\,z + 4725\right)\cosh\left(2\sqrt{z}\right) - 30\sqrt{z}\left(16\,z^2 + 168\,z + 315\right)\sinh\left(2\sqrt{z}\right)}{4725}$$

07.22.03.1724.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, -\frac{5}{2}; -z\right) = \left(-\frac{64\,z^3}{4725} + \frac{128\,z^2}{315} - \frac{28\,z}{15} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{315}\sqrt{z}\left(16\,z^2 - 168\,z + 315\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.1725.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, -\frac{3}{2}; z\right) = \left(\frac{16\,z^2}{63} + \frac{16\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1726.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, -\frac{3}{2}; -z\right) = \left(\frac{16\,z^2}{63} - \frac{16\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.1727.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, -\frac{1}{2}; z\right) = \left(\frac{16\,z^2}{315} + \frac{4\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{315}\sqrt{z}\left(64\,z + 315\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1728.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, -\frac{1}{2}; -z\right) = \left(\frac{16\,z^2}{315} - \frac{4\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{315}\left(315 - 64\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1729.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, \frac{1}{2}; z\right) = \left(\frac{8\,z}{35} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{315}\sqrt{z}\left(4\,z + 123\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1730.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, \frac{1}{2}; -z\right) = \left(1 - \frac{8\,z}{35}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{315}\left(123 - 4\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1731.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, 1; z\right) = \frac{1}{315}\left((76\,z+315)\,I_0\left(2\sqrt{z}\right) - 2\sqrt{z}\,(4\,z+143)\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1732.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, 1; -z\right) = \frac{1}{315}\left((315-76\,z)\,J_0\left(2\sqrt{z}\right) + 2\,(143-4\,z)\sqrt{z}\,J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1733.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, \frac{3}{2}; z\right) = \frac{6\,(7\,z+40)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\,(4\,z+165)\cosh\left(2\sqrt{z}\right)}{315\sqrt{z}}$$

07.22.03.1734.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, \frac{3}{2}; -z\right) = \frac{\sqrt{z}\,(4\,z-165)\cos\left(2\sqrt{z}\right) + 6\,(40-7\,z)\sin\left(2\sqrt{z}\right)}{315\sqrt{z}}$$

07.22.03.1735.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, 2; z\right) = \frac{(4\,z+15)\,I_1\left(2\sqrt{z}\right)}{15\sqrt{z}} - \frac{2}{315}(4\,z+189)\,I_2\left(2\sqrt{z}\right)$$

07.22.03.1736.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, 2; -z\right) = \frac{2}{315}(189-4\,z)\,J_2\left(2\sqrt{z}\right) - \frac{(4\,z-15)\,J_1\left(2\sqrt{z}\right)}{15\sqrt{z}}$$

07.22.03.1737.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, \frac{5}{2}; z\right) = \frac{5\sqrt{z}\,(5\,z+48)\cosh\left(2\sqrt{z}\right) - 2\left(z^2+60\,z+60\right)\sinh\left(2\sqrt{z}\right)}{105\,z^{3/2}}$$

07.22.03.1738.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, \frac{5}{2}; -z\right) = \frac{5\sqrt{z}\,(5\,z-48)\cos\left(2\sqrt{z}\right) + 2\left(z^2-60\,z+60\right)\sin\left(2\sqrt{z}\right)}{105\,z^{3/2}}$$

07.22.03.1739.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, 3; z\right) = \frac{2\left((92\,z+315)\,I_2\left(2\sqrt{z}\right) - 2\sqrt{z}\,(4\,z+243)\,I_3\left(2\sqrt{z}\right)\right)}{315\,z}$$

07.22.03.1740.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, 3; -z\right) = \frac{(630-184\,z)\,J_2\left(2\sqrt{z}\right) + 4\,(243-4\,z)\sqrt{z}\,J_3\left(2\sqrt{z}\right)}{315\,z}$$

07.22.03.1741.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, \frac{7}{2}; z\right) = \frac{15\left(2\,z^2+34\,z+21\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(z^2+90\,z+315\right)\cosh\left(2\sqrt{z}\right)}{42\,z^{5/2}}$$

07.22.03.1742.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, \frac{7}{2}; -z\right) = \frac{15\left(2\,z^2-34\,z+21\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(z^2-90\,z+315\right)\cos\left(2\sqrt{z}\right)}{42\,z^{5/2}}$$

07.22.03.1743.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, 4; z\right) = \frac{2\,(20\,z+63)\,I_3\left(2\sqrt{z}\right)}{21\,z^{3/2}} - \frac{4\,(4\,z+305)\,I_4\left(2\sqrt{z}\right)}{105\,z}$$

07.22.03.1744.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, 4; -z\right) = \frac{(630-200\,z)\,J_3\left(2\sqrt{z}\right) + 4\,(305-4\,z)\,\sqrt{z}\;J_4\left(2\sqrt{z}\right)}{105\,z^{3/2}}$$

07.22.03.1745.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, \frac{9}{2}; z\right) = \frac{6\sqrt{z}\;\left(6\,z^2+175\,z+420\right)\cosh\left(2\sqrt{z}\right) - \left(2\,z^3+270\,z^2+2205\,z+1260\right)\sinh\left(2\sqrt{z}\right)}{12\,z^{7/2}}$$

07.22.03.1746.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, \frac{9}{2}; -z\right) = \frac{\left(-2\,z^3+270\,z^2-2205\,z+1260\right)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\;\left(6\,z^2-175\,z+420\right)\cos\left(2\sqrt{z}\right)}{12\,z^{7/2}}$$

07.22.03.1747.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, 5; z\right) = \frac{8\left(9\,(12\,z+35)\,I_4\left(2\sqrt{z}\right) - 2\sqrt{z}\;(4\,z+375)\,I_5\left(2\sqrt{z}\right)\right)}{105\,z^2}$$

07.22.03.1748.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, 5; -z\right) = -\frac{8\left(9\,(12\,z-35)\,J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\;(4\,z-375)\,J_5\left(2\sqrt{z}\right)\right)}{105\,z^2}$$

07.22.03.1749.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, \frac{11}{2}; z\right) =$$
$$-\frac{1}{16\,z^{9/2}}\left(3\left(2\sqrt{z}\;\left(2\,z^3+399\,z^2+6300\,z+13\,230\right)\cosh\left(2\sqrt{z}\right) - \left(86\,z^3+4095\,z^2+23\,940\,z+13\,230\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1750.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{16\,z^{9/2}}\left(3\left(2\sqrt{z}\;\left(2\,z^3-399\,z^2+6300\,z-13\,230\right)\cos\left(2\sqrt{z}\right) + \left(-86\,z^3+4095\,z^2-23\,940\,z+13\,230\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1751.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, 6; z\right) = \frac{8\left((116\,z+315)\,I_5\left(2\sqrt{z}\right) - 2\sqrt{z}\;(4\,z+453)\,I_6\left(2\sqrt{z}\right)\right)}{21\,z^{5/2}}$$

07.22.03.1752.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{9}{2}, 6; -z\right) = -\frac{8\left((116\,z-315)\,J_5\left(2\sqrt{z}\right) + 2\sqrt{z}\;(4\,z-453)\,J_6\left(2\sqrt{z}\right)\right)}{21\,z^{5/2}}$$

For fixed z and $a_1 = -\frac{3}{2}$, $b_1 = -\frac{7}{2}$

07.22.03.1753.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, -\frac{7}{2}; z\right) = \frac{\left(64\,z^3 + 1568\,z^2 + 6900\,z + 3675\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(208\,z^2 + 2000\,z + 3675\right)\sinh\left(2\sqrt{z}\right)}{3675}$$

07.22.03.1754.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, -\frac{7}{2}; -z\right) = \frac{\left(-64\,z^3 + 1568\,z^2 - 6900\,z + 3675\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(208\,z^2 - 2000\,z + 3675\right)\sin\left(2\sqrt{z}\right)}{3675}$$

07.22.03.1755.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, -\frac{5}{2}; z\right) = \frac{1}{525}\left(\left(176\,z^2 + 960\,z + 525\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,z^2 + 260\,z + 525\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1756.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, -\frac{5}{2}; -z\right) = \frac{1}{525}\left(\left(176\,z^2 - 960\,z + 525\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^2 - 260\,z + 525\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1757.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, -\frac{3}{2}; z\right) = \left(\frac{16\,z^2}{105} + \frac{12\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,\left(8\,z + 21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1758.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, -\frac{3}{2}; -z\right) = \left(\frac{16\,z^2}{105} - \frac{12\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}\left(21 - 8\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1759.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, -\frac{1}{2}; z\right) = \left(\frac{8\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{35}\sqrt{z}\,\left(4\,z + 35\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1760.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, -\frac{1}{2}; -z\right) = \left(1 - \frac{8\,z}{7}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{35}\left(35 - 4\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1761.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, \frac{1}{2}; z\right) = \left(\frac{4\,z}{35} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{22}{35}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.1762.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, \frac{1}{2}; -z\right) = \left(1 - \frac{4\,z}{35}\right)\cos\left(2\sqrt{z}\right) + \frac{22}{35}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1763.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, 1; z\right) = \frac{1}{35}\left(\left(4\,z + 35\right)I_0\left(2\sqrt{z}\right) - 24\sqrt{z}\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1764.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, 1; -z\right) = \frac{1}{35}\left(\left(35 - 4\,z\right)J_0\left(2\sqrt{z}\right) + 24\sqrt{z}\,J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1765.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, \frac{3}{2}; z\right) = \frac{2\left(z + 12\right)\sinh\left(2\sqrt{z}\right) - 13\sqrt{z}\,\cosh\left(2\sqrt{z}\right)}{35\sqrt{z}}$$

07.22.03.1766.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, \frac{3}{2}; -z\right) = \frac{-13\sqrt{z}\,\cos\left(2\sqrt{z}\right) - 2\,(z-12)\sin\left(2\sqrt{z}\right)}{35\sqrt{z}}$$

07.22.03.1767.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, 2; z\right) = \frac{(4z+35)\,I_1\left(2\sqrt{z}\right)}{35\sqrt{z}} - \frac{4}{5}\,I_2\left(2\sqrt{z}\right)$$

07.22.03.1768.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, 2; -z\right) = \frac{(35-4z)\,J_1\left(2\sqrt{z}\right)}{35\sqrt{z}} + \frac{4}{5}\,J_2\left(2\sqrt{z}\right)$$

07.22.03.1769.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, \frac{5}{2}; z\right) = \frac{3\left(\sqrt{z}\,(z+20)\cosh\left(2\sqrt{z}\right) - 2\,(4z+5)\sinh\left(2\sqrt{z}\right)\right)}{35\,z^{3/2}}$$

07.22.03.1770.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, \frac{5}{2}; -z\right) = \frac{3\left((z-20)\sqrt{z}\,\cos\left(2\sqrt{z}\right) + 2\,(5-4z)\sin\left(2\sqrt{z}\right)\right)}{35\,z^{3/2}}$$

07.22.03.1771.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, 3; z\right) = \frac{(8z+70)\,I_2\left(2\sqrt{z}\right) - 64\sqrt{z}\,I_3\left(2\sqrt{z}\right)}{35\,z}$$

07.22.03.1772.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, 3; -z\right) = \frac{(70-8z)\,J_2\left(2\sqrt{z}\right) + 64\sqrt{z}\,J_3\left(2\sqrt{z}\right)}{35\,z}$$

07.22.03.1773.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, \frac{7}{2}; z\right) = \frac{3\left(\left(2z^2+70z+45\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\,(2z+9)\cosh\left(2\sqrt{z}\right)\right)}{28\,z^{5/2}}$$

07.22.03.1774.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, \frac{7}{2}; -z\right) = \frac{3\left(10\sqrt{z}\,(2z-9)\cos\left(2\sqrt{z}\right) + \left(2z^2-70z+45\right)\sin\left(2\sqrt{z}\right)\right)}{28\,z^{5/2}}$$

07.22.03.1775.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, 4; z\right) = \frac{6\left((4z+35)\,I_3\left(2\sqrt{z}\right) - 36\sqrt{z}\,I_4\left(2\sqrt{z}\right)\right)}{35\,z^{3/2}}$$

07.22.03.1776.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, 4; -z\right) = \frac{6\left((35-4z)\,J_3\left(2\sqrt{z}\right) + 36\sqrt{z}\,J_4\left(2\sqrt{z}\right)\right)}{35\,z^{3/2}}$$

07.22.03.1777.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, \frac{9}{2}; z\right) = \frac{3\left(2\sqrt{z}\,\left(2z^2+120z+315\right)\cosh\left(2\sqrt{z}\right) - 5\left(10z^2+108z+63\right)\sinh\left(2\sqrt{z}\right)\right)}{16\,z^{7/2}}$$

07.22.03.1778.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, \frac{9}{2}; -z\right) = -\frac{3\left(2\sqrt{z}\,\left(2z^2-120z+315\right)\cos\left(2\sqrt{z}\right)-5\left(10z^2-108z+63\right)\sin\left(2\sqrt{z}\right)\right)}{16\,z^{7/2}}$$

07.22.03.1779.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, 5; z\right) = \frac{24\left((4z+35)\,I_4\left(2\sqrt{z}\right)-40\sqrt{z}\;I_5\left(2\sqrt{z}\right)\right)}{35\,z^2}$$

07.22.03.1780.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, 5; -z\right) = \frac{(840-96z)\,J_4\left(2\sqrt{z}\right)+960\sqrt{z}\;J_5\left(2\sqrt{z}\right)}{35\,z^2}$$

07.22.03.1781.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, \frac{11}{2}; z\right) = \frac{27\left(\left(4z^3+395z^2+2625z+1470\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(31z^2+665z+1470\right)\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{9/2}}$$

07.22.03.1782.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, \frac{11}{2}; -z\right) = -\frac{27\left(2\sqrt{z}\,\left(31z^2-665z+1470\right)\cos\left(2\sqrt{z}\right)+\left(4z^3-395z^2+2625z-1470\right)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{9/2}}$$

07.22.03.1783.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, 6; z\right) = \frac{24\left((4z+35)\,I_5\left(2\sqrt{z}\right)-44\sqrt{z}\;I_6\left(2\sqrt{z}\right)\right)}{7\,z^{5/2}}$$

07.22.03.1784.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{7}{2}, 6; -z\right) = \frac{24\left((35-4z)\,J_5\left(2\sqrt{z}\right)+44\sqrt{z}\;J_6\left(2\sqrt{z}\right)\right)}{7\,z^{5/2}}$$

For fixed z and $a_1 = -\frac{3}{2}$, $b_1 = -\frac{5}{2}$

07.22.03.1785.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, -\frac{5}{2}; z\right) = \frac{1}{75}\left(\left(16z^2+132z+75\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(32z+75\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.1786.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, -\frac{5}{2}; -z\right) = \frac{1}{75}\left(\left(16z^2-132z+75\right)\cos\left(2\sqrt{z}\right)+2\,(75-32z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.1787.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, -\frac{3}{2}; z\right) = \left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\,\left(4z+15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.1788.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, -\frac{3}{2}; -z\right) = \left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}\,(15-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1789.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, -\frac{1}{2}; z\right) = \left(\frac{4z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.1790.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, -\frac{1}{2}; -z\right) = \left(1 - \frac{4z}{5}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1791.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, \frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right) - \frac{2}{5}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.1792.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, \frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right) + \frac{2}{5}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1793.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, 1; z\right) = I_0\left(2\sqrt{z}\right) - \frac{2}{5}\sqrt{z}\,I_1\left(2\sqrt{z}\right)$$

07.22.03.1794.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, 1; -z\right) = J_0\left(2\sqrt{z}\right) + \frac{2}{5}\sqrt{z}\,J_1\left(2\sqrt{z}\right)$$

07.22.03.1795.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, \frac{3}{2}; z\right) = \frac{3\sinh\left(2\sqrt{z}\right)}{5\sqrt{z}} - \frac{1}{5}\cosh\left(2\sqrt{z}\right)$$

07.22.03.1796.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, \frac{3}{2}; -z\right) = \frac{3\sin\left(2\sqrt{z}\right)}{5\sqrt{z}} - \frac{1}{5}\cos\left(2\sqrt{z}\right)$$

07.22.03.1797.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, 2; z\right) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - \frac{2}{5}I_2\left(2\sqrt{z}\right)$$

07.22.03.1798.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, 2; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + \frac{2}{5}J_2\left(2\sqrt{z}\right)$$

07.22.03.1799.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, \frac{5}{2}; z\right) = -\frac{3\left((z+2)\sinh\left(2\sqrt{z}\right) - 4\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{10\,z^{3/2}}$$

07.22.03.1800.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, \frac{5}{2}; -z\right) = -\frac{3\left(4\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (z-2)\sin\left(2\sqrt{z}\right)\right)}{10\,z^{3/2}}$$

07.22.03.1801.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, 3; z\right) = \frac{2\,I_2\left(2\sqrt{z}\right)}{z} - \frac{4\,I_3\left(2\sqrt{z}\right)}{5\sqrt{z}}$$

07.22.03.1802.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, 3; -z\right) = \frac{2\,J_2\left(2\sqrt{z}\right)}{z} + \frac{4\,J_3\left(2\sqrt{z}\right)}{5\sqrt{z}}$$

07.22.03.1803.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, \frac{7}{2}; z\right) = \frac{3\,(22\,z+15)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,(2\,z+15)\cosh\left(2\sqrt{z}\right)}{16\,z^{5/2}}$$

07.22.03.1804.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, \frac{7}{2}; -z\right) = \frac{6\sqrt{z}\,(2\,z-15)\cos\left(2\sqrt{z}\right) + 3\,(15-22\,z)\sin\left(2\sqrt{z}\right)}{16\,z^{5/2}}$$

07.22.03.1805.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, 4; z\right) = \frac{6\,I_3\left(2\sqrt{z}\right)}{z^{3/2}} - \frac{12\,I_4\left(2\sqrt{z}\right)}{5\,z}$$

07.22.03.1806.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, 4; -z\right) = \frac{6\,J_3\left(2\sqrt{z}\right)}{z^{3/2}} + \frac{12\,J_4\left(2\sqrt{z}\right)}{5\,z}$$

07.22.03.1807.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, \frac{9}{2}; z\right) = -\frac{21\left(\left(4\,z^2+75\,z+45\right)\sinh\left(2\sqrt{z}\right) - 30\sqrt{z}\,(z+3)\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{7/2}}$$

07.22.03.1808.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, \frac{9}{2}; -z\right) = \frac{21\left(30\,(z-3)\sqrt{z}\,\cos\left(2\sqrt{z}\right) + \left(4\,z^2-75\,z+45\right)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{7/2}}$$

07.22.03.1809.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, 5; z\right) = \frac{24\,I_4\left(2\sqrt{z}\right)}{z^2} - \frac{48\,I_5\left(2\sqrt{z}\right)}{5\,z^{3/2}}$$

07.22.03.1810.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, 5; -z\right) = \frac{24\left(5\,J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,J_5\left(2\sqrt{z}\right)\right)}{5\,z^2}$$

07.22.03.1811.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, \frac{11}{2}; z\right) = -\frac{189\left(2\sqrt{z}\,\left(8\,z^2+310\,z+735\right)\cosh\left(2\sqrt{z}\right) - 5\left(32\,z^2+258\,z+147\right)\sinh\left(2\sqrt{z}\right)\right)}{256\,z^{9/2}}$$

07.22.03.1812.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, \frac{11}{2}; -z\right) = -\frac{189\left(2\sqrt{z}\,\left(8\,z^2-310\,z+735\right)\cos\left(2\sqrt{z}\right) - 5\left(32\,z^2-258\,z+147\right)\sin\left(2\sqrt{z}\right)\right)}{256\,z^{9/2}}$$

07.22.03.1813.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, 6; z\right) = \frac{120\,I_5\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{48\,I_6\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.1814.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{5}{2}, 6; -z\right) = \frac{120\, J_5\left(2\sqrt{z}\right)}{z^{5/2}} + \frac{48\, J_6\left(2\sqrt{z}\right)}{z^2}$$

For fixed z and $a_1 = -\frac{3}{2}$, $b_1 = -\frac{3}{2}$

07.22.03.1815.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, -\frac{3}{2}; z\right) = \left(\frac{4z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.1816.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, -\frac{3}{2}; -z\right) = \left(1 - \frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1817.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, -\frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.1818.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, -\frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.1819.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, \frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.1820.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, \frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.1821.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, 1; z\right) = I_0\left(2\sqrt{z}\right)$$

07.22.03.1822.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, 1; -z\right) = J_0\left(2\sqrt{z}\right)$$

07.22.03.1823.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, \frac{3}{2}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.1824.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, \frac{3}{2}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.1825.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, 2; z\right) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.1826.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, 2; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.1827.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, \frac{5}{2}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.1828.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, \frac{5}{2}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}}$$

07.22.03.1829.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, 3; z\right) = \frac{2I_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.1830.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, 3; -z\right) = \frac{2J_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.1831.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, \frac{7}{2}; z\right) = \frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.1832.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, \frac{7}{2}; -z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4z-3)\sin\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.1833.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, 4; z\right) = \frac{6I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.1834.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, 4; -z\right) = \frac{6J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.1835.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, \frac{9}{2}; z\right) = \frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right) - 3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.1836.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, \frac{9}{2}; -z\right) = \frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right) + 3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.1837.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, 5; z\right) = \frac{24I_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.1838.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, 5; -z\right) = \frac{24\, J_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.1839.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, \frac{11}{2}; z\right) = \frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\,(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}}$$

07.22.03.1840.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, \frac{11}{2}; -z\right) = \frac{945\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right) + \left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}}$$

07.22.03.1841.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, 6; z\right) = \frac{120\, I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.1842.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{3}{2}, 6; -z\right) = \frac{120\, J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = -\frac{3}{2}$, $b_1 = -\frac{1}{2}$

07.22.03.1843.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{1}{2}, -\frac{1}{2}; z\right) = 8\,\mathrm{Shi}\left(2\sqrt{z}\right)z^{3/2} - 2\sinh\left(2\sqrt{z}\right)\sqrt{z} + (1-4z)\cosh\left(2\sqrt{z}\right)$$

07.22.03.1844.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{1}{2}, -\frac{1}{2}; -z\right) = 8\,\mathrm{Si}\left(2\sqrt{z}\right)z^{3/2} + 2\sin\left(2\sqrt{z}\right)\sqrt{z} + (4z+1)\cos\left(2\sqrt{z}\right)$$

07.22.03.1845.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{1}{2}, \frac{1}{2}; z\right) = -4\,\mathrm{Shi}\left(2\sqrt{z}\right)z^{3/2} + \sinh\left(2\sqrt{z}\right)\sqrt{z} + (2z+1)\cosh\left(2\sqrt{z}\right)$$

07.22.03.1846.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{1}{2}, \frac{1}{2}; -z\right) = -4\,\mathrm{Si}\left(2\sqrt{z}\right)z^{3/2} - \sin\left(2\sqrt{z}\right)\sqrt{z} + (1-2z)\cos\left(2\sqrt{z}\right)$$

07.22.03.1847.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{1}{2}, 1; z\right) = \frac{1}{3}\left(2\sqrt{z}\, I_1\left(2\sqrt{z}\right)\left(4\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2} + 4z + 1\right) + I_0\left(2\sqrt{z}\right)\left(-8\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right)z^2 - 16z^2 + 4z + 3\right)\right)$$

07.22.03.1848.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{1}{2}, 1; -z\right) = \frac{1}{3}\left(J_0\left(2\sqrt{z}\right)\left(8\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right)z^2 - 16z^2 - 4z + 3\right) - 2\sqrt{z}\, J_1\left(2\sqrt{z}\right)\left(4\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2} - 4z + 1\right)\right)$$

07.22.03.1849.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{1}{2}, \frac{3}{2}; z\right) = \frac{1}{8}\left(-8\,\mathrm{Shi}\left(2\sqrt{z}\right)z^{3/2} + 2(2z+1)\cosh\left(2\sqrt{z}\right) + \frac{(2z+3)\sinh\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.1850.01

$${}_1F_2\left(-\frac{3}{2};-\frac{1}{2},\frac{3}{2};-z\right)=\frac{1}{8}\left(-8\,\mathrm{Si}\left(2\sqrt{z}\right)z^{3/2}+2\,(1-2\,z)\cos\left(2\sqrt{z}\right)+\frac{(3-2\,z)\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.1851.01

$${}_1F_2\left(-\frac{3}{2};-\frac{1}{2},2;z\right)=\frac{1}{15}\left(\frac{I_1\left(2\sqrt{z}\right)\left(16\,\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}+16\,z^2+4\,z+9\right)}{\sqrt{z}}-2\,I_0\left(2\sqrt{z}\right)\left(8\,\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^2+16\,z^2-4\,z-3\right)\right)$$

07.22.03.1852.01

$${}_1F_2\left(-\frac{3}{2};-\frac{1}{2},2;-z\right)=$$

$$\frac{1}{15}\left(\frac{J_1\left(2\sqrt{z}\right)\left(-16\,\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}+16\,z^2-4\,z+9\right)}{\sqrt{z}}+2\,J_0\left(2\sqrt{z}\right)\left(8\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^2-16\,z^2-4\,z+3\right)\right)$$

07.22.03.1853.01

$${}_1F_2\left(-\frac{3}{2};-\frac{1}{2},\frac{5}{2};z\right)=\frac{-8\,\mathrm{Shi}\left(2\sqrt{z}\right)z^3+2\left(2\,z^2+z+3\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\,+\left(2\,z^2+3\,z-3\right)\sinh\left(2\sqrt{z}\right)}{16\,z^{3/2}}$$

07.22.03.1854.01

$${}_1F_2\left(-\frac{3}{2};-\frac{1}{2},\frac{5}{2};-z\right)=\frac{-8\,\mathrm{Si}\left(2\sqrt{z}\right)z^3-2\left(2\,z^2-z+3\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,+\left(-2\,z^2+3\,z+3\right)\sin\left(2\sqrt{z}\right)}{16\,z^{3/2}}$$

07.22.03.1855.01

$${}_1F_2\left(-\frac{3}{2};-\frac{1}{2},3;z\right)=\frac{1}{105\,z^{3/2}}$$

$$\left(2\left(I_1\left(2\sqrt{z}\right)\left(32\,\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2}+32\,z^3+8\,z^2+18\,z-45\right)-\sqrt{z}\;I_0\left(2\sqrt{z}\right)\left(32\,\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^3+64\,z^3-16\,z^2-12\,z-45\right)\right)\right)$$

07.22.03.1856.01

$${}_1F_2\left(-\frac{3}{2};-\frac{1}{2},3;-z\right)=\frac{1}{105\,z^{3/2}}\left(2\left(\sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(32\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^3-64\,z^3-16\,z^2+12\,z-45\right)-\right.\right.$$

$$\left.\left.J_1\left(2\sqrt{z}\right)\left(32\,\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2}-32\,z^3+8\,z^2-18\,z-45\right)\right)\right)$$

07.22.03.1857.01

$${}_1F_2\left(-\frac{3}{2};-\frac{1}{2},\frac{7}{2};z\right)=$$

$$\frac{1}{256\,z^{5/2}}\left(5\left(-16\,\mathrm{Shi}\left(2\sqrt{z}\right)z^4+2\left(4\,z^3+2\,z^2+6\,z-27\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\,+\left(4\,z^3+6\,z^2+30\,z+27\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1858.01

$${}_1F_2\left(-\frac{3}{2};-\frac{1}{2},\frac{7}{2};-z\right)=$$

$$-\frac{1}{256\,z^{5/2}}\left(5\left(16\,\mathrm{Si}\left(2\sqrt{z}\right)z^4+2\left(4\,z^3-2\,z^2+6\,z+27\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,+\left(4\,z^3-6\,z^2+30\,z-27\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1859.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{1}{2}, 4; z\right) = \frac{1}{315\, z^{5/2}}\left(2\left(I_1\left(2\sqrt{z}\right)\left(64\,\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{9/2} + 64\, z^4 + 16\, z^3 + 36\, z^2 + 225\, z + 630\right) - 2\sqrt{z}\; I_0\left(2\sqrt{z}\right)\left(32\,\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right) z^4 + 64\, z^4 - 16\, z^3 - 12\, z^2 - 45\, z + 315\right)\right)\right)$$

07.22.03.1860.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{1}{2}, 4; -z\right) = \frac{1}{315\, z^{5/2}}\left(2\left(2\sqrt{z}\; J_0\left(2\sqrt{z}\right)\left(32\,\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right) z^4 - 64\, z^4 - 16\, z^3 + 12\, z^2 - 45\, z - 315\right) - J_1\left(2\sqrt{z}\right)\left(64\,\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{9/2} - 64\, z^4 + 16\, z^3 - 36\, z^2 + 225\, z - 630\right)\right)\right)$$

07.22.03.1861.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{1}{2}, \frac{9}{2}; z\right) = \frac{1}{512\, z^{7/2}}$$
$$\left(7\left(-16\,\mathrm{Shi}\left(2\sqrt{z}\right) z^5 + 2\left(4\, z^4 + 2\, z^3 + 6\, z^2 + 45\, z + 270\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(4\, z^4 + 6\, z^3 + 30\, z^2 - 405\, z - 270\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1862.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{1}{2}, \frac{9}{2}; -z\right) = -\frac{1}{512\, z^{7/2}}$$
$$\left(7\left(16\,\mathrm{Si}\left(2\sqrt{z}\right) z^5 + 2\left(4\, z^4 - 2\, z^3 + 6\, z^2 - 45\, z + 270\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(4\, z^4 - 6\, z^3 + 30\, z^2 + 405\, z - 270\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1863.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{1}{2}, 5; z\right) =$$
$$\frac{1}{3465\, z^{7/2}}\left(8\left(2\, I_1\left(2\sqrt{z}\right)\left(64\,\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{11/2} + 64\, z^5 + 16\, z^4 + 36\, z^3 + 225\, z^2 - 5040\, z - 8505\right) - \sqrt{z}\; I_0\left(2\sqrt{z}\right)\left(128\,\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right) z^5 + 256\, z^5 - 64\, z^4 - 48\, z^3 - 180\, z^2 - 1575\, z - 17\,010\right)\right)\right)$$

07.22.03.1864.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{1}{2}, 5; -z\right) =$$
$$\frac{1}{3465\, z^{7/2}}\left(8\left(\sqrt{z}\; J_0\left(2\sqrt{z}\right)\left(128\,\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right) z^5 - 256\, z^5 - 64\, z^4 + 48\, z^3 - 180\, z^2 + 1575\, z - 17\,010\right) - 2\, J_1\left(2\sqrt{z}\right)\left(64\,\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{11/2} - 64\, z^5 + 16\, z^4 - 36\, z^3 + 225\, z^2 + 5040\, z - 8505\right)\right)\right)$$

07.22.03.1865.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{1}{2}, \frac{11}{2}; z\right) = \frac{1}{2048\, z^{9/2}}\left(21\left(-16\,\mathrm{Shi}\left(2\sqrt{z}\right) z^6 + 2\left(4\, z^5 + 2\, z^4 + 6\, z^3 + 45\, z^2 - 1530\, z - 4725\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(4\, z^5 + 6\, z^4 + 30\, z^3 + 315\, z^2 + 7830\, z + 4725\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1866.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{1}{2}, \frac{11}{2}; -z\right) = -\frac{1}{2048\, z^{9/2}}\left(21\left(16\,\mathrm{Si}\left(2\sqrt{z}\right) z^6 + 2\left(4\, z^5 - 2\, z^4 + 6\, z^3 - 45\, z^2 - 1530\, z + 4725\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(4\, z^5 - 6\, z^4 + 30\, z^3 - 315\, z^2 + 7830\, z - 4725\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1867.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{1}{2}, 6; z\right) =$$
$$\frac{1}{9009\, z^{9/2}}\left(8\left(I_1\left(2\sqrt{z}\right)\left(256\,\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{13/2} + 256\, z^6 + 64\, z^5 + 144\, z^4 + 900\, z^3 + 11\,025\, z^2 + 527\,310\, z + 748\,440\right) - \right.\right.$$
$$\left.\left. 2\sqrt{z}\; I_0\left(2\sqrt{z}\right)\left(128\,\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right) z^6 + 256\, z^6 - 64\, z^5 - 48\, z^4 - 180\, z^3 - 1575\, z^2 + 76\,545\, z + 374\,220\right)\right)\right)$$

07.22.03.1868.01

$${}_1F_2\left(-\frac{3}{2}; -\frac{1}{2}, 6; -z\right) =$$
$$\frac{1}{9009\, z^{9/2}}\left(8\left(2\sqrt{z}\; J_0\left(2\sqrt{z}\right)\left(128\,\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right) z^6 - 256\, z^6 - 64\, z^5 + 48\, z^4 - 180\, z^3 + 1575\, z^2 + 76\,545\, z - 374\,220\right) - \right.\right.$$
$$\left.\left. J_1\left(2\sqrt{z}\right)\left(256\,\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{13/2} - 256\, z^6 + 64\, z^5 - 144\, z^4 + 900\, z^3 - 11\,025\, z^2 + 527\,310\, z - 748\,440\right)\right)\right)$$

For fixed z and $a_1 = -\frac{3}{2}$, $b_1 = \frac{1}{2}$

07.22.03.1869.01

$${}_1F_2\left(-\frac{3}{2}; \frac{1}{2}, \frac{1}{2}; z\right) = -(z-1)\cosh\left(2\sqrt{z}\right) - \frac{1}{2}\sqrt{z}\,\sinh\left(2\sqrt{z}\right) + \sqrt{z}\,(2z-3)\,\mathrm{Shi}\left(2\sqrt{z}\right)$$

07.22.03.1870.01

$${}_1F_2\left(-\frac{3}{2}; \frac{1}{2}, \frac{1}{2}; -z\right) = (z+1)\cos\left(2\sqrt{z}\right) + \frac{1}{2}\sqrt{z}\,\sin\left(2\sqrt{z}\right) + \sqrt{z}\,(2z+3)\,\mathrm{Si}\left(2\sqrt{z}\right)$$

07.22.03.1871.01

$${}_1F_2\left(-\frac{3}{2}; \frac{1}{2}, 1; z\right) = \frac{1}{3}\left(I_1\left(2\sqrt{z}\right)\left(\pi\,(9-4z)\, z\, \boldsymbol{L}_0\left(2\sqrt{z}\right) - 4\,(z-2)\sqrt{z}\right) + I_0\left(2\sqrt{z}\right)\left(8z^2 + \pi\,(4z-9)\, \boldsymbol{L}_1\left(2\sqrt{z}\right) z - 20z + 3\right)\right)$$

07.22.03.1872.01

$${}_1F_2\left(-\frac{3}{2}; \frac{1}{2}, 1; -z\right) =$$
$$\frac{1}{3}\left(J_1\left(2\sqrt{z}\right)\left(\pi\, z\,(4z+9)\, \boldsymbol{H}_0\left(2\sqrt{z}\right) - 4\sqrt{z}\,(z+2)\right) + J_0\left(2\sqrt{z}\right)\left(8z^2 - \pi\,(4z+9)\, \boldsymbol{H}_1\left(2\sqrt{z}\right) z + 20z + 3\right)\right)$$

07.22.03.1873.01

$${}_1F_2\left(-\frac{3}{2}; \frac{1}{2}, \frac{3}{2}; z\right) = \frac{-2\sqrt{z}\,(2z-5)\cosh\left(2\sqrt{z}\right) + (3-2z)\sinh\left(2\sqrt{z}\right) + 8\,(z-3)\, z\,\mathrm{Shi}\left(2\sqrt{z}\right)}{16\sqrt{z}}$$

07.22.03.1874.01

$${}_1F_2\left(-\frac{3}{2}; \frac{1}{2}, \frac{3}{2}; -z\right) = \frac{2\sqrt{z}\,(2z+5)\cos\left(2\sqrt{z}\right) + (2z+3)\sin\left(2\sqrt{z}\right) + 8\, z\,(z+3)\,\mathrm{Si}\left(2\sqrt{z}\right)}{16\sqrt{z}}$$

07.22.03.1875.01

$${}_1F_2\left(-\frac{3}{2}; \frac{1}{2}, 2; z\right) =$$
$$\frac{1}{15}\left(2\, I_0\left(2\sqrt{z}\right)\left(8z^2 + \pi\,(4z-15)\, \boldsymbol{L}_1\left(2\sqrt{z}\right) z - 32z + 6\right) - \frac{I_1\left(2\sqrt{z}\right)\left(8z^2 + 2\pi\,(4z-15)\, \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{3/2} - 28z - 3\right)}{\sqrt{z}}\right)$$

07.22.03.1876.01

$${}_1F_2\left(-\frac{3}{2};\frac{1}{2},2;-z\right)=$$
$$\frac{1}{15}\left(\frac{J_1\left(2\sqrt{z}\right)\left(-8z^2+2\pi(4z+15)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}-28z+3\right)}{\sqrt{z}}-2J_0\left(2\sqrt{z}\right)\left(\pi z(4z+15)\boldsymbol{H}_1\left(2\sqrt{z}\right)-2\left(4z^2+16z+3\right)\right)\right)$$

07.22.03.1877.01

$${}_1F_2\left(-\frac{3}{2};\frac{1}{2},\frac{5}{2};z\right)=\frac{8(2z-9)\operatorname{Shi}\left(2\sqrt{z}\right)z^2-2\left(4z^2-16z-3\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(-4z^2+12z-3\right)\sinh\left(2\sqrt{z}\right)}{64z^{3/2}}$$

07.22.03.1878.01

$${}_1F_2\left(-\frac{3}{2};\frac{1}{2},\frac{5}{2};-z\right)=\frac{8(2z+9)\operatorname{Si}\left(2\sqrt{z}\right)z^2+2\left(4z^2+16z-3\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^2+12z+3\right)\sin\left(2\sqrt{z}\right)}{64z^{3/2}}$$

07.22.03.1879.01

$${}_1F_2\left(-\frac{3}{2};\frac{1}{2},3;z\right)=\frac{1}{105z^{3/2}}\left(2\left(\sqrt{z}\,I_0\left(2\sqrt{z}\right)\left(32z^3+4\pi(4z-21)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^2-176z^2+36z+9\right)-\right.\right.$$
$$\left.\left.I_1\left(2\sqrt{z}\right)\left(16z^3+4\pi(4z-21)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}-80z^2-12z+9\right)\right)\right)$$

07.22.03.1880.01

$${}_1F_2\left(-\frac{3}{2};\frac{1}{2},3;-z\right)=\frac{1}{105z^{3/2}}\left(2\left(J_1\left(2\sqrt{z}\right)\left(-16z^3+4\pi(4z+21)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-80z^2+12z+9\right)-\right.\right.$$
$$\left.\left.\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(-32z^3+4\pi(4z+21)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^2-176z^2-36z+9\right)\right)\right)$$

07.22.03.1881.01

$${}_1F_2\left(-\frac{3}{2};\frac{1}{2},\frac{7}{2};z\right)=$$
$$\frac{1}{512z^{5/2}}\left(5\left(16(z-6)\operatorname{Shi}\left(2\sqrt{z}\right)z^3-2\left(4z^3-22z^2-6z+9\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(-4z^3+18z^2+6z+9\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1882.01

$${}_1F_2\left(-\frac{3}{2};\frac{1}{2},\frac{7}{2};-z\right)=$$
$$\frac{1}{512z^{5/2}}\left(5\left(16(z+6)\operatorname{Si}\left(2\sqrt{z}\right)z^3+2\left(4z^3+22z^2-6z-9\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^3+18z^2-6z+9\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1883.01

$${}_1F_2\left(-\frac{3}{2};\frac{1}{2},4;z\right)=\frac{1}{315z^{5/2}}\left(2\left(2\sqrt{z}\,I_0\left(2\sqrt{z}\right)\left(32z^4+4\pi(4z-27)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^3-224z^3+48z^2+18z-45\right)-\right.\right.$$
$$\left.\left.I_1\left(2\sqrt{z}\right)\left(32z^4+8\pi(4z-27)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2}-208z^3-36z^2-9z-90\right)\right)\right)$$

07.22.03.1884.01

$${}_1F_2\left(-\frac{3}{2};\frac{1}{2},4;-z\right)=$$
$$\frac{1}{315z^{5/2}}\left(2\left(J_1\left(2\sqrt{z}\right)\left(-32z^4+8\pi(4z+27)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2}-208z^3+36z^2-9z+90\right)-2\sqrt{z}\,J_0\left(2\sqrt{z}\right)\right.\right.$$
$$\left.\left.\left(-32z^4+4\pi(4z+27)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^3-224z^3-48z^2+18z+45\right)\right)\right)$$

07.22.03.1885.01

$${}_1F_2\left(-\frac{3}{2};\frac{1}{2},\frac{9}{2};z\right)=\frac{1}{2048\,z^{7/2}}\left(7\left(16\,(2\,z-15)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^4-\right.\right.$$
$$\left.\left.2\left(8\,z^4-56\,z^3-18\,z^2-135\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(-8\,z^4+48\,z^3+30\,z^2-180\,z-135\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1886.01

$${}_1F_2\left(-\frac{3}{2};\frac{1}{2},\frac{9}{2};-z\right)=\frac{1}{2048\,z^{7/2}}$$
$$\left(7\left(16\,(2\,z+15)\,\mathrm{Si}\left(2\sqrt{z}\right)z^4+2\left(8\,z^4+56\,z^3-18\,z^2-135\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8\,z^4+48\,z^3-30\,z^2-180\,z+135\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1887.01

$${}_1F_2\left(-\frac{3}{2};\frac{1}{2},5;z\right)=$$
$$\frac{1}{3465\,z^{7/2}}\left(8\left(\sqrt{z}\;I_0\left(2\sqrt{z}\right)\left(128\,z^5+16\,\pi\,(4\,z-33)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^4-1088\,z^4+240\,z^3+108\,z^2-45\,z+1890\right)-\right.\right.$$
$$\left.\left.2\,I_1\left(2\sqrt{z}\right)\left(32\,z^5+8\,\pi\,(4\,z-33)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{9/2}-256\,z^4-48\,z^3-36\,z^2+450\,z+945\right)\right)\right)$$

07.22.03.1888.01

$${}_1F_2\left(-\frac{3}{2};\frac{1}{2},5;-z\right)=$$
$$\frac{1}{3465\,z^{7/2}}\left(8\left(2\,J_1\left(2\sqrt{z}\right)\left(-32\,z^5+8\,\pi\,(4\,z+33)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{9/2}-256\,z^4+48\,z^3-36\,z^2-450\,z+945\right)-\sqrt{z}\right.\right.$$
$$\left.\left.J_0\left(2\sqrt{z}\right)\left(-128\,z^5+16\,\pi\,(4\,z+33)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^4-1088\,z^4-240\,z^3+108\,z^2+45\,z+1890\right)\right)\right)$$

07.22.03.1889.01

$${}_1F_2\left(-\frac{3}{2};\frac{1}{2},\frac{11}{2};z\right)=\frac{1}{4096\,z^{9/2}}\left(21\left(16\,(z-9)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^5-2\left(4\,z^5-34\,z^4-12\,z^3-9\,z^2+225\,z+945\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\right.\right.$$
$$\left.\left.\left(-4\,z^5+30\,z^4+24\,z^3-45\,z^2+1485\,z+945\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1890.01

$${}_1F_2\left(-\frac{3}{2};\frac{1}{2},\frac{11}{2};-z\right)=\frac{1}{4096\,z^{9/2}}\left(21\left(16\,(z+9)\,\mathrm{Si}\left(2\sqrt{z}\right)z^5+\right.\right.$$
$$\left.\left.2\left(4\,z^5+34\,z^4-12\,z^3+9\,z^2+225\,z-945\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(4\,z^5+30\,z^4-24\,z^3-45\,z^2-1485\,z+945\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1891.01

$${}_1F_2\left(-\frac{3}{2};\frac{1}{2},6;z\right)=$$
$$\frac{1}{9009\,z^{9/2}}\left(8\left(2\sqrt{z}\;I_0\left(2\sqrt{z}\right)\left(128\,z^6+16\,\pi\,(4\,z-39)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^5-1280\,z^5+288\,z^4+144\,z^3+90\,z^2-4725\,z-34\,020\right)-\right.\right.$$
$$\left.\left.I_1\left(2\sqrt{z}\right)\left(128\,z^6+32\,\pi\,(4\,z-39)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{11/2}-1216\,z^5-240\,z^4-252\,z^3+1125\,z^2-43\,470\,z-68\,040\right)\right)\right)$$

07.22.03.1892.01

$${}_1F_2\left(-\frac{3}{2};\frac{1}{2},6;-z\right)=$$
$$\frac{1}{9009\,z^{9/2}}\left(8\left(J_1\left(2\sqrt{z}\right)\left(-128\,z^6+32\,\pi\,(4\,z+39)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{11/2}-1216\,z^5+240\,z^4-252\,z^3-1125\,z^2-43\,470\,z+68\,040\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(-128\,z^6+16\,\pi\,(4\,z+39)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^5-1280\,z^5-288\,z^4+144\,z^3-90\,z^2-4725\,z+34\,020\right)\right)\right)$$

For fixed z and $a_1 = -\frac{3}{2}$, $b_1 = 1$

07.22.03.1893.01

$$ {}_1F_2\left(-\frac{3}{2}; 1, 1; z\right) = \frac{1}{9}\left(\left(8z^2 - 30z + 9\right) I_0\left(\sqrt{z}\right)^2 - 8(z-3)\sqrt{z}\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + 2(13 - 4z) z\, I_1\left(\sqrt{z}\right)^2\right) $$

07.22.03.1894.01

$$ {}_1F_2\left(-\frac{3}{2}; 1, 1; -z\right) = \frac{1}{9}\left(\left(8z^2 + 30z + 9\right) J_0\left(\sqrt{z}\right)^2 - 8\sqrt{z}\,(z+3) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + 2z(4z + 13) J_1\left(\sqrt{z}\right)^2\right) $$

07.22.03.1895.01

$$ {}_1F_2\left(-\frac{3}{2}; 1, \frac{3}{2}; z\right) = \frac{1}{48}\left(4\left(2\left(4z^2 - 19z + 6\right) I_0\left(2\sqrt{z}\right) + (17 - 4z)\sqrt{z}\, I_1\left(2\sqrt{z}\right)\right) + \right. $$
$$ \left. \pi\left(-16z^2 + 72z - 9\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(16z^2 - 72z + 9\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1896.01

$$ {}_1F_2\left(-\frac{3}{2}; 1, \frac{3}{2}; -z\right) = \frac{1}{48}\left(4\left(2\left(4z^2 + 19z + 6\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\,(4z + 17) J_1\left(2\sqrt{z}\right)\right) + \right. $$
$$ \left. \pi\left(16z^2 + 72z + 9\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(16z^2 + 72z + 9\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1897.01

$$ {}_1F_2\left(-\frac{3}{2}; 1, 2; z\right) = \frac{1}{45}\left(\left(16z^2 - 96z + 45\right) I_0\left(\sqrt{z}\right)^2 + 4(21 - 4z)\sqrt{z}\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-16z^2 + 88z - 9\right) I_1\left(\sqrt{z}\right)^2\right) $$

07.22.03.1898.01

$$ {}_1F_2\left(-\frac{3}{2}; 1, 2; -z\right) = \frac{1}{45}\left(\left(16z^2 + 96z + 45\right) J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(4z + 21) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(16z^2 + 88z + 9\right) J_1\left(\sqrt{z}\right)^2\right) $$

07.22.03.1899.01

$$ {}_1F_2\left(-\frac{3}{2}; 1, \frac{5}{2}; z\right) = \frac{1}{384z}\left(4\left(2z\left(16z^2 - 112z + 51\right) I_0\left(2\sqrt{z}\right) + \sqrt{z}\left(-16z^2 + 104z - 9\right) I_1\left(2\sqrt{z}\right)\right) + \right. $$
$$ \left. \pi\left(-64z^3 + 432z^2 - 108z + 9\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(64z^3 - 432z^2 + 108z - 9\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1900.01

$$ {}_1F_2\left(-\frac{3}{2}; 1, \frac{5}{2}; -z\right) = \frac{1}{384z}\left(4\left(2z\left(16z^2 + 112z + 51\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\left(16z^2 + 104z + 9\right) J_1\left(2\sqrt{z}\right)\right) + \right. $$
$$ \left. \pi\left(64z^3 + 432z^2 + 108z + 9\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(64z^3 + 432z^2 + 108z + 9\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1901.01

$$ {}_1F_2\left(-\frac{3}{2}; 1, 3; z\right) = $$
$$ \frac{1}{315z}\left(4\left(z\left(16z^2 - 132z + 81\right) I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-16z^2 + 120z - 9\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-16z^3 + 124z^2 - 27z + 9\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1902.01

$$ {}_1F_2\left(-\frac{3}{2}; 1, 3; -z\right) = $$
$$ \frac{1}{315z}\left(4\left(z\left(16z^2 + 132z + 81\right) J_0\left(\sqrt{z}\right)^2 - \sqrt{z}\left(16z^2 + 120z + 9\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(16z^3 + 124z^2 + 27z + 9\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1903.01

$$ {}_1F_2\left(-\frac{3}{2}; 1, \frac{7}{2}; z\right) = \frac{1}{12\,288\,z^2} \left(5\left(4\left(2\,z\left(64\,z^3 - 592\,z^2 + 348\,z - 27\right) I_0\left(2\sqrt{z}\right) + \sqrt{z}\,\left(-64\,z^3 + 560\,z^2 - 108\,z + 81\right) I_1\left(2\sqrt{z}\right)\right) + \pi\left(-256\,z^4 + 2304\,z^3 - 864\,z^2 + 144\,z - 81\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(256\,z^4 - 2304\,z^3 + 864\,z^2 - 144\,z + 81\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1904.01

$$ {}_1F_2\left(-\frac{3}{2}; 1, \frac{7}{2}; -z\right) = \frac{1}{12\,288\,z^2} \left(5\left(4\left(2\,z\left(64\,z^3 + 592\,z^2 + 348\,z + 27\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\,\left(64\,z^3 + 560\,z^2 + 108\,z + 81\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(256\,z^4 + 2304\,z^3 + 864\,z^2 + 144\,z + 81\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(256\,z^4 + 2304\,z^3 + 864\,z^2 + 144\,z + 81\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1905.01

$$ {}_1F_2\left(-\frac{3}{2}; 1, 4; z\right) = \frac{1}{945\,z^2} \left(4\left(2\,z\left(16\,z^3 - 168\,z^2 + 126\,z - 9\right) I_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\,\left(-16\,z^3 + 156\,z^2 - 27\,z + 36\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-32\,z^4 + 320\,z^3 - 108\,z^2 + 45\,z - 72\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1906.01

$$ {}_1F_2\left(-\frac{3}{2}; 1, 4; -z\right) = \frac{1}{945\,z^2} \left(4\left(2\,z\left(16\,z^3 + 168\,z^2 + 126\,z + 9\right) J_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\,\left(16\,z^3 + 156\,z^2 + 27\,z + 36\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(32\,z^4 + 320\,z^3 + 108\,z^2 + 45\,z + 72\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1907.01

$$ {}_1F_2\left(-\frac{3}{2}; 1, \frac{9}{2}; z\right) = \frac{1}{98\,304\,z^3} \left(7\left(4\left(2\,z\left(256\,z^4 - 2944\,z^3 + 2112\,z^2 - 360\,z + 675\right) I_0\left(2\sqrt{z}\right) + \sqrt{z}\,\left(-256\,z^4 + 2816\,z^3 - 864\,z^2 + 720\,z - 2025\right) I_1\left(2\sqrt{z}\right)\right) + \pi\left(-1024\,z^5 + 11\,520\,z^4 - 5760\,z^3 + 1440\,z^2 - 1620\,z + 2025\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(1024\,z^5 - 11\,520\,z^4 + 5760\,z^3 - 1440\,z^2 + 1620\,z - 2025\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1908.01

$$ {}_1F_2\left(-\frac{3}{2}; 1, \frac{9}{2}; -z\right) = \frac{1}{98\,304\,z^3} \left(7\left(4\left(2\,z\left(256\,z^4 + 2944\,z^3 + 2112\,z^2 + 360\,z + 675\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\,\left(256\,z^4 + 2816\,z^3 + 864\,z^2 + 720\,z + 2025\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(1024\,z^5 + 11\,520\,z^4 + 5760\,z^3 + 1440\,z^2 + 1620\,z + 2025\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(1024\,z^5 + 11\,520\,z^4 + 5760\,z^3 + 1440\,z^2 + 1620\,z + 2025\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1909.01

$$ {}_1F_2\left(-\frac{3}{2}; 1, 5; z\right) = \frac{1}{10\,395\,z^3} \left(16\left(z\left(64\,z^4 - 816\,z^3 + 720\,z^2 - 117\,z + 324\right) I_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\,\left(32\,z^4 - 384\,z^3 + 108\,z^2 - 153\,z + 648\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-64\,z^5 + 784\,z^4 - 360\,z^3 + 171\,z^2 - 144\,z + 1296\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1910.01

$${}_1F_2\left(-\frac{3}{2}; 1, 5; -z\right) = \frac{1}{10\,395\,z^3}$$
$$\left(16\left(z\left(64\,z^4+816\,z^3+720\,z^2+117\,z+324\right)J_0\left(\sqrt{z}\right)^2-2\sqrt{z}\left(32\,z^4+384\,z^3+108\,z^2+153\,z+648\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(64\,z^5+784\,z^4+360\,z^3+171\,z^2+144\,z+1296\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1911.01

$${}_1F_2\left(-\frac{3}{2}; 1, \frac{11}{2}; z\right) = \frac{1}{524\,288\,z^4}\left(7\left(4\left(2\,z\left(1024\,z^5-14\,080\,z^4+11\,904\,z^3-3168\,z^2+7380\,z-33\,075\right)I_0\left(2\sqrt{z}\right)+\right.\right.\right.$$
$$\left.\sqrt{z}\left(-1024\,z^5+13\,568\,z^4-5760\,z^3+4896\,z^2-4500\,z+99\,225\right)I_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(-4096\,z^6+55\,296\,z^5-34\,560\,z^4+11\,520\,z^3-19\,440\,z^2+48\,600\,z-99\,225\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\left.\pi\left(4096\,z^6-55\,296\,z^5+34\,560\,z^4-11\,520\,z^3+19\,440\,z^2-48\,600\,z+99\,225\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1912.01

$${}_1F_2\left(-\frac{3}{2}; 1, \frac{11}{2}; -z\right) = \frac{1}{524\,288\,z^4}\left(7\left(4\left(2\,z\left(1024\,z^5+14\,080\,z^4+11\,904\,z^3+3168\,z^2+7380\,z+33\,075\right)J_0\left(2\sqrt{z}\right)-\right.\right.\right.$$
$$\left.\sqrt{z}\left(1024\,z^5+13\,568\,z^4+5760\,z^3+4896\,z^2+4500\,z+99\,225\right)J_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(4096\,z^6+55\,296\,z^5+34\,560\,z^4+11\,520\,z^3+19\,440\,z^2+48\,600\,z+99\,225\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\left.\pi\left(4096\,z^6+55\,296\,z^5+34\,560\,z^4+11\,520\,z^3+19\,440\,z^2+48\,600\,z+99\,225\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1913.01

$${}_1F_2\left(-\frac{3}{2}; 1, 6; z\right) = \frac{1}{27\,027\,z^4}$$
$$\left(32\left(2\,z\left(32\,z^5-480\,z^4+486\,z^3-126\,z^2+405\,z-2592\right)I_0\left(\sqrt{z}\right)^2+\sqrt{z}\left(-64\,z^5+912\,z^4-360\,z^3+495\,z^2-648\,z+20\,736\right)\right.\right.$$
$$\left.\left.I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-2\left(32\,z^6-464\,z^5+270\,z^4-144\,z^3+153\,z^2+972\,z+10\,368\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1914.01

$${}_1F_2\left(-\frac{3}{2}; 1, 6; -z\right) = \frac{1}{27\,027\,z^4}$$
$$\left(32\left(2\,z\left(32\,z^5+480\,z^4+486\,z^3+126\,z^2+405\,z+2592\right)J_0\left(\sqrt{z}\right)^2-\sqrt{z}\left(64\,z^5+912\,z^4+360\,z^3+495\,z^2+648\,z+20\,736\right)\right.\right.$$
$$\left.\left.J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+2\left(32\,z^6+464\,z^5+270\,z^4+144\,z^3+153\,z^2-972\,z+10\,368\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = -\frac{3}{2}$, $b_1 = \frac{3}{2}$

07.22.03.1915.01

$${}_1F_2\left(-\frac{3}{2}; \frac{3}{2}, \frac{3}{2}; z\right) = \frac{-2\sqrt{z}\,(2\,z-11)\cosh\left(2\sqrt{z}\right)+(9-2\,z)\sinh\left(2\sqrt{z}\right)+4\left(2\,z^2-12\,z+3\right)\mathrm{Shi}\left(2\sqrt{z}\right)}{64\sqrt{z}}$$

07.22.03.1916.01

$${}_1F_2\left(-\frac{3}{2}; \frac{3}{2}, \frac{3}{2}; -z\right) = \frac{2\sqrt{z}\,(2\,z+11)\cos\left(2\sqrt{z}\right)+(2\,z+9)\sin\left(2\sqrt{z}\right)+4\left(2\,z^2+12\,z+3\right)\mathrm{Si}\left(2\sqrt{z}\right)}{64\sqrt{z}}$$

07.22.03.1917.01

$${}_1F_2\left(-\frac{3}{2};\frac{3}{2},2;z\right)=\frac{1}{120\sqrt{z}}\left(4\left(2\sqrt{z}\left(4z^2-31z+18\right)I_0\left(2\sqrt{z}\right)+\left(-4z^2+29z-6\right)I_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.\pi\sqrt{z}\left(-16z^2+120z-45\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\sqrt{z}\left(16z^2-120z+45\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1918.01

$${}_1F_2\left(-\frac{3}{2};\frac{3}{2},2;-z\right)=\frac{1}{120\sqrt{z}}\left(4\left(2\sqrt{z}\left(4z^2+31z+18\right)J_0\left(2\sqrt{z}\right)-\left(4z^2+29z+6\right)J_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.\pi\sqrt{z}\left(16z^2+120z+45\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\sqrt{z}\left(16z^2+120z+45\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1919.01

$${}_1F_2\left(-\frac{3}{2};\frac{3}{2},\frac{5}{2};z\right)=$$
$$\frac{1}{128z^{3/2}}\left(-2\sqrt{z}\left(2z^2-17z+3\right)\cosh\left(2\sqrt{z}\right)+\left(-2z^2+15z+3\right)\sinh\left(2\sqrt{z}\right)+4z\left(2z^2-18z+9\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.1920.01

$${}_1F_2\left(-\frac{3}{2};\frac{3}{2},\frac{5}{2};-z\right)=\frac{2\sqrt{z}\left(2z^2+17z+3\right)\cos\left(2\sqrt{z}\right)+\left(2z^2+15z-3\right)\sin\left(2\sqrt{z}\right)+4z\left(2z^2+18z+9\right)\mathrm{Si}\left(2\sqrt{z}\right)}{128z^{3/2}}$$

07.22.03.1921.01

$${}_1F_2\left(-\frac{3}{2};\frac{3}{2},3;z\right)=$$
$$\frac{1}{210z^{3/2}}\left(\pi\left(-16z^2+168z-105\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+\pi\left(16z^2-168z+105\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2}+\right.$$
$$\left.4\left(\sqrt{z}\left(8z^3-86z^2+72z-3\right)I_0\left(2\sqrt{z}\right)+\left(-4z^3+41z^2-18z+3\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1922.01

$${}_1F_2\left(-\frac{3}{2};\frac{3}{2},3;-z\right)=$$
$$\frac{1}{210z^{3/2}}\left(\pi\left(16z^2+168z+105\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}-\pi\left(16z^2+168z+105\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{3/2}+\right.$$
$$\left.4\left(\sqrt{z}\left(8z^3+86z^2+72z+3\right)J_0\left(2\sqrt{z}\right)-\left(4z^3+41z^2+18z+3\right)J_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1923.01

$${}_1F_2\left(-\frac{3}{2};\frac{3}{2},\frac{7}{2};z\right)=\frac{1}{2048z^{5/2}}$$
$$\left(5\left(16\left(z^2-12z+9\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^2-2\left(4z^3-46z^2+18z-9\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(-4z^3+42z^2+6z-9\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1924.01

$${}_1F_2\left(-\frac{3}{2};\frac{3}{2},\frac{7}{2};-z\right)=$$
$$\frac{1}{2048z^{5/2}}\left(5\left(16\left(z^2+12z+9\right)\mathrm{Si}\left(2\sqrt{z}\right)z^2+2\left(4z^3+46z^2+18z+9\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^3+42z^2-6z-9\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1925.01

$$ {}_1F_2\left(-\frac{3}{2}; \frac{3}{2}, 4; z\right) = \frac{1}{315\, z^{5/2}} \left(\pi \left(-16 z^2 + 216 z - 189\right) I_1\left(2 \sqrt{z}\right) \boldsymbol{L}_0\left(2 \sqrt{z}\right) z^{5/2} + \pi \left(16 z^2 - 216 z + 189\right) I_0\left(2 \sqrt{z}\right) \boldsymbol{L}_1\left(2 \sqrt{z}\right) z^{5/2} + 2 \left(2 \sqrt{z}\, \left(8 z^4 - 110 z^3 + 120 z^2 - 9 z + 9\right) I_0\left(2 \sqrt{z}\right) + \left(-8 z^4 + 106 z^3 - 72 z^2 + 9 z - 18\right) I_1\left(2 \sqrt{z}\right)\right)\right) $$

07.22.03.1926.01

$$ {}_1F_2\left(-\frac{3}{2}; \frac{3}{2}, 4; -z\right) = \frac{1}{315\, z^{5/2}} \left(\pi \left(16 z^2 + 216 z + 189\right) J_1\left(2 \sqrt{z}\right) \boldsymbol{H}_0\left(2 \sqrt{z}\right) z^{5/2} - \pi \left(16 z^2 + 216 z + 189\right) J_0\left(2 \sqrt{z}\right) \boldsymbol{H}_1\left(2 \sqrt{z}\right) z^{5/2} + 2 \left(2 \sqrt{z}\, \left(8 z^4 + 110 z^3 + 120 z^2 + 9 z + 9\right) J_0\left(2 \sqrt{z}\right) - \left(8 z^4 + 106 z^3 + 72 z^2 + 9 z + 18\right) J_1\left(2 \sqrt{z}\right)\right)\right) $$

07.22.03.1927.01

$$ {}_1F_2\left(-\frac{3}{2}; \frac{3}{2}, \frac{9}{2}; z\right) = \frac{1}{4096\, z^{7/2}} \left(7 \left(16 \left(z^2 - 15 z + 15\right) \operatorname{Shi}\left(2 \sqrt{z}\right) z^3 - 2 \left(4 z^4 - 58 z^3 + 36 z^2 - 15 z + 45\right) \cosh\left(2 \sqrt{z}\right) \sqrt{z} + \left(-4 z^4 + 54 z^3 + 45 z + 45\right) \sinh\left(2 \sqrt{z}\right)\right)\right) $$

07.22.03.1928.01

$$ {}_1F_2\left(-\frac{3}{2}; \frac{3}{2}, \frac{9}{2}; -z\right) = \frac{1}{4096\, z^{7/2}} \left(7 \left(16 \left(z^2 + 15 z + 15\right) \operatorname{Si}\left(2 \sqrt{z}\right) z^3 + 2 \left(4 z^4 + 58 z^3 + 36 z^2 + 15 z + 45\right) \cos\left(2 \sqrt{z}\right) \sqrt{z} + \left(4 z^4 + 54 z^3 + 45 z - 45\right) \sin\left(2 \sqrt{z}\right)\right)\right) $$

07.22.03.1929.01

$$ {}_1F_2\left(-\frac{3}{2}; \frac{3}{2}, 5; z\right) = \frac{1}{3465\, z^{7/2}} \left(8 \left(\sqrt{z}\, I_0\left(2 \sqrt{z}\right) \left(32 z^5 - 536 z^4 + \pi \left(16 z^2 - 264 z + 297\right) \boldsymbol{L}_1\left(2 \sqrt{z}\right) z^3 + 720 z^3 - 72 z^2 + 63 z - 270\right) - I_1\left(2 \sqrt{z}\right) \left(\pi \left(16 z^2 - 264 z + 297\right) \boldsymbol{L}_0\left(2 \sqrt{z}\right) z^{7/2} + 2 \left(8 z^5 - 130 z^4 + 120 z^3 - 9 z^2 - 36 z - 135\right)\right)\right)\right) $$

07.22.03.1930.01

$$ {}_1F_2\left(-\frac{3}{2}; \frac{3}{2}, 5; -z\right) = \frac{1}{3465\, z^{7/2}} \left(8 \left(J_1\left(2 \sqrt{z}\right) \left(\pi z^{7/2} \left(16 z^2 + 264 z + 297\right) \boldsymbol{H}_0\left(2 \sqrt{z}\right) - 2 \left(8 z^5 + 130 z^4 + 120 z^3 + 9 z^2 - 36 z + 135\right)\right) - \sqrt{z}\, J_0\left(2 \sqrt{z}\right) \left(-32 z^5 - 536 z^4 + \pi \left(16 z^2 + 264 z + 297\right) \boldsymbol{H}_1\left(2 \sqrt{z}\right) z^3 - 720 z^3 - 72 z^2 - 63 z - 270\right)\right)\right) $$

07.22.03.1931.01

$$ {}_1F_2\left(-\frac{3}{2}; \frac{3}{2}, \frac{11}{2}; z\right) = \frac{1}{32\,768\, z^{9/2}} \left(21 \left(16 \left(2 z^2 - 36 z + 45\right) \operatorname{Shi}\left(2 \sqrt{z}\right) z^4 - 2 \left(8 z^5 - 140 z^4 + 120 z^3 - 36 z^2 - 90 z - 945\right) \cosh\left(2 \sqrt{z}\right) \sqrt{z} - \left(8 z^5 - 132 z^4 + 24 z^3 - 180 z^2 + 1350 z + 945\right) \sinh\left(2 \sqrt{z}\right)\right)\right) $$

07.22.03.1932.01

$${}_1F_2\left(-\frac{3}{2};\frac{3}{2},\frac{11}{2};-z\right)=$$
$$\frac{1}{32\,768\,z^{9/2}}\left(21\left(16\left(2z^2+36z+45\right)\mathrm{Si}\left(2\sqrt{z}\right)z^4+2\left(8z^5+140z^4+120z^3+36z^2-90z+945\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.\right.$$
$$\left.\left.\left(8z^5+132z^4+24z^3+180z^2+1350z-945\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1933.01

$${}_1F_2\left(-\frac{3}{2};\frac{3}{2},6;z\right)=\frac{1}{9009\,z^{9/2}}$$
$$\left(8\left(2\sqrt{z}\;I_0\left(2\sqrt{z}\right)\left(32z^6-632z^5+\pi\left(16z^2-312z+429\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^4+1008z^4-120z^3+81z^2+135z+3780\right)-\right.\right.$$
$$\left.\left.I_1\left(2\sqrt{z}\right)\left(32z^6-616z^5+2\pi\left(16z^2-312z+429\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{9/2}+720z^4-24z^3-333z^2+4050z+7560\right)\right)\right)$$

07.22.03.1934.01

$${}_1F_2\left(-\frac{3}{2};\frac{3}{2},6;-z\right)=$$
$$\frac{1}{9009\,z^{9/2}}\left(8\left(J_1\left(2\sqrt{z}\right)\left(-32z^6-616z^5+2\pi\left(16z^2+312z+429\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{9/2}-720z^4-24z^3+333z^2+4050z-7560\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(-32z^6-632z^5+\pi\left(16z^2+312z+429\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^4-1008z^4-120z^3-81z^2+135z-3780\right)\right)\right)$$

For fixed z and $a_1=-\frac{3}{2}$, $b_1=2$

07.22.03.1935.01

$${}_1F_2\left(-\frac{3}{2};2,2;z\right)=\frac{2}{225}\left(\left(16z^2-156z+135\right)I_0\left(\sqrt{z}\right)^2-\frac{\left(16z^2-144z+45\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)}{\sqrt{z}}+\left(-16z^2+148z-69\right)I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.1936.01

$${}_1F_2\left(-\frac{3}{2};2,2;-z\right)=$$
$$\frac{2}{225}\left(\left(16z^2+156z+135\right)J_0\left(\sqrt{z}\right)^2-\frac{\left(16z^2+144z+45\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)}{\sqrt{z}}+\left(16z^2+148z+69\right)J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.1937.01

$${}_1F_2\left(-\frac{3}{2};2,\frac{5}{2};z\right)=\frac{1}{960\,z}\left(4\left(2z\left(16z^2-184z+177\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\left(-16z^2+176z-99\right)I_1\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.\pi\left(64z^3-720z^2+540z+45\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(64z^3-720z^2+540z+45\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1938.01

$${}_1F_2\left(-\frac{3}{2};2,\frac{5}{2};-z\right)=\frac{1}{960\,z}\left(4\left(2z\left(16z^2+184z+177\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\left(16z^2+176z+99\right)J_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.\pi\left(64z^3+720z^2+540z-45\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\left(64z^3+720z^2+540z-45\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1939.01

$${}_1F_2\left(-\frac{3}{2}; 2, 3; z\right) = \frac{1}{1575\,z}$$
$$\left(4\left(4\,z\left(8\,z^2-108\,z+135\right)I_0\left(\sqrt{z}\right)^2-2\sqrt{z}\,\left(16\,z^2-204\,z+135\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\left(32\,z^3-416\,z^2+348\,z+45\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1940.01

$${}_1F_2\left(-\frac{3}{2}; 2, 3; -z\right) = \frac{1}{1575\,z}$$
$$\left(4\left(4\,z\left(8\,z^2+108\,z+135\right)J_0\left(\sqrt{z}\right)^2-2\sqrt{z}\,\left(16\,z^2+204\,z+135\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(32\,z^3+416\,z^2+348\,z-45\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1941.01

$${}_1F_2\left(-\frac{3}{2}; 2, \frac{7}{2}; z\right) = \frac{1}{6144\,z^2}\left(4\left(2\,z\left(64\,z^3-976\,z^2+1308\,z+45\right)I_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(64\,z^3-944\,z^2+876\,z+135\right)I_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\left(-256\,z^4+3840\,z^3-4320\,z^2-720\,z+135\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(256\,z^4-3840\,z^3+4320\,z^2+720\,z-135\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1942.01

$${}_1F_2\left(-\frac{3}{2}; 2, \frac{7}{2}; -z\right) = \frac{1}{6144\,z^2}\left(4\left(2\,z\left(64\,z^3+976\,z^2+1308\,z-45\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(64\,z^3+944\,z^2+876\,z-135\right)J_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\left(256\,z^4+3840\,z^3+4320\,z^2-720\,z-135\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(-256\,z^4-3840\,z^3-4320\,z^2+720\,z+135\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1943.01

$${}_1F_2\left(-\frac{3}{2}; 2, 4; z\right) =$$
$$\frac{1}{4725\,z^2}\left(4\left(z\left(64\,z^3-1104\,z^2+1800\,z+45\right)I_0\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(16\,z^3-264\,z^2+270\,z+45\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-64\,z^4+1072\,z^3-1296\,z^2-315\,z+180\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1944.01

$${}_1F_2\left(-\frac{3}{2}; 2, 4; -z\right) =$$
$$\frac{1}{4725\,z^2}\left(4\left(z\left(64\,z^3+1104\,z^2+1800\,z-45\right)J_0\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(16\,z^3+264\,z^2+270\,z-45\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(64\,z^4+1072\,z^3+1296\,z^2-315\,z-180\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1945.01

$${}_1F_2\left(-\frac{3}{2}; 2, \frac{9}{2}; z\right) =$$
$$\frac{1}{245\,760\,z^3}\left(7\left(4\left(2\,z\left(256\,z^4-4864\,z^3+8352\,z^2+720\,z-675\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-256\,z^4+4736\,z^3-6144\,z^2-1800\,z+2025\right)\right.\right.\right.$$
$$\left.\left.I_1\left(2\sqrt{z}\right)\right)-\pi\left(1024\,z^5-19\,200\,z^4+28\,800\,z^3+7200\,z^2-2700\,z+2025\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\left.\pi\left(1024\,z^5-19\,200\,z^4+28\,800\,z^3+7200\,z^2-2700\,z+2025\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1946.01

$$ {}_1F_2\left(-\frac{3}{2}; 2, \frac{9}{2}; -z\right) = \frac{1}{245\,760\,z^3}\left(7\left(4\left(2\,z\left(256\,z^4+4864\,z^3+8352\,z^2-720\,z-675\right)J_0\left(2\sqrt{z}\right)+\sqrt{z}\left(-256\,z^4-4736\,z^3-6144\,z^2+1800\,z+2025\right)\right.\right.\right.$$
$$\left.\left.\left.J_1\left(2\sqrt{z}\right)\right)+\pi\left(1024\,z^5+19\,200\,z^4+28\,800\,z^3-7200\,z^2-2700\,z-2025\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+\right.$$
$$\left.\pi\left(-1024\,z^5-19\,200\,z^4-28\,800\,z^3+7200\,z^2+2700\,z+2025\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1947.01

$$ {}_1F_2\left(-\frac{3}{2}; 2, 5; z\right) = \frac{1}{51\,975\,z^3}\left(32\left(2\,z\left(32\,z^4-672\,z^3+1350\,z^2+90\,z-135\right)I_0\left(\sqrt{z}\right)^2+\sqrt{z}\left(-64\,z^4+1296\,z^3-1800\,z^2-585\,z+1080\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\left(32\,z^5-656\,z^4+1038\,z^3+360\,z^2-225\,z+540\right)I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1948.01

$$ {}_1F_2\left(-\frac{3}{2}; 2, 5; -z\right) = \frac{1}{51\,975\,z^3}\left(32\left(2\,z\left(32\,z^4+672\,z^3+1350\,z^2-90\,z-135\right)J_0\left(\sqrt{z}\right)^2+\sqrt{z}\left(-64\,z^4-1296\,z^3-1800\,z^2+585\,z+1080\right)\right.\right.$$
$$\left.\left.J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+2\left(32\,z^5+656\,z^4+1038\,z^3-360\,z^2-225\,z-540\right)J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1949.01

$$ {}_1F_2\left(-\frac{3}{2}; 2, \frac{11}{2}; z\right) = \frac{1}{1\,310\,720\,z^4}\left(7\left(4\left(2\,z\left(1024\,z^5-23\,296\,z^4+48\,768\,z^3+7200\,z^2-9900\,z+23\,625\right)I_0\left(2\sqrt{z}\right)-\right.\right.\right.$$
$$\left.\left.\left.\sqrt{z}\left(1024\,z^5-22\,784\,z^4+38\,016\,z^3+15\,840\,z^2-17\,100\,z+70\,875\right)I_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.\pi\left(-4096\,z^6+92\,160\,z^5-172\,800\,z^4-57\,600\,z^3+32\,400\,z^2-48\,600\,z+70\,875\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\right.$$
$$\left.\pi\left(4096\,z^6-92\,160\,z^5+172\,800\,z^4+57\,600\,z^3-32\,400\,z^2+48\,600\,z-70\,875\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1950.01

$$ {}_1F_2\left(-\frac{3}{2}; 2, \frac{11}{2}; -z\right) = \frac{1}{1\,310\,720\,z^4}\left(7\left(4\left(2\,z\left(1024\,z^5+23\,296\,z^4+48\,768\,z^3-7200\,z^2-9900\,z-23\,625\right)J_0\left(2\sqrt{z}\right)+\right.\right.\right.$$
$$\left.\left.\left.\sqrt{z}\left(-1024\,z^5-22\,784\,z^4-38\,016\,z^3+15\,840\,z^2+17\,100\,z+70\,875\right)J_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.\pi\left(4096\,z^6+92\,160\,z^5+172\,800\,z^4-57\,600\,z^3-32\,400\,z^2-48\,600\,z-70\,875\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+\right.$$
$$\left.\pi\left(-4096\,z^6-92\,160\,z^5-172\,800\,z^4+57\,600\,z^3+32\,400\,z^2+48\,600\,z+70\,875\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.1951.01

$$ {}_1F_2\left(-\frac{3}{2}; 2, 6; z\right) = \frac{1}{135\,135\,z^4}\left(32\left(2\,z\left(64\,z^5-1584\,z^4+3780\,z^3+450\,z^2-945\,z+3240\right)I_0\left(\sqrt{z}\right)^2-8\sqrt{z}\left(16\,z^5-384\,z^4+675\,z^3+315\,z^2-540\,z+\right.\right.\right.$$
$$\left.\left.\left.3240\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(-128\,z^6+3104\,z^5-6072\,z^4-2700\,z^3+1845\,z^2-1080\,z+25\,920\right)I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1952.01

$${}_1F_2\left(-\frac{3}{2}; 2, 6; -z\right) =$$
$$\frac{1}{135\,135\,z^4}\left(32\left(2z\left(64z^5+1584z^4+3780z^3-450z^2-945z-3240\right)J_0\left(\sqrt{z}\right)^2-8\sqrt{z}\left(16z^5+384z^4+675z^3-315z^2-540z-3240\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(128z^6+3104z^5+6072z^4-2700z^3-1845z^2-1080z-25\,920\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = -\frac{3}{2}$, $b_1 = \frac{5}{2}$

07.22.03.1953.01

$${}_1F_2\left(-\frac{3}{2}; \frac{5}{2}, \frac{5}{2}; z\right) =$$
$$\frac{1}{512\,z^{3/2}}\left(-2\sqrt{z}\left(4z^2-52z+33\right)\cosh\left(2\sqrt{z}\right)+\left(-4z^2+48z-3\right)\sinh\left(2\sqrt{z}\right)+4\left(4z^3-54z^2+54z+9\right)\operatorname{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.1954.01

$${}_1F_2\left(-\frac{3}{2}; \frac{5}{2}, \frac{5}{2}; -z\right) =$$
$$\frac{1}{512\,z^{3/2}}\left(2\sqrt{z}\left(4z^2+52z+33\right)\cos\left(2\sqrt{z}\right)+\left(4z^2+48z+3\right)\sin\left(2\sqrt{z}\right)+4\left(4z^3+54z^2+54z-9\right)\operatorname{Si}\left(2\sqrt{z}\right)\right)$$

07.22.03.1955.01

$${}_1F_2\left(-\frac{3}{2}; \frac{5}{2}, 3; z\right) = \frac{1}{1680\,z^{3/2}}\left(4\left(2\sqrt{z}\left(16z^3-256z^2+375z+36\right)I_0\left(2\sqrt{z}\right)-\left(16z^3-248z^2+261z+72\right)I_1\left(2\sqrt{z}\right)\right)-\pi\sqrt{z}\left(64z^3-1008z^2+1260z+315\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\sqrt{z}\left(64z^3-1008z^2+1260z+315\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1956.01

$${}_1F_2\left(-\frac{3}{2}; \frac{5}{2}, 3; -z\right) =$$
$$\frac{1}{1680\,z^{3/2}}\left(4\left(2\sqrt{z}\left(16z^3+256z^2+375z-36\right)J_0\left(2\sqrt{z}\right)-\left(16z^3+248z^2+261z-72\right)J_1\left(2\sqrt{z}\right)\right)+\pi\sqrt{z}\left(64z^3+1008z^2+1260z-315\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\sqrt{z}\left(64z^3+1008z^2+1260z-315\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1957.01

$${}_1F_2\left(-\frac{3}{2}; \frac{5}{2}, \frac{7}{2}; z\right) = \frac{1}{4096\,z^{5/2}}\left(5\left(-2\sqrt{z}\left(4z^3-70z^2+78z+27\right)\cosh\left(2\sqrt{z}\right)+\left(-4z^3+66z^2-30z+27\right)\sinh\left(2\sqrt{z}\right)+16z\left(z^3-18z^2+27z+9\right)\operatorname{Shi}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1958.01

$${}_1F_2\left(-\frac{3}{2}; \frac{5}{2}, \frac{7}{2}; -z\right) = \frac{1}{4096\,z^{5/2}}$$
$$\left(5\left(2\sqrt{z}\left(4z^3+70z^2+78z-27\right)\cos\left(2\sqrt{z}\right)+\left(4z^3+66z^2+30z+27\right)\sin\left(2\sqrt{z}\right)+16z\left(z^3+18z^2+27z-9\right)\operatorname{Si}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1959.01

$${}_1F_2\left(-\frac{3}{2};\frac{5}{2},4;z\right)=\frac{1}{2520\,z^{5/2}}$$
$$\left(-\pi\left(64z^3-1296z^2+2268z+945\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+\pi\left(64z^3-1296z^2+2268z+945\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2}+\right.$$
$$\left.4\left(2\sqrt{z}\left(16z^4-328z^3+645z^2+144z-36\right)I_0\left(2\sqrt{z}\right)+\left(-16z^4+320z^3-495z^2-252z+72\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1960.01

$${}_1F_2\left(-\frac{3}{2};\frac{5}{2},4;-z\right)=\frac{1}{2520\,z^{5/2}}$$
$$\left(\pi\left(64z^3+1296z^2+2268z-945\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}-\pi\left(64z^3+1296z^2+2268z-945\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{3/2}+\right.$$
$$\left.4\left(2\sqrt{z}\left(16z^4+328z^3+645z^2-144z-36\right)J_0\left(2\sqrt{z}\right)+\left(-16z^4-320z^3-495z^2+252z+72\right)J_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1961.01

$${}_1F_2\left(-\frac{3}{2};\frac{5}{2},\frac{9}{2};z\right)=$$
$$-\frac{1}{16\,384\,z^{7/2}}\left(7\left(-16\left(2z^3-45z^2+90z+45\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^2+2\left(8z^4-176z^3+282z^2+180z-135\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\right.\right.$$
$$\left.\left.\left(8z^4-168z^3+150z^2+135\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1962.01

$${}_1F_2\left(-\frac{3}{2};\frac{5}{2},\frac{9}{2};-z\right)=$$
$$\frac{1}{16\,384\,z^{7/2}}\left(7\left(16\left(2z^3+45z^2+90z-45\right)\mathrm{Si}\left(2\sqrt{z}\right)z^2+2\left(8z^4+176z^3+282z^2-180z-135\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.\right.$$
$$\left.\left.\left(8z^4+168z^3+150z^2+135\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1963.01

$${}_1F_2\left(-\frac{3}{2};\frac{5}{2},5;z\right)=$$
$$\frac{1}{3465\,z^{7/2}}\left(-\pi\left(64z^3-1584z^2+3564z+2079\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}+\pi\left(64z^3-1584z^2+3564z+2079\right)\right.$$
$$I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{5/2}+4\left(2\sqrt{z}\left(16z^5-400z^4+987z^3+360z^2-117z+162\right)I_0\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left(16z^5-392z^4+801z^3+576z^2-72z+324\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1964.01

$${}_1F_2\left(-\frac{3}{2};\frac{5}{2},5;-z\right)=$$
$$\frac{1}{3465\,z^{7/2}}\left(\pi\left(64z^3+1584z^2+3564z-2079\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-\pi\left(64z^3+1584z^2+3564z-2079\right)\right.$$
$$J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{5/2}+4\left(2\sqrt{z}\left(16z^5+400z^4+987z^3-360z^2-117z-162\right)J_0\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(-16z^5-392z^4-801z^3+576z^2+72z+324\right)J_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1965.01

$${}_1F_2\left(-\frac{3}{2};\frac{5}{2},\frac{11}{2};z\right)=\frac{1}{65\,536\,z^{9/2}}$$
$$\left(21\left(16\left(2z^3-54z^2+135z+90\right)\operatorname{Shi}\left(2\sqrt{z}\right)z^3-2\left(8z^5-212z^4+444z^3+396z^2-180z+945\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\right.\right.$$
$$\left.\left.\left(-8z^5+204z^4-276z^3-180z^2+1080z+945\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1966.01

$${}_1F_2\left(-\frac{3}{2};\frac{5}{2},\frac{11}{2};-z\right)=$$
$$\frac{1}{65\,536\,z^{9/2}}\left(21\left(16\left(2z^3+54z^2+135z-90\right)\operatorname{Si}\left(2\sqrt{z}\right)z^3+2\left(8z^5+212z^4+444z^3-396z^2-180z-945\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.\right.$$
$$\left.\left.\left(8z^5+204z^4+276z^3-180z^2-1080z+945\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1967.01

$${}_1F_2\left(-\frac{3}{2};\frac{5}{2},6;z\right)=$$
$$\frac{1}{9009\,z^{9/2}}\left(2\left(-\pi\left(64z^3-1872z^2+5148z+3861\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2}+\pi\left(64z^3-1872z^2+5148z+3861\right)I_0\left(2\sqrt{z}\right)\right.\right.$$
$$\left.\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{7/2}+4\left(2\sqrt{z}\left(16z^6-472z^5+1401z^4+720z^3-252z^2+243z-1620\right)I_0\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left.\left(-16z^6+464z^5-1179z^4-1080z^3-9z^2+1134z+3240\right)I_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.1968.01

$${}_1F_2\left(-\frac{3}{2};\frac{5}{2},6;-z\right)=$$
$$-\frac{1}{9009\,z^{9/2}}\left(2\left(-\pi\left(64z^3+1872z^2+5148z-3861\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2}+\pi\left(64z^3+1872z^2+5148z-3861\right)J_0\left(2\sqrt{z}\right)\right.\right.$$
$$\left.\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{7/2}-4\left(2\sqrt{z}\left(16z^6+472z^5+1401z^4-720z^3-252z^2-243z-1620\right)J_0\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left.\left(16z^6+464z^5+1179z^4-1080z^3+9z^2+1134z-3240\right)J_1\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = -\frac{3}{2}$, $b_1 = 3$

07.22.03.1969.01

$${}_1F_2\left(-\frac{3}{2};3,3;z\right)=$$
$$\frac{1}{11\,025\,z^{3/2}}\left(8\left(\sqrt{z}\left(64z^3-1200z^2+2256z+315\right)I_0\left(\sqrt{z}\right)^2-2\left(32z^3-576z^2+732z+315\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\sqrt{z}\left(64z^3-1168z^2+1704z+741\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1970.01

$$ {}_1F_2\left(-\frac{3}{2}; 3, 3; -z\right) = \frac{1}{11\,025\, z^{3/2}}\left(8\left(\sqrt{z}\,\left(64 z^3+1200 z^2+2256 z-315\right) J_0\left(\sqrt{z}\right)^2 - 2\left(32 z^3+576 z^2+732 z-315\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\,\left(64 z^3+1168 z^2+1704 z-741\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1971.01

$$ {}_1F_2\left(-\frac{3}{2}; 3, \frac{7}{2}; z\right) = \frac{1}{10\,752\, z^2}\left(4\left(2 z\left(64 z^3-1360 z^2+2844 z+837\right) I_0\left(2\sqrt{z}\right) - \sqrt{z}\,\left(64 z^3-1328 z^2+2220 z+1359\right) I_1\left(2\sqrt{z}\right)\right) - \pi\left(256 z^4-5376 z^3+10\,080 z^2+5040 z+945\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(256 z^4-5376 z^3+10\,080 z^2+5040 z+945\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1972.01

$$ {}_1F_2\left(-\frac{3}{2}; 3, \frac{7}{2}; -z\right) = \frac{1}{10\,752\, z^2}\left(4\left(2 z\left(64 z^3+1360 z^2+2844 z-837\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\,\left(64 z^3+1328 z^2+2220 z-1359\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(256 z^4+5376 z^3+10\,080 z^2-5040 z+945\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(256 z^4+5376 z^3+10\,080 z^2-5040 z+945\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1973.01

$$ {}_1F_2\left(-\frac{3}{2}; 3, 4; z\right) = \frac{1}{33\,075\, z^2}\left(16\left(4 z\left(16 z^3-384 z^2+963 z+315\right) I_0\left(\sqrt{z}\right)^2 - \sqrt{z}\,\left(64 z^3-1488 z^2+2808 z+2205\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - 2\left(32 z^4-752 z^3+1566 z^2+1116 z+315\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1974.01

$$ {}_1F_2\left(-\frac{3}{2}; 3, 4; -z\right) = \frac{1}{33\,075\, z^2}\left(16\left(4 z\left(16 z^3+384 z^2+963 z-315\right) J_0\left(\sqrt{z}\right)^2 - \sqrt{z}\,\left(64 z^3+1488 z^2+2808 z-2205\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + 2\left(32 z^4+752 z^3+1566 z^2-1116 z+315\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1975.01

$$ {}_1F_2\left(-\frac{3}{2}; 3, \frac{9}{2}; z\right) = \frac{1}{61\,440\, z^3}\left(4\left(2 z\left(256 z^4-6784 z^3+18\,432 z^2+9480 z+1575\right) I_0\left(2\sqrt{z}\right) - \sqrt{z}\,\left(256 z^4-6656 z^3+15\,264 z^2+13\,920 z+4725\right) I_1\left(2\sqrt{z}\right)\right) - \pi\left(1024 z^5-26\,880 z^4+67\,200 z^3+50\,400 z^2+18\,900 z-4725\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(1024 z^5-26\,880 z^4+67\,200 z^3+50\,400 z^2+18\,900 z-4725\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1976.01

$$ {}_1F_2\left(-\frac{3}{2}; 3, \frac{9}{2}; -z\right) = \frac{1}{61\,440\,z^3} \left(4\left(2\,z\left(256\,z^4+6784\,z^3+18\,432\,z^2-9480\,z+1575\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(256\,z^4+6656\,z^3+15\,264\,z^2-13\,920\,z+4725\right)\right.\right. \left.\left.J_1\left(2\sqrt{z}\right)\right)+\pi\left(1024\,z^5+26\,880\,z^4+67\,200\,z^3-50\,400\,z^2+18\,900\,z+4725\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)- \pi\left(1024\,z^5+26\,880\,z^4+67\,200\,z^3-50\,400\,z^2+18\,900\,z+4725\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1977.01

$$ {}_1F_2\left(-\frac{3}{2}; 3, 5; z\right) = \frac{1}{363\,825\,z^3} \left(64\left(z\left(128\,z^4-3744\,z^3+11\,736\,z^2+6300\,z+945\right)I_0\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(32\,z^4-912\,z^3+2286\,z^2+2520\,z+945\right)\right.\right. \left.\left.I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-4\left(32\,z^5-920\,z^4+2490\,z^3+2439\,z^2+1260\,z-945\right)I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1978.01

$$ {}_1F_2\left(-\frac{3}{2}; 3, 5; -z\right) = \frac{1}{363\,825\,z^3} \left(64\left(z\left(128\,z^4+3744\,z^3+11\,736\,z^2-6300\,z+945\right)J_0\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(32\,z^4+912\,z^3+2286\,z^2-2520\,z+945\right)\right.\right. \left.\left.J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+4\left(32\,z^5+920\,z^4+2490\,z^3-2439\,z^2+1260\,z+945\right)J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1979.01

$$ {}_1F_2\left(-\frac{3}{2}; 3, \frac{11}{2}; z\right) = \frac{1}{327\,680\,z^4} \left(4\left(2\,z\left(1024\,z^5-32\,512\,z^4+108\,672\,z^3+80\,928\,z^2+28\,980\,z-33\,075\right)I_0\left(2\sqrt{z}\right)- \sqrt{z}\,\left(1024\,z^5-32\,000\,z^4+93\,312\,z^3+111\,456\,z^2+69\,300\,z-99\,225\right)I_1\left(2\sqrt{z}\right)\right)- \pi\left(4096\,z^6-129\,024\,z^5+403\,200\,z^4+403\,200\,z^3+226\,800\,z^2-113\,400\,z+99\,225\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+ \pi\left(4096\,z^6-129\,024\,z^5+403\,200\,z^4+403\,200\,z^3+226\,800\,z^2-113\,400\,z+99\,225\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1980.01

$$ {}_1F_2\left(-\frac{3}{2}; 3, \frac{11}{2}; -z\right) = \frac{1}{327\,680\,z^4} \left(4\left(2\,z\left(1024\,z^5+32\,512\,z^4+108\,672\,z^3-80\,928\,z^2+28\,980\,z+33\,075\right)J_0\left(2\sqrt{z}\right)- \sqrt{z}\,\left(1024\,z^5+32\,000\,z^4+93\,312\,z^3-111\,456\,z^2+69\,300\,z+99\,225\right)J_1\left(2\sqrt{z}\right)\right)+ \pi\left(4096\,z^6+129\,024\,z^5+403\,200\,z^4-403\,200\,z^3+226\,800\,z^2+113\,400\,z+99\,225\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)- \pi\left(4096\,z^6+129\,024\,z^5+403\,200\,z^4-403\,200\,z^3+226\,800\,z^2+113\,400\,z+99\,225\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.1981.01

$$ {}_1F_2\left(-\frac{3}{2}; 3, 6; z\right) = \frac{1}{945\,945\,z^4} \left(64\left(z\left(256\,z^5-8832\,z^4+33\,216\,z^3+25\,200\,z^2+8505\,z-15\,120\right)I_0\left(\sqrt{z}\right)^2- 4\sqrt{z}\,\left(64\,z^5-2160\,z^4+6756\,z^3+9450\,z^2+6615\,z-15\,120\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)- \left(256\,z^6-8704\,z^5+28\,992\,z^4+35\,976\,z^3+26\,145\,z^2-18\,900\,z+60\,480\right)I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.1982.01

$${}_1F_2\left(-\frac{3}{2}; 3, 6; -z\right) = \frac{1}{945\,945\,z^4}\left(64\left(z\left(256\,z^5+8832\,z^4+33\,216\,z^3-25\,200\,z^2+8505\,z+15\,120\right)J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(64\,z^5+2160\,z^4+6756\,z^3-9450\,z^2+6615\,z+15\,120\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + \left(256\,z^6+8704\,z^5+28\,992\,z^4-35\,976\,z^3+26\,145\,z^2+18\,900\,z+60\,480\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = -\frac{3}{2}$, $b_1 = \frac{7}{2}$

07.22.03.1983.01

$${}_1F_2\left(-\frac{3}{2}; \frac{7}{2}, \frac{7}{2}; z\right) = -\frac{1}{32\,768\,z^{5/2}}\left(25\left(2\sqrt{z}\left(4\,z^3-94\,z^2+174\,z+153\right)\cosh\left(2\sqrt{z}\right) + \left(4\,z^3-90\,z^2+102\,z+63\right)\sinh\left(2\sqrt{z}\right) - 8\left(2\,z^4-48\,z^3+108\,z^2+72\,z+27\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1984.01

$${}_1F_2\left(-\frac{3}{2}; \frac{7}{2}, \frac{7}{2}; -z\right) = \frac{1}{32\,768\,z^{5/2}}\left(25\left(2\sqrt{z}\left(4\,z^3+94\,z^2+174\,z-153\right)\cos\left(2\sqrt{z}\right) + \left(4\,z^3+90\,z^2+102\,z-63\right)\sin\left(2\sqrt{z}\right) + 8\left(2\,z^4+48\,z^3+108\,z^2-72\,z+27\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1985.01

$${}_1F_2\left(-\frac{3}{2}; \frac{7}{2}, 4; z\right) = \frac{1}{16\,128\,z^{5/2}}\left(4\left(2\sqrt{z}\left(64\,z^4-1744\,z^3+4956\,z^2+2925\,z+1152\right)I_0\left(2\sqrt{z}\right) - \left(64\,z^4-1712\,z^3+4140\,z^2+4167\,z+2304\right)I_1\left(2\sqrt{z}\right)\right) - \pi\sqrt{z}\left(256\,z^4-6912\,z^3+18\,144\,z^2+15\,120\,z+8505\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\sqrt{z}\left(256\,z^4-6912\,z^3+18\,144\,z^2+15\,120\,z+8505\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1986.01

$${}_1F_2\left(-\frac{3}{2}; \frac{7}{2}, 4; -z\right) = \frac{1}{16\,128\,z^{5/2}}\left(4\left(2\sqrt{z}\left(64\,z^4+1744\,z^3+4956\,z^2-2925\,z+1152\right)J_0\left(2\sqrt{z}\right) - \left(64\,z^4+1712\,z^3+4140\,z^2-4167\,z+2304\right)J_1\left(2\sqrt{z}\right)\right) + \pi\sqrt{z}\left(256\,z^4+6912\,z^3+18\,144\,z^2-15\,120\,z+8505\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\sqrt{z}\left(256\,z^4+6912\,z^3+18\,144\,z^2-15\,120\,z+8505\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1987.01

$${}_1F_2\left(-\frac{3}{2}; \frac{7}{2}, \frac{9}{2}; z\right) = -\frac{1}{65\,536\,z^{7/2}}\left(35\left(2\sqrt{z}\left(4\,z^4-118\,z^3+306\,z^2+405\,z+270\right)\cosh\left(2\sqrt{z}\right) + \left(4\,z^4-114\,z^3+210\,z^2+315\,z-270\right)\sinh\left(2\sqrt{z}\right) - 8\,z\left(2\,z^4-60\,z^3+180\,z^2+180\,z+135\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1988.01

$${}_1F_2\left(-\frac{3}{2};\frac{7}{2},\frac{9}{2};-z\right)=$$
$$\frac{1}{65\,536\,z^{7/2}}\left(35\left(2\sqrt{z}\,\left(4z^4+118z^3+306z^2-405z+270\right)\cos\left(2\sqrt{z}\right)+\left(4z^4+114z^3+210z^2-315z-270\right)\sin\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.8z\left(2z^4+60z^3+180z^2-180z+135\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1989.01

$${}_1F_2\left(-\frac{3}{2};\frac{7}{2},5;z\right)=\frac{1}{22\,176\,z^{7/2}}\left(-\pi\left(256z^4-8448z^3+28\,512z^2+33\,264z+31\,185\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+\right.$$
$$\pi\left(256z^4-8448z^3+28\,512z^2+33\,264z+31\,185\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2}+$$
$$4\left(2\sqrt{z}\,\left(64z^5-2128z^4+7644z^3+6885z^2+5472z-1728\right)I_0\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left(64z^5-2096z^4+6636z^3+9135z^2+9216z-3456\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1990.01

$${}_1F_2\left(-\frac{3}{2};\frac{7}{2},5;-z\right)=\frac{1}{22\,176\,z^{7/2}}\left(\pi\left(256z^4+8448z^3+28\,512z^2-33\,264z+31\,185\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}-\right.$$
$$\pi\left(256z^4+8448z^3+28\,512z^2-33\,264z+31\,185\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{3/2}+$$
$$4\left(2\sqrt{z}\,\left(64z^5+2128z^4+7644z^3-6885z^2+5472z+1728\right)J_0\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left(64z^5+2096z^4+6636z^3-9135z^2+9216z+3456\right)J_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1991.01

$${}_1F_2\left(-\frac{3}{2};\frac{7}{2},\frac{11}{2};z\right)=$$
$$-\frac{1}{262\,144\,z^{9/2}}\left(105\left(-8\left(2z^4-72z^3+270z^2+360z+405\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^2+2\left(4z^5-142z^4+474z^3+819z^2+990z-945\right)\right.\right.$$
$$\left.\left.\cosh\left(2\sqrt{z}\right)\sqrt{z}\,+\left(4z^5-138z^4+354z^3+765z^2+270z+945\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1992.01

$${}_1F_2\left(-\frac{3}{2};\frac{7}{2},\frac{11}{2};-z\right)=\frac{1}{262\,144\,z^{9/2}}$$
$$\left(105\left(8\left(2z^4+72z^3+270z^2-360z+405\right)\mathrm{Si}\left(2\sqrt{z}\right)z^2+2\left(4z^5+142z^4+474z^3-819z^2+990z+945\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,+\right.\right.$$
$$\left.\left.\left(4z^5+138z^4+354z^3-765z^2+270z-945\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.1993.01

$${}_1F_2\left(-\frac{3}{2};\frac{7}{2},6;z\right)=\frac{1}{144\,144\,z^{9/2}}\left(5\left(-\pi\left(256z^4-9984z^3+41\,184z^2+61\,776z+81\,081\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}+\right.\right.$$
$$\pi\left(256z^4-9984z^3+41\,184z^2+61\,776z+81\,081\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{5/2}+$$
$$4\left(2\sqrt{z}\,\left(64z^6-2512z^5+10\,908z^4+13\,293z^3+15\,840z^2-6048z+10\,368\right)I_0\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left.\left(64z^6-2480z^5+9708z^4+16\,839z^3+23\,904z^2-1728z+20\,736\right)I_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.1994.01

$${}_1F_2\left(-\frac{3}{2};\frac{7}{2},6;-z\right)=\frac{1}{144\,144\,z^{9/2}}\left(5\left(\pi\left(256\,z^4+9984\,z^3+41\,184\,z^2-61\,776\,z+81\,081\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-\right.\right.$$
$$\pi\left(256\,z^4+9984\,z^3+41\,184\,z^2-61\,776\,z+81\,081\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{5/2}+$$
$$4\left(2\sqrt{z}\left(64\,z^6+2512\,z^5+10\,908\,z^4-13\,293\,z^3+15\,840\,z^2+6048\,z+10\,368\right)J_0\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left.\left(64\,z^6+2480\,z^5+9708\,z^4-16\,839\,z^3+23\,904\,z^2+1728\,z+20\,736\right)J_1\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1=-\frac{3}{2}$, $b_1=4$

07.22.03.1995.01

$${}_1F_2\left(-\frac{3}{2};4,4;z\right)=$$
$$\frac{1}{99\,225\,z^{5/2}}\left(16\left(2\sqrt{z}\left(64\,z^4-1968\,z^3+6660\,z^2+4554\,z+2835\right)I_0\left(\sqrt{z}\right)^2-4\left(32\,z^4-960\,z^3+2646\,z^2+3438\,z+2835\right)\right.$$
$$\left.I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\sqrt{z}\left(128\,z^4-3872\,z^3+11\,448\,z^2+13\,212\,z+11\,763\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1996.01

$${}_1F_2\left(-\frac{3}{2};4,4;-z\right)=$$
$$\frac{1}{99\,225\,z^{5/2}}\left(16\left(2\sqrt{z}\left(64\,z^4+1968\,z^3+6660\,z^2-4554\,z+2835\right)J_0\left(\sqrt{z}\right)^2-4\left(32\,z^4+960\,z^3+2646\,z^2-3438\,z+2835\right)\right.$$
$$\left.J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\sqrt{z}\left(128\,z^4+3872\,z^3+11\,448\,z^2-13\,212\,z+11\,763\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.1997.01

$${}_1F_2\left(-\frac{3}{2};4,\frac{9}{2};z\right)=\frac{1}{92\,160\,z^3}$$
$$\left(4\left(2\,z\left(256\,z^4-8704\,z^3+32\,352\,z^2+31\,680\,z+31\,905\right)I_0\left(2\sqrt{z}\right)-\sqrt{z}\left(256\,z^4-8576\,z^3+28\,224\,z^2+41\,400\,z+49\,635\right)\right.\right.$$
$$\left.I_1\left(2\sqrt{z}\right)\right)-\pi\left(1024\,z^5-34\,560\,z^4+120\,960\,z^3+151\,200\,z^2+170\,100\,z+42\,525\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(1024\,z^5-34\,560\,z^4+120\,960\,z^3+151\,200\,z^2+170\,100\,z+42\,525\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1998.01

$${}_1F_2\left(-\frac{3}{2};4,\frac{9}{2};-z\right)=\frac{1}{92\,160\,z^3}$$
$$\left(4\left(2\,z\left(256\,z^4+8704\,z^3+32\,352\,z^2-31\,680\,z+31\,905\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\left(256\,z^4+8576\,z^3+28\,224\,z^2-41\,400\,z+49\,635\right)\right.\right.$$
$$\left.J_1\left(2\sqrt{z}\right)\right)+\pi\left(1024\,z^5+34\,560\,z^4+120\,960\,z^3-151\,200\,z^2+170\,100\,z-42\,525\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\pi\left(1024\,z^5+34\,560\,z^4+120\,960\,z^3-151\,200\,z^2+170\,100\,z-42\,525\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.1999.01

$${}_1F_2\left(-\frac{3}{2};4,5;z\right)=\frac{1}{1\,091\,475\,z^3}$$
$$\left(64\left(z\left(256\,z^4-9600\,z^3+40\,896\,z^2+43\,488\,z+53\,865\right)I_0\left(\sqrt{z}\right)^2-8\sqrt{z}\left(32\,z^4-1176\,z^3+4266\,z^2+7569\,z+11\,340\right)\right.\right.$$
$$\left.\left.I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\left(256\,z^5-9472\,z^4+36\,288\,z^3+57\,528\,z^2+84\,033\,z+34\,020\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2000.01

$${}_1F_2\left(-\frac{3}{2}; 4, 5; -z\right) = \frac{1}{1\,091\,475\,z^3}$$
$$\left(64\left(z\left(256\,z^4 + 9600\,z^3 + 40\,896\,z^2 - 43\,488\,z + 53\,865\right) J_0\left(\sqrt{z}\right)^2 - 8\sqrt{z}\left(32\,z^4 + 1176\,z^3 + 4266\,z^2 - 7569\,z + 11\,340\right)\right.\right.$$
$$\left.\left. J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(256\,z^5 + 9472\,z^4 + 36\,288\,z^3 - 57\,528\,z^2 + 84\,033\,z - 34\,020\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2001.01

$${}_1F_2\left(-\frac{3}{2}; 4, \frac{11}{2}; z\right) = \frac{1}{491\,520\,z^4}\left(4\left(2\,z\left(1024\,z^5 - 41\,728\,z^4 + 191\,616\,z^3 + 264\,096\,z^2 + 423\,540\,z + 99\,225\right) I_0\left(2\sqrt{z}\right) -\right.\right.$$
$$\left.\left.\sqrt{z}\left(1024\,z^5 - 41\,216\,z^4 + 171\,648\,z^3 + 328\,032\,z^2 + 586\,260\,z + 297\,675\right) I_1\left(2\sqrt{z}\right)\right) -\right.$$
$$\pi\left(4096\,z^6 - 165\,888\,z^5 + 725\,760\,z^4 + 1\,209\,600\,z^3 + 2\,041\,200\,z^2 + 1\,020\,600\,z - 297\,675\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) +$$
$$\left.\pi\left(4096\,z^6 - 165\,888\,z^5 + 725\,760\,z^4 + 1\,209\,600\,z^3 + 2\,041\,200\,z^2 + 1\,020\,600\,z - 297\,675\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2002.01

$${}_1F_2\left(-\frac{3}{2}; 4, \frac{11}{2}; -z\right) = \frac{1}{491\,520\,z^4}\left(4\left(2\,z\left(1024\,z^5 + 41\,728\,z^4 + 191\,616\,z^3 - 264\,096\,z^2 + 423\,540\,z - 99\,225\right) J_0\left(2\sqrt{z}\right) -\right.\right.$$
$$\left.\left.\sqrt{z}\left(1024\,z^5 + 41\,216\,z^4 + 171\,648\,z^3 - 328\,032\,z^2 + 586\,260\,z - 297\,675\right) J_1\left(2\sqrt{z}\right)\right) +\right.$$
$$\pi\left(4096\,z^6 + 165\,888\,z^5 + 725\,760\,z^4 - 1\,209\,600\,z^3 + 2\,041\,200\,z^2 - 1\,020\,600\,z - 297\,675\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) +$$
$$\left.\pi\left(-4096\,z^6 - 165\,888\,z^5 - 725\,760\,z^4 + 1\,209\,600\,z^3 - 2\,041\,200\,z^2 + 1\,020\,600\,z + 297\,675\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2003.01

$${}_1F_2\left(-\frac{3}{2}; 4, 6; z\right) = \frac{1}{2\,837\,835\,z^4}\left(128\left(z\left(256\,z^5 - 11\,328\,z^4 + 58\,176\,z^3 + 84\,636\,z^2 + 155\,925\,z + 34\,020\right) I_0\left(\sqrt{z}\right)^2 -\right.\right.$$
$$\sqrt{z}\left(256\,z^5 - 11\,136\,z^4 + 50\,112\,z^3 + 111\,744\,z^2 + 235\,305\,z + 136\,080\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) -$$
$$\left.\left.\left(256\,z^6 - 11\,200\,z^5 + 52\,704\,z^4 + 106\,020\,z^3 + 214\,281\,z^2 + 153\,090\,z - 136\,080\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2004.01

$${}_1F_2\left(-\frac{3}{2}; 4, 6; -z\right) = \frac{1}{2\,837\,835\,z^4}\left(128\left(z\left(256\,z^5 + 11\,328\,z^4 + 58\,176\,z^3 - 84\,636\,z^2 + 155\,925\,z - 34\,020\right) J_0\left(\sqrt{z}\right)^2 -\right.\right.$$
$$\sqrt{z}\left(256\,z^5 + 11\,136\,z^4 + 50\,112\,z^3 - 111\,744\,z^2 + 235\,305\,z - 136\,080\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) +$$
$$\left.\left.\left(256\,z^6 + 11\,200\,z^5 + 52\,704\,z^4 - 106\,020\,z^3 + 214\,281\,z^2 - 153\,090\,z - 136\,080\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = -\frac{3}{2}$, $b_1 = \frac{9}{2}$

07.22.03.2005.01

$${}_1F_2\left(-\frac{3}{2}; \frac{9}{2}, \frac{9}{2}; z\right) =$$
$$-\frac{1}{262\,144\,z^{7/2}}\left(49\left(2\sqrt{z}\left(8\,z^4 - 296\,z^3 + 1062\,z^2 + 2040\,z + 3285\right)\cosh\left(2\sqrt{z}\right) + \left(8\,z^4 - 288\,z^3 + 810\,z^2 + 1980\,z + 2115\right)\right.\right.$$
$$\left.\left.\sinh\left(2\sqrt{z}\right) - 8\left(4\,z^5 - 150\,z^4 + 600\,z^3 + 900\,z^2 + 1350\,z + 675\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2006.01

$$ {}_1F_2\left(-\frac{3}{2}; \frac{9}{2}, \frac{9}{2}; -z\right) = \frac{1}{262\,144\, z^{7/2}} \left(49\left(2\sqrt{z}\,\left(8 z^4 + 296 z^3 + 1062 z^2 - 2040 z + 3285\right)\cos\left(2\sqrt{z}\right) + \left(8 z^4 + 288 z^3 + 810 z^2 - 1980 z + 2115\right)\sin\left(2\sqrt{z}\right) + 8\left(4 z^5 + 150 z^4 + 600 z^3 - 900 z^2 + 1350 z - 675\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.2007.01

$$ {}_1F_2\left(-\frac{3}{2}; \frac{9}{2}, 5; z\right) = \frac{1}{126\,720\, z^{7/2}} \left(4\left(2\sqrt{z}\,\left(256 z^5 - 10\,624 z^4 + 50\,112 z^3 + 73\,080 z^2 + 132\,075 z + 69\,120\right) I_0\left(2\sqrt{z}\right) - \left(256 z^5 - 10\,496 z^4 + 45\,024 z^3 + 90\,000 z^2 + 177\,345 z + 138\,240\right) I_1\left(2\sqrt{z}\right)\right) - \pi\sqrt{z}\,\left(1024 z^5 - 42\,240 z^4 + 190\,080 z^3 + 332\,640 z^2 + 623\,700 z + 467\,775\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\sqrt{z}\,\left(1024 z^5 - 42\,240 z^4 + 190\,080 z^3 + 332\,640 z^2 + 623\,700 z + 467\,775\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.2008.01

$$ {}_1F_2\left(-\frac{3}{2}; \frac{9}{2}, 5; -z\right) = \frac{1}{126\,720\, z^{7/2}} \left(4\left(2\sqrt{z}\,\left(256 z^5 + 10\,624 z^4 + 50\,112 z^3 - 73\,080 z^2 + 132\,075 z - 69\,120\right) J_0\left(2\sqrt{z}\right) - \left(256 z^5 + 10\,496 z^4 + 45\,024 z^3 - 90\,000 z^2 + 177\,345 z - 138\,240\right) J_1\left(2\sqrt{z}\right)\right) + \pi\sqrt{z}\,\left(1024 z^5 + 42\,240 z^4 + 190\,080 z^3 - 332\,640 z^2 + 623\,700 z - 467\,775\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\sqrt{z}\,\left(1024 z^5 + 42\,240 z^4 + 190\,080 z^3 - 332\,640 z^2 + 623\,700 z - 467\,775\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.2009.01

$$ {}_1F_2\left(-\frac{3}{2}; \frac{9}{2}, \frac{11}{2}; z\right) = -\frac{1}{524\,288\, z^{9/2}} \left(147\left(2\sqrt{z}\,\left(4 z^5 - 178 z^4 + 816 z^3 + 2025 z^2 + 4905 z + 4725\right)\cosh\left(2\sqrt{z}\right) + \left(4 z^5 - 174 z^4 + 660 z^3 + 2115 z^2 + 4995 z - 4725\right)\sinh\left(2\sqrt{z}\right) - 8 z\left(2 z^5 - 90 z^4 + 450 z^3 + 900 z^2 + 2025 z + 2025\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.2010.01

$$ {}_1F_2\left(-\frac{3}{2}; \frac{9}{2}, \frac{11}{2}; -z\right) = \frac{1}{524\,288\, z^{9/2}} \left(147\left(2\sqrt{z}\,\left(4 z^5 + 178 z^4 + 816 z^3 - 2025 z^2 + 4905 z - 4725\right)\cos\left(2\sqrt{z}\right) + \left(4 z^5 + 174 z^4 + 660 z^3 - 2115 z^2 + 4995 z + 4725\right)\sin\left(2\sqrt{z}\right) + 8 z\left(2 z^5 + 90 z^4 + 450 z^3 - 900 z^2 + 2025 z - 2025\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.2011.01

$$ {}_1F_2\left(-\frac{3}{2}; \frac{9}{2}, 6; z\right) = \frac{1}{164\,736\, z^{9/2}} \left(-\pi\left(1024 z^5 - 49\,920 z^4 + 274\,560 z^3 + 617\,760 z^2 + 1\,621\,620 z + 2\,027\,025\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{3/2} + \pi\left(1024 z^5 - 49\,920 z^4 + 274\,560 z^3 + 617\,760 z^2 + 1\,621\,620 z + 2\,027\,025\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{3/2} + 4\left(2\sqrt{z}\,\left(256 z^6 - 12\,544 z^5 + 71\,712 z^4 + 139\,440 z^3 + 361\,125 z^2 + 380\,160 z - 138\,240\right) I_0\left(2\sqrt{z}\right) - \left(256 z^6 - 12\,416 z^5 + 65\,664 z^4 + 165\,480 z^3 + 449\,775 z^2 + 622\,080 z - 276\,480\right) I_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.2012.01

$${}_1F_2\left(-\frac{3}{2}; \frac{9}{2}, 6; -z\right) =$$
$$\frac{1}{164\,736\,z^{9/2}}\left(\pi\left(1024\,z^5+49\,920\,z^4+274\,560\,z^3-617\,760\,z^2+1\,621\,620\,z-2\,027\,025\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}-\right.$$
$$\pi\left(1024\,z^5+49\,920\,z^4+274\,560\,z^3-617\,760\,z^2+1\,621\,620\,z-2\,027\,025\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{3/2}+$$
$$4\left(2\sqrt{z}\left(256\,z^6+12\,544\,z^5+71\,712\,z^4-139\,440\,z^3+361\,125\,z^2-380\,160\,z-138\,240\right)J_0\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(-256\,z^6-12\,416\,z^5-65\,664\,z^4+165\,480\,z^3-449\,775\,z^2+622\,080\,z+276\,480\right)J_1\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = -\frac{3}{2}$, $b_1 = 5$

07.22.03.2013.01

$${}_1F_2\left(-\frac{3}{2}; 5, 5; z\right) = \frac{1}{12\,006\,225\,z^{7/2}}\left(512\left(\sqrt{z}\left(256\,z^5-11\,712\,z^4+63\,072\,z^3+101\,700\,z^2+229\,689\,z+187\,110\right)I_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(256\,z^5-11\,520\,z^4+54\,720\,z^3+131\,832\,z^2+326\,241\,z+374\,220\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-$$
$$\left.\left.\sqrt{z}\left(256\,z^5-11\,584\,z^4+57\,408\,z^3+125\,244\,z^2+299\,061\,z+359\,829\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2014.01

$${}_1F_2\left(-\frac{3}{2}; 5, 5; -z\right) = \frac{1}{12\,006\,225\,z^{7/2}}\left(512\left(\sqrt{z}\left(256\,z^5+11\,712\,z^4+63\,072\,z^3-101\,700\,z^2+229\,689\,z-187\,110\right)J_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(256\,z^5+11\,520\,z^4+54\,720\,z^3-131\,832\,z^2+326\,241\,z-374\,220\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+$$
$$\left.\left.\sqrt{z}\left(256\,z^5+11\,584\,z^4+57\,408\,z^3-125\,244\,z^2+299\,061\,z-359\,829\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2015.01

$${}_1F_2\left(-\frac{3}{2}; 5, \frac{11}{2}; z\right) =$$
$$\frac{1}{675\,840\,z^4}\left(4\left(2\,z\left(1024\,z^5-50\,944\,z^4+297\,600\,z^3+602\,784\,z^2+1\,680\,660\,z+2\,226\,285\right)I_0\left(2\sqrt{z}\right)-\sqrt{z}\right.\right.$$
$$\left.\left(1024\,z^5-50\,432\,z^4+273\,024\,z^3+711\,648\,z^2+2\,063\,700\,z+3\,361\,095\right)I_1\left(2\sqrt{z}\right)\right)-$$
$$\pi\left(4096\,z^6-202\,752\,z^5+1\,140\,480\,z^4+2\,661\,120\,z^3+7\,484\,400\,z^2+11\,226\,600\,z+3\,274\,425\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(4096\,z^6-202\,752\,z^5+1\,140\,480\,z^4+2\,661\,120\,z^3+7\,484\,400\,z^2+11\,226\,600\,z+3\,274\,425\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2016.01

$${}_1F_2\left(-\frac{3}{2}; 5, \frac{11}{2}; -z\right) =$$
$$\frac{1}{675\,840\,z^4}\left(4\left(2\,z\left(1024\,z^5+50\,944\,z^4+297\,600\,z^3-602\,784\,z^2+1\,680\,660\,z-2\,226\,285\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\right.\right.$$
$$\left.\left(1024\,z^5+50\,432\,z^4+273\,024\,z^3-711\,648\,z^2+2\,063\,700\,z-3\,361\,095\right)J_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\left(4096\,z^6+202\,752\,z^5+1\,140\,480\,z^4-2\,661\,120\,z^3+7\,484\,400\,z^2-11\,226\,600\,z+3\,274\,425\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\pi\left(4096\,z^6+202\,752\,z^5+1\,140\,480\,z^4-2\,661\,120\,z^3+7\,484\,400\,z^2-11\,226\,600\,z+3\,274\,425\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2017.01

$$ {}_1F_2\left(-\frac{3}{2}; 5, 6; z\right) = \frac{1}{31\,216\,185\,z^4}\left(512\left(2\,z\left(256\,z^5 - 13\,824\,z^4 + 90\,000\,z^3 + 195\,552\,z^2 + 635\,391\,z + 1\,029\,105\right) I_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(256\,z^5 - 13\,632\,z^4 + 80\,064\,z^3 + 242\,316\,z^2 + 826\,389\,z + 1\,683\,990\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \left(512\,z^6 - 27\,392\,z^5 + 166\,560\,z^4 + 461\,952\,z^3 + 1\,530\,702\,z^2 + 2\,993\,787\,z + 1\,496\,880\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.2018.01

$$ {}_1F_2\left(-\frac{3}{2}; 5, 6; -z\right) = \frac{1}{31\,216\,185\,z^4}\left(512\left(2\,z\left(256\,z^5 + 13\,824\,z^4 + 90\,000\,z^3 - 195\,552\,z^2 + 635\,391\,z - 1\,029\,105\right) J_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(256\,z^5 + 13\,632\,z^4 + 80\,064\,z^3 - 242\,316\,z^2 + 826\,389\,z - 1\,683\,990\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(512\,z^6 + 27\,392\,z^5 + 166\,560\,z^4 - 461\,952\,z^3 + 1\,530\,702\,z^2 - 2\,993\,787\,z + 1\,496\,880\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

For fixed z and $a_1 = -\frac{3}{2}$, $b_1 = \frac{11}{2}$

07.22.03.2019.01

$$ {}_1F_2\left(-\frac{3}{2}; \frac{11}{2}, \frac{11}{2}; z\right) = -\frac{1}{4\,194\,304\,z^{9/2}}\left(441\left(2\sqrt{z}\left(8\,z^5 - 428\,z^4 + 2496\,z^3 + 7992\,z^2 + 28\,350\,z + 62\,235\right)\cosh\left(2\sqrt{z}\right) + \left(8\,z^5 - 420\,z^4 + 2112\,z^3 + 8640\,z^2 + 32\,670\,z + 51\,165\right)\sinh\left(2\sqrt{z}\right) - 8\left(4\,z^6 - 216\,z^5 + 1350\,z^4 + 3600\,z^3 + 12\,150\,z^2 + 24\,300\,z + 14\,175\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.2020.01

$$ {}_1F_2\left(-\frac{3}{2}; \frac{11}{2}, \frac{11}{2}; -z\right) = \frac{1}{4\,194\,304\,z^{9/2}}\left(441\left(2\sqrt{z}\left(8\,z^5 + 428\,z^4 + 2496\,z^3 - 7992\,z^2 + 28\,350\,z - 62\,235\right)\cos\left(2\sqrt{z}\right) + \left(8\,z^5 + 420\,z^4 + 2112\,z^3 - 8640\,z^2 + 32\,670\,z - 51\,165\right)\sin\left(2\sqrt{z}\right) + 8\left(4\,z^6 + 216\,z^5 + 1350\,z^4 - 3600\,z^3 + 12\,150\,z^2 - 24\,300\,z + 14\,175\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.2021.01

$$ {}_1F_2\left(-\frac{3}{2}; \frac{11}{2}, 6; z\right) = \frac{1}{878\,592\,z^{9/2}}\left(4\left(2\sqrt{z}\left(1024\,z^6 - 60\,160\,z^5 + 426\,624\,z^4 + 1\,143\,072\,z^3 + 4\,514\,580\,z^2 + 10\,694\,025\,z + 6\,635\,520\right) I_0\left(2\sqrt{z}\right) - \left(1024\,z^6 - 59\,648\,z^5 + 397\,440\,z^4 + 1\,308\,384\,z^3 + 5\,238\,900\,z^2 + 13\,834\,395\,z + 13\,271\,040\right) I_1\left(2\sqrt{z}\right)\right) - \pi\sqrt{z}\left(4096\,z^6 - 239\,616\,z^5 + 1\,647\,360\,z^4 + 4\,942\,080\,z^3 + 19\,459\,440\,z^2 + 48\,648\,600\,z + 42\,567\,525\right) I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\sqrt{z}\left(4096\,z^6 - 239\,616\,z^5 + 1\,647\,360\,z^4 + 4\,942\,080\,z^3 + 19\,459\,440\,z^2 + 48\,648\,600\,z + 42\,567\,525\right) I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.2022.01

$$ {}_1F_2\left(-\frac{3}{2}; \frac{11}{2}, 6; -z\right) = \frac{1}{878\,592\, z^{9/2}} \left(4\left(2\sqrt{z}\,\left(1024 z^6 + 60\,160 z^5 + 426\,624 z^4 - 1\,143\,072 z^3 + 4\,514\,580 z^2 - 10\,694\,025 z + 6\,635\,520\right) J_0\left(2\sqrt{z}\right) - \left(1024 z^6 + 59\,648 z^5 + 397\,440 z^4 - 1\,308\,384 z^3 + 5\,238\,900 z^2 - 13\,834\,395 z + 13\,271\,040\right) J_1\left(2\sqrt{z}\right)\right) + \pi\sqrt{z}\,\left(4096 z^6 + 239\,616 z^5 + 1\,647\,360 z^4 - 4\,942\,080 z^3 + 19\,459\,440 z^2 - 48\,648\,600 z + 42\,567\,525\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\sqrt{z}\,\left(4096 z^6 + 239\,616 z^5 + 1\,647\,360 z^4 - 4\,942\,080 z^3 + 19\,459\,440 z^2 - 48\,648\,600 z + 42\,567\,525\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

For fixed z and $a_1 = -\frac{3}{2}$, $b_1 = 6$

07.22.03.2023.01

$$ {}_1F_2\left(-\frac{3}{2}; 6, 6; z\right) = \frac{1}{81\,162\,081\, z^{9/2}} \left(512\left(\sqrt{z}\,\left(1024 z^6 - 65\,280 z^5 + 514\,752 z^4 + 1\,493\,568 z^3 + 6\,899\,580 z^2 + 20\,301\,381 z + 19\,459\,440\right) I_0\left(\sqrt{z}\right)^2 - 4\left(256 z^6 - 16\,128 z^5 + 116\,880 z^4 + 444\,960 z^3 + 2\,089\,287 z^2 + 6\,923\,016 z + 9\,729\,720\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \sqrt{z}\,\left(1024 z^6 - 64\,768 z^5 + 482\,880 z^4 + 1\,705\,152 z^3 + 7\,860\,276 z^2 + 25\,073\,199 z + 35\,551\,116\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.2024.01

$$ {}_1F_2\left(-\frac{3}{2}; 6, 6; -z\right) = \frac{1}{81\,162\,081\, z^{9/2}} \left(512\left(\sqrt{z}\,\left(1024 z^6 + 65\,280 z^5 + 514\,752 z^4 - 1\,493\,568 z^3 + 6\,899\,580 z^2 - 20\,301\,381 z + 19\,459\,440\right) J_0\left(\sqrt{z}\right)^2 - 4\left(256 z^6 + 16\,128 z^5 + 116\,880 z^4 - 444\,960 z^3 + 2\,089\,287 z^2 - 6\,923\,016 z + 9\,729\,720\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\,\left(1024 z^6 + 64\,768 z^5 + 482\,880 z^4 - 1\,705\,152 z^3 + 7\,860\,276 z^2 - 25\,073\,199 z + 35\,551\,116\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

For fixed z and $a_1 = -\frac{1}{2}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = -\frac{1}{2}$, $b_1 = -\frac{11}{2}$

07.22.03.2025.01

$$ {}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, -\frac{11}{2}; z\right) = \frac{1}{108\,056\,025} \left(\left(16\,384 z^5 + 510\,720 z^4 + 8\,369\,280 z^3 + 68\,443\,200 z^2 + 214\,326\,000 z + 108\,056\,025\right) \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(1024 z^5 + 49\,920 z^4 + 1\,118\,400 z^3 + 13\,194\,720 z^2 + 70\,251\,300 z + 108\,056\,025\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.2026.01

$$ {}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, -\frac{11}{2}; -z\right) = \frac{1}{108\,056\,025}\left(\left(-16\,384\,z^5 + 510\,720\,z^4 - 8\,369\,280\,z^3 + 68\,443\,200\,z^2 - 214\,326\,000\,z + 108\,056\,025\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-1024\,z^5 + 49\,920\,z^4 - 1\,118\,400\,z^3 + 13\,194\,720\,z^2 - 70\,251\,300\,z + 108\,056\,025\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.2027.01

$$ {}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, -\frac{9}{2}; z\right) = \frac{1}{9\,823\,275}\left(\left(1024\,z^5 + 42\,240\,z^4 + 734\,400\,z^3 + 6\,148\,800\,z^2 + 19\,448\,100\,z + 9\,823\,275\right)\cosh\left(2\sqrt{z}\right) - 30\sqrt{z}\left(256\,z^4 + 6400\,z^3 + 78\,288\,z^2 + 423\,360\,z + 654\,885\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.2028.01

$$ {}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, -\frac{9}{2}; -z\right) = \frac{1}{9\,823\,275}\left(\left(-1024\,z^5 + 42\,240\,z^4 - 734\,400\,z^3 + 6\,148\,800\,z^2 - 19\,448\,100\,z + 9\,823\,275\right)\cos\left(2\sqrt{z}\right) + 30\sqrt{z}\left(256\,z^4 - 6400\,z^3 + 78\,288\,z^2 - 423\,360\,z + 654\,885\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.2029.01

$$ {}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, -\frac{7}{2}; z\right) = \frac{1}{1\,091\,475}\left(15\left(256\,z^4 + 5120\,z^3 + 44\,688\,z^2 + 143\,640\,z + 72\,765\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256\,z^4 + 9600\,z^3 + 126\,000\,z^2 + 699\,300\,z + 1\,091\,475\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.2030.01

$$ {}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, -\frac{7}{2}; -z\right) = \frac{1}{1\,091\,475}\left(15\left(256\,z^4 - 5120\,z^3 + 44\,688\,z^2 - 143\,640\,z + 72\,765\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256\,z^4 - 9600\,z^3 + 126\,000\,z^2 - 699\,300\,z + 1\,091\,475\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.2031.01

$$ {}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, -\frac{5}{2}; z\right) = \left(\frac{256\,z^4}{155\,925} + \frac{128\,z^3}{2079} + \frac{16\,z^2}{27} + \frac{108\,z}{55} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(1024\,z^3 + 16\,800\,z^2 + 98\,280\,z + 155\,925\right)\sinh\left(2\sqrt{z}\right)}{155\,925} $$

07.22.03.2032.01

$$ {}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, -\frac{5}{2}; -z\right) = \left(\frac{256\,z^4}{155\,925} - \frac{128\,z^3}{2079} + \frac{16\,z^2}{27} - \frac{108\,z}{55} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-1024\,z^3 + 16\,800\,z^2 - 98\,280\,z + 155\,925\right)\sin\left(2\sqrt{z}\right)}{155\,925} $$

07.22.03.2033.01

$$ {}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, -\frac{3}{2}; z\right) = \left(\frac{128\,z^3}{3465} + \frac{160\,z^2}{297} + \frac{64\,z}{33} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(64\,z^3 + 2688\,z^2 + 18\,900\,z + 31\,185\right)\sinh\left(2\sqrt{z}\right)}{31\,185} $$

07.22.03.2034.01

$${}_1F_2\left(-\frac{1}{2};-\frac{11}{2},-\frac{3}{2};-z\right)=$$

$$\left(-\frac{128\,z^3}{3465}+\frac{160\,z^2}{297}-\frac{64\,z}{33}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-64\,z^3+2688\,z^2-18\,900\,z+31\,185\right)\sin\left(2\sqrt{z}\right)}{31\,185}$$

07.22.03.2035.01

$${}_1F_2\left(-\frac{1}{2};-\frac{11}{2},-\frac{1}{2};z\right)=\left(\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}+\frac{20\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{495}\sqrt{z}\left(16\,z^2+240\,z+495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2036.01

$${}_1F_2\left(-\frac{1}{2};-\frac{11}{2},-\frac{1}{2};-z\right)=\left(-\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}-\frac{20\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.2037.01

$${}_1F_2\left(-\frac{1}{2};-\frac{11}{2},\frac{1}{2};z\right)=\frac{5\left(80\,z^2+1464\,z+2079\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(16\,z^2+1140\,z+6555\right)\sinh\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.2038.01

$${}_1F_2\left(-\frac{1}{2};-\frac{11}{2},\frac{1}{2};-z\right)=\frac{5\left(80\,z^2-1464\,z+2079\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(16\,z^2-1140\,z+6555\right)\sin\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.2039.01

$${}_1F_2\left(-\frac{1}{2};-\frac{11}{2},1;z\right)=\frac{3\left(144\,z^2+2936\,z+3465\right)I_0\left(2\sqrt{z}\right)-2\sqrt{z}\left(16\,z^2+1368\,z+9129\right)I_1\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.2040.01

$${}_1F_2\left(-\frac{1}{2};-\frac{11}{2},1;-z\right)=\frac{3\left(144\,z^2-2936\,z+3465\right)J_0\left(2\sqrt{z}\right)+2\sqrt{z}\left(16\,z^2-1368\,z+9129\right)J_1\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.2041.01

$${}_1F_2\left(-\frac{1}{2};-\frac{11}{2},\frac{3}{2};z\right)=\frac{30\left(8\,z^2+203\,z+384\right)\sinh\left(2\sqrt{z}\right)-\sqrt{z}\left(16\,z^2+1620\,z+12\,645\right)\cosh\left(2\sqrt{z}\right)}{10\,395\sqrt{z}}$$

07.22.03.2042.01

$${}_1F_2\left(-\frac{1}{2};-\frac{11}{2},\frac{3}{2};-z\right)=\frac{30\left(8\,z^2-203\,z+384\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(16\,z^2-1620\,z+12\,645\right)\cos\left(2\sqrt{z}\right)}{10\,395\sqrt{z}}$$

07.22.03.2043.01

$${}_1F_2\left(-\frac{1}{2};-\frac{11}{2},2;z\right)=\frac{\frac{\left(496\,z^2+12\,600\,z+10\,395\right)I_1\left(2\sqrt{z}\right)}{\sqrt{z}}-2\left(16\,z^2+1896\,z+17\,325\right)I_2\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.2044.01

$${}_1F_2\left(-\frac{1}{2};-\frac{11}{2},2;-z\right)=\frac{\frac{\left(496\,z^2-12\,600\,z+10\,395\right)J_1\left(2\sqrt{z}\right)}{\sqrt{z}}+2\left(16\,z^2-1896\,z+17\,325\right)J_2\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.2045.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, \frac{5}{2}; z\right) = \frac{3\sqrt{z}\left(48z^2+1795z+6720\right)\cosh\left(2\sqrt{z}\right) - 2\left(4z^3+585z^2+7200z+5040\right)\sinh\left(2\sqrt{z}\right)}{3465\,z^{3/2}}$$

07.22.03.2046.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, \frac{5}{2}; -z\right) = \frac{2\left(-4z^3+585z^2-7200z+5040\right)\sin\left(2\sqrt{z}\right) - 3\sqrt{z}\left(48z^2-1795z+6720\right)\cos\left(2\sqrt{z}\right)}{3465\,z^{3/2}}$$

07.22.03.2047.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, 3; z\right) = \frac{2\left(35\left(16z^2+504z+297\right)I_2\left(2\sqrt{z}\right) - 2\sqrt{z}\left(16z^2+2520z+31\,185\right)I_3\left(2\sqrt{z}\right)\right)}{10\,395\,z}$$

07.22.03.2048.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, 3; -z\right) = \frac{2\left(35\left(16z^2-504z+297\right)J_2\left(2\sqrt{z}\right) + 2\sqrt{z}\left(16z^2-2520z+31\,185\right)J_3\left(2\sqrt{z}\right)\right)}{10\,395\,z}$$

07.22.03.2049.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, \frac{7}{2}; z\right) =$$
$$\frac{1}{693\,z^{5/2}}\left(2\left(43z^3+2400z^2+17\,640z+10\,080\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\left(4z^3+843z^2+16\,800z+40\,320\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.2050.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, \frac{7}{2}; -z\right) =$$
$$\frac{1}{693\,z^{5/2}}\left(\sqrt{z}\left(4z^3-843z^2+16\,800z-40\,320\right)\cos\left(2\sqrt{z}\right) + 2\left(-43z^3+2400z^2-17\,640z+10\,080\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2051.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, 4; z\right) = \frac{2\left(3\left(208z^2+8040z+3465\right)I_3\left(2\sqrt{z}\right) - 2\sqrt{z}\left(16z^2+3240z+52\,965\right)I_4\left(2\sqrt{z}\right)\right)}{3465\,z^{3/2}}$$

07.22.03.2052.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, 4; -z\right) = \frac{2\left(3\left(208z^2-8040z+3465\right)J_3\left(2\sqrt{z}\right) + 2\sqrt{z}\left(16z^2-3240z+52\,965\right)J_4\left(2\sqrt{z}\right)\right)}{3465\,z^{3/2}}$$

07.22.03.2053.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, \frac{9}{2}; z\right) =$$
$$\frac{1}{99\,z^{7/2}}\left(3\sqrt{z}\left(17z^3+1400z^2+18\,480z+37\,800\right)\cosh\left(2\sqrt{z}\right) - 2\left(z^4+300z^3+9450z^2+51\,660z+28\,350\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2054.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{11}{2}, \frac{9}{2}; -z\right) =$$
$$\frac{1}{99\,z^{7/2}}\left(3\sqrt{z}\left(17z^3-1400z^2+18\,480z-37\,800\right)\cos\left(2\sqrt{z}\right) + 2\left(z^4-300z^3+9450z^2-51\,660z+28\,350\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2055.01

$${}_1F_2\left(-\frac{1}{2};-\frac{11}{2},5;z\right)=\frac{8\left(\left(688z^2+32\,232z+10\,395\right)I_4\left(2\sqrt{z}\right)-2\sqrt{z}\left(16z^2+4056z+85\,305\right)I_5\left(2\sqrt{z}\right)\right)}{3465z^2}$$

07.22.03.2056.01

$${}_1F_2\left(-\frac{1}{2};-\frac{11}{2},5;-z\right)=\frac{8\left(\left(688z^2-32\,232z+10\,395\right)J_4\left(2\sqrt{z}\right)+2\sqrt{z}\left(16z^2-4056z+85\,305\right)J_5\left(2\sqrt{z}\right)\right)}{3465z^2}$$

07.22.03.2057.01

$${}_1F_2\left(-\frac{1}{2};-\frac{11}{2},\frac{11}{2};z\right)=\frac{1}{11z^{9/2}}$$
$$\left(30\left(z^4+119z^3+2604z^2+12\,285z+6615\right)\sinh\left(2\sqrt{z}\right)-\sqrt{z}\left(z^4+420z^3+20\,160z^2+207\,900z+396\,900\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.2058.01

$${}_1F_2\left(-\frac{1}{2};-\frac{11}{2},\frac{11}{2};-z\right)=\frac{1}{11z^{9/2}}$$
$$\left(30\left(z^4-119z^3+2604z^2-12\,285z+6615\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(z^4-420z^3+20\,160z^2-207\,900z+396\,900\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.2059.01

$${}_1F_2\left(-\frac{1}{2};-\frac{11}{2},6;z\right)=\frac{8\left(\left(752z^2+42\,168z+10\,395\right)I_5\left(2\sqrt{z}\right)-2\sqrt{z}\left(16z^2+4968z+131\,229\right)I_6\left(2\sqrt{z}\right)\right)}{693z^{5/2}}$$

07.22.03.2060.01

$${}_1F_2\left(-\frac{1}{2};-\frac{11}{2},6;-z\right)=\frac{8\left(\left(752z^2-42\,168z+10\,395\right)J_5\left(2\sqrt{z}\right)+2\sqrt{z}\left(16z^2-4968z+131\,229\right)J_6\left(2\sqrt{z}\right)\right)}{693z^{5/2}}$$

For fixed z and $a_1=-\frac{1}{2}$, $b_1=-\frac{9}{2}$

07.22.03.2061.01

$${}_1F_2\left(-\frac{1}{2};-\frac{9}{2},-\frac{9}{2};z\right)=\frac{1}{893\,025}\left(\left(3328z^4+63\,744z^3+550\,800z^2+1\,764\,000z+893\,025\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(256z^4+8064z^3+103\,920z^2+573\,300z+893\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2062.01

$${}_1F_2\left(-\frac{1}{2};-\frac{9}{2},-\frac{9}{2};-z\right)=\frac{1}{893\,025}\left(\left(3328z^4-63\,744z^3+550\,800z^2-1\,764\,000z+893\,025\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(256z^4-8064z^3+103\,920z^2-573\,300z+893\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2063.01

$${}_1F_2\left(-\frac{1}{2};-\frac{9}{2},-\frac{7}{2};z\right)=\frac{1}{99\,225}$$
$$\left(\left(256z^4+6528z^3+59\,760z^2+195\,300z+99\,225\right)\cosh\left(2\sqrt{z}\right)-6\sqrt{z}\left(256z^3+3680z^2+21\,000z+33\,075\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2064.01

$${}_1F_2\left(-\frac{1}{2};-\frac{9}{2},-\frac{7}{2};-z\right)=\frac{1}{99\,225}$$
$$\left(\left(256z^4-6528z^3+59\,760z^2-195\,300z+99\,225\right)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\left(256z^3-3680z^2+21\,000z-33\,075\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2065.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, -\frac{5}{2}; z\right) = \frac{1}{14\,175}\left(3\left(256 z^3 + 2720 z^2 + 9240 z + 4725\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(64 z^3 + 1440 z^2 + 8820 z + 14\,175\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2066.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, -\frac{5}{2}; -z\right) = \left(-\frac{256 z^3}{4725} + \frac{544 z^2}{945} - \frac{88 z}{45} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-64 z^3 + 1440 z^2 - 8820 z + 14\,175\right)\sin\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.2067.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, -\frac{3}{2}; z\right) = \left(\frac{64 z^3}{2835} + \frac{32 z^2}{63} + \frac{52 z}{27} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(208 z^2 + 1680 z + 2835\right)\sinh\left(2\sqrt{z}\right)}{2835}$$

07.22.03.2068.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, -\frac{3}{2}; -z\right) = \left(-\frac{64 z^3}{2835} + \frac{32 z^2}{63} - \frac{52 z}{27} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(208 z^2 - 1680 z + 2835\right)\sin\left(2\sqrt{z}\right)}{2835}$$

07.22.03.2069.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, -\frac{1}{2}; z\right) = \left(\frac{16 z^2}{63} + \frac{16 z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(16 z^2 + 420 z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2070.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, -\frac{1}{2}; -z\right) = \left(\frac{16 z^2}{63} - \frac{16 z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(16 z^2 - 420 z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.2071.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, \frac{1}{2}; z\right) = \frac{1}{945}\left(\left(16 z^2 + 564 z + 945\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(24 z + 187\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2072.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, \frac{1}{2}; -z\right) = \frac{1}{945}\left(\left(16 z^2 - 564 z + 945\right)\cos\left(2\sqrt{z}\right) + 6\left(187 - 24 z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2073.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, 1; z\right) = \frac{1}{945}\left(\left(16 z^2 + 648 z + 945\right) I_0\left(2\sqrt{z}\right) - 16\sqrt{z}\left(10 z + 93\right) I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2074.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, 1; -z\right) = \frac{1}{945}\left(\left(16 z^2 - 648 z + 945\right) J_0\left(2\sqrt{z}\right) + 16\left(93 - 10 z\right)\sqrt{z}\,J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2075.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, \frac{3}{2}; z\right) = \frac{2\left(4 z^2 + 207 z + 480\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\left(88 z + 975\right)\cosh\left(2\sqrt{z}\right)}{945\sqrt{z}}$$

07.22.03.2076.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, \frac{3}{2}; -z\right) = \frac{\sqrt{z}\left(88 z - 975\right)\cos\left(2\sqrt{z}\right) + 2\left(4 z^2 - 207 z + 480\right)\sin\left(2\sqrt{z}\right)}{945\sqrt{z}}$$

07.22.03.2077.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, 2; z\right) = \frac{1}{945}\left(\frac{\left(16\,z^2+840\,z+945\right) I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 24\,(8\,z+105)\,I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.2078.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, 2; -z\right) = \frac{1}{945}\left(\frac{\left(16\,z^2-840\,z+945\right) J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 24\,(105-8\,z)\,J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.2079.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, \frac{5}{2}; z\right) = \frac{\sqrt{z}\,\left(4\,z^2+315\,z+1440\right)\cosh\left(2\sqrt{z}\right) - 6\left(9\,z^2+160\,z+120\right)\sinh\left(2\sqrt{z}\right)}{315\,z^{3/2}}$$

07.22.03.2080.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, \frac{5}{2}; -z\right) = \frac{6\left(9\,z^2-160\,z+120\right)\sin\left(2\sqrt{z}\right) - \sqrt{z}\,\left(4\,z^2-315\,z+1440\right)\cos\left(2\sqrt{z}\right)}{315\,z^{3/2}}$$

07.22.03.2081.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, 3; z\right) = \frac{2\left(16\,z^2+1064\,z+945\right) I_2\left(2\sqrt{z}\right) - 448\sqrt{z}\,\,(z+18)\,I_3\left(2\sqrt{z}\right)}{945\,z}$$

07.22.03.2082.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, 3; -z\right) = \frac{2\left(16\,z^2-1064\,z+945\right) J_2\left(2\sqrt{z}\right) - 448\,(z-18)\sqrt{z}\,\,J_3\left(2\sqrt{z}\right)}{945\,z}$$

07.22.03.2083.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, \frac{7}{2}; z\right) = \frac{2\left(z^3+120\,z^2+1080\,z+630\right)\sinh\left(2\sqrt{z}\right) - 3\sqrt{z}\,\left(11\,z^2+320\,z+840\right)\cosh\left(2\sqrt{z}\right)}{63\,z^{5/2}}$$

07.22.03.2084.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, \frac{7}{2}; -z\right) = \frac{-3\sqrt{z}\,\left(11\,z^2-320\,z+840\right)\cos\left(2\sqrt{z}\right) - 2\left(z^3-120\,z^2+1080\,z-630\right)\sin\left(2\sqrt{z}\right)}{63\,z^{5/2}}$$

07.22.03.2085.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, 4; z\right) = \frac{2\left(\left(16\,z^2+1320\,z+945\right) I_3\left(2\sqrt{z}\right) - 8\sqrt{z}\,\,(32\,z+765)\,I_4\left(2\sqrt{z}\right)\right)}{315\,z^{3/2}}$$

07.22.03.2086.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, 4; -z\right) = \frac{2\left(\left(16\,z^2-1320\,z+945\right) J_3\left(2\sqrt{z}\right) + 8\,(765-32\,z)\sqrt{z}\,\,J_4\left(2\sqrt{z}\right)\right)}{315\,z^{3/2}}$$

07.22.03.2087.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, \frac{9}{2}; z\right) = \frac{\sqrt{z}\,\left(z^3+180\,z^2+2940\,z+6300\right)\cosh\left(2\sqrt{z}\right) - 10\left(2\,z^3+93\,z^2+567\,z+315\right)\sinh\left(2\sqrt{z}\right)}{9\,z^{7/2}}$$

07.22.03.2088.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, \frac{9}{2}; -z\right) = \frac{\sqrt{z}\,\left(z^3-180\,z^2+2940\,z-6300\right)\cos\left(2\sqrt{z}\right) + 10\left(-2\,z^3+93\,z^2-567\,z+315\right)\sin\left(2\sqrt{z}\right)}{9\,z^{7/2}}$$

07.22.03.2089.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, 5; z\right) = \frac{8\left(\left(16z^2+1608z+945\right) I_4\left(2\sqrt{z}\right) - 48\sqrt{z}\,(6z+185)\, I_5\left(2\sqrt{z}\right)\right)}{315\,z^2}$$

07.22.03.2090.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, 5; -z\right) = \frac{8\left(\left(16z^2-1608z+945\right) J_4\left(2\sqrt{z}\right) + 48\,(185-6z)\sqrt{z}\, J_5\left(2\sqrt{z}\right)\right)}{315\,z^2}$$

07.22.03.2091.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, \frac{11}{2}; z\right) =$$
$$\frac{1}{2\,z^{9/2}}\left(\left(z^4+264z^3+7245z^2+36\,540z+19\,845\right)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(4z^3+287z^2+3360z+6615\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.2092.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{2\,z^{9/2}}\left(6\sqrt{z}\,\left(4z^3-287z^2+3360z-6615\right)\cos\left(2\sqrt{z}\right) + \left(z^4-264z^3+7245z^2-36\,540z+19\,845\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2093.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, 6; z\right) = \frac{8\left(\left(16z^2+1928z+945\right) I_5\left(2\sqrt{z}\right) - 8\sqrt{z}\,(40z+1551)\, I_6\left(2\sqrt{z}\right)\right)}{63\,z^{5/2}}$$

07.22.03.2094.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{9}{2}, 6; -z\right) = \frac{8\left(\left(16z^2-1928z+945\right) J_5\left(2\sqrt{z}\right) + 8\,(1551-40z)\sqrt{z}\, J_6\left(2\sqrt{z}\right)\right)}{63\,z^{5/2}}$$

For fixed z and $a_1 = -\frac{1}{2}$, $b_1 = -\frac{7}{2}$

07.22.03.2095.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, -\frac{7}{2}; z\right) =$$
$$\frac{1}{11\,025}\left(\left(640z^3+6432z^2+21\,600z+11\,025\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(64z^3+1152z^2+6900z+11\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2096.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, -\frac{7}{2}; -z\right) =$$
$$\frac{1}{11\,025}\left(\left(-640z^3+6432z^2-21\,600z+11\,025\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-64z^3+1152z^2-6900z+11\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2097.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, -\frac{5}{2}; z\right) = \frac{\left(64z^3+864z^2+3060z+1575\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(48z^2+320z+525\right)\sinh\left(2\sqrt{z}\right)}{1575}$$

07.22.03.2098.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, -\frac{5}{2}; -z\right) = \frac{\left(-64z^3+864z^2-3060z+1575\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(48z^2-320z+525\right)\sin\left(2\sqrt{z}\right)}{1575}$$

07.22.03.2099.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, -\frac{3}{2}; z\right) = \left(\frac{16\,z^2}{35} + \frac{40\,z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{315}\sqrt{z}\,\left(16\,z^2 + 180\,z + 315\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2100.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, -\frac{3}{2}; -z\right) = \left(\frac{16\,z^2}{35} - \frac{40\,z}{21} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{315}\sqrt{z}\,\left(16\,z^2 - 180\,z + 315\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.2101.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, -\frac{1}{2}; z\right) = \left(\frac{16\,z^2}{105} + \frac{12\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,\left(8\,z + 21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2102.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, -\frac{1}{2}; -z\right) = \left(\frac{16\,z^2}{105} - \frac{12\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}\left(21 - 8\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.2103.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, \frac{1}{2}; z\right) = \left(\frac{16\,z}{35} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{105}\sqrt{z}\,\left(4\,z + 57\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2104.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, \frac{1}{2}; -z\right) = \left(1 - \frac{16\,z}{35}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{105}\left(57 - 4\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.2105.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, 1; z\right) = \frac{1}{105}\left(\left(52\,z + 105\right)I_0\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(4\,z + 71\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2106.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, 1; -z\right) = \frac{1}{105}\left(\left(105 - 52\,z\right)J_0\left(2\sqrt{z}\right) + 2\left(71 - 4\,z\right)\sqrt{z}\,J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2107.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, \frac{3}{2}; z\right) = \frac{6\left(5\,z + 16\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\,\left(4\,z + 87\right)\cosh\left(2\sqrt{z}\right)}{105\sqrt{z}}$$

07.22.03.2108.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, \frac{3}{2}; -z\right) = \frac{\sqrt{z}\,\left(4\,z - 87\right)\cos\left(2\sqrt{z}\right) + 6\left(16 - 5\,z\right)\sin\left(2\sqrt{z}\right)}{105\sqrt{z}}$$

07.22.03.2109.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, 2; z\right) = \frac{\left(4\,z + 7\right)I_1\left(2\sqrt{z}\right)}{7\sqrt{z}} - \frac{2}{105}\left(4\,z + 105\right)I_2\left(2\sqrt{z}\right)$$

07.22.03.2110.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, 2; -z\right) = \frac{2}{105}\left(105 - 4\,z\right)J_2\left(2\sqrt{z}\right) - \frac{\left(4\,z - 7\right)J_1\left(2\sqrt{z}\right)}{7\sqrt{z}}$$

07.22.03.2111.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, \frac{5}{2}; z\right) = \frac{\sqrt{z}\,\left(19\,z + 120\right)\cosh\left(2\sqrt{z}\right) - 2\left(z^2 + 36\,z + 30\right)\sinh\left(2\sqrt{z}\right)}{35\,z^{3/2}}$$

07.22.03.2112.01

$${}_1F_2\left(-\frac{1}{2};-\frac{7}{2},\frac{5}{2};-z\right)=\frac{\sqrt{z}\ (19\,z-120)\cos\left(2\sqrt{z}\right)+2\left(z^2-36\,z+30\right)\sin\left(2\sqrt{z}\right)}{35\,z^{3/2}}$$

07.22.03.2113.01

$${}_1F_2\left(-\frac{1}{2};-\frac{7}{2},3;z\right)=\frac{2\left((68\,z+105)\,I_2\left(2\sqrt{z}\right)-2\sqrt{z}\ (4\,z+147)\,I_3\left(2\sqrt{z}\right)\right)}{105\,z}$$

07.22.03.2114.01

$${}_1F_2\left(-\frac{1}{2};-\frac{7}{2},3;-z\right)=\frac{(210-136\,z)\,J_2\left(2\sqrt{z}\right)+4\,(147-4\,z)\sqrt{z}\ J_3\left(2\sqrt{z}\right)}{105\,z}$$

07.22.03.2115.01

$${}_1F_2\left(-\frac{1}{2};-\frac{7}{2},\frac{7}{2};z\right)=\frac{6\left(2\,z^2+25\,z+15\right)\sinh\left(2\sqrt{z}\right)-\sqrt{z}\ \left(z^2+60\,z+180\right)\cosh\left(2\sqrt{z}\right)}{7\,z^{5/2}}$$

07.22.03.2116.01

$${}_1F_2\left(-\frac{1}{2};-\frac{7}{2},\frac{7}{2};-z\right)=\frac{6\left(2\,z^2-25\,z+15\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\ \left(z^2-60\,z+180\right)\cos\left(2\sqrt{z}\right)}{7\,z^{5/2}}$$

07.22.03.2117.01

$${}_1F_2\left(-\frac{1}{2};-\frac{7}{2},4;z\right)=\frac{2\left((76\,z+105)\,I_3\left(2\sqrt{z}\right)-2\sqrt{z}\ (4\,z+197)\,I_4\left(2\sqrt{z}\right)\right)}{35\,z^{3/2}}$$

07.22.03.2118.01

$${}_1F_2\left(-\frac{1}{2};-\frac{7}{2},4;-z\right)=\frac{(210-152\,z)\,J_3\left(2\sqrt{z}\right)+4\,(197-4\,z)\sqrt{z}\ J_4\left(2\sqrt{z}\right)}{35\,z^{3/2}}$$

07.22.03.2119.01

$${}_1F_2\left(-\frac{1}{2};-\frac{7}{2},\frac{9}{2};z\right)=\frac{30\sqrt{z}\ \left(2\,z^2+46\,z+105\right)\cosh\left(2\sqrt{z}\right)-\left(4\,z^3+390\,z^2+2790\,z+1575\right)\sinh\left(2\sqrt{z}\right)}{8\,z^{7/2}}$$

07.22.03.2120.01

$${}_1F_2\left(-\frac{1}{2};-\frac{7}{2},\frac{9}{2};-z\right)=\frac{\left(-4\,z^3+390\,z^2-2790\,z+1575\right)\sin\left(2\sqrt{z}\right)-30\sqrt{z}\ \left(2\,z^2-46\,z+105\right)\cos\left(2\sqrt{z}\right)}{8\,z^{7/2}}$$

07.22.03.2121.01

$${}_1F_2\left(-\frac{1}{2};-\frac{7}{2},5;z\right)=\frac{8\left(21\,(4\,z+5)\,I_4\left(2\sqrt{z}\right)-2\sqrt{z}\ (4\,z+255)\,I_5\left(2\sqrt{z}\right)\right)}{35\,z^2}$$

07.22.03.2122.01

$${}_1F_2\left(-\frac{1}{2};-\frac{7}{2},5;-z\right)=-\frac{8\left(21\,(4\,z-5)\,J_4\left(2\sqrt{z}\right)+2\sqrt{z}\ (4\,z-255)\,J_5\left(2\sqrt{z}\right)\right)}{35\,z^2}$$

07.22.03.2123.01

$${}_1F_2\left(-\frac{1}{2};-\frac{7}{2},\frac{11}{2};z\right)=$$

$$-\frac{1}{16\,z^{9/2}}\left(9\left(2\sqrt{z}\ \left(2\,z^3+306\,z^2+4305\,z+8820\right)\cosh\left(2\sqrt{z}\right)-\left(74\,z^3+2910\,z^2+16\,065\,z+8820\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2124.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, \frac{11}{2}; -z\right) = \frac{1}{16\,z^{9/2}}\left(9\left(2\sqrt{z}\,\left(2\,z^3 - 306\,z^2 + 4305\,z - 8820\right)\cos\left(2\sqrt{z}\right) + \left(-74\,z^3 + 2910\,z^2 - 16\,065\,z + 8820\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2125.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, 6; z\right) = \frac{8\left((92\,z + 105)\,I_5\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(4\,z + 321\right)\,I_6\left(2\sqrt{z}\right)\right)}{7\,z^{5/2}}$$

07.22.03.2126.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{7}{2}, 6; -z\right) = -\frac{8\left((92\,z - 105)\,J_5\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,z - 321\right)\,J_6\left(2\sqrt{z}\right)\right)}{7\,z^{5/2}}$$

For fixed z and $a_1 = -\frac{1}{2}$, $b_1 = -\frac{5}{2}$

07.22.03.2127.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, -\frac{5}{2}; z\right) = \frac{1}{225}\left(\left(112\,z^2 + 432\,z + 225\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,z^2 + 132\,z + 225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2128.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, -\frac{5}{2}; -z\right) = \frac{1}{225}\left(\left(112\,z^2 - 432\,z + 225\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^2 - 132\,z + 225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2129.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, -\frac{3}{2}; z\right) = \frac{1}{45}\left(\left(16\,z^2 + 84\,z + 45\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(8\,z + 15\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2130.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, -\frac{3}{2}; -z\right) = \frac{1}{45}\left(\left(16\,z^2 - 84\,z + 45\right)\cos\left(2\sqrt{z}\right) + 6\,(15 - 8\,z)\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2131.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, -\frac{1}{2}; z\right) = \left(\frac{8\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,\left(4\,z + 15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2132.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, -\frac{1}{2}; -z\right) = \left(1 - \frac{8\,z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\,(15 - 4\,z)\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.2133.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, \frac{1}{2}; z\right) = \left(\frac{4\,z}{15} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{14}{15}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.2134.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, \frac{1}{2}; -z\right) = \left(1 - \frac{4\,z}{15}\right)\cos\left(2\sqrt{z}\right) + \frac{14}{15}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.2135.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, 1; z\right) = \frac{1}{15}\left(\left(4\,z + 15\right)\,I_0\left(2\sqrt{z}\right) - 16\sqrt{z}\,\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2136.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, 1; -z\right) = \frac{1}{15}\left((15-4z)\,J_0\left(2\sqrt{z}\right) + 16\sqrt{z}\;J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2137.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, \frac{3}{2}; z\right) = \frac{2\,(z+6)\sinh\left(2\sqrt{z}\right) - 9\sqrt{z}\;\cosh\left(2\sqrt{z}\right)}{15\sqrt{z}}$$

07.22.03.2138.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, \frac{3}{2}; -z\right) = \frac{-9\sqrt{z}\;\cos\left(2\sqrt{z}\right) - 2\,(z-6)\sin\left(2\sqrt{z}\right)}{15\sqrt{z}}$$

07.22.03.2139.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, 2; z\right) = \frac{(4z+15)\,I_1\left(2\sqrt{z}\right)}{15\sqrt{z}} - \frac{4}{3}\,I_2\left(2\sqrt{z}\right)$$

07.22.03.2140.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, 2; -z\right) = \frac{(15-4z)\,J_1\left(2\sqrt{z}\right)}{15\sqrt{z}} + \frac{4}{3}\,J_2\left(2\sqrt{z}\right)$$

07.22.03.2141.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, \frac{5}{2}; z\right) = \frac{\sqrt{z}\;(z+12)\cosh\left(2\sqrt{z}\right) - 6\,(z+1)\sinh\left(2\sqrt{z}\right)}{5\,z^{3/2}}$$

07.22.03.2142.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, \frac{5}{2}; -z\right) = \frac{(z-12)\sqrt{z}\;\cos\left(2\sqrt{z}\right) - 6\,(z-1)\sin\left(2\sqrt{z}\right)}{5\,z^{3/2}}$$

07.22.03.2143.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, 3; z\right) = \frac{(8z+30)\,I_2\left(2\sqrt{z}\right) - 48\sqrt{z}\;I_3\left(2\sqrt{z}\right)}{15\,z}$$

07.22.03.2144.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, 3; -z\right) = \frac{(30-8z)\,J_2\left(2\sqrt{z}\right) + 48\sqrt{z}\;J_3\left(2\sqrt{z}\right)}{15\,z}$$

07.22.03.2145.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, \frac{7}{2}; z\right) = \frac{\left(z^2+24z+15\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\;(4z+15)\cosh\left(2\sqrt{z}\right)}{2\,z^{5/2}}$$

07.22.03.2146.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, \frac{7}{2}; -z\right) = \frac{2\sqrt{z}\;(4z-15)\cos\left(2\sqrt{z}\right) + \left(z^2-24z+15\right)\sin\left(2\sqrt{z}\right)}{2\,z^{5/2}}$$

07.22.03.2147.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, 4; z\right) = \frac{2\,(4z+15)\,I_3\left(2\sqrt{z}\right)}{5\,z^{3/2}} - \frac{56\,I_4\left(2\sqrt{z}\right)}{5\,z}$$

07.22.03.2148.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, 4; -z\right) = \frac{(30 - 8z)\, J_3\left(2\sqrt{z}\right) + 56\sqrt{z}\; J_4\left(2\sqrt{z}\right)}{5\, z^{3/2}}$$

07.22.03.2149.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, \frac{9}{2}; z\right) = \frac{7\left(2\sqrt{z}\,\left(2z^2 + 90z + 225\right)\cosh\left(2\sqrt{z}\right) - 3\left(14z^2 + 130z + 75\right)\sinh\left(2\sqrt{z}\right)\right)}{16\, z^{7/2}}$$

07.22.03.2150.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, \frac{9}{2}; -z\right) = -\frac{7\left(2\sqrt{z}\,\left(2z^2 - 90z + 225\right)\cos\left(2\sqrt{z}\right) - 3\left(14z^2 - 130z + 75\right)\sin\left(2\sqrt{z}\right)\right)}{16\, z^{7/2}}$$

07.22.03.2151.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, 5; z\right) = \frac{8\left((4z + 15)\, I_4\left(2\sqrt{z}\right) - 32\sqrt{z}\; I_5\left(2\sqrt{z}\right)\right)}{5\, z^2}$$

07.22.03.2152.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, 5; -z\right) = \frac{8\left((15 - 4z)\, J_4\left(2\sqrt{z}\right) + 32\sqrt{z}\; J_5\left(2\sqrt{z}\right)\right)}{5\, z^2}$$

07.22.03.2153.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, \frac{11}{2}; z\right) = \frac{63\left(\left(8z^3 + 630z^2 + 3960z + 2205\right)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(18z^2 + 340z + 735\right)\cosh\left(2\sqrt{z}\right)\right)}{64\, z^{9/2}}$$

07.22.03.2154.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, \frac{11}{2}; -z\right) = -\frac{63\left(6\sqrt{z}\,\left(18z^2 - 340z + 735\right)\cos\left(2\sqrt{z}\right) + \left(8z^3 - 630z^2 + 3960z - 2205\right)\sin\left(2\sqrt{z}\right)\right)}{64\, z^{9/2}}$$

07.22.03.2155.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, 6; z\right) = \frac{8\,(4z + 15)\, I_5\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{288\, I_6\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.2156.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{5}{2}, 6; -z\right) = \frac{288\, J_6\left(2\sqrt{z}\right)}{z^2} - \frac{8\,(4z - 15)\, J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = -\frac{1}{2}$, $b_1 = -\frac{3}{2}$

07.22.03.2157.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, -\frac{3}{2}; z\right) = \left(\frac{16z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{9}\sqrt{z}\;(4z + 9)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2158.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, -\frac{3}{2}; -z\right) = \left(1 - \frac{16z}{9}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{9}(9 - 4z)\sqrt{z}\;\sin\left(2\sqrt{z}\right)$$

07.22.03.2159.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, -\frac{1}{2}; z\right) = \left(\frac{4z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\;\sinh\left(2\sqrt{z}\right)$$

07.22.03.2160.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, -\frac{1}{2}; -z\right) = \left(1 - \frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.2161.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, \frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right) - \frac{2}{3}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.2162.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, \frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right) + \frac{2}{3}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.2163.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, 1; z\right) = I_0\left(2\sqrt{z}\right) - \frac{2}{3}\sqrt{z}\,I_1\left(2\sqrt{z}\right)$$

07.22.03.2164.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, 1; -z\right) = J_0\left(2\sqrt{z}\right) + \frac{2}{3}\sqrt{z}\,J_1\left(2\sqrt{z}\right)$$

07.22.03.2165.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, \frac{3}{2}; z\right) = \frac{2\sinh\left(2\sqrt{z}\right)}{3\sqrt{z}} - \frac{1}{3}\cosh\left(2\sqrt{z}\right)$$

07.22.03.2166.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, \frac{3}{2}; -z\right) = \frac{2\sin\left(2\sqrt{z}\right)}{3\sqrt{z}} - \frac{1}{3}\cos\left(2\sqrt{z}\right)$$

07.22.03.2167.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, 2; z\right) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - \frac{2}{3}I_2\left(2\sqrt{z}\right)$$

07.22.03.2168.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, 2; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + \frac{2}{3}J_2\left(2\sqrt{z}\right)$$

07.22.03.2169.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, \frac{5}{2}; z\right) = \frac{6\sqrt{z}\,\cosh\left(2\sqrt{z}\right) - (2z+3)\sinh\left(2\sqrt{z}\right)}{4z^{3/2}}$$

07.22.03.2170.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, \frac{5}{2}; -z\right) = \frac{(3-2z)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cos\left(2\sqrt{z}\right)}{4z^{3/2}}$$

07.22.03.2171.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, 3; z\right) = \frac{2I_2\left(2\sqrt{z}\right)}{z} - \frac{4I_3\left(2\sqrt{z}\right)}{3\sqrt{z}}$$

07.22.03.2172.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, 3; -z\right) = \frac{2\,J_2\left(2\sqrt{z}\right)}{z} + \frac{4\,J_3\left(2\sqrt{z}\right)}{3\sqrt{z}}$$

07.22.03.2173.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, \frac{7}{2}; z\right) = -\frac{5\left(2\sqrt{z}\,(z+6)\cosh\left(2\sqrt{z}\right) - 3\,(3z+2)\sinh\left(2\sqrt{z}\right)\right)}{8\,z^{5/2}}$$

07.22.03.2174.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, \frac{7}{2}; -z\right) = \frac{5\left(2\,(z-6)\sqrt{z}\,\cos\left(2\sqrt{z}\right) + 3\,(2-3z)\sin\left(2\sqrt{z}\right)\right)}{8\,z^{5/2}}$$

07.22.03.2175.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, 4; z\right) = \frac{6\,I_3\left(2\sqrt{z}\right)}{z^{3/2}} - \frac{4\,I_4\left(2\sqrt{z}\right)}{z}$$

07.22.03.2176.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, 4; -z\right) = \frac{6\,J_3\left(2\sqrt{z}\right)}{z^{3/2}} + \frac{4\,J_4\left(2\sqrt{z}\right)}{z}$$

07.22.03.2177.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, \frac{9}{2}; z\right) = -\frac{35\left(\left(8z^2+126z+75\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,(26z+75)\cosh\left(2\sqrt{z}\right)\right)}{64\,z^{7/2}}$$

07.22.03.2178.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, \frac{9}{2}; -z\right) = \frac{35\left(2\sqrt{z}\,(26z-75)\cos\left(2\sqrt{z}\right) + \left(8z^2-126z+75\right)\sin\left(2\sqrt{z}\right)\right)}{64\,z^{7/2}}$$

07.22.03.2179.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, 5; z\right) = \frac{8\left(3\,I_4\left(2\sqrt{z}\right) - 2\sqrt{z}\,I_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.2180.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, 5; -z\right) = \frac{8\left(3\,J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,J_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.2181.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, \frac{11}{2}; z\right) = -\frac{315\left(2\sqrt{z}\,\left(4z^2+135z+315\right)\cosh\left(2\sqrt{z}\right) - 3\left(24z^2+185z+105\right)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{9/2}}$$

07.22.03.2182.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, \frac{11}{2}; -z\right) = -\frac{315\left(2\sqrt{z}\,\left(4z^2-135z+315\right)\cos\left(2\sqrt{z}\right) - 3\left(24z^2-185z+105\right)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{9/2}}$$

07.22.03.2183.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, 6; z\right) = \frac{120\,I_5\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{80\,I_6\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.2184.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{3}{2}, 6; -z\right) = \frac{120\, J_5\left(2\sqrt{z}\right)}{z^{5/2}} + \frac{80\, J_6\left(2\sqrt{z}\right)}{z^2}$$

For fixed z and $a_1 = -\frac{1}{2}$, $b_1 = -\frac{1}{2}$

07.22.03.2185.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, -\frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.2186.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, -\frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.2187.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, \frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.2188.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, \frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.2189.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, 1; z\right) = I_0\left(2\sqrt{z}\right)$$

07.22.03.2190.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, 1; -z\right) = J_0\left(2\sqrt{z}\right)$$

07.22.03.2191.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, \frac{3}{2}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.2192.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, \frac{3}{2}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.2193.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, 2; z\right) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.2194.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, 2; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.2195.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, \frac{5}{2}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.2196.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, \frac{5}{2}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.2197.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, 3; z\right) = \frac{2\,I_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.2198.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, 3; -z\right) = \frac{2\,J_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.2199.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, \frac{7}{2}; z\right) = \frac{15\left((4\,z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.2200.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, \frac{7}{2}; -z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4\,z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.2201.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, 4; z\right) = \frac{6\,I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.2202.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, 4; -z\right) = \frac{6\,J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.2203.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, \frac{9}{2}; z\right) = \frac{105\left(2\sqrt{z}\,(4\,z+15)\cosh\left(2\sqrt{z}\right) - 3\,(8\,z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.2204.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, \frac{9}{2}; -z\right) = \frac{105\left(2\sqrt{z}\,(4\,z-15)\cos\left(2\sqrt{z}\right) + 3\,(5-8\,z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.2205.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, 5; z\right) = \frac{24\,I_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.2206.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, 5; -z\right) = \frac{24\,J_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.2207.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, \frac{11}{2}; z\right) = \frac{945\left(\left(16\,z^2+180\,z+105\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\,(8\,z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.2208.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, \frac{11}{2}; -z\right) = \frac{945\left(10\sqrt{z}\ (8z-21)\cos\left(2\sqrt{z}\right) + \left(16z^2 - 180z + 105\right)\sin\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}}$$

07.22.03.2209.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, 6; z\right) = \frac{120\, I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.2210.01

$${}_1F_2\left(-\frac{1}{2}; -\frac{1}{2}, 6; -z\right) = \frac{120\, J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = -\frac{1}{2}$, $b_1 = \frac{1}{2}$

07.22.03.0032.01

$${}_1F_2\left(-\frac{1}{2}; \frac{1}{2}, \frac{1}{2}; z\right) == \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\ \mathrm{Shi}\left(2\sqrt{z}\right)$$

07.22.03.2211.01

$${}_1F_2\left(-\frac{1}{2}; \frac{1}{2}, \frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\ \mathrm{Si}\left(2\sqrt{z}\right)$$

07.22.03.0033.01

$${}_1F_2\left(-\frac{1}{2}; \frac{1}{2}, 1; z\right) == (1-4z)\, I_0\left(2\sqrt{z}\right) + 2\sqrt{z}\ I_1\left(2\sqrt{z}\right) + 2\pi z\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) - I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2212.01

$${}_1F_2\left(-\frac{1}{2}; \frac{1}{2}, 1; -z\right) = 2\, J_1\left(2\sqrt{z}\right)\left(\pi z\, \boldsymbol{H}_0\left(2\sqrt{z}\right) - \sqrt{z}\right) + J_0\left(2\sqrt{z}\right)\left(-2\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right)z + 4z + 1\right)$$

07.22.03.0034.01

$${}_1F_2\left(-\frac{1}{2}; \frac{1}{2}, \frac{3}{2}; z\right) == \frac{1}{4\sqrt{z}}\left(2\sqrt{z}\ \cosh\left(2\sqrt{z}\right) + \sinh\left(2\sqrt{z}\right) - 4z\,\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.2213.01

$${}_1F_2\left(-\frac{1}{2}; \frac{1}{2}, \frac{3}{2}; -z\right) = \frac{2\sqrt{z}\ \cos\left(2\sqrt{z}\right) + \sin\left(2\sqrt{z}\right) + 4z\,\mathrm{Si}\left(2\sqrt{z}\right)}{4\sqrt{z}}$$

07.22.03.0035.01

$${}_1F_2\left(-\frac{1}{2}; \frac{1}{2}, 2; z\right) == \frac{1}{3}\left(2(1-4z)\, I_0\left(2\sqrt{z}\right) + \frac{4z+1}{\sqrt{z}}\, I_1\left(2\sqrt{z}\right) + 4\pi z\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) - I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2214.01

$${}_1F_2\left(-\frac{1}{2}; \frac{1}{2}, 2; -z\right) = \frac{1}{3}\left(\frac{J_1\left(2\sqrt{z}\right)\left(4\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2} - 4z + 1\right)}{\sqrt{z}} - 2\, J_0\left(2\sqrt{z}\right)\left(2\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right)z - 4z - 1\right)\right)$$

07.22.03.0036.01

$${}_1F_2\left(-\frac{1}{2}; \frac{1}{2}, \frac{5}{2}; z\right) == \frac{3}{32\, z^{3/2}}\left(-8\,\mathrm{Shi}\left(2\sqrt{z}\right)z^2 + 2(2z+1)\cosh\left(2\sqrt{z}\right)\sqrt{z}\ + (2z-1)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2215.01

$${}_1F_2\left(-\frac{1}{2};\frac{1}{2},\frac{5}{2};-z\right)=\frac{3\left(8\,\mathrm{Si}\left(2\sqrt{z}\right)z^2+2\,(2z-1)\cos\left(2\sqrt{z}\right)\sqrt{z}+(2z+1)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{3/2}}$$

07.22.03.0037.01

$${}_1F_2\left(-\frac{1}{2};\frac{1}{2},3;z\right)==$$
$$\frac{2}{15\,z^{3/2}}\left(8\pi z^{5/2}\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)-I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)+\sqrt{z}\left(-16z^2+4z+3\right)I_0\left(2\sqrt{z}\right)+(2z-1)(4z+3)\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2216.01

$${}_1F_2\left(-\frac{1}{2};\frac{1}{2},3;-z\right)=$$
$$\frac{1}{15\,z^{3/2}}\left(2\left(J_1\left(2\sqrt{z}\right)\left(8\pi\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-8z^2+2z+3\right)-\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(8\pi\boldsymbol{H}_1\left(2\sqrt{z}\right)z^2-16z^2-4z+3\right)\right)\right)$$

07.22.03.0038.01

$${}_1F_2\left(-\frac{1}{2};\frac{1}{2},\frac{7}{2};z\right)==\frac{5}{64\,z^{5/2}}\left(-8\,\mathrm{Shi}\left(2\sqrt{z}\right)z^3+2\left(2z^2+z-3\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(2z^2+3z+3\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2217.01

$${}_1F_2\left(-\frac{1}{2};\frac{1}{2},\frac{7}{2};-z\right)=\frac{5\left(8\,\mathrm{Si}\left(2\sqrt{z}\right)z^3+2\left(2z^2-z-3\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(2z^2-3z+3\right)\sin\left(2\sqrt{z}\right)\right)}{64\,z^{5/2}}$$

07.22.03.0039.01

$${}_1F_2\left(-\frac{1}{2};\frac{1}{2},4;z\right)==\frac{2}{35\,z^{5/2}}\left(16\pi\,z^{7/2}\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)-I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)-$$
$$2\sqrt{z}\left(16z^3-4z^2-3z+15\right)I_0\left(2\sqrt{z}\right)+\left(16z^3+4z^2+9z+30\right)I_1\left(2\sqrt{z}\right)\Big)$$

07.22.03.2218.01

$${}_1F_2\left(-\frac{1}{2};\frac{1}{2},4;-z\right)=\frac{1}{35\,z^{5/2}}$$
$$\left(2\left(J_1\left(2\sqrt{z}\right)\left(16\pi\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2}-16z^3+4z^2-9z+30\right)-2\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(8\pi\boldsymbol{H}_1\left(2\sqrt{z}\right)z^3-16z^3-4z^2+3z+15\right)\right)\right)$$

07.22.03.2219.01

$${}_1F_2\left(-\frac{1}{2};\frac{1}{2},\frac{9}{2};z\right)=$$
$$\frac{1}{1024\,z^{7/2}}\left(35\left(-16\,\mathrm{Shi}\left(2\sqrt{z}\right)z^4+2\left(4z^3+2z^2+6z+45\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^3+6z^2-66z-45\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2220.01

$${}_1F_2\left(-\frac{1}{2};\frac{1}{2},\frac{9}{2};-z\right)=$$
$$\frac{1}{1024\,z^{7/2}}\left(35\left(16\,\mathrm{Si}\left(2\sqrt{z}\right)z^4+2\left(4z^3-2z^2+6z-45\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^3-6z^2-66z+45\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2221.01

$${}_1F_2\left(-\frac{1}{2};\frac{1}{2},5;z\right)=\frac{1}{315\,z^{7/2}}\left(8\left(2\,I_1\left(2\sqrt{z}\right)\left(16\pi\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{9/2}+16z^4+4z^3+9z^2-180z-315\right)-\right.$$
$$\left.\sqrt{z}\,I_0\left(2\sqrt{z}\right)\left(32\pi\boldsymbol{L}_1\left(2\sqrt{z}\right)z^4+64z^4-16z^3-12z^2-45z-630\right)\right)\Big)$$

07.22.03.2222.01

$${}_1F_2\left(-\frac{1}{2};\frac{1}{2},5;-z\right)=\frac{1}{315\,z^{7/2}}\left(8\left(2\,J_1\left(2\sqrt{z}\right)\left(16\,\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{9/2}-16\,z^4+4\,z^3-9\,z^2-180\,z+315\right)-\right.\right.$$
$$\left.\left.\sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(32\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^4-64\,z^4-16\,z^3+12\,z^2-45\,z+630\right)\right)\right)$$

07.22.03.2223.01

$${}_1F_2\left(-\frac{1}{2};\frac{1}{2},\frac{11}{2};z\right)=\frac{1}{2048\,z^{9/2}}\left(63\left(-16\,\mathrm{Shi}\left(2\sqrt{z}\right)z^5+\right.\right.$$
$$\left.\left.2\left(4\,z^4+2\,z^3+6\,z^2-195\,z-630\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\;+\left(4\,z^4+6\,z^3+30\,z^2+1035\,z+630\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2224.01

$${}_1F_2\left(-\frac{1}{2};\frac{1}{2},\frac{11}{2};-z\right)=\frac{1}{2048\,z^{9/2}}$$
$$\left(63\left(16\,\mathrm{Si}\left(2\sqrt{z}\right)z^5+2\left(4\,z^4-2\,z^3+6\,z^2+195\,z-630\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+\left(4\,z^4-6\,z^3+30\,z^2-1035\,z+630\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2225.01

$${}_1F_2\left(-\frac{1}{2};\frac{1}{2},6;z\right)=$$
$$\frac{1}{693\,z^{9/2}}\left(8\left(I_1\left(2\sqrt{z}\right)\left(64\,\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{11/2}+64\,z^5+16\,z^4+36\,z^3+225\,z^2+15\,750\,z+22\,680\right)-2\sqrt{z}\;I_0\left(2\sqrt{z}\right)\right.\right.$$
$$\left.\left.\left(32\,\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^5+64\,z^5-16\,z^4-12\,z^3-45\,z^2+2205\,z+11\,340\right)\right)\right)$$

07.22.03.2226.01

$${}_1F_2\left(-\frac{1}{2};\frac{1}{2},6;-z\right)=$$
$$\frac{1}{693\,z^{9/2}}\left(8\left(J_1\left(2\sqrt{z}\right)\left(64\,\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{11/2}-64\,z^5+16\,z^4-36\,z^3+225\,z^2-15\,750\,z+22\,680\right)-2\sqrt{z}\;J_0\left(2\sqrt{z}\right)\right.\right.$$
$$\left.\left.\left(32\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^5-64\,z^5-16\,z^4+12\,z^3-45\,z^2-2205\,z+11\,340\right)\right)\right)$$

For fixed z and $a_1 = -\frac{1}{2}$, $b_1 = 1$

07.22.03.0040.01

$${}_1F_2\left(-\frac{1}{2};1,1;z\right)==(1-2\,z)\,I_0\left(\sqrt{z}\right)^2+2\sqrt{z}\;I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+2\,z\,I_1\left(\sqrt{z}\right)^2$$

07.22.03.2227.01

$${}_1F_2\left(-\frac{1}{2};1,1;-z\right)=(2\,z+1)\,J_0\left(\sqrt{z}\right)^2-2\sqrt{z}\;J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+2\,z\,J_1\left(\sqrt{z}\right)^2$$

07.22.03.0041.01

$${}_1F_2\left(-\frac{1}{2};1,\frac{3}{2};z\right)==(1-2\,z)\,I_0\left(2\sqrt{z}\right)+\sqrt{z}\;I_1\left(2\sqrt{z}\right)+\frac{\pi}{4}(4\,z-1)\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)-I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2228.01

$${}_1F_2\left(-\frac{1}{2};1,\frac{3}{2};-z\right)=\frac{1}{4}\left(J_1\left(2\sqrt{z}\right)\left((4\,\pi\,z+\pi)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)-4\sqrt{z}\right)+J_0\left(2\sqrt{z}\right)\left(8\,z-(4\,\pi\,z+\pi)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)+4\right)\right)$$

07.22.03.0042.01

$${}_1F_2\left(-\frac{1}{2};1,2;z\right)==\frac{1}{3}\left((3-4\,z)\,I_0\left(\sqrt{z}\right)^2+4\sqrt{z}\;I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+(4\,z-1)\,I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.2229.01

$${}_1F_2\left(-\frac{1}{2};\,1,\,2;\,-z\right)=\frac{1}{3}\left((4\,z+3)\,J_0\left(\sqrt{z}\right)^2-4\sqrt{z}\;J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+(4\,z+1)\,J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.0043.01

$${}_1F_2\left(-\frac{1}{2};\,1,\,\frac{5}{2};\,z\right)==$$

$$-\frac{3}{64\,z}\left(4\left(2\,z\,(4\,z-3)\,I_0\left(2\sqrt{z}\right)+\sqrt{z}\;(1-4\,z)\,I_1\left(2\sqrt{z}\right)\right)-\pi\,(1-4\,z)^2\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)-I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2230.01

$${}_1F_2\left(-\frac{1}{2};\,1,\,\frac{5}{2};\,-z\right)=\frac{1}{64\,z}$$

$$\left(3\left(\pi\,J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)(4\,z+1)^2-\pi\,J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)(4\,z+1)^2+4\left(2\,z\,(4\,z+3)\,J_0\left(2\sqrt{z}\right)-\sqrt{z}\;(4\,z+1)\,J_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.0044.01

$${}_1F_2\left(-\frac{1}{2};\,1,\,3;\,z\right)==-\frac{4}{15\,z}\left(4\,(z-1)\,z\,I_0\left(\sqrt{z}\right)^2+\sqrt{z}\;(1-4\,z)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(-4\,z^2+2\,z-1\right)I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.2231.01

$${}_1F_2\left(-\frac{1}{2};\,1,\,3;\,-z\right)=\frac{4\left(4\,z\,(z+1)\,J_0\left(\sqrt{z}\right)^2-\sqrt{z}\;(4\,z+1)\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(4\,z^2+2\,z+1\right)J_1\left(\sqrt{z}\right)^2\right)}{15\,z}$$

07.22.03.0045.01

$${}_1F_2\left(-\frac{1}{2};\,1,\,\frac{7}{2};\,z\right)==-\frac{5}{512\,z^2}\left(4\left(2\,z\left(16\,z^2-16\,z+3\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\;\left(-16\,z^2+8\,z-9\right)I_1\left(2\sqrt{z}\right)\right)+\right.$$

$$\left.\pi\left(-64\,z^3+48\,z^2-12\,z+9\right)\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)-I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2232.01

$${}_1F_2\left(-\frac{1}{2};\,1,\,\frac{7}{2};\,-z\right)=$$

$$\frac{1}{512\,z^2}\left(5\left(4\left(2\,z\left(16\,z^2+16\,z+3\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\;\left(16\,z^2+8\,z+9\right)J_1\left(2\sqrt{z}\right)\right)+\pi\left(64\,z^3+48\,z^2+12\,z+9\right)\right.\right.$$

$$\left.\left.J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\left(64\,z^3+48\,z^2+12\,z+9\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0046.01

$${}_1F_2\left(-\frac{1}{2};\,1,\,4;\,z\right)==$$

$$-\frac{4}{35\,z^2}\left(2\,z\left(4\,z^2-5\,z+1\right)I_0\left(\sqrt{z}\right)^2+4\sqrt{z}\;\left(-2\,z^2+z-2\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(-8\,z^3+6\,z^2-3\,z+8\right)I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.2233.01

$${}_1F_2\left(-\frac{1}{2};\,1,\,4;\,-z\right)=$$

$$\frac{1}{35\,z^2}\left(4\left(2\,z\left(4\,z^2+5\,z+1\right)J_0\left(\sqrt{z}\right)^2-4\sqrt{z}\;\left(2\,z^2+z+2\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(8\,z^3+6\,z^2+3\,z+8\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2234.01

$${}_1F_2\left(-\frac{1}{2}; 1, \frac{9}{2}; z\right) =$$
$$\frac{1}{16\,384\,z^3}\left(35\left(-4\left(2\,z\left(64\,z^3-80\,z^2+28\,z-75\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-64\,z^3+48\,z^2-44\,z+225\right)I_1\left(2\sqrt{z}\right)\right)+\pi\left(256\,z^4-256\,z^3+\right.\right.\right.$$
$$\left.\left.\left.96\,z^2-144\,z+225\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(-256\,z^4+256\,z^3-96\,z^2+144\,z-225\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2235.01

$${}_1F_2\left(-\frac{1}{2}; 1, \frac{9}{2}; -z\right) =$$
$$\frac{1}{16\,384\,z^3}\left(35\left(4\left(2\,z\left(64\,z^3+80\,z^2+28\,z+75\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(64\,z^3+48\,z^2+44\,z+225\right)J_1\left(2\sqrt{z}\right)\right)+\pi\left(256\,z^4+256\,z^3+\right.\right.\right.$$
$$\left.\left.\left.96\,z^2+144\,z+225\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\left(256\,z^4+256\,z^3+96\,z^2+144\,z+225\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2236.01

$${}_1F_2\left(-\frac{1}{2}; 1, 5; z\right) = -\frac{1}{315\,z^3}\left(16\left(z\left(16\,z^3-24\,z^2+9\,z-36\right)I_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(8\,z^3-6\,z^2+9\,z-72\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\left(16\,z^4-16\,z^3+9\,z^2+144\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2237.01

$${}_1F_2\left(-\frac{1}{2}; 1, 5; -z\right) = \frac{1}{315\,z^3}\left(16\left(z\left(16\,z^3+24\,z^2+9\,z+36\right)J_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(8\,z^3+6\,z^2+9\,z+72\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(16\,z^4+16\,z^3+9\,z^2+144\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2238.01

$${}_1F_2\left(-\frac{1}{2}; 1, \frac{11}{2}; z\right) =$$
$$\frac{1}{131\,072\,z^4}\left(63\left(-4\left(2\,z\left(256\,z^4-384\,z^3+192\,z^2-520\,z+3675\right)I_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(256\,z^4-256\,z^3+224\,z^2+400\,z+11\,025\right)\right.\right.\right.$$
$$\left.\left.I_1\left(2\sqrt{z}\right)\right)+\pi\left(1024\,z^5-1280\,z^4+640\,z^3-1440\,z^2+4500\,z-11\,025\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\left.\pi\left(-1024\,z^5+1280\,z^4-640\,z^3+1440\,z^2-4500\,z+11\,025\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2239.01

$${}_1F_2\left(-\frac{1}{2}; 1, \frac{11}{2}; -z\right) = \frac{1}{131\,072\,z^4}$$
$$\left(63\left(4\left(2\,z\left(256\,z^4+384\,z^3+192\,z^2+520\,z+3675\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(256\,z^4+256\,z^3+224\,z^2-400\,z+11\,025\right)J_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\left(1024\,z^5+1280\,z^4+640\,z^3+1440\,z^2+4500\,z+11\,025\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\pi\left(1024\,z^5+1280\,z^4+640\,z^3+1440\,z^2+4500\,z+11\,025\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2240.01

$${}_1F_2\left(-\frac{1}{2}; 1, 6; z\right) =$$
$$-\frac{1}{693\,z^4}\left(32\left(z\left(16\,z^4-28\,z^3+15\,z^2-54\,z+576\right)I_0\left(\sqrt{z}\right)^2-\sqrt{z}\,\left(16\,z^4-16\,z^3+21\,z^2+72\,z+2304\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-16\,z^5+20\,z^4-13\,z^3+18\,z^2+360\,z+2304\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2241.01

$${}_1F_2\left(-\frac{1}{2}; 1, 6; -z\right) =$$
$$\frac{1}{693\,z^4}\left(32\left(z\left(16\,z^4+28\,z^3+15\,z^2+54\,z+576\right)J_0\left(\sqrt{z}\right)^2-\sqrt{z}\,\left(16\,z^4+16\,z^3+21\,z^2-72\,z+2304\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(16\,z^5+20\,z^4+13\,z^3+18\,z^2-360\,z+2304\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = -\frac{1}{2}$, $b_1 = \frac{3}{2}$

07.22.03.0047.01

$${}_1F_2\left(-\frac{1}{2}; \frac{3}{2}, \frac{3}{2}; z\right) == \frac{1}{8\sqrt{z}}\left(2\sqrt{z}\,\cosh\left(2\sqrt{z}\right)+\sinh\left(2\sqrt{z}\right)+(2-4\,z)\,\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.2242.01

$${}_1F_2\left(-\frac{1}{2}; \frac{3}{2}, \frac{3}{2}; -z\right) = \frac{2\sqrt{z}\,\cos\left(2\sqrt{z}\right)+\sin\left(2\sqrt{z}\right)+(4\,z+2)\,\mathrm{Si}\left(2\sqrt{z}\right)}{8\sqrt{z}}$$

07.22.03.0048.01

$${}_1F_2\left(-\frac{1}{2}; \frac{3}{2}, 2; z\right) ==$$
$$\frac{1}{6\sqrt{z}}\left(8\,(1-z)\sqrt{z}\,I_0\left(2\sqrt{z}\right)+2\,(2\,z-1)\,I_1\left(2\sqrt{z}\right)+\pi\sqrt{z}\,(4\,z-3)\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)-I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2243.01

$${}_1F_2\left(-\frac{1}{2}; \frac{3}{2}, 2; -z\right) = \frac{1}{6}\left(\frac{J_1\left(2\sqrt{z}\right)\left(-4\,z+\pi\,(4\,z+3)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)\sqrt{z}-2\right)}{\sqrt{z}}+J_0\left(2\sqrt{z}\right)\left(8\,(z+1)-\pi\,(4\,z+3)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0049.01

$${}_1F_2\left(-\frac{1}{2}; \frac{3}{2}, \frac{5}{2}; z\right) == \frac{3}{64\,z^{3/2}}\left(2\sqrt{z}\,(2\,z-1)\cosh\left(2\sqrt{z}\right)+(2\,z+1)\sinh\left(2\sqrt{z}\right)-8\,(z-1)\,z\,\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.2244.01

$${}_1F_2\left(-\frac{1}{2}; \frac{3}{2}, \frac{5}{2}; -z\right) = \frac{3\left(2\sqrt{z}\,(2\,z+1)\cos\left(2\sqrt{z}\right)+(2\,z-1)\sin\left(2\sqrt{z}\right)+8\,z\,(z+1)\,\mathrm{Si}\left(2\sqrt{z}\right)\right)}{64\,z^{3/2}}$$

07.22.03.0050.01

$${}_1F_2\left(-\frac{1}{2}; \frac{3}{2}, 3; z\right) ==$$
$$-\frac{2}{15\,z^{3/2}}\left(\pi\,(5-4\,z)\,z^{3/2}\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)-I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)+\left(8\,z^2-12\,z+1\right)\sqrt{z}\,I_0\left(2\sqrt{z}\right)-(2\,z-1)^2\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2245.01

$${}_1F_2\left(-\frac{1}{2}; \frac{3}{2}, 3; -z\right) =$$
$$\frac{1}{15\,z^{3/2}}\left(2\left(J_1\left(2\sqrt{z}\right)\left(\pi\,z^{3/2}\,(4\,z+5)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)-(2\,z+1)^2\right)-\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(-8\,z^2+\pi\,(4\,z+5)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z-12\,z-1\right)\right)\right)$$

07.22.03.0051.01

$${}_1F_2\left(-\frac{1}{2};\frac{3}{2},\frac{7}{2};z\right)==\frac{5}{256\,z^{5/2}}\left(-8\,(2\,z-3)\,z^2\,\text{Shi}\left(2\sqrt{z}\right)+2\left(4\,z^2-4\,z+3\right)\sqrt{z}\,\cosh\left(2\sqrt{z}\right)+\left(4\,z^2-3\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2246.01

$${}_1F_2\left(-\frac{1}{2};\frac{3}{2},\frac{7}{2};-z\right)=\frac{5\left(8\,(2\,z+3)\,\text{Si}\left(2\sqrt{z}\right)z^2+2\left(4\,z^2+4\,z+3\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(4\,z^2-3\right)\sin\left(2\sqrt{z}\right)\right)}{256\,z^{5/2}}$$

07.22.03.0052.01

$${}_1F_2\left(-\frac{1}{2};\frac{3}{2},4;z\right)==-\frac{2}{35\,z^{5/2}}\left(2\,\pi\,(7-4\,z)\,z^{5/2}\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)-I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.2\left(8\,z^3-16\,z^2+2\,z-3\right)\sqrt{z}\,I_0\left(2\sqrt{z}\right)-\left(8\,z^3-12\,z^2+z-6\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2247.01

$${}_1F_2\left(-\frac{1}{2};\frac{3}{2},4;-z\right)=\frac{1}{35\,z^{5/2}}\left(2\left(J_1\left(2\sqrt{z}\right)\left(-8\,z^3+2\,\pi\,(4\,z+7)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-12\,z^2-z-6\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(-8\,z^3+\pi\,(4\,z+7)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^2-16\,z^2-2\,z-3\right)\right)\right)$$

07.22.03.2248.01

$${}_1F_2\left(-\frac{1}{2};\frac{3}{2},\frac{9}{2};z\right)=$$
$$\frac{1}{2048\,z^{7/2}}\left(35\left(-16\,(z-2)\,\text{Shi}\left(2\sqrt{z}\right)z^3+2\left(4\,z^3-6\,z^2+2\,z-15\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(4\,z^3-2\,z^2+18\,z+15\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2249.01

$${}_1F_2\left(-\frac{1}{2};\frac{3}{2},\frac{9}{2};-z\right)=$$
$$\frac{1}{2048\,z^{7/2}}\left(35\left(16\,(z+2)\,\text{Si}\left(2\sqrt{z}\right)z^3+2\left(4\,z^3+6\,z^2+2\,z+15\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(4\,z^3+2\,z^2+18\,z-15\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2250.01

$${}_1F_2\left(-\frac{1}{2};\frac{3}{2},5;z\right)=\frac{1}{315\,z^{7/2}}\left(8\left(2\,I_1\left(2\sqrt{z}\right)\left(8\,z^4+2\,\pi\,(4\,z-9)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2}-16\,z^3+18\,z+45\right)-\right.\right.$$
$$\left.\left.\sqrt{z}\,I_0\left(2\sqrt{z}\right)\left(32\,z^4+4\,\pi\,(4\,z-9)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^3-80\,z^3+12\,z^2-9\,z+90\right)\right)\right)$$

07.22.03.2251.01

$${}_1F_2\left(-\frac{1}{2};\frac{3}{2},5;-z\right)=\frac{1}{315\,z^{7/2}}\left(8\left(2\,J_1\left(2\sqrt{z}\right)\left(-8\,z^4+2\,\pi\,(4\,z+9)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2}-16\,z^3+18\,z-45\right)-\right.\right.$$
$$\left.\left.\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(-32\,z^4+4\,\pi\,(4\,z+9)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^3-80\,z^3-12\,z^2-9\,z-90\right)\right)\right)$$

07.22.03.2252.01

$${}_1F_2\left(-\frac{1}{2};\frac{3}{2},\frac{11}{2};z\right)=\frac{1}{8192\,z^{9/2}}\left(63\left(16\,(5-2\,z)\,\text{Shi}\left(2\sqrt{z}\right)z^4+\right.\right.$$
$$\left.\left.2\left(8\,z^4-16\,z^3+2\,z^2+60\,z+315\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(8\,z^4-8\,z^3+30\,z^2-480\,z-315\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2253.01

$${}_1F_2\left(-\frac{1}{2};\frac{3}{2},\frac{11}{2};-z\right)=\frac{1}{8192\,z^{9/2}}\left(63\left(16\,(2\,z+5)\,\text{Si}\left(2\sqrt{z}\right)z^4+\right.\right.$$
$$\left.\left.2\left(8\,z^4+16\,z^3+2\,z^2-60\,z+315\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8\,z^4+8\,z^3+30\,z^2+480\,z-315\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2254.01

$${}_1F_2\left(-\frac{1}{2}; \frac{3}{2}, 6; z\right) =$$
$$\frac{1}{693\, z^{9/2}}\left(8\left(I_1\left(2\sqrt{z}\right)\left(32\, z^5 + 8\,\pi\,(4\,z-11)\,\boldsymbol{L}_0\left(2\sqrt{z}\right) z^{9/2} - 80\, z^4 - 4\, z^3 + 63\, z^2 - 1530\, z - 2520\right) - 2\sqrt{z}\; I_0\left(2\sqrt{z}\right)\right.\right.$$
$$\left.\left.\left(32\, z^5 + 4\,\pi\,(4\,z-11)\,\boldsymbol{L}_1\left(2\sqrt{z}\right) z^4 - 96\, z^4 + 16\, z^3 - 6\, z^2 - 135\, z - 1260\right)\right)\right)$$

07.22.03.2255.01

$${}_1F_2\left(-\frac{1}{2}; \frac{3}{2}, 6; -z\right) =$$
$$\frac{1}{693\, z^{9/2}}\left(8\left(J_1\left(2\sqrt{z}\right)\left(-32\, z^5 + 8\,\pi\,(4\,z+11)\,\boldsymbol{H}_0\left(2\sqrt{z}\right) z^{9/2} - 80\, z^4 + 4\, z^3 + 63\, z^2 + 1530\, z - 2520\right) - 2\sqrt{z}\right.\right.$$
$$\left.\left.J_0\left(2\sqrt{z}\right)\left(-32\, z^5 + 4\,\pi\,(4\,z+11)\,\boldsymbol{H}_1\left(2\sqrt{z}\right) z^4 - 96\, z^4 - 16\, z^3 - 6\, z^2 + 135\, z - 1260\right)\right)\right)$$

For fixed z and $a_1 = -\frac{1}{2}$, $b_1 = 2$

07.22.03.0053.01

$${}_1F_2\left(-\frac{1}{2}; 2, 2; z\right) == \frac{1}{9\sqrt{z}}\left(4\sqrt{z}\;(3-2\,z)\, I_0\left(\sqrt{z}\right)^2 + 2\,(4\,z-3)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + 8\,(z-1)\sqrt{z}\; I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.2256.01

$${}_1F_2\left(-\frac{1}{2}; 2, 2; -z\right) = \frac{2}{9}\left((4\,z+6)\, J_0\left(\sqrt{z}\right)^2 - \frac{(4\,z+3)\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right)}{\sqrt{z}} + 4\,(z+1)\, J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.0054.01

$${}_1F_2\left(-\frac{1}{2}; 2, \frac{5}{2}; z\right) ==$$
$$\frac{1}{32\, z}\left(\pi\left(16\, z^2 - 24\, z - 3\right)\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) - I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) - 4\left(2\, z\,(4\,z-7)\, I_0\left(2\sqrt{z}\right) + \sqrt{z}\;(5-4\,z)\, I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2257.01

$${}_1F_2\left(-\frac{1}{2}; 2, \frac{5}{2}; -z\right) = \frac{1}{32\, z}\left(4\left(2\, z\,(4\,z+7)\, J_0\left(2\sqrt{z}\right) - \sqrt{z}\;(4\,z+5)\, J_1\left(2\sqrt{z}\right)\right) +\right.$$
$$\left.\pi\left(16\, z^2 + 24\, z - 3\right) J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) + \pi\left(-16\, z^2 - 24\, z + 3\right) J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0055.01

$${}_1F_2\left(-\frac{1}{2}; 2, 3; z\right) == -\frac{4}{45\, z}\left(2\, z\,(4\,z-9)\, I_0\left(\sqrt{z}\right)^2 + 4\sqrt{z}\;(3-2\,z)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-8\, z^2 + 14\, z + 3\right) I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.2258.01

$${}_1F_2\left(-\frac{1}{2}; 2, 3; -z\right) = \frac{4\left(2\, z\,(4\,z+9)\, J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\;(2\,z+3)\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(8\, z^2 + 14\, z - 3\right) J_1\left(\sqrt{z}\right)^2\right)}{45\, z}$$

07.22.03.0056.01

$${}_1F_2\left(-\frac{1}{2}; 2, \frac{7}{2}; z\right) == -\frac{5}{768\, z^2}\left(4\left(2\, z\left(16\, z^2 - 40\, z - 3\right) I_0\left(2\sqrt{z}\right) + \sqrt{z}\;\left(-16\, z^2 + 32\, z + 9\right) I_1\left(2\sqrt{z}\right)\right) +\right.$$
$$\left.\pi\left(-64\, z^3 + 144\, z^2 + 36\, z - 9\right)\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) - I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2259.01

$${}_1F_2\left(-\frac{1}{2};\,2,\,\frac{7}{2};\,-z\right)=$$
$$\frac{1}{768\,z^2}\left(5\left(4\left(2\,z\left(16\,z^2+40\,z-3\right)J_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-16\,z^2-32\,z+9\right)J_1\left(2\sqrt{z}\right)\right)+\pi\left(64\,z^3+144\,z^2-36\,z-9\right)\right.\right.$$
$$\left.\left.J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+\pi\left(-64\,z^3-144\,z^2+36\,z+9\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0057.01

$${}_1F_2\left(-\frac{1}{2};\,2,\,4;\,z\right)==$$
$$-\frac{4}{105\,z^2}\left(z\left(16\,z^2-48\,z-3\right)I_0\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(4\,z^2-9\,z-3\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(-16\,z^3+40\,z^2+15\,z-12\right)I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.2260.01

$${}_1F_2\left(-\frac{1}{2};\,2,\,4;\,-z\right)=$$
$$\frac{1}{105\,z^2}\left(4\left(z\left(16\,z^2+48\,z-3\right)J_0\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(4\,z^2+9\,z-3\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(16\,z^3+40\,z^2-15\,z-12\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2261.01

$${}_1F_2\left(-\frac{1}{2};\,2,\,\frac{9}{2};\,z\right)=$$
$$\frac{1}{24\,576\,z^3}\left(35\left(-4\left(2\,z\left(64\,z^3-208\,z^2-36\,z+45\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-64\,z^3+176\,z^2+84\,z-135\right)I_1\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\pi\left(256\,z^4-768\,z^3-288\,z^2+144\,z-135\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\left.\pi\left(-256\,z^4+768\,z^3+288\,z^2-144\,z+135\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2262.01

$${}_1F_2\left(-\frac{1}{2};\,2,\,\frac{9}{2};\,-z\right)=$$
$$\frac{1}{24\,576\,z^3}\left(35\left(4\left(2\,z\left(64\,z^3+208\,z^2-36\,z-45\right)J_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-64\,z^3-176\,z^2+84\,z+135\right)J_1\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\pi\left(256\,z^4+768\,z^3-288\,z^2-144\,z-135\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+$$
$$\left.\left.\pi\left(-256\,z^4-768\,z^3+288\,z^2+144\,z+135\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2263.01

$${}_1F_2\left(-\frac{1}{2};\,2,\,5;\,z\right)=-\frac{1}{945\,z^3}\left(32\left(z\left(16\,z^3-60\,z^2-9\,z+18\right)I_0\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.\sqrt{z}\,\left(-16\,z^3+48\,z^2+27\,z-72\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(-16\,z^4+52\,z^3+27\,z^2-18\,z+72\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2264.01

$${}_1F_2\left(-\frac{1}{2};\,2,\,5;\,-z\right)=\frac{1}{945\,z^3}\left(32\left(z\left(16\,z^3+60\,z^2-9\,z-18\right)J_0\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.\sqrt{z}\,\left(-16\,z^3-48\,z^2+27\,z+72\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(16\,z^4+52\,z^3-27\,z^2-18\,z-72\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2265.01

$${}_1F_2\left(-\frac{1}{2}; 2, \frac{11}{2}; z\right) =$$
$$\frac{1}{65\,536\,z^4}\left(21\left(-4\left(2z\left(256z^4-1024z^3-288z^2+480z-1575\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\left(-256z^4+896z^3+576z^2-600z+4725\right)\right.\right.\right.$$
$$\left.\left.I_1\left(2\sqrt{z}\right)\right)+\pi\left(1024z^5-3840z^4-1920z^3+1440z^2-2700z+4725\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(-1024z^5+3840z^4+1920z^3-1440z^2+2700z-4725\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2266.01

$${}_1F_2\left(-\frac{1}{2}; 2, \frac{11}{2}; -z\right) =$$
$$\frac{1}{65\,536\,z^4}\left(21\left(4\left(2z\left(256z^4+1024z^3-288z^2-480z-1575\right)J_0\left(2\sqrt{z}\right)+\sqrt{z}\left(-256z^4-896z^3+576z^2+600z+4725\right)\right.\right.\right.$$
$$\left.\left.J_1\left(2\sqrt{z}\right)\right)+\pi\left(1024z^5+3840z^4-1920z^3-1440z^2-2700z-4725\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(-1024z^5-3840z^4+1920z^3+1440z^2+2700z+4725\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2267.01

$${}_1F_2\left(-\frac{1}{2}; 2, 6; z\right) =$$
$$-\frac{1}{2079\,z^4}\left(32\left(2z\left(16z^4-72z^3-18z^2+45z-216\right)I_0\left(\sqrt{z}\right)^2-2\sqrt{z}\left(16z^4-60z^3-45z^2+72z-864\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(32z^5-128z^4-84z^3+63z^2+72z+1728\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2268.01

$${}_1F_2\left(-\frac{1}{2}; 2, 6; -z\right) =$$
$$\frac{1}{2079\,z^4}\left(32\left(2z\left(16z^4+72z^3-18z^2-45z-216\right)J_0\left(\sqrt{z}\right)^2-2\sqrt{z}\left(16z^4+60z^3-45z^2-72z-864\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(32z^5+128z^4-84z^3-63z^2+72z-1728\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = -\frac{1}{2}$, $b_1 = \frac{5}{2}$

07.22.03.0058.01

$${}_1F_2\left(-\frac{1}{2}; \frac{5}{2}, \frac{5}{2}; z\right) == \frac{9}{256\,z^{3/2}}\left(2\sqrt{z}\,(2z-3)\cosh\left(2\sqrt{z}\right)+(2z-1)\sinh\left(2\sqrt{z}\right)+\left(-8z^2+16z+4\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.2269.01

$${}_1F_2\left(-\frac{1}{2}; \frac{5}{2}, \frac{5}{2}; -z\right) = \frac{9\left(2\sqrt{z}\,(2z+3)\cos\left(2\sqrt{z}\right)+(2z+1)\sin\left(2\sqrt{z}\right)+4\left(2z^2+4z-1\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)}{256\,z^{3/2}}$$

07.22.03.0059.01

$${}_1F_2\left(-\frac{1}{2}; \frac{5}{2}, 3; z\right) == \frac{1}{40\,z^{3/2}}\left(\pi\sqrt{z}\left(16z^2-40z-15\right)\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)-I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.4\left(2\sqrt{z}\left(4z^2-11z-2\right)I_0\left(2\sqrt{z}\right)+\left(-4z^2+9z+4\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2270.01

$${}_1F_2\left(-\frac{1}{2};\frac{5}{2},3;-z\right)=\frac{1}{40\,z^{3/2}}\left(4\left(2\sqrt{z}\,\left(4z^2+11z-2\right)J_0\left(2\sqrt{z}\right)+\left(-4z^2-9z+4\right)J_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.\pi\sqrt{z}\,\left(16z^2+40z-15\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+\pi\sqrt{z}\,\left(-16z^2-40z+15\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0060.01

$${}_1F_2\left(-\frac{1}{2};\frac{5}{2},\frac{7}{2};z\right)==\frac{15}{512\,z^{5/2}}\left(2\sqrt{z}\,\left(2z^2-5z-3\right)\cosh\left(2\sqrt{z}\right)+\left(2z^2-3z+3\right)\sinh\left(2\sqrt{z}\right)+4z\left(-2z^2+6z+3\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.2271.01

$${}_1F_2\left(-\frac{1}{2};\frac{5}{2},\frac{7}{2};-z\right)=\frac{15\left(2\sqrt{z}\,\left(2z^2+5z-3\right)\cos\left(2\sqrt{z}\right)+\left(2z^2+3z+3\right)\sin\left(2\sqrt{z}\right)+4z\left(2z^2+6z-3\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)}{512\,z^{5/2}}$$

07.22.03.0061.01

$${}_1F_2\left(-\frac{1}{2};\frac{5}{2},4;z\right)==-\frac{3}{140\,z^{5/2}}\left(\pi\left(-16z^2+56z+35\right)z^{3/2}\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)-I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.4\left(2\sqrt{z}\,\left(4z^3-15z^2-6z+2\right)I_0\left(2\sqrt{z}\right)+\left(-4z^3+13z^2+10z-4\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2272.01

$${}_1F_2\left(-\frac{1}{2};\frac{5}{2},4;-z\right)=$$
$$\frac{1}{140\,z^{5/2}}\left(3\left(\pi\left(16z^2+56z-35\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}+\pi\left(-16z^2-56z+35\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{3/2}+\right.\right.$$
$$\left.\left.4\left(2\sqrt{z}\,\left(4z^3+15z^2-6z-2\right)J_0\left(2\sqrt{z}\right)+\left(-4z^3-13z^2+10z+4\right)J_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.2273.01

$${}_1F_2\left(-\frac{1}{2};\frac{5}{2},\frac{9}{2};z\right)=\frac{1}{8192\,z^{7/2}}$$
$$\left(105\left(-16\left(z^2-4z-3\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^2+2\left(4z^3-14z^2-14z+15\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\,+\left(4z^3-10z^2-6z-15\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2274.01

$${}_1F_2\left(-\frac{1}{2};\frac{5}{2},\frac{9}{2};-z\right)=\frac{1}{8192\,z^{7/2}}$$
$$\left(105\left(16\left(z^2+4z-3\right)\mathrm{Si}\left(2\sqrt{z}\right)z^2+2\left(4z^3+14z^2-14z-15\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,+\left(4z^3+10z^2-6z+15\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2275.01

$${}_1F_2\left(-\frac{1}{2};\frac{5}{2},5;z\right)=$$
$$-\frac{1}{105\,z^{7/2}}\left(2\left(\pi\left(-16z^2+72z+63\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}+\pi\left(16z^2-72z-63\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{5/2}+\right.\right.$$
$$\left.\left.4\left(\sqrt{z}\,\left(8z^4-38z^3-24z^2+9z-18\right)I_0\left(2\sqrt{z}\right)+\left(-4z^4+17z^3+18z^2+18\right)I_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.2276.01

$${}_1F_2\left(-\frac{1}{2};\frac{5}{2},5;-z\right)=$$
$$-\frac{1}{105\,z^{7/2}}\left(2\left(\pi\left(-16\,z^2-72\,z+63\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}+\pi\left(16\,z^2+72\,z-63\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{5/2}+\right.\right.$$
$$\left.\left.4\left(\sqrt{z}\,\left(-8\,z^4-38\,z^3+24\,z^2+9\,z+18\right)J_0\left(2\sqrt{z}\right)+\left(4\,z^4+17\,z^3-18\,z^2-18\right)J_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.2277.01

$${}_1F_2\left(-\frac{1}{2};\frac{5}{2},\frac{11}{2};z\right)=\frac{1}{16\,384\,z^{9/2}}\left(189\left(-16\left(z^2-5\,z-5\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^3+\right.\right.$$
$$\left.\left.2\left(4\,z^4-18\,z^3-24\,z^2+5\,z-105\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\,+\left(4\,z^4-14\,z^3-20\,z^2+135\,z+105\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2278.01

$${}_1F_2\left(-\frac{1}{2};\frac{5}{2},\frac{11}{2};-z\right)=\frac{1}{16\,384\,z^{9/2}}\left(189\left(16\left(z^2+5\,z-5\right)\mathrm{Si}\left(2\sqrt{z}\right)z^3+\right.\right.$$
$$\left.\left.2\left(4\,z^4+18\,z^3-24\,z^2-5\,z-105\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,+\left(4\,z^4+14\,z^3-20\,z^2-135\,z+105\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2279.01

$${}_1F_2\left(-\frac{1}{2};\frac{5}{2},6;z\right)=$$
$$\frac{1}{231\,z^{9/2}}\left(4\left(\pi\left(16\,z^2-88\,z-99\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2}+\pi\left(-16\,z^2+88\,z+99\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{7/2}-2\right.\right.$$
$$\left.\left.\left(2\sqrt{z}\,\left(8\,z^5-46\,z^4-40\,z^3+15\,z^2-9\,z+180\right)I_0\left(2\sqrt{z}\right)+\left(-8\,z^5+42\,z^4+56\,z^3+9\,z^2-162\,z-360\right)I_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.2280.01

$${}_1F_2\left(-\frac{1}{2};\frac{5}{2},6;-z\right)=$$
$$-\frac{1}{231\,z^{9/2}}\left(4\left(\pi\left(-16\,z^2-88\,z+99\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2}+\pi\left(16\,z^2+88\,z-99\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{7/2}+2\left(2\sqrt{z}\right.\right.\right.$$
$$\left.\left.\left.\left(-8\,z^5-46\,z^4+40\,z^3+15\,z^2+9\,z+180\right)J_0\left(2\sqrt{z}\right)+\left(8\,z^5+42\,z^4-56\,z^3+9\,z^2+162\,z-360\right)J_1\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = -\frac{1}{2}$, $b_1 = 3$

07.22.03.0062.01

$${}_1F_2\left(-\frac{1}{2};3,3;z\right)==$$
$$-\frac{8}{225\,z^{3/2}}\left(\sqrt{z}\,\left(16\,z^2-56\,z-15\right)I_0\left(\sqrt{z}\right)^2+2\left(-8\,z^2+22\,z+15\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\sqrt{z}\,\left(-16\,z^2+48\,z+31\right)I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.2281.01

$${}_1F_2\left(-\frac{1}{2};3,3;-z\right)=$$
$$\frac{1}{225\,z^{3/2}}\left(8\left(\sqrt{z}\,\left(16\,z^2+56\,z-15\right)J_0\left(\sqrt{z}\right)^2-2\left(8\,z^2+22\,z-15\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\sqrt{z}\,\left(16\,z^2+48\,z-31\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.0063.01

$${}_1F_2\left(-\frac{1}{2};\,3,\,\frac{7}{2};\,z\right)==\frac{1}{192\,z^2}\left(\pi\left(64\,z^3-240\,z^2-180\,z-45\right)\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)-I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.4\left(2\,z\left(16\,z^2-64\,z-33\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-16\,z^2+56\,z+51\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2282.01

$${}_1F_2\left(-\frac{1}{2};\,3,\,\frac{7}{2};\,-z\right)=\frac{1}{192\,z^2}\left(4\left(2\,z\left(16\,z^2+64\,z-33\right)J_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-16\,z^2-56\,z+51\right)J_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.\pi\left(64\,z^3+240\,z^2-180\,z+45\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\left(64\,z^3+240\,z^2-180\,z+45\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0064.01

$${}_1F_2\left(-\frac{1}{2};\,3,\,4;\,z\right)==$$
$$-\frac{16}{525\,z^2}\left(z\left(16\,z^2-76\,z-45\right)I_0\left(\sqrt{z}\right)^2+\sqrt{z}\,\left(-16\,z^2+64\,z+75\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(-16\,z^3+68\,z^2+71\,z+30\right)I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.2283.01

$${}_1F_2\left(-\frac{1}{2};\,3,\,4;\,-z\right)=$$
$$\frac{1}{525\,z^2}\left(16\left(z\left(16\,z^2+76\,z-45\right)J_0\left(\sqrt{z}\right)^2+\sqrt{z}\,\left(-16\,z^2-64\,z+75\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(16\,z^3+68\,z^2-71\,z+30\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2284.01

$${}_1F_2\left(-\frac{1}{2};\,3,\,\frac{9}{2};\,z\right)=$$
$$\frac{1}{6144\,z^3}\left(7\left(-4\left(2\,z\left(64\,z^3-336\,z^2-292\,z-75\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-64\,z^3+304\,z^2+404\,z+225\right)I_1\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\pi\left(256\,z^4-1280\,z^3-1440\,z^2-720\,z+225\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\left.\pi\left(-256\,z^4+1280\,z^3+1440\,z^2+720\,z-225\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2285.01

$${}_1F_2\left(-\frac{1}{2};\,3,\,\frac{9}{2};\,-z\right)=$$
$$\frac{1}{6144\,z^3}\left(7\left(4\left(2\,z\left(64\,z^3+336\,z^2-292\,z+75\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(64\,z^3+304\,z^2-404\,z+225\right)J_1\left(2\sqrt{z}\right)\right)+\pi\right.\right.$$
$$\left(256\,z^4+1280\,z^3-1440\,z^2+720\,z+225\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\left.\pi\left(256\,z^4+1280\,z^3-1440\,z^2+720\,z+225\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2286.01

$${}_1F_2\left(-\frac{1}{2};\,3,\,5;\,z\right)=$$
$$-\frac{1}{4725\,z^3}\left(64\left(z\left(32\,z^3-192\,z^2-180\,z-45\right)I_0\left(\sqrt{z}\right)^2+2\sqrt{z}\,\left(-16\,z^3+84\,z^2+135\,z+90\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4\left(8\,z^4-44\,z^3-63\,z^2-45\,z+45\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2287.01

$${}_1F_2\left(-\frac{1}{2}; 3, 5; -z\right) =$$
$$\frac{1}{4725\,z^3}\left(64\left(z\left(32\,z^3+192\,z^2-180\,z+45\right)J_0\left(\sqrt{z}\right)^2-2\sqrt{z}\,\left(16\,z^3+84\,z^2-135\,z+90\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\left(8\,z^4+44\,z^3-63\,z^2+45\,z+45\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2288.01

$${}_1F_2\left(-\frac{1}{2}; 3, \frac{11}{2}; z\right) = \frac{1}{81\,920\,z^4}$$
$$\left(21\left(-4\left(2\,z\left(256\,z^4-1664\,z^3-2048\,z^2-1080\,z+1575\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-256\,z^4+1536\,z^3+2656\,z^2+2400\,z-4725\right)\right.\right.\right.$$
$$\left.\left.\left.I_1\left(2\sqrt{z}\right)\right)+\pi\left(1024\,z^5-6400\,z^4-9600\,z^3-7200\,z^2+4500\,z-4725\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\pi\left(-1024\,z^5+6400\,z^4+9600\,z^3+7200\,z^2-4500\,z+4725\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2289.01

$${}_1F_2\left(-\frac{1}{2}; 3, \frac{11}{2}; -z\right) = \frac{1}{81\,920\,z^4}$$
$$\left(21\left(4\left(2\,z\left(256\,z^4+1664\,z^3-2048\,z^2+1080\,z+1575\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(256\,z^4+1536\,z^3-2656\,z^2+2400\,z+4725\right)\right.\right.\right.$$
$$\left.\left.\left.J_1\left(2\sqrt{z}\right)\right)+\pi\left(1024\,z^5+6400\,z^4-9600\,z^3+7200\,z^2+4500\,z+4725\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\pi\left(1024\,z^5+6400\,z^4-9600\,z^3+7200\,z^2+4500\,z+4725\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2290.01

$${}_1F_2\left(-\frac{1}{2}; 3, 6; z\right) =$$
$$-\frac{1}{10\,395\,z^4}\left(64\left(z\left(64\,z^4-464\,z^3-600\,z^2-315\,z+720\right)I_0\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(-16\,z^4+104\,z^3+210\,z^2+225\,z-720\right)\right.\right.$$
$$\left.\left.I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(-64\,z^5+432\,z^4+784\,z^3+765\,z^2-540\,z+2880\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2291.01

$${}_1F_2\left(-\frac{1}{2}; 3, 6; -z\right) = \frac{1}{10\,395\,z^4}$$
$$\left(64\left(z\left(64\,z^4+464\,z^3-600\,z^2+315\,z+720\right)J_0\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(16\,z^4+104\,z^3-210\,z^2+225\,z+720\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(64\,z^5+432\,z^4-784\,z^3+765\,z^2+540\,z+2880\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = -\frac{1}{2}$, $b_1 = \frac{7}{2}$

07.22.03.0065.01

$${}_1F_2\left(-\frac{1}{2}; \frac{7}{2}, \frac{7}{2}; z\right) ==$$
$$\frac{25}{2048\,z^{5/2}}\left(2\sqrt{z}\,\left(4\,z^2-16\,z-21\right)\cosh\left(2\sqrt{z}\right)+\left(4\,z^2-12\,z-15\right)\sinh\left(2\sqrt{z}\right)+\left(-16\,z^3+72\,z^2+72\,z+36\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.2292.01

$${}_1F_2\left(-\frac{1}{2};\frac{7}{2},\frac{7}{2};-z\right)=$$
$$\frac{1}{2048\,z^{5/2}}\left(25\left(2\sqrt{z}\,\left(4z^2+16z-21\right)\cos\left(2\sqrt{z}\right)+\left(4z^2+12z-15\right)\sin\left(2\sqrt{z}\right)+4\left(4z^3+18z^2-18z+9\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0066.01

$${}_1F_2\left(-\frac{1}{2};\frac{7}{2},4;z\right)==\frac{1}{224\,z^{5/2}}\left(\pi\sqrt{z}\,\left(64z^3-336z^2-420z-315\right)\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)-I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.4\left(2\sqrt{z}\,\left(16z^3-88z^2-87z-48\right)I_0\left(2\sqrt{z}\right)+\left(-16z^3+80z^2+117z+96\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2293.01

$${}_1F_2\left(-\frac{1}{2};\frac{7}{2},4;-z\right)=\frac{1}{224\,z^{5/2}}\left(4\left(2\sqrt{z}\,\left(16z^3+88z^2-87z+48\right)J_0\left(2\sqrt{z}\right)-\left(16z^3+80z^2-117z+96\right)J_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.\pi\sqrt{z}\,\left(64z^3+336z^2-420z+315\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\sqrt{z}\,\left(64z^3+336z^2-420z+315\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2294.01

$${}_1F_2\left(-\frac{1}{2};\frac{7}{2},\frac{9}{2};z\right)=\frac{1}{16\,384\,z^{7/2}}\left(175\left(2\sqrt{z}\,\left(4z^3-22z^2-42z-45\right)\cosh\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4z^3-18z^2-42z+45\right)\sinh\left(2\sqrt{z}\right)-16z\left(z^3-6z^2-9z-9\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2295.01

$${}_1F_2\left(-\frac{1}{2};\frac{7}{2},\frac{9}{2};-z\right)=\frac{1}{16\,384\,z^{7/2}}$$
$$\left(175\left(2\sqrt{z}\,\left(4z^3+22z^2-42z+45\right)\cos\left(2\sqrt{z}\right)+\left(4z^3+18z^2-42z-45\right)\sin\left(2\sqrt{z}\right)+16z\left(z^3+6z^2-9z+9\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2296.01

$${}_1F_2\left(-\frac{1}{2};\frac{7}{2},5;z\right)=\frac{1}{252\,z^{7/2}}$$
$$\left(\pi\left(64z^3-432z^2-756z-945\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+\pi\left(-64z^3+432z^2+756z+945\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2}-\right.$$
$$\left.4\left(2\sqrt{z}\,\left(16z^4-112z^3-165z^2-180z+72\right)I_0\left(2\sqrt{z}\right)+\left(-16z^4+104z^3+207z^2+288z-144\right)I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2297.01

$${}_1F_2\left(-\frac{1}{2};\frac{7}{2},5;-z\right)=\frac{1}{252\,z^{7/2}}$$
$$\left(\pi\left(64z^3+432z^2-756z+945\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}-\pi\left(64z^3+432z^2-756z+945\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{3/2}+\right.$$
$$\left.4\left(2\sqrt{z}\,\left(16z^4+112z^3-165z^2+180z+72\right)J_0\left(2\sqrt{z}\right)-\left(16z^4+104z^3-207z^2+288z+144\right)J_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2298.01

$${}_1F_2\left(-\frac{1}{2};\frac{7}{2},\frac{11}{2};z\right)=$$
$$-\frac{1}{65\,536\,z^{9/2}}\left(315\left(16\left(2z^3-15z^2-30z-45\right)\mathrm{Shi}\left(2\sqrt{z}\right)z^2-2\left(8z^4-56z^3-138z^2-240z+315\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\right.\right.$$
$$\left.\left.\left(-8z^4+48z^3+150z^2+180z+315\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2299.01

$${}_1F_2\left(-\frac{1}{2};\frac{7}{2},\frac{11}{2};-z\right)=$$
$$\frac{1}{65\,536\,z^{9/2}}\left(315\left(16\left(2z^3+15z^2-30z+45\right)\mathrm{Si}\left(2\sqrt{z}\right)z^2+2\left(8z^4+56z^3-138z^2+240z+315\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.\right.$$
$$\left.\left.\left(8z^4+48z^3-150z^2+180z-315\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2300.01

$${}_1F_2\left(-\frac{1}{2};\frac{7}{2},6;z\right)=$$
$$-\frac{1}{1386\,z^{9/2}}\left(5\left(\pi\left(-64z^3+528z^2+1188z+2079\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}+\pi\left(64z^3-528z^2-1188z-2079\right)\right.\right.$$
$$I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{5/2}+4\left(2\sqrt{z}\left(16z^5-136z^4-267z^3-432z^2+180z-432\right)I_0\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(-16z^5+128z^4+321z^3+612z^2+72z+864\right)I_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.2301.01

$${}_1F_2\left(-\frac{1}{2};\frac{7}{2},6;-z\right)=$$
$$\frac{1}{1386\,z^{9/2}}\left(5\left(\pi\left(64z^3+528z^2-1188z+2079\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-\pi\left(64z^3+528z^2-1188z+2079\right)\right.\right.$$
$$J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{5/2}+4\left(2\sqrt{z}\left(16z^5+136z^4-267z^3+432z^2+180z+432\right)J_0\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left.\left(16z^5+128z^4-321z^3+612z^2-72z+864\right)J_1\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = -\frac{1}{2}$, $b_1 = 4$

07.22.03.0067.01

$${}_1F_2\left(-\frac{1}{2};4,4;z\right)==-\frac{16}{1225\,z^{5/2}}\left(2\sqrt{z}\left(16z^3-104z^2-122z-105\right)I_0\left(\sqrt{z}\right)^2+\right.$$
$$\left.2\left(-16z^3+92z^2+173z+210\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\sqrt{z}\left(-32z^3+192z^2+324z+389\right)I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.2302.01

$${}_1F_2\left(-\frac{1}{2};4,4;-z\right)=$$
$$\frac{1}{1225\,z^{5/2}}\left(16\left(2\sqrt{z}\left(16z^3+104z^2-122z+105\right)J_0\left(\sqrt{z}\right)^2-2\left(16z^3+92z^2-173z+210\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{z}\left(32z^3+192z^2-324z+389\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2303.01

$${}_1F_2\left(-\frac{1}{2};4,\frac{9}{2};z\right)=$$
$$\frac{1}{1024\,z^3}\left(-4\left(2z\left(64z^3-464z^2-740z-1011\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\left(-64z^3+432z^2+916z+1497\right)I_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\left(256z^4-1792z^3-3360z^2-5040z-1575\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(-256z^4+1792z^3+3360z^2+5040z+1575\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2304.01

$$ {}_1F_2\left(-\frac{1}{2}; 4, \frac{9}{2}; -z\right) = \frac{1}{1024\,z^3}\left(4\left(2\,z\left(64\,z^3+464\,z^2-740\,z+1011\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\left(64\,z^3+432\,z^2-916\,z+1497\right)J_1\left(2\sqrt{z}\right)\right)+ \pi\left(256\,z^4+1792\,z^3-3360\,z^2+5040\,z-1575\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+ \pi\left(-256\,z^4-1792\,z^3+3360\,z^2-5040\,z+1575\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right) $$

07.22.03.2305.01

$$ {}_1F_2\left(-\frac{1}{2}; 4, 5; z\right) = -\frac{1}{11\,025\,z^3}\left(64\left(z\left(64\,z^3-528\,z^2-936\,z-1575\right)I_0\left(\sqrt{z}\right)^2-8\sqrt{z}\left(8\,z^3-60\,z^2-153\,z-315\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+ \left(-64\,z^4+496\,z^3+1152\,z^2+2241\,z+1260\right)I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.2306.01

$$ {}_1F_2\left(-\frac{1}{2}; 4, 5; -z\right) = \frac{1}{11\,025\,z^3}\left(64\left(z\left(64\,z^3+528\,z^2-936\,z+1575\right)J_0\left(\sqrt{z}\right)^2-8\sqrt{z}\left(8\,z^3+60\,z^2-153\,z+315\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+ \left(64\,z^4+496\,z^3-1152\,z^2+2241\,z-1260\right)J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.2307.01

$$ {}_1F_2\left(-\frac{1}{2}; 4, \frac{11}{2}; z\right) = \frac{1}{40\,960\,z^4}\left(9\left(-4\left(2\,z\left(256\,z^4-2304\,z^3-5088\,z^2-10\,960\,z-3675\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\left(-256\,z^4+2176\,z^3+6016\,z^2+14\,360\,z+11\,025\right)I_1\left(2\sqrt{z}\right)\right)+\pi\left(1024\,z^5-8960\,z^4-22\,400\,z^3-50\,400\,z^2-31\,500\,z+11\,025\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+ \pi\left(-1024\,z^5+8960\,z^4+22\,400\,z^3+50\,400\,z^2+31\,500\,z-11\,025\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.2308.01

$$ {}_1F_2\left(-\frac{1}{2}; 4, \frac{11}{2}; -z\right) = \frac{1}{40\,960\,z^4}\left(9\left(4\left(2\,z\left(256\,z^4+2304\,z^3-5088\,z^2+10\,960\,z-3675\right)J_0\left(2\sqrt{z}\right)+\sqrt{z}\left(-256\,z^4-2176\,z^3+6016\,z^2-14\,360\,z+11\,025\right)J_1\left(2\sqrt{z}\right)\right)+\pi\left(1024\,z^5+8960\,z^4-22\,400\,z^3+50\,400\,z^2-31\,500\,z-11\,025\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+ \pi\left(-1024\,z^5-8960\,z^4+22\,400\,z^3-50\,400\,z^2+31\,500\,z+11\,025\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.2309.01

$$ {}_1F_2\left(-\frac{1}{2}; 4, 6; z\right) = -\frac{1}{24\,255\,z^4}\left(128\left(4\,z\left(16\,z^4-160\,z^3-381\,z^2-945\,z-315\right)I_0\left(\sqrt{z}\right)^2+\sqrt{z}\left(-64\,z^4+592\,z^3+1896\,z^2+5355\,z+5040\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+2\left(-32\,z^5+304\,z^4+898\,z^3+2412\,z^2+2205\,z-2520\right)I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.2310.01

$${}_1F_2\left(-\frac{1}{2}; 4, 6; -z\right) =$$
$$\frac{1}{24\,255\,z^4}\left(128\left(4\,z\left(16\,z^4+160\,z^3-381\,z^2+945\,z-315\right)J_0\left(\sqrt{z}\right)^2+\sqrt{z}\,\left(-64\,z^4-592\,z^3+1896\,z^2-5355\,z+5040\right)\right.\right.$$
$$\left.\left.J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+2\left(32\,z^5+304\,z^4-898\,z^3+2412\,z^2-2205\,z-2520\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = -\frac{1}{2}$, $b_1 = \frac{9}{2}$

07.22.03.2311.01

$${}_1F_2\left(-\frac{1}{2}; \frac{9}{2}, \frac{9}{2}; z\right) = \frac{1}{131\,072\,z^{7/2}}\left(1225\left(2\sqrt{z}\,\left(4\,z^3-30\,z^2-82\,z-183\right)\cosh\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4\,z^3-26\,z^2-90\,z-177\right)\sinh\left(2\sqrt{z}\right)-8\left(2\,z^4-16\,z^3-36\,z^2-72\,z-45\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2312.01

$${}_1F_2\left(-\frac{1}{2}; \frac{9}{2}, \frac{9}{2}; -z\right) = \frac{1}{131\,072\,z^{7/2}}\left(1225\left(2\sqrt{z}\,\left(4\,z^3+30\,z^2-82\,z+183\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4\,z^3+26\,z^2-90\,z+177\right)\sin\left(2\sqrt{z}\right)+8\left(2\,z^4+16\,z^3-36\,z^2+72\,z-45\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2313.01

$${}_1F_2\left(-\frac{1}{2}; \frac{9}{2}, 5; z\right) = \frac{1}{1152\,z^{7/2}}$$
$$\left(-4\left(2\sqrt{z}\,\left(64\,z^4-592\,z^3-1380\,z^2-3339\,z-2304\right)I_0\left(2\sqrt{z}\right)+\left(-64\,z^4+560\,z^3+1620\,z^2+4257\,z+4608\right)I_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\sqrt{z}\,\left(256\,z^4-2304\,z^3-6048\,z^2-15\,120\,z-14\,175\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\sqrt{z}\,\left(-256\,z^4+2304\,z^3+6048\,z^2+15\,120\,z+14\,175\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2314.01

$${}_1F_2\left(-\frac{1}{2}; \frac{9}{2}, 5; -z\right) = \frac{1}{1152\,z^{7/2}}$$
$$\left(4\left(2\sqrt{z}\,\left(64\,z^4+592\,z^3-1380\,z^2+3339\,z-2304\right)J_0\left(2\sqrt{z}\right)+\left(-64\,z^4-560\,z^3+1620\,z^2-4257\,z+4608\right)J_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\sqrt{z}\,\left(256\,z^4+2304\,z^3-6048\,z^2+15\,120\,z-14\,175\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\sqrt{z}\,\left(-256\,z^4-2304\,z^3+6048\,z^2-15\,120\,z+14\,175\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2315.01

$${}_1F_2\left(-\frac{1}{2}; \frac{9}{2}, \frac{11}{2}; z\right) = \frac{1}{262\,144\,z^{9/2}}$$
$$\left(2205\left(2\sqrt{z}\,\left(4\,z^4-38\,z^3-134\,z^2-435\,z-630\right)\cosh\left(2\sqrt{z}\right)+\left(4\,z^4-34\,z^3-150\,z^2-525\,z+630\right)\sinh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.8\,z\left(2\,z^4-20\,z^3-60\,z^2-180\,z-225\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2316.01

$${}_1F_2\left(-\frac{1}{2};\frac{9}{2},\frac{11}{2};-z\right)=$$
$$\frac{1}{262\,144\,z^{9/2}}\left(2205\left(2\sqrt{z}\,\left(4z^4+38z^3-134z^2+435z-630\right)\cos\left(2\sqrt{z}\right)+\left(4z^4+34z^3-150z^2+525z+630\right)\sin\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.8z\left(2z^4+20z^3-60z^2+180z-225\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2317.01

$${}_1F_2\left(-\frac{1}{2};\frac{9}{2},6;z\right)=\frac{1}{6336\,z^{9/2}}$$
$$\left(5\left(\pi\left(256z^4-2816z^3-9504z^2-33\,264z-51\,975\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+\pi\left(-256z^4+2816z^3+9504z^2+33\,264z+\right.\right.\right.$$
$$\left.\left.\left.51\,975\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2}-4\left(2\sqrt{z}\,\left(64z^5-720z^4-2212z^3-7635z^2-10\,368z+4608\right)I_0\left(2\sqrt{z}\right)+\right.\right.\right.$$
$$\left.\left.\left.\left(-64z^5+688z^4+2516z^3+9081z^2+16\,128z-9216\right)I_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.2318.01

$${}_1F_2\left(-\frac{1}{2};\frac{9}{2},6;-z\right)=\frac{1}{6336\,z^{9/2}}$$
$$\left(5\left(\pi\left(256z^4+2816z^3-9504z^2+33\,264z-51\,975\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}+\pi\left(-256z^4-2816z^3+9504z^2-33\,264z+\right.\right.\right.$$
$$\left.\left.\left.51\,975\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{3/2}+4\left(2\sqrt{z}\,\left(64z^5+720z^4-2212z^3+7635z^2-10\,368z-4608\right)J_0\left(2\sqrt{z}\right)+\right.\right.\right.$$
$$\left.\left.\left.\left(-64z^5-688z^4+2516z^3-9081z^2+16\,128z+9216\right)J_1\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1=-\frac{1}{2}$, $b_1=5$

07.22.03.2319.01

$${}_1F_2\left(-\frac{1}{2};5,5;z\right)=$$
$$-\frac{1}{99\,225\,z^{7/2}}\left(512\left(2\sqrt{z}\,\left(32z^4-336z^3-882z^2-2664z-2835\right)I_0\left(\sqrt{z}\right)^2+\left(-64z^4+624z^3+2160z^2+7137z+11\,340\right)\right.\right.$$
$$\left.\left.I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\sqrt{z}\,\left(-64z^4+640z^3+2052z^2+6516z+9873\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2320.01

$${}_1F_2\left(-\frac{1}{2};5,5;-z\right)=$$
$$\frac{1}{99\,225\,z^{7/2}}\left(512\left(2\sqrt{z}\,\left(32z^4+336z^3-882z^2+2664z-2835\right)J_0\left(\sqrt{z}\right)^2+\left(-64z^4-624z^3+2160z^2-7137z+11\,340\right)\right.\right.$$
$$\left.\left.J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\sqrt{z}\,\left(64z^4+640z^3-2052z^2+6516z-9873\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2321.01

$${}_1F_2\left(-\frac{1}{2};5,\frac{11}{2};z\right)=\frac{1}{5120\,z^4}$$
$$\left(-4\left(2z\left(256z^4-2944z^3-9408z^2-34\,920z-59\,085\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-256z^4+2816z^3+10\,656z^2+41\,040z+85\,095\right)\right.\right.$$
$$\left.\left.I_1\left(2\sqrt{z}\right)\right)+\pi\left(1024z^5-11\,520z^4-40\,320z^3-151\,200z^2-283\,500z-99\,225\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(-1024z^5+11\,520z^4+40\,320z^3+151\,200z^2+283\,500z+99\,225\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2322.01

$${}_1F_2\left(-\frac{1}{2}; 5, \frac{11}{2}; -z\right) = \frac{1}{5120\, z^4}$$
$$\left(4\left(2\, z\left(256\, z^4 + 2944\, z^3 - 9408\, z^2 + 34\,920\, z - 59\,085\right) J_0\left(2\sqrt{z}\right) + \sqrt{z}\left(-256\, z^4 - 2816\, z^3 + 10\,656\, z^2 - 41\,040\, z + 85\,095\right)\right.\right.$$
$$\left.\left. J_1\left(2\sqrt{z}\right)\right) + \pi\left(1024\, z^5 + 11\,520\, z^4 - 40\,320\, z^3 + 151\,200\, z^2 - 283\,500\, z + 99\,225\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) -$$
$$\pi\left(1024\, z^5 + 11\,520\, z^4 - 40\,320\, z^3 + 151\,200\, z^2 - 283\,500\, z + 99\,225\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\Big)$$

07.22.03.2323.01

$${}_1F_2\left(-\frac{1}{2}; 5, 6; z\right) = -\frac{1}{218\,295\, z^4}$$
$$\left(512\left(2\, z\left(64\, z^4 - 816\, z^3 - 2844\, z^2 - 12\,294\, z - 25\,515\right) I_0\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-32\, z^4 + 384\, z^3 + 1674\, z^2 + 7578\, z + 19\,845\right)\right.\right.$$
$$\left.\left. I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-128\, z^5 + 1568\, z^4 + 6408\, z^3 + 28\,260\, z^2 + 68\,913\, z + 45\,360\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2324.01

$${}_1F_2\left(-\frac{1}{2}; 5, 6; -z\right) = \frac{1}{218\,295\, z^4}$$
$$\left(512\left(2\, z\left(64\, z^4 + 816\, z^3 - 2844\, z^2 + 12\,294\, z - 25\,515\right) J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(32\, z^4 + 384\, z^3 - 1674\, z^2 + 7578\, z - 19\,845\right)\right.\right.$$
$$\left.\left. J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(128\, z^5 + 1568\, z^4 - 6408\, z^3 + 28\,260\, z^2 - 68\,913\, z + 45\,360\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = -\frac{1}{2}$, $b_1 = \frac{11}{2}$

07.22.03.2325.01

$${}_1F_2\left(-\frac{1}{2}; \frac{11}{2}, \frac{11}{2}; z\right) =$$
$$-\frac{1}{1\,048\,576\, z^{9/2}}\left(3969\left(-2\sqrt{z}\left(8\, z^4 - 96\, z^3 - 438\, z^2 - 2060\, z - 5865\right)\cosh\left(2\sqrt{z}\right) + \left(-8\, z^4 + 88\, z^3 + 490\, z^2 + 2520\, z + 6735\right)\right.\right.$$
$$\left.\left. \sinh\left(2\sqrt{z}\right) + 8\left(4\, z^5 - 50\, z^4 - 200\, z^3 - 900\, z^2 - 2250\, z - 1575\right) \mathrm{Shi}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2326.01

$${}_1F_2\left(-\frac{1}{2}; \frac{11}{2}, \frac{11}{2}; -z\right) = \frac{1}{1\,048\,576\, z^{9/2}}$$
$$\left(3969\left(2\sqrt{z}\left(8\, z^4 + 96\, z^3 - 438\, z^2 + 2060\, z - 5865\right)\cos\left(2\sqrt{z}\right) + \left(8\, z^4 + 88\, z^3 - 490\, z^2 + 2520\, z - 6735\right)\sin\left(2\sqrt{z}\right) +\right.\right.$$
$$\left.\left. 8\left(4\, z^5 + 50\, z^4 - 200\, z^3 + 900\, z^2 - 2250\, z + 1575\right) \mathrm{Si}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2327.01

$${}_1F_2\left(-\frac{1}{2}; \frac{11}{2}, 6; z\right) = \frac{1}{5632\, z^{9/2}}\left(-4\left(2\sqrt{z}\left(256\, z^5 - 3584\, z^4 - 15\,008\, z^3 - 78\,720\, z^2 - 235\,215\, z - 184\,320\right) I_0\left(2\sqrt{z}\right) +\right.\right.$$
$$\left.\left(-256\, z^5 + 3456\, z^4 + 16\,576\, z^3 + 88\,200\, z^2 + 290\,925\, z + 368\,640\right) I_1\left(2\sqrt{z}\right)\right) +$$
$$\pi\sqrt{z}\left(1024\, z^5 - 14\,080\, z^4 - 63\,360\, z^3 - 332\,640\, z^2 - 1\,039\,500\, z - 1\,091\,475\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) +$$
$$\left.\pi\sqrt{z}\left(-1024\, z^5 + 14\,080\, z^4 + 63\,360\, z^3 + 332\,640\, z^2 + 1\,039\,500\, z + 1\,091\,475\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2328.01

$${}_1F_2\left(-\frac{1}{2};\frac{11}{2},6;-z\right)=\frac{1}{5632\,z^{9/2}}\left(4\left(2\sqrt{z}\left(256z^5+3584z^4-15\,008z^3+78\,720z^2-235\,215z+184\,320\right)J_0\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left(256z^5+3456z^4-16\,576z^3+88\,200z^2-290\,925z+368\,640\right)J_1\left(2\sqrt{z}\right)\right)+$$
$$\pi\sqrt{z}\left(1024z^5+14\,080z^4-63\,360z^3+332\,640z^2-1\,039\,500z+1\,091\,475\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\pi\sqrt{z}\left(1024z^5+14\,080z^4-63\,360z^3+332\,640z^2-1\,039\,500z+1\,091\,475\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

For fixed z and $a_1 = -\frac{1}{2}$, $b_1 = 6$

07.22.03.2329.01

$${}_1F_2\left(-\frac{1}{2};6,6;z\right)=-\frac{1}{480\,249\,z^{9/2}}\left(512\left(\sqrt{z}\left(256z^5-3968z^4-18\,240z^3-111\,744z^2-414\,999z-498\,960\right)I_0\left(\sqrt{z}\right)^2+\right.\right.$$
$$8\left(-32z^5+472z^4+2598z^3+16\,191z^2+67\,167z+124\,740\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+$$
$$\left.\left.\sqrt{z}\left(-256z^5+3840z^4+20\,032z^3+123\,048z^2+489\,375z+834\,804\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2330.01

$${}_1F_2\left(-\frac{1}{2};6,6;-z\right)=\frac{1}{480\,249\,z^{9/2}}\left(512\left(\sqrt{z}\left(256z^5+3968z^4-18\,240z^3+111\,744z^2-414\,999z+498\,960\right)J_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$8\left(32z^5+472z^4-2598z^3+16\,191z^2-67\,167z+124\,740\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+$$
$$\left.\left.\sqrt{z}\left(256z^5+3840z^4-20\,032z^3+123\,048z^2-489\,375z+834\,804\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = \frac{1}{2}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = \frac{1}{2}$, $b_1 = -\frac{11}{2}$

07.22.03.2331.01

$${}_1F_2\left(\frac{1}{2};-\frac{11}{2},-\frac{11}{2};z\right)=$$
$$\frac{1}{108\,056\,025}\left(\left(4096z^6+52\,224z^5+898\,560z^4+10\,932\,480z^3+75\,675\,600z^2+217\,898\,100z+108\,056\,025\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.6\sqrt{z}\left(2048z^5+37\,120z^4+552\,960z^3+5\,221\,440z^2+24\,607\,800z+36\,018\,675\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2332.01

$${}_1F_2\left(\frac{1}{2};-\frac{11}{2},-\frac{11}{2};-z\right)=$$
$$\frac{1}{108\,056\,025}\left(\left(4096z^6-52\,224z^5+898\,560z^4-10\,932\,480z^3+75\,675\,600z^2-217\,898\,100z+108\,056\,025\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.6\sqrt{z}\left(2048z^5-37\,120z^4+552\,960z^3-5\,221\,440z^2+24\,607\,800z-36\,018\,675\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2333.01

$${}_1F_2\left(\frac{1}{2};-\frac{11}{2},-\frac{9}{2};z\right)=\frac{1}{9\,823\,275}\left(3\left(2048z^5+29\,440z^4+341\,760z^3+2\,318\,400z^2+6\,615\,000z+3\,274\,425\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(1024z^5+11\,520z^4+158\,400z^3+1\,451\,520z^2+6\,747\,300z+9\,823\,275\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2334.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, -\frac{9}{2}; -z\right) =$$
$$\frac{1}{9\,823\,275}\left(2\sqrt{z}\,\left(-1024\,z^5 + 11\,520\,z^4 - 158\,400\,z^3 + 1\,451\,520\,z^2 - 6\,747\,300\,z + 9\,823\,275\right)\sin\left(2\sqrt{z}\right) - 3\left(2048\,z^5 - 29\,440\,z^4 + 341\,760\,z^3 - 2\,318\,400\,z^2 + 6\,615\,000\,z - 3\,274\,425\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.2335.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, -\frac{7}{2}; z\right) = \frac{1}{1\,091\,475}\left(\left(1024\,z^5 + 11\,520\,z^4 + 120\,000\,z^3 + 786\,240\,z^2 + 2\,211\,300\,z + 1\,091\,475\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(1792\,z^4 + 19\,200\,z^3 + 166\,320\,z^2 + 756\,000\,z + 1\,091\,475\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2336.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, -\frac{7}{2}; -z\right) = \frac{1}{1\,091\,475}\left(\left(-1024\,z^5 + 11\,520\,z^4 - 120\,000\,z^3 + 786\,240\,z^2 - 2\,211\,300\,z + 1\,091\,475\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(1792\,z^4 - 19\,200\,z^3 + 166\,320\,z^2 - 756\,000\,z + 1\,091\,475\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2337.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, -\frac{5}{2}; z\right) = \frac{1}{155\,925}\left(3\left(768\,z^4 + 6400\,z^3 + 38\,640\,z^2 + 105\,840\,z + 51\,975\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(256\,z^4 + 3456\,z^3 + 25\,200\,z^2 + 109\,620\,z + 155\,925\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2338.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, -\frac{5}{2}; -z\right) = \frac{1}{155\,925}\left(3\left(768\,z^4 - 6400\,z^3 + 38\,640\,z^2 - 105\,840\,z + 51\,975\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(256\,z^4 - 3456\,z^3 + 25\,200\,z^2 - 109\,620\,z + 155\,925\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2339.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, -\frac{3}{2}; z\right) = \frac{1}{31\,185}$$
$$\left(\left(256\,z^4 + 4992\,z^3 + 25\,200\,z^2 + 64\,260\,z + 31\,185\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(256\,z^3 + 2016\,z^2 + 7560\,z + 10\,395\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2340.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, -\frac{3}{2}; -z\right) = \frac{1}{31\,185}$$
$$\left(\left(256\,z^4 - 4992\,z^3 + 25\,200\,z^2 - 64\,260\,z + 31\,185\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(-256\,z^3 + 2016\,z^2 - 7560\,z + 10\,395\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2341.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, -\frac{1}{2}; z\right) = \left(\frac{1024\,z^3}{10\,395} + \frac{32\,z^2}{33} + \frac{24\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(64\,z^3 + 2016\,z^2 + 8820\,z + 10\,395\right)\sinh\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.2342.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, -\frac{1}{2}; -z\right) = \left(-\frac{1024\,z^3}{10\,395} + \frac{32\,z^2}{33} - \frac{24\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(-64\,z^3 + 2016\,z^2 - 8820\,z + 10\,395\right)\sin\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.2343.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, \frac{1}{2}; z\right) = \left(\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} + \frac{20\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\,\left(16\,z^2 + 240\,z + 495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2344.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, \frac{1}{2}; -z\right) = \left(-\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} - \frac{20\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(16\,z^2 - 240\,z + 495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.2345.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, 1; z\right) = \frac{\left(64\,z^3 + 4176\,z^2 + 27\,708\,z + 10\,395\right)I_0\left(2\sqrt{z}\right) - 24\sqrt{z}\left(32\,z^2 + 620\,z + 1627\right)I_1\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.2346.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, 1; -z\right) = \frac{\left(-64\,z^3 + 4176\,z^2 - 27\,708\,z + 10\,395\right)J_0\left(2\sqrt{z}\right) + 24\sqrt{z}\left(32\,z^2 - 620\,z + 1627\right)J_1\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.2347.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, \frac{3}{2}; z\right) = \frac{2\left(16\,z^3 + 1380\,z^2 + 12\,645\,z + 11\,520\right)\sinh\left(2\sqrt{z}\right) - 3\sqrt{z}\left(144\,z^2 + 3520\,z + 11\,895\right)\cosh\left(2\sqrt{z}\right)}{10\,395\sqrt{z}}$$

07.22.03.2348.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, \frac{3}{2}; -z\right) = \frac{2\left(-16\,z^3 + 1380\,z^2 - 12\,645\,z + 11\,520\right)\sin\left(2\sqrt{z}\right) - 3\sqrt{z}\left(144\,z^2 - 3520\,z + 11\,895\right)\cos\left(2\sqrt{z}\right)}{10\,395\sqrt{z}}$$

07.22.03.2349.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, 2; z\right) = \frac{\frac{\left(64\,z^3 + 6096\,z^2 + 56\,700\,z + 10\,395\right)I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 12\left(80\,z^2 + 2416\,z + 10\,395\right)I_2\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.2350.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, 2; -z\right) = \frac{\frac{\left(-64\,z^3 + 6096\,z^2 - 56\,700\,z + 10\,395\right)J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 12\left(80\,z^2 - 2416\,z + 10\,395\right)J_2\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.2351.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, \frac{5}{2}; z\right) =$$

$$\frac{1}{3465\,z^{3/2}}\left(\sqrt{z}\left(16\,z^3 + 2196\,z^2 + 34\,185\,z + 80\,640\right)\cosh\left(2\sqrt{z}\right) - 2\left(136\,z^3 + 5385\,z^2 + 34\,560\,z + 20\,160\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2352.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, \frac{5}{2}; -z\right) =$$

$$\frac{1}{3465\,z^{3/2}}\left(\sqrt{z}\left(16\,z^3 - 2196\,z^2 + 34\,185\,z - 80\,640\right)\cos\left(2\sqrt{z}\right) + 2\left(-136\,z^3 + 5385\,z^2 - 34\,560\,z + 20\,160\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2353.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, 3; z\right) = \frac{2\left(\left(64\,z^3 + 8400\,z^2 + 107\,100\,z + 10\,395\right)I_2\left(2\sqrt{z}\right) - 288\sqrt{z}\left(4\,z^2 + 175\,z + 1155\right)I_3\left(2\sqrt{z}\right)\right)}{10\,395\,z}$$

07.22.03.2354.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, 3; -z\right) = \frac{2\left(\left(-64\,z^3 + 8400\,z^2 - 107\,100\,z + 10\,395\right)J_2\left(2\sqrt{z}\right) + 288\sqrt{z}\left(4\,z^2 - 175\,z + 1155\right)J_3\left(2\sqrt{z}\right)\right)}{10\,395\,z}$$

07.22.03.2355.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, \frac{7}{2}; z\right) = \frac{1}{693\, z^{5/2}}$$
$$\left(2\left(4\, z^4 + 843\, z^3 + 21\,600\, z^2 + 110\,880\, z + 60\,480\right)\sinh\left(2\sqrt{z}\right) - 3\sqrt{z}\,\left(56\, z^3 + 3481\, z^2 + 40\,320\, z + 80\,640\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.2356.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, \frac{7}{2}; -z\right) =$$
$$\frac{1}{693\, z^{5/2}}\left(3\sqrt{z}\,\left(56\, z^3 - 3481\, z^2 + 40\,320\, z - 80\,640\right)\cos\left(2\sqrt{z}\right) + 2\left(4\, z^4 - 843\, z^3 + 21\,600\, z^2 - 110\,880\, z + 60\,480\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2357.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, 4; z\right) = \frac{2\left(\left(64\, z^3 + 11\,088\, z^2 + 187\,740\, z + 10\,395\right) I_3\left(2\sqrt{z}\right) - 84\sqrt{z}\,\left(16\, z^2 + 960\, z + 9075\right) I_4\left(2\sqrt{z}\right)\right)}{3465\, z^{3/2}}$$

07.22.03.2358.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, 4; -z\right) = \frac{2\left(\left(-64\, z^3 + 11\,088\, z^2 - 187\,740\, z + 10\,395\right) J_3\left(2\sqrt{z}\right) + 84\sqrt{z}\,\left(16\, z^2 - 960\, z + 9075\right) J_4\left(2\sqrt{z}\right)\right)}{3465\, z^{3/2}}$$

07.22.03.2359.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, \frac{9}{2}; z\right) = \frac{1}{99\, z^{7/2}}\left(\sqrt{z}\,\left(4\, z^4 + 1251\, z^3 + 50\,400\, z^2 + 483\,840\, z + 907\,200\right)\cosh\left(2\sqrt{z}\right) -$$
$$6\left(17\, z^4 + 1600\, z^3 + 31\,080\, z^2 + 141\,120\, z + 75\,600\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2360.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, \frac{9}{2}; -z\right) = \frac{1}{99\, z^{7/2}}\left(6\left(17\, z^4 - 1600\, z^3 + 31\,080\, z^2 - 141\,120\, z + 75\,600\right)\sin\left(2\sqrt{z}\right) -$$
$$\sqrt{z}\,\left(4\, z^4 - 1251\, z^3 + 50\,400\, z^2 - 483\,840\, z + 907\,200\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.2361.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, 5; z\right) = \frac{8\left(\left(64\, z^3 + 14\,160\, z^2 + 308\,988\, z + 10\,395\right) I_4\left(2\sqrt{z}\right) - 24\sqrt{z}\,\left(64\, z^2 + 5052\, z + 64\,845\right) I_5\left(2\sqrt{z}\right)\right)}{3465\, z^2}$$

07.22.03.2362.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, 5; -z\right) =$$
$$-\frac{1}{3465\, z^2}\left(8\left(\left(64\, z^3 - 14\,160\, z^2 + 308\,988\, z - 10\,395\right) J_4\left(2\sqrt{z}\right) - 24\sqrt{z}\,\left(64\, z^2 - 5052\, z + 64\,845\right) J_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2363.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, \frac{11}{2}; z\right) = \frac{1}{11\, z^{9/2}}\left(2\left(z^5 + 450\, z^4 + 27\,300\, z^3 + 442\,260\, z^2 + 1\,871\,100\, z + 992\,250\right)\sinh\left(2\sqrt{z}\right) -$$
$$\sqrt{z}\,\left(61\, z^4 + 8400\, z^3 + 257\,040\, z^2 + 2\,192\,400\, z + 3\,969\,000\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.2364.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, \frac{11}{2}; -z\right) = \frac{1}{11\, z^{9/2}}\left(-\sqrt{z}\,\left(61\, z^4 - 8400\, z^3 + 257\,040\, z^2 - 2\,192\,400\, z + 3\,969\,000\right)\cos\left(2\sqrt{z}\right) -$$
$$2\left(z^5 - 450\, z^4 + 27\,300\, z^3 - 442\,260\, z^2 + 1\,871\,100\, z - 992\,250\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2365.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, 6; z\right) = \frac{1}{693\, z^{5/2}}\left(8\left(\left(64\, z^3 + 17\,616\, z^2 + 482\,748\, z + 10\,395\right) I_5\left(2\sqrt{z}\right) - 12\sqrt{z}\,\left(144\, z^2 + 14\,480\, z + 242\,319\right) I_6\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2366.01

$${}_1F_2\left(\frac{1}{2}; -\frac{11}{2}, 6; -z\right) = -\frac{1}{693\, z^{5/2}}\left(8\left(\left(64\, z^3 - 17\,616\, z^2 + 482\,748\, z - 10\,395\right) J_5\left(2\sqrt{z}\right) - 12\sqrt{z}\,\left(144\, z^2 - 14\,480\, z + 242\,319\right) J_6\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = \frac{1}{2}$, $b_1 = -\frac{9}{2}$

07.22.03.2367.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, -\frac{9}{2}; z\right) = \frac{1}{893\,025}\left(\left(1024\, z^5 + 8960\, z^4 + 96\,960\, z^3 + 640\,800\, z^2 + 1\,808\,100\, z + 893\,025\right)\cosh\left(2\sqrt{z}\right) - 10\sqrt{z}\,\left(256\, z^4 + 3072\, z^3 + 27\,024\, z^2 + 123\,480\, z + 178\,605\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2368.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, -\frac{9}{2}; -z\right) = \frac{1}{893\,025}\left(\left(-1024\, z^5 + 8960\, z^4 - 96\,960\, z^3 + 640\,800\, z^2 - 1\,808\,100\, z + 893\,025\right)\cos\left(2\sqrt{z}\right) + 10\sqrt{z}\,\left(256\, z^4 - 3072\, z^3 + 27\,024\, z^2 - 123\,480\, z + 178\,605\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2369.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, -\frac{7}{2}; z\right) = \frac{1}{99\,225}\left(5\left(256\, z^4 + 2304\, z^3 + 14\,544\, z^2 + 40\,320\, z + 19\,845\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(256\, z^4 + 1920\, z^3 + 15\,600\, z^2 + 69\,300\, z + 99\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2370.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, -\frac{7}{2}; -z\right) = \frac{1}{99\,225}\left(5\left(256\, z^4 - 2304\, z^3 + 14\,544\, z^2 - 40\,320\, z + 19\,845\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(256\, z^4 - 1920\, z^3 + 15\,600\, z^2 - 69\,300\, z + 99\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2371.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, -\frac{5}{2}; z\right) = \left(\frac{256\, z^4}{14\,175} + \frac{128\, z^3}{945} + \frac{16\, z^2}{21} + \frac{92\, z}{45} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(128\, z^3 + 800\, z^2 + 3360\, z + 4725\right)\sinh\left(2\sqrt{z}\right)}{4725}$$

07.22.03.2372.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, -\frac{5}{2}; -z\right) = \left(\frac{256\, z^4}{14\,175} - \frac{128\, z^3}{945} + \frac{16\, z^2}{21} - \frac{92\, z}{45} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(-128\, z^3 + 800\, z^2 - 3360\, z + 4725\right)\sin\left(2\sqrt{z}\right)}{4725}$$

07.22.03.2373.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, -\frac{3}{2}; z\right) =$$
$$\frac{1}{2835}\left(\left(512\,z^3 + 2400\,z^2 + 5880\,z + 2835\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(64\,z^3 + 608\,z^2 + 2100\,z + 2835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2374.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, -\frac{3}{2}; -z\right) =$$
$$\frac{1}{2835}\left(\left(-512\,z^3 + 2400\,z^2 - 5880\,z + 2835\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-64\,z^3 + 608\,z^2 - 2100\,z + 2835\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2375.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, -\frac{1}{2}; z\right) = \left(\frac{64\,z^3}{945} + \frac{64\,z^2}{63} + \frac{20\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\,\left(176\,z^2 + 840\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2376.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, -\frac{1}{2}; -z\right) = \left(-\frac{64\,z^3}{945} + \frac{64\,z^2}{63} - \frac{20\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\,\left(176\,z^2 - 840\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.2377.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, \frac{1}{2}; z\right) = \left(\frac{16\,z^2}{63} + \frac{16\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\,\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2378.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, \frac{1}{2}; -z\right) = \left(\frac{16\,z^2}{63} - \frac{16\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\,\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.2379.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, 1; z\right) = \frac{1}{945}\left(\left(272\,z^2 + 2328\,z + 945\right)I_0\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,z^2 + 568\,z + 1689\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2380.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, 1; -z\right) = \frac{1}{945}\left(\left(272\,z^2 - 2328\,z + 945\right)J_0\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^2 - 568\,z + 1689\right)J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2381.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, \frac{3}{2}; z\right) = \frac{10\left(16\,z^2 + 195\,z + 192\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\,\left(16\,z^2 + 740\,z + 2895\right)\cosh\left(2\sqrt{z}\right)}{945\sqrt{z}}$$

07.22.03.2382.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, \frac{3}{2}; -z\right) = \frac{10\left(16\,z^2 - 195\,z + 192\right)\sin\left(2\sqrt{z}\right) - \sqrt{z}\,\left(16\,z^2 - 740\,z + 2895\right)\cos\left(2\sqrt{z}\right)}{945\sqrt{z}}$$

07.22.03.2383.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, 2; z\right) = \frac{\left(16\,z^2 + 200\,z + 45\right)I_1\left(2\sqrt{z}\right)}{45\sqrt{z}} - \frac{2}{945}\left(16\,z^2 + 936\,z + 4725\right)I_2\left(2\sqrt{z}\right)$$

07.22.03.2384.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, 2; -z\right) = \frac{\left(16\,z^2 - 200\,z + 45\right)J_1\left(2\sqrt{z}\right)}{45\sqrt{z}} + \frac{2}{945}\left(16\,z^2 - 936\,z + 4725\right)J_2\left(2\sqrt{z}\right)$$

07.22.03.2385.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, \frac{5}{2}; z\right) = \frac{\sqrt{z}\,\left(104\,z^2 + 2235\,z + 5760\right)\cosh\left(2\sqrt{z}\right) - 2\left(4\,z^3 + 315\,z^2 + 2400\,z + 1440\right)\sinh\left(2\sqrt{z}\right)}{315\,z^{3/2}}$$

07.22.03.2386.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, \frac{5}{2}; -z\right) = \frac{2\left(-4\,z^3 + 315\,z^2 - 2400\,z + 1440\right)\sin\left(2\sqrt{z}\right) - \sqrt{z}\,\left(104\,z^2 - 2235\,z + 5760\right)\cos\left(2\sqrt{z}\right)}{315\,z^{3/2}}$$

07.22.03.2387.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, 3; z\right) = \frac{2\left(5\left(80\,z^2 + 1400\,z + 189\right)I_2\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,z^2 + 1400\,z + 11\,025\right)I_3\left(2\sqrt{z}\right)\right)}{945\,z}$$

07.22.03.2388.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, 3; -z\right) = \frac{2\left(5\left(80\,z^2 - 1400\,z + 189\right)J_2\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^2 - 1400\,z + 11\,025\right)J_3\left(2\sqrt{z}\right)\right)}{945\,z}$$

07.22.03.2389.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, \frac{7}{2}; z\right) = \frac{1}{63\,z^{5/2}}\left(6\left(11\,z^3 + 400\,z^2 + 2280\,z + 1260\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\,\left(4\,z^3 + 513\,z^2 + 7200\,z + 15\,120\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.2390.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, \frac{7}{2}; -z\right) = \frac{\sqrt{z}\,\left(4\,z^3 - 513\,z^2 + 7200\,z - 15\,120\right)\cos\left(2\sqrt{z}\right) + 6\left(-11\,z^3 + 400\,z^2 - 2280\,z + 1260\right)\sin\left(2\sqrt{z}\right)}{63\,z^{5/2}}$$

07.22.03.2391.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, 4; z\right) = \frac{2\left(464\,z^2 + 10\,920\,z + 945\right)I_3\left(2\sqrt{z}\right) - 4\sqrt{z}\,\left(16\,z^2 + 1960\,z + 22\,365\right)I_4\left(2\sqrt{z}\right)}{315\,z^{3/2}}$$

07.22.03.2392.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, 4; -z\right) = \frac{2\left(464\,z^2 - 10\,920\,z + 945\right)J_3\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(16\,z^2 - 1960\,z + 22\,365\right)J_4\left(2\sqrt{z}\right)}{315\,z^{3/2}}$$

07.22.03.2393.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, \frac{9}{2}; z\right) =$$
$$\frac{1}{9\,z^{7/2}}\left(\sqrt{z}\,\left(41\,z^3 + 2400\,z^2 + 26\,040\,z + 50\,400\right)\cosh\left(2\sqrt{z}\right) - 2\left(z^4 + 200\,z^3 + 4800\,z^2 + 23\,310\,z + 12\,600\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2394.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, \frac{9}{2}; -z\right) =$$
$$\frac{1}{9\,z^{7/2}}\left(\sqrt{z}\,\left(41\,z^3 - 2400\,z^2 + 26\,040\,z - 50\,400\right)\cos\left(2\sqrt{z}\right) + 2\left(z^4 - 200\,z^3 + 4800\,z^2 - 23\,310\,z + 12\,600\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2395.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, 5; z\right) = \frac{8\left(3\left(176\,z^2 + 5384\,z + 315\right)I_4\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,z^2 + 2616\,z + 40\,905\right)I_5\left(2\sqrt{z}\right)\right)}{315\,z^2}$$

07.22.03.2396.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, 5; -z\right) = \frac{8\left(3\left(176 z^2 - 5384 z + 315\right) J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\left(16 z^2 - 2616 z + 40\,905\right) J_5\left(2\sqrt{z}\right)\right)}{315 z^2}$$

07.22.03.2397.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, \frac{11}{2}; z\right) = \frac{1}{z^{9/2}}\left(5\left(5 z^4 + 450 z^3 + 8379 z^2 + 37\,170 z + 19\,845\right)\sinh\left(2\sqrt{z}\right) - \right.$$
$$\left.\sqrt{z}\left(z^4 + 300 z^3 + 11\,550 z^2 + 107\,100 z + 198\,450\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.2398.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, \frac{11}{2}; -z\right) = \frac{1}{z^{9/2}}$$
$$\left(5\left(5 z^4 - 450 z^3 + 8379 z^2 - 37\,170 z + 19\,845\right)\sin\left(2\sqrt{z}\right) - \sqrt{z}\left(z^4 - 300 z^3 + 11\,550 z^2 - 107\,100 z + 198\,450\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.2399.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, 6; z\right) = \frac{8\left(\left(592 z^2 + 22\,888 z + 945\right) I_5\left(2\sqrt{z}\right) - 2\sqrt{z}\left(16 z^2 + 3368 z + 69\,189\right) I_6\left(2\sqrt{z}\right)\right)}{63 z^{5/2}}$$

07.22.03.2400.01

$${}_1F_2\left(\frac{1}{2}; -\frac{9}{2}, 6; -z\right) = \frac{8\left(\left(592 z^2 - 22\,888 z + 945\right) J_5\left(2\sqrt{z}\right) + 2\sqrt{z}\left(16 z^2 - 3368 z + 69\,189\right) J_6\left(2\sqrt{z}\right)\right)}{63 z^{5/2}}$$

For fixed z and $a_1 = \frac{1}{2}$, $b_1 = -\frac{7}{2}$

07.22.03.2401.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, -\frac{7}{2}; z\right) =$$
$$\frac{1}{11\,025}\left(\left(256 z^4 + 1408 z^3 + 8304 z^2 + 22\,500 z + 11\,025\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256 z^3 + 1824 z^2 + 7800 z + 11\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2402.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, -\frac{7}{2}; -z\right) =$$
$$\frac{1}{11\,025}\left(\left(256 z^4 - 1408 z^3 + 8304 z^2 - 22\,500 z + 11\,025\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-256 z^3 + 1824 z^2 - 7800 z + 11\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2403.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, -\frac{5}{2}; z\right) =$$
$$\frac{1}{1575}\left(\left(256 z^3 + 1248 z^2 + 3240 z + 1575\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(64 z^3 + 288 z^2 + 1140 z + 1575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2404.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, -\frac{5}{2}; -z\right) =$$
$$\frac{1}{1575}\left(\left(-256 z^3 + 1248 z^2 - 3240 z + 1575\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-64 z^3 + 288 z^2 - 1140 z + 1575\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2405.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, -\frac{3}{2}; z\right) = \frac{1}{315}\left(\left(64\,z^3 + 288\,z^2 + 660\,z + 315\right)\cosh\left(2\sqrt{z}\right) - 10\sqrt{z}\,\left(16\,z^2 + 48\,z + 63\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2406.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, -\frac{3}{2}; -z\right) = \frac{1}{315}\left(\left(-64\,z^3 + 288\,z^2 - 660\,z + 315\right)\cos\left(2\sqrt{z}\right) + 10\sqrt{z}\,\left(16\,z^2 - 48\,z + 63\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2407.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, -\frac{1}{2}; z\right) = \left(\frac{16\,z^2}{15} + \frac{16\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{105}\sqrt{z}\,\left(16\,z^2 + 100\,z + 105\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2408.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, -\frac{1}{2}; -z\right) = \left(\frac{16\,z^2}{15} - \frac{16\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{105}\sqrt{z}\,\left(16\,z^2 - 100\,z + 105\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.2409.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, \frac{1}{2}; z\right) = \left(\frac{16\,z^2}{105} + \frac{12\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,\left(8\,z + 21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2410.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, \frac{1}{2}; -z\right) = \left(\frac{16\,z^2}{105} - \frac{12\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}\left(21 - 8\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.2411.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, 1; z\right) = \frac{1}{105}\left(\left(16\,z^2 + 232\,z + 105\right)I_0\left(2\sqrt{z}\right) - 32\sqrt{z}\,\left(3\,z + 11\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2412.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, 1; -z\right) = \frac{1}{105}\left(\left(16\,z^2 - 232\,z + 105\right)J_0\left(2\sqrt{z}\right) + 32\left(11 - 3\,z\right)\sqrt{z}\,J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2413.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, \frac{3}{2}; z\right) = \frac{2\left(4\,z^2 + 87\,z + 96\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\,\left(56\,z + 279\right)\cosh\left(2\sqrt{z}\right)}{105\sqrt{z}}$$

07.22.03.2414.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, \frac{3}{2}; -z\right) = \frac{\sqrt{z}\,\left(56\,z - 279\right)\cos\left(2\sqrt{z}\right) + 2\left(4\,z^2 - 87\,z + 96\right)\sin\left(2\sqrt{z}\right)}{105\sqrt{z}}$$

07.22.03.2415.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, 2; z\right) = \frac{1}{105}\left(\frac{\left(16\,z^2 + 360\,z + 105\right)I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 8\left(16\,z + 105\right)I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.2416.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, 2; -z\right) = \frac{1}{105}\left(\frac{\left(16\,z^2 - 360\,z + 105\right)J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 8\left(105 - 16\,z\right)J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.2417.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, \frac{5}{2}; z\right) = \frac{\sqrt{z}\,\left(4\,z^2 + 163\,z + 480\right)\cosh\left(2\sqrt{z}\right) - 2\left(19\,z^2 + 192\,z + 120\right)\sinh\left(2\sqrt{z}\right)}{35\,z^{3/2}}$$

07.22.03.2418.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, \frac{5}{2}; -z\right) = \frac{2\left(19\,z^2 - 192\,z + 120\right)\sin\left(2\sqrt{z}\right) - \sqrt{z}\,\left(4\,z^2 - 163\,z + 480\right)\cos\left(2\sqrt{z}\right)}{35\,z^{3/2}}$$

07.22.03.2419.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, 3; z\right) = \frac{2\left(16\,z^2 + 520\,z + 105\right)I_2\left(2\sqrt{z}\right) - 160\sqrt{z}\,\left(2\,z + 21\right)I_3\left(2\sqrt{z}\right)}{105\,z}$$

07.22.03.2420.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, 3; -z\right) = \frac{2\left(16\,z^2 - 520\,z + 105\right)J_2\left(2\sqrt{z}\right) + 160\left(21 - 2\,z\right)\sqrt{z}\,J_3\left(2\sqrt{z}\right)}{105\,z}$$

07.22.03.2421.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, \frac{7}{2}; z\right) = \frac{2\left(z^3 + 72\,z^2 + 480\,z + 270\right)\sinh\left(2\sqrt{z}\right) - 5\sqrt{z}\,\left(5\,z^2 + 96\,z + 216\right)\cosh\left(2\sqrt{z}\right)}{7\,z^{5/2}}$$

07.22.03.2422.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, \frac{7}{2}; -z\right) = \frac{-5\sqrt{z}\,\left(5\,z^2 - 96\,z + 216\right)\cos\left(2\sqrt{z}\right) - 2\left(z^3 - 72\,z^2 + 480\,z - 270\right)\sin\left(2\sqrt{z}\right)}{7\,z^{5/2}}$$

07.22.03.2423.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, 4; z\right) = \frac{2\left(\left(16\,z^2 + 712\,z + 105\right)I_3\left(2\sqrt{z}\right) - 8\sqrt{z}\,\left(24\,z + 371\right)I_4\left(2\sqrt{z}\right)\right)}{35\,z^{3/2}}$$

07.22.03.2424.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, 4; -z\right) = \frac{2\left(16\,z^2 - 712\,z + 105\right)J_3\left(2\sqrt{z}\right) + 16\left(371 - 24\,z\right)\sqrt{z}\,J_4\left(2\sqrt{z}\right)}{35\,z^{3/2}}$$

07.22.03.2425.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, \frac{9}{2}; z\right) = \frac{\sqrt{z}\,\left(z^3 + 120\,z^2 + 1560\,z + 3150\right)\cosh\left(2\sqrt{z}\right) - \left(16\,z^3 + 540\,z^2 + 2880\,z + 1575\right)\sinh\left(2\sqrt{z}\right)}{z^{7/2}}$$

07.22.03.2426.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, \frac{9}{2}; -z\right) = \frac{\sqrt{z}\,\left(z^3 - 120\,z^2 + 1560\,z - 3150\right)\cos\left(2\sqrt{z}\right) + \left(-16\,z^3 + 540\,z^2 - 2880\,z + 1575\right)\sin\left(2\sqrt{z}\right)}{z^{7/2}}$$

07.22.03.2427.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, 5; z\right) = \frac{8\left(\left(16\,z^2 + 936\,z + 105\right)I_4\left(2\sqrt{z}\right) - 32\sqrt{z}\,\left(7\,z + 150\right)I_5\left(2\sqrt{z}\right)\right)}{35\,z^2}$$

07.22.03.2428.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, 5; -z\right) = \frac{8\left(\left(16\,z^2 - 936\,z + 105\right)J_4\left(2\sqrt{z}\right) + 32\left(150 - 7\,z\right)\sqrt{z}\,J_5\left(2\sqrt{z}\right)\right)}{35\,z^2}$$

07.22.03.2429.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, \frac{11}{2}; z\right) =$$

$$\frac{1}{2\,z^{9/2}}\left(9\left(\left(z^4 + 190\,z^3 + 4335\,z^2 + 20\,475\,z + 11\,025\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\,\left(2\,z^3 + 111\,z^2 + 1155\,z + 2205\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2430.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, \frac{11}{2}; -z\right) = \frac{1}{2\,z^{9/2}}\left(9\left(10\sqrt{z}\,\left(2\,z^3 - 111\,z^2 + 1155\,z - 2205\right)\cos\left(2\sqrt{z}\right) + \left(z^4 - 190\,z^3 + 4335\,z^2 - 20\,475\,z + 11\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2431.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, 6; z\right) = \frac{8\left(\left(16\,z^2 + 1192\,z + 105\right) I_5\left(2\sqrt{z}\right) - 8\sqrt{z}\,\left(32\,z + 909\right) I_6\left(2\sqrt{z}\right)\right)}{7\,z^{5/2}}$$

07.22.03.2432.01

$${}_1F_2\left(\frac{1}{2}; -\frac{7}{2}, 6; -z\right) = \frac{8\left(\left(16\,z^2 - 1192\,z + 105\right) J_5\left(2\sqrt{z}\right) + 8\left(909 - 32\,z\right)\sqrt{z}\,J_6\left(2\sqrt{z}\right)\right)}{7\,z^{5/2}}$$

For fixed z and $a_1 = \frac{1}{2}$, $b_1 = -\frac{5}{2}$

07.22.03.2433.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, -\frac{5}{2}; z\right) = \frac{1}{225}\left(\left(64\,z^3 + 192\,z^2 + 468\,z + 225\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(16\,z^2 + 56\,z + 75\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2434.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, -\frac{5}{2}; -z\right) = \frac{1}{225}\left(\left(-64\,z^3 + 192\,z^2 - 468\,z + 225\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(16\,z^2 - 56\,z + 75\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2435.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, -\frac{3}{2}; z\right) = \frac{1}{45}\left(\left(48\,z^2 + 96\,z + 45\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,z^2 + 36\,z + 45\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2436.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, -\frac{3}{2}; -z\right) = \frac{1}{45}\left(\left(48\,z^2 - 96\,z + 45\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^2 - 36\,z + 45\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2437.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, -\frac{1}{2}; z\right) = \frac{1}{15}\left(\left(16\,z^2 + 36\,z + 15\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,z + 15\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2438.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, -\frac{1}{2}; -z\right) = \frac{1}{15}\left(\left(16\,z^2 - 36\,z + 15\right)\cos\left(2\sqrt{z}\right) + 2\left(15 - 16\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2439.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, \frac{1}{2}; z\right) = \left(\frac{8\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,\left(4\,z + 15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2440.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, \frac{1}{2}; -z\right) = \left(1 - \frac{8\,z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\left(15 - 4\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.2441.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, 1; z\right) = \frac{1}{15}\left(\left(28\,z + 15\right) I_0\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(4\,z + 23\right) I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2442.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, 1; -z\right) = \frac{1}{15}\left((15 - 28\,z)\,J_0\left(2\sqrt{z}\right) + 2\,(23 - 4\,z)\,\sqrt{z}\;J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2443.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, \frac{3}{2}; z\right) = \frac{6\,(3\,z + 4)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\;(4\,z + 33)\cosh\left(2\sqrt{z}\right)}{15\sqrt{z}}$$

07.22.03.2444.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, \frac{3}{2}; -z\right) = \frac{\sqrt{z}\;(4\,z - 33)\cos\left(2\sqrt{z}\right) + 6\,(4 - 3\,z)\sin\left(2\sqrt{z}\right)}{15\sqrt{z}}$$

07.22.03.2445.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, 2; z\right) = \frac{(12\,z + 5)\,I_1\left(2\sqrt{z}\right)}{5\sqrt{z}} - \frac{2}{15}(4\,z + 45)\,I_2\left(2\sqrt{z}\right)$$

07.22.03.2446.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, 2; -z\right) = \frac{2}{15}(45 - 4\,z)\,J_2\left(2\sqrt{z}\right) - \frac{(12\,z - 5)\,J_1\left(2\sqrt{z}\right)}{5\sqrt{z}}$$

07.22.03.2447.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, \frac{5}{2}; z\right) = \frac{\sqrt{z}\;(13\,z + 48)\cosh\left(2\sqrt{z}\right) - 2\left(z^2 + 18\,z + 12\right)\sinh\left(2\sqrt{z}\right)}{5\,z^{3/2}}$$

07.22.03.2448.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, \frac{5}{2}; -z\right) = \frac{\sqrt{z}\;(13\,z - 48)\cos\left(2\sqrt{z}\right) + 2\left(z^2 - 18\,z + 12\right)\sin\left(2\sqrt{z}\right)}{5\,z^{3/2}}$$

07.22.03.2449.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, 3; z\right) = \frac{(88\,z + 30)\,I_2\left(2\sqrt{z}\right) - 4\sqrt{z}\;(4\,z + 75)\,I_3\left(2\sqrt{z}\right)}{15\,z}$$

07.22.03.2450.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, 3; -z\right) = \frac{(30 - 88\,z)\,J_2\left(2\sqrt{z}\right) + 4\,(75 - 4\,z)\,\sqrt{z}\;J_3\left(2\sqrt{z}\right)}{15\,z}$$

07.22.03.2451.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, \frac{7}{2}; z\right) = \frac{3\left(3\,z^2 + 26\,z + 15\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\;\left(z^2 + 36\,z + 90\right)\cosh\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.2452.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, \frac{7}{2}; -z\right) = \frac{3\left(3\,z^2 - 26\,z + 15\right)\sin\left(2\sqrt{z}\right) - \sqrt{z}\;\left(z^2 - 36\,z + 90\right)\cos\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.2453.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, 4; z\right) = \frac{2\,(52\,z + 15)\,I_3\left(2\sqrt{z}\right)}{5\,z^{3/2}} - \frac{4\,(4\,z + 113)\,I_4\left(2\sqrt{z}\right)}{5\,z}$$

07.22.03.2454.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, 4; -z\right) = \frac{(30 - 104\,z)\,J_3\left(2\sqrt{z}\right) + 4\,(113 - 4\,z)\,\sqrt{z}\;J_4\left(2\sqrt{z}\right)}{5\,z^{3/2}}$$

07.22.03.2455.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, \frac{9}{2}; z\right) = -\frac{7\left(\left(z^3 + 66\,z^2 + 405\,z + 225\right)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\;\left(2\,z^2 + 35\,z + 75\right)\cosh\left(2\sqrt{z}\right)\right)}{2\,z^{7/2}}$$

07.22.03.2456.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, \frac{9}{2}; -z\right) = -\frac{7\left(6\sqrt{z}\;\left(2\,z^2 - 35\,z + 75\right)\cos\left(2\sqrt{z}\right) + \left(z^3 - 66\,z^2 + 405\,z - 225\right)\sin\left(2\sqrt{z}\right)\right)}{2\,z^{7/2}}$$

07.22.03.2457.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, 5; z\right) = \frac{24\,(4\,z + 1)\,I_4\left(2\sqrt{z}\right)}{z^2} - \frac{16\,(4\,z + 159)\,I_5\left(2\sqrt{z}\right)}{5\,z^{3/2}}$$

07.22.03.2458.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, 5; -z\right) = -\frac{8\left(15\,(4\,z - 1)\,J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\;(4\,z - 159)\,J_5\left(2\sqrt{z}\right)\right)}{5\,z^2}$$

07.22.03.2459.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, \frac{11}{2}; z\right) =$$

$$-\frac{1}{32\,z^{9/2}}\left(63\left(2\sqrt{z}\;\left(4\,z^3 + 450\,z^2 + 5550\,z + 11\,025\right)\cosh\left(2\sqrt{z}\right) - \left(124\,z^3 + 3930\,z^2 + 20\,250\,z + 11\,025\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2460.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, \frac{11}{2}; -z\right) =$$

$$\frac{1}{32\,z^{9/2}}\left(63\left(2\sqrt{z}\;\left(4\,z^3 - 450\,z^2 + 5550\,z - 11\,025\right)\cos\left(2\sqrt{z}\right) + \left(-124\,z^3 + 3930\,z^2 - 20\,250\,z + 11\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2461.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, 6; z\right) = \frac{8\,(68\,z + 15)\,I_5\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{16\,(4\,z + 213)\,I_6\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.2462.01

$${}_1F_2\left(\frac{1}{2}; -\frac{5}{2}, 6; -z\right) = \frac{16\,(213 - 4\,z)\,J_6\left(2\sqrt{z}\right)}{z^2} - \frac{8\,(68\,z - 15)\,J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = \frac{1}{2}$, $b_1 = -\frac{3}{2}$

07.22.03.2463.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, -\frac{3}{2}; z\right) = \frac{1}{9}\left(\left(16\,z^2 + 20\,z + 9\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\;(8\,z + 9)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2464.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, -\frac{3}{2}; -z\right) = \frac{1}{9}\left(\left(16\,z^2 - 20\,z + 9\right)\cos\left(2\sqrt{z}\right) + 2\,(9 - 8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2465.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, -\frac{1}{2}; z\right) = \left(\frac{8\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{3}\sqrt{z}\,(4\,z + 3)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2466.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, -\frac{1}{2}; -z\right) = \left(1 - \frac{8\,z}{3}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{3}(3 - 4\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.2467.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, \frac{1}{2}; z\right) = \left(\frac{4\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.2468.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, \frac{1}{2}; -z\right) = \left(1 - \frac{4\,z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.2469.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, 1; z\right) = \frac{1}{3}\left((4\,z + 3)\,I_0\left(2\sqrt{z}\right) - 8\sqrt{z}\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2470.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, 1; -z\right) = \frac{1}{3}\left((3 - 4\,z)\,J_0\left(2\sqrt{z}\right) + 8\sqrt{z}\,J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2471.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, \frac{3}{2}; z\right) = \frac{2\,(z + 2)\sinh\left(2\sqrt{z}\right) - 5\sqrt{z}\,\cosh\left(2\sqrt{z}\right)}{3\sqrt{z}}$$

07.22.03.2472.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, \frac{3}{2}; -z\right) = \frac{-5\sqrt{z}\,\cos\left(2\sqrt{z}\right) - 2\,(z - 2)\sin\left(2\sqrt{z}\right)}{3\sqrt{z}}$$

07.22.03.2473.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, 2; z\right) = \frac{(4\,z + 3)\,I_1\left(2\sqrt{z}\right)}{3\sqrt{z}} - 4\,I_2\left(2\sqrt{z}\right)$$

07.22.03.2474.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, 2; -z\right) = \frac{(3 - 4\,z)\,J_1\left(2\sqrt{z}\right)}{3\sqrt{z}} + 4\,J_2\left(2\sqrt{z}\right)$$

07.22.03.2475.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, \frac{5}{2}; z\right) = \frac{\sqrt{z}\,(z + 6)\cosh\left(2\sqrt{z}\right) - (4\,z + 3)\sinh\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.2476.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, \frac{5}{2}; -z\right) = \frac{(z - 6)\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (3 - 4\,z)\sin\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.2477.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, 3; z\right) = \frac{(8z+6)\, I_2\left(2\sqrt{z}\right) - 32\sqrt{z}\, I_3\left(2\sqrt{z}\right)}{3z}$$

07.22.03.2478.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, 3; -z\right) = \frac{(6-8z)\, J_2\left(2\sqrt{z}\right) + 32\sqrt{z}\, J_3\left(2\sqrt{z}\right)}{3z}$$

07.22.03.2479.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, \frac{7}{2}; z\right) = \frac{5\left(\left(z^2+15z+9\right)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,(z+3)\cosh\left(2\sqrt{z}\right)\right)}{2z^{5/2}}$$

07.22.03.2480.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, \frac{7}{2}; -z\right) = \frac{5\left(6(z-3)\sqrt{z}\,\cos\left(2\sqrt{z}\right) + \left(z^2-15z+9\right)\sin\left(2\sqrt{z}\right)\right)}{2z^{5/2}}$$

07.22.03.2481.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, 4; z\right) = \frac{2(4z+3)\, I_3\left(2\sqrt{z}\right)}{z^{3/2}} - \frac{40\, I_4\left(2\sqrt{z}\right)}{z}$$

07.22.03.2482.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, 4; -z\right) = \frac{40\, J_4\left(2\sqrt{z}\right)}{z} - \frac{2(4z-3)\, J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.2483.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, \frac{9}{2}; z\right) = \frac{35\left(2\sqrt{z}\,\left(z^2+32z+75\right)\cosh\left(2\sqrt{z}\right) - \left(17z^2+132z+75\right)\sinh\left(2\sqrt{z}\right)\right)}{8z^{7/2}}$$

07.22.03.2484.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, \frac{9}{2}; -z\right) = -\frac{35\left(2\sqrt{z}\,\left(z^2-32z+75\right)\cos\left(2\sqrt{z}\right) + \left(-17z^2+132z-75\right)\sin\left(2\sqrt{z}\right)\right)}{8z^{7/2}}$$

07.22.03.2485.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, 5; z\right) = \frac{8\left((4z+3)\, I_4\left(2\sqrt{z}\right) - 24\sqrt{z}\, I_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.2486.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, 5; -z\right) = \frac{8\left((3-4z)\, J_4\left(2\sqrt{z}\right) + 24\sqrt{z}\, J_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.2487.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, \frac{11}{2}; z\right) = \frac{315\left(\left(8z^3+486z^2+2850z+1575\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(46z^2+750z+1575\right)\cosh\left(2\sqrt{z}\right)\right)}{64z^{9/2}}$$

07.22.03.2488.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, \frac{11}{2}; -z\right) = -\frac{315\left(2\sqrt{z}\,\left(46z^2-750z+1575\right)\cos\left(2\sqrt{z}\right) + \left(8z^3-486z^2+2850z-1575\right)\sin\left(2\sqrt{z}\right)\right)}{64z^{9/2}}$$

07.22.03.2489.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, 6; z\right) = \frac{40\,(4\,z+3)\,I_5\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{1120\,I_6\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.2490.01

$${}_1F_2\left(\frac{1}{2}; -\frac{3}{2}, 6; -z\right) = \frac{1120\,J_6\left(2\sqrt{z}\right)}{z^2} - \frac{40\,(4\,z-3)\,J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = \frac{1}{2}$, $b_1 = -\frac{1}{2}$

07.22.03.2491.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, -\frac{1}{2}; z\right) = (4\,z+1)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.2492.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, -\frac{1}{2}; -z\right) = (1-4\,z)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.2493.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, \frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.2494.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, \frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.2495.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, 1; z\right) = I_0\left(2\sqrt{z}\right) - 2\sqrt{z}\,I_1\left(2\sqrt{z}\right)$$

07.22.03.2496.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, 1; -z\right) = J_0\left(2\sqrt{z}\right) + 2\sqrt{z}\,J_1\left(2\sqrt{z}\right)$$

07.22.03.2497.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, \frac{3}{2}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{\sqrt{z}} - \cosh\left(2\sqrt{z}\right)$$

07.22.03.2498.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, \frac{3}{2}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{\sqrt{z}} - \cos\left(2\sqrt{z}\right)$$

07.22.03.2499.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, 2; z\right) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 2\,I_2\left(2\sqrt{z}\right)$$

07.22.03.2500.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, 2; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 2\,J_2\left(2\sqrt{z}\right)$$

07.22.03.2501.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, \frac{5}{2}; z\right) = -\frac{3\left((z+1)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{2\,z^{3/2}}$$

07.22.03.2502.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, \frac{5}{2}; -z\right) = \frac{-6\sqrt{z}\,\cos\left(2\sqrt{z}\right) - 3\,(z-1)\sin\left(2\sqrt{z}\right)}{2\,z^{3/2}}$$

07.22.03.2503.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, 3; z\right) = \frac{2\left(I_2\left(2\sqrt{z}\right) - 2\sqrt{z}\,I_3\left(2\sqrt{z}\right)\right)}{z}$$

07.22.03.2504.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, 3; -z\right) = \frac{2\left(J_2\left(2\sqrt{z}\right) + 2\sqrt{z}\,J_3\left(2\sqrt{z}\right)\right)}{z}$$

07.22.03.2505.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, \frac{7}{2}; z\right) = -\frac{15\left(2\sqrt{z}\,(2z+9)\cosh\left(2\sqrt{z}\right) - (14z+9)\sinh\left(2\sqrt{z}\right)\right)}{16\,z^{5/2}}$$

07.22.03.2506.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, \frac{7}{2}; -z\right) = \frac{15\left(2\sqrt{z}\,(2z-9)\cos\left(2\sqrt{z}\right) + (9-14z)\sin\left(2\sqrt{z}\right)\right)}{16\,z^{5/2}}$$

07.22.03.2507.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, 4; z\right) = \frac{6\,I_3\left(2\sqrt{z}\right)}{z^{3/2}} - \frac{12\,I_4\left(2\sqrt{z}\right)}{z}$$

07.22.03.2508.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, 4; -z\right) = \frac{6\left(J_3\left(2\sqrt{z}\right) + 2\sqrt{z}\,J_4\left(2\sqrt{z}\right)\right)}{z^{3/2}}$$

07.22.03.2509.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, \frac{9}{2}; z\right) = -\frac{105\left(\left(4z^2+51z+30\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,(11z+30)\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{7/2}}$$

07.22.03.2510.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, \frac{9}{2}; -z\right) = \frac{105\left(2\sqrt{z}\,(11z-30)\cos\left(2\sqrt{z}\right) + \left(4z^2-51z+30\right)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{7/2}}$$

07.22.03.2511.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, 5; z\right) = \frac{24\left(I_4\left(2\sqrt{z}\right) - 2\sqrt{z}\,I_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.2512.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, 5; -z\right) = \frac{24\left(J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,J_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.2513.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, \frac{11}{2}; z\right) = -\frac{945\left(2\sqrt{z}\,\left(8z^2+230z+525\right)\cosh\left(2\sqrt{z}\right)-\left(128z^2+930z+525\right)\sinh\left(2\sqrt{z}\right)\right)}{256\,z^{9/2}}$$

07.22.03.2514.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, \frac{11}{2}; -z\right) = -\frac{945\left(2\sqrt{z}\,\left(8z^2-230z+525\right)\cos\left(2\sqrt{z}\right)+\left(-128z^2+930z-525\right)\sin\left(2\sqrt{z}\right)\right)}{256\,z^{9/2}}$$

07.22.03.2515.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, 6; z\right) = \frac{120\left(I_5\left(2\sqrt{z}\right)-2\sqrt{z}\;I_6\left(2\sqrt{z}\right)\right)}{z^{5/2}}$$

07.22.03.2516.01

$${}_1F_2\left(\frac{1}{2}; -\frac{1}{2}, 6; -z\right) = \frac{120\left(J_5\left(2\sqrt{z}\right)+2\sqrt{z}\;J_6\left(2\sqrt{z}\right)\right)}{z^{5/2}}$$

For fixed z and $a_1 = \frac{1}{2}$, $b_1 = \frac{1}{2}$

07.22.03.2517.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, \frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.2518.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, \frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.2519.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, 1; z\right) = I_0\left(2\sqrt{z}\right)$$

07.22.03.2520.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, 1; -z\right) = J_0\left(2\sqrt{z}\right)$$

07.22.03.2521.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, \frac{3}{2}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.2522.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, \frac{3}{2}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.2523.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, 2; z\right) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.2524.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, 2; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.2525.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, \frac{5}{2}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.2526.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, \frac{5}{2}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}}$$

07.22.03.2527.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, 3; z\right) = \frac{2I_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.2528.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, 3; -z\right) = \frac{2J_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.2529.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, \frac{7}{2}; z\right) = \frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.2530.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, \frac{7}{2}; -z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4z-3)\sin\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.2531.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, 4; z\right) = \frac{6I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.2532.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, 4; -z\right) = \frac{6J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.2533.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, \frac{9}{2}; z\right) = \frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right) - 3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.2534.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, \frac{9}{2}; -z\right) = \frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right) + 3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.2535.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, 5; z\right) = \frac{24I_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.2536.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, 5; -z\right) = \frac{24J_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.2537.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, \frac{11}{2}; z\right) = \frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\,(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.2538.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, \frac{11}{2}; -z\right) = \frac{945\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right) + \left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.2539.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, 6; z\right) = \frac{120\,I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.2540.01

$${}_1F_2\left(\frac{1}{2}; \frac{1}{2}, 6; -z\right) = \frac{120\,J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = \frac{1}{2}$, $b_1 = 1$

07.22.03.0071.01

$${}_1F_2\left(\frac{1}{2}; 1, 1; z\right) == I_0\left(\sqrt{z}\right)^2$$

07.22.03.2541.01

$${}_1F_2\left(\frac{1}{2}; 1, 1; -z\right) = J_0\left(\sqrt{z}\right)^2$$

07.22.03.0072.01

$${}_1F_2\left(\frac{1}{2}; 1, \frac{3}{2}; z\right) == I_0\left(2\sqrt{z}\right) + \frac{\pi}{2}\left(I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) - I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\right)$$

07.22.03.2542.01

$${}_1F_2\left(\frac{1}{2}; 1, \frac{3}{2}; -z\right) = \frac{1}{2}\left(\pi\,J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) + J_0\left(2\sqrt{z}\right)\left(2 - \pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0073.01

$${}_1F_2\left(\frac{1}{2}; 1, 2; z\right) == I_0\left(\sqrt{z}\right)^2 - I_1\left(\sqrt{z}\right)^2$$

07.22.03.2543.01

$${}_1F_2\left(\frac{1}{2}; 1, 2; -z\right) = J_0\left(\sqrt{z}\right)^2 + J_1\left(\sqrt{z}\right)^2$$

07.22.03.0074.01

$${}_1F_2\left(\frac{1}{2}; 1, \frac{5}{2}; z\right) == \frac{3}{16\,z}\left(8\,z\,I_0\left(2\sqrt{z}\right) - 4\sqrt{z}\;I_1\left(2\sqrt{z}\right) + \pi\,(1-4\,z)\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) - I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2544.01

$${}_1F_2\left(\frac{1}{2}; 1, \frac{5}{2}; -z\right) =$$

$$\frac{1}{16\,z}\left(3\left(8\,z\,J_0\left(2\sqrt{z}\right) - \pi\,(4\,z+1)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)J_0\left(2\sqrt{z}\right) - 4\sqrt{z}\;J_1\left(2\sqrt{z}\right) + \pi\,(4\,z+1)\,J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0075.01

$${}_1F_2\left(\frac{1}{2}; 1, 3; z\right) == \frac{4}{3z}\left(z\, I_0\left(\sqrt{z}\right)^2 - \sqrt{z}\; I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - (z-1)\, I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.2545.01

$${}_1F_2\left(\frac{1}{2}; 1, 3; -z\right) = \frac{4\left(z\, J_0\left(\sqrt{z}\right)^2 - \sqrt{z}\; J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + (z+1)\, J_1\left(\sqrt{z}\right)^2\right)}{3z}$$

07.22.03.0076.01

$${}_1F_2\left(\frac{1}{2}; 1, \frac{7}{2}; z\right) ==$$

$$\frac{15}{256 z^2}\left(4\left(2z(4z-3) I_0\left(2\sqrt{z}\right) + \sqrt{z}\;(9-4z) I_1\left(2\sqrt{z}\right)\right) + \pi\left(-16z^2+8z-9\right)\left(I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) - I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2546.01

$${}_1F_2\left(\frac{1}{2}; 1, \frac{7}{2}; -z\right) = \frac{1}{256 z^2}\left(15\left(4\left(2z(4z+3) J_0\left(2\sqrt{z}\right) - \sqrt{z}\;(4z+9) J_1\left(2\sqrt{z}\right)\right) + \right.\right.$$
$$\left.\left.\pi\left(16z^2+8z+9\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(16z^2+8z+9\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0077.01

$${}_1F_2\left(\frac{1}{2}; 1, 4; z\right) == \frac{4}{5z^2}\left(2(z-1) z\, I_0\left(\sqrt{z}\right)^2 - 2(z-4)\sqrt{z}\; I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-2z^2+z-8\right) I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.2547.01

$${}_1F_2\left(\frac{1}{2}; 1, 4; -z\right) = \frac{4\left(2z(z+1) J_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\;(z+4) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(2z^2+z+8\right) J_1\left(\sqrt{z}\right)^2\right)}{5z^2}$$

07.22.03.2548.01

$${}_1F_2\left(\frac{1}{2}; 1, \frac{9}{2}; z\right) =$$

$$\frac{1}{2048 z^3}\left(35\left(4\left(2z\left(16z^2-16z+75\right) I_0\left(2\sqrt{z}\right) + \sqrt{z}\;\left(-16z^2+8z-225\right) I_1\left(2\sqrt{z}\right)\right) + \pi\left(-64z^3+48z^2-108z+225\right)\right.\right.$$
$$\left.\left. I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(64z^3-48z^2+108z-225\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2549.01

$${}_1F_2\left(\frac{1}{2}; 1, \frac{9}{2}; -z\right) =$$

$$\frac{1}{2048 z^3}\left(35\left(4\left(2z\left(16z^2+16z+75\right) J_0\left(2\sqrt{z}\right) - \sqrt{z}\;\left(16z^2+8z+225\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(64z^3+48z^2+108z+225\right)\right.\right.$$
$$\left.\left. J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(64z^3+48z^2+108z+225\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2550.01

$${}_1F_2\left(\frac{1}{2}; 1, 5; z\right) =$$

$$\frac{1}{35 z^3}\left(16\left(z\left(4z^2-5z+36\right) I_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\;\left(2z^2-z+72\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-4z^3+3z^2+16z+144\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2551.01

$${}_1F_2\left(\frac{1}{2}; 1, 5; -z\right) =$$
$$\frac{1}{35\,z^3}\left(16\left(z\left(4\,z^2+5\,z+36\right)J_0\left(\sqrt{z}\right)^2-2\sqrt{z}\,\left(2\,z^2+z+72\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(4\,z^3+3\,z^2-16\,z+144\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2552.01

$${}_1F_2\left(\frac{1}{2}; 1, \frac{11}{2}; z\right) =$$
$$\frac{1}{65\,536\,z^4}\left(315\left(4\left(2\,z\left(64\,z^3-80\,z^2+220\,z-3675\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-64\,z^3+48\,z^2+1300\,z+11\,025\right)I_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\left(-256\,z^4+256\,z^3-864\,z^2+3600\,z-11\,025\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(256\,z^4-256\,z^3+864\,z^2-3600\,z+11\,025\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2553.01

$${}_1F_2\left(\frac{1}{2}; 1, \frac{11}{2}; -z\right) =$$
$$\frac{1}{65\,536\,z^4}\left(315\left(4\left(2\,z\left(64\,z^3+80\,z^2+220\,z+3675\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(64\,z^3+48\,z^2-1300\,z+11\,025\right)J_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\left(256\,z^4+256\,z^3+864\,z^2+3600\,z+11\,025\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\pi\left(256\,z^4+256\,z^3+864\,z^2+3600\,z+11\,025\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2554.01

$${}_1F_2\left(\frac{1}{2}; 1, 6; z\right) = \frac{1}{63\,z^4}\left(32\left(2\,z\left(2\,z^3-3\,z^2+9\,z-288\right)I_0\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.\sqrt{z}\,\left(-4\,z^3+3\,z^2+216\,z+2304\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-2\left(2\,z^4-2\,z^3+9\,z^2+252\,z+1152\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2555.01

$${}_1F_2\left(\frac{1}{2}; 1, 6; -z\right) = \frac{1}{63\,z^4}\left(32\left(2\,z\left(2\,z^3+3\,z^2+9\,z+288\right)J_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.\sqrt{z}\,\left(4\,z^3+3\,z^2-216\,z+2304\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+2\left(2\,z^4+2\,z^3+9\,z^2-252\,z+1152\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = \frac{1}{2}$, $b_1 = \frac{3}{2}$

07.22.03.0078.01

$${}_1F_2\left(\frac{1}{2}; \frac{3}{2}, \frac{3}{2}; z\right) == \frac{\mathrm{Shi}\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.0079.01

$${}_1F_2\left(\frac{1}{2}; \frac{3}{2}, \frac{3}{2}; z\right) == \frac{1}{2\sqrt{-z}}\,\mathrm{Si}\left(2\sqrt{-z}\right)$$

07.22.03.2556.01

$${}_1F_2\left(\frac{1}{2}; \frac{3}{2}, \frac{3}{2}; -z\right) = \frac{\mathrm{Si}\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.0080.01

$${}_1F_2\left(\frac{1}{2};\frac{3}{2},2;z\right)==2\,I_0\left(2\sqrt{z}\right)+\pi\left(I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)-I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\right)-\frac{1}{\sqrt{z}}\,I_1\left(2\sqrt{z}\right)$$

07.22.03.2557.01

$${}_1F_2\left(\frac{1}{2};\frac{3}{2},2;-z\right)=\frac{J_1\left(2\sqrt{z}\right)\left(\pi\sqrt{z}\;\boldsymbol{H}_0\left(2\sqrt{z}\right)-1\right)}{\sqrt{z}}+J_0\left(2\sqrt{z}\right)\left(2-\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0081.01

$${}_1F_2\left(\frac{1}{2};\frac{3}{2},\frac{5}{2};z\right)==\frac{3}{16\,z^{3/2}}\left(-2\sqrt{z}\;\cosh\left(2\sqrt{z}\right)+\sinh\left(2\sqrt{z}\right)+4\,z\,\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.2558.01

$${}_1F_2\left(\frac{1}{2};\frac{3}{2},\frac{5}{2};-z\right)=\frac{3\left(2\sqrt{z}\;\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)+4\,z\,\mathrm{Si}\left(2\sqrt{z}\right)\right)}{16\,z^{3/2}}$$

07.22.03.0082.01

$${}_1F_2\left(\frac{1}{2};\frac{3}{2},3;z\right)==\frac{2}{3}\left(\frac{4\,z-1}{z}\,I_0\left(2\sqrt{z}\right)+\frac{1-2\,z}{z^{3/2}}\,I_1\left(2\sqrt{z}\right)+2\,\pi\left(I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)-I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2559.01

$${}_1F_2\left(\frac{1}{2};\frac{3}{2},3;-z\right)=\frac{2\,J_1\left(2\sqrt{z}\right)\left(2\,\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}-2\,z-1\right)}{3\,z^{3/2}}-\frac{2\,J_0\left(2\sqrt{z}\right)\left(2\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z-4\,z-1\right)}{3\,z}$$

07.22.03.0083.01

$${}_1F_2\left(\frac{1}{2};\frac{3}{2},\frac{7}{2};z\right)==-\frac{15}{128\,z^{5/2}}\left(-8\,\mathrm{Shi}\left(2\sqrt{z}\right)z^2+2\,(2\,z-3)\cosh\left(2\sqrt{z}\right)\sqrt{z}\;+(2\,z+3)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2560.01

$${}_1F_2\left(\frac{1}{2};\frac{3}{2},\frac{7}{2};-z\right)=\frac{15\left(8\,\mathrm{Si}\left(2\sqrt{z}\right)z^2+2\,(2\,z+3)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+(2\,z-3)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{5/2}}$$

07.22.03.0084.01

$${}_1F_2\left(\frac{1}{2};\frac{3}{2},4;z\right)==$$

$$\frac{2}{5\,z^{5/2}}\left(4\,\pi\,z^{5/2}\left(I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)-I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\right)+2\sqrt{z}\;\left(4\,z^2-z+3\right)I_0\left(2\sqrt{z}\right)-\left(4\,z^2+z+6\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2561.01

$${}_1F_2\left(\frac{1}{2};\frac{3}{2},4;-z\right)=\frac{2\,J_1\left(2\sqrt{z}\right)\left(4\,\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}-4\,z^2+z-6\right)}{5\,z^{5/2}}-\frac{4\,J_0\left(2\sqrt{z}\right)\left(2\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^2-4\,z^2-z-3\right)}{5\,z^2}$$

07.22.03.2562.01

$${}_1F_2\left(\frac{1}{2};\frac{3}{2},\frac{9}{2};z\right)=-\frac{35\left(-8\,\mathrm{Shi}\left(2\sqrt{z}\right)z^3+2\left(2\,z^2+z+15\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}\;+\left(2\,z^2-21\,z-15\right)\sinh\left(2\sqrt{z}\right)\right)}{256\,z^{7/2}}$$

07.22.03.2563.01

$${}_1F_2\left(\frac{1}{2};\frac{3}{2},\frac{9}{2};-z\right)=\frac{35\left(8\,\mathrm{Si}\left(2\sqrt{z}\right)z^3+2\left(2\,z^2-z+15\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+\left(2\,z^2+21\,z-15\right)\sin\left(2\sqrt{z}\right)\right)}{256\,z^{7/2}}$$

07.22.03.2564.01

$${}_1F_2\left(\frac{1}{2}; \frac{3}{2}, 5; z\right) =$$
$$\frac{1}{35\, z^{7/2}}\left(8\left(\sqrt{z}\ I_0\left(2\sqrt{z}\right)\left(8\pi \boldsymbol{L}_1\left(2\sqrt{z}\right) z^3 + 16 z^3 - 4 z^2 - 3 z - 90\right) - 2\, I_1\left(2\sqrt{z}\right)\left(4\pi \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{7/2} + 4 z^3 + z^2 - 24 z - 45\right)\right)\right)$$

07.22.03.2565.01

$${}_1F_2\left(\frac{1}{2}; \frac{3}{2}, 5; -z\right) =$$
$$\frac{1}{35\, z^{7/2}}\left(8\left(2\, J_1\left(2\sqrt{z}\right)\left(4\pi \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{7/2} - 4 z^3 + z^2 + 24 z - 45\right) - \sqrt{z}\ J_0\left(2\sqrt{z}\right)\left(8\pi \boldsymbol{H}_1\left(2\sqrt{z}\right) z^3 - 16 z^3 - 4 z^2 + 3 z - 90\right)\right)\right)$$

07.22.03.2566.01

$${}_1F_2\left(\frac{1}{2}; \frac{3}{2}, \frac{11}{2}; z\right) =$$
$$-\frac{1}{4096\, z^{9/2}}\left(315\left(-16\,\mathrm{Shi}\left(2\sqrt{z}\right) z^4 + 2\left(4 z^3 + 2 z^2 - 90 z - 315\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(4 z^3 + 6 z^2 + 510 z + 315\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2567.01

$${}_1F_2\left(\frac{1}{2}; \frac{3}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{4096\, z^{9/2}}\left(315\left(16\,\mathrm{Si}\left(2\sqrt{z}\right) z^4 + 2\left(4 z^3 - 2 z^2 - 90 z + 315\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(4 z^3 - 6 z^2 + 510 z - 315\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2568.01

$${}_1F_2\left(\frac{1}{2}; \frac{3}{2}, 6; z\right) = \frac{1}{63\, z^{9/2}}\left(8\left(2\sqrt{z}\ I_0\left(2\sqrt{z}\right)\left(8\pi \boldsymbol{L}_1\left(2\sqrt{z}\right) z^4 + 16 z^4 - 4 z^3 - 3 z^2 + 225 z + 1260\right) - I_1\left(2\sqrt{z}\right)\left(16\pi \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{9/2} + 16 z^4 + 4 z^3 + 9 z^2 + 1710 z + 2520\right)\right)\right)$$

07.22.03.2569.01

$${}_1F_2\left(\frac{1}{2}; \frac{3}{2}, 6; -z\right) = \frac{1}{63\, z^{9/2}}\left(8\left(J_1\left(2\sqrt{z}\right)\left(16\pi \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{9/2} - 16 z^4 + 4 z^3 - 9 z^2 + 1710 z - 2520\right) - 2\sqrt{z}\ J_0\left(2\sqrt{z}\right)\left(8\pi \boldsymbol{H}_1\left(2\sqrt{z}\right) z^4 - 16 z^4 - 4 z^3 + 3 z^2 + 225 z - 1260\right)\right)\right)$$

For fixed z and $a_1 = \frac{1}{2}$, $b_1 = 2$

07.22.03.0085.01

$${}_1F_2\left(\frac{1}{2}; 2, 2; z\right) == 2\, I_0\left(\sqrt{z}\right)^2 - \frac{2}{\sqrt{z}} I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - 2\, I_1\left(\sqrt{z}\right)^2$$

07.22.03.2570.01

$${}_1F_2\left(\frac{1}{2}; 2, 2; -z\right) = 2\left(J_0\left(\sqrt{z}\right)^2 - \frac{J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right)}{\sqrt{z}} + J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.0086.01

$${}_1F_2\left(\frac{1}{2}; 2, \frac{5}{2}; z\right) == \frac{3}{8\, z}\left(8 z\, I_0\left(2\sqrt{z}\right) - 4\sqrt{z}\ I_1\left(2\sqrt{z}\right) + \pi\,(4 z + 1)\left(I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) - I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2571.01

$${}_1F_2\left(\frac{1}{2}; 2, \frac{5}{2}; -z\right) = \frac{1}{8z}\left(3\left(8z\,J_0\left(2\sqrt{z}\right) + \pi(1-4z)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)J_0\left(2\sqrt{z}\right) - 4\sqrt{z}\;J_1\left(2\sqrt{z}\right) + \pi(4z-1)\,J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0087.01

$${}_1F_2\left(\frac{1}{2}; 2, 3; z\right) == \frac{1}{3z}\left(8z\,I_0\left(\sqrt{z}\right)^2 - 8\sqrt{z}\;I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) - 4(2z+1)\,I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.2572.01

$${}_1F_2\left(\frac{1}{2}; 2, 3; -z\right) = \frac{8z\,J_0\left(\sqrt{z}\right)^2 - 8\sqrt{z}\;J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + 4(2z-1)\,J_1\left(\sqrt{z}\right)^2}{3z}$$

07.22.03.0088.01

$${}_1F_2\left(\frac{1}{2}; 2, \frac{7}{2}; z\right) ==$$

$$\frac{15}{128z^2}\left(4\left(2z(4z+1)\,I_0\left(2\sqrt{z}\right) - \sqrt{z}\;(4z+3)\,I_1\left(2\sqrt{z}\right)\right) + \pi\left(-16z^2-8z+3\right)\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) - I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2573.01

$${}_1F_2\left(\frac{1}{2}; 2, \frac{7}{2}; -z\right) = \frac{1}{128z^2}\left(15\left(4\left(2z(4z-1)\,J_0\left(2\sqrt{z}\right) + (3-4z)\sqrt{z}\;J_1\left(2\sqrt{z}\right)\right) + \right.$$
$$\left.\pi\left(16z^2-8z-3\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) + \pi\left(-16z^2+8z+3\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0089.01

$${}_1F_2\left(\frac{1}{2}; 2, 4; z\right) == \frac{4}{5z^2}\left(z(4z+1)\,I_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\;(z+1)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) + \left(-4z^2-3z+4\right)I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.2574.01

$${}_1F_2\left(\frac{1}{2}; 2, 4; -z\right) = \frac{4\left(z(4z-1)\,J_0\left(\sqrt{z}\right)^2 - 4(z-1)\sqrt{z}\;J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + \left(4z^2-3z-4\right)J_1\left(\sqrt{z}\right)^2\right)}{5z^2}$$

07.22.03.2575.01

$${}_1F_2\left(\frac{1}{2}; 2, \frac{9}{2}; z\right) = \frac{1}{1024z^3}\left(35\left(4\left(2z\left(16z^2+8z-15\right)I_0\left(2\sqrt{z}\right) + \sqrt{z}\;\left(-16z^2-16z+45\right)I_1\left(2\sqrt{z}\right)\right) - \right.$$
$$\left.\pi\left(64z^3+48z^2-36z+45\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(64z^3+48z^2-36z+45\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2576.01

$${}_1F_2\left(\frac{1}{2}; 2, \frac{9}{2}; -z\right) =$$

$$\frac{1}{1024z^3}\left(35\left(4\left(2z\left(16z^2-8z-15\right)J_0\left(2\sqrt{z}\right) + \sqrt{z}\;\left(-16z^2+16z+45\right)J_1\left(2\sqrt{z}\right)\right) + \pi\left(64z^3-48z^2-36z-45\right)\right.\right.$$
$$\left.\left.J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) + \pi\left(-64z^3+48z^2+36z+45\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2577.01

$${}_1F_2\left(\frac{1}{2}; 2, 5; z\right) =$$

$$\frac{1}{35z^3}\left(32\left(2z\left(2z^2+z-3\right)I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\;\left(-4z^2-5z+24\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) + 2\left(-2z^3-2z^2+z-12\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2578.01

$${}_1F_2\left(\frac{1}{2}; 2, 5; -z\right) =$$
$$\frac{1}{35\,z^3}\left(32\left(2\,z\left(2\,z^2-z-3\right)J_0\left(\sqrt{z}\right)^2+\sqrt{z}\,\left(-4\,z^2+5\,z+24\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+2\left(2\,z^3-2\,z^2-z-12\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2579.01

$${}_1F_2\left(\frac{1}{2}; 2, \frac{11}{2}; z\right) = \frac{1}{32\,768\,z^4}$$
$$\left(315\left(4\left(2\,z\left(64\,z^3+48\,z^2-100\,z+525\right)I_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(64\,z^3+80\,z^2-20\,z+1575\right)I_1\left(2\sqrt{z}\right)\right)+\pi\left(-256\,z^4-256\,z^3+\right.\right.\right.$$
$$\left.\left.\left.288\,z^2-720\,z+1575\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(256\,z^4+256\,z^3-288\,z^2+720\,z-1575\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2580.01

$${}_1F_2\left(\frac{1}{2}; 2, \frac{11}{2}; -z\right) =$$
$$\frac{1}{32\,768\,z^4}\left(315\left(4\left(2\,z\left(64\,z^3-48\,z^2-100\,z-525\right)J_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-64\,z^3+80\,z^2+20\,z+1575\right)J_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\left(256\,z^4-256\,z^3-288\,z^2-720\,z-1575\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(-256\,z^4+256\,z^3+288\,z^2+720\,z+1575\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2581.01

$${}_1F_2\left(\frac{1}{2}; 2, 6; z\right) = \frac{1}{63\,z^4}\left(32\left(2\,z\left(4\,z^3+3\,z^2-9\,z+72\right)I_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.4\sqrt{z}\,\left(2\,z^3+3\,z^2+144\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(-8\,z^4-10\,z^3+9\,z^2+72\,z+576\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2582.01

$${}_1F_2\left(\frac{1}{2}; 2, 6; -z\right) = \frac{1}{63\,z^4}\left(32\left(2\,z\left(4\,z^3-3\,z^2-9\,z-72\right)J_0\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\,\left(-2\,z^3+3\,z^2+144\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(8\,z^4-10\,z^3-9\,z^2+72\,z-576\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = \frac{1}{2}$, $b_1 = \frac{5}{2}$

07.22.03.0090.01

$${}_1F_2\left(\frac{1}{2}; \frac{5}{2}, \frac{5}{2}; z\right) == -\frac{9}{32\,z^{3/2}}\left(2\sqrt{z}\,\cosh\left(2\sqrt{z}\right)+\sinh\left(2\sqrt{z}\right)-2\,(2\,z+1)\,\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.2583.01

$${}_1F_2\left(\frac{1}{2}; \frac{5}{2}, \frac{5}{2}; -z\right) = \frac{9\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)+\sin\left(2\sqrt{z}\right)+(4\,z-2)\,\mathrm{Si}\left(2\sqrt{z}\right)\right)}{32\,z^{3/2}}$$

07.22.03.0091.01

$${}_1F_2\left(\frac{1}{2}; \frac{5}{2}, 3; z\right) ==$$
$$\frac{1}{2\,z^{3/2}}\left(4\sqrt{z}\,(2\,z+1)\,I_0\left(2\sqrt{z}\right)-4\,(z+1)\,I_1\left(2\sqrt{z}\right)+\pi\sqrt{z}\,(4\,z+3)\left(I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)-I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2584.01

$${}_1F_2\left(\frac{1}{2}; \frac{5}{2}, 3; -z\right) = \frac{J_1\left(2\sqrt{z}\right)\left(-4z+\pi(4z-3)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)\sqrt{z}+4\right)+\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(8z+\pi(3-4z)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)-4\right)}{2z^{3/2}}$$

07.22.03.0092.01

$${}_1F_2\left(\frac{1}{2}; \frac{5}{2}, \frac{7}{2}; z\right) == \frac{45}{256z^{5/2}}\left(-2\sqrt{z}\,(2z+3)\cosh\left(2\sqrt{z}\right)+(3-2z)\sinh\left(2\sqrt{z}\right)+8z(z+1)\,\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.2585.01

$${}_1F_2\left(\frac{1}{2}; \frac{5}{2}, \frac{7}{2}; -z\right) = \frac{45\left(2\sqrt{z}\,(2z-3)\cos\left(2\sqrt{z}\right)+(2z+3)\sin\left(2\sqrt{z}\right)+8(z-1)z\,\mathrm{Si}\left(2\sqrt{z}\right)\right)}{256z^{5/2}}$$

07.22.03.0093.01

$${}_1F_2\left(\frac{1}{2}; \frac{5}{2}, 4; z\right) == \frac{3}{5z^{5/2}}$$
$$\left(\pi(4z+5)z^{3/2}\left(I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)-I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\right)+4\left(2z^2+2z-1\right)\sqrt{z}\,I_0\left(2\sqrt{z}\right)-2(z+2)(2z-1)\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2586.01

$${}_1F_2\left(\frac{1}{2}; \frac{5}{2}, 4; -z\right) =$$
$$\frac{3J_1\left(2\sqrt{z}\right)\left(-4z^2+\pi(4z-5)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}+6z+4\right)}{5z^{5/2}} - \frac{3J_0\left(2\sqrt{z}\right)\left(-8z^2+\pi(4z-5)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z+8z+4\right)}{5z^2}$$

07.22.03.2587.01

$${}_1F_2\left(\frac{1}{2}; \frac{5}{2}, \frac{9}{2}; z\right) =$$
$$-\frac{1}{1024z^{7/2}}\left(105\left(-8(2z+3)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^2+2\left(4z^2+8z-15\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^2+12z+15\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2588.01

$${}_1F_2\left(\frac{1}{2}; \frac{5}{2}, \frac{9}{2}; -z\right) = \frac{105\left(8(2z-3)\,\mathrm{Si}\left(2\sqrt{z}\right)z^2+2\left(4z^2-8z-15\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^2-12z+15\right)\sin\left(2\sqrt{z}\right)\right)}{1024z^{7/2}}$$

07.22.03.2589.01

$${}_1F_2\left(\frac{1}{2}; \frac{5}{2}, 5; z\right) = \frac{1}{35z^{7/2}}\left(24\left(\sqrt{z}\,I_0\left(2\sqrt{z}\right)\left(8z^3+\pi(4z+7)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^2+12z^2-5z+18\right)-\right.\right.$$
$$\left.\left.I_1\left(2\sqrt{z}\right)\left(4z^3+\pi(4z+7)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2}+8z^2+4z+18\right)\right)\right)$$

07.22.03.2590.01

$${}_1F_2\left(\frac{1}{2}; \frac{5}{2}, 5; -z\right) = \frac{1}{35z^{7/2}}\left(24\left(J_1\left(2\sqrt{z}\right)\left(-4z^3+\pi(4z-7)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2}+8z^2-4z+18\right)-\right.\right.$$
$$\left.\left.\sqrt{z}\,J_0\left(2\sqrt{z}\right)\left(-8z^3+\pi(4z-7)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^2+12z^2+5z+18\right)\right)\right)$$

07.22.03.2591.01

$${}_1F_2\left(\frac{1}{2}; \frac{5}{2}, \frac{11}{2}; z\right) = -\frac{1}{8192z^{9/2}}$$
$$\left(945\left(-16(z+2)\,\mathrm{Shi}\left(2\sqrt{z}\right)z^3+2\left(4z^3+10z^2+10z+105\right)\cosh\left(2\sqrt{z}\right)\sqrt{z}+\left(4z^3+14z^2-150z-105\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2592.01

$${}_1F_2\left(\frac{1}{2}; \frac{5}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{8192\, z^{9/2}}\left(945\left(16\,(z-2)\,\mathrm{Si}\left(2\sqrt{z}\right)z^3 + 2\left(4z^3 - 10z^2 + 10z - 105\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^3 - 14z^2 - 150z + 105\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2593.01

$${}_1F_2\left(\frac{1}{2}; \frac{5}{2}, 6; z\right) = \frac{1}{21\, z^{9/2}}\left(8\left(2\sqrt{z}\; I_0\left(2\sqrt{z}\right)\left(8z^4 + \pi\,(4z+9)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^3 + 16z^3 - 6z^2 - 9z - 180\right) - I_1\left(2\sqrt{z}\right)\left(8z^4 + 2\pi\,(4z+9)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2} + 20z^3 + 9z^2 - 198z - 360\right)\right)\right)$$

07.22.03.2594.01

$${}_1F_2\left(\frac{1}{2}; \frac{5}{2}, 6; -z\right) = \frac{1}{21\, z^{9/2}}\left(8\left(J_1\left(2\sqrt{z}\right)\left(-8z^4 + 2\pi\,(4z-9)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2} + 20z^3 - 9z^2 - 198z + 360\right) - 2\sqrt{z}\; J_0\left(2\sqrt{z}\right)\left(-8z^4 + \pi\,(4z-9)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^3 + 16z^3 + 6z^2 - 9z + 180\right)\right)\right)$$

For fixed z and $a_1 = \frac{1}{2}$, $b_1 = 3$

07.22.03.0094.01

$${}_1F_2\left(\frac{1}{2}; 3, 3; z\right) == \frac{8}{9\, z^{3/2}}\left(\sqrt{z}\;(4z+3)\,I_0\left(\sqrt{z}\right)^2 - 2\,(2z+3)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) - \sqrt{z}\;(4z+5)\,I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.2595.01

$${}_1F_2\left(\frac{1}{2}; 3, 3; -z\right) = \frac{8\left(\sqrt{z}\;(4z-3)\,J_0\left(\sqrt{z}\right)^2 + 2\,(3-2z)\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + \sqrt{z}\;(4z-5)\,J_1\left(\sqrt{z}\right)^2\right)}{9\, z^{3/2}}$$

07.22.03.0095.01

$${}_1F_2\left(\frac{1}{2}; 3, \frac{7}{2}; z\right) ==$$
$$\frac{5}{32\, z^2}\left(\pi\,(4z+3)^2\left(I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) - I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\right) + 4\left(2z\,(4z+5)\,I_0\left(2\sqrt{z}\right) - \sqrt{z}\;(4z+7)\,I_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2596.01

$${}_1F_2\left(\frac{1}{2}; 3, \frac{7}{2}; -z\right) = \frac{1}{32\, z^2}$$
$$\left(5\left(\pi\, J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)(3-4z)^2 - \pi\, J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)(3-4z)^2 + 4\left(2z\,(4z-5)\,J_0\left(2\sqrt{z}\right) + (7-4z)\sqrt{z}\; J_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.0096.01

$${}_1F_2\left(\frac{1}{2}; 3, 4; z\right) == \frac{16}{15\, z^2}\left(2z\,(2z+3)\,I_0\left(\sqrt{z}\right)^2 - \sqrt{z}\;(4z+9)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) - 2\left(2z^2 + 4z + 3\right)I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.2597.01

$${}_1F_2\left(\frac{1}{2}; 3, 4; -z\right) = \frac{16\left(2z\,(2z-3)\,J_0\left(\sqrt{z}\right)^2 + (9-4z)\sqrt{z}\; J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + 2\left(2z^2 - 4z + 3\right)J_1\left(\sqrt{z}\right)^2\right)}{15\, z^2}$$

07.22.03.2598.01

$${}_1F_2\left(\frac{1}{2}; 3, \frac{9}{2}; z\right) =$$
$$\frac{1}{768\,z^3}\left(35\left(4\left(2\,z\left(16\,z^2+32\,z+15\right)I_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(16\,z^2+40\,z+45\right)I_1\left(2\sqrt{z}\right)\right)-\pi\left(64\,z^3+144\,z^2+108\,z-45\right)\right.\right.$$
$$\left.\left.I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(64\,z^3+144\,z^2+108\,z-45\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2599.01

$${}_1F_2\left(\frac{1}{2}; 3, \frac{9}{2}; -z\right) =$$
$$\frac{1}{768\,z^3}\left(35\left(4\left(2\,z\left(16\,z^2-32\,z+15\right)J_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-16\,z^2+40\,z-45\right)J_1\left(2\sqrt{z}\right)\right)+\pi\left(64\,z^3-144\,z^2+108\,z+45\right)\right.\right.$$
$$\left.\left.J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-\pi\left(64\,z^3-144\,z^2+108\,z+45\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2600.01

$${}_1F_2\left(\frac{1}{2}; 3, 5; z\right) =$$
$$\frac{1}{105\,z^3}\left(64\left(z\left(8\,z^2+18\,z+9\right)I_0\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(2\,z^2+6\,z+9\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-2\left(4\,z^3+11\,z^2+12\,z-18\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2601.01

$${}_1F_2\left(\frac{1}{2}; 3, 5; -z\right) =$$
$$\frac{1}{105\,z^3}\left(64\left(z\left(8\,z^2-18\,z+9\right)J_0\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(2\,z^2-6\,z+9\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+2\left(4\,z^3-11\,z^2+12\,z+18\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2602.01

$${}_1F_2\left(\frac{1}{2}; 3, \frac{11}{2}; z\right) =$$
$$\frac{1}{8192\,z^4}\left(105\left(4\left(2\,z\left(64\,z^3+176\,z^2+156\,z-315\right)I_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(64\,z^3+208\,z^2+300\,z-945\right)I_1\left(2\sqrt{z}\right)\right)-\right.\right.$$
$$\pi\left(256\,z^4+768\,z^3+864\,z^2-720\,z+945\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\left.\pi\left(256\,z^4+768\,z^3+864\,z^2-720\,z+945\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2603.01

$${}_1F_2\left(\frac{1}{2}; 3, \frac{11}{2}; -z\right) =$$
$$\frac{1}{8192\,z^4}\left(105\left(4\left(2\,z\left(64\,z^3-176\,z^2+156\,z+315\right)J_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(64\,z^3-208\,z^2+300\,z+945\right)J_1\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\pi\left(256\,z^4-768\,z^3+864\,z^2+720\,z+945\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-$$
$$\left.\left.\pi\left(256\,z^4-768\,z^3+864\,z^2+720\,z+945\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2604.01

$${}_1F_2\left(\frac{1}{2}; 3, 6; z\right) = \frac{1}{189\,z^4}\left(64\left(z\left(16\,z^3+48\,z^2+45\,z-144\right)I_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.4\sqrt{z}\,\left(4\,z^3+15\,z^2+27\,z-144\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\left(16\,z^4+56\,z^3+81\,z^2-36\,z+576\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2605.01

$${}_1F_2\left(\frac{1}{2}; 3, 6; -z\right) = \frac{1}{189\,z^4}\left(64\left(z\left(16\,z^3 - 48\,z^2 + 45\,z + 144\right)J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(4\,z^3 - 15\,z^2 + 27\,z + 144\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + \left(16\,z^4 - 56\,z^3 + 81\,z^2 + 36\,z + 576\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = \frac{1}{2}$, $b_1 = \frac{7}{2}$

07.22.03.0097.01

$${}_1F_2\left(\frac{1}{2}; \frac{7}{2}, \frac{7}{2}; z\right) == -\frac{225}{1024\,z^{5/2}}\left(2\sqrt{z}\,(2\,z+5)\cosh\left(2\sqrt{z}\right) + (2\,z+7)\sinh\left(2\sqrt{z}\right) - 4\left(2\,z^2+4\,z+3\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.2606.01

$${}_1F_2\left(\frac{1}{2}; \frac{7}{2}, \frac{7}{2}; -z\right) = \frac{225\left(2\sqrt{z}\,(2\,z-5)\cos\left(2\sqrt{z}\right) + (2\,z-7)\sin\left(2\sqrt{z}\right) + 4\left(2\,z^2-4\,z+3\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)}{1024\,z^{5/2}}$$

07.22.03.0098.01

$${}_1F_2\left(\frac{1}{2}; \frac{7}{2}, 4; z\right) == \frac{3}{16\,z^{5/2}}\left(4\left(2\sqrt{z}\,\left(4\,z^2+9\,z+8\right)I_0\left(2\sqrt{z}\right) - \left(4\,z^2+11\,z+16\right)I_1\left(2\sqrt{z}\right)\right) + \pi\sqrt{z}\,\left(16\,z^2+40\,z+45\right)\left(I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) - I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2607.01

$${}_1F_2\left(\frac{1}{2}; \frac{7}{2}, 4; -z\right) = \frac{1}{16\,z^{5/2}}\left(3\left(4\left(2\sqrt{z}\,\left(4\,z^2-9\,z+8\right)J_0\left(2\sqrt{z}\right) + \left(-4\,z^2+11\,z-16\right)J_1\left(2\sqrt{z}\right)\right) + \pi\sqrt{z}\,\left(16\,z^2-40\,z+45\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) + \pi\sqrt{z}\,\left(-16\,z^2+40\,z-45\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2608.01

$${}_1F_2\left(\frac{1}{2}; \frac{7}{2}, \frac{9}{2}; z\right) = -\frac{1}{2048\,z^{7/2}}\left(525\left(2\sqrt{z}\,\left(2\,z^2+7\,z+15\right)\cosh\left(2\sqrt{z}\right) + \left(2\,z^2+9\,z-15\right)\sinh\left(2\sqrt{z}\right) - 4\,z\left(2\,z^2+6\,z+9\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2609.01

$${}_1F_2\left(\frac{1}{2}; \frac{7}{2}, \frac{9}{2}; -z\right) = \frac{1}{2048\,z^{7/2}}\left(525\left(2\sqrt{z}\,\left(2\,z^2-7\,z+15\right)\cos\left(2\sqrt{z}\right) + \left(2\,z^2-9\,z-15\right)\sin\left(2\sqrt{z}\right) + 4\,z\left(2\,z^2-6\,z+9\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2610.01

$${}_1F_2\left(\frac{1}{2}; \frac{7}{2}, 5; z\right) = \frac{1}{14\,z^{7/2}}\left(3\left(-\pi\left(16\,z^2+56\,z+105\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2} + \pi\left(16\,z^2+56\,z+105\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2} + 4\left(2\sqrt{z}\,\left(4\,z^3+13\,z^2+22\,z-12\right)I_0\left(2\sqrt{z}\right) - \left(4\,z^3+15\,z^2+32\,z-24\right)I_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.2611.01

$${}_1F_2\left(\frac{1}{2}; \frac{7}{2}, 5; -z\right) =$$
$$\frac{1}{14\, z^{7/2}}\left(3\left(\pi\left(16\, z^2-56\, z+105\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{3/2}+\pi\left(-16\, z^2+56\, z-105\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{3/2}+\right.\right.$$
$$\left.\left.4\left(2\sqrt{z}\,\left(4\, z^3-13\, z^2+22\, z+12\right) J_0\left(2\sqrt{z}\right)-\left(4\, z^3-15\, z^2+32\, z+24\right) J_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.2612.01

$${}_1F_2\left(\frac{1}{2}; \frac{7}{2}, \frac{11}{2}; z\right) = -\frac{1}{32\,768\, z^{9/2}}\left(4725\left(-16\left(z^2+4\, z+9\right) \mathrm{Shi}\left(2\sqrt{z}\right) z^2+\right.\right.$$
$$\left.\left.2\left(4\, z^3+18\, z^2+50\, z-105\right) \cosh\left(2\sqrt{z}\right)\sqrt{z}\,+\left(4\, z^3+22\, z^2+90\, z+105\right) \sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2613.01

$${}_1F_2\left(\frac{1}{2}; \frac{7}{2}, \frac{11}{2}; -z\right) = \frac{1}{32\,768\, z^{9/2}}$$
$$\left(4725\left(16\left(z^2-4\, z+9\right) \mathrm{Si}\left(2\sqrt{z}\right) z^2+2\left(4\, z^3-18\, z^2+50\, z+105\right) \cos\left(2\sqrt{z}\right)\sqrt{z}\,+\left(4\, z^3-22\, z^2+90\, z-105\right) \sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2614.01

$${}_1F_2\left(\frac{1}{2}; \frac{7}{2}, 6; z\right) =$$
$$\frac{1}{21\, z^{9/2}}\left(5\left(-\pi\left(16\, z^2+72\, z+189\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{5/2}+\pi\left(16\, z^2+72\, z+189\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{5/2}+4\right.\right.$$
$$\left.\left.\left(2\sqrt{z}\,\left(4\, z^4+17\, z^3+42\, z^2-18\, z+72\right) I_0\left(2\sqrt{z}\right)-\left(4\, z^4+19\, z^3+54\, z^2+36\, z+144\right) I_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.2615.01

$${}_1F_2\left(\frac{1}{2}; \frac{7}{2}, 6; -z\right) =$$
$$\frac{1}{21\, z^{9/2}}\left(5\left(\pi\left(16\, z^2-72\, z+189\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{5/2}+\pi\left(-16\, z^2+72\, z-189\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{5/2}+\right.\right.$$
$$\left.\left.4\left(2\sqrt{z}\,\left(4\, z^4-17\, z^3+42\, z^2+18\, z+72\right) J_0\left(2\sqrt{z}\right)+\left(-4\, z^4+19\, z^3-54\, z^2+36\, z-144\right) J_1\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{1}{2}$, $b_1 = 4$

07.22.03.0099.01

$${}_1F_2\left(\frac{1}{2}; 4, 4; z\right) ==$$
$$\frac{16}{25\, z^{5/2}}\left(2\sqrt{z}\,\left(4\, z^2+11\, z+15\right) I_0\left(\sqrt{z}\right)^2-4\left(2\, z^2+7\, z+15\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right)-\sqrt{z}\,\left(8\, z^2+26\, z+47\right) I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.2616.01

$${}_1F_2\left(\frac{1}{2}; 4, 4; -z\right) =$$
$$\frac{1}{25\, z^{5/2}}\left(16\left(2\sqrt{z}\,\left(4\, z^2-11\, z+15\right) J_0\left(\sqrt{z}\right)^2-4\left(2\, z^2-7\, z+15\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right)+\sqrt{z}\,\left(8\, z^2-26\, z+47\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2617.01

$${}_1F_2\left(\frac{1}{2}; 4, \frac{9}{2}; z\right) =$$
$$\frac{1}{128\,z^3}\left(7\left(4\left(2\,z\left(16\,z^2+56\,z+117\right)I_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(16\,z^2+64\,z+159\right)I_1\left(2\sqrt{z}\right)\right)-\pi\left(64\,z^3+240\,z^2+540\,z+225\right)\right.\right.$$
$$\left.\left.I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(64\,z^3+240\,z^2+540\,z+225\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2618.01

$${}_1F_2\left(\frac{1}{2}; 4, \frac{9}{2}; -z\right) =$$
$$\frac{1}{128\,z^3}\left(7\left(4\left(2\,z\left(16\,z^2-56\,z+117\right)J_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-16\,z^2+64\,z-159\right)J_1\left(2\sqrt{z}\right)\right)+\pi\left(64\,z^3-240\,z^2+540\,z-225\right)\right.\right.$$
$$\left.\left.J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+\pi\left(-64\,z^3+240\,z^2-540\,z+225\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2619.01

$${}_1F_2\left(\frac{1}{2}; 4, 5; z\right) =$$
$$\frac{1}{175\,z^3}\left(64\left(z\left(16\,z^2+64\,z+165\right)I_0\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(4\,z^2+19\,z+60\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\left(16\,z^3+72\,z^2+209\,z+180\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2620.01

$${}_1F_2\left(\frac{1}{2}; 4, 5; -z\right) = \frac{1}{175\,z^3}$$
$$\left(64\left(z\left(16\,z^2-64\,z+165\right)J_0\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(4\,z^2-19\,z+60\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(16\,z^3-72\,z^2+209\,z-180\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2621.01

$${}_1F_2\left(\frac{1}{2}; 4, \frac{11}{2}; z\right) =$$
$$\frac{1}{4096\,z^4}\left(63\left(4\left(2\,z\left(64\,z^3+304\,z^2+988\,z+525\right)I_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(64\,z^3+336\,z^2+1196\,z+1575\right)I_1\left(2\sqrt{z}\right)\right)-\right.$$
$$\pi\left(256\,z^4+1280\,z^3+4320\,z^2+3600\,z-1575\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\left(256\,z^4+1280\,z^3+4320\,z^2+3600\,z-1575\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2622.01

$${}_1F_2\left(\frac{1}{2}; 4, \frac{11}{2}; -z\right) =$$
$$\frac{1}{4096\,z^4}\left(63\left(4\left(2\,z\left(64\,z^3-304\,z^2+988\,z-525\right)J_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-64\,z^3+336\,z^2-1196\,z+1575\right)J_1\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\pi\left(256\,z^4-1280\,z^3+4320\,z^2-3600\,z-1575\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+$$
$$\left.\left.\pi\left(-256\,z^4+1280\,z^3-4320\,z^2+3600\,z+1575\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2623.01

$${}_1F_2\left(\frac{1}{2}; 4, 6; z\right) = \frac{1}{315\,z^4}\left(128\left(z\left(16\,z^3+84\,z^2+315\,z+180\right)I_0\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.\sqrt{z}\,\left(16\,z^3+96\,z^2+405\,z+720\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\left(16\,z^4+92\,z^3+369\,z^2+450\,z-720\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2624.01

$${}_1F_2\left(\frac{1}{2}; 4, 6; -z\right) = \frac{1}{315\,z^4}\left(128\left(z\left(16\,z^3-84\,z^2+315\,z-180\right)J_0\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.\sqrt{z}\left(-16\,z^3+96\,z^2-405\,z+720\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(16\,z^4-92\,z^3+369\,z^2-450\,z-720\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = \frac{1}{2}$, $b_1 = \frac{9}{2}$

07.22.03.2625.01

$${}_1F_2\left(\frac{1}{2}; \frac{9}{2}, \frac{9}{2}; z\right) = -\frac{1}{8192\,z^{7/2}}$$
$$\left(1225\left(2\sqrt{z}\left(4\,z^2+20\,z+69\right)\cosh\left(2\sqrt{z}\right)+\left(4\,z^2+24\,z+111\right)\sinh\left(2\sqrt{z}\right)-4\left(4\,z^3+18\,z^2+54\,z+45\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2626.01

$${}_1F_2\left(\frac{1}{2}; \frac{9}{2}, \frac{9}{2}; -z\right) =$$
$$\frac{1}{8192\,z^{7/2}}\left(1225\left(2\sqrt{z}\left(4\,z^2-20\,z+69\right)\cos\left(2\sqrt{z}\right)+\left(4\,z^2-24\,z+111\right)\sin\left(2\sqrt{z}\right)+4\left(4\,z^3-18\,z^2+54\,z-45\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2627.01

$${}_1F_2\left(\frac{1}{2}; \frac{9}{2}, 5; z\right) = \frac{1}{16\,z^{7/2}}\left(4\left(2\sqrt{z}\left(16\,z^3+80\,z^2+291\,z+288\right)I_0\left(2\sqrt{z}\right)-\left(16\,z^3+88\,z^2+345\,z+576\right)I_1\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.\pi\sqrt{z}\left(64\,z^3+336\,z^2+1260\,z+1575\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\sqrt{z}\left(64\,z^3+336\,z^2+1260\,z+1575\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2628.01

$${}_1F_2\left(\frac{1}{2}; \frac{9}{2}, 5; -z\right) = \frac{1}{16\,z^{7/2}}\left(4\left(2\sqrt{z}\left(16\,z^3-80\,z^2+291\,z-288\right)J_0\left(2\sqrt{z}\right)+\left(-16\,z^3+88\,z^2-345\,z+576\right)J_1\left(2\sqrt{z}\right)\right)+\pi\sqrt{z}\right.$$
$$\left.\left(64\,z^3-336\,z^2+1260\,z-1575\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+\pi\sqrt{z}\left(-64\,z^3+336\,z^2-1260\,z+1575\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2629.01

$${}_1F_2\left(\frac{1}{2}; \frac{9}{2}, \frac{11}{2}; z\right) =$$
$$-\frac{1}{65\,536\,z^{9/2}}\left(11\,025\left(2\sqrt{z}\left(4\,z^3+26\,z^2+126\,z+315\right)\cosh\left(2\sqrt{z}\right)+\left(4\,z^3+30\,z^2+174\,z-315\right)\sinh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.16\,z\left(z^3+6\,z^2+27\,z+45\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2630.01

$${}_1F_2\left(\frac{1}{2}; \frac{9}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{65\,536\,z^{9/2}}\left(11\,025\left(2\sqrt{z}\left(4\,z^3-26\,z^2+126\,z-315\right)\cos\left(2\sqrt{z}\right)+\left(4\,z^3-30\,z^2+174\,z+315\right)\sin\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.16\,z\left(z^3-6\,z^2+27\,z-45\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2631.01

$${}_1F_2\left(\frac{1}{2}; \frac{9}{2}, 6; z\right) = \frac{1}{72\, z^{9/2}} \left(5 \left(-\pi \left(64\, z^3 + 432\, z^2 + 2268\, z + 4725\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{3/2} + \right.\right.$$
$$\pi \left(64\, z^3 + 432\, z^2 + 2268\, z + 4725\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{3/2} +$$
$$\left.\left. 4 \left(2\sqrt{z}\, \left(16\, z^4 + 104\, z^3 + 537\, z^2 + 1008\, z - 576\right) I_0\left(2\sqrt{z}\right) - \left(16\, z^4 + 112\, z^3 + 603\, z^2 + 1440\, z - 1152\right) I_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.2632.01

$${}_1F_2\left(\frac{1}{2}; \frac{9}{2}, 6; -z\right) = \frac{1}{72\, z^{9/2}} \left(5 \left(\pi \left(64\, z^3 - 432\, z^2 + 2268\, z - 4725\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{3/2} + \right.\right.$$
$$\pi \left(-64\, z^3 + 432\, z^2 - 2268\, z + 4725\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{3/2} +$$
$$\left.\left. 4 \left(2\sqrt{z}\, \left(16\, z^4 - 104\, z^3 + 537\, z^2 - 1008\, z - 576\right) J_0\left(2\sqrt{z}\right) + \left(-16\, z^4 + 112\, z^3 - 603\, z^2 + 1440\, z + 1152\right) J_1\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{1}{2}$, $b_1 = 5$

07.22.03.2633.01

$${}_1F_2\left(\frac{1}{2}; 5, 5; z\right) = \frac{1}{1225\, z^{7/2}} \left(512 \left(\sqrt{z}\, \left(16\, z^3 + 92\, z^2 + 417\, z + 630\right) I_0\left(\sqrt{z}\right)^2 - \right.\right.$$
$$\left.\left. \left(16\, z^3 + 104\, z^2 + 513\, z + 1260\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \sqrt{z}\, \left(16\, z^3 + 100\, z^2 + 475\, z + 957\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2634.01

$${}_1F_2\left(\frac{1}{2}; 5, 5; -z\right) =$$
$$\frac{1}{1225\, z^{7/2}} \left(512 \left(\sqrt{z}\, \left(16\, z^3 - 92\, z^2 + 417\, z - 630\right) J_0\left(\sqrt{z}\right)^2 + \left(-16\, z^3 + 104\, z^2 - 513\, z + 1260\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. \sqrt{z}\, \left(16\, z^3 - 100\, z^2 + 475\, z - 957\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.2635.01

$${}_1F_2\left(\frac{1}{2}; 5, \frac{11}{2}; z\right) =$$
$$\frac{1}{512\, z^4} \left(9 \left(4 \left(2\, z \left(64\, z^3 + 432\, z^2 + 2396\, z + 5541\right) I_0\left(2\sqrt{z}\right) - \sqrt{z}\, \left(64\, z^3 + 464\, z^2 + 2668\, z + 7407\right) I_1\left(2\sqrt{z}\right)\right) - \right.\right.$$
$$\pi \left(256\, z^4 + 1792\, z^3 + 10\,080\, z^2 + 25\,200\, z + 11\,025\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) +$$
$$\left.\left. \pi \left(256\, z^4 + 1792\, z^3 + 10\,080\, z^2 + 25\,200\, z + 11\,025\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2636.01

$${}_1F_2\left(\frac{1}{2}; 5, \frac{11}{2}; -z\right) =$$
$$\frac{1}{512\, z^4} \left(9 \left(4 \left(2\, z \left(64\, z^3 - 432\, z^2 + 2396\, z - 5541\right) J_0\left(2\sqrt{z}\right) + \sqrt{z}\, \left(-64\, z^3 + 464\, z^2 - 2668\, z + 7407\right) J_1\left(2\sqrt{z}\right)\right) + \right.\right.$$
$$\pi \left(256\, z^4 - 1792\, z^3 + 10\,080\, z^2 - 25\,200\, z + 11\,025\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) +$$
$$\left.\left. \pi \left(-256\, z^4 + 1792\, z^3 - 10\,080\, z^2 + 25\,200\, z - 11\,025\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2637.01

$$ {}_1F_2\left(\frac{1}{2}; 5, 6; z\right) = \frac{1}{2205 z^4}\left(512\left(2 z \left(16 z^3+120 z^2+774 z+2205\right) I_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(16 z^3+132 z^2+891 z+3150\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \left(32 z^4+256 z^3+1692 z^2+5463 z+5040\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.2638.01

$$ {}_1F_2\left(\frac{1}{2}; 5, 6; -z\right) = \frac{1}{2205 z^4}\left(512\left(2 z \left(16 z^3-120 z^2+774 z-2205\right) J_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\left(-16 z^3+132 z^2-891 z+3150\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(32 z^4-256 z^3+1692 z^2-5463 z+5040\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

For fixed z and $a_1 = \frac{1}{2}$, $b_1 = \frac{11}{2}$

07.22.03.2639.01

$$ {}_1F_2\left(\frac{1}{2}; \frac{11}{2}, \frac{11}{2}; z\right) = -\frac{1}{524288 z^{9/2}}\left(99225\left(2\sqrt{z}\left(4 z^3+34 z^2+238 z+921\right)\cosh\left(2\sqrt{z}\right) + \left(4 z^3+38 z^2+294 z+1599\right)\sinh\left(2\sqrt{z}\right) - 8\left(2 z^4+16 z^3+108 z^2+360 z+315\right)\operatorname{Shi}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.2640.01

$$ {}_1F_2\left(\frac{1}{2}; \frac{11}{2}, \frac{11}{2}; -z\right) = \frac{1}{524288 z^{9/2}}\left(99225\left(2\sqrt{z}\left(4 z^3-34 z^2+238 z-921\right)\cos\left(2\sqrt{z}\right) + \left(4 z^3-38 z^2+294 z-1599\right)\sin\left(2\sqrt{z}\right) + 8\left(2 z^4-16 z^3+108 z^2-360 z+315\right)\operatorname{Si}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.2641.01

$$ {}_1F_2\left(\frac{1}{2}; \frac{11}{2}, 6; z\right) = \frac{1}{256 z^{9/2}}\left(5\left(4\left(2\sqrt{z}\left(64 z^4+560 z^3+4380 z^2+17613 z+18432\right) I_0\left(2\sqrt{z}\right) - \left(64 z^4+592 z^3+4716 z^2+20583 z+36864\right) I_1\left(2\sqrt{z}\right)\right) - \pi\sqrt{z}\left(256 z^4+2304 z^3+18144 z^2+75600 z+99225\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\sqrt{z}\left(256 z^4+2304 z^3+18144 z^2+75600 z+99225\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.2642.01

$$ {}_1F_2\left(\frac{1}{2}; \frac{11}{2}, 6; -z\right) = \frac{1}{256\, z^{9/2}}\left(5\left(4\left(2\sqrt{z}\,\left(64\, z^4 - 560\, z^3 + 4380\, z^2 - 17\,613\, z + 18\,432\right) J_0\left(2\sqrt{z}\right) + \left(-64\, z^4 + 592\, z^3 - 4716\, z^2 + 20\,583\, z - 36\,864\right) J_1\left(2\sqrt{z}\right)\right) + \pi\sqrt{z}\,\left(256\, z^4 - 2304\, z^3 + 18\,144\, z^2 - 75\,600\, z + 99\,225\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) + \pi\sqrt{z}\,\left(-256\, z^4 + 2304\, z^3 - 18\,144\, z^2 + 75\,600\, z - 99\,225\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = \frac{1}{2}$, $b_1 = 6$

07.22.03.2643.01

$$ {}_1F_2\left(\frac{1}{2}; 6, 6; z\right) = \frac{1}{3969\, z^{9/2}}\left(512\left(\sqrt{z}\,\left(64\, z^4 + 624\, z^3 + 5688\, z^2 + 28\,449\, z + 45\,360\right) I_0\left(\sqrt{z}\right)^2 - 8\left(8\, z^4 + 84\, z^3 + 783\, z^2 + 4302\, z + 11\,340\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \sqrt{z}\,\left(64\, z^4 + 656\, z^3 + 6048\, z^2 + 31\,959\, z + 67\,644\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.2644.01

$$ {}_1F_2\left(\frac{1}{2}; 6, 6; -z\right) = \frac{1}{3969\, z^{9/2}}\left(512\left(\sqrt{z}\,\left(64\, z^4 - 624\, z^3 + 5688\, z^2 - 28\,449\, z + 45\,360\right) J_0\left(\sqrt{z}\right)^2 - 8\left(8\, z^4 - 84\, z^3 + 783\, z^2 - 4302\, z + 11\,340\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\,\left(64\, z^4 - 656\, z^3 + 6048\, z^2 - 31\,959\, z + 67\,644\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

For fixed z and $a_1 = 1$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = 1$, $b_1 = -\frac{11}{2}$

07.22.03.2645.01

$$ {}_1F_2\left(1; -\frac{11}{2}, -\frac{11}{2}; z\right) = \frac{1}{108\,056\,025}\left(4096\,\pi\, z^3\left(\boldsymbol{L}_{-14}\left(2\sqrt{z}\right) z^{7/2} + 7\left(7\, \boldsymbol{L}_{-13}\left(2\sqrt{z}\right) z^3 + 6\left(21\, \boldsymbol{L}_{-12}\left(2\sqrt{z}\right) z^{5/2} + 5\left(35\, \boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^2 + 4\left(35\, \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^{3/2} + 63\, \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z + 42\, \boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 6\, \boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)\right) $$

07.22.03.2646.01

$$ {}_1F_2\left(1; -\frac{11}{2}, -\frac{11}{2}; -z\right) = \frac{1}{108\,056\,025}\left(4096\,\pi\, z^3\left(\boldsymbol{H}_{-14}\left(2\sqrt{z}\right) z^{7/2} + 7\left(7\, \boldsymbol{H}_{-13}\left(2\sqrt{z}\right) z^3 + 6\left(21\, \boldsymbol{H}_{-12}\left(2\sqrt{z}\right) z^{5/2} + 5\left(35\, \boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^2 + 4\left(35\, \boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^{3/2} + 63\, \boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z + 42\, \boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 6\, \boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)\right) $$

07.22.03.2647.01

$$ {}_1F_2\left(1; -\frac{11}{2}, -\frac{9}{2}; z\right) = -\frac{1}{9\,823\,275}\left(2048\,\pi\,z^3\left(\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3 + 42\left(\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 5\left(3\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2 + 20\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 60\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z + 72\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 24\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right) $$

07.22.03.2648.01

$$ {}_1F_2\left(1; -\frac{11}{2}, -\frac{9}{2}; -z\right) = -\frac{1}{9\,823\,275}\left(2048\,\pi\,z^3\left(\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3 + 42\left(\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 5\left(3\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2 + 20\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 60\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z + 72\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 24\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right) $$

07.22.03.2649.01

$$ {}_1F_2\left(1; -\frac{11}{2}, -\frac{7}{2}; z\right) = \frac{1}{1\,091\,475}\left(1024\,\pi\,z^3\left(\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 35\left(\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2 + 12\left(\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 5\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z + 10\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 6\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right) $$

07.22.03.2650.01

$$ {}_1F_2\left(1; -\frac{11}{2}, -\frac{7}{2}; -z\right) = \frac{1}{1\,091\,475}\left(1024\,\pi\,z^3\left(\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 35\left(\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2 + 12\left(\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 5\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z + 10\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 6\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right) $$

07.22.03.2651.01

$$ {}_1F_2\left(1; -\frac{11}{2}, -\frac{5}{2}; z\right) = -\frac{1}{155\,925}\left(512\,\pi\,z^3\left(\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2 + 28\left(\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 9\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z + 30\left(\sqrt{z}\;\boldsymbol{L}_{-8}\left(2\sqrt{z}\right) + \boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right) $$

07.22.03.2652.01

$$ {}_1F_2\left(1; -\frac{11}{2}, -\frac{5}{2}; -z\right) = -\frac{1}{155\,925}\left(512\,\pi\,z^3\left(\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2 + 28\left(\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 9\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z + 30\left(\sqrt{z}\;\boldsymbol{H}_{-8}\left(2\sqrt{z}\right) + \boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right) $$

07.22.03.2653.01

$$ {}_1F_2\left(1; -\frac{11}{2}, -\frac{3}{2}; z\right) = \frac{256\,\pi\,z^3\left(\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 21\left(z\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right) + 6\sqrt{z}\;\boldsymbol{L}_{-8}\left(2\sqrt{z}\right) + 10\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)}{31\,185} $$

07.22.03.2654.01

$$ {}_1F_2\left(1; -\frac{11}{2}, -\frac{3}{2}; -z\right) = \frac{256\,\pi\,z^3\left(\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 21\left(z\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right) + 6\sqrt{z}\;\boldsymbol{H}_{-8}\left(2\sqrt{z}\right) + 10\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)}{31\,185} $$

07.22.03.2655.01

$$ {}_1F_2\left(1; -\frac{11}{2}, -\frac{1}{2}; z\right) = -\frac{128\,\pi\,z^3\left(z\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right) + 14\sqrt{z}\;\boldsymbol{L}_{-8}\left(2\sqrt{z}\right) + 42\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)}{10\,395} $$

07.22.03.2656.01

$${}_1F_2\left(1;-\frac{11}{2},-\frac{1}{2};-z\right)=-\frac{128\,\pi\,z^3\left(z\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)+14\sqrt{z}\;\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)+42\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)}{10\,395}$$

07.22.03.2657.01

$${}_1F_2\left(1;-\frac{11}{2},\frac{1}{2};z\right)=\frac{64\,\pi\left(\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{7/2}+7\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^3\right)}{10\,395}$$

07.22.03.2658.01

$${}_1F_2\left(1;-\frac{11}{2},\frac{1}{2};-z\right)=\frac{64\,\pi\left(\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{7/2}+7\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^3\right)}{10\,395}$$

07.22.03.2659.01

$${}_1F_2\left(1;-\frac{11}{2},1;z\right)=\left(\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}+\frac{20\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{495}\sqrt{z}\,\left(16\,z^2+240\,z+495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2660.01

$${}_1F_2\left(1;-\frac{11}{2},1;-z\right)=\left(-\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}-\frac{20\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\,\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.2661.01

$${}_1F_2\left(1;-\frac{11}{2},\frac{3}{2};z\right)=\frac{32\,\pi\,z^3\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.2662.01

$${}_1F_2\left(1;-\frac{11}{2},\frac{3}{2};-z\right)=\frac{32\,\pi\,z^3\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.2663.01

$${}_1F_2\left(1;-\frac{11}{2},2;z\right)=\frac{1}{20\,790\,z}$$
$$\left(-7\left(256\,z^3+7200\,z^2+35\,640\,z+19\,305\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(64\,z^3+6048\,z^2+69\,300\,z+135\,135\right)\sinh\left(2\sqrt{z}\right)+135\,135\right)$$

07.22.03.2664.01

$${}_1F_2\left(1;-\frac{11}{2},2;-z\right)=-\frac{1}{20\,790\,z}$$
$$\left(7\left(256\,z^3-7200\,z^2+35\,640\,z-19\,305\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(64\,z^3-6048\,z^2+69\,300\,z-135\,135\right)\sin\left(2\sqrt{z}\right)+135\,135\right)$$

07.22.03.2665.01

$${}_1F_2\left(1;-\frac{11}{2},\frac{5}{2};z\right)=\frac{1}{10\,395\sqrt{z}}\left(\sqrt{z}\,\left(64\,z^3+6192\,z^2+63\,756\,z+10\,395\right)-\right.$$
$$\left.720\,\pi\sqrt{z}\,\left(z^2+32\,z+168\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)+48\,\pi\left(z^3+120\,z^2+1800\,z+5040\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.2666.01

$${}_1F_2\left(1;-\frac{11}{2},\frac{5}{2};-z\right)=\frac{1}{10\,395\sqrt{z}}\left(\sqrt{z}\,\left(-64\,z^3+6192\,z^2-63\,756\,z+10\,395\right)+\right.$$
$$\left.720\,\pi\sqrt{z}\,\left(z^2-32\,z+168\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)+48\,\pi\left(z^3-120\,z^2+1800\,z-5040\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.2667.01

$${}_1F_2\left(1; -\frac{11}{2}, 3; z\right) = \frac{1}{20\,790\,z^2}\left(\left(256\,z^4 + 40\,320\,z^3 + 831\,600\,z^2 + 3\,783\,780\,z + 2\,027\,025\right)\cosh\left(2\sqrt{z}\right) - 9\left(2\sqrt{z}\,\left(256\,z^3 + 12\,320\,z^2 + 120\,120\,z + 225\,225\right)\sinh\left(2\sqrt{z}\right) - 15\,015\,(2\,z - 15)\right)\right)$$

07.22.03.2668.01

$${}_1F_2\left(1; -\frac{11}{2}, 3; -z\right) = \frac{1}{20\,790\,z^2}\left(\left(256\,z^4 - 40\,320\,z^3 + 831\,600\,z^2 - 3\,783\,780\,z + 2\,027\,025\right)\cos\left(2\sqrt{z}\right) - 9\left(15\,015\,(2\,z + 15) + 2\sqrt{z}\,\left(256\,z^3 - 12\,320\,z^2 + 120\,120\,z - 225\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2669.01

$${}_1F_2\left(1; -\frac{11}{2}, \frac{7}{2}; z\right) = \frac{1}{10\,395\,z}\left(z\left(64\,z^3 + 8560\,z^2 + 122\,340\,z + 10\,395\right) - 720\,\pi\sqrt{z}\,\left(3\,z^2 + 140\,z + 1120\right)\boldsymbol{L}_2\left(2\sqrt{z}\right) + 120\,\pi\left(z^3 + 180\,z^2 + 4200\,z + 20\,160\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.2670.01

$${}_1F_2\left(1; -\frac{11}{2}, \frac{7}{2}; -z\right) = \frac{1}{10\,395\,z}\left(z\left(-64\,z^3 + 8560\,z^2 - 122\,340\,z + 10\,395\right) + 720\,\pi\sqrt{z}\,\left(3\,z^2 - 140\,z + 1120\right)\boldsymbol{H}_2\left(2\sqrt{z}\right) + 120\,\pi\left(z^3 - 180\,z^2 + 4200\,z - 20\,160\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.2671.01

$${}_1F_2\left(1; -\frac{11}{2}, 4; z\right) = \frac{1}{13\,860\,z^3}\left(135\,135\left(2\,z^2 - 30\,z + 255\right) - 45\left(256\,z^4 + 19\,712\,z^3 + 336\,336\,z^2 + 1\,441\,440\,z + 765\,765\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(256\,z^4 + 63\,360\,z^3 + 2\,162\,160\,z^2 + 18\,918\,900\,z + 34\,459\,425\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2672.01

$${}_1F_2\left(1; -\frac{11}{2}, 4; -z\right) = \frac{1}{13\,860\,z^3}\left(-135\,135\left(2\,z^2 + 30\,z + 255\right) + 45\left(256\,z^4 - 19\,712\,z^3 + 336\,336\,z^2 - 1\,441\,440\,z + 765\,765\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(256\,z^4 - 63\,360\,z^3 + 2\,162\,160\,z^2 - 18\,918\,900\,z + 34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2673.01

$${}_1F_2\left(1; -\frac{11}{2}, \frac{9}{2}; z\right) = \frac{1}{10\,395\,z^{3/2}}\left(\left(64\,z^3 + 11\,312\,z^2 + 214\,620\,z + 10\,395\right)z^{3/2} - 8820\,\pi\left(z^2 + 64\,z + 720\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z} + 420\,\pi\left(z^3 + 252\,z^2 + 8400\,z + 60\,480\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.2674.01

$${}_1F_2\left(1; -\frac{11}{2}, \frac{9}{2}; -z\right) = \frac{1}{10\,395\,z^{3/2}}\left(\left(-64\,z^3 + 11\,312\,z^2 - 214\,620\,z + 10\,395\right)z^{3/2} + 8820\,\pi\left(z^2 - 64\,z + 720\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z} + 420\,\pi\left(z^3 - 252\,z^2 + 8400\,z - 60\,480\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.2675.01

$${}_1F_2\left(1; -\frac{11}{2}, 5; z\right) =$$
$$\frac{1}{6930\, z^4}\left(\left(1024\, z^5 + 380\,160\, z^4 + 20\,180\,160\, z^3 + 302\,702\,400\, z^2 + 1\,240\,539\,300\, z + 654\,729\,075\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left. 55\left(2\sqrt{z}\,\left(256\, z^4 + 29\,952\, z^3 + 825\,552\, z^2 + 6\,683\,040\, z + 11\,904\,165\right)\sinh\left(2\sqrt{z}\right) - 819\left(4\, z^3 - 90\, z^2 + 1530\, z - 14\,535\right)\right)\right)$$

07.22.03.2676.01

$${}_1F_2\left(1; -\frac{11}{2}, 5; -z\right) =$$
$$\frac{1}{6930\, z^4}\left(\left(-1024\, z^5 + 380\,160\, z^4 - 20\,180\,160\, z^3 + 302\,702\,400\, z^2 - 1\,240\,539\,300\, z + 654\,729\,075\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left. 55\left(2\sqrt{z}\,\left(256\, z^4 - 29\,952\, z^3 + 825\,552\, z^2 - 6\,683\,040\, z + 11\,904\,165\right)\sin\left(2\sqrt{z}\right) - 819\left(4\, z^3 + 90\, z^2 + 1530\, z + 14\,535\right)\right)\right)$$

07.22.03.2677.01

$${}_1F_2\left(1; -\frac{11}{2}, \frac{11}{2}; z\right) = \frac{1}{10\,395\, z^2}\left(\left(64\, z^3 + 14\,448\, z^2 + 351\,540\, z + 10\,395\right) z^2 - \right.$$
$$\left. 45\,360\,\pi\left(z^2 + 84\, z + 1260\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} + 1890\,\pi\left(z^3 + 336\, z^2 + 15\,120\, z + 151\,200\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.2678.01

$${}_1F_2\left(1; -\frac{11}{2}, \frac{11}{2}; -z\right) = \frac{1}{10\,395\, z^2}\left(\left(-64\, z^3 + 14\,448\, z^2 - 351\,540\, z + 10\,395\right) z^2 + \right.$$
$$\left. 45\,360\,\pi\left(z^2 - 84\, z + 1260\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} + 1890\,\pi\left(z^3 - 336\, z^2 + 15\,120\, z - 151\,200\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.2679.01

$${}_1F_2\left(1; -\frac{11}{2}, 6; z\right) = \frac{1}{2772\, z^5}\left(45\,045\left(2\, z^4 - 60\, z^3 + 1530\, z^2 - 29\,070\, z + 305\,235\right) - \right.$$
$$33\left(2048\, z^5 + 349\,440\, z^4 + 14\,676\,480\, z^3 + 200\,491\,200\, z^2 + 793\,611\,000\, z + 416\,645\,775\right)\cosh\left(2\sqrt{z}\right) +$$
$$\left. 2\sqrt{z}\,\left(1024\, z^5 + 549\,120\, z^4 + 43\,243\,200\, z^3 + 1\,029\,188\,160\, z^2 + 7\,856\,748\,900\, z + 13\,749\,310\,575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2680.01

$${}_1F_2\left(1; -\frac{11}{2}, 6; -z\right) = -\frac{1}{2772\, z^5}\left(45\,045\left(2\, z^4 + 60\, z^3 + 1530\, z^2 + 29\,070\, z + 305\,235\right) + \right.$$
$$33\left(2048\, z^5 - 349\,440\, z^4 + 14\,676\,480\, z^3 - 200\,491\,200\, z^2 + 793\,611\,000\, z - 416\,645\,775\right)\cos\left(2\sqrt{z}\right) +$$
$$\left. 2\sqrt{z}\,\left(1024\, z^5 - 549\,120\, z^4 + 43\,243\,200\, z^3 - 1\,029\,188\,160\, z^2 + 7\,856\,748\,900\, z - 13\,749\,310\,575\right)\sin\left(2\sqrt{z}\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = -\frac{9}{2}$

07.22.03.2681.01

$${}_1F_2\left(1; -\frac{9}{2}, -\frac{9}{2}; z\right) =$$
$$\frac{1}{893\,025}\left(1024\,\pi\, z^{5/2}\left(\boldsymbol{L}_{-12}\left(2\sqrt{z}\right) z^3 + 6\left(6\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^{5/2} + 75\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^2 + 400\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 900\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z + \right.\right.\right.$$
$$\left.\left.\left. 720\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 120\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.2682.01

$$ {}_1F_2\left(1; -\frac{9}{2}, -\frac{9}{2}; -z\right) = \frac{1}{893\,025}\left(1024\,\pi\, z^{5/2}\left(\boldsymbol{H}_{-12}\left(2\sqrt{z}\right) z^3 + 6\left(6\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^{5/2} + 75\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^2 + 400\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 900\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z + 720\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 120\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.2683.01

$$ {}_1F_2\left(1; -\frac{9}{2}, -\frac{7}{2}; z\right) = -\frac{1}{99\,225}\left(512\,\pi\left(\boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^5 + 30\left(\boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^2 + 10\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 40\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z + 60\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 24\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right) z^{5/2}\right)\right)$$

07.22.03.2684.01

$$ {}_1F_2\left(1; -\frac{9}{2}, -\frac{7}{2}; -z\right) = -\frac{1}{99\,225}\left(512\,\pi\left(\boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^5 + 30\left(\boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^2 + 10\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 40\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z + 60\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 24\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right) z^{5/2}\right)\right)$$

07.22.03.2685.01

$$ {}_1F_2\left(1; -\frac{9}{2}, -\frac{5}{2}; z\right) = \frac{1}{14\,175}\left(256\,\pi\, z^{5/2}\left(\boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^2 + 12\left(2\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 5\left(3\,z\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right) + 8\sqrt{z}\;\boldsymbol{L}_{-7}\left(2\sqrt{z}\right) + 6\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.2686.01

$$ {}_1F_2\left(1; -\frac{9}{2}, -\frac{5}{2}; -z\right) = \frac{1}{14\,175}\left(256\,\pi\, z^{5/2}\left(\boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^2 + 12\left(2\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 5\left(3\,z\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right) + 8\sqrt{z}\;\boldsymbol{H}_{-7}\left(2\sqrt{z}\right) + 6\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.2687.01

$$ {}_1F_2\left(1; -\frac{9}{2}, -\frac{3}{2}; z\right) = -\frac{128\,\pi\left(\boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^4 + 6\left(3\,z\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right) + 15\sqrt{z}\;\boldsymbol{L}_{-7}\left(2\sqrt{z}\right) + 20\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right) z^{5/2}\right)}{2835}$$

07.22.03.2688.01

$$ {}_1F_2\left(1; -\frac{9}{2}, -\frac{3}{2}; -z\right) = -\frac{128\,\pi\left(\boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^4 + 6\left(3\,z\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right) + 15\sqrt{z}\;\boldsymbol{H}_{-7}\left(2\sqrt{z}\right) + 20\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right) z^{5/2}\right)}{2835}$$

07.22.03.2689.01

$$ {}_1F_2\left(1; -\frac{9}{2}, -\frac{1}{2}; z\right) = \frac{64}{945}\,\pi\, z^{5/2}\left(z\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right) + 12\sqrt{z}\;\boldsymbol{L}_{-7}\left(2\sqrt{z}\right) + 30\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)$$

07.22.03.2690.01

$$ {}_1F_2\left(1; -\frac{9}{2}, -\frac{1}{2}; -z\right) = \frac{64}{945}\,\pi\, z^{5/2}\left(z\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right) + 12\sqrt{z}\;\boldsymbol{H}_{-7}\left(2\sqrt{z}\right) + 30\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)$$

07.22.03.2691.01

$$ {}_1F_2\left(1; -\frac{9}{2}, \frac{1}{2}; z\right) = -\frac{32}{945}\,\pi\left(\boldsymbol{L}_{-7}\left(2\sqrt{z}\right) z^3 + 6\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right) z^{5/2}\right)$$

07.22.03.2692.01

$${}_1F_2\left(1; -\frac{9}{2}, \frac{1}{2}; -z\right) = -\frac{32}{945}\pi\left(\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^3 + 6\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{5/2}\right)$$

07.22.03.2693.01

$${}_1F_2\left(1; -\frac{9}{2}, 1; z\right) = \left(\frac{16\,z^2}{63} + \frac{16\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\,\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2694.01

$${}_1F_2\left(1; -\frac{9}{2}, 1; -z\right) = \left(\frac{16\,z^2}{63} - \frac{16\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\,\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.2695.01

$${}_1F_2\left(1; -\frac{9}{2}, \frac{3}{2}; z\right) = -\frac{16}{945}\pi\,z^{5/2}\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)$$

07.22.03.2696.01

$${}_1F_2\left(1; -\frac{9}{2}, \frac{3}{2}; -z\right) = -\frac{16}{945}\pi\,z^{5/2}\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)$$

07.22.03.2697.01

$${}_1F_2\left(1; -\frac{9}{2}, 2; z\right) =$$

$$\frac{1}{1890\,z}\left(21\left(2\sqrt{z}\,\left(16\,z^2 + 240\,z + 495\right)\sinh\left(2\sqrt{z}\right) + 495\right) - \left(64\,z^3 + 3360\,z^2 + 18\,900\,z + 10\,395\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.2698.01

$${}_1F_2\left(1; -\frac{9}{2}, 2; -z\right) =$$

$$\frac{1}{1890\,z}\left(\left(-64\,z^3 + 3360\,z^2 - 18\,900\,z + 10\,395\right)\cos\left(2\sqrt{z}\right) + 21\left(2\sqrt{z}\,\left(16\,z^2 - 240\,z + 495\right)\sin\left(2\sqrt{z}\right) - 495\right)\right)$$

07.22.03.2699.01

$${}_1F_2\left(1; -\frac{9}{2}, \frac{5}{2}; z\right) =$$

$$\frac{1}{315\sqrt{z}}\left(\sqrt{z}\,\left(112\,z^2 + 1508\,z + 315\right) - 8\,\pi\sqrt{z}\,\left(z^2 + 60\,z + 360\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) + 96\,\pi\left(z^2 + 20\,z + 60\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.2700.01

$${}_1F_2\left(1; -\frac{9}{2}, \frac{5}{2}; -z\right) =$$

$$\frac{1}{315\sqrt{z}}\left(\sqrt{z}\,\left(112\,z^2 - 1508\,z + 315\right) + 8\,\pi\sqrt{z}\,\left(z^2 - 60\,z + 360\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) - 96\,\pi\left(z^2 - 20\,z + 60\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.2701.01

$${}_1F_2\left(1; -\frac{9}{2}, 3; z\right) = \frac{1}{1890\,z^2}\left(10\,395\,(2\,z - 13) + \right.$$

$$\left.7\left(256\,z^3 + 7200\,z^2 + 35\,640\,z + 19\,305\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(64\,z^3 + 6048\,z^2 + 69\,300\,z + 135\,135\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2702.01

$${}_1F_2\left(1;-\frac{9}{2},3;-z\right)=-\frac{1}{1890\,z^2}\left(10\,395\,(2\,z+13)+\right.$$
$$\left.7\left(256\,z^3-7200\,z^2+35\,640\,z-19\,305\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(64\,z^3-6048\,z^2+69\,300\,z-135\,135\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2703.01

$${}_1F_2\left(1;-\frac{9}{2},\frac{7}{2};z\right)=\frac{1}{189\,z}\left(z\left(80\,z^2+1524\,z+189\right)-12\,\pi\sqrt{z}\,\left(z^2+90\,z+840\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)+180\,\pi\left(z^2+32\,z+168\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.2704.01

$${}_1F_2\left(1;-\frac{9}{2},\frac{7}{2};-z\right)=$$
$$\frac{1}{189\,z}\left(z\left(80\,z^2-1524\,z+189\right)+12\,\pi\sqrt{z}\,\left(z^2-90\,z+840\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)-180\,\pi\left(z^2-32\,z+168\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.2705.01

$${}_1F_2\left(1;-\frac{9}{2},4;z\right)=\frac{1}{1260\,z^3}\left(9\left(1155\left(2\,z^2-26\,z+195\right)+2\sqrt{z}\,\left(256\,z^3+12\,320\,z^2+120\,120\,z+225\,225\right)\sinh\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.\left(256\,z^4+40\,320\,z^3+831\,600\,z^2+3\,783\,780\,z+2\,027\,025\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.2706.01

$${}_1F_2\left(1;-\frac{9}{2},4;-z\right)=\frac{1}{1260\,z^3}\left(\left(256\,z^4-40\,320\,z^3+831\,600\,z^2-3\,783\,780\,z+2\,027\,025\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.9\left(1155\left(2\,z^2+26\,z+195\right)+2\sqrt{z}\,\left(256\,z^3-12\,320\,z^2+120\,120\,z-225\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2707.01

$${}_1F_2\left(1;-\frac{9}{2},\frac{9}{2};z\right)=$$
$$\frac{1}{945\,z^{3/2}}\left(\left(464\,z^2+11\,900\,z+945\right)z^{3/2}-210\,\pi\left(z^2+126\,z+1680\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z}\,+1260\,\pi\left(3\,z^2+140\,z+1120\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.2708.01

$${}_1F_2\left(1;-\frac{9}{2},\frac{9}{2};-z\right)=$$
$$\frac{1}{945\,z^{3/2}}\left(\left(464\,z^2-11\,900\,z+945\right)z^{3/2}+210\,\pi\left(z^2-126\,z+1680\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z}\,-1260\,\pi\left(3\,z^2-140\,z+1120\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.2709.01

$${}_1F_2\left(1;-\frac{9}{2},5;z\right)=$$
$$\frac{1}{630\,z^4}\left(3465\left(4\,z^3-78\,z^2+1170\,z-9945\right)+45\left(256\,z^4+19\,712\,z^3+336\,336\,z^2+1\,441\,440\,z+765\,765\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\,\left(256\,z^4+63\,360\,z^3+2\,162\,160\,z^2+18\,918\,900\,z+34\,459\,425\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2710.01

$${}_1F_2\left(1;-\frac{9}{2},5;-z\right)=$$
$$\frac{1}{630\,z^4}\left(-3465\left(4\,z^3+78\,z^2+1170\,z+9945\right)+45\left(256\,z^4-19\,712\,z^3+336\,336\,z^2-1\,441\,440\,z+765\,765\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\,\left(256\,z^4-63\,360\,z^3+2\,162\,160\,z^2-18\,918\,900\,z+34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2711.01

$${}_1F_2\left(1; -\frac{9}{2}, \frac{11}{2}; z\right) =$$
$$\frac{1}{315\,z^2}\left(\left(176\,z^2+5852\,z+315\right)z^2-315\,\pi\left(z^2+168\,z+3024\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}+6615\,\pi\left(z^2+64\,z+720\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.2712.01

$${}_1F_2\left(1; -\frac{9}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{315\,z^2}\left(\left(176\,z^2-5852\,z+315\right)z^2+315\,\pi\left(z^2-168\,z+3024\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}-6615\,\pi\left(z^2-64\,z+720\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.2713.01

$${}_1F_2\left(1; -\frac{9}{2}, 6; z\right) = \frac{1}{252\,z^5}\left(55\left(63\left(2\,z^4-52\,z^3+1170\,z^2-19\,890\,z+188\,955\right)+\right.\right.$$
$$\left.2\sqrt{z}\,\left(256\,z^4+29\,952\,z^3+825\,552\,z^2+6\,683\,040\,z+11\,904\,165\right)\sinh\left(2\sqrt{z}\right)\right)-$$
$$\left.\left(1024\,z^5+380\,160\,z^4+20\,180\,160\,z^3+302\,702\,400\,z^2+1\,240\,539\,300\,z+654\,729\,075\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.2714.01

$${}_1F_2\left(1; -\frac{9}{2}, 6; -z\right) =$$
$$\frac{1}{252\,z^5}\left(\left(-1024\,z^5+380\,160\,z^4-20\,180\,160\,z^3+302\,702\,400\,z^2-1\,240\,539\,300\,z+654\,729\,075\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$55\left(2\sqrt{z}\,\left(256\,z^4-29\,952\,z^3+825\,552\,z^2-6\,683\,040\,z+11\,904\,165\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.63\left(2\,z^4+52\,z^3+1170\,z^2+19\,890\,z+188\,955\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = -\frac{7}{2}$

07.22.03.2715.01

$${}_1F_2\left(1; -\frac{7}{2}, -\frac{7}{2}; z\right) = \frac{1}{11\,025}\left(256\,\pi\,z^2\right.$$
$$\left.\left(\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{5/2}+5\left(5\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^2+8\left(5\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{3/2}+3\left(5\,z\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)+5\sqrt{z}\;\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)+\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)$$

07.22.03.2716.01

$${}_1F_2\left(1; -\frac{7}{2}, -\frac{7}{2}; -z\right) = \frac{1}{11\,025}\left(256\,\pi\,z^2\right.$$
$$\left.\left(\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{5/2}+5\left(5\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^2+8\left(5\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2}+3\left(5\,z\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)+5\sqrt{z}\;\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)+\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)$$

07.22.03.2717.01

$${}_1F_2\left(1; -\frac{7}{2}, -\frac{5}{2}; z\right) =$$
$$-\frac{1}{1575}\left(128\,\pi\,z^2\left(\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^2+20\left(\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{3/2}+6\left(z\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)+2\sqrt{z}\;\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)+\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.2718.01

$${}_1F_2\left(1; -\frac{7}{2}, -\frac{5}{2}; -z\right) = -\frac{1}{1575}\left(128\,\pi\,z^2\left(\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^2 + 20\left(\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 6\left(z\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right) + 2\sqrt{z}\;\boldsymbol{H}_{-6}\left(2\sqrt{z}\right) + \boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.2719.01

$${}_1F_2\left(1; -\frac{7}{2}, -\frac{3}{2}; z\right) = \frac{64}{315}\,\pi\,z^2\left(\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 15\left(z\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right) + 4\left(\sqrt{z}\;\boldsymbol{L}_{-6}\left(2\sqrt{z}\right) + \boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.2720.01

$${}_1F_2\left(1; -\frac{7}{2}, -\frac{3}{2}; -z\right) = \frac{64}{315}\,\pi\,z^2\left(\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 15\left(z\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right) + 4\left(\sqrt{z}\;\boldsymbol{H}_{-6}\left(2\sqrt{z}\right) + \boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.2721.01

$${}_1F_2\left(1; -\frac{7}{2}, -\frac{1}{2}; z\right) = -\frac{32}{105}\,\pi\,z^2\left(z\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right) + 10\sqrt{z}\;\boldsymbol{L}_{-6}\left(2\sqrt{z}\right) + 20\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)$$

07.22.03.2722.01

$${}_1F_2\left(1; -\frac{7}{2}, -\frac{1}{2}; -z\right) = -\frac{32}{105}\,\pi\,z^2\left(z\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right) + 10\sqrt{z}\;\boldsymbol{H}_{-6}\left(2\sqrt{z}\right) + 20\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)$$

07.22.03.2723.01

$${}_1F_2\left(1; -\frac{7}{2}, \frac{1}{2}; z\right) = \frac{16}{105}\,\pi\left(\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{5/2} + 5\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z^2\right)$$

07.22.03.2724.01

$${}_1F_2\left(1; -\frac{7}{2}, \frac{1}{2}; -z\right) = \frac{16}{105}\,\pi\left(\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{5/2} + 5\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z^2\right)$$

07.22.03.2725.01

$${}_1F_2\left(1; -\frac{7}{2}, 1; z\right) = \left(\frac{16\,z^2}{105} + \frac{12\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\;(8\,z + 21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2726.01

$${}_1F_2\left(1; -\frac{7}{2}, 1; -z\right) = \left(\frac{16\,z^2}{105} - \frac{12\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}\,(21 - 8\,z)\sqrt{z}\;\sin\left(2\sqrt{z}\right)$$

07.22.03.2727.01

$${}_1F_2\left(1; -\frac{7}{2}, \frac{3}{2}; z\right) = \frac{8}{105}\,\pi\,z^2\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)$$

07.22.03.2728.01

$${}_1F_2\left(1; -\frac{7}{2}, \frac{3}{2}; -z\right) = \frac{8}{105}\,\pi\,z^2\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)$$

07.22.03.2729.01

$${}_1F_2\left(1; -\frac{7}{2}, 2; z\right) = \frac{-15\left(16\,z^2 + 112\,z + 63\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\;\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right) + 945}{210\,z}$$

07.22.03.2730.01

$${}_1F_2\left(1; -\frac{7}{2}, 2; -z\right) = \frac{15\left(16\,z^2 - 112\,z + 63\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\;\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right) - 945}{210\,z}$$

07.22.03.2731.01

$${}_1F_2\left(1; -\frac{7}{2}, \frac{5}{2}; z\right) = \frac{\sqrt{z}\,\left(16\,z^2+372\,z+105\right) - 48\,\pi\,\sqrt{z}\;(2\,z+15)\,\boldsymbol{L}_1\left(2\,\sqrt{z}\right) + 12\,\pi\left(z^2+36\,z+120\right)\boldsymbol{L}_2\left(2\,\sqrt{z}\right)}{105\,\sqrt{z}}$$

07.22.03.2732.01

$${}_1F_2\left(1; -\frac{7}{2}, \frac{5}{2}; -z\right) = \frac{\sqrt{z}\,\left(16\,z^2-372\,z+105\right) + 48\,\pi\,(15-2\,z)\,\sqrt{z}\;\boldsymbol{H}_1\left(2\,\sqrt{z}\right) - 12\,\pi\left(z^2-36\,z+120\right)\boldsymbol{H}_2\left(2\,\sqrt{z}\right)}{105\,\sqrt{z}}$$

07.22.03.2733.01

$${}_1F_2\left(1; -\frac{7}{2}, 3; z\right) =$$

$$\frac{1}{210\,z^2}\left(\left(64\,z^3+3360\,z^2+18\,900\,z+10\,395\right)\cosh\left(2\,\sqrt{z}\right) - 21\left(-90\,z+2\left(16\,z^2+240\,z+495\right)\sinh\left(2\,\sqrt{z}\right)\sqrt{z}\;+495\right)\right)$$

07.22.03.2734.01

$${}_1F_2\left(1; -\frac{7}{2}, 3; -z\right) =$$

$$\frac{1}{210\,z^2}\left(\left(-64\,z^3+3360\,z^2-18\,900\,z+10\,395\right)\cos\left(2\,\sqrt{z}\right) + 21\left(2\,\sqrt{z}\;\left(16\,z^2-240\,z+495\right)\sin\left(2\,\sqrt{z}\right) - 45\,(2\,z+11)\right)\right)$$

07.22.03.2735.01

$${}_1F_2\left(1; -\frac{7}{2}, \frac{7}{2}; z\right) = \frac{z\left(16\,z^2+540\,z+105\right) - 300\,\pi\,\sqrt{z}\;(z+12)\,\boldsymbol{L}_2\left(2\,\sqrt{z}\right) + 30\,\pi\left(z^2+60\,z+360\right)\boldsymbol{L}_3\left(2\,\sqrt{z}\right)}{105\,z}$$

07.22.03.2736.01

$${}_1F_2\left(1; -\frac{7}{2}, \frac{7}{2}; -z\right) = \frac{z\left(16\,z^2-540\,z+105\right) - 300\,\pi\,(z-12)\,\sqrt{z}\;\boldsymbol{H}_2\left(2\,\sqrt{z}\right) - 30\,\pi\left(z^2-60\,z+360\right)\boldsymbol{H}_3\left(2\,\sqrt{z}\right)}{105\,z}$$

07.22.03.2737.01

$${}_1F_2\left(1; -\frac{7}{2}, 4; z\right) = \frac{1}{140\,z^3}\left(945\left(2\,z^2-22\,z+143\right) -\right.$$
$$\left.7\left(256\,z^3+7200\,z^2+35\,640\,z+19\,305\right)\cosh\left(2\,\sqrt{z}\right) + 2\,\sqrt{z}\;\left(64\,z^3+6048\,z^2+69\,300\,z+135\,135\right)\sinh\left(2\,\sqrt{z}\right)\right)$$

07.22.03.2738.01

$${}_1F_2\left(1; -\frac{7}{2}, 4; -z\right) = -\frac{1}{140\,z^3}\left(945\left(2\,z^2+22\,z+143\right) +\right.$$
$$\left.7\left(256\,z^3-7200\,z^2+35\,640\,z-19\,305\right)\cos\left(2\,\sqrt{z}\right) + 2\,\sqrt{z}\;\left(64\,z^3-6048\,z^2+69\,300\,z-135\,135\right)\sin\left(2\,\sqrt{z}\right)\right)$$

07.22.03.2739.01

$${}_1F_2\left(1; -\frac{7}{2}, \frac{9}{2}; z\right) = \frac{\left(16\,z^2+740\,z+105\right)z^{3/2} - 630\,\pi\,(2\,z+35)\,\boldsymbol{L}_3\left(2\,\sqrt{z}\right)\sqrt{z}\;+105\,\pi\left(z^2+90\,z+840\right)\boldsymbol{L}_4\left(2\,\sqrt{z}\right)}{105\,z^{3/2}}$$

07.22.03.2740.01

$${}_1F_2\left(1; -\frac{7}{2}, \frac{9}{2}; -z\right) = \frac{\left(16\,z^2-740\,z+105\right)z^{3/2} - 630\,\pi\,(2\,z-35)\,\boldsymbol{H}_3\left(2\,\sqrt{z}\right)\sqrt{z}\;-105\,\pi\left(z^2-90\,z+840\right)\boldsymbol{H}_4\left(2\,\sqrt{z}\right)}{105\,z^{3/2}}$$

07.22.03.2741.01

$${}_1F_2\left(1; -\frac{7}{2}, 5; z\right) = \frac{1}{70\,z^4}\left(\left(256\,z^4 + 40\,320\,z^3 + 831\,600\,z^2 + 3\,783\,780\,z + 2\,027\,025\right)\cosh\left(2\sqrt{z}\right) - 9\left(2\sqrt{z}\,\left(256\,z^3 + 12\,320\,z^2 + 120\,120\,z + 225\,225\right)\sinh\left(2\sqrt{z}\right) - 35\left(4\,z^3 - 66\,z^2 + 858\,z - 6435\right)\right)\right)$$

07.22.03.2742.01

$${}_1F_2\left(1; -\frac{7}{2}, 5; -z\right) = \frac{1}{70\,z^4}\left(\left(256\,z^4 - 40\,320\,z^3 + 831\,600\,z^2 - 3\,783\,780\,z + 2\,027\,025\right)\cos\left(2\sqrt{z}\right) - 9\left(35\left(4\,z^3 + 66\,z^2 + 858\,z + 6435\right) + 2\sqrt{z}\,\left(256\,z^3 - 12\,320\,z^2 + 120\,120\,z - 225\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2743.01

$${}_1F_2\left(1; -\frac{7}{2}, \frac{11}{2}; z\right) = \frac{2\left(16\,z^2 + 972\,z + 105\right)z^2 - 13\,230\,\pi\,(z + 24)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} + 945\,\pi\left(z^2 + 126\,z + 1680\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)}{210\,z^2}$$

07.22.03.2744.01

$${}_1F_2\left(1; -\frac{7}{2}, \frac{11}{2}; -z\right) = \frac{1}{210\,z^2}\left(2\left(16\,z^2 - 972\,z + 105\right)z^2 - 13\,230\,\pi\,(z - 24)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} - 945\,\pi\left(z^2 - 126\,z + 1680\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.2745.01

$${}_1F_2\left(1; -\frac{7}{2}, 6; z\right) = \frac{1}{28\,z^5}\left(315\left(2\,z^4 - 44\,z^3 + 858\,z^2 - 12\,870\,z + 109\,395\right) - 45\left(256\,z^4 + 19\,712\,z^3 + 336\,336\,z^2 + 1\,441\,440\,z + 765\,765\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(256\,z^4 + 63\,360\,z^3 + 2\,162\,160\,z^2 + 18\,918\,900\,z + 34\,459\,425\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2746.01

$${}_1F_2\left(1; -\frac{7}{2}, 6; -z\right) = \frac{1}{28\,z^5}\left(-315\left(2\,z^4 + 44\,z^3 + 858\,z^2 + 12\,870\,z + 109\,395\right) + 45\left(256\,z^4 - 19\,712\,z^3 + 336\,336\,z^2 - 1\,441\,440\,z + 765\,765\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(256\,z^4 - 63\,360\,z^3 + 2\,162\,160\,z^2 - 18\,918\,900\,z + 34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = -\frac{5}{2}$

07.22.03.2747.01

$${}_1F_2\left(1; -\frac{5}{2}, -\frac{5}{2}; z\right) = \frac{64}{225}\pi\,z^{3/2}\left(\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^2 + 8\left(2\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^{3/2} + 3\left(3\,z\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right) + 4\sqrt{z}\;\boldsymbol{L}_{-5}\left(2\sqrt{z}\right) + \boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.2748.01

$${}_1F_2\left(1; -\frac{5}{2}, -\frac{5}{2}; -z\right) = \frac{64}{225}\pi\,z^{3/2}\left(\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^2 + 8\left(2\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^{3/2} + 3\left(3\,z\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right) + 4\sqrt{z}\;\boldsymbol{H}_{-5}\left(2\sqrt{z}\right) + \boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.2749.01

$${}_1F_2\left(1; -\frac{5}{2}, -\frac{3}{2}; z\right) = -\frac{32}{45}\pi\left(\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^3 + 12\left(z\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right) + 3\sqrt{z}\;\boldsymbol{L}_{-5}\left(2\sqrt{z}\right) + 2\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)z^{3/2}\right)$$

07.22.03.2750.01

$${}_1F_2\left(1; -\frac{5}{2}, -\frac{3}{2}; -z\right) = -\frac{32}{45}\pi\left(\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^3 + 12\left(z\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right) + 3\sqrt{z}\;\boldsymbol{H}_{-5}\left(2\sqrt{z}\right) + 2\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)z^{3/2}\right)$$

07.22.03.2751.01

$${}_1F_2\left(1; -\frac{5}{2}, -\frac{1}{2}; z\right) = \frac{16}{15}\pi z^{3/2}\left(z\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right) + 8\sqrt{z}\;\boldsymbol{L}_{-5}\left(2\sqrt{z}\right) + 12\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)$$

07.22.03.2752.01

$${}_1F_2\left(1; -\frac{5}{2}, -\frac{1}{2}; -z\right) = \frac{16}{15}\pi z^{3/2}\left(z\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right) + 8\sqrt{z}\;\boldsymbol{H}_{-5}\left(2\sqrt{z}\right) + 12\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)$$

07.22.03.2753.01

$${}_1F_2\left(1; -\frac{5}{2}, \frac{1}{2}; z\right) = -\frac{8}{15}\pi\left(\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z^2 + 4\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)z^{3/2}\right)$$

07.22.03.2754.01

$${}_1F_2\left(1; -\frac{5}{2}, \frac{1}{2}; -z\right) = -\frac{8}{15}\pi\left(\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z^2 + 4\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)z^{3/2}\right)$$

07.22.03.2755.01

$${}_1F_2\left(1; -\frac{5}{2}, 1; z\right) = \left(\frac{8z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\;(4z + 15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2756.01

$${}_1F_2\left(1; -\frac{5}{2}, 1; -z\right) = \left(1 - \frac{8z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}(15 - 4z)\sqrt{z}\;\sin\left(2\sqrt{z}\right)$$

07.22.03.2757.01

$${}_1F_2\left(1; -\frac{5}{2}, \frac{3}{2}; z\right) = -\frac{4}{15}\pi z^{3/2}\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)$$

07.22.03.2758.01

$${}_1F_2\left(1; -\frac{5}{2}, \frac{3}{2}; -z\right) = -\frac{4}{15}\pi z^{3/2}\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)$$

07.22.03.2759.01

$${}_1F_2\left(1; -\frac{5}{2}, 2; z\right) = \frac{5\left(2\sqrt{z}\;(8z + 21)\sinh\left(2\sqrt{z}\right) + 21\right) - \left(16z^2 + 180z + 105\right)\cosh\left(2\sqrt{z}\right)}{30z}$$

07.22.03.2760.01

$${}_1F_2\left(1; -\frac{5}{2}, 2; -z\right) = \frac{\left(16z^2 - 180z + 105\right)\cos\left(2\sqrt{z}\right) - 5\left(2\sqrt{z}\;(8z - 21)\sin\left(2\sqrt{z}\right) + 21\right)}{30z}$$

07.22.03.2761.01

$${}_1F_2\left(1; -\frac{5}{2}, \frac{5}{2}; z\right) = \frac{\sqrt{z}\;(12z + 5) - 2\pi\sqrt{z}\;(z + 12)\,\boldsymbol{L}_1\left(2\sqrt{z}\right) + 12\pi(z + 4)\,\boldsymbol{L}_2\left(2\sqrt{z}\right)}{5\sqrt{z}}$$

07.22.03.2762.01

$${}_1F_2\left(1; -\frac{5}{2}, \frac{5}{2}; -z\right) = \frac{\sqrt{z}\;(5 - 12z) - 2\pi(z - 12)\sqrt{z}\;\boldsymbol{H}_1\left(2\sqrt{z}\right) + 12\pi(z - 4)\,\boldsymbol{H}_2\left(2\sqrt{z}\right)}{5\sqrt{z}}$$

07.22.03.2763.01

$${}_1F_2\left(1; -\frac{5}{2}, 3; z\right) = \frac{105\,(2\,z-9) + 15\left(16\,z^2+112\,z+63\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,z^2+420\,z+945\right)\sinh\left(2\sqrt{z}\right)}{30\,z^2}$$

07.22.03.2764.01

$${}_1F_2\left(1; -\frac{5}{2}, 3; -z\right) = \frac{-105\,(2\,z+9) + 15\left(16\,z^2-112\,z+63\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^2-420\,z+945\right)\sin\left(2\sqrt{z}\right)}{30\,z^2}$$

07.22.03.2765.01

$${}_1F_2\left(1; -\frac{5}{2}, \frac{7}{2}; z\right) = \frac{z\,(44\,z+15) - 15\,\pi\sqrt{z}\,\,(z+20)\,\boldsymbol{L}_2\left(2\sqrt{z}\right) + 60\,\pi\,(2\,z+15)\,\boldsymbol{L}_3\left(2\sqrt{z}\right)}{15\,z}$$

07.22.03.2766.01

$${}_1F_2\left(1; -\frac{5}{2}, \frac{7}{2}; -z\right) = \frac{(15-44\,z)\,z - 15\,\pi\,(z-20)\,\boldsymbol{H}_2\left(2\sqrt{z}\right)\sqrt{z}\, + 60\,\pi\,(2\,z-15)\,\boldsymbol{H}_3\left(2\sqrt{z}\right)}{15\,z}$$

07.22.03.2767.01

$${}_1F_2\left(1; -\frac{5}{2}, 4; z\right) =$$

$$\frac{1}{20\,z^3}\left(21\left(5\left(2\,z^2-18\,z+99\right)+2\sqrt{z}\,\left(16\,z^2+240\,z+495\right)\sinh\left(2\sqrt{z}\right)\right) - \left(64\,z^3+3360\,z^2+18\,900\,z+10\,395\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.2768.01

$${}_1F_2\left(1; -\frac{5}{2}, 4; -z\right) =$$

$$\frac{1}{20\,z^3}\left(\left(-64\,z^3+3360\,z^2-18\,900\,z+10\,395\right)\cos\left(2\sqrt{z}\right) + 21\left(2\sqrt{z}\,\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right) - 5\left(2\,z^2+18\,z+99\right)\right)\right)$$

07.22.03.2769.01

$${}_1F_2\left(1; -\frac{5}{2}, \frac{9}{2}; z\right) = \frac{2\left((52\,z+15)\,z^{3/2} + 525\,\pi\,(z+12)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)\right) - 105\,\pi\sqrt{z}\,\,(z+30)\,\boldsymbol{L}_3\left(2\sqrt{z}\right)}{30\,z^{3/2}}$$

07.22.03.2770.01

$${}_1F_2\left(1; -\frac{5}{2}, \frac{9}{2}; -z\right) = \frac{2\left((15-52\,z)\,z^{3/2} + 525\,\pi\,(z-12)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)\right) - 105\,\pi\,(z-30)\sqrt{z}\,\,\boldsymbol{H}_3\left(2\sqrt{z}\right)}{30\,z^{3/2}}$$

07.22.03.2771.01

$${}_1F_2\left(1; -\frac{5}{2}, 5; z\right) = \frac{1}{10\,z^4}\left(35\left(4\,z^3-54\,z^2+594\,z-3861\right) + 7\left(256\,z^3+7200\,z^2+35\,640\,z+19\,305\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(64\,z^3+6048\,z^2+69\,300\,z+135\,135\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2772.01

$${}_1F_2\left(1; -\frac{5}{2}, 5; -z\right) = -\frac{1}{10\,z^4}\left(35\left(4\,z^3+54\,z^2+594\,z+3861\right) + 7\left(256\,z^3-7200\,z^2+35\,640\,z-19\,305\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(64\,z^3-6048\,z^2+69\,300\,z-135\,135\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2773.01

$${}_1F_2\left(1; -\frac{5}{2}, \frac{11}{2}; z\right) = \frac{2\left(2\,(4\,z+1)\,z^2 + 189\,\pi\,(2\,z+35)\,\boldsymbol{L}_5\left(2\sqrt{z}\right)\right) - 63\,\pi\,\sqrt{z}\;(z+42)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)}{4\,z^2}$$

07.22.03.2774.01

$${}_1F_2\left(1; -\frac{5}{2}, \frac{11}{2}; -z\right) = \frac{2\left(2\,(1-4\,z)\,z^2 + 189\,\pi\,(2\,z-35)\,\boldsymbol{H}_5\left(2\sqrt{z}\right)\right) - 63\,\pi\,(z-42)\,\sqrt{z}\;\boldsymbol{H}_4\left(2\sqrt{z}\right)}{4\,z^2}$$

07.22.03.2775.01

$${}_1F_2\left(1; -\frac{5}{2}, 6; z\right) =$$
$$\frac{1}{4\,z^5}\left(35\left(2\,z^4 - 36\,z^3 + 594\,z^2 - 7722\,z + 57\,915\right) - \left(256\,z^4 + 40\,320\,z^3 + 831\,600\,z^2 + 3\,783\,780\,z + 2\,027\,025\right)\cosh\left(2\sqrt{z}\right) + 18\sqrt{z}\,\left(256\,z^3 + 12\,320\,z^2 + 120\,120\,z + 225\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2776.01

$${}_1F_2\left(1; -\frac{5}{2}, 6; -z\right) =$$
$$\frac{1}{4\,z^5}\left(-35\left(2\,z^4 + 36\,z^3 + 594\,z^2 + 7722\,z + 57\,915\right) + \left(256\,z^4 - 40\,320\,z^3 + 831\,600\,z^2 - 3\,783\,780\,z + 2\,027\,025\right)\cos\left(2\sqrt{z}\right) - 18\sqrt{z}\,\left(256\,z^3 - 12\,320\,z^2 + 120\,120\,z - 225\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = -\frac{3}{2}$

07.22.03.2777.01

$${}_1F_2\left(1; -\frac{3}{2}, -\frac{3}{2}; z\right) = \frac{16}{9}\,\pi\,z\left(\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{3/2} + 9\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z + 6\left(3\sqrt{z}\;\boldsymbol{L}_{-4}\left(2\sqrt{z}\right) + \boldsymbol{L}_{-3}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2778.01

$${}_1F_2\left(1; -\frac{3}{2}, -\frac{3}{2}; -z\right) = \frac{16}{9}\,\pi\,z\left(\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{3/2} + 9\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z + 6\left(3\sqrt{z}\;\boldsymbol{H}_{-4}\left(2\sqrt{z}\right) + \boldsymbol{H}_{-3}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2779.01

$${}_1F_2\left(1; -\frac{3}{2}, -\frac{1}{2}; z\right) = -\frac{8}{3}\,\pi\,z\left(z\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right) + 6\left(\sqrt{z}\;\boldsymbol{L}_{-4}\left(2\sqrt{z}\right) + \boldsymbol{L}_{-3}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2780.01

$${}_1F_2\left(1; -\frac{3}{2}, -\frac{1}{2}; -z\right) = -\frac{8}{3}\,\pi\,z\left(z\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right) + 6\left(\sqrt{z}\;\boldsymbol{H}_{-4}\left(2\sqrt{z}\right) + \boldsymbol{H}_{-3}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2781.01

$${}_1F_2\left(1; -\frac{3}{2}, \frac{1}{2}; z\right) = \frac{4}{3}\,\pi\left(\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 3\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)z\right)$$

07.22.03.2782.01

$${}_1F_2\left(1; -\frac{3}{2}, \frac{1}{2}; -z\right) = \frac{4}{3}\,\pi\left(\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 3\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)z\right)$$

07.22.03.2783.01

$${}_1F_2\left(1; -\frac{3}{2}, 1; z\right) = \left(\frac{4\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\;\sinh\left(2\sqrt{z}\right)$$

07.22.03.2784.01

$${}_1F_2\left(1; -\frac{3}{2}, 1; -z\right) = \left(1 - \frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.2785.01

$${}_1F_2\left(1; -\frac{3}{2}, \frac{3}{2}; z\right) = \frac{2}{3}\pi z\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)$$

07.22.03.2786.01

$${}_1F_2\left(1; -\frac{3}{2}, \frac{3}{2}; -z\right) = \frac{2}{3}\pi z\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)$$

07.22.03.2787.01

$${}_1F_2\left(1; -\frac{3}{2}, 2; z\right) = \frac{-3(8z+5)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,(4z+15)\sinh\left(2\sqrt{z}\right) + 15}{6z}$$

07.22.03.2788.01

$${}_1F_2\left(1; -\frac{3}{2}, 2; -z\right) = -\frac{3(8z-5)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,(4z-15)\sin\left(2\sqrt{z}\right) + 15}{6z}$$

07.22.03.2789.01

$${}_1F_2\left(1; -\frac{3}{2}, \frac{5}{2}; z\right) = \frac{4z}{3} - 3\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right) + 1 + \frac{\pi(z+6)\,\boldsymbol{L}_2\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.2790.01

$${}_1F_2\left(1; -\frac{3}{2}, \frac{5}{2}; -z\right) = -\frac{4z}{3} + 3\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right) + 1 + \frac{\pi(z-6)\,\boldsymbol{H}_2\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.2791.01

$${}_1F_2\left(1; -\frac{3}{2}, 3; z\right) = \frac{\left(16z^2 + 180z + 105\right)\cosh\left(2\sqrt{z}\right) - 5\left(-6z + 2(8z+21)\sinh\left(2\sqrt{z}\right)\sqrt{z} + 21\right)}{6z^2}$$

07.22.03.2792.01

$${}_1F_2\left(1; -\frac{3}{2}, 3; -z\right) = \frac{\left(16z^2 - 180z + 105\right)\cos\left(2\sqrt{z}\right) - 5\left(6z + 2(8z-21)\sin\left(2\sqrt{z}\right)\sqrt{z} + 21\right)}{6z^2}$$

07.22.03.2793.01

$${}_1F_2\left(1; -\frac{3}{2}, \frac{7}{2}; z\right) = \frac{2z(4z+3) - 60\pi\sqrt{z}\,\boldsymbol{L}_2\left(2\sqrt{z}\right) + 15\pi(z+12)\,\boldsymbol{L}_3\left(2\sqrt{z}\right)}{6z}$$

07.22.03.2794.01

$${}_1F_2\left(1; -\frac{3}{2}, \frac{7}{2}; -z\right) = \frac{2(3-4z)z + 60\pi\,\boldsymbol{H}_2\left(2\sqrt{z}\right)\sqrt{z} + 15\pi(z-12)\,\boldsymbol{H}_3\left(2\sqrt{z}\right)}{6z}$$

07.22.03.2795.01

$${}_1F_2\left(1; -\frac{3}{2}, 4; z\right) = \frac{1}{4z^3}\left(15\left(2z^2 - 14z + 63\right) - 15\left(16z^2 + 112z + 63\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16z^2 + 420z + 945\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2796.01

$${}_1F_2\left(1; -\frac{3}{2}, 4; -z\right) = \frac{1}{4z^3}\left(-15\left(2z^2 + 14z + 63\right) + 15\left(16z^2 - 112z + 63\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16z^2 - 420z + 945\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2797.01

$${}_1F_2\left(1; -\frac{3}{2}, \frac{9}{2}; z\right) = \frac{4\,(4\,z+3)\,z^{3/2} - 525\,\pi\,\boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z} + 105\,\pi\,(z+20)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)}{12\,z^{3/2}}$$

07.22.03.2798.01

$${}_1F_2\left(1; -\frac{3}{2}, \frac{9}{2}; -z\right) = \frac{4\,(3-4\,z)\,z^{3/2} + 525\,\pi\,\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z} + 105\,\pi\,(z-20)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)}{12\,z^{3/2}}$$

07.22.03.2799.01

$${}_1F_2\left(1; -\frac{3}{2}, 5; z\right) = \frac{1}{2\,z^4}\left(5\left(4\,z^3 - 42\,z^2 + 378\,z - 2079\right) + \left(64\,z^3 + 3360\,z^2 + 18\,900\,z + 10\,395\right)\cosh\left(2\sqrt{z}\right) - 42\sqrt{z}\,\left(16\,z^2 + 240\,z + 495\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2800.01

$${}_1F_2\left(1; -\frac{3}{2}, 5; -z\right) = \frac{1}{2\,z^4}\left(-5\left(4\,z^3 + 42\,z^2 + 378\,z + 2079\right) + \left(-64\,z^3 + 3360\,z^2 - 18\,900\,z + 10\,395\right)\cos\left(2\sqrt{z}\right) + 42\sqrt{z}\,\left(16\,z^2 - 240\,z + 495\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2801.01

$${}_1F_2\left(1; -\frac{3}{2}, \frac{11}{2}; z\right) = \frac{8\,(4\,z+3)\,z^2 - 5670\,\pi\,\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} + 945\,\pi\,(z+30)\,\boldsymbol{L}_5\left(2\sqrt{z}\right)}{24\,z^2}$$

07.22.03.2802.01

$${}_1F_2\left(1; -\frac{3}{2}, \frac{11}{2}; -z\right) = \frac{8\,(3-4\,z)\,z^2 + 5670\,\pi\,\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} + 945\,\pi\,(z-30)\,\boldsymbol{H}_5\left(2\sqrt{z}\right)}{24\,z^2}$$

07.22.03.2803.01

$${}_1F_2\left(1; -\frac{3}{2}, 6; z\right) = \frac{1}{4\,z^5}\left(5\left(5\left(2\,z^4 - 28\,z^3 + 378\,z^2 - 4158\,z + 27\,027\right) - 7\left(256\,z^3 + 7200\,z^2 + 35\,640\,z + 19\,305\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(64\,z^3 + 6048\,z^2 + 69\,300\,z + 135\,135\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2804.01

$${}_1F_2\left(1; -\frac{3}{2}, 6; -z\right) = -\frac{1}{4\,z^5}\left(5\left(5\left(2\,z^4 + 28\,z^3 + 378\,z^2 + 4158\,z + 27\,027\right) + 7\left(256\,z^3 - 7200\,z^2 + 35\,640\,z - 19\,305\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(64\,z^3 - 6048\,z^2 + 69\,300\,z - 135\,135\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = -\frac{1}{2}$

07.22.03.2805.01

$${}_1F_2\left(1; -\frac{1}{2}, -\frac{1}{2}; z\right) = 4\,\pi\left(\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 4\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)z + 2\,\boldsymbol{L}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)$$

07.22.03.2806.01

$${}_1F_2\left(1; -\frac{1}{2}, -\frac{1}{2}; -z\right) = 4\,\pi\left(\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 4\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)z + 2\,\boldsymbol{H}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)$$

07.22.03.2807.01

$${}_1F_2\left(1; -\frac{1}{2}, \frac{1}{2}; z\right) = -2\pi\left(z\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right) + 2\sqrt{z}\;\boldsymbol{L}_{-2}\left(2\sqrt{z}\right)\right)$$

07.22.03.2808.01

$${}_1F_2\left(1; -\frac{1}{2}, \frac{1}{2}; -z\right) = -2\pi\left(z\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right) + 2\sqrt{z}\;\boldsymbol{H}_{-2}\left(2\sqrt{z}\right)\right)$$

07.22.03.2809.01

$${}_1F_2\left(1; -\frac{1}{2}, 1; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\;\sinh\left(2\sqrt{z}\right)$$

07.22.03.2810.01

$${}_1F_2\left(1; -\frac{1}{2}, 1; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\;\sin\left(2\sqrt{z}\right)$$

07.22.03.2811.01

$${}_1F_2\left(1; -\frac{1}{2}, \frac{3}{2}; z\right) = -\pi\sqrt{z}\;\boldsymbol{L}_{-2}\left(2\sqrt{z}\right)$$

07.22.03.2812.01

$${}_1F_2\left(1; -\frac{1}{2}, \frac{3}{2}; -z\right) = -\pi\sqrt{z}\;\boldsymbol{H}_{-2}\left(2\sqrt{z}\right)$$

07.22.03.2813.01

$${}_1F_2\left(1; -\frac{1}{2}, 2; z\right) = \frac{-(4z+3)\cosh\left(2\sqrt{z}\right) + 6\sqrt{z}\;\sinh\left(2\sqrt{z}\right) + 3}{2z}$$

07.22.03.2814.01

$${}_1F_2\left(1; -\frac{1}{2}, 2; -z\right) = \frac{(3-4z)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\;\sin\left(2\sqrt{z}\right) - 3}{2z}$$

07.22.03.2815.01

$${}_1F_2\left(1; -\frac{1}{2}, \frac{5}{2}; z\right) = -\frac{3}{2}\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right) + \frac{3\pi\,\boldsymbol{L}_2\left(2\sqrt{z}\right)}{\sqrt{z}} + 1$$

07.22.03.2816.01

$${}_1F_2\left(1; -\frac{1}{2}, \frac{5}{2}; -z\right) = \frac{3}{2}\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right) - \frac{3\pi\,\boldsymbol{H}_2\left(2\sqrt{z}\right)}{\sqrt{z}} + 1$$

07.22.03.2817.01

$${}_1F_2\left(1; -\frac{1}{2}, 3; z\right) = \frac{6z - 2(4z+15)\sinh\left(2\sqrt{z}\right)\sqrt{z} + 3(8z+5)\cosh\left(2\sqrt{z}\right) - 15}{2z^2}$$

07.22.03.2818.01

$${}_1F_2\left(1; -\frac{1}{2}, 3; -z\right) = -\frac{6z + 2(4z-15)\sin\left(2\sqrt{z}\right)\sqrt{z} + 3(8z-5)\cos\left(2\sqrt{z}\right) + 15}{2z^2}$$

07.22.03.2819.01

$${}_1F_2\left(1; -\frac{1}{2}, \frac{7}{2}; z\right) = -\frac{15\pi\,\boldsymbol{L}_2\left(2\sqrt{z}\right)}{4\sqrt{z}} + \frac{45\pi\,\boldsymbol{L}_3\left(2\sqrt{z}\right)}{4z} + 1$$

07.22.03.2820.01

$${}_1F_2\left(1; -\frac{1}{2}, \frac{7}{2}; -z\right) = \frac{15\,\pi\,\boldsymbol{H}_2\left(2\sqrt{z}\right)}{4\sqrt{z}} - \frac{45\,\pi\,\boldsymbol{H}_3\left(2\sqrt{z}\right)}{4\,z} + 1$$

07.22.03.2821.01

$${}_1F_2\left(1; -\frac{1}{2}, 4; z\right) = \frac{3\left(6\,z^2 - 30\,z + 10\,(8\,z + 21)\sinh\left(2\sqrt{z}\right)\sqrt{z} - \left(16\,z^2 + 180\,z + 105\right)\cosh\left(2\sqrt{z}\right) + 105\right)}{4\,z^3}$$

07.22.03.2822.01

$${}_1F_2\left(1; -\frac{1}{2}, 4; -z\right) = \frac{3\left(-3\left(2\,z^2 + 10\,z + 35\right) + \left(16\,z^2 - 180\,z + 105\right)\cos\left(2\sqrt{z}\right) - 10\sqrt{z}\,(8\,z - 21)\sin\left(2\sqrt{z}\right)\right)}{4\,z^3}$$

07.22.03.2823.01

$${}_1F_2\left(1; -\frac{1}{2}, \frac{9}{2}; z\right) = -\frac{105\,\pi\,\boldsymbol{L}_3\left(2\sqrt{z}\right)}{8\,z} + \frac{105\,\pi\,\boldsymbol{L}_4\left(2\sqrt{z}\right)}{2\,z^{3/2}} + 1$$

07.22.03.2824.01

$${}_1F_2\left(1; -\frac{1}{2}, \frac{9}{2}; -z\right) = \frac{105\,\pi\,\boldsymbol{H}_3\left(2\sqrt{z}\right)}{8\,z} - \frac{105\,\pi\,\boldsymbol{H}_4\left(2\sqrt{z}\right)}{2\,z^{3/2}} + 1$$

07.22.03.2825.01

$${}_1F_2\left(1; -\frac{1}{2}, 5; z\right) =$$

$$\frac{1}{2\,z^4}\left(3\left(4\,z^3 - 30\,z^2 + 210\,z - 2\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + 15\left(16\,z^2 + 112\,z + 63\right)\cosh\left(2\sqrt{z}\right) - 945\right)\right)$$

07.22.03.2826.01

$${}_1F_2\left(1; -\frac{1}{2}, 5; -z\right) =$$

$$-\frac{1}{2\,z^4}\left(3\left(4\,z^3 + 30\,z^2 + 210\,z - 2\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right)\sqrt{z} - 15\left(16\,z^2 - 112\,z + 63\right)\cos\left(2\sqrt{z}\right) + 945\right)\right)$$

07.22.03.2827.01

$${}_1F_2\left(1; -\frac{1}{2}, \frac{11}{2}; z\right) = -\frac{945\,\pi\,\boldsymbol{L}_4\left(2\sqrt{z}\right)}{16\,z^{3/2}} + \frac{4725\,\pi\,\boldsymbol{L}_5\left(2\sqrt{z}\right)}{16\,z^2} + 1$$

07.22.03.2828.01

$${}_1F_2\left(1; -\frac{1}{2}, \frac{11}{2}; -z\right) = \frac{945\,\pi\,\boldsymbol{H}_4\left(2\sqrt{z}\right)}{16\,z^{3/2}} - \frac{4725\,\pi\,\boldsymbol{H}_5\left(2\sqrt{z}\right)}{16\,z^2} + 1$$

07.22.03.2829.01

$${}_1F_2\left(1; -\frac{1}{2}, 6; z\right) = \frac{1}{4\,z^5}\left(15\left(2\,z^4 - 20\,z^3 + 210\,z^2 - 1890\,z + \right.\right.$$
$$\left.\left.42\left(16\,z^2 + 240\,z + 495\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} - \left(64\,z^3 + 3360\,z^2 + 18\,900\,z + 10\,395\right)\cosh\left(2\sqrt{z}\right) + 10\,395\right)\right)$$

07.22.03.2830.01

$${}_1F_2\left(1; -\frac{1}{2}, 6; -z\right) = -\frac{1}{4\,z^5}\left(15\left(2\,z^4 + 20\,z^3 + 210\,z^2 + 1890\,z - \right.\right.$$
$$\left.\left.42\left(16\,z^2 - 240\,z + 495\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(64\,z^3 - 3360\,z^2 + 18\,900\,z - 10\,395\right)\cos\left(2\sqrt{z}\right) + 10\,395\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = \frac{1}{2}$

07.22.03.0106.01

$${}_1F_2\left(1; \frac{1}{2}, \frac{1}{2}; z\right) == \pi\left(\sqrt{z}\ \boldsymbol{L}_{-2}\left(2\sqrt{z}\right) + \boldsymbol{L}_{-1}\left(2\sqrt{z}\right)\right)$$

07.22.03.2831.01

$${}_1F_2\left(1; \frac{1}{2}, \frac{1}{2}; -z\right) = \pi\left(\sqrt{z}\ \boldsymbol{H}_{-2}\left(2\sqrt{z}\right) + \boldsymbol{H}_{-1}\left(2\sqrt{z}\right)\right)$$

07.22.03.2832.01

$${}_1F_2\left(1; \frac{1}{2}, 1; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.2833.01

$${}_1F_2\left(1; \frac{1}{2}, 1; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.0107.01

$${}_1F_2\left(1; \frac{1}{2}, \frac{3}{2}; z\right) == \frac{\pi}{2}\boldsymbol{L}_{-1}\left(2\sqrt{z}\right)$$

07.22.03.2834.01

$${}_1F_2\left(1; \frac{1}{2}, \frac{3}{2}; -z\right) = \frac{1}{2}\pi\boldsymbol{H}_{-1}\left(2\sqrt{z}\right)$$

07.22.03.0108.01

$${}_1F_2\left(1; \frac{1}{2}, 2; z\right) == \frac{1}{z}\left(2\sqrt{z}\ \cosh\left(\sqrt{z}\right) - \sinh\left(\sqrt{z}\right)\right)\sinh\left(\sqrt{z}\right)$$

07.22.03.2835.01

$${}_1F_2\left(1; \frac{1}{2}, 2; -z\right) = \frac{\left(2\sqrt{z}\ \cos\left(\sqrt{z}\right) - \sin\left(\sqrt{z}\right)\right)\sin\left(\sqrt{z}\right)}{z}$$

07.22.03.0109.01

$${}_1F_2\left(1; \frac{1}{2}, \frac{5}{2}; z\right) == \frac{3\pi}{4z}\left(\sqrt{z}\ \boldsymbol{L}_0\left(2\sqrt{z}\right) - \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2836.01

$${}_1F_2\left(1; \frac{1}{2}, \frac{5}{2}; -z\right) = 1 - \frac{3\pi\boldsymbol{H}_2\left(2\sqrt{z}\right)}{4\sqrt{z}}$$

07.22.03.0110.01

$${}_1F_2\left(1; \frac{1}{2}, 3; z\right) == \frac{1}{2z^2}\left(2z - 6\sinh\left(2\sqrt{z}\right)\sqrt{z} + (4z+3)\cosh\left(2\sqrt{z}\right) - 3\right)$$

07.22.03.2837.01

$${}_1F_2\left(1; \frac{1}{2}, 3; -z\right) = \frac{-2z + 6\sin\left(2\sqrt{z}\right)\sqrt{z} + (3-4z)\cos\left(2\sqrt{z}\right) - 3}{2z^2}$$

07.22.03.0111.01

$${}_1F_2\left(1; \frac{1}{2}, \frac{7}{2}; z\right) == \frac{15\pi}{8z^{3/2}}\left(\sqrt{z}\ \boldsymbol{L}_1\left(2\sqrt{z}\right) - 2\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.2838.01

$${}_1F_2\left(1;\frac{1}{2},\frac{7}{2};-z\right)=1-\frac{15\,\pi\,\boldsymbol{H}_3\left(2\sqrt{z}\right)}{8\,z}$$

07.22.03.0112.01

$${}_1F_2\left(1;\frac{1}{2},4;z\right)==\frac{3}{4\,z^3}\left(2\,z^2-6\,z+2\,(4\,z+15)\sinh\left(2\sqrt{z}\right)\sqrt{z}\,-3\,(8\,z+5)\cosh\left(2\sqrt{z}\right)+15\right)$$

07.22.03.2839.01

$${}_1F_2\left(1;\frac{1}{2},4;-z\right)=-\frac{3\left(2\,z^2+6\,z+2\,(4\,z-15)\sin\left(2\sqrt{z}\right)\sqrt{z}\,+3\,(8\,z-5)\cos\left(2\sqrt{z}\right)+15\right)}{4\,z^3}$$

07.22.03.2840.01

$${}_1F_2\left(1;\frac{1}{2},\frac{9}{2};z\right)=\frac{105\,\pi\,\boldsymbol{L}_4\left(2\sqrt{z}\right)}{16\,z^{3/2}}+1$$

07.22.03.2841.01

$${}_1F_2\left(1;\frac{1}{2},\frac{9}{2};-z\right)=1-\frac{105\,\pi\,\boldsymbol{H}_4\left(2\sqrt{z}\right)}{16\,z^{3/2}}$$

07.22.03.2842.01

$${}_1F_2\left(1;\frac{1}{2},5;z\right)=\frac{4\,z^3-18\,z^2+90\,z-30\,(8\,z+21)\sinh\left(2\sqrt{z}\right)\sqrt{z}\,+\left(48\,z^2+540\,z+315\right)\cosh\left(2\sqrt{z}\right)-315}{2\,z^4}$$

07.22.03.2843.01

$${}_1F_2\left(1;\frac{1}{2},5;-z\right)=-\frac{4\,z^3+18\,z^2+90\,z+30\,(8\,z-21)\sin\left(2\sqrt{z}\right)\sqrt{z}\,+\left(-48\,z^2+540\,z-315\right)\cos\left(2\sqrt{z}\right)+315}{2\,z^4}$$

07.22.03.2844.01

$${}_1F_2\left(1;\frac{1}{2},\frac{11}{2};z\right)=\frac{945\,\pi\,\boldsymbol{L}_5\left(2\sqrt{z}\right)}{32\,z^2}+1$$

07.22.03.2845.01

$${}_1F_2\left(1;\frac{1}{2},\frac{11}{2};-z\right)=1-\frac{945\,\pi\,\boldsymbol{H}_5\left(2\sqrt{z}\right)}{32\,z^2}$$

07.22.03.2846.01

$${}_1F_2\left(1;\frac{1}{2},6;z\right)=$$

$$\frac{1}{4\,z^5}\left(5\left(2\,z^4-12\,z^3+90\,z^2-630\,z+6\left(16\,z^2+420\,z+945\right)\sinh\left(2\sqrt{z}\right)\sqrt{z}\,-45\left(16\,z^2+112\,z+63\right)\cosh\left(2\sqrt{z}\right)+2835\right)\right)$$

07.22.03.2847.01

$${}_1F_2\left(1;\frac{1}{2},6;-z\right)=$$

$$-\frac{1}{4\,z^5}\left(5\left(2\,z^4+12\,z^3+90\,z^2+630\,z-6\left(16\,z^2-420\,z+945\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\,-45\left(16\,z^2-112\,z+63\right)\cos\left(2\sqrt{z}\right)+2835\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = 1$

07.22.03.2848.01

$${}_1F_2(1;\,1,\,1;\,z) = I_0\left(2\sqrt{z}\right)$$

07.22.03.2849.01

$${}_1F_2(1;\,1,\,1;\,-z) = J_0\left(2\sqrt{z}\right)$$

07.22.03.2850.01

$${}_1F_2\left(1;\,1,\,\frac{3}{2};\,z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.2851.01

$${}_1F_2\left(1;\,1,\,\frac{3}{2};\,-z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.2852.01

$${}_1F_2(1;\,1,\,2;\,z) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.2853.01

$${}_1F_2(1;\,1,\,2;\,-z) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.2854.01

$${}_1F_2\left(1;\,1,\,\frac{5}{2};\,z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4\,z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.2855.01

$${}_1F_2\left(1;\,1,\,\frac{5}{2};\,-z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.2856.01

$${}_1F_2(1;\,1,\,3;\,z) = \frac{2\,I_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.2857.01

$${}_1F_2(1;\,1,\,3;\,-z) = \frac{2\,J_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.2858.01

$${}_1F_2\left(1;\,1,\,\frac{7}{2};\,z\right) = \frac{15\left((4\,z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.2859.01

$${}_1F_2\left(1;\,1,\,\frac{7}{2};\,-z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4\,z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.2860.01

$${}_1F_2(1;\,1,\,4;\,z) = \frac{6\,I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.2861.01

$${}_1F_2(1;\,1,\,4;\,-z) = \frac{6\,J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.2862.01

$${}_1F_2\left(1;\,1,\,\frac{9}{2};\,z\right) = \frac{105\left(2\sqrt{z}\,\left(4\,z+15\right)\cosh\left(2\sqrt{z}\right)-3\left(8\,z+5\right)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.2863.01

$${}_1F_2\left(1;\,1,\,\frac{9}{2};\,-z\right) = \frac{105\left(2\sqrt{z}\,\left(4\,z-15\right)\cos\left(2\sqrt{z}\right)+3\left(5-8\,z\right)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.2864.01

$${}_1F_2(1;\,1,\,5;\,z) = \frac{24\,I_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.2865.01

$${}_1F_2(1;\,1,\,5;\,-z) = \frac{24\,J_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.2866.01

$${}_1F_2\left(1;\,1,\,\frac{11}{2};\,z\right) = \frac{945\left(\left(16\,z^2+180\,z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,\left(8\,z+21\right)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.2867.01

$${}_1F_2\left(1;\,1,\,\frac{11}{2};\,-z\right) = \frac{945\left(10\sqrt{z}\,\left(8\,z-21\right)\cos\left(2\sqrt{z}\right)+\left(16\,z^2-180\,z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.2868.01

$${}_1F_2(1;\,1,\,6;\,z) = \frac{120\,I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.2869.01

$${}_1F_2(1;\,1,\,6;\,-z) = \frac{120\,J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = 1$, $b_1 = \frac{3}{2}$

07.22.03.0113.01

$${}_1F_2\left(1;\,\frac{3}{2},\,\frac{3}{2};\,z\right) == \frac{\pi}{4\sqrt{z}}\,\boldsymbol{L}_0\left(2\sqrt{z}\right)$$

07.22.03.2870.01

$${}_1F_2\left(1; \frac{3}{2}, \frac{3}{2}; -z\right) = \frac{\pi \boldsymbol{H}_0\left(2\sqrt{z}\right)}{4\sqrt{z}}$$

07.22.03.0114.01

$${}_1F_2\left(1; \frac{3}{2}, 2; z\right) == \frac{\sinh^2\left(\sqrt{z}\right)}{z}$$

07.22.03.2871.01

$${}_1F_2\left(1; \frac{3}{2}, 2; -z\right) = \frac{\sin^2\left(\sqrt{z}\right)}{z}$$

07.22.03.0115.01

$${}_1F_2\left(1; \frac{3}{2}, \frac{5}{2}; z\right) == \frac{3\pi}{8z} \boldsymbol{L}_1\left(2\sqrt{z}\right)$$

07.22.03.2872.01

$${}_1F_2\left(1; \frac{3}{2}, \frac{5}{2}; -z\right) = \frac{3\pi \boldsymbol{H}_1\left(2\sqrt{z}\right)}{8z}$$

07.22.03.0116.01

$${}_1F_2\left(1; \frac{3}{2}, 3; z\right) == -\frac{1}{2z^2}\left(2z - 2\sinh\left(2\sqrt{z}\right)\sqrt{z} + \cosh\left(2\sqrt{z}\right) - 1\right)$$

07.22.03.2873.01

$${}_1F_2\left(1; \frac{3}{2}, 3; -z\right) = -\frac{-2z + 2\sin\left(2\sqrt{z}\right)\sqrt{z} + \cos\left(2\sqrt{z}\right) - 1}{2z^2}$$

07.22.03.0117.01

$${}_1F_2\left(1; \frac{3}{2}, \frac{7}{2}; z\right) == \frac{15\pi}{16z^{3/2}} \boldsymbol{L}_2\left(2\sqrt{z}\right)$$

07.22.03.2874.01

$${}_1F_2\left(1; \frac{3}{2}, \frac{7}{2}; -z\right) = \frac{15\pi \boldsymbol{H}_2\left(2\sqrt{z}\right)}{16z^{3/2}}$$

07.22.03.0118.01

$${}_1F_2\left(1; \frac{3}{2}, 4; z\right) == \frac{3}{4z^3}\left(-2z^2 + 2z - 6\sinh\left(2\sqrt{z}\right)\sqrt{z} + (4z + 3)\cosh\left(2\sqrt{z}\right) - 3\right)$$

07.22.03.2875.01

$${}_1F_2\left(1; \frac{3}{2}, 4; -z\right) = \frac{3\left(2z^2 + 2z - 6\sin\left(2\sqrt{z}\right)\sqrt{z} + (4z - 3)\cos\left(2\sqrt{z}\right) + 3\right)}{4z^3}$$

07.22.03.2876.01

$${}_1F_2\left(1; \frac{3}{2}, \frac{9}{2}; z\right) = \frac{105\pi \boldsymbol{L}_3\left(2\sqrt{z}\right)}{32z^2}$$

07.22.03.2877.01

$${}_1F_2\left(1;\frac{3}{2},\frac{9}{2};-z\right)=\frac{105\,\pi\,\boldsymbol{H}_3\left(2\sqrt{z}\right)}{32\,z^2}$$

07.22.03.2878.01

$${}_1F_2\left(1;\frac{3}{2},5;z\right)=\frac{-4\,z^3+6\,z^2-18\,z+6\,(4\,z+15)\sinh\left(2\sqrt{z}\right)\sqrt{z}\,-9\,(8\,z+5)\cosh\left(2\sqrt{z}\right)+45}{2\,z^4}$$

07.22.03.2879.01

$${}_1F_2\left(1;\frac{3}{2},5;-z\right)=\frac{4\,z^3+6\,z^2+18\,z+6\,(4\,z-15)\sin\left(2\sqrt{z}\right)\sqrt{z}\,+9\,(8\,z-5)\cos\left(2\sqrt{z}\right)+45}{2\,z^4}$$

07.22.03.2880.01

$${}_1F_2\left(1;\frac{3}{2},\frac{11}{2};z\right)=\frac{945\,\pi\,\boldsymbol{L}_4\left(2\sqrt{z}\right)}{64\,z^{5/2}}$$

07.22.03.2881.01

$${}_1F_2\left(1;\frac{3}{2},\frac{11}{2};-z\right)=\frac{945\,\pi\,\boldsymbol{H}_4\left(2\sqrt{z}\right)}{64\,z^{5/2}}$$

07.22.03.2882.01

$${}_1F_2\left(1;\frac{3}{2},6;z\right)=\frac{1}{4\,z^5}\left(5\left(-2\,z^4+4\,z^3-18\,z^2+90\,z-30\,(8\,z+21)\sinh\left(2\sqrt{z}\right)\sqrt{z}\,+\left(48\,z^2+540\,z+315\right)\cosh\left(2\sqrt{z}\right)-315\right)\right)$$

07.22.03.2883.01

$${}_1F_2\left(1;\frac{3}{2},6;-z\right)=\frac{1}{4\,z^5}\left(5\left(2\,z^4+4\,z^3+18\,z^2+90\,z+30\,(8\,z-21)\sin\left(2\sqrt{z}\right)\sqrt{z}\,+\left(-48\,z^2+540\,z-315\right)\cos\left(2\sqrt{z}\right)+315\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = 2$

07.22.03.0120.01

$${}_1F_2\left(1;\frac{7}{4},\frac{9}{4};z\right)==\frac{1}{z}\left(I_0\left(2\sqrt{z}\right)-1\right)$$

07.22.03.2884.01

$${}_1F_2(1;2,2;-z)=\frac{1-J_0\left(2\sqrt{z}\right)}{z}$$

07.22.03.0121.01

$${}_1F_2\left(1;2,\frac{5}{2};z\right)==\frac{3}{4\,z^{3/2}}\left(\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\right)$$

07.22.03.2885.01

$${}_1F_2\left(1;2,\frac{5}{2};-z\right)=-\frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\right)}{4\,z^{3/2}}$$

07.22.03.0122.01

$${}_1F_2(1;2,3;z)==\frac{2}{z^{3/2}}\,I_1\left(2\sqrt{z}\right)-\frac{2}{z}$$

07.22.03.2886.01

$${}_1F_2(1;\,2,\,3;\,-z) = \frac{2}{z} - \frac{2\,J_1\left(2\,\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.0123.01

$${}_1F_2\left(1;\,2,\,\frac{7}{2};\,z\right) == -\frac{5}{16\,z^{5/2}}\left(8\,z^{3/2} - 6\cosh\left(2\,\sqrt{z}\right)\sqrt{z} + 3\sinh\left(2\,\sqrt{z}\right)\right)$$

07.22.03.2887.01

$${}_1F_2\left(1;\,2,\,\frac{7}{2};\,-z\right) = \frac{5\left(8\,z^{3/2} + 6\cos\left(2\,\sqrt{z}\right)\sqrt{z} - 3\sin\left(2\,\sqrt{z}\right)\right)}{16\,z^{5/2}}$$

07.22.03.0124.01

$${}_1F_2(1;\,2,\,4;\,z) == -\frac{3}{z^2}\left(z - 2\,I_2\left(2\,\sqrt{z}\right)\right)$$

07.22.03.2888.01

$${}_1F_2(1;\,2,\,4;\,-z) = \frac{3\left(z - 2\,J_2\left(2\,\sqrt{z}\right)\right)}{z^2}$$

07.22.03.2889.01

$${}_1F_2\left(1;\,2,\,\frac{9}{2};\,z\right) = \frac{7\left(-32\,z^{5/2} - 90\cosh\left(2\,\sqrt{z}\right)\sqrt{z} + 15\,(4\,z+3)\sinh\left(2\,\sqrt{z}\right)\right)}{64\,z^{7/2}}$$

07.22.03.2890.01

$${}_1F_2\left(1;\,2,\,\frac{9}{2};\,-z\right) = \frac{7\left(32\,z^{5/2} + 90\cos\left(2\,\sqrt{z}\right)\sqrt{z} + 15\,(4\,z-3)\sin\left(2\,\sqrt{z}\right)\right)}{64\,z^{7/2}}$$

07.22.03.2891.01

$${}_1F_2(1;\,2,\,5;\,z) = \frac{24\,I_3\left(2\,\sqrt{z}\right)}{z^{5/2}} - \frac{4}{z}$$

07.22.03.2892.01

$${}_1F_2(1;\,2,\,5;\,-z) = \frac{4\left(z^{3/2} - 6\,J_3\left(2\,\sqrt{z}\right)\right)}{z^{5/2}}$$

07.22.03.2893.01

$${}_1F_2\left(1;\,2,\,\frac{11}{2};\,z\right) = \frac{9\left(-128\,z^{7/2} + 210\,(4\,z+15)\cosh\left(2\,\sqrt{z}\right)\sqrt{z} - 315\,(8\,z+5)\sinh\left(2\,\sqrt{z}\right)\right)}{256\,z^{9/2}}$$

07.22.03.2894.01

$${}_1F_2\left(1;\,2,\,\frac{11}{2};\,-z\right) = \frac{9\left(128\,z^{7/2} - 210\,(4\,z-15)\cos\left(2\,\sqrt{z}\right)\sqrt{z} + 315\,(8\,z-5)\sin\left(2\,\sqrt{z}\right)\right)}{256\,z^{9/2}}$$

07.22.03.2895.01

$${}_1F_2(1;\,2,\,6;\,z) = -\frac{5\left(z^2 - 24\,I_4\left(2\,\sqrt{z}\right)\right)}{z^3}$$

07.22.03.2896.01

$${}_1F_2(1; 2, 6; -z) = \frac{5\left(z^2 - 24\, J_4\left(2\sqrt{z}\right)\right)}{z^3}$$

For fixed z and $a_1 = 1$, $b_1 = \frac{5}{2}$

07.22.03.0125.01

$${}_1F_2\left(1; \frac{5}{2}, \frac{5}{2}; z\right) == \frac{9}{16\, z^{3/2}}\left(\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right) - 4\sqrt{z}\right)$$

07.22.03.2897.01

$${}_1F_2\left(1; \frac{5}{2}, \frac{5}{2}; -z\right) = \frac{3\left(8\, z + 3\pi\, \boldsymbol{H}_2\left(2\sqrt{z}\right)\sqrt{z} - 3\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)}{16\, z^2}$$

07.22.03.0126.01

$${}_1F_2\left(1; \frac{5}{2}, 3; z\right) == \frac{3}{2\, z^2}\left(-2\, z + \cosh\left(2\sqrt{z}\right) - 1\right)$$

07.22.03.2898.01

$${}_1F_2\left(1; \frac{5}{2}, 3; -z\right) = \frac{3\left(2\, z + \cos\left(2\sqrt{z}\right) - 1\right)}{2\, z^2}$$

07.22.03.0127.01

$${}_1F_2\left(1; \frac{5}{2}, \frac{7}{2}; z\right) == \frac{15}{32\, z^2}\left(3\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right) - 8\, z\right)$$

07.22.03.2899.01

$${}_1F_2\left(1; \frac{5}{2}, \frac{7}{2}; -z\right) = -\frac{45\pi\, \boldsymbol{H}_2\left(2\sqrt{z}\right)}{16\, z^{5/2}} + \frac{45\pi\, \boldsymbol{H}_3\left(2\sqrt{z}\right)}{32\, z^2} + \frac{3}{z}$$

07.22.03.0128.01

$${}_1F_2\left(1; \frac{5}{2}, 4; z\right) == -\frac{9}{4\, z^3}\left(2\, z^2 + 2\, z - 2\sinh\left(2\sqrt{z}\right)\sqrt{z} + \cosh\left(2\sqrt{z}\right) - 1\right)$$

07.22.03.2900.01

$${}_1F_2\left(1; \frac{5}{2}, 4; -z\right) = \frac{9\left(2\, z^2 - 2\, z + 2\sin\left(2\sqrt{z}\right)\sqrt{z} + \cos\left(2\sqrt{z}\right) - 1\right)}{4\, z^3}$$

07.22.03.2901.01

$${}_1F_2\left(1; \frac{5}{2}, \frac{9}{2}; z\right) = \frac{9\left(-32\, z^2 + 35\pi\, \boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} + 105\pi\, \boldsymbol{L}_3\left(2\sqrt{z}\right)\right)}{64\, z^3}$$

07.22.03.2902.01

$${}_1F_2\left(1; \frac{5}{2}, \frac{9}{2}; -z\right) = \frac{9\left(32\, z^2 + 35\pi\, \boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} - 105\pi\, \boldsymbol{H}_3\left(2\sqrt{z}\right)\right)}{64\, z^3}$$

07.22.03.2903.01

$${}_1F_2\left(1; \frac{5}{2}, 5; z\right) = \frac{3\left(-4\, z^3 - 6\, z^2 + 6\, z - 18\sinh\left(2\sqrt{z}\right)\sqrt{z} + 3\,(4\, z + 3)\cosh\left(2\sqrt{z}\right) - 9\right)}{2\, z^4}$$

07.22.03.2904.01

$${}_1F_2\left(1;\frac{5}{2},5;-z\right)=-\frac{3\left(-4z^3+6z^2+6z-18\sin\left(2\sqrt{z}\right)\sqrt{z}+3(4z-3)\cos\left(2\sqrt{z}\right)+9\right)}{2z^4}$$

07.22.03.2905.01

$${}_1F_2\left(1;\frac{5}{2},\frac{11}{2};z\right)=\frac{2835\pi\boldsymbol{L}_4\left(2\sqrt{z}\right)}{32z^{7/2}}+\frac{2835\pi\boldsymbol{L}_5\left(2\sqrt{z}\right)}{128z^3}-\frac{6}{z}$$

07.22.03.2906.01

$${}_1F_2\left(1;\frac{5}{2},\frac{11}{2};-z\right)=-\frac{2835\pi\boldsymbol{H}_4\left(2\sqrt{z}\right)}{32z^{7/2}}+\frac{2835\pi\boldsymbol{H}_5\left(2\sqrt{z}\right)}{128z^3}+\frac{6}{z}$$

07.22.03.2907.01

$${}_1F_2\left(1;\frac{5}{2},6;z\right)=\frac{15\left(-2z^4-4z^3+6z^2-18z+6(4z+15)\sinh\left(2\sqrt{z}\right)\sqrt{z}-9(8z+5)\cosh\left(2\sqrt{z}\right)+45\right)}{4z^5}$$

07.22.03.2908.01

$${}_1F_2\left(1;\frac{5}{2},6;-z\right)=-\frac{15\left(-2z^4+4z^3+6z^2+18z+6(4z-15)\sin\left(2\sqrt{z}\right)\sqrt{z}+9(8z-5)\cos\left(2\sqrt{z}\right)+45\right)}{4z^5}$$

For fixed z and $a_1 = 1$, $b_1 = 3$

07.22.03.0129.01

$${}_1F_2(1;3,3;z)==-\frac{4}{z^2}\left(z-I_0\left(2\sqrt{z}\right)+1\right)$$

07.22.03.2909.01

$${}_1F_2(1;3,3;-z)=\frac{4\left(z+J_0\left(2\sqrt{z}\right)-1\right)}{z^2}$$

07.22.03.0130.01

$${}_1F_2\left(1;3,\frac{7}{2};z\right)==\frac{5}{4z^{5/2}}\left(3\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,(2z+3)\right)$$

07.22.03.2910.01

$${}_1F_2\left(1;3,\frac{7}{2};-z\right)=\frac{5\left(2\sqrt{z}\,(2z-3)+3\sin\left(2\sqrt{z}\right)\right)}{4z^{5/2}}$$

07.22.03.0131.01

$${}_1F_2(1;3,4;z)==-\frac{6}{z^{5/2}}\left(\sqrt{z}\,(z+2)-2I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2911.01

$${}_1F_2(1;3,4;-z)=\frac{6\left(\sqrt{z}\,(z-2)+2J_1\left(2\sqrt{z}\right)\right)}{z^{5/2}}$$

07.22.03.2912.01

$${}_1F_2\left(1;3,\frac{9}{2};z\right)=-\frac{7\left(8(2z+5)z^{3/2}-30\cosh\left(2\sqrt{z}\right)\sqrt{z}+15\sinh\left(2\sqrt{z}\right)\right)}{16z^{7/2}}$$

07.22.03.2913.01

$${}_1F_2\left(1; 3, \frac{9}{2}; -z\right) = \frac{7\left(8\,(2\,z-5)\,z^{3/2} - 30\cos\left(2\sqrt{z}\right)\sqrt{z} + 15\sin\left(2\sqrt{z}\right)\right)}{16\,z^{7/2}}$$

07.22.03.2914.01

$${}_1F_2(1; 3, 5; z) = -\frac{8\left(z\,(z+3) - 6\,I_2\left(2\sqrt{z}\right)\right)}{z^3}$$

07.22.03.2915.01

$${}_1F_2(1; 3, 5; -z) = \frac{8\left((z-3)\,z + 6\,J_2\left(2\sqrt{z}\right)\right)}{z^3}$$

07.22.03.2916.01

$${}_1F_2\left(1; 3, \frac{11}{2}; z\right) = \frac{9\left(-32\,(2\,z+7)\,z^{5/2} - 630\cosh\left(2\sqrt{z}\right)\sqrt{z} + 105\,(4\,z+3)\sinh\left(2\sqrt{z}\right)\right)}{64\,z^{9/2}}$$

07.22.03.2917.01

$${}_1F_2\left(1; 3, \frac{11}{2}; -z\right) = -\frac{9\left(32\,(7-2\,z)\,z^{5/2} + 630\cos\left(2\sqrt{z}\right)\sqrt{z} + 105\,(4\,z-3)\sin\left(2\sqrt{z}\right)\right)}{64\,z^{9/2}}$$

07.22.03.2918.01

$${}_1F_2(1; 3, 6; z) = -\frac{10\left(z^{3/2}\,(z+4) - 24\,I_3\left(2\sqrt{z}\right)\right)}{z^{7/2}}$$

07.22.03.2919.01

$${}_1F_2(1; 3, 6; -z) = \frac{10\left((z-4)\,z^{3/2} + 24\,J_3\left(2\sqrt{z}\right)\right)}{z^{7/2}}$$

For fixed z and $a_1 = 1$, $b_1 = \frac{7}{2}$

07.22.03.0132.01

$${}_1F_2\left(1; \frac{7}{2}, \frac{7}{2}; z\right) == \frac{25}{64\,z^{5/2}}\left(9\,\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right) - 4\sqrt{z}\,(4\,z+9)\right)$$

07.22.03.2920.01

$${}_1F_2\left(1; \frac{7}{2}, \frac{7}{2}; -z\right) = -\frac{5\left(45\,\pi\,(z-2)\,\boldsymbol{H}_2\left(2\sqrt{z}\right) + \sqrt{z}\,\left(16\,(6-5\,z)\,z + 45\,\pi\,\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)\right)}{64\,z^{7/2}}$$

07.22.03.0133.01

$${}_1F_2\left(1; \frac{7}{2}, 4; z\right) == -\frac{15}{4\,z^3}\left(2\,z^2 + 6\,z - 3\cosh\left(2\sqrt{z}\right) + 3\right)$$

07.22.03.2921.01

$${}_1F_2\left(1; \frac{7}{2}, 4; -z\right) = \frac{15\left(2\,z^2 - 6\,z - 3\cos\left(2\sqrt{z}\right) + 3\right)}{4\,z^3}$$

07.22.03.2922.01

$${}_1F_2\left(1;\frac{7}{2},\frac{9}{2};z\right)=\frac{5\left(-32\,(7\,z+18)\,z^2+630\,\pi\,\boldsymbol{L}_4\left(2\,\sqrt{z}\right)\sqrt{z}\,+315\,\pi\,(z+6)\,\boldsymbol{L}_3\left(2\,\sqrt{z}\right)\right)}{128\,z^4}$$

07.22.03.2923.01

$${}_1F_2\left(1;\frac{7}{2},\frac{9}{2};-z\right)=-\frac{5\left(32\,(18-7\,z)\,z^2+630\,\pi\,\boldsymbol{H}_4\left(2\,\sqrt{z}\right)\sqrt{z}\,+315\,\pi\,(z-6)\,\boldsymbol{H}_3\left(2\,\sqrt{z}\right)\right)}{128\,z^4}$$

07.22.03.2924.01

$${}_1F_2\left(1;\frac{7}{2},5;z\right)=-\frac{5\left(4\,z^3+18\,z^2+18\,z-18\sinh\left(2\,\sqrt{z}\right)\sqrt{z}\,+9\cosh\left(2\,\sqrt{z}\right)-9\right)}{2\,z^4}$$

07.22.03.2925.01

$${}_1F_2\left(1;\frac{7}{2},5;-z\right)=\frac{5\left(4\,z^3-18\,z^2+18\,z-18\sin\left(2\,\sqrt{z}\right)\sqrt{z}\,-9\cos\left(2\,\sqrt{z}\right)+9\right)}{2\,z^4}$$

07.22.03.2926.01

$${}_1F_2\left(1;\frac{7}{2},\frac{11}{2};z\right)=\frac{45\left(315\,\pi\,(z+12)\,\boldsymbol{L}_4\left(2\,\sqrt{z}\right)+\sqrt{z}\,\left(945\,\pi\,\boldsymbol{L}_5\left(2\,\sqrt{z}\right)-64\,z^2\,(z+4)\right)\right)}{256\,z^{9/2}}$$

07.22.03.2927.01

$${}_1F_2\left(1;\frac{7}{2},\frac{11}{2};-z\right)=-\frac{45\left(315\,\pi\,(z-12)\,\boldsymbol{H}_4\left(2\,\sqrt{z}\right)+\sqrt{z}\,\left(945\,\pi\,\boldsymbol{H}_5\left(2\,\sqrt{z}\right)-64\,(z-4)\,z^2\right)\right)}{256\,z^{9/2}}$$

07.22.03.2928.01

$${}_1F_2\left(1;\frac{7}{2},6;z\right)=-\frac{25\left(2\,z^4+12\,z^3+18\,z^2-18\,z+54\sinh\left(2\,\sqrt{z}\right)\sqrt{z}\,-9\,(4\,z+3)\cosh\left(2\,\sqrt{z}\right)+27\right)}{4\,z^5}$$

07.22.03.2929.01

$${}_1F_2\left(1;\frac{7}{2},6;-z\right)=\frac{25\left(2\,z^4-12\,z^3+18\,z^2+18\,z-54\sin\left(2\,\sqrt{z}\right)\sqrt{z}\,+9\,(4\,z-3)\cos\left(2\,\sqrt{z}\right)+27\right)}{4\,z^5}$$

For fixed z and $a_1 = 1$, $b_1 = 4$

07.22.03.0134.01

$${}_1F_2(1;4,4;z)==-\frac{9}{z^3}\left((z+2)^2-4\,I_0\left(2\,\sqrt{z}\right)\right)$$

07.22.03.2930.01

$${}_1F_2(1;4,4;-z)=\frac{9\left((z-2)^2-4\,J_0\left(2\,\sqrt{z}\right)\right)}{z^3}$$

07.22.03.2931.01

$${}_1F_2\left(1;4,\frac{9}{2};z\right)=-\frac{21\left(2\,\sqrt{z}\,\left(2\,z^2+10\,z+15\right)-15\sinh\left(2\,\sqrt{z}\right)\right)}{8\,z^{7/2}}$$

07.22.03.2932.01

$${}_1F_2\left(1; 4, \frac{9}{2}; -z\right) = \frac{21\left(2\sqrt{z}\,\left(2z^2 - 10z + 15\right) - 15\sin\left(2\sqrt{z}\right)\right)}{8z^{7/2}}$$

07.22.03.2933.01

$${}_1F_2(1; 4, 5; z) = -\frac{12\left(\sqrt{z}\,\left(z^2 + 6z + 12\right) - 12\,I_1\left(2\sqrt{z}\right)\right)}{z^{7/2}}$$

07.22.03.2934.01

$${}_1F_2(1; 4, 5; -z) = \frac{12\left(\sqrt{z}\,\left(z^2 - 6z + 12\right) - 12\,J_1\left(2\sqrt{z}\right)\right)}{z^{7/2}}$$

07.22.03.2935.01

$${}_1F_2\left(1; 4, \frac{11}{2}; z\right) = -\frac{27\left(8\left(2z^2 + 14z + 35\right)z^{3/2} - 210\cosh\left(2\sqrt{z}\right)\sqrt{z} + 105\sinh\left(2\sqrt{z}\right)\right)}{32z^{9/2}}$$

07.22.03.2936.01

$${}_1F_2\left(1; 4, \frac{11}{2}; -z\right) = \frac{27\left(8\left(2z^2 - 14z + 35\right)z^{3/2} + 210\cos\left(2\sqrt{z}\right)\sqrt{z} - 105\sin\left(2\sqrt{z}\right)\right)}{32z^{9/2}}$$

07.22.03.2937.01

$${}_1F_2(1; 4, 6; z) = -\frac{15\left(z\left(z^2 + 8z + 24\right) - 48\,I_2\left(2\sqrt{z}\right)\right)}{z^4}$$

07.22.03.2938.01

$${}_1F_2(1; 4, 6; -z) = \frac{15\left(z\left(z^2 - 8z + 24\right) - 48\,J_2\left(2\sqrt{z}\right)\right)}{z^4}$$

For fixed z and $a_1 = 1$, $b_1 = \frac{9}{2}$

07.22.03.2939.01

$${}_1F_2\left(1; \frac{9}{2}, \frac{9}{2}; z\right) = \frac{7\left(-64\left(7z^2 + 40z + 45\right)z^2 + 1575\pi\left(z + 2\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} + 3150\pi\left(2z + 3\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)}{256z^5}$$

07.22.03.2940.01

$${}_1F_2\left(1; \frac{9}{2}, \frac{9}{2}; -z\right) = \frac{7\left(64\left(7z^2 - 40z + 45\right)z^2 - 1575\pi\left(z - 2\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} + 3150\pi\left(2z - 3\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)}{256z^5}$$

07.22.03.2941.01

$${}_1F_2\left(1; \frac{9}{2}, 5; z\right) = -\frac{7\left(4z^3 + 30z^2 + 90z - 45\cosh\left(2\sqrt{z}\right) + 45\right)}{2z^4}$$

07.22.03.2942.01

$${}_1F_2\left(1; \frac{9}{2}, 5; -z\right) = \frac{7\left(4z^3 - 30z^2 + 90z + 45\cos\left(2\sqrt{z}\right) - 45\right)}{2z^4}$$

07.22.03.2943.01

$${}_1F_2\left(1;\frac{9}{2},\frac{11}{2};z\right)=\frac{21\left(28\,350\,\pi\,(z+4)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)+\sqrt{z}\,\left(4725\,\pi\,(z+6)\,\boldsymbol{L}_5\left(2\sqrt{z}\right)-128\,z^2\left(3\,z^2+25\,z+60\right)\right)\right)}{512\,z^{11/2}}$$

07.22.03.2944.01

$${}_1F_2\left(1;\frac{9}{2},\frac{11}{2};-z\right)=\frac{21\left(28\,350\,\pi\,(z-4)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)+\sqrt{z}\,\left(128\,z^2\left(3\,z^2-25\,z+60\right)-4725\,\pi\,(z-6)\,\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)\right)}{512\,z^{11/2}}$$

07.22.03.2945.01

$${}_1F_2\left(1;\frac{9}{2},6;z\right)=-\frac{35\left(2\,z^4+20\,z^3+90\,z^2+90\,z-90\sinh\left(2\sqrt{z}\right)\sqrt{z}\,+45\cosh\left(2\sqrt{z}\right)-45\right)}{4\,z^5}$$

07.22.03.2946.01

$${}_1F_2\left(1;\frac{9}{2},6;-z\right)=\frac{35\left(2\,z^4-20\,z^3+90\,z^2-90\,z+90\sin\left(2\sqrt{z}\right)\sqrt{z}\,+45\cos\left(2\sqrt{z}\right)-45\right)}{4\,z^5}$$

For fixed z and $a_1 = 1$, $b_1 = 5$

07.22.03.2947.01

$${}_1F_2(1;5,5;z)=-\frac{16\left(z^3+9\,z^2+36\,z-36\,I_0\left(2\sqrt{z}\right)+36\right)}{z^4}$$

07.22.03.2948.01

$${}_1F_2(1;5,5;-z)=\frac{16\left(z^3-9\,z^2+36\,z+36\,J_0\left(2\sqrt{z}\right)-36\right)}{z^4}$$

07.22.03.2949.01

$${}_1F_2\left(1;5,\frac{11}{2};z\right)=-\frac{9\left(2\sqrt{z}\,\left(4\,z^3+42\,z^2+210\,z+315\right)-315\sinh\left(2\sqrt{z}\right)\right)}{4\,z^{9/2}}$$

07.22.03.2950.01

$${}_1F_2\left(1;5,\frac{11}{2};-z\right)=\frac{9\left(2\sqrt{z}\,\left(4\,z^3-42\,z^2+210\,z-315\right)+315\sin\left(2\sqrt{z}\right)\right)}{4\,z^{9/2}}$$

07.22.03.2951.01

$${}_1F_2(1;5,6;z)=-\frac{20\left(\sqrt{z}\,\left(z^3+12\,z^2+72\,z+144\right)-144\,I_1\left(2\sqrt{z}\right)\right)}{z^{9/2}}$$

07.22.03.2952.01

$${}_1F_2(1;5,6;-z)=\frac{20\left(\sqrt{z}\,\left(z^3-12\,z^2+72\,z-144\right)+144\,J_1\left(2\sqrt{z}\right)\right)}{z^{9/2}}$$

For fixed z and $a_1 = 1$, $b_1 = \frac{11}{2}$

07.22.03.2953.01

$${}_1F_2\left(1;\frac{11}{2},\frac{11}{2};z\right)=\frac{1}{1024\,z^{13/2}}$$
$$\left(27\left(33\,075\,\pi\left(z^2+18\,z+24\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)-2\sqrt{z}\left(32\,z^2\left(12\,z^3+147\,z^2+770\,z+840\right)-33\,075\,\pi\,(2\,z+3)\,\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.2954.01

$${}_1F_2\left(1;\frac{11}{2},\frac{11}{2};-z\right)=\frac{1}{1024\,z^{13/2}}$$
$$\left(27\left(33\,075\,\pi\left(z^2-18\,z+24\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)+2\sqrt{z}\left(32\left(12\,z^3-147\,z^2+770\,z-840\right)z^2+33\,075\,\pi\,(2\,z-3)\,\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.2955.01

$${}_1F_2\left(1;\frac{11}{2},6;z\right)=-\frac{45\left(2\,z^4+28\,z^3+210\,z^2+630\,z-315\cosh\left(2\sqrt{z}\right)+315\right)}{4\,z^5}$$

07.22.03.2956.01

$${}_1F_2\left(1;\frac{11}{2},6;-z\right)=\frac{45\left(2\,z^4-28\,z^3+210\,z^2-630\,z-315\cos\left(2\sqrt{z}\right)+315\right)}{4\,z^5}$$

For fixed z and $a_1 = 1$, $b_1 = 6$

07.22.03.2957.01

$${}_1F_2(1;6,6;z)=-\frac{25\left(z^4+16\,z^3+144\,z^2+576\,z-576\,I_0\left(2\sqrt{z}\right)+576\right)}{z^5}$$

07.22.03.2958.01

$${}_1F_2(1;6,6;-z)=\frac{25\left(z^4-16\,z^3+144\,z^2-576\,z-576\,J_0\left(2\sqrt{z}\right)+576\right)}{z^5}$$

For fixed z and $a_1 = \frac{3}{2}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = \frac{3}{2}$, $b_1 = -\frac{11}{2}$

07.22.03.2959.01

$${}_1F_2\left(\frac{3}{2};-\frac{11}{2},-\frac{11}{2};z\right)=$$
$$\frac{1}{108\,056\,025}\left(7\left(4096\,z^6+18\,432\,z^5+207\,360\,z^4+1\,981\,440\,z^3+11\,869\,200\,z^2+31\,638\,600\,z+15\,436\,575\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(4096\,z^6-21\,504\,z^5-215\,040\,z^4-2\,338\,560\,z^3-18\,310\,320\,z^2-77\,395\,500\,z-108\,056\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2960.01

$${}_1F_2\left(\frac{3}{2};-\frac{11}{2},-\frac{11}{2};-z\right)=$$
$$\frac{1}{108\,056\,025}\left(7\left(4096\,z^6-18\,432\,z^5+207\,360\,z^4-1\,981\,440\,z^3+11\,869\,200\,z^2-31\,638\,600\,z+15\,436\,575\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(4096\,z^6+21\,504\,z^5-215\,040\,z^4+2\,338\,560\,z^3-18\,310\,320\,z^2+77\,395\,500\,z-108\,056\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2961.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, -\frac{9}{2}; z\right) =$$
$$\frac{1}{9\,823\,275}\left(\left(-4096\,z^6 + 21\,504\,z^5 + 161\,280\,z^4 + 1\,370\,880\,z^3 + 7\,786\,800\,z^2 + 20\,241\,900\,z + 9\,823\,275\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(2048\,z^5 + 8960\,z^4 + 80\,640\,z^3 + 584\,640\,z^2 + 2\,381\,400\,z + 3\,274\,425\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2962.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, -\frac{9}{2}; -z\right) =$$
$$\frac{1}{9\,823\,275}\left(\left(-4096\,z^6 - 21\,504\,z^5 + 161\,280\,z^4 - 1\,370\,880\,z^3 + 7\,786\,800\,z^2 - 20\,241\,900\,z + 9\,823\,275\right)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\left(2048\,z^5 - 8960\,z^4 + 80\,640\,z^3 - 584\,640\,z^2 + 2\,381\,400\,z - 3\,274\,425\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2963.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, -\frac{7}{2}; z\right) = \frac{1}{1\,091\,475}\left(\left(4096\,z^5 + 26\,880\,z^4 + 174\,720\,z^3 + 907\,200\,z^2 + 2\,268\,000\,z + 1\,091\,475\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1024\,z^5 - 6400\,z^4 - 33\,600\,z^3 - 211\,680\,z^2 - 812\,700\,z - 1\,091\,475\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2964.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, -\frac{7}{2}; -z\right) = \frac{1}{1\,091\,475}\left(\left(-4096\,z^5 + 26\,880\,z^4 - 174\,720\,z^3 + 907\,200\,z^2 - 2\,268\,000\,z + 1\,091\,475\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1024\,z^5 + 6400\,z^4 - 33\,600\,z^3 + 211\,680\,z^2 - 812\,700\,z + 1\,091\,475\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2965.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, -\frac{5}{2}; z\right) = \frac{1}{155\,925}\left(\left(-1024\,z^5 + 6912\,z^4 + 33\,600\,z^3 + 141\,120\,z^2 + 328\,860\,z + 155\,925\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256\,z^4 + 8448\,z^3 + 35\,280\,z^2 + 120\,960\,z + 155\,925\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2966.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, -\frac{5}{2}; -z\right) = \frac{1}{155\,925}\left(\left(1024\,z^5 + 6912\,z^4 - 33\,600\,z^3 + 141\,120\,z^2 - 328\,860\,z + 155\,925\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256\,z^4 - 8448\,z^3 + 35\,280\,z^2 - 120\,960\,z + 155\,925\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2967.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, -\frac{3}{2}; z\right) = \frac{1}{31\,185}\left(\left(-768\,z^4 + 10\,752\,z^3 + 35\,280\,z^2 + 68\,040\,z + 31\,185\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256\,z^4 - 1152\,z^3 - 11\,088\,z^2 - 26\,460\,z - 31\,185\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2968.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, -\frac{3}{2}; -z\right) = \frac{1}{31\,185}\left(-3\left(256\,z^4 + 3584\,z^3 - 11\,760\,z^2 + 22\,680\,z - 10\,395\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256\,z^4 + 1152\,z^3 - 11\,088\,z^2 + 26\,460\,z - 31\,185\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2969.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, -\frac{1}{2}; z\right) = \frac{1}{10\,395}$$
$$\left(\left(-256\,z^4 - 896\,z^3 + 15\,120\,z^2 + 26\,460\,z + 10\,395\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(512\,z^3 - 2016\,z^2 - 12\,600\,z - 10\,395\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2970.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, -\frac{1}{2}; -z\right) = \frac{1}{10\,395}$$
$$\left(\left(-256\,z^4 + 896\,z^3 + 15\,120\,z^2 - 26\,460\,z + 10\,395\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(512\,z^3 + 2016\,z^2 - 12\,600\,z + 10\,395\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2971.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, \frac{1}{2}; z\right) = \left(-\frac{128\,z^3}{1485} - \frac{32\,z^2}{99} + \frac{16\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(64\,z^3 + 1344\,z^2 - 1260\,z - 10\,395\right)\sinh\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.2972.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, \frac{1}{2}; -z\right) = \left(\frac{128\,z^3}{1485} - \frac{32\,z^2}{99} - \frac{16\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(64\,z^3 - 1344\,z^2 - 1260\,z + 10\,395\right)\sin\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.2973.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, 1; z\right) =$$
$$\frac{1}{10\,395}\left(\left(-1088\,z^3 - 8880\,z^2 + 5028\,z + 10\,395\right)I_0\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(64\,z^3 + 2256\,z^2 + 5388\,z - 9129\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2974.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, 1; -z\right) =$$
$$\frac{1}{10\,395}\left(\left(1088\,z^3 - 8880\,z^2 - 5028\,z + 10\,395\right)J_0\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(64\,z^3 - 2256\,z^2 + 5388\,z + 9129\right)J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.2975.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, \frac{3}{2}; z\right) = \left(\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} + \frac{20\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\,\left(16\,z^2 + 240\,z + 495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.2976.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, \frac{3}{2}; -z\right) = \left(-\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} - \frac{20\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\,\left(16\,z^2 - 240\,z + 495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.2977.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, 2; z\right) = \frac{2\left(64\,z^3 + 4656\,z^2 + 42\,204\,z + 72\,765\right)I_2\left(2\sqrt{z}\right) - \frac{\left(1472\,z^3 + 27\,504\,z^2 + 79\,380\,z - 10\,395\right)I_1\left(2\sqrt{z}\right)}{\sqrt{z}}}{10\,395}$$

07.22.03.2978.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, 2; -z\right) = \frac{\frac{\left(1472\,z^3 - 27\,504\,z^2 + 79\,380\,z + 10\,395\right)J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 2\left(64\,z^3 - 4656\,z^2 + 42\,204\,z - 72\,765\right)J_2\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.2979.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, \frac{5}{2}; z\right) = \frac{1}{3465\,z^{3/2}}\left(2\left(16\,z^4 + 1652\,z^3 + 23\,415\,z^2 + 80\,640\,z + 40\,320\right)\sinh\left(2\sqrt{z}\right) -$$
$$\sqrt{z}\,\left(464\,z^3 + 14\,952\,z^2 + 104\,055\,z + 161\,280\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.2980.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, \frac{5}{2}; -z\right) = \frac{1}{3465\, z^{3/2}}$$
$$\left(-\sqrt{z}\,\left(464\, z^3 - 14\,952\, z^2 + 104\,055\, z - 161\,280\right)\cos\left(2\sqrt{z}\right) - 2\left(16\, z^4 - 1652\, z^3 + 23\,415\, z^2 - 80\,640\, z + 40\,320\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2981.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, 3; z\right) =$$
$$\frac{1}{10\,395\, z}\left(4\sqrt{z}\,\left(64\, z^3 + 7824\, z^2 + 132\,300\, z + 509\,355\right) I_3\left(2\sqrt{z}\right) - 2\left(1856\, z^3 + 58\,800\, z^2 + 343\,980\, z - 10\,395\right) I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.2982.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, 3; -z\right) =$$
$$\frac{1}{10\,395\, z}\left(2\left(1856\, z^3 - 58\,800\, z^2 + 343\,980\, z + 10\,395\right) J_2\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(64\, z^3 - 7824\, z^2 + 132\,300\, z - 509\,355\right) J_3\left(2\sqrt{z}\right)\right)$$

07.22.03.2983.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, \frac{7}{2}; z\right) = \frac{1}{693\, z^{5/2}}\left(\sqrt{z}\,\left(16\, z^4 + 2868\, z^3 + 75\,957\, z^2 + 564\,480\, z + 967\,680\right)\cosh\left(2\sqrt{z}\right) -$$
$$2\left(152\, z^4 + 8757\, z^3 + 120\,960\, z^2 + 463\,680\, z + 241\,920\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2984.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, \frac{7}{2}; -z\right) = \frac{1}{693\, z^{5/2}}\left(\sqrt{z}\,\left(16\, z^4 - 2868\, z^3 + 75\,957\, z^2 - 564\,480\, z + 967\,680\right)\cos\left(2\sqrt{z}\right) -$$
$$2\left(152\, z^4 - 8757\, z^3 + 120\,960\, z^2 - 463\,680\, z + 241\,920\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2985.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, 4; z\right) = \frac{4\left(64\, z^3 + 11\,760\, z^2 + 308\,700\, z + 1\,916\,145\right) I_4\left(2\sqrt{z}\right)}{3465\, z} - \frac{2\left(64\, z^3 + 3024\, z^2 + 27\,468\, z - 297\right) I_3\left(2\sqrt{z}\right)}{99\, z^{3/2}}$$

07.22.03.2986.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, 4; -z\right) = \frac{2\left(64\, z^3 - 3024\, z^2 + 27\,468\, z + 297\right) J_3\left(2\sqrt{z}\right)}{99\, z^{3/2}} + \frac{4\left(64\, z^3 - 11\,760\, z^2 + 308\,700\, z - 1\,916\,145\right) J_4\left(2\sqrt{z}\right)}{3465\, z}$$

07.22.03.2987.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, \frac{9}{2}; z\right) = \frac{1}{99\, z^{7/2}}\left(2\left(4\, z^5 + 1149\, z^4 + 50\,400\, z^3 + 670\,320\, z^2 + 2\,600\,640\, z + 1\,360\,800\right)\sinh\left(2\sqrt{z}\right) -$$
$$3\sqrt{z}\,\left(64\, z^4 + 5983\, z^3 + 141\,120\, z^2 + 1\,048\,320\, z + 1\,814\,400\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.2988.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, \frac{9}{2}; -z\right) = \frac{1}{99\, z^{7/2}}\left(3\sqrt{z}\,\left(64\, z^4 - 5983\, z^3 + 141\,120\, z^2 - 1\,048\,320\, z + 1\,814\,400\right)\cos\left(2\sqrt{z}\right) +$$
$$2\left(4\, z^5 - 1149\, z^4 + 50\,400\, z^3 - 670\,320\, z^2 + 2\,600\,640\, z - 1\,360\,800\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2989.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, 5; z\right) = \frac{1}{3465\, z^2}$$
$$\left(8\left(2\sqrt{z}\,\left(64\, z^3 + 16\,464\, z^2 + 612\,108\, z + 5\,457\,375\right) I_5\left(2\sqrt{z}\right) - \left(2624\, z^3 + 171\,696\, z^2 + 2\,185\,596\, z - 10\,395\right) I_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2990.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, 5; -z\right) = \frac{1}{3465\, z^2}$$
$$\left(8\left(\left(2624\, z^3 - 171\,696\, z^2 + 2\,185\,596\, z + 10\,395\right) J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(64\, z^3 - 16\,464\, z^2 + 612\,108\, z - 5\,457\,375\right) J_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2991.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, \frac{11}{2}; z\right) = \frac{1}{11\, z^{9/2}}\left(\sqrt{z}\,\left(4\, z^5 + 1739\, z^4 + 117\,600\, z^3 + 2\,540\,160\, z^2 + 18\,446\,400\, z + 31\,752\,000\right)\cosh\left(2\sqrt{z}\right) - 2\left(59\, z^5 + 8400\, z^4 + 311\,640\, z^3 + 3\,961\,440\, z^2 + 15\,195\,600\, z + 7\,938\,000\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2992.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, \frac{11}{2}; -z\right) = \frac{1}{11\, z^{9/2}}\left(2\left(59\, z^5 - 8400\, z^4 + 311\,640\, z^3 - 3\,961\,440\, z^2 + 15\,195\,600\, z - 7\,938\,000\right)\sin\left(2\sqrt{z}\right) - \sqrt{z}\,\left(4\, z^5 - 1739\, z^4 + 117\,600\, z^3 - 2\,540\,160\, z^2 + 18\,446\,400\, z - 31\,752\,000\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.2993.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, 6; z\right) = \frac{1}{693\, z^{5/2}}$$
$$\left(8\left(2\sqrt{z}\,\left(64\, z^3 + 21\,936\, z^2 + 1\,090\,908\, z + 13\,095\,621\right) I_6\left(2\sqrt{z}\right) - \left(3008\, z^3 + 259\,440\, z^2 + 4\,367\,412\, z - 10\,395\right) I_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.2994.01

$${}_1F_2\left(\frac{3}{2}; -\frac{11}{2}, 6; -z\right) = \frac{1}{693\, z^{5/2}}$$
$$\left(8\left(\left(3008\, z^3 - 259\,440\, z^2 + 4\,367\,412\, z + 10\,395\right) J_5\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(64\, z^3 - 21\,936\, z^2 + 1\,090\,908\, z - 13\,095\,621\right) J_6\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = \frac{3}{2}$, $b_1 = -\frac{9}{2}$

07.22.03.2995.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, -\frac{9}{2}; z\right) = \frac{1}{893\,025}\left(3\left(2048\, z^5 + 6400\, z^4 + 46\,080\, z^3 + 244\,800\, z^2 + 617\,400\, z + 297\,675\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(1024\, z^5 - 3840\, z^4 - 25\,920\, z^3 - 169\,920\, z^2 - 661\,500\, z - 893\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2996.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, -\frac{9}{2}; -z\right) = \frac{1}{893\,025}\left(2\sqrt{z}\,\left(1024\, z^5 + 3840\, z^4 - 25\,920\, z^3 + 169\,920\, z^2 - 661\,500\, z + 893\,025\right)\sin\left(2\sqrt{z}\right) - 3\left(2048\, z^5 - 6400\, z^4 + 46\,080\, z^3 - 244\,800\, z^2 + 617\,400\, z - 297\,675\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.2997.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, -\frac{7}{2}; z\right) = \frac{1}{99\,225}\left(\left(-1024\, z^5 + 3840\, z^4 + 18\,240\, z^3 + 86\,400\, z^2 + 207\,900\, z + 99\,225\right)\cosh\left(2\sqrt{z}\right) - 10\sqrt{z}\,\left(256\, z^4 + 768\, z^3 + 4176\, z^2 + 15\,120\, z + 19\,845\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.2998.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, -\frac{7}{2}; -z\right) = \frac{1}{99\,225}\left(\left(1024\, z^5 + 3840\, z^4 - 18\,240\, z^3 + 86\,400\, z^2 - 207\,900\, z + 99\,225\right)\cos\left(2\sqrt{z}\right) + 10\sqrt{z}\,\left(256\, z^4 - 768\, z^3 + 4176\, z^2 - 15\,120\, z + 19\,845\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.2999.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, -\frac{5}{2}; z\right) = \frac{1}{14\,175}\left(3\left(256\,z^4 + 1280\,z^3 + 4560\,z^2 + 10\,080\,z + 4725\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256\,z^4 - 1152\,z^3 - 3600\,z^2 - 11\,340\,z - 14\,175\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3000.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, -\frac{5}{2}; -z\right) = \frac{1}{14\,175}\left(3\left(256\,z^4 - 1280\,z^3 + 4560\,z^2 - 10\,080\,z + 4725\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256\,z^4 + 1152\,z^3 - 3600\,z^2 + 11\,340\,z - 14\,175\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3001.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, -\frac{3}{2}; z\right) = \left(-\frac{256\,z^4}{2835} + \frac{128\,z^3}{315} + \frac{80\,z^2}{63} + \frac{20\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(416\,z^2 + 840\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3002.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, -\frac{3}{2}; -z\right) = \frac{1}{2835}\left(\left(-256\,z^4 - 1152\,z^3 + 3600\,z^2 - 6300\,z + 2835\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(416\,z^2 - 840\,z + 945\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3003.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, -\frac{1}{2}; z\right) = \left(-\frac{256\,z^3}{945} + \frac{32\,z^2}{21} + \frac{8\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(64\,z^3 - 96\,z^2 - 1260\,z - 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3004.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, -\frac{1}{2}; -z\right) = \left(\frac{256\,z^3}{945} + \frac{32\,z^2}{21} - \frac{8\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(64\,z^3 + 96\,z^2 - 1260\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3005.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, \frac{1}{2}; z\right) = \left(-\frac{64\,z^3}{945} - \frac{32\,z^2}{63} + \frac{4\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{105}\sqrt{z}\left(16\,z^2 - 105\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3006.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, \frac{1}{2}; -z\right) = \left(\frac{64\,z^3}{945} - \frac{32\,z^2}{63} - \frac{4\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{105}\sqrt{z}\left(105 - 16\,z^2\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3007.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, 1; z\right) = \frac{1}{945}\left(\left(-64\,z^3 - 912\,z^2 + 228\,z + 945\right)I_0\left(2\sqrt{z}\right) + 48\sqrt{z}\left(8\,z^2 + 26\,z - 31\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3008.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, 1; -z\right) = \frac{1}{945}\left(\left(64\,z^3 - 912\,z^2 - 228\,z + 945\right)J_0\left(2\sqrt{z}\right) - 48\sqrt{z}\left(8\,z^2 - 26\,z - 31\right)J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3009.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, \frac{3}{2}; z\right) = \left(\frac{16\,z^2}{63} + \frac{16\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3010.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, \frac{3}{2}; -z\right) = \left(\frac{16\,z^2}{63} - \frac{16\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3011.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, 2; z\right) = \frac{1}{945}\left(12\left(48 z^2 + 544 z + 945\right) I_2\left(2\sqrt{z}\right) - \frac{\left(64 z^3 + 2064 z^2 + 6300 z - 945\right) I_1\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.3012.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, 2; -z\right) = \frac{1}{945}\left(\frac{\left(64 z^3 - 2064 z^2 + 6300 z + 945\right) J_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 12\left(48 z^2 - 544 z + 945\right) J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3013.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, \frac{5}{2}; z\right) =$$

$$\frac{1}{315 z^{3/2}}\left(2\left(88 z^3 + 1605 z^2 + 5760 z + 2880\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\left(16 z^3 + 948 z^2 + 7365 z + 11\,520\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.3014.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, \frac{5}{2}; -z\right) = \frac{2\left(88 z^3 - 1605 z^2 + 5760 z - 2880\right)\sin\left(2\sqrt{z}\right) - \sqrt{z}\left(16 z^3 - 948 z^2 + 7365 z - 11\,520\right)\cos\left(2\sqrt{z}\right)}{315 z^{3/2}}$$

07.22.03.3015.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, 3; z\right) = -\frac{2\left(\left(64 z^3 + 3600 z^2 + 23\,100 z - 945\right) I_2\left(2\sqrt{z}\right) - 24\sqrt{z}\left(32 z^2 + 700 z + 2835\right) I_3\left(2\sqrt{z}\right)\right)}{945 z}$$

07.22.03.3016.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, 3; -z\right) = \frac{2\left(\left(64 z^3 - 3600 z^2 + 23\,100 z + 945\right) J_2\left(2\sqrt{z}\right) - 24\sqrt{z}\left(32 z^2 - 700 z + 2835\right) J_3\left(2\sqrt{z}\right)\right)}{945 z}$$

07.22.03.3017.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, \frac{7}{2}; z\right) =$$

$$\frac{1}{63 z^{5/2}}\left(3\sqrt{z}\left(40 z^3 + 1429 z^2 + 11\,520 z + 20\,160\right)\cosh\left(2\sqrt{z}\right) - 2\left(4 z^4 + 447 z^3 + 7200 z^2 + 28\,800 z + 15\,120\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3018.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, \frac{7}{2}; -z\right) =$$

$$\frac{1}{63 z^{5/2}}\left(-3\sqrt{z}\left(40 z^3 - 1429 z^2 + 11\,520 z - 20\,160\right)\cos\left(2\sqrt{z}\right) - 2\left(4 z^4 - 447 z^3 + 7200 z^2 - 28\,800 z + 15\,120\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3019.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, 4; z\right) = \frac{8\left(16 z^2 + 560 z + 3759\right) I_4\left(2\sqrt{z}\right)}{21 z} - \frac{2\left(64 z^3 + 5520 z^2 + 56\,700 z - 945\right) I_3\left(2\sqrt{z}\right)}{315 z^{3/2}}$$

07.22.03.3020.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, 4; -z\right) = \frac{2\left(64 z^3 - 5520 z^2 + 56\,700 z + 945\right) J_3\left(2\sqrt{z}\right)}{315 z^{3/2}} - \frac{8\left(16 z^2 - 560 z + 3759\right) J_4\left(2\sqrt{z}\right)}{21 z}$$

07.22.03.3021.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, \frac{9}{2}; z\right) = \frac{1}{9\,z^{7/2}}\left(6\left(13\,z^4 + 800\,z^3 + 11\,880\,z^2 + 47\,880\,z + 25\,200\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\left(4\,z^4 + 759\,z^3 + 21\,600\,z^2 + 171\,360\,z + 302\,400\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.3022.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, \frac{9}{2}; -z\right) = \frac{1}{9\,z^{7/2}}\left(\sqrt{z}\left(4\,z^4 - 759\,z^3 + 21\,600\,z^2 - 171\,360\,z + 302\,400\right)\cos\left(2\sqrt{z}\right) - 6\left(13\,z^4 - 800\,z^3 + 11\,880\,z^2 - 47\,880\,z + 25\,200\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3023.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, 5; z\right) = -\frac{8\left(\left(64\,z^3 + 7824\,z^2 + 115\,164\,z - 945\right)I_4\left(2\sqrt{z}\right) - 288\sqrt{z}\left(4\,z^2 + 203\,z + 1995\right)I_5\left(2\sqrt{z}\right)\right)}{315\,z^2}$$

07.22.03.3024.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, 5; -z\right) = \frac{8\left(\left(64\,z^3 - 7824\,z^2 + 115\,164\,z + 945\right)J_4\left(2\sqrt{z}\right) - 288\sqrt{z}\left(4\,z^2 - 203\,z + 1995\right)J_5\left(2\sqrt{z}\right)\right)}{315\,z^2}$$

07.22.03.3025.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, \frac{11}{2}; z\right) = \frac{1}{z^{9/2}}\left(\sqrt{z}\left(49\,z^4 + 4800\,z^3 + 118\,440\,z^2 + 907\,200\,z + 1\,587\,600\right)\cosh\left(2\sqrt{z}\right) - 2\left(z^5 + 300\,z^4 + 13\,800\,z^3 + 190\,890\,z^2 + 756\,000\,z + 396\,900\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3026.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, \frac{11}{2}; -z\right) = \frac{1}{z^{9/2}}\left(\sqrt{z}\left(49\,z^4 - 4800\,z^3 + 118\,440\,z^2 - 907\,200\,z + 1\,587\,600\right)\cos\left(2\sqrt{z}\right) + 2\left(z^5 - 300\,z^4 + 13\,800\,z^3 - 190\,890\,z^2 + 756\,000\,z - 396\,900\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3027.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, 6; z\right) = \frac{32\left(112\,z^2 + 7744\,z + 103\,941\right)I_6\left(2\sqrt{z}\right)}{21\,z^2} - \frac{8\left(64\,z^3 + 10\,512\,z^2 + 208\,092\,z - 945\right)I_5\left(2\sqrt{z}\right)}{63\,z^{5/2}}$$

07.22.03.3028.01

$${}_1F_2\left(\frac{3}{2}; -\frac{9}{2}, 6; -z\right) = \frac{8\left(\left(64\,z^3 - 10\,512\,z^2 + 208\,092\,z + 945\right)J_5\left(2\sqrt{z}\right) - 12\sqrt{z}\left(112\,z^2 - 7744\,z + 103\,941\right)J_6\left(2\sqrt{z}\right)\right)}{63\,z^{5/2}}$$

For fixed z and $a_1 = \frac{3}{2}$, $b_1 = -\frac{7}{2}$

07.22.03.3029.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, -\frac{7}{2}; z\right) = \frac{1}{11\,025}\left(5\left(256\,z^4 + 512\,z^3 + 2064\,z^2 + 4680\,z + 2205\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256\,z^4 - 640\,z^3 - 2640\,z^2 - 8700\,z - 11\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3030.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, -\frac{7}{2}; -z\right) = \frac{1}{11\,025}$$
$$\left(5\left(256\,z^4 - 512\,z^3 + 2064\,z^2 - 4680\,z + 2205\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256\,z^4 + 640\,z^3 - 2640\,z^2 + 8700\,z - 11\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3031.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, -\frac{5}{2}; z\right) =$$
$$\frac{1}{1575}\left(\left(-256\,z^4+640\,z^3+1680\,z^2+3420\,z+1575\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(256\,z^3+480\,z^2+1320\,z+1575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3032.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, -\frac{5}{2}; -z\right) =$$
$$\frac{1}{1575}\left(\left(-256\,z^4-640\,z^3+1680\,z^2-3420\,z+1575\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(-256\,z^3+480\,z^2-1320\,z+1575\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3033.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, -\frac{3}{2}; z\right) = \frac{1}{315}\left(\left(128\,z^3+480\,z^2+720\,z+315\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(64\,z^3-192\,z^2-300\,z-315\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3034.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, -\frac{3}{2}; -z\right) = \frac{1}{315}\left(\left(-128\,z^3+480\,z^2-720\,z+315\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(64\,z^3+192\,z^2-300\,z+315\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3035.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, -\frac{1}{2}; z\right) = \frac{1}{105}\left(\left(-64\,z^3+160\,z^2+300\,z+105\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(16\,z^2-160\,z-105\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3036.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, -\frac{1}{2}; -z\right) = \frac{1}{105}\left(\left(64\,z^3+160\,z^2-300\,z+105\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(16\,z^2+160\,z-105\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3037.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, \frac{1}{2}; z\right) = \left(-\frac{16\,z^2}{21}+\frac{8\,z}{7}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{105}\sqrt{z}\,\left(16\,z^2+20\,z-105\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3038.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, \frac{1}{2}; -z\right) = \left(-\frac{16\,z^2}{21}-\frac{8\,z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{105}\sqrt{z}\,\left(-16\,z^2+20\,z+105\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3039.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, 1; z\right) = \frac{1}{105}\left(\left(-112\,z^2-8\,z+105\right)I_0\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(16\,z^2+88\,z-71\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3040.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, 1; -z\right) = \frac{1}{105}\left(\left(-112\,z^2+8\,z+105\right)J_0\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(-16\,z^2+88\,z+71\right)J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3041.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, \frac{3}{2}; z\right) = \left(\frac{16\,z^2}{105}+\frac{12\,z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\,\left(8\,z+21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3042.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, \frac{3}{2}; -z\right) = \left(\frac{16\,z^2}{105}-\frac{12\,z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}\left(21-8\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.3043.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, 2; z\right) = \frac{1}{105}\left(\frac{\left(-176\,z^2 - 600\,z + 105\right) I_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 2\left(16\,z^2 + 296\,z + 525\right) I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3044.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, 2; -z\right) = \frac{1}{105}\left(\frac{\left(-176\,z^2 + 600\,z + 105\right) J_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 2\left(16\,z^2 - 296\,z + 525\right) J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3045.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, \frac{5}{2}; z\right) = \frac{2\left(4\,z^3 + 125\,z^2 + 480\,z + 240\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\,\left(64\,z^2 + 605\,z + 960\right)\cosh\left(2\sqrt{z}\right)}{35\,z^{3/2}}$$

07.22.03.3046.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, \frac{5}{2}; -z\right) = \frac{\sqrt{z}\,\left(64\,z^2 - 605\,z + 960\right)\cos\left(2\sqrt{z}\right) + 2\left(4\,z^3 - 125\,z^2 + 480\,z - 240\right)\sin\left(2\sqrt{z}\right)}{35\,z^{3/2}}$$

07.22.03.3047.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, 3; z\right) = \left(-\frac{32\,z}{7} - \frac{240}{7} + \frac{2}{z}\right) I_2\left(2\sqrt{z}\right) + \frac{4\left(16\,z^2 + 600\,z + 2625\right) I_3\left(2\sqrt{z}\right)}{105\sqrt{z}}$$

07.22.03.3048.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, 3; -z\right) = \left(-\frac{32\,z}{7} + \frac{240}{7} + \frac{2}{z}\right) J_2\left(2\sqrt{z}\right) - \frac{4\left(16\,z^2 - 600\,z + 2625\right) J_3\left(2\sqrt{z}\right)}{105\sqrt{z}}$$

07.22.03.3049.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, \frac{7}{2}; z\right) = \frac{\sqrt{z}\,\left(4\,z^3 + 263\,z^2 + 2400\,z + 4320\right)\cosh\left(2\sqrt{z}\right) - 2\left(23\,z^3 + 480\,z^2 + 2040\,z + 1080\right)\sinh\left(2\sqrt{z}\right)}{7\,z^{5/2}}$$

07.22.03.3050.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, \frac{7}{2}; -z\right) = \frac{2\left(23\,z^3 - 480\,z^2 + 2040\,z - 1080\right)\sin\left(2\sqrt{z}\right) - \sqrt{z}\,\left(4\,z^3 - 263\,z^2 + 2400\,z - 4320\right)\cos\left(2\sqrt{z}\right)}{7\,z^{5/2}}$$

07.22.03.3051.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, 4; z\right) = \frac{\left(-608\,z^2 - 7600\,z + 210\right) I_3\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(16\,z^2 + 1000\,z + 7525\right) I_4\left(2\sqrt{z}\right)}{35\,z^{3/2}}$$

07.22.03.3052.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, 4; -z\right) = \frac{\left(-608\,z^2 + 7600\,z + 210\right) J_3\left(2\sqrt{z}\right) - 4\sqrt{z}\,\left(16\,z^2 - 1000\,z + 7525\right) J_4\left(2\sqrt{z}\right)}{35\,z^{3/2}}$$

07.22.03.3053.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, \frac{9}{2}; z\right) =$$

$$\frac{1}{z^{7/2}}\left(2\left(z^4 + 120\,z^3 + 2100\,z^2 + 8910\,z + 4725\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\,\left(31\,z^3 + 1200\,z^2 + 10\,440\,z + 18\,900\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.3054.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, \frac{9}{2}; -z\right) =$$
$$\frac{1}{z^{7/2}}\left(-\sqrt{z}\,\left(31\,z^3 - 1200\,z^2 + 10\,440\,z - 18\,900\right)\cos\left(2\sqrt{z}\right) - 2\left(z^4 - 120\,z^3 + 2100\,z^2 - 8910\,z + 4725\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3055.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, 5; z\right) = \frac{8\left(\left(-368\,z^2 - 6792\,z + 105\right)I_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^2 + 1496\,z + 16\,905\right)I_5\left(2\sqrt{z}\right)\right)}{35\,z^2}$$

07.22.03.3056.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, 5; -z\right) = -\frac{8\left(\left(368\,z^2 - 6792\,z - 105\right)J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^2 - 1496\,z + 16\,905\right)J_5\left(2\sqrt{z}\right)\right)}{35\,z^2}$$

07.22.03.3057.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, \frac{11}{2}; z\right) = \frac{1}{z^{9/2}}$$
$$\left(9\left(\sqrt{z}\,\left(z^4 + 200\,z^3 + 6000\,z^2 + 49\,350\,z + 88\,200\right)\cosh\left(2\sqrt{z}\right) - 5\left(4\,z^4 + 260\,z^3 + 4044\,z^2 + 16\,695\,z + 8820\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3058.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{z^{9/2}}\left(9\left(\sqrt{z}\,\left(z^4 - 200\,z^3 + 6000\,z^2 - 49\,350\,z + 88\,200\right)\cos\left(2\sqrt{z}\right) - 5\left(4\,z^4 - 260\,z^3 + 4044\,z^2 - 16\,695\,z + 8820\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3059.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, 6; z\right) = \frac{8\left(2\sqrt{z}\,\left(16\,z^2 + 2088\,z + 32\,829\right)I_6\left(2\sqrt{z}\right) - 3\left(144\,z^2 + 3656\,z - 35\right)I_5\left(2\sqrt{z}\right)\right)}{7\,z^{5/2}}$$

07.22.03.3060.01

$${}_1F_2\left(\frac{3}{2}; -\frac{7}{2}, 6; -z\right) = -\frac{8\left(3\left(144\,z^2 - 3656\,z - 35\right)J_5\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^2 - 2088\,z + 32\,829\right)J_6\left(2\sqrt{z}\right)\right)}{7\,z^{5/2}}$$

For fixed z and $a_1 = \frac{3}{2}$, $b_1 = -\frac{5}{2}$

07.22.03.3061.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, -\frac{5}{2}; z\right) = \frac{1}{225}\left(\left(256\,z^3 + 288\,z^2 + 504\,z + 225\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(64\,z^3 - 96\,z^2 - 204\,z - 225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3062.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, -\frac{5}{2}; -z\right) = \frac{1}{225}\left(\left(-256\,z^3 + 288\,z^2 - 504\,z + 225\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(64\,z^3 + 96\,z^2 - 204\,z + 225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3063.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, -\frac{3}{2}; z\right) = \frac{1}{45}\left(\left(-64\,z^3 + 96\,z^2 + 108\,z + 45\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(16\,z^2 + 16\,z + 15\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3064.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, -\frac{3}{2}; -z\right) = \frac{1}{45}\left(\left(64\,z^3 + 96\,z^2 - 108\,z + 45\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(16\,z^2 - 16\,z + 15\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3065.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, -\frac{1}{2}; z\right) = \frac{1}{15}\left(\left(16z^2+48z+15\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16z^2-28z-15\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3066.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, -\frac{1}{2}; -z\right) = \frac{1}{15}\left(\left(16z^2-48z+15\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(16z^2+28z-15\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3067.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, \frac{1}{2}; z\right) = \left(-\frac{16z^2}{15}+\frac{4z}{5}+1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\,(8z-15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3068.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, \frac{1}{2}; -z\right) = \left(-\frac{16z^2}{15}-\frac{4z}{5}+1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\,(8z+15)\sin\left(2\sqrt{z}\right)$$

07.22.03.3069.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, 1; z\right) = \frac{1}{15}\left(\left(-16z^2-8z+15\right)I_0\left(2\sqrt{z}\right) + 16\sqrt{z}\,(2z-1)\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3070.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, 1; -z\right) = \frac{1}{15}\left(\left(-16z^2+8z+15\right)J_0\left(2\sqrt{z}\right) + 16\sqrt{z}\,(2z+1)\,J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3071.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, \frac{3}{2}; z\right) = \left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,(4z+15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3072.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, \frac{3}{2}; -z\right) = \left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}(15-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.3073.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, 2; z\right) = \frac{1}{15}\left(\frac{\left(-16z^2-72z+15\right)I_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 8\,(8z+15)\,I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3074.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, 2; -z\right) = \frac{1}{15}\left(\frac{\left(-16z^2+72z+15\right)J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 8\,(8z-15)\,J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3075.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, \frac{5}{2}; z\right) = \frac{2\left(11z^2+48z+24\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\,\left(4z^2+59z+96\right)\cosh\left(2\sqrt{z}\right)}{5z^{3/2}}$$

07.22.03.3076.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, \frac{5}{2}; -z\right) = \frac{\sqrt{z}\,\left(4z^2-59z+96\right)\cos\left(2\sqrt{z}\right) - 2\left(11z^2-48z+24\right)\sin\left(2\sqrt{z}\right)}{5z^{3/2}}$$

07.22.03.3077.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, 3; z\right) = \frac{\left(-32z^2-336z+30\right)I_2\left(2\sqrt{z}\right) + 192\sqrt{z}\,(z+5)\,I_3\left(2\sqrt{z}\right)}{15z}$$

07.22.03.3078.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, 3; -z\right) = \frac{\left(-32z^2+336z+30\right)J_2\left(2\sqrt{z}\right)+192(z-5)\sqrt{z}\,J_3\left(2\sqrt{z}\right)}{15z}$$

07.22.03.3079.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, \frac{7}{2}; z\right) = \frac{\sqrt{z}\left(17z^2+192z+360\right)\cosh\left(2\sqrt{z}\right)-2\left(z^3+36z^2+168z+90\right)\sinh\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.3080.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, \frac{7}{2}; -z\right) = \frac{\sqrt{z}\left(17z^2-192z+360\right)\cos\left(2\sqrt{z}\right)+2\left(z^3-36z^2+168z-90\right)\sin\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.3081.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, 4; z\right) = \frac{16(16z+145)I_4\left(2\sqrt{z}\right)}{5z} - \frac{2\left(16z^2+296z-15\right)I_3\left(2\sqrt{z}\right)}{5z^{3/2}}$$

07.22.03.3082.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, 4; -z\right) = \frac{\left(-32z^2+592z+30\right)J_3\left(2\sqrt{z}\right)+16\sqrt{z}\,(16z-145)J_4\left(2\sqrt{z}\right)}{5z^{3/2}}$$

07.22.03.3083.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, \frac{9}{2}; z\right) = -\frac{7\left(\sqrt{z}\left(z^3+72z^2+720z+1350\right)\cosh\left(2\sqrt{z}\right)-3\left(4z^3+92z^2+420z+225\right)\sinh\left(2\sqrt{z}\right)\right)}{z^{7/2}}$$

07.22.03.3084.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, \frac{9}{2}; -z\right) = -\frac{7\left(\sqrt{z}\left(z^3-72z^2+720z-1350\right)\cos\left(2\sqrt{z}\right)+3\left(-4z^3+92z^2-420z+225\right)\sin\left(2\sqrt{z}\right)\right)}{z^{7/2}}$$

07.22.03.3085.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, 5; z\right) = -\frac{8\left(\left(16z^2+456z-15\right)I_4\left(2\sqrt{z}\right)-16\sqrt{z}\,(10z+141)I_5\left(2\sqrt{z}\right)\right)}{5z^2}$$

07.22.03.3086.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, 5; -z\right) = -\frac{8\left(\left(16z^2-456z-15\right)J_4\left(2\sqrt{z}\right)+16(141-10z)\sqrt{z}\,J_5\left(2\sqrt{z}\right)\right)}{5z^2}$$

07.22.03.3087.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, \frac{11}{2}; z\right) =$$

$$-\frac{1}{4z^{9/2}}\left(63\left(\left(2z^4+256z^3+4740z^2+20\,700z+11\,025\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(16z^3+660z^2+6000z+11\,025\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3088.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, \frac{11}{2}; -z\right) =$$

$$-\frac{1}{4z^{9/2}}\left(63\left(2\sqrt{z}\left(16z^3-660z^2+6000z-11\,025\right)\cos\left(2\sqrt{z}\right)+\left(2z^4-256z^3+4740z^2-20\,700z+11\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3089.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, 6; z\right) = \frac{192\,(8\,z+161)\,I_6\left(2\sqrt{z}\right)}{z^2} - \frac{8\left(16\,z^2+648\,z-15\right)I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.3090.01

$${}_1F_2\left(\frac{3}{2}; -\frac{5}{2}, 6; -z\right) = \frac{192\,(8\,z-161)\,J_6\left(2\sqrt{z}\right)}{z^2} - \frac{8\left(16\,z^2-648\,z-15\right)J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = \frac{3}{2}$, $b_1 = -\frac{3}{2}$

07.22.03.3091.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, -\frac{3}{2}; z\right) = \frac{1}{3}\left(16\,z^2+8\,z+3\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{9}\sqrt{z}\,\left(16\,z^2-12\,z-9\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3092.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, -\frac{3}{2}; -z\right) = \frac{1}{3}\left(16\,z^2-8\,z+3\right)\cos\left(2\sqrt{z}\right) - \frac{2}{9}\sqrt{z}\,\left(16\,z^2+12\,z-9\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3093.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, -\frac{1}{2}; z\right) = \left(-\frac{16\,z^2}{3}+4\,z+1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{3}\sqrt{z}\,(8\,z+3)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3094.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, -\frac{1}{2}; -z\right) = \left(-\frac{16\,z^2}{3}-4\,z+1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{3}(3-8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.3095.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, \frac{1}{2}; z\right) = \cosh\left(2\sqrt{z}\right) + \frac{2}{3}\sqrt{z}\,(4\,z-3)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3096.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, \frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right) + \frac{2}{3}\sqrt{z}\,(4\,z+3)\sin\left(2\sqrt{z}\right)$$

07.22.03.3097.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, 1; z\right) = \frac{1}{3}\left((3-4\,z)\,I_0\left(2\sqrt{z}\right) + 2\sqrt{z}\,(4\,z-1)\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3098.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, 1; -z\right) = \frac{1}{3}\left((4\,z+3)\,J_0\left(2\sqrt{z}\right) + 2\sqrt{z}\,(4\,z+1)\,J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3099.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, \frac{3}{2}; z\right) = \left(\frac{4\,z}{3}+1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.3100.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, \frac{3}{2}; -z\right) = \left(1-\frac{4\,z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.3101.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, 2; z\right) = \frac{(1-4\,z)\,I_1\left(2\sqrt{z}\right)}{\sqrt{z}} + \frac{2}{3}(4\,z+9)\,I_2\left(2\sqrt{z}\right)$$

07.22.03.3102.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, 2; -z\right) = \frac{(4z+1)\,J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + \frac{2}{3}(4z-9)\,J_2\left(2\sqrt{z}\right)$$

07.22.03.3103.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, \frac{5}{2}; z\right) = \frac{2\left(z^2+6z+3\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\,(7z+12)\cosh\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.3104.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, \frac{5}{2}; -z\right) = \frac{-\sqrt{z}\,(7z-12)\cos\left(2\sqrt{z}\right) - 2\left(z^2-6z+3\right)\sin\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.3105.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, 3; z\right) = \frac{2\left((3-20z)\,I_2\left(2\sqrt{z}\right) + 2\sqrt{z}\,(4z+27)\,I_3\left(2\sqrt{z}\right)\right)}{3z}$$

07.22.03.3106.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, 3; -z\right) = \frac{2\left((20z+3)\,J_2\left(2\sqrt{z}\right) + 2\sqrt{z}\,(4z-27)\,J_3\left(2\sqrt{z}\right)\right)}{3z}$$

07.22.03.3107.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, \frac{7}{2}; z\right) = \frac{5\left(\sqrt{z}\,\left(z^2+18z+36\right)\cosh\left(2\sqrt{z}\right) - 3\left(2z^2+11z+6\right)\sinh\left(2\sqrt{z}\right)\right)}{z^{5/2}}$$

07.22.03.3108.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, \frac{7}{2}; -z\right) = \frac{5\left(\sqrt{z}\,\left(z^2-18z+36\right)\cos\left(2\sqrt{z}\right) - 3\left(2z^2-11z+6\right)\sin\left(2\sqrt{z}\right)\right)}{z^{5/2}}$$

07.22.03.3109.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, 4; z\right) = \frac{4(4z+53)\,I_4\left(2\sqrt{z}\right)}{z} - \frac{2(28z-3)\,I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.3110.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, 4; -z\right) = \frac{2(28z+3)\,J_3\left(2\sqrt{z}\right)}{z^{3/2}} + \frac{4(4z-53)\,J_4\left(2\sqrt{z}\right)}{z}$$

07.22.03.3111.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, \frac{9}{2}; z\right) = \frac{35\left(\left(2z^3+81z^2+414z+225\right)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(3z^2+38z+75\right)\cosh\left(2\sqrt{z}\right)\right)}{4z^{7/2}}$$

07.22.03.3112.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, \frac{9}{2}; -z\right) = \frac{35\left(6\sqrt{z}\,\left(3z^2-38z+75\right)\cos\left(2\sqrt{z}\right) + \left(2z^3-81z^2+414z-225\right)\sin\left(2\sqrt{z}\right)\right)}{4z^{7/2}}$$

07.22.03.3113.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, 5; z\right) = \frac{8\left((3-36z)\,I_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,(4z+87)\,I_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.3114.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, 5; -z\right) = \frac{8\left((36\,z+3)\,J_4\left(2\sqrt{z}\right)+2\sqrt{z}\,(4\,z-87)\,J_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.3115.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, \frac{11}{2}; z\right) = \frac{1}{8\,z^{9/2}}\left(315\left(2\sqrt{z}\,\left(z^3+78\,z^2+825\,z+1575\right)\cosh\left(2\sqrt{z}\right)-\left(25\,z^3+618\,z^2+2925\,z+1575\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3116.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, \frac{11}{2}; -z\right) =$$
$$-\frac{1}{8\,z^{9/2}}\left(315\left(2\sqrt{z}\,\left(z^3-78\,z^2+825\,z-1575\right)\cos\left(2\sqrt{z}\right)+\left(-25\,z^3+618\,z^2-2925\,z+1575\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3117.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, 6; z\right) = \frac{80\,(4\,z+129)\,I_6\left(2\sqrt{z}\right)}{z^2} - \frac{40\,(44\,z-3)\,I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.3118.01

$${}_1F_2\left(\frac{3}{2}; -\frac{3}{2}, 6; -z\right) = \frac{40\,(44\,z+3)\,J_5\left(2\sqrt{z}\right)}{z^{5/2}} + \frac{80\,(4\,z-129)\,J_6\left(2\sqrt{z}\right)}{z^2}$$

For fixed z and $a_1 = \frac{3}{2}$, $b_1 = -\frac{1}{2}$

07.22.03.3119.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, -\frac{1}{2}; z\right) = (8\,z+1)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\,(4\,z-1)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3120.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, -\frac{1}{2}; -z\right) = (1-8\,z)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(4\,z+1)\sin\left(2\sqrt{z}\right)$$

07.22.03.3121.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, \frac{1}{2}; z\right) = (1-4\,z)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.3122.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, \frac{1}{2}; -z\right) = (4\,z+1)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.3123.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, 1; z\right) = -(4\,z-1)\,I_0\left(2\sqrt{z}\right)$$

07.22.03.3124.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, 1; -z\right) = (4\,z+1)\,J_0\left(2\sqrt{z}\right)$$

07.22.03.3125.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, \frac{3}{2}; z\right) = \cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.3126.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, \frac{3}{2}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.3127.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, 2; z\right) = \frac{(1-4z)\,I_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 4\,I_2\left(2\sqrt{z}\right)$$

07.22.03.3128.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, 2; -z\right) = \frac{(4z+1)\,J_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 4\,J_2\left(2\sqrt{z}\right)$$

07.22.03.3129.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, \frac{5}{2}; z\right) = \frac{3\,(2z+1)\sinh\left(2\sqrt{z}\right) - 3\sqrt{z}\,(z+2)\cosh\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.3130.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, \frac{5}{2}; -z\right) = -\frac{3\left((z-2)\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (1-2z)\sin\left(2\sqrt{z}\right)\right)}{z^{3/2}}$$

07.22.03.3131.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, 3; z\right) = \frac{2\left((1-4z)\,I_2\left(2\sqrt{z}\right) + 8\sqrt{z}\,I_3\left(2\sqrt{z}\right)\right)}{z}$$

07.22.03.3132.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, 3; -z\right) = \frac{2\left((4z+1)\,J_2\left(2\sqrt{z}\right) - 8\sqrt{z}\,J_3\left(2\sqrt{z}\right)\right)}{z}$$

07.22.03.3133.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, \frac{7}{2}; z\right) = -\frac{15\left(\left(2z^2+16z+9\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,(4z+9)\cosh\left(2\sqrt{z}\right)\right)}{4\,z^{5/2}}$$

07.22.03.3134.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, \frac{7}{2}; -z\right) = -\frac{15\left(2\sqrt{z}\,(4z-9)\cos\left(2\sqrt{z}\right) + \left(2z^2-16z+9\right)\sin\left(2\sqrt{z}\right)\right)}{4\,z^{5/2}}$$

07.22.03.3135.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, 4; z\right) = \frac{72\,I_4\left(2\sqrt{z}\right)}{z} - \frac{6\,(4z-1)\,I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.3136.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, 4; -z\right) = \frac{6\,(4z+1)\,J_3\left(2\sqrt{z}\right)}{z^{3/2}} - \frac{72\,J_4\left(2\sqrt{z}\right)}{z}$$

07.22.03.3137.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, \frac{9}{2}; z\right) = -\frac{105\left(2\sqrt{z}\,\left(z^2+21z+45\right)\cosh\left(2\sqrt{z}\right) - \left(13z^2+81z+45\right)\sinh\left(2\sqrt{z}\right)\right)}{8\,z^{7/2}}$$

07.22.03.3138.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, \frac{9}{2}; -z\right) = \frac{105\left(2\sqrt{z}\,\left(z^2-21z+45\right)\cos\left(2\sqrt{z}\right)+\left(-13z^2+81z-45\right)\sin\left(2\sqrt{z}\right)\right)}{8z^{7/2}}$$

07.22.03.3139.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, 5; z\right) = \frac{24\left((1-4z)\,I_4\left(2\sqrt{z}\right)+16\sqrt{z}\;I_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.3140.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, 5; -z\right) = \frac{24\left((4z+1)\,J_4\left(2\sqrt{z}\right)-16\sqrt{z}\;J_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.3141.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, \frac{11}{2}; z\right) = -\frac{945\left(\left(4z^3+179z^2+960z+525\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(19z^2+260z+525\right)\cosh\left(2\sqrt{z}\right)\right)}{32z^{9/2}}$$

07.22.03.3142.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, \frac{11}{2}; -z\right) = \frac{945\left(2\sqrt{z}\,\left(19z^2-260z+525\right)\cos\left(2\sqrt{z}\right)+\left(4z^3-179z^2+960z-525\right)\sin\left(2\sqrt{z}\right)\right)}{32z^{9/2}}$$

07.22.03.3143.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, 6; z\right) = \frac{2400\,I_6\left(2\sqrt{z}\right)}{z^2} - \frac{120\,(4z-1)\,I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.3144.01

$${}_1F_2\left(\frac{3}{2}; -\frac{1}{2}, 6; -z\right) = \frac{120\,(4z+1)\,J_5\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{2400\,J_6\left(2\sqrt{z}\right)}{z^2}$$

For fixed z and $a_1 = \frac{3}{2}$, $b_1 = \frac{1}{2}$

07.22.03.0135.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, \frac{1}{2}; z\right) == \cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\;\sinh\left(2\sqrt{z}\right)$$

07.22.03.3145.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, \frac{1}{2}; -z\right) = \cos\left(2\sqrt{z}\right) - 2\sqrt{z}\;\sin\left(2\sqrt{z}\right)$$

07.22.03.0136.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, 1; z\right) == I_0\left(2\sqrt{z}\right) + 2\sqrt{z}\;I_1\left(2\sqrt{z}\right)$$

07.22.03.3146.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, 1; -z\right) = J_0\left(2\sqrt{z}\right) - 2\sqrt{z}\;J_1\left(2\sqrt{z}\right)$$

07.22.03.3147.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, \frac{3}{2}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.0137.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, 2; z\right) == \frac{1}{\sqrt{z}} I_1\left(2\sqrt{z}\right) + 2\, I_2\left(2\sqrt{z}\right)$$

07.22.03.3148.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, 2; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 2\, J_2\left(2\sqrt{z}\right)$$

07.22.03.0138.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, \frac{5}{2}; z\right) == \frac{3}{4\, z^{3/2}} \left((2\, z + 1) \sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\, \cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.3149.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, \frac{5}{2}; -z\right) = \frac{6\sqrt{z}\, \cos\left(2\sqrt{z}\right) + 3\,(2\, z - 1) \sin\left(2\sqrt{z}\right)}{4\, z^{3/2}}$$

07.22.03.0139.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, 3; z\right) == \frac{2}{z}\left(I_2\left(2\sqrt{z}\right) + 2\sqrt{z}\, I_3\left(2\sqrt{z}\right)\right)$$

07.22.03.3150.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, 3; -z\right) = \frac{2\left(J_2\left(2\sqrt{z}\right) - 2\sqrt{z}\, J_3\left(2\sqrt{z}\right)\right)}{z}$$

07.22.03.0140.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, \frac{7}{2}; z\right) == \frac{15}{8\, z^{5/2}} \left(2\sqrt{z}\, (z + 3) \cosh\left(2\sqrt{z}\right) - (5\, z + 3) \sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3151.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, \frac{7}{2}; -z\right) = -\frac{15\left(2\,(z - 3)\sqrt{z}\, \cos\left(2\sqrt{z}\right) + (3 - 5\, z) \sin\left(2\sqrt{z}\right)\right)}{8\, z^{5/2}}$$

07.22.03.0141.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, 4; z\right) == \frac{6}{z^{3/2}}\left(I_3\left(2\sqrt{z}\right) + 2\sqrt{z}\, I_4\left(2\sqrt{z}\right)\right)$$

07.22.03.3152.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, 4; -z\right) = \frac{6\, J_3\left(2\sqrt{z}\right)}{z^{3/2}} - \frac{12\, J_4\left(2\sqrt{z}\right)}{z}$$

07.22.03.3153.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, \frac{9}{2}; z\right) = \frac{105\left(\left(8\, z^2 + 78\, z + 45\right) \sinh\left(2\sqrt{z}\right) - 18\sqrt{z}\, (2\, z + 5) \cosh\left(2\sqrt{z}\right)\right)}{64\, z^{7/2}}$$

07.22.03.3154.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, \frac{9}{2}; -z\right) = -\frac{105\left(18\sqrt{z}\, (2\, z - 5) \cos\left(2\sqrt{z}\right) + \left(8\, z^2 - 78\, z + 45\right) \sin\left(2\sqrt{z}\right)\right)}{64\, z^{7/2}}$$

07.22.03.3155.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, 5; z\right) = \frac{24\left(I_4\left(2\sqrt{z}\right) + 2\sqrt{z}\ I_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.3156.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, 5; -z\right) = \frac{24\left(J_4\left(2\sqrt{z}\right) - 2\sqrt{z}\ J_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.3157.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, \frac{11}{2}; z\right) = \frac{945\left(2\sqrt{z}\ \left(4z^2 + 95z + 210\right)\cosh\left(2\sqrt{z}\right) - \left(56z^2 + 375z + 210\right)\sinh\left(2\sqrt{z}\right)\right)}{128\, z^{9/2}}$$

07.22.03.3158.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, \frac{11}{2}; -z\right) = \frac{945\left(2\sqrt{z}\ \left(4z^2 - 95z + 210\right)\cos\left(2\sqrt{z}\right) + \left(-56z^2 + 375z - 210\right)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{9/2}}$$

07.22.03.3159.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, 6; z\right) = \frac{120\left(I_5\left(2\sqrt{z}\right) + 2\sqrt{z}\ I_6\left(2\sqrt{z}\right)\right)}{z^{5/2}}$$

07.22.03.3160.01

$${}_1F_2\left(\frac{3}{2}; \frac{1}{2}, 6; -z\right) = \frac{120\left(J_5\left(2\sqrt{z}\right) - 2\sqrt{z}\ J_6\left(2\sqrt{z}\right)\right)}{z^{5/2}}$$

For fixed z and $a_1 = \frac{3}{2}$, $b_1 = 1$

07.22.03.0142.01

$${}_1F_2\left(\frac{3}{2}; 1, 1; z\right) == I_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\ I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right)$$

07.22.03.3161.01

$${}_1F_2\left(\frac{3}{2}; 1, 1; -z\right) = J_0\left(\sqrt{z}\right)\left(J_0\left(\sqrt{z}\right) - 2\sqrt{z}\ J_1\left(\sqrt{z}\right)\right)$$

07.22.03.3162.01

$${}_1F_2\left(\frac{3}{2}; 1, \frac{3}{2}; z\right) = I_0\left(2\sqrt{z}\right)$$

07.22.03.3163.01

$${}_1F_2\left(\frac{3}{2}; 1, \frac{3}{2}; -z\right) = J_0\left(2\sqrt{z}\right)$$

07.22.03.0143.01

$${}_1F_2\left(\frac{3}{2}; 1, 2; z\right) == I_0\left(\sqrt{z}\right)^2 + I_1\left(\sqrt{z}\right)^2$$

07.22.03.3164.01

$${}_1F_2\left(\frac{3}{2}; 1, 2; -z\right) = J_0\left(\sqrt{z}\right)^2 - J_1\left(\sqrt{z}\right)^2$$

07.22.03.0144.01

$${}_1F_2\left(\frac{3}{2}; 1, \frac{5}{2}; z\right) == \frac{3}{8z}\left(4\sqrt{z}\, I_1\left(2\sqrt{z}\right) + \pi\left(I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) - I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3165.01

$${}_1F_2\left(\frac{3}{2}; 1, \frac{5}{2}; -z\right) = \frac{3\left(J_1\left(2\sqrt{z}\right)\left(4\sqrt{z} - \pi\boldsymbol{H}_0\left(2\sqrt{z}\right)\right) + \pi J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)}{8z}$$

07.22.03.0145.01

$${}_1F_2\left(\frac{3}{2}; 1, 3; z\right) == \frac{4}{z}\left(\sqrt{z}\, I_0\left(\sqrt{z}\right) - I_1\left(\sqrt{z}\right)\right) I_1\left(\sqrt{z}\right)$$

07.22.03.3166.01

$${}_1F_2\left(\frac{3}{2}; 1, 3; -z\right) = \frac{4\left(\sqrt{z}\, J_0\left(\sqrt{z}\right) - J_1\left(\sqrt{z}\right)\right) J_1\left(\sqrt{z}\right)}{z}$$

07.22.03.0146.01

$${}_1F_2\left(\frac{3}{2}; 1, \frac{7}{2}; z\right) == \frac{15}{64z^2}\left(24z\, I_0\left(2\sqrt{z}\right) - 36\sqrt{z}\, I_1\left(2\sqrt{z}\right) + \pi(9-4z)\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) - I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3167.01

$${}_1F_2\left(\frac{3}{2}; 1, \frac{7}{2}; -z\right) =$$
$$\frac{1}{64z^2}\left(15\left(-24z\, J_0\left(2\sqrt{z}\right) + \pi(4z+9)\boldsymbol{H}_1\left(2\sqrt{z}\right) J_0\left(2\sqrt{z}\right) + 36\sqrt{z}\, J_1\left(2\sqrt{z}\right) - \pi(4z+9) J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0147.01

$${}_1F_2\left(\frac{3}{2}; 1, 4; z\right) == \frac{4}{z^2}\left(2z\, I_0\left(\sqrt{z}\right)^2 - 8\sqrt{z}\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + (z+8)\, I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.3168.01

$${}_1F_2\left(\frac{3}{2}; 1, 4; -z\right) = \frac{4\left(-2z\, J_0\left(\sqrt{z}\right)^2 + 8\sqrt{z}\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + (z-8)\, J_1\left(\sqrt{z}\right)^2\right)}{z^2}$$

07.22.03.3169.01

$${}_1F_2\left(\frac{3}{2}; 1, \frac{9}{2}; z\right) =$$
$$\frac{1}{1024z^3}\left(105\left(4\left(2z(4z-75) I_0\left(2\sqrt{z}\right) + \sqrt{z}\,(28z+225) I_1\left(2\sqrt{z}\right)\right) + \pi\left(-16z^2+72z-225\right) I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \right.\right.$$
$$\left.\left.\pi\left(16z^2-72z+225\right) I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3170.01

$${}_1F_2\left(\frac{3}{2}; 1, \frac{9}{2}; -z\right) =$$
$$-\frac{1}{1024z^3}\left(105\left(4\left(2z(4z+75) J_0\left(2\sqrt{z}\right) + \sqrt{z}\,(28z-225) J_1\left(2\sqrt{z}\right)\right) + \pi\left(16z^2+72z+225\right) J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) - \right.\right.$$
$$\left.\left.\pi\left(16z^2+72z+225\right) J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3171.01

$${}_1F_2\left(\frac{3}{2}; 1, 5; z\right) = \frac{16\left((z-36)\, z\, I_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\ (7z+72)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \left(z^2+32z+144\right) I_1\left(\sqrt{z}\right)^2\right)}{5z^3}$$

07.22.03.3172.01

$${}_1F_2\left(\frac{3}{2}; 1, 5; -z\right) = -\frac{16\left(z\,(z+36)\, J_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\ (7z-72)\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(z^2-32z+144\right) J_1\left(\sqrt{z}\right)^2\right)}{5z^3}$$

07.22.03.3173.01

$${}_1F_2\left(\frac{3}{2}; 1, \frac{11}{2}; z\right) = \frac{1}{8192\, z^4}$$
$$\left(315\left(4\left(2z\left(16z^2+80z+3675\right) I_0\left(2\sqrt{z}\right) - \sqrt{z}\ \left(16z^2+2200z+11\,025\right) I_1\left(2\sqrt{z}\right)\right) + \pi\left(-64z^3+432z^2-2700z+11\,025\right)\right.\right.$$
$$\left.\left. I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(64z^3-432z^2+2700z-11\,025\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3174.01

$${}_1F_2\left(\frac{3}{2}; 1, \frac{11}{2}; -z\right) =$$
$$\frac{1}{8192\, z^4}\left(315\left(-128\, J_0\left(2\sqrt{z}\right) z^3 + 64\, J_1\left(2\sqrt{z}\right) z^{5/2} + 640\, J_0\left(2\sqrt{z}\right) z^2 - 8800\, J_1\left(2\sqrt{z}\right) z^{3/2} - 29\,400\, J_0\left(2\sqrt{z}\right) z + \right.\right.$$
$$44\,100\, J_1\left(2\sqrt{z}\right)\sqrt{z} - \pi\left(64z^3+432z^2+2700z+11\,025\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) +$$
$$\left.\left.\pi\left(64z^3+432z^2+2700z+11\,025\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3175.01

$${}_1F_2\left(\frac{3}{2}; 1, 6; z\right) =$$
$$\frac{1}{7z^4}\left(32\left(z\left(z^2+18z+576\right) I_0\left(\sqrt{z}\right)^2 - \sqrt{z}\ \left(z^2+360z+2304\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-z^3+34z^2+648z+2304\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.3176.01

$${}_1F_2\left(\frac{3}{2}; 1, 6; -z\right) =$$
$$-\frac{1}{7z^4}\left(32\left(z\left(z^2-18z+576\right) J_0\left(\sqrt{z}\right)^2 - \sqrt{z}\ \left(z^2-360z+2304\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(z^3+34z^2-648z+2304\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = \frac{3}{2}$, $b_1 = \frac{3}{2}$

07.22.03.3177.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, \frac{3}{2}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.3178.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, \frac{3}{2}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.3179.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, 2; z\right) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.3180.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, 2; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.3181.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, \frac{5}{2}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.3182.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, \frac{5}{2}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}}$$

07.22.03.3183.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, 3; z\right) = \frac{2I_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.3184.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, 3; -z\right) = \frac{2J_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.3185.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, \frac{7}{2}; z\right) = \frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.3186.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, \frac{7}{2}; -z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4z-3)\sin\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.3187.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, 4; z\right) = \frac{6I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.3188.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, 4; -z\right) = \frac{6J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.3189.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, \frac{9}{2}; z\right) = \frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right) - 3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.3190.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, \frac{9}{2}; -z\right) = \frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right) + 3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.3191.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, 5; z\right) = \frac{24\, I_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.3192.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, 5; -z\right) = \frac{24\, J_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.3193.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, \frac{11}{2}; z\right) = \frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\,(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}}$$

07.22.03.3194.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, \frac{11}{2}; -z\right) = \frac{945\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right) + \left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}}$$

07.22.03.3195.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, 6; z\right) = \frac{120\, I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.3196.01

$${}_1F_2\left(\frac{3}{2}; \frac{3}{2}, 6; -z\right) = \frac{120\, J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = \frac{3}{2}$, $b_1 = 2$

07.22.03.0148.01

$${}_1F_2\left(\frac{3}{2}; 2, 2; z\right) == \frac{2}{\sqrt{z}}\, I_0\left(\sqrt{z}\right) I_1\left(\sqrt{z}\right)$$

07.22.03.3197.01

$${}_1F_2\left(\frac{3}{2}; 2, 2; -z\right) = \frac{2\, J_0\left(\sqrt{z}\right) J_1\left(\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.0149.01

$${}_1F_2\left(\frac{3}{2}; 2, \frac{5}{2}; z\right) == \frac{3\pi}{4z}\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) - I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3198.01

$${}_1F_2\left(\frac{3}{2}; 2, \frac{5}{2}; -z\right) = \frac{3\pi\left(J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) - J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)}{4z}$$

07.22.03.0150.01

$${}_1F_2\left(\frac{3}{2}; 2, 3; z\right) == \frac{4}{z}\, I_1\left(\sqrt{z}\right)^2$$

07.22.03.3199.01

$${}_1F_2\left(\frac{3}{2}; 2, 3; -z\right) = \frac{4\, J_1\left(\sqrt{z}\right)^2}{z}$$

07.22.03.0151.01

$${}_1F_2\left(\frac{3}{2}; 2, \frac{7}{2}; z\right) == -\frac{15}{32\, z^2}\left(8\, z\, I_0\left(2\sqrt{z}\right) - 12\sqrt{z}\; I_1\left(2\sqrt{z}\right) + \pi\,(3-4\,z)\left(I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) - I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3200.01

$${}_1F_2\left(\frac{3}{2}; 2, \frac{7}{2}; -z\right) =$$
$$\frac{1}{32\, z^2}\left(15\left(8\, z\, J_0\left(2\sqrt{z}\right) - \pi\,(4\,z+3)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)J_0\left(2\sqrt{z}\right) - 12\sqrt{z}\; J_1\left(2\sqrt{z}\right) + \pi\,(4\,z+3)\,J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0152.01

$${}_1F_2\left(\frac{3}{2}; 2, 4; z\right) == \frac{4}{z^2}\left(4\sqrt{z}\; I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) - z\, I_0\left(\sqrt{z}\right)^2 - (4-z)\, I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.3201.01

$${}_1F_2\left(\frac{3}{2}; 2, 4; -z\right) = \frac{4\left(z\, J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\; J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + (z+4)\, J_1\left(\sqrt{z}\right)^2\right)}{z^2}$$

07.22.03.3202.01

$${}_1F_2\left(\frac{3}{2}; 2, \frac{9}{2}; z\right) =$$
$$\frac{1}{512\, z^3}\left(105\left(-4\left(2\, z\,(4\,z-15)\, I_0\left(2\sqrt{z}\right) + (45-4\,z)\sqrt{z}\; I_1\left(2\sqrt{z}\right)\right) + \pi\left(16\, z^2 - 24\, z + 45\right) I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \right.$$
$$\left.\pi\left(-16\, z^2 + 24\, z - 45\right) I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3203.01

$${}_1F_2\left(\frac{3}{2}; 2, \frac{9}{2}; -z\right) =$$
$$\frac{1}{512\, z^3}\left(105\left(4\left(2\, z\,(4\,z+15)\, J_0\left(2\sqrt{z}\right) - \sqrt{z}\;(4\,z+45)\, J_1\left(2\sqrt{z}\right)\right) + \pi\left(16\, z^2 + 24\, z + 45\right) J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) - \right.$$
$$\left.\pi\left(16\, z^2 + 24\, z + 45\right) J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3204.01

$${}_1F_2\left(\frac{3}{2}; 2, 5; z\right) = -\frac{32\left((z-6)\, z\, I_0\left(\sqrt{z}\right)^2 - (z-24)\sqrt{z}\; I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) - \left(z^2 + 2\, z + 24\right) I_1\left(\sqrt{z}\right)^2\right)}{5\, z^3}$$

07.22.03.3205.01

$${}_1F_2\left(\frac{3}{2}; 2, 5; -z\right) = \frac{32\left(z\,(z+6)\, J_0\left(\sqrt{z}\right)^2 - \sqrt{z}\;(z+24)\, J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + \left(z^2 - 2\, z + 24\right) J_1\left(\sqrt{z}\right)^2\right)}{5\, z^3}$$

07.22.03.3206.01

$${}_1F_2\left(\frac{3}{2}; 2, \frac{11}{2}; z\right) = -\frac{1}{4096\, z^4}\left(315\left(4\left(2\, z\left(16\, z^2 - 40\, z + 525\right) I_0\left(2\sqrt{z}\right) - \sqrt{z}\;\left(16\, z^2 + 160\, z + 1575\right) I_1\left(2\sqrt{z}\right)\right) + \right.\right.$$
$$\left.\left.\pi\left(-64\, z^3 + 144\, z^2 - 540\, z + 1575\right) I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(64\, z^3 - 144\, z^2 + 540\, z - 1575\right) I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3207.01

$${}_1F_2\left(\frac{3}{2}; 2, \frac{11}{2}; -z\right) = \frac{1}{4096\, z^4}\left(315\left(4\left(2\, z\left(16\, z^2 + 40\, z + 525\right) J_0\left(2\sqrt{z}\right) + \sqrt{z}\,\left(-16\, z^2 + 160\, z - 1575\right) J_1\left(2\sqrt{z}\right)\right) + \right.$$
$$\left. \pi\left(64\, z^3 + 144\, z^2 + 540\, z + 1575\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(64\, z^3 + 144\, z^2 + 540\, z + 1575\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3208.01

$${}_1F_2\left(\frac{3}{2}; 2, 6; z\right) =$$
$$-\frac{1}{7\, z^4}\left(32\left(2\, z\left(z^2 - 3\, z + 72\right) I_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\,\left(z^2 + 24\, z + 288\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(-2\, z^3 + 5\, z^2 + 120\, z + 576\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.3209.01

$${}_1F_2\left(\frac{3}{2}; 2, 6; -z\right) =$$
$$\frac{1}{7\, z^4}\left(32\left(2\, z\left(z^2 + 3\, z + 72\right) J_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\,\left(z^2 - 24\, z + 288\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(2\, z^3 + 5\, z^2 - 120\, z + 576\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = \frac{3}{2}$, $b_1 = \frac{5}{2}$

07.22.03.0153.01

$${}_1F_2\left(\frac{3}{2}; \frac{5}{2}, \frac{5}{2}; z\right) == \frac{9}{8\, z^{3/2}}\left(\sinh\left(2\sqrt{z}\right) - \operatorname{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.3210.01

$${}_1F_2\left(\frac{3}{2}; \frac{5}{2}, \frac{5}{2}; -z\right) = -\frac{9\left(\sin\left(2\sqrt{z}\right) - \operatorname{Si}\left(2\sqrt{z}\right)\right)}{8\, z^{3/2}}$$

07.22.03.0154.01

$${}_1F_2\left(\frac{3}{2}; \frac{5}{2}, 3; z\right) == -\frac{3}{z^{3/2}}\left(2\sqrt{z}\; I_0\left(2\sqrt{z}\right) - 2\, I_1\left(2\sqrt{z}\right) + \pi\sqrt{z}\,\left(I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) - I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3211.01

$${}_1F_2\left(\frac{3}{2}; \frac{5}{2}, 3; -z\right) = \frac{3\, J_1\left(2\sqrt{z}\right)\left(\pi\sqrt{z}\; \boldsymbol{H}_0\left(2\sqrt{z}\right) - 2\right)}{z^{3/2}} - \frac{3\, J_0\left(2\sqrt{z}\right)\left(\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right) - 2\right)}{z}$$

07.22.03.0155.01

$${}_1F_2\left(\frac{3}{2}; \frac{5}{2}, \frac{7}{2}; z\right) == -\frac{45}{64\, z^{5/2}}\left(-6\sqrt{z}\,\cosh\left(2\sqrt{z}\right) + 3\sinh\left(2\sqrt{z}\right) + 4\, z\operatorname{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.3212.01

$${}_1F_2\left(\frac{3}{2}; \frac{5}{2}, \frac{7}{2}; -z\right) = \frac{45\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right) - 3\sin\left(2\sqrt{z}\right) + 4\, z\operatorname{Si}\left(2\sqrt{z}\right)\right)}{64\, z^{5/2}}$$

07.22.03.0156.01

$${}_1F_2\left(\frac{3}{2}; \frac{5}{2}, 4; z\right) == -\frac{6}{z^{5/2}}\left(\pi\, z^{3/2}\left(I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) - I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right)\right) + 2\,(z-1)\sqrt{z}\; I_0\left(2\sqrt{z}\right) + (2-z)\, I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3213.01

$${}_1F_2\left(\frac{3}{2}; \frac{5}{2}, 4; -z\right) = \frac{6\,J_1\left(2\sqrt{z}\right)\left(\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2} - z - 2\right)}{z^{5/2}} - \frac{6\,J_0\left(2\sqrt{z}\right)\left(\pi\,z\,\boldsymbol{H}_1\left(2\sqrt{z}\right) - 2\,(z+1)\right)}{z^2}$$

07.22.03.3214.01

$${}_1F_2\left(\frac{3}{2}; \frac{5}{2}, \frac{9}{2}; z\right) = \frac{315\left(-8\,\mathrm{Shi}\left(2\sqrt{z}\right)z^2 + 2\,(2\,z - 15)\cosh\left(2\sqrt{z}\right)\sqrt{z} + 3\,(6\,z+5)\sinh\left(2\sqrt{z}\right)\right)}{512\,z^{7/2}}$$

07.22.03.3215.01

$${}_1F_2\left(\frac{3}{2}; \frac{5}{2}, \frac{9}{2}; -z\right) = \frac{315\left(8\,\mathrm{Si}\left(2\sqrt{z}\right)z^2 + 2\,(2\,z + 15)\cos\left(2\sqrt{z}\right)\sqrt{z} + 3\,(6\,z-5)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{7/2}}$$

07.22.03.3216.01

$${}_1F_2\left(\frac{3}{2}; \frac{5}{2}, 5; z\right) = \frac{48\,I_1\left(2\sqrt{z}\right)\left(\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2} + z^2 + 4\,z + 9\right)}{5\,z^{7/2}} - \frac{24\,I_0\left(2\sqrt{z}\right)\left(2\,\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^2 + 4\,z^2 - z + 18\right)}{5\,z^3}$$

07.22.03.3217.01

$${}_1F_2\left(\frac{3}{2}; \frac{5}{2}, 5; -z\right) = \frac{48\,J_1\left(2\sqrt{z}\right)\left(\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2} - z^2 + 4\,z - 9\right)}{5\,z^{7/2}} - \frac{24\,J_0\left(2\sqrt{z}\right)\left(2\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^2 - 4\,z^2 - z - 18\right)}{5\,z^3}$$

07.22.03.3218.01

$${}_1F_2\left(\frac{3}{2}; \frac{5}{2}, \frac{11}{2}; z\right) = \frac{945\left(-8\,\mathrm{Shi}\left(2\sqrt{z}\right)z^3 + 2\left(2\,z^2 + 25\,z + 105\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(2\,z^2 - 165\,z - 105\right)\sinh\left(2\sqrt{z}\right)\right)}{1024\,z^{9/2}}$$

07.22.03.3219.01

$${}_1F_2\left(\frac{3}{2}; \frac{5}{2}, \frac{11}{2}; -z\right) = \frac{945\left(8\,\mathrm{Si}\left(2\sqrt{z}\right)z^3 + 2\left(2\,z^2 - 25\,z + 105\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(2\,z^2 + 165\,z - 105\right)\sin\left(2\sqrt{z}\right)\right)}{1024\,z^{9/2}}$$

07.22.03.3220.01

$${}_1F_2\left(\frac{3}{2}; \frac{5}{2}, 6; z\right) = \frac{1}{7\,z^{9/2}}$$
$$\left(24\left(I_1\left(2\sqrt{z}\right)\left(4\,\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{7/2} + 4\,z^3 + z^2 - 234\,z - 360\right) - 2\sqrt{z}\;I_0\left(2\sqrt{z}\right)\left(2\,\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^3 + 4\,z^3 - z^2 - 27\,z - 180\right)\right)\right)$$

07.22.03.3221.01

$${}_1F_2\left(\frac{3}{2}; \frac{5}{2}, 6; -z\right) = \frac{1}{7\,z^{9/2}}$$
$$\left(24\left(J_1\left(2\sqrt{z}\right)\left(4\,\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{7/2} - 4\,z^3 + z^2 + 234\,z - 360\right) - 2\sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(2\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^3 - 4\,z^3 - z^2 + 27\,z - 180\right)\right)\right)$$

For fixed z and $a_1 = \frac{3}{2}$, $b_1 = 3$

07.22.03.0157.01

$${}_1F_2\left(\frac{3}{2}; 3, 3; z\right) == \frac{8}{z^{3/2}}\left(\sqrt{z}\left(I_1\left(\sqrt{z}\right)^2 - I_0\left(\sqrt{z}\right)^2\right) + 2\,I_0\left(\sqrt{z}\right)I_1\left(\sqrt{z}\right)\right)$$

07.22.03.3222.01

$${}_1F_2\left(\frac{3}{2}; 3, 3; -z\right) = \frac{8\,J_0\left(\sqrt{z}\right)^2}{z} - \frac{16\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)}{z^{3/2}} + \frac{8\,J_1\left(\sqrt{z}\right)^2}{z}$$

07.22.03.0158.01

$${}_1F_2\left(\frac{3}{2}; 3, \frac{7}{2}; z\right) == -\frac{15}{8\,z^2}\left(8\,z\,I_0\left(2\sqrt{z}\right) - 4\sqrt{z}\;I_1\left(2\sqrt{z}\right) + \pi\,(4\,z+3)\left(I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) - I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3223.01

$${}_1F_2\left(\frac{3}{2}; 3, \frac{7}{2}; -z\right) =$$
$$\frac{1}{8\,z^2}\left(15\left(8\,z\,J_0\left(2\sqrt{z}\right) + \pi\,(3-4\,z)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)J_0\left(2\sqrt{z}\right) - 4\sqrt{z}\;J_1\left(2\sqrt{z}\right) + \pi\,(4\,z-3)\,J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.0159.01

$${}_1F_2\left(\frac{3}{2}; 3, 4; z\right) == \frac{16}{z^2}\left(-z\,I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\;I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) + (z+2)\,I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.3224.01

$${}_1F_2\left(\frac{3}{2}; 3, 4; -z\right) = \frac{16\left(z\,J_0\left(\sqrt{z}\right)^2 - \sqrt{z}\;J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + (z-2)\,J_1\left(\sqrt{z}\right)^2\right)}{z^2}$$

07.22.03.3225.01

$${}_1F_2\left(\frac{3}{2}; 3, \frac{9}{2}; z\right) =$$
$$-\frac{1}{128\,z^3}\left(105\left(4\left(2\,z\,(4\,z+5)\,I_0\left(2\sqrt{z}\right) - \sqrt{z}\;(4\,z+15)\,I_1\left(2\sqrt{z}\right)\right) + \pi\left(-16\,z^2-24\,z+15\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \right.$$
$$\left.\pi\left(16\,z^2+24\,z-15\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3226.01

$${}_1F_2\left(\frac{3}{2}; 3, \frac{9}{2}; -z\right) =$$
$$\frac{1}{128\,z^3}\left(105\left(4\left(2\,z\,(4\,z-5)\,J_0\left(2\sqrt{z}\right) + (15-4\,z)\sqrt{z}\;J_1\left(2\sqrt{z}\right)\right) + \pi\left(16\,z^2-24\,z-15\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) + \right.$$
$$\left.\pi\left(-16\,z^2+24\,z+15\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3227.01

$${}_1F_2\left(\frac{3}{2}; 3, 5; z\right) = -\frac{64\left(z\,(2\,z+3)\,I_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\;(z+6)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) - 2\left(z^2+2\,z-6\right)I_1\left(\sqrt{z}\right)^2\right)}{5\,z^3}$$

07.22.03.3228.01

$${}_1F_2\left(\frac{3}{2}; 3, 5; -z\right) = \frac{64\left(z\,(2\,z-3)\,J_0\left(\sqrt{z}\right)^2 - 2\,(z-6)\sqrt{z}\;J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + 2\left(z^2-2\,z-6\right)J_1\left(\sqrt{z}\right)^2\right)}{5\,z^3}$$

07.22.03.3229.01

$${}_1F_2\left(\frac{3}{2}; 3, \frac{11}{2}; z\right) =$$
$$\frac{1}{1024\,z^4}\left(315\left(-4\left(2\,z\left(16\,z^2+32\,z-105\right)I_0\left(2\sqrt{z}\right) + \sqrt{z}\;\left(-16\,z^2-40\,z+315\right)I_1\left(2\sqrt{z}\right)\right) + \pi\left(64\,z^3+144\,z^2-180\,z+315\right)\right.$$
$$\left.I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) - \pi\left(64\,z^3+144\,z^2-180\,z+315\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3230.01

$${}_1F_2\left(\frac{3}{2}; 3, \frac{11}{2}; -z\right) =$$
$$\frac{1}{1024\,z^4}\left(315\left(4\left(2\,z\left(16\,z^2-32\,z-105\right)J_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-16\,z^2+40\,z+315\right)J_1\left(2\sqrt{z}\right)\right)+\pi\left(64\,z^3-144\,z^2-180\,z-315\right)\right.\right.$$
$$\left.\left.J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+\pi\left(-64\,z^3+144\,z^2+180\,z+315\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3231.01

$${}_1F_2\left(\frac{3}{2}; 3, 6; z\right) =$$
$$-\frac{1}{7\,z^4}\left(64\left(z\left(4\,z^2+9\,z-48\right)I_0\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(z^2+3\,z-48\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\left(4\,z^3+11\,z^2+12\,z+192\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.3232.01

$${}_1F_2\left(\frac{3}{2}; 3, 6; -z\right) =$$
$$\frac{1}{7\,z^4}\left(64\left(z\left(4\,z^2-9\,z-48\right)J_0\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(z^2-3\,z-48\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(4\,z^3-11\,z^2+12\,z-192\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = \frac{3}{2}$, $b_1 = \frac{7}{2}$

07.22.03.0160.01

$${}_1F_2\left(\frac{3}{2}; \frac{7}{2}, \frac{7}{2}; z\right) == \frac{225}{128\,z^{5/2}}\left(2\sqrt{z}\,\cosh\left(2\sqrt{z}\right)+5\sinh\left(2\sqrt{z}\right)-2\,(2\,z+3)\,\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.3233.01

$${}_1F_2\left(\frac{3}{2}; \frac{7}{2}, \frac{7}{2}; -z\right) = \frac{225\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)+5\sin\left(2\sqrt{z}\right)+(4\,z-6)\,\mathrm{Si}\left(2\sqrt{z}\right)\right)}{128\,z^{5/2}}$$

07.22.03.0161.01

$${}_1F_2\left(\frac{3}{2}; \frac{7}{2}, 4; z\right) ==$$
$$-\frac{15}{4\,z^{5/2}}\left(4\left(2\sqrt{z}\,(z+2)\,I_0\left(2\sqrt{z}\right)-(z+4)\,I_1\left(2\sqrt{z}\right)\right)+\pi\sqrt{z}\,(4\,z+9)\left(I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)-I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3234.01

$${}_1F_2\left(\frac{3}{2}; \frac{7}{2}, 4; -z\right) = \frac{1}{4\,z^{5/2}}\left(15\left(4\left(2\,(z-2)\sqrt{z}\,J_0\left(2\sqrt{z}\right)-(z-4)\,J_1\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\pi\sqrt{z}\,(4\,z-9)\,J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+\pi\,(9-4\,z)\sqrt{z}\,J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3235.01

$${}_1F_2\left(\frac{3}{2}; \frac{7}{2}, \frac{9}{2}; z\right) = \frac{1575\left(2\sqrt{z}\,(2\,z+15)\cosh\left(2\sqrt{z}\right)+(2\,z-15)\sinh\left(2\sqrt{z}\right)-8\,z\,(z+3)\,\mathrm{Shi}\left(2\sqrt{z}\right)\right)}{1024\,z^{7/2}}$$

07.22.03.3236.01

$${}_1F_2\left(\frac{3}{2}; \frac{7}{2}, \frac{9}{2}; -z\right) = \frac{1575\left(2\sqrt{z}\,(2\,z-15)\cos\left(2\sqrt{z}\right)+(2\,z+15)\sin\left(2\sqrt{z}\right)+8\,(z-3)\,z\,\mathrm{Si}\left(2\sqrt{z}\right)\right)}{1024\,z^{7/2}}$$

07.22.03.3237.01

$${}_1F_2\left(\frac{3}{2}; \frac{7}{2}, 5; z\right) =$$
$$\frac{6\, I_1\left(2\sqrt{z}\right)\left(\pi\,(4z+15)\, \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{3/2} + 4\left(z^2+4z-6\right)\right)}{z^{7/2}} - \frac{6\, I_0\left(2\sqrt{z}\right)\left(4\left(2z^2+7z-6\right) + \pi z\,(4z+15)\, \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)}{z^3}$$

07.22.03.3238.01

$${}_1F_2\left(\frac{3}{2}; \frac{7}{2}, 5; -z\right) = \frac{1}{z^{7/2}}\left(6\left(\pi\,(4z-15)\, J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{3/2} + \right.\right.$$
$$\left.\left.\pi\,(15-4z)\, J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{3/2} + 4\left(\sqrt{z}\,\left(2z^2-7z-6\right) J_0\left(2\sqrt{z}\right) + \left(-z^2+4z+6\right) J_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3239.01

$${}_1F_2\left(\frac{3}{2}; \frac{7}{2}, \frac{11}{2}; z\right) =$$
$$\frac{1}{4096\, z^{9/2}}\left(4725\left(-8\,(2z+9)\, \mathrm{Shi}\left(2\sqrt{z}\right) z^2 + 2\left(4z^2+20z-105\right)\cosh\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^2+120z+105\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3240.01

$${}_1F_2\left(\frac{3}{2}; \frac{7}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{4096\, z^{9/2}}\left(4725\left(8\,(2z-9)\, \mathrm{Si}\left(2\sqrt{z}\right) z^2 + 2\left(4z^2-20z-105\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^2-120z+105\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3241.01

$${}_1F_2\left(\frac{3}{2}; \frac{7}{2}, 6; z\right) = \frac{1}{7\, z^{9/2}}\left(60\left(\pi\,(4z+21)\, I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) z^{5/2} - \pi\,(4z+21)\, I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) z^{5/2} + \right.\right.$$
$$\left.\left.2\left(\left(2z^3+11z^2+30z+72\right) I_1\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(2z^3+10z^2-3z+36\right) I_0\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3242.01

$${}_1F_2\left(\frac{3}{2}; \frac{7}{2}, 6; -z\right) = -\frac{1}{7\, z^{9/2}}\left(60\left(\pi\,(21-4z)\, J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) z^{5/2} + \pi\,(4z-21)\, J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) z^{5/2} + \right.\right.$$
$$\left.\left.2\left(2\sqrt{z}\,\left(-2z^3+10z^2+3z+36\right) J_0\left(2\sqrt{z}\right) + \left(2z^3-11z^2+30z-72\right) J_1\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{3}{2}$, $b_1 = 4$

07.22.03.0162.01

$${}_1F_2\left(\frac{3}{2}; 4, 4; z\right) == \frac{16}{z^{5/2}}\left(-2\sqrt{z}\,(z+3)\, I_0\left(\sqrt{z}\right)^2 + 2\,(z+6)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \sqrt{z}\,(2z+7)\, I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.3243.01

$${}_1F_2\left(\frac{3}{2}; 4, 4; -z\right) = \frac{32\,(z-3)\, J_0\left(\sqrt{z}\right)^2}{z^2} - \frac{32\,(z-6)\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right)}{z^{5/2}} + \frac{16\,(2z-7)\, J_1\left(\sqrt{z}\right)^2}{z^2}$$

07.22.03.3244.01

$${}_1F_2\left(\frac{3}{2}; 4, \frac{9}{2}; z\right) =$$
$$\frac{1}{64 z^3}\left(105\left(-4\left(2 z (4 z+17) I_0\left(2\sqrt{z}\right) - \sqrt{z}\ (4 z+19) I_1\left(2\sqrt{z}\right)\right) + \pi\left(16 z^2+72 z+45\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) - \right.\right.$$
$$\left.\left.\pi\left(16 z^2+72 z+45\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3245.01

$${}_1F_2\left(\frac{3}{2}; 4, \frac{9}{2}; -z\right) =$$
$$\frac{1}{64 z^3}\left(105\left(4\left(2 z (4 z-17) J_0\left(2\sqrt{z}\right) + (19-4 z)\sqrt{z}\ J_1\left(2\sqrt{z}\right)\right) + \pi\left(16 z^2-72 z+45\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) + \right.\right.$$
$$\left.\left.\pi\left(-16 z^2+72 z-45\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3246.01

$${}_1F_2\left(\frac{3}{2}; 4, 5; z\right) = -\frac{64\left(z (4 z+21) I_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\ (z+6) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \left(4 z^2+23 z+36\right) I_1\left(\sqrt{z}\right)^2\right)}{5 z^3}$$

07.22.03.3247.01

$${}_1F_2\left(\frac{3}{2}; 4, 5; -z\right) = \frac{64\left(z (4 z-21) J_0\left(\sqrt{z}\right)^2 - 4 (z-6)\sqrt{z}\ J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(4 z^2-23 z+36\right) J_1\left(\sqrt{z}\right)^2\right)}{5 z^3}$$

07.22.03.3248.01

$${}_1F_2\left(\frac{3}{2}; 4, \frac{11}{2}; z\right) =$$
$$-\frac{1}{512 z^4}\left(315\left(4\left(2 z\left(16 z^2+104 z+105\right) I_0\left(2\sqrt{z}\right) - \sqrt{z}\ \left(16 z^2+112 z+315\right) I_1\left(2\sqrt{z}\right)\right) - \pi\left(64 z^3+432 z^2+540 z-315\right)\right.\right.$$
$$\left.\left. I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(64 z^3+432 z^2+540 z-315\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3249.01

$${}_1F_2\left(\frac{3}{2}; 4, \frac{11}{2}; -z\right) =$$
$$\frac{1}{512 z^4}\left(315\left(4\left(2 z\left(16 z^2-104 z+105\right) J_0\left(2\sqrt{z}\right) + \sqrt{z}\ \left(-16 z^2+112 z-315\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(64 z^3-432 z^2+540 z+315\right)\right.\right.$$
$$\left.\left. J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(64 z^3-432 z^2+540 z+315\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3250.01

$${}_1F_2\left(\frac{3}{2}; 4, 6; z\right) =$$
$$-\frac{1}{7 z^4}\left(128\left(2 z\left(2 z^2+15 z+18\right) I_0\left(\sqrt{z}\right)^2 - \sqrt{z}\ \left(4 z^2+33 z+144\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - 2\left(2 z^3+16 z^2+27 z-72\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.3251.01

$${}_1F_2\left(\frac{3}{2}; 4, 6; -z\right) =$$
$$\frac{1}{7 z^4}\left(128\left(2 z\left(2 z^2-15 z+18\right) J_0\left(\sqrt{z}\right)^2 + \sqrt{z}\ \left(-4 z^2+33 z-144\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + 2\left(2 z^3-16 z^2+27 z+72\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = \frac{3}{2}$, $b_1 = \frac{9}{2}$

07.22.03.3252.01

$$ {}_1F_2\left(\frac{3}{2}; \frac{9}{2}, \frac{9}{2}; z\right) = \frac{11\,025\left(2\sqrt{z}\,(2z+13)\cosh\left(2\sqrt{z}\right) + (2z+47)\sinh\left(2\sqrt{z}\right) - 4\left(2z^2+12z+15\right)\operatorname{Shi}\left(2\sqrt{z}\right)\right)}{4096\,z^{7/2}} $$

07.22.03.3253.01

$$ {}_1F_2\left(\frac{3}{2}; \frac{9}{2}, \frac{9}{2}; -z\right) = \frac{11\,025\left(2\sqrt{z}\,(2z-13)\cos\left(2\sqrt{z}\right) + (2z-47)\sin\left(2\sqrt{z}\right) + \left(8z^2-48z+60\right)\operatorname{Si}\left(2\sqrt{z}\right)\right)}{4096\,z^{7/2}} $$

07.22.03.3254.01

$$ {}_1F_2\left(\frac{3}{2}; \frac{9}{2}, 5; z\right) = \frac{1}{8\,z^{7/2}}\left(21\left(\pi\sqrt{z}\,I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)(4z+15)^2 - \right.\right. $$
$$ \left.\left.\pi\sqrt{z}\,I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)(4z+15)^2 - 4\left(2\sqrt{z}\,\left(4z^2+29z+48\right)I_0\left(2\sqrt{z}\right) - \left(4z^2+31z+96\right)I_1\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.3255.01

$$ {}_1F_2\left(\frac{3}{2}; \frac{9}{2}, 5; -z\right) = \frac{1}{8\,z^{7/2}}\left(21\left(\pi\sqrt{z}\,J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)(15-4z)^2 - \right.\right. $$
$$ \left.\left.\pi\sqrt{z}\,J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)(15-4z)^2 + 4\left(2\sqrt{z}\,\left(4z^2-29z+48\right)J_0\left(2\sqrt{z}\right) + \left(-4z^2+31z-96\right)J_1\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.3256.01

$$ {}_1F_2\left(\frac{3}{2}; \frac{9}{2}, \frac{11}{2}; z\right) = $$
$$ \frac{1}{8192\,z^{9/2}}\left(33\,075\left(2\sqrt{z}\,\left(2z^2+19z+105\right)\cosh\left(2\sqrt{z}\right) + \left(2z^2+21z-105\right)\sinh\left(2\sqrt{z}\right) - 4z\left(2z^2+18z+45\right)\operatorname{Shi}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.3257.01

$$ {}_1F_2\left(\frac{3}{2}; \frac{9}{2}, \frac{11}{2}; -z\right) = $$
$$ \frac{1}{8192\,z^{9/2}}\left(33\,075\left(2\sqrt{z}\,\left(2z^2-19z+105\right)\cos\left(2\sqrt{z}\right) + \left(2z^2-21z-105\right)\sin\left(2\sqrt{z}\right) + 4z\left(2z^2-18z+45\right)\operatorname{Si}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.3258.01

$$ {}_1F_2\left(\frac{3}{2}; \frac{9}{2}, 6; z\right) = $$
$$ \frac{1}{4\,z^{9/2}}\left(15\left(\pi\left(16z^2+168z+525\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2} - \pi\left(16z^2+168z+525\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)z^{3/2} - 4\right.\right. $$
$$ \left.\left.\left(2\sqrt{z}\,\left(4z^3+41z^2+120z-96\right)I_0\left(2\sqrt{z}\right) - \left(4z^3+43z^2+144z-192\right)I_1\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.3259.01

$$ {}_1F_2\left(\frac{3}{2}; \frac{9}{2}, 6; -z\right) = $$
$$ \frac{1}{4\,z^{9/2}}\left(15\left(\pi\left(16z^2-168z+525\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2} + \pi\left(-16z^2+168z-525\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)z^{3/2} + \right.\right. $$
$$ \left.\left.4\left(2\sqrt{z}\,\left(4z^3-41z^2+120z+96\right)J_0\left(2\sqrt{z}\right) - \left(4z^3-43z^2+144z+192\right)J_1\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{3}{2}$, $b_1 = 5$

07.22.03.3260.01

$$ {}_1F_2\left(\frac{3}{2}; 5, 5; z\right) = -\frac{1}{25\, z^{7/2}}\left(512\left(2\sqrt{z}\,\left(2z^2+18z+45\right) I_0\left(\sqrt{z}\right)^2 - \left(4z^2+39z+180\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \sqrt{z}\,\left(4z^2+38z+111\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.3261.01

$$ {}_1F_2\left(\frac{3}{2}; 5, 5; -z\right) = \frac{1}{25\, z^{7/2}}\left(512\left(2\sqrt{z}\,\left(2z^2-18z+45\right) J_0\left(\sqrt{z}\right)^2 + \left(-4z^2+39z-180\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\,\left(4z^2-38z+111\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.3262.01

$$ {}_1F_2\left(\frac{3}{2}; 5, \frac{11}{2}; z\right) = \frac{1}{64\, z^4}\left(63\left(-4\left(2z\left(16z^2+176z+627\right) I_0\left(2\sqrt{z}\right) - \sqrt{z}\,\left(16z^2+184z+729\right) I_1\left(2\sqrt{z}\right)\right) + \pi\left(64z^3+720z^2+2700z+1575\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) - \pi\left(64z^3+720z^2+2700z+1575\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.3263.01

$$ {}_1F_2\left(\frac{3}{2}; 5, \frac{11}{2}; -z\right) = \frac{1}{64\, z^4}\left(63\left(4\left(2z\left(16z^2-176z+627\right) J_0\left(2\sqrt{z}\right) + \sqrt{z}\,\left(-16z^2+184z-729\right) J_1\left(2\sqrt{z}\right)\right) + \pi\left(64z^3-720z^2+2700z-1575\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) + \pi\left(-64z^3+720z^2-2700z+1575\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.3264.01

$$ {}_1F_2\left(\frac{3}{2}; 5, 6; z\right) = -\frac{1}{35\, z^4}\left(512\left(2z\left(4z^2+51z+225\right) I_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(2z^2+27z+135\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \left(8z^3+106z^2+507z+720\right) I_1\left(\sqrt{z}\right)^2\right)\right) $$

07.22.03.3265.01

$$ {}_1F_2\left(\frac{3}{2}; 5, 6; -z\right) = \frac{1}{35\, z^4}\left(512\left(2z\left(4z^2-51z+225\right) J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(2z^2-27z+135\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(8z^3-106z^2+507z-720\right) J_1\left(\sqrt{z}\right)^2\right)\right) $$

For fixed z and $a_1 = \frac{3}{2}$, $b_1 = \frac{11}{2}$

07.22.03.3266.01

$$ {}_1F_2\left(\frac{3}{2}; \frac{11}{2}, \frac{11}{2}; z\right) = \frac{1}{32\,768\, z^{9/2}}\left(99\,225\left(2\sqrt{z}\,\left(4z^2+56z+303\right)\cosh\left(2\sqrt{z}\right) + \left(4z^2+60z+957\right)\sinh\left(2\sqrt{z}\right) - 4\left(4z^3+54z^2+270z+315\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.3267.01

$${}_1F_2\left(\frac{3}{2}; \frac{11}{2}, \frac{11}{2}; -z\right) = \frac{1}{32\,768\,z^{9/2}}$$
$$\left(99\,225\left(2\sqrt{z}\,\left(4z^2-56z+303\right)\cos\left(2\sqrt{z}\right)+\left(4z^2-60z+957\right)\sin\left(2\sqrt{z}\right)+4\left(4z^3-54z^2+270z-315\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3268.01

$${}_1F_2\left(\frac{3}{2}; \frac{11}{2}, 6; z\right) =$$
$$\frac{1}{32\,z^{9/2}}\left(45\left(-4\left(2\sqrt{z}\,\left(16z^3+248z^2+1509z+2304\right)I_0\left(2\sqrt{z}\right)-\left(16z^3+256z^2+1647z+4608\right)I_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\sqrt{z}\,\left(64z^3+1008z^2+6300z+11\,025\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)-$$
$$\left.\pi\sqrt{z}\,\left(64z^3+1008z^2+6300z+11\,025\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3269.01

$${}_1F_2\left(\frac{3}{2}; \frac{11}{2}, 6; -z\right) =$$
$$\frac{1}{32\,z^{9/2}}\left(45\left(4\left(2\sqrt{z}\,\left(16z^3-248z^2+1509z-2304\right)J_0\left(2\sqrt{z}\right)+\left(-16z^3+256z^2-1647z+4608\right)J_1\left(2\sqrt{z}\right)\right)+\right.$$
$$\pi\sqrt{z}\,\left(64z^3-1008z^2+6300z-11\,025\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+$$
$$\left.\pi\sqrt{z}\,\left(-64z^3+1008z^2-6300z+11\,025\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = \frac{3}{2}$, $b_1 = 6$

07.22.03.3270.01

$${}_1F_2\left(\frac{3}{2}; 6, 6; z\right) =$$
$$-\frac{1}{49\,z^{9/2}}\left(512\left(\sqrt{z}\,\left(16z^3+288z^2+2181z+5040\right)I_0\left(\sqrt{z}\right)^2-4\left(4z^3+75z^2+606z+2520\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\sqrt{z}\,\left(16z^3+296z^2+2337z+6396\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.3271.01

$${}_1F_2\left(\frac{3}{2}; 6, 6; -z\right) =$$
$$\frac{1}{49\,z^{9/2}}\left(512\left(\sqrt{z}\,\left(16z^3-288z^2+2181z-5040\right)J_0\left(\sqrt{z}\right)^2-4\left(4z^3-75z^2+606z-2520\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{z}\,\left(16z^3-296z^2+2337z-6396\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = 2$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = 2$, $b_1 = -\frac{11}{2}$

07.22.03.3272.01

$${}_1F_2\left(2;-\frac{11}{2},-\frac{11}{2};z\right)=\frac{1}{108\,056\,025}$$
$$\left(2048\,\pi\,z^3\left(2\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^4+127\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2}+21\left(147\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3+10\left(175\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+1085\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)\right.\right.\right.\right.$$
$$\left.\left.\left.\left.z^2+3444\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+5124\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+2904\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+360\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.3273.01

$${}_1F_2\left(2;-\frac{11}{2},-\frac{11}{2};-z\right)=\frac{1}{108\,056\,025}\left(2048\,\pi\,z^3\right.$$
$$\left(2\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^4+127\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2}+21\left(147\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3+10\left(175\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+1085\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.\left.3444\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+5124\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+2904\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+360\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)$$

07.22.03.3274.01

$${}_1F_2\left(2;-\frac{11}{2},-\frac{9}{2};z\right)=$$
$$-\frac{1}{9\,823\,275}\left(1024\,\pi\,z^3\left(2\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2}+3\left(37\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3+70\left(11\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+109\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.540\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+1284\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+1272\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+360\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.3275.01

$${}_1F_2\left(2;-\frac{11}{2},-\frac{9}{2};-z\right)=$$
$$-\frac{1}{9\,823\,275}\left(1024\,\pi\,z^3\left(2\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2}+3\left(37\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3+70\left(11\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+109\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.540\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+1284\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+1272\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+360\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.3276.01

$${}_1F_2\left(2;-\frac{11}{2},-\frac{7}{2};z\right)=\frac{1}{1\,091\,475}\left(512\,\pi\,z^3\left(2\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3+5\left(19\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+\right.\right.\right.$$
$$\left.\left.\left.7\left(47\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+12\left(31\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+115\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+182\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+90\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.3277.01

$${}_1F_2\left(2;-\frac{11}{2},-\frac{7}{2};-z\right)=\frac{1}{1\,091\,475}\left(512\,\pi\,z^3\left(2\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3+5\left(19\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+\right.\right.\right.$$
$$\left.\left.\left.7\left(47\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+12\left(31\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+115\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+182\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+90\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.3278.01

$${}_1F_2\left(2;-\frac{11}{2},-\frac{5}{2};z\right)=-\frac{1}{155\,925}\left(256\,\pi\,z^3\left(2\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+79\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+\right.\right.$$
$$\left.\left.84\left(13\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+77\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+190\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+150\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3279.01

$${}_1F_2\left(2;-\frac{11}{2},-\frac{5}{2};-z\right)=-\frac{1}{155\,925}\left(256\,\pi\,z^3\left(2\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+79\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+\right.\right.$$
$$\left.\left.84\left(13\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+77\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+190\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+150\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3280.01

$${}_1F_2\left(2; -\frac{11}{2}, -\frac{3}{2}; z\right) =$$
$$\frac{1}{31\,185}\left(128\,\pi\, z^3\left(2\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2 + 21\left(3\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 31\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z + 122\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 150\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3281.01

$${}_1F_2\left(2; -\frac{11}{2}, -\frac{3}{2}; -z\right) =$$
$$\frac{1}{31\,185}\left(128\,\pi\, z^3\left(2\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2 + 21\left(3\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 31\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z + 122\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 150\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3282.01

$${}_1F_2\left(2; -\frac{11}{2}, -\frac{1}{2}; z\right) = -\frac{64\,\pi\, z^3\left(2\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 47\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z + 322\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 630\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)}{10\,395}$$

07.22.03.3283.01

$${}_1F_2\left(2; -\frac{11}{2}, -\frac{1}{2}; -z\right) = -\frac{64\,\pi\, z^3\left(2\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 47\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z + 322\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 630\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)}{10\,395}$$

07.22.03.3284.01

$${}_1F_2\left(2; -\frac{11}{2}, \frac{1}{2}; z\right) = \frac{32\,\pi\, z^3\left(2\,z\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right) + 31\sqrt{z}\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right) + 105\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)}{10\,395}$$

07.22.03.3285.01

$${}_1F_2\left(2; -\frac{11}{2}, \frac{1}{2}; -z\right) = \frac{32\,\pi\, z^3\left(2\,z\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right) + 31\sqrt{z}\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right) + 105\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)}{10\,395}$$

07.22.03.3286.01

$${}_1F_2\left(2; -\frac{11}{2}, 1; z\right) = \left(-\frac{416\,z^3}{10\,395} + \frac{18\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(32\,z^3 + 504\,z^2 - 3150\,z - 10\,395\right)\sinh\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.3287.01

$${}_1F_2\left(2; -\frac{11}{2}, 1; -z\right) = \left(\frac{416\,z^3}{10\,395} - \frac{18\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(32\,z^3 - 504\,z^2 - 3150\,z + 10\,395\right)\sin\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.3288.01

$${}_1F_2\left(2; -\frac{11}{2}, \frac{3}{2}; z\right) = \frac{1}{10\,395}\left(-512\,z^3 - 2736\,z^2 + 12\,840\,z +\right.$$
$$\left.32\,\pi\left(z^3 + 30\,z^2 - 360\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z} - 16\,\pi\left(17\,z^3 + 120\,z^2 - 360\,z - 720\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) + 10\,395\right)$$

07.22.03.3289.01

$${}_1F_2\left(2; -\frac{11}{2}, \frac{3}{2}; -z\right) = \frac{1}{10\,395}\left(512\,z^3 - 2736\,z^2 - 12\,840\,z +\right.$$
$$\left.32\,\pi\left(z^3 - 30\,z^2 + 360\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)\sqrt{z} - 16\,\pi\left(17\,z^3 - 120\,z^2 - 360\,z + 720\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 10\,395\right)$$

07.22.03.3290.01

$${}_1F_2\left(2; -\frac{11}{2}, 2; z\right) = \left(\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} + \frac{20\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16\,z^2 + 240\,z + 495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3291.01

$${}_1F_2\left(2;-\frac{11}{2},2;-z\right)=\left(-\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}-\frac{20\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\,\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3292.01

$${}_1F_2\left(2;-\frac{11}{2},\frac{5}{2};z\right)=\frac{1}{10\,395\sqrt{z}}\left(-\sqrt{z}\,\left(704\,z^3+12\,144\,z^2+33\,768\,z-10\,395\right)+\right.$$
$$\left.24\,\pi\sqrt{z}\,\left(2\,z^3+135\,z^2+1200\,z+2520\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)-120\,\pi\left(5\,z^3+120\,z^2+648\,z+1008\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3293.01

$${}_1F_2\left(2;-\frac{11}{2},\frac{5}{2};-z\right)=\frac{1}{10\,395\sqrt{z}}\left(\sqrt{z}\,\left(704\,z^3-12\,144\,z^2+33\,768\,z+10\,395\right)+\right.$$
$$\left.24\,\pi\sqrt{z}\,\left(2\,z^3-135\,z^2+1200\,z-2520\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)-120\,\pi\left(5\,z^3-120\,z^2+648\,z-1008\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3294.01

$${}_1F_2\left(2;-\frac{11}{2},3;z\right)=\frac{1}{20\,790\,z^2}\left(-15\left(256\,z^4+9408\,z^3+88\,704\,z^2+270\,270\,z+135\,135\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\,\left(128\,z^4+14\,400\,z^3+249\,480\,z^2+1\,351\,350\,z+2\,027\,025\right)\sinh\left(2\sqrt{z}\right)+2\,027\,025\right)$$

07.22.03.3295.01

$${}_1F_2\left(2;-\frac{11}{2},3;-z\right)=\frac{1}{20\,790\,z^2}\left(-15\left(256\,z^4-9408\,z^3+88\,704\,z^2-270\,270\,z+135\,135\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\,\left(128\,z^4-14\,400\,z^3+249\,480\,z^2-1\,351\,350\,z+2\,027\,025\right)\sin\left(2\sqrt{z}\right)+2\,027\,025\right)$$

07.22.03.3296.01

$${}_1F_2\left(2;-\frac{11}{2},\frac{7}{2};z\right)=$$
$$-\frac{1}{10\,395\,z}\left(z\left(896\,z^3+28\,080\,z^2+185\,400\,z-10\,395\right)-120\,\pi\sqrt{z}\,\left(z^3+117\,z^2+2100\,z+10\,080\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)+\right.$$
$$\left.180\,\pi\left(11\,z^3+500\,z^2+5880\,z+20\,160\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.3297.01

$${}_1F_2\left(2;-\frac{11}{2},\frac{7}{2};-z\right)=\frac{1}{10\,395\,z}\left(z\left(896\,z^3-28\,080\,z^2+185\,400\,z+10\,395\right)+\right.$$
$$\left.120\,\pi\sqrt{z}\,\left(z^3-117\,z^2+2100\,z-10\,080\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)-180\,\pi\left(11\,z^3-500\,z^2+5880\,z-20\,160\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.3298.01

$${}_1F_2\left(2;-\frac{11}{2},4;z\right)=\frac{1}{6930\,z^3}\left(\left(256\,z^5+51\,840\,z^4+1\,718\,640\,z^3+18\,918\,900\,z^2+66\,891\,825\,z+34\,459\,425\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.5\left(2\sqrt{z}\,\left(512\,z^4+34\,848\,z^3+648\,648\,z^2+4\,189\,185\,z+6\,891\,885\right)\sinh\left(2\sqrt{z}\right)-405\,405\,(z-17)\right)\right)$$

07.22.03.3299.01

$${}_1F_2\left(2;-\frac{11}{2},4;-z\right)=\frac{1}{6930\,z^3}\left(\left(256\,z^5-51\,840\,z^4+1\,718\,640\,z^3-18\,918\,900\,z^2+66\,891\,825\,z-34\,459\,425\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.5\left(405\,405\,(z+17)-2\sqrt{z}\,\left(512\,z^4-34\,848\,z^3+648\,648\,z^2-4\,189\,185\,z+6\,891\,885\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3300.01

$${}_1F_2\left(2;-\frac{11}{2},\frac{9}{2};z\right)=\frac{1}{10\,395\,z^{3/2}}\left(-\left(1088\,z^3+52\,080\,z^2+538\,440\,z-10\,395\right)z^{3/2}+\right.$$
$$\left.210\,\pi\left(2\,z^3+357\,z^2+10\,080\,z+75\,600\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z}-210\,\pi\left(41\,z^3+2940\,z^2+55\,440\,z+302\,400\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.3301.01

$${}_1F_2\left(2;-\frac{11}{2},\frac{9}{2};-z\right)=\frac{1}{10\,395\,z^{3/2}}\left(\left(1088\,z^3-52\,080\,z^2+538\,440\,z+10\,395\right)z^{3/2}+\right.$$
$$\left.210\,\pi\left(2\,z^3-357\,z^2+10\,080\,z-75\,600\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z}-210\,\pi\left(41\,z^3-2940\,z^2+55\,440\,z-302\,400\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.3302.01

$${}_1F_2\left(2;-\frac{11}{2},5;z\right)=\frac{1}{6930\,z^4}\left(2\,027\,025\left(2\,z^2-68\,z+969\right)-\right.$$
$$3\left(8704\,z^5+971\,520\,z^4+30\,270\,240\,z^3+345\,945\,600\,z^2+1\,263\,512\,250\,z+654\,729\,075\right)\cosh\left(2\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\,\left(512\,z^5+168\,960\,z^4+9\,266\,400\,z^3+174\,053\,880\,z^2+1\,171\,620\,450\,z+1\,964\,187\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3303.01

$${}_1F_2\left(2;-\frac{11}{2},5;-z\right)=\frac{1}{6930\,z^4}$$
$$\left(2\,027\,025\left(2\,z^2+68\,z+969\right)+3\left(8704\,z^5-971\,520\,z^4+30\,270\,240\,z^3-345\,945\,600\,z^2+1\,263\,512\,250\,z-654\,729\,075\right)\right.$$
$$\left.\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(512\,z^5-168\,960\,z^4+9\,266\,400\,z^3-174\,053\,880\,z^2+1\,171\,620\,450\,z-1\,964\,187\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3304.01

$${}_1F_2\left(2;-\frac{11}{2},\frac{11}{2};z\right)=$$
$$-\frac{1}{2079\,z^2}\left(\left(256\,z^3+17\,136\,z^2+246\,456\,z-2079\right)z^2-378\,\pi\left(z^3+252\,z^2+10\,080\,z+105\,840\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.1323\,\pi\left(7\,z^3+720\,z^2+19\,440\,z+151\,200\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.3305.01

$${}_1F_2\left(2;-\frac{11}{2},\frac{11}{2};-z\right)=\frac{1}{2079\,z^2}\left(\left(256\,z^3-17\,136\,z^2+246\,456\,z+2079\right)z^2+\right.$$
$$\left.378\,\pi\left(z^3-252\,z^2+10\,080\,z-105\,840\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}-1323\,\pi\left(7\,z^3-720\,z^2+19\,440\,z-151\,200\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.3306.01

$${}_1F_2\left(2;-\frac{11}{2},6;z\right)=$$
$$\frac{1}{1386\,z^5}\left(\left(1024\,z^6+515\,328\,z^5+43\,243\,200\,z^4+1\,271\,350\,080\,z^3+14\,472\,958\,500\,z^2+53\,033\,055\,075\,z+27\,498\,621\,150\right)\right.$$
$$\cosh\left(2\sqrt{z}\right)-3\left(2\sqrt{z}\,\left(5376\,z^5+915\,200\,z^4+43\,963\,920\,z^3+808\,647\,840\,z^2+5\,456\,075\,625\,z+9\,166\,207\,050\right)\right.$$
$$\left.\left.\sinh\left(2\sqrt{z}\right)-225\,225\left(2\,z^3-102\,z^2+2907\,z-40\,698\right)\right)\right)$$

07.22.03.3307.01

$${}_1F_2\left(2; -\frac{11}{2}, 6; -z\right) =$$
$$\frac{1}{1386\, z^5}\left(\left(-1024\, z^6 + 515\,328\, z^5 - 43\,243\,200\, z^4 + 1\,271\,350\,080\, z^3 - 14\,472\,958\,500\, z^2 + 53\,033\,055\,075\, z - 27\,498\,621\,150\right)\right.$$
$$\cos\left(2\sqrt{z}\right) + 3\left(225\,225\left(2\, z^3 + 102\, z^2 + 2907\, z + 40\,698\right) +\right.$$
$$\left.\left.2\sqrt{z}\left(5376\, z^5 - 915\,200\, z^4 + 43\,963\,920\, z^3 - 808\,647\,840\, z^2 + 5\,456\,075\,625\, z - 9\,166\,207\,050\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = -\frac{9}{2}$

07.22.03.3308.01

$${}_1F_2\left(2; -\frac{9}{2}, -\frac{9}{2}; z\right) =$$
$$\frac{1}{893\,025}\left(512\,\pi\, z^{5/2}\left(2\, \boldsymbol{L}_{-13}\left(2\sqrt{z}\right) z^{7/2} + 97\, \boldsymbol{L}_{-12}\left(2\sqrt{z}\right) z^3 + 6\left(288\, \boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^{5/2} + 5\left(475\, \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^2 +\right.\right.\right.\right.$$
$$\left.\left.\left.\left.4\left(470\, \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 837\, \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z + 552\, \boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 78\, \boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)$$

07.22.03.3309.01

$${}_1F_2\left(2; -\frac{9}{2}, -\frac{9}{2}; -z\right) =$$
$$\frac{1}{893\,025}\left(512\,\pi\, z^{5/2}\left(2\, \boldsymbol{H}_{-13}\left(2\sqrt{z}\right) z^{7/2} + 97\, \boldsymbol{H}_{-12}\left(2\sqrt{z}\right) z^3 + 6\left(288\, \boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^{5/2} + 5\left(475\, \boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^2 +\right.\right.\right.\right.$$
$$\left.\left.\left.\left.4\left(470\, \boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 837\, \boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z + 552\, \boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 78\, \boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)$$

07.22.03.3310.01

$${}_1F_2\left(2; -\frac{9}{2}, -\frac{7}{2}; z\right) = -\frac{1}{99\,225}\left(256\,\pi\, z^{5/2}\left(2\, \boldsymbol{L}_{-12}\left(2\sqrt{z}\right) z^3 + 83\, \boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^{5/2} +\right.\right.$$
$$\left.\left.30\left(41\, \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^2 + 270\, \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 800\, \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z + 948\, \boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 312\, \boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3311.01

$${}_1F_2\left(2; -\frac{9}{2}, -\frac{7}{2}; -z\right) = -\frac{1}{99\,225}\left(256\,\pi\, z^{5/2}\left(2\, \boldsymbol{H}_{-12}\left(2\sqrt{z}\right) z^3 + 83\, \boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^{5/2} +\right.\right.$$
$$\left.\left.30\left(41\, \boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^2 + 270\, \boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 800\, \boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z + 948\, \boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 312\, \boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3312.01

$${}_1F_2\left(2; -\frac{9}{2}, -\frac{5}{2}; z\right) = \frac{1}{14\,175}\left(128\,\pi\left(2\, \boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^5 +\right.\right.$$
$$\left.\left.3\left(23\, \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^2 + 4\left(68\, \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 335\, \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z + 660\, \boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 390\, \boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right) z^{5/2}\right)\right)$$

07.22.03.3313.01

$${}_1F_2\left(2; -\frac{9}{2}, -\frac{5}{2}; -z\right) = \frac{1}{14\,175}\left(128\,\pi\left(2\, \boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^5 +\right.\right.$$
$$\left.\left.3\left(23\, \boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^2 + 4\left(68\, \boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 335\, \boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z + 660\, \boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 390\, \boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right) z^{5/2}\right)\right)$$

07.22.03.3314.01

$${}_1F_2\left(2; -\frac{9}{2}, -\frac{3}{2}; z\right) =$$
$$-\frac{1}{2835}\left(64\,\pi\, z^{5/2}\left(2\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^2 + 55\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 6\left(81\,z\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right) + 265\sqrt{z}\;\boldsymbol{L}_{-7}\left(2\sqrt{z}\right) + 260\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3315.01

$${}_1F_2\left(2; -\frac{9}{2}, -\frac{3}{2}; -z\right) =$$
$$-\frac{1}{2835}\left(64\,\pi\, z^{5/2}\left(2\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^2 + 55\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 6\left(81\,z\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right) + 265\sqrt{z}\;\boldsymbol{H}_{-7}\left(2\sqrt{z}\right) + 260\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3316.01

$${}_1F_2\left(2; -\frac{9}{2}, -\frac{1}{2}; z\right) = \frac{32}{945}\,\pi\left(2\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^4 + \left(41\,z\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right) + 240\sqrt{z}\;\boldsymbol{L}_{-7}\left(2\sqrt{z}\right) + 390\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right) z^{5/2}\right)$$

07.22.03.3317.01

$${}_1F_2\left(2; -\frac{9}{2}, -\frac{1}{2}; -z\right) = \frac{32}{945}\,\pi\left(2\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^4 + \left(41\,z\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right) + 240\sqrt{z}\;\boldsymbol{H}_{-7}\left(2\sqrt{z}\right) + 390\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right) z^{5/2}\right)$$

07.22.03.3318.01

$${}_1F_2\left(2; -\frac{9}{2}, \frac{1}{2}; z\right) = -\frac{16}{945}\,\pi\, z^{5/2}\left(2\,z\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right) + 27\sqrt{z}\;\boldsymbol{L}_{-7}\left(2\sqrt{z}\right) + 78\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)$$

07.22.03.3319.01

$${}_1F_2\left(2; -\frac{9}{2}, \frac{1}{2}; -z\right) = -\frac{16}{945}\,\pi\, z^{5/2}\left(2\,z\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right) + 27\sqrt{z}\;\boldsymbol{H}_{-7}\left(2\sqrt{z}\right) + 78\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)$$

07.22.03.3320.01

$${}_1F_2\left(2; -\frac{9}{2}, 1; z\right) = \left(-\frac{32\,z^3}{945} - \frac{8\,z^2}{63} + \frac{14\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\,\left(64\,z^2 - 210\,z - 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3321.01

$${}_1F_2\left(2; -\frac{9}{2}, 1; -z\right) = \left(\frac{32\,z^3}{945} - \frac{8\,z^2}{63} - \frac{14\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\,\left(64\,z^2 + 210\,z - 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3322.01

$${}_1F_2\left(2; -\frac{9}{2}, \frac{3}{2}; z\right) =$$
$$\frac{1}{945}\left(-32\,z^3 - 336\,z^2 + 1000\,z + 8\,\pi\left(11\,z^2 + 12\,z - 120\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z} - 8\,\pi\left(2\,z^3 + 27\,z^2 - 48\,z - 120\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) + 945\right)$$

07.22.03.3323.01

$${}_1F_2\left(2; -\frac{9}{2}, \frac{3}{2}; -z\right) =$$
$$\frac{1}{945}\left(32\,z^3 - 336\,z^2 - 1000\,z + 8\,\pi\left(-11\,z^2 + 12\,z + 120\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)\sqrt{z} - 8\,\pi\left(2\,z^3 - 27\,z^2 - 48\,z + 120\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 945\right)$$

07.22.03.3324.01

$${}_1F_2\left(2; -\frac{9}{2}, 2; z\right) = \left(\frac{16\,z^2}{63} + \frac{16\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\,\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3325.01

$${}_1F_2\left(2;-\frac{9}{2},2;-z\right)=\left(\frac{16\,z^2}{63}-\frac{16\,z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\,\left(16\,z^2-420\,z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3326.01

$${}_1F_2\left(2;-\frac{9}{2},\frac{5}{2};z\right)=\frac{1}{945\sqrt{z}}\left(-\sqrt{z}\,\left(32\,z^3+912\,z^2+2472\,z-945\right)+\right.$$
$$\left.12\,\pi\sqrt{z}\,\left(17\,z^2+180\,z+360\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)-24\,\pi\left(z^3+42\,z^2+240\,z+360\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3327.01

$${}_1F_2\left(2;-\frac{9}{2},\frac{5}{2};-z\right)=\frac{1}{945\sqrt{z}}$$
$$\left(\sqrt{z}\,\left(32\,z^3-912\,z^2+2472\,z+945\right)-12\,\pi\sqrt{z}\,\left(17\,z^2-180\,z+360\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)-24\,\pi\left(z^3-42\,z^2+240\,z-360\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3328.01

$${}_1F_2\left(2;-\frac{9}{2},3;z\right)=\frac{1}{1890\,z^2}\left(-\left(128\,z^4+8512\,z^3+88\,200\,z^2+270\,270\,z+135\,135\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\,\left(736\,z^3+16\,128\,z^2+90\,090\,z+135\,135\right)\sinh\left(2\sqrt{z}\right)+135\,135\right)$$

07.22.03.3329.01

$${}_1F_2\left(2;-\frac{9}{2},3;-z\right)=\frac{1}{1890\,z^2}\left(\left(-128\,z^4+8512\,z^3-88\,200\,z^2+270\,270\,z-135\,135\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\,\left(736\,z^3-16\,128\,z^2+90\,090\,z-135\,135\right)\sin\left(2\sqrt{z}\right)+135\,135\right)$$

07.22.03.3330.01

$${}_1F_2\left(2;-\frac{9}{2},\frac{7}{2};z\right)=-\frac{1}{945\,z}\left(z\left(32\,z^3+1680\,z^2+11\,640\,z-945\right)-\right.$$
$$\left.30\,\pi\sqrt{z}\,\left(23\,z^2+510\,z+2520\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)+30\,\pi\left(2\,z^3+165\,z^2+2160\,z+7560\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.3331.01

$${}_1F_2\left(2;-\frac{9}{2},\frac{7}{2};-z\right)=\frac{1}{945\,z}\left(z\left(32\,z^3-1680\,z^2+11\,640\,z+945\right)-\right.$$
$$\left.30\,\pi\sqrt{z}\,\left(23\,z^2-510\,z+2520\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)-30\,\pi\left(2\,z^3-165\,z^2+2160\,z-7560\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.3332.01

$${}_1F_2\left(2;-\frac{9}{2},4;z\right)=\frac{1}{630\,z^3}\left(135\,135\,(z-15)+\left(2048\,z^4+90\,720\,z^3+1\,081\,080\,z^2+3\,918\,915\,z+2\,027\,025\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\,\left(64\,z^4+8352\,z^3+180\,180\,z^2+1\,216\,215\,z+2\,027\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3333.01

$${}_1F_2\left(2;-\frac{9}{2},4;-z\right)=\frac{1}{630\,z^3}\left(135\,135\,(z+15)+\left(-2048\,z^4+90\,720\,z^3-1\,081\,080\,z^2+3\,918\,915\,z-2\,027\,025\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\,\left(64\,z^4-8352\,z^3+180\,180\,z^2-1\,216\,215\,z+2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3334.01

$${}_1F_2\left(2;-\frac{9}{2},\frac{9}{2};z\right)=\frac{1}{945\,z^{3/2}}\left(-\left(32\,z^3+2640\,z^2+29\,960\,z-945\right)z^{3/2}+\right.$$
$$\left.105\,\pi\left(29\,z^2+1050\,z+8400\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z}\,-210\,\pi\left(z^3+135\,z^2+2940\,z+16\,800\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.3335.01

$${}_1F_2\left(2; -\frac{9}{2}, \frac{9}{2}; -z\right) = \frac{1}{945\, z^{3/2}} \left(\left(32\, z^3 - 2640\, z^2 + 29\,960\, z + 945\right) z^{3/2} - 105\, \pi \left(29\, z^2 - 1050\, z + 8400\right) \boldsymbol{H}_3\left(2\sqrt{z}\right) \sqrt{z} - 210\, \pi \left(z^3 - 135\, z^2 + 2940\, z - 16\,800\right) \boldsymbol{H}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.3336.01

$${}_1F_2\left(2; -\frac{9}{2}, 5; z\right) = \frac{1}{630\, z^4} \left(3 \left(45\,045 \left(2\, z^2 - 60\, z + 765\right) + 2\sqrt{z} \left(1792\, z^4 + 137\,280\, z^3 + 2\,882\,880\, z^2 + 20\,270\,250\, z + 34\,459\,425\right) \sinh\left(2\sqrt{z}\right)\right) - \left(512\, z^5 + 115\,200\, z^4 + 4\,324\,320\, z^3 + 52\,972\,920\, z^2 + 198\,648\,450\, z + 103\,378\,275\right) \cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.3337.01

$${}_1F_2\left(2; -\frac{9}{2}, 5; -z\right) = \frac{1}{630\, z^4} \left(\left(512\, z^5 - 115\,200\, z^4 + 4\,324\,320\, z^3 - 52\,972\,920\, z^2 + 198\,648\,450\, z - 103\,378\,275\right) \cos\left(2\sqrt{z}\right) - 3 \left(2\sqrt{z} \left(1792\, z^4 - 137\,280\, z^3 + 2\,882\,880\, z^2 - 20\,270\,250\, z + 34\,459\,425\right) \sin\left(2\sqrt{z}\right) - 45\,045 \left(2\, z^2 + 60\, z + 765\right)\right)\right)$$

07.22.03.3338.01

$${}_1F_2\left(2; -\frac{9}{2}, \frac{11}{2}; z\right) = \frac{1}{1890\, z^2} \left(-2 \left(32\, z^3 + 3792\, z^2 + 61\,656\, z - 945\right) z^2 + 6615\, \pi \left(5\, z^2 + 264\, z + 3024\right) \boldsymbol{L}_4\left(2\sqrt{z}\right) \sqrt{z} - 945\, \pi \left(2\, z^3 + 399\, z^2 + 12\,768\, z + 105\,840\right) \boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.3339.01

$${}_1F_2\left(2; -\frac{9}{2}, \frac{11}{2}; -z\right) = \frac{1}{1890\, z^2} \left(2 \left(32\, z^3 - 3792\, z^2 + 61\,656\, z + 945\right) z^2 - 6615\, \pi \left(5\, z^2 - 264\, z + 3024\right) \boldsymbol{H}_4\left(2\sqrt{z}\right) \sqrt{z} - 945\, \pi \left(2\, z^3 - 399\, z^2 + 12\,768\, z - 105\,840\right) \boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.3340.01

$${}_1F_2\left(2; -\frac{9}{2}, 6; z\right) = \frac{1}{126\, z^5} \left(45\,045 \left(2\, z^3 - 90\, z^2 + 2295\, z - 29\,070\right) + \left(13\,568\, z^5 + 1\,647\,360\, z^4 + 55\,495\,440\, z^3 + 670\,269\,600\, z^2 + 2\,515\,538\,025\, z + 1\,309\,458\,150\right) \cosh\left(2\sqrt{z}\right) - 2\sqrt{z} \left(256\, z^5 + 91\,520\, z^4 + 5\,456\,880\, z^3 + 109\,729\,620\, z^2 + 769\,593\,825\, z + 1\,309\,458\,150\right) \sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3341.01

$${}_1F_2\left(2; -\frac{9}{2}, 6; -z\right) = \frac{1}{126\, z^5} \left(45\,045 \left(2\, z^3 + 90\, z^2 + 2295\, z + 29\,070\right) + \left(13\,568\, z^5 - 1\,647\,360\, z^4 + 55\,495\,440\, z^3 - 670\,269\,600\, z^2 + 2\,515\,538\,025\, z - 1\,309\,458\,150\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z} \left(256\, z^5 - 91\,520\, z^4 + 5\,456\,880\, z^3 - 109\,729\,620\, z^2 + 769\,593\,825\, z - 1\,309\,458\,150\right) \sin\left(2\sqrt{z}\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = -\frac{7}{2}$

07.22.03.3342.01

$${}_1F_2\left(2; -\frac{7}{2}, -\frac{7}{2}; z\right) = \frac{1}{11\,025} \left(128\, \pi\, z^2 \left(2\, \boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^3 + 71\, \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^{5/2} + 5 \left(175\, \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^2 + 920\, \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z^{3/2} + 2040\, \boldsymbol{L}_{-7}\left(2\sqrt{z}\right) z + 1608\, \boldsymbol{L}_{-6}\left(2\sqrt{z}\right) \sqrt{z} + 264\, \boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3343.01

$${}_1F_2\left(2; -\frac{7}{2}, -\frac{7}{2}; -z\right) = \frac{1}{11\,025}\left(128\,\pi\,z^2\left(2\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^3 + 71\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 5\left(175\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^2 + 920\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 2040\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z + 1608\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 264\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3344.01

$${}_1F_2\left(2; -\frac{7}{2}, -\frac{5}{2}; z\right) = -\frac{1}{1575}\left(64\,\pi\,z^2\left(2\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 59\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^2 + 20\left(29\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 114\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z + 168\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 66\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3345.01

$${}_1F_2\left(2; -\frac{7}{2}, -\frac{5}{2}; -z\right) = -\frac{1}{1575}\left(64\,\pi\,z^2\left(2\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 59\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^2 + 20\left(29\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 114\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z + 168\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 66\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3346.01

$${}_1F_2\left(2; -\frac{7}{2}, -\frac{3}{2}; z\right) = \frac{32}{315}\,\pi\,z^2\left(2\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^2 + 47\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 345\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z + 900\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 660\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)$$

07.22.03.3347.01

$${}_1F_2\left(2; -\frac{7}{2}, -\frac{3}{2}; -z\right) = \frac{32}{315}\,\pi\,z^2\left(2\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^2 + 47\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 345\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z + 900\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 660\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)$$

07.22.03.3348.01

$${}_1F_2\left(2; -\frac{7}{2}, -\frac{1}{2}; z\right) = -\frac{16}{105}\,\pi\,z^2\left(2\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 5\left(7\,z\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right) + 34\sqrt{z}\;\boldsymbol{L}_{-6}\left(2\sqrt{z}\right) + 44\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3349.01

$${}_1F_2\left(2; -\frac{7}{2}, -\frac{1}{2}; -z\right) = -\frac{16}{105}\,\pi\,z^2\left(2\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 5\left(7\,z\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right) + 34\sqrt{z}\;\boldsymbol{H}_{-6}\left(2\sqrt{z}\right) + 44\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3350.01

$${}_1F_2\left(2; -\frac{7}{2}, \frac{1}{2}; z\right) = \frac{8}{105}\,\pi\,z^2\left(2\,z\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right) + 23\sqrt{z}\;\boldsymbol{L}_{-6}\left(2\sqrt{z}\right) + 55\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)$$

07.22.03.3351.01

$${}_1F_2\left(2; -\frac{7}{2}, \frac{1}{2}; -z\right) = \frac{8}{105}\,\pi\,z^2\left(2\,z\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right) + 23\sqrt{z}\;\boldsymbol{H}_{-6}\left(2\sqrt{z}\right) + 55\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)$$

07.22.03.3352.01

$${}_1F_2\left(2; -\frac{7}{2}, 1; z\right) = \left(-\frac{32\,z^2}{105} + \frac{10\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{105}\sqrt{z}\left(8\,z^2 - 10\,z - 105\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3353.01

$${}_1F_2\left(2; -\frac{7}{2}, 1; -z\right) = \left(-\frac{32\,z^2}{105} - \frac{10\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{105}\sqrt{z}\left(8\,z^2 + 10\,z - 105\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3354.01

$${}_1F_2\left(2;-\frac{7}{2},\frac{3}{2};z\right)=\frac{1}{105}\left(-48z^2+88z+8\pi\left(z^2+3z-12\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z}+4\pi\left(-7z^2+6z+24\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)+105\right)$$

07.22.03.3355.01

$${}_1F_2\left(2;-\frac{7}{2},\frac{3}{2};-z\right)=\frac{1}{105}\left(-48z^2-88z-8\pi\left(z^2-3z-12\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)\sqrt{z}+4\pi\left(7z^2+6z-24\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)+105\right)$$

07.22.03.3356.01

$${}_1F_2\left(2;-\frac{7}{2},2;z\right)=\left(\frac{16z^2}{105}+\frac{12z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\,(8z+21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3357.01

$${}_1F_2\left(2;-\frac{7}{2},2;-z\right)=\left(\frac{16z^2}{105}-\frac{12z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}(21-8z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.3358.01

$${}_1F_2\left(2;-\frac{7}{2},\frac{5}{2};z\right)=$$

$$\frac{1}{105\sqrt{z}}\left(\sqrt{z}\left(-80z^2-216z+105\right)+12\pi\sqrt{z}\left(z^2+16z+30\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)-6\pi\left(13z^2+84z+120\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3359.01

$${}_1F_2\left(2;-\frac{7}{2},\frac{5}{2};-z\right)=$$

$$\frac{1}{105\sqrt{z}}\left(\sqrt{z}\left(-80z^2+216z+105\right)-12\pi\sqrt{z}\left(z^2-16z+30\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)+6\pi\left(13z^2-84z+120\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3360.01

$${}_1F_2\left(2;-\frac{7}{2},3;z\right)=$$

$$\frac{1}{210z^2}\left(-\left(544z^3+6720z^2+20\,790z+10\,395\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\left(32z^3+1176z^2+6930z+10\,395\right)\sinh\left(2\sqrt{z}\right)+10\,395\right)$$

07.22.03.3361.01

$${}_1F_2\left(2;-\frac{7}{2},3;-z\right)=$$

$$\frac{1}{210z^2}\left(\left(544z^3-6720z^2+20\,790z-10\,395\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(32z^3-1176z^2+6930z-10\,395\right)\sin\left(2\sqrt{z}\right)+10\,395\right)$$

07.22.03.3362.01

$${}_1F_2\left(2;-\frac{7}{2},\frac{7}{2};z\right)=$$

$$\frac{1}{105z}\left(-7z\left(16z^2+120z-15\right)+30\pi\sqrt{z}\left(z^2+35z+180\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)-15\pi\left(19z^2+300z+1080\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.3363.01

$${}_1F_2\left(2;-\frac{7}{2},\frac{7}{2};-z\right)=$$

$$\frac{1}{105z}\left(7z\left(-16z^2+120z+15\right)-30\pi\sqrt{z}\left(z^2-35z+180\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)+15\pi\left(19z^2-300z+1080\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.3364.01

$${}_1F_2\left(2; -\frac{7}{2}, 4; z\right) = \frac{1}{70\,z^3}\left(10\,395\,(z-13) + \left(64\,z^4 + 5152\,z^3 + 69\,300\,z^2 + 259\,875\,z + 135\,135\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(400\,z^3 + 11\,088\,z^2 + 79\,695\,z + 135\,135\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3365.01

$${}_1F_2\left(2; -\frac{7}{2}, 4; -z\right) = \frac{1}{70\,z^3}\left(10\,395\,(z+13) + \left(-64\,z^4 + 5152\,z^3 - 69\,300\,z^2 + 259\,875\,z - 135\,135\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(400\,z^3 - 11\,088\,z^2 + 79\,695\,z - 135\,135\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3366.01

$${}_1F_2\left(2; -\frac{7}{2}, \frac{9}{2}; z\right) = \frac{1}{210\,z^{3/2}}\left(-2\left(144\,z^2 + 1880\,z - 105\right)z^{3/2} + 210\,\pi\left(z^2 + 60\,z + 525\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z} - 525\,\pi\left(5\,z^2 + 138\,z + 840\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.3367.01

$${}_1F_2\left(2; -\frac{7}{2}, \frac{9}{2}; -z\right) = \frac{1}{210\,z^{3/2}}\left(2\left(-144\,z^2 + 1880\,z + 105\right)z^{3/2} - 210\,\pi\left(z^2 - 60\,z + 525\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z} + 525\,\pi\left(5\,z^2 - 138\,z + 840\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.3368.01

$${}_1F_2\left(2; -\frac{7}{2}, 5; z\right) = \frac{1}{70\,z^4}\left(10\,395\left(2\,z^2 - 52\,z + 585\right) - \left(4352\,z^4 + 221\,760\,z^3 + 2\,993\,760\,z^2 + 11\,621\,610\,z + 6\,081\,075\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(128\,z^4 + 19\,008\,z^3 + 471\,240\,z^2 + 3\,513\,510\,z + 6\,081\,075\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3369.01

$${}_1F_2\left(2; -\frac{7}{2}, 5; -z\right) = \frac{1}{70\,z^4}\left(10\,395\left(2\,z^2 + 52\,z + 585\right) + \left(-4352\,z^4 + 221\,760\,z^3 - 2\,993\,760\,z^2 + 11\,621\,610\,z - 6\,081\,075\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(128\,z^4 - 19\,008\,z^3 + 471\,240\,z^2 - 3\,513\,510\,z + 6\,081\,075\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3370.01

$${}_1F_2\left(2; -\frac{7}{2}, \frac{11}{2}; z\right) = \frac{1}{420\,z^2}\left(-4\left(176\,z^2 + 3432\,z - 105\right)z^2 + 1890\,\pi\left(z^2 + 91\,z + 1176\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} - 945\,\pi\left(31\,z^2 + 1302\,z + 11\,760\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.3371.01

$${}_1F_2\left(2; -\frac{7}{2}, \frac{11}{2}; -z\right) = \frac{1}{420\,z^2}\left(4\left(-176\,z^2 + 3432\,z + 105\right)z^2 - 1890\,\pi\left(z^2 - 91\,z + 1176\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} + 945\,\pi\left(31\,z^2 - 1302\,z + 11\,760\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.3372.01

$${}_1F_2\left(2; -\frac{7}{2}, 6; z\right) = \frac{1}{14\,z^5}\left(\left(256\,z^5 + 63\,360\,z^4 + 2\,605\,680\,z^3 + 34\,054\,020\,z^2 + 131\,756\,625\,z + 68\,918\,850\right)\cosh\left(2\sqrt{z}\right) - 11\left(2\sqrt{z}\,\left(256\,z^4 + 21\,600\,z^3 + 491\,400\,z^2 + 3\,624\,075\,z + 6\,265\,350\right)\sinh\left(2\sqrt{z}\right) - 315\left(2\,z^3 - 78\,z^2 + 1755\,z - 19\,890\right)\right)\right)$$

07.22.03.3373.01

$${}_1F_2\left(2; -\frac{7}{2}, 6; -z\right) = \frac{1}{14\,z^5}\left(\left(256\,z^5 - 63\,360\,z^4 + 2\,605\,680\,z^3 - 34\,054\,020\,z^2 + 131\,756\,625\,z - 68\,918\,850\right)\cos\left(2\sqrt{z}\right) - 11\left(2\sqrt{z}\,\left(256\,z^4 - 21\,600\,z^3 + 491\,400\,z^2 - 3\,624\,075\,z + 6\,265\,350\right)\sin\left(2\sqrt{z}\right) - 315\left(2\,z^3 + 78\,z^2 + 1755\,z + 19\,890\right)\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = -\frac{5}{2}$

07.22.03.3374.01

$${}_1F_2\left(2; -\frac{5}{2}, -\frac{5}{2}; z\right) = \frac{32}{225}\pi \left(2\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^4 + \left(49\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^2 + 24\left(16\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^{3/2} + 47\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z + 46\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 9\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)\right)z^{3/2}\right)$$

07.22.03.3375.01

$${}_1F_2\left(2; -\frac{5}{2}, -\frac{5}{2}; -z\right) = \frac{32}{225}\pi \left(2\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^4 + \left(49\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^2 + 24\left(16\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^{3/2} + 47\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z + 46\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 9\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)\right)z^{3/2}\right)$$

07.22.03.3376.01

$${}_1F_2\left(2; -\frac{5}{2}, -\frac{3}{2}; z\right) = -\frac{16}{45}\pi z^{3/2}\left(2\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^2 + 39\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^{3/2} + 228\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z + 444\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 216\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)$$

07.22.03.3377.01

$${}_1F_2\left(2; -\frac{5}{2}, -\frac{3}{2}; -z\right) = -\frac{16}{45}\pi z^{3/2}\left(2\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^2 + 39\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^{3/2} + 228\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z + 444\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 216\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)$$

07.22.03.3378.01

$${}_1F_2\left(2; -\frac{5}{2}, -\frac{1}{2}; z\right) = \frac{8}{15}\pi \left(2\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^3 + \left(29\,z\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right) + 112\sqrt{z}\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right) + 108\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)z^{3/2}\right)$$

07.22.03.3379.01

$${}_1F_2\left(2; -\frac{5}{2}, -\frac{1}{2}; -z\right) = \frac{8}{15}\pi \left(2\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^3 + \left(29\,z\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right) + 112\sqrt{z}\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right) + 108\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)z^{3/2}\right)$$

07.22.03.3380.01

$${}_1F_2\left(2; -\frac{5}{2}, \frac{1}{2}; z\right) = -\frac{4}{15}\pi z^{3/2}\left(2\,z\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right) + 19\sqrt{z}\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right) + 36\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)$$

07.22.03.3381.01

$${}_1F_2\left(2; -\frac{5}{2}, \frac{1}{2}; -z\right) = -\frac{4}{15}\pi z^{3/2}\left(2\,z\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right) + 19\sqrt{z}\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right) + 36\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)$$

07.22.03.3382.01

$${}_1F_2\left(2; -\frac{5}{2}, 1; z\right) = \left(-\frac{8\,z^2}{15} + \frac{6\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\,(2\,z - 15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3383.01

$${}_1F_2\left(2; -\frac{5}{2}, 1; -z\right) = \left(-\frac{8\,z^2}{15} - \frac{6\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\,(2\,z + 15)\sin\left(2\sqrt{z}\right)$$

07.22.03.3384.01

$${}_1F_2\left(2; -\frac{5}{2}, \frac{3}{2}; z\right) = \frac{1}{15}\left(-8\,z^2 + 8\,z + 6\,\pi\,(z-2)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z} - 4\,\pi\left(z^2 - 3\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) + 15\right)$$

07.22.03.3385.01

$${}_1F_2\left(2; -\frac{5}{2}, \frac{3}{2}; -z\right) = \frac{1}{15}\left(-8\,z^2 - 8\,z + 6\,\pi\,(z+2)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)\sqrt{z} + 4\,\pi\left(z^2 - 3\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 15\right)$$

07.22.03.3386.01

$${}_1F_2\left(2; -\frac{5}{2}, 2; z\right) = \left(\frac{8\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,(4\,z + 15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3387.01

$${}_1F_2\left(2; -\frac{5}{2}, 2; -z\right) = \left(1 - \frac{8\,z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}(15 - 4\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.3388.01

$${}_1F_2\left(2; -\frac{5}{2}, \frac{5}{2}; z\right) = \frac{\sqrt{z}\left(-8\,z^2 - 24\,z + 15\right) + 3\,\pi\sqrt{z}\,(7\,z + 12)\,\boldsymbol{L}_1\left(2\sqrt{z}\right) - 6\,\pi\left(z^2 + 9\,z + 12\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)}{15\sqrt{z}}$$

07.22.03.3389.01

$${}_1F_2\left(2; -\frac{5}{2}, \frac{5}{2}; -z\right) = \frac{\sqrt{z}\left(-8\,z^2 + 24\,z + 15\right) + 3\,\pi\sqrt{z}\,(7\,z - 12)\,\boldsymbol{H}_1\left(2\sqrt{z}\right) + 6\,\pi\left(z^2 - 9\,z + 12\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)}{15\sqrt{z}}$$

07.22.03.3390.01

$${}_1F_2\left(2; -\frac{5}{2}, 3; z\right) = \frac{3\left(2\sqrt{z}\,\left(32\,z^2 + 210\,z + 315\right)\sinh\left(2\sqrt{z}\right) + 315\right) - \left(32\,z^3 + 600\,z^2 + 1890\,z + 945\right)\cosh\left(2\sqrt{z}\right)}{30\,z^2}$$

07.22.03.3391.01

$${}_1F_2\left(2; -\frac{5}{2}, 3; -z\right) = \frac{\left(32\,z^3 - 600\,z^2 + 1890\,z - 945\right)\cos\left(2\sqrt{z}\right) + 3\left(315 - 2\sqrt{z}\,\left(32\,z^2 - 210\,z + 315\right)\sin\left(2\sqrt{z}\right)\right)}{30\,z^2}$$

07.22.03.3392.01

$${}_1F_2\left(2; -\frac{5}{2}, \frac{7}{2}; z\right) = \frac{15\,\pi\sqrt{z}\,(11\,z + 60)\,\boldsymbol{L}_2\left(2\sqrt{z}\right) - 2\left(z\left(8\,z^2 + 72\,z - 15\right) + 15\,\pi\left(z^2 + 24\,z + 90\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)}{30\,z}$$

07.22.03.3393.01

$${}_1F_2\left(2; -\frac{5}{2}, \frac{7}{2}; -z\right) = \frac{15\,\pi\sqrt{z}\,(11\,z - 60)\,\boldsymbol{H}_2\left(2\sqrt{z}\right) + 2\left(z\left(-8\,z^2 + 72\,z + 15\right) + 15\,\pi\left(z^2 - 24\,z + 90\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)}{30\,z}$$

07.22.03.3394.01

$${}_1F_2\left(2; -\frac{5}{2}, 4; z\right) = \frac{1}{10\,z^3}$$
$$\left(945\,(z-11) + \left(304\,z^3 + 5040\,z^2 + 19\,845\,z + 10\,395\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,z^3 + 756\,z^2 + 5985\,z + 10\,395\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3395.01

$${}_1F_2\left(2; -\frac{5}{2}, 4; -z\right) =$$
$$\frac{1}{10\,z^3}\left(945\,(z+11) + \left(304\,z^3 - 5040\,z^2 + 19\,845\,z - 10\,395\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^3 - 756\,z^2 + 5985\,z - 10\,395\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3396.01

$${}_1F_2\left(2; -\frac{5}{2}, \frac{9}{2}; z\right) = \frac{1575\,\pi\,\sqrt{z}\,(z+10)\,\boldsymbol{L}_3\left(2\sqrt{z}\right) - 2\left(2\left(8\,z^2 + 136\,z - 15\right)z^{3/2} + 105\,\pi\left(z^2 + 45\,z + 300\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)}{60\,z^{3/2}}$$

07.22.03.3397.01

$${}_1F_2\left(2; -\frac{5}{2}, \frac{9}{2}; -z\right) = \frac{4\left(-8\,z^2 + 136\,z + 15\right)z^{3/2} + 1575\,\pi\,(z-10)\,\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z} + 210\,\pi\left(z^2 - 45\,z + 300\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)}{60\,z^{3/2}}$$

07.22.03.3398.01

$${}_1F_2\left(2; -\frac{5}{2}, 5; z\right) = \frac{1}{10\,z^4}\left(9\left(105\left(2\,z^2 - 44\,z + 429\right) + 2\sqrt{z}\,\left(96\,z^3 + 3136\,z^2 + 25\,410\,z + 45\,045\right)\sinh\left(2\sqrt{z}\right)\right) -$$
$$\left(128\,z^4 + 12\,096\,z^3 + 189\,000\,z^2 + 769\,230\,z + 405\,405\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.3399.01

$${}_1F_2\left(2; -\frac{5}{2}, 5; -z\right) = \frac{1}{10\,z^4}\left(\left(-128\,z^4 + 12\,096\,z^3 - 189\,000\,z^2 + 769\,230\,z - 405\,405\right)\cos\left(2\sqrt{z}\right) +$$
$$9\left(105\left(2\,z^2 + 44\,z + 429\right) + 2\sqrt{z}\,\left(96\,z^3 - 3136\,z^2 + 25\,410\,z - 45\,045\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3400.01

$${}_1F_2\left(2; -\frac{5}{2}, \frac{11}{2}; z\right) = \frac{945\,\pi\,\sqrt{z}\,(19\,z + 294)\,\boldsymbol{L}_4\left(2\sqrt{z}\right) - 2\left(4\left(8\,z^2 + 216\,z - 15\right)z^2 + 945\,\pi\left(z^2 + 72\,z + 735\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)}{120\,z^2}$$

07.22.03.3401.01

$${}_1F_2\left(2; -\frac{5}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{120\,z^2}\left(945\,\pi\,\sqrt{z}\,(19\,z - 294)\,\boldsymbol{H}_4\left(2\sqrt{z}\right) + 2\left(4\left(-8\,z^2 + 216\,z + 15\right)z^2 + 945\,\pi\left(z^2 - 72\,z + 735\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3402.01

$${}_1F_2\left(2; -\frac{5}{2}, 6; z\right) =$$
$$\frac{1}{2\,z^5}\left(315\left(2\,z^3 - 66\,z^2 + 1287\,z - 12\,870\right) + 9\left(256\,z^4 + 14\,560\,z^3 + 212\,520\,z^2 + 855\,855\,z + 450\,450\right)\cosh\left(2\sqrt{z}\right) -$$
$$2\sqrt{z}\,\left(64\,z^4 + 10\,656\,z^3 + 291\,060\,z^2 + 2\,297\,295\,z + 4\,054\,050\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3403.01

$${}_1F_2\left(2; -\frac{5}{2}, 6; -z\right) =$$
$$\frac{1}{2\,z^5}\left(315\left(2\,z^3+66\,z^2+1287\,z+12\,870\right)-9\left(256\,z^4-14\,560\,z^3+212\,520\,z^2-855\,855\,z+450\,450\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(64\,z^4-10\,656\,z^3+291\,060\,z^2-2\,297\,295\,z+4\,054\,050\right)\sin\left(2\sqrt{z}\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = -\frac{3}{2}$

07.22.03.3404.01

$${}_1F_2\left(2; -\frac{3}{2}, -\frac{3}{2}; z\right) = \frac{8}{9}\pi z\left(2\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^2+31\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{3/2}+135\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z+174\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\sqrt{z}+42\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)\right)$$

07.22.03.3405.01

$${}_1F_2\left(2; -\frac{3}{2}, -\frac{3}{2}; -z\right) = \frac{8}{9}\pi z\left(2\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^2+31\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{3/2}+135\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z+174\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\sqrt{z}+42\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)\right)$$

07.22.03.3406.01

$${}_1F_2\left(2; -\frac{3}{2}, -\frac{1}{2}; z\right) = -\frac{4}{3}\pi z\left(2\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{3/2}+23\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z+66\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\sqrt{z}+42\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)\right)$$

07.22.03.3407.01

$${}_1F_2\left(2; -\frac{3}{2}, -\frac{1}{2}; -z\right) = -\frac{4}{3}\pi z\left(2\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{3/2}+23\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z+66\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\sqrt{z}+42\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)\right)$$

07.22.03.3408.01

$${}_1F_2\left(2; -\frac{3}{2}, \frac{1}{2}; z\right) = \frac{2}{3}\pi z\left(2\,z\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)+15\sqrt{z}\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)+21\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)\right)$$

07.22.03.3409.01

$${}_1F_2\left(2; -\frac{3}{2}, \frac{1}{2}; -z\right) = \frac{2}{3}\pi z\left(2\,z\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)+15\sqrt{z}\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)+21\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)\right)$$

07.22.03.3410.01

$${}_1F_2\left(2; -\frac{3}{2}, 1; z\right) = \left(\frac{2\,z}{3}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{3}\sqrt{z}\,(2\,z-3)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3411.01

$${}_1F_2\left(2; -\frac{3}{2}, 1; -z\right) = \left(1-\frac{2\,z}{3}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{3}\sqrt{z}\,(2\,z+3)\sin\left(2\sqrt{z}\right)$$

07.22.03.3412.01

$${}_1F_2\left(2; -\frac{3}{2}, \frac{3}{2}; z\right) = \frac{2}{3}\pi(z-1)\sqrt{z}\,\boldsymbol{L}_0\left(2\sqrt{z}\right)-\frac{1}{3}\pi(z-2)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)+1$$

07.22.03.3413.01

$${}_1F_2\left(2; -\frac{3}{2}, \frac{3}{2}; -z\right) = \frac{2}{3}\pi\sqrt{z}\,(z+1)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)-\frac{1}{3}\pi(z+2)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)+1$$

07.22.03.3414.01

$${}_1F_2\left(2; -\frac{3}{2}, 2; z\right) = \left(\frac{4\,z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.3415.01

$${}_1F_2\left(2; -\frac{3}{2}, 2; -z\right) = \left(1 - \frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.3416.01

$${}_1F_2\left(2; -\frac{3}{2}, \frac{5}{2}; z\right) = \frac{2\sqrt{z}\,(3-4z) + 3\pi\sqrt{z}\,(2z+3)\,\boldsymbol{L}_1\left(2\sqrt{z}\right) - 3\pi(5z+6)\,\boldsymbol{L}_2\left(2\sqrt{z}\right)}{6\sqrt{z}}$$

07.22.03.3417.01

$${}_1F_2\left(2; -\frac{3}{2}, \frac{5}{2}; -z\right) = \frac{2\sqrt{z}\,(4z+3) + 3\pi\sqrt{z}\,(2z-3)\,\boldsymbol{H}_1\left(2\sqrt{z}\right) - 3\pi(5z-6)\,\boldsymbol{H}_2\left(2\sqrt{z}\right)}{6\sqrt{z}}$$

07.22.03.3418.01

$${}_1F_2\left(2; -\frac{3}{2}, 3; z\right) = \frac{-\left(64z^2+210z+105\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(8z^2+70z+105\right)\sinh\left(2\sqrt{z}\right) + 105}{6z^2}$$

07.22.03.3419.01

$${}_1F_2\left(2; -\frac{3}{2}, 3; -z\right) = \frac{\left(-64z^2+210z-105\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(8z^2-70z+105\right)\sin\left(2\sqrt{z}\right) + 105}{6z^2}$$

07.22.03.3420.01

$${}_1F_2\left(2; -\frac{3}{2}, \frac{7}{2}; z\right) = \frac{4(3-8z)z + 30\pi(z+6)\,\boldsymbol{L}_2\left(2\sqrt{z}\right)\sqrt{z} - 135\pi(z+4)\,\boldsymbol{L}_3\left(2\sqrt{z}\right)}{12z}$$

07.22.03.3421.01

$${}_1F_2\left(2; -\frac{3}{2}, \frac{7}{2}; -z\right) = \frac{4z(8z+3) + 30\pi(z-6)\sqrt{z}\,\boldsymbol{H}_2\left(2\sqrt{z}\right) - 135\pi(z-4)\,\boldsymbol{H}_3\left(2\sqrt{z}\right)}{12z}$$

07.22.03.3422.01

$${}_1F_2\left(2; -\frac{3}{2}, 4; z\right) = \frac{1}{2z^3}\left(\left(16z^3+420z^2+1785z+945\right)\cosh\left(2\sqrt{z}\right) - 7\left(2\sqrt{z}\,\left(8z^2+75z+135\right)\sinh\left(2\sqrt{z}\right) - 15(z-9)\right)\right)$$

07.22.03.3423.01

$${}_1F_2\left(2; -\frac{3}{2}, 4; -z\right) = \frac{\left(16z^3-420z^2+1785z-945\right)\cos\left(2\sqrt{z}\right) + 7\left(15(z+9) - 2\sqrt{z}\,\left(8z^2-75z+135\right)\sin\left(2\sqrt{z}\right)\right)}{2z^3}$$

07.22.03.3424.01

$${}_1F_2\left(2; -\frac{3}{2}, \frac{9}{2}; z\right) = \frac{8(1-4z)z^{3/2} + 35\pi(2z+25)\,\boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z} - 35\pi(13z+100)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.3425.01

$${}_1F_2\left(2; -\frac{3}{2}, \frac{9}{2}; -z\right) = \frac{8(4z+1)z^{3/2} + 35\pi(2z-25)\,\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z} + 35\pi(100-13z)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.3426.01

$${}_1F_2\left(2; -\frac{3}{2}, 5; z\right) = \frac{1}{2z^4}\left(105\left(2z^2-36z+297\right) - 21\left(32z^3+640z^2+2790z+1485\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(32z^3+1848z^2+17\,010z+31\,185\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3427.01

$${}_1F_2\left(2; -\frac{3}{2}, 5; -z\right) = \frac{1}{2\,z^4}\left(105\left(2\,z^2+36\,z+297\right)+ 21\left(32\,z^3-640\,z^2+2790\,z-1485\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(32\,z^3-1848\,z^2+17\,010\,z-31\,185\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3428.01

$${}_1F_2\left(2; -\frac{3}{2}, \frac{11}{2}; z\right) = \frac{16\,(3-16\,z)\,z^2+1890\,\pi\,(z+21)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}\,-945\,\pi\,(17\,z+210)\,\boldsymbol{L}_5\left(2\sqrt{z}\right)}{48\,z^2}$$

07.22.03.3429.01

$${}_1F_2\left(2; -\frac{3}{2}, \frac{11}{2}; -z\right) = \frac{16\,(16\,z+3)\,z^2+1890\,\pi\,(z-21)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}\,-945\,\pi\,(17\,z-210)\,\boldsymbol{H}_5\left(2\sqrt{z}\right)}{48\,z^2}$$

07.22.03.3430.01

$${}_1F_2\left(2; -\frac{3}{2}, 6; z\right) = \frac{1}{2\,z^5}\left(5\left(35\left(2\,z^3-54\,z^2+891\,z-7722\right)+\left(64\,z^4+6944\,z^3+119\,700\,z^2+509\,355\,z+270\,270\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(464\,z^3+17\,136\,z^2+148\,995\,z+270\,270\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3431.01

$${}_1F_2\left(2; -\frac{3}{2}, 6; -z\right) = -\frac{1}{2\,z^5}\left(5\left(-35\left(2\,z^3+54\,z^2+891\,z+7722\right)+\left(64\,z^4-6944\,z^3+119\,700\,z^2-509\,355\,z+270\,270\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(464\,z^3-17\,136\,z^2+148\,995\,z-270\,270\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = -\frac{1}{2}$

07.22.03.3432.01

$${}_1F_2\left(2; -\frac{1}{2}, -\frac{1}{2}; z\right) = 2\,\pi\left(2\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z^2+17\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)z^{3/2}+32\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)z+10\,\boldsymbol{L}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)$$

07.22.03.3433.01

$${}_1F_2\left(2; -\frac{1}{2}, -\frac{1}{2}; -z\right) = 2\,\pi\left(2\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z^2+17\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)z^{3/2}+32\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)z+10\,\boldsymbol{H}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)$$

07.22.03.3434.01

$${}_1F_2\left(2; -\frac{1}{2}, \frac{1}{2}; z\right) = -\pi\left(2\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)z^{3/2}+11\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)z+10\,\boldsymbol{L}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)$$

07.22.03.3435.01

$${}_1F_2\left(2; -\frac{1}{2}, \frac{1}{2}; -z\right) = -\pi\left(2\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)z^{3/2}+11\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)z+10\,\boldsymbol{H}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)$$

07.22.03.3436.01

$${}_1F_2\left(2; -\frac{1}{2}, 1; z\right) = (1-2\,z)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.3437.01

$${}_1F_2\left(2; -\frac{1}{2}, 1; -z\right) = (2z+1)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.3438.01

$${}_1F_2\left(2; -\frac{1}{2}, \frac{3}{2}; z\right) = \frac{1}{2}\left(-\pi\sqrt{z}\,\boldsymbol{L}_0\left(2\sqrt{z}\right) - (2z-1)\left(\pi\boldsymbol{L}_1\left(2\sqrt{z}\right)+2\right)\right)$$

07.22.03.3439.01

$${}_1F_2\left(2; -\frac{1}{2}, \frac{3}{2}; -z\right) = \frac{1}{2}\left(\pi\sqrt{z}\,\boldsymbol{H}_0\left(2\sqrt{z}\right) - (2z+1)\left(\pi\boldsymbol{H}_1\left(2\sqrt{z}\right)-2\right)\right)$$

07.22.03.3440.01

$${}_1F_2\left(2; -\frac{1}{2}, 2; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.3441.01

$${}_1F_2\left(2; -\frac{1}{2}, 2; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.3442.01

$${}_1F_2\left(2; -\frac{1}{2}, \frac{5}{2}; z\right) = -2z + \frac{3}{4}\pi\boldsymbol{L}_1\left(2\sqrt{z}\right) + 1 - \frac{3\pi(z+1)\boldsymbol{L}_2\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.3443.01

$${}_1F_2\left(2; -\frac{1}{2}, \frac{5}{2}; -z\right) = 2z - \frac{3}{4}\pi\boldsymbol{H}_1\left(2\sqrt{z}\right) + 1 - \frac{3\pi(z-1)\boldsymbol{H}_2\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.3444.01

$${}_1F_2\left(2; -\frac{1}{2}, 3; z\right) = \frac{5\left(2\sqrt{z}\,(2z+3)\sinh\left(2\sqrt{z}\right)+3\right) - \left(8z^2+30z+15\right)\cosh\left(2\sqrt{z}\right)}{2z^2}$$

07.22.03.3445.01

$${}_1F_2\left(2; -\frac{1}{2}, 3; -z\right) = \frac{\left(-8z^2+30z-15\right)\cos\left(2\sqrt{z}\right) + 5\left(2\sqrt{z}\,(2z-3)\sin\left(2\sqrt{z}\right)+3\right)}{2z^2}$$

07.22.03.3446.01

$${}_1F_2\left(2; -\frac{1}{2}, \frac{7}{2}; z\right) = \frac{8(1-2z)z + 45\pi\boldsymbol{L}_2\left(2\sqrt{z}\right)\sqrt{z} - 15\pi(2z+9)\boldsymbol{L}_3\left(2\sqrt{z}\right)}{8z}$$

07.22.03.3447.01

$${}_1F_2\left(2; -\frac{1}{2}, \frac{7}{2}; -z\right) = \frac{8z(2z+1) - 45\pi\sqrt{z}\,\boldsymbol{H}_2\left(2\sqrt{z}\right) - 15\pi(2z-9)\boldsymbol{H}_3\left(2\sqrt{z}\right)}{8z}$$

07.22.03.3448.01

$${}_1F_2\left(2; -\frac{1}{2}, 4; z\right) = \frac{3\left(15(z-7) + 5\left(8z^2+39z+21\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(4z^2+55z+105\right)\sinh\left(2\sqrt{z}\right)\right)}{2z^3}$$

07.22.03.3449.01

$${}_1F_2\left(2; -\frac{1}{2}, 4; -z\right) = \frac{45(z+7) - 15\left(8z^2-39z+21\right)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(4z^2-55z+105\right)\sin\left(2\sqrt{z}\right)}{2z^3}$$

07.22.03.3450.01

$${}_1F_2\left(2; -\frac{1}{2}, \frac{9}{2}; z\right) = -2z + 1 + \frac{525\pi \boldsymbol{L}_3\left(2\sqrt{z}\right)}{16z} - \frac{105\pi(z+10)\boldsymbol{L}_4\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.3451.01

$${}_1F_2\left(2; -\frac{1}{2}, \frac{9}{2}; -z\right) = 2z + 1 - \frac{525\pi \boldsymbol{H}_3\left(2\sqrt{z}\right)}{16z} - \frac{105\pi(z-10)\boldsymbol{H}_4\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.3452.01

$${}_1F_2\left(2; -\frac{1}{2}, 5; z\right) = -\frac{1}{2z^4}$$
$$\left(3\left(-15\left(2z^2 - 28z + 189\right) + \left(32z^3 + 1080z^2 + 5250z + 2835\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(128z^2 + 1470z + 2835\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3453.01

$${}_1F_2\left(2; -\frac{1}{2}, 5; -z\right) =$$
$$\frac{1}{2z^4}\left(3\left(15\left(2z^2 + 28z + 189\right) + \left(32z^3 - 1080z^2 + 5250z - 2835\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(128z^2 - 1470z + 2835\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3454.01

$${}_1F_2\left(2; -\frac{1}{2}, \frac{11}{2}; z\right) = \frac{32(1-2z)z^2 + 6615\pi \boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} - 945\pi(2z+35)\boldsymbol{L}_5\left(2\sqrt{z}\right)}{32z^2}$$

07.22.03.3455.01

$${}_1F_2\left(2; -\frac{1}{2}, \frac{11}{2}; -z\right) = \frac{32(2z+1)z^2 - 6615\pi \boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} - 945\pi(2z-35)\boldsymbol{H}_5\left(2\sqrt{z}\right)}{32z^2}$$

07.22.03.3456.01

$${}_1F_2\left(2; -\frac{1}{2}, 6; z\right) = -\frac{1}{2z^5}\left(15\left(-5\left(2z^3 - 42z^2 + 567z - 4158\right) -\right.\right.$$
$$\left.\left.\left(368z^3 + 8400z^2 + 38\,745z + 20\,790\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16z^3 + 1092z^2 + 11\,025z + 20\,790\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3457.01

$${}_1F_2\left(2; -\frac{1}{2}, 6; -z\right) = \frac{1}{2z^5}\left(15\left(5\left(2z^3 + 42z^2 + 567z + 4158\right) +\right.\right.$$
$$\left.\left.\left(368z^3 - 8400z^2 + 38\,745z - 20\,790\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16z^3 - 1092z^2 + 11\,025z - 20\,790\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = \frac{1}{2}$

07.22.03.0163.01

$${}_1F_2\left(2; \frac{1}{2}, \frac{1}{2}; z\right) = 1 + 2z + \pi z \boldsymbol{L}_1\left(2\sqrt{z}\right) + \frac{3\pi\sqrt{z}}{2}\boldsymbol{L}_0\left(2\sqrt{z}\right)$$

07.22.03.3458.01

$${}_1F_2\left(2; \frac{1}{2}, \frac{1}{2}; -z\right) = \frac{1}{2}\pi\left(2z\boldsymbol{H}_{-3}\left(2\sqrt{z}\right) + 7\sqrt{z}\,\boldsymbol{H}_{-2}\left(2\sqrt{z}\right) + 3\boldsymbol{H}_{-1}\left(2\sqrt{z}\right)\right)$$

07.22.03.0164.01

$${}_1F_2\left(2;\ \frac{1}{2},\ 1;\ z\right) == \cosh\left(2\sqrt{z}\right) + \sqrt{z}\ \sinh\left(2\sqrt{z}\right)$$

07.22.03.3459.01

$${}_1F_2\left(2;\ \frac{1}{2},\ 1;\ -z\right) = \cos\left(2\sqrt{z}\right) - \sqrt{z}\ \sin\left(2\sqrt{z}\right)$$

07.22.03.0165.01

$${}_1F_2\left(2;\ \frac{1}{2},\ \frac{3}{2};\ z\right) == 1 + \frac{\pi\sqrt{z}}{2}\,\boldsymbol{L}_0\left(2\sqrt{z}\right) + \frac{\pi}{4}\,\boldsymbol{L}_1\left(2\sqrt{z}\right)$$

07.22.03.3460.01

$${}_1F_2\left(2;\ \frac{1}{2},\ \frac{3}{2};\ -z\right) = \frac{1}{4}\left(-2\pi\sqrt{z}\ \boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right) + 4\right)$$

07.22.03.3461.01

$${}_1F_2\left(2;\ \frac{1}{2},\ 2;\ z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.3462.01

$${}_1F_2\left(2;\ \frac{1}{2},\ 2;\ -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.0166.01

$${}_1F_2\left(2;\ \frac{1}{2},\ \frac{5}{2};\ z\right) == \frac{3}{8z}\left(4z - \pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z} + \pi\,(2z+1)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3463.01

$${}_1F_2\left(2;\ \frac{1}{2},\ \frac{5}{2};\ -z\right) = -\frac{3}{4}\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right) + \frac{3\pi\,\boldsymbol{H}_2\left(2\sqrt{z}\right)}{8\sqrt{z}} + 1$$

07.22.03.0167.01

$${}_1F_2\left(2;\ \frac{1}{2},\ 3;\ z\right) == \frac{1}{2z^2}\left(3 - 3\,(2z+1)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\ (2z+3)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3464.01

$${}_1F_2\left(2;\ \frac{1}{2},\ 3;\ -z\right) = \frac{(6z-3)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\ (2z-3)\sin\left(2\sqrt{z}\right) + 3}{2z^2}$$

07.22.03.0168.01

$${}_1F_2\left(2;\ \frac{1}{2},\ \frac{7}{2};\ z\right) == \frac{15}{16z^2}\left(-8z + 2\pi\,(z+3)\sqrt{z}\ \boldsymbol{L}_0\left(2\sqrt{z}\right) - \pi\,(5z+6)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3465.01

$${}_1F_2\left(2;\ \frac{1}{2},\ \frac{7}{2};\ -z\right) = -\frac{15\pi\,\boldsymbol{H}_2\left(2\sqrt{z}\right)}{8\sqrt{z}} + \frac{45\pi\,\boldsymbol{H}_3\left(2\sqrt{z}\right)}{16z} + 1$$

07.22.03.0169.01

$${}_1F_2\left(2;\ \frac{1}{2},\ 4;\ z\right) == \frac{1}{2z^3}\left(9\,(z-5) + 3\left(4z^2 + 27z + 15\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\ (7z+15)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3466.01

$${}_1F_2\left(2;\frac{1}{2},4;-z\right)=\frac{9(z+5)-3\left(4z^2-27z+15\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\,(7z-15)\sin\left(2\sqrt{z}\right)}{2z^3}$$

07.22.03.3467.01

$${}_1F_2\left(2;\frac{1}{2},\frac{9}{2};z\right)=\frac{105\pi\boldsymbol{L}_3\left(2\sqrt{z}\right)}{16z}-\frac{525\pi\boldsymbol{L}_4\left(2\sqrt{z}\right)}{32z^{3/2}}+1$$

07.22.03.3468.01

$${}_1F_2\left(2;\frac{1}{2},\frac{9}{2};-z\right)=-\frac{105\pi\boldsymbol{H}_3\left(2\sqrt{z}\right)}{16z}+\frac{525\pi\boldsymbol{H}_4\left(2\sqrt{z}\right)}{32z^{3/2}}+1$$

07.22.03.3469.01

$${}_1F_2\left(2;\frac{1}{2},5;z\right)=\frac{1}{2z^4}\left(3\left(6z^2-60z+2\left(8z^2+150z+315\right)\sinh\left(2\sqrt{z}\right)\sqrt{z}\,-3\left(32z^2+190z+105\right)\cosh\left(2\sqrt{z}\right)+315\right)\right)$$

07.22.03.3470.01

$${}_1F_2\left(2;\frac{1}{2},5;-z\right)=-\frac{1}{2z^4}\left(3\left(-3\left(2z^2+20z+105\right)+\left(96z^2-570z+315\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(8z^2-150z+315\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3471.01

$${}_1F_2\left(2;\frac{1}{2},\frac{11}{2};z\right)=\frac{945\pi\boldsymbol{L}_4\left(2\sqrt{z}\right)}{32z^{3/2}}-\frac{6615\pi\boldsymbol{L}_5\left(2\sqrt{z}\right)}{64z^2}+1$$

07.22.03.3472.01

$${}_1F_2\left(2;\frac{1}{2},\frac{11}{2};-z\right)=-\frac{945\pi\boldsymbol{H}_4\left(2\sqrt{z}\right)}{32z^{3/2}}+\frac{6615\pi\boldsymbol{H}_5\left(2\sqrt{z}\right)}{64z^2}+1$$

07.22.03.3473.01

$${}_1F_2\left(2;\frac{1}{2},6;z\right)=$$
$$\frac{1}{2z^5}\left(15\left(2z^3-30z^2+315z-18\left(8z^2+105z+210\right)\sinh\left(2\sqrt{z}\right)\sqrt{z}\,+\left(16z^3+660z^2+3465z+1890\right)\cosh\left(2\sqrt{z}\right)-1890\right)\right)$$

07.22.03.3474.01

$${}_1F_2\left(2;\frac{1}{2},6;-z\right)=$$
$$\frac{1}{2z^5}\left(15\left(2z^3+30z^2+315z-18\left(8z^2-105z+210\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\,+\left(16z^3-660z^2+3465z-1890\right)\cos\left(2\sqrt{z}\right)+1890\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = 1$

07.22.03.0170.01

$${}_1F_2(2;1,1;z)=I_0\left(2\sqrt{z}\right)+\sqrt{z}\,I_1\left(2\sqrt{z}\right)$$

07.22.03.3475.01

$${}_1F_2(2;1,1;-z)=J_0\left(2\sqrt{z}\right)-\sqrt{z}\,J_1\left(2\sqrt{z}\right)$$

07.22.03.0171.01

$${}_1F_2\left(2;\,1,\,\frac{3}{2};\,z\right) == \frac{1}{4}\left(2\cosh\left(2\sqrt{z}\right)+\frac{\sinh\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.3476.01

$${}_1F_2\left(2;\,1,\,\frac{3}{2};\,-z\right) = \frac{1}{4}\left(2\cos\left(2\sqrt{z}\right)+\frac{\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.3477.01

$${}_1F_2(2;\,1,\,2;\,z) = I_0\left(2\sqrt{z}\right)$$

07.22.03.3478.01

$${}_1F_2(2;\,1,\,2;\,-z) = J_0\left(2\sqrt{z}\right)$$

07.22.03.0172.01

$${}_1F_2\left(2;\,1,\,\frac{5}{2};\,z\right) == \frac{3\left((4\,z+1)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{16\,z^{3/2}}$$

07.22.03.3479.01

$${}_1F_2\left(2;\,1,\,\frac{5}{2};\,-z\right) = \frac{6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+3\,(4\,z-1)\sin\left(2\sqrt{z}\right)}{16\,z^{3/2}}$$

07.22.03.0173.01

$${}_1F_2(2;\,1,\,3;\,z) == \frac{2}{z}\left(I_2\left(2\sqrt{z}\right)+\sqrt{z}\,I_3\left(2\sqrt{z}\right)\right)$$

07.22.03.3480.01

$${}_1F_2(2;\,1,\,3;\,-z) = \frac{2\left(J_2\left(2\sqrt{z}\right)-\sqrt{z}\,J_3\left(2\sqrt{z}\right)\right)}{z}$$

07.22.03.0174.01

$${}_1F_2\left(2;\,1,\,\frac{7}{2};\,z\right) == \frac{15}{64\,z^{5/2}}\left(2\sqrt{z}\,(4\,z+9)\cosh\left(2\sqrt{z}\right)-(16\,z+9)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3481.01

$${}_1F_2\left(2;\,1,\,\frac{7}{2};\,-z\right) = -\frac{15\left(2\sqrt{z}\,(4\,z-9)\cos\left(2\sqrt{z}\right)+(9-16\,z)\sin\left(2\sqrt{z}\right)\right)}{64\,z^{5/2}}$$

07.22.03.0175.01

$${}_1F_2(2;\,1,\,4;\,z) == \frac{6}{z^{3/2}}\left(I_3\left(2\sqrt{z}\right)+\sqrt{z}\,I_4\left(2\sqrt{z}\right)\right)$$

07.22.03.3482.01

$${}_1F_2(2;\,1,\,4;\,-z) = \frac{6\,J_3\left(2\sqrt{z}\right)}{z^{3/2}}-\frac{6\,J_4\left(2\sqrt{z}\right)}{z}$$

07.22.03.3483.01

$${}_1F_2\left(2;\,1,\,\frac{9}{2};\,z\right) = \frac{105\left(\left(16\,z^2+132\,z+75\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,(32\,z+75)\cosh\left(2\sqrt{z}\right)\right)}{256\,z^{7/2}}$$

07.22.03.3484.01

$${}_1F_2\left(2;\ 1,\ \frac{9}{2};\ -z\right) = -\frac{105\left(2\sqrt{z}\ (32z-75)\cos\left(2\sqrt{z}\right)+\left(16z^2-132z+75\right)\sin\left(2\sqrt{z}\right)\right)}{256\,z^{7/2}}$$

07.22.03.3485.01

$${}_1F_2(2;\ 1,\ 5;\ z) = \frac{24\left(I_4\left(2\sqrt{z}\right)+\sqrt{z}\ I_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.3486.01

$${}_1F_2(2;\ 1,\ 5;\ -z) = \frac{24\left(J_4\left(2\sqrt{z}\right)-\sqrt{z}\ J_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.3487.01

$${}_1F_2\left(2;\ 1,\ \frac{11}{2};\ z\right) = \frac{945\left(2\sqrt{z}\ \left(16z^2+340z+735\right)\cosh\left(2\sqrt{z}\right)-\left(208z^2+1320z+735\right)\sinh\left(2\sqrt{z}\right)\right)}{1024\,z^{9/2}}$$

07.22.03.3488.01

$${}_1F_2\left(2;\ 1,\ \frac{11}{2};\ -z\right) = \frac{945\left(2\sqrt{z}\ \left(16z^2-340z+735\right)\cos\left(2\sqrt{z}\right)+\left(-208z^2+1320z-735\right)\sin\left(2\sqrt{z}\right)\right)}{1024\,z^{9/2}}$$

07.22.03.3489.01

$${}_1F_2(2;\ 1,\ 6;\ z) = \frac{120\left(I_5\left(2\sqrt{z}\right)+\sqrt{z}\ I_6\left(2\sqrt{z}\right)\right)}{z^{5/2}}$$

07.22.03.3490.01

$${}_1F_2(2;\ 1,\ 6;\ -z) = \frac{120\left(J_5\left(2\sqrt{z}\right)-\sqrt{z}\ J_6\left(2\sqrt{z}\right)\right)}{z^{5/2}}$$

For fixed z and $a_1 = 2$, $b_1 = \frac{3}{2}$

07.22.03.0176.01

$${}_1F_2\left(2;\ \frac{3}{2},\ \frac{3}{2};\ z\right) == \frac{1}{2}\left(1+\frac{\pi}{4\sqrt{z}}\,\boldsymbol{L}_0\left(2\sqrt{z}\right)+\frac{\pi}{2}\,\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3491.01

$${}_1F_2\left(2;\ \frac{3}{2},\ \frac{3}{2};\ -z\right) = \frac{1}{8}\left(\frac{\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)}{\sqrt{z}}-2\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)+4\right)$$

07.22.03.3492.01

$${}_1F_2\left(2;\ \frac{3}{2},\ 2;\ z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.3493.01

$${}_1F_2\left(2;\ \frac{3}{2},\ 2;\ -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.0177.01

$${}_1F_2\left(2;\frac{3}{2},\frac{5}{2};z\right)==\frac{3\pi}{16z}\left(2\sqrt{z}\,\boldsymbol{L}_0\left(2\sqrt{z}\right)-\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3494.01

$${}_1F_2\left(2;\frac{3}{2},\frac{5}{2};-z\right)=\frac{8z-6\pi\boldsymbol{H}_2\left(2\sqrt{z}\right)\sqrt{z}+3\pi\boldsymbol{H}_1\left(2\sqrt{z}\right)}{16z}$$

07.22.03.0178.01

$${}_1F_2\left(2;\frac{3}{2},3;z\right)==\frac{1}{2z^2}\left((2z+1)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)-1\right)$$

07.22.03.3495.01

$${}_1F_2\left(2;\frac{3}{2},3;-z\right)=\frac{(1-2z)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)-1}{2z^2}$$

07.22.03.0179.01

$${}_1F_2\left(2;\frac{3}{2},\frac{7}{2};z\right)==\frac{15\left(4z-3\pi\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z}+\pi(2z+3)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)}{32z^2}$$

07.22.03.3496.01

$${}_1F_2\left(2;\frac{3}{2},\frac{7}{2};-z\right)=\frac{1}{32}\left(\frac{15\pi\boldsymbol{H}_2\left(2\sqrt{z}\right)}{z^{3/2}}-\frac{30\pi\boldsymbol{H}_3\left(2\sqrt{z}\right)}{z}+16\right)$$

07.22.03.0180.01

$${}_1F_2\left(2;\frac{3}{2},4;z\right)==\frac{3}{2z^3}\left(3-z+2(z+3)\sinh\left(2\sqrt{z}\right)\sqrt{z}-(5z+3)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.3497.01

$${}_1F_2\left(2;\frac{3}{2},4;-z\right)=-\frac{3\left(z+2(z-3)\sin\left(2\sqrt{z}\right)\sqrt{z}+(5z-3)\cos\left(2\sqrt{z}\right)+3\right)}{2z^3}$$

07.22.03.3498.01

$${}_1F_2\left(2;\frac{3}{2},\frac{9}{2};z\right)=\frac{1}{64}\left(\frac{105\pi\boldsymbol{L}_3\left(2\sqrt{z}\right)}{z^2}+\frac{210\pi\boldsymbol{L}_4\left(2\sqrt{z}\right)}{z^{3/2}}+32\right)$$

07.22.03.3499.01

$${}_1F_2\left(2;\frac{3}{2},\frac{9}{2};-z\right)=\frac{1}{64}\left(\frac{105\pi\boldsymbol{H}_3\left(2\sqrt{z}\right)}{z^2}-\frac{210\pi\boldsymbol{H}_4\left(2\sqrt{z}\right)}{z^{3/2}}+32\right)$$

07.22.03.3500.01

$${}_1F_2\left(2;\frac{3}{2},5;z\right)=\frac{3\left(-2z^2+12z-18(2z+5)\sinh\left(2\sqrt{z}\right)\sqrt{z}+\left(8z^2+78z+45\right)\cosh\left(2\sqrt{z}\right)-45\right)}{2z^4}$$

07.22.03.3501.01

$${}_1F_2\left(2;\frac{3}{2},5;-z\right)=\frac{3\left(-2z^2-12z-18(2z-5)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(8z^2-78z+45\right)\cos\left(2\sqrt{z}\right)-45\right)}{2z^4}$$

07.22.03.3502.01

$${}_1F_2\left(2;\ \frac{3}{2},\ \frac{11}{2};\ z\right) = \frac{1}{128}\left(\frac{945\,\pi\,\boldsymbol{L}_4\left(2\sqrt{z}\right)}{z^{5/2}} + \frac{1890\,\pi\,\boldsymbol{L}_5\left(2\sqrt{z}\right)}{z^2} + 64\right)$$

07.22.03.3503.01

$${}_1F_2\left(2;\ \frac{3}{2},\ \frac{11}{2};\ -z\right) = \frac{1}{128}\left(\frac{945\,\pi\,\boldsymbol{H}_4\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{1890\,\pi\,\boldsymbol{H}_5\left(2\sqrt{z}\right)}{z^2} + 64\right)$$

07.22.03.3504.01

$${}_1F_2\left(2;\ \frac{3}{2},\ 6;\ z\right) =$$
$$\frac{1}{2\,z^5}\left(5\left(-2\,z^3 + 18\,z^2 - 135\,z + 6\left(4\,z^2 + 95\,z + 210\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} - 3\left(56\,z^2 + 375\,z + 210\right)\cosh\left(2\sqrt{z}\right) + 630\right)\right)$$

07.22.03.3505.01

$${}_1F_2\left(2;\ \frac{3}{2},\ 6;\ -z\right) =$$
$$-\frac{1}{2\,z^5}\left(5\left(2\,z^3 + 18\,z^2 + 135\,z - 6\left(4\,z^2 - 95\,z + 210\right)\sin\left(2\sqrt{z}\right)\sqrt{z} - 3\left(56\,z^2 - 375\,z + 210\right)\cos\left(2\sqrt{z}\right) + 630\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = 2$

07.22.03.3506.01

$${}_1F_2(2;\ 2,\ 2;\ z) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.3507.01

$${}_1F_2(2;\ 2,\ 2;\ -z) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.3508.01

$${}_1F_2\left(2;\ 2,\ \frac{5}{2};\ z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4\,z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.3509.01

$${}_1F_2\left(2;\ 2,\ \frac{5}{2};\ -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.3510.01

$${}_1F_2(2;\ 2,\ 3;\ z) = \frac{2\,I_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.3511.01

$${}_1F_2(2;\ 2,\ 3;\ -z) = \frac{2\,J_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.3512.01

$${}_1F_2\left(2;\,2,\,\frac{7}{2};\,z\right)=\frac{15\left((4\,z+3)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.3513.01

$${}_1F_2\left(2;\,2,\,\frac{7}{2};\,-z\right)=-\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4\,z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.3514.01

$${}_1F_2(2;\,2,\,4;\,z)=\frac{6\,I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.3515.01

$${}_1F_2(2;\,2,\,4;\,-z)=\frac{6\,J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.3516.01

$${}_1F_2\left(2;\,2,\,\frac{9}{2};\,z\right)=\frac{105\left(2\sqrt{z}\,(4\,z+15)\cosh\left(2\sqrt{z}\right)-3\,(8\,z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.3517.01

$${}_1F_2\left(2;\,2,\,\frac{9}{2};\,-z\right)=\frac{105\left(2\sqrt{z}\,(4\,z-15)\cos\left(2\sqrt{z}\right)+3\,(5-8\,z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.3518.01

$${}_1F_2(2;\,2,\,5;\,z)=\frac{24\,I_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.3519.01

$${}_1F_2(2;\,2,\,5;\,-z)=\frac{24\,J_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.3520.01

$${}_1F_2\left(2;\,2,\,\frac{11}{2};\,z\right)=\frac{945\left(\left(16\,z^2+180\,z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,(8\,z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.3521.01

$${}_1F_2\left(2;\,2,\,\frac{11}{2};\,-z\right)=\frac{945\left(10\sqrt{z}\,(8\,z-21)\cos\left(2\sqrt{z}\right)+\left(16\,z^2-180\,z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.3522.01

$${}_1F_2(2;\,2,\,6;\,z)=\frac{120\,I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.3523.01

$${}_1F_2(2;\,2,\,6;\,-z)=\frac{120\,J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = 2$, $b_1 = \frac{5}{2}$

07.22.03.0181.01

$$ {}_1F_2\left(2; \frac{5}{2}, \frac{5}{2}; z\right) == \frac{9}{32 z^{3/2}} \left(4 \sqrt{z} - \pi \boldsymbol{L}_0\left(2 \sqrt{z}\right) + 2 \pi \sqrt{z}\ \boldsymbol{L}_1\left(2 \sqrt{z}\right)\right) $$

07.22.03.3524.01

$$ {}_1F_2\left(2; \frac{5}{2}, \frac{5}{2}; -z\right) = \frac{3\left(-8 z - 3 \pi \boldsymbol{H}_2\left(2 \sqrt{z}\right) \sqrt{z} + 3 (2 \pi z + \pi) \boldsymbol{H}_1\left(2 \sqrt{z}\right)\right)}{32 z^2} $$

07.22.03.0182.01

$$ {}_1F_2\left(2; \frac{5}{2}, 3; z\right) == \frac{3}{z^2} \left(\sqrt{z}\ \cosh\left(\sqrt{z}\right) - \sinh\left(\sqrt{z}\right)\right) \sinh\left(\sqrt{z}\right) $$

07.22.03.3525.01

$$ {}_1F_2\left(2; \frac{5}{2}, 3; -z\right) = -\frac{3\left(\cos\left(2 \sqrt{z}\right) + \sqrt{z}\ \sin\left(2 \sqrt{z}\right) - 1\right)}{2 z^2} $$

07.22.03.0183.01

$$ {}_1F_2\left(2; \frac{5}{2}, \frac{7}{2}; z\right) == \frac{45 \pi}{64 z^2} \left(2 \sqrt{z}\ \boldsymbol{L}_0\left(2 \sqrt{z}\right) - 3 \boldsymbol{L}_1\left(2 \sqrt{z}\right)\right) $$

07.22.03.3526.01

$$ {}_1F_2\left(2; \frac{5}{2}, \frac{7}{2}; -z\right) = \frac{90 \pi (z + 1) \boldsymbol{H}_2\left(2 \sqrt{z}\right) - 3 \sqrt{z}\ \left(32 z + 15 \pi \boldsymbol{H}_3\left(2 \sqrt{z}\right)\right)}{64 z^{5/2}} $$

07.22.03.0184.01

$$ {}_1F_2\left(2; \frac{5}{2}, 4; z\right) == \frac{9}{z^3} \left(\sinh\left(\sqrt{z}\right) - \sqrt{z}\ \cosh\left(\sqrt{z}\right)\right)^2 $$

07.22.03.3527.01

$$ {}_1F_2\left(2; \frac{5}{2}, 4; -z\right) = \frac{9\left(\sin\left(\sqrt{z}\right) - \sqrt{z}\ \cos\left(\sqrt{z}\right)\right)^2}{z^3} $$

07.22.03.3528.01

$$ {}_1F_2\left(2; \frac{5}{2}, \frac{9}{2}; z\right) = \frac{9\left(32 z^2 - 35 \pi \boldsymbol{L}_4\left(2 \sqrt{z}\right) \sqrt{z} + 35 \pi (2 z - 3) \boldsymbol{L}_3\left(2 \sqrt{z}\right)\right)}{128 z^3} $$

07.22.03.3529.01

$$ {}_1F_2\left(2; \frac{5}{2}, \frac{9}{2}; -z\right) = \frac{9\left(-32 z^2 - 35 \pi \boldsymbol{H}_4\left(2 \sqrt{z}\right) \sqrt{z} + 35 \pi (2 z + 3) \boldsymbol{H}_3\left(2 \sqrt{z}\right)\right)}{128 z^3} $$

07.22.03.3530.01

$$ {}_1F_2\left(2; \frac{5}{2}, 5; z\right) = \frac{9\left(2 z^2 - 4 z + 2 (2 z + 9) \sinh\left(2 \sqrt{z}\right) \sqrt{z} - (14 z + 9) \cosh\left(2 \sqrt{z}\right) + 9\right)}{2 z^4} $$

07.22.03.3531.01

$$ {}_1F_2\left(2; \frac{5}{2}, 5; -z\right) = \frac{9\left(2 z^2 + 4 z + 2 (2 z - 9) \sin\left(2 \sqrt{z}\right) \sqrt{z} + (14 z - 9) \cos\left(2 \sqrt{z}\right) + 9\right)}{2 z^4} $$

07.22.03.3532.01

$${}_1F_2\left(2;\frac{5}{2},\frac{11}{2};z\right)=\frac{2835\,\pi\,(z-2)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)}{128\,z^{7/2}}-\frac{2835\,\pi\,\boldsymbol{L}_5\left(2\sqrt{z}\right)}{256\,z^3}+\frac{3}{z}$$

07.22.03.3533.01

$${}_1F_2\left(2;\frac{5}{2},\frac{11}{2};-z\right)=\frac{2835\,\pi\,(z+2)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)}{128\,z^{7/2}}-\frac{2835\,\pi\,\boldsymbol{H}_5\left(2\sqrt{z}\right)}{256\,z^3}-\frac{3}{z}$$

07.22.03.3534.01

$${}_1F_2\left(2;\frac{5}{2},6;z\right)=\frac{15\left(2\,z^3-6\,z^2+27\,z-6\,(11\,z+30)\sinh\left(2\sqrt{z}\right)\sqrt{z}+3\left(4\,z^2+51\,z+30\right)\cosh\left(2\sqrt{z}\right)-90\right)}{2\,z^5}$$

07.22.03.3535.01

$${}_1F_2\left(2;\frac{5}{2},6;-z\right)=\frac{15\left(2\,z^3+6\,z^2+27\,z+6\,(11\,z-30)\sin\left(2\sqrt{z}\right)\sqrt{z}-3\left(4\,z^2-51\,z+30\right)\cos\left(2\sqrt{z}\right)+90\right)}{2\,z^5}$$

For fixed z and $a_1 = 2$, $b_1 = 3$

07.22.03.0185.01

$${}_1F_2(2;3,3;z)==\frac{4}{z^2}\left(1-I_0\left(2\sqrt{z}\right)+\sqrt{z}\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3536.01

$${}_1F_2(2;3,3;-z)=-\frac{4\left(J_0\left(2\sqrt{z}\right)+\sqrt{z}\,J_1\left(2\sqrt{z}\right)-1\right)}{z^2}$$

07.22.03.0186.01

$${}_1F_2\left(2;3,\frac{7}{2};z\right)==\frac{15}{8\,z^{5/2}}\left(2\sqrt{z}\,\cosh\left(2\sqrt{z}\right)-3\sinh\left(2\sqrt{z}\right)+4\sqrt{z}\right)$$

07.22.03.3537.01

$${}_1F_2\left(2;3,\frac{7}{2};-z\right)=\frac{15\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)-3\sin\left(2\sqrt{z}\right)+4\sqrt{z}\right)}{8\,z^{5/2}}$$

07.22.03.0187.01

$${}_1F_2(2;3,4;z)==\frac{12}{z^{5/2}}\left(\sqrt{z}\,I_0\left(2\sqrt{z}\right)-2\,I_1\left(2\sqrt{z}\right)+\sqrt{z}\right)$$

07.22.03.3538.01

$${}_1F_2(2;3,4;-z)=-\frac{12\left(J_1\left(2\sqrt{z}\right)+\sqrt{z}\left(J_2\left(2\sqrt{z}\right)-1\right)\right)}{z^{5/2}}$$

07.22.03.3539.01

$${}_1F_2\left(2;3,\frac{9}{2};z\right)=\frac{35\left(16\,z^{3/2}-30\cosh\left(2\sqrt{z}\right)\sqrt{z}+3\,(4\,z+5)\sinh\left(2\sqrt{z}\right)\right)}{32\,z^{7/2}}$$

07.22.03.3540.01

$${}_1F_2\left(2;3,\frac{9}{2};-z\right)=\frac{35\left(16\,z^{3/2}+30\cos\left(2\sqrt{z}\right)\sqrt{z}+3\,(4\,z-5)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{7/2}}$$

07.22.03.3541.01

$${}_1F_2(2;\,3,\,5;\,z) = \frac{24\left(z + 2\,I_3\left(2\sqrt{z}\right)\sqrt{z} - 2\,I_2\left(2\sqrt{z}\right)\right)}{z^3}$$

07.22.03.3542.01

$${}_1F_2(2;\,3,\,5;\,-z) = \frac{24\left(z - 2\,J_3\left(2\sqrt{z}\right)\sqrt{z} - 2\,J_2\left(2\sqrt{z}\right)\right)}{z^3}$$

07.22.03.3543.01

$${}_1F_2\left(2;\,3,\,\frac{11}{2};\,z\right) = \frac{63\left(64\,z^{5/2} + 30\,(4\,z+21)\cosh\left(2\sqrt{z}\right)\sqrt{z} - 15\,(32\,z+21)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{9/2}}$$

07.22.03.3544.01

$${}_1F_2\left(2;\,3,\,\frac{11}{2};\,-z\right) = \frac{63\left(64\,z^{5/2} - 30\,(4\,z-21)\cos\left(2\sqrt{z}\right)\sqrt{z} + 15\,(32\,z-21)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{9/2}}$$

07.22.03.3545.01

$${}_1F_2(2;\,3,\,6;\,z) = \frac{40\left(\sqrt{z}\,\left(z + 6\,I_4\left(2\sqrt{z}\right)\right) - 6\,I_3\left(2\sqrt{z}\right)\right)}{z^{7/2}}$$

07.22.03.3546.01

$${}_1F_2(2;\,3,\,6;\,-z) = \frac{40\left(\sqrt{z}\,\left(z - 6\,J_4\left(2\sqrt{z}\right)\right) - 6\,J_3\left(2\sqrt{z}\right)\right)}{z^{7/2}}$$

For fixed z and $a_1 = 2$, $b_1 = \frac{7}{2}$

07.22.03.0188.01

$${}_1F_2\left(2;\,\frac{7}{2},\,\frac{7}{2};\,z\right) == \frac{225}{128\,z^{5/2}}\left(12\sqrt{z} - 3\,\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right) + 2\,\pi\sqrt{z}\;\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3547.01

$${}_1F_2\left(2;\,\frac{7}{2},\,\frac{7}{2};\,-z\right) = \frac{15\left(\sqrt{z}\,\left(15\,\pi\,(2\,z+3)\,\boldsymbol{H}_3\left(2\sqrt{z}\right) - 16\,(z-6)\,z\right) - 15\,\pi\,(z+6)\,\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.0189.01

$${}_1F_2\left(2;\,\frac{7}{2},\,4;\,z\right) == \frac{45}{4\,z^3}\left(2\,z + \sinh\left(2\sqrt{z}\right)\sqrt{z} - 2\cosh\left(2\sqrt{z}\right) + 2\right)$$

07.22.03.3548.01

$${}_1F_2\left(2;\,\frac{7}{2},\,4;\,-z\right) = \frac{45\left(2\,z + \sin\left(2\sqrt{z}\right)\sqrt{z} + 2\cos\left(2\sqrt{z}\right) - 2\right)}{4\,z^3}$$

07.22.03.3549.01

$${}_1F_2\left(2;\,\frac{7}{2},\,\frac{9}{2};\,z\right) = \frac{15\left(32\,(z+18)\,z^2 + 210\,\pi\,(z-3)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} + 315\,\pi\,(z-6)\,\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)}{256\,z^4}$$

07.22.03.3550.01

$${}_1F_2\left(2;\frac{7}{2},\frac{9}{2};-z\right)=\frac{15\left(-32\,(z-18)\,z^2+210\,\pi\,(z+3)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}\,-315\,\pi\,(z+6)\,\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)}{256\,z^4}$$

07.22.03.3551.01

$${}_1F_2\left(2;\frac{7}{2},5;z\right)=\frac{45\left(2\,z^2+4\,z-6\sinh\left(2\sqrt{z}\right)\sqrt{z}\,+(2\,z+3)\cosh\left(2\sqrt{z}\right)-3\right)}{2\,z^4}$$

07.22.03.3552.01

$${}_1F_2\left(2;\frac{7}{2},5;-z\right)=\frac{45\left(2\,z^2-4\,z+6\sin\left(2\sqrt{z}\right)\sqrt{z}\,+(3-2\,z)\cos\left(2\sqrt{z}\right)-3\right)}{2\,z^4}$$

07.22.03.3553.01

$${}_1F_2\left(2;\frac{7}{2},\frac{11}{2};z\right)=\frac{15\left(945\,\pi\,(5\,z-36)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)+\sqrt{z}\,\left(64\,(z+36)\,z^2+945\,\pi\,(2\,z-9)\,\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right)}{512\,z^{9/2}}$$

07.22.03.3554.01

$${}_1F_2\left(2;\frac{7}{2},\frac{11}{2};-z\right)=\frac{15\left(\sqrt{z}\,\left(945\,\pi\,(2\,z+9)\,\boldsymbol{H}_5\left(2\sqrt{z}\right)-64\,(z-36)\,z^2\right)-945\,\pi\,(5\,z+36)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.3555.01

$${}_1F_2\left(2;\frac{7}{2},6;z\right)=\frac{75\left(2\,z^3+6\,z^2-9\,z+6\,(z+6)\sinh\left(2\sqrt{z}\right)\sqrt{z}\,-9\,(3\,z+2)\cosh\left(2\sqrt{z}\right)+18\right)}{2\,z^5}$$

07.22.03.3556.01

$${}_1F_2\left(2;\frac{7}{2},6;-z\right)=-\frac{75\left(-2\,z^3+6\,z^2+9\,z+6\,(z-6)\sin\left(2\sqrt{z}\right)\sqrt{z}\,+9\,(3\,z-2)\cos\left(2\sqrt{z}\right)+18\right)}{2\,z^5}$$

For fixed z and $a_1 = 2$, $b_1 = 4$

07.22.03.0190.01

$${}_1F_2(2;4,4;z)==\frac{36}{z^3}\left(z+I_1\left(2\sqrt{z}\right)\sqrt{z}\,-2\,I_0\left(2\sqrt{z}\right)+2\right)$$

07.22.03.3557.01

$${}_1F_2(2;4,4;-z)=\frac{36\left(z+J_1\left(2\sqrt{z}\right)\sqrt{z}\,+2\,J_0\left(2\sqrt{z}\right)-2\right)}{z^3}$$

07.22.03.3558.01

$${}_1F_2\left(2;4,\frac{9}{2};z\right)=\frac{105\left(8\sqrt{z}\,\,(z+3)+6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)-15\sinh\left(2\sqrt{z}\right)\right)}{16\,z^{7/2}}$$

07.22.03.3559.01

$${}_1F_2\left(2;4,\frac{9}{2};-z\right)=\frac{105\left(8\sqrt{z}\,\,(z-3)-6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+15\sin\left(2\sqrt{z}\right)\right)}{16\,z^{7/2}}$$

07.22.03.3560.01

$${}_1F_2(2;\,4,\,5;\,z) = \frac{72\left(\sqrt{z}\,\left(z+2\,I_2\left(2\,\sqrt{z}\right)+4\right)-4\,I_1\left(2\,\sqrt{z}\right)\right)}{z^{7/2}}$$

07.22.03.3561.01

$${}_1F_2(2;\,4,\,5;\,-z) = \frac{72\left(4\,J_1\left(2\,\sqrt{z}\right)+\sqrt{z}\,\left(z+2\,J_2\left(2\,\sqrt{z}\right)-4\right)\right)}{z^{7/2}}$$

07.22.03.3562.01

$${}_1F_2\left(2;\,4,\,\frac{11}{2};\,z\right) = \frac{189\left(32\,(z+5)\,z^{3/2}-210\cosh\left(2\,\sqrt{z}\right)\sqrt{z}\,+15\,(4\,z+7)\sinh\left(2\,\sqrt{z}\right)\right)}{64\,z^{9/2}}$$

07.22.03.3563.01

$${}_1F_2\left(2;\,4,\,\frac{11}{2};\,-z\right) = -\frac{189\left(-32\,(z-5)\,z^{3/2}+210\cos\left(2\,\sqrt{z}\right)\sqrt{z}\,+15\,(4\,z-7)\sin\left(2\,\sqrt{z}\right)\right)}{64\,z^{9/2}}$$

07.22.03.3564.01

$${}_1F_2(2;\,4,\,6;\,z) = \frac{120\left(z\,(z+6)-12\,I_2\left(2\,\sqrt{z}\right)+6\,\sqrt{z}\,\,I_3\left(2\,\sqrt{z}\right)\right)}{z^4}$$

07.22.03.3565.01

$${}_1F_2(2;\,4,\,6;\,-z) = \frac{120\left((z-6)\,z+6\,J_3\left(2\,\sqrt{z}\right)\sqrt{z}\,+12\,J_2\left(2\,\sqrt{z}\right)\right)}{z^4}$$

For fixed z and $a_1 = 2$, $b_1 = \frac{9}{2}$

07.22.03.3566.01

$${}_1F_2\left(2;\,\frac{9}{2},\,\frac{9}{2};\,z\right) = \frac{35\left(64\,(22\,z+45)\,z^2-315\,\pi\,(z+10)\,\boldsymbol{L}_4\left(2\,\sqrt{z}\right)\sqrt{z}\,+630\,\pi\left(z^2-4\,z-15\right)\boldsymbol{L}_3\left(2\,\sqrt{z}\right)\right)}{512\,z^5}$$

07.22.03.3567.01

$${}_1F_2\left(2;\,\frac{9}{2},\,\frac{9}{2};\,-z\right) = -\frac{35\left(64\,(45-22\,z)\,z^2-315\,\pi\,(z-10)\,\boldsymbol{H}_4\left(2\,\sqrt{z}\right)\sqrt{z}\,+630\,\pi\left(z^2+4\,z-15\right)\boldsymbol{H}_3\left(2\,\sqrt{z}\right)\right)}{512\,z^5}$$

07.22.03.3568.01

$${}_1F_2\left(2;\,\frac{9}{2},\,5;\,z\right) = \frac{105\left(2\,z^2+12\,z+3\sinh\left(2\,\sqrt{z}\right)\sqrt{z}\,-9\cosh\left(2\,\sqrt{z}\right)+9\right)}{2\,z^4}$$

07.22.03.3569.01

$${}_1F_2\left(2;\,\frac{9}{2},\,5;\,-z\right) = \frac{105\left(2\,z^2-12\,z-3\sin\left(2\,\sqrt{z}\right)\sqrt{z}\,-9\cos\left(2\,\sqrt{z}\right)+9\right)}{2\,z^4}$$

07.22.03.3570.01

$${}_1F_2\left(2;\,\frac{9}{2},\,\frac{11}{2};\,z\right) = \frac{105\left(1890\,\pi\left(z^2-3\,z-60\right)\boldsymbol{L}_4\left(2\,\sqrt{z}\right)+\sqrt{z}\,\left(128\,(13\,z+60)\,z^2+945\,\pi\,(z-30)\,\boldsymbol{L}_5\left(2\,\sqrt{z}\right)\right)\right)}{1024\,z^{11/2}}$$

07.22.03.3571.01

$${}_1F_2\left(2;\frac{9}{2},\frac{11}{2};-z\right)=-\frac{105\left(1890\,\pi\left(z^2+3\,z-60\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)+\sqrt{z}\,\left(128\,(60-13\,z)\,z^2+945\,\pi\,(z+30)\,\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)\right)}{1024\,z^{11/2}}$$

07.22.03.3572.01

$${}_1F_2\left(2;\frac{9}{2},6;z\right)=\frac{175\left(2\,z^3+18\,z^2+27\,z-36\sinh\left(2\sqrt{z}\right)\sqrt{z}+9\,(z+2)\cosh\left(2\sqrt{z}\right)-18\right)}{2\,z^5}$$

07.22.03.3573.01

$${}_1F_2\left(2;\frac{9}{2},6;-z\right)=\frac{175\left(2\,z^3-18\,z^2+27\,z-36\sin\left(2\sqrt{z}\right)\sqrt{z}+9\,(z-2)\cos\left(2\sqrt{z}\right)+18\right)}{2\,z^5}$$

For fixed z and $a_1 = 2$, $b_1 = 5$

07.22.03.3574.01

$${}_1F_2(2;5,5;z)=\frac{144\left(z^2+8\,z+4\,I_1\left(2\sqrt{z}\right)\sqrt{z}-12\,I_0\left(2\sqrt{z}\right)+12\right)}{z^4}$$

07.22.03.3575.01

$${}_1F_2(2;5,5;-z)=\frac{144\left(z^2-8\,z-4\,J_1\left(2\sqrt{z}\right)\sqrt{z}-12\,J_0\left(2\sqrt{z}\right)+12\right)}{z^4}$$

07.22.03.3576.01

$${}_1F_2\left(2;5,\frac{11}{2};z\right)=\frac{189\left(4\sqrt{z}\,\left(2\,z^2+20\,z+45\right)+30\sqrt{z}\,\cosh\left(2\sqrt{z}\right)-105\sinh\left(2\sqrt{z}\right)\right)}{8\,z^{9/2}}$$

07.22.03.3577.01

$${}_1F_2\left(2;5,\frac{11}{2};-z\right)=\frac{189\left(4\sqrt{z}\,\left(2\,z^2-20\,z+45\right)+30\sqrt{z}\,\cos\left(2\sqrt{z}\right)-105\sin\left(2\sqrt{z}\right)\right)}{8\,z^{9/2}}$$

07.22.03.3578.01

$${}_1F_2(2;5,6;z)=\frac{240\left(\sqrt{z}\,\left((z+6)^2+12\,I_2\left(2\sqrt{z}\right)\right)-36\,I_1\left(2\sqrt{z}\right)\right)}{z^{9/2}}$$

07.22.03.3579.01

$${}_1F_2(2;5,6;-z)=\frac{240\left(\sqrt{z}\,\left((z-6)^2-12\,J_2\left(2\sqrt{z}\right)\right)-36\,J_1\left(2\sqrt{z}\right)\right)}{z^{9/2}}$$

For fixed z and $a_1 = 2$, $b_1 = \frac{11}{2}$

07.22.03.3580.01

$${}_1F_2\left(2;\frac{11}{2},\frac{11}{2};z\right)=$$
$$\frac{1}{2048\,z^{13/2}}\left(189\left(4725\,\pi\left(5\,z^2-78\,z-168\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(32\left(47\,z^2+530\,z+840\right)z^2+4725\,\pi\left(z^2-8\,z-21\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3581.01

$${}_1F_2\left(2;\ \frac{11}{2},\ \frac{11}{2};\ -z\right) =$$
$$\frac{1}{2048\, z^{13/2}}\left(189\left(4725\,\pi\left(5\,z^2+78\,z-168\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(32\,z^2\left(47\,z^2-530\,z+840\right)-4725\,\pi\left(z^2+8\,z-21\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3582.01

$${}_1F_2\left(2;\ \frac{11}{2},\ 6;\ z\right) = \frac{315\left(4\,z^3+60\,z^2+270\,z+45\sinh\left(2\sqrt{z}\right)\sqrt{z}\ -180\cosh\left(2\sqrt{z}\right)+180\right)}{4\,z^5}$$

07.22.03.3583.01

$${}_1F_2\left(2;\ \frac{11}{2},\ 6;\ -z\right) = \frac{315\left(4\,z^3-60\,z^2+270\,z+45\sin\left(2\sqrt{z}\right)\sqrt{z}\ +180\cos\left(2\sqrt{z}\right)-180\right)}{4\,z^5}$$

For fixed z and $a_1 = 2$, $b_1 = 6$

07.22.03.3584.01

$${}_1F_2(2;\ 6,\ 6;\ z) = \frac{400\left(z^3+18\,z^2+108\,z+36\,I_1\left(2\sqrt{z}\right)\sqrt{z}\ -144\,I_0\left(2\sqrt{z}\right)+144\right)}{z^5}$$

07.22.03.3585.01

$${}_1F_2(2;\ 6,\ 6;\ -z) = \frac{400\left(z^3-18\,z^2+108\,z+36\,J_1\left(2\sqrt{z}\right)\sqrt{z}\ +144\,J_0\left(2\sqrt{z}\right)-144\right)}{z^5}$$

For fixed z and $a_1 = \frac{5}{2}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = \frac{5}{2}$, $b_1 = -\frac{11}{2}$

07.22.03.3586.01

$${}_1F_2\left(\frac{5}{2};\ -\frac{11}{2},\ -\frac{11}{2};\ z\right) = \frac{1}{324\,168\,075}$$
$$\left(\left(16\,384\,z^7+344\,064\,z^6+817\,152\,z^5+6\,612\,480\,z^4+51\,589\,440\,z^3+272\,008\,800\,z^2+675\,126\,900\,z+324\,168\,075\right)\right.$$
$$\cosh\left(2\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\,\left(94\,208\,z^6-172\,032\,z^5-1\,128\,960\,z^4-9\,515\,520\,z^3-63\,398\,160\,z^2-242\,902\,800\,z-324\,168\,075\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3587.01

$${}_1F_2\left(\frac{5}{2};\ -\frac{11}{2},\ -\frac{11}{2};\ -z\right) = \frac{1}{324\,168\,075}$$
$$\left(\left(-16\,384\,z^7+344\,064\,z^6-817\,152\,z^5+6\,612\,480\,z^4-51\,589\,440\,z^3+272\,008\,800\,z^2-675\,126\,900\,z+324\,168\,075\right)\right.$$
$$\cos\left(2\sqrt{z}\right)-$$
$$\left.2\sqrt{z}\,\left(94\,208\,z^6+172\,032\,z^5-1\,128\,960\,z^4+9\,515\,520\,z^3-63\,398\,160\,z^2+242\,902\,800\,z-324\,168\,075\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3588.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, -\frac{9}{2}; z\right) =$$
$$\frac{1}{29\,469\,825}\left(-21\left(4096\,z^6 - 8192\,z^5 - 38\,400\,z^4 - 253\,440\,z^3 - 1\,234\,800\,z^2 - 2\,948\,400\,z - 1\,403\,325\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4096\,z^6 + 64\,512\,z^5 + 161\,280\,z^4 + 1\,048\,320\,z^3 + 6\,244\,560\,z^2 + 22\,623\,300\,z + 29\,469\,825\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3589.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, -\frac{9}{2}; -z\right) =$$
$$\frac{1}{29\,469\,825}\left(2\sqrt{z}\left(4096\,z^6 - 64\,512\,z^5 + 161\,280\,z^4 - 1\,048\,320\,z^3 + 6\,244\,560\,z^2 - 22\,623\,300\,z + 29\,469\,825\right)\sin\left(2\sqrt{z}\right) - 21\left(4096\,z^6 + 8192\,z^5 - 38\,400\,z^4 + 253\,440\,z^3 - 1\,234\,800\,z^2 + 2\,948\,400\,z - 1\,403\,325\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.3590.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, -\frac{7}{2}; z\right) =$$
$$\frac{1}{3\,274\,425}\left(\left(4096\,z^6 + 27\,648\,z^5 + 161\,280\,z^4 + 725\,760\,z^3 + 3\,099\,600\,z^2 + 6\,974\,100\,z + 3\,274\,425\right)\cosh\left(2\sqrt{z}\right) + 6\sqrt{z}\left(6144\,z^5 - 16\,640\,z^4 - 53\,760\,z^3 - 262\,080\,z^2 - 869\,400\,z - 1\,091\,475\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3591.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, -\frac{7}{2}; -z\right) =$$
$$\frac{1}{3\,274\,425}\left(\left(4096\,z^6 - 27\,648\,z^5 + 161\,280\,z^4 - 725\,760\,z^3 + 3\,099\,600\,z^2 - 6\,974\,100\,z + 3\,274\,425\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(6144\,z^5 + 16\,640\,z^4 - 53\,760\,z^3 + 262\,080\,z^2 - 869\,400\,z + 1\,091\,475\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3592.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, -\frac{5}{2}; z\right) = \frac{1}{467\,775}\left(\left(-14\,336\,z^5 + 42\,240\,z^4 + 161\,280\,z^3 + 504\,000\,z^2 + 1\,020\,600\,z + 467\,775\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(1024\,z^5 - 3840\,z^4 + 50\,880\,z^3 + 141\,120\,z^2 + 396\,900\,z + 467\,775\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3593.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, -\frac{5}{2}; -z\right) = \frac{1}{467\,775}\left(\left(14\,336\,z^5 + 42\,240\,z^4 - 161\,280\,z^3 + 504\,000\,z^2 - 1\,020\,600\,z + 467\,775\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(1024\,z^5 + 3840\,z^4 + 50\,880\,z^3 - 141\,120\,z^2 + 396\,900\,z - 467\,775\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3594.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, -\frac{3}{2}; z\right) = \frac{1}{93\,555}\left(\left(1024\,z^5 - 13\,056\,z^4 + 52\,416\,z^3 + 141\,120\,z^2 + 215\,460\,z + 93\,555\right)\cosh\left(2\sqrt{z}\right) + 6\sqrt{z}\left(768\,z^4 - 256\,z^3 - 17\,808\,z^2 - 30\,240\,z - 31\,185\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3595.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, -\frac{3}{2}; -z\right) = \frac{1}{93\,555}\left(-\left(1024\,z^5 + 13\,056\,z^4 + 52\,416\,z^3 - 141\,120\,z^2 + 215\,460\,z - 93\,555\right)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\left(768\,z^4 + 256\,z^3 - 17\,808\,z^2 + 30\,240\,z - 31\,185\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3596.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, -\frac{1}{2}; z\right) = \frac{1}{31\,185}\left(\left(-768\,z^4 - 16\,128\,z^3 + 55\,440\,z^2 + 90\,720\,z + 31\,185\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256\,z^4 - 4224\,z^3 + 1008\,z^2 + 49\,140\,z + 31\,185\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3597.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, -\frac{1}{2}; -z\right) = \frac{1}{31\,185}\left(\left(-768\,z^4 + 16\,128\,z^3 + 55\,440\,z^2 - 90\,720\,z + 31\,185\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256\,z^4 + 4224\,z^3 + 1008\,z^2 - 49\,140\,z + 31\,185\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3598.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, \frac{1}{2}; z\right) = \frac{1}{31\,185}\left(\left(256\,z^4 - 2688\,z^3 - 28\,560\,z^2 + 34\,020\,z + 31\,185\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-256\,z^3 + 7392\,z^2 + 7560\,z - 31\,185\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3599.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, \frac{1}{2}; -z\right) = \frac{1}{31\,185}\left(\left(256\,z^4 + 2688\,z^3 - 28\,560\,z^2 - 34\,020\,z + 31\,185\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-256\,z^3 - 7392\,z^2 + 7560\,z + 31\,185\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3600.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, 1; z\right) = \frac{1}{31\,185}\left(\left(256\,z^4 - 768\,z^3 - 40\,608\,z^2 - 11\,376\,z + 31\,185\right)I_0\left(2\sqrt{z}\right) - 64\sqrt{z}\left(16\,z^3 - 216\,z^2 - 999\,z + 531\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3601.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, 1; -z\right) = \frac{1}{31\,185}\left(\left(256\,z^4 + 768\,z^3 - 40\,608\,z^2 + 11\,376\,z + 31\,185\right)J_0\left(2\sqrt{z}\right) - 64\sqrt{z}\left(16\,z^3 + 216\,z^2 - 999\,z - 531\right)J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3602.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, \frac{3}{2}; z\right) = \left(-\frac{256\,z^3}{10\,395} + \frac{32\,z^2}{297} + \frac{56\,z}{33} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(64\,z^3 + 672\,z^2 - 11\,340\,z - 31\,185\right)\sinh\left(2\sqrt{z}\right)}{31\,185}$$

07.22.03.3603.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, \frac{3}{2}; -z\right) = \left(\frac{256\,z^3}{10\,395} + \frac{32\,z^2}{297} - \frac{56\,z}{33} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(64\,z^3 - 672\,z^2 - 11\,340\,z + 31\,185\right)\sin\left(2\sqrt{z}\right)}{31\,185}$$

07.22.03.3604.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, 2; z\right) = \frac{1}{31\,185\sqrt{z}}\left(\left(256\,z^4 + 5376\,z^3 - 23\,712\,z^2 - 105\,840\,z + 31\,185\right)I_1\left(2\sqrt{z}\right) + 16\sqrt{z}\left(-128\,z^3 - 528\,z^2 + 5904\,z + 10\,395\right)I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3605.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, 2; -z\right) = \frac{1}{31\,185\sqrt{z}}$$
$$\left(\left(256z^4 - 5376z^3 - 23\,712z^2 + 105\,840z + 31\,185\right) J_1\left(2\sqrt{z}\right) + 16\sqrt{z}\left(-128z^3 + 528z^2 + 5904z - 10\,395\right) J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3606.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, \frac{5}{2}; z\right) = \left(\frac{64z^3}{10\,395} + \frac{32z^2}{99} + \frac{20z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16z^2 + 240z + 495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3607.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, \frac{5}{2}; -z\right) = \left(-\frac{64z^3}{10\,395} + \frac{32z^2}{99} - \frac{20z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(16z^2 - 240z + 495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3608.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, 3; z\right) = \frac{1}{31\,185z}$$
$$\left(2\left(\left(256z^4 + 14\,592z^3 + 117\,600z^2 + 317\,520z + 31\,185\right) I_2\left(2\sqrt{z}\right) - 96\sqrt{z}\left(32z^3 + 736z^2 + 4410z + 10\,395\right) I_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3609.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, 3; -z\right) = \frac{1}{31\,185z}$$
$$\left(2\left(\left(256z^4 - 14\,592z^3 + 117\,600z^2 - 317\,520z + 31\,185\right) J_2\left(2\sqrt{z}\right) - 96\sqrt{z}\left(32z^3 - 736z^2 + 4410z - 10\,395\right) J_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3610.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, \frac{7}{2}; z\right) = \frac{1}{2079z^{5/2}}\left(2\left(16z^5 + 1956z^4 + 40\,929z^3 + 322\,560z^2 + 967\,680z + 483\,840\right)\sinh\left(2\sqrt{z}\right) -\right.$$
$$\left.\sqrt{z}\left(496z^4 + 20\,688z^3 + 255\,969z^2 + 1\,290\,240z + 1\,935\,360\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.3611.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, \frac{7}{2}; -z\right) = \frac{1}{2079z^{5/2}}\left(2\left(-16z^5 + 1956z^4 - 40\,929z^3 + 322\,560z^2 - 967\,680z + 483\,840\right)\sin\left(2\sqrt{z}\right) -\right.$$
$$\left.\sqrt{z}\left(496z^4 - 20\,688z^3 + 255\,969z^2 - 1\,290\,240z + 1\,935\,360\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.3612.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, 4; z\right) = \frac{1}{10\,395z^{3/2}}\left(\left(512z^4 + 53\,760z^3 + 987\,840z^2 + 5\,715\,360z + 62\,370\right) I_3\left(2\sqrt{z}\right) -\right.$$
$$\left.32\sqrt{z}\left(256z^3 + 11\,760z^2 + 158\,760z + 717\,255\right) I_4\left(2\sqrt{z}\right)\right)$$

07.22.03.3613.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, 4; -z\right) = \frac{1}{10\,395z^{3/2}}\left(\left(512z^4 - 53\,760z^3 + 987\,840z^2 - 5\,715\,360z + 62\,370\right) J_3\left(2\sqrt{z}\right) -\right.$$
$$\left.32\sqrt{z}\left(256z^3 - 11\,760z^2 + 158\,760z - 717\,255\right) J_4\left(2\sqrt{z}\right)\right)$$

07.22.03.3614.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, \frac{9}{2}; z\right) = \frac{1}{297z^{7/2}}\left(\sqrt{z}\left(16z^5 + 3636z^4 + 147\,753z^3 + 2\,257\,920z^2 + 13\,547\,520z + 21\,772\,800\right)\cosh\left(2\sqrt{z}\right) -\right.$$
$$\left.6\left(56z^5 + 4451z^4 + 107\,520z^3 + 1\,048\,320z^2 + 3\,548\,160z + 1\,814\,400\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3615.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, \frac{9}{2}; -z\right) = \frac{1}{297\, z^{7/2}}\left(\sqrt{z}\,\left(16\, z^5 - 3636\, z^4 + 147\,753\, z^3 - 2\,257\,920\, z^2 + 13\,547\,520\, z - 21\,772\,800\right)\cos\left(2\sqrt{z}\right) - 6\left(56\, z^5 - 4451\, z^4 + 107\,520\, z^3 - 1\,048\,320\, z^2 + 3\,548\,160\, z - 1\,814\,400\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3616.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, 5; z\right) = \frac{1}{10\,395\, z^2}\left(8\left(\left(256\, z^4 + 42\,240\, z^3 + 1\,246\,560\, z^2 + 10\,901\,520\, z + 31\,185\right) I_4\left(2\sqrt{z}\right) - 320\sqrt{z}\,\left(16\, z^3 + 1176\, z^2 + 25\,137\, z + 170\,478\right) I_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3617.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, 5; -z\right) = \frac{1}{10\,395\, z^2}\left(8\left(\left(256\, z^4 - 42\,240\, z^3 + 1\,246\,560\, z^2 - 10\,901\,520\, z + 31\,185\right) J_4\left(2\sqrt{z}\right) - 320\sqrt{z}\,\left(16\, z^3 - 1176\, z^2 + 25\,137\, z - 170\,478\right) J_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3618.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, \frac{11}{2}; z\right) = \frac{1}{33\, z^{9/2}}\left(2\left(4\, z^6 + 1503\, z^5 + 100\,800\, z^4 + 2\,540\,160\, z^3 + 26\,369\,280\, z^2 + 92\,534\,400\, z + 47\,628\,000\right)\sinh\left(2\sqrt{z}\right) - 3\sqrt{z}\,\left(72\, z^5 + 9461\, z^4 + 376\,320\, z^3 + 6\,128\,640\, z^2 + 38\,707\,200\, z + 63\,504\,000\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.3619.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, \frac{11}{2}; -z\right) = \frac{1}{33\, z^{9/2}}\left(3\sqrt{z}\,\left(72\, z^5 - 9461\, z^4 + 376\,320\, z^3 - 6\,128\,640\, z^2 + 38\,707\,200\, z - 63\,504\,000\right)\cos\left(2\sqrt{z}\right) + 2\left(4\, z^6 - 1503\, z^5 + 100\,800\, z^4 - 2\,540\,160\, z^3 + 26\,369\,280\, z^2 - 92\,534\,400\, z + 47\,628\,000\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3620.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, 6; z\right) = \frac{1}{2079\, z^{5/2}}\left(8\left(\left(256\, z^4 + 60\,672\, z^3 + 2\,547\,552\, z^2 + 30\,545\,424\, z + 31\,185\right) I_5\left(2\sqrt{z}\right) - 48\sqrt{z}\,\left(128\, z^3 + 13\,552\, z^2 + 409\,248\, z + 3\,819\,123\right) I_6\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3621.01

$${}_1F_2\left(\frac{5}{2}; -\frac{11}{2}, 6; -z\right) = \frac{1}{2079\, z^{5/2}}\left(8\left(\left(256\, z^4 - 60\,672\, z^3 + 2\,547\,552\, z^2 - 30\,545\,424\, z + 31\,185\right) J_5\left(2\sqrt{z}\right) - 48\sqrt{z}\,\left(128\, z^3 - 13\,552\, z^2 + 409\,248\, z - 3\,819\,123\right) J_6\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = \frac{5}{2}$, $b_1 = -\frac{9}{2}$

07.22.03.3622.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, -\frac{9}{2}; z\right) = \frac{1}{2\,679\,075}\left(\left(4096\, z^6 + 64\,512\, z^5 + 107\,520\, z^4 + 564\,480\, z^3 + 2\,494\,800\, z^2 + 5\,688\,900\, z + 2\,679\,075\right)\cosh\left(2\sqrt{z}\right) + 10\sqrt{z}\,\left(4096\, z^5 - 5376\, z^4 - 24\,192\, z^3 - 124\,992\, z^2 - 423\,360\, z - 535\,815\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3623.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, -\frac{9}{2}; -z\right) =$$
$$\frac{1}{2\,679\,075}\left(\left(4096\,z^6 - 64\,512\,z^5 + 107\,520\,z^4 - 564\,480\,z^3 + 2\,494\,800\,z^2 - 5\,688\,900\,z + 2\,679\,075\right)\cos\left(2\sqrt{z}\right) + 10\sqrt{z}\left(4096\,z^5 + 5376\,z^4 - 24\,192\,z^3 + 124\,992\,z^2 - 423\,360\,z + 535\,815\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3624.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, -\frac{7}{2}; z\right) = \frac{1}{297\,675}\left(3\left(-6144\,z^5 + 8960\,z^4 + 26\,880\,z^3 + 100\,800\,z^2 + 214\,200\,z + 99\,225\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(1024\,z^5 + 11\,520\,z^4 + 20\,160\,z^3 + 80\,640\,z^2 + 245\,700\,z + 297\,675\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3625.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, -\frac{7}{2}; -z\right) = \frac{1}{297\,675}\left(3\left(6144\,z^5 + 8960\,z^4 - 26\,880\,z^3 + 100\,800\,z^2 - 214\,200\,z + 99\,225\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-1024\,z^5 + 11\,520\,z^4 - 20\,160\,z^3 + 80\,640\,z^2 - 245\,700\,z + 297\,675\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3626.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, -\frac{5}{2}; z\right) =$$
$$\left(\frac{1024\,z^5}{42\,525} + \frac{256\,z^4}{2835} + \frac{64\,z^3}{135} + \frac{32\,z^2}{27} + \frac{20\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(256\,z^4 - 512\,z^3 - 1008\,z^2 - 2520\,z - 2835\right)\sinh\left(2\sqrt{z}\right)}{2835}$$

07.22.03.3627.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, -\frac{5}{2}; -z\right) =$$
$$\left(-\frac{1024\,z^5}{42\,525} + \frac{256\,z^4}{2835} - \frac{64\,z^3}{135} + \frac{32\,z^2}{27} - \frac{20\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256\,z^4 + 512\,z^3 - 1008\,z^2 + 2520\,z - 2835\right)\sin\left(2\sqrt{z}\right)}{2835}$$

07.22.03.3628.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, -\frac{3}{2}; z\right) = \frac{1}{8505}\left(\left(-2816\,z^4 + 5376\,z^3 + 15\,120\,z^2 + 20\,160\,z + 8505\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256\,z^4 - 1152\,z^3 + 6384\,z^2 + 8820\,z + 8505\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3629.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, -\frac{3}{2}; -z\right) = \frac{1}{8505}\left(\left(-2816\,z^4 - 5376\,z^3 + 15\,120\,z^2 - 20\,160\,z + 8505\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256\,z^4 + 1152\,z^3 + 6384\,z^2 - 8820\,z + 8505\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3630.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, -\frac{1}{2}; z\right) =$$
$$\left(\frac{256\,z^4}{2835} - \frac{128\,z^3}{135} + \frac{16\,z^2}{9} + \frac{28\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(128\,z^3 + 224\,z^2 - 1680\,z - 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3631.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, -\frac{1}{2}; -z\right) =$$
$$\left(\frac{256\,z^4}{2835} + \frac{128\,z^3}{135} + \frac{16\,z^2}{9} - \frac{28\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(128\,z^3 - 224\,z^2 - 1680\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3632.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, \frac{1}{2}; z\right) = \left(-\frac{32\,z^2}{27} + \frac{8\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-64\,z^3 + 672\,z^2 + 1260\,z - 2835\right)\sinh\left(2\sqrt{z}\right)}{2835}$$

07.22.03.3633.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, \frac{1}{2}; -z\right) = \left(-\frac{32\,z^2}{27} - \frac{8\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-64\,z^3 - 672\,z^2 + 1260\,z + 2835\right)\sin\left(2\sqrt{z}\right)}{2835}$$

07.22.03.3634.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, 1; z\right) = \frac{3\left(64\,z^3 - 1296\,z^2 - 612\,z + 945\right)I_0\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-64\,z^3 + 432\,z^2 + 3348\,z - 1287\right)I_1\left(2\sqrt{z}\right)}{2835}$$

07.22.03.3635.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, 1; -z\right) = \frac{2\sqrt{z}\left(-64\,z^3 - 432\,z^2 + 3348\,z + 1287\right)J_1\left(2\sqrt{z}\right) - 3\left(64\,z^3 + 1296\,z^2 - 612\,z - 945\right)J_0\left(2\sqrt{z}\right)}{2835}$$

07.22.03.3636.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, \frac{3}{2}; z\right) = \left(-\frac{64\,z^3}{2835} + \frac{44\,z}{27} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{405}\sqrt{z}\left(16\,z^2 - 120\,z - 405\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3637.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, \frac{3}{2}; -z\right) = \left(\frac{64\,z^3}{2835} - \frac{44\,z}{27} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{405}\sqrt{z}\left(16\,z^2 + 120\,z - 405\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3638.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, 2; z\right) = \frac{\frac{3\left(192\,z^3 - 464\,z^2 - 2940\,z + 945\right)I_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 2\left(-64\,z^3 - 624\,z^2 + 3492\,z + 6615\right)I_2\left(2\sqrt{z}\right)}{2835}$$

07.22.03.3639.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, 2; -z\right) = \frac{2\left(-64\,z^3 + 624\,z^2 + 3492\,z - 6615\right)J_2\left(2\sqrt{z}\right) - \frac{3\left(192\,z^3 + 464\,z^2 - 2940\,z - 945\right)J_1\left(2\sqrt{z}\right)}{\sqrt{z}}}{2835}$$

07.22.03.3640.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, \frac{5}{2}; z\right) = \left(\frac{16\,z^2}{63} + \frac{16\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3641.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, \frac{5}{2}; -z\right) = \left(\frac{16\,z^2}{63} - \frac{16\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3642.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, 3; z\right) =$$
$$\frac{1}{2835\,z}\left(2\left(15\left(64\,z^3+560\,z^2+1372\,z+189\right)I_2\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(64\,z^3+2448\,z^2+14\,700\,z+33\,075\right)I_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3643.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, 3; -z\right) =$$
$$-\frac{1}{2835\,z}\left(2\left(15\left(64\,z^3-560\,z^2+1372\,z-189\right)J_2\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(64\,z^3-2448\,z^2+14\,700\,z-33\,075\right)J_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3644.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, \frac{7}{2}; z\right) = \frac{1}{189\,z^{5/2}}\left(6\left(32\,z^4+833\,z^3+6720\,z^2+20\,160\,z+10\,080\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.\sqrt{z}\,\left(16\,z^4+1188\,z^3+15\,939\,z^2+80\,640\,z+120\,960\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.3645.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, \frac{7}{2}; -z\right) = \frac{1}{189\,z^{5/2}}\left(6\left(32\,z^4-833\,z^3+6720\,z^2-20\,160\,z+10\,080\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.\sqrt{z}\,\left(16\,z^4-1188\,z^3+15\,939\,z^2-80\,640\,z+120\,960\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.3646.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, 4; z\right) = \frac{2\left(64\,z^3+1360\,z^2+7980\,z+135\right)I_3\left(2\sqrt{z}\right)}{45\,z^{3/2}}-\frac{4\left(64\,z^3+5040\,z^2+73\,500\,z+337\,365\right)I_4\left(2\sqrt{z}\right)}{945\,z}$$

07.22.03.3647.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, 4; -z\right) = -\frac{2\left(64\,z^3-1360\,z^2+7980\,z-135\right)J_3\left(2\sqrt{z}\right)}{45\,z^{3/2}}-\frac{4\left(64\,z^3-5040\,z^2+73\,500\,z-337\,365\right)J_4\left(2\sqrt{z}\right)}{945\,z}$$

07.22.03.3648.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, \frac{9}{2}; z\right) = \frac{1}{27\,z^{7/2}}\left(\sqrt{z}\,\left(136\,z^4+7323\,z^3+120\,960\,z^2+745\,920\,z+1\,209\,600\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\left(4\,z^5+603\,z^4+16\,800\,z^3+171\,360\,z^2+589\,680\,z+302\,400\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3649.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, \frac{9}{2}; -z\right) = \frac{1}{27\,z^{7/2}}\left(2\left(-4\,z^5+603\,z^4-16\,800\,z^3+171\,360\,z^2-589\,680\,z+302\,400\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.\sqrt{z}\,\left(136\,z^4-7323\,z^3+120\,960\,z^2-745\,920\,z+1\,209\,600\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.3650.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, 5; z\right) =$$
$$\frac{1}{945\,z^2}\left(8\left(3\left(576\,z^3+20\,720\,z^2+191\,100\,z+945\right)I_4\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(64\,z^3+8400\,z^2+202\,860\,z+1\,435\,455\right)I_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3651.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, 5; -z\right) =$$
$$-\frac{1}{945\,z^2}\left(8\left(3\left(576\,z^3 - 20\,720\,z^2 + 191\,100\,z - 945\right)J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(64\,z^3 - 8400\,z^2 + 202\,860\,z - 1\,435\,455\right)J_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3652.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, \frac{11}{2}; z\right) = \frac{1}{3\,z^{9/2}}\left(30\left(3\,z^5 + 280\,z^4 + 7896\,z^3 + 85\,932\,z^2 + 307\,440\,z + 158\,760\right)\sinh\left(2\sqrt{z}\right) -$$
$$\sqrt{z}\,\left(4\,z^5 + 1053\,z^4 + 50\,400\,z^3 + 882\,000\,z^2 + 5\,745\,600\,z + 9\,525\,600\right)\cosh\left(2\sqrt{z}\right)\Big)$$

07.22.03.3653.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, \frac{11}{2}; -z\right) = \frac{1}{3\,z^{9/2}}\left(\sqrt{z}\,\left(4\,z^5 - 1053\,z^4 + 50\,400\,z^3 - 882\,000\,z^2 + 5\,745\,600\,z - 9\,525\,600\right)\cos\left(2\sqrt{z}\right) -$$
$$30\left(3\,z^5 - 280\,z^4 + 7896\,z^3 - 85\,932\,z^2 + 307\,440\,z - 158\,760\right)\sin\left(2\sqrt{z}\right)\Big)$$

07.22.03.3654.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, 6; z\right) =$$
$$\frac{1}{189\,z^{5/2}}\left(8\left(3\left(704\,z^3 + 37\,424\,z^2 + 484\,708\,z + 945\right)I_5\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(64\,z^3 + 12\,528\,z^2 + 440\,412\,z + 4\,364\,577\right)I_6\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3655.01

$${}_1F_2\left(\frac{5}{2}; -\frac{9}{2}, 6; -z\right) =$$
$$-\frac{1}{189\,z^{5/2}}\left(8\left(3\left(704\,z^3 - 37\,424\,z^2 + 484\,708\,z - 945\right)J_5\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(64\,z^3 - 12\,528\,z^2 + 440\,412\,z - 4\,364\,577\right)J_6\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = \frac{5}{2}$, $b_1 = -\frac{7}{2}$

07.22.03.3656.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, -\frac{7}{2}; z\right) = \frac{1}{33\,075}\left(\left(1024\,z^5 + 11\,520\,z^4 + 12\,480\,z^3 + 37\,440\,z^2 + 72\,900\,z + 33\,075\right)\cosh\left(2\sqrt{z}\right) +$$
$$2\sqrt{z}\,\left(4352\,z^4 - 3840\,z^3 - 10\,800\,z^2 - 28\,800\,z - 33\,075\right)\sinh\left(2\sqrt{z}\right)\Big)$$

07.22.03.3657.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, -\frac{7}{2}; -z\right) = \frac{1}{33\,075}\left(\left(-1024\,z^5 + 11\,520\,z^4 - 12\,480\,z^3 + 37\,440\,z^2 - 72\,900\,z + 33\,075\right)\cos\left(2\sqrt{z}\right) -$$
$$2\sqrt{z}\,\left(4352\,z^4 + 3840\,z^3 - 10\,800\,z^2 + 28\,800\,z - 33\,075\right)\sin\left(2\sqrt{z}\right)\Big)$$

07.22.03.3658.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, -\frac{5}{2}; z\right) = \frac{1}{4725}$$
$$\left(-15\left(256\,z^4 - 256\,z^3 - 432\,z^2 - 720\,z - 315\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(256\,z^4 + 1920\,z^3 + 2160\,z^2 + 4500\,z + 4725\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3659.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, -\frac{5}{2}; -z\right) =$$
$$\frac{1}{4725}\left(2\sqrt{z}\,\left(256\,z^4 - 1920\,z^3 + 2160\,z^2 - 4500\,z + 4725\right)\sin\left(2\sqrt{z}\right) - 15\left(256\,z^4 + 256\,z^3 - 432\,z^2 + 720\,z - 315\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.3660.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, -\frac{3}{2}; z\right) =$$
$$\frac{1}{945}\left(\left(256\,z^4 + 384\,z^3 + 2160\,z^2 + 2340\,z + 945\right)\cosh\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(256\,z^3 - 352\,z^2 - 360\,z - 315\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3661.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, -\frac{3}{2}; -z\right) =$$
$$\frac{1}{945}\left(\left(256\,z^4 - 384\,z^3 + 2160\,z^2 - 2340\,z + 945\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(256\,z^3 + 352\,z^2 - 360\,z + 315\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3662.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, -\frac{1}{2}; z\right) = \frac{1}{315}\left(\left(-512\,z^3 + 480\,z^2 + 1080\,z + 315\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(64\,z^3 - 288\,z^2 + 660\,z + 315\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3663.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, -\frac{1}{2}; -z\right) = \frac{1}{315}\left(\left(512\,z^3 + 480\,z^2 - 1080\,z + 315\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(64\,z^3 + 288\,z^2 + 660\,z - 315\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3664.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, \frac{1}{2}; z\right) = \frac{1}{315}\left(\left(64\,z^3 - 480\,z^2 + 180\,z + 315\right)\cosh\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(16\,z^2 + 80\,z - 105\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3665.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, \frac{1}{2}; -z\right) = \frac{1}{315}\left(6\sqrt{z}\,\left(-16\,z^2 + 80\,z + 105\right)\sin\left(2\sqrt{z}\right) - \left(64\,z^3 + 480\,z^2 + 180\,z - 315\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.3666.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, 1; z\right) = \frac{1}{315}\left(\left(64\,z^3 - 432\,z^2 - 324\,z + 315\right)I_0\left(2\sqrt{z}\right) + 216\sqrt{z}\,\left(4\,z - 1\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3667.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, 1; -z\right) = \frac{1}{315}\left(\left(-64\,z^3 - 432\,z^2 + 324\,z + 315\right)J_0\left(2\sqrt{z}\right) + 216\sqrt{z}\,\left(4\,z + 1\right)J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3668.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, \frac{3}{2}; z\right) = \left(-\frac{16\,z^2}{105} + \frac{32\,z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{315}\sqrt{z}\,\left(16\,z^2 - 60\,z - 315\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3669.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, \frac{3}{2}; -z\right) = \left(-\frac{16\,z^2}{105} - \frac{32\,z}{21} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{315}\sqrt{z}\,\left(16\,z^2 + 60\,z - 315\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3670.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, 2; z\right) = \frac{1}{315}\left(\frac{\left(64 z^3 - 48 z^2 - 900 z + 315\right) I_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 12\left(-16 z^2 + 48 z + 105\right) I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3671.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, 2; -z\right) = \frac{1}{315}\left(\frac{\left(-64 z^3 - 48 z^2 + 900 z + 315\right) J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 12\left(16 z^2 + 48 z - 105\right) J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3672.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, \frac{5}{2}; z\right) = \left(\frac{16 z^2}{105} + \frac{12 z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,(8 z + 21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3673.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, \frac{5}{2}; -z\right) = \left(\frac{16 z^2}{105} - \frac{12 z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}(21 - 8 z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.3674.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, 3; z\right) = \frac{2\left(\left(64 z^3 + 720 z^2 + 1500 z + 315\right) I_2\left(2\sqrt{z}\right) - 48\sqrt{z}\,\left(8 z^2 + 50 z + 105\right) I_3\left(2\sqrt{z}\right)\right)}{315 z}$$

07.22.03.3675.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, 3; -z\right) = \frac{2\left(\left(-64 z^3 + 720 z^2 - 1500 z + 315\right) J_2\left(2\sqrt{z}\right) + 48\sqrt{z}\,\left(8 z^2 - 50 z + 105\right) J_3\left(2\sqrt{z}\right)\right)}{315 z}$$

07.22.03.3676.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, \frac{7}{2}; z\right) =$$

$$\frac{1}{21 z^{5/2}}\left(2\left(4 z^4 + 171 z^3 + 1440 z^2 + 4320 z + 2160\right)\sinh\left(2\sqrt{z}\right) - 3\sqrt{z}\,\left(24 z^3 + 377 z^2 + 1920 z + 2880\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.3677.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, \frac{7}{2}; -z\right) =$$

$$\frac{1}{21 z^{5/2}}\left(3\sqrt{z}\,\left(24 z^3 - 377 z^2 + 1920 z - 2880\right)\cos\left(2\sqrt{z}\right) + 2\left(4 z^4 - 171 z^3 + 1440 z^2 - 4320 z + 2160\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3678.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, 4; z\right) = \frac{2\left(64 z^3 + 1872 z^2 + 11\,100 z + 315\right) I_3\left(2\sqrt{z}\right)}{105 z^{3/2}} - \frac{8\left(48 z^2 + 800 z + 3745\right) I_4\left(2\sqrt{z}\right)}{35 z}$$

07.22.03.3679.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, 4; -z\right) = \frac{2\left(\left(-64 z^3 + 1872 z^2 - 11\,100 z + 315\right) J_3\left(2\sqrt{z}\right) + 12\sqrt{z}\,\left(48 z^2 - 800 z + 3745\right) J_4\left(2\sqrt{z}\right)\right)}{105 z^{3/2}}$$

07.22.03.3680.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, \frac{9}{2}; z\right) = \frac{1}{3 z^{7/2}}$$

$$\left(\sqrt{z}\,\left(4 z^4 + 387 z^3 + 7200 z^2 + 46\,080 z + 75\,600\right)\cosh\left(2\sqrt{z}\right) - 6\left(9 z^4 + 320 z^3 + 3480 z^2 + 12\,240 z + 6300\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3681.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, \frac{9}{2}; -z\right) =$$
$$\frac{1}{3\,z^{7/2}}\left(6\left(9\,z^4 - 320\,z^3 + 3480\,z^2 - 12\,240\,z + 6300\right)\sin\left(2\sqrt{z}\right) - \sqrt{z}\,\left(4\,z^4 - 387\,z^3 + 7200\,z^2 - 46\,080\,z + 75\,600\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.3682.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, 5; z\right) = \frac{8\left(\left(64\,z^3 + 3408\,z^2 + 33\,660\,z + 315\right)I_4\left(2\sqrt{z}\right) - 24\sqrt{z}\,\left(32\,z^2 + 940\,z + 7035\right)I_5\left(2\sqrt{z}\right)\right)}{105\,z^2}$$

07.22.03.3683.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, 5; -z\right) = -\frac{8\left(\left(64\,z^3 - 3408\,z^2 + 33\,660\,z - 315\right)J_4\left(2\sqrt{z}\right) - 24\sqrt{z}\,\left(32\,z^2 - 940\,z + 7035\right)J_5\left(2\sqrt{z}\right)\right)}{105\,z^2}$$

07.22.03.3684.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, \frac{11}{2}; z\right) = \frac{1}{z^{9/2}}\left(3\left(2\left(z^5 + 180\,z^4 + 6000\,z^3 + 69\,570\,z^2 + 255\,150\,z + 132\,300\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\,\left(37\,z^4 + 2400\,z^3 + 46\,440\,z^2 + 315\,000\,z + 529\,200\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3685.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, \frac{11}{2}; -z\right) = -\frac{1}{z^{9/2}}\left(3\left(\sqrt{z}\,\left(37\,z^4 - 2400\,z^3 + 46\,440\,z^2 - 315\,000\,z + 529\,200\right)\cos\left(2\sqrt{z}\right) + 2\left(z^5 - 180\,z^4 + 6000\,z^3 - 69\,570\,z^2 + 255\,150\,z - 132\,300\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3686.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, 6; z\right) = \frac{8\left(64\,z^3 + 5328\,z^2 + 76\,476\,z + 315\right)I_5\left(2\sqrt{z}\right)}{21\,z^{5/2}} - \frac{32\left(80\,z^2 + 3568\,z + 38\,283\right)I_6\left(2\sqrt{z}\right)}{7\,z^2}$$

07.22.03.3687.01

$${}_1F_2\left(\frac{5}{2}; -\frac{7}{2}, 6; -z\right) = \frac{32\left(80\,z^2 - 3568\,z + 38\,283\right)J_6\left(2\sqrt{z}\right)}{7\,z^2} - \frac{8\left(64\,z^3 - 5328\,z^2 + 76\,476\,z - 315\right)J_5\left(2\sqrt{z}\right)}{21\,z^{5/2}}$$

For fixed z and $a_1 = \frac{5}{2}$, $b_1 = -\frac{5}{2}$

07.22.03.3688.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, -\frac{5}{2}; z\right) =$$
$$\frac{1}{675}\left(\left(256\,z^4 + 1920\,z^3 + 1200\,z^2 + 1620\,z + 675\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(896\,z^3 - 480\,z^2 - 720\,z - 675\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3689.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, -\frac{5}{2}; -z\right) =$$
$$\frac{1}{675}\left(\left(256\,z^4 - 1920\,z^3 + 1200\,z^2 - 1620\,z + 675\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(896\,z^3 + 480\,z^2 - 720\,z + 675\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3690.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, -\frac{3}{2}; z\right) = \left(-\frac{256\,z^3}{45} + \frac{32\,z^2}{9} + \frac{8\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{135}\sqrt{z}\left(64\,z^3 + 288\,z^2 + 180\,z + 135\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3691.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, -\frac{3}{2}; -z\right) = \left(\frac{256\,z^3}{45} + \frac{32\,z^2}{9} - \frac{8\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{135}\sqrt{z}\left(-64\,z^3 + 288\,z^2 - 180\,z + 135\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3692.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, -\frac{1}{2}; z\right) = \left(\frac{64\,z^3}{45} + 4\,z + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\left(48\,z^2 - 40\,z - 15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3693.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, -\frac{1}{2}; -z\right) = \left(-\frac{64\,z^3}{45} - 4\,z + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\left(48\,z^2 + 40\,z - 15\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3694.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, \frac{1}{2}; z\right) = \left(1 - \frac{16\,z^2}{9}\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{45}\sqrt{z}\left(16\,z^2 - 60\,z + 45\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3695.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, \frac{1}{2}; -z\right) = \left(1 - \frac{16\,z^2}{9}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{45}\sqrt{z}\left(16\,z^2 + 60\,z + 45\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3696.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, 1; z\right) = \frac{1}{45}\left(\left(-48\,z^2 - 72\,z + 45\right)I_0\left(2\sqrt{z}\right) - 2\sqrt{z}\left(16\,z^2 - 72\,z + 9\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3697.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, 1; -z\right) = \frac{1}{45}\left(\left(-48\,z^2 + 72\,z + 45\right)J_0\left(2\sqrt{z}\right) + 2\sqrt{z}\left(16\,z^2 + 72\,z + 9\right)J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3698.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, \frac{3}{2}; z\right) = \left(-\frac{16\,z^2}{45} + \frac{4\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.3699.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, \frac{3}{2}; -z\right) = \left(-\frac{16\,z^2}{45} - \frac{4\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.3700.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, 2; z\right) = \frac{1}{45}\left(\frac{\left(16\,z^2 - 120\,z + 45\right)I_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 2\left(-16\,z^2 + 24\,z + 75\right)I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3701.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, 2; -z\right) = \frac{1}{45}\left(\frac{\left(16\,z^2 + 120\,z + 45\right)J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 2\left(16\,z^2 + 24\,z - 75\right)J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3702.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, \frac{5}{2}; z\right) = \left(\frac{8\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,(4\,z + 15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3703.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, \frac{5}{2}; -z\right) = \left(1 - \frac{8z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}(15 - 4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.3704.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, 3; z\right) = \frac{10(4z+3)^2 I_2\left(2\sqrt{z}\right) - 4\sqrt{z}\,(4z+15)^2 I_3\left(2\sqrt{z}\right)}{45z}$$

07.22.03.3705.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, 3; -z\right) = \frac{10 J_2\left(2\sqrt{z}\right)(3-4z)^2 + 4(15-4z)^2\sqrt{z}\,J_3\left(2\sqrt{z}\right)}{45z}$$

07.22.03.3706.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, \frac{7}{2}; z\right) = \frac{2\left(13z^3 + 120z^2 + 360z + 180\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\left(4z^3 + 93z^2 + 480z + 720\right)\cosh\left(2\sqrt{z}\right)}{3z^{5/2}}$$

07.22.03.3707.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, \frac{7}{2}; -z\right) = \frac{\sqrt{z}\left(4z^3 - 93z^2 + 480z - 720\right)\cos\left(2\sqrt{z}\right) + 2\left(-13z^3 + 120z^2 - 360z + 180\right)\sin\left(2\sqrt{z}\right)}{3z^{5/2}}$$

07.22.03.3708.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, 4; z\right) = \frac{2\left(48z^2 + 280z + 15\right)I_3\left(2\sqrt{z}\right)}{5z^{3/2}} - \frac{4\left(16z^2 + 360z + 1725\right)I_4\left(2\sqrt{z}\right)}{15z}$$

07.22.03.3709.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, 4; -z\right) = \frac{2\left(48z^2 - 280z + 15\right)J_3\left(2\sqrt{z}\right)}{5z^{3/2}} + \frac{4\left(16z^2 - 360z + 1725\right)J_4\left(2\sqrt{z}\right)}{15z}$$

07.22.03.3710.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, \frac{9}{2}; z\right) =$$

$$-\frac{1}{3z^{7/2}}\left(7\left(2\left(z^4 + 60z^3 + 720z^2 + 2610z + 1350\right)\sinh\left(2\sqrt{z}\right) - 3\sqrt{z}\left(7z^3 + 160z^2 + 1080z + 1800\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3711.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, \frac{9}{2}; -z\right) =$$

$$\frac{1}{3z^{7/2}}\left(7\left(3\sqrt{z}\left(7z^3 - 160z^2 + 1080z - 1800\right)\cos\left(2\sqrt{z}\right) + 2\left(z^4 - 60z^3 + 720z^2 - 2610z + 1350\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3712.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, 5; z\right) = \frac{8\left(\left(208z^2 + 2232z + 45\right)I_4\left(2\sqrt{z}\right) - 2\sqrt{z}\left(16z^2 + 696z + 5625\right)I_5\left(2\sqrt{z}\right)\right)}{15z^2}$$

07.22.03.3713.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, 5; -z\right) = \frac{8\left(\left(208z^2 - 2232z + 45\right)J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\left(16z^2 - 696z + 5625\right)J_5\left(2\sqrt{z}\right)\right)}{15z^2}$$

07.22.03.3714.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, \frac{11}{2}; z\right) = -\frac{1}{2\,z^{9/2}}\left(21\left(2\sqrt{z}\,\left(z^4+120\,z^3+2700\,z^2+19\,350\,z+33\,075\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.15\left(2\,z^4+88\,z^3+1116\,z^2+4230\,z+2205\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3715.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, \frac{11}{2}; -z\right) = -\frac{1}{2\,z^{9/2}}$$
$$\left(21\left(2\sqrt{z}\,\left(z^4-120\,z^3+2700\,z^2-19\,350\,z+33\,075\right)\cos\left(2\sqrt{z}\right)-15\left(2\,z^4-88\,z^3+1116\,z^2-4230\,z+2205\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3716.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, 6; z\right) = \frac{8\left(\left(272\,z^2+4488\,z+45\right)I_5\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(16\,z^2+1128\,z+13\,509\right)I_6\left(2\sqrt{z}\right)\right)}{3\,z^{5/2}}$$

07.22.03.3717.01

$${}_1F_2\left(\frac{5}{2}; -\frac{5}{2}, 6; -z\right) = \frac{8\left(\left(272\,z^2-4488\,z+45\right)J_5\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(16\,z^2-1128\,z+13\,509\right)J_6\left(2\sqrt{z}\right)\right)}{3\,z^{5/2}}$$

For fixed z and $a_1 = \frac{5}{2}$, $b_1 = -\frac{3}{2}$

07.22.03.3718.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, -\frac{3}{2}; z\right) = \frac{1}{27}\left(\left(64\,z^3+288\,z^2+84\,z+27\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(176\,z^2-48\,z-27\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3719.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, -\frac{3}{2}; -z\right) = \frac{1}{27}\left(\left(-64\,z^3+288\,z^2-84\,z+27\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(176\,z^2+48\,z-27\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3720.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, -\frac{1}{2}; z\right) = \left(-16\,z^2+\frac{16\,z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{9}\sqrt{z}\,\left(16\,z^2+36\,z+9\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3721.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, -\frac{1}{2}; -z\right) = \left(-16\,z^2-\frac{16\,z}{3}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{9}\sqrt{z}\,\left(16\,z^2-36\,z+9\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3722.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, \frac{1}{2}; z\right) = \frac{1}{9}\left(\left(16\,z^2-12\,z+9\right)\cosh\left(2\sqrt{z}\right)+6\sqrt{z}\,\left(8\,z-3\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3723.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, \frac{1}{2}; -z\right) = \frac{1}{9}\left(\left(16\,z^2+12\,z+9\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\,\left(8\,z+3\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3724.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, 1; z\right) = \frac{1}{9}\left(I_0\left(2\sqrt{z}\right)\left(3-4\,z\right)^2+32\,z^{3/2}\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3725.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, 1; -z\right) = \frac{1}{9}\left(J_0\left(2\sqrt{z}\right)\left(4\,z+3\right)^2+32\,z^{3/2}\,J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3726.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, \frac{3}{2}; z\right) = \left(\frac{8z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{9}\sqrt{z}\,(4z - 9)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3727.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, \frac{3}{2}; -z\right) = \left(1 - \frac{8z}{9}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{9}\sqrt{z}\,(4z + 9)\sin\left(2\sqrt{z}\right)$$

07.22.03.3728.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, 2; z\right) = \frac{I_1\left(2\sqrt{z}\right)(3 - 4z)^2}{9\sqrt{z}} + \frac{8}{3}I_2\left(2\sqrt{z}\right)$$

07.22.03.3729.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, 2; -z\right) = \frac{(4z + 3)^2 J_1\left(2\sqrt{z}\right)}{9\sqrt{z}} - \frac{8}{3}J_2\left(2\sqrt{z}\right)$$

07.22.03.3730.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, \frac{5}{2}; z\right) = \left(\frac{4z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.3731.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, \frac{5}{2}; -z\right) = \left(1 - \frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.3732.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, 3; z\right) = \frac{2\left(\left(16z^2 + 8z + 9\right)I_2\left(2\sqrt{z}\right) - 16\sqrt{z}\,(2z + 3)I_3\left(2\sqrt{z}\right)\right)}{9z}$$

07.22.03.3733.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, 3; -z\right) = \frac{2\left(\left(16z^2 - 8z + 9\right)J_2\left(2\sqrt{z}\right) + 16(3 - 2z)\sqrt{z}\,J_3\left(2\sqrt{z}\right)\right)}{9z}$$

07.22.03.3734.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, \frac{7}{2}; z\right) = \frac{5\left(2\left(z^3 + 12z^2 + 36z + 18\right)\sinh\left(2\sqrt{z}\right) - 3\sqrt{z}\,\left(3z^2 + 16z + 24\right)\cosh\left(2\sqrt{z}\right)\right)}{3z^{5/2}}$$

07.22.03.3735.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, \frac{7}{2}; -z\right) = -\frac{5\left(3\sqrt{z}\,\left(3z^2 - 16z + 24\right)\cos\left(2\sqrt{z}\right) + 2\left(z^3 - 12z^2 + 36z - 18\right)\sin\left(2\sqrt{z}\right)\right)}{3z^{5/2}}$$

07.22.03.3736.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, 4; z\right) = \frac{2\left(\left(16z^2 + 72z + 9\right)I_3\left(2\sqrt{z}\right) - 8\sqrt{z}\,(8z + 39)I_4\left(2\sqrt{z}\right)\right)}{3z^{3/2}}$$

07.22.03.3737.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, 4; -z\right) = \frac{2\left(\left(16z^2 - 72z + 9\right)J_3\left(2\sqrt{z}\right) + 8(39 - 8z)\sqrt{z}\,J_4\left(2\sqrt{z}\right)\right)}{3z^{3/2}}$$

07.22.03.3738.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, \frac{9}{2}; z\right) = \frac{35\left(\sqrt{z}\,\left(z^3+36\,z^2+264\,z+450\right)\cosh\left(2\sqrt{z}\right)-\left(8\,z^3+114\,z^2+432\,z+225\right)\sinh\left(2\sqrt{z}\right)\right)}{3\,z^{7/2}}$$

07.22.03.3739.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, \frac{9}{2}; -z\right) = \frac{35\left(\sqrt{z}\,\left(z^3-36\,z^2+264\,z-450\right)\cos\left(2\sqrt{z}\right)+\left(-8\,z^3+114\,z^2-432\,z+225\right)\sin\left(2\sqrt{z}\right)\right)}{3\,z^{7/2}}$$

07.22.03.3740.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, 5; z\right) = \frac{8\left(\left(16\,z^2+168\,z+9\right)I_4\left(2\sqrt{z}\right)-96\sqrt{z}\,\left(z+9\right)I_5\left(2\sqrt{z}\right)\right)}{3\,z^2}$$

07.22.03.3741.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, 5; -z\right) = \frac{8\left(\left(16\,z^2-168\,z+9\right)J_4\left(2\sqrt{z}\right)-96\left(z-9\right)\sqrt{z}\,J_5\left(2\sqrt{z}\right)\right)}{3\,z^2}$$

07.22.03.3742.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, \frac{11}{2}; z\right) =$$

$$\frac{1}{4\,z^{9/2}}\left(105\left(\left(2\,z^4+156\,z^3+2268\,z^2+9000\,z+4725\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,\left(4\,z^3+116\,z^2+900\,z+1575\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3743.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, \frac{11}{2}; -z\right) =$$

$$\frac{1}{4\,z^{9/2}}\left(105\left(6\sqrt{z}\,\left(4\,z^3-116\,z^2+900\,z-1575\right)\cos\left(2\sqrt{z}\right)+\left(2\,z^4-156\,z^3+2268\,z^2-9000\,z+4725\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3744.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, 6; z\right) = \frac{40\left(\left(16\,z^2+296\,z+9\right)I_5\left(2\sqrt{z}\right)-8\sqrt{z}\,\left(16\,z+225\right)I_6\left(2\sqrt{z}\right)\right)}{3\,z^{5/2}}$$

07.22.03.3745.01

$${}_1F_2\left(\frac{5}{2}; -\frac{3}{2}, 6; -z\right) = \frac{40\left(\left(16\,z^2-296\,z+9\right)J_5\left(2\sqrt{z}\right)+8\left(225-16\,z\right)\sqrt{z}\,J_6\left(2\sqrt{z}\right)\right)}{3\,z^{5/2}}$$

For fixed z and $a_1 = \frac{5}{2}$, $b_1 = -\frac{1}{2}$

07.22.03.3746.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, -\frac{1}{2}; z\right) = \left(\frac{16\,z^2}{3}+12\,z+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{3}\sqrt{z}\,\left(32\,z-3\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3747.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, -\frac{1}{2}; -z\right) = \left(\frac{16\,z^2}{3}-12\,z+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{3}\sqrt{z}\,\left(32\,z+3\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3748.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, \frac{1}{2}; z\right) = (1-8z)\cosh\left(2\sqrt{z}\right) - \frac{2}{3}\sqrt{z}\,(4z+3)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3749.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, \frac{1}{2}; -z\right) = (8z+1)\cos\left(2\sqrt{z}\right) + \frac{2}{3}(3-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.3750.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, 1; z\right) = \frac{1}{3}\left((3-20z)\,I_0\left(2\sqrt{z}\right) + 2(1-4z)\sqrt{z}\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3751.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, 1; -z\right) = \frac{1}{3}\left((20z+3)\,J_0\left(2\sqrt{z}\right) - 2\sqrt{z}\,(4z+1)\,J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3752.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, \frac{3}{2}; z\right) = \left(1-\frac{4z}{3}\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.3753.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, \frac{3}{2}; -z\right) = \left(\frac{4z}{3}+1\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.3754.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, 2; z\right) = \frac{(1-4z)\,I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - \frac{2}{3}(4z-3)\,I_2\left(2\sqrt{z}\right)$$

07.22.03.3755.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, 2; -z\right) = \frac{(4z+1)\,J_1\left(2\sqrt{z}\right)}{\sqrt{z}} - \frac{2}{3}(4z+3)\,J_2\left(2\sqrt{z}\right)$$

07.22.03.3756.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, \frac{5}{2}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.3757.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, \frac{5}{2}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.3758.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, 3; z\right) = -\frac{2\left((4z-3)\,I_2\left(2\sqrt{z}\right) + 2\sqrt{z}\,(4z+3)\,I_3\left(2\sqrt{z}\right)\right)}{3z}$$

07.22.03.3759.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, 3; -z\right) = \frac{2\left((4z+3)\,J_2\left(2\sqrt{z}\right) + 2(3-4z)\sqrt{z}\,J_3\left(2\sqrt{z}\right)\right)}{3z}$$

07.22.03.3760.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, \frac{7}{2}; z\right) = -\frac{5\left(2\sqrt{z}\,(z+3)^2\cosh\left(2\sqrt{z}\right) - 3\left(2z^2+6z+3\right)\sinh\left(2\sqrt{z}\right)\right)}{2z^{5/2}}$$

07.22.03.3761.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, \frac{7}{2}; -z\right) = -\frac{5\left(2\,(z-3)^2\,\sqrt{z}\,\cos\left(2\sqrt{z}\right) - 3\left(2\,z^2-6\,z+3\right)\sin\left(2\sqrt{z}\right)\right)}{2\,z^{5/2}}$$

07.22.03.3762.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, 4; z\right) = \frac{2\,(4\,z+3)\,I_3\left(2\sqrt{z}\right)}{z^{3/2}} - \frac{4\,(4\,z+17)\,I_4\left(2\sqrt{z}\right)}{z}$$

07.22.03.3763.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, 4; -z\right) = \frac{(6-8\,z)\,J_3\left(2\sqrt{z}\right) + 4\,(17-4\,z)\,\sqrt{z}\;J_4\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.3764.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, \frac{9}{2}; z\right) = -\frac{35\left(\left(2\,z^3+42\,z^2+171\,z+90\right)\sinh\left(2\sqrt{z}\right) - 6\,\sqrt{z}\,\left(2\,z^2+17\,z+30\right)\cosh\left(2\sqrt{z}\right)\right)}{4\,z^{7/2}}$$

07.22.03.3765.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, \frac{9}{2}; -z\right) = -\frac{35\left(6\,\sqrt{z}\,\left(2\,z^2-17\,z+30\right)\cos\left(2\sqrt{z}\right) + \left(2\,z^3-42\,z^2+171\,z-90\right)\sin\left(2\sqrt{z}\right)\right)}{4\,z^{7/2}}$$

07.22.03.3766.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, 5; z\right) = \frac{8\left(3\,(4\,z+1)\,I_4\left(2\sqrt{z}\right) - 2\,\sqrt{z}\,(4\,z+39)\,I_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.3767.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, 5; -z\right) = -\frac{8\left(3\,(4\,z-1)\,J_4\left(2\sqrt{z}\right) + 2\,\sqrt{z}\,(4\,z-39)\,J_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.3768.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, \frac{11}{2}; z\right) =$$

$$-\frac{1}{16\,z^{9/2}}\left(315\left(2\,\sqrt{z}\,\left(2\,z^3+99\,z^2+870\,z+1575\right)\cosh\left(2\sqrt{z}\right) - \left(38\,z^3+699\,z^2+2970\,z+1575\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3769.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, \frac{11}{2}; -z\right) =$$

$$\frac{1}{16\,z^{9/2}}\left(315\left(2\,\sqrt{z}\,\left(2\,z^3-99\,z^2+870\,z-1575\right)\cos\left(2\sqrt{z}\right) + \left(-38\,z^3+699\,z^2-2970\,z+1575\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3770.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, 6; z\right) = \frac{40\,(20\,z+3)\,I_5\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{80\,(4\,z+69)\,I_6\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.3771.01

$${}_1F_2\left(\frac{5}{2}; -\frac{1}{2}, 6; -z\right) = -\frac{40\,(20\,z-3)\,J_5\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{80\,(4\,z-69)\,J_6\left(2\sqrt{z}\right)}{z^2}$$

For fixed z and $a_1 = \frac{5}{2}$, $b_1 = \frac{1}{2}$

07.22.03.0191.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, \frac{1}{2}; z\right) == \left(\frac{4z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{10}{3}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.3772.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, \frac{1}{2}; -z\right) = \left(1 - \frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) - \frac{10}{3}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.0192.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, 1; z\right) == \left(\frac{4z}{3} + 1\right)I_0\left(2\sqrt{z}\right) + \frac{8}{3}\sqrt{z}\,I_1\left(2\sqrt{z}\right)$$

07.22.03.3773.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, 1; -z\right) = \frac{1}{3}\left((3 - 4z)\,J_0\left(2\sqrt{z}\right) - 8\sqrt{z}\,J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0193.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, \frac{3}{2}; z\right) == \cosh\left(2\sqrt{z}\right) + \frac{2}{3}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.3774.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, \frac{3}{2}; -z\right) = \cos\left(2\sqrt{z}\right) - \frac{2}{3}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.0194.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, 2; z\right) == \frac{1}{3\sqrt{z}}\left(4\sqrt{z}\,I_0\left(2\sqrt{z}\right) + (4z - 1)\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.3775.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, 2; -z\right) = \frac{1}{3}\left(\frac{(3 - 4z)\,J_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 4\,J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3776.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, \frac{5}{2}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.3777.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, \frac{5}{2}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.0195.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, 3; z\right) == \frac{2(4z + 3)}{3z}I_2\left(2\sqrt{z}\right)$$

07.22.03.3778.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, 3; -z\right) = -\frac{2(4z - 3)\,J_2\left(2\sqrt{z}\right)}{3z}$$

07.22.03.0196.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, \frac{7}{2}; z\right) == \frac{5}{4\,z^{5/2}}\left(\left(2\,z^2+6\,z+3\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(2\,z+3\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.3779.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, \frac{7}{2}; -z\right) = \frac{5\left(2\sqrt{z}\,\left(2\,z-3\right)\cos\left(2\sqrt{z}\right)+\left(2\,z^2-6\,z+3\right)\sin\left(2\sqrt{z}\right)\right)}{4\,z^{5/2}}$$

07.22.03.0197.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, 4; z\right) == \frac{1}{z^{3/2}}\left(\left(8\,z+6\right)I_3\left(2\sqrt{z}\right)-8\sqrt{z}\,I_4\left(2\sqrt{z}\right)\right)$$

07.22.03.3780.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, 4; -z\right) = \frac{8\,J_4\left(2\sqrt{z}\right)}{z}-\frac{2\left(4\,z-3\right)J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.3781.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, \frac{9}{2}; z\right) = \frac{35\left(2\sqrt{z}\,\left(2\,z^2+24\,z+45\right)\cosh\left(2\sqrt{z}\right)-3\left(6\,z^2+28\,z+15\right)\sinh\left(2\sqrt{z}\right)\right)}{16\,z^{7/2}}$$

07.22.03.3782.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, \frac{9}{2}; -z\right) = -\frac{35\left(2\sqrt{z}\,\left(2\,z^2-24\,z+45\right)\cos\left(2\sqrt{z}\right)-3\left(6\,z^2-28\,z+15\right)\sin\left(2\sqrt{z}\right)\right)}{16\,z^{7/2}}$$

07.22.03.3783.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, 5; z\right) = \frac{8\left(\left(4\,z+3\right)I_4\left(2\sqrt{z}\right)-8\sqrt{z}\,I_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.3784.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, 5; -z\right) = \frac{8\left(\left(3-4\,z\right)J_4\left(2\sqrt{z}\right)+8\sqrt{z}\,J_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.3785.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, \frac{11}{2}; z\right) = \frac{315\left(\left(4\,z^3+123\,z^2+585\,z+315\right)\sinh\left(2\sqrt{z}\right)-30\sqrt{z}\,\left(z^2+11\,z+21\right)\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{9/2}}$$

07.22.03.3786.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, \frac{11}{2}; -z\right) = -\frac{315\left(30\sqrt{z}\,\left(z^2-11\,z+21\right)\cos\left(2\sqrt{z}\right)+\left(4\,z^3-123\,z^2+585\,z-315\right)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{9/2}}$$

07.22.03.3787.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, 6; z\right) = \frac{40\left(4\,z+3\right)I_5\left(2\sqrt{z}\right)}{z^{5/2}}-\frac{480\,I_6\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.3788.01

$${}_1F_2\left(\frac{5}{2}; \frac{1}{2}, 6; -z\right) = \frac{480\,J_6\left(2\sqrt{z}\right)}{z^2}-\frac{40\left(4\,z-3\right)J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = \frac{5}{2}$, $b_1 = 1$

07.22.03.0198.01

$$ {}_1F_2\left(\frac{5}{2}; 1, 1; z\right) == \frac{1}{3}\left((2z+3)\, I_0\left(\sqrt{z}\right)^2 + 8\sqrt{z}\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + 2z\, I_1\left(\sqrt{z}\right)^2\right) $$

07.22.03.3789.01

$$ {}_1F_2\left(\frac{5}{2}; 1, 1; -z\right) = \frac{1}{3}\left((3-2z)\, J_0\left(\sqrt{z}\right)^2 - 8\sqrt{z}\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + 2z\, J_1\left(\sqrt{z}\right)^2\right) $$

07.22.03.0199.01

$$ {}_1F_2\left(\frac{5}{2}; 1, \frac{3}{2}; z\right) == I_0\left(2\sqrt{z}\right) + \frac{2}{3}\sqrt{z}\, I_1\left(2\sqrt{z}\right) $$

07.22.03.3790.01

$$ {}_1F_2\left(\frac{5}{2}; 1, \frac{3}{2}; -z\right) = J_0\left(2\sqrt{z}\right) - \frac{2}{3}\sqrt{z}\, J_1\left(2\sqrt{z}\right) $$

07.22.03.0200.01

$$ {}_1F_2\left(\frac{5}{2}; 1, 2; z\right) == \frac{1}{3}\left(3\, I_0\left(\sqrt{z}\right)^2 + 4\sqrt{z}\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + I_1\left(\sqrt{z}\right)^2\right) $$

07.22.03.3791.01

$$ {}_1F_2\left(\frac{5}{2}; 1, 2; -z\right) = J_0\left(\sqrt{z}\right)^2 - \frac{4}{3}\sqrt{z}\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) - \frac{1}{3} J_1\left(\sqrt{z}\right)^2 $$

07.22.03.3792.01

$$ {}_1F_2\left(\frac{5}{2}; 1, \frac{5}{2}; z\right) = I_0\left(2\sqrt{z}\right) $$

07.22.03.3793.01

$$ {}_1F_2\left(\frac{5}{2}; 1, \frac{5}{2}; -z\right) = J_0\left(2\sqrt{z}\right) $$

07.22.03.0201.01

$$ {}_1F_2\left(\frac{5}{2}; 1, 3; z\right) == \frac{4}{3z}\left(z\, I_0\left(\sqrt{z}\right)^2 - \sqrt{z}\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + (z+1)\, I_1\left(\sqrt{z}\right)^2\right) $$

07.22.03.3794.01

$$ {}_1F_2\left(\frac{5}{2}; 1, 3; -z\right) = \frac{4\left(z\, J_0\left(\sqrt{z}\right)^2 - \sqrt{z}\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) - (z-1)\, J_1\left(\sqrt{z}\right)^2\right)}{3z} $$

07.22.03.0202.01

$$ {}_1F_2\left(\frac{5}{2}; 1, \frac{7}{2}; z\right) == \frac{5}{32z^2}\left(4\left(\sqrt{z}\,(4z+9)\, I_1\left(2\sqrt{z}\right) - 6z\, I_0\left(2\sqrt{z}\right)\right) + 9\pi\left(I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) - I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.3795.01

$$ {}_1F_2\left(\frac{5}{2}; 1, \frac{7}{2}; -z\right) = \frac{5\left(J_1\left(2\sqrt{z}\right)\left(4\sqrt{z}\,(4z-9) + 9\pi \boldsymbol{H}_0\left(2\sqrt{z}\right)\right) + 3\, J_0\left(2\sqrt{z}\right)\left(8z - 3\pi \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)}{32z^2} $$

07.22.03.0203.01

$${}_1F_2\left(\frac{5}{2}; 1, 4; z\right) == \frac{4}{z^2}\left(2\sqrt{z}\ (z+4)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - 2\, z\, I_0\left(\sqrt{z}\right)^2 - (3z+8)\, I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.3796.01

$${}_1F_2\left(\frac{5}{2}; 1, 4; -z\right) = \frac{4\left(2\, z\, J_0\left(\sqrt{z}\right)^2 + 2\,(z-4)\sqrt{z}\ J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + (8-3\,z)\, J_1\left(\sqrt{z}\right)^2\right)}{z^2}$$

07.22.03.3797.01

$${}_1F_2\left(\frac{5}{2}; 1, \frac{9}{2}; z\right) =$$

$$\frac{1}{256\, z^3}\left(35\left(I_0\left(2\sqrt{z}\right)\left(8\, z\,(8z+75) + 9\,\pi\,(4z-25)\, \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) - I_1\left(2\sqrt{z}\right)\left(4\sqrt{z}\ (64z+225) + 9\,\pi\,(4z-25)\, \boldsymbol{L}_0\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3798.01

$${}_1F_2\left(\frac{5}{2}; 1, \frac{9}{2}; -z\right) =$$

$$\frac{1}{256\, z^3}\left(35\left(J_1\left(2\sqrt{z}\right)\left(4\sqrt{z}\ (64z-225) + 9\,\pi\,(4z+25)\, \boldsymbol{H}_0\left(2\sqrt{z}\right)\right) - J_0\left(2\sqrt{z}\right)\left(8\, z\,(8z-75) + 9\,\pi\,(4z+25)\, \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3799.01

$${}_1F_2\left(\frac{5}{2}; 1, 5; z\right) = \frac{16\left(z\,(z+12)\, I_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\ (5z+24)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(z^2+16z+48\right) I_1\left(\sqrt{z}\right)^2\right)}{z^3}$$

07.22.03.3800.01

$${}_1F_2\left(\frac{5}{2}; 1, 5; -z\right) = -\frac{16\left((z-12)\, z\, J_0\left(\sqrt{z}\right)^2 + 2\,(24-5\,z)\sqrt{z}\ J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) - \left(z^2-16\,z+48\right) J_1\left(\sqrt{z}\right)^2\right)}{z^3}$$

07.22.03.3801.01

$${}_1F_2\left(\frac{5}{2}; 1, \frac{11}{2}; z\right) = \frac{1}{4096\, z^4}\left(315\left(4\left(\sqrt{z}\ \left(128\, z^2+3100\, z+11\,025\right) I_1\left(2\sqrt{z}\right) - 10\, z\,(76z+735)\, I_0\left(2\sqrt{z}\right)\right) - \right.\right.$$
$$\left.\left. 9\,\pi\left(16\, z^2-200\, z+1225\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + 9\,\pi\left(16\, z^2-200\, z+1225\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3802.01

$${}_1F_2\left(\frac{5}{2}; 1, \frac{11}{2}; -z\right) =$$

$$-\frac{1}{4096\, z^4}\left(315\left(4\left(10\, z\,(76z-735)\, J_0\left(2\sqrt{z}\right) + \sqrt{z}\ \left(128\, z^2-3100\, z+11\,025\right) J_1\left(2\sqrt{z}\right)\right) - 9\,\pi\left(16\, z^2+200\, z+1225\right)\right.\right.$$
$$\left.\left. J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) + 9\,\pi\left(16\, z^2+200\, z+1225\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3803.01

$${}_1F_2\left(\frac{5}{2}; 1, 6; z\right) = \frac{1}{z^4}\left(32\left(-6\, z\,(3z+32)\, I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\ \left(5\, z^2+168\, z+768\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - 2\left(11\, z^2+132\, z+384\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.3804.01

$${}_1F_2\left(\frac{5}{2}; 1, 6; -z\right) = -\frac{1}{z^4}\left(32\left(6\,z\,(3\,z-32)\,J_0\left(\sqrt{z}\right)^2 + \sqrt{z}\,\left(5\,z^2-168\,z+768\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) - 2\left(11\,z^2-132\,z+384\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = \frac{5}{2}$, $b_1 = \frac{3}{2}$

07.22.03.0204.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, \frac{3}{2}; z\right) == \frac{1}{3}\left(\cosh\left(2\sqrt{z}\right) + \frac{\sinh\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.3805.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, \frac{3}{2}; -z\right) = \frac{1}{3}\left(\cos\left(2\sqrt{z}\right) + \frac{\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.0205.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, 2; z\right) == \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}} + \frac{2}{3}I_2\left(2\sqrt{z}\right)$$

07.22.03.3806.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, 2; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}} - \frac{2}{3}J_2\left(2\sqrt{z}\right)$$

07.22.03.3807.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, \frac{5}{2}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.3808.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, \frac{5}{2}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.0206.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, 3; z\right) == \frac{2\,I_2\left(2\sqrt{z}\right)}{z} + \frac{4\,I_3\left(2\sqrt{z}\right)}{3\sqrt{z}}$$

07.22.03.3809.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, 3; -z\right) = \frac{2\,J_2\left(2\sqrt{z}\right)}{z} - \frac{4\,J_3\left(2\sqrt{z}\right)}{3\sqrt{z}}$$

07.22.03.0207.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, \frac{7}{2}; z\right) == \frac{5}{16\,z^{5/2}}\left(2\sqrt{z}\,(2\,z+3)\cosh\left(2\sqrt{z}\right) - 3\,(2\,z+1)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3810.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, \frac{7}{2}; -z\right) = -\frac{5\left(2\sqrt{z}\ (2z-3)\cos\left(2\sqrt{z}\right) + 3(1-2z)\sin\left(2\sqrt{z}\right)\right)}{16\,z^{5/2}}$$

07.22.03.0208.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, 4; z\right) = \frac{6}{z^{3/2}} I_3\left(2\sqrt{z}\right) + \frac{4}{z} I_4\left(2\sqrt{z}\right)$$

07.22.03.3811.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, 4; -z\right) = \frac{6\,J_3\left(2\sqrt{z}\right)}{z^{3/2}} - \frac{4\,J_4\left(2\sqrt{z}\right)}{z}$$

07.22.03.3812.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, \frac{9}{2}; z\right) = \frac{35\left(\left(4z^2+27z+15\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\ (7z+15)\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{7/2}}$$

07.22.03.3813.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, \frac{9}{2}; -z\right) = -\frac{35\left(2\sqrt{z}\ (7z-15)\cos\left(2\sqrt{z}\right) + \left(4z^2-27z+15\right)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{7/2}}$$

07.22.03.3814.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, 5; z\right) = \frac{8\left(3\,I_4\left(2\sqrt{z}\right) + 2\sqrt{z}\ I_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.3815.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, 5; -z\right) = \frac{8\left(3\,J_4\left(2\sqrt{z}\right) - 2\sqrt{z}\ J_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.3816.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, \frac{11}{2}; z\right) = \frac{315\left(2\sqrt{z}\ \left(8z^2+150z+315\right)\cosh\left(2\sqrt{z}\right) - 3\left(32z^2+190z+105\right)\sinh\left(2\sqrt{z}\right)\right)}{256\,z^{9/2}}$$

07.22.03.3817.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, \frac{11}{2}; -z\right) = \frac{315\left(2\sqrt{z}\ \left(8z^2-150z+315\right)\cos\left(2\sqrt{z}\right) - 3\left(32z^2-190z+105\right)\sin\left(2\sqrt{z}\right)\right)}{256\,z^{9/2}}$$

07.22.03.3818.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, 6; z\right) = \frac{120\,I_5\left(2\sqrt{z}\right)}{z^{5/2}} + \frac{80\,I_6\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.3819.01

$${}_1F_2\left(\frac{5}{2}; \frac{3}{2}, 6; -z\right) = \frac{120\,J_5\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{80\,J_6\left(2\sqrt{z}\right)}{z^2}$$

For fixed z and $a_1 = \frac{5}{2}$, $b_1 = 2$

07.22.03.0209.01

$${}_1F_2\left(\frac{5}{2}; 2, 2; z\right) == \frac{2}{3\sqrt{z}}\left(\sqrt{z}\ I_0\left(\sqrt{z}\right)^2 + I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \sqrt{z}\ I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.3820.01

$${}_1F_2\left(\frac{5}{2}; 2, 2; -z\right) = \frac{2}{3}\left(J_0\left(\sqrt{z}\right)^2 + \frac{J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right)}{\sqrt{z}} - J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.3821.01

$${}_1F_2\left(\frac{5}{2}; 2, \frac{5}{2}; z\right) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.3822.01

$${}_1F_2\left(\frac{5}{2}; 2, \frac{5}{2}; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.0210.01

$${}_1F_2\left(\frac{5}{2}; 2, 3; z\right) == \frac{4}{3z}\left(2\sqrt{z}\ I_0\left(\sqrt{z}\right) I_1\left(\sqrt{z}\right) - I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.3823.01

$${}_1F_2\left(\frac{5}{2}; 2, 3; -z\right) = \frac{4\left(2\sqrt{z}\ J_0\left(\sqrt{z}\right) - J_1\left(\sqrt{z}\right)\right) J_1\left(\sqrt{z}\right)}{3z}$$

07.22.03.0211.01

$${}_1F_2\left(\frac{5}{2}; 2, \frac{7}{2}; z\right) == \frac{5}{16z^2}\left(8z\, I_0\left(2\sqrt{z}\right) - 12\sqrt{z}\ I_1\left(2\sqrt{z}\right) + 3\pi\left(I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) - I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3824.01

$${}_1F_2\left(\frac{5}{2}; 2, \frac{7}{2}; -z\right) = \frac{5\left(3 J_1\left(2\sqrt{z}\right)\left(4\sqrt{z} - \pi \boldsymbol{H}_0\left(2\sqrt{z}\right)\right) + J_0\left(2\sqrt{z}\right)\left(3\pi \boldsymbol{H}_1\left(2\sqrt{z}\right) - 8z\right)\right)}{16z^2}$$

07.22.03.0212.01

$${}_1F_2\left(\frac{5}{2}; 2, 4; z\right) == \frac{4}{z^2}\left(z\, I_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\ I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + (z+4)\, I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.3825.01

$${}_1F_2\left(\frac{5}{2}; 2, 4; -z\right) = -\frac{4\left(z\, J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\ J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) - (z-4)\, J_1\left(\sqrt{z}\right)^2\right)}{z^2}$$

07.22.03.3826.01

$${}_1F_2\left(\frac{5}{2}; 2, \frac{9}{2}; z\right) = \frac{1}{128z^3}$$
$$\left(35\left(4\left(\sqrt{z}\ (8z+45)\, I_1\left(2\sqrt{z}\right) - 30z\, I_0\left(2\sqrt{z}\right)\right) + 3\pi(4z-15)\, I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + 3\pi(15-4z)\, I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3827.01

$${}_1F_2\left(\frac{5}{2}; 2, \frac{9}{2}; -z\right) = \frac{1}{128z^3}\left(35\left(-4\left(30z\, J_0\left(2\sqrt{z}\right) + \sqrt{z}\ (8z-45)\, J_1\left(2\sqrt{z}\right)\right) -\right.\right.$$
$$\left.\left.3\pi(4z+15)\, J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) + 3\pi(4z+15)\, J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3828.01

$${}_1F_2\left(\frac{5}{2}; 2, 5; z\right) = \frac{32\left(-2\,z\,I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\,(z+8)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) - 2\,(z+4)\,I_1\left(\sqrt{z}\right)^2\right)}{z^3}$$

07.22.03.3829.01

$${}_1F_2\left(\frac{5}{2}; 2, 5; -z\right) = -\frac{32\left(2\,z\,J_0\left(\sqrt{z}\right)^2 + (z-8)\,\sqrt{z}\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) - 2\,(z-4)\,J_1\left(\sqrt{z}\right)^2\right)}{z^3}$$

07.22.03.3830.01

$${}_1F_2\left(\frac{5}{2}; 2, \frac{11}{2}; z\right) =$$

$$\frac{1}{2048\,z^4}\left(315\left(20\left(2\,z\,(4\,z+105)\,I_0\left(2\sqrt{z}\right) - \sqrt{z}\,(68\,z+315)\,I_1\left(2\sqrt{z}\right)\right) + 3\,\pi\left(16\,z^2-120\,z+525\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) - 3\,\pi\left(16\,z^2-120\,z+525\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3831.01

$${}_1F_2\left(\frac{5}{2}; 2, \frac{11}{2}; -z\right) =$$

$$\frac{1}{2048\,z^4}\left(315\left(20\left(2\,z\,(4\,z-105)\,J_0\left(2\sqrt{z}\right) + (315-68\,z)\,\sqrt{z}\,J_1\left(2\sqrt{z}\right)\right) - 3\,\pi\left(16\,z^2+120\,z+525\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) + 3\,\pi\left(16\,z^2+120\,z+525\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3832.01

$${}_1F_2\left(\frac{5}{2}; 2, 6; z\right) = \frac{32\left(2\,z\,(z+24)\,I_0\left(\sqrt{z}\right)^2 - 32\,\sqrt{z}\,(z+6)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) + \left(3\,z^2+56\,z+192\right)I_1\left(\sqrt{z}\right)^2\right)}{z^4}$$

07.22.03.3833.01

$${}_1F_2\left(\frac{5}{2}; 2, 6; -z\right) = \frac{32\left(2\,(z-24)\,z\,J_0\left(\sqrt{z}\right)^2 - 32\,(z-6)\,\sqrt{z}\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + \left(-3\,z^2+56\,z-192\right)J_1\left(\sqrt{z}\right)^2\right)}{z^4}$$

For fixed z and $a_1 = \frac{5}{2}$, $b_1 = \frac{5}{2}$

07.22.03.3834.01

$${}_1F_2\left(\frac{5}{2}; \frac{5}{2}, \frac{5}{2}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4\,z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.3835.01

$${}_1F_2\left(\frac{5}{2}; \frac{5}{2}, \frac{5}{2}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.3836.01

$${}_1F_2\left(\frac{5}{2}; \frac{5}{2}, 3; z\right) = \frac{2\,I_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.3837.01

$${}_1F_2\left(\frac{5}{2}; \frac{5}{2}, 3; -z\right) = \frac{2\, J_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.3838.01

$${}_1F_2\left(\frac{5}{2}; \frac{5}{2}, \frac{7}{2}; z\right) = \frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\, z^{5/2}}$$

07.22.03.3839.01

$${}_1F_2\left(\frac{5}{2}; \frac{5}{2}, \frac{7}{2}; -z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4z-3)\sin\left(2\sqrt{z}\right)\right)}{32\, z^{5/2}}$$

07.22.03.3840.01

$${}_1F_2\left(\frac{5}{2}; \frac{5}{2}, 4; z\right) = \frac{6\, I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.3841.01

$${}_1F_2\left(\frac{5}{2}; \frac{5}{2}, 4; -z\right) = \frac{6\, J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.3842.01

$${}_1F_2\left(\frac{5}{2}; \frac{5}{2}, \frac{9}{2}; z\right) = \frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right) - 3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.3843.01

$${}_1F_2\left(\frac{5}{2}; \frac{5}{2}, \frac{9}{2}; -z\right) = \frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right) + 3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.3844.01

$${}_1F_2\left(\frac{5}{2}; \frac{5}{2}, 5; z\right) = \frac{24\, I_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.3845.01

$${}_1F_2\left(\frac{5}{2}; \frac{5}{2}, 5; -z\right) = \frac{24\, J_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.3846.01

$${}_1F_2\left(\frac{5}{2}; \frac{5}{2}, \frac{11}{2}; z\right) = \frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\,(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}}$$

07.22.03.3847.01

$${}_1F_2\left(\frac{5}{2}; \frac{5}{2}, \frac{11}{2}; -z\right) = \frac{945\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right) + \left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}}$$

07.22.03.3848.01

$${}_1F_2\left(\frac{5}{2}; \frac{5}{2}, 6; z\right) = \frac{120\, I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.3849.01

$${}_1F_2\left(\frac{5}{2}; \frac{5}{2}, 6; -z\right) = \frac{120\, J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = \frac{5}{2}$, $b_1 = 3$

07.22.03.0213.01

$${}_1F_2\left(\frac{5}{2}; 3, 3; z\right) == \frac{8}{3\, z^{3/2}}\left(\sqrt{z}\; I_0\left(\sqrt{z}\right)^2 - 2\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \sqrt{z}\; I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.3850.01

$${}_1F_2\left(\frac{5}{2}; 3, 3; -z\right) = \frac{8\left(-\sqrt{z}\; J_0\left(\sqrt{z}\right)^2 + 2\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\; J_1\left(\sqrt{z}\right)^2\right)}{3\, z^{3/2}}$$

07.22.03.0214.01

$${}_1F_2\left(\frac{5}{2}; 3, \frac{7}{2}; z\right) == \frac{5}{4\, z^2}\left(4\sqrt{z}\; I_1\left(2\sqrt{z}\right) + 3\pi\left(I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) - I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3851.01

$${}_1F_2\left(\frac{5}{2}; 3, \frac{7}{2}; -z\right) = \frac{5\left(J_1\left(2\sqrt{z}\right)\left(3\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right) - 4\sqrt{z}\right) - 3\pi\, J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)}{4\, z^2}$$

07.22.03.0215.01

$${}_1F_2\left(\frac{5}{2}; 3, 4; z\right) == \frac{16}{z^2} I_1\left(\sqrt{z}\right)\left(\sqrt{z}\; I_0\left(\sqrt{z}\right) - 2\, I_1\left(\sqrt{z}\right)\right)$$

07.22.03.3852.01

$${}_1F_2\left(\frac{5}{2}; 3, 4; -z\right) = -\frac{16\left(\sqrt{z}\; J_0\left(\sqrt{z}\right) - 2\, J_1\left(\sqrt{z}\right)\right) J_1\left(\sqrt{z}\right)}{z^2}$$

07.22.03.3853.01

$${}_1F_2\left(\frac{5}{2}; 3, \frac{9}{2}; z\right) =$$

$$\frac{1}{32\, z^3}\left(35\left(40\, z\, I_0\left(2\sqrt{z}\right) + 3\pi\,(4z-5)\, \boldsymbol{L}_1\left(2\sqrt{z}\right) I_0\left(2\sqrt{z}\right) - 60\sqrt{z}\; I_1\left(2\sqrt{z}\right) - 3\pi\,(4z-5)\, I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3854.01

$${}_1F_2\left(\frac{5}{2}; 3, \frac{9}{2}; -z\right) =$$

$$\frac{1}{32\, z^3}\left(35\left(40\, z\, J_0\left(2\sqrt{z}\right) - 3\pi\,(4z+5)\, \boldsymbol{H}_1\left(2\sqrt{z}\right) J_0\left(2\sqrt{z}\right) - 60\sqrt{z}\; J_1\left(2\sqrt{z}\right) + 3\pi\,(4z+5)\, J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3855.01

$${}_1F_2\left(\frac{5}{2}; 3, 5; z\right) = \frac{64\left(\sqrt{z}\; I_0\left(\sqrt{z}\right) - 2\, I_1\left(\sqrt{z}\right)\right)^2}{z^3}$$

07.22.03.3856.01

$${}_1F_2\left(\frac{5}{2}; 3, 5; -z\right) = \frac{64\left(\sqrt{z}\, J_0\left(\sqrt{z}\right) - 2\, J_1\left(\sqrt{z}\right)\right)^2}{z^3}$$

07.22.03.3857.01

$${}_1F_2\left(\frac{5}{2}; 3, \frac{11}{2}; z\right) = \frac{1}{512\, z^4}\left(315\left(96\, I_0\left(2\sqrt{z}\right) z^2 + 80\, I_1\left(2\sqrt{z}\right) z^{3/2} - 840\, I_0\left(2\sqrt{z}\right) z + 1260\, I_1\left(2\sqrt{z}\right)\sqrt{z}\, - \right.\right.$$
$$\left.\left. 3\pi\left(16 z^2 - 40 z + 105\right) I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + 3\pi\left(16 z^2 - 40 z + 105\right) I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3858.01

$${}_1F_2\left(\frac{5}{2}; 3, \frac{11}{2}; -z\right) =$$
$$-\frac{1}{512\, z^4}\left(315\left(-4\left(6 z\,(4 z + 35)\, J_0\left(2\sqrt{z}\right) + 5\sqrt{z}\,(4 z - 63)\, J_1\left(2\sqrt{z}\right)\right) - 3\pi\left(16 z^2 + 40 z + 105\right) J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 3\pi\left(16 z^2 + 40 z + 105\right) J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3859.01

$${}_1F_2\left(\frac{5}{2}; 3, 6; z\right) = \frac{64\left((z - 16)\, z\, I_0\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(z + 16)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \left(z^2 + 12 z + 64\right) I_1\left(\sqrt{z}\right)^2\right)}{z^4}$$

07.22.03.3860.01

$${}_1F_2\left(\frac{5}{2}; 3, 6; -z\right) = \frac{64\left(z\,(z + 16)\, J_0\left(\sqrt{z}\right)^2 + 4\,(z - 16)\sqrt{z}\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(z^2 - 12 z + 64\right) J_1\left(\sqrt{z}\right)^2\right)}{z^4}$$

For fixed z and $a_1 = \frac{5}{2}$, $b_1 = \frac{7}{2}$

07.22.03.0216.01

$${}_1F_2\left(\frac{5}{2}; \frac{7}{2}, \frac{7}{2}; z\right) == \frac{75}{32\, z^{5/2}}\left(2\sqrt{z}\, \cosh\left(2\sqrt{z}\right) - 4\sinh\left(2\sqrt{z}\right) + 3\,\mathrm{Shi}\left(2\sqrt{z}\right)\right)$$

07.22.03.3861.01

$${}_1F_2\left(\frac{5}{2}; \frac{7}{2}, \frac{7}{2}; -z\right) = \frac{75\left(2\sqrt{z}\, \cos\left(2\sqrt{z}\right) - 4\sin\left(2\sqrt{z}\right) + 3\,\mathrm{Si}\left(2\sqrt{z}\right)\right)}{32\, z^{5/2}}$$

07.22.03.0217.01

$${}_1F_2\left(\frac{5}{2}; \frac{7}{2}, 4; z\right) == \frac{15}{2\, z^{5/2}}\left(8\sqrt{z}\, I_0\left(2\sqrt{z}\right) - 8\, I_1\left(2\sqrt{z}\right) + 3\pi\sqrt{z}\, \left(I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) - I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3862.01

$${}_1F_2\left(\frac{5}{2}; \frac{7}{2}, 4; -z\right) = \frac{15\left(J_1\left(2\sqrt{z}\right)\left(3\pi\sqrt{z}\, \boldsymbol{H}_0\left(2\sqrt{z}\right) - 8\right) - \sqrt{z}\, J_0\left(2\sqrt{z}\right)\left(3\pi \boldsymbol{H}_1\left(2\sqrt{z}\right) - 8\right)\right)}{2\, z^{5/2}}$$

07.22.03.3863.01

$${}_1F_2\left(\frac{5}{2}; \frac{7}{2}, \frac{9}{2}; z\right) = \frac{525\left(-30\sqrt{z}\, \cosh\left(2\sqrt{z}\right) + (8 z + 15)\sinh\left(2\sqrt{z}\right) + 12 z\,\mathrm{Shi}\left(2\sqrt{z}\right)\right)}{256\, z^{7/2}}$$

07.22.03.3864.01

$${}_1F_2\left(\frac{5}{2}; \frac{7}{2}, \frac{9}{2}; -z\right) = \frac{525\left(30\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (8z-15)\sin\left(2\sqrt{z}\right) + 12z\,\mathrm{Si}\left(2\sqrt{z}\right)\right)}{256\,z^{7/2}}$$

07.22.03.3865.01

$${}_1F_2\left(\frac{5}{2}; \frac{7}{2}, 5; z\right) = \frac{60\,I_0\left(2\sqrt{z}\right)\left(\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z + 2z - 4\right)}{z^3} - \frac{60\,I_1\left(2\sqrt{z}\right)\left(\pi\,z^{3/2}\,\boldsymbol{L}_0\left(2\sqrt{z}\right) - 4\right)}{z^{7/2}}$$

07.22.03.3866.01

$${}_1F_2\left(\frac{5}{2}; \frac{7}{2}, 5; -z\right) = \frac{60\,J_1\left(2\sqrt{z}\right)\left(\pi\,z^{3/2}\,\boldsymbol{H}_0\left(2\sqrt{z}\right) - 4\right)}{z^{7/2}} - \frac{60\,J_0\left(2\sqrt{z}\right)\left(\pi\,z\,\boldsymbol{H}_1\left(2\sqrt{z}\right) - 2(z+2)\right)}{z^3}$$

07.22.03.3867.01

$${}_1F_2\left(\frac{5}{2}; \frac{7}{2}, \frac{11}{2}; z\right) = \frac{4725\left(24\,\mathrm{Shi}\left(2\sqrt{z}\right)z^2 + 5\left(2\sqrt{z}\,(2z+21)\cosh\left(2\sqrt{z}\right) - 3(10z+7)\sinh\left(2\sqrt{z}\right)\right)\right)}{2048\,z^{9/2}}$$

07.22.03.3868.01

$${}_1F_2\left(\frac{5}{2}; \frac{7}{2}, \frac{11}{2}; -z\right) = \frac{4725\left(24z^2\,\mathrm{Si}\left(2\sqrt{z}\right) - 5\left(2\sqrt{z}\,(2z-21)\cos\left(2\sqrt{z}\right) + 3(7-10z)\sin\left(2\sqrt{z}\right)\right)\right)}{2048\,z^{9/2}}$$

07.22.03.3869.01

$${}_1F_2\left(\frac{5}{2}; \frac{7}{2}, 6; z\right) = \frac{120\,I_0\left(2\sqrt{z}\right)\left(\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)z^2 + 2\left(z^2+z+12\right)\right)}{z^4} - \frac{120\,I_1\left(2\sqrt{z}\right)\left(\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{5/2} + z^2 + 14z + 24\right)}{z^{9/2}}$$

07.22.03.3870.01

$${}_1F_2\left(\frac{5}{2}; \frac{7}{2}, 6; -z\right) = \frac{120\,J_1\left(2\sqrt{z}\right)\left(\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{5/2} - z^2 + 14z - 24\right)}{z^{9/2}} - \frac{120\,J_0\left(2\sqrt{z}\right)\left(\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)z^2 - 2z^2 + 2z - 24\right)}{z^4}$$

For fixed z and $a_1 = \frac{5}{2}$, $b_1 = 4$

07.22.03.0218.01

$${}_1F_2\left(\frac{5}{2}; 4, 4; z\right) == \frac{48}{z^{5/2}}\left(2\sqrt{z}\,I_0\left(\sqrt{z}\right)^2 - 4\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) - \sqrt{z}\,I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.3871.01

$${}_1F_2\left(\frac{5}{2}; 4, 4; -z\right) = \frac{48\left(2\sqrt{z}\,J_0\left(\sqrt{z}\right)^2 - 4\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + \sqrt{z}\,J_1\left(\sqrt{z}\right)^2\right)}{z^{5/2}}$$

07.22.03.3872.01

$${}_1F_2\left(\frac{5}{2}; 4, \frac{9}{2}; z\right) =$$

$$\frac{1}{16\,z^3}\left(105\left(24z\,I_0\left(2\sqrt{z}\right) + 3\pi(4z+5)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)I_0\left(2\sqrt{z}\right) - 4\sqrt{z}\,I_1\left(2\sqrt{z}\right) - 3\pi(4z+5)\,I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3873.01

$${}_1F_2\left(\frac{5}{2}; 4, \frac{9}{2}; -z\right) =$$
$$\frac{1}{16\,z^3}\left(105\left(24\,z\,J_0\left(2\sqrt{z}\right) - 3\,\pi\,(4\,z-5)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)J_0\left(2\sqrt{z}\right) - 4\sqrt{z}\;J_1\left(2\sqrt{z}\right) + 3\,\pi\,(4\,z-5)\,J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3874.01

$${}_1F_2\left(\frac{5}{2}; 4, 5; z\right) = \frac{192\left(z\,I_0\left(\sqrt{z}\right)^2 - (z+4)\,I_1\left(\sqrt{z}\right)^2\right)}{z^3}$$

07.22.03.3875.01

$${}_1F_2\left(\frac{5}{2}; 4, 5; -z\right) = \frac{192\left(z\,J_0\left(\sqrt{z}\right)^2 + (z-4)\,J_1\left(\sqrt{z}\right)^2\right)}{z^3}$$

07.22.03.3876.01

$${}_1F_2\left(\frac{5}{2}; 4, \frac{11}{2}; z\right) = \frac{1}{256\,z^4}\left(945\left(96\,I_0\left(2\sqrt{z}\right)z^2 - 48\,I_1\left(2\sqrt{z}\right)z^{3/2} + 280\,I_0\left(2\sqrt{z}\right)z - 420\,I_1\left(2\sqrt{z}\right)\sqrt{z} - 3\,\pi\left(16\,z^2+40\,z-35\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + 3\,\pi\left(16\,z^2+40\,z-35\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3877.01

$${}_1F_2\left(\frac{5}{2}; 4, \frac{11}{2}; -z\right) =$$
$$\frac{1}{256\,z^4}\left(945\left(96\,J_0\left(2\sqrt{z}\right)z^2 - 48\,J_1\left(2\sqrt{z}\right)z^{3/2} - 280\,J_0\left(2\sqrt{z}\right)z + 420\,J_1\left(2\sqrt{z}\right)\sqrt{z} + 3\,\pi\left(16\,z^2-40\,z-35\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) + 3\,\pi\left(-16\,z^2+40\,z+35\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3878.01

$${}_1F_2\left(\frac{5}{2}; 4, 6; z\right) = \frac{384\left(z\,(z+4)\,I_0\left(\sqrt{z}\right)^2 - \sqrt{z}\;(z+16)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) - \left(z^2+2\,z-16\right)I_1\left(\sqrt{z}\right)^2\right)}{z^4}$$

07.22.03.3879.01

$${}_1F_2\left(\frac{5}{2}; 4, 6; -z\right) = \frac{384\left((z-4)\,z\,J_0\left(\sqrt{z}\right)^2 - (z-16)\sqrt{z}\;J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + \left(z^2-2\,z-16\right)J_1\left(\sqrt{z}\right)^2\right)}{z^4}$$

For fixed z and $a_1 = \frac{5}{2}$, $b_1 = \frac{9}{2}$

07.22.03.3880.01

$${}_1F_2\left(\frac{5}{2}; \frac{9}{2}, \frac{9}{2}; z\right) = \frac{3675\left(2\sqrt{z}\,\cosh\left(2\sqrt{z}\right) - 31\sinh\left(2\sqrt{z}\right) + 6\,(2\,z+5)\,\mathrm{Shi}\left(2\sqrt{z}\right)\right)}{512\,z^{7/2}}$$

07.22.03.3881.01

$${}_1F_2\left(\frac{5}{2}; \frac{9}{2}, \frac{9}{2}; -z\right) = \frac{3675\left(-2\sqrt{z}\,\cos\left(2\sqrt{z}\right) + 31\sin\left(2\sqrt{z}\right) + 6\,(2\,z-5)\,\mathrm{Si}\left(2\sqrt{z}\right)\right)}{512\,z^{7/2}}$$

07.22.03.3882.01

$${}_1F_2\left(\frac{5}{2}; \frac{9}{2}, 5; z\right) = \frac{1}{2\,z^{7/2}}\left(105\left(4\left(2\sqrt{z}\ (z+4)\,I_0\left(2\sqrt{z}\right) - (z+8)\,I_1\left(2\sqrt{z}\right)\right) - \right.\right.$$
$$\left.\left.\pi\sqrt{z}\ (4z+15)\,I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\sqrt{z}\ (4z+15)\,I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3883.01

$${}_1F_2\left(\frac{5}{2}; \frac{9}{2}, 5; -z\right) = \frac{1}{2\,z^{7/2}}\left(105\left(4\left(2\,(z-4)\sqrt{z}\ J_0\left(2\sqrt{z}\right) - (z-8)\,J_1\left(2\sqrt{z}\right)\right) + \right.\right.$$
$$\left.\left.\pi\sqrt{z}\ (4z-15)\,J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) + \pi\,(15-4z)\sqrt{z}\ J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3884.01

$${}_1F_2\left(\frac{5}{2}; \frac{9}{2}, \frac{11}{2}; z\right) = \frac{33\,075\left(-6\sqrt{z}\ (2z+35)\cosh\left(2\sqrt{z}\right) + (26z+105)\sinh\left(2\sqrt{z}\right) + 24z\,(z+5)\,\mathrm{Shi}\left(2\sqrt{z}\right)\right)}{4096\,z^{9/2}}$$

07.22.03.3885.01

$${}_1F_2\left(\frac{5}{2}; \frac{9}{2}, \frac{11}{2}; -z\right) = \frac{33\,075\left(6\sqrt{z}\ (2z-35)\cos\left(2\sqrt{z}\right) + (105-26z)\sin\left(2\sqrt{z}\right) + 24\,(z-5)\,z\,\mathrm{Si}\left(2\sqrt{z}\right)\right)}{4096\,z^{9/2}}$$

07.22.03.3886.01

$${}_1F_2\left(\frac{5}{2}; \frac{9}{2}, 6; z\right) =$$
$$\frac{105\,I_0\left(2\sqrt{z}\right)\left(8\left(z^2+6z-8\right)+\pi\,z\,(4z+25)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)}{z^4} - \frac{105\,I_1\left(2\sqrt{z}\right)\left(\pi\,(4z+25)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)z^{3/2}+4\left(z^2+4z-16\right)\right)}{z^{9/2}}$$

07.22.03.3887.01

$${}_1F_2\left(\frac{5}{2}; \frac{9}{2}, 6; -z\right) =$$
$$\frac{105\,J_1\left(2\sqrt{z}\right)\left(-4z^2+\pi\,(4z-25)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2}+16z+64\right)}{z^{9/2}} - \frac{105\,J_0\left(2\sqrt{z}\right)\left(\pi\,z\,(4z-25)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)-8\left(z^2-6z-8\right)\right)}{z^4}$$

For fixed z and $a_1 = \frac{5}{2}$, $b_1 = 5$

07.22.03.3888.01

$${}_1F_2\left(\frac{5}{2}; 5, 5; z\right) = \frac{512\left(\sqrt{z}\ (z+6)\,I_0\left(\sqrt{z}\right)^2 - (z+12)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) - \sqrt{z}\ (z+5)\,I_1\left(\sqrt{z}\right)^2\right)}{z^{7/2}}$$

07.22.03.3889.01

$${}_1F_2\left(\frac{5}{2}; 5, 5; -z\right) = \frac{512\left((z-6)\sqrt{z}\ J_0\left(\sqrt{z}\right)^2 - (z-12)\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + (z-5)\sqrt{z}\ J_1\left(\sqrt{z}\right)^2\right)}{z^{7/2}}$$

07.22.03.3890.01

$${}_1F_2\left(\frac{5}{2}; 5, \frac{11}{2}; z\right) =$$
$$\frac{1}{32\,z^4}\left(945\left(4\left(2\,z\,(4\,z+29)\,I_0\left(2\sqrt{z}\right)-\sqrt{z}\,(4\,z+23)\,I_1\left(2\sqrt{z}\right)\right)-\pi\left(16\,z^2+120\,z+105\right)I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\pi\left(16\,z^2+120\,z+105\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3891.01

$${}_1F_2\left(\frac{5}{2}; 5, \frac{11}{2}; -z\right) =$$
$$\frac{1}{32\,z^4}\left(945\left(4\left(2\,z\,(4\,z-29)\,J_0\left(2\sqrt{z}\right)+(23-4\,z)\sqrt{z}\,J_1\left(2\sqrt{z}\right)\right)+\pi\left(16\,z^2-120\,z+105\right)J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\pi\left(-16\,z^2+120\,z-105\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3892.01

$${}_1F_2\left(\frac{5}{2}; 5, 6; z\right) = \frac{512\left(2\,z\,(z+9)\,I_0\left(\sqrt{z}\right)^2-2\sqrt{z}\,(z+6)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\left(2\,z^2+19\,z+48\right)I_1\left(\sqrt{z}\right)^2\right)}{z^4}$$

07.22.03.3893.01

$${}_1F_2\left(\frac{5}{2}; 5, 6; -z\right) = \frac{512\left(2\,(z-9)\,z\,J_0\left(\sqrt{z}\right)^2-2\,(z-6)\sqrt{z}\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(2\,z^2-19\,z+48\right)J_1\left(\sqrt{z}\right)^2\right)}{z^4}$$

For fixed z and $a_1 = \frac{5}{2}$, $b_1 = \frac{11}{2}$

07.22.03.3894.01

$${}_1F_2\left(\frac{5}{2}; \frac{11}{2}, \frac{11}{2}; z\right) =$$
$$-\frac{1}{16\,384\,z^{9/2}}\left(297\,675\left(2\sqrt{z}\,(6\,z+31)\cosh\left(2\sqrt{z}\right)+(6\,z+389)\sinh\left(2\sqrt{z}\right)-12\left(2\,z^2+20\,z+35\right)\mathrm{Shi}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3895.01

$${}_1F_2\left(\frac{5}{2}; \frac{11}{2}, \frac{11}{2}; -z\right) = \frac{297\,675\left(2\sqrt{z}\,(6\,z-31)\cos\left(2\sqrt{z}\right)+(6\,z-389)\sin\left(2\sqrt{z}\right)+12\left(2\,z^2-20\,z+35\right)\mathrm{Si}\left(2\sqrt{z}\right)\right)}{16\,384\,z^{9/2}}$$

07.22.03.3896.01

$${}_1F_2\left(\frac{5}{2}; \frac{11}{2}, 6; z\right) =$$
$$\frac{1}{16\,z^{9/2}}\left(945\left(4\left(2\sqrt{z}\,\left(4\,z^2+49\,z+128\right)I_0\left(2\sqrt{z}\right)-\left(4\,z^2+51\,z+256\right)I_1\left(2\sqrt{z}\right)\right)-\pi\sqrt{z}\,\left(16\,z^2+200\,z+525\right)\right.\right.$$
$$\left.\left.I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\sqrt{z}\,\left(16\,z^2+200\,z+525\right)I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3897.01

$${}_1F_2\left(\frac{5}{2}; \frac{11}{2}, 6; -z\right) =$$
$$\frac{1}{16\, z^{9/2}}\left(945\left(4\left(2\sqrt{z}\,\left(4z^2-49z+128\right)J_0\left(2\sqrt{z}\right)+\left(-4z^2+51z-256\right)J_1\left(2\sqrt{z}\right)\right)+\pi\sqrt{z}\,\left(16z^2-200z+525\right)\right.\right.$$
$$\left.\left.J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+\pi\sqrt{z}\,\left(-16z^2+200z-525\right)J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = \frac{5}{2}$, $b_1 = 6$

07.22.03.3898.01

$${}_1F_2\left(\frac{5}{2}; 6, 6; z\right) =$$
$$\frac{1}{z^{9/2}}\left(512\left(\sqrt{z}\,\left(4z^2+61z+240\right)I_0\left(\sqrt{z}\right)^2-4\left(z^2+16z+120\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\sqrt{z}\,\left(4z^2+63z+236\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.3899.01

$${}_1F_2\left(\frac{5}{2}; 6, 6; -z\right) =$$
$$\frac{1}{z^{9/2}}\left(512\left(\sqrt{z}\,\left(4z^2-61z+240\right)J_0\left(\sqrt{z}\right)^2-4\left(z^2-16z+120\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\sqrt{z}\,\left(4z^2-63z+236\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 \geq -\frac{11}{2}$

For fixed z and $a_1 = 3$, $b_1 = -\frac{11}{2}$

07.22.03.3900.01

$${}_1F_2\left(3; -\frac{11}{2}, -\frac{11}{2}; z\right) =$$
$$\frac{1}{108\,056\,025}\left(512\,\pi\,z^3\left(4\,\boldsymbol{L}_{-16}\left(2\sqrt{z}\right)z^{9/2}+320\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^4+10\,111\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2}+163\,023\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3+\right.\right.$$
$$1\,447\,950\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+7\,142\,730\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+18\,786\,600\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+$$
$$\left.\left.23\,816\,520\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+11\,738\,160\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}\,+1\,285\,200\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3901.01

$${}_1F_2\left(3; -\frac{11}{2}, -\frac{11}{2}; -z\right) =$$
$$\frac{1}{108\,056\,025}\left(512\,\pi\,z^3\left(4\,\boldsymbol{H}_{-16}\left(2\sqrt{z}\right)z^{9/2}+320\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^4+10\,111\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2}+163\,023\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3+\right.\right.$$
$$1\,447\,950\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+7\,142\,730\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+18\,786\,600\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+$$
$$\left.\left.23\,816\,520\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+11\,738\,160\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}\,+1\,285\,200\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3902.01

$${}_1F_2\left(3;-\frac{11}{2},-\frac{9}{2};z\right)=-\frac{1}{9\,823\,275}$$
$$\left(256\,\pi\,z^3\left(4\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^4+284\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2}+7839\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3+108\,150\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+799\,050\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)\right.\right.$$
$$\left.\left.z^2+3\,147\,480\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+6\,196\,680\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+5\,226\,480\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+1\,285\,200\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3903.01

$${}_1F_2\left(3;-\frac{11}{2},-\frac{9}{2};-z\right)=$$
$$-\frac{1}{9\,823\,275}\left(256\,\pi\,z^3\left(4\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^4+284\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2}+7839\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3+108\,150\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+\right.\right.$$
$$799\,050\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+3\,147\,480\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+$$
$$\left.\left.6\,196\,680\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+5\,226\,480\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+1\,285\,200\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3904.01

$${}_1F_2\left(3;-\frac{11}{2},-\frac{7}{2};z\right)=$$
$$\frac{1}{1\,091\,475}\left(128\,\pi\,z^3\left(4\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2}+248\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3+5\left(1171\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+13\,433\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+\right.\right.\right.$$
$$\left.\left.\left.79\,212\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+233\,436\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+305\,592\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+128\,520\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3905.01

$${}_1F_2\left(3;-\frac{11}{2},-\frac{7}{2};-z\right)=$$
$$\frac{1}{1\,091\,475}\left(128\,\pi\,z^3\left(4\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2}+248\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3+5\left(1171\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+13\,433\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+\right.\right.\right.$$
$$\left.\left.\left.79\,212\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+233\,436\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+305\,592\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+128\,520\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3906.01

$${}_1F_2\left(3;-\frac{11}{2},-\frac{5}{2};z\right)=$$
$$-\frac{1}{155\,925}\left(64\,\pi\,z^3\left(4\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3+212\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+4159\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+38\,052\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+\right.\right.$$
$$\left.\left.167\,748\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+328\,440\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+214\,200\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3907.01

$${}_1F_2\left(3;-\frac{11}{2},-\frac{5}{2};-z\right)=$$
$$-\frac{1}{155\,925}\left(64\,\pi\,z^3\left(4\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3+212\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+4159\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+38\,052\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+\right.\right.$$
$$\left.\left.167\,748\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+328\,440\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+214\,200\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3908.01

$${}_1F_2\left(3;-\frac{11}{2},-\frac{3}{2};z\right)=\frac{1}{31\,185}\left(32\,\pi\,z^3\left(4\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+176\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+\right.\right.$$
$$\left.\left.21\left(131\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+895\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+2618\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+2550\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3909.01

$${}_1F_2\left(3;-\frac{11}{2},-\frac{3}{2};-z\right)=\frac{1}{31\,185}\left(32\,\pi\,z^3\left(4\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+176\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+21\left(131\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+895\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+2618\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+2550\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3910.01

$${}_1F_2\left(3;-\frac{11}{2},-\frac{1}{2};z\right)=-\frac{1}{10\,395}\left(16\,\pi\,z^3\left(4\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+7\left(20\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+233\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+1054\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+1530\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3911.01

$${}_1F_2\left(3;-\frac{11}{2},-\frac{1}{2};-z\right)=-\frac{1}{10\,395}\left(16\,\pi\,z^3\left(4\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+7\left(20\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+233\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+1054\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+1530\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.3912.01

$${}_1F_2\left(3;-\frac{11}{2},\frac{1}{2};z\right)=\frac{8\,\pi\,z^3\left(4\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+104\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+799\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+1785\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)}{10\,395}$$

07.22.03.3913.01

$${}_1F_2\left(3;-\frac{11}{2},\frac{1}{2};-z\right)=\frac{8\,\pi\,z^3\left(4\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+104\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+799\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+1785\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)}{10\,395}$$

07.22.03.3914.01

$${}_1F_2\left(3;-\frac{11}{2},1;z\right)=\frac{1}{10\,395}\left(\left(32\,z^4-536\,z^3-3150\,z^2+15\,120\,z+10\,395\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(16\,z^3-1134\,z^2+1260\,z+10\,395\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3915.01

$${}_1F_2\left(3;-\frac{11}{2},1;-z\right)=\frac{1}{10\,395}\left(\left(32\,z^4+536\,z^3-3150\,z^2-15\,120\,z+10\,395\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\left(16\,z^3+1134\,z^2+1260\,z-10\,395\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3916.01

$${}_1F_2\left(3;-\frac{11}{2},\frac{3}{2};z\right)=\frac{1}{10\,395}\left(32\,z^4-320\,z^3-5472\,z^2+7740\,z-48\,\pi\left(z^3-25\,z^2-60\,z+180\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z}+4\,\pi\left(4\,z^4-33\,z^3-840\,z^2+360\,z+2160\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)+10\,395\right)$$

07.22.03.3917.01

$${}_1F_2\left(3;-\frac{11}{2},\frac{3}{2};-z\right)=\frac{1}{10\,395}\left(32\,z^4+320\,z^3-5472\,z^2-7740\,z-48\,\pi\left(z^3+25\,z^2-60\,z-180\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)\sqrt{z}-4\,\pi\left(4\,z^4+33\,z^3-840\,z^2-360\,z+2160\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)+10\,395\right)$$

07.22.03.3918.01

$${}_1F_2\left(3;-\frac{11}{2},2;z\right)=\left(-\frac{16\,z^3}{945}+\frac{16\,z^2}{99}+\frac{19\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(16\,z^3+84\,z^2-4095\,z-10\,395\right)\sinh\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.3919.01

$${}_1F_2\left(3;-\frac{11}{2},2;-z\right)=\left(\frac{16z^3}{945}+\frac{16z^2}{99}-\frac{19z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(16z^3-84z^2-4095z+10395\right)\sin\left(2\sqrt{z}\right)}{10395}$$

07.22.03.3920.01

$${}_1F_2\left(3;-\frac{11}{2},\frac{5}{2};z\right)=\frac{1}{10395\sqrt{z}}\left(\sqrt{z}\left(32z^4+400z^3-5088z^2-10332z+10395\right)+\right.$$
$$\left.6\pi\sqrt{z}\left(-28z^3+15z^2+1920z+2520\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)+6\pi\left(4z^4+95z^3-600z^2-4680z-5040\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3921.01

$${}_1F_2\left(3;-\frac{11}{2},\frac{5}{2};-z\right)=\frac{1}{10395\sqrt{z}}\left(\sqrt{z}\left(32z^4-400z^3-5088z^2+10332z+10395\right)-\right.$$
$$\left.6\pi\sqrt{z}\left(28z^3+15z^2-1920z+2520\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)-6\pi\left(4z^4-95z^3-600z^2+4680z-5040\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3922.01

$${}_1F_2\left(3;-\frac{11}{2},3;z\right)=\left(\frac{64z^3}{10395}+\frac{32z^2}{99}+\frac{20z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{495}\sqrt{z}\left(16z^2+240z+495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3923.01

$${}_1F_2\left(3;-\frac{11}{2},3;-z\right)=\left(-\frac{64z^3}{10395}+\frac{32z^2}{99}-\frac{20z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\left(16z^2-240z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3924.01

$${}_1F_2\left(3;-\frac{11}{2},\frac{7}{2};z\right)=\frac{1}{10395z}\left(z\left(32z^4+1504z^3+11040z^2+44460z+10395\right)-\right.$$
$$\left.30\pi\sqrt{z}\left(22z^3+447z^2+2940z+10080\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)+15\pi\left(4z^4+303z^3+3900z^2+22680z+60480\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.3925.01

$${}_1F_2\left(3;-\frac{11}{2},\frac{7}{2};-z\right)=$$
$$\frac{1}{10395z}\left(z\left(32z^4-1504z^3+11040z^2-44460z+10395\right)-30\pi\sqrt{z}\left(22z^3-447z^2+2940z-10080\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)-\right.$$
$$\left.15\pi\left(4z^4-303z^3+3900z^2-22680z+60480\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.3926.01

$${}_1F_2\left(3;-\frac{11}{2},4;z\right)=$$
$$\frac{1}{13860z^3}\left(-\left(4096z^5+192960z^4+3049200z^3+22972950z^2+68918850z+34459425\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(128z^5+16960z^4+423720z^3+4594590z^2+22972950z+34459425\right)\sinh\left(2\sqrt{z}\right)+34459425\right)$$

07.22.03.3927.01

$${}_1F_2\left(3;-\frac{11}{2},4;-z\right)=$$
$$\frac{1}{13860z^3}\left(\left(-4096z^5+192960z^4-3049200z^3+22972950z^2-68918850z+34459425\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(128z^5-16960z^4+423720z^3-4594590z^2+22972950z-34459425\right)\sin\left(2\sqrt{z}\right)-34459425\right)$$

07.22.03.3928.01

$${}_1F_2\left(3; -\frac{11}{2}, \frac{9}{2}; z\right) = \frac{1}{20\,790\, z^{3/2}}$$
$$\left(2\left(32 z^4 + 2992 z^3 + 57\,120 z^2 + 401\,940 z + 10\,395\right) z^{3/2} - 315\,\pi\left(20 z^3 + 889 z^2 + 13\,440 z + 75\,600\right) \boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z} + \right.$$
$$\left. 105\,\pi\left(4 z^4 + 591 z^3 + 17\,220 z^2 + 206\,640 z + 907\,200\right) \boldsymbol{L}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.3929.01

$${}_1F_2\left(3; -\frac{11}{2}, \frac{9}{2}; -z\right) = \frac{1}{20\,790\, z^{3/2}}$$
$$\left(2\left(32 z^4 - 2992 z^3 + 57\,120 z^2 - 401\,940 z + 10\,395\right) z^{3/2} - 315\,\pi\left(20 z^3 - 889 z^2 + 13\,440 z - 75\,600\right) \boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z} - \right.$$
$$\left. 105\,\pi\left(4 z^4 - 591 z^3 + 17\,220 z^2 - 206\,640 z + 907\,200\right) \boldsymbol{H}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.3930.01

$${}_1F_2\left(3; -\frac{11}{2}, 5; z\right) = \frac{1}{6930\, z^4}$$
$$\left(\left(512 z^6 + 129\,792 z^5 + 6\,351\,840 z^4 + 128\,648\,520 z^3 + 1\,171\,620\,450 z^2 + 3\,859\,455\,600 z + 1\,964\,187\,225\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$11\left(2\sqrt{z}\left(512 z^5 + 47\,040 z^4 + 1\,432\,080 z^3 + 19\,631\,430 z^2 + 112\,776\,300 z + 178\,562\,475\right)\sinh\left(2\sqrt{z}\right) - \right.$$
$$\left.\left. 3\,132\,675\,(2 z - 57)\right)\right)$$

07.22.03.3931.01

$${}_1F_2\left(3; -\frac{11}{2}, 5; -z\right) =$$
$$\frac{1}{6930\, z^4}\left(\left(512 z^6 - 129\,792 z^5 + 6\,351\,840 z^4 - 128\,648\,520 z^3 + 1\,171\,620\,450 z^2 - 3\,859\,455\,600 z + 1\,964\,187\,225\right)\right.$$
$$\cos\left(2\sqrt{z}\right) - 11\left(3\,132\,675\,(2 z + 57) + \right.$$
$$\left.\left.\left. 2\sqrt{z}\left(512 z^5 - 47\,040 z^4 + 1\,432\,080 z^3 - 19\,631\,430 z^2 + 112\,776\,300 z - 178\,562\,475\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3932.01

$${}_1F_2\left(3; -\frac{11}{2}, \frac{11}{2}; z\right) = \frac{1}{41\,580\, z^2}$$
$$\left(4\left(32 z^4 + 4864 z^3 + 151\,200 z^2 + 1\,538\,460 z + 10\,395\right) z^2 - 3780\,\pi\left(19 z^3 + 1386 z^2 + 32\,760 z + 264\,600\right) \boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} + \right.$$
$$\left. 945\,\pi\left(4 z^4 + 959 z^3 + 45\,360 z^2 + 831\,600 z + 5\,292\,000\right) \boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.3933.01

$${}_1F_2\left(3; -\frac{11}{2}, \frac{11}{2}; -z\right) = \frac{1}{41\,580\, z^2}$$
$$\left(4\left(32 z^4 - 4864 z^3 + 151\,200 z^2 - 1\,538\,460 z + 10\,395\right) z^2 - 3780\,\pi\left(19 z^3 - 1386 z^2 + 32\,760 z - 264\,600\right) \boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} - \right.$$
$$\left. 945\,\pi\left(4 z^4 - 959 z^3 + 45\,360 z^2 - 831\,600 z + 5\,292\,000\right) \boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.3934.01

$${}_1F_2\left(3; -\frac{11}{2}, 6; z\right) =$$
$$\frac{1}{1386\, z^5}\left(34\,459\,425\left(z^2 - 57\, z + 1197\right) - 3\left(4864\, z^6 + 743\,424\, z^5 + 36\,756\,720\, z^4 + 808\,647\,840\, z^3 + 7\,868\,235\,375\, z^2 + 26\,843\,892\,075\, z + 13\,749\,310\,575\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(256\, z^6 + 108\,672\, z^5 + 8\,751\,600\, z^4 + 284\,864\,580\, z^3 + 4\,224\,725\,505\, z^2 + 25\,534\,433\,925\, z + 41\,247\,931\,725\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3935.01

$${}_1F_2\left(3; -\frac{11}{2}, 6; -z\right) =$$
$$\frac{1}{1386\, z^5}\left(-34\,459\,425\left(z^2 + 57\, z + 1197\right) + 3\left(4864\, z^6 - 743\,424\, z^5 + 36\,756\,720\, z^4 - 808\,647\,840\, z^3 + 7\,868\,235\,375\, z^2 - 26\,843\,892\,075\, z + 13\,749\,310\,575\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(256\, z^6 - 108\,672\, z^5 + 8\,751\,600\, z^4 - 284\,864\,580\, z^3 + 4\,224\,725\,505\, z^2 - 25\,534\,433\,925\, z + 41\,247\,931\,725\right)\sin\left(2\sqrt{z}\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 = -\frac{9}{2}$

07.22.03.3936.01

$${}_1F_2\left(3; -\frac{9}{2}, -\frac{9}{2}; z\right) = \frac{1}{893\,025}$$
$$\left(128\,\pi\, z^{5/2}\left(4\, \boldsymbol{L}_{-14}\left(2\sqrt{z}\right) z^4 + 3\left(84\, \boldsymbol{L}_{-13}\left(2\sqrt{z}\right) z^{7/2} + 5\left(405\, \boldsymbol{L}_{-12}\left(2\sqrt{z}\right) z^3 + 4780\, \boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^{5/2} + 29\,370\, \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^2 + 92\,352\, \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 136\,056\, \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z + 76\,320\, \boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 9360\, \boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.3937.01

$${}_1F_2\left(3; -\frac{9}{2}, -\frac{9}{2}; -z\right) = \frac{1}{893\,025}$$
$$\left(128\,\pi\, z^{5/2}\left(4\, \boldsymbol{H}_{-14}\left(2\sqrt{z}\right) z^4 + 3\left(84\, \boldsymbol{H}_{-13}\left(2\sqrt{z}\right) z^{7/2} + 5\left(405\, \boldsymbol{H}_{-12}\left(2\sqrt{z}\right) z^3 + 4780\, \boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^{5/2} + 29\,370\, \boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^2 + 92\,352\, \boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 136\,056\, \boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z + 76\,320\, \boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 9360\, \boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.3938.01

$${}_1F_2\left(3; -\frac{9}{2}, -\frac{7}{2}; z\right) =$$
$$-\frac{1}{99\,225}\left(64\,\pi\, z^{5/2}\left(4\, \boldsymbol{L}_{-13}\left(2\sqrt{z}\right) z^{7/2} + 5\left(44\, \boldsymbol{L}_{-12}\left(2\sqrt{z}\right) z^3 + 907\, \boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^{5/2} + 6\left(1483\, \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^2 + 7270\, \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 17\,096\, \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z + 16\,740\, \boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 4680\, \boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.3939.01

$${}_1F_2\left(3; -\frac{9}{2}, -\frac{7}{2}; -z\right) =$$
$$-\frac{1}{99\,225}\left(64\,\pi\, z^{5/2}\left(4\, \boldsymbol{H}_{-13}\left(2\sqrt{z}\right) z^{7/2} + 5\left(44\, \boldsymbol{H}_{-12}\left(2\sqrt{z}\right) z^3 + 907\, \boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^{5/2} + 6\left(1483\, \boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^2 + 7270\, \boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 17\,096\, \boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z + 16\,740\, \boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 4680\, \boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.3940.01

$${}_1F_2\left(3; -\frac{9}{2}, -\frac{5}{2}; z\right) =$$
$$\frac{1}{14\,175}\left(32\,\pi\, z^{5/2}\left(4\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^3 + 188\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 3219\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^2 + 25\,176\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 92\,220\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z + 144\,000\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 70\,200\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3941.01

$${}_1F_2\left(3; -\frac{9}{2}, -\frac{5}{2}; -z\right) =$$
$$\frac{1}{14\,175}\left(32\,\pi\, z^{5/2}\left(4\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^3 + 188\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 3219\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^2 + 25\,176\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 92\,220\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z + 144\,000\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 70\,200\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3942.01

$${}_1F_2\left(3; -\frac{9}{2}, -\frac{3}{2}; z\right) = -\frac{1}{2835}\left(16\,\pi\left(4\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^5 + 3\left(52\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^2 + 709\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 4138\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z + 10\,050\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 7800\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)z^{5/2}\right)\right)$$

07.22.03.3943.01

$${}_1F_2\left(3; -\frac{9}{2}, -\frac{3}{2}; -z\right) =$$
$$-\frac{1}{2835}\left(16\,\pi\left(4\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^5 + 3\left(52\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^2 + 709\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 4138\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z + 10\,050\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 7800\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)z^{5/2}\right)\right)$$

07.22.03.3944.01

$${}_1F_2\left(3; -\frac{9}{2}, -\frac{1}{2}; z\right) =$$
$$\frac{8}{945}\,\pi\, z^{5/2}\left(4\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^2 + 124\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 1259\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z + 4860\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 5850\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)$$

07.22.03.3945.01

$${}_1F_2\left(3; -\frac{9}{2}, -\frac{1}{2}; -z\right) =$$
$$\frac{8}{945}\,\pi\, z^{5/2}\left(4\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^2 + 124\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 1259\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z + 4860\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 5850\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)$$

07.22.03.3946.01

$${}_1F_2\left(3; -\frac{9}{2}, \frac{1}{2}; z\right) = -\frac{4}{945}\,\pi\left(4\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^4 + \left(92\,z\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right) + 615\sqrt{z}\;\boldsymbol{L}_{-7}\left(2\sqrt{z}\right) + 1170\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)z^{5/2}\right)$$

07.22.03.3947.01

$${}_1F_2\left(3; -\frac{9}{2}, \frac{1}{2}; -z\right) = -\frac{4}{945}\,\pi\left(4\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^4 + \left(92\,z\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right) + 615\sqrt{z}\;\boldsymbol{H}_{-7}\left(2\sqrt{z}\right) + 1170\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)z^{5/2}\right)$$

07.22.03.3948.01

$${}_1F_2\left(3; -\frac{9}{2}, 1; z\right) = \left(-\frac{16\,z^3}{945} - \frac{10\,z^2}{21} + \frac{4\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(8\,z^3 - 114\,z^2 + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3949.01

$${}_1F_2\left(3; -\frac{9}{2}, 1; -z\right) = \left(\frac{16 z^3}{945} - \frac{10 z^2}{21} - \frac{4 z}{3} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(8 z^3 + 114 z^2 - 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3950.01

$${}_1F_2\left(3; -\frac{9}{2}, \frac{3}{2}; z\right) =$$
$$\frac{1}{945}\left(8 z^3 - 576 z^2 + 540 z + 2\pi\left(-4 z^3 + 45 z^2 + 180 z - 360\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z} + 2\pi\left(4 z^3 - 165 z^2 + 360\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) + 945\right)$$

07.22.03.3951.01

$${}_1F_2\left(3; -\frac{9}{2}, \frac{3}{2}; -z\right) =$$
$$\frac{1}{945}\left(-8 z^3 - 576 z^2 - 540 z + 2\pi\left(-4 z^3 - 45 z^2 + 180 z + 360\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)\sqrt{z} + 2\pi\left(4 z^3 + 165 z^2 - 360\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 945\right)$$

07.22.03.3952.01

$${}_1F_2\left(3; -\frac{9}{2}, 2; z\right) = \left(-\frac{16 z^3}{945} + \frac{4 z^2}{63} + \frac{5 z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{315}\sqrt{z}\left(8 z^2 - 105 z - 315\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3953.01

$${}_1F_2\left(3; -\frac{9}{2}, 2; -z\right) = \left(\frac{16 z^3}{945} + \frac{4 z^2}{63} - \frac{5 z}{3} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{315}\sqrt{z}\left(8 z^2 + 105 z - 315\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3954.01

$${}_1F_2\left(3; -\frac{9}{2}, \frac{5}{2}; z\right) = \frac{1}{945\sqrt{z}}$$
$$\left(\sqrt{z}\left(56 z^3 - 384 z^2 - 828 z + 945\right) - 3\pi\sqrt{z}\left(4 z^3 + 15 z^2 - 300 z - 360\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) + 60\pi\left(z^3 - 3 z^2 - 36 z - 36\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3955.01

$${}_1F_2\left(3; -\frac{9}{2}, \frac{5}{2}; -z\right) = \frac{1}{945\sqrt{z}}\left(\sqrt{z}\left(-56 z^3 - 384 z^2 + 828 z + 945\right) -\right.$$
$$\left. 3\pi\sqrt{z}\left(4 z^3 - 15 z^2 - 300 z + 360\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 60\pi\left(z^3 + 3 z^2 - 36 z + 36\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3956.01

$${}_1F_2\left(3; -\frac{9}{2}, 3; z\right) = \left(\frac{16 z^2}{63} + \frac{16 z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(16 z^2 + 420 z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3957.01

$${}_1F_2\left(3; -\frac{9}{2}, 3; -z\right) = \left(\frac{16 z^2}{63} - \frac{16 z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(16 z^2 - 420 z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.3958.01

$${}_1F_2\left(3; -\frac{9}{2}, \frac{7}{2}; z\right) = \frac{1}{1890 z}\left(2 z\left(104 z^3 + 720 z^2 + 2700 z + 945\right) -\right.$$
$$\left. 15\pi\sqrt{z}\left(4 z^3 + 123 z^2 + 750 z + 2520\right)\boldsymbol{L}_2\left(2\sqrt{z}\right) + 45\pi\left(12 z^3 + 175 z^2 + 960 z + 2520\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.3959.01

$${}_1F_2\left(3; -\frac{9}{2}, \frac{7}{2}; -z\right) = \frac{1}{1890\,z}\left(2\,z\left(-104\,z^3+720\,z^2-2700\,z+945\right)-\right.$$
$$\left.15\,\pi\,\sqrt{z}\,\left(4\,z^3-123\,z^2+750\,z-2520\right)\boldsymbol{H}_2\left(2\,\sqrt{z}\right)+45\,\pi\left(12\,z^3-175\,z^2+960\,z-2520\right)\boldsymbol{H}_3\left(2\,\sqrt{z}\right)\right)$$

07.22.03.3960.01

$${}_1F_2\left(3; -\frac{9}{2}, 4; z\right) = \frac{1}{1260\,z^3}\left(5\left(2\,\sqrt{z}\,\left(160\,z^4+4896\,z^3+54\,054\,z^2+270\,270\,z+405\,405\right)\sinh\left(2\,\sqrt{z}\right)+405\,405\right)-\right.$$
$$\left.\left(128\,z^5+10\,560\,z^4+178\,920\,z^3+1\,351\,350\,z^2+4\,054\,050\,z+2\,027\,025\right)\cosh\left(2\,\sqrt{z}\right)\right)$$

07.22.03.3961.01

$${}_1F_2\left(3; -\frac{9}{2}, 4; -z\right) = \frac{1}{1260\,z^3}\left(\left(-128\,z^5+10\,560\,z^4-178\,920\,z^3+1\,351\,350\,z^2-4\,054\,050\,z+2\,027\,025\right)\cos\left(2\,\sqrt{z}\right)+\right.$$
$$\left.5\left(2\,\sqrt{z}\,\left(160\,z^4-4896\,z^3+54\,054\,z^2-270\,270\,z+405\,405\right)\sin\left(2\,\sqrt{z}\right)-405\,405\right)\right)$$

07.22.03.3962.01

$${}_1F_2\left(3; -\frac{9}{2}, \frac{9}{2}; z\right) =$$
$$\frac{1}{3780\,z^{3/2}}\left(2\left(2\left(152\,z^3+3120\,z^2+22\,260\,z+945\right)z^{3/2}+105\,\pi\left(26\,z^3+915\,z^2+11\,340\,z+50\,400\right)\boldsymbol{L}_4\left(2\,\sqrt{z}\right)\right)-\right.$$
$$\left.105\,\pi\,\sqrt{z}\,\left(4\,z^3+279\,z^2+4410\,z+25\,200\right)\boldsymbol{L}_3\left(2\,\sqrt{z}\right)\right)$$

07.22.03.3963.01

$${}_1F_2\left(3; -\frac{9}{2}, \frac{9}{2}; -z\right) =$$
$$\frac{1}{3780\,z^{3/2}}\left(2\left(2\left(-152\,z^3+3120\,z^2-22\,260\,z+945\right)z^{3/2}+105\,\pi\left(26\,z^3-915\,z^2+11\,340\,z-50\,400\right)\boldsymbol{H}_4\left(2\,\sqrt{z}\right)\right)-\right.$$
$$\left.105\,\pi\,\sqrt{z}\,\left(4\,z^3-279\,z^2+4410\,z-25\,200\right)\boldsymbol{H}_3\left(2\,\sqrt{z}\right)\right)$$

07.22.03.3964.01

$${}_1F_2\left(3; -\frac{9}{2}, 5; z\right) =$$
$$\frac{1}{630\,z^4}\left(2\,027\,025\,(2\,z-51)+9\left(512\,z^5+32\,960\,z^4+720\,720\,z^3+6\,756\,750\,z^2+22\,522\,500\,z+11\,486\,475\right)\cosh\left(2\,\sqrt{z}\right)-\right.$$
$$\left.2\,\sqrt{z}\,\left(128\,z^5+22\,080\,z^4+772\,200\,z^3+11\,081\,070\,z^2+64\,864\,800\,z+103\,378\,275\right)\sinh\left(2\,\sqrt{z}\right)\right)$$

07.22.03.3965.01

$${}_1F_2\left(3; -\frac{9}{2}, 5; -z\right) =$$
$$-\frac{1}{630\,z^4}\left(2\,027\,025\,(2\,z+51)+9\left(512\,z^5-32\,960\,z^4+720\,720\,z^3-6\,756\,750\,z^2+22\,522\,500\,z-11\,486\,475\right)\cos\left(2\,\sqrt{z}\right)+\right.$$
$$\left.2\,\sqrt{z}\,\left(128\,z^5-22\,080\,z^4+772\,200\,z^3-11\,081\,070\,z^2+64\,864\,800\,z-103\,378\,275\right)\sin\left(2\,\sqrt{z}\right)\right)$$

07.22.03.3966.01

$${}_1F_2\left(3; -\frac{9}{2}, \frac{11}{2}; z\right) = \frac{1}{1512\,z^2}\left(8\left(40\,z^3+1440\,z^2+15\,372\,z+189\right)z^2-\right.$$
$$\left.189\,\pi\left(4\,z^3+483\,z^2+12\,600\,z+105\,840\right)\boldsymbol{L}_4\left(2\,\sqrt{z}\right)\sqrt{z}+189\,\pi\left(68\,z^3+4095\,z^2+80\,640\,z+529\,200\right)\boldsymbol{L}_5\left(2\,\sqrt{z}\right)\right)$$

07.22.03.3967.01

$$ {}_1F_2\left(3; -\frac{9}{2}, \frac{11}{2}; -z\right) = \frac{1}{1512\, z^2}\left(-8\left(40\, z^3 - 1440\, z^2 + 15\,372\, z - 189\right) z^2 - 189\,\pi\left(4\, z^3 - 483\, z^2 + 12\,600\, z - 105\,840\right) \boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} + 189\,\pi\left(68\, z^3 - 4095\, z^2 + 80\,640\, z - 529\,200\right) \boldsymbol{H}_5\left(2\sqrt{z}\right)\right) $$

07.22.03.3968.01

$$ {}_1F_2\left(3; -\frac{9}{2}, 6; z\right) = \frac{1}{126\, z^5}\left(3\left(675\,675\left(z^2 - 51\, z + 969\right) + 2\sqrt{z}\left(1024\, z^5 + 114\,400\, z^4 + 4\,169\,880\, z^3 + 64\,999\,935\, z^2 + 402\,026\,625\, z + 654\,729\,075\right)\sinh\left(2\sqrt{z}\right)\right) - \left(256\, z^6 + 77\,952\, z^5 + 4\,633\,200\, z^4 + 109\,729\,620\, z^3 + 1\,104\,728\,625\, z^2 + 3\,824\,996\,175\, z + 1\,964\,187\,225\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.3969.01

$$ {}_1F_2\left(3; -\frac{9}{2}, 6; -z\right) = \frac{1}{126\, z^5}\left(\left(256\, z^6 - 77\,952\, z^5 + 4\,633\,200\, z^4 - 109\,729\,620\, z^3 + 1\,104\,728\,625\, z^2 - 3\,824\,996\,175\, z + 1\,964\,187\,225\right)\cos\left(2\sqrt{z}\right) - 3\left(675\,675\left(z^2 + 51\, z + 969\right) + 2\sqrt{z}\left(1024\, z^5 - 114\,400\, z^4 + 4\,169\,880\, z^3 - 64\,999\,935\, z^2 + 402\,026\,625\, z - 654\,729\,075\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 3$, $b_1 = -\frac{7}{2}$

07.22.03.3970.01

$$ {}_1F_2\left(3; -\frac{7}{2}, -\frac{7}{2}; z\right) = \frac{1}{11\,025}\left(32\,\pi\, z^2\left(4\, \boldsymbol{L}_{-12}\left(2\sqrt{z}\right) z^{7/2} + 192\, \boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^3 + 3383\, \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^{5/2} + 27\,575\, \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^2 + 107\,800\, \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z^{3/2} + 189\,480\, \boldsymbol{L}_{-7}\left(2\sqrt{z}\right) z + 123\,240\, \boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 17\,160\, \boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.3971.01

$$ {}_1F_2\left(3; -\frac{7}{2}, -\frac{7}{2}; -z\right) = \frac{1}{11\,025}\left(32\,\pi\, z^2\left(4\, \boldsymbol{H}_{-12}\left(2\sqrt{z}\right) z^{7/2} + 192\, \boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^3 + 3383\, \boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^{5/2} + 27\,575\, \boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^2 + 107\,800\, \boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z^{3/2} + 189\,480\, \boldsymbol{H}_{-7}\left(2\sqrt{z}\right) z + 123\,240\, \boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 17\,160\, \boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.3972.01

$$ {}_1F_2\left(3; -\frac{7}{2}, -\frac{5}{2}; z\right) = -\frac{1}{1575}\left(16\,\pi\, z^2\left(4\, \boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^3 + 164\, \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^{5/2} + 2399\, \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^2 + 15\,580\, \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z^{3/2} + 45\,480\, \boldsymbol{L}_{-7}\left(2\sqrt{z}\right) z + 53\,040\, \boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 17\,160\, \boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.3973.01

$${}_1F_2\left(3; -\frac{7}{2}, -\frac{5}{2}; -z\right) =$$
$$-\frac{1}{1575}\left(16\pi z^2\left(4\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^3 + 164\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 2399\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^2 + 15\,580\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 45\,480\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z + 53\,040\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 17\,160\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.3974.01

$${}_1F_2\left(3; -\frac{7}{2}, -\frac{3}{2}; z\right) = \frac{8}{315}\pi z^2\left(4\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 136\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^2 + 1583\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 7665\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z + 14\,820\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 8580\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)$$

07.22.03.3975.01

$${}_1F_2\left(3; -\frac{7}{2}, -\frac{3}{2}; -z\right) = \frac{8}{315}\pi z^2\left(4\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 136\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^2 + 1583\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 7665\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z + 14\,820\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 8580\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)$$

07.22.03.3976.01

$${}_1F_2\left(3; -\frac{7}{2}, -\frac{1}{2}; z\right) =$$
$$-\frac{4}{105}\pi z^2\left(4\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^2 + 108\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 935\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z + 2990\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 2860\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)$$

07.22.03.3977.01

$${}_1F_2\left(3; -\frac{7}{2}, -\frac{1}{2}; -z\right) =$$
$$-\frac{4}{105}\pi z^2\left(4\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^2 + 108\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 935\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z + 2990\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 2860\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)$$

07.22.03.3978.01

$${}_1F_2\left(3; -\frac{7}{2}, \frac{1}{2}; z\right) = \frac{2}{105}\pi z^2\left(4\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 80\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z + 455\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 715\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)$$

07.22.03.3979.01

$${}_1F_2\left(3; -\frac{7}{2}, \frac{1}{2}; -z\right) = \frac{2}{105}\pi z^2\left(4\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 80\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z + 455\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 715\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)$$

07.22.03.3980.01

$${}_1F_2\left(3; -\frac{7}{2}, 1; z\right) = \frac{1}{105}\left(\left(8z^3 - 74z^2 + 120z + 105\right)\cosh\left(2\sqrt{z}\right) + 10\sqrt{z}\left(2z^2 + 4z - 21\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3981.01

$${}_1F_2\left(3; -\frac{7}{2}, 1; -z\right) = \frac{1}{105}\left(10\sqrt{z}\left(-2z^2 + 4z + 21\right)\sin\left(2\sqrt{z}\right) - \left(8z^3 + 74z^2 + 120z - 105\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.3982.01

$${}_1F_2\left(3; -\frac{7}{2}, \frac{3}{2}; z\right) =$$
$$\frac{1}{105}\left(8z^3 - 72z^2 + 36z + 2\pi\left(2z^2 + 27z - 36\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z} + \pi\left(4z^3 - 37z^2 - 18z + 72\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) + 105\right)$$

07.22.03.3983.01

$${}_1F_2\left(3; -\frac{7}{2}, \frac{3}{2}; -z\right) =$$
$$\frac{1}{105}\left(-8z^3 - 72z^2 - 36z + 2\pi\left(-2z^2 + 27z + 36\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)\sqrt{z} + \pi\left(4z^3 + 37z^2 - 18z - 72\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 105\right)$$

07.22.03.3984.01

$${}_1F_2\left(3; -\frac{7}{2}, 2; z\right) = \frac{1}{105}\left(\left(-8z^2 + 165z + 105\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(4z^2 - 25z - 105\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3985.01

$${}_1F_2\left(3; -\frac{7}{2}, 2; -z\right) = \frac{1}{105}\left(\left(-8z^2 - 165z + 105\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4z^2 + 25z - 105\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3986.01

$${}_1F_2\left(3; -\frac{7}{2}, \frac{5}{2}; z\right) =$$
$$\frac{1}{210\sqrt{z}}\left(2\sqrt{z}\left(8z^3 - 32z^2 - 84z + 105\right) + 12\pi\sqrt{z}\left(-2z^2 + 14z + 15\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) + 3\pi\left(4z^3 - z^2 - 132z - 120\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3987.01

$${}_1F_2\left(3; -\frac{7}{2}, \frac{5}{2}; -z\right) =$$
$$\frac{1}{210\sqrt{z}}\left(2\sqrt{z}\left(-8z^3 - 32z^2 + 84z + 105\right) + 12\pi\sqrt{z}\left(2z^2 + 14z - 15\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 3\pi\left(4z^3 + z^2 - 132z + 120\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.3988.01

$${}_1F_2\left(3; -\frac{7}{2}, 3; z\right) = \left(\frac{16z^2}{105} + \frac{12z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\left(8z + 21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.3989.01

$${}_1F_2\left(3; -\frac{7}{2}, 3; -z\right) = \left(\frac{16z^2}{105} - \frac{12z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}\left(21 - 8z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.3990.01

$${}_1F_2\left(3; -\frac{7}{2}, \frac{7}{2}; z\right) =$$
$$\frac{1}{420z}\left(4z\left(8z^3 + 56z^2 + 180z + 105\right) - 150\pi\sqrt{z}\left(2z^2 + 11z + 36\right)\boldsymbol{L}_2\left(2\sqrt{z}\right) + 15\pi\left(4z^3 + 83z^2 + 420z + 1080\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.3991.01

$${}_1F_2\left(3; -\frac{7}{2}, \frac{7}{2}; -z\right) = \frac{1}{420z}$$
$$\left(4z\left(-8z^3 + 56z^2 - 180z + 105\right) + 150\pi\sqrt{z}\left(2z^2 - 11z + 36\right)\boldsymbol{H}_2\left(2\sqrt{z}\right) + 15\pi\left(4z^3 - 83z^2 + 420z - 1080\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.3992.01

$${}_1F_2\left(3; -\frac{7}{2}, 4; z\right) = \frac{1}{140z^3}\left(-\left(608z^4 + 11\,872z^3 + 90\,090z^2 + 270\,270z + 135\,135\right)\cosh\left(2\sqrt{z}\right) +$$
$$2\sqrt{z}\left(32z^4 + 1576z^3 + 18\,018z^2 + 90\,090z + 135\,135\right)\sinh\left(2\sqrt{z}\right) + 135\,135\right)$$

07.22.03.3993.01

$${}_1F_2\left(3; -\frac{7}{2}, 4; -z\right) = \frac{1}{140\, z^3}\left(\left(608\, z^4 - 11\,872\, z^3 + 90\,090\, z^2 - 270\,270\, z + 135\,135\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(32\, z^4 - 1576\, z^3 + 18\,018\, z^2 - 90\,090\, z + 135\,135\right)\sin\left(2\sqrt{z}\right) - 135\,135\right)$$

07.22.03.3994.01

$${}_1F_2\left(3; -\frac{7}{2}, \frac{9}{2}; z\right) = \frac{1}{840\, z^{3/2}}\left(8\left(8\, z^3 + 192\, z^2 + 1380\, z + 105\right) z^{3/2} - 210\,\pi\left(16\, z^2 + 270\, z + 1575\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z} + 105\,\pi\left(4\, z^3 + 215\, z^2 + 2790\, z + 12\,600\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.3995.01

$${}_1F_2\left(3; -\frac{7}{2}, \frac{9}{2}; -z\right) = \frac{1}{840\, z^{3/2}}\left(8\left(-8\, z^3 + 192\, z^2 - 1380\, z + 105\right) z^{3/2} + 210\,\pi\left(16\, z^2 - 270\, z + 1575\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z} + 105\,\pi\left(4\, z^3 - 215\, z^2 + 2790\, z - 12\,600\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.3996.01

$${}_1F_2\left(3; -\frac{7}{2}, 5; z\right) = \frac{1}{70\, z^4}\left(135\,135\,(2\, z - 45) + \left(128\, z^5 + 14\,656\, z^4 + 360\,360\, z^3 + 3\,513\,510\, z^2 + 11\,891\,880\, z + 6\,081\,075\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(928\, z^4 + 41\,184\, z^3 + 630\,630\, z^2 + 3\,783\,780\, z + 6\,081\,075\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.3997.01

$${}_1F_2\left(3; -\frac{7}{2}, 5; -z\right) = \frac{1}{70\, z^4}\left(-135\,135\,(2\, z + 45) + \left(-128\, z^5 + 14\,656\, z^4 - 360\,360\, z^3 + 3\,513\,510\, z^2 - 11\,891\,880\, z + 6\,081\,075\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(928\, z^4 - 41\,184\, z^3 + 630\,630\, z^2 - 3\,783\,780\, z + 6\,081\,075\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.3998.01

$${}_1F_2\left(3; -\frac{7}{2}, \frac{11}{2}; z\right) = \frac{1}{1680\, z^2}\left(16\left(8\, z^3 + 376\, z^2 + 4260\, z + 105\right) z^2 - 1890\,\pi\left(22\, z^2 + 665\, z + 5880\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} + 945\,\pi\left(4\, z^3 + 395\, z^2 + 8610\, z + 58\,800\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.3999.01

$${}_1F_2\left(3; -\frac{7}{2}, \frac{11}{2}; -z\right) = \frac{1}{1680\, z^2}\left(-16\left(8\, z^3 - 376\, z^2 + 4260\, z - 105\right) z^2 + 1890\,\pi\left(22\, z^2 - 665\, z + 5880\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} + 945\,\pi\left(4\, z^3 - 395\, z^2 + 8610\, z - 58\,800\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.4000.01

$${}_1F_2\left(3; -\frac{7}{2}, 6; z\right) = \frac{1}{14\, z^5}\left(135\,135\left(z^2 - 45\, z + 765\right) - 5\left(512\, z^5 + 41\,184\, z^4 + 1\,081\,080\, z^3 + 11\,378\,367\, z^2 + 40\,135\,095\, z + 20\,675\,655\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64\, z^5 + 13\,728\, z^4 + 592\,020\, z^3 + 9\,864\,855\, z^2 + 62\,837\,775\, z + 103\,378\,275\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4001.01

$$ {}_1F_2\left(3; -\frac{7}{2}, 6; -z\right) = $$
$$ -\frac{1}{14\,z^5}\left(135\,135\left(z^2+45\,z+765\right)+5\left(512\,z^5-41\,184\,z^4+1\,081\,080\,z^3-11\,378\,367\,z^2+40\,135\,095\,z-20\,675\,655\right)\right. $$
$$ \left.\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(64\,z^5-13\,728\,z^4+592\,020\,z^3-9\,864\,855\,z^2+62\,837\,775\,z-103\,378\,275\right)\sin\left(2\sqrt{z}\right)\right) $$

For fixed z and $a_1 = 3$, $b_1 = -\frac{5}{2}$

07.22.03.4002.01

$$ {}_1F_2\left(3; -\frac{5}{2}, -\frac{5}{2}; z\right) = \frac{8}{225}\pi z^{3/2}\left(4\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^3+140\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{5/2}+1699\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^2+\right. $$
$$ \left.8784\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^{3/2}+19\,128\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z+14\,784\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\sqrt{z}+2376\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right) $$

07.22.03.4003.01

$$ {}_1F_2\left(3; -\frac{5}{2}, -\frac{5}{2}; -z\right) = \frac{8}{225}\pi z^{3/2}\left(4\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^3+140\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{5/2}+1699\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^2+\right. $$
$$ \left.8784\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^{3/2}+19\,128\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z+14\,784\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\sqrt{z}+2376\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right) $$

07.22.03.4004.01

$$ {}_1F_2\left(3; -\frac{5}{2}, -\frac{3}{2}; z\right) = -\frac{4}{45}\pi\left(4\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^4+\right. $$
$$ \left.\left(116\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^2+1119\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^{3/2}+4308\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z+6204\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\sqrt{z}+2376\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)z^{3/2}\right) $$

07.22.03.4005.01

$$ {}_1F_2\left(3; -\frac{5}{2}, -\frac{3}{2}; -z\right) = -\frac{4}{45}\pi\left(4\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^4+\right. $$
$$ \left.\left(116\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^2+1119\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^{3/2}+4308\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z+6204\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\sqrt{z}+2376\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)z^{3/2}\right) $$

07.22.03.4006.01

$$ {}_1F_2\left(3; -\frac{5}{2}, -\frac{1}{2}; z\right) = $$
$$ \frac{2}{15}\pi z^{3/2}\left(4\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^2+92\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^{3/2}+659\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z+1672\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\sqrt{z}+1188\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right) $$

07.22.03.4007.01

$$ {}_1F_2\left(3; -\frac{5}{2}, -\frac{1}{2}; -z\right) = $$
$$ \frac{2}{15}\pi z^{3/2}\left(4\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^2+92\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^{3/2}+659\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z+1672\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\sqrt{z}+1188\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right) $$

07.22.03.4008.01

$$ {}_1F_2\left(3; -\frac{5}{2}, \frac{1}{2}; z\right) = -\frac{1}{15}\pi\left(4\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^3+\left(68\,z\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)+319\sqrt{z}\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)+396\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)z^{3/2}\right) $$

07.22.03.4009.01

$$ {}_1F_2\left(3; -\frac{5}{2}, \frac{1}{2}; -z\right) = -\frac{1}{15}\pi\left(4\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^3+\left(68\,z\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)+319\sqrt{z}\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)+396\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)z^{3/2}\right) $$

07.22.03.4010.01

$${}_1F_2\left(3; -\frac{5}{2}, 1; z\right) = \frac{1}{15}\left(\left(-14\,z^2 + 12\,z + 15\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(2\,z^2 - 8\,z + 15\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4011.01

$${}_1F_2\left(3; -\frac{5}{2}, 1; -z\right) = \frac{1}{15}\left(\left(-14\,z^2 - 12\,z + 15\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(2\,z^2 + 8\,z + 15\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4012.01

$${}_1F_2\left(3; -\frac{5}{2}, \frac{3}{2}; z\right) = \frac{1}{30}\left(\pi\sqrt{z}\,\left(-4\,z^2 + 21\,z - 18\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) - 2\left(5\left(2\,z^2 - 3\right) + \pi\left(4\,z^2 + 6\,z - 9\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4013.01

$${}_1F_2\left(3; -\frac{5}{2}, \frac{3}{2}; -z\right) = \frac{1}{30}\left(\pi\sqrt{z}\,\left(4\,z^2 + 21\,z + 18\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) + 2\left(-10\,z^2 + \pi\left(4\,z^2 - 6\,z - 9\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 15\right)\right)$$

07.22.03.4014.01

$${}_1F_2\left(3; -\frac{5}{2}, 2; z\right) = \left(-\frac{4\,z^2}{15} + \frac{7\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,\left(z + 15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4015.01

$${}_1F_2\left(3; -\frac{5}{2}, 2; -z\right) = \left(-\frac{4\,z^2}{15} - \frac{7\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{15}\left(z - 15\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4016.01

$${}_1F_2\left(3; -\frac{5}{2}, \frac{5}{2}; z\right) =$$

$$\frac{1}{60\sqrt{z}}\left(3\,\pi\sqrt{z}\,\left(-4\,z^2 + 13\,z + 12\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) - 2\left(2\sqrt{z}\,\left(2\,z^2 + 12\,z - 15\right) + 3\,\pi\left(-2\,z^2 + 15\,z + 12\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4017.01

$${}_1F_2\left(3; -\frac{5}{2}, \frac{5}{2}; -z\right) = \frac{4\sqrt{z}\,\left(-2\,z^2 + 12\,z + 15\right) + 3\,\pi\sqrt{z}\,\left(4\,z^2 + 13\,z - 12\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) - 6\,\pi\left(2\,z^2 + 15\,z - 12\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)}{60\sqrt{z}}$$

07.22.03.4018.01

$${}_1F_2\left(3; -\frac{5}{2}, 3; z\right) = \left(\frac{8\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,\left(4\,z + 15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4019.01

$${}_1F_2\left(3; -\frac{5}{2}, 3; -z\right) = \left(1 - \frac{8\,z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\left(15 - 4\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4020.01

$${}_1F_2\left(3; -\frac{5}{2}, \frac{7}{2}; z\right) = \frac{4\left(2\,z\left(2\,z^2 + 4\,z + 5\right) + 5\,\pi\left(4\,z^2 + 18\,z + 45\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right) - 5\,\pi\sqrt{z}\,\left(4\,z^2 + 19\,z + 60\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)}{40\,z}$$

07.22.03.4021.01

$${}_1F_2\left(3; -\frac{5}{2}, \frac{7}{2}; -z\right) = \frac{5\,\pi\sqrt{z}\,\left(4\,z^2 - 19\,z + 60\right)\boldsymbol{H}_2\left(2\sqrt{z}\right) + 4\left(2\,z\left(2\,z^2 - 4\,z + 5\right) - 5\,\pi\left(4\,z^2 - 18\,z + 45\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)}{40\,z}$$

07.22.03.4022.01

$${}_1F_2\left(3; -\frac{5}{2}, 4; z\right) = \frac{1}{20\,z^3}$$
$$\left(7\left(2\sqrt{z}\,\left(16\,z^3 + 198\,z^2 + 990\,z + 1485\right)\sinh\left(2\sqrt{z}\right) + 1485\right) - \left(32\,z^4 + 904\,z^3 + 6930\,z^2 + 20\,790\,z + 10\,395\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.4023.01

$${}_1F_2\left(3; -\frac{5}{2}, 4; -z\right) =$$
$$\frac{1}{20\,z^3}\left(\left(32\,z^4 - 904\,z^3 + 6930\,z^2 - 20\,790\,z + 10\,395\right)\cos\left(2\sqrt{z}\right) - 7\left(2\sqrt{z}\,\left(16\,z^3 - 198\,z^2 + 990\,z - 1485\right)\sin\left(2\sqrt{z}\right) + 1485\right)\right)$$

07.22.03.4024.01

$${}_1F_2\left(3; -\frac{5}{2}, \frac{9}{2}; z\right) =$$
$$\frac{1}{240\,z^{3/2}}\left(2\left(8\left(14\,z^2 + 96\,z + 15\right)z^{3/2} + 105\,\pi\left(14\,z^2 + 195\,z + 900\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right) - 105\,\pi\sqrt{z}\,\left(4\,z^2 + 75\,z + 450\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.4025.01

$${}_1F_2\left(3; -\frac{5}{2}, \frac{9}{2}; -z\right) =$$
$$\frac{1}{240\,z^{3/2}}\left(105\,\pi\sqrt{z}\,\left(4\,z^2 - 75\,z + 450\right)\boldsymbol{H}_3\left(2\sqrt{z}\right) + 2\left(8\,z^{3/2}\left(14\,z^2 - 96\,z + 15\right) - 105\,\pi\left(14\,z^2 - 195\,z + 900\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4026.01

$${}_1F_2\left(3; -\frac{5}{2}, 5; z\right) = \frac{1}{10\,z^4}\left(10\,395\,(2\,z - 39) + \left(736\,z^4 + 22\,176\,z^3 + 228\,690\,z^2 + 790\,020\,z + 405\,405\right)\cosh\left(2\sqrt{z}\right) -$$
$$2\sqrt{z}\,\left(32\,z^4 + 2376\,z^3 + 40\,194\,z^2 + 249\,480\,z + 405\,405\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4027.01

$${}_1F_2\left(3; -\frac{5}{2}, 5; -z\right) = \frac{1}{10\,z^4}\left(-10\,395\,(2\,z + 39) + \left(736\,z^4 - 22\,176\,z^3 + 228\,690\,z^2 - 790\,020\,z + 405\,405\right)\cos\left(2\sqrt{z}\right) +$$
$$2\sqrt{z}\,\left(32\,z^4 - 2376\,z^3 + 40\,194\,z^2 - 249\,480\,z + 405\,405\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4028.01

$${}_1F_2\left(3; -\frac{5}{2}, \frac{11}{2}; z\right) =$$
$$\frac{1}{480\,z^2}\left(32\left(22\,z^2 + 264\,z + 15\right)z^2 - 945\,\pi\left(4\,z^2 + 155\,z + 1470\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} + 9450\,\pi\left(4\,z^2 + 102\,z + 735\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.4029.01

$${}_1F_2\left(3; -\frac{5}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{480\,z^2}\left(32\left(22\,z^2 - 264\,z + 15\right)z^2 + 945\,\pi\left(4\,z^2 - 155\,z + 1470\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} - 9450\,\pi\left(4\,z^2 - 102\,z + 735\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.4030.01

$${}_1F_2\left(3; -\frac{5}{2}, 6; z\right) = \frac{1}{2\,z^5}\left(33\left(315\left(z^2-39\,z+585\right)+2\sqrt{z}\,\left(16\,z^4+912\,z^3+16\,695\,z^2+110\,565\,z+184\,275\right)\sinh\left(2\sqrt{z}\right)\right)-\left(64\,z^5+9504\,z^4+291\,060\,z^3+3\,253\,635\,z^2+11\,756\,745\,z+6\,081\,075\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.4031.01

$${}_1F_2\left(3; -\frac{5}{2}, 6; -z\right) = \frac{1}{2\,z^5}\left(\left(-64\,z^5+9504\,z^4-291\,060\,z^3+3\,253\,635\,z^2-11\,756\,745\,z+6\,081\,075\right)\cos\left(2\sqrt{z}\right)+33\left(2\sqrt{z}\,\left(16\,z^4-912\,z^3+16\,695\,z^2-110\,565\,z+184\,275\right)\sin\left(2\sqrt{z}\right)-315\left(z^2+39\,z+585\right)\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 = -\frac{3}{2}$

07.22.03.4032.01

$${}_1F_2\left(3; -\frac{3}{2}, -\frac{3}{2}; z\right) = \frac{2}{9}\pi\,z\left(4\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{5/2}+96\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^2+735\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{3/2}+2103\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z+1998\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\sqrt{z}+378\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)\right)$$

07.22.03.4033.01

$${}_1F_2\left(3; -\frac{3}{2}, -\frac{3}{2}; -z\right) = \frac{2}{9}\pi\,z\left(4\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{5/2}+96\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^2+735\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{3/2}+2103\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z+1998\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\sqrt{z}+378\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)\right)$$

07.22.03.4034.01

$${}_1F_2\left(3; -\frac{3}{2}, -\frac{1}{2}; z\right) = -\frac{1}{3}\pi\,z\left(4\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^2+76\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{3/2}+431\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z+810\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\sqrt{z}+378\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)\right)$$

07.22.03.4035.01

$${}_1F_2\left(3; -\frac{3}{2}, -\frac{1}{2}; -z\right) = -\frac{1}{3}\pi\,z\left(4\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^2+76\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{3/2}+431\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z+810\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\sqrt{z}+378\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)\right)$$

07.22.03.4036.01

$${}_1F_2\left(3; -\frac{3}{2}, \frac{1}{2}; z\right) = \frac{1}{6}\pi\,z\left(4\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{3/2}+56\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z+207\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\sqrt{z}+189\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)\right)$$

07.22.03.4037.01

$${}_1F_2\left(3; -\frac{3}{2}, \frac{1}{2}; -z\right) = \frac{1}{6}\pi\,z\left(4\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{3/2}+56\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z+207\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\sqrt{z}+189\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)\right)$$

07.22.03.4038.01

$${}_1F_2\left(3; -\frac{3}{2}, 1; z\right) = \left(\frac{2\,z^2}{3}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{3}\sqrt{z}\,\left(4\,z-3\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4039.01

$${}_1F_2\left(3; -\frac{3}{2}, 1; -z\right) = \left(\frac{2\,z^2}{3}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{3}\sqrt{z}\,\left(4\,z+3\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4040.01

$${}_1F_2\left(3; -\frac{3}{2}, \frac{3}{2}; z\right) = \frac{1}{12}\left(8\,z^2-8\,z+6\,\pi\left(2\,z-1\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z}+\pi\left(4\,z^2-9\,z+6\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)+12\right)$$

07.22.03.4041.01

$${}_1F_2\left(3; -\frac{3}{2}, \frac{3}{2}; -z\right) = \frac{1}{12}\left(8z^2 + 8z + 6\pi(2z+1)\boldsymbol{H}_0\left(2\sqrt{z}\right)\sqrt{z} - \pi\left(4z^2 + 9z + 6\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 12\right)$$

07.22.03.4042.01

$${}_1F_2\left(3; -\frac{3}{2}, 2; z\right) = (z+1)\cosh\left(2\sqrt{z}\right) + \frac{2}{3}(z-3)\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.4043.01

$${}_1F_2\left(3; -\frac{3}{2}, 2; -z\right) = \frac{2}{3}\sqrt{z}\,(z+3)\sin\left(2\sqrt{z}\right) - (z-1)\cos\left(2\sqrt{z}\right)$$

07.22.03.4044.01

$${}_1F_2\left(3; -\frac{3}{2}, \frac{5}{2}; z\right) = \frac{8\sqrt{z}\left(2z^2 - 3z + 3\right) + 3\pi\sqrt{z}\,(4z+3)\boldsymbol{L}_1\left(2\sqrt{z}\right) + 3\pi\left(4z^2 - 9z - 6\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)}{24\sqrt{z}}$$

07.22.03.4045.01

$${}_1F_2\left(3; -\frac{3}{2}, \frac{5}{2}; -z\right) = \frac{8\sqrt{z}\left(2z^2 + 3z + 3\right) + 3\pi\sqrt{z}\,(4z-3)\boldsymbol{H}_1\left(2\sqrt{z}\right) - 3\pi\left(4z^2 + 9z - 6\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)}{24\sqrt{z}}$$

07.22.03.4046.01

$${}_1F_2\left(3; -\frac{3}{2}, 3; z\right) = \left(\frac{4z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.4047.01

$${}_1F_2\left(3; -\frac{3}{2}, 3; -z\right) = \left(1 - \frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4048.01

$${}_1F_2\left(3; -\frac{3}{2}, \frac{7}{2}; z\right) = \frac{16z\left(2z^2 + 3\right) - 60\pi\sqrt{z}\,(z+3)\boldsymbol{L}_2\left(2\sqrt{z}\right) + 15\pi\left(4z^2 + 15z + 36\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)}{48z}$$

07.22.03.4049.01

$${}_1F_2\left(3; -\frac{3}{2}, \frac{7}{2}; -z\right) = \frac{16z\left(2z^2 + 3\right) - 60\pi(z-3)\sqrt{z}\,\boldsymbol{H}_2\left(2\sqrt{z}\right) - 15\pi\left(4z^2 - 15z + 36\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)}{48z}$$

07.22.03.4050.01

$${}_1F_2\left(3; -\frac{3}{2}, 4; z\right) = \frac{1}{4z^3}\left(-5\left(16z^3 + 126z^2 + 378z + 189\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(8z^3 + 126z^2 + 630z + 945\right)\sinh\left(2\sqrt{z}\right) + 945\right)$$

07.22.03.4051.01

$${}_1F_2\left(3; -\frac{3}{2}, 4; -z\right) = \frac{1}{4z^3}\left(\left(-80z^3 + 630z^2 - 1890z + 945\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(8z^3 - 126z^2 + 630z - 945\right)\sin\left(2\sqrt{z}\right) - 945\right)$$

07.22.03.4052.01

$${}_1F_2\left(3; -\frac{3}{2}, \frac{9}{2}; z\right) = \frac{32\left(2z^2 + 7z + 3\right)z^{3/2} - 315\pi(4z+25)\boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z} + 105\pi\left(4z^2 + 63z + 300\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)}{96z^{3/2}}$$

07.22.03.4053.01

$${}_1F_2\left(3; -\frac{3}{2}, \frac{9}{2}; -z\right) = \frac{32\left(2z^2 - 7z + 3\right)z^{3/2} - 315\pi(4z-25)\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z} - 105\pi\left(4z^2 - 63z + 300\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)}{96z^{3/2}}$$

07.22.03.4054.01

$${}_1F_2\left(3; -\frac{3}{2}, 5; z\right) = \frac{1}{2\,z^4}\left(\left(32\,z^4 + 1512\,z^3 + 17\,010\,z^2 + 60\,480\,z + 31\,185\right)\cosh\left(2\sqrt{z}\right) - 9\left(-210\,z + 2\left(16\,z^3 + 322\,z^2 + 2100\,z + 3465\right)\sinh\left(2\sqrt{z}\right)\sqrt{z} + 3465\right)\right)$$

07.22.03.4055.01

$${}_1F_2\left(3; -\frac{3}{2}, 5; -z\right) = \frac{1}{2\,z^4}\left(\left(32\,z^4 - 1512\,z^3 + 17\,010\,z^2 - 60\,480\,z + 31\,185\right)\cos\left(2\sqrt{z}\right) - 9\left(105\,(2\,z + 33) + 2\sqrt{z}\,\left(16\,z^3 - 322\,z^2 + 2100\,z - 3465\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4056.01

$${}_1F_2\left(3; -\frac{3}{2}, \frac{11}{2}; z\right) = \frac{64\left(2\,z^2 + 18\,z + 3\right)z^2 - 9450\,\pi\,(2\,z + 21)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} + 945\,\pi\left(4\,z^2 + 135\,z + 1050\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)}{192\,z^2}$$

07.22.03.4057.01

$${}_1F_2\left(3; -\frac{3}{2}, \frac{11}{2}; -z\right) = \frac{64\left(2\,z^2 - 18\,z + 3\right)z^2 - 9450\,\pi\,(2\,z - 21)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} - 945\,\pi\left(4\,z^2 - 135\,z + 1050\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)}{192\,z^2}$$

07.22.03.4058.01

$${}_1F_2\left(3; -\frac{3}{2}, 6; z\right) = \frac{1}{2\,z^5}\left(5\left(945\left(z^2 - 33\,z + 429\right) - 9\left(48\,z^4 + 1904\,z^3 + 23\,205\,z^2 + 86\,625\,z + 45\,045\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^4 + 1620\,z^3 + 34\,209\,z^2 + 239\,085\,z + 405\,405\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4059.01

$${}_1F_2\left(3; -\frac{3}{2}, 6; -z\right) = \frac{1}{2\,z^5}\left(5\left(-945\left(z^2 + 33\,z + 429\right) + 9\left(48\,z^4 - 1904\,z^3 + 23\,205\,z^2 - 86\,625\,z + 45\,045\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^4 - 1620\,z^3 + 34\,209\,z^2 - 239\,085\,z + 405\,405\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 = -\frac{1}{2}$

07.22.03.4060.01

$${}_1F_2\left(3; -\frac{1}{2}, -\frac{1}{2}; z\right) = \frac{1}{2}\,\pi\left(4\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{5/2} + 60\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z^2 + 251\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 308\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)z + 70\,\boldsymbol{L}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)$$

07.22.03.4061.01

$${}_1F_2\left(3; -\frac{1}{2}, -\frac{1}{2}; -z\right) = \frac{1}{2}\,\pi\left(4\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{5/2} + 60\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z^2 + 251\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 308\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)z + 70\,\boldsymbol{H}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)$$

07.22.03.4062.01

$${}_1F_2\left(3; -\frac{1}{2}, \frac{1}{2}; z\right) = -\frac{1}{4}\,\pi\left(4\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z^2 + 44\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 119\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)z + 70\,\boldsymbol{L}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)$$

07.22.03.4063.01

$${}_1F_2\left(3; -\frac{1}{2}, \frac{1}{2}; -z\right) = -\frac{1}{4}\,\pi\left(4\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z^2 + 44\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 119\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)z + 70\,\boldsymbol{H}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)$$

07.22.03.4064.01

$${}_1F_2\left(3; -\frac{1}{2}, 1; z\right) = (1-4z)\cosh\left(2\sqrt{z}\right) - \sqrt{z}\,(z+2)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4065.01

$${}_1F_2\left(3; -\frac{1}{2}, 1; -z\right) = (4z+1)\cos\left(2\sqrt{z}\right) - (z-2)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4066.01

$${}_1F_2\left(3; -\frac{1}{2}, \frac{3}{2}; z\right) = \frac{1}{8}\left(-28z - \pi(4z+3)\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z} + 3\pi(1-4z)\boldsymbol{L}_1\left(2\sqrt{z}\right) + 8\right)$$

07.22.03.4067.01

$${}_1F_2\left(3; -\frac{1}{2}, \frac{3}{2}; -z\right) = \frac{1}{8}\left(28z + \pi(3-4z)\boldsymbol{H}_0\left(2\sqrt{z}\right)\sqrt{z} - 3(4\pi z+\pi)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 8\right)$$

07.22.03.4068.01

$${}_1F_2\left(3; -\frac{1}{2}, 2; z\right) = -(z-1)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.4069.01

$${}_1F_2\left(3; -\frac{1}{2}, 2; -z\right) = (z+1)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4070.01

$${}_1F_2\left(3; -\frac{1}{2}, \frac{5}{2}; z\right) = \frac{3\pi(1-4z)\sqrt{z}\,\boldsymbol{L}_1\left(2\sqrt{z}\right) - 2\left(4\sqrt{z}\,(5z-2) + 3(2\pi z+\pi)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)}{16\sqrt{z}}$$

07.22.03.4071.01

$${}_1F_2\left(3; -\frac{1}{2}, \frac{5}{2}; -z\right) = \frac{2\left(4\sqrt{z}\,(5z+2) + \pi(3-6z)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right) - 3\pi\sqrt{z}\,(4z+1)\boldsymbol{H}_1\left(2\sqrt{z}\right)}{16\sqrt{z}}$$

07.22.03.4072.01

$${}_1F_2\left(3; -\frac{1}{2}, 3; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.4073.01

$${}_1F_2\left(3; -\frac{1}{2}, 3; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4074.01

$${}_1F_2\left(3; -\frac{1}{2}, \frac{7}{2}; z\right) = \frac{16(2-3z)z - 15\pi(4z+3)\boldsymbol{L}_2\left(2\sqrt{z}\right)\sqrt{z} + 15\pi(4z+9)\boldsymbol{L}_3\left(2\sqrt{z}\right)}{32z}$$

07.22.03.4075.01

$${}_1F_2\left(3; -\frac{1}{2}, \frac{7}{2}; -z\right) = \frac{16z(3z+2) + 15\pi(3-4z)\sqrt{z}\,\boldsymbol{H}_2\left(2\sqrt{z}\right) + 15\pi(4z-9)\boldsymbol{H}_3\left(2\sqrt{z}\right)}{32z}$$

07.22.03.4076.01

$${}_1F_2\left(3; -\frac{1}{2}, 4; z\right) = \frac{21\left(2\sqrt{z}\,\left(2z^2+10z+15\right)\sinh\left(2\sqrt{z}\right) + 15\right) - 3\left(8z^3+70z^2+210z+105\right)\cosh\left(2\sqrt{z}\right)}{4z^3}$$

07.22.03.4077.01

$${}_1F_2\left(3; -\frac{1}{2}, 4; -z\right) = \frac{21\left(2\sqrt{z}\,\left(2z^2-10z+15\right)\sin\left(2\sqrt{z}\right)-15\right)-3\left(8z^3-70z^2+210z-105\right)\cos\left(2\sqrt{z}\right)}{4z^3}$$

07.22.03.4078.01

$${}_1F_2\left(3; -\frac{1}{2}, \frac{9}{2}; z\right) = \frac{4\left(315\pi(z+5)\boldsymbol{L}_4\left(2\sqrt{z}\right)-8(z-2)z^{3/2}\right)-105\pi\sqrt{z}\,(4z+15)\boldsymbol{L}_3\left(2\sqrt{z}\right)}{64z^{3/2}}$$

07.22.03.4079.01

$${}_1F_2\left(3; -\frac{1}{2}, \frac{9}{2}; -z\right) = \frac{4\left(8(z+2)z^{3/2}+315\pi(z-5)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)-105\pi\sqrt{z}\,(4z-15)\boldsymbol{H}_3\left(2\sqrt{z}\right)}{64z^{3/2}}$$

07.22.03.4080.01

$${}_1F_2\left(3; -\frac{1}{2}, 5; z\right) =$$
$$-\frac{1}{2z^4}\left(3\left(-210z+2\left(8z^3+238z^2+1680z+2835\right)\sinh\left(2\sqrt{z}\right)\sqrt{z}-7\left(16z^3+210z^2+780z+405\right)\cosh\left(2\sqrt{z}\right)+2835\right)\right)$$

07.22.03.4081.01

$${}_1F_2\left(3; -\frac{1}{2}, 5; -z\right) =$$
$$-\frac{1}{2z^4}\left(3\left(105(2z+27)+7\left(16z^3-210z^2+780z-405\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(8z^3-238z^2+1680z-2835\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4082.01

$${}_1F_2\left(3; -\frac{1}{2}, \frac{11}{2}; z\right) = \frac{64(z+2)z^2-945\pi(4z+35)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}+4725\pi(4z+35)\boldsymbol{L}_5\left(2\sqrt{z}\right)}{128z^2}$$

07.22.03.4083.01

$${}_1F_2\left(3; -\frac{1}{2}, \frac{11}{2}; -z\right) = \frac{-64(z-2)z^2-945\pi(4z-35)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}+4725\pi(4z-35)\boldsymbol{H}_5\left(2\sqrt{z}\right)}{128z^2}$$

07.22.03.4084.01

$${}_1F_2\left(3; -\frac{1}{2}, 6; z\right) = -\frac{1}{2z^5}\left(15\left(-105\left(z^2-27z+297\right)+\left(16z^4+1092z^3+15\,225z^2+59\,535z+31\,185\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(88z^3+2373z^2+17\,955z+31\,185\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4085.01

$${}_1F_2\left(3; -\frac{1}{2}, 6; -z\right) = \frac{1}{2z^5}\left(15\left(-105\left(z^2+27z+297\right)+\left(16z^4-1092z^3+15\,225z^2-59\,535z+31\,185\right)\cos\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(88z^3-2373z^2+17\,955z-31\,185\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 = \frac{1}{2}$

07.22.03.0219.01

$${}_1F_2\left(3; \frac{1}{2}, \frac{1}{2}; z\right) == \frac{1}{8}\left(8+36z+16\pi z\boldsymbol{L}_1\left(2\sqrt{z}\right)+\pi(4z+15)\sqrt{z}\,\boldsymbol{L}_0\left(2\sqrt{z}\right)\right)$$

07.22.03.4086.01

$${}_1F_2\left(3;\ \frac{1}{2},\ \frac{1}{2};\ -z\right) = \frac{1}{8}\pi\left(4\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 32\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)z + 55\,\boldsymbol{H}_{-2}\left(2\sqrt{z}\right)\sqrt{z} + 15\,\boldsymbol{H}_{-1}\left(2\sqrt{z}\right)\right)$$

07.22.03.0220.01

$${}_1F_2\left(3;\ \frac{1}{2},\ 1;\ z\right) == \frac{z+2}{2}\cosh\left(2\sqrt{z}\right) + \frac{7}{4}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.4087.01

$${}_1F_2\left(3;\ \frac{1}{2},\ 1;\ -z\right) = -\frac{1}{2}(z-2)\cos\left(2\sqrt{z}\right) - \frac{7}{4}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.0221.01

$${}_1F_2\left(3;\ \frac{1}{2},\ \frac{3}{2};\ z\right) == \frac{\sqrt{z}}{16}\left(16 + 8z + 12\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi(4z+3)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4088.01

$${}_1F_2\left(3;\ \frac{1}{2},\ \frac{3}{2};\ -z\right) = \frac{1}{16}\left(-8(z-2) - 12\pi\sqrt{z}\,\boldsymbol{H}_0\left(2\sqrt{z}\right) + \pi(4z-3)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0222.01

$${}_1F_2\left(3;\ \frac{1}{2},\ 2;\ z\right) == \cosh\left(2\sqrt{z}\right) + \frac{1}{2}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.4089.01

$${}_1F_2\left(3;\ \frac{1}{2},\ 2;\ -z\right) = \cos\left(2\sqrt{z}\right) - \frac{1}{2}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.0223.01

$${}_1F_2\left(3;\ \frac{1}{2},\ \frac{5}{2};\ z\right) == \frac{3}{32z}\left(12z - \pi(1-4z)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z} + \pi(4z+1)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4090.01

$${}_1F_2\left(3;\ \frac{1}{2},\ \frac{5}{2};\ -z\right) = -\frac{z}{2} - \frac{3}{4}\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right) + 1 + \frac{3\pi(4z+1)\,\boldsymbol{H}_2\left(2\sqrt{z}\right)}{32\sqrt{z}}$$

07.22.03.4091.01

$${}_1F_2\left(3;\ \frac{1}{2},\ 3;\ z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.4092.01

$${}_1F_2\left(3;\ \frac{1}{2},\ 3;\ -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.0224.01

$${}_1F_2\left(3;\ \frac{1}{2},\ \frac{7}{2};\ z\right) == \frac{15}{64z^2}\left(8z(z+1) - 2\pi\sqrt{z}\,(2z+3)\,\boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(4z^2+7z+6\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4093.01

$${}_1F_2\left(3;\ \frac{1}{2},\ \frac{7}{2};\ -z\right) = \frac{-32(z-2)z - 60\pi\,\boldsymbol{H}_2\left(2\sqrt{z}\right)\sqrt{z} + 15\pi(4z-3)\,\boldsymbol{H}_3\left(2\sqrt{z}\right)}{64z}$$

07.22.03.0225.01

$${}_1F_2\left(3;\ \frac{1}{2},\ 4;\ z\right) == \frac{1}{4z^3}\left(45 - 15\left(2z^2+6z+3\right)\cosh\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(2z^2+10z+15\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4094.01

$${}_1F_2\left(3;\ \frac{1}{2},\ 4;\ -z\right) = \frac{15\left(2z^2-6z+3\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\ \left(2z^2-10z+15\right)\sin\left(2\sqrt{z}\right)-45}{4z^3}$$

07.22.03.4095.01

$${}_1F_2\left(3;\ \frac{1}{2},\ \frac{9}{2};\ z\right) = \frac{64\,(z+2)\,z^{3/2}+105\,\pi\,(4z+15)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)}{128\,z^{3/2}}$$

07.22.03.4096.01

$${}_1F_2\left(3;\ \frac{1}{2},\ \frac{9}{2};\ -z\right) = \frac{105\,\pi\,(4z-15)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)-64\,(z-2)\,z^{3/2}}{128\,z^{3/2}}$$

07.22.03.4097.01

$${}_1F_2\left(3;\ \frac{1}{2},\ 5;\ z\right) = \frac{1}{2z^4}\left(3\left(30z-2\left(22z^2+180z+315\right)\sinh\left(2\sqrt{z}\right)\sqrt{z}\ +\left(8z^3+150z^2+600z+315\right)\cosh\left(2\sqrt{z}\right)-315\right)\right)$$

07.22.03.4098.01

$${}_1F_2\left(3;\ \frac{1}{2},\ 5;\ -z\right) = -\frac{1}{2z^4}\left(3\left(30z-2\left(22z^2-180z+315\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\ +\left(8z^3-150z^2+600z-315\right)\cos\left(2\sqrt{z}\right)+315\right)\right)$$

07.22.03.4099.01

$${}_1F_2\left(3;\ \frac{1}{2},\ \frac{11}{2};\ z\right) = \frac{128\,(z+2)\,z^2-3780\,\pi\,\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}\ +945\,\pi\,(4z+35)\,\boldsymbol{L}_5\left(2\sqrt{z}\right)}{256\,z^2}$$

07.22.03.4100.01

$${}_1F_2\left(3;\ \frac{1}{2},\ \frac{11}{2};\ -z\right) = \frac{-128\,(z-2)\,z^2+3780\,\pi\,\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}\ +945\,\pi\,(4z-35)\,\boldsymbol{H}_5\left(2\sqrt{z}\right)}{256\,z^2}$$

07.22.03.4101.01

$${}_1F_2\left(3;\ \frac{1}{2},\ 6;\ z\right) = \frac{1}{2z^5}\left(15\left(15\left(z^2-21z+189\right)-\right.\right.$$
$$\left.\left.3\left(24z^3+425z^2+1785z+945\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\ \left(4z^3+183z^2+1575z+2835\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4102.01

$${}_1F_2\left(3;\ \frac{1}{2},\ 6;\ -z\right) = -\frac{1}{2z^5}$$
$$\left(15\left(15\left(z^2+21z+189\right)+3\left(24z^3-425z^2+1785z-945\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\ \left(4z^3-183z^2+1575z-2835\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 = 1$

07.22.03.0226.01

$${}_1F_2(3;\ 1,\ 1;\ z) == \frac{1}{2}\left((z+2)\,I_0\left(2\sqrt{z}\right)+3\sqrt{z}\ I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4103.01

$${}_1F_2(3;\ 1,\ 1;\ -z) = \frac{1}{2}\left(-(z-2)\,J_0\left(2\sqrt{z}\right)-3\sqrt{z}\ J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0227.01

$${}_1F_2\left(3;\,1,\,\frac{3}{2};\,z\right) == \frac{1}{16\sqrt{z}}\left(10\sqrt{z}\,\cosh\left(2\sqrt{z}\right)+(4z+3)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4104.01

$${}_1F_2\left(3;\,1,\,\frac{3}{2};\,-z\right) = \frac{10\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(3-4z)\sin\left(2\sqrt{z}\right)}{16\sqrt{z}}$$

07.22.03.0228.01

$${}_1F_2(3;\,1,\,2;\,z) == I_0\left(2\sqrt{z}\right)+\frac{1}{2}\sqrt{z}\,I_1\left(2\sqrt{z}\right)$$

07.22.03.4105.01

$${}_1F_2(3;\,1,\,2;\,-z) = -\frac{(z-2)\,J_1\left(2\sqrt{z}\right)}{2\sqrt{z}}-J_2\left(2\sqrt{z}\right)$$

07.22.03.0229.01

$${}_1F_2\left(3;\,1,\,\frac{5}{2};\,z\right) == \frac{3\left(2\sqrt{z}\,(4z-1)\cosh\left(2\sqrt{z}\right)+(8z+1)\sinh\left(2\sqrt{z}\right)\right)}{64\,z^{3/2}}$$

07.22.03.4106.01

$${}_1F_2\left(3;\,1,\,\frac{5}{2};\,-z\right) = \frac{3\left(2\sqrt{z}\,(4z+1)\cos\left(2\sqrt{z}\right)+(8z-1)\sin\left(2\sqrt{z}\right)\right)}{64\,z^{3/2}}$$

07.22.03.4107.01

$${}_1F_2(3;\,1,\,3;\,z) = I_0\left(2\sqrt{z}\right)$$

07.22.03.4108.01

$${}_1F_2(3;\,1,\,3;\,-z) = J_0\left(2\sqrt{z}\right)$$

07.22.03.0230.01

$${}_1F_2\left(3;\,1,\,\frac{7}{2};\,z\right) == \frac{15}{256\,z^{5/2}}\left(\left(16z^2+20z+9\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,(8z+9)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.4109.01

$${}_1F_2\left(3;\,1,\,\frac{7}{2};\,-z\right) = \frac{15\left(2\sqrt{z}\,(8z-9)\cos\left(2\sqrt{z}\right)+\left(16z^2-20z+9\right)\sin\left(2\sqrt{z}\right)\right)}{256\,z^{5/2}}$$

07.22.03.0231.01

$${}_1F_2(3;\,1,\,4;\,z) == \frac{3\,(z+2)}{z^{3/2}}\,I_3\left(2\sqrt{z}\right)$$

07.22.03.4110.01

$${}_1F_2(3;\,1,\,4;\,-z) = -\frac{3\,(z-2)\,J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.4111.01

$${}_1F_2\left(3;\,1,\,\frac{9}{2};\,z\right) = \frac{105\left(2\sqrt{z}\,\left(16z^2+132z+225\right)\cosh\left(2\sqrt{z}\right)-\left(112z^2+432z+225\right)\sinh\left(2\sqrt{z}\right)\right)}{1024\,z^{7/2}}$$

07.22.03.4112.01

$${}_1F_2\left(3;\,1,\,\frac{9}{2};\,-z\right)=-\frac{105\left(2\sqrt{z}\,\left(16\,z^2-132\,z+225\right)\cos\left(2\sqrt{z}\right)+\left(-112\,z^2+432\,z-225\right)\sin\left(2\sqrt{z}\right)\right)}{1024\,z^{7/2}}$$

07.22.03.4113.01

$${}_1F_2(3;\,1,\,5;\,z)=\frac{12\left((z+2)\,I_4\left(2\sqrt{z}\right)-\sqrt{z}\,\,I_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.4114.01

$${}_1F_2(3;\,1,\,5;\,-z)=\frac{12\left(\sqrt{z}\,\,J_5\left(2\sqrt{z}\right)-(z-2)\,J_4\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.4115.01

$${}_1F_2\left(3;\,1,\,\frac{11}{2};\,z\right)=\frac{945\left(\left(64\,z^3+1568\,z^2+6900\,z+3675\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(208\,z^2+2000\,z+3675\right)\cosh\left(2\sqrt{z}\right)\right)}{4096\,z^{9/2}}$$

07.22.03.4116.01

$${}_1F_2\left(3;\,1,\,\frac{11}{2};\,-z\right)=-\frac{945\left(2\sqrt{z}\,\left(208\,z^2-2000\,z+3675\right)\cos\left(2\sqrt{z}\right)+\left(64\,z^3-1568\,z^2+6900\,z-3675\right)\sin\left(2\sqrt{z}\right)\right)}{4096\,z^{9/2}}$$

07.22.03.4117.01

$${}_1F_2(3;\,1,\,6;\,z)=\frac{60\,(z+2)\,I_5\left(2\sqrt{z}\right)}{z^{5/2}}-\frac{120\,I_6\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.4118.01

$${}_1F_2(3;\,1,\,6;\,-z)=\frac{120\,J_6\left(2\sqrt{z}\right)}{z^2}-\frac{60\,(z-2)\,J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = 3$, $b_1 = \frac{3}{2}$

07.22.03.0232.01

$${}_1F_2\left(3;\,\frac{3}{2},\,\frac{3}{2};\,z\right)==\frac{1}{32\sqrt{z}}\left(\pi\,(4\,z+3)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)+8\,\pi\,\sqrt{z}\,\,\boldsymbol{L}_1\left(2\sqrt{z}\right)+20\,\sqrt{z}\right)$$

07.22.03.4119.01

$${}_1F_2\left(3;\,\frac{3}{2},\,\frac{3}{2};\,-z\right)=\frac{1}{32}\left(\frac{\pi\,(3-4\,z)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)}{\sqrt{z}}-8\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)+20\right)$$

07.22.03.0233.01

$${}_1F_2\left(3;\,\frac{3}{2},\,2;\,z\right)==\frac{1}{4}\cosh\left(2\sqrt{z}\right)+\frac{3\sinh\left(2\sqrt{z}\right)}{8\sqrt{z}}$$

07.22.03.4120.01

$${}_1F_2\left(3;\,\frac{3}{2},\,2;\,-z\right)=\frac{1}{4}\cos\left(2\sqrt{z}\right)+\frac{3\sin\left(2\sqrt{z}\right)}{8\sqrt{z}}$$

07.22.03.0234.01

$${}_1F_2\left(3;\frac{3}{2},\frac{5}{2};z\right)==\frac{3}{64\,z}\left(8\,z+4\,\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z}\,+(4\,z-1)\,\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4121.01

$${}_1F_2\left(3;\frac{3}{2},\frac{5}{2};-z\right)=\frac{1}{64}\left(3\,\pi\left(\frac{3}{z}-4\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)-\frac{12\,\pi\,\boldsymbol{H}_2\left(2\sqrt{z}\right)}{\sqrt{z}}+40\right)$$

07.22.03.4122.01

$${}_1F_2\left(3;\frac{3}{2},3;z\right)=\frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.4123.01

$${}_1F_2\left(3;\frac{3}{2},3;-z\right)=\frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.0235.01

$${}_1F_2\left(3;\frac{3}{2},\frac{7}{2};z\right)==\frac{15}{128\,z^2}\left(\pi\,(4\,z+3)\left(\sqrt{z}\;\boldsymbol{L}_0\left(2\sqrt{z}\right)-\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)-4\,z\right)$$

07.22.03.4124.01

$${}_1F_2\left(3;\frac{3}{2},\frac{7}{2};-z\right)=\frac{15\,\pi\,(3-4\,z)\,\boldsymbol{H}_2\left(2\sqrt{z}\right)}{128\,z^{3/2}}+\frac{5}{8}$$

07.22.03.0236.01

$${}_1F_2\left(3;\frac{3}{2},4;z\right)==\frac{3}{4\,z^3}\left(\left(2\,z^2+6\,z+3\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\;(2\,z+3)\sinh\left(2\sqrt{z}\right)-3\right)$$

07.22.03.4125.01

$${}_1F_2\left(3;\frac{3}{2},4;-z\right)=-\frac{3\left(\left(2\,z^2-6\,z+3\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\;(2\,z-3)\sin\left(2\sqrt{z}\right)-3\right)}{4\,z^3}$$

07.22.03.4126.01

$${}_1F_2\left(3;\frac{3}{2},\frac{9}{2};z\right)=\frac{5\left(32\,z^2-84\,\pi\,\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}\,+21\,\pi\,(4\,z+3)\,\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)}{256\,z^2}$$

07.22.03.4127.01

$${}_1F_2\left(3;\frac{3}{2},\frac{9}{2};-z\right)=\frac{5\left(32\,z^2+84\,\pi\,\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}\,+21\,\pi\,(3-4\,z)\,\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)}{256\,z^2}$$

07.22.03.4128.01

$${}_1F_2\left(3;\frac{3}{2},5;z\right)=\frac{3\left(-6\,z+2\left(2\,z^2+24\,z+45\right)\sinh\left(2\sqrt{z}\right)\sqrt{z}\,-3\left(6\,z^2+28\,z+15\right)\cosh\left(2\sqrt{z}\right)+45\right)}{2\,z^4}$$

07.22.03.4129.01

$${}_1F_2\left(3;\frac{3}{2},5;-z\right)=-\frac{3\left(-6\,z+2\left(2\,z^2-24\,z+45\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\,+3\left(6\,z^2-28\,z+15\right)\cos\left(2\sqrt{z}\right)-45\right)}{2\,z^4}$$

07.22.03.4130.01

$${}_1F_2\left(3;\ \frac{3}{2},\ \frac{11}{2};\ z\right) = \frac{5}{512}\left(\frac{189\,\pi\,(4\,z+3)\,\boldsymbol{L}_4\left(2\,\sqrt{z}\right)}{z^{5/2}} - \frac{1512\,\pi\,\boldsymbol{L}_5\left(2\,\sqrt{z}\right)}{z^2} + 64\right)$$

07.22.03.4131.01

$${}_1F_2\left(3;\ \frac{3}{2},\ \frac{11}{2};\ -z\right) = \frac{5}{512}\left(\frac{189\,\pi\,(3-4\,z)\,\boldsymbol{H}_4\left(2\,\sqrt{z}\right)}{z^{5/2}} + \frac{1512\,\pi\,\boldsymbol{H}_5\left(2\,\sqrt{z}\right)}{z^2} + 64\right)$$

07.22.03.4132.01

$${}_1F_2\left(3;\ \frac{3}{2},\ 6;\ z\right) = \frac{1}{2\,z^5}\left(15\left(\left(4\,z^3+123\,z^2+585\,z+315\right)\cosh\left(2\,\sqrt{z}\right) - 3\left(z^2-15\,z+10\left(z^2+11\,z+21\right)\sinh\left(2\,\sqrt{z}\right)\sqrt{z}\ +105\right)\right)\right)$$

07.22.03.4133.01

$${}_1F_2\left(3;\ \frac{3}{2},\ 6;\ -z\right) = \frac{1}{2\,z^5}\left(15\left(\left(4\,z^3-123\,z^2+585\,z-315\right)\cos\left(2\,\sqrt{z}\right) + 3\left(z^2+15\,z-10\left(z^2-11\,z+21\right)\sin\left(2\,\sqrt{z}\right)\sqrt{z}\ +105\right)\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 = 2$

07.22.03.0237.01

$${}_1F_2(3;\ 2,\ 2;\ z) == \frac{1}{2}\,I_0\left(2\,\sqrt{z}\right) + \frac{1}{2\,\sqrt{z}}\,I_1\left(2\,\sqrt{z}\right)$$

07.22.03.4134.01

$${}_1F_2(3;\ 2,\ 2;\ -z) = \frac{J_1\left(2\,\sqrt{z}\right)}{\sqrt{z}} - \frac{1}{2}\,J_2\left(2\,\sqrt{z}\right)$$

07.22.03.0238.01

$${}_1F_2\left(3;\ 2,\ \frac{5}{2};\ z\right) == \frac{6\,\sqrt{z}\,\cosh\left(2\,\sqrt{z}\right) + 3\,(4\,z-1)\,\sinh\left(2\,\sqrt{z}\right)}{32\,z^{3/2}}$$

07.22.03.4135.01

$${}_1F_2\left(3;\ 2,\ \frac{5}{2};\ -z\right) = \frac{3\left((4\,z+1)\,\sin\left(2\,\sqrt{z}\right) - 2\,\sqrt{z}\,\cos\left(2\,\sqrt{z}\right)\right)}{32\,z^{3/2}}$$

07.22.03.4136.01

$${}_1F_2(3;\ 2,\ 3;\ z) = \frac{I_1\left(2\,\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.4137.01

$${}_1F_2(3;\ 2,\ 3;\ -z) = \frac{J_1\left(2\,\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.0239.01

$${}_1F_2\left(3;\ 2,\ \frac{7}{2};\ z\right) == \frac{15}{128\,z^{5/2}}\left(2\,\sqrt{z}\,\,(4\,z+3)\cosh\left(2\,\sqrt{z}\right) - (8\,z+3)\,\sinh\left(2\,\sqrt{z}\right)\right)$$

07.22.03.4138.01

$${}_1F_2\left(3;\,2,\,\frac{7}{2};\,-z\right) = -\frac{15\left(2\sqrt{z}\,\,(4z-3)\cos\left(2\sqrt{z}\right)+(3-8z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{5/2}}$$

07.22.03.0240.01

$${}_1F_2(3;\,2,\,4;\,z) == \frac{6}{z^{3/2}}\,I_3\left(2\sqrt{z}\right)+\frac{3}{z}\,I_4\left(2\sqrt{z}\right)$$

07.22.03.4139.01

$${}_1F_2(3;\,2,\,4;\,-z) = \frac{6\,J_3\left(2\sqrt{z}\right)}{z^{3/2}}-\frac{3\,J_4\left(2\sqrt{z}\right)}{z}$$

07.22.03.4140.01

$${}_1F_2\left(3;\,2,\,\frac{9}{2};\,z\right) = \frac{105\left(\left(16z^2+84z+45\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,\,(8z+15)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{7/2}}$$

07.22.03.4141.01

$${}_1F_2\left(3;\,2,\,\frac{9}{2};\,-z\right) = -\frac{105\left(6\sqrt{z}\,\,(8z-15)\cos\left(2\sqrt{z}\right)+\left(16z^2-84z+45\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{7/2}}$$

07.22.03.4142.01

$${}_1F_2(3;\,2,\,5;\,z) = \frac{12\left(2\,I_4\left(2\sqrt{z}\right)+\sqrt{z}\,\,I_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.4143.01

$${}_1F_2(3;\,2,\,5;\,-z) = \frac{24\,J_4\left(2\sqrt{z}\right)-12\sqrt{z}\,\,J_5\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.4144.01

$${}_1F_2\left(3;\,2,\,\frac{11}{2};\,z\right) = \frac{945\left(2\sqrt{z}\,\,\left(16z^2+260z+525\right)\cosh\left(2\sqrt{z}\right)-\left(176z^2+960z+525\right)\sinh\left(2\sqrt{z}\right)\right)}{2048\,z^{9/2}}$$

07.22.03.4145.01

$${}_1F_2\left(3;\,2,\,\frac{11}{2};\,-z\right) = \frac{945\left(2\sqrt{z}\,\,\left(16z^2-260z+525\right)\cos\left(2\sqrt{z}\right)+\left(-176z^2+960z-525\right)\sin\left(2\sqrt{z}\right)\right)}{2048\,z^{9/2}}$$

07.22.03.4146.01

$${}_1F_2(3;\,2,\,6;\,z) = \frac{60\left(2\,I_5\left(2\sqrt{z}\right)+\sqrt{z}\,\,I_6\left(2\sqrt{z}\right)\right)}{z^{5/2}}$$

07.22.03.4147.01

$${}_1F_2(3;\,2,\,6;\,-z) = \frac{120\,J_5\left(2\sqrt{z}\right)}{z^{5/2}}-\frac{60\,J_6\left(2\sqrt{z}\right)}{z^2}$$

For fixed z and $a_1 = 3$, $b_1 = \frac{5}{2}$

07.22.03.0241.01

$${}_1F_2\left(3;\frac{5}{2},\frac{5}{2};z\right)==\frac{8}{128\,z^{3/2}}\left(4\sqrt{z}\,-\pi\,(1-4\,z)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)\right)$$

07.22.03.4148.01

$${}_1F_2\left(3;\frac{5}{2},\frac{5}{2};-z\right)=\frac{9\,(4\,\pi\,z+\pi)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)-3\left(8\,(1-2\,z)\,z+3\,\pi\,(4\,z+1)\,\boldsymbol{H}_2\left(2\sqrt{z}\right)\sqrt{z}\right)}{128\,z^2}$$

07.22.03.4149.01

$${}_1F_2\left(3;\frac{5}{2},3;z\right)=\frac{3\cosh\left(2\sqrt{z}\right)}{4\,z}-\frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.4150.01

$${}_1F_2\left(3;\frac{5}{2},3;-z\right)=\frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.0242.01

$${}_1F_2\left(3;\frac{5}{2},\frac{7}{2};z\right)==\frac{45}{256\,z^2}\left(8\,z-4\,\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z}\,+\pi\,(4\,z+3)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4151.01

$${}_1F_2\left(3;\frac{5}{2},\frac{7}{2};-z\right)=\frac{3\left(30\,(2\,\pi\,z+\pi)\,\boldsymbol{H}_2\left(2\sqrt{z}\right)+\sqrt{z}\,\left(32\,(z-1)\,z-15\,(4\,\pi\,z+\pi)\,\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)\right)}{256\,z^{5/2}}$$

07.22.03.0243.01

$${}_1F_2\left(3;\frac{5}{2},4;z\right)==\frac{9}{4\,z^3}\left(1-(2\,z+1)\cosh\left(2\sqrt{z}\right)+\sqrt{z}\,\,(z+2)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4152.01

$${}_1F_2\left(3;\frac{5}{2},4;-z\right)=-\frac{9\left((2\,z-1)\cos\left(2\sqrt{z}\right)+(z-2)\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)+1\right)}{4\,z^3}$$

07.22.03.4153.01

$${}_1F_2\left(3;\frac{5}{2},\frac{9}{2};z\right)=\frac{3\left(32\,(2\,z+3)\,z^2+105\,\pi\,(4\,z-1)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}\,+105\,\pi\,(4\,z-3)\,\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)}{512\,z^3}$$

07.22.03.4154.01

$${}_1F_2\left(3;\frac{5}{2},\frac{9}{2};-z\right)=\frac{3\left(32\,(2\,z-3)\,z^2-105\,\pi\,(4\,z+1)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}\,+105\,\pi\,(4\,z+3)\,\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)}{512\,z^3}$$

07.22.03.4155.01

$${}_1F_2\left(3;\frac{5}{2},5;z\right)=\frac{9\left(2\,z-2\,(4\,z+9)\sinh\left(2\sqrt{z}\right)\sqrt{z}\,+\left(2\,z^2+16\,z+9\right)\cosh\left(2\sqrt{z}\right)-9\right)}{2\,z^4}$$

07.22.03.4156.01

$${}_1F_2\left(3;\frac{5}{2},5;-z\right)=\frac{9\left(-2\,z-2\,(4\,z-9)\sin\left(2\sqrt{z}\right)\sqrt{z}\,+\left(2\,z^2-16\,z+9\right)\cos\left(2\sqrt{z}\right)-9\right)}{2\,z^4}$$

07.22.03.4157.01

$${}_1F_2\left(3;\ \frac{5}{2},\ \frac{11}{2};\ z\right) = \frac{3\left(3780\,\pi\,(z-1)\,\boldsymbol{L}_4\left(2\sqrt{z}\right) + \sqrt{z}\,\left(128\,(z+2)\,z^2 + 945\,\pi\,(4\,z-1)\,\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right)}{1024\,z^{7/2}}$$

07.22.03.4158.01

$${}_1F_2\left(3;\ \frac{5}{2},\ \frac{11}{2};\ -z\right) = \frac{3\left(3780\,\pi\,(z+1)\,\boldsymbol{H}_4\left(2\sqrt{z}\right) + \sqrt{z}\,\left(128\,(z-2)\,z^2 - 945\,(4\,\pi\,z+\pi)\,\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)\right)}{1024\,z^{7/2}}$$

07.22.03.4159.01

$${}_1F_2\left(3;\ \frac{5}{2},\ 6;\ z\right) = \frac{45\left(z^2 - 9\,z + 2\left(z^2 + 21\,z + 45\right)\sinh\left(2\sqrt{z}\right)\sqrt{z}\ - \left(13\,z^2 + 81\,z + 45\right)\cosh\left(2\sqrt{z}\right) + 45\right)}{2\,z^5}$$

07.22.03.4160.01

$${}_1F_2\left(3;\ \frac{5}{2},\ 6;\ -z\right) = \frac{45\left(-z^2 - 9\,z + 2\left(z^2 - 21\,z + 45\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\ + \left(13\,z^2 - 81\,z + 45\right)\cos\left(2\sqrt{z}\right) - 45\right)}{2\,z^5}$$

For fixed z and $a_1 = 3$, $b_1 = 3$

07.22.03.4161.01

$${}_1F_2(3;\ 3,\ 3;\ z) = \frac{2\,I_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.4162.01

$${}_1F_2(3;\ 3,\ 3;\ -z) = \frac{2\,J_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.4163.01

$${}_1F_2\left(3;\ 3,\ \frac{7}{2};\ z\right) = \frac{15\left((4\,z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.4164.01

$${}_1F_2\left(3;\ 3,\ \frac{7}{2};\ -z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4\,z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.4165.01

$${}_1F_2(3;\ 3,\ 4;\ z) = \frac{6\,I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.4166.01

$${}_1F_2(3;\ 3,\ 4;\ -z) = \frac{6\,J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.4167.01

$${}_1F_2\left(3;\ 3,\ \frac{9}{2};\ z\right) = \frac{105\left(2\sqrt{z}\,(4\,z+15)\cosh\left(2\sqrt{z}\right) - 3\,(8\,z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.4168.01

$${}_1F_2\left(3;\, 3,\, \frac{9}{2};\, -z\right) = \frac{105\left(2\sqrt{z}\,\,(4z-15)\cos\left(2\sqrt{z}\right)+3\,(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.4169.01

$${}_1F_2(3;\, 3,\, 5;\, z) = \frac{24\,I_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.4170.01

$${}_1F_2(3;\, 3,\, 5;\, -z) = \frac{24\,J_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.4171.01

$${}_1F_2\left(3;\, 3,\, \frac{11}{2};\, z\right) = \frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,\,(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.4172.01

$${}_1F_2\left(3;\, 3,\, \frac{11}{2};\, -z\right) = \frac{945\left(10\sqrt{z}\,\,(8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.4173.01

$${}_1F_2(3;\, 3,\, 6;\, z) = \frac{120\,I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.4174.01

$${}_1F_2(3;\, 3,\, 6;\, -z) = \frac{120\,J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = 3$, $b_1 = \frac{7}{2}$

07.22.03.0244.01

$${}_1F_2\left(3;\, \frac{7}{2},\, \frac{7}{2};\, z\right) == \frac{225}{512\,z^{5/2}}\left(\pi\,(4z+3)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)-8\pi\sqrt{z}\,\,\boldsymbol{L}_1\left(2\sqrt{z}\right)-12\sqrt{z}\right)$$

07.22.03.4175.01

$${}_1F_2\left(3;\, \frac{7}{2},\, \frac{7}{2};\, -z\right) = \frac{45\left(5\pi\left(4z^2+5z+6\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)-\sqrt{z}\,\left(16z(z+2)+5\pi\,(4z+3)\,\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)\right)}{512\,z^{7/2}}$$

07.22.03.0245.01

$${}_1F_2\left(3;\, \frac{7}{2},\, 4;\, z\right) == \frac{45}{16\,z^3}\left(2\,(z+2)\cosh\left(2\sqrt{z}\right)-5\sqrt{z}\,\sinh\left(2\sqrt{z}\right)-4\right)$$

07.22.03.4176.01

$${}_1F_2\left(3;\, \frac{7}{2},\, 4;\, -z\right) = \frac{45\left(2\,(z-2)\cos\left(2\sqrt{z}\right)-5\sqrt{z}\,\sin\left(2\sqrt{z}\right)+4\right)}{16\,z^3}$$

07.22.03.4177.01

$${}_1F_2\left(3;\frac{7}{2},\frac{9}{2};z\right)=\frac{15\left(32\,(5\,z-18)\,z^2-210\,\pi\,(2\,z-3)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}+105\,\pi\left(4\,z^2-9\,z+18\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)}{1024\,z^4}$$

07.22.03.4178.01

$${}_1F_2\left(3;\frac{7}{2},\frac{9}{2};-z\right)=\frac{15\left(105\,\pi\left(4\,z^2+9\,z+18\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)-2\left(16\,(5\,z+18)\,z^2+105\,\pi\,(2\,z+3)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}\right)\right)}{1024\,z^4}$$

07.22.03.4179.01

$${}_1F_2\left(3;\frac{7}{2},5;z\right)=\frac{45\left(-2\,z+(z+6)\sinh\left(2\sqrt{z}\right)\sqrt{z}-(4\,z+3)\cosh\left(2\sqrt{z}\right)+3\right)}{2\,z^4}$$

07.22.03.4180.01

$${}_1F_2\left(3;\frac{7}{2},5;-z\right)=\frac{45\left(2\,z+(z-6)\sin\left(2\sqrt{z}\right)\sqrt{z}+(4\,z-3)\cos\left(2\sqrt{z}\right)+3\right)}{2\,z^4}$$

07.22.03.4181.01

$${}_1F_2\left(3;\frac{7}{2},\frac{11}{2};z\right)=\frac{15\left(945\,\pi\left(4\,z^2-13\,z+36\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)+\sqrt{z}\left(64\,z^2\,(7\,z-36)-945\,\pi\,(4\,z-9)\,\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right)}{2048\,z^{9/2}}$$

07.22.03.4182.01

$${}_1F_2\left(3;\frac{7}{2},\frac{11}{2};-z\right)=\frac{15\left(945\,\pi\left(4\,z^2+13\,z+36\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)-\sqrt{z}\left(64\,(7\,z+36)\,z^2+945\,\pi\,(4\,z+9)\,\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)\right)}{2048\,z^{9/2}}$$

07.22.03.4183.01

$${}_1F_2\left(3;\frac{7}{2},6;z\right)=\frac{225\left((z+3)\sinh\left(\sqrt{z}\right)-3\sqrt{z}\,\cosh\left(\sqrt{z}\right)\right)^2}{z^5}$$

07.22.03.4184.01

$${}_1F_2\left(3;\frac{7}{2},6;-z\right)=\frac{225\left(3\sqrt{z}\,\cos\left(\sqrt{z}\right)+(z-3)\sin\left(\sqrt{z}\right)\right)^2}{z^5}$$

For fixed z and $a_1 = 3$, $b_1 = 4$

07.22.03.0246.01

$${}_1F_2(3;4,4;z)=\frac{18}{z^3}\left((z+2)\,I_0\left(2\sqrt{z}\right)-3\sqrt{z}\,I_1\left(2\sqrt{z}\right)-2\right)$$

07.22.03.4185.01

$${}_1F_2(3;4,4;-z)=\frac{18\left((z-2)\,J_0\left(2\sqrt{z}\right)-3\sqrt{z}\,J_1\left(2\sqrt{z}\right)+2\right)}{z^3}$$

07.22.03.4186.01

$${}_1F_2\left(3;4,\frac{9}{2};z\right)=\frac{315\left(-14\sqrt{z}\,\cosh\left(2\sqrt{z}\right)+(4\,z+15)\sinh\left(2\sqrt{z}\right)-16\sqrt{z}\right)}{64\,z^{7/2}}$$

07.22.03.4187.01

$${}_1F_2\left(3;\,4,\,\frac{9}{2};\,-z\right)=\frac{315\left(14\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4z-15)\sin\left(2\sqrt{z}\right)+16\sqrt{z}\right)}{64\,z^{7/2}}$$

07.22.03.4188.01

$${}_1F_2(3;\,4,\,5;\,z)=\frac{72\left((z+2)\,I_1\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(2\,I_2\left(2\sqrt{z}\right)+1\right)\right)}{z^{7/2}}$$

07.22.03.4189.01

$${}_1F_2(3;\,4,\,5;\,-z)=\frac{72\left((z-2)\,J_1\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(1-2\,J_2\left(2\sqrt{z}\right)\right)\right)}{z^{7/2}}$$

07.22.03.4190.01

$${}_1F_2\left(3;\,4,\,\frac{11}{2};\,z\right)=\frac{945\left(-64\,z^{3/2}+6\,(4z+35)\cosh\left(2\sqrt{z}\right)\sqrt{z}\,-15\,(8z+7)\sinh\left(2\sqrt{z}\right)\right)}{256\,z^{9/2}}$$

07.22.03.4191.01

$${}_1F_2\left(3;\,4,\,\frac{11}{2};\,-z\right)=-\frac{945\left(-64\,z^{3/2}+6\,(4z-35)\cos\left(2\sqrt{z}\right)\sqrt{z}\,-15\,(8z-7)\sin\left(2\sqrt{z}\right)\right)}{256\,z^{9/2}}$$

07.22.03.4192.01

$${}_1F_2(3;\,4,\,6;\,z)=\frac{360\left(-z-5\,I_3\left(2\sqrt{z}\right)\sqrt{z}\,+(z+2)\,I_2\left(2\sqrt{z}\right)\right)}{z^4}$$

07.22.03.4193.01

$${}_1F_2(3;\,4,\,6;\,-z)=\frac{360\left(z-5\,J_3\left(2\sqrt{z}\right)\sqrt{z}\,+(z-2)\,J_2\left(2\sqrt{z}\right)\right)}{z^4}$$

For fixed z and $a_1 = 3$, $b_1 = \frac{9}{2}$

07.22.03.4194.01

$${}_1F_2\left(3;\,\frac{9}{2},\,\frac{9}{2};\,z\right)=\frac{105\left(64\left(z^2-4z-45\right)z^2+105\,\pi\left(4z^2-9z+30\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}\,-630\,\pi\,(2z-15)\,\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)}{2048\,z^5}$$

07.22.03.4195.01

$${}_1F_2\left(3;\,\frac{9}{2},\,\frac{9}{2};\,-z\right)=\frac{105\left(-64\left(z^2+4z-45\right)z^2+105\,\pi\left(4z^2+9z+30\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}\,-630\,\pi\,(2z+15)\,\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)}{2048\,z^5}$$

07.22.03.4196.01

$${}_1F_2\left(3;\,\frac{9}{2},\,5;\,z\right)=\frac{315\left(-8z-9\sinh\left(2\sqrt{z}\right)\sqrt{z}\,+2\,(z+6)\cosh\left(2\sqrt{z}\right)-12\right)}{8\,z^4}$$

07.22.03.4197.01

$${}_1F_2\left(3;\,\frac{9}{2},\,5;\,-z\right)=-\frac{315\left(-8z-9\sin\left(2\sqrt{z}\right)\sqrt{z}\,+2\,(z-6)\cos\left(2\sqrt{z}\right)+12\right)}{8\,z^4}$$

07.22.03.4198.01

$$ {}_1F_2\left(3;\frac{9}{2},\frac{11}{2};z\right)= \frac{1}{4096\,z^{11/2}}\left(105\left(1890\,\pi\left(2\,z^2-27\,z+180\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)+\sqrt{z}\,\left(128\left(z^2-3\,z-180\right)z^2+945\,\pi\left(4\,z^2-21\,z+90\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.4199.01

$$ {}_1F_2\left(3;\frac{9}{2},\frac{11}{2};-z\right)= \frac{1}{4096\,z^{11/2}}\left(105\left(\sqrt{z}\,\left(945\,\pi\left(4\,z^2+21\,z+90\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)-128\,z^2\left(z^2+3\,z-180\right)\right)-1890\,\pi\left(2\,z^2+27\,z+180\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4200.01

$$ {}_1F_2\left(3;\frac{9}{2},6;z\right)=\frac{1575\left(-2\left(z^2+3\,z-3\right)-6\,(z+1)\cosh\left(2\sqrt{z}\right)+\sqrt{z}\,\,(z+12)\sinh\left(2\sqrt{z}\right)\right)}{4\,z^5}$$

07.22.03.4201.01

$$ {}_1F_2\left(3;\frac{9}{2},6;-z\right)=-\frac{1575\left(-2\,z^2+6\,z+(z-12)\sin\left(2\sqrt{z}\right)\sqrt{z}\,+6\,(z-1)\cos\left(2\sqrt{z}\right)+6\right)}{4\,z^5}$$

For fixed z and $a_1 = 3$, $b_1 = 5$

07.22.03.4202.01

$$ {}_1F_2(3;5,5;z)=\frac{288\left(-2\,(z+3)+(z+6)\,I_0\left(2\sqrt{z}\right)-5\sqrt{z}\,\,I_1\left(2\sqrt{z}\right)\right)}{z^4}$$

07.22.03.4203.01

$$ {}_1F_2(3;5,5;-z)=-\frac{288\left(-2\,z-5\,J_1\left(2\sqrt{z}\right)\sqrt{z}\,+(z-6)\,J_0\left(2\sqrt{z}\right)+6\right)}{z^4}$$

07.22.03.4204.01

$$ {}_1F_2\left(3;5,\frac{11}{2};z\right)=\frac{945\left(-16\sqrt{z}\,\,(2\,z+9)-66\sqrt{z}\,\cosh\left(2\sqrt{z}\right)+3\,(4\,z+35)\sinh\left(2\sqrt{z}\right)\right)}{32\,z^{9/2}}$$

07.22.03.4205.01

$$ {}_1F_2\left(3;5,\frac{11}{2};-z\right)=-\frac{945\left(16\sqrt{z}\,\,(9-2\,z)+66\sqrt{z}\,\cos\left(2\sqrt{z}\right)+3\,(4\,z-35)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{9/2}}$$

07.22.03.4206.01

$$ {}_1F_2(3;5,6;z)=-\frac{1440\left(\sqrt{z}\,\left(z+6\,I_2\left(2\sqrt{z}\right)+6\right)-(z+6)\,I_1\left(2\sqrt{z}\right)\right)}{z^{9/2}}$$

07.22.03.4207.01

$$ {}_1F_2(3;5,6;-z)=\frac{1440\left(\sqrt{z}\,\left(z+6\,J_2\left(2\sqrt{z}\right)-6\right)-(z-6)\,J_1\left(2\sqrt{z}\right)\right)}{z^{9/2}}$$

For fixed z and $a_1 = 3$, $b_1 = \frac{11}{2}$

07.22.03.4208.01

$${}_1F_2\left(3;\ \frac{11}{2},\ \frac{11}{2};\ z\right) = \frac{1}{8192\, z^{13/2}}$$
$$\left(4725\left(189\,\pi\left(4\,z^3 - 37\,z^2 + 150\,z + 840\right)\boldsymbol{L}_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(32\,z^2\left(z^2 - 58\,z - 168\right) - 189\,\pi\left(4\,z^2 - 10\,z - 105\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.4209.01

$${}_1F_2\left(3;\ \frac{11}{2},\ \frac{11}{2};\ -z\right) = \frac{1}{8192\, z^{13/2}}$$
$$\left(4725\left(2\sqrt{z}\,\left(32\left(z^2 + 58\,z - 168\right)z^2 + 189\,\pi\left(4\,z^2 + 10\,z - 105\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right) - 189\,\pi\left(4\,z^3 + 37\,z^2 + 150\,z - 840\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4210.01

$${}_1F_2\left(3;\ \frac{11}{2},\ 6;\ z\right) = -\frac{4725\left(8\left(z^2 + 9\,z + 9\right) - 6\,(z + 12)\cosh\left(2\sqrt{z}\right) + 39\sqrt{z}\,\sinh\left(2\sqrt{z}\right)\right)}{16\, z^5}$$

07.22.03.4211.01

$${}_1F_2\left(3;\ \frac{11}{2},\ 6;\ -z\right) = \frac{4725\left(8\left(z^2 - 9\,z + 9\right) + 6\,(z - 12)\cos\left(2\sqrt{z}\right) - 39\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)}{16\, z^5}$$

For fixed z and $a_1 = 3$, $b_1 = 6$

07.22.03.4212.01

$${}_1F_2(3;\ 6,\ 6;\ z) = -\frac{3600\left(z^2 + 12\,z + 14\,I_1\left(2\sqrt{z}\right)\sqrt{z} - 2\,(z + 12)\,I_0\left(2\sqrt{z}\right) + 24\right)}{z^5}$$

07.22.03.4213.01

$${}_1F_2(3;\ 6,\ 6;\ -z) = \frac{3600\left(z^2 - 12\,z - 14\,J_1\left(2\sqrt{z}\right)\sqrt{z} + 2\,(z - 12)\,J_0\left(2\sqrt{z}\right) + 24\right)}{z^5}$$

For fixed z and $a_1 = \frac{7}{2}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = \frac{7}{2}$, $b_1 = -\frac{11}{2}$

07.22.03.4214.01

$${}_1F_2\left(\frac{7}{2};\ -\frac{11}{2},\ -\frac{11}{2};\ z\right) = \frac{1}{1\,620\,840\,375}$$
$$\left(21\left(32\,768\,z^7 + 245\,760\,z^6 + 368\,640\,z^5 + 2\,280\,960\,z^4 + 14\,947\,200\,z^3 + 70\,308\,000\,z^2 + 163\,296\,000\,z + 77\,182\,875\right)\right.$$
$$\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,384\,z^7 + 2\,039\,808\,z^6 - 1\,935\,360\,z^5 - 9\,192\,960\,z^4 -\right.$$
$$\left.\left.62\,596\,800\,z^3 - 361\,972\,800\,z^2 - 1\,268\,095\,500\,z - 1\,620\,840\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4215.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, -\frac{11}{2}; -z\right) =$$
$$\frac{1}{1\,620\,840\,375}\left(2\sqrt{z}\,\left(16\,384\,z^7 - 2\,039\,808\,z^6 - 1\,935\,360\,z^5 + 9\,192\,960\,z^4 - 62\,596\,800\,z^3 + 361\,972\,800\,z^2 - 1\,268\,095\,500\,z + 1\,620\,840\,375\right)\sin\left(2\sqrt{z}\right) - 21\left(32\,768\,z^7 - 245\,760\,z^6 + 368\,640\,z^5 - 2\,280\,960\,z^4 + 14\,947\,200\,z^3 - 70\,308\,000\,z^2 + 163\,296\,000\,z - 77\,182\,875\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.4216.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, -\frac{9}{2}; z\right) = \frac{1}{147\,349\,125}$$
$$\left(\left(-16\,384\,z^7 - 1\,720\,320\,z^6 + 1\,935\,360\,z^5 + 6\,289\,920\,z^4 + 33\,566\,400\,z^3 + 142\,884\,000\,z^2 + 315\,535\,500\,z + 147\,349\,125\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(53\,248\,z^6 + 286\,720\,z^5 + 483\,840\,z^4 + 2\,419\,200\,z^3 + 12\,171\,600\,z^2 + 39\,690\,000\,z + 49\,116\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4217.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, -\frac{9}{2}; -z\right) = \frac{1}{147\,349\,125}$$
$$\left(\left(16\,384\,z^7 - 1\,720\,320\,z^6 - 1\,935\,360\,z^5 + 6\,289\,920\,z^4 - 33\,566\,400\,z^3 + 142\,884\,000\,z^2 - 315\,535\,500\,z + 147\,349\,125\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(53\,248\,z^6 - 286\,720\,z^5 + 483\,840\,z^4 - 2\,419\,200\,z^3 + 12\,171\,600\,z^2 - 39\,690\,000\,z + 49\,116\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4218.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, -\frac{7}{2}; z\right) =$$
$$\frac{1}{16\,372\,125}\left(35\left(4096\,z^6 + 6144\,z^5 + 41\,472\,z^4 + 138\,240\,z^3 + 498\,960\,z^2 + 1\,020\,600\,z + 467\,775\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(4096\,z^6 + 322\,560\,z^5 - 537\,600\,z^4 - 1\,209\,600\,z^3 - 4\,762\,800\,z^2 - 13\,891\,500\,z - 16\,372\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4219.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, -\frac{7}{2}; -z\right) =$$
$$\frac{1}{16\,372\,125}\left(35\left(4096\,z^6 - 6144\,z^5 + 41\,472\,z^4 - 138\,240\,z^3 + 498\,960\,z^2 - 1\,020\,600\,z + 467\,775\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-4096\,z^6 + 322\,560\,z^5 + 537\,600\,z^4 - 1\,209\,600\,z^3 + 4\,762\,800\,z^2 - 13\,891\,500\,z + 16\,372\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4220.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, -\frac{5}{2}; z\right) =$$
$$\frac{1}{2\,338\,875}\left(\left(-4096\,z^6 - 199\,680\,z^5 + 345\,600\,z^4 + 1\,209\,600\,z^3 + 2\,948\,400\,z^2 + 5\,273\,100\,z + 2\,338\,875\right)\cosh\left(2\sqrt{z}\right) - 30\sqrt{z}\,\left(2048\,z^5 - 6400\,z^4 + 29\,952\,z^3 + 60\,480\,z^2 + 143\,640\,z + 155\,925\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4221.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, -\frac{5}{2}; -z\right) =$$
$$\frac{1}{2\,338\,875}\left(\left(-4096\,z^6 + 199\,680\,z^5 + 345\,600\,z^4 - 1\,209\,600\,z^3 + 2\,948\,400\,z^2 - 5\,273\,100\,z + 2\,338\,875\right)\cos\left(2\sqrt{z}\right) - 30\sqrt{z}\left(2048\,z^5 + 6400\,z^4 + 29\,952\,z^3 - 60\,480\,z^2 + 143\,640\,z - 155\,925\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4222.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, -\frac{3}{2}; z\right) = \left(\frac{8192\,z^5}{155\,925} - \frac{256\,z^4}{693} + \frac{128\,z^3}{165} + \frac{64\,z^2}{33} + \frac{80\,z}{33} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(1024\,z^5 + 19\,200\,z^4 + 43\,200\,z^3 - 393\,120\,z^2 - 510\,300\,z - 467\,775\right)\sinh\left(2\sqrt{z}\right)}{467\,775}$$

07.22.03.4223.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, -\frac{3}{2}; -z\right) = \left(-\frac{8192\,z^5}{155\,925} - \frac{256\,z^4}{693} - \frac{128\,z^3}{165} + \frac{64\,z^2}{33} - \frac{80\,z}{33} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(1024\,z^5 - 19\,200\,z^4 + 43\,200\,z^3 + 393\,120\,z^2 - 510\,300\,z + 467\,775\right)\sin\left(2\sqrt{z}\right)}{467\,775}$$

07.22.03.4224.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, -\frac{1}{2}; z\right) = \left(-\frac{1024\,z^5}{155\,925} + \frac{256\,z^4}{5775} - \frac{64\,z^3}{55} + \frac{64\,z^2}{33} + \frac{36\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(4352\,z^4 - 34\,560\,z^3 - 45\,360\,z^2 + 302\,400\,z + 155\,925\right)\sinh\left(2\sqrt{z}\right)}{155\,925}$$

07.22.03.4225.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, -\frac{1}{2}; -z\right) = \left(\frac{1024\,z^5}{155\,925} + \frac{256\,z^4}{5775} + \frac{64\,z^3}{55} + \frac{64\,z^2}{33} - \frac{36\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(4352\,z^4 + 34\,560\,z^3 - 45\,360\,z^2 - 302\,400\,z + 155\,925\right)\sin\left(2\sqrt{z}\right)}{155\,925}$$

07.22.03.4226.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, \frac{1}{2}; z\right) =$$
$$\left(\frac{256\,z^4}{17\,325} - \frac{16\,z^2}{11} + \frac{8\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(256\,z^4 - 5760\,z^3 + 45\,360\,z^2 + 94\,500\,z - 155\,925\right)\sinh\left(2\sqrt{z}\right)}{155\,925}$$

07.22.03.4227.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, \frac{1}{2}; -z\right) =$$
$$\left(\frac{256\,z^4}{17\,325} - \frac{16\,z^2}{11} - \frac{8\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256\,z^4 + 5760\,z^3 + 45\,360\,z^2 - 94\,500\,z - 155\,925\right)\sin\left(2\sqrt{z}\right)}{155\,925}$$

07.22.03.4228.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, 1; z\right) = \frac{1}{155\,925}\left(5\left(256\,z^4 + 3840\,z^3 - 47\,520\,z^2 - 29\,520\,z + 31\,185\right) I_0\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256\,z^4 - 6400\,z^3 + 21\,600\,z^2 + 212\,400\,z - 53\,775\right) I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4229.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, 1; -z\right) = \frac{1}{155\,925}\left(5\left(256\,z^4 - 3840\,z^3 - 47\,520\,z^2 + 29\,520\,z + 31\,185\right) J_0\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256\,z^4 + 6400\,z^3 + 21\,600\,z^2 - 212\,400\,z - 53\,775\right) J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4230.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, \frac{3}{2}; z\right) = \left(\frac{256\,z^4}{155\,925} - \frac{128\,z^3}{3465} - \frac{16\,z^2}{165} + \frac{52\,z}{33} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(32\,z^2 - 120\,z - 495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4231.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, \frac{3}{2}; -z\right) = \left(\frac{256\,z^4}{155\,925} + \frac{128\,z^3}{3465} - \frac{16\,z^2}{165} - \frac{52\,z}{33} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(32\,z^2 + 120\,z - 495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4232.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, 2; z\right) = \frac{1}{155\,925}\left(2\left(256\,z^4 - 3840\,z^3 - 53\,280\,z^2 + 130\,320\,z + 280\,665\right) I_2\left(2\sqrt{z}\right) - \frac{3\left(256\,z^4 - 14\,080\,z^3 + 8160\,z^2 + 136\,080\,z - 51\,975\right) I_1\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.4233.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, 2; -z\right) = \frac{1}{155\,925}\left(-\frac{3\left(256\,z^4 + 14\,080\,z^3 + 8160\,z^2 - 136\,080\,z - 51\,975\right) J_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 2\left(256\,z^4 + 3840\,z^3 - 53\,280\,z^2 - 130\,320\,z + 280\,665\right) J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.4234.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, \frac{5}{2}; z\right) = \left(-\frac{128\,z^3}{10\,395} + \frac{32\,z^2}{165} + \frac{96\,z}{55} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(64\,z^3 - 21\,420\,z - 51\,975\right)\sinh\left(2\sqrt{z}\right)}{51\,975}$$

07.22.03.4235.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, \frac{5}{2}; -z\right) = \left(\frac{128\,z^3}{10\,395} + \frac{32\,z^2}{165} - \frac{96\,z}{55} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(64\,z^3 - 21\,420\,z + 51\,975\right)\sin\left(2\sqrt{z}\right)}{51\,975}$$

07.22.03.4236.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, 3; z\right) = \frac{1}{155\,925\,z}\left(2\left(\left(-2816\,z^4 + 19\,200\,z^3 + 211\,680\,z^2 + 226\,800\,z + 155\,925\right) I_2\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256\,z^4 + 3840\,z^3 - 59\,040\,z^2 - 317\,520\,z - 467\,775\right) I_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4237.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, 3; -z\right) = -\frac{1}{155\,925\,z}\left(2\left(\left(2816\,z^4 + 19\,200\,z^3 - 211\,680\,z^2 + 226\,800\,z - 155\,925\right) J_2\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256\,z^4 - 3840\,z^3 - 59\,040\,z^2 + 317\,520\,z - 467\,775\right) J_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4238.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, \frac{7}{2}; z\right) = \left(\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} + \frac{20\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16\,z^2 + 240\,z + 495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4239.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, \frac{7}{2}; -z\right) = \left(-\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} - \frac{20\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(16\,z^2 - 240\,z + 495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4240.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, 4; z\right) = \frac{1}{51\,975\,z^{3/2}}\left(2\left(2\sqrt{z}\left(256\,z^4 + 16\,640\,z^3 + 211\,680\,z^2 + 1\,587\,600\,z + 5\,769\,225\right) I_4\left(2\sqrt{z}\right) - \left(4864\,z^4 + 80\,640\,z^3 + 635\,040\,z^2 + 2\,948\,400\,z - 155\,925\right) I_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4241.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, 4; -z\right) = -\frac{1}{51\,975\,z^{3/2}}\left(2\left(\left(4864\,z^4 - 80\,640\,z^3 + 635\,040\,z^2 - 2\,948\,400\,z - 155\,925\right) J_3\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256\,z^4 - 16\,640\,z^3 + 211\,680\,z^2 - 1\,587\,600\,z + 5\,769\,225\right) J_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4242.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, \frac{9}{2}; z\right) = \frac{1}{1485\,z^{7/2}}\left(2\left(16\,z^6 + 2292\,z^5 + 67\,635\,z^4 + 967\,680\,z^3 + 7\,257\,600\,z^2 + 21\,772\,800\,z + 10\,886\,400\right)\sinh\left(2\sqrt{z}\right) - 3\sqrt{z}\left(176\,z^5 + 9320\,z^4 + 183\,825\,z^3 + 1\,935\,360\,z^2 + 9\,676\,800\,z + 14\,515\,200\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.4243.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, \frac{9}{2}; -z\right) = \frac{1}{1485\,z^{7/2}}\left(-3\sqrt{z}\left(176\,z^5 - 9320\,z^4 + 183\,825\,z^3 - 1\,935\,360\,z^2 + 9\,676\,800\,z - 14\,515\,200\right)\cos\left(2\sqrt{z}\right) - 2\left(16\,z^6 - 2292\,z^5 + 67\,635\,z^4 - 967\,680\,z^3 + 7\,257\,600\,z^2 - 21\,772\,800\,z + 10\,886\,400\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4244.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, 5; z\right) = \frac{1}{51\,975\,z^2}\left(8\left(2\sqrt{z}\left(256\,z^4 + 34\,560\,z^3 + 1\,058\,400\,z^2 + 14\,923\,440\,z + 81\,860\,625\right) I_5\left(2\sqrt{z}\right) - 9\left(768\,z^4 + 32\,000\,z^3 + 540\,960\,z^2 + 3\,643\,920\,z - 17\,325\right) I_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4245.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, 5; -z\right) = -\frac{1}{51\,975\,z^2}\left(8\left(9\left(768\,z^4 - 32\,000\,z^3 + 540\,960\,z^2 - 3\,643\,920\,z - 17\,325\right) J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256\,z^4 - 34\,560\,z^3 + 1\,058\,400\,z^2 - 14\,923\,440\,z + 81\,860\,625\right) J_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4246.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, \frac{11}{2}; z\right) =$$
$$\frac{1}{165\, z^{9/2}}\left(\sqrt{z}\,\left(16\, z^6 + 4500\, z^5 + 261\,285\, z^4 + 6\,773\,760\, z^3 + 87\,091\,200\, z^2 + 486\,259\,200\, z + 762\,048\,000\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left. 2\left(184\, z^6 + 19\,365\, z^5 + 725\,760\, z^4 + 13\,305\,600\, z^3 + 116\,121\,600\, z^2 + 375\,580\,800\, z + 190\,512\,000\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4247.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{165\, z^{9/2}}\left(\sqrt{z}\,\left(16\, z^6 - 4500\, z^5 + 261\,285\, z^4 - 6\,773\,760\, z^3 + 87\,091\,200\, z^2 - 486\,259\,200\, z + 762\,048\,000\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left. 2\left(184\, z^6 - 19\,365\, z^5 + 725\,760\, z^4 - 13\,305\,600\, z^3 + 116\,121\,600\, z^2 - 375\,580\,800\, z + 190\,512\,000\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4248.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, 6; z\right) = \frac{1}{10\,395\, z^{5/2}}\left(8\left(2\sqrt{z}\,\left(256\, z^4 + 57\,600\, z^3 + 2\,872\,800\, z^2 + 60\,011\,280\, z + 458\,325\,945\right) I_6\left(2\sqrt{z}\right) - \right.\right.$$
$$\left.\left. 5\left(1792\, z^4 + 126\,720\, z^3 + 3\,271\,968\, z^2 + 30\,563\,568\, z - 31\,185\right) I_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4249.01

$${}_1F_2\left(\frac{7}{2}; -\frac{11}{2}, 6; -z\right) = -\frac{1}{10\,395\, z^{5/2}}\left(8\left(5\left(1792\, z^4 - 126\,720\, z^3 + 3\,271\,968\, z^2 - 30\,563\,568\, z - 31\,185\right) J_5\left(2\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 2\sqrt{z}\,\left(256\, z^4 - 57\,600\, z^3 + 2\,872\,800\, z^2 - 60\,011\,280\, z + 458\,325\,945\right) J_6\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = \frac{7}{2}$, $b_1 = -\frac{9}{2}$

07.22.03.4250.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, -\frac{9}{2}; z\right) =$$
$$\frac{1}{13\,395\,375}\left(\left(151\,552\, z^6 + 860\,160\, z^5 + 913\,920\, z^4 + 3\,709\,440\, z^3 + 13\,986\,000\, z^2 + 29\,106\,000\, z + 13\,395\,375\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left. 2\sqrt{z}\,\left(4096\, z^6 + 392\,192\, z^5 - 268\,800\, z^4 - 887\,040\, z^3 - 3\,754\,800\, z^2 - 11\,245\,500\, z - 13\,395\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4251.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, -\frac{9}{2}; -z\right) =$$
$$\frac{1}{13\,395\,375}\left(\left(151\,552\, z^6 - 860\,160\, z^5 + 913\,920\, z^4 - 3\,709\,440\, z^3 + 13\,986\,000\, z^2 - 29\,106\,000\, z + 13\,395\,375\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left. 2\sqrt{z}\,\left(-4096\, z^6 + 392\,192\, z^5 + 268\,800\, z^4 - 887\,040\, z^3 + 3\,754\,800\, z^2 - 11\,245\,500\, z + 13\,395\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4252.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, -\frac{7}{2}; z\right) = \left(-\frac{4096\, z^6}{1\,488\,375} - \frac{1024\, z^5}{4725} + \frac{512\, z^4}{2835} + \frac{256\, z^3}{675} + \frac{368\, z^2}{315} + \frac{20\, z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) -$$
$$\frac{2\sqrt{z}\,\left(34\,816\, z^5 + 134\,400\, z^4 + 161\,280\, z^3 + 504\,000\, z^2 + 1\,323\,000\, z + 1\,488\,375\right)\sinh\left(2\sqrt{z}\right)}{1\,488\,375}$$

07.22.03.4253.01

$${}_1F_2\left(\frac{7}{2};-\frac{9}{2},-\frac{7}{2};-z\right)=\left(-\frac{4096\,z^6}{1\,488\,375}+\frac{1024\,z^5}{4725}+\frac{512\,z^4}{2835}-\frac{256\,z^3}{675}+\frac{368\,z^2}{315}-\frac{20\,z}{9}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\,\left(-34\,816\,z^5+134\,400\,z^4-161\,280\,z^3+504\,000\,z^2-1\,323\,000\,z+1\,488\,375\right)\sin\left(2\sqrt{z}\right)}{1\,488\,375}$$

07.22.03.4254.01

$${}_1F_2\left(\frac{7}{2};-\frac{9}{2},-\frac{5}{2};z\right)=\frac{1}{212\,625}\left(15\left(2048\,z^5+1280\,z^4+10\,752\,z^3+20\,160\,z^2+32\,760\,z+14\,175\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\,\left(1024\,z^5+57\,600\,z^4-72\,000\,z^3-100\,800\,z^2-207\,900\,z-212\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4255.01

$${}_1F_2\left(\frac{7}{2};-\frac{9}{2},-\frac{5}{2};-z\right)=\frac{1}{212\,625}\left(2\sqrt{z}\,\left(1024\,z^5-57\,600\,z^4-72\,000\,z^3+100\,800\,z^2-207\,900\,z+212\,625\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.15\left(2048\,z^5-1280\,z^4+10\,752\,z^3-20\,160\,z^2+32\,760\,z-14\,175\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.4256.01

$${}_1F_2\left(\frac{7}{2};-\frac{9}{2},-\frac{3}{2};z\right)=\left(-\frac{1024\,z^5}{42\,525}-\frac{1280\,z^4}{1701}+\frac{64\,z^3}{81}+\frac{64\,z^2}{27}+\frac{68\,z}{27}+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\,\left(1280\,z^4-3840\,z^3+9744\,z^2+10\,080\,z+8505\right)\sinh\left(2\sqrt{z}\right)}{8505}$$

07.22.03.4257.01

$${}_1F_2\left(\frac{7}{2};-\frac{9}{2},-\frac{3}{2};-z\right)=\left(\frac{1024\,z^5}{42\,525}-\frac{1280\,z^4}{1701}-\frac{64\,z^3}{81}+\frac{64\,z^2}{27}-\frac{68\,z}{27}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\,\left(1280\,z^4+3840\,z^3+9744\,z^2-10\,080\,z+8505\right)\sin\left(2\sqrt{z}\right)}{8505}$$

07.22.03.4258.01

$${}_1F_2\left(\frac{7}{2};-\frac{9}{2},-\frac{1}{2};z\right)=$$
$$\left(\frac{4864\,z^4}{14\,175}-\frac{256\,z^3}{135}+\frac{16\,z^2}{9}+\frac{32\,z}{9}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(256\,z^4+1920\,z^3+11\,760\,z^2-31\,500\,z-14\,175\right)\sinh\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.4259.01

$${}_1F_2\left(\frac{7}{2};-\frac{9}{2},-\frac{1}{2};-z\right)=$$
$$\left(\frac{4864\,z^4}{14\,175}+\frac{256\,z^3}{135}+\frac{16\,z^2}{9}-\frac{32\,z}{9}+1\right)\cos\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(256\,z^4-1920\,z^3+11\,760\,z^2+31\,500\,z-14\,175\right)\sin\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.4260.01

$${}_1F_2\left(\frac{7}{2};-\frac{9}{2},\frac{1}{2};z\right)=$$
$$\left(-\frac{256\,z^4}{14\,175}+\frac{128\,z^3}{675}-\frac{16\,z^2}{9}+\frac{4\,z}{9}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(-256\,z^3+1120\,z^2+4200\,z-4725\right)\sinh\left(2\sqrt{z}\right)}{4725}$$

07.22.03.4261.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, \frac{1}{2}; -z\right) =$$
$$\left(-\frac{256\,z^4}{14\,175} - \frac{128\,z^3}{675} - \frac{16\,z^2}{9} - \frac{4\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-256\,z^3 - 1120\,z^2 + 4200\,z + 4725\right)\sin\left(2\sqrt{z}\right)}{4725}$$

07.22.03.4262.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, 1; z\right) =$$
$$\frac{1}{14\,175}\left(\left(-256\,z^4 + 3840\,z^3 - 21\,600\,z^2 - 18\,000\,z + 14\,175\right) I_0\left(2\sqrt{z}\right) - 32\sqrt{z}\left(32\,z^3 - 1350\,z + 225\right) I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4263.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, 1; -z\right) =$$
$$\frac{1}{14\,175}\left(\left(-256\,z^4 - 3840\,z^3 - 21\,600\,z^2 + 18\,000\,z + 14\,175\right) J_0\left(2\sqrt{z}\right) + 32\sqrt{z}\left(-32\,z^3 + 1350\,z + 225\right) J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4264.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, \frac{3}{2}; z\right) = \left(-\frac{256\,z^3}{14\,175} - \frac{32\,z^2}{135} + \frac{40\,z}{27} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(64\,z^3 - 1120\,z^2 + 2100\,z + 14\,175\right)\sinh\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.4265.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, \frac{3}{2}; -z\right) = \left(\frac{256\,z^3}{14\,175} - \frac{32\,z^2}{135} - \frac{40\,z}{27} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(64\,z^3 + 1120\,z^2 + 2100\,z - 14\,175\right)\sin\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.4266.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, 2; z\right) = \frac{\frac{\left(-256\,z^4+3840\,z^3+1440\,z^2-35\,280\,z+14\,175\right) I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 720\left(16\,z^2 - 24\,z - 63\right) I_2\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.4267.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, 2; -z\right) = \frac{\frac{\left(-256\,z^4-3840\,z^3+1440\,z^2+35\,280\,z+14\,175\right) J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 720\left(16\,z^2 + 24\,z - 63\right) J_2\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.4268.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, \frac{5}{2}; z\right) = \left(-\frac{64\,z^3}{4725} + \frac{32\,z^2}{315} + \frac{76\,z}{45} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(16\,z^2 - 336\,z - 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4269.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, \frac{5}{2}; -z\right) = \frac{\left(64\,z^3 + 480\,z^2 - 7980\,z + 4725\right)\cos\left(2\sqrt{z}\right) - 10\sqrt{z}\left(16\,z^2 + 336\,z - 945\right)\sin\left(2\sqrt{z}\right)}{4725}$$

07.22.03.4270.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, 3; z\right) =$$
$$\frac{1}{14\,175\,z}\left(2\left(\left(-256\,z^4 + 768\,z^3 + 16\,800\,z^2 + 11\,760\,z + 14\,175\right) I_2\left(2\sqrt{z}\right) + 64\sqrt{z}\left(16\,z^3 - 120\,z^2 - 735\,z - 945\right) I_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4271.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, 3; -z\right) =$$
$$\frac{1}{14\,175\,z}\left(2\left(\left(-256\,z^4 - 768\,z^3 + 16\,800\,z^2 - 11\,760\,z + 14\,175\right) J_2\left(2\sqrt{z}\right) + 64\sqrt{z}\left(16\,z^3 + 120\,z^2 - 735\,z + 945\right) J_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4272.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, \frac{7}{2}; z\right) = \left(\frac{16\,z^2}{63} + \frac{16\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4273.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, \frac{7}{2}; -z\right) = \left(\frac{16\,z^2}{63} - \frac{16\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4274.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, 4; z\right) = \frac{1}{4725\,z^{3/2}}$$
$$\left(32\sqrt{z}\left(128\,z^3 + 1680\,z^2 + 11\,760\,z + 42\,525\right) I_4\left(2\sqrt{z}\right) - 2\left(256\,z^4 + 5376\,z^3 + 36\,960\,z^2 + 176\,400\,z - 14\,175\right) I_3\left(2\sqrt{z}\right)\right)$$

07.22.03.4275.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, 4; -z\right) = \frac{1}{4725\,z^{3/2}}$$
$$\left(\left(-512\,z^4 + 10\,752\,z^3 - 73\,920\,z^2 + 352\,800\,z + 28\,350\right) J_3\left(2\sqrt{z}\right) + 32\sqrt{z}\left(128\,z^3 - 1680\,z^2 + 11\,760\,z - 42\,525\right) J_4\left(2\sqrt{z}\right)\right)$$

07.22.03.4276.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, \frac{9}{2}; z\right) = \frac{1}{135\,z^{7/2}}\left(2\left(104\,z^5 + 3705\,z^4 + 53\,760\,z^3 + 403\,200\,z^2 + 1\,209\,600\,z + 604\,800\right)\sinh\left(2\sqrt{z}\right) -$$
$$\sqrt{z}\left(16\,z^5 + 1460\,z^4 + 30\,585\,z^3 + 322\,560\,z^2 + 1\,612\,800\,z + 2\,419\,200\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.4277.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, \frac{9}{2}; -z\right) = \frac{1}{135\,z^{7/2}}\left(2\left(104\,z^5 - 3705\,z^4 + 53\,760\,z^3 - 403\,200\,z^2 + 1\,209\,600\,z - 604\,800\right)\sin\left(2\sqrt{z}\right) -$$
$$\sqrt{z}\left(16\,z^5 - 1460\,z^4 + 30\,585\,z^3 - 322\,560\,z^2 + 1\,612\,800\,z - 2\,419\,200\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.4278.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, 5; z\right) = -\frac{1}{4725\,z^2}\left(8\left(\left(256\,z^4 + 14\,592\,z^3 + 252\,000\,z^2 + 1\,728\,720\,z - 14\,175\right) I_4\left(2\sqrt{z}\right) -\right.$$
$$\left.96\sqrt{z}\left(32\,z^3 + 1120\,z^2 + 16\,170\,z + 89\,775\right) I_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4279.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, 5; -z\right) = -\frac{1}{4725\,z^2}\left(8\left(\left(256\,z^4 - 14\,592\,z^3 + 252\,000\,z^2 - 1\,728\,720\,z - 14\,175\right) J_4\left(2\sqrt{z}\right) -\right.$$
$$\left.96\sqrt{z}\left(32\,z^3 - 1120\,z^2 + 16\,170\,z - 89\,775\right) J_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4280.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, \frac{11}{2}; z\right) = \frac{1}{15\,z^{9/2}}\left(\sqrt{z}\left(152\,z^5 + 11\,535\,z^4 + 322\,560\,z^3 + 4\,273\,920\,z^2 + 24\,192\,000\,z + 38\,102\,400\right)\cosh\left(2\sqrt{z}\right) -\right.$$
$$\left.2\left(4\,z^6 + 783\,z^5 + 33\,600\,z^4 + 645\,120\,z^3 + 5\,745\,600\,z^2 + 18\,748\,800\,z + 9\,525\,600\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4281.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, \frac{11}{2}; -z\right) = \frac{1}{15\,z^{9/2}}\left(-\sqrt{z}\,\left(152\,z^5 - 11\,535\,z^4 + 322\,560\,z^3 - 4\,273\,920\,z^2 + 24\,192\,000\,z - 38\,102\,400\right)\cos\left(2\sqrt{z}\right) - 2\left(4\,z^6 - 783\,z^5 + 33\,600\,z^4 - 645\,120\,z^3 + 5\,745\,600\,z^2 - 18\,748\,800\,z + 9\,525\,600\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4282.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, 6; z\right) = -\frac{1}{945\,z^{5/2}}\left(8\left(\left(256\,z^4 + 26\,880\,z^3 + 751\,200\,z^2 + 7\,279\,440\,z - 14\,175\right)I_5\left(2\sqrt{z}\right) - 16\sqrt{z}\,\left(256\,z^3 + 15\,600\,z^2 + 346\,920\,z + 2\,728\,215\right)I_6\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4283.01

$${}_1F_2\left(\frac{7}{2}; -\frac{9}{2}, 6; -z\right) = -\frac{1}{945\,z^{5/2}}\left(8\left(\left(256\,z^4 - 26\,880\,z^3 + 751\,200\,z^2 - 7\,279\,440\,z - 14\,175\right)J_5\left(2\sqrt{z}\right) + 16\sqrt{z}\,\left(-256\,z^3 + 15\,600\,z^2 - 346\,920\,z + 2\,728\,215\right)J_6\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = \frac{7}{2}$, $b_1 = -\frac{7}{2}$

07.22.03.4284.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, -\frac{7}{2}; z\right) = \frac{1}{165\,375}\left(\left(32\,768\,z^5 + 134\,400\,z^4 + 94\,080\,z^3 + 221\,760\,z^2 + 378\,000\,z + 165\,375\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(1024\,z^5 + 72\,448\,z^4 - 33\,600\,z^3 - 70\,560\,z^2 - 157\,500\,z - 165\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4285.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, -\frac{7}{2}; -z\right) = \frac{1}{165\,375}\left(\left(-32\,768\,z^5 + 134\,400\,z^4 - 94\,080\,z^3 + 221\,760\,z^2 - 378\,000\,z + 165\,375\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(1024\,z^5 - 72\,448\,z^4 - 33\,600\,z^3 + 70\,560\,z^2 - 157\,500\,z + 165\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4286.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, -\frac{5}{2}; z\right) = \left(-\frac{1024\,z^5}{23\,625} - \frac{256\,z^4}{105} + \frac{64\,z^3}{45} + \frac{128\,z^2}{75} + \frac{12\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(7424\,z^4 + 19\,200\,z^3 + 15\,120\,z^2 + 25\,200\,z + 23\,625\right)\sinh\left(2\sqrt{z}\right)}{23\,625}$$

07.22.03.4287.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, -\frac{5}{2}; -z\right) = \left(\frac{1024\,z^5}{23\,625} - \frac{256\,z^4}{105} - \frac{64\,z^3}{45} + \frac{128\,z^2}{75} - \frac{12\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(7424\,z^4 - 19\,200\,z^3 + 15\,120\,z^2 - 25\,200\,z + 23\,625\right)\sin\left(2\sqrt{z}\right)}{23\,625}$$

07.22.03.4288.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, -\frac{3}{2}; z\right) = \left(\frac{256\,z^4}{189} + \frac{16\,z^2}{5} + \frac{8\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(256\,z^4 + 9600\,z^3 - 8400\,z^2 - 6300\,z - 4725\right)\sinh\left(2\sqrt{z}\right)}{4725}$$

07.22.03.4289.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, -\frac{3}{2}; -z\right) =$$

$$\left(\frac{256\,z^4}{189} + \frac{16\,z^2}{5} - \frac{8\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-256\,z^4 + 9600\,z^3 + 8400\,z^2 - 6300\,z + 4725\right)\sin\left(2\sqrt{z}\right)}{4725}$$

07.22.03.4290.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, -\frac{1}{2}; z\right) = \left(-\frac{256\,z^4}{1575} - \frac{128\,z^3}{45} + \frac{16\,z^2}{15} + 4\,z + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{315}\sqrt{z}\left(256\,z^3 - 672\,z^2 + 840\,z + 315\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4291.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, -\frac{1}{2}; -z\right) = \left(-\frac{256\,z^4}{1575} + \frac{128\,z^3}{45} + \frac{16\,z^2}{15} - 4\,z + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{315}\sqrt{z}\left(256\,z^3 + 672\,z^2 + 840\,z - 315\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4292.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, \frac{1}{2}; z\right) = \left(\frac{128\,z^3}{225} - \frac{32\,z^2}{15} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(64\,z^3 + 2100\,z - 1575\right)\sinh\left(2\sqrt{z}\right)}{1575}$$

07.22.03.4293.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, \frac{1}{2}; -z\right) = \left(-\frac{128\,z^3}{225} - \frac{32\,z^2}{15} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(64\,z^3 + 2100\,z + 1575\right)\sin\left(2\sqrt{z}\right)}{1575}$$

07.22.03.4294.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, 1; z\right) = \frac{\left(704\,z^3 - 2160\,z^2 - 2700\,z + 1575\right)I_0\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64\,z^3 - 432\,z^2 + 2700\,z - 225\right)I_1\left(2\sqrt{z}\right)}{1575}$$

07.22.03.4295.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, 1; -z\right) = \frac{\left(-704\,z^3 - 2160\,z^2 + 2700\,z + 1575\right)J_0\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64\,z^3 + 432\,z^2 + 2700\,z + 225\right)J_1\left(2\sqrt{z}\right)}{1575}$$

07.22.03.4296.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, \frac{3}{2}; z\right) = \left(\frac{64\,z^3}{1575} - \frac{32\,z^2}{75} + \frac{4\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{225}\sqrt{z}\left(16\,z^2 - 225\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4297.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, \frac{3}{2}; -z\right) = \left(-\frac{64\,z^3}{1575} - \frac{32\,z^2}{75} - \frac{4\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{225}\sqrt{z}\left(225 - 16\,z^2\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4298.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, 2; z\right) = \frac{\frac{5\left(64\,z^3 + 144\,z^2 - 756\,z + 315\right)I_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 2\left(64\,z^3 - 720\,z^2 + 540\,z + 2205\right)I_2\left(2\sqrt{z}\right)}{1575}$$

07.22.03.4299.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, 2; -z\right) = \frac{\frac{5\left(-64\,z^3 + 144\,z^2 + 756\,z + 315\right)J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 2\left(64\,z^3 + 720\,z^2 + 540\,z - 2205\right)J_2\left(2\sqrt{z}\right)}{1575}$$

07.22.03.4300.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, \frac{5}{2}; z\right) = \left(-\frac{16\,z^2}{525} + \frac{8\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{525}\sqrt{z}\left(16\,z^2 - 140\,z - 525\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4301.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, \frac{5}{2}; -z\right) = \left(-\frac{16\,z^2}{525} - \frac{8\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{525}\sqrt{z}\,\left(16\,z^2 + 140\,z - 525\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4302.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, 3; z\right) = \frac{\left(-128\,z^3 + 3360\,z^2 + 840\,z + 3150\right) I_2\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(64\,z^3 - 240\,z^2 - 2100\,z - 2205\right) I_3\left(2\sqrt{z}\right)}{1575\,z}$$

07.22.03.4303.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, 3; -z\right) = \frac{2\left(64\,z^3 + 1680\,z^2 - 420\,z + 1575\right) J_2\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(64\,z^3 + 240\,z^2 - 2100\,z + 2205\right) J_3\left(2\sqrt{z}\right)}{1575\,z}$$

07.22.03.4304.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, \frac{7}{2}; z\right) = \left(\frac{16\,z^2}{105} + \frac{12\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,\left(8\,z + 21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4305.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, \frac{7}{2}; -z\right) = \left(\frac{16\,z^2}{105} - \frac{12\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}\left(21 - 8\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4306.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, 4; z\right) = \frac{4\left(64\,z^3 + 1008\,z^2 + 6300\,z + 22\,785\right) I_4\left(2\sqrt{z}\right)}{525\,z} - \frac{2\left(64\,z^3 + 336\,z^2 + 1740\,z - 225\right) I_3\left(2\sqrt{z}\right)}{75\,z^{3/2}}$$

07.22.03.4307.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, 4; -z\right) = \frac{2\left(64\,z^3 - 336\,z^2 + 1740\,z + 225\right) J_3\left(2\sqrt{z}\right)}{75\,z^{3/2}} + \frac{4\left(64\,z^3 - 1008\,z^2 + 6300\,z - 22\,785\right) J_4\left(2\sqrt{z}\right)}{525\,z}$$

07.22.03.4308.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, \frac{9}{2}; z\right) = \frac{1}{15\,z^{7/2}}\left(2\left(4\,z^5 + 225\,z^4 + 3360\,z^3 + 25\,200\,z^2 + 75\,600\,z + 37\,800\right)\sinh\left(2\sqrt{z}\right) - 5\sqrt{z}\,\left(16\,z^4 + 381\,z^3 + 4032\,z^2 + 20\,160\,z + 30\,240\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.4309.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, \frac{9}{2}; -z\right) = \frac{1}{15\,z^{7/2}}\left(5\sqrt{z}\,\left(16\,z^4 - 381\,z^3 + 4032\,z^2 - 20\,160\,z + 30\,240\right)\cos\left(2\sqrt{z}\right) + 2\left(4\,z^5 - 225\,z^4 + 3360\,z^3 - 25\,200\,z^2 + 75\,600\,z - 37\,800\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4310.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, 5; z\right) = \frac{1}{525\,z^2}\left(8\left(2\sqrt{z}\,\left(64\,z^3 + 3024\,z^2 + 44\,940\,z + 253\,575\right) I_5\left(2\sqrt{z}\right) - \left(832\,z^3 + 14\,448\,z^2 + 102\,060\,z - 1575\right) I_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4311.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, 5; -z\right) = \frac{1}{525\,z^2}\left(8\left(\left(832\,z^3 - 14\,448\,z^2 + 102\,060\,z + 1575\right) J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(64\,z^3 - 3024\,z^2 + 44\,940\,z - 253\,575\right) J_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4312.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, \frac{11}{2}; z\right) = \frac{1}{5\,z^{9/2}}\left(3\left(\sqrt{z}\,\left(4\,z^5 + 535\,z^4 + 16\,800\,z^3 + 231\,840\,z^2 + 1\,335\,600\,z + 2\,116\,800\right)\cosh\left(2\sqrt{z}\right) - \right.\right.$$
$$\left.\left. 2\left(31\,z^5 + 1680\,z^4 + 34\,440\,z^3 + 315\,000\,z^2 + 1\,039\,500\,z + 529\,200\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4313.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, \frac{11}{2}; -z\right) = -\frac{1}{5\,z^{9/2}}\left(3\left(\sqrt{z}\,\left(4\,z^5 - 535\,z^4 + 16\,800\,z^3 - 231\,840\,z^2 + 1\,335\,600\,z - 2\,116\,800\right)\cos\left(2\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 2\left(-31\,z^5 + 1680\,z^4 - 34\,440\,z^3 + 315\,000\,z^2 - 1\,039\,500\,z + 529\,200\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4314.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, 6; z\right) =$$
$$\frac{1}{105\,z^{5/2}}\left(8\left(2\sqrt{z}\,\left(64\,z^3 + 5808\,z^2 + 140\,700\,z + 1\,148\,805\right)I_6\left(2\sqrt{z}\right) - \left(1216\,z^3 + 37\,680\,z^2 + 383\,460\,z - 1575\right)I_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4315.01

$${}_1F_2\left(\frac{7}{2}; -\frac{7}{2}, 6; -z\right) =$$
$$\frac{1}{105\,z^{5/2}}\left(8\left(\left(1216\,z^3 - 37\,680\,z^2 + 383\,460\,z + 1575\right)J_5\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(64\,z^3 - 5808\,z^2 + 140\,700\,z - 1\,148\,805\right)J_6\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = \frac{7}{2}$, $b_1 = -\frac{5}{2}$

07.22.03.4316.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, -\frac{5}{2}; z\right) = \frac{1}{3375}\left(3\left(2304\,z^4 + 6400\,z^3 + 2640\,z^2 + 2880\,z + 1125\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left. 2\sqrt{z}\,\left(256\,z^4 + 12\,672\,z^3 - 3600\,z^2 - 4140\,z - 3375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4317.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, -\frac{5}{2}; -z\right) = \frac{1}{3375}\left(3\left(2304\,z^4 - 6400\,z^3 + 2640\,z^2 - 2880\,z + 1125\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left. 2\sqrt{z}\,\left(-256\,z^4 + 12\,672\,z^3 + 3600\,z^2 - 4140\,z + 3375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4318.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, -\frac{3}{2}; z\right) =$$
$$\left(-\frac{256\,z^4}{675} - \frac{128\,z^3}{9} + \frac{16\,z^2}{3} + \frac{44\,z}{15} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{225}\sqrt{z}\,\left(512\,z^3 + 800\,z^2 + 360\,z + 225\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4319.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, -\frac{3}{2}; -z\right) =$$
$$\left(-\frac{256\,z^4}{675} + \frac{128\,z^3}{9} + \frac{16\,z^2}{3} - \frac{44\,z}{15} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{225}\sqrt{z}\,\left(-512\,z^3 + 800\,z^2 - 360\,z + 225\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4320.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, -\frac{1}{2}; z\right) = \frac{1}{225}\left(5\left(256 z^3 - 96 z^2 + 216 z + 45\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64 z^3 + 1440 z^2 - 780 z - 225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4321.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, -\frac{1}{2}; -z\right) = \frac{1}{225}\left(2\sqrt{z}\left(64 z^3 - 1440 z^2 - 780 z + 225\right)\sin\left(2\sqrt{z}\right) - 5\left(256 z^3 + 96 z^2 + 216 z - 45\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.4322.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, \frac{1}{2}; z\right) = -\frac{1}{225}\left(64 z^3 + 480 z^2 + 180 z - 225\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\left(16 z^2 - 32 z + 15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4323.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, \frac{1}{2}; -z\right) = \left(\frac{64 z^3}{225} - \frac{32 z^2}{15} + \frac{4 z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\left(16 z^2 + 32 z + 15\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4324.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, 1; z\right) = \frac{1}{225}\left(96\left(9 - 4 z\right) z^{3/2} I_1\left(2\sqrt{z}\right) - \left(64 z^3 + 144 z^2 + 540 z - 225\right) I_0\left(2\sqrt{z}\right)\right)$$

07.22.03.4325.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, 1; -z\right) = \frac{1}{225}\left(96\left(4 z + 9\right) J_1\left(2\sqrt{z}\right) z^{3/2} + \left(64 z^3 - 144 z^2 + 540 z + 225\right) J_0\left(2\sqrt{z}\right)\right)$$

07.22.03.4326.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, \frac{3}{2}; z\right) = \frac{1}{225}\left(3\left(-48 z^2 + 80 z + 75\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(16 z^2 - 60 z + 225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4327.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, \frac{3}{2}; -z\right) = \frac{1}{225}\left(2\sqrt{z}\left(16 z^2 + 60 z + 225\right)\sin\left(2\sqrt{z}\right) - 3\left(48 z^2 + 80 z - 75\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.4328.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, 2; z\right) = \frac{1}{225}\left(\frac{\left(-64 z^3 + 240 z^2 - 540 z + 225\right) I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 12\left(16 z^2 - 45\right) I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.4329.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, 2; -z\right) = \frac{1}{225}\left(\frac{\left(64 z^3 + 240 z^2 + 540 z + 225\right) J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 12\left(16 z^2 - 45\right) J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.4330.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, \frac{5}{2}; z\right) = \left(-\frac{16 z^2}{75} + \frac{36 z}{25} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{75}\sqrt{z}\left(8 z + 75\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4331.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, \frac{5}{2}; -z\right) = \frac{1}{75}\left(\left(-16 z^2 - 108 z + 75\right)\cos\left(2\sqrt{z}\right) + 2\left(75 - 8 z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4332.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, 3; z\right) = -\frac{2\left(\left(64 z^3 - 240 z^2 + 60 z - 225\right) I_2\left(2\sqrt{z}\right) + 120\sqrt{z}\left(4 z + 3\right) I_3\left(2\sqrt{z}\right)\right)}{225 z}$$

07.22.03.4333.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, 3; -z\right) = \frac{2\left(\left(64z^3+240z^2+60z+225\right)J_2\left(2\sqrt{z}\right)+120\,(3-4z)\sqrt{z}\;J_3\left(2\sqrt{z}\right)\right)}{225z}$$

07.22.03.4334.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, \frac{7}{2}; z\right) = \left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\;(4z+15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4335.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, \frac{7}{2}; -z\right) = \left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}(15-4z)\sqrt{z}\;\sin\left(2\sqrt{z}\right)$$

07.22.03.4336.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, 4; z\right) = \frac{8\left(16z^2+80z+295\right)I_4\left(2\sqrt{z}\right)}{25z} - \frac{2\left(64z^3+144z^2+1020z-225\right)I_3\left(2\sqrt{z}\right)}{75z^{3/2}}$$

07.22.03.4337.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, 4; -z\right) = \frac{2\left(64z^3-144z^2+1020z+225\right)J_3\left(2\sqrt{z}\right)}{75z^{3/2}} - \frac{8\left(16z^2-80z+295\right)J_4\left(2\sqrt{z}\right)}{25z}$$

07.22.03.4338.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, \frac{9}{2}; z\right) =$$

$$-\frac{1}{15z^{7/2}}\left(7\left(\sqrt{z}\;\left(4z^4+135z^3+1440z^2+7200z+10\,800\right)\cosh\left(2\sqrt{z}\right)-30\left(z^4+16z^3+120z^2+360z+180\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4339.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, \frac{9}{2}; -z\right) =$$

$$\frac{1}{15z^{7/2}}\left(7\left(\sqrt{z}\;\left(4z^4-135z^3+1440z^2-7200z+10\,800\right)\cos\left(2\sqrt{z}\right)-30\left(z^4-16z^3+120z^2-360z+180\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4340.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, 5; z\right) = -\frac{8\left(\left(64z^3+912z^2+6876z-225\right)I_4\left(2\sqrt{z}\right)-48\sqrt{z}\;\left(8z^2+122z+705\right)I_5\left(2\sqrt{z}\right)\right)}{75z^2}$$

07.22.03.4341.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, 5; -z\right) = \frac{8\left(\left(64z^3-912z^2+6876z+225\right)J_4\left(2\sqrt{z}\right)-48\sqrt{z}\;\left(8z^2-122z+705\right)J_5\left(2\sqrt{z}\right)\right)}{75z^2}$$

07.22.03.4342.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, \frac{11}{2}; z\right) = -\frac{1}{5z^{9/2}}\left(21\left(2\left(z^5+90z^4+2040z^3+19\,350z^2+64\,800z+33\,075\right)\sinh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.5\sqrt{z}\;\left(5z^4+192z^3+2808z^2+16\,560z+26\,460\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4343.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, \frac{11}{2}; -z\right) = \frac{1}{5z^{9/2}}\left(21\left(5\sqrt{z}\;\left(5z^4-192z^3+2808z^2-16\,560z+26\,460\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\left(z^5-90z^4+2040z^3-19\,350z^2+64\,800z-33\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4344.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, 6; z\right) = \frac{32\left(48 z^2 + 1312 z + 11\,265\right) I_6\left(2\sqrt{z}\right)}{5 z^2} - \frac{8\left(64 z^3 + 2064 z^2 + 22\,620 z - 225\right) I_5\left(2\sqrt{z}\right)}{15 z^{5/2}}$$

07.22.03.4345.01

$${}_1F_2\left(\frac{7}{2}; -\frac{5}{2}, 6; -z\right) = \frac{8\left(64 z^3 - 2064 z^2 + 22\,620 z + 225\right) J_5\left(2\sqrt{z}\right)}{15 z^{5/2}} - \frac{32\left(48 z^2 - 1312 z + 11\,265\right) J_6\left(2\sqrt{z}\right)}{5 z^2}$$

For fixed z and $a_1 = \frac{7}{2}$, $b_1 = -\frac{3}{2}$

07.22.03.4346.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, -\frac{3}{2}; z\right) = \frac{1}{135}\left(\left(1408 z^3 + 2400 z^2 + 480 z + 135\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64 z^3 + 2048 z^2 - 300 z - 135\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4347.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, -\frac{3}{2}; -z\right) = \frac{1}{135}\left(\left(-1408 z^3 + 2400 z^2 - 480 z + 135\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64 z^3 - 2048 z^2 - 300 z + 135\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4348.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, -\frac{1}{2}; z\right) = \left(-\frac{64 z^3}{45} - 32 z^2 + \frac{20 z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{45}\sqrt{z}\left(304 z^2 + 240 z + 45\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4349.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, -\frac{1}{2}; -z\right) = \left(\frac{64 z^3}{45} - 32 z^2 - \frac{20 z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{45}\sqrt{z}\left(304 z^2 - 240 z + 45\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4350.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, \frac{1}{2}; z\right) = \frac{1}{3}\left(16 z^2 - 8 z + 3\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{45}\sqrt{z}\left(16 z^2 + 180 z - 45\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4351.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, \frac{1}{2}; -z\right) = \frac{1}{3}\left(16 z^2 + 8 z + 3\right)\cos\left(2\sqrt{z}\right) + \frac{2}{45}\sqrt{z}\left(-16 z^2 + 180 z + 45\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4352.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, 1; z\right) = \frac{1}{45}\left(\left(208 z^2 - 168 z + 45\right) I_0\left(2\sqrt{z}\right) + 2\sqrt{z}\left(16 z^2 + 88 z + 9\right) I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4353.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, 1; -z\right) = \frac{1}{45}\left(\left(208 z^2 + 168 z + 45\right) J_0\left(2\sqrt{z}\right) - 2\sqrt{z}\left(16 z^2 - 88 z + 9\right) J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4354.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, \frac{3}{2}; z\right) = \left(\frac{16 z^2}{45} + \frac{4 z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{9}\sqrt{z}\left(8 z - 9\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4355.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, \frac{3}{2}; -z\right) = \left(\frac{16 z^2}{45} - \frac{4 z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{9}\sqrt{z}\left(8 z + 9\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4356.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, 2; z\right) = \frac{1}{45}\left(\frac{3\left(48 z^2 - 40 z + 15\right) I_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 2\left(16 z^2 - 24 z + 45\right) I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.4357.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, 2; -z\right) = \frac{1}{45}\left(\frac{3\left(48 z^2 + 40 z + 15\right) J_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 2\left(16 z^2 + 24 z + 45\right) J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.4358.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, \frac{5}{2}; z\right) = \left(\frac{16 z}{15} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\,(4 z - 15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4359.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, \frac{5}{2}; -z\right) = \left(1 - \frac{16 z}{15}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\,(4 z + 15)\sin\left(2\sqrt{z}\right)$$

07.22.03.4360.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, 3; z\right) = \frac{2\left(5\left(16 z^2 - 8 z + 9\right) I_2\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16 z^2 - 40 z - 15\right) I_3\left(2\sqrt{z}\right)\right)}{45 z}$$

07.22.03.4361.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, 3; -z\right) = \frac{2\left(5\left(16 z^2 + 8 z + 9\right) J_2\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(16 z^2 + 40 z - 15\right) J_3\left(2\sqrt{z}\right)\right)}{45 z}$$

07.22.03.4362.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, \frac{7}{2}; z\right) = \left(\frac{4 z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.4363.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, \frac{7}{2}; -z\right) = \left(1 - \frac{4 z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4364.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, 4; z\right) = \frac{\left(32 z^2 - 240 z + 90\right) I_3\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(16 z^2 + 40 z + 165\right) I_4\left(2\sqrt{z}\right)}{15 z^{3/2}}$$

07.22.03.4365.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, 4; -z\right) = \frac{\left(32 z^2 + 240 z + 90\right) J_3\left(2\sqrt{z}\right) - 4\sqrt{z}\,\left(16 z^2 - 40 z + 165\right) J_4\left(2\sqrt{z}\right)}{15 z^{3/2}}$$

07.22.03.4366.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, \frac{9}{2}; z\right) =$$

$$\frac{1}{3 z^{7/2}}\left(7\left(2\left(z^4 + 20 z^3 + 150 z^2 + 450 z + 225\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\,\left(11 z^3 + 120 z^2 + 600 z + 900\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4367.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, \frac{9}{2}; -z\right) = -\frac{1}{3\,z^{7/2}}\left(7\left(\sqrt{z}\,\left(11\,z^3 - 120\,z^2 + 600\,z - 900\right)\cos\left(2\sqrt{z}\right) + 2\left(z^4 - 20\,z^3 + 150\,z^2 - 450\,z + 225\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4368.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, 5; z\right) = \frac{8\left(\left(-48\,z^2 - 552\,z + 45\right)I_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^2 + 216\,z + 1305\right)I_5\left(2\sqrt{z}\right)\right)}{15\,z^2}$$

07.22.03.4369.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, 5; -z\right) = -\frac{8\left(\left(48\,z^2 - 552\,z - 45\right)J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^2 - 216\,z + 1305\right)J_5\left(2\sqrt{z}\right)\right)}{15\,z^2}$$

07.22.03.4370.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, \frac{11}{2}; z\right) = \frac{1}{z^{9/2}}\left(21\left(\sqrt{z}\,\left(z^4 + 60\,z^3 + 960\,z^2 + 5850\,z + 9450\right)\cosh\left(2\sqrt{z}\right) - 5\left(2\,z^4 + 54\,z^3 + 540\,z^2 + 1845\,z + 945\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4371.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, \frac{11}{2}; -z\right) = \frac{1}{z^{9/2}}\left(21\left(\sqrt{z}\,\left(z^4 - 60\,z^3 + 960\,z^2 - 5850\,z + 9450\right)\cos\left(2\sqrt{z}\right) - 5\left(2\,z^4 - 54\,z^3 + 540\,z^2 - 1845\,z + 945\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4372.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, 6; z\right) = \frac{8\left(\left(-112\,z^2 - 1528\,z + 45\right)I_5\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^2 + 488\,z + 4509\right)I_6\left(2\sqrt{z}\right)\right)}{3\,z^{5/2}}$$

07.22.03.4373.01

$${}_1F_2\left(\frac{7}{2}; -\frac{3}{2}, 6; -z\right) = -\frac{8\left(\left(112\,z^2 - 1528\,z - 45\right)J_5\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^2 - 488\,z + 4509\right)J_6\left(2\sqrt{z}\right)\right)}{3\,z^{5/2}}$$

For fixed z and $a_1 = \frac{7}{2}$, $b_1 = -\frac{1}{2}$

07.22.03.4374.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, -\frac{1}{2}; z\right) = \left(\frac{272\,z^2}{15} + 16\,z + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\,\left(16\,z^2 + 292\,z - 15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4375.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, -\frac{1}{2}; -z\right) = \left(\frac{272\,z^2}{15} - 16\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\,\left(-16\,z^2 + 292\,z + 15\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4376.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, \frac{1}{2}; z\right) = \left(-\frac{16\,z^2}{15} - 12\,z + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,\left(56\,z + 15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4377.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, \frac{1}{2}; -z\right) = \left(-\frac{16\,z^2}{15} + 12\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\,(15 - 56\,z)\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4378.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, 1; z\right) = \frac{1}{15}\left(\left(-16\,z^2 - 136\,z + 15\right) I_0\left(2\sqrt{z}\right) + 16\,(1 - 6\,z)\,\sqrt{z}\,\, I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4379.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, 1; -z\right) = \frac{1}{15}\left(\left(-16\,z^2 + 136\,z + 15\right) J_0\left(2\sqrt{z}\right) - 16\,\sqrt{z}\,\,(6\,z + 1)\,J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4380.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, \frac{3}{2}; z\right) = \left(1 - \frac{8\,z}{3}\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\,\sqrt{z}\,\,(4\,z + 15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4381.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, \frac{3}{2}; -z\right) = \left(\frac{8\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\,(15 - 4\,z)\,\sqrt{z}\,\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4382.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, 2; z\right) = \frac{1}{15}\left(8\,(3 - 8\,z)\,I_2\left(2\sqrt{z}\right) - \frac{\left(16\,z^2 + 72\,z - 15\right) I_1\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.4383.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, 2; -z\right) = \frac{1}{15}\left(\frac{\left(-16\,z^2 + 72\,z + 15\right) J_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 8\,(8\,z + 3)\,J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.4384.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, \frac{5}{2}; z\right) = \left(1 - \frac{4\,z}{5}\right)\cosh\left(2\sqrt{z}\right) - 2\,\sqrt{z}\,\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.4385.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, \frac{5}{2}; -z\right) = \left(\frac{4\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + 2\,\sqrt{z}\,\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4386.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, 3; z\right) = \frac{\left(-32\,z^2 - 80\,z + 30\right) I_2\left(2\sqrt{z}\right) - 64\,z^{3/2}\,I_3\left(2\sqrt{z}\right)}{15\,z}$$

07.22.03.4387.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, 3; -z\right) = \frac{\left(-32\,z^2 + 80\,z + 30\right) J_2\left(2\sqrt{z}\right) - 64\,z^{3/2}\,J_3\left(2\sqrt{z}\right)}{15\,z}$$

07.22.03.4388.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, \frac{7}{2}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\,\sqrt{z}\,\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.4389.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, \frac{7}{2}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\,\sqrt{z}\,\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4390.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, 4; z\right) = \frac{16\, I_4\left(2\sqrt{z}\right)}{z} - \frac{2\left(16 z^2 + 40 z - 15\right) I_3\left(2\sqrt{z}\right)}{5 z^{3/2}}$$

07.22.03.4391.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, 4; -z\right) = -\frac{2\left(16 z^2 - 40 z - 15\right) J_3\left(2\sqrt{z}\right)}{5 z^{3/2}} - \frac{16\, J_4\left(2\sqrt{z}\right)}{z}$$

07.22.03.4392.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, \frac{9}{2}; z\right) = -\frac{7\left(\sqrt{z}\,\left(z^3 + 12 z^2 + 60 z + 90\right)\cosh\left(2\sqrt{z}\right) - \left(4 z^3 + 30 z^2 + 90 z + 45\right)\sinh\left(2\sqrt{z}\right)\right)}{z^{7/2}}$$

07.22.03.4393.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, \frac{9}{2}; -z\right) = -\frac{7\left(\sqrt{z}\,\left(z^3 - 12 z^2 + 60 z - 90\right)\cos\left(2\sqrt{z}\right) + \left(-4 z^3 + 30 z^2 - 90 z + 45\right)\sin\left(2\sqrt{z}\right)\right)}{z^{7/2}}$$

07.22.03.4394.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, 5; z\right) = -\frac{8\left(\left(16 z^2 + 72 z - 15\right) I_4\left(2\sqrt{z}\right) - 16\sqrt{z}\,\left(2 z + 15\right) I_5\left(2\sqrt{z}\right)\right)}{5 z^2}$$

07.22.03.4395.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, 5; -z\right) = -\frac{8\left(\left(16 z^2 - 72 z - 15\right) J_4\left(2\sqrt{z}\right) + 16\left(15 - 2 z\right)\sqrt{z}\, J_5\left(2\sqrt{z}\right)\right)}{5 z^2}$$

07.22.03.4396.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, \frac{11}{2}; z\right) =$$
$$-\frac{1}{4 z^{9/2}}\left(63\left(\left(2 z^4 + 80 z^3 + 870 z^2 + 3060 z + 1575\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(8 z^3 + 150 z^2 + 960 z + 1575\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4397.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, \frac{11}{2}; -z\right) =$$
$$-\frac{1}{4 z^{9/2}}\left(63\left(2\sqrt{z}\,\left(8 z^3 - 150 z^2 + 960 z - 1575\right)\cos\left(2\sqrt{z}\right) + \left(2 z^4 - 80 z^3 + 870 z^2 - 3060 z + 1575\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4398.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, 6; z\right) = \frac{64\left(8 z + 87\right) I_6\left(2\sqrt{z}\right)}{z^2} - \frac{8\left(16 z^2 + 136 z - 15\right) I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.4399.01

$${}_1F_2\left(\frac{7}{2}; -\frac{1}{2}, 6; -z\right) = \frac{64\left(8 z - 87\right) J_6\left(2\sqrt{z}\right)}{z^2} - \frac{8\left(16 z^2 - 136 z - 15\right) J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = \frac{7}{2}$, $b_1 = \frac{1}{2}$

07.22.03.0247.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, \frac{1}{2}; z\right) == \left(\frac{16\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\,(4\,z + 33)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4400.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, \frac{1}{2}; -z\right) = \left(1 - \frac{16\,z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\,(4\,z - 33)\sin\left(2\sqrt{z}\right)$$

07.22.03.0248.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, 1; z\right) == \frac{1}{15}\left((44\,z + 15)\,I_0\left(2\sqrt{z}\right) + 2\sqrt{z}\,(4\,z + 23)\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4401.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, 1; -z\right) = \frac{1}{15}\left((15 - 44\,z)\,J_0\left(2\sqrt{z}\right) + 2\sqrt{z}\,(4\,z - 23)\,J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0249.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, 1; z\right) == \left(\frac{4\,z}{15} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{6}{5}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.4402.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, \frac{3}{2}; -z\right) = \left(1 - \frac{4\,z}{15}\right)\cos\left(2\sqrt{z}\right) - \frac{6}{5}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.0250.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, 2; z\right) == \frac{1}{15\sqrt{z}}\left(2\sqrt{z}\,(4\,z + 9)\,I_0\left(2\sqrt{z}\right) - (3 - 28\,z)\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4403.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, 2; -z\right) = \frac{(5 - 12\,z)\,J_1\left(2\sqrt{z}\right)}{5\sqrt{z}} + \frac{2}{15}(4\,z - 9)\,J_2\left(2\sqrt{z}\right)$$

07.22.03.0251.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, \frac{5}{2}; z\right) == \cosh\left(2\sqrt{z}\right) + \frac{2}{5}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.4404.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, \frac{5}{2}; -z\right) = \cos\left(2\sqrt{z}\right) - \frac{2}{5}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.0252.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, 3; z\right) == \frac{2}{15\,z^{3/2}}\left(3\sqrt{z}\,(4\,z + 1)\,I_0\left(2\sqrt{z}\right) - \left(-8\,z^2 + 6\,z + 3\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4405.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, 3; -z\right) = \frac{2\left((15 - 28\,z)\,J_2\left(2\sqrt{z}\right) + 2\sqrt{z}\,(4\,z - 3)\,J_3\left(2\sqrt{z}\right)\right)}{15\,z}$$

07.22.03.4406.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, \frac{7}{2}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.4407.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, \frac{7}{2}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.0253.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, 4; z\right) == \frac{2}{5\,z^{5/2}}\left(2\sqrt{z}\,\left(4\,z^2+9\,z+15\right) I_0\left(2\sqrt{z}\right) - 3\left(4\,z^2+11\,z+10\right) I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4408.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, 4; -z\right) = \frac{4\,(4\,z-5)\,J_4\left(2\sqrt{z}\right)}{5\,z} - \frac{2\,(4\,z-3)\,J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.4409.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, \frac{9}{2}; z\right) = \frac{7\left(\left(4\,z^3+30\,z^2+90\,z+45\right)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(2\,z^2+10\,z+15\right)\cosh\left(2\sqrt{z}\right)\right)}{8\,z^{7/2}}$$

07.22.03.4410.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, \frac{9}{2}; -z\right) = \frac{7\left(6\sqrt{z}\,\left(2\,z^2-10\,z+15\right)\cos\left(2\sqrt{z}\right) + \left(4\,z^3-30\,z^2+90\,z-45\right)\sin\left(2\sqrt{z}\right)\right)}{8\,z^{7/2}}$$

07.22.03.4411.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, 5; z\right) = \frac{8\left(3\,(4\,z+5)\,I_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,z+15\right) I_5\left(2\sqrt{z}\right)\right)}{5\,z^2}$$

07.22.03.4412.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, 5; -z\right) = \frac{8\left(2\sqrt{z}\,\left(4\,z-15\right) J_5\left(2\sqrt{z}\right) - 3\,(4\,z-5)\,J_4\left(2\sqrt{z}\right)\right)}{5\,z^2}$$

07.22.03.4413.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, \frac{11}{2}; z\right) = \frac{63\left(2\sqrt{z}\,\left(2\,z^3+54\,z^2+375\,z+630\right)\cosh\left(2\sqrt{z}\right) - \left(26\,z^3+330\,z^2+1215\,z+630\right)\sinh\left(2\sqrt{z}\right)\right)}{16\,z^{9/2}}$$

07.22.03.4414.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, \frac{11}{2}; -z\right) = -\frac{63\left(2\sqrt{z}\,\left(2\,z^3-54\,z^2+375\,z-630\right)\cos\left(2\sqrt{z}\right) + \left(-26\,z^3+330\,z^2-1215\,z+630\right)\sin\left(2\sqrt{z}\right)\right)}{16\,z^{9/2}}$$

07.22.03.4415.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, 6; z\right) = \frac{8\,(4\,z+15)\,I_5\left(2\sqrt{z}\right)}{z^{5/2}} + \frac{16\,(4\,z+33)\,I_6\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.4416.01

$${}_1F_2\left(\frac{7}{2}; \frac{1}{2}, 6; -z\right) = \frac{16\,(4\,z-33)\,J_6\left(2\sqrt{z}\right)}{z^2} - \frac{8\,(4\,z-15)\,J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = \frac{7}{2}$, $b_1 = 1$

07.22.03.0254.01

$${}_1F_2\left(\frac{7}{2}; 1, 1; z\right) == \frac{1}{15}\left(\left(22\,z+15\right) I_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\,\left(4\,z+23\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + 18\,z\,I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.4417.01

$${}_1F_2\left(\frac{7}{2}; 1, 1; -z\right) = \frac{1}{15}\left(\left(15-22\,z\right) J_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\,\left(4\,z-23\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + 18\,z\,J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.0255.01

$${}_1F_2\left(\frac{7}{2}; 1, \frac{3}{2}; z\right) == \left(\frac{4z}{15} + 1\right) I_0\left(2\sqrt{z}\right) + \frac{16}{15}\sqrt{z}\, I_1\left(2\sqrt{z}\right)$$

07.22.03.4418.01

$${}_1F_2\left(\frac{7}{2}; 1, \frac{3}{2}; -z\right) = \frac{1}{15}\left((15 - 4z) J_0\left(2\sqrt{z}\right) - 16\sqrt{z}\, J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.0256.01

$${}_1F_2\left(\frac{7}{2}; 1, 2; z\right) == \frac{1}{15}\left((4z + 15) I_0\left(\sqrt{z}\right)^2 + 28\sqrt{z}\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + (4z + 3) I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.4419.01

$${}_1F_2\left(\frac{7}{2}; 1, 2; -z\right) = \frac{1}{15}\left((15 - 4z) J_0\left(\sqrt{z}\right)^2 - 28\sqrt{z}\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + (4z - 3) J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.0257.01

$${}_1F_2\left(\frac{7}{2}; 1, \frac{5}{2}; z\right) == I_0\left(2\sqrt{z}\right) + \frac{2}{5}\sqrt{z}\, I_1\left(2\sqrt{z}\right)$$

07.22.03.4420.01

$${}_1F_2\left(\frac{7}{2}; 1, \frac{5}{2}; -z\right) = J_0\left(2\sqrt{z}\right) - \frac{2}{5}\sqrt{z}\, J_1\left(2\sqrt{z}\right)$$

07.22.03.0258.01

$${}_1F_2\left(\frac{7}{2}; 1, 3; z\right) == \frac{4}{15z}\left(4z\, I_0\left(\sqrt{z}\right)^2 - \sqrt{z}\,(1 - 4z) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + (2z + 1) I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.4421.01

$${}_1F_2\left(\frac{7}{2}; 1, 3; -z\right) = \frac{4\left(4z\, J_0\left(\sqrt{z}\right)^2 - \sqrt{z}\,(4z + 1) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + (1 - 2z) J_1\left(\sqrt{z}\right)^2\right)}{15z}$$

07.22.03.4422.01

$${}_1F_2\left(\frac{7}{2}; 1, \frac{7}{2}; z\right) = I_0\left(2\sqrt{z}\right)$$

07.22.03.4423.01

$${}_1F_2\left(\frac{7}{2}; 1, \frac{7}{2}; -z\right) = J_0\left(2\sqrt{z}\right)$$

07.22.03.0259.01

$${}_1F_2\left(\frac{7}{2}; 1, 4; z\right) == \frac{4}{5z^2}\left(2z(z + 1) I_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(z + 2) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(2z^2 + 5z + 8\right) I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.4424.01

$${}_1F_2\left(\frac{7}{2}; 1, 4; -z\right) = \frac{4\left(2(z - 1) z\, J_0\left(\sqrt{z}\right)^2 - 4(z - 2)\sqrt{z}\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(-2z^2 + 5z - 8\right) J_1\left(\sqrt{z}\right)^2\right)}{5z^2}$$

07.22.03.4425.01

$${}_1F_2\left(\frac{7}{2}; 1, \frac{9}{2}; z\right) =$$

$$\frac{1}{128 z^3}\left(7\left(I_1\left(2\sqrt{z}\right)\left(4\sqrt{z}\,\left(16z^2 + 100z + 225\right) - 225\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right)\right) - 5 I_0\left(2\sqrt{z}\right)\left(8z(4z + 15) - 45\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.4426.01

$${}_1F_2\left(\frac{7}{2}; 1, \frac{9}{2}; -z\right) =$$
$$\frac{1}{128\,z^3}\left(7\left(J_1\left(2\sqrt{z}\right)\left(4\sqrt{z}\,\left(16\,z^2-100\,z+225\right)-225\,\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)\right)+5\,J_0\left(2\sqrt{z}\right)\left(8\,z\,(4\,z-15)+45\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.4427.01

$${}_1F_2\left(\frac{7}{2}; 1, 5; z\right) = \frac{1}{5\,z^3}\left(16\left(-z\,(7\,z+36)\,I_0\left(\sqrt{z}\right)^2+2\sqrt{z}\,\left(2\,z^2+23\,z+72\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\left(9\,z^2+64\,z+144\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.4428.01

$${}_1F_2\left(\frac{7}{2}; 1, 5; -z\right) = \frac{1}{5\,z^3}\left(16\left(z\,(7\,z-36)\,J_0\left(\sqrt{z}\right)^2+2\sqrt{z}\,\left(2\,z^2-23\,z+72\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(-9\,z^2+64\,z-144\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.4429.01

$${}_1F_2\left(\frac{7}{2}; 1, \frac{11}{2}; z\right) = \frac{1}{1024\,z^4}\left(63\left(4\left(2\,z\left(32\,z^2+680\,z+3675\right)I_0\left(2\sqrt{z}\right)-\sqrt{z}\,\left(384\,z^2+4000\,z+11\,025\right)I_1\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.225\,\pi\,(4\,z-49)\,I_1\left(2\sqrt{z}\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+225\,\pi\,(4\,z-49)\,I_0\left(2\sqrt{z}\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4430.01

$${}_1F_2\left(\frac{7}{2}; 1, \frac{11}{2}; -z\right) =$$
$$\frac{1}{1024\,z^4}\left(63\left(-4\left(2\,z\left(32\,z^2-680\,z+3675\right)J_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(-384\,z^2+4000\,z-11\,025\right)J_1\left(2\sqrt{z}\right)\right)-225\,\pi\right.$$
$$\left.(4\,z+49)\,J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+225\,\pi\,(4\,z+49)\,J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4431.01

$${}_1F_2\left(\frac{7}{2}; 1, 6; z\right) =$$
$$\frac{1}{z^4}\left(32\left(z\left(z^2+30\,z+192\right)I_0\left(\sqrt{z}\right)^2-3\sqrt{z}\,\left(5\,z^2+72\,z+256\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(z^3+38\,z^2+312\,z+768\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.4432.01

$${}_1F_2\left(\frac{7}{2}; 1, 6; -z\right) =$$
$$-\frac{1}{z^4}\left(32\left(z\left(z^2-30\,z+192\right)J_0\left(\sqrt{z}\right)^2-3\sqrt{z}\,\left(5\,z^2-72\,z+256\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)-\left(z^3-38\,z^2+312\,z-768\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = \frac{7}{2}$, $b_1 = \frac{3}{2}$

07.22.03.0260.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, \frac{3}{2}; z\right) == \frac{7\sqrt{z}\,\cosh\left(2\sqrt{z}\right)+2\,(z+2)\sinh\left(2\sqrt{z}\right)}{15\sqrt{z}}$$

07.22.03.4433.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, \frac{3}{2}; -z\right) = \frac{7\sqrt{z}\,\cos\left(2\sqrt{z}\right)-2\,(z-2)\sin\left(2\sqrt{z}\right)}{15\sqrt{z}}$$

07.22.03.0261.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, 2; z\right) == \frac{1}{15\sqrt{z}}\left(12\sqrt{z}\, I_0\left(2\sqrt{z}\right) + (4z+3)\, I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4434.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, 2; -z\right) = \frac{(15-4z)\, J_1\left(2\sqrt{z}\right)}{15\sqrt{z}} - \frac{4}{5} J_2\left(2\sqrt{z}\right)$$

07.22.03.0262.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, \frac{5}{2}; z\right) == \frac{1}{5}\left(\cosh\left(2\sqrt{z}\right) + \frac{2}{\sqrt{z}}\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4435.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, \frac{5}{2}; -z\right) = \frac{1}{5}\left(\cos\left(2\sqrt{z}\right) + \frac{2\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.0263.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, 3; z\right) == \frac{2}{15 z^{3/2}}\left((4z+1)\, I_1\left(2\sqrt{z}\right) - \sqrt{z}\,(1-4z)\, I_0\left(2\sqrt{z}\right)\right)$$

07.22.03.4436.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, 3; -z\right) = \frac{(30-8z)\, J_2\left(2\sqrt{z}\right) - 16\sqrt{z}\, J_3\left(2\sqrt{z}\right)}{15z}$$

07.22.03.4437.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, \frac{7}{2}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.4438.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, \frac{7}{2}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.0264.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, 4; z\right) == \frac{2}{5 z^{5/2}}\left(\left(4z^2+7z+6\right) I_1\left(2\sqrt{z}\right) - 2\sqrt{z}\,(2z+3)\, I_0\left(2\sqrt{z}\right)\right)$$

07.22.03.4439.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, 4; -z\right) = \frac{(30-8z)\, J_3\left(2\sqrt{z}\right) - 8\sqrt{z}\, J_4\left(2\sqrt{z}\right)}{5 z^{3/2}}$$

07.22.03.4440.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, \frac{9}{2}; z\right) = \frac{7\left(2\sqrt{z}\,\left(2z^2+10z+15\right)\cosh\left(2\sqrt{z}\right) - 5\left(2z^2+6z+3\right)\sinh\left(2\sqrt{z}\right)\right)}{16 z^{7/2}}$$

07.22.03.4441.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, \frac{9}{2}; -z\right) = -\frac{7\left(2\sqrt{z}\,\left(2z^2-10z+15\right)\cos\left(2\sqrt{z}\right) - 5\left(2z^2-6z+3\right)\sin\left(2\sqrt{z}\right)\right)}{16 z^{7/2}}$$

07.22.03.4442.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, 5; z\right) = \frac{8\,(4\,z+15)\,I_4\left(2\sqrt{z}\right)}{5\,z^2}$$

07.22.03.4443.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, 5; -z\right) = -\frac{8\,(4\,z-15)\,J_4\left(2\sqrt{z}\right)}{5\,z^2}$$

07.22.03.4444.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, \frac{11}{2}; z\right) = \frac{63\left(\left(8\,z^3+150\,z^2+600\,z+315\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(22\,z^2+180\,z+315\right)\cosh\left(2\sqrt{z}\right)\right)}{64\,z^{9/2}}$$

07.22.03.4445.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, \frac{11}{2}; -z\right) = -\frac{63\left(2\sqrt{z}\,\left(22\,z^2-180\,z+315\right)\cos\left(2\sqrt{z}\right)+\left(8\,z^3-150\,z^2+600\,z-315\right)\sin\left(2\sqrt{z}\right)\right)}{64\,z^{9/2}}$$

07.22.03.4446.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, 6; z\right) = \frac{8\,(4\,z+15)\,I_5\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{32\,I_6\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.4447.01

$${}_1F_2\left(\frac{7}{2}; \frac{3}{2}, 6; -z\right) = \frac{32\,J_6\left(2\sqrt{z}\right)}{z^2} - \frac{8\,(4\,z-15)\,J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = \frac{7}{2}$, $b_1 = 2$

07.22.03.0265.01

$${}_1F_2\left(\frac{7}{2}; 2, 2; z\right) == \frac{2}{15\sqrt{z}}\left(6\sqrt{z}\;I_0\left(\sqrt{z}\right)^2+(4\,z+3)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+4\sqrt{z}\;I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.4448.01

$${}_1F_2\left(\frac{7}{2}; 2, 2; -z\right) = \frac{2}{15}\left(6\,J_0\left(\sqrt{z}\right)^2-\frac{(4\,z-3)\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)}{\sqrt{z}}-4\,J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.0266.01

$${}_1F_2\left(\frac{7}{2}; 2, \frac{5}{2}; z\right) == \frac{2}{5}\,I_0\left(2\sqrt{z}\right)+\frac{3}{5\sqrt{z}}\,I_1\left(2\sqrt{z}\right)$$

07.22.03.4449.01

$${}_1F_2\left(\frac{7}{2}; 2, \frac{5}{2}; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}} - \frac{2}{5}\,J_2\left(2\sqrt{z}\right)$$

07.22.03.0267.01

$${}_1F_2\left(\frac{7}{2}; 2, 3; z\right) == \frac{4}{15\,z}\left(2\,z\,I_0\left(\sqrt{z}\right)^2+4\sqrt{z}\;I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-(1-2\,z)\,I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.4450.01

$${}_1F_2\left(\frac{7}{2};\,2,\,3;\,-z\right)=\frac{8\,z\,J_0\left(\sqrt{z}\right)^2+16\,\sqrt{z}\;J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)-4\,(2\,z+1)\,J_1\left(\sqrt{z}\right)^2}{15\,z}$$

07.22.03.4451.01

$${}_1F_2\left(\frac{7}{2};\,2,\,\frac{7}{2};\,z\right)=\frac{I_1\left(2\,\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.4452.01

$${}_1F_2\left(\frac{7}{2};\,2,\,\frac{7}{2};\,-z\right)=\frac{J_1\left(2\,\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.0268.01

$${}_1F_2\left(\frac{7}{2};\,2,\,4;\,z\right)==\frac{4}{5\,z^2}\left(4\,\sqrt{z}\;(z+1)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-z\,I_0\left(\sqrt{z}\right)^2-(3\,z+4)\,I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.4453.01

$${}_1F_2\left(\frac{7}{2};\,2,\,4;\,-z\right)=\frac{4\left(z\,J_0\left(\sqrt{z}\right)^2+4\,(z-1)\,\sqrt{z}\;J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+(4-3\,z)\,J_1\left(\sqrt{z}\right)^2\right)}{5\,z^2}$$

07.22.03.4454.01

$${}_1F_2\left(\frac{7}{2};\,2,\,\frac{9}{2};\,z\right)=\frac{7\left(I_0\left(2\,\sqrt{z}\right)\left(8\,z\,(4\,z+15)-45\,\pi\,\boldsymbol{L}_1\left(2\,\sqrt{z}\right)\right)-5\,I_1\left(2\,\sqrt{z}\right)\left(4\,\sqrt{z}\;(4\,z+9)-9\,\pi\,\boldsymbol{L}_0\left(2\,\sqrt{z}\right)\right)\right)}{64\,z^3}$$

07.22.03.4455.01

$${}_1F_2\left(\frac{7}{2};\,2,\,\frac{9}{2};\,-z\right)=\frac{7\left(5\,J_1\left(2\,\sqrt{z}\right)\left(4\,\sqrt{z}\;(4\,z-9)+9\,\pi\,\boldsymbol{H}_0\left(2\,\sqrt{z}\right)\right)-J_0\left(2\,\sqrt{z}\right)\left(8\,z\,(4\,z-15)+45\,\pi\,\boldsymbol{H}_1\left(2\,\sqrt{z}\right)\right)\right)}{64\,z^3}$$

07.22.03.4456.01

$${}_1F_2\left(\frac{7}{2};\,2,\,5;\,z\right)=\frac{32\left(z\,(z+6)\,I_0\left(\sqrt{z}\right)^2-\sqrt{z}\;(7\,z+24)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(z^2+10\,z+24\right)I_1\left(\sqrt{z}\right)^2\right)}{5\,z^3}$$

07.22.03.4457.01

$${}_1F_2\left(\frac{7}{2};\,2,\,5;\,-z\right)=-\frac{32\left((z-6)\,z\,J_0\left(\sqrt{z}\right)^2+(24-7\,z)\,\sqrt{z}\;J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)-\left(z^2-10\,z+24\right)J_1\left(\sqrt{z}\right)^2\right)}{5\,z^3}$$

07.22.03.4458.01

$${}_1F_2\left(\frac{7}{2};\,2,\,\frac{11}{2};\,z\right)=$$

$$\frac{1}{512\,z^4}\left(63\left(4\,\sqrt{z}\;\left(\left(32\,z^2+520\,z+1575\right)I_1\left(2\,\sqrt{z}\right)-10\,\sqrt{z}\;(16\,z+105)\,I_0\left(2\,\sqrt{z}\right)\right)+45\,\pi\,(4\,z-35)\,I_1\left(2\,\sqrt{z}\right)\boldsymbol{L}_0\left(2\,\sqrt{z}\right)-\right.\right.$$

$$\left.\left.45\,\pi\,(4\,z-35)\,I_0\left(2\,\sqrt{z}\right)\boldsymbol{L}_1\left(2\,\sqrt{z}\right)\right)\right)$$

07.22.03.4459.01

$${}_1F_2\left(\frac{7}{2}; 2, \frac{11}{2}; -z\right) = -\frac{1}{512\, z^4}\left(63\left(4\sqrt{z}\,\left(10\sqrt{z}\,(16\,z-105)\,J_0\left(2\sqrt{z}\right)+\left(32\,z^2-520\,z+1575\right)J_1\left(2\sqrt{z}\right)\right)-45\,\pi\,(4\,z+35)\,J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+45\,\pi\,(4\,z+35)\,J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4460.01

$${}_1F_2\left(\frac{7}{2}; 2, 6; z\right) = \frac{32\left(-6\,z\,(z+8)\,I_0\left(\sqrt{z}\right)^2+2\sqrt{z}\,\left(z^2+24\,z+96\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\left(7\,z^2+72\,z+192\right)I_1\left(\sqrt{z}\right)^2\right)}{z^4}$$

07.22.03.4461.01

$${}_1F_2\left(\frac{7}{2}; 2, 6; -z\right) = -\frac{32\left(6\,(z-8)\,z\,J_0\left(\sqrt{z}\right)^2+2\sqrt{z}\,\left(z^2-24\,z+96\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(-7\,z^2+72\,z-192\right)J_1\left(\sqrt{z}\right)^2\right)}{z^4}$$

For fixed z and $a_1 = \frac{7}{2}$, $b_1 = \frac{5}{2}$

07.22.03.0269.01

$${}_1F_2\left(\frac{7}{2}; \frac{5}{2}, \frac{5}{2}; z\right) == \frac{6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)+3\,(2\,z-1)\sinh\left(2\sqrt{z}\right)}{20\,z^{3/2}}$$

07.22.03.4462.01

$${}_1F_2\left(\frac{7}{2}; \frac{5}{2}, \frac{5}{2}; -z\right) = \frac{3\left((2\,z+1)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{20\,z^{3/2}}$$

07.22.03.0270.01

$${}_1F_2\left(\frac{7}{2}; \frac{5}{2}, 3; z\right) == \frac{2}{5\,z^{3/2}}\left(\sqrt{z}\,I_0\left(2\sqrt{z}\right)-(1-2\,z)\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4463.01

$${}_1F_2\left(\frac{7}{2}; \frac{5}{2}, 3; -z\right) = \frac{2\,J_2\left(2\sqrt{z}\right)}{z}-\frac{4\,J_3\left(2\sqrt{z}\right)}{5\sqrt{z}}$$

07.22.03.4464.01

$${}_1F_2\left(\frac{7}{2}; \frac{5}{2}, \frac{7}{2}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4\,z}-\frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.4465.01

$${}_1F_2\left(\frac{7}{2}; \frac{5}{2}, \frac{7}{2}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.0271.01

$${}_1F_2\left(\frac{7}{2}; \frac{5}{2}, 4; z\right) == \frac{6}{5\,z^{5/2}}\left(2\sqrt{z}\,(z+1)\,I_0\left(2\sqrt{z}\right)-(3\,z+2)\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4466.01

$${}_1F_2\left(\frac{7}{2}; \frac{5}{2}, 4; -z\right) = \frac{6\, J_3\left(2\sqrt{z}\right)}{z^{3/2}} - \frac{12\, J_4\left(2\sqrt{z}\right)}{5\, z}$$

07.22.03.4467.01

$${}_1F_2\left(\frac{7}{2}; \frac{5}{2}, \frac{9}{2}; z\right) = \frac{21\left(\left(8\, z^2 + 30\, z + 15\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\ (2\, z + 3)\cosh\left(2\sqrt{z}\right)\right)}{64\, z^{7/2}}$$

07.22.03.4468.01

$${}_1F_2\left(\frac{7}{2}; \frac{5}{2}, \frac{9}{2}; -z\right) = -\frac{21\left(10\sqrt{z}\ (2\, z - 3)\cos\left(2\sqrt{z}\right) + \left(8\, z^2 - 30\, z + 15\right)\sin\left(2\sqrt{z}\right)\right)}{64\, z^{7/2}}$$

07.22.03.4469.01

$${}_1F_2\left(\frac{7}{2}; \frac{5}{2}, 5; z\right) = \frac{24\left(5\, I_4\left(2\sqrt{z}\right) + 2\sqrt{z}\ I_5\left(2\sqrt{z}\right)\right)}{5\, z^2}$$

07.22.03.4470.01

$${}_1F_2\left(\frac{7}{2}; \frac{5}{2}, 5; -z\right) = \frac{24\, J_4\left(2\sqrt{z}\right)}{z^2} - \frac{48\, J_5\left(2\sqrt{z}\right)}{5\, z^{3/2}}$$

07.22.03.4471.01

$${}_1F_2\left(\frac{7}{2}; \frac{5}{2}, \frac{11}{2}; z\right) = \frac{189\left(2\sqrt{z}\ \left(4\, z^2 + 55\, z + 105\right)\cosh\left(2\sqrt{z}\right) - 5\left(8\, z^2 + 39\, z + 21\right)\sinh\left(2\sqrt{z}\right)\right)}{128\, z^{9/2}}$$

07.22.03.4472.01

$${}_1F_2\left(\frac{7}{2}; \frac{5}{2}, \frac{11}{2}; -z\right) = \frac{189\left(2\sqrt{z}\ \left(4\, z^2 - 55\, z + 105\right)\cos\left(2\sqrt{z}\right) - 5\left(8\, z^2 - 39\, z + 21\right)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{9/2}}$$

07.22.03.4473.01

$${}_1F_2\left(\frac{7}{2}; \frac{5}{2}, 6; z\right) = \frac{120\, I_5\left(2\sqrt{z}\right)}{z^{5/2}} + \frac{48\, I_6\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.4474.01

$${}_1F_2\left(\frac{7}{2}; \frac{5}{2}, 6; -z\right) = \frac{120\, J_5\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{48\, J_6\left(2\sqrt{z}\right)}{z^2}$$

For fixed z and $a_1 = \frac{7}{2}$, $b_1 = 3$

07.22.03.0272.01

$${}_1F_2\left(\frac{7}{2}; 3, 3; z\right) == \frac{8}{15\, z^{3/2}}\left(\sqrt{z}\ I_0\left(\sqrt{z}\right)^2 - 2\,(1 - 2\, z)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \sqrt{z}\ I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.4475.01

$${}_1F_2\left(\frac{7}{2}; 3, 3; -z\right) = \frac{8\left(-\sqrt{z}\ J_0\left(\sqrt{z}\right)^2 + 2\,(2\, z + 1)\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) - \sqrt{z}\ J_1\left(\sqrt{z}\right)^2\right)}{15\, z^{3/2}}$$

07.22.03.4476.01

$${}_1F_2\left(\frac{7}{2}; 3, \frac{7}{2}; z\right) = \frac{2\, I_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.4477.01

$${}_1F_2\left(\frac{7}{2}; 3, \frac{7}{2}; -z\right) = \frac{2\, J_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.0273.01

$${}_1F_2\left(\frac{7}{2}; 3, 4; z\right) == \frac{16}{5\, z^2}\left(z\, I_0\left(\sqrt{z}\right)^2 - 3\sqrt{z}\; I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + (z+2)\, I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.4478.01

$${}_1F_2\left(\frac{7}{2}; 3, 4; -z\right) = -\frac{16\left(z\, J_0\left(\sqrt{z}\right)^2 - 3\sqrt{z}\; J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) - (z-2)\, J_1\left(\sqrt{z}\right)^2\right)}{5\, z^2}$$

07.22.03.4479.01

$${}_1F_2\left(\frac{7}{2}; 3, \frac{9}{2}; z\right) = \frac{7\left(I_1\left(2\sqrt{z}\right)\left(4\sqrt{z}\;(4z+15) - 15\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right)\right) + 5\, I_0\left(2\sqrt{z}\right)\left(3\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right) - 8z\right)\right)}{16\, z^3}$$

07.22.03.4480.01

$${}_1F_2\left(\frac{7}{2}; 3, \frac{9}{2}; -z\right) = \frac{7\left(5\, J_0\left(2\sqrt{z}\right)\left(3\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right) - 8z\right) - J_1\left(2\sqrt{z}\right)\left(4\sqrt{z}\;(4z-15) + 15\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right)\right)\right)}{16\, z^3}$$

07.22.03.4481.01

$${}_1F_2\left(\frac{7}{2}; 3, 5; z\right) = \frac{64\left(-3z\, I_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\;(z+6)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - 4(z+3)\, I_1\left(\sqrt{z}\right)^2\right)}{5\, z^3}$$

07.22.03.4482.01

$${}_1F_2\left(\frac{7}{2}; 3, 5; -z\right) = -\frac{64\left(3z\, J_0\left(\sqrt{z}\right)^2 + 2(z-6)\sqrt{z}\; J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) - 4(z-3)\, J_1\left(\sqrt{z}\right)^2\right)}{5\, z^3}$$

07.22.03.4483.01

$${}_1F_2\left(\frac{7}{2}; 3, \frac{11}{2}; z\right) = \frac{1}{128\, z^4}\left(63\left(4\left(2z\,(8z+105)\, I_0\left(2\sqrt{z}\right) - 5\sqrt{z}\;(16z+63)\, I_1\left(2\sqrt{z}\right)\right) + \right.\right.$$
$$\left.\left.15\pi\,(21-4z)\, I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + 15\pi\,(4z-21)\, I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4484.01

$${}_1F_2\left(\frac{7}{2}; 3, \frac{11}{2}; -z\right) =$$
$$\frac{1}{128\, z^4}\left(63\left(4\left(2z\,(8z-105)\, J_0\left(2\sqrt{z}\right) + 5\,(63-16z)\sqrt{z}\; J_1\left(2\sqrt{z}\right)\right) - 15\pi\,(4z+21)\, J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) + \right.\right.$$
$$\left.\left.15\pi\,(4z+21)\, J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4485.01

$${}_1F_2\left(\frac{7}{2}; 3, 6; z\right) = \frac{64\left(z\,(z+16)\, I_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\;(3z+16)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(z^2+20z+64\right) I_1\left(\sqrt{z}\right)^2\right)}{z^4}$$

07.22.03.4486.01

$${}_1F_2\left(\frac{7}{2}; 3, 6; -z\right) = \frac{64\left((z-16)\,z\,J_0\left(\sqrt{z}\right)^2 + 4\,(16-3\,z)\,\sqrt{z}\;J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) - \left(z^2-20\,z+64\right)J_1\left(\sqrt{z}\right)^2\right)}{z^4}$$

For fixed z and $a_1 = \frac{7}{2}$, $b_1 = \frac{7}{2}$

07.22.03.4487.01

$${}_1F_2\left(\frac{7}{2}; \frac{7}{2}, \frac{7}{2}; z\right) = \frac{15\left((4\,z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\;\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.4488.01

$${}_1F_2\left(\frac{7}{2}; \frac{7}{2}, \frac{7}{2}; -z\right) = -\frac{15\left(6\sqrt{z}\;\cos\left(2\sqrt{z}\right) + (4\,z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.4489.01

$${}_1F_2\left(\frac{7}{2}; \frac{7}{2}, 4; z\right) = \frac{6\,I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.4490.01

$${}_1F_2\left(\frac{7}{2}; \frac{7}{2}, 4; -z\right) = \frac{6\,J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.4491.01

$${}_1F_2\left(\frac{7}{2}; \frac{7}{2}, \frac{9}{2}; z\right) = \frac{105\left(2\sqrt{z}\;(4\,z+15)\cosh\left(2\sqrt{z}\right) - 3\,(8\,z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.4492.01

$${}_1F_2\left(\frac{7}{2}; \frac{7}{2}, \frac{9}{2}; -z\right) = \frac{105\left(2\sqrt{z}\;(4\,z-15)\cos\left(2\sqrt{z}\right) + 3\,(5-8\,z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.4493.01

$${}_1F_2\left(\frac{7}{2}; \frac{7}{2}, 5; z\right) = \frac{24\,I_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.4494.01

$${}_1F_2\left(\frac{7}{2}; \frac{7}{2}, 5; -z\right) = \frac{24\,J_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.4495.01

$${}_1F_2\left(\frac{7}{2}; \frac{7}{2}, \frac{11}{2}; z\right) = \frac{945\left(\left(16\,z^2+180\,z+105\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\;(8\,z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.4496.01

$${}_1F_2\left(\frac{7}{2}; \frac{7}{2}, \frac{11}{2}; -z\right) = \frac{945\left(10\sqrt{z}\;(8\,z-21)\cos\left(2\sqrt{z}\right) + \left(16\,z^2-180\,z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.4497.01

$${}_1F_2\left(\frac{7}{2}; \frac{7}{2}, 6; z\right) = \frac{120\, I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.4498.01

$${}_1F_2\left(\frac{7}{2}; \frac{7}{2}, 6; -z\right) = \frac{120\, J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = \frac{7}{2}$, $b_1 = 4$

07.22.03.0274.01

$${}_1F_2\left(\frac{7}{2}; 4, 4; z\right) == \frac{48}{5\, z^{5/2}}\left(-2\sqrt{z}\, I_0\left(\sqrt{z}\right)^2 + 2\,(z+2)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - 3\sqrt{z}\, I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.4499.01

$${}_1F_2\left(\frac{7}{2}; 4, 4; -z\right) = -\frac{48\left(2\sqrt{z}\, J_0\left(\sqrt{z}\right)^2 + 2\,(z-2)\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) - 3\sqrt{z}\, J_1\left(\sqrt{z}\right)^2\right)}{5\, z^{5/2}}$$

07.22.03.4500.01

$${}_1F_2\left(\frac{7}{2}; 4, \frac{9}{2}; z\right) = \frac{21\left(I_1\left(2\sqrt{z}\right)\left(15\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right) - 28\sqrt{z}\right) + I_0\left(2\sqrt{z}\right)\left(8z - 15\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)}{8\, z^3}$$

07.22.03.4501.01

$${}_1F_2\left(\frac{7}{2}; 4, \frac{9}{2}; -z\right) = \frac{21\left(J_1\left(2\sqrt{z}\right)\left(15\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right) - 28\sqrt{z}\right) + J_0\left(2\sqrt{z}\right)\left(8z - 15\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)}{8\, z^3}$$

07.22.03.4502.01

$${}_1F_2\left(\frac{7}{2}; 4, 5; z\right) = \frac{192\left(z\, I_0\left(\sqrt{z}\right)^2 - 8\sqrt{z}\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + (z+12)\, I_1\left(\sqrt{z}\right)^2\right)}{5\, z^3}$$

07.22.03.4503.01

$${}_1F_2\left(\frac{7}{2}; 4, 5; -z\right) = \frac{192\left(z\, J_0\left(\sqrt{z}\right)^2 - 8\sqrt{z}\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) - (z-12)\, J_1\left(\sqrt{z}\right)^2\right)}{5\, z^3}$$

07.22.03.4504.01

$${}_1F_2\left(\frac{7}{2}; 4, \frac{11}{2}; z\right) = \frac{1}{64\, z^4}\left(189\left(4\sqrt{z}\left((8z+105)\, I_1\left(2\sqrt{z}\right) - 70\sqrt{z}\, I_0\left(2\sqrt{z}\right)\right) + 15\pi\,(4z-7)\, I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) - 15\pi\,(4z-7)\, I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4505.01

$${}_1F_2\left(\frac{7}{2}; 4, \frac{11}{2}; -z\right) = \frac{1}{64\, z^4}\left(189\left(4\sqrt{z}\left(70\sqrt{z}\, J_0\left(2\sqrt{z}\right) + (8z-105)\, J_1\left(2\sqrt{z}\right)\right) + 15\pi\,(4z+7)\, J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - 15\pi\,(4z+7)\, J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4506.01

$${}_1F_2\left(\frac{7}{2}; 4, 6; z\right) = \frac{384\left(-4\,z\,I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\,(z+16)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) - 2\,(z+8)\,I_1\left(\sqrt{z}\right)^2\right)}{z^4}$$

07.22.03.4507.01

$${}_1F_2\left(\frac{7}{2}; 4, 6; -z\right) = \frac{384\left(4\,z\,J_0\left(\sqrt{z}\right)^2 + (z-16)\sqrt{z}\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) - 2\,(z-8)\,J_1\left(\sqrt{z}\right)^2\right)}{z^4}$$

For fixed z and $a_1 = \frac{7}{2}$, $b_1 = \frac{9}{2}$

07.22.03.4508.01

$${}_1F_2\left(\frac{7}{2}; \frac{9}{2}, \frac{9}{2}; z\right) = \frac{735\left(-16\sqrt{z}\,\cosh\left(2\sqrt{z}\right) + (4z+23)\sinh\left(2\sqrt{z}\right) - 15\,\mathrm{Shi}\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.4509.01

$${}_1F_2\left(\frac{7}{2}; \frac{9}{2}, \frac{9}{2}; -z\right) = \frac{735\left(16\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4z-23)\sin\left(2\sqrt{z}\right) + 15\,\mathrm{Si}\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.4510.01

$${}_1F_2\left(\frac{7}{2}; \frac{9}{2}, 5; z\right) = \frac{21\,I_1\left(2\sqrt{z}\right)\left(4z + 15\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z} + 48\right)}{z^{7/2}} - \frac{63\,I_0\left(2\sqrt{z}\right)\left(5\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right) + 16\right)}{z^3}$$

07.22.03.4511.01

$${}_1F_2\left(\frac{7}{2}; \frac{9}{2}, 5; -z\right) = \frac{21\,J_1\left(2\sqrt{z}\right)\left(4z + 15\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)\sqrt{z} - 48\right)}{z^{7/2}} - \frac{63\,J_0\left(2\sqrt{z}\right)\left(5\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right) - 16\right)}{z^3}$$

07.22.03.4512.01

$${}_1F_2\left(\frac{7}{2}; \frac{9}{2}, \frac{11}{2}; z\right) = \frac{6615\left(2\sqrt{z}\,(8z+105)\cosh\left(2\sqrt{z}\right) - (88z+105)\sinh\left(2\sqrt{z}\right) - 60\,z\,\mathrm{Shi}\left(2\sqrt{z}\right)\right)}{1024\,z^{9/2}}$$

07.22.03.4513.01

$${}_1F_2\left(\frac{7}{2}; \frac{9}{2}, \frac{11}{2}; -z\right) = -\frac{6615\left(2\sqrt{z}\,(8z-105)\cos\left(2\sqrt{z}\right) + (105-88z)\sin\left(2\sqrt{z}\right) - 60\,z\,\mathrm{Si}\left(2\sqrt{z}\right)\right)}{1024\,z^{9/2}}$$

07.22.03.4514.01

$${}_1F_2\left(\frac{7}{2}; \frac{9}{2}, 6; z\right) = \frac{210\,I_1\left(2\sqrt{z}\right)\left(5\pi\,z^{3/2}\,\boldsymbol{L}_0\left(2\sqrt{z}\right) - 8\,(z+4)\right)}{z^{9/2}} - \frac{210\,I_0\left(2\sqrt{z}\right)\left(8\,(z-4) + 5\pi\,z\,\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)}{z^4}$$

07.22.03.4515.01

$${}_1F_2\left(\frac{7}{2}; \frac{9}{2}, 6; -z\right) = \frac{210\,J_1\left(2\sqrt{z}\right)\left(5\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)z^{3/2} + 8\,(z-4)\right)}{z^{9/2}} - \frac{210\,J_0\left(2\sqrt{z}\right)\left(5\pi\,z\,\boldsymbol{H}_1\left(2\sqrt{z}\right) - 8\,(z+4)\right)}{z^4}$$

For fixed z and $a_1 = \frac{7}{2}$, $b_1 = 5$

07.22.03.4516.01

$${}_1F_2\left(\frac{7}{2}; 5, 5; z\right) = \frac{1536\left(-6\sqrt{z}\, I_0\left(\sqrt{z}\right)^2 + (z+12)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \sqrt{z}\, I_1\left(\sqrt{z}\right)^2\right)}{5\, z^{7/2}}$$

07.22.03.4517.01

$${}_1F_2\left(\frac{7}{2}; 5, 5; -z\right) = \frac{1536\left(6\sqrt{z}\, J_0\left(\sqrt{z}\right)^2 + (z-12)\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \sqrt{z}\, J_1\left(\sqrt{z}\right)^2\right)}{5\, z^{7/2}}$$

07.22.03.4518.01

$${}_1F_2\left(\frac{7}{2}; 5, \frac{11}{2}; z\right) =$$
$$-\frac{1}{8 z^4}\left(189\left(4\left(26\, z\, I_0\left(2\sqrt{z}\right) + 9\sqrt{z}\, I_1\left(2\sqrt{z}\right)\right) - 15\pi(4z+7)\, I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + 15\pi(4z+7)\, I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4519.01

$${}_1F_2\left(\frac{7}{2}; 5, \frac{11}{2}; -z\right) =$$
$$\frac{1}{8 z^4}\left(189\left(4\left(26\, z\, J_0\left(2\sqrt{z}\right) + 9\sqrt{z}\, J_1\left(2\sqrt{z}\right)\right) + 15\pi(4z-7)\, J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - 15\pi(4z-7)\, J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4520.01

$${}_1F_2\left(\frac{7}{2}; 5, 6; z\right) = -\frac{1536\left(2\, z\, I_0\left(\sqrt{z}\right)^2 + 4\sqrt{z}\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - (3z+16)\, I_1\left(\sqrt{z}\right)^2\right)}{z^4}$$

07.22.03.4521.01

$${}_1F_2\left(\frac{7}{2}; 5, 6; -z\right) = \frac{1536\left(2\, z\, J_0\left(\sqrt{z}\right)^2 + 4\sqrt{z}\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + (3z-16)\, J_1\left(\sqrt{z}\right)^2\right)}{z^4}$$

For fixed z and $a_1 = \frac{7}{2}$, $b_1 = \frac{11}{2}$

07.22.03.4522.01

$${}_1F_2\left(\frac{7}{2}; \frac{11}{2}, \frac{11}{2}; z\right) = \frac{59\,535\left(-74\sqrt{z}\, \cosh\left(2\sqrt{z}\right) + (16z+247)\sinh\left(2\sqrt{z}\right) - 30(2z+7)\,\mathrm{Shi}\left(2\sqrt{z}\right)\right)}{2048\, z^{9/2}}$$

07.22.03.4523.01

$${}_1F_2\left(\frac{7}{2}; \frac{11}{2}, \frac{11}{2}; -z\right) = -\frac{59\,535\left(74\sqrt{z}\, \cos\left(2\sqrt{z}\right) + (16z-247)\sin\left(2\sqrt{z}\right) - 30(2z-7)\,\mathrm{Si}\left(2\sqrt{z}\right)\right)}{2048\, z^{9/2}}$$

07.22.03.4524.01

$${}_1F_2\left(\frac{7}{2}; \frac{11}{2}, 6; z\right) = \frac{1}{4\, z^{9/2}}\left(945\left(4\left((7z+64)\, I_1\left(2\sqrt{z}\right) - 2\sqrt{z}\, (5z+32)\, I_0\left(2\sqrt{z}\right)\right) + \right.\right.$$
$$\left.\left. 5\pi\sqrt{z}\, (4z+21)\, I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) - 5\pi\sqrt{z}\, (4z+21)\, I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4525.01

$${}_1F_2\left(\frac{7}{2};\frac{11}{2},6;-z\right)=\frac{1}{4\,z^{9/2}}\left(945\left(4\left(2\sqrt{z}\,(5z-32)\,J_0\left(2\sqrt{z}\right)+(64-7z)\,J_1\left(2\sqrt{z}\right)\right)+5\pi\sqrt{z}\,(4z-21)\,J_1\left(2\sqrt{z}\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)-5\pi\sqrt{z}\,(4z-21)\,J_0\left(2\sqrt{z}\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1=\frac{7}{2}$, $b_1=6$

07.22.03.4526.01

$${}_1F_2\left(\frac{7}{2};6,6;z\right)=-\frac{2560\left(\sqrt{z}\,(5z+48)\,I_0\left(\sqrt{z}\right)^2-8\,(z+12)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-\sqrt{z}\,(5z+28)\,I_1\left(\sqrt{z}\right)^2\right)}{z^{9/2}}$$

07.22.03.4527.01

$${}_1F_2\left(\frac{7}{2};6,6;-z\right)=\frac{2560\left(\sqrt{z}\,(5z-48)\,J_0\left(\sqrt{z}\right)^2-8\,(z-12)\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\sqrt{z}\,(5z-28)\,J_1\left(\sqrt{z}\right)^2\right)}{z^{9/2}}$$

For fixed z and $a_1=4$, $b_1\geq-\frac{11}{2}$

For fixed z and $a_1=4$, $b_1=-\frac{11}{2}$

07.22.03.4528.01

$${}_1F_2\left(4;-\frac{11}{2},-\frac{11}{2};z\right)=\frac{1}{324\,168\,075}\left(256\pi z^3\left(8\,\boldsymbol{L}_{-17}\left(2\sqrt{z}\right)z^5+788\,\boldsymbol{L}_{-16}\left(2\sqrt{z}\right)z^{9/2}+3\left(10\,474\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^4+219\,903\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2}+2\,649\,871\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3+18\,758\,670\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+76\,808\,970\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+172\,432\,680\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+190\,418\,760\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+83\,023\,920\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+8\,139\,600\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.4529.01

$${}_1F_2\left(4;-\frac{11}{2},-\frac{11}{2};-z\right)=\frac{1}{324\,168\,075}\left(256\pi z^3\left(8\,\boldsymbol{H}_{-17}\left(2\sqrt{z}\right)z^5+788\,\boldsymbol{H}_{-16}\left(2\sqrt{z}\right)z^{9/2}+3\left(10\,474\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^4+219\,903\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2}+2\,649\,871\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3+18\,758\,670\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+76\,808\,970\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+172\,432\,680\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+190\,418\,760\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+83\,023\,920\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+8\,139\,600\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.4530.01

$${}_1F_2\left(4;-\frac{11}{2},-\frac{9}{2};z\right)=-\frac{1}{29\,469\,825}\left(128\pi z^3\left(8\,\boldsymbol{L}_{-16}\left(2\sqrt{z}\right)z^{9/2}+3\left(236\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^4+8350\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2}+153\,103\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3+1\,578\,150\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+9\,289\,770\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+30\,360\,120\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+50\,992\,200\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+37\,442\,160\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+8\,139\,600\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.4531.01

$${}_1F_2\left(4;-\frac{11}{2},-\frac{9}{2};-z\right)=$$
$$-\frac{1}{29\,469\,825}\left(128\,\pi\,z^3\left(8\,\boldsymbol{H}_{-16}\left(2\sqrt{z}\right)z^{9/2}+3\left(236\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^4+8350\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2}+153\,103\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3+\right.\right.\right.$$
$$\left.\left.\left.1\,578\,150\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+9\,289\,770\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+30\,360\,120\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+\right.\right.\right.$$
$$\left.\left.\left.50\,992\,200\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+37\,442\,160\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}\,+8\,139\,600\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.4532.01

$${}_1F_2\left(4;-\frac{11}{2},-\frac{7}{2};z\right)=\frac{1}{3\,274\,425}\left(64\,\pi\,z^3\left(8\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^4+628\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2}+\right.\right.$$
$$3\left(6466\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3+5\left(20\,275\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+7\left(24\,815\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+12\right.\right.\right.$$
$$\left.\left.\left.\left.\left.\left(9711\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+23\,731\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+26\,486\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}\,+9690\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)\right)$$

07.22.03.4533.01

$${}_1F_2\left(4;-\frac{11}{2},-\frac{7}{2};-z\right)=\frac{1}{3\,274\,425}\left(64\,\pi\,z^3\left(8\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^4+628\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2}+\right.\right.$$
$$3\left(6466\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3+5\left(20\,275\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+7\left(24\,815\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+12\right.\right.\right.$$
$$\left.\left.\left.\left.\left.\left(9711\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+23\,731\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+26\,486\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}\,+9690\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)\right)$$

07.22.03.4534.01

$${}_1F_2\left(4;-\frac{11}{2},-\frac{5}{2};z\right)=$$
$$-\frac{1}{467\,775}\left(32\,\pi\,z^3\left(8\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2}+548\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3+3\left(4822\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+62\,799\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+\right.\right.\right.$$
$$\left.\left.\left.428\,932\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+1\,505\,028\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+2\,441\,880\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}\,+1\,356\,600\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.4535.01

$${}_1F_2\left(4;-\frac{11}{2},-\frac{5}{2};-z\right)=$$
$$-\frac{1}{467\,775}\left(32\,\pi\,z^3\left(8\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2}+548\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3+3\left(4822\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+62\,799\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+\right.\right.\right.$$
$$\left.\left.\left.428\,932\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+1\,505\,028\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+2\,441\,880\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}\,+1\,356\,600\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.4536.01

$${}_1F_2\left(4;-\frac{11}{2},-\frac{3}{2};z\right)=\frac{1}{93\,555}\left(16\,\pi\,z^3\left(8\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3+3\left(156\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+3418\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+\right.\right.\right.$$
$$\left.\left.\left.7\left(5065\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+57\left(453\,z\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)+1054\sqrt{z}\;\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)+850\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)$$

07.22.03.4537.01

$${}_1F_2\left(4;-\frac{11}{2},-\frac{3}{2};-z\right)=\frac{1}{93\,555}\left(16\,\pi\,z^3\left(8\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3+3\left(156\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+3418\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+\right.\right.\right.$$
$$\left.\left.\left.7\left(5065\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+57\left(453\,z\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)+1054\sqrt{z}\;\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)+850\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)$$

07.22.03.4538.01

$${}_1F_2\left(4;-\frac{11}{2},-\frac{1}{2};z\right)=-\frac{1}{31\,185}\left(8\pi z^3\left(8\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+388\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+\right.\right.$$
$$\left.\left.21\left(322\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+2489\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+8398\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+9690\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.4539.01

$${}_1F_2\left(4;-\frac{11}{2},-\frac{1}{2};-z\right)=-\frac{1}{31\,185}\left(8\pi z^3\left(8\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+388\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+\right.\right.$$
$$\left.\left.21\left(322\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+2489\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+8398\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+9690\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.4540.01

$${}_1F_2\left(4;-\frac{11}{2},\frac{1}{2};z\right)=$$
$$\frac{1}{31\,185}\left(4\pi z^3\left(8\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+7\left(44\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+57\left(10\,z\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)+51\sqrt{z}\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)+85\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.4541.01

$${}_1F_2\left(4;-\frac{11}{2},\frac{1}{2};-z\right)=$$
$$\frac{1}{31\,185}\left(4\pi z^3\left(8\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+7\left(44\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+57\left(10\,z\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)+51\sqrt{z}\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)+85\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.4542.01

$${}_1F_2\left(4;-\frac{11}{2},1;z\right)=\frac{1}{31\,185}\left(3\left(64z^4-316z^3-6090z^2+13\,230z+10\,395\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(16z^4-372z^3+4662z^2+1890z-31\,185\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4543.01

$${}_1F_2\left(4;-\frac{11}{2},1;-z\right)=\frac{1}{31\,185}$$
$$\left(3\left(64z^4+316z^3-6090z^2-13\,230z+10\,395\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\left(16z^4+372z^3+4662z^2-1890z-31\,185\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4544.01

$${}_1F_2\left(4;-\frac{11}{2},\frac{3}{2};z\right)=$$
$$\frac{1}{31\,185}\left(128z^4+480z^3-21\,600z^2+13\,680z+4\pi\left(4z^4-111z^3+810z^2+3600z-5400\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.2\pi\left(28z^4+237z^3-6120z^2-1800z+10\,800\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)+31\,185\right)$$

07.22.03.4545.01

$${}_1F_2\left(4;-\frac{11}{2},\frac{3}{2};-z\right)=$$
$$\frac{1}{31\,185}\left(128z^4-480z^3-21\,600z^2-13\,680z-4\pi\left(4z^4+111z^3+810z^2-3600z-5400\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)\sqrt{z}-\right.$$
$$\left.2\pi\left(28z^4-237z^3-6120z^2+1800z+10\,800\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)+31\,185\right)$$

07.22.03.4546.01

$${}_1F_2\left(4; -\frac{11}{2}, 2; z\right) =$$
$$\frac{1}{31\,185}\left(\left(32\,z^4 - 888\,z^3 + 210\,z^2 + 51\,030\,z + 31\,185\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^3 + 1302\,z^2 - 9450\,z - 31\,185\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4547.01

$${}_1F_2\left(4; -\frac{11}{2}, 2; -z\right) =$$
$$\frac{1}{31\,185}\left(\left(32\,z^4 + 888\,z^3 + 210\,z^2 - 51\,030\,z + 31\,185\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^3 - 1302\,z^2 - 9450\,z + 31\,185\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4548.01

$${}_1F_2\left(4; -\frac{11}{2}, \frac{5}{2}; z\right) = \frac{1}{10\,395\sqrt{z}}\left(\pi\sqrt{z}\,\left(8\,z^4 - 174\,z^3 - 1035\,z^2 + 7920\,z + 7560\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) -\right.$$
$$\left.3\left(\pi\left(4\,z^4 - 295\,z^3 + 120\,z^2 + 6120\,z + 5040\right)\boldsymbol{L}_2\left(2\sqrt{z}\right) - 7\sqrt{z}\,\left(40\,z^3 - 160\,z^2 - 336\,z + 495\right)\right)\right)$$

07.22.03.4549.01

$${}_1F_2\left(4; -\frac{11}{2}, \frac{5}{2}; -z\right) = \frac{1}{10\,395\sqrt{z}}\left(\pi\sqrt{z}\,\left(-8\,z^4 - 174\,z^3 + 1035\,z^2 + 7920\,z - 7560\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) +\right.$$
$$\left.3\left(\pi\left(4\,z^4 + 295\,z^3 + 120\,z^2 - 6120\,z + 5040\right)\boldsymbol{H}_2\left(2\sqrt{z}\right) - 7\sqrt{z}\,\left(40\,z^3 + 160\,z^2 - 336\,z - 495\right)\right)\right)$$

07.22.03.4550.01

$${}_1F_2\left(4; -\frac{11}{2}, 3; z\right) = \left(-\frac{32\,z^3}{3465} + \frac{64\,z^2}{297} + \frac{58\,z}{33} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(32\,z^3 - 168\,z^2 - 13\,230\,z - 31\,185\right)\sinh\left(2\sqrt{z}\right)}{31\,185}$$

07.22.03.4551.01

$${}_1F_2\left(4; -\frac{11}{2}, 3; -z\right) = \left(\frac{32\,z^3}{3465} + \frac{64\,z^2}{297} - \frac{58\,z}{33} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(32\,z^3 + 168\,z^2 - 13\,230\,z + 31\,185\right)\sin\left(2\sqrt{z}\right)}{31\,185}$$

07.22.03.4552.01

$${}_1F_2\left(4; -\frac{11}{2}, \frac{7}{2}; z\right) = \frac{1}{62\,370\,z}$$
$$\left(2\,z\left(-128\,z^4 + 1872\,z^3 + 8160\,z^2 + 16\,560\,z + 31\,185\right) + 30\,\pi\sqrt{z}\,\left(4\,z^4 + 17\,z^3 - 1017\,z^2 - 3780\,z - 10\,080\right)\boldsymbol{L}_2\left(2\sqrt{z}\right) -\right.$$
$$\left.15\,\pi\left(52\,z^4 - 333\,z^3 - 7740\,z^2 - 27\,720\,z - 60\,480\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.4553.01

$${}_1F_2\left(4; -\frac{11}{2}, \frac{7}{2}; -z\right) = \frac{1}{62\,370\,z}$$
$$\left(-2\,z\left(128\,z^4 + 1872\,z^3 - 8160\,z^2 + 16\,560\,z - 31\,185\right) - 30\,\pi\sqrt{z}\,\left(4\,z^4 - 17\,z^3 - 1017\,z^2 + 3780\,z - 10\,080\right)\boldsymbol{H}_2\left(2\sqrt{z}\right) +\right.$$
$$\left.15\,\pi\left(52\,z^4 + 333\,z^3 - 7740\,z^2 + 27\,720\,z - 60\,480\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.4554.01

$${}_1F_2\left(4; -\frac{11}{2}, 4; z\right) = \left(\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} + \frac{20\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\,\left(16\,z^2 + 240\,z + 495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4555.01

$${}_1F_2\left(4;-\frac{11}{2},4;-z\right)=\left(-\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}-\frac{20\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\,\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4556.01

$${}_1F_2\left(4;-\frac{11}{2},\frac{9}{2};z\right)=$$
$$\frac{1}{124\,740\,z^{3/2}}\left(-4\left(256\,z^4+3384\,z^3+36\,960\,z^2+206\,640\,z-31\,185\right)z^{3/2}+105\,\pi\left(8\,z^4+402\,z^3+5103\,z^2+50\,400\,z+226\,800\right)\right.$$
$$\left.\boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z}-105\,\pi\left(92\,z^4+2379\,z^3+28\,980\,z^2+246\,960\,z+907\,200\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.4557.01

$${}_1F_2\left(4;-\frac{11}{2},\frac{9}{2};-z\right)=$$
$$\frac{1}{124\,740\,z^{3/2}}\left(4\left(-256\,z^4+3384\,z^3-36\,960\,z^2+206\,640\,z+31\,185\right)z^{3/2}-105\,\pi\left(8\,z^4-402\,z^3+5103\,z^2-50\,400\,z+226\,800\right)\right.$$
$$\left.\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z}+105\,\pi\left(92\,z^4-2379\,z^3+28\,980\,z^2-246\,960\,z+907\,200\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.4558.01

$${}_1F_2\left(4;-\frac{11}{2},5;z\right)=\frac{1}{20\,790\,z^4}$$
$$\left(-\left(8704\,z^6+515\,712\,z^5+12\,450\,240\,z^4+174\,594\,420\,z^3+1\,309\,458\,150\,z^2+3\,928\,374\,450\,z+1\,964\,187\,225\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$2\sqrt{z}\,\left(256\,z^6+39\,552\,z^5+1\,364\,880\,z^4+24\,942\,060\,z^3+261\,891\,630\,z^2+1\,309\,458\,150\,z+1\,964\,187\,225\right)$$
$$\left.\sinh\left(2\sqrt{z}\right)+1\,964\,187\,225\right)$$

07.22.03.4559.01

$${}_1F_2\left(4;-\frac{11}{2},5;-z\right)=\frac{1}{20\,790\,z^4}$$
$$\left(\left(-8704\,z^6+515\,712\,z^5-12\,450\,240\,z^4+174\,594\,420\,z^3-1\,309\,458\,150\,z^2+3\,928\,374\,450\,z-1\,964\,187\,225\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$2\sqrt{z}\,\left(256\,z^6-39\,552\,z^5+1\,364\,880\,z^4-24\,942\,060\,z^3+261\,891\,630\,z^2-1\,309\,458\,150\,z+1\,964\,187\,225\right)\sin\left(2\sqrt{z}\right)+$$
$$\left.1\,964\,187\,225\right)$$

07.22.03.4560.01

$${}_1F_2\left(4;-\frac{11}{2},\frac{11}{2};z\right)=$$
$$\frac{1}{83\,160\,z^2}\left(-8\left(128\,z^4+5056\,z^3+97\,440\,z^2+771\,120\,z-10\,395\right)z^2+630\,\pi\left(4\,z^4+465\,z^3+14\,868\,z^2+241\,920\,z+1\,587\,600\right)\right.$$
$$\left.\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}-945\,\pi\left(44\,z^4+2737\,z^3+72\,240\,z^2+982\,800\,z+5\,292\,000\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.4561.01

$${}_1F_2\left(4;-\frac{11}{2},\frac{11}{2};-z\right)=$$
$$\frac{1}{83\,160\,z^2}\left(8\left(-128\,z^4+5056\,z^3-97\,440\,z^2+771\,120\,z+10\,395\right)z^2-630\,\pi\left(4\,z^4-465\,z^3+14\,868\,z^2-241\,920\,z+1\,587\,600\right)\right.$$
$$\left.\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}+945\,\pi\left(44\,z^4-2737\,z^3+72\,240\,z^2-982\,800\,z+5\,292\,000\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.4562.01

$${}_1F_2\left(4; -\frac{11}{2}, 6; z\right) =$$
$$\frac{1}{4158\,z^5}\left(\left(512\,z^7 + 158\,976\,z^6 + 10\,812\,384\,z^5 + 349\,188\,840\,z^4 + 6\,023\,507\,490\,z^3 + 51\,068\,867\,850\,z^2 + 163\,027\,539\,675\,z + 82\,495\,863\,450\right)\cosh\left(2\sqrt{z}\right) - 3\left(2\sqrt{z}\,\left(2048\,z^6 + 244\,928\,z^5 + 11\,085\,360\,z^4 + 261\,891\,630\,z^3 + 3\,229\,996\,770\,z^2 + 17\,677\,685\,025\,z + 27\,498\,621\,150\right)\sinh\left(2\sqrt{z}\right) - 654\,729\,075\,(z-42)\right)\right)$$

07.22.03.4563.01

$${}_1F_2\left(4; -\frac{11}{2}, 6; -z\right) =$$
$$\frac{1}{4158\,z^5}\left(\left(512\,z^7 - 158\,976\,z^6 + 10\,812\,384\,z^5 - 349\,188\,840\,z^4 + 6\,023\,507\,490\,z^3 - 51\,068\,867\,850\,z^2 + 163\,027\,539\,675\,z - 82\,495\,863\,450\right)\cos\left(2\sqrt{z}\right) - 3\left(2\sqrt{z}\,\left(2048\,z^6 - 244\,928\,z^5 + 11\,085\,360\,z^4 - 261\,891\,630\,z^3 + 3\,229\,996\,770\,z^2 - 17\,677\,685\,025\,z + 27\,498\,621\,150\right)\sin\left(2\sqrt{z}\right) - 654\,729\,075\,(z+42)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = -\frac{9}{2}$

07.22.03.4564.01

$${}_1F_2\left(4; -\frac{9}{2}, -\frac{9}{2}; z\right) =$$
$$\frac{1}{2\,679\,075}\left(64\,\pi\,z^{5/2}\left(8\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^{9/2} + 3\left(212\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^4 + 6654\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 5\left(21\,305\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^3 + 6\left(31\,300\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 153\,159\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^2 + 399\,368\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 501\,636\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z + 244\,800\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 26\,520\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)$$

07.22.03.4565.01

$${}_1F_2\left(4; -\frac{9}{2}, -\frac{9}{2}; -z\right) =$$
$$\frac{1}{2\,679\,075}\left(64\,\pi\,z^{5/2}\left(8\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^{9/2} + 3\left(212\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^4 + 6654\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 5\left(21\,305\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^3 + 6\left(31\,300\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 153\,159\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^2 + 399\,368\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 501\,636\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z + 244\,800\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 26\,520\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)$$

07.22.03.4566.01

$${}_1F_2\left(4; -\frac{9}{2}, -\frac{7}{2}; z\right) = -\frac{1}{297\,675}\left(32\,\pi\,z^{5/2}\left(8\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^4 + 3\left(188\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 5\left(1030\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^3 + 14\,095\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 103\,230\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^2 + 402\,804\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 784\,992\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z + 654\,840\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 159\,120\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)$$

07.22.03.4567.01

$${}_1F_2\left(4; -\frac{9}{2}, -\frac{7}{2}; -z\right) = -\frac{1}{297\,675}\left(32\,\pi\, z^{5/2}\left(8\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right) z^4 + 3\left(188\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right) z^{7/2} + 5\left(1030\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right) z^3 + 14\,095\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^{5/2} + 103\,230\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^2 + 402\,804\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 784\,992\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z + 654\,840\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 159\,120\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.4568.01

$${}_1F_2\left(4; -\frac{9}{2}, -\frac{5}{2}; z\right) = \frac{1}{42\,525}\left(16\,\pi\, z^{5/2}\left(8\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right) z^{7/2} + 3\left(164\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right) z^3 + 3838\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^{5/2} + 43\,609\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^2 + 254\,496\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 741\,540\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z + 958\,800\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 397\,800\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.4569.01

$${}_1F_2\left(4; -\frac{9}{2}, -\frac{5}{2}; -z\right) = \frac{1}{42\,525}\left(16\,\pi\, z^{5/2}\left(8\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right) z^{7/2} + 3\left(164\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right) z^3 + 3838\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^{5/2} + 43\,609\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^2 + 254\,496\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 741\,540\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z + 958\,800\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 397\,800\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.4570.01

$${}_1F_2\left(4; -\frac{9}{2}, -\frac{3}{2}; z\right) = -\frac{1}{8505}\left(8\,\pi\, z^{5/2}\left(8\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right) z^3 + 420\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^{5/2} + 8154\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^2 + 73\,749\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 320\,994\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z + 619\,650\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 397\,800\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4571.01

$${}_1F_2\left(4; -\frac{9}{2}, -\frac{3}{2}; -z\right) = -\frac{1}{8505}\left(8\,\pi\, z^{5/2}\left(8\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right) z^3 + 420\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^{5/2} + 8154\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^2 + 73\,749\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 320\,994\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z + 619\,650\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 397\,800\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4572.01

$${}_1F_2\left(4; -\frac{9}{2}, -\frac{1}{2}; z\right) = \frac{1}{2835}\left(4\,\pi\left(8\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^5 + 3\left(116\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^2 + 1790\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 12\,053\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z + 34\,680\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 33\,150\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right) z^{5/2}\right)\right)$$

07.22.03.4573.01

$${}_1F_2\left(4; -\frac{9}{2}, -\frac{1}{2}; -z\right) = \frac{1}{2835}\left(4\,\pi\left(8\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^5 + 3\left(116\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^2 + 1790\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^{3/2} + 12\,053\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z + 34\,680\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 33\,150\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right) z^{5/2}\right)\right)$$

07.22.03.4574.01

$${}_1F_2\left(4;-\frac{9}{2},\frac{1}{2};z\right)=$$
$$-\frac{1}{2835}\left(2\pi z^{5/2}\left(8\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^2+3\left(92\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{3/2}+17\left(62\,z\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)+275\sqrt{z}\;\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)+390\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.4575.01

$${}_1F_2\left(4;-\frac{9}{2},\frac{1}{2};-z\right)=$$
$$-\frac{1}{2835}\left(2\pi z^{5/2}\left(8\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^2+3\left(92\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{3/2}+17\left(62\,z\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)+275\sqrt{z}\;\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)+390\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.4576.01

$${}_1F_2\left(4;-\frac{9}{2},1;z\right)=\left(-\frac{16z^4}{2835}+\frac{44z^3}{945}-\frac{50z^2}{63}+\frac{10z}{9}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\left(-20z^3+134z^2+210z-945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4577.01

$${}_1F_2\left(4;-\frac{9}{2},1;-z\right)=$$
$$\frac{1}{2835}\left(6\sqrt{z}\left(-20z^3-134z^2+210z+945\right)\sin\left(2\sqrt{z}\right)-\left(16z^4+132z^3+2250z^2+3150z-2835\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.4578.01

$${}_1F_2\left(4;-\frac{9}{2},\frac{3}{2};z\right)=\frac{1}{2835}\left(-16z^4+228z^3-2160z^2+720z+\right.$$
$$\left.\pi\left(-44z^3+165z^2+1620z-1800\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z}+\pi\left(-8z^4+134z^3-1125z^2-720z+1800\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)+2835\right)$$

07.22.03.4579.01

$${}_1F_2\left(4;-\frac{9}{2},\frac{3}{2};-z\right)=\frac{1}{2835}\left(-16z^4-228z^3-2160z^2-720z+\right.$$
$$\left.\pi\left(-44z^3-165z^2+1620z+1800\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)\sqrt{z}+\pi\left(8z^4+134z^3+1125z^2-720z-1800\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)+2835\right)$$

07.22.03.4580.01

$${}_1F_2\left(4;-\frac{9}{2},2;z\right)=\left(-\frac{16z^3}{945}-\frac{22z^2}{189}+\frac{14z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(8z^3-162z^2+630z+2835\right)\sinh\left(2\sqrt{z}\right)}{2835}$$

07.22.03.4581.01

$${}_1F_2\left(4;-\frac{9}{2},2;-z\right)=\frac{3\left(16z^3-110z^2-1470z+945\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\left(8z^3+162z^2+630z-2835\right)\sin\left(2\sqrt{z}\right)}{2835}$$

07.22.03.4582.01

$${}_1F_2\left(4;-\frac{9}{2},\frac{5}{2};z\right)=\frac{1}{5670\sqrt{z}}\left(-9\pi\sqrt{z}\left(4z^3+95z^2-420z-360\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)-\right.$$
$$\left.2\left(\sqrt{z}\left(16z^4-276z^3+720z^2+1872z-2835\right)+3\pi\left(4z^4-75z^3-90z^2+1440z+1080\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4583.01

$${}_1F_2\left(4;-\frac{9}{2},\frac{5}{2};-z\right)=\frac{1}{5670\sqrt{z}}\left(-2\sqrt{z}\left(16z^4+276z^3+720z^2-1872z-2835\right)-\right.$$
$$\left.9\pi\sqrt{z}\left(4z^3-95z^2-420z+360\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)+6\pi\left(4z^4+75z^3-90z^2-1440z+1080\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.4584.01

$${}_1F_2\left(4;-\frac{9}{2},3;z\right)=\left(-\frac{32z^3}{2835}+\frac{8z^2}{63}+\frac{46z}{27}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(32z^2-1050z-2835\right)\sinh\left(2\sqrt{z}\right)}{2835}$$

07.22.03.4585.01

$${}_1F_2\left(4;-\frac{9}{2},3;-z\right)=\left(\frac{32z^3}{2835}+\frac{8z^2}{63}-\frac{46z}{27}+1\right)\cos\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(32z^2+1050z-2835\right)\sin\left(2\sqrt{z}\right)}{2835}$$

07.22.03.4586.01

$${}_1F_2\left(4;-\frac{9}{2},\frac{7}{2};z\right)=\frac{1}{11\,340z}\left(4z\left(-16z^4+132z^3+600z^2+720z+2835\right)+\right.$$
$$\left.15\pi\sqrt{z}\left(20z^3-303z^2-990z-2520\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)-15\pi\left(8z^4-6z^3-1125z^2-3600z-7560\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.4587.01

$${}_1F_2\left(4;-\frac{9}{2},\frac{7}{2};-z\right)=\frac{1}{11\,340z}\left(-4z\left(16z^4+132z^3-600z^2+720z-2835\right)+\right.$$
$$\left.15\pi\sqrt{z}\left(20z^3+303z^2-990z+2520\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)+15\pi\left(8z^4+6z^3-1125z^2+3600z-7560\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.4588.01

$${}_1F_2\left(4;-\frac{9}{2},4;z\right)=\left(\frac{16z^2}{63}+\frac{16z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{945}\sqrt{z}\left(16z^2+420z+945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4589.01

$${}_1F_2\left(4;-\frac{9}{2},4;-z\right)=\left(\frac{16z^2}{63}-\frac{16z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\left(16z^2-420z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4590.01

$${}_1F_2\left(4;-\frac{9}{2},\frac{9}{2};z\right)=\frac{1}{22\,680z^{3/2}}\left(105\pi\sqrt{z}\left(52z^3+591z^2+5670z+25\,200\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)-\right.$$
$$\left.2\left(4\left(16z^4+204z^3+2040z^2+11\,760z-2835\right)z^{3/2}+105\pi\left(4z^4+149z^3+1665z^2+13\,860z+50\,400\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4591.01

$${}_1F_2\left(4;-\frac{9}{2},\frac{9}{2};-z\right)=\frac{1}{22\,680z^{3/2}}\left(105\pi\sqrt{z}\left(52z^3-591z^2+5670z-25\,200\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)+\right.$$
$$\left.2\left(4\left(-16z^4+204z^3-2040z^2+11\,760z+2835\right)z^{3/2}+105\pi\left(4z^4-149z^3+1665z^2-13\,860z+50\,400\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4592.01

$${}_1F_2\left(4;-\frac{9}{2},5;z\right)=$$
$$\frac{1}{1890z^4}\left(3\left(2\sqrt{z}\left(576z^5+23\,680z^4+437\,580z^3+4\,594\,590z^2+22\,972\,950z+34\,459\,425\right)\sinh\left(2\sqrt{z}\right)+34\,459\,425\right)-\right.$$
$$\left.\left(256z^6+25\,728z^5+654\,480z^4+9\,189\,180z^3+68\,918\,850z^2+206\,756\,550z+103\,378\,275\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.4593.01

$${}_1F_2\left(4; -\frac{9}{2}, 5; -z\right) =$$
$$\frac{1}{1890\,z^4}\left(\left(-256\,z^6+25\,728\,z^5-654\,480\,z^4+9\,189\,180\,z^3-68\,918\,850\,z^2+206\,756\,550\,z-103\,378\,275\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.3\left(2\sqrt{z}\,\left(576\,z^5-23\,680\,z^4+437\,580\,z^3-4\,594\,590\,z^2+22\,972\,950\,z-34\,459\,425\right)\sin\left(2\sqrt{z}\right)+34\,459\,425\right)\right)$$

07.22.03.4594.01

$${}_1F_2\left(4; -\frac{9}{2}, \frac{11}{2}; z\right) =$$
$$\frac{1}{45\,360\,z^2}\left(-16\left(16\,z^4+732\,z^3+14\,400\,z^2+115\,920\,z-2835\right)z^2+19\,845\,\pi\left(4\,z^3+137\,z^2+2280\,z+15\,120\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}\,-\right.$$
$$\left.945\,\pi\left(8\,z^4+762\,z^3+21\,105\,z^2+292\,320\,z+1\,587\,600\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.4595.01

$${}_1F_2\left(4; -\frac{9}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{45\,360\,z^2}\left(-16\left(16\,z^4-732\,z^3+14\,400\,z^2-115\,920\,z-2835\right)z^2+19\,845\,\pi\left(4\,z^3-137\,z^2+2280\,z-15\,120\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}\,+\right.$$
$$\left.945\,\pi\left(8\,z^4-762\,z^3+21\,105\,z^2-292\,320\,z+1\,587\,600\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.4596.01

$${}_1F_2\left(4; -\frac{9}{2}, 6; z\right) =$$
$$\frac{1}{378\,z^5}\left(103\,378\,275\,(z-38)+\left(5120\,z^6+452\,544\,z^5+15\,752\,880\,z^4+280\,269\,990\,z^3+2\,412\,159\,750\,z^2+7\,753\,370\,625\,z+\right.\right.$$
$$\left.\left.3\,928\,374\,450\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\,\left(128\,z^6+28\,224\,z^5+1\,458\,600\,z^4+36\,100\,350\,z^3+454\,864\,410\,z^2+2\,515\,538\,025\,z+3\,928\,374\,450\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4597.01

$${}_1F_2\left(4; -\frac{9}{2}, 6; -z\right) =$$
$$\frac{1}{378\,z^5}\left(103\,378\,275\,(z+38)+\left(-5120\,z^6+452\,544\,z^5-15\,752\,880\,z^4+280\,269\,990\,z^3-2\,412\,159\,750\,z^2+\right.\right.$$
$$\left.\left.7\,753\,370\,625\,z-3\,928\,374\,450\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\,\left(128\,z^6-28\,224\,z^5+1\,458\,600\,z^4-36\,100\,350\,z^3+454\,864\,410\,z^2-2\,515\,538\,025\,z+3\,928\,374\,450\right)\sin\left(2\sqrt{z}\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = -\frac{7}{2}$

07.22.03.4598.01

$${}_1F_2\left(4; -\frac{7}{2}, -\frac{7}{2}; z\right) = \frac{1}{33\,075}$$
$$\left(16\,\pi\,z^2\left(8\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^4+5\left(100\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{7/2}+2390\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^3+9\left(3105\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{5/2}+18\,885\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)\right.\right.\right.\right.$$
$$\left.\left.\left.\left.z^2+58\,728\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{3/2}+85\,480\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z+47\,320\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z}\,+5720\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.4599.01

$$ {}_1F_2\left(4; -\frac{7}{2}, -\frac{7}{2}; -z\right) = \frac{1}{33\,075} \left(16\,\pi\, z^2 \left(8\, \boldsymbol{H}_{-13}\left(2\sqrt{z}\right) z^4 + 5\left(100\, \boldsymbol{H}_{-12}\left(2\sqrt{z}\right) z^{7/2} + 2390\, \boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^3 + 9\left(3105\, \boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^{5/2} + 18\,885\, \boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^2 + 58\,728\, \boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z^{3/2} + 85\,480\, \boldsymbol{H}_{-7}\left(2\sqrt{z}\right) z + 47\,320\, \boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 5720\, \boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right) $$

07.22.03.4600.01

$$ {}_1F_2\left(4; -\frac{7}{2}, -\frac{5}{2}; z\right) = -\frac{1}{4725} \left(8\,\pi\, z^2 \left(8\, \boldsymbol{L}_{-12}\left(2\sqrt{z}\right) z^{7/2} + 436\, \boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^3 + 8898\, \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^{5/2} + 86\,337\, \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^2 + 418\,140\, \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z^{3/2} + 970\,200\, \boldsymbol{L}_{-7}\left(2\sqrt{z}\right) z + 936\,000\, \boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 257\,400\, \boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.4601.01

$$ {}_1F_2\left(4; -\frac{7}{2}, -\frac{5}{2}; -z\right) = -\frac{1}{4725} \left(8\,\pi\, z^2 \left(8\, \boldsymbol{H}_{-12}\left(2\sqrt{z}\right) z^{7/2} + 436\, \boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^3 + 8898\, \boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^{5/2} + 86\,337\, \boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^2 + 418\,140\, \boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z^{3/2} + 970\,200\, \boldsymbol{H}_{-7}\left(2\sqrt{z}\right) z + 936\,000\, \boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 257\,400\, \boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.4602.01

$$ {}_1F_2\left(4; -\frac{7}{2}, -\frac{3}{2}; z\right) = \frac{4}{945}\,\pi\, z^2 \left(8\, \boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^3 + 3\left(124\, \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^{5/2} + 2098\, \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^2 + 16\,191\, \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z^{3/2} + 58\,425\, \boldsymbol{L}_{-7}\left(2\sqrt{z}\right) z + 89\,700\, \boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 42\,900\, \boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.4603.01

$$ {}_1F_2\left(4; -\frac{7}{2}, -\frac{3}{2}; -z\right) = \frac{4}{945}\,\pi\, z^2 \left(8\, \boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^3 + 3\left(124\, \boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^{5/2} + 2098\, \boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^2 + 16\,191\, \boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z^{3/2} + 58\,425\, \boldsymbol{H}_{-7}\left(2\sqrt{z}\right) z + 89\,700\, \boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 42\,900\, \boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.4604.01

$$ {}_1F_2\left(4; -\frac{7}{2}, -\frac{1}{2}; z\right) = -\frac{2}{315}\,\pi\, z^2 \left(8\, \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^{5/2} + 308\, \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^2 + 4138\, \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z^{3/2} + 23\,745\, \boldsymbol{L}_{-7}\left(2\sqrt{z}\right) z + 56\,550\, \boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 42\,900\, \boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right) $$

07.22.03.4605.01

$$ {}_1F_2\left(4; -\frac{7}{2}, -\frac{1}{2}; -z\right) = -\frac{2}{315}\,\pi\, z^2 \left(8\, \boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^{5/2} + 308\, \boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^2 + 4138\, \boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z^{3/2} + 23\,745\, \boldsymbol{H}_{-7}\left(2\sqrt{z}\right) z + 56\,550\, \boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 42\,900\, \boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right) $$

07.22.03.4606.01

$${}_1F_2\left(4; -\frac{7}{2}, \frac{1}{2}; z\right) =$$
$$\frac{1}{315}\pi z^2\left(8\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^2 + 244\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 15\left(162\,z\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right) + 611\sqrt{z}\;\boldsymbol{L}_{-6}\left(2\sqrt{z}\right) + 715\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4607.01

$${}_1F_2\left(4; -\frac{7}{2}, \frac{1}{2}; -z\right) =$$
$$\frac{1}{315}\pi z^2\left(8\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^2 + 244\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 15\left(162\,z\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right) + 611\sqrt{z}\;\boldsymbol{H}_{-6}\left(2\sqrt{z}\right) + 715\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4608.01

$${}_1F_2\left(4; -\frac{7}{2}, 1; z\right) = \frac{1}{315}\left(\left(68z^3 - 330z^2 + 270z + 315\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(4z^3 + 18z^2 + 150z - 315\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4609.01

$${}_1F_2\left(4; -\frac{7}{2}, 1; -z\right) = \frac{1}{315}\left(2\sqrt{z}\,\left(4z^3 - 18z^2 + 150z + 315\right)\sin\left(2\sqrt{z}\right) - \left(68z^3 + 330z^2 + 270z - 315\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.4610.01

$${}_1F_2\left(4; -\frac{7}{2}, \frac{3}{2}; z\right) =$$
$$\frac{1}{630}\left(14\left(8z^3 - 36z^2 + 45\right) + 2\pi\sqrt{z}\,\left(4z^3 - 15z^2 + 225z - 180\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(52z^3 - 225z^2 - 270z + 360\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4611.01

$${}_1F_2\left(4; -\frac{7}{2}, \frac{3}{2}; -z\right) =$$
$$\frac{1}{630}\left(-14\left(8z^3 + 36z^2 - 45\right) + 2\pi\sqrt{z}\,\left(4z^3 + 15z^2 + 225z + 180\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) + \pi\left(52z^3 + 225z^2 - 270z - 360\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4612.01

$${}_1F_2\left(4; -\frac{7}{2}, 2; z\right) = \left(\frac{8z^3}{315} - \frac{2z^2}{7} + \frac{10z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{105}\sqrt{z}\,\left(6z^2 - 10z - 105\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4613.01

$${}_1F_2\left(4; -\frac{7}{2}, 2; -z\right) = \frac{1}{315}\left(-\left(8z^3 + 90z^2 + 450z - 315\right)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(6z^2 + 10z - 105\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4614.01

$${}_1F_2\left(4; -\frac{7}{2}, \frac{5}{2}; z\right) = \frac{1}{1260\sqrt{z}}\left(4\sqrt{z}\,\left(32z^3 - 48z^2 - 216z + 315\right) +\right.$$
$$\left.6\pi\sqrt{z}\,\left(4z^3 - 45z^2 + 120z + 90\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) + 15\pi\left(4z^3 + 21z^2 - 108z - 72\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.4615.01

$${}_1F_2\left(4; -\frac{7}{2}, \frac{5}{2}; -z\right) = \frac{1}{1260\sqrt{z}}\left(4\sqrt{z}\,\left(-32z^3 - 48z^2 + 216z + 315\right) +\right.$$
$$\left.6\pi\sqrt{z}\,\left(4z^3 + 45z^2 + 120z - 90\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 15\pi\left(4z^3 - 21z^2 - 108z + 72\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.4616.01

$${}_1F_2\left(4; -\frac{7}{2}, 3; z\right) = \left(\frac{34\,z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{315}\sqrt{z}\left(8\,z^2 - 90\,z - 315\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4617.01

$${}_1F_2\left(4; -\frac{7}{2}, 3; -z\right) = \left(1 - \frac{34\,z}{21}\right)\cos\left(2\sqrt{z}\right) - \frac{2}{315}\sqrt{z}\left(8\,z^2 + 90\,z - 315\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4618.01

$${}_1F_2\left(4; -\frac{7}{2}, \frac{7}{2}; z\right) =$$
$$\frac{1}{2520\,z}\left(8\,z\left(8\,z^3 + 60\,z^2 + 315\right) + 30\,\pi\sqrt{z}\left(4\,z^3 - 27\,z^2 - 75\,z - 180\right)\boldsymbol{L}_2\left(2\sqrt{z}\right) - 45\,\pi\left(4\,z^3 - 65\,z^2 - 180\,z - 360\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.4619.01

$${}_1F_2\left(4; -\frac{7}{2}, \frac{7}{2}; -z\right) = \frac{1}{2520\,z}$$
$$\left(8\,z\left(-8\,z^3 + 60\,z^2 + 315\right) + 30\,\pi\sqrt{z}\left(4\,z^3 + 27\,z^2 - 75\,z + 180\right)\boldsymbol{H}_2\left(2\sqrt{z}\right) - 45\,\pi\left(4\,z^3 + 65\,z^2 - 180\,z + 360\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.4620.01

$${}_1F_2\left(4; -\frac{7}{2}, 4; z\right) = \left(\frac{16\,z^2}{105} + \frac{12\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,(8\,z + 21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4621.01

$${}_1F_2\left(4; -\frac{7}{2}, 4; -z\right) = \left(\frac{16\,z^2}{105} - \frac{12\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}\,(21 - 8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4622.01

$${}_1F_2\left(4; -\frac{7}{2}, \frac{9}{2}; z\right) = \frac{1}{5040\,z^{3/2}}\left(-16\left(16\,z^3 + 120\,z^2 + 780\,z - 315\right)z^{3/2} +\right.$$
$$\left.210\,\pi\left(4\,z^3 + 39\,z^2 + 360\,z + 1575\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z} - 105\,\pi\left(44\,z^3 + 435\,z^2 + 3510\,z + 12\,600\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.4623.01

$${}_1F_2\left(4; -\frac{7}{2}, \frac{9}{2}; -z\right) = \frac{1}{5040\,z^{3/2}}\left(16\left(16\,z^3 - 120\,z^2 + 780\,z + 315\right)z^{3/2} +\right.$$
$$\left.210\,\pi\left(4\,z^3 - 39\,z^2 + 360\,z - 1575\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z} - 105\,\pi\left(44\,z^3 - 435\,z^2 + 3510\,z - 12\,600\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.4624.01

$${}_1F_2\left(4; -\frac{7}{2}, 5; z\right) = \frac{1}{210\,z^4}\left(-3\left(448\,z^5 + 12\,800\,z^4 + 180\,180\,z^3 + 1\,351\,350\,z^2 + 4\,054\,050\,z + 2\,027\,025\right)\cosh\left(2\sqrt{z}\right) +\right.$$
$$\left.2\sqrt{z}\left(64\,z^5 + 4080\,z^4 + 77\,220\,z^3 + 810\,810\,z^2 + 4\,054\,050\,z + 6\,081\,075\right)\sinh\left(2\sqrt{z}\right) + 6\,081\,075\right)$$

07.22.03.4625.01

$${}_1F_2\left(4; -\frac{7}{2}, 5; -z\right) = \frac{1}{210\,z^4}\left(3\left(448\,z^5 - 12\,800\,z^4 + 180\,180\,z^3 - 1\,351\,350\,z^2 + 4\,054\,050\,z - 2\,027\,025\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.2\sqrt{z}\left(64\,z^5 - 4080\,z^4 + 77\,220\,z^3 - 810\,810\,z^2 + 4\,054\,050\,z - 6\,081\,075\right)\sin\left(2\sqrt{z}\right) + 6\,081\,075\right)$$

07.22.03.4626.01

$${}_1F_2\left(4; -\frac{7}{2}, \frac{11}{2}; z\right) = \frac{1}{2016\, z^2}\left(-32\left(8\, z^3 + 156\, z^2 + 1296\, z - 63\right) z^2 + 378\, \pi \left(4\, z^3 + 153\, z^2 + 2625\, z + 17\,640\right) \boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} - 189\, \pi \left(76\, z^3 + 2265\, z^2 + 32\,130\, z + 176\,400\right) \boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.4627.01

$${}_1F_2\left(4; -\frac{7}{2}, \frac{11}{2}; -z\right) = \frac{1}{2016\, z^2}\left(32\left(8\, z^3 - 156\, z^2 + 1296\, z + 63\right) z^2 + 378\, \pi \left(4\, z^3 - 153\, z^2 + 2625\, z - 17\,640\right) \boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} - 189\, \pi \left(76\, z^3 - 2265\, z^2 + 32\,130\, z - 176\,400\right) \boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.4628.01

$${}_1F_2\left(4; -\frac{7}{2}, 6; z\right) = \frac{1}{42\, z^5}\left(\left(128\, z^6 + 19\,776\, z^5 + 772\,200\, z^4 + 14\,324\,310\, z^3 + 125\,675\,550\, z^2 + 407\,432\,025\, z + 206\,756\,550\right)\cosh\left(2\sqrt{z}\right) - 33\left(2\sqrt{z}\,\left(32\, z^5 + 2080\, z^4 + 54\,990\, z^3 + 712\,530\, z^2 + 3\,992\,625\, z + 6\,265\,350\right)\sinh\left(2\sqrt{z}\right) - 184\,275\,(z - 34)\right)\right)$$

07.22.03.4629.01

$${}_1F_2\left(4; -\frac{7}{2}, 6; -z\right) = \frac{1}{42\, z^5}\left(\left(-128\, z^6 + 19\,776\, z^5 - 772\,200\, z^4 + 14\,324\,310\, z^3 - 125\,675\,550\, z^2 + 407\,432\,025\, z - 206\,756\,550\right)\cos\left(2\sqrt{z}\right) + 33\left(184\,275\,(z + 34) + 2\sqrt{z}\,\left(32\, z^5 - 2080\, z^4 + 54\,990\, z^3 - 712\,530\, z^2 + 3\,992\,625\, z - 6\,265\,350\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = -\frac{5}{2}$

07.22.03.4630.01

$${}_1F_2\left(4; -\frac{5}{2}, -\frac{5}{2}; z\right) = \frac{4}{675}\,\pi\left(8\, \boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^5 + \left(380\, \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^3 + 6618\, \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^{5/2} + 53\,247\, \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z^2 + 205\,152\, \boldsymbol{L}_{-7}\left(2\sqrt{z}\right) z^{3/2} + 354\,744\, \boldsymbol{L}_{-6}\left(2\sqrt{z}\right) z + 226\,512\, \boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 30\,888\, \boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right) z^{3/2}\right)$$

07.22.03.4631.01

$${}_1F_2\left(4; -\frac{5}{2}, -\frac{5}{2}; -z\right) = \frac{4}{675}\,\pi\left(8\, \boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^5 + \left(380\, \boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^3 + 6618\, \boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^{5/2} + 53\,247\, \boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z^2 + 205\,152\, \boldsymbol{H}_{-7}\left(2\sqrt{z}\right) z^{3/2} + 354\,744\, \boldsymbol{H}_{-6}\left(2\sqrt{z}\right) z + 226\,512\, \boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 30\,888\, \boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right) z^{3/2}\right)$$

07.22.03.4632.01

$${}_1F_2\left(4; -\frac{5}{2}, -\frac{3}{2}; z\right) = -\frac{2}{135}\,\pi\, z^{3/2}\left(8\, \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^3 + 324\, \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^{5/2} + 4674\, \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z^2 + 29\,877\, \boldsymbol{L}_{-7}\left(2\sqrt{z}\right) z^{3/2} + 85\,644\, \boldsymbol{L}_{-6}\left(2\sqrt{z}\right) z + 97\,812\, \boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 30\,888\, \boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)$$

07.22.03.4633.01

$${}_1F_2\left(4; -\frac{5}{2}, -\frac{3}{2}; -z\right) = -\frac{2}{135}\pi z^{3/2}\left(8\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^3 + 324\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{5/2} + 4674\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^2 + 29\,877\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^{3/2} + 85\,644\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z + 97\,812\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 30\,888\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)$$

07.22.03.4634.01

$${}_1F_2\left(4; -\frac{5}{2}, -\frac{1}{2}; z\right) = \frac{1}{45}\pi\left(8\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^4 + \left(268\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^2 + 3\left(1022\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^{3/2} + 4849\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z + 9152\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 5148\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)\right)z^{3/2}\right)$$

07.22.03.4635.01

$${}_1F_2\left(4; -\frac{5}{2}, -\frac{1}{2}; -z\right) = \frac{1}{45}\pi\left(8\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^4 + \left(268\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^2 + 3\left(1022\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^{3/2} + 4849\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z + 9152\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 5148\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)\right)z^{3/2}\right)$$

07.22.03.4636.01

$${}_1F_2\left(4; -\frac{5}{2}, \frac{1}{2}; z\right) = -\frac{1}{90}\pi z^{3/2}\left(8\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^2 + 212\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^{3/2} + 39\left(46\,z\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right) + 143\sqrt{z}\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right) + 132\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4637.01

$${}_1F_2\left(4; -\frac{5}{2}, \frac{1}{2}; -z\right) = -\frac{1}{90}\pi z^{3/2}\left(8\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^2 + 212\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^{3/2} + 39\left(46\,z\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right) + 143\sqrt{z}\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right) + 132\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4638.01

$${}_1F_2\left(4; -\frac{5}{2}, 1; z\right) = \frac{1}{45}\left(\left(-4z^3 - 54z^2 + 18z + 45\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(6z^2 - 14z + 15\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4639.01

$${}_1F_2\left(4; -\frac{5}{2}, 1; -z\right) = \frac{1}{45}\left(\left(4z^3 - 54z^2 - 18z + 45\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(6z^2 + 14z + 15\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4640.01

$${}_1F_2\left(4; -\frac{5}{2}, \frac{3}{2}; z\right) = \frac{1}{180}\left(-15\pi\sqrt{z}\left(4z^2 - 11z + 6\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) - 2\left(8z^3 + 58z^2 + 36z + \pi\left(4z^3 + 15z^2 + 60z - 45\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) - 90\right)\right)$$

07.22.03.4641.01

$${}_1F_2\left(4; -\frac{5}{2}, \frac{3}{2}; -z\right) = \frac{1}{180}\left(15\pi\sqrt{z}\left(4z^2 + 11z + 6\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) - 2\left(-8z^3 + 58z^2 - 36z + \pi\left(4z^3 - 15z^2 + 60z + 45\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) - 90\right)\right)$$

07.22.03.4642.01

$${}_1F_2\left(4; -\frac{5}{2}, 2; z\right) = \frac{1}{45}\left(\left(-22z^2 + 54z + 45\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(2z^2 - 6z + 45\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4643.01

$${}_1F_2\left(4; -\frac{5}{2}, 2; -z\right) = \frac{1}{45}\left(\left(-22z^2 - 54z + 45\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(2z^2 + 6z + 45\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4644.01

$${}_1F_2\left(4; -\frac{5}{2}, \frac{5}{2}; z\right) =$$

$$\frac{1}{360\sqrt{z}}\left(-9\pi\sqrt{z}\,\left(12z^2 - 19z - 12\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) - 2\left(4\sqrt{z}\,\left(4z^3 - 3z^2 + 36z - 45\right) + 3\pi\left(4z^3 - 27z^2 + 63z + 36\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4645.01

$${}_1F_2\left(4; -\frac{5}{2}, \frac{5}{2}; -z\right) =$$

$$\frac{1}{360\sqrt{z}}\left(8\sqrt{z}\,\left(4z^3 + 3z^2 + 36z + 45\right) + 9\pi\sqrt{z}\,\left(12z^2 + 19z - 12\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) - 6\pi\left(4z^3 + 27z^2 + 63z - 36\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.4646.01

$${}_1F_2\left(4; -\frac{5}{2}, 3; z\right) = \frac{1}{45}\left(\left(-8z^2 + 66z + 45\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(2z + 15\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4647.01

$${}_1F_2\left(4; -\frac{5}{2}, 3; -z\right) = \frac{1}{45}\left(\left(-8z^2 - 66z + 45\right)\cos\left(2\sqrt{z}\right) + 6\left(15 - 2z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4648.01

$${}_1F_2\left(4; -\frac{5}{2}, \frac{7}{2}; z\right) =$$

$$\frac{1}{720z}\left(2\left(8z\left(-4z^3 + 11z^2 - 12z + 45\right) - 15\pi\left(4z^3 - 21z^2 - 48z - 90\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right) - 45\pi\sqrt{z}\,\left(4z^2 + 9z + 20\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.4649.01

$${}_1F_2\left(4; -\frac{5}{2}, \frac{7}{2}; -z\right) =$$

$$\frac{1}{720z}\left(45\pi\sqrt{z}\,\left(4z^2 - 9z + 20\right)\boldsymbol{H}_2\left(2\sqrt{z}\right) + 2\left(8z\left(4z^3 + 11z^2 + 12z + 45\right) - 15\pi\left(4z^3 + 21z^2 - 48z + 90\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4650.01

$${}_1F_2\left(4; -\frac{5}{2}, 4; z\right) = \left(\frac{8z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,\left(4z + 15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4651.01

$${}_1F_2\left(4; -\frac{5}{2}, 4; -z\right) = \left(1 - \frac{8z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\left(15 - 4z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4652.01

$${}_1F_2\left(4; -\frac{5}{2}, \frac{9}{2}; z\right) = \frac{1}{1440\,z^{3/2}}$$

$$\left(315\pi\sqrt{z}\,\left(4z^2 + 35z + 150\right)\boldsymbol{L}_3\left(2\sqrt{z}\right) - 2\left(16\left(4z^3 + 5z^2 + 66z - 45\right)z^{3/2} + 105\pi\left(4z^3 + 33z^2 + 255z + 900\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4653.01

$${}_1F_2\left(4; -\frac{5}{2}, \frac{9}{2}; -z\right) = \frac{1}{1440\, z^{3/2}}$$
$$\left(2\left(16\, z^{3/2}\left(4\, z^3 - 5\, z^2 + 66\, z + 45\right) - 105\, \pi \left(4\, z^3 - 33\, z^2 + 255\, z - 900\right) \boldsymbol{H}_4\left(2\sqrt{z}\right)\right) - 315\, \pi \sqrt{z}\, \left(4\, z^2 - 35\, z + 150\right) \boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.4654.01

$${}_1F_2\left(4; -\frac{5}{2}, 5; z\right) = \frac{1}{30\, z^4}\left(-\left(64\, z^5 + 2544\, z^4 + 36\,036\, z^3 + 270\,270\, z^2 + 810\,810\, z + 405\,405\right)\cosh\left(2\sqrt{z}\right) +$$
$$2\sqrt{z}\, \left(256\, z^4 + 5148\, z^3 + 54\,054\, z^2 + 270\,270\, z + 405\,405\right)\sinh\left(2\sqrt{z}\right) + 405\,405\Big)$$

07.22.03.4655.01

$${}_1F_2\left(4; -\frac{5}{2}, 5; -z\right) = \frac{1}{30\, z^4}\left(\left(64\, z^5 - 2544\, z^4 + 36\,036\, z^3 - 270\,270\, z^2 + 810\,810\, z - 405\,405\right)\cos\left(2\sqrt{z}\right) -$$
$$2\sqrt{z}\, \left(256\, z^4 - 5148\, z^3 + 54\,054\, z^2 - 270\,270\, z + 405\,405\right)\sin\left(2\sqrt{z}\right) + 405\,405\Big)$$

07.22.03.4656.01

$${}_1F_2\left(4; -\frac{5}{2}, \frac{11}{2}; z\right) = \frac{1}{2880\, z^2}\left(2835\, \pi \sqrt{z}\, \left(12\, z^2 + 215\, z + 1470\right) \boldsymbol{L}_4\left(2\sqrt{z}\right) -\right.$$
$$\left.2\left(32\left(4\, z^3 + 45\, z^2 + 414\, z - 45\right) z^2 + 945\, \pi \left(4\, z^3 + 135\, z^2 + 1980\, z + 11\,025\right) \boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4657.01

$${}_1F_2\left(4; -\frac{5}{2}, \frac{11}{2}; -z\right) = \frac{1}{2880\, z^2}\left(64\left(4\, z^3 - 45\, z^2 + 414\, z + 45\right) z^2 -\right.$$
$$\left.2835\, \pi \left(12\, z^2 - 215\, z + 1470\right) \boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} - 1890\, \pi \left(4\, z^3 - 135\, z^2 + 1980\, z - 11\,025\right) \boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.4658.01

$${}_1F_2\left(4; -\frac{5}{2}, 6; z\right) = \frac{1}{6\, z^5}\left(405\,405\, (z - 30) + 9\left(96\, z^5 + 4576\, z^4 + 90\,090\, z^3 + 810\,810\, z^2 + 2\,657\,655\, z + 1\,351\,350\right)\cosh\left(2\sqrt{z}\right) -\right.$$
$$\left.2\sqrt{z}\, \left(32\, z^5 + 3432\, z^4 + 100\,386\, z^3 + 1\,351\,350\, z^2 + 7\,702\,695\, z + 12\,162\,150\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4659.01

$${}_1F_2\left(4; -\frac{5}{2}, 6; -z\right) = \frac{1}{6\, z^5}\left(405\,405\, (z + 30) + 9\left(96\, z^5 - 4576\, z^4 + 90\,090\, z^3 - 810\,810\, z^2 + 2\,657\,655\, z - 1\,351\,350\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.2\sqrt{z}\, \left(32\, z^5 - 3432\, z^4 + 100\,386\, z^3 - 1\,351\,350\, z^2 + 7\,702\,695\, z - 12\,162\,150\right)\sin\left(2\sqrt{z}\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = -\frac{3}{2}$

07.22.03.4660.01

$${}_1F_2\left(4; -\frac{3}{2}, -\frac{3}{2}; z\right) =$$
$$\frac{1}{27}\pi z\left(8\, \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^3 + 3\left(92\, \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z^{5/2} + 1098\, \boldsymbol{L}_{-7}\left(2\sqrt{z}\right) z^2 + 5567\, \boldsymbol{L}_{-6}\left(2\sqrt{z}\right) z^{3/2} + 11\,847\, \boldsymbol{L}_{-5}\left(2\sqrt{z}\right) z +\right.\right.$$
$$\left.\left.8910\, \boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\sqrt{z} + 1386\, \boldsymbol{L}_{-3}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4661.01

$${}_1F_2\left(4; -\frac{3}{2}, -\frac{3}{2}; -z\right) = \frac{1}{27}\pi z\left(8\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^3 + 3\left(92\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{5/2} + 1098\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^2 + 5567\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{3/2} + 11\,847\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z + 8910\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\sqrt{z} + 1386\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4662.01

$${}_1F_2\left(4; -\frac{3}{2}, -\frac{1}{2}; z\right) = -\frac{1}{18}\pi z\left(8\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{5/2} + 3\left(76\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^2 + 718\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{3/2} + 2695\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z + 3762\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\sqrt{z} + 1386\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4663.01

$${}_1F_2\left(4; -\frac{3}{2}, -\frac{1}{2}; -z\right) = -\frac{1}{18}\pi z\left(8\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{5/2} + 3\left(76\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^2 + 718\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{3/2} + 2695\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z + 3762\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\sqrt{z} + 1386\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4664.01

$${}_1F_2\left(4; -\frac{3}{2}, \frac{1}{2}; z\right) = \frac{1}{36}\pi z\left(8\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^2 + 3\left(60\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{3/2} + 11\left(38\,z\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right) + 93\sqrt{z}\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right) + 63\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.4665.01

$${}_1F_2\left(4; -\frac{3}{2}, \frac{1}{2}; -z\right) = \frac{1}{36}\pi z\left(8\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^2 + 3\left(60\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{3/2} + 11\left(38\,z\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right) + 93\sqrt{z}\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right) + 63\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.4666.01

$${}_1F_2\left(4; -\frac{3}{2}, 1; z\right) = \left(2z^2 - \frac{2z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{9}\sqrt{z}\left(z^2 + 18z - 9\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4667.01

$${}_1F_2\left(4; -\frac{3}{2}, 1; -z\right) = \left(2z^2 + \frac{2z}{3} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{9}\sqrt{z}\left(z^2 - 18z - 9\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4668.01

$${}_1F_2\left(4; -\frac{3}{2}, \frac{3}{2}; z\right) = \frac{1}{72}\left(8\left(16z^2 - 11z + 9\right) + 2\pi\sqrt{z}\left(4z^2 + 45z - 15\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + 15\pi\left(4z^2 - 5z + 2\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4669.01

$${}_1F_2\left(4; -\frac{3}{2}, \frac{3}{2}; -z\right) = \frac{1}{72}\left(8\left(16z^2 + 11z + 9\right) + 2\pi\sqrt{z}\left(-4z^2 + 45z + 15\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) - 15\pi\left(4z^2 + 5z + 2\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4670.01

$${}_1F_2\left(4; -\frac{3}{2}, 2; z\right) = \frac{1}{9}\left(\left(2z^2 + 6z + 9\right)\cosh\left(2\sqrt{z}\right) + 6\sqrt{z}\,(2z - 3)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4671.01

$${}_1F_2\left(4; -\frac{3}{2}, 2; -z\right) = \frac{1}{9}\left(\left(2z^2 - 6z + 9\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\,(2z + 3)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4672.01

$${}_1F_2\left(4; -\frac{3}{2}, \frac{5}{2}; z\right) = \frac{8\sqrt{z}\,\left(8z^2-7z+6\right)+\pi\sqrt{z}\,\left(8z^2+18z+9\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)+3\pi\left(12z^2-13z-6\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)}{48\sqrt{z}}$$

07.22.03.4673.01

$${}_1F_2\left(4; -\frac{3}{2}, \frac{5}{2}; -z\right) = \frac{8\sqrt{z}\,\left(8z^2+7z+6\right)+\pi\sqrt{z}\,\left(-8z^2+18z-9\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)-3\pi\left(12z^2+13z-6\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)}{48\sqrt{z}}$$

07.22.03.4674.01

$${}_1F_2\left(4; -\frac{3}{2}, 3; z\right) = \left(\frac{10z}{9}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{9}\sqrt{z}\,(2z-9)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4675.01

$${}_1F_2\left(4; -\frac{3}{2}, 3; -z\right) = \left(1-\frac{10z}{9}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{9}\sqrt{z}\,(2z+9)\sin\left(2\sqrt{z}\right)$$

07.22.03.4676.01

$${}_1F_2\left(4; -\frac{3}{2}, \frac{7}{2}; z\right) = \frac{32z\left(8z^2-6z+9\right)+30\pi\sqrt{z}\,\left(4z^2-3z-6\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)+45\pi\left(4z^2+7z+12\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)}{288z}$$

07.22.03.4677.01

$${}_1F_2\left(4; -\frac{3}{2}, \frac{7}{2}; -z\right) = \frac{32z\left(8z^2+6z+9\right)-30\pi\sqrt{z}\,\left(4z^2+3z-6\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)-45\pi\left(4z^2-7z+12\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)}{288z}$$

07.22.03.4678.01

$${}_1F_2\left(4; -\frac{3}{2}, 4; z\right) = \left(\frac{4z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.4679.01

$${}_1F_2\left(4; -\frac{3}{2}, 4; -z\right) = \left(1-\frac{4z}{3}\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4680.01

$${}_1F_2\left(4; -\frac{3}{2}, \frac{9}{2}; z\right) =$$
$$\frac{1}{576z^{3/2}}\left(32\left(8z^2-19z+18\right)z^{3/2}+105\pi\left(8z^2+18z+75\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z}\,-315\pi\left(4z^2+29z+100\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.4681.01

$${}_1F_2\left(4; -\frac{3}{2}, \frac{9}{2}; -z\right) =$$
$$\frac{1}{576z^{3/2}}\left(32\left(8z^2+19z+18\right)z^{3/2}-105\pi\left(8z^2-18z+75\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z}\,+315\pi\left(4z^2-29z+100\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.4682.01

$${}_1F_2\left(4; -\frac{3}{2}, 5; z\right) = \frac{1}{6z^4}\left(-3\left(64z^4+924z^3+6930z^2+20\,790z+10\,395\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\,\left(16z^4+396z^3+4158z^2+20\,790z+31\,185\right)\sinh\left(2\sqrt{z}\right)+31\,185\right)$$

07.22.03.4683.01

$${}_1F_2\left(4; -\frac{3}{2}, 5; -z\right) = \frac{1}{6z^4}\left(-3\left(64z^4 - 924z^3 + 6930z^2 - 20\,790z + 10\,395\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(16z^4 - 396z^3 + 4158z^2 - 20\,790z + 31\,185\right)\sin\left(2\sqrt{z}\right) + 31\,185\right)$$

07.22.03.4684.01

$${}_1F_2\left(4; -\frac{3}{2}, \frac{11}{2}; z\right) = \frac{1}{384z^2}\left(128(3 - 11z)z^2 + 630\pi\left(4z^2 + 45z + 315\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} - 945\pi\left(12z^2 + 185z + 1050\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.4685.01

$${}_1F_2\left(4; -\frac{3}{2}, \frac{11}{2}; -z\right) = \frac{1}{384z^2}\left(128(11z + 3)z^2 - 630\pi\left(4z^2 - 45z + 315\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} + 945\pi\left(12z^2 - 185z + 1050\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.4686.01

$${}_1F_2\left(4; -\frac{3}{2}, 6; z\right) = \frac{1}{6z^5}\left(5\left(\left(32z^5 + 2376z^4 + 51\,282z^3 + 478\,170z^2 + 1\,590\,435z + 810\,810\right)\cosh\left(2\sqrt{z}\right) - 11\left(2\sqrt{z}\left(16z^4 + 558z^3 + 7938z^2 + 46\,305z + 73\,710\right)\sinh\left(2\sqrt{z}\right) - 2835(z - 26)\right)\right)\right)$$

07.22.03.4687.01

$${}_1F_2\left(4; -\frac{3}{2}, 6; -z\right) = \frac{1}{6z^5}\left(5\left(\left(32z^5 - 2376z^4 + 51\,282z^3 - 478\,170z^2 + 1\,590\,435z - 810\,810\right)\cos\left(2\sqrt{z}\right) - 11\left(2\sqrt{z}\left(16z^4 - 558z^3 + 7938z^2 - 46\,305z + 73\,710\right)\sin\left(2\sqrt{z}\right) - 2835(z + 26)\right)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = -\frac{1}{2}$

07.22.03.4688.01

$${}_1F_2\left(4; -\frac{1}{2}, -\frac{1}{2}; z\right) = \frac{1}{12}\pi\left(8\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^3 + 188\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{5/2} + 1402\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z^2 + 3879\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 3528\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)z + 630\boldsymbol{L}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)$$

07.22.03.4689.01

$${}_1F_2\left(4; -\frac{1}{2}, -\frac{1}{2}; -z\right) = \frac{1}{12}\pi\left(8\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^3 + 188\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{5/2} + 1402\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z^2 + 3879\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 3528\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)z + 630\boldsymbol{H}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)$$

07.22.03.4690.01

$${}_1F_2\left(4; -\frac{1}{2}, \frac{1}{2}; z\right) = -\frac{1}{24}\pi\left(8\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{5/2} + 148\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z^2 + 9\left(90\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 161\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)z + 70\boldsymbol{L}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)\right)$$

07.22.03.4691.01

$${}_1F_2\left(4; -\frac{1}{2}, \frac{1}{2}; -z\right) =$$
$$-\frac{1}{24}\pi\left(8\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{5/2} + 148\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z^2 + 9\left(90\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 161\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)z + 70\,\boldsymbol{H}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)\right)$$

07.22.03.4692.01

$${}_1F_2\left(4; -\frac{1}{2}, 1; z\right) = -\frac{1}{3}\left(z^2 + 18z - 3\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{6}\sqrt{z}\,(17z + 12)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4693.01

$${}_1F_2\left(4; -\frac{1}{2}, 1; -z\right) = \left(-\frac{z^2}{3} + 6z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{6}(12 - 17z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4694.01

$${}_1F_2\left(4; -\frac{1}{2}, \frac{3}{2}; z\right) = \frac{1}{48}\left(-4\left(4z^2 + 59z - 12\right) - 15\pi\sqrt{z}\,(4z + 1)\,\boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(-8z^2 - 90z + 15\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4695.01

$${}_1F_2\left(4; -\frac{1}{2}, \frac{3}{2}; -z\right) = \frac{1}{48}\left(-16z^2 + 236z + 15\pi(1 - 4z)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)\sqrt{z} + \pi\left(8z^2 - 90z - 15\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 48\right)$$

07.22.03.4696.01

$${}_1F_2\left(4; -\frac{1}{2}, 2; z\right) = (1 - 2z)\cosh\left(2\sqrt{z}\right) - \frac{1}{3}\sqrt{z}\,(z + 6)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4697.01

$${}_1F_2\left(4; -\frac{1}{2}, 2; -z\right) = (2z + 1)\cos\left(2\sqrt{z}\right) - \frac{1}{3}(z - 6)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4698.01

$${}_1F_2\left(4; -\frac{1}{2}, \frac{5}{2}; z\right) = \frac{3\pi(3 - 44z)\sqrt{z}\,\boldsymbol{L}_1\left(2\sqrt{z}\right) - 2\left(4\sqrt{z}\left(4z^2 + 39z - 12\right) + 3\pi\left(4z^2 + 9z + 3\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)}{96\sqrt{z}}$$

07.22.03.4699.01

$${}_1F_2\left(4; -\frac{1}{2}, \frac{5}{2}; -z\right) = \frac{8\sqrt{z}\left(-4z^2 + 39z + 12\right) - 3\pi\sqrt{z}\,(44z + 3)\,\boldsymbol{H}_1\left(2\sqrt{z}\right) + 6\pi\left(4z^2 - 9z + 3\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)}{96\sqrt{z}}$$

07.22.03.4700.01

$${}_1F_2\left(4; -\frac{1}{2}, 3; z\right) = \left(1 - \frac{2z}{3}\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.4701.01

$${}_1F_2\left(4; -\frac{1}{2}, 3; -z\right) = \left(\frac{2z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4702.01

$${}_1F_2\left(4; -\frac{1}{2}, \frac{7}{2}; z\right) = -\frac{16z\left(4z^2 + 27z - 12\right) + 15\pi\sqrt{z}\,(28z + 3)\,\boldsymbol{L}_2\left(2\sqrt{z}\right) + 15\pi\left(8z^2 - 6z - 9\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)}{192z}$$

07.22.03.4703.01

$${}_1F_2\left(4; -\frac{1}{2}, \frac{7}{2}; -z\right) = \frac{16z\left(-4z^2 + 27z + 12\right) + 15\pi(3 - 28z)\sqrt{z}\,\boldsymbol{H}_2\left(2\sqrt{z}\right) + 15\pi\left(8z^2 + 6z - 9\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)}{192z}$$

07.22.03.4704.01

$${}_1F_2\left(4; -\frac{1}{2}, 4; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.4705.01

$${}_1F_2\left(4; -\frac{1}{2}, 4; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4706.01

$${}_1F_2\left(4; -\frac{1}{2}, \frac{9}{2}; z\right) = \frac{-315\pi\sqrt{z}\,(4z-5)\,\boldsymbol{L}_3\left(2\sqrt{z}\right) - 2\left(16\left(4z^2+23z-12\right)z^{3/2} + 105\pi\left(4z^2+9z+30\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)}{384\,z^{3/2}}$$

07.22.03.4707.01

$${}_1F_2\left(4; -\frac{1}{2}, \frac{9}{2}; -z\right) = \frac{2\left(16\left(-4z^2+23z+12\right)z^{3/2} + 105\pi\left(4z^2-9z+30\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right) - 315\pi\sqrt{z}\,(4z+5)\,\boldsymbol{H}_3\left(2\sqrt{z}\right)}{384\,z^{3/2}}$$

07.22.03.4708.01

$${}_1F_2\left(4; -\frac{1}{2}, 5; z\right) =$$

$$\frac{1}{2z^4}\left(9\left(2\sqrt{z}\,\left(4z^3+42z^2+210z+315\right)\sinh\left(2\sqrt{z}\right)+315\right) - \left(16z^4+252z^3+1890z^2+5670z+2835\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.4709.01

$${}_1F_2\left(4; -\frac{1}{2}, 5; -z\right) =$$

$$\frac{1}{2z^4}\left(\left(-16z^4+252z^3-1890z^2+5670z-2835\right)\cos\left(2\sqrt{z}\right) + 9\left(2\sqrt{z}\,\left(4z^3-42z^2+210z-315\right)\sin\left(2\sqrt{z}\right)+315\right)\right)$$

07.22.03.4710.01

$${}_1F_2\left(4; -\frac{1}{2}, \frac{11}{2}; z\right) = \frac{-64\left(4z^2+27z-12\right)z^2 + 945\pi\,(4z+105)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} - 945\pi\left(8z^2+90z+525\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)}{768\,z^2}$$

07.22.03.4711.01

$${}_1F_2\left(4; -\frac{1}{2}, \frac{11}{2}; -z\right) = \frac{64\left(-4z^2+27z+12\right)z^2 + 945\pi\,(4z-105)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} + 945\pi\left(8z^2-90z+525\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)}{768\,z^2}$$

07.22.03.4712.01

$${}_1F_2\left(4; -\frac{1}{2}, 6; z\right) = -\frac{1}{2z^5}\left(5\left(-2835\,(z-22) - 9\left(16z^4+406z^3+3990z^2+13\,545z+6930\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(8z^4+414z^3+6426z^2+38\,745z+62\,370\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4713.01

$${}_1F_2\left(4; -\frac{1}{2}, 6; -z\right) = -\frac{1}{2z^5}\left(5\left(-2835\,(z+22) + 9\left(16z^4-406z^3+3990z^2-13\,545z+6930\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(8z^4-414z^3+6426z^2-38\,745z+62\,370\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = \frac{1}{2}$

07.22.03.0275.01

$${}_1F_2\left(4;\ \frac{1}{2},\ \frac{1}{2};\ z\right) == \frac{1}{48}\left(48 + 348\,z + 16\,z^2 + 2\,\pi\,(4\,z + 71)\,z\ \boldsymbol{L}_1\left(2\,\sqrt{z}\right) + \pi\,(68\,z + 105)\,\sqrt{z}\ \boldsymbol{L}_0\left(2\,\sqrt{z}\right)\right)$$

07.22.03.4714.01

$${}_1F_2\left(4;\ \frac{1}{2},\ \frac{1}{2};\ -z\right) = \frac{1}{48}\,\pi\left(8\,\boldsymbol{H}_{-5}\left(2\,\sqrt{z}\right)z^2 + 116\,\boldsymbol{H}_{-4}\left(2\,\sqrt{z}\right)z^{3/2} + 21\left(22\,z\,\boldsymbol{H}_{-3}\left(2\,\sqrt{z}\right) + 25\,\sqrt{z}\ \boldsymbol{H}_{-2}\left(2\,\sqrt{z}\right) + 5\,\boldsymbol{H}_{-1}\left(2\,\sqrt{z}\right)\right)\right)$$

07.22.03.0276.01

$${}_1F_2\left(4;\ \frac{1}{2},\ 1;\ z\right) == \left(\frac{5\,z}{4} + 1\right)\cosh\left(2\,\sqrt{z}\right) + \frac{1}{24}\,\sqrt{z}\ (4\,z + 57)\,\sinh\left(2\,\sqrt{z}\right)$$

07.22.03.4715.01

$${}_1F_2\left(4;\ \frac{1}{2},\ 1;\ -z\right) = \left(1 - \frac{5\,z}{4}\right)\cos\left(2\,\sqrt{z}\right) + \frac{1}{24}\,\sqrt{z}\ (4\,z - 57)\,\sin\left(2\,\sqrt{z}\right)$$

07.22.03.0277.01

$${}_1F_2\left(4;\ \frac{1}{2},\ \frac{3}{2};\ z\right) == \frac{1}{96}\left(96 + 112\,z + 2\,\pi\,(4\,z + 45)\,\sqrt{z}\ \boldsymbol{L}_0\left(2\,\sqrt{z}\right) + \pi\,(52\,z + 15)\,\boldsymbol{L}_1\left(2\,\sqrt{z}\right)\right)$$

07.22.03.4716.01

$${}_1F_2\left(4;\ \frac{1}{2},\ \frac{3}{2};\ -z\right) = \frac{1}{96}\left(-112\,z + 2\,\pi\,(4\,z - 45)\,\boldsymbol{H}_0\left(2\,\sqrt{z}\right)\sqrt{z} + \pi\,(52\,z - 15)\,\boldsymbol{H}_1\left(2\,\sqrt{z}\right) + 96\right)$$

07.22.03.0278.01

$${}_1F_2\left(4;\ \frac{1}{2},\ 2;\ z\right) == \frac{1}{6}\,(z + 6)\cosh\left(2\,\sqrt{z}\right) + \frac{11}{12}\,\sqrt{z}\ \sinh\left(2\,\sqrt{z}\right)$$

07.22.03.4717.01

$${}_1F_2\left(4;\ \frac{1}{2},\ 2;\ -z\right) = -\frac{1}{6}\,(z - 6)\cos\left(2\,\sqrt{z}\right) - \frac{11}{12}\,\sqrt{z}\ \sin\left(2\,\sqrt{z}\right)$$

07.22.03.0279.01

$${}_1F_2\left(4;\ \frac{1}{2},\ \frac{5}{2};\ z\right) == \frac{1}{64\,z}\left(16\,z^2 + 68\,z - 3\,\pi\,(1 - 12\,z)\,\boldsymbol{L}_0\left(2\,\sqrt{z}\right)\sqrt{z} + \pi\left(8\,z^2 + 18\,z + 3\right)\boldsymbol{L}_1\left(2\,\sqrt{z}\right)\right)$$

07.22.03.4718.01

$${}_1F_2\left(4;\ \frac{1}{2},\ \frac{5}{2};\ -z\right) = \frac{-64\,\sqrt{z}\ (z - 1) + 2\,\pi\,\sqrt{z}\ (4\,z - 27)\,\boldsymbol{H}_1\left(2\,\sqrt{z}\right) + 3\,(12\,\pi\,z + \pi)\,\boldsymbol{H}_2\left(2\,\sqrt{z}\right)}{64\,\sqrt{z}}$$

07.22.03.0280.01

$${}_1F_2\left(4;\ \frac{1}{2},\ 3;\ z\right) == \cosh\left(2\,\sqrt{z}\right) + \frac{1}{3}\,\sqrt{z}\ \sinh\left(2\,\sqrt{z}\right)$$

07.22.03.4719.01

$${}_1F_2\left(4;\ \frac{1}{2},\ 3;\ -z\right) = \cos\left(2\,\sqrt{z}\right) - \frac{1}{3}\,\sqrt{z}\ \sin\left(2\,\sqrt{z}\right)$$

07.22.03.0281.01

$${}_1F_2\left(4;\ \frac{1}{2},\ \frac{7}{2};\ z\right) == \frac{5}{128\,z^2}\left(8\,z + 32\,z^2 - 2\,\pi\left(-4\,z^2 + 3\,z + 3\right)\sqrt{z}\ \boldsymbol{L}_0\left(2\,\sqrt{z}\right) + 3\,\pi\left(4\,z^2 + 3\,z + 2\right)\boldsymbol{L}_1\left(2\,\sqrt{z}\right)\right)$$

07.22.03.4720.01

$${}_1F_2\left(4;\ \frac{1}{2},\ \frac{7}{2};\ -z\right) = \frac{64\,(6 - 5\,z)\,z + 30\,\pi\,(4\,z - 17)\,\boldsymbol{H}_2\left(2\,\sqrt{z}\right)\sqrt{z} + 15\,\pi\,(20\,z - 3)\,\boldsymbol{H}_3\left(2\,\sqrt{z}\right)}{384\,z}$$

07.22.03.4721.01

$${}_1F_2\left(4;\frac{1}{2},4;z\right)=\cosh\left(2\sqrt{z}\right)$$

07.22.03.4722.01

$${}_1F_2\left(4;\frac{1}{2},4;-z\right)=\cos\left(2\sqrt{z}\right)$$

07.22.03.4723.01

$${}_1F_2\left(4;\frac{1}{2},\frac{9}{2};z\right)=\frac{256\,(2z+3)\,z^{3/2}+210\,\pi\,(4z+15)\,\boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z}+105\,\pi\,(4z-15)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)}{768\,z^{3/2}}$$

07.22.03.4724.01

$${}_1F_2\left(4;\frac{1}{2},\frac{9}{2};-z\right)=\frac{256\,(3-2z)\,z^{3/2}+210\,\pi\,(4z-15)\,\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z}+105\,\pi\,(4z+15)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)}{768\,z^{3/2}}$$

07.22.03.4725.01

$${}_1F_2\left(4;\frac{1}{2},5;z\right)=\frac{-7\left(4z^3+30z^2+90z+45\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(4z^3+42z^2+210z+315\right)\sinh\left(2\sqrt{z}\right)+315}{2\,z^4}$$

07.22.03.4726.01

$${}_1F_2\left(4;\frac{1}{2},5;-z\right)=\frac{7\left(4z^3-30z^2+90z-45\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(4z^3-42z^2+210z-315\right)\sin\left(2\sqrt{z}\right)+315}{2\,z^4}$$

07.22.03.4727.01

$${}_1F_2\left(4;\frac{1}{2},\frac{11}{2};z\right)=\frac{256\,(z+2)\,z^2+630\,\pi\,(4z+21)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}-945\,\pi\,(4z+35)\,\boldsymbol{L}_5\left(2\sqrt{z}\right)}{512\,z^2}$$

07.22.03.4728.01

$${}_1F_2\left(4;\frac{1}{2},\frac{11}{2};-z\right)=\frac{-256\,(z-2)\,z^2+630\,\pi\,(4z-21)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}-945\,\pi\,(4z-35)\,\boldsymbol{H}_5\left(2\sqrt{z}\right)}{512\,z^2}$$

07.22.03.4729.01

$${}_1F_2\left(4;\frac{1}{2},6;z\right)=\frac{1}{2\,z^5}\left(5\left(\left(8z^4+294z^3+3150z^2+11\,025z+5670\right)\cosh\left(2\sqrt{z}\right)-3\left(2\sqrt{z}\,\left(10z^3+182z^2+1155z+1890\right)\sinh\left(2\sqrt{z}\right)-105\,(z-18)\right)\right)\right)$$

07.22.03.4730.01

$${}_1F_2\left(4;\frac{1}{2},6;-z\right)=-\frac{1}{2\,z^5}\left(5\left(\left(8z^4-294z^3+3150z^2-11\,025z+5670\right)\cos\left(2\sqrt{z}\right)-3\left(105\,(z+18)+2\sqrt{z}\,\left(10z^3-182z^2+1155z-1890\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = 1$

07.22.03.0282.01

$${}_1F_2(4;1,1;z)==\frac{1}{6}\left((7z+6)\,I_0\left(2\sqrt{z}\right)+\sqrt{z}\,(z+11)\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4731.01

$${}_1F_2(4;\,1,\,1;\,-z) = \frac{1}{6}\left((6-7\,z)\,J_0\left(2\,\sqrt{z}\,\right)+(z-11)\,\sqrt{z}\;J_1\left(2\,\sqrt{z}\,\right)\right)$$

07.22.03.0283.01

$${}_1F_2\left(4;\,1,\,\frac{3}{2};\,z\right) == \frac{1}{96\,\sqrt{z}}\left(2\,\sqrt{z}\;(4\,z+33)\cosh\left(2\,\sqrt{z}\,\right)+3\,(16\,z+5)\sinh\left(2\,\sqrt{z}\,\right)\right)$$

07.22.03.4732.01

$${}_1F_2\left(4;\,1,\,\frac{3}{2};\,-z\right) = \frac{3\,(5-16\,z)\sin\left(2\,\sqrt{z}\,\right)-2\,\sqrt{z}\;(4\,z-33)\cos\left(2\,\sqrt{z}\,\right)}{96\,\sqrt{z}}$$

07.22.03.0284.01

$${}_1F_2(4;\,1,\,2;\,z) == \frac{1}{6}\left((z+6)\,I_0\left(2\,\sqrt{z}\,\right)+5\,\sqrt{z}\;I_1\left(2\,\sqrt{z}\,\right)\right)$$

07.22.03.4733.01

$${}_1F_2(4;\,1,\,2;\,-z) = \frac{1}{6}\,(z-6)\,J_2\left(2\,\sqrt{z}\,\right)-\frac{(z-1)\,J_1\left(2\,\sqrt{z}\,\right)}{\sqrt{z}}$$

07.22.03.0285.01

$${}_1F_2\left(4;\,1,\,\frac{5}{2};\,z\right) == \frac{1}{128\,z^{3/2}}\left(2\,\sqrt{z}\;(32\,z-3)\cosh\left(2\,\sqrt{z}\,\right)+\left(16\,z^2+36\,z+3\right)\sinh\left(2\,\sqrt{z}\,\right)\right)$$

07.22.03.4734.01

$${}_1F_2\left(4;\,1,\,\frac{5}{2};\,-z\right) = \frac{2\,\sqrt{z}\;(32\,z+3)\cos\left(2\,\sqrt{z}\,\right)+\left(-16\,z^2+36\,z-3\right)\sin\left(2\,\sqrt{z}\,\right)}{128\,z^{3/2}}$$

07.22.03.0286.01

$${}_1F_2(4;\,1,\,3;\,z) == I_0\left(2\,\sqrt{z}\,\right)+\frac{1}{3}\,\sqrt{z}\;I_1\left(2\,\sqrt{z}\,\right)$$

07.22.03.4735.01

$${}_1F_2(4;\,1,\,3;\,-z) = \frac{(6-5\,z)\,J_2\left(2\,\sqrt{z}\,\right)+(z-3)\,\sqrt{z}\;J_3\left(2\,\sqrt{z}\,\right)}{3\,z}$$

07.22.03.0287.01

$${}_1F_2\left(4;\,1,\,\frac{7}{2};\,z\right) == \frac{1}{512\,z^{5/2}}\left(5\left(2\,\sqrt{z}\;\left(16\,z^2-12\,z-9\right)\cosh\left(2\,\sqrt{z}\,\right)+3\left(16\,z^2+8\,z+3\right)\sinh\left(2\,\sqrt{z}\,\right)\right)\right)$$

07.22.03.4736.01

$${}_1F_2\left(4;\,1,\,\frac{7}{2};\,-z\right) = \frac{5\left(2\,\sqrt{z}\;\left(16\,z^2+12\,z-9\right)\cos\left(2\,\sqrt{z}\,\right)+3\left(16\,z^2-8\,z+3\right)\sin\left(2\,\sqrt{z}\,\right)\right)}{512\,z^{5/2}}$$

07.22.03.4737.01

$${}_1F_2(4;\,1,\,4;\,z) = I_0\left(2\,\sqrt{z}\,\right)$$

07.22.03.4738.01

$${}_1F_2(4;\,1,\,4;\,-z) = J_0\left(2\,\sqrt{z}\,\right)$$

07.22.03.4739.01

$${}_1F_2\left(4;\,1,\,\frac{9}{2};\,z\right)=\frac{35\left(\left(64\,z^3+192\,z^2+468\,z+225\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,\left(16\,z^2+56\,z+75\right)\cosh\left(2\sqrt{z}\right)\right)}{2048\,z^{7/2}}$$

07.22.03.4740.01

$${}_1F_2\left(4;\,1,\,\frac{9}{2};\,-z\right)=\frac{35\left(6\sqrt{z}\,\left(16\,z^2-56\,z+75\right)\cos\left(2\sqrt{z}\right)+\left(64\,z^3-192\,z^2+468\,z-225\right)\sin\left(2\sqrt{z}\right)\right)}{2048\,z^{7/2}}$$

07.22.03.4741.01

$${}_1F_2(4;\,1,\,5;\,z)=\frac{4\left(3\,(z+2)\,I_4\left(2\sqrt{z}\right)+\sqrt{z}\,\,(z+3)\,I_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.4742.01

$${}_1F_2(4;\,1,\,5;\,-z)=\frac{4\left((z-3)\sqrt{z}\,\,J_5\left(2\sqrt{z}\right)-3\,(z-2)\,J_4\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.4743.01

$${}_1F_2\left(4;\,1,\,\frac{11}{2};\,z\right)=$$

$$\frac{1}{8192\,z^{9/2}}\left(315\left(2\sqrt{z}\,\left(64\,z^3+1152\,z^2+6900\,z+11\,025\right)\cosh\left(2\sqrt{z}\right)-\left(640\,z^3+6432\,z^2+21\,600\,z+11\,025\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4744.01

$${}_1F_2\left(4;\,1,\,\frac{11}{2};\,-z\right)=$$

$$-\frac{1}{8192\,z^{9/2}}\left(315\left(2\sqrt{z}\,\left(64\,z^3-1152\,z^2+6900\,z-11\,025\right)\cos\left(2\sqrt{z}\right)+\left(-640\,z^3+6432\,z^2-21\,600\,z+11\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4745.01

$${}_1F_2(4;\,1,\,6;\,z)=\frac{40\,(z+3)\,I_5\left(2\sqrt{z}\right)}{z^{5/2}}+\frac{20\,(z+6)\,I_6\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.4746.01

$${}_1F_2(4;\,1,\,6;\,-z)=\frac{20\,(z-6)\,J_6\left(2\sqrt{z}\right)}{z^2}-\frac{40\,(z-3)\,J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = 4$, $b_1 = \frac{3}{2}$

07.22.03.0288.01

$${}_1F_2\left(4;\,\frac{3}{2},\,\frac{3}{2};\,z\right)=\frac{1}{192\sqrt{z}}\left(4\sqrt{z}\,\,(4\,z+33)+\pi\,(44\,z+15)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)+2\,\pi\sqrt{z}\,\,(4\,z+23)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4747.01

$${}_1F_2\left(4;\,\frac{3}{2},\,\frac{3}{2};\,-z\right)=\frac{\pi\,(15-44\,z)\,\boldsymbol{H}_0\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(-8\,z+\pi\,(4\,z-23)\,\boldsymbol{H}_1\left(2\sqrt{z}\right)+66\right)}{192\sqrt{z}}$$

07.22.03.0289.01

$${}_1F_2\left(4;\frac{3}{2},2;z\right)==\frac{1}{48\sqrt{z}}\left(18\sqrt{z}\,\cosh\left(2\sqrt{z}\right)+(4z+15)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4748.01

$${}_1F_2\left(4;\frac{3}{2},2;-z\right)=\frac{18\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(15-4z)\sin\left(2\sqrt{z}\right)}{48\sqrt{z}}$$

07.22.03.0290.01

$${}_1F_2\left(4;\frac{3}{2},\frac{5}{2};z\right)==\frac{1}{128z}\left(64z+2\pi(4z+9)\sqrt{z}\,\boldsymbol{L}_0\left(2\sqrt{z}\right)-\pi(3-28z)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4749.01

$${}_1F_2\left(4;\frac{3}{2},\frac{5}{2};-z\right)=\frac{8(33-4z)z+6\pi(4z-9)\boldsymbol{H}_2\left(2\sqrt{z}\right)\sqrt{z}-9\pi(12z-5)\boldsymbol{H}_1\left(2\sqrt{z}\right)}{384z}$$

07.22.03.0291.01

$${}_1F_2\left(4;\frac{3}{2},3;z\right)==\frac{1}{6}\cosh\left(2\sqrt{z}\right)+\frac{5}{12\sqrt{z}}\sinh\left(2\sqrt{z}\right)$$

07.22.03.4750.01

$${}_1F_2\left(4;\frac{3}{2},3;-z\right)=\frac{1}{6}\cos\left(2\sqrt{z}\right)+\frac{5\sin\left(2\sqrt{z}\right)}{12\sqrt{z}}$$

07.22.03.0292.01

$${}_1F_2\left(4;\frac{3}{2},\frac{7}{2};z\right)==\frac{5}{256z^2}\left(16z^2-4z+3\pi(4z+1)\sqrt{z}\,\boldsymbol{L}_0\left(2\sqrt{z}\right)-\pi\left(-8z^2+6z+3\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4751.01

$${}_1F_2\left(4;\frac{3}{2},\frac{7}{2};-z\right)=\frac{1}{768}\left(-64z+528+\frac{30\pi(4z-3)\boldsymbol{H}_3\left(2\sqrt{z}\right)}{z}+\frac{15\pi(15-28z)\boldsymbol{H}_2\left(2\sqrt{z}\right)}{z^{3/2}}\right)$$

07.22.03.4752.01

$${}_1F_2\left(4;\frac{3}{2},4;z\right)=\frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.4753.01

$${}_1F_2\left(4;\frac{3}{2},4;-z\right)=\frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.4754.01

$${}_1F_2\left(4;\frac{3}{2},\frac{9}{2};z\right)=\frac{525\pi(4z+3)\boldsymbol{L}_3\left(2\sqrt{z}\right)+2\left(16(4z+33)z^2+105\pi(4z+5)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}\right)}{1536z^2}$$

07.22.03.4755.01

$${}_1F_2\left(4;\frac{3}{2},\frac{9}{2};-z\right)=\frac{2\left(16(33-4z)z^2+105\pi(4z-5)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}\right)-525\pi(4z-3)\boldsymbol{H}_3\left(2\sqrt{z}\right)}{1536z^2}$$

07.22.03.4756.01

$${}_1F_2\left(4;\ \frac{3}{2},\ 5;\ z\right) = \frac{\left(4\,z^3+30\,z^2+90\,z+45\right)\cosh\left(2\sqrt{z}\right)-3\left(2\sqrt{z}\ \left(2\,z^2+10\,z+15\right)\sinh\left(2\sqrt{z}\right)+15\right)}{2\,z^4}$$

07.22.03.4757.01

$${}_1F_2\left(4;\ \frac{3}{2},\ 5;\ -z\right) = \frac{\left(-4\,z^3+30\,z^2-90\,z+45\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\ \left(2\,z^2-10\,z+15\right)\sin\left(2\sqrt{z}\right)-45}{2\,z^4}$$

07.22.03.4758.01

$${}_1F_2\left(4;\ \frac{3}{2},\ \frac{11}{2};\ z\right) = \frac{2835\,\pi\,(4\,z+5)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)+2\sqrt{z}\ \left(32\,(4\,z+33)\,z^2+945\,\pi\,(4\,z+15)\,\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)}{3072\,z^{5/2}}$$

07.22.03.4759.01

$${}_1F_2\left(4;\ \frac{3}{2},\ \frac{11}{2};\ -z\right) = \frac{2\sqrt{z}\ \left(32\,(33-4\,z)\,z^2+945\,\pi\,(4\,z-15)\,\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)-2835\,\pi\,(4\,z-5)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)}{3072\,z^{5/2}}$$

07.22.03.4760.01

$${}_1F_2\left(4;\ \frac{3}{2},\ 6;\ z\right) =$$
$$\frac{1}{2\,z^5}\left(5\left(-45\,(z-14)-\left(26\,z^3+330\,z^2+1215\,z+630\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\ \left(2\,z^3+54\,z^2+375\,z+630\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4761.01

$${}_1F_2\left(4;\ \frac{3}{2},\ 6;\ -z\right) =$$
$$-\frac{1}{2\,z^5}\left(5\left(45\,(z+14)+\left(26\,z^3-330\,z^2+1215\,z-630\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\ \left(2\,z^3-54\,z^2+375\,z-630\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = 2$

07.22.03.0293.01

$${}_1F_2(4;\ 2,\ 2;\ z) == \frac{1}{6\sqrt{z}}\left(4\sqrt{z}\ I_0\left(2\sqrt{z}\right)+(z+2)\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4762.01

$${}_1F_2(4;\ 2,\ 2;\ -z) = \frac{1}{6}\left(-\frac{(z-6)\,J_1\left(2\sqrt{z}\right)}{\sqrt{z}}-4\,J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.0294.01

$${}_1F_2\left(4;\ 2,\ \frac{5}{2};\ z\right) == \frac{1}{64\,z^{3/2}}\left(2\sqrt{z}\ (4\,z+3)\cosh\left(2\sqrt{z}\right)+3\,(8\,z-1)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4763.01

$${}_1F_2\left(4;\ 2,\ \frac{5}{2};\ -z\right) = \frac{2\sqrt{z}\ (4\,z-3)\cos\left(2\sqrt{z}\right)+3\,(8\,z+1)\sin\left(2\sqrt{z}\right)}{64\,z^{3/2}}$$

07.22.03.0295.01

$${}_1F_2(4;\ 2,\ 3;\ z) == \frac{1}{3}\,I_0\left(2\sqrt{z}\right)+\frac{2}{3\sqrt{z}}\,I_1\left(2\sqrt{z}\right)$$

07.22.03.4764.01

$${}_1F_2(4;\,2,\,3;\,-z) = \left(\frac{2}{z} - \frac{1}{3}\right) J_2\left(2\sqrt{z}\right) - \frac{J_3\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.0296.01

$${}_1F_2\left(4;\,2,\,\frac{7}{2};\,z\right) == \frac{5}{256\,z^{5/2}}\left(2\sqrt{z}\,\left(8\,z+3\right)\cosh\left(2\sqrt{z}\right) + \left(16\,z^2 - 12\,z - 3\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4765.01

$${}_1F_2\left(4;\,2,\,\frac{7}{2};\,-z\right) = \frac{5\left(\left(16\,z^2 + 12\,z - 3\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(8\,z - 3\right)\cos\left(2\sqrt{z}\right)\right)}{256\,z^{5/2}}$$

07.22.03.4766.01

$${}_1F_2(4;\,2,\,4;\,z) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.4767.01

$${}_1F_2(4;\,2,\,4;\,-z) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.4768.01

$${}_1F_2\left(4;\,2,\,\frac{9}{2};\,z\right) = \frac{35\left(2\sqrt{z}\,\left(16\,z^2 + 36\,z + 45\right)\cosh\left(2\sqrt{z}\right) - 3\left(16\,z^2 + 32\,z + 15\right)\sinh\left(2\sqrt{z}\right)\right)}{1024\,z^{7/2}}$$

07.22.03.4769.01

$${}_1F_2\left(4;\,2,\,\frac{9}{2};\,-z\right) = -\frac{35\left(2\sqrt{z}\,\left(16\,z^2 - 36\,z + 45\right)\cos\left(2\sqrt{z}\right) - 3\left(16\,z^2 - 32\,z + 15\right)\sin\left(2\sqrt{z}\right)\right)}{1024\,z^{7/2}}$$

07.22.03.4770.01

$${}_1F_2(4;\,2,\,5;\,z) = \frac{4\left(\left(z+6\right)I_4\left(2\sqrt{z}\right) + \sqrt{z}\;I_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.4771.01

$${}_1F_2(4;\,2,\,5;\,-z) = -\frac{4\left(\left(z-6\right)J_4\left(2\sqrt{z}\right) + \sqrt{z}\;J_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.4772.01

$${}_1F_2\left(4;\,2,\,\frac{11}{2};\,z\right) = \frac{315\left(\left(64\,z^3 + 864\,z^2 + 3060\,z + 1575\right)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(48\,z^2 + 320\,z + 525\right)\cosh\left(2\sqrt{z}\right)\right)}{4096\,z^{9/2}}$$

07.22.03.4773.01

$${}_1F_2\left(4;\,2,\,\frac{11}{2};\,-z\right) = -\frac{315\left(6\sqrt{z}\,\left(48\,z^2 - 320\,z + 525\right)\cos\left(2\sqrt{z}\right) + \left(64\,z^3 - 864\,z^2 + 3060\,z - 1575\right)\sin\left(2\sqrt{z}\right)\right)}{4096\,z^{9/2}}$$

07.22.03.4774.01

$${}_1F_2(4;\,2,\,6;\,z) = \frac{20\left(z+6\right)I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.4775.01

$${}_1F_2(4;\,2,\,6;\,-z) = -\frac{20\,(z-6)\,J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = 4$, $b_1 = \frac{5}{2}$

07.22.03.0297.01

$${}_1F_2\left(4;\,\frac{5}{2},\,\frac{5}{2};\,z\right) == \frac{3}{256\,z^{3/2}}\left(4\sqrt{z}\,\,(4\,z+3) - \pi\,(3-20\,z)\,\boldsymbol{L}_0\left(2\sqrt{z}\right) - 2\,\pi\,(1-4\,z)\,\sqrt{z}\,\,\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4776.01

$${}_1F_2\left(4;\,\frac{5}{2},\,\frac{5}{2};\,-z\right) = \frac{8\,z\,(16\,z-3) + 3\,\pi\left(-8\,z^2+18\,z+3\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) - 3\,\pi\,\sqrt{z}\,\,(20\,z+3)\,\boldsymbol{H}_2\left(2\sqrt{z}\right)}{256\,z^2}$$

07.22.03.0298.01

$${}_1F_2\left(4;\,\frac{5}{2},\,3;\,z\right) == \frac{6\sqrt{z}\,\,\cosh\left(2\sqrt{z}\right) + (4\,z-3)\sinh\left(2\sqrt{z}\right)}{16\,z^{3/2}}$$

07.22.03.4777.01

$${}_1F_2\left(4;\,\frac{5}{2},\,3;\,-z\right) = \frac{(4\,z+3)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\,\,\cos\left(2\sqrt{z}\right)}{16\,z^{3/2}}$$

07.22.03.0299.01

$${}_1F_2\left(4;\,\frac{5}{2},\,\frac{7}{2};\,z\right) == \frac{15}{512\,z^2}\left(16\,z - 2\,\pi\,(3-4\,z)\,\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z}\,\, + \pi\,(4\,z+3)\,\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4778.01

$${}_1F_2\left(4;\,\frac{5}{2},\,\frac{7}{2};\,-z\right) = \frac{\sqrt{z}\,\left(32\,z\,(8\,z-3) - 45\,(4\,\pi\,z+\pi)\,\boldsymbol{H}_3\left(2\sqrt{z}\right)\right) - 30\,\pi\left(4\,z^2-9\,z-3\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)}{512\,z^{5/2}}$$

07.22.03.4779.01

$${}_1F_2\left(4;\,\frac{5}{2},\,4;\,z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4\,z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.4780.01

$${}_1F_2\left(4;\,\frac{5}{2},\,4;\,-z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\,\cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.4781.01

$${}_1F_2\left(4;\,\frac{5}{2},\,\frac{9}{2};\,z\right) = \frac{32\,(16\,z+9)\,z^2 + 105\,\pi\,(4\,z-3)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}\,\, + 105\,\pi\left(8\,z^2+18\,z-9\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)}{1024\,z^3}$$

07.22.03.4782.01

$${}_1F_2\left(4;\,\frac{5}{2},\,\frac{9}{2};\,-z\right) = \frac{32\,(16\,z-9)\,z^2 - 105\,\pi\,(4\,z+3)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}\,\, - 105\,\pi\left(8\,z^2-18\,z-9\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)}{1024\,z^3}$$

07.22.03.4783.01

$${}_1F_2\left(4;\frac{5}{2},5;z\right)=\frac{3\left(2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)(z+3)^2-3\left(2z^2+6z+3\right)\cosh\left(2\sqrt{z}\right)+9\right)}{2z^4}$$

07.22.03.4784.01

$${}_1F_2\left(4;\frac{5}{2},5;-z\right)=-\frac{3\left(2\sqrt{z}\,\sin\left(2\sqrt{z}\right)(z-3)^2+3\left(2z^2-6z+3\right)\cos\left(2\sqrt{z}\right)-9\right)}{2z^4}$$

07.22.03.4785.01

$${}_1F_2\left(4;\frac{5}{2},\frac{11}{2};z\right)=\frac{1890\pi\left(4z^2+9z-6\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)+\sqrt{z}\,(4z+3)\left(256z^2-945\pi\,\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)}{2048z^{7/2}}$$

07.22.03.4786.01

$${}_1F_2\left(4;\frac{5}{2},\frac{11}{2};-z\right)=\frac{\sqrt{z}\,(4z-3)\left(256z^2+945\pi\,\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)-1890\pi\left(4z^2-9z-6\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)}{2048z^{7/2}}$$

07.22.03.4787.01

$${}_1F_2\left(4;\frac{5}{2},6;z\right)=\frac{15\left(\left(2z^3+42z^2+171z+90\right)\cosh\left(2\sqrt{z}\right)-3\left(-3z+2\left(2z^2+17z+30\right)\sinh\left(2\sqrt{z}\right)\sqrt{z}+30\right)\right)}{2z^5}$$

07.22.03.4788.01

$${}_1F_2\left(4;\frac{5}{2},6;-z\right)=\frac{15\left(\left(2z^3-42z^2+171z-90\right)\cos\left(2\sqrt{z}\right)+3\left(3(z+10)-2\sqrt{z}\,\left(2z^2-17z+30\right)\sin\left(2\sqrt{z}\right)\right)\right)}{2z^5}$$

For fixed z and $a_1 = 4$, $b_1 = 3$

07.22.03.0300.01

$${}_1F_2(4;3,3;z)==\frac{2}{3z^{3/2}}\left(\sqrt{z}\,I_0\left(2\sqrt{z}\right)-(1-z)\,I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4789.01

$${}_1F_2(4;3,3;-z)=\frac{2J_2\left(2\sqrt{z}\right)}{z}-\frac{2J_3\left(2\sqrt{z}\right)}{3\sqrt{z}}$$

07.22.03.0301.01

$${}_1F_2\left(4;3,\frac{7}{2};z\right)==\frac{5}{64z^{5/2}}\left(2\sqrt{z}\,(4z-3)\cosh\left(2\sqrt{z}\right)+3\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4790.01

$${}_1F_2\left(4;3,\frac{7}{2};-z\right)=-\frac{5\left(2\sqrt{z}\,(4z+3)\cos\left(2\sqrt{z}\right)-3\sin\left(2\sqrt{z}\right)\right)}{64z^{5/2}}$$

07.22.03.4791.01

$${}_1F_2(4;3,4;z)=\frac{2I_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.4792.01

$${}_1F_2(4;3,4;-z)=\frac{2J_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.4793.01

$${}_1F_2\left(4;\,3,\,\frac{9}{2};\,z\right)=\frac{35\left(\left(16\,z^2+36\,z+15\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(16\,z+15\right)\cosh\left(2\sqrt{z}\right)\right)}{256\,z^{7/2}}$$

07.22.03.4794.01

$${}_1F_2\left(4;\,3,\,\frac{9}{2};\,-z\right)=-\frac{35\left(2\sqrt{z}\,\left(16\,z-15\right)\cos\left(2\sqrt{z}\right)+\left(16\,z^2-36\,z+15\right)\sin\left(2\sqrt{z}\right)\right)}{256\,z^{7/2}}$$

07.22.03.4795.01

$${}_1F_2(4;\,3,\,5;\,z)=\frac{8\left(3\,I_4\left(2\sqrt{z}\right)+\sqrt{z}\,\,I_5\left(2\sqrt{z}\right)\right)}{z^2}$$

07.22.03.4796.01

$${}_1F_2(4;\,3,\,5;\,-z)=\frac{24\,J_4\left(2\sqrt{z}\right)-8\sqrt{z}\,\,J_5\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.4797.01

$${}_1F_2\left(4;\,3,\,\frac{11}{2};\,z\right)=\frac{315\left(2\sqrt{z}\,\left(16\,z^2+180\,z+315\right)\cosh\left(2\sqrt{z}\right)-3\left(48\,z^2+200\,z+105\right)\sinh\left(2\sqrt{z}\right)\right)}{1024\,z^{9/2}}$$

07.22.03.4798.01

$${}_1F_2\left(4;\,3,\,\frac{11}{2};\,-z\right)=\frac{315\left(2\sqrt{z}\,\left(16\,z^2-180\,z+315\right)\cos\left(2\sqrt{z}\right)-3\left(48\,z^2-200\,z+105\right)\sin\left(2\sqrt{z}\right)\right)}{1024\,z^{9/2}}$$

07.22.03.4799.01

$${}_1F_2(4;\,3,\,6;\,z)=\frac{40\left(3\,I_5\left(2\sqrt{z}\right)+\sqrt{z}\,\,I_6\left(2\sqrt{z}\right)\right)}{z^{5/2}}$$

07.22.03.4800.01

$${}_1F_2(4;\,3,\,6;\,-z)=\frac{120\,J_5\left(2\sqrt{z}\right)}{z^{5/2}}-\frac{40\,J_6\left(2\sqrt{z}\right)}{z^2}$$

For fixed z and $a_1 = 4$, $b_1 = \frac{7}{2}$

07.22.03.0302.01

$${}_1F_2\left(4;\,\frac{7}{2},\,\frac{7}{2};\,z\right)=\frac{75}{1024\,z^{5/2}}\left(\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)\left(3-4\,z\right)-4\sqrt{z}\,\left(3-4\,z\right)-2\,\pi\sqrt{z}\,\left(1-4\,z\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4801.01

$${}_1F_2\left(4;\,\frac{7}{2},\,\frac{7}{2};\,-z\right)=$$
$$-\frac{1}{1024\,z^{7/2}}\left(5\left(\sqrt{z}\,\left(16\,z\left(-4\,z^2+7\,z+6\right)+15\,\pi\left(8\,z^2+6\,z+3\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)-45\,\pi\left(4\,z^2+3\,z+2\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4802.01

$${}_1F_2\left(4;\,\frac{7}{2},\,4;\,z\right)=\frac{15\left(\left(4\,z+3\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.4803.01

$${}_1F_2\left(4;\ \frac{7}{2},\ 4;\ -z\right) = -\frac{15\left(6\sqrt{z}\ \cos\left(2\sqrt{z}\right) + (4z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.4804.01

$${}_1F_2\left(4;\ \frac{7}{2},\ \frac{9}{2};\ z\right) = \frac{5\left(32\left(4z^2+11z-18\right)z^2 + 210\,\pi\left(4z^2-3z+3\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}\ + 315\,\pi\left(4z^2-5z+6\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)}{2048\,z^4}$$

07.22.03.4805.01

$${}_1F_2\left(4;\ \frac{7}{2},\ \frac{9}{2};\ -z\right) =$$
$$-\frac{1}{2048\,z^4}\left(5\left(32\left(-4z^2+11z+18\right)z^2 + 210\,\pi\left(4z^2+3z+3\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}\ - 315\,\pi\left(4z^2+5z+6\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4806.01

$${}_1F_2\left(4;\ \frac{7}{2},\ 5;\ z\right) = \frac{15\left(2\left(z^2+6z+3\right)\cosh\left(2\sqrt{z}\right) - \sqrt{z}\ (7z+12)\sinh\left(2\sqrt{z}\right) - 6\right)}{4\,z^4}$$

07.22.03.4807.01

$${}_1F_2\left(4;\ \frac{7}{2},\ 5;\ -z\right) = \frac{15\left(2\left(z^2-6z+3\right)\cos\left(2\sqrt{z}\right) - \sqrt{z}\ (7z-12)\sin\left(2\sqrt{z}\right) - 6\right)}{4\,z^4}$$

07.22.03.4808.01

$${}_1F_2\left(4;\ \frac{7}{2},\ \frac{11}{2};\ z\right) =$$
$$\frac{1}{4096\,z^{9/2}}\left(5\left(2835\,\pi\left(4z^2-7z+12\right)\boldsymbol{L}_4\left(2\sqrt{z}\right) + \sqrt{z}\ \left(64\left(4z^2+15z-36\right)z^2 + 945\,\pi\left(8z^2-6z+9\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.4809.01

$${}_1F_2\left(4;\ \frac{7}{2},\ \frac{11}{2};\ -z\right) =$$
$$-\frac{1}{4096\,z^{9/2}}\left(5\left(\sqrt{z}\ \left(64\left(-4z^2+15z+36\right)z^2 + 945\,\pi\left(8z^2+6z+9\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right) - 2835\,\pi\left(4z^2+7z+12\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4810.01

$${}_1F_2\left(4;\ \frac{7}{2},\ 6;\ z\right) = \frac{75\left(-3(z-6) - 3\left(2z^2+11z+6\right)\cosh\left(2\sqrt{z}\right) + \sqrt{z}\ \left(z^2+18z+36\right)\sinh\left(2\sqrt{z}\right)\right)}{2\,z^5}$$

07.22.03.4811.01

$${}_1F_2\left(4;\ \frac{7}{2},\ 6;\ -z\right) = \frac{75\left(-3(z+6) + 3\left(2z^2-11z+6\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\ \left(z^2-18z+36\right)\sin\left(2\sqrt{z}\right)\right)}{2\,z^5}$$

For fixed z and $a_1 = 4$, $b_1 = 4$

07.22.03.4812.01

$${}_1F_2(4;\ 4,\ 4;\ z) = \frac{6\,I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.4813.01

$${}_1F_2(4;\,4,\,4;\,-z) = \frac{6\,J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.4814.01

$${}_1F_2\left(4;\,4,\,\frac{9}{2};\,z\right) = \frac{105\left(2\sqrt{z}\,\left(4\,z+15\right)\cosh\left(2\sqrt{z}\right)-3\left(8\,z+5\right)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.4815.01

$${}_1F_2\left(4;\,4,\,\frac{9}{2};\,-z\right) = \frac{105\left(2\sqrt{z}\,\left(4\,z-15\right)\cos\left(2\sqrt{z}\right)+3\left(5-8\,z\right)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.4816.01

$${}_1F_2(4;\,4,\,5;\,z) = \frac{24\,I_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.4817.01

$${}_1F_2(4;\,4,\,5;\,-z) = \frac{24\,J_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.4818.01

$${}_1F_2\left(4;\,4,\,\frac{11}{2};\,z\right) = \frac{945\left(\left(16\,z^2+180\,z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,\left(8\,z+21\right)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.4819.01

$${}_1F_2\left(4;\,4,\,\frac{11}{2};\,-z\right) = \frac{945\left(10\sqrt{z}\,\left(8\,z-21\right)\cos\left(2\sqrt{z}\right)+\left(16\,z^2-180\,z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.4820.01

$${}_1F_2(4;\,4,\,6;\,z) = \frac{120\,I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.4821.01

$${}_1F_2(4;\,4,\,6;\,-z) = \frac{120\,J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = 4$, $b_1 = \frac{9}{2}$

07.22.03.4822.01

$${}_1F_2\left(4;\,\frac{9}{2},\,\frac{9}{2};\,z\right) =$$

$$\frac{1}{4096\,z^5}\left(35\left(64\left(4\,z^2-14\,z+45\right)z^2-315\,\pi\left(4\,z^2-7\,z+10\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}\,+210\,\pi\left(4\,z^3-9\,z^2+24\,z-45\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4823.01

$${}_1F_2\left(4;\frac{9}{2},\frac{9}{2};-z\right)=$$
$$-\frac{1}{4096\,z^5}\left(35\left(64\left(4\,z^2+14\,z+45\right)z^2+315\,\pi\left(4\,z^2+7\,z+10\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}-210\,\pi\left(4\,z^3+9\,z^2+24\,z+45\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4824.01

$${}_1F_2\left(4;\frac{9}{2},5;z\right)=\frac{105\left(-6\,(3\,z+4)\cosh\left(2\sqrt{z}\right)+\sqrt{z}\,(4\,z+33)\sinh\left(2\sqrt{z}\right)+24\right)}{16\,z^4}$$

07.22.03.4825.01

$${}_1F_2\left(4;\frac{9}{2},5;-z\right)=\frac{105\left(6\,(3\,z-4)\cos\left(2\sqrt{z}\right)+\sqrt{z}\,(4\,z-33)\sin\left(2\sqrt{z}\right)+24\right)}{16\,z^4}$$

07.22.03.4826.01

$${}_1F_2\left(4;\frac{9}{2},\frac{11}{2};z\right)=\frac{1}{8192\,z^{11/2}}$$
$$\left(105\left(630\,\pi\left(4\,z^3-15\,z^2+63\,z-180\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)+\sqrt{z}\left(128\,z^2\left(2\,z^2-11\,z+60\right)-945\,\pi\left(4\,z^2-13\,z+30\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.4827.01

$${}_1F_2\left(4;\frac{9}{2},\frac{11}{2};-z\right)=-\frac{1}{8192\,z^{11/2}}$$
$$\left(105\left(\sqrt{z}\left(128\left(2\,z^2+11\,z+60\right)z^2+945\,\pi\left(4\,z^2+13\,z+30\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)-630\,\pi\left(4\,z^3+15\,z^2+63\,z+180\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4828.01

$${}_1F_2\left(4;\frac{9}{2},6;z\right)=\frac{525\left(12\,(z-2)+2\left(z^2+18\,z+12\right)\cosh\left(2\sqrt{z}\right)-\sqrt{z}\,(13\,z+48)\sinh\left(2\sqrt{z}\right)\right)}{8\,z^5}$$

07.22.03.4829.01

$${}_1F_2\left(4;\frac{9}{2},6;-z\right)=-\frac{525\left(-12\,(z+2)+2\left(z^2-18\,z+12\right)\cos\left(2\sqrt{z}\right)-\sqrt{z}\,(13\,z-48)\sin\left(2\sqrt{z}\right)\right)}{8\,z^5}$$

For fixed z and $a_1 = 4$, $b_1 = 5$

07.22.03.4830.01

$${}_1F_2(4;5,5;z)=\frac{96\left(-(5\,z+6)\,I_0\left(2\sqrt{z}\right)+\sqrt{z}\,(z+11)\,I_1\left(2\sqrt{z}\right)+6\right)}{z^4}$$

07.22.03.4831.01

$${}_1F_2(4;5,5;-z)=\frac{96\left((5\,z-6)\,J_0\left(2\sqrt{z}\right)+(z-11)\sqrt{z}\,J_1\left(2\sqrt{z}\right)+6\right)}{z^4}$$

07.22.03.4832.01

$${}_1F_2\left(4;5,\frac{11}{2};z\right)=\frac{945\left(2\sqrt{z}\,(4\,z+57)\cosh\left(2\sqrt{z}\right)-3\,(16\,z+35)\sinh\left(2\sqrt{z}\right)+96\sqrt{z}\right)}{64\,z^{9/2}}$$

07.22.03.4833.01

$${}_1F_2\left(4;\, 5,\, \frac{11}{2};\, -z\right) = -\frac{945\left(2\sqrt{z}\,\left(4z-57\right)\cos\left(2\sqrt{z}\right)+\left(105-48z\right)\sin\left(2\sqrt{z}\right)-96\sqrt{z}\right)}{64\,z^{9/2}}$$

07.22.03.4834.01

$${}_1F_2(4;\, 5,\, 6;\, z) = \frac{480\left(\sqrt{z}\,\left(\left(z+18\right)I_2\left(2\sqrt{z}\right)+6\right)-6\left(z+1\right)I_1\left(2\sqrt{z}\right)\right)}{z^{9/2}}$$

07.22.03.4835.01

$${}_1F_2(4;\, 5,\, 6;\, -z) = \frac{480\left(6\left(z-1\right)J_1\left(2\sqrt{z}\right)+\sqrt{z}\,\left(\left(z-18\right)J_2\left(2\sqrt{z}\right)+6\right)\right)}{z^{9/2}}$$

For fixed z and $a_1 = 4$, $b_1 = \frac{11}{2}$

07.22.03.4836.01

$${}_1F_2\left(4;\, \frac{11}{2},\, \frac{11}{2};\, z\right) = \frac{1}{16\,384\,z^{13/2}}\left(315\left(2\sqrt{z}\,\left(32\left(4z^3-27z^2+150z+2520\right)z^2+945\pi\left(4z^3-9z^2+60z-315\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)-945\pi\left(4z^3-3z^2-270z+2520\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4837.01

$${}_1F_2\left(4;\, \frac{11}{2},\, \frac{11}{2};\, -z\right) = \frac{1}{16\,384\,z^{13/2}}\left(315\left(945\pi\left(4z^3+3z^2-270z-2520\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(945\pi\left(4z^3+9z^2+60z+315\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)-32z^2\left(4z^3+27z^2+150z-2520\right)\right)\right)\right)$$

07.22.03.4838.01

$${}_1F_2\left(4;\, \frac{11}{2},\, 6;\, z\right) = \frac{4725\left(48\left(z+2\right)-6\left(5z+16\right)\cosh\left(2\sqrt{z}\right)+\sqrt{z}\,\left(4z+87\right)\sinh\left(2\sqrt{z}\right)\right)}{32\,z^5}$$

07.22.03.4839.01

$${}_1F_2\left(4;\, \frac{11}{2},\, 6;\, -z\right) = -\frac{4725\left(-48\left(z-2\right)+6\left(5z-16\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\,\left(4z-87\right)\sin\left(2\sqrt{z}\right)\right)}{32\,z^5}$$

For fixed z and $a_1 = 4$, $b_1 = 6$

07.22.03.4840.01

$${}_1F_2(4;\, 6,\, 6;\, z) = \frac{2400\left(6\left(z+4\right)-8\left(z+3\right)I_0\left(2\sqrt{z}\right)+\sqrt{z}\,\left(z+26\right)I_1\left(2\sqrt{z}\right)\right)}{z^5}$$

07.22.03.4841.01

$${}_1F_2(4;\, 6,\, 6;\, -z) = -\frac{2400\left(-6\left(z-4\right)+8\left(z-3\right)J_0\left(2\sqrt{z}\right)+\left(z-26\right)\sqrt{z}\,J_1\left(2\sqrt{z}\right)\right)}{z^5}$$

For fixed z and $a_1 = \frac{9}{2}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = \frac{9}{2}$, $b_1 = -\frac{11}{2}$

07.22.03.4842.01

$$ {}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, -\frac{11}{2}; z\right) = \frac{1}{11\,345\,882\,625}\left(\left(65\,536\,z^8 + 22\,609\,920\,z^7 + 90\,316\,800\,z^6 + 94\,832\,640\,z^5 + 468\,115\,200\,z^4 + 2\,632\,694\,400\,z^3 + 11\,168\,766\,000\,z^2 + 24\,379\,582\,500\,z + 11\,345\,882\,625\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576\,z^7 + 45\,957\,120\,z^6 - 27\,095\,040\,z^5 - 99\,187\,200\,z^4 - 562\,464\,000\,z^3 - 2\,867\,205\,600\,z^2 - 9\,251\,739\,000\,z - 11\,345\,882\,625\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.4843.01

$$ {}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, -\frac{11}{2}; -z\right) = \frac{1}{11\,345\,882\,625}\left(\left(65\,536\,z^8 - 22\,609\,920\,z^7 + 90\,316\,800\,z^6 - 94\,832\,640\,z^5 + 468\,115\,200\,z^4 - 2\,632\,694\,400\,z^3 + 11\,168\,766\,000\,z^2 - 24\,379\,582\,500\,z + 11\,345\,882\,625\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576\,z^7 - 45\,957\,120\,z^6 - 27\,095\,040\,z^5 + 99\,187\,200\,z^4 - 562\,464\,000\,z^3 + 2\,867\,205\,600\,z^2 - 9\,251\,739\,000\,z + 11\,345\,882\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.4844.01

$$ {}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, -\frac{9}{2}; z\right) = \left(-\frac{65\,536\,z^7}{68\,762\,925} - \frac{16\,384\,z^6}{467\,775} + \frac{4096\,z^5}{155\,925} + \frac{512\,z^4}{8085} + \frac{4096\,z^3}{14\,553} + \frac{736\,z^2}{693} + \frac{24\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{1\,031\,443\,875}\left(2\sqrt{z}\left(16\,384\,z^7 + 4\,915\,200\,z^6 + 13\,547\,520\,z^5 + 16\,934\,400\,z^4 + 68\,040\,000\,z^3 + 295\,293\,600\,z^2 + 875\,164\,500\,z + 1\,031\,443\,875\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.4845.01

$$ {}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, -\frac{9}{2}; -z\right) = \left(\frac{65\,536\,z^7}{68\,762\,925} - \frac{16\,384\,z^6}{467\,775} - \frac{4096\,z^5}{155\,925} + \frac{512\,z^4}{8085} - \frac{4096\,z^3}{14\,553} + \frac{736\,z^2}{693} - \frac{24\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{1\,031\,443\,875}\left(2\sqrt{z}\left(-16\,384\,z^7 + 4\,915\,200\,z^6 - 13\,547\,520\,z^5 + 16\,934\,400\,z^4 - 68\,040\,000\,z^3 + 295\,293\,600\,z^2 - 875\,164\,500\,z + 1\,031\,443\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.4846.01

$$ {}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, -\frac{7}{2}; z\right) = \left(\frac{16\,384\,z^7}{114\,604\,875} + \frac{16\,384\,z^6}{467\,775} + \frac{2048\,z^5}{155\,925} + \frac{512\,z^4}{3465} + \frac{1856\,z^3}{4851} + \frac{1376\,z^2}{1155} + \frac{172\,z}{77} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{22\,920\,975}\left(2\sqrt{z}\left(45\,056\,z^6 + 1\,204\,224\,z^5 - 1\,430\,016\,z^4 - 2\,419\,200\,z^3 - 7\,938\,000\,z^2 - 20\,638\,800\,z - 22\,920\,975\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.4847.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, -\frac{7}{2}; -z\right) =$$
$$\left(-\frac{16\,384\,z^7}{114\,604\,875} + \frac{16\,384\,z^6}{467\,775} - \frac{2048\,z^5}{155\,925} + \frac{512\,z^4}{3465} - \frac{1856\,z^3}{4851} + \frac{1376\,z^2}{1155} - \frac{172\,z}{77} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{22\,920\,975}$$
$$\left(2\sqrt{z}\left(-45\,056\,z^6 + 1\,204\,224\,z^5 + 1\,430\,016\,z^4 - 2\,419\,200\,z^3 + 7\,938\,000\,z^2 - 20\,638\,800\,z + 22\,920\,975\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4848.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, -\frac{5}{2}; z\right) = \left(-\frac{4096\,z^6}{334\,125} - \frac{4096\,z^5}{22\,275} + \frac{512\,z^4}{2475} + \frac{512\,z^3}{693} + \frac{16\,z^2}{11} + \frac{128\,z}{55} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{16\,372\,125}$$
$$\left(2\sqrt{z}\left(4096\,z^6 + 752\,640\,z^5 - 1\,881\,600\,z^4 + 5\,080\,320\,z^3 + 7\,938\,000\,z^2 + 16\,272\,900\,z + 16\,372\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4849.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, -\frac{5}{2}; -z\right) = \left(-\frac{4096\,z^6}{334\,125} + \frac{4096\,z^5}{22\,275} + \frac{512\,z^4}{2475} - \frac{512\,z^3}{693} + \frac{16\,z^2}{11} - \frac{128\,z}{55} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{1}{16\,372\,125}\left(2\sqrt{z}\left(4096\,z^6 - 752\,640\,z^5 - 1\,881\,600\,z^4 - 5\,080\,320\,z^3 + 7\,938\,000\,z^2 - 16\,272\,900\,z + 16\,372\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4850.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, -\frac{3}{2}; z\right) = \left(\frac{4096\,z^6}{3\,274\,425} + \frac{23\,552\,z^5}{155\,925} - \frac{512\,z^4}{693} + \frac{3328\,z^3}{3465} + \frac{80\,z^2}{33} + \frac{28\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) +$$
$$\frac{2\sqrt{z}\left(2048\,z^5 + 6400\,z^4 + 46\,080\,z^3 - 181\,440\,z^2 - 189\,000\,z - 155\,925\right)\sinh\left(2\sqrt{z}\right)}{155\,925}$$

07.22.03.4851.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, -\frac{3}{2}; -z\right) = \left(\frac{4096\,z^6}{3\,274\,425} - \frac{23\,552\,z^5}{155\,925} - \frac{512\,z^4}{693} - \frac{3328\,z^3}{3465} + \frac{80\,z^2}{33} - \frac{28\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{2\sqrt{z}\left(2048\,z^5 - 6400\,z^4 + 46\,080\,z^3 + 181\,440\,z^2 - 189\,000\,z + 155\,925\right)\sin\left(2\sqrt{z}\right)}{155\,925}$$

07.22.03.4852.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, -\frac{1}{2}; z\right) = \left(-\frac{34\,816\,z^5}{1\,091\,475} + \frac{256\,z^4}{1155} - \frac{768\,z^3}{385} + \frac{64\,z^2}{33} + \frac{40\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) -$$
$$\frac{2\sqrt{z}\left(1024\,z^5 + 62\,720\,z^4 - 302\,400\,z^3 - 846\,720\,z^2 + 2\,513\,700\,z + 1\,091\,475\right)\sinh\left(2\sqrt{z}\right)}{1\,091\,475}$$

07.22.03.4853.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, -\frac{1}{2}; -z\right) = \left(\frac{34\,816\,z^5}{1\,091\,475} + \frac{256\,z^4}{1155} + \frac{768\,z^3}{385} + \frac{64\,z^2}{33} - \frac{40\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{2\sqrt{z}\left(-1024\,z^5 + 62\,720\,z^4 + 302\,400\,z^3 - 846\,720\,z^2 - 2\,513\,700\,z + 1\,091\,475\right)\sin\left(2\sqrt{z}\right)}{1\,091\,475}$$

07.22.03.4854.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, \frac{1}{2}; z\right) = \left(\frac{1024\,z^5}{1\,091\,475} + \frac{256\,z^4}{24\,255} + \frac{64\,z^3}{385} - \frac{64\,z^2}{33} + \frac{4\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(1280\,z^4 - 16\,128\,z^3 + 63\,504\,z^2 + 211\,680\,z - 218\,295\right)\sinh\left(2\sqrt{z}\right)}{218\,295}$$

07.22.03.4855.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, \frac{1}{2}; -z\right) = \left(-\frac{1024\,z^5}{1\,091\,475} + \frac{256\,z^4}{24\,255} - \frac{64\,z^3}{385} - \frac{64\,z^2}{33} - \frac{4\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(1280\,z^4 + 16\,128\,z^3 + 63\,504\,z^2 - 211\,680\,z - 218\,295\right)\sin\left(2\sqrt{z}\right)}{218\,295}$$

07.22.03.4856.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, 1; z\right) = \frac{1}{1\,091\,475}\left(\left(1024\,z^5 - 6400\,z^4 + 336\,000\,z^3 - 1\,764\,000\,z^2 - 1\,543\,500\,z + 1\,091\,475\right) I_0\left(2\sqrt{z}\right) + 40\sqrt{z}\,\left(256\,z^4 - 3200\,z^3 + 88\,200\,z - 11\,025\right) I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4857.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, 1; -z\right) = \frac{1}{1\,091\,475}\left(-\left(1024\,z^5 + 6400\,z^4 + 336\,000\,z^3 + 1\,764\,000\,z^2 - 1\,543\,500\,z - 1\,091\,475\right) J_0\left(2\sqrt{z}\right) - 40\sqrt{z}\,\left(256\,z^4 + 3200\,z^3 - 88\,200\,z - 11\,025\right) J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4858.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, \frac{3}{2}; z\right) = \left(\frac{256\,z^4}{72\,765} - \frac{256\,z^3}{8085} - \frac{16\,z^2}{55} + \frac{16\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(256\,z^4 - 5760\,z^3 + 105\,840\,z^2 - 132\,300\,z - 1\,091\,475\right)\sinh\left(2\sqrt{z}\right)}{1\,091\,475}$$

07.22.03.4859.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, \frac{3}{2}; -z\right) = \left(\frac{256\,z^4}{72\,765} + \frac{256\,z^3}{8085} - \frac{16\,z^2}{55} - \frac{16\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(256\,z^4 + 5760\,z^3 + 105\,840\,z^2 + 132\,300\,z - 1\,091\,475\right)\sin\left(2\sqrt{z}\right)}{1\,091\,475}$$

07.22.03.4860.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, 2; z\right) = \frac{1}{1\,091\,475}\left(\frac{\left(1024\,z^5 - 26\,880\,z^4 + 336\,000\,z^3 + 252\,000\,z^2 - 2\,551\,500\,z + 1\,091\,475\right) I_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 20\left(256\,z^4 - 50\,400\,z^2 + 50\,400\,z + 155\,925\right) I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.4861.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, 2; -z\right) = \frac{1}{1\,091\,475}\left(\frac{\left(-1024\,z^5 - 26\,880\,z^4 - 336\,000\,z^3 + 252\,000\,z^2 + 2\,551\,500\,z + 1\,091\,475\right) J_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 20\left(256\,z^4 - 50\,400\,z^2 - 50\,400\,z + 155\,925\right) J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.4862.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, \frac{5}{2}; z\right) = \frac{1}{363\,825}\left(\left(256\,z^4 - 8320\,z^3 + 25\,200\,z^2 + 608\,580\,z + 363\,825\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256\,z^3 + 10\,080\,z^2 - 123\,480\,z - 363\,825\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4863.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, \frac{5}{2}; -z\right) = \frac{1}{363\,825}\left(\left(256\,z^4 + 8320\,z^3 + 25\,200\,z^2 - 608\,580\,z + 363\,825\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256\,z^3 - 10\,080\,z^2 - 123\,480\,z + 363\,825\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4864.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, 3; z\right) = \frac{1}{1\,091\,475\,z}\left(\left(2048\,z^5 - 53\,760\,z^4 + 26\,880\,z^3 + 2\,116\,800\,z^2 + 340\,200\,z + 2\,182\,950\right) I_2\left(2\sqrt{z}\right) + 3360\sqrt{z}\left(64\,z^3 - 240\,z^2 - 1620\,z - 1485\right) I_3\left(2\sqrt{z}\right)\right)$$

07.22.03.4865.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, 3; -z\right) = \frac{1}{1\,091\,475\,z}\left(3360\sqrt{z}\left(64\,z^3 + 240\,z^2 - 1620\,z + 1485\right) J_3\left(2\sqrt{z}\right) - 2\left(1024\,z^5 + 26\,880\,z^4 + 13\,440\,z^3 - 1\,058\,400\,z^2 + 170\,100\,z - 1\,091\,475\right) J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.4866.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, \frac{7}{2}; z\right) = \frac{1}{72\,765}\left(\left(-512\,z^3 + 16\,800\,z^2 + 128\,520\,z + 72\,765\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64\,z^3 - 672\,z^2 - 31\,500\,z - 72\,765\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4867.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, \frac{7}{2}; -z\right) = \frac{1}{72\,765}\left(\left(512\,z^3 + 16\,800\,z^2 - 128\,520\,z + 72\,765\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64\,z^3 + 672\,z^2 - 31\,500\,z + 72\,765\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4868.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, 4; z\right) = \frac{1}{363\,825\,z^{3/2}}\left(2\left(\left(1024\,z^5 - 6400\,z^4 - 201\,600\,z^3 - 635\,040\,z^2 - 3\,458\,700\,z + 1\,091\,475\right) I_3\left(2\sqrt{z}\right) + 20\sqrt{z}\left(-256\,z^4 + 3584\,z^3 + 42\,336\,z^2 + 181\,440\,z + 592\,515\right) I_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4869.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, 4; -z\right) =$$
$$-\frac{1}{363\,825\, z^{3/2}}\left(2\left(\left(1024\, z^5 + 6400\, z^4 - 201\,600\, z^3 + 635\,040\, z^2 - 3\,458\,700\, z - 1\,091\,475\right) J_3\left(2\sqrt{z}\right) - 20\sqrt{z}\right.\right.$$
$$\left.\left.\left(256\, z^4 + 3584\, z^3 - 42\,336\, z^2 + 181\,440\, z - 592\,515\right) J_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4870.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, \frac{9}{2}; z\right) = \left(\frac{64\, z^3}{10\,395} + \frac{32\, z^2}{99} + \frac{20\, z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16\, z^2 + 240\, z + 495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4871.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, \frac{9}{2}; -z\right) = \left(-\frac{64\, z^3}{10\,395} + \frac{32\, z^2}{99} - \frac{20\, z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(16\, z^2 - 240\, z + 495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4872.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, 5; z\right) =$$
$$\frac{1}{363\,825\, z^2}\left(8\left(\left(1024\, z^5 + 34\,560\, z^4 + 489\,600\, z^3 + 6\,138\,720\, z^2 + 32\,284\,980\, z + 1\,091\,475\right) I_4\left(2\sqrt{z}\right) - 40\sqrt{z}\right.\right.$$
$$\left.\left.\left(256\, z^4 + 5760\, z^3 + 84\,672\, z^2 + 893\,592\, z + 4\,085\,235\right) I_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4873.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, 5; -z\right) =$$
$$-\frac{1}{363\,825\, z^2}\left(8\left(\left(1024\, z^5 - 34\,560\, z^4 + 489\,600\, z^3 - 6\,138\,720\, z^2 + 32\,284\,980\, z - 1\,091\,475\right) J_4\left(2\sqrt{z}\right) - 40\right.\right.$$
$$\left.\left.\sqrt{z}\left(256\, z^4 - 5760\, z^3 + 84\,672\, z^2 - 893\,592\, z + 4\,085\,235\right) J_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4874.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, \frac{11}{2}; z\right) = \frac{1}{1155\, z^{9/2}}$$
$$\left(2\left(16\, z^7 + 2660\, z^6 + 106\,365\, z^5 + 2\,419\,200\, z^4 + 33\,868\,800\, z^3 + 254\,016\,000\, z^2 + 762\,048\,000\, z + 381\,024\,000\right)\sinh\left(2\sqrt{z}\right) -\right.$$
$$\left.35\sqrt{z}\left(16\, z^6 + 1056\, z^5 + 30\,687\, z^4 + 552\,960\, z^3 + 5\,806\,080\, z^2 + 29\,030\,400\, z + 43\,545\,600\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.4875.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, \frac{11}{2}; -z\right) = \frac{1}{1155\, z^{9/2}}$$
$$\left(2\left(-16\, z^7 + 2660\, z^6 - 106\,365\, z^5 + 2\,419\,200\, z^4 - 33\,868\,800\, z^3 + 254\,016\,000\, z^2 - 762\,048\,000\, z + 381\,024\,000\right)\sin\left(2\sqrt{z}\right) -\right.$$
$$\left.35\sqrt{z}\left(16\, z^6 - 1056\, z^5 + 30\,687\, z^4 - 552\,960\, z^3 + 5\,806\,080\, z^2 - 29\,030\,400\, z + 43\,545\,600\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.4876.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, 6; z\right) =$$
$$\frac{1}{72\,765\, z^{5/2}}\left(8\left(\left(1024\, z^5 + 96\,000\, z^4 + 3\,254\,400\, z^3 + 60\,086\,880\, z^2 + 457\,943\,220\, z + 1\,091\,475\right) I_5\left(2\sqrt{z}\right) - 60\right.\right.$$
$$\left.\left.\sqrt{z}\left(256\, z^4 + 15\,360\, z^3 + 449\,568\, z^2 + 7\,094\,304\, z + 45\,827\,397\right) I_6\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4877.01

$${}_1F_2\left(\frac{9}{2}; -\frac{11}{2}, 6; -z\right) =$$
$$-\frac{1}{72\,765\,z^{5/2}}\left(8\left(\left(1024\,z^5 - 96\,000\,z^4 + 3\,254\,400\,z^3 - 60\,086\,880\,z^2 + 457\,943\,220\,z - 1\,091\,475\right) J_5\left(2\sqrt{z}\right) - \right.\right.$$
$$\left.\left.60\sqrt{z}\left(256\,z^4 - 15\,360\,z^3 + 449\,568\,z^2 - 7\,094\,304\,z + 45\,827\,397\right) J_6\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = \frac{9}{2}$, $b_1 = -\frac{9}{2}$

07.22.03.4878.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, -\frac{9}{2}; z\right) = \frac{1}{93\,767\,625}$$
$$\left(\left(16\,384\,z^7 + 4\,448\,256\,z^6 + 13\,547\,520\,z^5 + 10\,160\,640\,z^4 + 33\,203\,520\,z^3 + 108\,864\,000\,z^2 + 208\,372\,500\,z + 93\,767\,625\right)\right.$$
$$\cosh\left(2\sqrt{z}\right) +$$
$$\left.6\sqrt{z}\left(77\,824\,z^6 + 2\,639\,872\,z^5 - 1\,128\,960\,z^4 - 2\,903\,040\,z^3 - 10\,357\,200\,z^2 - 27\,783\,000\,z - 31\,255\,875\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4879.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, -\frac{9}{2}; -z\right) = \frac{1}{93\,767\,625}$$
$$\left(\left(-16\,384\,z^7 + 4\,448\,256\,z^6 - 13\,547\,520\,z^5 + 10\,160\,640\,z^4 - 33\,203\,520\,z^3 + 108\,864\,000\,z^2 - 208\,372\,500\,z + 93\,767\,625\right)\right.$$
$$\cos\left(2\sqrt{z}\right) -$$
$$\left.6\sqrt{z}\left(77\,824\,z^6 - 2\,639\,872\,z^5 - 1\,128\,960\,z^4 + 2\,903\,040\,z^3 - 10\,357\,200\,z^2 + 27\,783\,000\,z - 31\,255\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4880.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, -\frac{7}{2}; z\right) = \frac{1}{10\,418\,625}$$
$$\left(\left(-217\,088\,z^6 - 6\,021\,120\,z^5 + 3\,386\,880\,z^4 + 5\,322\,240\,z^3 + 13\,834\,800\,z^2 + 23\,814\,000\,z + 10\,418\,625\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left.2\sqrt{z}\left(4096\,z^6 + 949\,248\,z^5 + 1\,881\,600\,z^4 + 1\,693\,440\,z^3 + 4\,309\,200\,z^2 + 9\,922\,500\,z + 10\,418\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4881.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, -\frac{7}{2}; -z\right) = \frac{1}{10\,418\,625}$$
$$\left(\left(-217\,088\,z^6 + 6\,021\,120\,z^5 + 3\,386\,880\,z^4 - 5\,322\,240\,z^3 + 13\,834\,800\,z^2 - 23\,814\,000\,z + 10\,418\,625\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(4096\,z^6 - 949\,248\,z^5 + 1\,881\,600\,z^4 - 1\,693\,440\,z^3 + 4\,309\,200\,z^2 - 9\,922\,500\,z + 10\,418\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4882.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, -\frac{5}{2}; z\right) = \left(\frac{4096\,z^6}{1\,488\,375} + \frac{1024\,z^5}{2025} + \frac{256\,z^3}{225} + \frac{176\,z^2}{105} + \frac{12\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) +$$
$$\frac{2\sqrt{z}\left(16\,384\,z^5 + 313\,600\,z^4 - 282\,240\,z^3 - 302\,400\,z^2 - 529\,200\,z - 496\,125\right)\sinh\left(2\sqrt{z}\right)}{496\,125}$$

07.22.03.4883.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, -\frac{5}{2}; -z\right) = \left(\frac{4096\,z^6}{1\,488\,375} - \frac{1024\,z^5}{2025} - \frac{256\,z^3}{225} + \frac{176\,z^2}{105} - \frac{12\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(16\,384\,z^5 - 313\,600\,z^4 - 282\,240\,z^3 + 302\,400\,z^2 - 529\,200\,z + 496\,125\right)\sin\left(2\sqrt{z}\right)}{496\,125}$$

07.22.03.4884.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, -\frac{3}{2}; z\right) = \left(-\frac{2048\,z^5}{14\,175} - \frac{256\,z^4}{189} + \frac{256\,z^3}{315} + \frac{64\,z^2}{21} + \frac{8\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(1024\,z^5 + 134\,400\,z^4 - 302\,400\,z^3 + 483\,840\,z^2 + 396\,900\,z + 297\,675\right)\sinh\left(2\sqrt{z}\right)}{297\,675}$$

07.22.03.4885.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, -\frac{3}{2}; -z\right) = \left(\frac{2048\,z^5}{14\,175} - \frac{256\,z^4}{189} - \frac{256\,z^3}{315} + \frac{64\,z^2}{21} - \frac{8\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(-1024\,z^5 + 134\,400\,z^4 + 302\,400\,z^3 + 483\,840\,z^2 - 396\,900\,z + 297\,675\right)\sin\left(2\sqrt{z}\right)}{297\,675}$$

07.22.03.4886.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, -\frac{1}{2}; z\right) = \left(\frac{1024\,z^5}{99\,225} + \frac{256\,z^4}{315} - \frac{64\,z^3}{21} + \frac{32\,z^2}{21} + 4\,z + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(256\,z^4 + 4752\,z^2 - 7560\,z - 2835\right)\sinh\left(2\sqrt{z}\right)}{2835}$$

07.22.03.4887.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, -\frac{1}{2}; -z\right) = \left(-\frac{1024\,z^5}{99\,225} + \frac{256\,z^4}{315} + \frac{64\,z^3}{21} + \frac{32\,z^2}{21} - 4\,z + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(256\,z^4 + 4752\,z^2 + 7560\,z - 2835\right)\sin\left(2\sqrt{z}\right)}{2835}$$

07.22.03.4888.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, \frac{1}{2}; z\right) = \left(-\frac{256\,z^4}{3675} + \frac{256\,z^3}{525} - \frac{16\,z^2}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(256\,z^4 + 8064\,z^3 - 15\,120\,z^2 - 132\,300\,z + 99\,225\right)\sinh\left(2\sqrt{z}\right)}{99\,225}$$

07.22.03.4889.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, \frac{1}{2}; -z\right) = \frac{1}{99\,225}\left(2\sqrt{z}\,\left(256\,z^4 - 8064\,z^3 - 15\,120\,z^2 + 132\,300\,z + 99\,225\right)\sin\left(2\sqrt{z}\right) - 27\left(256\,z^4 + 1792\,z^3 + 8400\,z^2 - 3675\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.4890.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, 1; z\right) = \frac{1}{99\,225}\left(\left(-5888\,z^4 + 49\,920\,z^3 - 151\,200\,z^2 - 176\,400\,z + 99\,225\right)I_0\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(256\,z^4 + 2816\,z^3 + 21\,600\,z^2 - 176\,400\,z + 11\,025\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4891.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, 1; -z\right) = \frac{1}{99\,225}\left(\left(-5888\,z^4 - 49\,920\,z^3 - 151\,200\,z^2 + 176\,400\,z + 99\,225\right) J_0\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256\,z^4 - 2816\,z^3 + 21\,600\,z^2 + 176\,400\,z + 11\,025\right) J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4892.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, \frac{3}{2}; z\right) = \left(-\frac{256\,z^4}{99\,225} + \frac{128\,z^3}{11\,025} - \frac{16\,z^2}{35} + \frac{4\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(128\,z^3 - 1120\,z^2 + 11\,025\right)\sinh\left(2\sqrt{z}\right)}{11\,025}$$

07.22.03.4893.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, \frac{3}{2}; -z\right) = \left(-\frac{256\,z^4}{99\,225} - \frac{128\,z^3}{11\,025} - \frac{16\,z^2}{35} - \frac{4\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(128\,z^3 + 1120\,z^2 - 11\,025\right)\sin\left(2\sqrt{z}\right)}{11\,025}$$

07.22.03.4894.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, 2; z\right) = \frac{1}{99\,225}\left(2\left(-256\,z^4 + 3840\,z^3 - 50\,400\,z^2 + 25\,200\,z + 127\,575\right) I_2\left(2\sqrt{z}\right) - \frac{15\left(256\,z^4 - 1792\,z^3 - 3360\,z^2 + 15\,120\,z - 6615\right) I_1\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.4895.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, 2; -z\right) = \frac{1}{99\,225}\left(\frac{15\left(-256\,z^4 - 1792\,z^3 + 3360\,z^2 + 15\,120\,z + 6615\right) J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 2\left(256\,z^4 + 3840\,z^3 + 50\,400\,z^2 + 25\,200\,z - 127\,575\right) J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.4896.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, \frac{5}{2}; z\right) = \left(-\frac{512\,z^3}{33\,075} - \frac{32\,z^2}{735} + \frac{8\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(64\,z^3 - 1440\,z^2 + 8820\,z + 33\,075\right)\sinh\left(2\sqrt{z}\right)}{33\,075}$$

07.22.03.4897.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, \frac{5}{2}; -z\right) = \left(\frac{512\,z^3}{33\,075} - \frac{32\,z^2}{735} - \frac{8\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(64\,z^3 + 1440\,z^2 + 8820\,z - 33\,075\right)\sin\left(2\sqrt{z}\right)}{33\,075}$$

07.22.03.4898.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, 3; z\right) = -\frac{1}{99\,225\,z}\left(2\left(7\left(256\,z^4 + 768\,z^3 - 12\,960\,z^2 + 2160\,z - 14\,175\right) I_2\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256\,z^4 - 5376\,z^3 + 10\,080\,z^2 + 105\,840\,z + 76\,545\right) I_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4899.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, 3; -z\right) = \frac{1}{99\,225\,z}\left(2\left(7\left(-256\,z^4 + 768\,z^3 + 12\,960\,z^2 + 2160\,z + 14\,175\right) J_2\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256\,z^4 + 5376\,z^3 + 10\,080\,z^2 - 105\,840\,z + 76\,545\right) J_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4900.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, \frac{7}{2}; z\right) = \left(-\frac{64\,z^3}{6615} + \frac{64\,z^2}{441} + \frac{12\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(16\,z^2 - 840\,z - 2205\right)\sinh\left(2\sqrt{z}\right)}{2205}$$

07.22.03.4901.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, \frac{7}{2}; -z\right) = \left(\frac{64\,z^3}{6615} + \frac{64\,z^2}{441} - \frac{12\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(16\,z^2 + 840\,z - 2205\right)\sin\left(2\sqrt{z}\right)}{2205}$$

07.22.03.4902.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, 4; z\right) = \frac{1}{33\,075\,z^{3/2}}\left(2\left(\left(256\,z^4 - 16\,128\,z^3 - 30\,240\,z^2 - 226\,800\,z + 99\,225\right)I_3\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-256\,z^4 + 1792\,z^3 + 30\,240\,z^2 + 105\,840\,z + 354\,375\right)I_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4903.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, 4; -z\right) = \frac{1}{33\,075\,z^{3/2}}\left(2\left(\left(256\,z^4 + 16\,128\,z^3 - 30\,240\,z^2 + 226\,800\,z + 99\,225\right)J_3\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(256\,z^4 + 1792\,z^3 - 30\,240\,z^2 + 105\,840\,z - 354\,375\right)J_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4904.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, \frac{9}{2}; z\right) = \left(\frac{16\,z^2}{63} + \frac{16\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\,\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4905.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, \frac{9}{2}; -z\right) = \left(\frac{16\,z^2}{63} - \frac{16\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\,\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4906.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, 5; z\right) = \frac{1}{33\,075\,z^2}\left(8\left(9\left(256\,z^4 + 2816\,z^3 + 36\,960\,z^2 + 186\,480\,z + 11\,025\right)I_4\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(256\,z^4 + 6912\,z^3 + 90\,720\,z^2 + 952\,560\,z + 4\,295\,025\right)I_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4907.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, 5; -z\right) = \frac{1}{33\,075\,z^2}\left(8\left(9\left(256\,z^4 - 2816\,z^3 + 36\,960\,z^2 - 186\,480\,z + 11\,025\right)J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(256\,z^4 - 6912\,z^3 + 90\,720\,z^2 - 952\,560\,z + 4\,295\,025\right)J_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4908.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, \frac{11}{2}; z\right) = \frac{1}{105\,z^{9/2}}\left(14\left(16\,z^6 + 753\,z^5 + 17\,280\,z^4 + 241\,920\,z^3 + 1\,814\,400\,z^2 + 5\,443\,200\,z + 2\,721\,600\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\,\left(16\,z^6 + 1764\,z^5 + 53\,655\,z^4 + 967\,680\,z^3 + 10\,160\,640\,z^2 + 50\,803\,200\,z + 76\,204\,800\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.4909.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{105\, z^{9/2}}\left(14\left(16\, z^6 - 753\, z^5 + 17\,280\, z^4 - 241\,920\, z^3 + 1\,814\,400\, z^2 - 5\,443\,200\, z + 2\,721\,600\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$\left.\sqrt{z}\left(16\, z^6 - 1764\, z^5 + 53\,655\, z^4 - 967\,680\, z^3 + 10\,160\,640\, z^2 - 50\,803\,200\, z + 76\,204\,800\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.4910.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, 6; z\right) = \frac{1}{6615\, z^{5/2}}\left(8\left(\left(4352\, z^4 + 149\,760\, z^3 + 2\,838\,240\, z^2 + 21\,787\,920\, z + 99\,225\right) I_5\left(2\sqrt{z}\right) - \right.\right.$$
$$\left.\left.2\sqrt{z}\left(256\, z^4 + 20\,736\, z^3 + 626\,400\, z^2 + 10\,054\,800\, z + 65\,462\,985\right) I_6\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4911.01

$${}_1F_2\left(\frac{9}{2}; -\frac{9}{2}, 6; -z\right) = \frac{1}{6615\, z^{5/2}}\left(8\left(\left(4352\, z^4 - 149\,760\, z^3 + 2\,838\,240\, z^2 - 21\,787\,920\, z + 99\,225\right) J_5\left(2\sqrt{z}\right) + \right.\right.$$
$$\left.\left.2\sqrt{z}\left(256\, z^4 - 20\,736\, z^3 + 626\,400\, z^2 - 10\,054\,800\, z + 65\,462\,985\right) J_6\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = \frac{9}{2}$, $b_1 = -\frac{7}{2}$

07.22.03.4912.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, -\frac{7}{2}; z\right) =$$
$$\frac{1}{1\,157\,625}\left(\left(4096\, z^6 + 846\,848\, z^5 + 1\,881\,600\, z^4 + 940\,800\, z^3 + 1\,809\,360\, z^2 + 2\,740\,500\, z + 1\,157\,625\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(51\,200\, z^5 + 1\,293\,568\, z^4 - 376\,320\, z^3 - 624\,960\, z^2 - 1\,197\,000\, z - 1\,157\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4913.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, -\frac{7}{2}; -z\right) =$$
$$\frac{1}{1\,157\,625}\left(\left(4096\, z^6 - 846\,848\, z^5 + 1\,881\,600\, z^4 - 940\,800\, z^3 + 1\,809\,360\, z^2 - 2\,740\,500\, z + 1\,157\,625\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(51\,200\, z^5 - 1\,293\,568\, z^4 - 376\,320\, z^3 + 624\,960\, z^2 - 1\,197\,000\, z + 1\,157\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4914.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, -\frac{5}{2}; z\right) = \frac{1}{165\,375}\left(\left(-47\,104\, z^5 - 940\,800\, z^4 + 376\,320\, z^3 + 342\,720\, z^2 + 415\,800\, z + 165\,375\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left.2\sqrt{z}\left(1024\, z^5 + 176\,384\, z^4 + 235\,200\, z^3 + 141\,120\, z^2 + 195\,300\, z + 165\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4915.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, -\frac{5}{2}; -z\right) = \frac{1}{165\,375}\left(\left(47\,104\, z^5 - 940\,800\, z^4 - 376\,320\, z^3 + 342\,720\, z^2 - 415\,800\, z + 165\,375\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(-1024\, z^5 + 176\,384\, z^4 - 235\,200\, z^3 + 141\,120\, z^2 - 195\,300\, z + 165\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4916.01

$${}_1F_2\left(\frac{9}{2};-\frac{7}{2},-\frac{3}{2};z\right)=\left(\frac{1024\,z^5}{33\,075}+\frac{256\,z^4}{63}-\frac{64\,z^3}{63}+\frac{64\,z^2}{15}+\frac{20\,z}{7}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(10\,496\,z^4+134\,400\,z^3-85\,680\,z^2-50\,400\,z-33\,075\right)\sinh\left(2\sqrt{z}\right)}{33\,075}$$

07.22.03.4917.01

$${}_1F_2\left(\frac{9}{2};-\frac{7}{2},-\frac{3}{2};-z\right)=\left(-\frac{1024\,z^5}{33\,075}+\frac{256\,z^4}{63}+\frac{64\,z^3}{63}+\frac{64\,z^2}{15}-\frac{20\,z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(-10\,496\,z^4+134\,400\,z^3+85\,680\,z^2-50\,400\,z+33\,075\right)\sin\left(2\sqrt{z}\right)}{33\,075}$$

07.22.03.4918.01

$${}_1F_2\left(\frac{9}{2};-\frac{7}{2},-\frac{1}{2};z\right)=\frac{1}{11\,025}\left(-35\left(256\,z^4+1280\,z^3-48\,z^2-1440\,z-315\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(256\,z^4+22\,400\,z^3-42\,000\,z^2+35\,700\,z+11\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4919.01

$${}_1F_2\left(\frac{9}{2};-\frac{7}{2},-\frac{1}{2};-z\right)=\frac{1}{11\,025}\left(2\sqrt{z}\,\left(256\,z^4-22\,400\,z^3-42\,000\,z^2-35\,700\,z+11\,025\right)\sin\left(2\sqrt{z}\right)-35\left(256\,z^4-1280\,z^3-48\,z^2+1440\,z-315\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.4920.01

$${}_1F_2\left(\frac{9}{2};-\frac{7}{2},\frac{1}{2};z\right)=\frac{1}{11\,025}\left(\left(256\,z^4+11\,648\,z^3-28\,560\,z^2-6300\,z+11\,025\right)\cosh\left(2\sqrt{z}\right)+14\sqrt{z}\,\left(256\,z^3-480\,z^2+3000\,z-1575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4921.01

$${}_1F_2\left(\frac{9}{2};-\frac{7}{2},\frac{1}{2};-z\right)=\frac{1}{11\,025}\left(\left(256\,z^4-11\,648\,z^3-28\,560\,z^2+6300\,z+11\,025\right)\cos\left(2\sqrt{z}\right)+14\sqrt{z}\,\left(256\,z^3+480\,z^2+3000\,z+1575\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4922.01

$${}_1F_2\left(\frac{9}{2};-\frac{7}{2},1;z\right)=\frac{1}{11\,025}\left(192\left(16\,z^2-72\,z+225\right)I_1\left(2\sqrt{z}\right)z^{3/2}+\left(256\,z^4+7424\,z^3-12\,960\,z^2-25\,200\,z+11\,025\right)I_0\left(2\sqrt{z}\right)\right)$$

07.22.03.4923.01

$${}_1F_2\left(\frac{9}{2};-\frac{7}{2},1;-z\right)=\frac{1}{11\,025}\left(192\left(16\,z^2+72\,z+225\right)J_1\left(2\sqrt{z}\right)z^{3/2}+\left(256\,z^4-7424\,z^3-12\,960\,z^2+25\,200\,z+11\,025\right)J_0\left(2\sqrt{z}\right)\right)$$

07.22.03.4924.01

$${}_1F_2\left(\frac{9}{2};-\frac{7}{2},\frac{3}{2};z\right)=\left(\frac{256\,z^3}{2205}-\frac{352\,z^2}{525}+\frac{8\,z}{7}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(64\,z^3+672\,z^2+2100\,z-11\,025\right)\sinh\left(2\sqrt{z}\right)}{11\,025}$$

07.22.03.4925.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, \frac{3}{2}; -z\right) = \left(-\frac{256\,z^3}{2205} - \frac{352\,z^2}{525} - \frac{8\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(64\,z^3 - 672\,z^2 + 2100\,z + 11\,025\right)\sin\left(2\sqrt{z}\right)}{11\,025}$$

07.22.03.4926.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, 2; z\right) = \frac{\frac{\left(256\,z^4+1280\,z^3+10\,080\,z^2-25\,200\,z+11\,025\right)I_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 16\left(128\,z^3 - 720\,z^2 + 1575\right)I_2\left(2\sqrt{z}\right)}{11\,025}$$

07.22.03.4927.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, 2; -z\right) = \frac{\frac{\left(256\,z^4-1280\,z^3+10\,080\,z^2+25\,200\,z+11\,025\right)J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 16\left(128\,z^3 + 720\,z^2 - 1575\right)J_2\left(2\sqrt{z}\right)}{11\,025}$$

07.22.03.4928.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, \frac{5}{2}; z\right) = \frac{\left(64\,z^3 - 736\,z^2 + 5460\,z + 3675\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(176\,z^2 - 560\,z - 3675\right)\sinh\left(2\sqrt{z}\right)}{3675}$$

07.22.03.4929.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, \frac{5}{2}; -z\right) = \frac{-\left(64\,z^3 + 736\,z^2 + 5460\,z - 3675\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(176\,z^2 + 560\,z - 3675\right)\sin\left(2\sqrt{z}\right)}{3675}$$

07.22.03.4930.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, 3; z\right) =$$

$$\frac{1}{11\,025\,z}\left(2\left(256\,z^4 - 1792\,z^3 + 10\,080\,z^2 - 5040\,z + 11\,025\right)I_2\left(2\sqrt{z}\right) + 64\sqrt{z}\,\left(32\,z^3 - 630\,z - 315\right)I_3\left(2\sqrt{z}\right)\right)$$

07.22.03.4931.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, 3; -z\right) =$$

$$\frac{1}{11\,025\,z}\left(2\left(256\,z^4 + 1792\,z^3 + 10\,080\,z^2 + 5040\,z + 11\,025\right)J_2\left(2\sqrt{z}\right) + 64\sqrt{z}\,\left(32\,z^3 - 630\,z + 315\right)J_3\left(2\sqrt{z}\right)\right)$$

07.22.03.4932.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, \frac{7}{2}; z\right) = \left(\frac{16\,z^2}{735} + \frac{80\,z}{49} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{735}\sqrt{z}\,\left(16\,z^2 - 220\,z - 735\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4933.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, \frac{7}{2}; -z\right) = \left(\frac{16\,z^2}{735} - \frac{80\,z}{49} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{735}\sqrt{z}\,\left(16\,z^2 + 220\,z - 735\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4934.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, 4; z\right) =$$

$$\frac{1}{3675\,z^{3/2}}\left(2\left(\left(256\,z^4 - 1792\,z^3 - 672\,z^2 - 18\,480\,z + 11\,025\right)I_3\left(2\sqrt{z}\right) + 336\sqrt{z}\,\left(16\,z^2 + 40\,z + 145\right)I_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4935.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, 4; -z\right) = \frac{1}{3675\, z^{3/2}}\left(2\left(\left(256\, z^4 + 1792\, z^3 - 672\, z^2 + 18\,480\, z + 11\,025\right) J_3\left(2\sqrt{z}\right) - 336\sqrt{z}\,\left(16\, z^2 - 40\, z + 145\right) J_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4936.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, \frac{9}{2}; z\right) = \left(\frac{16\, z^2}{105} + \frac{12\, z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,(8\, z + 21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4937.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, \frac{9}{2}; -z\right) = \left(\frac{16\, z^2}{105} - \frac{12\, z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}(21 - 8\, z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4938.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, 5; z\right) = \frac{1}{3675\, z^2}\left(8\left(\left(256\, z^4 + 1280\, z^3 + 20\,832\, z^2 + 95\,760\, z + 11\,025\right) I_4\left(2\sqrt{z}\right) - 64\sqrt{z}\,\left(16\, z^3 + 168\, z^2 + 1785\, z + 7875\right) I_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4939.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, 5; -z\right) = \frac{1}{3675\, z^2}\left(8\left(\left(256\, z^4 - 1280\, z^3 + 20\,832\, z^2 - 95\,760\, z + 11\,025\right) J_4\left(2\sqrt{z}\right) - 64\sqrt{z}\,\left(16\, z^3 - 168\, z^2 + 1785\, z - 7875\right) J_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4940.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, \frac{11}{2}; z\right) = \frac{1}{35\, z^{9/2}}\left(3\left(2\left(4\, z^6 + 287\, z^5 + 6720\, z^4 + 94\,080\, z^3 + 705\,600\, z^2 + 2\,116\,800\, z + 1\,058\,400\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\,\left(88\, z^5 + 2975\, z^4 + 53\,760\, z^3 + 564\,480\, z^2 + 2\,822\,400\, z + 4\,233\,600\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4941.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, \frac{11}{2}; -z\right) = \frac{1}{35\, z^{9/2}}\left(3\left(\sqrt{z}\,\left(88\, z^5 - 2975\, z^4 + 53\,760\, z^3 - 564\,480\, z^2 + 2\,822\,400\, z - 4\,233\,600\right)\cos\left(2\sqrt{z}\right) + 2\left(4\, z^6 - 287\, z^5 + 6720\, z^4 - 94\,080\, z^3 + 705\,600\, z^2 - 2\,116\,800\, z + 1\,058\,400\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4942.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, 6; z\right) = \frac{1}{735\, z^{5/2}}\left(8\left(\left(256\, z^4 + 7424\, z^3 + 148\,320\, z^2 + 1\,144\,080\, z + 11\,025\right) I_5\left(2\sqrt{z}\right) - 16\sqrt{z}\,\left(128\, z^3 + 3984\, z^2 + 65\,520\, z + 430\,605\right) I_6\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4943.01

$${}_1F_2\left(\frac{9}{2}; -\frac{7}{2}, 6; -z\right) = \frac{1}{735\, z^{5/2}}\left(8\left(\left(256\, z^4 - 7424\, z^3 + 148\,320\, z^2 - 1\,144\,080\, z + 11\,025\right) J_5\left(2\sqrt{z}\right) - 16\sqrt{z}\,\left(128\, z^3 - 3984\, z^2 + 65\,520\, z - 430\,605\right) J_6\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = \frac{9}{2}$, $b_1 = -\frac{5}{2}$

07.22.03.4944.01

$${}_1F_2\left(\frac{9}{2};-\frac{5}{2},-\frac{5}{2};z\right)=\frac{1}{23\,625}\left(\left(1024\,z^5+154\,368\,z^4+235\,200\,z^3+70\,560\,z^2+64\,260\,z+23\,625\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\left(11\,008\,z^4+196\,608\,z^3-35\,280\,z^2-32\,760\,z-23\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4945.01

$${}_1F_2\left(\frac{9}{2};-\frac{5}{2},-\frac{5}{2};-z\right)=\frac{1}{23\,625}\left(\left(-1024\,z^5+154\,368\,z^4-235\,200\,z^3+70\,560\,z^2-64\,260\,z+23\,625\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(-11\,008\,z^4+196\,608\,z^3+35\,280\,z^2-32\,760\,z+23\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.4946.01

$${}_1F_2\left(\frac{9}{2};-\frac{5}{2},-\frac{3}{2};z\right)=\left(-\frac{3328\,z^4}{1575}-\frac{256\,z^3}{9}+\frac{112\,z^2}{15}+\frac{16\,z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(256\,z^4+31\,104\,z^3+25\,200\,z^2+8820\,z+4725\right)\sinh\left(2\sqrt{z}\right)}{4725}$$

07.22.03.4947.01

$${}_1F_2\left(\frac{9}{2};-\frac{5}{2},-\frac{3}{2};-z\right)=\left(-\frac{3328\,z^4}{1575}+\frac{256\,z^3}{9}+\frac{112\,z^2}{15}-\frac{16\,z}{5}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(256\,z^4-31\,104\,z^3+25\,200\,z^2-8820\,z+4725\right)\sin\left(2\sqrt{z}\right)}{4725}$$

07.22.03.4948.01

$${}_1F_2\left(\frac{9}{2};-\frac{5}{2},-\frac{1}{2};z\right)=\left(\frac{256\,z^4}{1575}+\frac{128\,z^3}{9}-\frac{16\,z^2}{3}+\frac{28\,z}{5}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(2176\,z^3+16\,800\,z^2-6720\,z-1575\right)\sinh\left(2\sqrt{z}\right)}{1575}$$

07.22.03.4949.01

$${}_1F_2\left(\frac{9}{2};-\frac{5}{2},-\frac{1}{2};-z\right)=\left(\frac{256\,z^4}{1575}-\frac{128\,z^3}{9}-\frac{16\,z^2}{3}-\frac{28\,z}{5}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(2176\,z^3-16\,800\,z^2-6720\,z+1575\right)\sin\left(2\sqrt{z}\right)}{1575}$$

07.22.03.4950.01

$${}_1F_2\left(\frac{9}{2};-\frac{5}{2},\frac{1}{2};z\right)=\frac{1}{1575}\left(-7\left(256\,z^3+480\,z^2+360\,z-225\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(64\,z^3+3360\,z^2-4620\,z+1575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.4951.01

$${}_1F_2\left(\frac{9}{2};-\frac{5}{2},\frac{1}{2};-z\right)=\left(\frac{256\,z^3}{225}-\frac{32\,z^2}{15}+\frac{8\,z}{5}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-64\,z^3+3360\,z^2+4620\,z+1575\right)\sin\left(2\sqrt{z}\right)}{1575}$$

07.22.03.4952.01

$${}_1F_2\left(\frac{9}{2};-\frac{5}{2},1;z\right)=\frac{1}{1575}\left(\left(-1600\,z^3+144\,z^2-4860\,z+1575\right)I_0\left(2\sqrt{z}\right)+2\sqrt{z}\left(-64\,z^3-2256\,z^2+3348\,z+225\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4953.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, 1; -z\right) = \frac{\left(1600 z^3 + 144 z^2 + 4860 z + 1575\right) J_0\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-64 z^3 + 2256 z^2 + 3348 z - 225\right) J_1\left(2\sqrt{z}\right)}{1575}$$

07.22.03.4954.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, \frac{3}{2}; z\right) = \left(-\frac{64 z^3}{1575} - \frac{64 z^2}{75} + \frac{4 z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{75}\sqrt{z}\left(16 z^2 - 40 z + 75\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4955.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, \frac{3}{2}; -z\right) = \left(\frac{64 z^3}{1575} - \frac{64 z^2}{75} - \frac{4 z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{75}\sqrt{z}\left(16 z^2 + 40 z + 75\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4956.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, 2; z\right) = \frac{\frac{\left(-1216 z^3 + 2640 z^2 - 3780 z + 1575\right) I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 2\left(64 z^3 + 624 z^2 + 540 z - 1575\right) I_2\left(2\sqrt{z}\right)}{1575}$$

07.22.03.4957.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, 2; -z\right) = \frac{\frac{\left(1216 z^3 + 2640 z^2 + 3780 z + 1575\right) J_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 2\left(64 z^3 - 624 z^2 + 540 z + 1575\right) J_2\left(2\sqrt{z}\right)}{1575}$$

07.22.03.4958.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, \frac{5}{2}; z\right) = \left(-\frac{208 z^2}{525} + \frac{32 z}{25} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{525}\sqrt{z}\left(16 z^2 - 28 z + 525\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4959.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, \frac{5}{2}; -z\right) = \left(-\frac{208 z^2}{525} - \frac{32 z}{25} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{525}\sqrt{z}\left(16 z^2 + 28 z + 525\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4960.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, 3; z\right) =$$

$$-\frac{1}{1575 z}\left(2\left(\left(832 z^3 - 1680 z^2 + 1260 z - 1575\right) I_2\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64 z^3 - 240 z^2 + 1260 z + 315\right) I_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4961.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, 3; -z\right) = \frac{2\left(\left(832 z^3 + 1680 z^2 + 1260 z + 1575\right) J_2\left(2\sqrt{z}\right) - 2\sqrt{z}\left(64 z^3 + 240 z^2 + 1260 z - 315\right) J_3\left(2\sqrt{z}\right)\right)}{1575 z}$$

07.22.03.4962.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, \frac{7}{2}; z\right) = \left(-\frac{16 z^2}{105} + \frac{52 z}{35} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{105}\sqrt{z}\left(16 z + 105\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4963.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, \frac{7}{2}; -z\right) = \left(-\frac{16 z^2}{105} - \frac{52 z}{35} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{105}\left(105 - 16 z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4964.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, 4; z\right) = \frac{4\sqrt{z}\left(-64 z^3 + 336 z^2 + 420 z + 1995\right) I_4\left(2\sqrt{z}\right) - 14\left(64 z^3 - 48 z^2 + 300 z - 225\right) I_3\left(2\sqrt{z}\right)}{525 z^{3/2}}$$

07.22.03.4965.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, 4; -z\right) = \frac{2\left(64z^3+48z^2+300z+225\right)J_3\left(2\sqrt{z}\right)}{75z^{3/2}} - \frac{4\left(64z^3+336z^2-420z+1995\right)J_4\left(2\sqrt{z}\right)}{525z}$$

07.22.03.4966.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, \frac{9}{2}; z\right) = \left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,(4z+15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4967.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, \frac{9}{2}; -z\right) = \left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}(15-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4968.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, 5; z\right) =$$

$$-\frac{1}{525z^2}\left(8\left(\left(64z^3-1680z^2-5796z-1575\right)I_4\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(64z^3+336z^2+3948z+16\,695\right)I_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4969.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, 5; -z\right) =$$

$$\frac{1}{525z^2}\left(8\left(\left(64z^3+1680z^2-5796z+1575\right)J_4\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(-64z^3+336z^2-3948z+16\,695\right)J_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4970.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, \frac{11}{2}; z\right) = -\frac{1}{5z^{9/2}}\left(3\left(\sqrt{z}\,\left(4z^5+185z^4+3360z^3+35\,280z^2+176\,400z+264\,600\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\left(17z^5+420z^4+5880z^3+44\,100z^2+132\,300z+66\,150\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4971.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, \frac{11}{2}; -z\right) = \frac{1}{5z^{9/2}}\left(3\left(\sqrt{z}\,\left(4z^5-185z^4+3360z^3-35\,280z^2+176\,400z-264\,600\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\left(-17z^5+420z^4-5880z^3+44\,100z^2-132\,300z+66\,150\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4972.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, 6; z\right) =$$

$$\frac{1}{105z^{5/2}}\left(8\left(\left(320z^3+8784z^2+66\,780z+1575\right)I_5\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(64z^3+1776z^2+30\,492z+202\,545\right)I_6\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4973.01

$${}_1F_2\left(\frac{9}{2}; -\frac{5}{2}, 6; -z\right) =$$

$$-\frac{1}{105z^{5/2}}\left(8\left(\left(320z^3-8784z^2+66\,780z-1575\right)J_5\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(64z^3-1776z^2+30\,492z-202\,545\right)J_6\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = \frac{9}{2}$, $b_1 = -\frac{3}{2}$

07.22.03.4974.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, -\frac{3}{2}; z\right) =$$
$$\left(\frac{256\,z^4}{945} + \frac{2944\,z^3}{105} + \frac{80\,z^2}{3} + 4\,z + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{315}\sqrt{z}\left(768\,z^3 + 8992\,z^2 - 840\,z - 315\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4975.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, -\frac{3}{2}; -z\right) = \left(\frac{256\,z^4}{945} - \frac{2944\,z^3}{105} + \frac{80\,z^2}{3} - 4\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{315}\sqrt{z}\left(768\,z^3 - 8992\,z^2 - 840\,z + 315\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4976.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, -\frac{1}{2}; z\right) = \left(-\frac{2048\,z^3}{315} - \frac{160\,z^2}{3} + 8\,z + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{315}\sqrt{z}\left(64\,z^3 + 5088\,z^2 + 2100\,z + 315\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4977.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, -\frac{1}{2}; -z\right) = \left(\frac{2048\,z^3}{315} - \frac{160\,z^2}{3} - 8\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{315}\sqrt{z}\left(-64\,z^3 + 5088\,z^2 - 2100\,z + 315\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4978.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, \frac{1}{2}; z\right) = \left(\frac{64\,z^3}{315} + \frac{32\,z^2}{3} - 4\,z + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{105}\sqrt{z}\left(144\,z^2 + 560\,z - 105\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4979.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, \frac{1}{2}; -z\right) = \left(-\frac{64\,z^3}{315} + \frac{32\,z^2}{3} + 4\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{105}\sqrt{z}\left(-144\,z^2 + 560\,z + 105\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4980.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, 1; z\right) = \frac{1}{315}\left(\left(64\,z^3 + 2640\,z^2 - 1476\,z + 315\right)I_0\left(2\sqrt{z}\right) + 24\sqrt{z}\left(32\,z^2 + 52\,z + 9\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4981.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, 1; -z\right) = \frac{1}{315}\left(\left(-64\,z^3 + 2640\,z^2 + 1476\,z + 315\right)J_0\left(2\sqrt{z}\right) - 24\sqrt{z}\left(32\,z^2 - 52\,z + 9\right)J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.4982.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, \frac{3}{2}; z\right) = \left(\frac{16\,z^2}{15} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{315}\sqrt{z}\left(16\,z^2 + 420\,z - 315\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4983.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, \frac{3}{2}; -z\right) = \left(\frac{16\,z^2}{15} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{315}\sqrt{z}\left(-16\,z^2 + 420\,z + 315\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.4984.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, 2; z\right) = \frac{1}{315}\left(\frac{\left(64\,z^3 + 1488\,z^2 - 900\,z + 315\right)I_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 36\left(16\,z^2 - 16\,z + 15\right)I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.4985.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, 2; -z\right) = \frac{1}{315}\left(\frac{\left(-64\,z^3 + 1488\,z^2 + 900\,z + 315\right)J_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 36\left(16\,z^2 + 16\,z + 15\right)J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.4986.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, \frac{5}{2}; z\right) = \left(\frac{16\,z^2}{105} + \frac{4\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\,(8\,z - 15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4987.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, \frac{5}{2}; -z\right) = \left(\frac{16\,z^2}{105} - \frac{4\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\,(8\,z + 15)\sin\left(2\sqrt{z}\right)$$

07.22.03.4988.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, 3; z\right) = \frac{2\left(96\,(4\,z - 5)\,I_3\left(2\sqrt{z}\right)z^{3/2} + \left(64\,z^3 + 720\,z^2 - 420\,z + 315\right)I_2\left(2\sqrt{z}\right)\right)}{315\,z}$$

07.22.03.4989.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, 3; -z\right) = \frac{\left(-128\,z^3 + 1440\,z^2 + 840\,z + 630\right)J_2\left(2\sqrt{z}\right) - 192\,z^{3/2}\,(4\,z + 5)\,J_3\left(2\sqrt{z}\right)}{315\,z}$$

07.22.03.4990.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, \frac{7}{2}; z\right) = \left(\frac{8\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{21}\sqrt{z}\,(4\,z - 21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.4991.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, \frac{7}{2}; -z\right) = \left(1 - \frac{8\,z}{7}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}\sqrt{z}\,(4\,z + 21)\sin\left(2\sqrt{z}\right)$$

07.22.03.4992.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, 4; z\right) = \frac{2\left(64\,z^3 + 336\,z^2 - 420\,z + 315\right)I_3\left(2\sqrt{z}\right)}{105\,z^{3/2}} + \frac{8\left(16\,z^2 + 35\right)I_4\left(2\sqrt{z}\right)}{35\,z}$$

07.22.03.4993.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, 4; -z\right) = \frac{\left(-128\,z^3 + 672\,z^2 + 840\,z + 630\right)J_3\left(2\sqrt{z}\right) - 24\sqrt{z}\,\left(16\,z^2 + 35\right)J_4\left(2\sqrt{z}\right)}{105\,z^{3/2}}$$

07.22.03.4994.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, \frac{9}{2}; z\right) = \left(\frac{4\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.4995.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, \frac{9}{2}; -z\right) = \left(1 - \frac{4\,z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.4996.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, 5; z\right) = \frac{8\left(\left(64\,z^3 + 336\,z^2 + 252\,z + 315\right)I_4\left(2\sqrt{z}\right) - 168\sqrt{z}\,(4\,z + 15)\,I_5\left(2\sqrt{z}\right)\right)}{105\,z^2}$$

07.22.03.4997.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, 5; -z\right) = -\frac{8\left(\left(64\,z^3 - 336\,z^2 + 252\,z - 315\right)J_4\left(2\sqrt{z}\right) + 168\sqrt{z}\,(4\,z - 15)\,J_5\left(2\sqrt{z}\right)\right)}{105\,z^2}$$

07.22.03.4998.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, \frac{11}{2}; z\right) = \frac{1}{z^{9/2}}\left(3\left(2\left(z^5 + 30\,z^4 + 420\,z^3 + 3150\,z^2 + 9450\,z + 4725\right)\sinh\left(2\sqrt{z}\right) - \sqrt{z}\left(13\,z^4 + 240\,z^3 + 2520\,z^2 + 12\,600\,z + 18\,900\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.4999.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, \frac{11}{2}; -z\right) = -\frac{1}{z^{9/2}}\left(3\left(\sqrt{z}\left(13\,z^4 - 240\,z^3 + 2520\,z^2 - 12\,600\,z + 18\,900\right)\cos\left(2\sqrt{z}\right) + 2\left(z^5 - 30\,z^4 + 420\,z^3 - 3150\,z^2 + 9450\,z - 4725\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5000.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, 6; z\right) = \frac{8\left(64\,z^3 + 720\,z^2 + 4284\,z + 315\right)I_5\left(2\sqrt{z}\right)}{21\,z^{5/2}} - \frac{32\left(16\,z^2 + 336\,z + 2247\right)I_6\left(2\sqrt{z}\right)}{7\,z^2}$$

07.22.03.5001.01

$${}_1F_2\left(\frac{9}{2}; -\frac{3}{2}, 6; -z\right) = \frac{32\left(16\,z^2 - 336\,z + 2247\right)J_6\left(2\sqrt{z}\right)}{7\,z^2} - \frac{8\left(64\,z^3 - 720\,z^2 + 4284\,z - 315\right)J_5\left(2\sqrt{z}\right)}{21\,z^{5/2}}$$

For fixed z and $a_1 = \frac{9}{2}$, $b_1 = -\frac{1}{2}$

07.22.03.5002.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, -\frac{1}{2}; z\right) = \left(\frac{64\,z^3}{105} + \frac{832\,z^2}{21} + 20\,z + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{105}\sqrt{z}\left(464\,z^2 + 3160\,z - 105\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5003.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, -\frac{1}{2}; -z\right) = \left(-\frac{64\,z^3}{105} + \frac{832\,z^2}{21} - 20\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{105}\sqrt{z}\left(-464\,z^2 + 3160\,z + 105\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5004.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, \frac{1}{2}; z\right) = \left(-\frac{80\,z^2}{21} - 16\,z + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{105}\sqrt{z}\left(16\,z^2 + 740\,z + 105\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5005.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, \frac{1}{2}; -z\right) = \left(-\frac{80\,z^2}{21} + 16\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{105}\sqrt{z}\left(16\,z^2 - 740\,z + 105\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5006.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, 1; z\right) = \frac{1}{105}\left(\left(-368\,z^2 - 1192\,z + 105\right)I_0\left(2\sqrt{z}\right) - 2\sqrt{z}\left(16\,z^2 + 568\,z - 71\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5007.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, 1; -z\right) = \frac{1}{105}\left(\left(-368\,z^2 + 1192\,z + 105\right)J_0\left(2\sqrt{z}\right) + 2\sqrt{z}\left(16\,z^2 - 568\,z - 71\right)J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5008.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, \frac{3}{2}; z\right) = \left(-\frac{16\,z^2}{105} - 4\,z + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\left(16\,z + 21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5009.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, \frac{3}{2}; -z\right) = \left(-\frac{16\,z^2}{105} + 4\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}\,(21 - 16\,z)\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5010.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, 2; z\right) = \frac{1}{105}\left(\frac{\left(-304\,z^2 - 600\,z + 105\right) I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 2\left(16\,z^2 + 296\,z - 75\right) I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5011.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, 2; -z\right) = \frac{1}{105}\left(\frac{\left(-304\,z^2 + 600\,z + 105\right) J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 2\left(16\,z^2 - 296\,z - 75\right) J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5012.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, \frac{5}{2}; z\right) = \left(1 - \frac{8\,z}{5}\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{35}\,\sqrt{z}\,\left(4\,z + 35\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5013.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, \frac{5}{2}; -z\right) = \left(\frac{8\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{35}\,(35 - 4\,z)\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5014.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, 3; z\right) = \left(-\frac{32\,z}{7} - \frac{48}{7} + \frac{2}{z}\right) I_2\left(2\sqrt{z}\right) - \frac{4\left(16\,z^2 + 120\,z - 15\right) I_3\left(2\sqrt{z}\right)}{105\,\sqrt{z}}$$

07.22.03.5015.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, 3; -z\right) = \left(-\frac{32\,z}{7} + \frac{48}{7} + \frac{2}{z}\right) J_2\left(2\sqrt{z}\right) + \frac{4\left(16\,z^2 - 120\,z - 15\right) J_3\left(2\sqrt{z}\right)}{105\,\sqrt{z}}$$

07.22.03.5016.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, \frac{7}{2}; z\right) = \left(1 - \frac{4\,z}{7}\right)\cosh\left(2\sqrt{z}\right) - 2\,\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.5017.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, \frac{7}{2}; -z\right) = \left(\frac{4\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + 2\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5018.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, 4; z\right) = -\frac{2\left(\left(176\,z^2 + 280\,z - 105\right) I_3\left(2\sqrt{z}\right) + 2\,\sqrt{z}\,\left(16\,z^2 + 40\,z - 35\right) I_4\left(2\sqrt{z}\right)\right)}{35\,z^{3/2}}$$

07.22.03.5019.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, 4; -z\right) = \frac{2\left(\left(-176\,z^2 + 280\,z + 105\right) J_3\left(2\sqrt{z}\right) + 2\,\sqrt{z}\,\left(16\,z^2 - 40\,z - 35\right) J_4\left(2\sqrt{z}\right)\right)}{35\,z^{3/2}}$$

07.22.03.5020.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, \frac{9}{2}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\,\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.5021.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, \frac{9}{2}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5022.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, 5; z\right) = -\frac{8\left(7\left(16z^2+24z-15\right)I_4\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(16z^2+56z+105\right)I_5\left(2\sqrt{z}\right)\right)}{35z^2}$$

07.22.03.5023.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, 5; -z\right) = \frac{8\left(2\sqrt{z}\,\left(16z^2-56z+105\right)J_5\left(2\sqrt{z}\right)-7\left(16z^2-24z-15\right)J_4\left(2\sqrt{z}\right)\right)}{35z^2}$$

07.22.03.5024.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, \frac{11}{2}; z\right) =$$
$$-\frac{1}{2z^{9/2}}\left(9\left(2\sqrt{z}\,\left(z^4+20z^3+210z^2+1050z+1575\right)\cosh\left(2\sqrt{z}\right)-5\left(2z^4+28z^3+210z^2+630z+315\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5025.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, \frac{11}{2}; -z\right) =$$
$$-\frac{1}{2z^{9/2}}\left(9\left(2\sqrt{z}\,\left(z^4-20z^3+210z^2-1050z+1575\right)\cos\left(2\sqrt{z}\right)-5\left(2z^4-28z^3+210z^2-630z+315\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5026.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, 6; z\right) = -\frac{8\left(3\left(16z^2-56z-35\right)I_5\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(16z^2+168z+1029\right)I_6\left(2\sqrt{z}\right)\right)}{7z^{5/2}}$$

07.22.03.5027.01

$${}_1F_2\left(\frac{9}{2}; -\frac{1}{2}, 6; -z\right) = \frac{8\left(2\sqrt{z}\,\left(16z^2-168z+1029\right)J_6\left(2\sqrt{z}\right)-3\left(16z^2+56z-35\right)J_5\left(2\sqrt{z}\right)\right)}{7z^{5/2}}$$

For fixed z and $a_1 = \frac{9}{2}$, $b_1 = \frac{1}{2}$

07.22.03.5028.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, \frac{1}{2}; z\right) = \frac{1}{105}\left(\left(16z^2+564z+105\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(88z+279\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5029.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, \frac{1}{2}; -z\right) = \frac{1}{105}\left(\left(16z^2-564z+105\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(88z-279\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5030.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, 1; z\right) = \frac{1}{105}\left(\left(16z^2+488z+105\right)I_0\left(2\sqrt{z}\right)+32\sqrt{z}\,\left(5z+11\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5031.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, 1; -z\right) = \frac{1}{105}\left(\left(16z^2-488z+105\right)J_0\left(2\sqrt{z}\right)+32\sqrt{z}\,\left(5z-11\right)J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5032.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, \frac{3}{2}; z\right) = \left(\frac{24z}{35}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{105}\sqrt{z}\,\left(4z+87\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5033.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, \frac{3}{2}; -z\right) = \left(1 - \frac{24\,z}{35}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{105}\sqrt{z}\,(4\,z - 87)\sin\left(2\sqrt{z}\right)$$

07.22.03.5034.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, 2; z\right) = \frac{1}{105}\left(\frac{\left(16\,z^2 + 360\,z + 105\right) I_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 8\,(16\,z + 15)\,I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5035.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, 2; -z\right) = \frac{1}{105}\left(\frac{\left(16\,z^2 - 360\,z + 105\right) J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 8\,(16\,z - 15)\,J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5036.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, \frac{5}{2}; z\right) = \left(\frac{4\,z}{35} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{26}{35}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.5037.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, \frac{5}{2}; -z\right) = \left(1 - \frac{4\,z}{35}\right)\cos\left(2\sqrt{z}\right) - \frac{26}{35}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5038.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, 3; z\right) = \frac{\left(32\,z^2 + 528\,z + 210\right) I_2\left(2\sqrt{z}\right) + 96\sqrt{z}\,(2\,z + 1)\,I_3\left(2\sqrt{z}\right)}{105\,z}$$

07.22.03.5039.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, 3; -z\right) = \frac{\left(32\,z^2 - 528\,z + 210\right) J_2\left(2\sqrt{z}\right) + 96\sqrt{z}\,(2\,z - 1)\,J_3\left(2\sqrt{z}\right)}{105\,z}$$

07.22.03.5040.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, \frac{7}{2}; z\right) = \cosh\left(2\sqrt{z}\right) + \frac{2}{7}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.5041.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, \frac{7}{2}; -z\right) = \cos\left(2\sqrt{z}\right) - \frac{2}{7}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5042.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, 4; z\right) = \frac{\left(32\,z^2 + 400\,z + 210\right) I_3\left(2\sqrt{z}\right) + 16\sqrt{z}\,(8\,z + 5)\,I_4\left(2\sqrt{z}\right)}{35\,z^{3/2}}$$

07.22.03.5043.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, 4; -z\right) = \frac{\left(32\,z^2 - 400\,z + 210\right) J_3\left(2\sqrt{z}\right) + 16\sqrt{z}\,(8\,z - 5)\,J_4\left(2\sqrt{z}\right)}{35\,z^{3/2}}$$

07.22.03.5044.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, \frac{9}{2}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.5045.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, \frac{9}{2}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.5046.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, 5; z\right) = \frac{8\left(32\, I_5\left(2\sqrt{z}\right) z^{3/2} + \left(16 z^2 + 168 z + 105\right) I_4\left(2\sqrt{z}\right)\right)}{35 z^2}$$

07.22.03.5047.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, 5; -z\right) = \frac{8\left(32\, J_5\left(2\sqrt{z}\right) z^{3/2} + \left(16 z^2 - 168 z + 105\right) J_4\left(2\sqrt{z}\right)\right)}{35 z^2}$$

07.22.03.5048.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, \frac{11}{2}; z\right) = \frac{1}{4 z^{9/2}}\left(9\left(\left(2 z^4 + 28 z^3 + 210 z^2 + 630 z + 315\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(4 z^3 + 42 z^2 + 210 z + 315\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5049.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, \frac{11}{2}; -z\right) = \frac{9\left(2\sqrt{z}\,\left(4 z^3 - 42 z^2 + 210 z - 315\right)\cos\left(2\sqrt{z}\right) + \left(2 z^4 - 28 z^3 + 210 z^2 - 630 z + 315\right)\sin\left(2\sqrt{z}\right)\right)}{4 z^{9/2}}$$

07.22.03.5050.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, 6; z\right) = \frac{8\left(16 z^2 + 168 z + 105\right) I_5\left(2\sqrt{z}\right)}{7 z^{5/2}} - \frac{192\, I_6\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.5051.01

$${}_1F_2\left(\frac{9}{2}; \frac{1}{2}, 6; -z\right) = \frac{8\left(16 z^2 - 168 z + 105\right) J_5\left(2\sqrt{z}\right)}{7 z^{5/2}} + \frac{192\, J_6\left(2\sqrt{z}\right)}{z^2}$$

For fixed z and $a_1 = \frac{9}{2}$, $b_1 = 1$

07.22.03.5052.01

$${}_1F_2\left(\frac{9}{2}; 1, 1; z\right) = \frac{1}{105}\left(\left(8 z^2 + 244 z + 105\right) I_0\left(\sqrt{z}\right)^2 + 8\sqrt{z}\,\left(19 z + 44\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + 4 z\left(2 z + 43\right) I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.5053.01

$${}_1F_2\left(\frac{9}{2}; 1, 1; -z\right) = \frac{1}{105}\left(\left(8 z^2 - 244 z + 105\right) J_0\left(\sqrt{z}\right)^2 + 8\sqrt{z}\,\left(19 z - 44\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + 4\left(43 - 2 z\right) z\, J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.5054.01

$${}_1F_2\left(\frac{9}{2}; 1, \frac{3}{2}; z\right) = \frac{1}{105}\left(\left(68 z + 105\right) I_0\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(4 z + 71\right) I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5055.01

$${}_1F_2\left(\frac{9}{2}; 1, \frac{3}{2}; -z\right) = \frac{1}{105}\left(\left(105 - 68 z\right) J_0\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(4 z - 71\right) J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5056.01

$${}_1F_2\left(\frac{9}{2}; 1, 2; z\right) = \frac{1}{105}\left(\left(64 z + 105\right) I_0\left(\sqrt{z}\right)^2 + 8\sqrt{z}\,\left(2 z + 29\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(56 z + 15\right) I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.5057.01

$${}_1F_2\left(\frac{9}{2}; 1, 2; -z\right) = \frac{1}{105}\left(\left(105 - 64 z\right) J_0\left(\sqrt{z}\right)^2 + 8\sqrt{z}\,\left(2 z - 29\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(56 z - 15\right) J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.5058.01

$${}_1F_2\left(\frac{9}{2}; 1, \frac{5}{2}; z\right) = \frac{1}{35}\left((4z+35)\, I_0\left(2\sqrt{z}\right) + 24\sqrt{z}\; I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5059.01

$${}_1F_2\left(\frac{9}{2}; 1, \frac{5}{2}; -z\right) = \frac{1}{35}\left((35-4z)\, J_0\left(2\sqrt{z}\right) - 24\sqrt{z}\; J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5060.01

$${}_1F_2\left(\frac{9}{2}; 1, 3; z\right) = \frac{4\left(z(4z+27)\, I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\;(40z-3)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(4z^2+9z+3\right) I_1\left(\sqrt{z}\right)^2\right)}{105\, z}$$

07.22.03.5061.01

$${}_1F_2\left(\frac{9}{2}; 1, 3; -z\right) = -\frac{4\left(z(4z-27)\, J_0\left(\sqrt{z}\right)^2 + \sqrt{z}\;(40z+3)\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(-4z^2+9z-3\right) J_1\left(\sqrt{z}\right)^2\right)}{105\, z}$$

07.22.03.5062.01

$${}_1F_2\left(\frac{9}{2}; 1, \frac{7}{2}; z\right) = I_0\left(2\sqrt{z}\right) + \frac{2}{7}\sqrt{z}\; I_1\left(2\sqrt{z}\right)$$

07.22.03.5063.01

$${}_1F_2\left(\frac{9}{2}; 1, \frac{7}{2}; -z\right) = J_0\left(2\sqrt{z}\right) - \frac{2}{7}\sqrt{z}\; J_1\left(2\sqrt{z}\right)$$

07.22.03.5064.01

$${}_1F_2\left(\frac{9}{2}; 1, 4; z\right) = \frac{4\left(2z(5z+1)\, I_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\,\left(4z^2-3z-4\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(6z^2+7z+8\right) I_1\left(\sqrt{z}\right)^2\right)}{35\, z^2}$$

07.22.03.5065.01

$${}_1F_2\left(\frac{9}{2}; 1, 4; -z\right) = -\frac{4\left(2(1-5z)\, z\, J_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\,\left(4z^2+3z-4\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(6z^2-7z+8\right) J_1\left(\sqrt{z}\right)^2\right)}{35\, z^2}$$

07.22.03.5066.01

$${}_1F_2\left(\frac{9}{2}; 1, \frac{9}{2}; z\right) = I_0\left(2\sqrt{z}\right)$$

07.22.03.5067.01

$${}_1F_2\left(\frac{9}{2}; 1, \frac{9}{2}; -z\right) = J_0\left(2\sqrt{z}\right)$$

07.22.03.5068.01

$${}_1F_2\left(\frac{9}{2}; 1, 5; z\right) =$$

$$\frac{1}{35\, z^3}\left(16\left(z\left(4z^2+11z+36\right) I_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\,\left(6z^2+31z+72\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(4z^3+19z^2+80z+144\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.5069.01

$${}_1F_2\left(\frac{9}{2}; 1, 5; -z\right) =$$

$$\frac{1}{35\, z^3}\left(16\left(z\left(4z^2-11z+36\right) J_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\,\left(6z^2-31z+72\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(-4z^3+19z^2-80z+144\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.5070.01

$$ {}_1F_2\left(\frac{9}{2}; 1, \frac{11}{2}; z\right) = \frac{1}{512\, z^4}\left(9\left(4\left(\sqrt{z}\,\left(64\, z^3 + 784\, z^2 + 4900\, z + 11\,025\right) I_1\left(2\sqrt{z}\right) - 14\, z\left(16\, z^2 + 140\, z + 525\right) I_0\left(2\sqrt{z}\right)\right) - 11\,025\right.\right. \left.\left. \pi\, I_1\left(2\sqrt{z}\right) \boldsymbol{L}_0\left(2\sqrt{z}\right) + 11\,025\,\pi\, I_0\left(2\sqrt{z}\right) \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5071.01

$$ {}_1F_2\left(\frac{9}{2}; 1, \frac{11}{2}; -z\right) = \frac{1}{512\, z^4}\left(9\left(4\left(14\, z\left(16\, z^2 - 140\, z + 525\right) J_0\left(2\sqrt{z}\right) + \sqrt{z}\,\left(64\, z^3 - 784\, z^2 + 4900\, z - 11\,025\right) J_1\left(2\sqrt{z}\right)\right) + 11\,025\right.\right. \left.\left. \pi\, J_1\left(2\sqrt{z}\right) \boldsymbol{H}_0\left(2\sqrt{z}\right) - 11\,025\,\pi\, J_0\left(2\sqrt{z}\right) \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5072.01

$$ {}_1F_2\left(\frac{9}{2}; 1, 6; z\right) = \frac{1}{7\, z^4}\left(32\left(-2\, z\left(5\, z^2 + 63\, z + 288\right) I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\,\left(4\, z^3 + 91\, z^2 + 792\, z + 2304\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - 2\left(6\, z^3 + 89\, z^2 + 540\, z + 1152\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.5073.01

$$ {}_1F_2\left(\frac{9}{2}; 1, 6; -z\right) = \frac{1}{7\, z^4}\left(32\left(2\, z\left(5\, z^2 - 63\, z + 288\right) J_0\left(\sqrt{z}\right)^2 + \sqrt{z}\,\left(4\, z^3 - 91\, z^2 + 792\, z - 2304\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + 2\left(-6\, z^3 + 89\, z^2 - 540\, z + 1152\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = \frac{9}{2}$, $b_1 = \frac{3}{2}$

07.22.03.5074.01

$$ {}_1F_2\left(\frac{9}{2}; \frac{3}{2}, \frac{3}{2}; z\right) = \frac{\sqrt{z}\,(4\, z + 57)\cosh\left(2\sqrt{z}\right) + 6\,(5\, z + 4)\sinh\left(2\sqrt{z}\right)}{105\sqrt{z}}$$

07.22.03.5075.01

$$ {}_1F_2\left(\frac{9}{2}; \frac{3}{2}, \frac{3}{2}; -z\right) = \frac{6\,(4 - 5\, z)\sin\left(2\sqrt{z}\right) - \sqrt{z}\,(4\, z - 57)\cos\left(2\sqrt{z}\right)}{105\sqrt{z}}$$

07.22.03.5076.01

$$ {}_1F_2\left(\frac{9}{2}; \frac{3}{2}, 2; z\right) = \frac{(4\, z + 7)\, I_1\left(2\sqrt{z}\right)}{7\sqrt{z}} + \frac{2}{105}(4\, z + 45)\, I_2\left(2\sqrt{z}\right)$$

07.22.03.5077.01

$$ {}_1F_2\left(\frac{9}{2}; \frac{3}{2}, 2; -z\right) = \frac{(7 - 4\, z)\, J_1\left(2\sqrt{z}\right)}{7\sqrt{z}} + \frac{2}{105}(4\, z - 45)\, J_2\left(2\sqrt{z}\right)$$

07.22.03.5078.01

$$ {}_1F_2\left(\frac{9}{2}; \frac{3}{2}, \frac{5}{2}; z\right) = \frac{11\sqrt{z}\,\cosh\left(2\sqrt{z}\right) + 2\,(z + 6)\sinh\left(2\sqrt{z}\right)}{35\sqrt{z}}$$

07.22.03.5079.01

$${}_1F_2\left(\frac{9}{2}; \frac{3}{2}, \frac{5}{2}; -z\right) = \frac{11\sqrt{z}\,\cos\left(2\sqrt{z}\right) - 2(z-6)\sin\left(2\sqrt{z}\right)}{35\sqrt{z}}$$

07.22.03.5080.01

$${}_1F_2\left(\frac{9}{2}; \frac{3}{2}, 3; z\right) = \frac{2\left((52z+105)\,I_2\left(2\sqrt{z}\right) + 2\sqrt{z}\,(4z+27)\,I_3\left(2\sqrt{z}\right)\right)}{105z}$$

07.22.03.5081.01

$${}_1F_2\left(\frac{9}{2}; \frac{3}{2}, 3; -z\right) = \frac{2\left((105-52z)\,J_2\left(2\sqrt{z}\right) + 2\sqrt{z}\,(4z-27)\,J_3\left(2\sqrt{z}\right)\right)}{105z}$$

07.22.03.5082.01

$${}_1F_2\left(\frac{9}{2}; \frac{3}{2}, \frac{7}{2}; z\right) = \frac{1}{7}\left(\cosh\left(2\sqrt{z}\right) + \frac{3\sinh\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.5083.01

$${}_1F_2\left(\frac{9}{2}; \frac{3}{2}, \frac{7}{2}; -z\right) = \frac{1}{7}\left(\cos\left(2\sqrt{z}\right) + \frac{3\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.5084.01

$${}_1F_2\left(\frac{9}{2}; \frac{3}{2}, 4; z\right) = \frac{(88z+210)\,I_3\left(2\sqrt{z}\right) + 4\sqrt{z}\,(4z+17)\,I_4\left(2\sqrt{z}\right)}{35z^{3/2}}$$

07.22.03.5085.01

$${}_1F_2\left(\frac{9}{2}; \frac{3}{2}, 4; -z\right) = \frac{(210-88z)\,J_3\left(2\sqrt{z}\right) + 4\sqrt{z}\,(4z-17)\,J_4\left(2\sqrt{z}\right)}{35z^{3/2}}$$

07.22.03.5086.01

$${}_1F_2\left(\frac{9}{2}; \frac{3}{2}, \frac{9}{2}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.5087.01

$${}_1F_2\left(\frac{9}{2}; \frac{3}{2}, \frac{9}{2}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.5088.01

$${}_1F_2\left(\frac{9}{2}; \frac{3}{2}, 5; z\right) = \frac{8\left(3(12z+35)\,I_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,(4z+15)\,I_5\left(2\sqrt{z}\right)\right)}{35z^2}$$

07.22.03.5089.01

$${}_1F_2\left(\frac{9}{2}; \frac{3}{2}, 5; -z\right) = \frac{8\left((105-36z)\,J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,(4z-15)\,J_5\left(2\sqrt{z}\right)\right)}{35z^2}$$

07.22.03.5090.01

$${}_1F_2\left(\frac{9}{2}; \frac{3}{2}, \frac{11}{2}; z\right) = \frac{9\left(2\sqrt{z}\,\left(4z^3+42z^2+210z+315\right)\cosh\left(2\sqrt{z}\right) - 7\left(4z^3+30z^2+90z+45\right)\sinh\left(2\sqrt{z}\right)\right)}{32z^{9/2}}$$

07.22.03.5091.01

$${}_1F_2\left(\frac{9}{2}; \frac{3}{2}, \frac{11}{2}; -z\right) = -\frac{9\left(2\sqrt{z}\,\left(4z^3-42z^2+210z-315\right)\cos\left(2\sqrt{z}\right)-7\left(4z^3-30z^2+90z-45\right)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{9/2}}$$

07.22.03.5092.01

$${}_1F_2\left(\frac{9}{2}; \frac{3}{2}, 6; z\right) = \frac{8\,(4z+15)\,I_5\left(2\sqrt{z}\right)}{z^{5/2}} + \frac{16\,(4z+21)\,I_6\left(2\sqrt{z}\right)}{7\,z^2}$$

07.22.03.5093.01

$${}_1F_2\left(\frac{9}{2}; \frac{3}{2}, 6; -z\right) = \frac{16\,(4z-21)\,J_6\left(2\sqrt{z}\right)}{7\,z^2} - \frac{8\,(4z-15)\,J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = \frac{9}{2}$, $b_1 = 2$

07.22.03.5094.01

$${}_1F_2\left(\frac{9}{2}; 2, 2; z\right) = \frac{2}{105}\left((4z+45)\,I_0\left(\sqrt{z}\right)^2 + \frac{3\,(16z+5)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)}{\sqrt{z}} + (4z+23)\,I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.5095.01

$${}_1F_2\left(\frac{9}{2}; 2, 2; -z\right) = \frac{2}{105}\left((45-4z)\,J_0\left(\sqrt{z}\right)^2 - \frac{3\,(16z-5)\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)}{\sqrt{z}} + (4z-23)\,J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.5096.01

$${}_1F_2\left(\frac{9}{2}; 2, \frac{5}{2}; z\right) = \frac{(4z+35)\,I_1\left(2\sqrt{z}\right)}{35\sqrt{z}} + \frac{4}{7}\,I_2\left(2\sqrt{z}\right)$$

07.22.03.5097.01

$${}_1F_2\left(\frac{9}{2}; 2, \frac{5}{2}; -z\right) = \frac{(35-4z)\,J_1\left(2\sqrt{z}\right)}{35\sqrt{z}} - \frac{4}{7}\,J_2\left(2\sqrt{z}\right)$$

07.22.03.5098.01

$${}_1F_2\left(\frac{9}{2}; 2, 3; z\right) = \frac{4\left(18z\,I_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\,(4z+9)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) + (14z-3)\,I_1\left(\sqrt{z}\right)^2\right)}{105\,z}$$

07.22.03.5099.01

$${}_1F_2\left(\frac{9}{2}; 2, 3; -z\right) = -\frac{4\left(-18z\,J_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\,(4z-9)\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + (14z+3)\,J_1\left(\sqrt{z}\right)^2\right)}{105\,z}$$

07.22.03.5100.01

$${}_1F_2\left(\frac{9}{2}; 2, \frac{7}{2}; z\right) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}} + \frac{2}{7}\,I_2\left(2\sqrt{z}\right)$$

07.22.03.5101.01

$${}_1F_2\left(\frac{9}{2}; 2, \frac{7}{2}; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}} - \frac{2}{7}\,J_2\left(2\sqrt{z}\right)$$

07.22.03.5102.01

$${}_1F_2\left(\frac{9}{2};\,2,\,4;\,z\right)=\frac{4\left(z\,(4\,z-1)\,I_0\left(\sqrt{z}\right)^2+4\sqrt{z}\,\,(3\,z+1)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(4\,z^2-5\,z-4\right)I_1\left(\sqrt{z}\right)^2\right)}{35\,z^2}$$

07.22.03.5103.01

$${}_1F_2\left(\frac{9}{2};\,2,\,4;\,-z\right)=\frac{4\left(z\,(4\,z+1)\,J_0\left(\sqrt{z}\right)^2+4\sqrt{z}\,\,(3\,z-1)\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(-4\,z^2-5\,z+4\right)J_1\left(\sqrt{z}\right)^2\right)}{35\,z^2}$$

07.22.03.5104.01

$${}_1F_2\left(\frac{9}{2};\,2,\,\frac{9}{2};\,z\right)=\frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.5105.01

$${}_1F_2\left(\frac{9}{2};\,2,\,\frac{9}{2};\,-z\right)=\frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.5106.01

$${}_1F_2\left(\frac{9}{2};\,2,\,5;\,z\right)=\frac{32\left(-2\,z\,(z+3)\,I_0\left(\sqrt{z}\right)^2+\sqrt{z}\,\left(4\,z^2+11\,z+24\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)-2\left(2\,z^2+7\,z+12\right)I_1\left(\sqrt{z}\right)^2\right)}{35\,z^3}$$

07.22.03.5107.01

$${}_1F_2\left(\frac{9}{2};\,2,\,5;\,-z\right)=\frac{32\left(2\,(z-3)\,z\,J_0\left(\sqrt{z}\right)^2+\sqrt{z}\,\left(4\,z^2-11\,z+24\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)-2\left(2\,z^2-7\,z+12\right)J_1\left(\sqrt{z}\right)^2\right)}{35\,z^3}$$

07.22.03.5108.01

$${}_1F_2\left(\frac{9}{2};\,2,\,\frac{11}{2};\,z\right)=\frac{1}{256\,z^4}$$
$$\left(9\left(I_0\left(2\sqrt{z}\right)\left(8\,z\left(16\,z^2+140\,z+525\right)-1575\,\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)-7\,I_1\left(2\sqrt{z}\right)\left(4\sqrt{z}\,\left(16\,z^2+100\,z+225\right)-225\,\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5109.01

$${}_1F_2\left(\frac{9}{2};\,2,\,\frac{11}{2};\,-z\right)=\frac{1}{256\,z^4}$$
$$\left(9\left(7\,J_1\left(2\sqrt{z}\right)\left(4\sqrt{z}\,\left(16\,z^2-100\,z+225\right)-225\,\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)\right)+J_0\left(2\sqrt{z}\right)\left(1575\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)-8\,z\left(16\,z^2-140\,z+525\right)\right)\right)\right)$$

07.22.03.5110.01

$${}_1F_2\left(\frac{9}{2};\,2,\,6;\,z\right)=$$
$$\frac{1}{7\,z^4}\left(32\left(2\,z\left(z^2+15\,z+72\right)I_0\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(5\,z^2+48\,z+144\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\left(2\,z^3+41\,z^2+264\,z+576\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.5111.01

$${}_1F_2\left(\frac{9}{2};\,2,\,6;\,-z\right)=$$
$$-\frac{1}{7\,z^4}\left(32\left(2\,z\left(z^2-15\,z+72\right)J_0\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(5\,z^2-48\,z+144\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)+\left(-2\,z^3+41\,z^2-264\,z+576\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = \frac{9}{2}$, $b_1 = \frac{5}{2}$

07.22.03.5112.01

$$ {}_1F_2\left(\frac{9}{2}; \frac{5}{2}, \frac{5}{2}; z\right) = \frac{3\left(\sqrt{z}\,(z+2)\cosh\left(2\sqrt{z}\right) + (4z-1)\sinh\left(2\sqrt{z}\right)\right)}{35\,z^{3/2}} $$

07.22.03.5113.01

$$ {}_1F_2\left(\frac{9}{2}; \frac{5}{2}, \frac{5}{2}; -z\right) = \frac{3\left((z-2)\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4z+1)\sin\left(2\sqrt{z}\right)\right)}{35\,z^{3/2}} $$

07.22.03.5114.01

$$ {}_1F_2\left(\frac{9}{2}; \frac{5}{2}, 3; z\right) = \frac{(8z+70)\,I_2\left(2\sqrt{z}\right) + 32\sqrt{z}\,I_3\left(2\sqrt{z}\right)}{35\,z} $$

07.22.03.5115.01

$$ {}_1F_2\left(\frac{9}{2}; \frac{5}{2}, 3; -z\right) = \frac{(70-8z)\,J_2\left(2\sqrt{z}\right) - 32\sqrt{z}\,J_3\left(2\sqrt{z}\right)}{35\,z} $$

07.22.03.5116.01

$$ {}_1F_2\left(\frac{9}{2}; \frac{5}{2}, \frac{7}{2}; z\right) = \frac{6\sqrt{z}\,\cosh\left(2\sqrt{z}\right) + 3(z-1)\sinh\left(2\sqrt{z}\right)}{14\,z^{3/2}} $$

07.22.03.5117.01

$$ {}_1F_2\left(\frac{9}{2}; \frac{5}{2}, \frac{7}{2}; -z\right) = \frac{3\left((z+1)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{14\,z^{3/2}} $$

07.22.03.5118.01

$$ {}_1F_2\left(\frac{9}{2}; \frac{5}{2}, 4; z\right) = \frac{6\left((4z+35)\,I_3\left(2\sqrt{z}\right) + 12\sqrt{z}\,I_4\left(2\sqrt{z}\right)\right)}{35\,z^{3/2}} $$

07.22.03.5119.01

$$ {}_1F_2\left(\frac{9}{2}; \frac{5}{2}, 4; -z\right) = -\frac{6\left((4z-35)\,J_3\left(2\sqrt{z}\right) + 12\sqrt{z}\,J_4\left(2\sqrt{z}\right)\right)}{35\,z^{3/2}} $$

07.22.03.5120.01

$$ {}_1F_2\left(\frac{9}{2}; \frac{5}{2}, \frac{9}{2}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}} $$

07.22.03.5121.01

$$ {}_1F_2\left(\frac{9}{2}; \frac{5}{2}, \frac{9}{2}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}} $$

07.22.03.5122.01

$$ {}_1F_2\left(\frac{9}{2}; \frac{5}{2}, 5; z\right) = \frac{24\left((4z+35)\,I_4\left(2\sqrt{z}\right) + 8\sqrt{z}\,I_5\left(2\sqrt{z}\right)\right)}{35\,z^2} $$

07.22.03.5123.01

$${}_1F_2\left(\frac{9}{2}; \frac{5}{2}, 5; -z\right) = -\frac{24\left((4z-35)\,J_4\left(2\sqrt{z}\right)+8\sqrt{z}\;J_5\left(2\sqrt{z}\right)\right)}{35\,z^2}$$

07.22.03.5124.01

$${}_1F_2\left(\frac{9}{2}; \frac{5}{2}, \frac{11}{2}; z\right) = \frac{27\left(\left(8z^3+70z^2+210z+105\right)\sinh\left(2\sqrt{z}\right)-14\sqrt{z}\;\left(2z^2+10z+15\right)\cosh\left(2\sqrt{z}\right)\right)}{64\,z^{9/2}}$$

07.22.03.5125.01

$${}_1F_2\left(\frac{9}{2}; \frac{5}{2}, \frac{11}{2}; -z\right) = -\frac{27\left(14\sqrt{z}\;\left(2z^2-10z+15\right)\cos\left(2\sqrt{z}\right)+\left(8z^3-70z^2+210z-105\right)\sin\left(2\sqrt{z}\right)\right)}{64\,z^{9/2}}$$

07.22.03.5126.01

$${}_1F_2\left(\frac{9}{2}; \frac{5}{2}, 6; z\right) = \frac{24\left((4z+35)\,I_5\left(2\sqrt{z}\right)+4\sqrt{z}\;I_6\left(2\sqrt{z}\right)\right)}{7\,z^{5/2}}$$

07.22.03.5127.01

$${}_1F_2\left(\frac{9}{2}; \frac{5}{2}, 6; -z\right) = -\frac{24\left((4z-35)\,J_5\left(2\sqrt{z}\right)+4\sqrt{z}\;J_6\left(2\sqrt{z}\right)\right)}{7\,z^{5/2}}$$

For fixed z and $a_1 = \frac{9}{2}$, $b_1 = 3$

07.22.03.5128.01

$${}_1F_2\left(\frac{9}{2}; 3, 3; z\right) = \frac{8\left(\sqrt{z}\;(4z+3)\,I_0\left(\sqrt{z}\right)^2+2\,(10z-3)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\sqrt{z}\;(4z-5)\,I_1\left(\sqrt{z}\right)^2\right)}{105\,z^{3/2}}$$

07.22.03.5129.01

$${}_1F_2\left(\frac{9}{2}; 3, 3; -z\right) = \frac{8\left(\sqrt{z}\;(4z-3)\,J_0\left(\sqrt{z}\right)^2+2\,(10z+3)\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)-\sqrt{z}\;(4z+5)\,J_1\left(\sqrt{z}\right)^2\right)}{105\,z^{3/2}}$$

07.22.03.5130.01

$${}_1F_2\left(\frac{9}{2}; 3, \frac{7}{2}; z\right) = \frac{2\,I_2\left(2\sqrt{z}\right)}{z}+\frac{4\,I_3\left(2\sqrt{z}\right)}{7\sqrt{z}}$$

07.22.03.5131.01

$${}_1F_2\left(\frac{9}{2}; 3, \frac{7}{2}; -z\right) = \frac{2\,J_2\left(2\sqrt{z}\right)}{z}-\frac{4\,J_3\left(2\sqrt{z}\right)}{7\sqrt{z}}$$

07.22.03.5132.01

$${}_1F_2\left(\frac{9}{2}; 3, 4; z\right) = \frac{16\left(2z\,I_0\left(\sqrt{z}\right)^2+\sqrt{z}\;(4z-5)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+2\,I_1\left(\sqrt{z}\right)^2\right)}{35\,z^2}$$

07.22.03.5133.01

$${}_1F_2\left(\frac{9}{2}; 3, 4; -z\right) = \frac{16\left(-2z\,J_0\left(\sqrt{z}\right)^2+\sqrt{z}\;(4z+5)\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right)-2\,J_1\left(\sqrt{z}\right)^2\right)}{35\,z^2}$$

07.22.03.5134.01

$${}_1F_2\left(\frac{9}{2}; 3, \frac{9}{2}; z\right) = \frac{2\, I_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.5135.01

$${}_1F_2\left(\frac{9}{2}; 3, \frac{9}{2}; -z\right) = \frac{2\, J_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.5136.01

$${}_1F_2\left(\frac{9}{2}; 3, 5; z\right) = \frac{64\left(z\,(2\,z+3)\, I_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\,(2\,z+3)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + 2\left(z^2+4\,z+6\right) I_1\left(\sqrt{z}\right)^2\right)}{35\, z^3}$$

07.22.03.5137.01

$${}_1F_2\left(\frac{9}{2}; 3, 5; -z\right) = -\frac{64\left(z\,(2\,z-3)\, J_0\left(\sqrt{z}\right)^2 + 4\,(3-2\,z)\sqrt{z}\,\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) - 2\left(z^2-4\,z+6\right) J_1\left(\sqrt{z}\right)^2\right)}{35\, z^3}$$

07.22.03.5138.01

$${}_1F_2\left(\frac{9}{2}; 3, \frac{11}{2}; z\right) =$$
$$\frac{1}{64\, z^4}\left(9\left(I_1\left(2\sqrt{z}\right)\left(4\sqrt{z}\,\left(16\, z^2+140\, z+315\right) - 315\,\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right)\right) - 7\, I_0\left(2\sqrt{z}\right)\left(8\, z\,(4\, z+15) - 45\,\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5139.01

$${}_1F_2\left(\frac{9}{2}; 3, \frac{11}{2}; -z\right) =$$
$$\frac{1}{64\, z^4}\left(9\left(J_1\left(2\sqrt{z}\right)\left(315\,\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right) - 4\sqrt{z}\,\left(16\, z^2-140\, z+315\right)\right) - 7\, J_0\left(2\sqrt{z}\right)\left(8\, z\,(4\, z-15) + 45\,\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5140.01

$${}_1F_2\left(\frac{9}{2}; 3, 6; z\right) = \frac{1}{7\, z^4}\left(64\left(-3\, z\,(3\, z+16)\, I_0\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(z^2+15\, z+48\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \left(11\, z^2+84\, z+192\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.5141.01

$${}_1F_2\left(\frac{9}{2}; 3, 6; -z\right) =$$
$$-\frac{1}{7\, z^4}\left(64\left(3\, z\,(3\, z-16)\, J_0\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(z^2-15\, z+48\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(-11\, z^2+84\, z-192\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = \frac{9}{2}$, $b_1 = \frac{7}{2}$

07.22.03.5142.01

$${}_1F_2\left(\frac{9}{2}; \frac{7}{2}, \frac{7}{2}; z\right) = \frac{15\left(2\sqrt{z}\,\,(2\, z-3)\cosh\left(2\sqrt{z}\right) + (2\, z+3)\sinh\left(2\sqrt{z}\right)\right)}{112\, z^{5/2}}$$

07.22.03.5143.01

$${}_1F_2\left(\frac{9}{2}; \frac{7}{2}, \frac{7}{2}; -z\right) = -\frac{15\left(2\sqrt{z}\,\,(2\, z+3)\cos\left(2\sqrt{z}\right) + (2\, z-3)\sin\left(2\sqrt{z}\right)\right)}{112\, z^{5/2}}$$

07.22.03.5144.01

$${}_1F_2\left(\frac{9}{2}; \frac{7}{2}, 4; z\right) = \frac{6\, I_3\left(2\sqrt{z}\right)}{z^{3/2}} + \frac{12\, I_4\left(2\sqrt{z}\right)}{7\, z}$$

07.22.03.5145.01

$${}_1F_2\left(\frac{9}{2}; \frac{7}{2}, 4; -z\right) = \frac{6\, J_3\left(2\sqrt{z}\right)}{z^{3/2}} - \frac{12\, J_4\left(2\sqrt{z}\right)}{7\, z}$$

07.22.03.5146.01

$${}_1F_2\left(\frac{9}{2}; \frac{7}{2}, \frac{9}{2}; z\right) = \frac{15\left((4\, z + 3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\, \cosh\left(2\sqrt{z}\right)\right)}{32\, z^{5/2}}$$

07.22.03.5147.01

$${}_1F_2\left(\frac{9}{2}; \frac{7}{2}, \frac{9}{2}; -z\right) = -\frac{15\left(6\sqrt{z}\, \cos\left(2\sqrt{z}\right) + (4\, z - 3)\sin\left(2\sqrt{z}\right)\right)}{32\, z^{5/2}}$$

07.22.03.5148.01

$${}_1F_2\left(\frac{9}{2}; \frac{7}{2}, 5; z\right) = \frac{24\left(7\, I_4\left(2\sqrt{z}\right) + 2\sqrt{z}\, I_5\left(2\sqrt{z}\right)\right)}{7\, z^2}$$

07.22.03.5149.01

$${}_1F_2\left(\frac{9}{2}; \frac{7}{2}, 5; -z\right) = \frac{24\, J_4\left(2\sqrt{z}\right)}{z^2} - \frac{48\, J_5\left(2\sqrt{z}\right)}{7\, z^{3/2}}$$

07.22.03.5150.01

$${}_1F_2\left(\frac{9}{2}; \frac{7}{2}, \frac{11}{2}; z\right) = \frac{135\left(2\sqrt{z}\, \left(8\, z^2 + 70\, z + 105\right)\cosh\left(2\sqrt{z}\right) - \left(64\, z^2 + 210\, z + 105\right)\sinh\left(2\sqrt{z}\right)\right)}{256\, z^{9/2}}$$

07.22.03.5151.01

$${}_1F_2\left(\frac{9}{2}; \frac{7}{2}, \frac{11}{2}; -z\right) = \frac{135\left(2\sqrt{z}\, \left(8\, z^2 - 70\, z + 105\right)\cos\left(2\sqrt{z}\right) + \left(-64\, z^2 + 210\, z - 105\right)\sin\left(2\sqrt{z}\right)\right)}{256\, z^{9/2}}$$

07.22.03.5152.01

$${}_1F_2\left(\frac{9}{2}; \frac{7}{2}, 6; z\right) = \frac{120\, I_5\left(2\sqrt{z}\right)}{z^{5/2}} + \frac{240\, I_6\left(2\sqrt{z}\right)}{7\, z^2}$$

07.22.03.5153.01

$${}_1F_2\left(\frac{9}{2}; \frac{7}{2}, 6; -z\right) = \frac{120\, J_5\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{240\, J_6\left(2\sqrt{z}\right)}{7\, z^2}$$

For fixed z and $a_1 = \frac{9}{2}$, $b_1 = 4$

07.22.03.5154.01

$${}_1F_2\left(\frac{9}{2}; 4, 4; z\right) = \frac{48\left(2\, (z - 1)\sqrt{z}\, I_0\left(\sqrt{z}\right)^2 - 4\, (z - 1)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \sqrt{z}\, (2\, z + 1)\, I_1\left(\sqrt{z}\right)^2\right)}{35\, z^{5/2}}$$

07.22.03.5155.01

$${}_1F_2\left(\frac{9}{2}; 4, 4; -z\right) = -\frac{48\left(2\sqrt{z}\ (z+1)\, J_0\left(\sqrt{z}\right)^2 - 4\,(z+1)\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + (1-2z)\sqrt{z}\ J_1\left(\sqrt{z}\right)^2\right)}{35\, z^{5/2}}$$

07.22.03.5156.01

$${}_1F_2\left(\frac{9}{2}; 4, \frac{9}{2}; z\right) = \frac{6\, I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.5157.01

$${}_1F_2\left(\frac{9}{2}; 4, \frac{9}{2}; -z\right) = \frac{6\, J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.5158.01

$${}_1F_2\left(\frac{9}{2}; 4, 5; z\right) = \frac{192\left(-5z\, I_0\left(\sqrt{z}\right)^2 + 4\sqrt{z}\ (z+4)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - (7z+12)\, I_1\left(\sqrt{z}\right)^2\right)}{35\, z^3}$$

07.22.03.5159.01

$${}_1F_2\left(\frac{9}{2}; 4, 5; -z\right) = -\frac{192\left(5z\, J_0\left(\sqrt{z}\right)^2 + 4\,(z-4)\sqrt{z}\ J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + (12-7z)\, J_1\left(\sqrt{z}\right)^2\right)}{35\, z^3}$$

07.22.03.5160.01

$${}_1F_2\left(\frac{9}{2}; 4, \frac{11}{2}; z\right) = \frac{27\left(I_0\left(2\sqrt{z}\right)\left(8z\,(4z+35) - 105\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right)\right) - 3\, I_1\left(2\sqrt{z}\right)\left(4\sqrt{z}\ (12z+35) - 35\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right)\right)\right)}{32\, z^4}$$

07.22.03.5161.01

$${}_1F_2\left(\frac{9}{2}; 4, \frac{11}{2}; -z\right) = \frac{27\left(J_0\left(2\sqrt{z}\right)\left(8z\,(4z-35) + 105\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right)\right) - 3\, J_1\left(2\sqrt{z}\right)\left(4\sqrt{z}\ (12z-35) + 35\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right)\right)\right)}{32\, z^4}$$

07.22.03.5162.01

$${}_1F_2\left(\frac{9}{2}; 4, 6; z\right) = \frac{384\left(z\,(z+12)\, I_0\left(\sqrt{z}\right)^2 - \sqrt{z}\ (11z+48)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(z^2+18z+48\right) I_1\left(\sqrt{z}\right)^2\right)}{7\, z^4}$$

07.22.03.5163.01

$${}_1F_2\left(\frac{9}{2}; 4, 6; -z\right) = \frac{384\left((z-12)\, z\, J_0\left(\sqrt{z}\right)^2 + (48-11z)\sqrt{z}\ J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) - \left(z^2-18z+48\right) J_1\left(\sqrt{z}\right)^2\right)}{7\, z^4}$$

For fixed z and $a_1 = \frac{9}{2}$, $b_1 = \frac{9}{2}$

07.22.03.5164.01

$${}_1F_2\left(\frac{9}{2}; \frac{9}{2}, \frac{9}{2}; z\right) = \frac{105\left(2\sqrt{z}\ (4z+15)\cosh\left(2\sqrt{z}\right) - 3\,(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.5165.01

$${}_1F_2\left(\frac{9}{2}; \frac{9}{2}, \frac{9}{2}; -z\right) = \frac{105\left(2\sqrt{z}\ (4z-15)\cos\left(2\sqrt{z}\right) + 3\,(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.5166.01

$${}_1F_2\left(\frac{9}{2}; \frac{9}{2}, 5; z\right) = \frac{24\, I_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.5167.01

$${}_1F_2\left(\frac{9}{2}; \frac{9}{2}, 5; -z\right) = \frac{24\, J_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.5168.01

$${}_1F_2\left(\frac{9}{2}; \frac{9}{2}, \frac{11}{2}; z\right) = \frac{945\left(\left(16 z^2 + 180 z + 105\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\,(8 z + 21)\cosh\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}}$$

07.22.03.5169.01

$${}_1F_2\left(\frac{9}{2}; \frac{9}{2}, \frac{11}{2}; -z\right) = \frac{945\left(10\sqrt{z}\,(8 z - 21)\cos\left(2\sqrt{z}\right) + \left(16 z^2 - 180 z + 105\right)\sin\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}}$$

07.22.03.5170.01

$${}_1F_2\left(\frac{9}{2}; \frac{9}{2}, 6; z\right) = \frac{120\, I_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

07.22.03.5171.01

$${}_1F_2\left(\frac{9}{2}; \frac{9}{2}, 6; -z\right) = \frac{120\, J_5\left(2\sqrt{z}\right)}{z^{5/2}}$$

For fixed z and $a_1 = \frac{9}{2}$, $b_1 = 5$

07.22.03.5172.01

$${}_1F_2\left(\frac{9}{2}; 5, 5; z\right) = \frac{1536\left(\sqrt{z}\,(z + 6)\, I_0\left(\sqrt{z}\right)^2 - 3\,(3 z + 4)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \sqrt{z}\,(z + 11)\, I_1\left(\sqrt{z}\right)^2\right)}{35\, z^{7/2}}$$

07.22.03.5173.01

$${}_1F_2\left(\frac{9}{2}; 5, 5; -z\right) = \frac{1536\left((z - 6)\sqrt{z}\, J_0\left(\sqrt{z}\right)^2 + 3\,(4 - 3 z)\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) - (z - 11)\sqrt{z}\, J_1\left(\sqrt{z}\right)^2\right)}{35\, z^{7/2}}$$

07.22.03.5174.01

$${}_1F_2\left(\frac{9}{2}; 5, \frac{11}{2}; z\right) = \frac{27\left(I_1\left(2\sqrt{z}\right)\left(4\sqrt{z}\,(4 z + 57) - 105\,\pi\, \boldsymbol{L}_0\left(2\sqrt{z}\right)\right) + I_0\left(2\sqrt{z}\right)\left(105\,\pi\, \boldsymbol{L}_1\left(2\sqrt{z}\right) - 88 z\right)\right)}{4 z^4}$$

07.22.03.5175.01

$${}_1F_2\left(\frac{9}{2}; 5, \frac{11}{2}; -z\right) = \frac{27\left(J_1\left(2\sqrt{z}\right)\left(4\sqrt{z}\,(4 z - 57) + 105\,\pi\, \boldsymbol{H}_0\left(2\sqrt{z}\right)\right) + J_0\left(2\sqrt{z}\right)\left(88 z - 105\,\pi\, \boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)}{4 z^4}$$

07.22.03.5176.01

$${}_1F_2\left(\frac{9}{2}; 5, 6; z\right) = \frac{1536\left(-6 z\, I_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\,(z + 18)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - (7 z + 48)\, I_1\left(\sqrt{z}\right)^2\right)}{7\, z^4}$$

07.22.03.5177.01

$${}_1F_2\left(\frac{9}{2}; 5, 6; -z\right) = \frac{1536\left(6\,z\,J_0\left(\sqrt{z}\right)^2 + 2\,(z-18)\,\sqrt{z}\;J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + (48-7\,z)\,J_1\left(\sqrt{z}\right)^2\right)}{7\,z^4}$$

For fixed z and $a_1 = \frac{9}{2}$, $b_1 = \frac{11}{2}$

07.22.03.5178.01

$${}_1F_2\left(\frac{9}{2}; \frac{11}{2}, \frac{11}{2}; z\right) = \frac{8505\left(2\left(\sqrt{z}\;(4\,z+71)\cosh\left(2\sqrt{z}\right) - 2\,(13\,z+44)\sinh\left(2\sqrt{z}\right)\right) + 105\,\mathrm{Shi}\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.5179.01

$${}_1F_2\left(\frac{9}{2}; \frac{11}{2}, \frac{11}{2}; -z\right) = -\frac{8505\left(2\left(\sqrt{z}\;(4\,z-71)\cos\left(2\sqrt{z}\right) + 2\,(44-13\,z)\sin\left(2\sqrt{z}\right)\right) - 105\,\mathrm{Si}\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.5180.01

$${}_1F_2\left(\frac{9}{2}; \frac{11}{2}, 6; z\right) = \frac{135\left(\sqrt{z}\;I_0\left(2\sqrt{z}\right)\left(8\,(z+48) + 105\,\pi\,\boldsymbol{L}_1\left(2\sqrt{z}\right)\right) - 3\,I_1\left(2\sqrt{z}\right)\left(20\,z + 35\,\pi\,\boldsymbol{L}_0\left(2\sqrt{z}\right)\sqrt{z} + 128\right)\right)}{2\,z^{9/2}}$$

07.22.03.5181.01

$${}_1F_2\left(\frac{9}{2}; \frac{11}{2}, 6; -z\right) = \frac{135\left(3\,J_1\left(2\sqrt{z}\right)\left(20\,z + 35\,\pi\,\boldsymbol{H}_0\left(2\sqrt{z}\right)\sqrt{z} - 128\right) - \sqrt{z}\;J_0\left(2\sqrt{z}\right)\left(8\,(z-48) + 105\,\pi\,\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)\right)}{2\,z^{9/2}}$$

For fixed z and $a_1 = \frac{9}{2}$, $b_1 = 6$

07.22.03.5182.01

$${}_1F_2\left(\frac{9}{2}; 6, 6; z\right) = \frac{7680\left(\sqrt{z}\;(z+48)\,I_0\left(\sqrt{z}\right)^2 - 16\,(z+6)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) + \sqrt{z}\;(z+4)\,I_1\left(\sqrt{z}\right)^2\right)}{7\,z^{9/2}}$$

07.22.03.5183.01

$${}_1F_2\left(\frac{9}{2}; 6, 6; -z\right) = -\frac{7680\left((z-48)\,\sqrt{z}\;J_0\left(\sqrt{z}\right)^2 - 16\,(z-6)\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) - (z-4)\,\sqrt{z}\;J_1\left(\sqrt{z}\right)^2\right)}{7\,z^{9/2}}$$

For fixed z and $a_1 = 5$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = 5$, $b_1 = -\frac{11}{2}$

07.22.03.5184.01

$$ {}_1F_2\left(5; -\frac{11}{2}, -\frac{11}{2}; z\right) = \frac{1}{324\,168\,075}\left(32\,\pi z^3\left(16\,\boldsymbol{L}_{-18}\left(2\sqrt{z}\right)z^{11/2} + 7\left(272\,\boldsymbol{L}_{-17}\left(2\sqrt{z}\right)z^5 + 3\left(4456\,\boldsymbol{L}_{-16}\left(2\sqrt{z}\right)z^{9/2} + 118\,192\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^4 + 1\,856\,621\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2} + 17\,851\,869\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3 + 105\,019\,530\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 367\,475\,070\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2 + 719\,502\,840\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 703\,788\,120\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z + 275\,118\,480\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 24\,418\,800\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right) $$

07.22.03.5185.01

$$ {}_1F_2\left(5; -\frac{11}{2}, -\frac{11}{2}; -z\right) = \frac{1}{324\,168\,075}\left(32\,\pi z^3\left(16\,\boldsymbol{H}_{-18}\left(2\sqrt{z}\right)z^{11/2} + 7\left(272\,\boldsymbol{H}_{-17}\left(2\sqrt{z}\right)z^5 + 3\left(4456\,\boldsymbol{H}_{-16}\left(2\sqrt{z}\right)z^{9/2} + 118\,192\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^4 + 1\,856\,621\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2} + 17\,851\,869\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3 + 105\,019\,530\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 367\,475\,070\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2 + 719\,502\,840\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 703\,788\,120\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z + 275\,118\,480\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 24\,418\,800\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right) $$

07.22.03.5186.01

$$ {}_1F_2\left(5; -\frac{11}{2}, -\frac{9}{2}; z\right) = -\frac{1}{29\,469\,825}\left(16\,\pi z^3\left(16\,\boldsymbol{L}_{-17}\left(2\sqrt{z}\right)z^5 + 3\left(576\,\boldsymbol{L}_{-16}\left(2\sqrt{z}\right)z^{9/2} + 25\,432\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^4 + 598\,456\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2} + 8\,208\,699\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3 + 67\,502\,190\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 330\,123\,570\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2 + 921\,707\,640\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 1\,349\,689\,320\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z + 877\,448\,880\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 170\,931\,600\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.5187.01

$$ {}_1F_2\left(5; -\frac{11}{2}, -\frac{9}{2}; -z\right) = -\frac{1}{29\,469\,825}\left(16\,\pi z^3\left(16\,\boldsymbol{H}_{-17}\left(2\sqrt{z}\right)z^5 + 3\left(576\,\boldsymbol{H}_{-16}\left(2\sqrt{z}\right)z^{9/2} + 25\,432\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^4 + 598\,456\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2} + 8\,208\,699\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3 + 67\,502\,190\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 330\,123\,570\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2 + 921\,707\,640\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 1\,349\,689\,320\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z + 877\,448\,880\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 170\,931\,600\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.5188.01

$$ {}_1F_2\left(5; -\frac{11}{2}, -\frac{7}{2}; z\right) = \frac{1}{3\,274\,425}\left(8\,\pi z^3\left(16\,\boldsymbol{L}_{-16}\left(2\sqrt{z}\right)z^{9/2} + 1552\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^4 + 60\,776\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2} + 1\,248\,384\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3 + 14\,639\,025\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 100\,033\,395\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2 + 390\,170\,340\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 814\,271\,220\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z + 791\,983\,080\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 256\,397\,400\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.5189.01

$${}_1F_2\left(5; -\frac{11}{2}, -\frac{7}{2}; -z\right) =$$
$$\frac{1}{3\,274\,425}\left(8\,\pi\,z^3\left(16\,\boldsymbol{H}_{-16}\left(2\sqrt{z}\right)z^{9/2} + 1552\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^4 + 60\,776\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2} + 1\,248\,384\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3 + \right.\right.$$
$$14\,639\,025\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 100\,033\,395\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2 + 390\,170\,340\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2} +$$
$$\left.\left.814\,271\,220\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z + 791\,983\,080\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 256\,397\,400\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5190.01

$${}_1F_2\left(5; -\frac{11}{2}, -\frac{5}{2}; z\right) =$$
$$-\frac{1}{467\,775}\left(4\,\pi\,z^3\left(16\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^4 + 1376\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2} + 47\,016\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3 + 825\,240\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2} + \right.\right.$$
$$8\,037\,105\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2 + 43\,773\,660\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2} +$$
$$\left.\left.127\,528\,380\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z + 176\,629\,320\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 85\,465\,800\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5191.01

$${}_1F_2\left(5; -\frac{11}{2}, -\frac{5}{2}; -z\right) =$$
$$-\frac{1}{467\,775}\left(4\,\pi\,z^3\left(16\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^4 + 1376\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2} + 47\,016\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3 + 825\,240\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2} + \right.\right.$$
$$8\,037\,105\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2 + 43\,773\,660\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2} +$$
$$\left.\left.127\,528\,380\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z + 176\,629\,320\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 85\,465\,800\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5192.01

$${}_1F_2\left(5; -\frac{11}{2}, -\frac{3}{2}; z\right) =$$
$$\frac{1}{93\,555}\left(2\,\pi\,z^3\left(16\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2} + 3\left(400\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3 + 11\,672\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 170\,032\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2 + \right.\right.\right.$$
$$\left.\left.\left.1\,318\,779\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 5\,359\,767\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z + 10\,350\,858\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 7\,122\,150\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5193.01

$${}_1F_2\left(5; -\frac{11}{2}, -\frac{3}{2}; -z\right) =$$
$$\frac{1}{93\,555}\left(2\,\pi\,z^3\left(16\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2} + 3\left(400\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3 + 11\,672\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 170\,032\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2 + \right.\right.\right.$$
$$\left.\left.\left.1\,318\,779\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 5\,359\,767\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z + 10\,350\,858\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 7\,122\,150\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5194.01

$${}_1F_2\left(5; -\frac{11}{2}, -\frac{1}{2}; z\right) =$$
$$-\frac{1}{31\,185}\left(\pi\,z^3\left(16\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3 + 1024\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 24\,776\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2 + 287\,112\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2} + \right.\right.$$
$$\left.\left.1\,659\,441\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z + 4\,463\,214\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 4\,273\,290\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5195.01

$${}_1F_2\left(5; -\frac{11}{2}, -\frac{1}{2}; -z\right) =$$
$$-\frac{1}{31\,185}\left(\pi z^3\left(16\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3 + 1024\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 24\,776\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2 + 287\,112\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2} + \right.\right.$$
$$\left.\left.1\,659\,441\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z + 4\,463\,214\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 4\,273\,290\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5196.01

$${}_1F_2\left(5; -\frac{11}{2}, \frac{1}{2}; z\right) = \frac{1}{62\,370}\left(\pi z^3\left(16\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 848\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2 + \right.\right.$$
$$\left.\left.21\left(776\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 6688\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z + 25\,517\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 33\,915\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5197.01

$${}_1F_2\left(5; -\frac{11}{2}, \frac{1}{2}; -z\right) = \frac{1}{62\,370}\left(\pi z^3\left(16\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 848\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2 + \right.\right.$$
$$\left.\left.21\left(776\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 6688\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z + 25\,517\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 33\,915\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5198.01

$${}_1F_2\left(5; -\frac{11}{2}, 1; z\right) = \frac{1}{31\,185}\left(\left(8z^5 + 198z^4 + 672z^3 - 26\,460z^2 + 34\,020z + 31\,185\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(58z^4 - 816z^3 + 5292z^2 + 7560z - 31\,185\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5199.01

$${}_1F_2\left(5; -\frac{11}{2}, 1; -z\right) = \frac{1}{31\,185}\left(-\left(8z^5 - 198z^4 + 672z^3 + 26\,460z^2 + 34\,020z - 31\,185\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left.2\sqrt{z}\left(58z^4 + 816z^3 + 5292z^2 - 7560z - 31\,185\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5200.01

$${}_1F_2\left(5; -\frac{11}{2}, \frac{3}{2}; z\right) = \frac{1}{124\,740}$$
$$\left(4\left(8z^5 + 34z^4 + 2460z^3 - 25\,200z^2 + 6300z + 31\,185\right) + 12\pi\sqrt{z}\left(16z^4 - 238z^3 + 735z^2 + 6300z - 6300\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \right.$$
$$\left.\pi\left(16z^5 - 24z^4 + 6321z^3 - 52\,920z^2 - 37\,800z + 75\,600\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5201.01

$${}_1F_2\left(5; -\frac{11}{2}, \frac{3}{2}; -z\right) = \frac{1}{124\,740}$$
$$\left(-4\left(8z^5 - 34z^4 + 2460z^3 + 25\,200z^2 + 6300z - 31\,185\right) - 12\pi\sqrt{z}\left(16z^4 + 238z^3 + 735z^2 - 6300z - 6300\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) + \right.$$
$$\left.\pi\left(16z^5 + 24z^4 + 6321z^3 + 52\,920z^2 - 37\,800z - 75\,600\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5202.01

$${}_1F_2\left(5; -\frac{11}{2}, 2; z\right) = \frac{1}{31\,185}$$
$$\left(\left(72z^4 - 903z^3 - 4410z^2 + 48\,195z + 31\,185\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(4z^4 - 81z^3 + 2142z^2 - 6615z - 31\,185\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5203.01

$${}_1F_2\left(5; -\frac{11}{2}, 2; -z\right) = \frac{1}{31\,185}$$
$$\left(\left(72z^4 + 903z^3 - 4410z^2 - 48\,195z + 31\,185\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4z^4 + 81z^3 + 2142z^2 + 6615z - 31\,185\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5204.01

$$ {}_1F_2\left(5; -\frac{11}{2}, \frac{5}{2}; z\right) = \frac{1}{249\,480\sqrt{z}} \left(8\sqrt{z}\left(8z^5 - 174z^4 + 3375z^3 - 7200z^2 - 18\,900z + 31\,185\right) + 21\pi\sqrt{z}\left(16z^4 - 120z^3 - 2025z^2 + 7200z + 5400\right) \boldsymbol{L}_1\left(2\sqrt{z}\right) + 3\pi\left(16z^5 - 504z^4 + 7665z^3 + 12\,600z^2 - 113\,400z - 75\,600\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right) $$

07.22.03.5205.01

$$ {}_1F_2\left(5; -\frac{11}{2}, \frac{5}{2}; -z\right) = \frac{1}{249\,480\sqrt{z}} \left(-8\sqrt{z}\left(8z^5 + 174z^4 + 3375z^3 + 7200z^2 - 18\,900z - 31\,185\right) - 21\pi\sqrt{z}\left(16z^4 + 120z^3 - 2025z^2 - 7200z + 5400\right) \boldsymbol{H}_1\left(2\sqrt{z}\right) + 3\pi\left(16z^5 + 504z^4 + 7665z^3 - 12\,600z^2 - 113\,400z + 75\,600\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right) $$

07.22.03.5206.01

$$ {}_1F_2\left(5; -\frac{11}{2}, 3; z\right) = \left(\frac{16z^4}{31\,185} - \frac{28z^3}{1485} + \frac{z^2}{9} + \frac{56z}{33} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(8z^3 + 189z^2 - 3780z - 10\,395\right)\sinh\left(2\sqrt{z}\right)}{10\,395} $$

07.22.03.5207.01

$$ {}_1F_2\left(5; -\frac{11}{2}, 3; -z\right) = \left(\frac{16z^4}{31\,185} + \frac{28z^3}{1485} + \frac{z^2}{9} - \frac{56z}{33} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(8z^3 - 189z^2 - 3780z + 10\,395\right)\sin\left(2\sqrt{z}\right)}{10\,395} $$

07.22.03.5208.01

$$ {}_1F_2\left(5; -\frac{11}{2}, \frac{7}{2}; z\right) = \frac{1}{498\,960z} \left(16z\left(8z^5 - 222z^4 + 1242z^3 + 4680z^2 + 540z + 31\,185\right) + 30\pi\sqrt{z}\left(16z^4 + 588z^3 - 5481z^2 - 13\,860z - 30\,240\right) \boldsymbol{L}_2\left(2\sqrt{z}\right) + 15\pi\left(16z^5 - 504z^4 - 1071z^3 + 39\,060z^2 + 98\,280z + 181\,440\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right) $$

07.22.03.5209.01

$$ {}_1F_2\left(5; -\frac{11}{2}, \frac{7}{2}; -z\right) = \frac{1}{498\,960z} \left(-16z\left(8z^5 + 222z^4 + 1242z^3 - 4680z^2 + 540z - 31\,185\right) - 30\pi\sqrt{z}\left(16z^4 - 588z^3 - 5481z^2 + 13\,860z - 30\,240\right) \boldsymbol{H}_2\left(2\sqrt{z}\right) + 15\pi\left(16z^5 + 504z^4 - 1071z^3 - 39\,060z^2 + 98\,280z - 181\,440\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right) $$

07.22.03.5210.01

$$ {}_1F_2\left(5; -\frac{11}{2}, 4; z\right) = \left(-\frac{8z^3}{1485} + \frac{8z^2}{33} + \frac{39z}{22} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{\sqrt{z}\left(16z^3 - 252z^2 - 9135z - 20\,790\right)\sinh\left(2\sqrt{z}\right)}{10\,395} $$

07.22.03.5211.01

$$ {}_1F_2\left(5; -\frac{11}{2}, 4; -z\right) = \left(\frac{8z^3}{1485} + \frac{8z^2}{33} - \frac{39z}{22} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{\sqrt{z}\left(16z^3 + 252z^2 - 9135z + 20\,790\right)\sin\left(2\sqrt{z}\right)}{10\,395} $$

07.22.03.5212.01

$$ {}_1F_2\left(5; -\frac{11}{2}, \frac{9}{2}; z\right) = \frac{1}{997\,920\, z^{3/2}} \left(32\left(8 z^5 - 110 z^4 - 819 z^3 - 5040 z^2 - 31\,500 z + 31\,185\right) z^{3/2} - 315\,\pi \left(16 z^4 - 424 z^3 - 2793 z^2 - 20\,160 z - 75\,600\right) \boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z} + 105\,\pi \left(16 z^5 - 24 z^4 - 6447 z^3 - 44\,100 z^2 - 287\,280 z - 907\,200\right) \boldsymbol{L}_4\left(2\sqrt{z}\right)\right) $$

07.22.03.5213.01

$$ {}_1F_2\left(5; -\frac{11}{2}, \frac{9}{2}; -z\right) = \frac{1}{997\,920\, z^{3/2}} \left(-32\left(8 z^5 + 110 z^4 - 819 z^3 + 5040 z^2 - 31\,500 z - 31\,185\right) z^{3/2} + 315\,\pi \left(16 z^4 + 424 z^3 - 2793 z^2 + 20\,160 z - 75\,600\right) \boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z} + 105\,\pi \left(16 z^5 + 24 z^4 - 6447 z^3 + 44\,100 z^2 - 287\,280 z + 907\,200\right) \boldsymbol{H}_4\left(2\sqrt{z}\right)\right) $$

07.22.03.5214.01

$$ {}_1F_2\left(5; -\frac{11}{2}, 5; z\right) = \left(\frac{64 z^3}{10\,395} + \frac{32 z^2}{99} + \frac{20 z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16 z^2 + 240 z + 495\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.5215.01

$$ {}_1F_2\left(5; -\frac{11}{2}, 5; -z\right) = \left(-\frac{64 z^3}{10\,395} + \frac{32 z^2}{99} - \frac{20 z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(16 z^2 - 240 z + 495\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.5216.01

$$ {}_1F_2\left(5; -\frac{11}{2}, \frac{11}{2}; z\right) = \frac{1}{1\,995\,840\, z^2} \left(64\left(8 z^5 + 162 z^4 + 3192 z^3 + 45\,360 z^2 + 283\,500 z + 31\,185\right) z^2 - 7560\,\pi \left(16 z^4 + 309 z^3 + 5859 z^2 + 71\,820 z + 396\,900\right) \boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} + 945\,\pi \left(16 z^5 + 936 z^4 + 18\,417 z^3 + 317\,520 z^2 + 3\,402\,000 z + 15\,876\,000\right) \boldsymbol{L}_5\left(2\sqrt{z}\right)\right) $$

07.22.03.5217.01

$$ {}_1F_2\left(5; -\frac{11}{2}, \frac{11}{2}; -z\right) = \frac{1}{1\,995\,840\, z^2} \left(-64\left(8 z^5 - 162 z^4 + 3192 z^3 - 45\,360 z^2 + 283\,500 z - 31\,185\right) z^2 + 7560\,\pi \left(16 z^4 - 309 z^3 + 5859 z^2 - 71\,820 z + 396\,900\right) \boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} + 945\,\pi \left(16 z^5 - 936 z^4 + 18\,417 z^3 - 317\,520 z^2 + 3\,402\,000 z - 15\,876\,000\right) \boldsymbol{H}_5\left(2\sqrt{z}\right)\right) $$

07.22.03.5218.01

$$ {}_1F_2\left(5; -\frac{11}{2}, 6; z\right) = \frac{1}{8316 z^5} \left(-3\left(1536 z^7 + 112\,448 z^6 + 3\,877\,104 z^5 + 87\,297\,210 z^4 + 1\,222\,160\,940 z^3 + 9\,166\,207\,050 z^2 + 27\,498\,621\,150 z + 13\,749\,310\,575\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(128 z^7 + 22\,848 z^6 + 1\,049\,832 z^5 + 29\,099\,070 z^4 + 523\,783\,260 z^3 + 5\,499\,724\,230 z^2 + 27\,498\,621\,150 z + 41\,247\,931\,725\right)\sinh\left(2\sqrt{z}\right) + 41\,247\,931\,725\right) $$

07.22.03.5219.01

$${}_1F_2\left(5; -\frac{11}{2}, 6; -z\right) =$$
$$-\frac{1}{8316\,z^5}\left(3\left(1536\,z^7 - 112\,448\,z^6 + 3\,877\,104\,z^5 - 87\,297\,210\,z^4 + 1\,222\,160\,940\,z^3 - 9\,166\,207\,050\,z^2 + 27\,498\,621\,150\,z - 13\,749\,310\,575\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(128\,z^7 - 22\,848\,z^6 + 1\,049\,832\,z^5 - 29\,099\,070\,z^4 + 523\,783\,260\,z^3 - 5\,499\,724\,230\,z^2 + 27\,498\,621\,150\,z - 41\,247\,931\,725\right)\sin\left(2\sqrt{z}\right) + 41\,247\,931\,725\right)$$

For fixed z and $a_1 = 5$, $b_1 = -\frac{9}{2}$

07.22.03.5220.01

$${}_1F_2\left(5; -\frac{9}{2}, -\frac{9}{2}; z\right) =$$
$$\frac{1}{2\,679\,075}\left(8\pi z^{5/2}\left(16\,\boldsymbol{L}_{-16}\left(2\sqrt{z}\right)z^5 + 1568\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^{9/2} + 3\left(20\,728\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^4 + 432\,632\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 5\left(1\,036\,055\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^3 + 7\,284\,108\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 29\,604\,174\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^2 + 65\,924\,832\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 72\,163\,368\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z + 31\,163\,040\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 3\,023\,280\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.5221.01

$${}_1F_2\left(5; -\frac{9}{2}, -\frac{9}{2}; -z\right) =$$
$$\frac{1}{2\,679\,075}\left(8\pi z^{5/2}\left(16\,\boldsymbol{H}_{-16}\left(2\sqrt{z}\right)z^5 + 1568\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^{9/2} + 3\left(20\,728\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^4 + 432\,632\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 5\left(1\,036\,055\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^3 + 7\,284\,108\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 29\,604\,174\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^2 + 65\,924\,832\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 72\,163\,368\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z + 31\,163\,040\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 3\,023\,280\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.5222.01

$${}_1F_2\left(5; -\frac{9}{2}, -\frac{7}{2}; z\right) =$$
$$-\frac{1}{297\,675}\left(4\pi z^{5/2}\left(16\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^{9/2} + 1408\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^4 + 3\left(16\,504\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 300\,600\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^3 + 3\,076\,075\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 17\,964\,090\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^2 + 58\,200\,420\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 96\,822\,480\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z + 70\,349\,400\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 15\,116\,400\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5223.01

$${}_1F_2\left(5; -\frac{9}{2}, -\frac{7}{2}; -z\right) =$$
$$-\frac{1}{297\,675}\left(4\pi z^{5/2}\left(16\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^{9/2} + 1408\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^4 + 3\left(16\,504\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 300\,600\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^3 + 3\,076\,075\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 17\,964\,090\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^2 + 58\,200\,420\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 96\,822\,480\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z + 70\,349\,400\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 15\,116\,400\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5224.01

$${}_1F_2\left(5; -\frac{9}{2}, -\frac{5}{2}; z\right) = \frac{1}{42\,525}\left(2\pi z^{5/2}\left(16\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^4 + 3\left(416\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 5\left(2552\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^3 + 39\,704\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 337\,287\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^2 + 1\,569\,096\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 3\,794\,604\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z + 4\,186\,080\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 1\,511\,640\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.5225.01

$${}_1F_2\left(5; -\frac{9}{2}, -\frac{5}{2}; -z\right) = \frac{1}{42\,525}\left(2\pi z^{5/2}\left(16\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^4 + 3\left(416\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 5\left(2552\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^3 + 39\,704\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 337\,287\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^2 + 1\,569\,096\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 3\,794\,604\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z + 4\,186\,080\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 1\,511\,640\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.5226.01

$${}_1F_2\left(5; -\frac{9}{2}, -\frac{3}{2}; z\right) = -\frac{1}{8505}\left(\pi z^{5/2}\left(16\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 1088\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^3 + 3\left(9496\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 122\,552\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^2 + 828\,571\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 2\,874\,054\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z + 4\,602\,750\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 2\,519\,400\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5227.01

$${}_1F_2\left(5; -\frac{9}{2}, -\frac{3}{2}; -z\right) = -\frac{1}{8505}\left(\pi z^{5/2}\left(16\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 1088\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^3 + 3\left(9496\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 122\,552\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^2 + 828\,571\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 2\,874\,054\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z + 4\,602\,750\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 2\,519\,400\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5228.01

$${}_1F_2\left(5; -\frac{9}{2}, -\frac{1}{2}; z\right) = \frac{1}{5670}\left(\pi z^{5/2}\left(16\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^3 + 928\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 3\left(6712\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^2 + 68\,856\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 346\,579\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z + 794\,580\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 629\,850\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5229.01

$${}_1F_2\left(5; -\frac{9}{2}, -\frac{1}{2}; -z\right) = \frac{1}{5670}\left(\pi z^{5/2}\left(16\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^3 + 928\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 3\left(6712\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^2 + 68\,856\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 346\,579\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z + 794\,580\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 629\,850\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5230.01

$${}_1F_2\left(5; -\frac{9}{2}, \frac{1}{2}; z\right) = -\frac{1}{11\,340}\left(\pi\left(16\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^5 + 3\left(256\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^2 + 19\left(232\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 1768\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z + 5865\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 6630\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)z^{5/2}\right)\right)$$

07.22.03.5231.01

$${}_1F_2\left(5; -\frac{9}{2}, \frac{1}{2}; -z\right) = -\frac{1}{11\,340}\left(\pi\left(16\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^5 + 3\left(256\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^2 + 19\left(232\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 1768\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z + 5865\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 6630\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)z^{5/2}\right)\right)$$

07.22.03.5232.01

$${}_1F_2\left(5; -\frac{9}{2}, 1; z\right) = \frac{1}{2835}\left(\left(-62z^4 + 432z^3 - 3060z^2 + 2520z + 2835\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(2z^4 + 96z^3 - 372z^2 - 1260z + 2835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5233.01

$${}_1F_2\left(5; -\frac{9}{2}, 1; -z\right) = \frac{1}{2835}\left(2\sqrt{z}\left(2z^4 - 96z^3 - 372z^2 + 1260z + 2835\right)\sin\left(2\sqrt{z}\right) - \left(62z^4 + 432z^3 + 3060z^2 + 2520z - 2835\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.5234.01

$${}_1F_2\left(5; -\frac{9}{2}, \frac{3}{2}; z\right) = \frac{1}{22\,680}\left(-36\left(12z^4 - 107z^3 + 540z^2 - 630\right) - \pi\sqrt{z}\left(16z^4 + 392z^3 + 105z^2 - 16\,380z + 12\,600\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(-208z^4 + 2072z^3 - 9135z^2 - 10\,080z + 12\,600\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5235.01

$${}_1F_2\left(5; -\frac{9}{2}, \frac{3}{2}; -z\right) = \frac{1}{22\,680}\left(-36\left(12z^4 + 107z^3 + 540z^2 - 630\right) + \pi\sqrt{z}\left(16z^4 - 392z^3 + 105z^2 + 16\,380z + 12\,600\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) + \pi\left(208z^4 + 2072z^3 + 9135z^2 - 10\,080z - 12\,600\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5236.01

$${}_1F_2\left(5; -\frac{9}{2}, 2; z\right) = \frac{1}{2835}\left(\left(-4z^4 - 3z^3 - 810z^2 + 4095z + 2835\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(7z^3 - 74z^2 + 105z + 945\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5237.01

$${}_1F_2\left(5; -\frac{9}{2}, 2; -z\right) = \frac{\left(-4z^4 + 3z^3 - 810z^2 - 4095z + 2835\right)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\left(7z^3 + 74z^2 + 105z - 945\right)\sin\left(2\sqrt{z}\right)}{2835}$$

07.22.03.5238.01

$${}_1F_2\left(5; -\frac{9}{2}, \frac{5}{2}; z\right) = \frac{1}{45\,360\sqrt{z}}\left(-3\pi\sqrt{z}\left(16z^4 - 120z^3 + 3345z^2 - 8100z - 5400\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) - 4\left(2\sqrt{z}\left(76z^4 - 681z^3 + 900z^2 + 3600z - 5670\right) + 3\pi\left(32z^4 - 270z^3 - 1035z^2 + 4500z + 2700\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5239.01

$${}_1F_2\left(5; -\frac{9}{2}, \frac{5}{2}; -z\right) = \frac{1}{45\,360\sqrt{z}}\left(3\pi\sqrt{z}\left(16z^4 + 120z^3 + 3345z^2 + 8100z - 5400\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 4\left(3\pi\left(32z^4 + 270z^3 - 1035z^2 - 4500z + 2700\right)\boldsymbol{H}_2\left(2\sqrt{z}\right) - 2\sqrt{z}\left(76z^4 + 681z^3 + 900z^2 - 3600z - 5670\right)\right)\right)$$

07.22.03.5240.01

$${}_1F_2\left(5; -\frac{9}{2}, 3; z\right) = \frac{-5\left(8z^3 - 3z^2 - 924z - 567\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4z^3 - 97z^2 + 840z + 2835\right)\sinh\left(2\sqrt{z}\right)}{2835}$$

07.22.03.5241.01

$${}_1F_2\left(5; -\frac{9}{2}, 3; -z\right) = \frac{5\left(8z^3 + 3z^2 - 924z + 567\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4z^3 + 97z^2 + 840z - 2835\right)\sin\left(2\sqrt{z}\right)}{2835}$$

07.22.03.5242.01

$${}_1F_2\left(5; -\frac{9}{2}, \frac{7}{2}; z\right) =$$
$$-\frac{1}{90\,720z}\left(16z\left(44z^4 - 159z^3 - 810z^2 + 720z - 5670\right) + 15\pi\sqrt{z}\left(16z^4 - 312z^3 + 1689z^2 + 3690z + 7560\right)\boldsymbol{L}_2\left(2\sqrt{z}\right) + \right.$$
$$\left. 45\pi\left(16z^4 + 184z^3 - 1965z^2 - 4320z - 7560\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.5243.01

$${}_1F_2\left(5; -\frac{9}{2}, \frac{7}{2}; -z\right) =$$
$$\frac{1}{90\,720z}\left(-16z\left(44z^4 + 159z^3 - 810z^2 - 720z - 5670\right) + 15\pi\sqrt{z}\left(16z^4 + 312z^3 + 1689z^2 - 3690z + 7560\right)\boldsymbol{H}_2\left(2\sqrt{z}\right) + \right.$$
$$\left. 45\pi\left(16z^4 - 184z^3 - 1965z^2 + 4320z - 7560\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.5244.01

$${}_1F_2\left(5; -\frac{9}{2}, 4; z\right) = \left(-\frac{8z^3}{945} + \frac{10z^2}{63} + \frac{31z}{18} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{945}\sqrt{z}\left(8z^2 - 735z - 1890\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5245.01

$${}_1F_2\left(5; -\frac{9}{2}, 4; -z\right) = \left(\frac{8z^3}{945} + \frac{10z^2}{63} - \frac{31z}{18} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{1}{945}\sqrt{z}\left(8z^2 + 735z - 1890\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5246.01

$${}_1F_2\left(5; -\frac{9}{2}, \frac{9}{2}; z\right) =$$
$$\frac{1}{60\,480z^{3/2}}\left(2\left(35\pi\left(16z^4 - 452z^3 - 2655z^2 - 16\,380z - 50\,400\right)\boldsymbol{L}_4\left(2\sqrt{z}\right) - 16z^{3/2}\left(4z^4 + 41z^3 + 150z^2 + 1400z - 1890\right)\right) - \right.$$
$$\left. 35\pi\sqrt{z}\left(16z^4 - 184z^3 - 1023z^2 - 6930z - 25\,200\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.5247.01

$${}_1F_2\left(5; -\frac{9}{2}, \frac{9}{2}; -z\right) = \frac{1}{60\,480z^{3/2}}\left(35\pi\sqrt{z}\left(16z^4 + 184z^3 - 1023z^2 + 6930z - 25\,200\right)\boldsymbol{H}_3\left(2\sqrt{z}\right) - \right.$$
$$\left. 2\left(16\left(4z^4 - 41z^3 + 150z^2 - 1400z - 1890\right)z^{3/2} + 35\pi\left(16z^4 + 452z^3 - 2655z^2 + 16\,380z - 50\,400\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5248.01

$${}_1F_2\left(5; -\frac{9}{2}, 5; z\right) = \left(\frac{16z^2}{63} + \frac{16z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(16z^2 + 420z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5249.01

$${}_1F_2\left(5; -\frac{9}{2}, 5; -z\right) = \left(\frac{16z^2}{63} - \frac{16z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(16z^2 - 420z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5250.01

$$ {}_1F_2\left(5; -\frac{9}{2}, \frac{11}{2}; z\right) = \frac{1}{72\,576\,z^2} \left(64\left(4z^4 + 63z^3 + 936z^2 + 5544z + 1134\right)z^2 - 189\pi\left(16z^4 + 264z^3 + 4809z^2 + 57\,960z + 317\,520\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} + 189\pi\left(112z^4 + 1944z^3 + 32\,445z^2 + 342\,720z + 1\,587\,600\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right) $$

07.22.03.5251.01

$$ {}_1F_2\left(5; -\frac{9}{2}, \frac{11}{2}; -z\right) = \frac{1}{72\,576\,z^2} \left(64\left(4z^4 - 63z^3 + 936z^2 - 5544z + 1134\right)z^2 + 189\pi\left(16z^4 - 264z^3 + 4809z^2 - 57\,960z + 317\,520\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} - 189\pi\left(112z^4 - 1944z^3 + 32\,445z^2 - 342\,720z + 1\,587\,600\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right) $$

07.22.03.5252.01

$$ {}_1F_2\left(5; -\frac{9}{2}, 6; z\right) = \frac{1}{756\,z^5} \left(-\left(128z^7 + 15\,424z^6 + 553\,512z^5 + 12\,471\,030z^4 + 174\,594\,420z^3 + 1\,309\,458\,150z^2 + 3\,928\,374\,450z + 1\,964\,187\,225\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(928z^6 + 49\,632z^5 + 1\,385\,670z^4 + 24\,942\,060z^3 + 261\,891\,630z^2 + 1\,309\,458\,150z + 1\,964\,187\,225\right)\sinh\left(2\sqrt{z}\right) + 1\,964\,187\,225\right) $$

07.22.03.5253.01

$$ {}_1F_2\left(5; -\frac{9}{2}, 6; -z\right) = \frac{1}{756\,z^5} \left(\left(-128z^7 + 15\,424z^6 - 553\,512z^5 + 12\,471\,030z^4 - 174\,594\,420z^3 + 1\,309\,458\,150z^2 - 3\,928\,374\,450z + 1\,964\,187\,225\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(928z^6 - 49\,632z^5 + 1\,385\,670z^4 - 24\,942\,060z^3 + 261\,891\,630z^2 - 1\,309\,458\,150z + 1\,964\,187\,225\right)\sin\left(2\sqrt{z}\right) - 1\,964\,187\,225\right) $$

For fixed z and $a_1 = 5$, $b_1 = -\frac{7}{2}$

07.22.03.5254.01

$$ {}_1F_2\left(5; -\frac{7}{2}, -\frac{7}{2}; z\right) = \frac{1}{33\,075}\left(2\pi z^2\left(16\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{9/2} + 1264\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^4 + 5\left(7880\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{7/2} + 125\,200\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^3 + 9\left(121\,605\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 589\,581\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^2 + 136\left(11\,189\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 13\,895\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z + 6695\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 715\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right) $$

07.22.03.5255.01

$$ {}_1F_2\left(5; -\frac{7}{2}, -\frac{7}{2}; -z\right) = \frac{1}{33\,075}\left(2\pi z^2\left(16\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{9/2} + 1264\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^4 + 5\left(7880\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{7/2} + 125\,200\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^3 + 9\left(121\,605\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 589\,581\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^2 + 136\left(11\,189\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 13\,895\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z + 6695\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 715\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right) $$

07.22.03.5256.01

$${}_1F_2\left(5; -\frac{7}{2}, -\frac{5}{2}; z\right) = -\frac{1}{4725}$$
$$\left(\pi z^2 \left(16 \boldsymbol{L}_{-13}\left(2\sqrt{z}\right) z^4 + 5\left(224 \boldsymbol{L}_{-12}\left(2\sqrt{z}\right) z^{7/2} + 6088 \boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^3 + 9\left(9176 \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^{5/2} + 66\,549 \boldsymbol{L}_{-9}\left(2\sqrt{z}\right)\right.\right.\right.\right.$$
$$\left.\left.\left.\left. z^2 + 68\left(3777 \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z^{3/2} + 7270 \boldsymbol{L}_{-7}\left(2\sqrt{z}\right) z + 5980 \boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 1430 \boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)$$

07.22.03.5257.01

$${}_1F_2\left(5; -\frac{7}{2}, -\frac{5}{2}; -z\right) = -\frac{1}{4725}$$
$$\left(\pi z^2 \left(16 \boldsymbol{H}_{-13}\left(2\sqrt{z}\right) z^4 + 5\left(224 \boldsymbol{H}_{-12}\left(2\sqrt{z}\right) z^{7/2} + 6088 \boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^3 + 9\left(9176 \boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^{5/2} + 66\,549 \boldsymbol{H}_{-9}\left(2\sqrt{z}\right)\right.\right.\right.\right.$$
$$\left.\left.\left.\left. z^2 + 68\left(3777 \boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z^{3/2} + 7270 \boldsymbol{H}_{-7}\left(2\sqrt{z}\right) z + 5980 \boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 1430 \boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)$$

07.22.03.5258.01

$${}_1F_2\left(5; -\frac{7}{2}, -\frac{3}{2}; z\right) =$$
$$\frac{1}{1890}\left(\pi z^2 \left(16 \boldsymbol{L}_{-12}\left(2\sqrt{z}\right) z^{7/2} + 976 \boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^3 + 3\left(7544 \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^{5/2} + 84\,832 \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^2 + 51\right.\right.\right.$$
$$\left.\left.\left.\left(9593 \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z^{3/2} + 27\,575 \boldsymbol{L}_{-7}\left(2\sqrt{z}\right) z + 35\,100 \boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 14\,300 \boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.5259.01

$${}_1F_2\left(5; -\frac{7}{2}, -\frac{3}{2}; -z\right) =$$
$$\frac{1}{1890}\left(\pi z^2 \left(16 \boldsymbol{H}_{-12}\left(2\sqrt{z}\right) z^{7/2} + 976 \boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^3 + 3\left(7544 \boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^{5/2} + 84\,832 \boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^2 + \right.\right.\right.$$
$$\left.\left.\left.\left.51\left(9593 \boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z^{3/2} + 27\,575 \boldsymbol{H}_{-7}\left(2\sqrt{z}\right) z + 35\,100 \boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 14\,300 \boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)$$

07.22.03.5260.01

$${}_1F_2\left(5; -\frac{7}{2}, -\frac{1}{2}; z\right) =$$
$$-\frac{1}{1260}\left(\pi z^2 \left(16 \boldsymbol{L}_{-11}\left(2\sqrt{z}\right) z^3 + 832 \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^{5/2} + 15\,976 \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^2 + 142\,664 \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z^{3/2} + 611\,745\right.\right.$$
$$\left.\left.\left.\boldsymbol{L}_{-7}\left(2\sqrt{z}\right) z + 1\,160\,250 \boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 729\,300 \boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5261.01

$${}_1F_2\left(5; -\frac{7}{2}, -\frac{1}{2}; -z\right) =$$
$$-\frac{1}{1260}\left(\pi z^2 \left(16 \boldsymbol{H}_{-11}\left(2\sqrt{z}\right) z^3 + 832 \boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^{5/2} + 15\,976 \boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^2 + 142\,664 \boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z^{3/2} + \right.\right.$$
$$\left.\left.\left.611\,745 \boldsymbol{H}_{-7}\left(2\sqrt{z}\right) z + 1\,160\,250 \boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 729\,300 \boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5262.01

$${}_1F_2\left(5; -\frac{7}{2}, \frac{1}{2}; z\right) = \frac{1}{2520}\left(\pi z^2 \left(16 \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^{5/2} + 688 \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^2 + \right.\right.$$
$$\left.\left.\left.17\left(616 \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z^{3/2} + 15\left(272 z \boldsymbol{L}_{-7}\left(2\sqrt{z}\right) + 767\sqrt{z}\, \boldsymbol{L}_{-6}\left(2\sqrt{z}\right) + 715 \boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.5263.01

$${}_1F_2\left(5; -\frac{7}{2}, \frac{1}{2}; -z\right) = \frac{1}{2520}\left(\pi z^2\left(16\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 688\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^2 + 17\left(616\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 15\left(272\,z\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right) + 767\sqrt{z}\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right) + 715\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.5264.01

$${}_1F_2\left(5; -\frac{7}{2}, 1; z\right) = \frac{1}{315}\left(\left(2z^4 + 128z^3 - 420z^2 + 180z + 315\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(16z^3 - 12z^2 + 240z - 315\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5265.01

$${}_1F_2\left(5; -\frac{7}{2}, 1; -z\right) = \frac{1}{315}\left(\left(2z^4 - 128z^3 - 420z^2 - 180z + 315\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(16z^3 + 12z^2 + 240z + 315\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5266.01

$${}_1F_2\left(5; -\frac{7}{2}, \frac{3}{2}; z\right) = \frac{1}{5040}\left(8\left(4z^4 + 181z^3 - 531z^2 - 180z + 630\right) + 14\pi\sqrt{z}\left(16z^3 - 60z^2 + 315z - 180\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(16z^4 + 616z^3 - 1575z^2 - 3150z + 2520\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5267.01

$${}_1F_2\left(5; -\frac{7}{2}, \frac{3}{2}; -z\right) = \frac{1}{5040}\left(8\left(4z^4 - 181z^3 - 531z^2 + 180z + 630\right) + 14\pi\sqrt{z}\left(16z^3 + 60z^2 + 315z + 180\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) + \pi\left(-16z^4 + 616z^3 + 1575z^2 - 3150z - 2520\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5268.01

$${}_1F_2\left(5; -\frac{7}{2}, 2; z\right) = \frac{1}{315}\left(\left(23z^3 - 150z^2 + 405z + 315\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(z^3 + 18z^2 + 15z - 315\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5269.01

$${}_1F_2\left(5; -\frac{7}{2}, 2; -z\right) = \frac{1}{315}\left(2\sqrt{z}\left(z^3 - 18z^2 + 15z + 315\right)\sin\left(2\sqrt{z}\right) - \left(23z^3 + 150z^2 + 405z - 315\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.5270.01

$${}_1F_2\left(5; -\frac{7}{2}, \frac{5}{2}; z\right) = \frac{1}{10\,080\sqrt{z}}\left(16\sqrt{z}\left(4z^4 + 67z^3 - 24z^2 - 450z + 630\right) + 60\pi\sqrt{z}\left(8z^3 - 48z^2 + 78z + 45\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) + 3\pi\left(16z^4 + 40z^3 + 1425z^2 - 3420z - 1800\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5271.01

$${}_1F_2\left(5; -\frac{7}{2}, \frac{5}{2}; -z\right) = \frac{1}{10\,080\sqrt{z}}\left(16\sqrt{z}\left(4z^4 - 67z^3 - 24z^2 + 450z + 630\right) + 60\pi\sqrt{z}\left(8z^3 + 48z^2 + 78z - 45\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) - 3\pi\left(16z^4 - 40z^3 + 1425z^2 + 3420z - 1800\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5272.01

$${}_1F_2\left(5; -\frac{7}{2}, 3; z\right) = \frac{1}{315}\left(\left(4z^3 - 45z^2 + 480z + 315\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(13z^2 - 60z - 315\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5273.01

$${}_1F_2\left(5; -\frac{7}{2}, 3; -z\right) = \frac{1}{315}\left(-\left(4z^3 + 45z^2 + 480z - 315\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(13z^2 + 60z - 315\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5274.01

$${}_1F_2\left(5; -\frac{7}{2}, \frac{7}{2}; z\right) = \frac{1}{20\,160\,z}\left(32\,z\left(4\,z^4 + z^3 + 105\,z^2 - 180\,z + 630\right) + 90\,\pi\,\sqrt{z}\,\left(16\,z^3 - 52\,z^2 - 95\,z - 180\right)\boldsymbol{L}_2\left(2\,\sqrt{z}\right) + 15\,\pi\left(16\,z^4 - 216\,z^3 + 1065\,z^2 + 1980\,z + 3240\right)\boldsymbol{L}_3\left(2\,\sqrt{z}\right)\right)$$

07.22.03.5275.01

$${}_1F_2\left(5; -\frac{7}{2}, \frac{7}{2}; -z\right) = \frac{1}{20\,160\,z}\left(32\,z\left(4\,z^4 - z^3 + 105\,z^2 + 180\,z + 630\right) + 90\,\pi\,\sqrt{z}\,\left(16\,z^3 + 52\,z^2 - 95\,z + 180\right)\boldsymbol{H}_2\left(2\,\sqrt{z}\right) - 15\,\pi\left(16\,z^4 + 216\,z^3 + 1065\,z^2 - 1980\,z + 3240\right)\boldsymbol{H}_3\left(2\,\sqrt{z}\right)\right)$$

07.22.03.5276.01

$${}_1F_2\left(5; -\frac{7}{2}, 4; z\right) = \frac{1}{210}\left(\left(8\,z^2 + 345\,z + 210\right)\cosh\left(2\,\sqrt{z}\right) + 2\,\sqrt{z}\,\left(4\,z^2 - 65\,z - 210\right)\sinh\left(2\,\sqrt{z}\right)\right)$$

07.22.03.5277.01

$${}_1F_2\left(5; -\frac{7}{2}, 4; -z\right) = \frac{1}{210}\left(\left(8\,z^2 - 345\,z + 210\right)\cos\left(2\,\sqrt{z}\right) - 2\,\sqrt{z}\,\left(4\,z^2 + 65\,z - 210\right)\sin\left(2\,\sqrt{z}\right)\right)$$

07.22.03.5278.01

$${}_1F_2\left(5; -\frac{7}{2}, \frac{9}{2}; z\right) = \frac{1}{40\,320\,z^{3/2}}\left(64\left(4\,z^4 - 17\,z^3 - 375\,z + 630\right)z^{3/2} + 210\,\pi\left(16\,z^3 + 72\,z^2 + 450\,z + 1575\right)\boldsymbol{L}_3\left(2\,\sqrt{z}\right)\sqrt{z} + 105\,\pi\left(16\,z^4 - 152\,z^3 - 735\,z^2 - 4230\,z - 12\,600\right)\boldsymbol{L}_4\left(2\,\sqrt{z}\right)\right)$$

07.22.03.5279.01

$${}_1F_2\left(5; -\frac{7}{2}, \frac{9}{2}; -z\right) = \frac{1}{40\,320\,z^{3/2}}\left(64\left(4\,z^4 + 17\,z^3 + 375\,z + 630\right)z^{3/2} + 210\,\pi\left(16\,z^3 - 72\,z^2 + 450\,z - 1575\right)\boldsymbol{H}_3\left(2\,\sqrt{z}\right)\sqrt{z} - 105\,\pi\left(16\,z^4 + 152\,z^3 - 735\,z^2 + 4230\,z - 12\,600\right)\boldsymbol{H}_4\left(2\,\sqrt{z}\right)\right)$$

07.22.03.5280.01

$${}_1F_2\left(5; -\frac{7}{2}, 5; z\right) = \left(\frac{16\,z^2}{105} + \frac{12\,z}{7} + 1\right)\cosh\left(2\,\sqrt{z}\right) - \frac{2}{21}\,\sqrt{z}\,\left(8\,z + 21\right)\sinh\left(2\,\sqrt{z}\right)$$

07.22.03.5281.01

$${}_1F_2\left(5; -\frac{7}{2}, 5; -z\right) = \left(\frac{16\,z^2}{105} - \frac{12\,z}{7} + 1\right)\cos\left(2\,\sqrt{z}\right) + \frac{2}{21}\,\left(21 - 8\,z\right)\sqrt{z}\,\sin\left(2\,\sqrt{z}\right)$$

07.22.03.5282.01

$${}_1F_2\left(5; -\frac{7}{2}, \frac{11}{2}; z\right) = \frac{1}{80\,640\,z^2}\left(128\left(4\,z^4 + 13\,z^3 + 285\,z^2 + 1440\,z + 630\right)z^2 - 1890\,\pi\left(16\,z^3 + 276\,z^2 + 3255\,z + 17\,640\right)\boldsymbol{L}_4\left(2\,\sqrt{z}\right)\sqrt{z} + 945\,\pi\left(16\,z^4 + 232\,z^3 + 3705\,z^2 + 38\,430\,z + 176\,400\right)\boldsymbol{L}_5\left(2\,\sqrt{z}\right)\right)$$

07.22.03.5283.01

$${}_1F_2\left(5; -\frac{7}{2}, \frac{11}{2}; -z\right) = \frac{1}{80\,640\,z^2}\left(128\left(4\,z^4 - 13\,z^3 + 285\,z^2 - 1440\,z + 630\right)z^2 - 1890\,\pi\left(16\,z^3 - 276\,z^2 + 3255\,z - 17\,640\right)\boldsymbol{H}_4\left(2\,\sqrt{z}\right)\sqrt{z} - 945\,\pi\left(16\,z^4 - 232\,z^3 + 3705\,z^2 - 38\,430\,z + 176\,400\right)\boldsymbol{H}_5\left(2\,\sqrt{z}\right)\right)$$

07.22.03.5284.01

$${}_1F_2\left(5; -\frac{7}{2}, 6; z\right) =$$
$$\frac{1}{84\,z^5}\left(-\left(736\,z^6+29\,088\,z^5+656\,370\,z^4+9\,189\,180\,z^3+68\,918\,850\,z^2+206\,756\,550\,z+103\,378\,275\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\right.$$
$$\left.\left(32\,z^6+2568\,z^5+72\,930\,z^4+1\,312\,740\,z^3+13\,783\,770\,z^2+68\,918\,850\,z+103\,378\,275\right)\sinh\left(2\sqrt{z}\right)+103\,378\,275\right)$$

07.22.03.5285.01

$${}_1F_2\left(5; -\frac{7}{2}, 6; -z\right) =$$
$$\frac{1}{84\,z^5}\left(\left(736\,z^6-29\,088\,z^5+656\,370\,z^4-9\,189\,180\,z^3+68\,918\,850\,z^2-206\,756\,550\,z+103\,378\,275\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(32\,z^6-2568\,z^5+72\,930\,z^4-1\,312\,740\,z^3+13\,783\,770\,z^2-68\,918\,850\,z+103\,378\,275\right)\sin\left(2\sqrt{z}\right)-103\,378\,275\right)$$

For fixed z and $a_1 = 5$, $b_1 = -\frac{5}{2}$

07.22.03.5286.01

$${}_1F_2\left(5; -\frac{5}{2}, -\frac{5}{2}; z\right) = \frac{1}{1350}$$
$$\left(\pi\,z^{3/2}\left(16\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^4+992\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^{7/2}+3\left(7832\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^3+90\,648\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{5/2}+544\,995\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^2+\right.\right.\right.$$
$$\left.\left.\left.1\,672\,560\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^{3/2}+2\,397\,720\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z+1\,304\,160\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\sqrt{z}+154\,440\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5287.01

$${}_1F_2\left(5; -\frac{5}{2}, -\frac{5}{2}; -z\right) = \frac{1}{1350}\left(\pi\,z^{3/2}\right.$$
$$\left(16\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^4+992\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^{7/2}+3\left(7832\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^3+90\,648\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{5/2}+544\,995\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^2+\right.\right.$$
$$\left.\left.\left.1\,672\,560\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^{3/2}+2\,397\,720\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z+1\,304\,160\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\sqrt{z}+154\,440\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5288.01

$${}_1F_2\left(5; -\frac{5}{2}, -\frac{3}{2}; z\right) =$$
$$-\frac{1}{540}\pi\left(16\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^5+3\left(288\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^3+5816\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{5/2}+55\,752\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^2+266\,235\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^{3/2}+\right.\right.$$
$$\left.\left.607\,620\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z+574\,860\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\sqrt{z}+154\,440\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)z^{3/2}\right)$$

07.22.03.5289.01

$${}_1F_2\left(5; -\frac{5}{2}, -\frac{3}{2}; -z\right) = -\frac{1}{540}\pi$$
$$\left(16\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^5+3\left(288\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^3+5816\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{5/2}+55\,752\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^2+266\,235\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^{3/2}+\right.\right.$$
$$\left.\left.607\,620\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z+574\,860\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\sqrt{z}+154\,440\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)z^{3/2}\right)$$

07.22.03.5290.01

$${}_1F_2\left(5; -\frac{5}{2}, -\frac{1}{2}; z\right) = \frac{1}{360}\pi\,z^{3/2}\left(16\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^3+736\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{5/2}+12\,296\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^2+\right.$$
$$\left.93\,480\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^{3/2}+331\,305\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z+497\,640\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\sqrt{z}+231\,660\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)$$

07.22.03.5291.01

$${}_1F_2\left(5; -\frac{5}{2}, -\frac{1}{2}; -z\right) = \frac{1}{360}\pi z^{3/2}\left(16\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^3 + 736\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{5/2} + 12\,296\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^2 + 93\,480\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^{3/2} + 331\,305\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z + 497\,640\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 231\,660\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)$$

07.22.03.5292.01

$${}_1F_2\left(5; -\frac{5}{2}, \frac{1}{2}; z\right) = -\frac{1}{720}\pi\left(16\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^4 + \left(608\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^2 + 15\left(536\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^{3/2} + 3016\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z + 7007\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 5148\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)\right)z^{3/2}\right)$$

07.22.03.5293.01

$${}_1F_2\left(5; -\frac{5}{2}, \frac{1}{2}; -z\right) = -\frac{1}{720}\pi\left(16\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^4 + \left(608\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^2 + 15\left(536\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^{3/2} + 3016\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z + 7007\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 5148\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)\right)z^{3/2}\right)$$

07.22.03.5294.01

$${}_1F_2\left(5; -\frac{5}{2}, 1; z\right) = \left(-\frac{16z^3}{45} - \frac{4z^2}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{45}\sqrt{z}\left(z^3 + 72z^2 - 120z + 90\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5295.01

$${}_1F_2\left(5; -\frac{5}{2}, 1; -z\right) = \left(\frac{16z^3}{45} - \frac{4z^2}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{45}\sqrt{z}\left(-z^3 + 72z^2 + 120z + 90\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5296.01

$${}_1F_2\left(5; -\frac{5}{2}, \frac{3}{2}; z\right) = \frac{1}{1440}\left(-\pi\sqrt{z}\left(16z^3 + 840z^2 - 1575z + 630\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) - 2\left(232z^3 + 366z^2 + 540z + 7\pi\left(16z^3 + 90z - 45\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) - 720\right)\right)$$

07.22.03.5297.01

$${}_1F_2\left(5; -\frac{5}{2}, \frac{3}{2}; -z\right) = \frac{1}{1440}\left(\pi\sqrt{z}\left(-16z^3 + 840z^2 + 1575z + 630\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) - 2\left(-232z^3 + 366z^2 - 540z + 7\pi\left(16z^3 + 90z + 45\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) - 720\right)\right)$$

07.22.03.5298.01

$${}_1F_2\left(5; -\frac{5}{2}, 2; z\right) = \left(-\frac{z^3}{45} - \frac{2z^2}{3} + z + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\left(2z^2 - 5z + 15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5299.01

$${}_1F_2\left(5; -\frac{5}{2}, 2; -z\right) = \frac{1}{45}\left(\left(z^3 - 30z^2 - 45z + 45\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(2z^2 + 5z + 15\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5300.01

$${}_1F_2\left(5; -\frac{5}{2}, \frac{5}{2}; z\right) = \frac{1}{2880\sqrt{z}}\left(-3\pi\sqrt{z}\left(16z^3 + 360z^2 - 375z - 180\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) - 2\left(4\sqrt{z}\left(92z^3 - 93z^2 + 324z - 360\right) + 15\pi\left(16z^3 - 60z^2 + 81z + 36\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5301.01

$${}_1F_2\left(5; -\frac{5}{2}, \frac{5}{2}; -z\right) = \frac{1}{2880\sqrt{z}}\left(2\left(4\sqrt{z}\left(92z^3+93z^2+324z+360\right)-15\pi\left(16z^3+60z^2+81z-36\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)-3\pi\sqrt{z}\left(16z^3-360z^2-375z+180\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5302.01

$${}_1F_2\left(5; -\frac{5}{2}, 3; z\right) = -\frac{1}{3}\left(z^2-4z-3\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{45}\sqrt{z}\left(z^2+45\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5303.01

$${}_1F_2\left(5; -\frac{5}{2}, 3; -z\right) = \frac{2}{45}\sqrt{z}\left(z^2+45\right)\sin\left(2\sqrt{z}\right)-\frac{1}{3}\left(z^2+4z-3\right)\cos\left(2\sqrt{z}\right)$$

07.22.03.5304.01

$${}_1F_2\left(5; -\frac{5}{2}, \frac{7}{2}; z\right) = \frac{1}{5760z}\left(4\left(4z\left(-68z^3+105z^2-180z+360\right)-45\pi\left(8z^3-20z^2-30z-45\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)-15\pi\sqrt{z}\left(16z^3+72z^2+105z+180\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5305.01

$${}_1F_2\left(5; -\frac{5}{2}, \frac{7}{2}; -z\right) = \frac{1}{5760z}\left(4\left(4z\left(68z^3+105z^2+180z+360\right)-45\pi\left(8z^3+20z^2-30z+45\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)-15\pi\sqrt{z}\left(16z^3-72z^2+105z-180\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5306.01

$${}_1F_2\left(5; -\frac{5}{2}, 4; z\right) = \left(-\frac{2z^2}{15}+\frac{3z}{2}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{1}{3}\sqrt{z}\,(z+6)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5307.01

$${}_1F_2\left(5; -\frac{5}{2}, 4; -z\right) = \left(-\frac{2z^2}{15}-\frac{3z}{2}+1\right)\cos\left(2\sqrt{z}\right)-\frac{1}{3}(z-6)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5308.01

$${}_1F_2\left(5; -\frac{5}{2}, \frac{9}{2}; z\right) = \frac{1}{11520z^{3/2}}\left(-105\pi\sqrt{z}\left(16z^3-24z^2-135z-450\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)-2\left(16\left(44z^3-45z^2+210z-360\right)z^{3/2}+105\pi\left(16z^3+60z^2+315z+900\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5309.01

$${}_1F_2\left(5; -\frac{5}{2}, \frac{9}{2}; -z\right) = \frac{1}{11520z^{3/2}}\left(2\left(16z^{3/2}\left(44z^3+45z^2+210z+360\right)-105\pi\left(16z^3-60z^2+315z-900\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)-105\pi\sqrt{z}\left(16z^3+24z^2-135z+450\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.5310.01

$${}_1F_2\left(5; -\frac{5}{2}, 5; z\right) = \left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\,(4z+15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5311.01

$${}_1F_2\left(5; -\frac{5}{2}, 5; -z\right) = \left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}(15-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5312.01

$${}_1F_2\left(5; -\frac{5}{2}, \frac{11}{2}; z\right) = \frac{1}{4608\, z^2}\left(-64\left(4\, z^3 - 21\, z^2 - 54\, z - 72\right) z^2 - 189\, \pi \left(16\, z^3 + 72\, z^2 + 825\, z + 4410\right) \boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} + 378\, \pi \left(16\, z^3 + 240\, z^2 + 2430\, z + 11\,025\right) \boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.5313.01

$${}_1F_2\left(5; -\frac{5}{2}, \frac{11}{2}; -z\right) = \frac{1}{4608\, z^2}\left(64\left(4\, z^3 + 21\, z^2 - 54\, z + 72\right) z^2 - 189\, \pi \left(16\, z^3 - 72\, z^2 + 825\, z - 4410\right) \boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} + 378\, \pi \left(16\, z^3 - 240\, z^2 + 2430\, z - 11\,025\right) \boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.5314.01

$${}_1F_2\left(5; -\frac{5}{2}, 6; z\right) = \frac{1}{12\, z^5}\left(3\left(2\sqrt{z}\,\left(48\, z^5 + 1430\, z^4 + 25\,740\, z^3 + 270\,270\, z^2 + 1\,351\,350\, z + 2\,027\,025\right)\sinh\left(2\sqrt{z}\right) + 2\,027\,025\right) - \left(32\, z^6 + 1704\, z^5 + 38\,610\, z^4 + 540\,540\, z^3 + 4\,054\,050\, z^2 + 12\,162\,150\, z + 6\,081\,075\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.5315.01

$${}_1F_2\left(5; -\frac{5}{2}, 6; -z\right) = \frac{1}{12\, z^5}\left(\left(32\, z^6 - 1704\, z^5 + 38\,610\, z^4 - 540\,540\, z^3 + 4\,054\,050\, z^2 - 12\,162\,150\, z + 6\,081\,075\right)\cos\left(2\sqrt{z}\right) - 3\left(2\sqrt{z}\,\left(48\, z^5 - 1430\, z^4 + 25\,740\, z^3 - 270\,270\, z^2 + 1\,351\,350\, z - 2\,027\,025\right)\sin\left(2\sqrt{z}\right) + 2\,027\,025\right)\right)$$

For fixed z and $a_1 = 5$, $b_1 = -\frac{3}{2}$

07.22.03.5316.01

$${}_1F_2\left(5; -\frac{3}{2}, -\frac{3}{2}; z\right) = \frac{1}{216}\,\pi\, z\left(16\, \boldsymbol{L}_{-10}\left(2\sqrt{z}\right) z^{7/2} + 752\, \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^3 + 12\,936\, \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z^{5/2} + 102\,576\, \boldsymbol{L}_{-7}\left(2\sqrt{z}\right) z^2 + 388\,401\, \boldsymbol{L}_{-6}\left(2\sqrt{z}\right) z^{3/2} + 657\,657\, \boldsymbol{L}_{-5}\left(2\sqrt{z}\right) z + 409\,266\, \boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\sqrt{z} + 54\,054\, \boldsymbol{L}_{-3}\left(2\sqrt{z}\right)\right)$$

07.22.03.5317.01

$${}_1F_2\left(5; -\frac{3}{2}, -\frac{3}{2}; -z\right) = \frac{1}{216}\,\pi\, z\left(16\, \boldsymbol{H}_{-10}\left(2\sqrt{z}\right) z^{7/2} + 752\, \boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^3 + 12\,936\, \boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z^{5/2} + 102\,576\, \boldsymbol{H}_{-7}\left(2\sqrt{z}\right) z^2 + 388\,401\, \boldsymbol{H}_{-6}\left(2\sqrt{z}\right) z^{3/2} + 657\,657\, \boldsymbol{H}_{-5}\left(2\sqrt{z}\right) z + 409\,266\, \boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\sqrt{z} + 54\,054\, \boldsymbol{H}_{-3}\left(2\sqrt{z}\right)\right)$$

07.22.03.5318.01

$${}_1F_2\left(5; -\frac{3}{2}, -\frac{1}{2}; z\right) = -\frac{1}{144}\,\pi\, z\left(16\, \boldsymbol{L}_{-9}\left(2\sqrt{z}\right) z^3 + 640\, \boldsymbol{L}_{-8}\left(2\sqrt{z}\right) z^{5/2} + 9096\, \boldsymbol{L}_{-7}\left(2\sqrt{z}\right) z^2 + 57\,096\, \boldsymbol{L}_{-6}\left(2\sqrt{z}\right) z^{3/2} + 160\,017\, \boldsymbol{L}_{-5}\left(2\sqrt{z}\right) z + 177\,606\, \boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\sqrt{z} + 54\,054\, \boldsymbol{L}_{-3}\left(2\sqrt{z}\right)\right)$$

07.22.03.5319.01

$${}_1F_2\left(5; -\frac{3}{2}, -\frac{1}{2}; -z\right) = -\frac{1}{144}\,\pi\, z\left(16\, \boldsymbol{H}_{-9}\left(2\sqrt{z}\right) z^3 + 640\, \boldsymbol{H}_{-8}\left(2\sqrt{z}\right) z^{5/2} + 9096\, \boldsymbol{H}_{-7}\left(2\sqrt{z}\right) z^2 + 57\,096\, \boldsymbol{H}_{-6}\left(2\sqrt{z}\right) z^{3/2} + 160\,017\, \boldsymbol{H}_{-5}\left(2\sqrt{z}\right) z + 177\,606\, \boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\sqrt{z} + 54\,054\, \boldsymbol{H}_{-3}\left(2\sqrt{z}\right)\right)$$

07.22.03.5320.01

$${}_1F_2\left(5; -\frac{3}{2}, \frac{1}{2}; z\right) = \frac{1}{288}\pi z\left(16\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{5/2} + 528\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^2 + 5928\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{3/2} + 27\,456\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z + 50\,193\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\sqrt{z} + 27\,027\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)\right)$$

07.22.03.5321.01

$${}_1F_2\left(5; -\frac{3}{2}, \frac{1}{2}; -z\right) = \frac{1}{288}\pi z\left(16\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{5/2} + 528\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^2 + 5928\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{3/2} + 27\,456\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z + 50\,193\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\sqrt{z} + 27\,027\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)\right)$$

07.22.03.5322.01

$${}_1F_2\left(5; -\frac{3}{2}, 1; z\right) = \frac{1}{36}\left(2\left(z^3 + 72\,z^2 - 24\,z + 18\right)\cosh\left(2\sqrt{z}\right) + \sqrt{z}\,\left(31\,z^2 + 192\,z - 72\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5323.01

$${}_1F_2\left(5; -\frac{3}{2}, 1; -z\right) = \left(-\frac{z^3}{18} + 4\,z^2 + \frac{4\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{36}\sqrt{z}\,\left(-31\,z^2 + 192\,z + 72\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5324.01

$${}_1F_2\left(5; -\frac{3}{2}, \frac{3}{2}; z\right) = \frac{1}{576}\left(8\left(4\,z^3 + 237\,z^2 - 125\,z + 72\right) + 14\,\pi\sqrt{z}\,\left(16\,z^2 + 60\,z - 15\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(16\,z^3 + 840\,z^2 - 735\,z + 210\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5325.01

$${}_1F_2\left(5; -\frac{3}{2}, \frac{3}{2}; -z\right) = \frac{1}{576}\left(8\left(-4\,z^3 + 237\,z^2 + 125\,z + 72\right) + 14\,\pi\sqrt{z}\,\left(-16\,z^2 + 60\,z + 15\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) + \pi\left(16\,z^3 - 840\,z^2 - 735\,z - 210\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5326.01

$${}_1F_2\left(5; -\frac{3}{2}, 2; z\right) = \frac{1}{18}\left(6\left(2\,z^2 + z + 3\right)\cosh\left(2\sqrt{z}\right) + \sqrt{z}\,\left(z^2 + 36\,z - 36\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5327.01

$${}_1F_2\left(5; -\frac{3}{2}, 2; -z\right) = \frac{1}{3}\left(2\,z^2 - z + 3\right)\cos\left(2\sqrt{z}\right) - \frac{1}{18}\sqrt{z}\,\left(z^2 - 36\,z - 36\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5328.01

$${}_1F_2\left(5; -\frac{3}{2}, \frac{5}{2}; z\right) = \frac{1}{1152\sqrt{z}}\left(8\sqrt{z}\,\left(8\,z^3 + 306\,z^2 - 201\,z + 144\right) + 3\,\pi\sqrt{z}\,\left(176\,z^2 + 120\,z + 45\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) + 3\,\pi\left(16\,z^3 + 360\,z^2 - 255\,z - 90\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5329.01

$${}_1F_2\left(5; -\frac{3}{2}, \frac{5}{2}; -z\right) = \frac{1}{1152\sqrt{z}}\left(8\sqrt{z}\,\left(-8\,z^3 + 306\,z^2 + 201\,z + 144\right) - 3\,\pi\sqrt{z}\,\left(176\,z^2 - 120\,z + 45\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 3\,\pi\left(16\,z^3 - 360\,z^2 - 255\,z + 90\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5330.01

$${}_1F_2\left(5; -\frac{3}{2}, 3; z\right) = \frac{1}{9}\left(\left(z^2 + 8\,z + 9\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,z - 9\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5331.01

$${}_1F_2\left(5; -\frac{3}{2}, 3; -z\right) = \frac{1}{9}\left(\left(z^2 - 8z + 9\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,(4z + 9)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5332.01

$${}_1F_2\left(5; -\frac{3}{2}, \frac{7}{2}; z\right) =$$
$$\frac{1}{2304z}\left(32z\left(4z^3 + 93z^2 - 66z + 72\right) + 60\pi\sqrt{z}\,\left(32z^2 - 6z - 9\right)\boldsymbol{L}_2\left(2\sqrt{z}\right) + 15\pi\left(16z^3 + 72z^2 + 81z + 108\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.5333.01

$${}_1F_2\left(5; -\frac{3}{2}, \frac{7}{2}; -z\right) =$$
$$\frac{1}{2304z}\left(-32z\left(4z^3 - 93z^2 - 66z - 72\right) - 60\pi\sqrt{z}\,\left(32z^2 + 6z - 9\right)\boldsymbol{H}_2\left(2\sqrt{z}\right) + 15\pi\left(16z^3 - 72z^2 + 81z - 108\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.5334.01

$${}_1F_2\left(5; -\frac{3}{2}, 4; z\right) = \left(\frac{7z}{6} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{3}(z - 6)\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.5335.01

$${}_1F_2\left(5; -\frac{3}{2}, 4; -z\right) = \left(1 - \frac{7z}{6}\right)\cos\left(2\sqrt{z}\right) + \frac{1}{3}\sqrt{z}\,(z + 6)\sin\left(2\sqrt{z}\right)$$

07.22.03.5336.01

$${}_1F_2\left(5; -\frac{3}{2}, \frac{9}{2}; z\right) = \frac{1}{4608z^{3/2}}\left(32\left(8z^3 + 114z^2 - 115z + 144\right)z^{3/2} +\right.$$
$$\left.105\pi\left(80z^2 + 24z + 75\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z} + 105\pi\left(16z^3 - 24z^2 - 111z - 300\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.5337.01

$${}_1F_2\left(5; -\frac{3}{2}, \frac{9}{2}; -z\right) = \frac{1}{4608z^{3/2}}\left(32\left(-8z^3 + 114z^2 + 115z + 144\right)z^{3/2} -\right.$$
$$\left.105\pi\left(80z^2 - 24z + 75\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z} + 105\pi\left(16z^3 + 24z^2 - 111z + 300\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.5338.01

$${}_1F_2\left(5; -\frac{3}{2}, 5; z\right) = \left(\frac{4z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.5339.01

$${}_1F_2\left(5; -\frac{3}{2}, 5; -z\right) = \left(1 - \frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5340.01

$${}_1F_2\left(5; -\frac{3}{2}, \frac{11}{2}; z\right) = \frac{1}{9216z^2}\left(128\left(4z^3 + 45z^2 - 15z + 72\right)z^2 +\right.$$
$$\left.1890\pi\left(16z^2 - 60z - 315\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} + 945\pi\left(16z^3 + 72z^2 + 705z + 3150\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.5341.01

$${}_1F_2\left(5; -\frac{3}{2}, \frac{11}{2}; -z\right) = \frac{1}{9216z^2}\left(-128\left(4z^3 - 45z^2 - 15z - 72\right)z^2 -\right.$$
$$\left.1890\pi\left(16z^2 + 60z - 315\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} + 945\pi\left(16z^3 - 72z^2 + 705z - 3150\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.5342.01

$${}_1F_2\left(5; -\frac{3}{2}, 6; z\right) = \frac{1}{12\,z^5}\left(5\left(-\left(112\,z^5 + 2574\,z^4 + 36\,036\,z^3 + 270\,270\,z^2 + 810\,810\,z + 405\,405\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(8\,z^5 + 286\,z^4 + 5148\,z^3 + 54\,054\,z^2 + 270\,270\,z + 405\,405\right)\sinh\left(2\sqrt{z}\right) + 405\,405\right)\right)$$

07.22.03.5343.01

$${}_1F_2\left(5; -\frac{3}{2}, 6; -z\right) = -\frac{1}{12\,z^5}\left(5\left(\left(112\,z^5 - 2574\,z^4 + 36\,036\,z^3 - 270\,270\,z^2 + 810\,810\,z - 405\,405\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(8\,z^5 - 286\,z^4 + 5148\,z^3 - 54\,054\,z^2 + 270\,270\,z - 405\,405\right)\sin\left(2\sqrt{z}\right) + 405\,405\right)\right)$$

For fixed z and $a_1 = 5$, $b_1 = -\frac{1}{2}$

07.22.03.5344.01

$${}_1F_2\left(5; -\frac{1}{2}, -\frac{1}{2}; z\right) = \frac{1}{96}\pi\left(16\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{7/2} + 544\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^3 + 6376\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{5/2} + 31\,592\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z^2 + 65\,241\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 47\,124\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)z + 6930\,\boldsymbol{L}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)$$

07.22.03.5345.01

$${}_1F_2\left(5; -\frac{1}{2}, -\frac{1}{2}; -z\right) = \frac{1}{96}\pi\left(16\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{7/2} + 544\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^3 + 6376\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{5/2} + 31\,592\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z^2 + 65\,241\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 47\,124\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)z + 6930\,\boldsymbol{H}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)$$

07.22.03.5346.01

$${}_1F_2\left(5; -\frac{1}{2}, \frac{1}{2}; z\right) = -\frac{1}{192}\pi\left(16\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^3 + 448\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{5/2} + 11\left(376\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z^2 + 1368\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 1827\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)z + 630\,\boldsymbol{L}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)\right)$$

07.22.03.5347.01

$${}_1F_2\left(5; -\frac{1}{2}, \frac{1}{2}; -z\right) = -\frac{1}{192}\pi\left(16\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^3 + 448\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{5/2} + 11\left(376\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z^2 + 1368\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 1827\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)z + 630\,\boldsymbol{H}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)\right)$$

07.22.03.5348.01

$${}_1F_2\left(5; -\frac{1}{2}, 1; z\right) = \left(-\frac{29\,z^2}{24} - 8\,z + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{48}\sqrt{z}\left(4\,z^2 + 259\,z + 96\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5349.01

$${}_1F_2\left(5; -\frac{1}{2}, 1; -z\right) = \left(-\frac{29\,z^2}{24} + 8\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{48}\sqrt{z}\left(4\,z^2 - 259\,z + 96\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5350.01

$${}_1F_2\left(5; -\frac{1}{2}, \frac{3}{2}; z\right) = \frac{1}{384}\left(-4\left(108\,z^2 + 605\,z - 96\right) - \pi\sqrt{z}\left(16\,z^2 + 840\,z + 105\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + \pi\left(-208\,z^2 - 840\,z + 105\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5351.01

$${}_1F_2\left(5; -\frac{1}{2}, \frac{3}{2}; -z\right) =$$
$$\frac{1}{384}\left(-432\,z^2 + 2420\,z + \pi\left(16\,z^2 - 840\,z + 105\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)\sqrt{z} + \pi\left(208\,z^2 - 840\,z - 105\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 384\right)$$

07.22.03.5352.01

$${}_1F_2\left(5; -\frac{1}{2}, 2; z\right) = \left(-\frac{z^2}{12} - 3\,z + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{24}\sqrt{z}\,(23\,z + 48)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5353.01

$${}_1F_2\left(5; -\frac{1}{2}, 2; -z\right) = \left(-\frac{z^2}{12} + 3\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{24}(48 - 23\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5354.01

$${}_1F_2\left(5; -\frac{1}{2}, \frac{5}{2}; z\right) =$$
$$\frac{1}{768\sqrt{z}}\left(-3\,\pi\sqrt{z}\,\left(16\,z^2 + 520\,z - 15\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) - 2\left(4\sqrt{z}\,\left(92\,z^2 + 387\,z - 96\right) + 15\,\pi\left(16\,z^2 + 12\,z + 3\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5355.01

$${}_1F_2\left(5; -\frac{1}{2}, \frac{5}{2}; -z\right) =$$
$$\frac{1}{768\sqrt{z}}\left(8\sqrt{z}\,\left(-92\,z^2 + 387\,z + 96\right) + 3\,\pi\sqrt{z}\,\left(16\,z^2 - 520\,z - 15\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 30\,\pi\left(16\,z^2 - 12\,z + 3\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5356.01

$${}_1F_2\left(5; -\frac{1}{2}, 3; z\right) = \left(1 - \frac{4\,z}{3}\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{6}\sqrt{z}\,(z + 12)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5357.01

$${}_1F_2\left(5; -\frac{1}{2}, 3; -z\right) = \left(\frac{4\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{1}{6}(z - 12)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5358.01

$${}_1F_2\left(5; -\frac{1}{2}, \frac{7}{2}; z\right) =$$
$$\frac{1}{1536\,z}\left(-16\,z\left(76\,z^2 + 273\,z - 96\right) - 15\,\pi\sqrt{z}\,\left(16\,z^2 + 296\,z + 9\right)\boldsymbol{L}_2\left(2\sqrt{z}\right) + 15\,\pi\left(-112\,z^2 + 24\,z + 27\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.5359.01

$${}_1F_2\left(5; -\frac{1}{2}, \frac{7}{2}; -z\right) =$$
$$\frac{1}{1536\,z}\left(16\,z\left(-76\,z^2 + 273\,z + 96\right) + 15\,\pi\sqrt{z}\,\left(16\,z^2 - 296\,z + 9\right)\boldsymbol{H}_2\left(2\sqrt{z}\right) + 15\,\pi\left(112\,z^2 + 24\,z - 27\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.5360.01

$${}_1F_2\left(5; -\frac{1}{2}, 4; z\right) = -\frac{1}{2}(z - 2)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.5361.01

$${}_1F_2\left(5; -\frac{1}{2}, 4; -z\right) = \frac{1}{2}(z + 2)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5362.01

$${}_1F_2\left(5; -\frac{1}{2}, \frac{9}{2}; z\right) =$$
$$\frac{1}{3072\, z^{3/2}}\left(-105\,\pi\sqrt{z}\,\left(16\,z^2+168\,z-15\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)-4\left(8\left(60\,z^2+215\,z-96\right)z^{3/2}+105\,\pi\left(16\,z^2+6\,z+15\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5363.01

$${}_1F_2\left(5; -\frac{1}{2}, \frac{9}{2}; -z\right) =$$
$$\frac{1}{3072\, z^{3/2}}\left(105\,\pi\sqrt{z}\,\left(16\,z^2-168\,z-15\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)+4\left(8\left(-60\,z^2+215\,z+96\right)z^{3/2}+105\,\pi\left(16\,z^2-6\,z+15\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5364.01

$${}_1F_2\left(5; -\frac{1}{2}, 5; z\right) = \cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.5365.01

$${}_1F_2\left(5; -\frac{1}{2}, 5; -z\right) = \cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5366.01

$${}_1F_2\left(5; -\frac{1}{2}, \frac{11}{2}; z\right) =$$
$$-\frac{1}{6144\, z^2}\left(64\left(44\,z^2+165\,z-96\right)z^2+945\,\pi\left(16\,z^2+136\,z+105\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}\,+945\,\pi\left(16\,z^2-120\,z-525\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.5367.01

$${}_1F_2\left(5; -\frac{1}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{6144\, z^2}\left(-64\left(44\,z^2-165\,z-96\right)z^2+945\,\pi\left(16\,z^2-136\,z+105\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}\,+945\,\pi\left(16\,z^2+120\,z-525\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.5368.01

$${}_1F_2\left(5; -\frac{1}{2}, 6; z\right) = -\frac{1}{4\, z^5}\left(5\left(\left(8\,z^5+198\,z^4+2772\,z^3+20\,790\,z^2+62\,370\,z+31\,185\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.11\left(2\sqrt{z}\,\left(2\,z^4+36\,z^3+378\,z^2+1890\,z+2835\right)\sinh\left(2\sqrt{z}\right)+2835\right)\right)\right)$$

07.22.03.5369.01

$${}_1F_2\left(5; -\frac{1}{2}, 6; -z\right) = -\frac{1}{4\, z^5}\left(5\left(\left(8\,z^5-198\,z^4+2772\,z^3-20\,790\,z^2+62\,370\,z-31\,185\right)\cos\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.11\left(2\sqrt{z}\,\left(2\,z^4-36\,z^3+378\,z^2-1890\,z+2835\right)\sin\left(2\sqrt{z}\right)-2835\right)\right)\right)$$

For fixed z and $a_1 = 5$, $b_1 = \frac{1}{2}$

07.22.03.5370.01

$${}_1F_2\left(5; \frac{1}{2}, \frac{1}{2}; z\right) = \frac{1}{384}\,\pi\left(16\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{5/2}+368\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z^2+\right.$$
$$\left.9\left(296\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)z^{3/2}+784\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)z+665\,\boldsymbol{L}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\,+105\,\boldsymbol{L}_{-1}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5371.01

$${}_1F_2\left(5;\frac{1}{2},\frac{1}{2};-z\right)=\frac{1}{384}\pi\left(16\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{5/2}+368\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z^2+9\left(296\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)z^{3/2}+784\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)z+665\,\boldsymbol{H}_{-2}\left(2\sqrt{z}\right)\sqrt{z}+105\,\boldsymbol{H}_{-1}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5372.01

$${}_1F_2\left(5;\frac{1}{2},1;z\right)=\frac{1}{192}\left(2\left(4z^2+207z+96\right)\cosh\left(2\sqrt{z}\right)+\sqrt{z}\,\left(104z+561\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5373.01

$${}_1F_2\left(5;\frac{1}{2},1;-z\right)=\frac{1}{192}\left(2\left(4z^2-207z+96\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\,\left(104z-561\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5374.01

$${}_1F_2\left(5;\frac{1}{2},\frac{3}{2};z\right)=\frac{1}{768}\left(8\left(4z^2+185z+96\right)+24\pi\sqrt{z}\,\left(8z+35\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(16z^2+648z+105\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5375.01

$${}_1F_2\left(5;\frac{1}{2},\frac{3}{2};-z\right)=\frac{1}{768}\left(8\left(4z^2-185z+96\right)+24\pi\sqrt{z}\,\left(8z-35\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+\pi\left(-16z^2+648z-105\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5376.01

$${}_1F_2\left(5;\frac{1}{2},2;z\right)=\left(\frac{7z}{16}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{1}{96}\sqrt{z}\,\left(4z+123\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5377.01

$${}_1F_2\left(5;\frac{1}{2},2;-z\right)=\left(1-\frac{7z}{16}\right)\cos\left(2\sqrt{z}\right)+\frac{1}{96}\sqrt{z}\,\left(4z-123\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5378.01

$${}_1F_2\left(5;\frac{1}{2},\frac{5}{2};z\right)=\frac{16\sqrt{z}\,\left(4z^2+147z+96\right)+480\pi\sqrt{z}\,\left(z+3\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)+3\pi\left(16z^2+360z-15\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)}{1536\sqrt{z}}$$

07.22.03.5379.01

$${}_1F_2\left(5;\frac{1}{2},\frac{5}{2};-z\right)=\frac{16\sqrt{z}\,\left(4z^2-147z+96\right)+480\pi\left(z-3\right)\sqrt{z}\,\boldsymbol{H}_1\left(2\sqrt{z}\right)+3\pi\left(-16z^2+360z+15\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)}{1536\sqrt{z}}$$

07.22.03.5380.01

$${}_1F_2\left(5;\frac{1}{2},3;z\right)=\frac{1}{12}\left(z+12\right)\cosh\left(2\sqrt{z}\right)+\frac{5}{8}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.5381.01

$${}_1F_2\left(5;\frac{1}{2},3;-z\right)=\left(1-\frac{z}{12}\right)\cos\left(2\sqrt{z}\right)-\frac{5}{8}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5382.01

$${}_1F_2\left(5;\frac{1}{2},\frac{7}{2};z\right)=\frac{32z\left(4z^2+117z+96\right)+120\pi\sqrt{z}\,\left(16z+39\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)+15\pi\left(16z^2+168z+9\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)}{3072z}$$

07.22.03.5383.01

$${}_1F_2\left(5;\frac{1}{2},\frac{7}{2};-z\right)=\frac{32z\left(4z^2-117z+96\right)+120\pi\sqrt{z}\,\left(16z-39\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)-15\pi\left(16z^2-168z+9\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)}{3072z}$$

07.22.03.5384.01

$${}_1F_2\left(5;\frac{1}{2},4;z\right)=\cosh\left(2\sqrt{z}\right)+\frac{1}{4}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.5385.01

$${}_1F_2\left(5;\frac{1}{2},4;-z\right)=\cos\left(2\sqrt{z}\right)-\frac{1}{4}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5386.01

$${}_1F_2\left(5;\frac{1}{2},\frac{9}{2};z\right)=\frac{64\left(4z^2+95z+96\right)z^{3/2}+5040\pi\left(2z+5\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z}+105\pi\left(16z^2+72z-15\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)}{6144\,z^{3/2}}$$

07.22.03.5387.01

$${}_1F_2\left(5;\frac{1}{2},\frac{9}{2};-z\right)=\frac{64\left(4z^2-95z+96\right)z^{3/2}+5040\pi\left(2z-5\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z}-105\pi\left(16z^2-72z-15\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)}{6144\,z^{3/2}}$$

07.22.03.5388.01

$${}_1F_2\left(5;\frac{1}{2},5;z\right)=\cosh\left(2\sqrt{z}\right)$$

07.22.03.5389.01

$${}_1F_2\left(5;\frac{1}{2},5;-z\right)=\cos\left(2\sqrt{z}\right)$$

07.22.03.5390.01

$${}_1F_2\left(5;\frac{1}{2},\frac{11}{2};z\right)=\frac{128\left(4z^2+81z+96\right)z^2+7560\pi\left(8z+21\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}+945\pi\left(16z^2+72z+105\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)}{12\,288\,z^2}$$

07.22.03.5391.01

$${}_1F_2\left(5;\frac{1}{2},\frac{11}{2};-z\right)=\frac{128\left(4z^2-81z+96\right)z^2+7560\pi\left(8z-21\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}-945\pi\left(16z^2-72z+105\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)}{12\,288\,z^2}$$

07.22.03.5392.01

$${}_1F_2\left(5;\frac{1}{2},6;z\right)=\frac{1}{4z^5}$$
$$\left(5\left(-9\left(2z^4+28z^3+210z^2+630z+315\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(2z^4+36z^3+378z^2+1890z+2835\right)\sinh\left(2\sqrt{z}\right)+2835\right)\right)$$

07.22.03.5393.01

$${}_1F_2\left(5;\frac{1}{2},6;-z\right)=$$
$$\frac{1}{4z^5}\left(5\left(9\left(2z^4-28z^3+210z^2-630z+315\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(2z^4-36z^3+378z^2-1890z+2835\right)\sin\left(2\sqrt{z}\right)-2835\right)\right)$$

For fixed z and $a_1 = 5$, $b_1 = 1$

07.22.03.5394.01

$${}_1F_2(5;1,1;z)=\frac{1}{24}\left(\left(z^2+46z+24\right)I_0\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(6z+25\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5395.01

$${}_1F_2(5;1,1;-z)=\frac{1}{24}\left(\left(z^2-46z+24\right)J_0\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(6z-25\right)J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5396.01

$${}_1F_2\left(5;\,1,\,\frac{3}{2};\,z\right)=\frac{2\sqrt{z}\,\left(88\,z+279\right)\cosh\left(2\sqrt{z}\right)+\left(16\,z^2+564\,z+105\right)\sinh\left(2\sqrt{z}\right)}{768\sqrt{z}}$$

07.22.03.5397.01

$${}_1F_2\left(5;\,1,\,\frac{3}{2};\,-z\right)=\frac{\left(16\,z^2-564\,z+105\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(88\,z-279\right)\cos\left(2\sqrt{z}\right)}{768\sqrt{z}}$$

07.22.03.5398.01

$${}_1F_2(5;\,1,\,2;\,z)=\frac{1}{24}\left(\frac{\left(z^2+36\,z+24\right)I_1\left(2\sqrt{z}\right)}{\sqrt{z}}+2\left(5\,z+12\right)I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5399.01

$${}_1F_2(5;\,1,\,2;\,-z)=\frac{1}{24}\left(\frac{\left(z^2-36\,z+24\right)J_1\left(2\sqrt{z}\right)}{\sqrt{z}}+2\left(5\,z-12\right)J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5400.01

$${}_1F_2\left(5;\,1,\,\frac{5}{2};\,z\right)=\frac{2\sqrt{z}\,\left(16\,z^2+292\,z-15\right)\cosh\left(2\sqrt{z}\right)+\left(272\,z^2+240\,z+15\right)\sinh\left(2\sqrt{z}\right)}{1024\,z^{3/2}}$$

07.22.03.5401.01

$${}_1F_2\left(5;\,1,\,\frac{5}{2};\,-z\right)=\frac{\left(-272\,z^2+240\,z-15\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(16\,z^2-292\,z-15\right)\cos\left(2\sqrt{z}\right)}{1024\,z^{3/2}}$$

07.22.03.5402.01

$${}_1F_2(5;\,1,\,3;\,z)=\frac{\left(z^2+28\,z+24\right)I_2\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(2\,z+3\right)I_3\left(2\sqrt{z}\right)}{12\,z}$$

07.22.03.5403.01

$${}_1F_2(5;\,1,\,3;\,-z)=\frac{\left(z^2-28\,z+24\right)J_2\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(2\,z-3\right)J_3\left(2\sqrt{z}\right)}{12\,z}$$

07.22.03.5404.01

$${}_1F_2\left(5;\,1,\,\frac{7}{2};\,z\right)=\frac{5\left(2\sqrt{z}\,\left(176\,z^2-48\,z-27\right)\cosh\left(2\sqrt{z}\right)+\left(64\,z^3+288\,z^2+84\,z+27\right)\sinh\left(2\sqrt{z}\right)\right)}{4096\,z^{5/2}}$$

07.22.03.5405.01

$${}_1F_2\left(5;\,1,\,\frac{7}{2};\,-z\right)=-\frac{5\left(\left(64\,z^3-288\,z^2+84\,z-27\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(176\,z^2+48\,z-27\right)\cos\left(2\sqrt{z}\right)\right)}{4096\,z^{5/2}}$$

07.22.03.5406.01

$${}_1F_2(5;\,1,\,4;\,z)=\frac{\left(z^2+22\,z+24\right)I_3\left(2\sqrt{z}\right)}{4\,z^{3/2}}+\frac{\left(3\,z+4\right)I_4\left(2\sqrt{z}\right)}{2\,z}$$

07.22.03.5407.01

$${}_1F_2(5;\,1,\,4;\,-z)=\frac{\left(z^2-22\,z+24\right)J_3\left(2\sqrt{z}\right)}{4\,z^{3/2}}+\frac{\left(3\,z-4\right)J_4\left(2\sqrt{z}\right)}{2\,z}$$

07.22.03.5408.01

$${}_1F_2\left(5;\,1,\,\frac{9}{2};\,z\right)=\frac{35\left(2\sqrt{z}\,\left(64z^3-96z^2-204z-225\right)\cosh\left(2\sqrt{z}\right)+\left(256z^3+288z^2+504z+225\right)\sinh\left(2\sqrt{z}\right)\right)}{16\,384\,z^{7/2}}$$

07.22.03.5409.01

$${}_1F_2\left(5;\,1,\,\frac{9}{2};\,-z\right)=\frac{35\left(2\sqrt{z}\,\left(64z^3+96z^2-204z+225\right)\cos\left(2\sqrt{z}\right)+\left(256z^3-288z^2+504z-225\right)\sin\left(2\sqrt{z}\right)\right)}{16\,384\,z^{7/2}}$$

07.22.03.5410.01

$${}_1F_2(5;\,1,\,5;\,z)=I_0\left(2\sqrt{z}\right)$$

07.22.03.5411.01

$${}_1F_2(5;\,1,\,5;\,-z)=J_0\left(2\sqrt{z}\right)$$

07.22.03.5412.01

$${}_1F_2\left(5;\,1,\,\frac{11}{2};\,z\right)=\frac{1}{65\,536\,z^{9/2}}$$
$$\left(315\left(\left(256z^4+1408z^3+8304z^2+22\,500z+11\,025\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(256z^3+1824z^2+7800z+11\,025\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5413.01

$${}_1F_2\left(5;\,1,\,\frac{11}{2};\,-z\right)=\frac{1}{65\,536\,z^{9/2}}$$
$$\left(315\left(2\sqrt{z}\,\left(256z^3-1824z^2+7800z-11\,025\right)\cos\left(2\sqrt{z}\right)+\left(256z^4-1408z^3+8304z^2-22\,500z+11\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5414.01

$${}_1F_2(5;\,1,\,6;\,z)=\frac{5\left(z^2+16z+24\right)I_5\left(2\sqrt{z}\right)}{z^{5/2}}+\frac{10\,I_6\left(2\sqrt{z}\right)}{z}$$

07.22.03.5415.01

$${}_1F_2(5;\,1,\,6;\,-z)=\frac{5\left(z^2-16z+24\right)J_5\left(2\sqrt{z}\right)}{z^{5/2}}+\frac{10\,J_6\left(2\sqrt{z}\right)}{z}$$

For fixed z and $a_1 = 5$, $b_1 = \frac{3}{2}$

07.22.03.5416.01

$${}_1F_2\left(5;\,\frac{3}{2},\,\frac{3}{2};\,z\right)=\frac{\pi\left(16z^2+488z+105\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(84z+8\pi\left(5z+11\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)+279\right)}{1536\sqrt{z}}$$

07.22.03.5417.01

$${}_1F_2\left(5;\,\frac{3}{2},\,\frac{3}{2};\,-z\right)=\frac{\pi\left(16z^2-488z+105\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(-84z+8\pi\left(5z-11\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)+279\right)}{1536\sqrt{z}}$$

07.22.03.5418.01

$${}_1F_2\left(5;\,\frac{3}{2},\,2;\,z\right)=\frac{2\sqrt{z}\,\left(4z+87\right)\cosh\left(2\sqrt{z}\right)+3\left(24z+35\right)\sinh\left(2\sqrt{z}\right)}{384\sqrt{z}}$$

07.22.03.5419.01

$${}_1F_2\left(5;\frac{3}{2},2;-z\right)=\frac{3\,(35-24\,z)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\;(4\,z-87)\cos\left(2\sqrt{z}\right)}{384\sqrt{z}}$$

07.22.03.5420.01

$${}_1F_2\left(5;\frac{3}{2},\frac{5}{2};z\right)=\frac{3\,\pi\left(16\,z^2+360\,z+105\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)+8\left(z\,(76\,z+279)+3\,\pi\sqrt{z}\;(16\,z+15)\,\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)}{3072\,z}$$

07.22.03.5421.01

$${}_1F_2\left(5;\frac{3}{2},\frac{5}{2};-z\right)=\frac{3\,\pi\left(16\,z^2-360\,z+105\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)+8\left((279-76\,z)\,z+3\,\pi\,(16\,z-15)\,\boldsymbol{H}_2\left(2\sqrt{z}\right)\sqrt{z}\right)}{3072\,z}$$

07.22.03.5422.01

$${}_1F_2\left(5;\frac{3}{2},3;z\right)=\frac{26\sqrt{z}\;\cosh\left(2\sqrt{z}\right)+(4\,z+35)\sinh\left(2\sqrt{z}\right)}{96\sqrt{z}}$$

07.22.03.5423.01

$${}_1F_2\left(5;\frac{3}{2},3;-z\right)=\frac{26\sqrt{z}\;\cos\left(2\sqrt{z}\right)+(35-4\,z)\sin\left(2\sqrt{z}\right)}{96\sqrt{z}}$$

07.22.03.5424.01

$${}_1F_2\left(5;\frac{3}{2},\frac{7}{2};z\right)=\frac{15\,\pi\left(16\,z^2+264\,z+105\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)+16\sqrt{z}\;\left(z\,(68\,z+279)+45\,(2\,\pi\,z+\pi)\,\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)}{6144\,z^{3/2}}$$

07.22.03.5425.01

$${}_1F_2\left(5;\frac{3}{2},\frac{7}{2};-z\right)=\frac{15\,\pi\left(16\,z^2-264\,z+105\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)+16\sqrt{z}\;\left((279-68\,z)\,z+45\,\pi\,(2\,z-1)\,\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)}{6144\,z^{3/2}}$$

07.22.03.5426.01

$${}_1F_2\left(5;\frac{3}{2},4;z\right)=\frac{1}{8}\cosh\left(2\sqrt{z}\right)+\frac{7\sinh\left(2\sqrt{z}\right)}{16\sqrt{z}}$$

07.22.03.5427.01

$${}_1F_2\left(5;\frac{3}{2},4;-z\right)=\frac{1}{8}\cos\left(2\sqrt{z}\right)+\frac{7\sin\left(2\sqrt{z}\right)}{16\sqrt{z}}$$

07.22.03.5428.01

$${}_1F_2\left(5;\frac{3}{2},\frac{9}{2};z\right)=\frac{35\,\pi\left(16\,z^2+200\,z+105\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)+8\left(4\,(20\,z+93)\,z^2+35\,\pi\,(8\,z+5)\,\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}\right)}{4096\,z^2}$$

07.22.03.5429.01

$${}_1F_2\left(5;\frac{3}{2},\frac{9}{2};-z\right)=\frac{35\,\pi\left(16\,z^2-200\,z+105\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)+8\left(4\,(93-20\,z)\,z^2+35\,\pi\,(8\,z-5)\,\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}\right)}{4096\,z^2}$$

07.22.03.5430.01

$${}_1F_2\left(5;\frac{3}{2},5;z\right)=\frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.5431.01

$${}_1F_2\left(5;\ \frac{3}{2},\ 5;\ -z\right)=\frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.5432.01

$${}_1F_2\left(5;\ \frac{3}{2},\ \frac{11}{2};\ z\right)=\frac{\frac{945\pi\left(16z^2+168z+105\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)}{z^{5/2}}+32\left(104z+558+\frac{945\pi\boldsymbol{L}_5\left(2\sqrt{z}\right)}{z}\right)}{24\,576}$$

07.22.03.5433.01

$${}_1F_2\left(5;\ \frac{3}{2},\ \frac{11}{2};\ -z\right)=\frac{\frac{945\pi\left(16z^2-168z+105\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)}{z^{5/2}}+32\left(-104z+558+\frac{945\pi\boldsymbol{H}_5\left(2\sqrt{z}\right)}{z}\right)}{24\,576}$$

07.22.03.5434.01

$${}_1F_2\left(5;\ \frac{3}{2},\ 6;\ z\right)=$$
$$\frac{1}{4z^5}\left(5\left(\left(2z^4+28z^3+210z^2+630z+315\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\ \left(4z^3+42z^2+210z+315\right)\sinh\left(2\sqrt{z}\right)-315\right)\right)$$

07.22.03.5435.01

$${}_1F_2\left(5;\ \frac{3}{2},\ 6;\ -z\right)=$$
$$-\frac{1}{4z^5}\left(5\left(\left(2z^4-28z^3+210z^2-630z+315\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\ \left(4z^3-42z^2+210z-315\right)\sin\left(2\sqrt{z}\right)-315\right)\right)$$

For fixed z and $a_1 = 5$, $b_1 = 2$

07.22.03.5436.01

$${}_1F_2(5;\ 2,\ 2;\ z)=\frac{1}{24}\left(\frac{3\,(3z+8)\,I_1\left(2\sqrt{z}\right)}{\sqrt{z}}+(z+18)\,I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5437.01

$${}_1F_2(5;\ 2,\ 2;\ -z)=\frac{1}{24}\left(\frac{3\,(8-3z)\,J_1\left(2\sqrt{z}\right)}{\sqrt{z}}+(z-18)\,J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5438.01

$${}_1F_2\left(5;\ 2,\ \frac{5}{2};\ z\right)=\frac{2\sqrt{z}\ (56z+15)\cosh\left(2\sqrt{z}\right)+\left(16z^2+180z-15\right)\sinh\left(2\sqrt{z}\right)}{512\,z^{3/2}}$$

07.22.03.5439.01

$${}_1F_2\left(5;\ 2,\ \frac{5}{2};\ -z\right)=\frac{2\sqrt{z}\ (56z-15)\cos\left(2\sqrt{z}\right)+\left(-16z^2+180z+15\right)\sin\left(2\sqrt{z}\right)}{512\,z^{3/2}}$$

07.22.03.5440.01

$${}_1F_2(5;\ 2,\ 3;\ z)=\frac{8\,(z+3)\,I_2\left(2\sqrt{z}\right)+\sqrt{z}\ (z+12)\,I_3\left(2\sqrt{z}\right)}{12z}$$

07.22.03.5441.01

$${}_1F_2(5;\,2,\,3;\,-z) = \frac{(z-12)\,\sqrt{z}\;J_3\left(2\sqrt{z}\right) - 8\,(z-3)\,J_2\left(2\sqrt{z}\right)}{12\,z}$$

07.22.03.5442.01

$${}_1F_2\left(5;\,2,\,\frac{7}{2};\,z\right) = \frac{5\left(2\sqrt{z}\,\left(16\,z^2+36\,z+9\right)\cosh\left(2\sqrt{z}\right) + 3\left(48\,z^2-16\,z-3\right)\sinh\left(2\sqrt{z}\right)\right)}{2048\,z^{5/2}}$$

07.22.03.5443.01

$${}_1F_2\left(5;\,2,\,\frac{7}{2};\,-z\right) = \frac{5\left(2\sqrt{z}\,\left(16\,z^2-36\,z+9\right)\cos\left(2\sqrt{z}\right) + 3\left(48\,z^2+16\,z-3\right)\sin\left(2\sqrt{z}\right)\right)}{2048\,z^{5/2}}$$

07.22.03.5444.01

$${}_1F_2(5;\,2,\,4;\,z) = \frac{(7\,z+24)\,I_3\left(2\sqrt{z}\right) + \sqrt{z}\;(z+8)\,I_4\left(2\sqrt{z}\right)}{4\,z^{3/2}}$$

07.22.03.5445.01

$${}_1F_2(5;\,2,\,4;\,-z) = \frac{(24-7\,z)\,J_3\left(2\sqrt{z}\right) + (z-8)\,\sqrt{z}\;J_4\left(2\sqrt{z}\right)}{4\,z^{3/2}}$$

07.22.03.5446.01

$${}_1F_2\left(5;\,2,\,\frac{9}{2};\,z\right) = \frac{35\left(6\sqrt{z}\,\left(16\,z^2+16\,z+15\right)\cosh\left(2\sqrt{z}\right) + \left(64\,z^3-96\,z^2-108\,z-45\right)\sinh\left(2\sqrt{z}\right)\right)}{8192\,z^{7/2}}$$

07.22.03.5447.01

$${}_1F_2\left(5;\,2,\,\frac{9}{2};\,-z\right) = \frac{35\left(\left(64\,z^3+96\,z^2-108\,z+45\right)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(16\,z^2-16\,z+15\right)\cos\left(2\sqrt{z}\right)\right)}{8192\,z^{7/2}}$$

07.22.03.5448.01

$${}_1F_2(5;\,2,\,5;\,z) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.5449.01

$${}_1F_2(5;\,2,\,5;\,-z) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.5450.01

$${}_1F_2\left(5;\,2,\,\frac{11}{2};\,z\right) = \frac{1}{32\,768\,z^{9/2}}\left(315\left(2\sqrt{z}\,\left(64\,z^3+288\,z^2+1140\,z+1575\right)\cosh\left(2\sqrt{z}\right) - \left(256\,z^3+1248\,z^2+3240\,z+1575\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5451.01

$${}_1F_2\left(5;\,2,\,\frac{11}{2};\,-z\right) = -\frac{1}{32\,768\,z^{9/2}}\left(315\left(2\sqrt{z}\,\left(64\,z^3-288\,z^2+1140\,z-1575\right)\cos\left(2\sqrt{z}\right) + \left(-256\,z^3+1248\,z^2-3240\,z+1575\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5452.01

$${}_1F_2(5;\,2,\,6;\,z) = \frac{5\,(5\,z+24)\,I_5\left(2\,\sqrt{z}\,\right)}{z^{5/2}} + \frac{5\,(z+6)\,I_6\left(2\,\sqrt{z}\,\right)}{z^2}$$

07.22.03.5453.01

$${}_1F_2(5;\,2,\,6;\,-z) = \frac{5\,(z-6)\,J_6\left(2\,\sqrt{z}\,\right)}{z^2} - \frac{5\,(5\,z-24)\,J_5\left(2\,\sqrt{z}\,\right)}{z^{5/2}}$$

For fixed z and $a_1 = 5$, $b_1 = \frac{5}{2}$

07.22.03.5454.01

$${}_1F_2\left(5;\,\frac{5}{2},\,\frac{5}{2};\,z\right) = \frac{1}{2048\,z^2}\left(8\,z\left(8\,z^2+146\,z+15\right)+3\,\pi\left(112\,z^2+120\,z-15\right)\boldsymbol{L}_1\left(2\,\sqrt{z}\,\right)+3\,\pi\,\sqrt{z}\,\left(16\,z^2+136\,z-15\right)\boldsymbol{L}_2\left(2\,\sqrt{z}\,\right)\right)$$

07.22.03.5455.01

$${}_1F_2\left(5;\,\frac{5}{2},\,\frac{5}{2};\,-z\right) =$$

$$\frac{1}{2048\,z^2}\left(-8\,z\left(8\,z^2-146\,z+15\right)+3\,\pi\left(-112\,z^2+120\,z+15\right)\boldsymbol{H}_1\left(2\,\sqrt{z}\,\right)+3\,\pi\,\sqrt{z}\,\left(16\,z^2-136\,z-15\right)\boldsymbol{H}_2\left(2\,\sqrt{z}\,\right)\right)$$

07.22.03.5456.01

$${}_1F_2\left(5;\,\frac{5}{2},\,3;\,z\right) = \frac{2\,\sqrt{z}\,\left(4\,z+15\right)\cosh\left(2\,\sqrt{z}\,\right)+5\,(8\,z-3)\sinh\left(2\,\sqrt{z}\,\right)}{128\,z^{3/2}}$$

07.22.03.5457.01

$${}_1F_2\left(5;\,\frac{5}{2},\,3;\,-z\right) = \frac{2\,\sqrt{z}\,\left(4\,z-15\right)\cos\left(2\,\sqrt{z}\,\right)+5\,(8\,z+3)\sin\left(2\,\sqrt{z}\,\right)}{128\,z^{3/2}}$$

07.22.03.5458.01

$${}_1F_2\left(5;\,\frac{5}{2},\,\frac{7}{2};\,z\right) =$$

$$\frac{1}{4096\,z^{5/2}}\left(90\,\pi\left(16\,z^2+20\,z-5\right)\boldsymbol{L}_2\left(2\,\sqrt{z}\,\right)+\sqrt{z}\,\left(32\,z\left(4\,z^2+73\,z+15\right)+15\,\pi\left(16\,z^2+72\,z-15\right)\boldsymbol{L}_3\left(2\,\sqrt{z}\,\right)\right)\right)$$

07.22.03.5459.01

$${}_1F_2\left(5;\,\frac{5}{2},\,\frac{7}{2};\,-z\right) =$$

$$\frac{1}{4096\,z^{5/2}}\left(\sqrt{z}\,\left(15\,\pi\left(16\,z^2-72\,z-15\right)\boldsymbol{H}_3\left(2\,\sqrt{z}\,\right)-32\,z\left(4\,z^2-73\,z+15\right)\right)-90\,\pi\left(16\,z^2-20\,z-5\right)\boldsymbol{H}_2\left(2\,\sqrt{z}\,\right)\right)$$

07.22.03.5460.01

$${}_1F_2\left(5;\,\frac{5}{2},\,4;\,z\right) = \frac{3\left(10\,\sqrt{z}\,\cosh\left(2\,\sqrt{z}\,\right)+(4\,z-5)\sinh\left(2\,\sqrt{z}\,\right)\right)}{64\,z^{3/2}}$$

07.22.03.5461.01

$${}_1F_2\left(5;\,\frac{5}{2},\,4;\,-z\right) = \frac{3\left((4\,z+5)\sin\left(2\,\sqrt{z}\,\right)-10\,\sqrt{z}\,\cos\left(2\,\sqrt{z}\,\right)\right)}{64\,z^{3/2}}$$

07.22.03.5462.01

$${}_1F_2\left(5;\frac{5}{2},\frac{9}{2};z\right)=$$
$$\frac{1}{8192\,z^3}\left(32\left(8\,z^2+146\,z+45\right)z^2+105\,\pi\left(16\,z^2+40\,z-15\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}+525\,\pi\left(16\,z^2+24\,z-9\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.5463.01

$${}_1F_2\left(5;\frac{5}{2},\frac{9}{2};-z\right)=$$
$$\frac{1}{8192\,z^3}\left(-32\left(8\,z^2-146\,z+45\right)z^2+105\,\pi\left(16\,z^2-40\,z-15\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}-525\,\pi\left(16\,z^2-24\,z-9\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.5464.01

$${}_1F_2\left(5;\frac{5}{2},5;z\right)=\frac{3\cosh\left(2\sqrt{z}\right)}{4\,z}-\frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.5465.01

$${}_1F_2\left(5;\frac{5}{2},5;-z\right)=\frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.5466.01

$${}_1F_2\left(5;\frac{5}{2},\frac{11}{2};z\right)=$$
$$\frac{1}{16\,384\,z^{7/2}}\left(3780\,\pi\left(16\,z^2+30\,z-15\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)+\sqrt{z}\left(128\left(4\,z^2+73\,z+30\right)z^2+945\,\pi\left(16\,z^2+40\,z-15\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5467.01

$${}_1F_2\left(5;\frac{5}{2},\frac{11}{2};-z\right)=$$
$$\frac{1}{16\,384\,z^{7/2}}\left(-128\left(4\,z^2-73\,z+30\right)z^{5/2}+945\,\pi\left(16\,z^2-40\,z-15\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\sqrt{z}+3780\,\pi\left(-16\,z^2+30\,z+15\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.5468.01

$${}_1F_2\left(5;\frac{5}{2},6;z\right)=\frac{15\left(-\left(4\,z^3+30\,z^2+90\,z+45\right)\cosh\left(2\sqrt{z}\right)+\sqrt{z}\left(z^3+12\,z^2+60\,z+90\right)\sinh\left(2\sqrt{z}\right)+45\right)}{4\,z^5}$$

07.22.03.5469.01

$${}_1F_2\left(5;\frac{5}{2},6;-z\right)=-\frac{15\left(\left(4\,z^3-30\,z^2+90\,z-45\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\left(z^3-12\,z^2+60\,z-90\right)\sin\left(2\sqrt{z}\right)+45\right)}{4\,z^5}$$

For fixed z and $a_1 = 5$, $b_1 = 3$

07.22.03.5470.01

$${}_1F_2(5;3,3;z)=\frac{(z+12)\,I_2\left(2\sqrt{z}\right)+5\sqrt{z}\,I_3\left(2\sqrt{z}\right)}{6\,z}$$

07.22.03.5471.01

$${}_1F_2(5;\,3,\,3;\,-z) = -\frac{(z-12)\,J_2\left(2\sqrt{z}\right)+5\sqrt{z}\;J_3\left(2\sqrt{z}\right)}{6\,z}$$

07.22.03.5472.01

$${}_1F_2\left(5;\,3,\,\frac{7}{2};\,z\right) = \frac{5\left(6\sqrt{z}\;(8\,z-3)\cosh\left(2\sqrt{z}\right)+\left(16\,z^2-12\,z+9\right)\sinh\left(2\sqrt{z}\right)\right)}{512\,z^{5/2}}$$

07.22.03.5473.01

$${}_1F_2\left(5;\,3,\,\frac{7}{2};\,-z\right) = \frac{5\left(\left(16\,z^2+12\,z+9\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\;(8\,z+3)\cos\left(2\sqrt{z}\right)\right)}{512\,z^{5/2}}$$

07.22.03.5474.01

$${}_1F_2(5;\,3,\,4;\,z) = \frac{(z+12)\,I_3\left(2\sqrt{z}\right)}{2\,z^{3/2}}+\frac{2\,I_4\left(2\sqrt{z}\right)}{z}$$

07.22.03.5475.01

$${}_1F_2(5;\,3,\,4;\,-z) = -\frac{(z-12)\,J_3\left(2\sqrt{z}\right)}{2\,z^{3/2}}-\frac{2\,J_4\left(2\sqrt{z}\right)}{z}$$

07.22.03.5476.01

$${}_1F_2\left(5;\,3,\,\frac{9}{2};\,z\right) = \frac{35\left(2\sqrt{z}\;\left(16\,z^2-28\,z-15\right)\cosh\left(2\sqrt{z}\right)+\left(16\,z^2+48\,z+15\right)\sinh\left(2\sqrt{z}\right)\right)}{2048\,z^{7/2}}$$

07.22.03.5477.01

$${}_1F_2\left(5;\,3,\,\frac{9}{2};\,-z\right) = -\frac{35\left(2\sqrt{z}\;\left(16\,z^2+28\,z-15\right)\cos\left(2\sqrt{z}\right)+\left(16\,z^2-48\,z+15\right)\sin\left(2\sqrt{z}\right)\right)}{2048\,z^{7/2}}$$

07.22.03.5478.01

$${}_1F_2(5;\,3,\,5;\,z) = \frac{2\,I_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.5479.01

$${}_1F_2(5;\,3,\,5;\,-z) = \frac{2\,J_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.5480.01

$${}_1F_2\left(5;\,3,\,\frac{11}{2};\,z\right) = \frac{315\left(\left(64\,z^3+288\,z^2+660\,z+315\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\;\left(16\,z^2+48\,z+63\right)\cosh\left(2\sqrt{z}\right)\right)}{8192\,z^{9/2}}$$

07.22.03.5481.01

$${}_1F_2\left(5;\,3,\,\frac{11}{2};\,-z\right) = -\frac{315\left(10\sqrt{z}\;\left(16\,z^2-48\,z+63\right)\cos\left(2\sqrt{z}\right)+\left(64\,z^3-288\,z^2+660\,z-315\right)\sin\left(2\sqrt{z}\right)\right)}{8192\,z^{9/2}}$$

07.22.03.5482.01

$${}_1F_2(5;\,3,\,6;\,z) = \frac{10\,(z+12)\,I_5\left(2\sqrt{z}\right)}{z^{5/2}}+\frac{20\,I_6\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.5483.01

$${}_1F_2(5;\,3,\,6;\,-z) = -\frac{10\,(z-12)\,J_5\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{20\,J_6\left(2\sqrt{z}\right)}{z^2}$$

For fixed z and $a_1 = 5$, $b_1 = \frac{7}{2}$

07.22.03.5484.01

$${}_1F_2\left(5;\,\frac{7}{2},\,\frac{7}{2};\,z\right) =$$
$$\frac{1}{8192\,z^{7/2}}\left(5\left(15\,\pi\left(16\,z^3+72\,z^2-39\,z+18\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)+\sqrt{z}\,\left(16\,z\left(44\,z^2+33\,z-18\right)+45\,\pi\left(16\,z^2-8\,z+3\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5485.01

$${}_1F_2\left(5;\,\frac{7}{2},\,\frac{7}{2};\,-z\right) =$$
$$-\frac{1}{8192\,z^{7/2}}\left(5\left(15\,\pi\left(16\,z^3-72\,z^2-39\,z-18\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)+\sqrt{z}\,\left(16\,z\left(-44\,z^2+33\,z+18\right)+45\,\pi\left(16\,z^2+8\,z+3\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5486.01

$${}_1F_2\left(5;\,\frac{7}{2},\,4;\,z\right) = \frac{15\left(2\sqrt{z}\,\left(4\,z-9\right)\cosh\left(2\sqrt{z}\right)+\left(8\,z+9\right)\sinh\left(2\sqrt{z}\right)\right)}{256\,z^{5/2}}$$

07.22.03.5487.01

$${}_1F_2\left(5;\,\frac{7}{2},\,4;\,-z\right) = -\frac{15\left(2\sqrt{z}\,\left(4\,z+9\right)\cos\left(2\sqrt{z}\right)+\left(8\,z-9\right)\sin\left(2\sqrt{z}\right)\right)}{256\,z^{5/2}}$$

07.22.03.5488.01

$${}_1F_2\left(5;\,\frac{7}{2},\,\frac{9}{2};\,z\right) = \frac{1}{16\,384\,z^4}$$
$$\left(5\left(105\,\pi\left(16\,z^3+72\,z^2-63\,z+54\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)+2\left(16\left(44\,z^2+51\,z-54\right)z^2+105\,\pi\left(16\,z^2-12\,z+9\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}\right)\right)\right)$$

07.22.03.5489.01

$${}_1F_2\left(5;\,\frac{7}{2},\,\frac{9}{2};\,-z\right) = -\frac{1}{16\,384\,z^4}$$
$$\left(5\left(105\,\pi\left(16\,z^3-72\,z^2-63\,z-54\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)+2\left(16\left(-44\,z^2+51\,z+54\right)z^2+105\,\pi\left(16\,z^2+12\,z+9\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}\right)\right)\right)$$

07.22.03.5490.01

$${}_1F_2\left(5;\,\frac{7}{2},\,5;\,z\right) = \frac{15\left(\left(4\,z+3\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.5491.01

$${}_1F_2\left(5;\,\frac{7}{2},\,5;\,-z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+\left(4\,z-3\right)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.5492.01

$${}_1F_2\left(5;\,\frac{7}{2},\,\frac{11}{2};\,z\right) = \frac{1}{32\,768\,z^{9/2}}$$
$$\left(5\left(945\,\pi\left(16\,z^3+72\,z^2-87\,z+108\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)+\sqrt{z}\,\left(64\left(44\,z^2+69\,z-108\right)z^2+945\,\pi\left(16\,z^2-24\,z+27\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5493.01

$${}_1F_2\left(5;\frac{7}{2},\frac{11}{2};-z\right)=-\frac{1}{32\,768\,z^{9/2}}$$
$$\left(5\left(945\,\pi\left(16\,z^3-72\,z^2-87\,z-108\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)+\sqrt{z}\,\left(64\left(-44\,z^2+69\,z+108\right)z^2+945\,\pi\left(16\,z^2+24\,z+27\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5494.01

$${}_1F_2\left(5;\frac{7}{2},6;z\right)=\frac{75\left(2\left(z^3+12\,z^2+36\,z+18\right)\cosh\left(2\sqrt{z}\right)-3\left(\sqrt{z}\,\left(3\,z^2+16\,z+24\right)\sinh\left(2\sqrt{z}\right)+12\right)\right)}{16\,z^5}$$

07.22.03.5495.01

$${}_1F_2\left(5;\frac{7}{2},6;-z\right)=\frac{75\left(2\left(z^3-12\,z^2+36\,z-18\right)\cos\left(2\sqrt{z}\right)-3\sqrt{z}\,\left(3\,z^2-16\,z+24\right)\sin\left(2\sqrt{z}\right)+36\right)}{16\,z^5}$$

For fixed z and $a_1 = 5$, $b_1 = 4$

07.22.03.5496.01

$${}_1F_2(5;4,4;z)=\frac{6\,I_3\left(2\sqrt{z}\right)}{z^{3/2}}+\frac{3\,I_4\left(2\sqrt{z}\right)}{2\,z}$$

07.22.03.5497.01

$${}_1F_2(5;4,4;-z)=\frac{6\,J_3\left(2\sqrt{z}\right)}{z^{3/2}}-\frac{3\,J_4\left(2\sqrt{z}\right)}{2\,z}$$

07.22.03.5498.01

$${}_1F_2\left(5;4,\frac{9}{2};z\right)=\frac{105\left(\left(16\,z^2-12\,z-15\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(8\,z-15\right)\cosh\left(2\sqrt{z}\right)\right)}{1024\,z^{7/2}}$$

07.22.03.5499.01

$${}_1F_2\left(5;4,\frac{9}{2};-z\right)=-\frac{105\left(2\sqrt{z}\,\left(8\,z+15\right)\cos\left(2\sqrt{z}\right)+\left(16\,z^2+12\,z-15\right)\sin\left(2\sqrt{z}\right)\right)}{1024\,z^{7/2}}$$

07.22.03.5500.01

$${}_1F_2(5;4,5;z)=\frac{6\,I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.5501.01

$${}_1F_2(5;4,5;-z)=\frac{6\,J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.5502.01

$${}_1F_2\left(5;4,\frac{11}{2};z\right)=\frac{945\left(2\sqrt{z}\,\left(16\,z^2+100\,z+105\right)\cosh\left(2\sqrt{z}\right)-\left(112\,z^2+240\,z+105\right)\sinh\left(2\sqrt{z}\right)\right)}{4096\,z^{9/2}}$$

07.22.03.5503.01

$${}_1F_2\left(5;4,\frac{11}{2};-z\right)=\frac{945\left(2\sqrt{z}\,\left(16\,z^2-100\,z+105\right)\cos\left(2\sqrt{z}\right)+\left(-112\,z^2+240\,z-105\right)\sin\left(2\sqrt{z}\right)\right)}{4096\,z^{9/2}}$$

07.22.03.5504.01

$${}_1F_2(5;\,4,\,6;\,z) = \frac{30\left(4\,I_5\left(2\sqrt{z}\right) + \sqrt{z}\;I_6\left(2\sqrt{z}\right)\right)}{z^{5/2}}$$

07.22.03.5505.01

$${}_1F_2(5;\,4,\,6;\,-z) = \frac{120\,J_5\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{30\,J_6\left(2\sqrt{z}\right)}{z^2}$$

For fixed z and $a_1 = 5$, $b_1 = \frac{9}{2}$

07.22.03.5506.01

$${}_1F_2\left(5;\,\frac{9}{2},\,\frac{9}{2};\,z\right) = \frac{1}{32\,768\,z^5}\left(35\left(64\left(4\,z^3 + 15\,z^2 - 32\,z + 45\right)z^2 + 105\,\pi\left(16\,z^3 - 24\,z^2 + 33\,z - 30\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} + 210\,\pi\left(16\,z^3 - 24\,z^2 + 42\,z - 45\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5507.01

$${}_1F_2\left(5;\,\frac{9}{2},\,\frac{9}{2};\,-z\right) = -\frac{1}{32\,768\,z^5}\left(35\left(-64\left(4\,z^3 - 15\,z^2 - 32\,z - 45\right)z^2 + 105\,\pi\left(16\,z^3 + 24\,z^2 + 33\,z + 30\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} - 210\,\pi\left(16\,z^3 + 24\,z^2 + 42\,z + 45\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5508.01

$${}_1F_2\left(5;\,\frac{9}{2},\,5;\,z\right) = \frac{105\left(2\sqrt{z}\;(4\,z + 15)\cosh\left(2\sqrt{z}\right) - 3\,(8\,z + 5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.5509.01

$${}_1F_2\left(5;\,\frac{9}{2},\,5;\,-z\right) = \frac{105\left(2\sqrt{z}\;(4\,z - 15)\cos\left(2\sqrt{z}\right) + 3\,(5 - 8\,z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.5510.01

$${}_1F_2\left(5;\,\frac{9}{2},\,\frac{11}{2};\,z\right) = \frac{1}{65\,536\,z^{11/2}}\left(35\left(1890\,\pi\left(16\,z^3 - 36\,z^2 + 99\,z - 180\right)\boldsymbol{L}_4\left(2\sqrt{z}\right) + \sqrt{z}\left(128\left(4\,z^3 + 21\,z^2 - 69\,z + 180\right)z^2 + 945\,\pi\left(16\,z^3 - 24\,z^2 + 57\,z - 90\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5511.01

$${}_1F_2\left(5;\,\frac{9}{2},\,\frac{11}{2};\,-z\right) = -\frac{1}{65\,536\,z^{11/2}}\left(35\left(\sqrt{z}\left(945\,\pi\left(16\,z^3 + 24\,z^2 + 57\,z + 90\right)\boldsymbol{H}_5\left(2\sqrt{z}\right) - 128\,z^2\left(4\,z^3 - 21\,z^2 - 69\,z - 180\right)\right) - 1890\,\pi\left(16\,z^3 + 36\,z^2 + 99\,z + 180\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5512.01

$${}_1F_2\left(5;\,\frac{9}{2},\,6;\,z\right) = \frac{525\left(-2\left(11\,z^2 + 48\,z + 24\right)\cosh\left(2\sqrt{z}\right) + \sqrt{z}\left(4\,z^2 + 59\,z + 96\right)\sinh\left(2\sqrt{z}\right) + 48\right)}{64\,z^5}$$

07.22.03.5513.01

$${}_1F_2\left(5;\,\frac{9}{2},\,6;\,-z\right) = \frac{525\left(\left(22\,z^2 - 96\,z + 48\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\left(4\,z^2 - 59\,z + 96\right)\sin\left(2\sqrt{z}\right) - 48\right)}{64\,z^5}$$

For fixed z and $a_1 = 5$, $b_1 = 5$

07.22.03.5514.01

$$ {}_1F_2(5;\,5,\,5;\,z) = \frac{24\,I_4\left(2\sqrt{z}\right)}{z^2} $$

07.22.03.5515.01

$$ {}_1F_2(5;\,5,\,5;\,-z) = \frac{24\,J_4\left(2\sqrt{z}\right)}{z^2} $$

07.22.03.5516.01

$$ {}_1F_2\left(5;\,5,\,\frac{11}{2};\,z\right) = \frac{945\left(\left(16\,z^2+180\,z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,\left(8\,z+21\right)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.5517.01

$$ {}_1F_2\left(5;\,5,\,\frac{11}{2};\,-z\right) = \frac{945\left(10\sqrt{z}\,\left(8\,z-21\right)\cos\left(2\sqrt{z}\right)+\left(16\,z^2-180\,z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.5518.01

$$ {}_1F_2(5;\,5,\,6;\,z) = \frac{120\,I_5\left(2\sqrt{z}\right)}{z^{5/2}} $$

07.22.03.5519.01

$$ {}_1F_2(5;\,5,\,6;\,-z) = \frac{120\,J_5\left(2\sqrt{z}\right)}{z^{5/2}} $$

For fixed z and $a_1 = 5$, $b_1 = \frac{11}{2}$

07.22.03.5520.01

$$ {}_1F_2\left(5;\,\frac{11}{2},\,\frac{11}{2};\,z\right) = \frac{1}{131\,072\,z^{13/2}}\left(1575\left(189\,\pi\left(16\,z^4-56\,z^3+249\,z^2-990\,z+2520\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)+\right.\right. $$
$$ \left.\left.2\sqrt{z}\,\left(32\,z^2\left(4\,z^3-21\,z^2+114\,z-504\right)-189\,\pi\left(16\,z^3-48\,z^2+150\,z-315\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.5521.01

$$ {}_1F_2\left(5;\,\frac{11}{2},\,\frac{11}{2};\,-z\right) = $$
$$ -\frac{1}{131\,072\,z^{13/2}}\left(1575\left(2\sqrt{z}\,\left(32\left(4\,z^3+21\,z^2+114\,z+504\right)z^2+189\,\pi\left(16\,z^3+48\,z^2+150\,z+315\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)-\right.\right. $$
$$ \left.\left.189\,\pi\left(16\,z^4+56\,z^3+249\,z^2+990\,z+2520\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.5522.01

$$ {}_1F_2\left(5;\,\frac{11}{2},\,6;\,z\right) = \frac{4725\left(2\left(4\,z^2+87\,z+96\right)\cosh\left(2\sqrt{z}\right)-\sqrt{z}\,\left(56\,z+279\right)\sinh\left(2\sqrt{z}\right)-192\right)}{256\,z^5} $$

07.22.03.5523.01

$${}_1F_2\left(5;\ \frac{11}{2},\ 6;\ -z\right) = -\frac{4725\left(2\left(4z^2-87z+96\right)\cos\left(2\sqrt{z}\right)-\sqrt{z}\ (56z-279)\sin\left(2\sqrt{z}\right)-192\right)}{256\,z^5}$$

For fixed z and $a_1 = 5$, $b_1 = 6$

07.22.03.5524.01

$${}_1F_2(5;\ 6,\ 6;\ z) = \frac{600\left(\left(z^2+26z+24\right)I_0\left(2\sqrt{z}\right)-2\left(\sqrt{z}\ (4z+25)\,I_1\left(2\sqrt{z}\right)+12\right)\right)}{z^5}$$

07.22.03.5525.01

$${}_1F_2(5;\ 6,\ 6;\ -z) = -\frac{600\left(\left(z^2-26z+24\right)J_0\left(2\sqrt{z}\right)+2\,(25-4z)\sqrt{z}\ J_1\left(2\sqrt{z}\right)-24\right)}{z^5}$$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 \geq -\frac{11}{2}$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 = -\frac{11}{2}$

07.22.03.5526.01

$${}_1F_2\left(\frac{11}{2};\ -\frac{11}{2},\ -\frac{11}{2};\ z\right) =$$
$$\left(\frac{5\,832\,704\,z^8}{102\,112\,943\,625}+\frac{46\,923\,776\,z^7}{6\,807\,529\,575}+\frac{8192\,z^6}{467\,775}+\frac{4096\,z^5}{297\,675}+\frac{3328\,z^4}{59\,535}+\frac{6656\,z^3}{24\,255}+\frac{944\,z^2}{891}+\frac{24\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)+$$
$$\frac{1}{102\,112\,943\,625}\left(2\sqrt{z}\ \left(65\,536\,z^8+47\,775\,744\,z^7+1\,101\,373\,440\,z^6-447\,068\,160\,z^5-1\,317\,254\,400\,z^4-\right.\right.$$
$$\left.\left.6\,366\,729\,600\,z^3-28\,972\,112\,400\,z^2-86\,641\,285\,500\,z-102\,112\,943\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5527.01

$${}_1F_2\left(\frac{11}{2};\ -\frac{11}{2},\ -\frac{11}{2};\ -z\right) =$$
$$\left(\frac{5\,832\,704\,z^8}{102\,112\,943\,625}-\frac{46\,923\,776\,z^7}{6\,807\,529\,575}+\frac{8192\,z^6}{467\,775}-\frac{4096\,z^5}{297\,675}+\frac{3328\,z^4}{59\,535}-\frac{6656\,z^3}{24\,255}+\frac{944\,z^2}{891}-\frac{24\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)-$$
$$\frac{1}{102\,112\,943\,625}\left(2\sqrt{z}\ \left(65\,536\,z^8-47\,775\,744\,z^7+1\,101\,373\,440\,z^6+447\,068\,160\,z^5-1\,317\,254\,400\,z^4+\right.\right.$$
$$\left.\left.6\,366\,729\,600\,z^3-28\,972\,112\,400\,z^2+86\,641\,285\,500\,z-102\,112\,943\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5528.01

$${}_1F_2\left(\frac{11}{2};\ -\frac{11}{2},\ -\frac{9}{2};\ z\right) =$$
$$\left(-\frac{65\,536\,z^8}{9\,282\,994\,875}-\frac{2\,818\,048\,z^7}{618\,866\,325}-\frac{8192\,z^6}{93\,555}+\frac{2048\,z^5}{42\,525}+\frac{256\,z^4}{2835}+\frac{6784\,z^3}{19\,845}+\frac{656\,z^2}{567}+\frac{20\,z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{1}{3\,094\,331\,625}\left(2\sqrt{z}\ \left(458\,752\,z^7+48\,087\,040\,z^6+81\,285\,120\,z^5+79\,833\,600\,z^4+\right.\right.$$
$$\left.\left.266\,112\,000\,z^3+1\,012\,888\,800\,z^2+2\,750\,517\,000\,z+3\,094\,331\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5529.01

$${}_1F_2\left(\frac{11}{2}; -\frac{11}{2}, -\frac{9}{2}; -z\right) =$$
$$\left(-\frac{65\,536\,z^8}{9\,282\,994\,875} + \frac{2\,818\,048\,z^7}{618\,866\,325} - \frac{8192\,z^6}{93\,555} - \frac{2048\,z^5}{42\,525} + \frac{256\,z^4}{2835} - \frac{6784\,z^3}{19\,845} + \frac{656\,z^2}{567} - \frac{20\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{1}{3\,094\,331\,625}\left(2\sqrt{z}\left(-458\,752\,z^7 + 48\,087\,040\,z^6 - 81\,285\,120\,z^5 + 79\,833\,600\,z^4 - \right.\right.$$
$$\left.\left.266\,112\,000\,z^3 + 1\,012\,888\,800\,z^2 - 2\,750\,517\,000\,z + 3\,094\,331\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5530.01

$${}_1F_2\left(\frac{11}{2}; -\frac{11}{2}, -\frac{7}{2}; z\right) = \left(\frac{425\,984\,z^7}{343\,814\,625} + \frac{16\,384\,z^6}{155\,925} + \frac{512\,z^4}{2205} + \frac{640\,z^3}{1323} + \frac{416\,z^2}{315} + \frac{16\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) +$$
$$\frac{1}{1\,031\,443\,875}\left(2\sqrt{z}\left(16\,384\,z^7 + 8\,970\,240\,z^6 + 121\,927\,680\,z^5 - 111\,767\,040\,z^4 - \right.\right.$$
$$\left.\left.149\,688\,000\,z^3 - 419\,126\,400\,z^2 - 982\,327\,500\,z - 1\,031\,443\,875\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5531.01

$${}_1F_2\left(\frac{11}{2}; -\frac{11}{2}, -\frac{7}{2}; -z\right) = \left(-\frac{425\,984\,z^7}{343\,814\,625} + \frac{16\,384\,z^6}{155\,925} + \frac{512\,z^4}{2205} - \frac{640\,z^3}{1323} + \frac{416\,z^2}{315} - \frac{16\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{1}{1\,031\,443\,875}\left(2\sqrt{z}\left(16\,384\,z^7 - 8\,970\,240\,z^6 + 121\,927\,680\,z^5 + 111\,767\,040\,z^4 - \right.\right.$$
$$\left.\left.149\,688\,000\,z^3 + 419\,126\,400\,z^2 - 982\,327\,500\,z + 1\,031\,443\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5532.01

$${}_1F_2\left(\frac{11}{2}; -\frac{11}{2}, -\frac{5}{2}; z\right) =$$
$$\left(-\frac{16\,384\,z^7}{147\,349\,125} - \frac{16\,384\,z^6}{334\,125} - \frac{2048\,z^5}{6075} + \frac{512\,z^4}{2025} + \frac{64\,z^3}{63} + \frac{224\,z^2}{135} + \frac{12\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{147\,349\,125}\left(2\sqrt{z}\right.$$
$$\left.\left(290\,816\,z^6 + 18\,063\,360\,z^5 - 37\,255\,680\,z^4 + 69\,189\,120\,z^3 + 87\,318\,000\,z^2 + 157\,172\,400\,z + 147\,349\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5533.01

$${}_1F_2\left(\frac{11}{2}; -\frac{11}{2}, -\frac{5}{2}; -z\right) =$$
$$\left(\frac{16\,384\,z^7}{147\,349\,125} - \frac{16\,384\,z^6}{334\,125} + \frac{2048\,z^5}{6075} + \frac{512\,z^4}{2025} - \frac{64\,z^3}{63} + \frac{224\,z^2}{135} - \frac{12\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{147\,349\,125}\left(2\sqrt{z}\right.$$
$$\left.\left(290\,816\,z^6 - 18\,063\,360\,z^5 - 37\,255\,680\,z^4 - 69\,189\,120\,z^3 + 87\,318\,000\,z^2 - 157\,172\,400\,z + 147\,349\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5534.01

$${}_1F_2\left(\frac{11}{2}; -\frac{11}{2}, -\frac{3}{2}; z\right) = \left(\frac{4096\,z^6}{467\,775} + \frac{2048\,z^5}{6075} - \frac{512\,z^4}{405} + \frac{1024\,z^3}{945} + \frac{80\,z^2}{27} + \frac{8\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) +$$
$$\frac{1}{29\,469\,825}\left(2\sqrt{z}\left(4096\,z^6 + 1\,354\,752\,z^5 + 18\,627\,840\,z^3 - 45\,405\,360\,z^2 - 39\,293\,100\,z - 29\,469\,825\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5535.01

$${}_1F_2\left(\frac{11}{2};-\frac{11}{2},-\frac{3}{2};-z\right)=\left(\frac{4096\,z^6}{467\,775}-\frac{2048\,z^5}{6075}-\frac{512\,z^4}{405}-\frac{1024\,z^3}{945}+\frac{80\,z^2}{27}-\frac{8\,z}{3}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{1}{29\,469\,825}\left(2\sqrt{z}\left(-4096\,z^6+1\,354\,752\,z^5+18\,627\,840\,z^3+45\,405\,360\,z^2-39\,293\,100\,z+29\,469\,825\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5536.01

$${}_1F_2\left(\frac{11}{2};-\frac{11}{2},-\frac{1}{2};z\right)=\left(-\frac{4096\,z^6}{9\,823\,275}-\frac{1024\,z^5}{11\,025}+\frac{512\,z^4}{945}-\frac{2816\,z^3}{945}+\frac{16\,z^2}{9}+4\,z+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\left(6144\,z^5+98\,560\,z^4-295\,680\,z^3-1\,552\,320\,z^2+2\,910\,600\,z+1\,091\,475\right)\sinh\left(2\sqrt{z}\right)}{1\,091\,475}$$

07.22.03.5537.01

$${}_1F_2\left(\frac{11}{2};-\frac{11}{2},-\frac{1}{2};-z\right)=\left(-\frac{4096\,z^6}{9\,823\,275}+\frac{1024\,z^5}{11\,025}+\frac{512\,z^4}{945}+\frac{2816\,z^3}{945}+\frac{16\,z^2}{9}-4\,z+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\left(-6144\,z^5+98\,560\,z^4+295\,680\,z^3-1\,552\,320\,z^2-2\,910\,600\,z+1\,091\,475\right)\sin\left(2\sqrt{z}\right)}{1\,091\,475}$$

07.22.03.5538.01

$${}_1F_2\left(\frac{11}{2};-\frac{11}{2},\frac{1}{2};z\right)=\left(\frac{4096\,z^5}{893\,025}-\frac{256\,z^4}{19\,845}+\frac{128\,z^3}{315}-\frac{64\,z^2}{27}+1\right)\cosh\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\left(1024\,z^5+126\,720\,z^4-1\,108\,800\,z^3+2\,328\,480\,z^2+13\,097\,700\,z-9\,823\,275\right)\sinh\left(2\sqrt{z}\right)}{9\,823\,275}$$

07.22.03.5539.01

$${}_1F_2\left(\frac{11}{2};-\frac{11}{2},\frac{1}{2};-z\right)=\left(-\frac{4096\,z^5}{893\,025}-\frac{256\,z^4}{19\,845}-\frac{128\,z^3}{315}-\frac{64\,z^2}{27}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\left(1024\,z^5-126\,720\,z^4-1\,108\,800\,z^3-2\,328\,480\,z^2+13\,097\,700\,z+9\,823\,275\right)\sin\left(2\sqrt{z}\right)}{9\,823\,275}$$

07.22.03.5540.01

$${}_1F_2\left(\frac{11}{2};-\frac{11}{2},1;z\right)=\frac{1}{9\,823\,275}\left(3\left(13\,312\,z^5-121\,600\,z^4+1\,680\,000\,z^3-5\,292\,000\,z^2-5\,953\,500\,z+3\,274\,425\right)I_0\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(1024\,z^5+80\,640\,z^4-624\,000\,z^3-1\,764\,000\,z^2+17\,860\,500\,z-893\,025\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5541.01

$${}_1F_2\left(\frac{11}{2};-\frac{11}{2},1;-z\right)=\frac{1}{9\,823\,275}\left(2\sqrt{z}\left(1024\,z^5-80\,640\,z^4-624\,000\,z^3+1\,764\,000\,z^2+17\,860\,500\,z+893\,025\right)J_1\left(2\sqrt{z}\right)-\right.$$
$$\left.3\left(13\,312\,z^5+121\,600\,z^4+1\,680\,000\,z^3+5\,292\,000\,z^2-5\,953\,500\,z-3\,274\,425\right)J_0\left(2\sqrt{z}\right)\right)$$

07.22.03.5542.01

$${}_1F_2\left(\frac{11}{2};-\frac{11}{2},\frac{3}{2};z\right)=$$
$$\left(\frac{1024\,z^5}{9\,823\,275}+\frac{256\,z^4}{59\,535}-\frac{64\,z^3}{6615}-\frac{64\,z^2}{135}+\frac{4\,z}{3}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(256\,z^4-3840\,z^3+35\,280\,z^2-297\,675\right)\sinh\left(2\sqrt{z}\right)}{297\,675}$$

07.22.03.5543.01

$${}_1F_2\left(\frac{11}{2}; -\frac{11}{2}, \frac{3}{2}; -z\right) =$$

$$\left(-\frac{1024\,z^5}{9\,823\,275} + \frac{256\,z^4}{59\,535} + \frac{64\,z^3}{6615} - \frac{64\,z^2}{135} - \frac{4\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256\,z^4 + 3840\,z^3 + 35\,280\,z^2 - 297\,675\right)\sin\left(2\sqrt{z}\right)}{297\,675}$$

07.22.03.5544.01

$${}_1F_2\left(\frac{11}{2}; -\frac{11}{2}, 2; z\right) =$$

$$\frac{1}{9\,823\,275\sqrt{z}}\left(\left(29\,696\,z^5 - 456\,960\,z^4 + 3\,024\,000\,z^3 + 5\,292\,000\,z^2 - 21\,829\,500\,z + 9\,823\,275\right) I_1\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1024\,z^5 + 11\,520\,z^4 + 336\,000\,z^3 - 5\,292\,000\,z^2 + 1\,984\,500\,z + 12\,006\,225\right) I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5545.01

$${}_1F_2\left(\frac{11}{2}; -\frac{11}{2}, 2; -z\right) =$$

$$\frac{1}{9\,823\,275\sqrt{z}}\left(\left(-29\,696\,z^5 - 456\,960\,z^4 - 3\,024\,000\,z^3 + 5\,292\,000\,z^2 + 21\,829\,500\,z + 9\,823\,275\right) J_1\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1024\,z^5 - 11\,520\,z^4 + 336\,000\,z^3 + 5\,292\,000\,z^2 + 1\,984\,500\,z - 12\,006\,225\right) J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5546.01

$${}_1F_2\left(\frac{11}{2}; -\frac{11}{2}, \frac{5}{2}; z\right) = \left(\frac{256\,z^4}{155\,925} - \frac{512\,z^3}{19\,845} - \frac{16\,z^2}{315} + \frac{8\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(256\,z^4 - 4224\,z^3 + 166\,320\,z^2 - 873\,180\,z - 3\,274\,425\right)\sinh\left(2\sqrt{z}\right)}{3\,274\,425}$$

07.22.03.5547.01

$${}_1F_2\left(\frac{11}{2}; -\frac{11}{2}, \frac{5}{2}; -z\right) =$$

$$\left(\frac{256\,z^4}{155\,925} + \frac{512\,z^3}{19\,845} - \frac{16\,z^2}{315} - \frac{8\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256\,z^4 + 4224\,z^3 + 166\,320\,z^2 + 873\,180\,z - 3\,274\,425\right)\sin\left(2\sqrt{z}\right)}{3\,274\,425}$$

07.22.03.5548.01

$${}_1F_2\left(\frac{11}{2}; -\frac{11}{2}, 3; z\right) =$$

$$\frac{1}{9\,823\,275\,z}\left(2\left(\left(19\,456\,z^5 - 241\,920\,z^4 - 604\,800\,z^3 + 8\,316\,000\,z^2 - 3\,118\,500\,z + 9\,823\,275\right) I_2\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1024\,z^5 - 26\,880\,z^4 + 604\,800\,z^3 - 756\,000\,z^2 - 9\,355\,500\,z - 5\,145\,525\right) I_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5549.01

$${}_1F_2\left(\frac{11}{2}; -\frac{11}{2}, 3; -z\right) =$$

$$\frac{1}{9\,823\,275\,z}\left(2\left(\left(-19\,456\,z^5 - 241\,920\,z^4 + 604\,800\,z^3 + 8\,316\,000\,z^2 + 3\,118\,500\,z + 9\,823\,275\right) J_2\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1024\,z^5 + 26\,880\,z^4 + 604\,800\,z^3 + 756\,000\,z^2 - 9\,355\,500\,z + 5\,145\,525\right) J_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5550.01

$${}_1F_2\left(\frac{11}{2};-\frac{11}{2},\frac{7}{2};z\right)=$$
$$\left(\frac{256\,z^4}{654\,885}-\frac{128\,z^3}{8085}+\frac{80\,z^2}{567}+\frac{12\,z}{7}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(512\,z^3+7392\,z^2-249\,480\,z-654\,885\right)\sinh\left(2\sqrt{z}\right)}{654\,885}$$

07.22.03.5551.01

$${}_1F_2\left(\frac{11}{2};-\frac{11}{2},\frac{7}{2};-z\right)=$$
$$\left(\frac{256\,z^4}{654\,885}+\frac{128\,z^3}{8085}+\frac{80\,z^2}{567}-\frac{12\,z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(512\,z^3-7392\,z^2-249\,480\,z+654\,885\right)\sin\left(2\sqrt{z}\right)}{654\,885}$$

07.22.03.5552.01

$${}_1F_2\left(\frac{11}{2};-\frac{11}{2},4;z\right)=$$
$$\frac{1}{3\,274\,425\,z^{3/2}}\left(2\left(9\left(1024\,z^5+3840\,z^4-147\,840\,z^3-110\,880\,z^2-1\,593\,900\,z+1\,091\,475\right)I_3\left(2\sqrt{z}\right)+2\sqrt{z}\right.\right.$$
$$\left.\left.\left(1024\,z^5-34\,560\,z^4+120\,960\,z^3+2\,328\,480\,z^2+5\,613\,300\,z+18\,866\,925\right)I_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5553.01

$${}_1F_2\left(\frac{11}{2};-\frac{11}{2},4;-z\right)=$$
$$\frac{1}{3\,274\,425\,z^{3/2}}\left(2\left(9\left(-1024\,z^5+3840\,z^4+147\,840\,z^3-110\,880\,z^2+1\,593\,900\,z+1\,091\,475\right)J_3\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1024\,z^5+34\,560\,z^4+120\,960\,z^3-2\,328\,480\,z^2+5\,613\,300\,z-18\,866\,925\right)J_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5554.01

$${}_1F_2\left(\frac{11}{2};-\frac{11}{2},\frac{9}{2};z\right)=\left(-\frac{128\,z^3}{31\,185}+\frac{224\,z^2}{891}+\frac{16\,z}{9}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(64\,z^3-1344\,z^2-41\,580\,z-93\,555\right)\sinh\left(2\sqrt{z}\right)}{93\,555}$$

07.22.03.5555.01

$${}_1F_2\left(\frac{11}{2};-\frac{11}{2},\frac{9}{2};-z\right)=\left(\frac{128\,z^3}{31\,185}+\frac{224\,z^2}{891}-\frac{16\,z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(64\,z^3+1344\,z^2-41\,580\,z+93\,555\right)\sin\left(2\sqrt{z}\right)}{93\,555}$$

07.22.03.5556.01

$${}_1F_2\left(\frac{11}{2};-\frac{11}{2},5;z\right)=$$
$$\frac{1}{3\,274\,425\,z^2}\left(8\left(\left(-1024\,z^5+126\,720\,z^4+570\,240\,z^3+8\,316\,000\,z^2+28\,315\,980\,z+9\,823\,275\right)I_4\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1024\,z^5-11\,520\,z^4-316\,800\,z^3-2\,328\,480\,z^2-21\,330\,540\,z-80\,613\,225\right)I_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5557.01

$${}_1F_2\left(\frac{11}{2};-\frac{11}{2},5;-z\right)=$$
$$\frac{1}{3\,274\,425\,z^2}\left(8\left(\left(1024\,z^5+126\,720\,z^4-570\,240\,z^3+8\,316\,000\,z^2-28\,315\,980\,z+9\,823\,275\right)J_4\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1024\,z^5+11\,520\,z^4-316\,800\,z^3+2\,328\,480\,z^2-21\,330\,540\,z+80\,613\,225\right)J_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5558.01

$${}_1F_2\left(\frac{11}{2}; -\frac{11}{2}, \frac{11}{2}; z\right) = \left(\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} + \frac{20\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16\,z^2 + 240\,z + 495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5559.01

$${}_1F_2\left(\frac{11}{2}; -\frac{11}{2}, \frac{11}{2}; -z\right) = \left(-\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} - \frac{20\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(16\,z^2 - 240\,z + 495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5560.01

$${}_1F_2\left(\frac{11}{2}; -\frac{11}{2}, 6; z\right) =$$
$$\frac{1}{654\,885\,z^{5/2}}\left(8\left(2\sqrt{z}\left(1024\,z^5 + 42\,240\,z^4 + 950\,400\,z^3 + 19\,625\,760\,z^2 + 245\,114\,100\,z + 1\,375\,913\,385\right)I_6\left(2\sqrt{z}\right) - \right.\right.$$
$$\left.\left.11\left(1024\,z^5 + 19\,200\,z^4 + 466\,560\,z^3 + 6\,380\,640\,z^2 + 41\,992\,020\,z - 893\,025\right)I_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5561.01

$${}_1F_2\left(\frac{11}{2}; -\frac{11}{2}, 6; -z\right) =$$
$$\frac{1}{654\,885\,z^{5/2}}\left(8\left(11\left(1024\,z^5 - 19\,200\,z^4 + 466\,560\,z^3 - 6\,380\,640\,z^2 + 41\,992\,020\,z + 893\,025\right)J_5\left(2\sqrt{z}\right) + \right.\right.$$
$$\left.\left.2\sqrt{z}\left(1024\,z^5 - 42\,240\,z^4 + 950\,400\,z^3 - 19\,625\,760\,z^2 + 245\,114\,100\,z - 1\,375\,913\,385\right)J_6\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 = -\frac{9}{2}$

07.22.03.5562.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, -\frac{9}{2}; z\right) =$$
$$\frac{1}{843\,908\,625}\left(5\left(262\,144\,z^7 + 25\,018\,368\,z^6 + 48\,771\,072\,z^5 + 27\,578\,880\,z^4 + 74\,753\,280\,z^3 + 216\,367\,200\,z^2 + \right.\right.$$
$$\left.383\,405\,400\,z + 168\,781\,725\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(16\,384\,z^7 + 9\,584\,640\,z^6 + 171\,939\,840\,z^5 - \right.$$
$$\left.\left.50\,803\,200\,z^4 - 106\,142\,400\,z^3 - 326\,138\,400\,z^2 - 791\,815\,500\,z - 843\,908\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5563.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, -\frac{9}{2}; -z\right) =$$
$$\frac{1}{843\,908\,625}\left(2\sqrt{z}\left(16\,384\,z^7 - 9\,584\,640\,z^6 + 171\,939\,840\,z^5 + 50\,803\,200\,z^4 - 106\,142\,400\,z^3 + 326\,138\,400\,z^2 - \right.\right.$$
$$\left.791\,815\,500\,z + 843\,908\,625\right)\sin\left(2\sqrt{z}\right) - 5\left(262\,144\,z^7 - 25\,018\,368\,z^6 + 48\,771\,072\,z^5 - \right.$$
$$\left.\left.27\,578\,880\,z^4 + 74\,753\,280\,z^3 - 216\,367\,200\,z^2 + 383\,405\,400\,z - 168\,781\,725\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.5564.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, -\frac{7}{2}; z\right) =$$
$$\left(-\frac{16\,384\,z^7}{93\,767\,625} - \frac{557\,056\,z^6}{6\,251\,175} - \frac{2048\,z^5}{1575} + \frac{512\,z^4}{945} + \frac{1472\,z^3}{2205} + \frac{3296\,z^2}{2205} + \frac{148\,z}{63} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{6\,251\,175}$$
$$\left(2\sqrt{z}\left(20\,480\,z^6 + 1\,667\,072\,z^5 + 2\,032\,128\,z^4 + 1\,451\,520\,z^3 + 3\,099\,600\,z^2 + 6\,350\,400\,z + 6\,251\,175\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5565.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, -\frac{7}{2}; -z\right) = \left(\frac{16\,384\,z^7}{93\,767\,625} - \frac{557\,056\,z^6}{6\,251\,175} + \frac{2048\,z^5}{1575} + \frac{512\,z^4}{945} - \frac{1472\,z^3}{2205} + \frac{3296\,z^2}{2205} - \frac{148\,z}{63} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{6\,251\,175}\left(2\sqrt{z}\,\left(20\,480\,z^6 - 1\,667\,072\,z^5 + 2\,032\,128\,z^4 - 1\,451\,520\,z^3 + 3\,099\,600\,z^2 - 6\,350\,400\,z + 6\,251\,175\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5566.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, -\frac{5}{2}; z\right) = \left(\frac{94\,208\,z^6}{4\,465\,125} + \frac{8192\,z^5}{6075} - \frac{512\,z^4}{2025} + \frac{512\,z^3}{315} + \frac{368\,z^2}{189} + \frac{112\,z}{45} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{13\,395\,375}\left(2\sqrt{z}\,\left(4096\,z^6 + 1\,735\,680\,z^5 + 16\,934\,400\,z^4 - 11\,854\,080\,z^3 - 10\,206\,000\,z^2 - 15\,479\,100\,z - 13\,395\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5567.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, -\frac{5}{2}; -z\right) = \left(\frac{94\,208\,z^6}{4\,465\,125} - \frac{8192\,z^5}{6075} - \frac{512\,z^4}{2025} - \frac{512\,z^3}{315} + \frac{368\,z^2}{189} - \frac{112\,z}{45} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{1}{13\,395\,375}\left(2\sqrt{z}\,\left(4096\,z^6 - 1\,735\,680\,z^5 + 16\,934\,400\,z^4 + 11\,854\,080\,z^3 - 10\,206\,000\,z^2 + 15\,479\,100\,z - 13\,395\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5568.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, -\frac{3}{2}; z\right) = \left(-\frac{4096\,z^6}{2\,679\,075} - \frac{1024\,z^5}{2025} - \frac{512\,z^4}{243} + \frac{256\,z^3}{405} + \frac{80\,z^2}{21} + \frac{76\,z}{27} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(63\,488\,z^5 + 2\,822\,400\,z^4 - 5\,080\,320\,z^3 + 5\,866\,560\,z^2 + 3\,969\,000\,z + 2\,679\,075\right)\sinh\left(2\sqrt{z}\right)}{2\,679\,075}$$

07.22.03.5569.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, -\frac{3}{2}; -z\right) = \left(-\frac{4096\,z^6}{2\,679\,075} + \frac{1024\,z^5}{2025} - \frac{512\,z^4}{243} - \frac{256\,z^3}{405} + \frac{80\,z^2}{21} - \frac{76\,z}{27} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(-63\,488\,z^5 + 2\,822\,400\,z^4 + 5\,080\,320\,z^3 + 5\,866\,560\,z^2 - 3\,969\,000\,z + 2\,679\,075\right)\sin\left(2\sqrt{z}\right)}{2\,679\,075}$$

07.22.03.5570.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, -\frac{1}{2}; z\right) = \left(\frac{2048\,z^5}{33\,075} + \frac{4352\,z^4}{2835} - \frac{4096\,z^3}{945} + \frac{64\,z^2}{63} + \frac{40\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(1024\,z^5 + 241\,920\,z^4 - 302\,400\,z^3 + 2\,479\,680\,z^2 - 2\,778\,300\,z - 893\,025\right)\sinh\left(2\sqrt{z}\right)}{893\,025}$$

07.22.03.5571.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, -\frac{1}{2}; -z\right) = \left(-\frac{2048\,z^5}{33\,075} + \frac{4352\,z^4}{2835} + \frac{4096\,z^3}{945} + \frac{64\,z^2}{63} - \frac{40\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(1024\,z^5 - 241\,920\,z^4 - 302\,400\,z^3 - 2\,479\,680\,z^2 - 2\,778\,300\,z + 893\,025\right)\sin\left(2\sqrt{z}\right)}{893\,025}$$

07.22.03.5572.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, \frac{1}{2}; z\right) = \left(-\frac{1024\,z^5}{893\,025} - \frac{3328\,z^4}{19\,845} + \frac{832\,z^3}{945} - \frac{512\,z^2}{189} - \frac{4\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(256\,z^4 + 1792\,z^3 + 336\,z^2 - 35\,280\,z + 19\,845\right)\sinh\left(2\sqrt{z}\right)}{19\,845}$$

07.22.03.5573.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, \frac{1}{2}; -z\right) = \left(\frac{1024\,z^5}{893\,025} - \frac{3328\,z^4}{19\,845} - \frac{832\,z^3}{945} - \frac{512\,z^2}{189} + \frac{4\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(256\,z^4 - 1792\,z^3 + 336\,z^2 + 35\,280\,z + 19\,845\right)\sin\left(2\sqrt{z}\right)}{19\,845}$$

07.22.03.5574.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, 1; z\right) = \frac{1}{893\,025}\left(-320\left(64\,z^3 - 48\,z^2 + 2700\,z - 11\,025\right)I_1\left(2\sqrt{z}\right)z^{3/2} - \left(1024\,z^5 + 111\,360\,z^4 - 662\,400\,z^3 + 1\,260\,000\,z^2 + 1\,984\,500\,z - 893\,025\right)I_0\left(2\sqrt{z}\right)\right)$$

07.22.03.5575.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, 1; -z\right) = \frac{1}{893\,025}\left(320\left(64\,z^3 + 48\,z^2 + 2700\,z + 11\,025\right)J_1\left(2\sqrt{z}\right)z^{3/2} + \left(1024\,z^5 - 111\,360\,z^4 - 662\,400\,z^3 - 1\,260\,000\,z^2 + 1\,984\,500\,z + 893\,025\right)J_0\left(2\sqrt{z}\right)\right)$$

07.22.03.5576.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, \frac{3}{2}; z\right) = \left(-\frac{256\,z^4}{25\,515} + \frac{256\,z^3}{3969} - \frac{208\,z^2}{315} + \frac{32\,z}{27} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(256\,z^4 + 17\,280\,z^3 - 95\,760\,z^2 - 132\,300\,z + 893\,025\right)\sinh\left(2\sqrt{z}\right)}{893\,025}$$

07.22.03.5577.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, \frac{3}{2}; -z\right) = \left(-\frac{256\,z^4}{25\,515} - \frac{256\,z^3}{3969} - \frac{208\,z^2}{315} - \frac{32\,z}{27} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(256\,z^4 - 17\,280\,z^3 - 95\,760\,z^2 + 132\,300\,z + 893\,025\right)\sin\left(2\sqrt{z}\right)}{893\,025}$$

07.22.03.5578.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, 2; z\right) = \frac{1}{893\,025}\left(\frac{\left(-1024\,z^5 - 49\,920\,z^4 + 201\,600\,z^3 + 756\,000\,z^2 - 1\,984\,500\,z + 893\,025\right)I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 60\left(256\,z^4 - 2560\,z^3 + 16\,800\,z^2 - 33\,075\right)I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5579.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, 2; -z\right) = \frac{1}{893\,025}\left(\frac{\left(1024\,z^5 - 49\,920\,z^4 - 201\,600\,z^3 + 756\,000\,z^2 + 1\,984\,500\,z + 893\,025\right)J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 60\left(256\,z^4 + 2560\,z^3 + 16\,800\,z^2 - 33\,075\right)J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5580.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, \frac{5}{2}; z\right) =$$

$$\left(-\frac{256\,z^4}{297\,675} - \frac{128\,z^3}{19\,845} - \frac{80\,z^2}{441} + \frac{68\,z}{45} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(512\,z^3 - 6240\,z^2 + 17\,640\,z + 99\,225\right)\sinh\left(2\sqrt{z}\right)}{99\,225}$$

07.22.03.5581.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, \frac{5}{2}; -z\right) =$$

$$\left(-\frac{256\,z^4}{297\,675} + \frac{128\,z^3}{19\,845} - \frac{80\,z^2}{441} - \frac{68\,z}{45} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(512\,z^3 + 6240\,z^2 + 17\,640\,z - 99\,225\right)\sin\left(2\sqrt{z}\right)}{99\,225}$$

07.22.03.5582.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, 3; z\right) = -\frac{1}{893\,025\,z}\left(2\left(\left(1024\,z^5 + 8960\,z^4 + 120\,960\,z^3 - 756\,000\,z^2 + 472\,500\,z - 893\,025\right)I_2\left(2\sqrt{z}\right) + 40\sqrt{z}\,\left(256\,z^4 - 2688\,z^3 + 37\,800\,z + 14\,175\right)I_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5583.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, 3; -z\right) = \frac{1}{893\,025\,z}\left(2\left(\left(1024\,z^5 - 8960\,z^4 + 120\,960\,z^3 + 756\,000\,z^2 + 472\,500\,z + 893\,025\right)J_2\left(2\sqrt{z}\right) + 40\sqrt{z}\,\left(256\,z^4 + 2688\,z^3 - 37\,800\,z + 14\,175\right)J_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5584.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, \frac{7}{2}; z\right) =$$

$$\frac{1}{59\,535}\left(\left(-768\,z^3 + 2400\,z^2 + 98\,280\,z + 59\,535\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(64\,z^3 - 1632\,z^2 + 18\,900\,z + 59\,535\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5585.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, \frac{7}{2}; -z\right) =$$

$$\frac{1}{59\,535}\left(3\left(256\,z^3 + 800\,z^2 - 32\,760\,z + 19\,845\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(64\,z^3 + 1632\,z^2 + 18\,900\,z - 59\,535\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5586.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, 4; z\right) =$$

$$\frac{1}{297\,675\,z^{3/2}}\left(2\left(\left(-1024\,z^5 + 11\,520\,z^4 - 120\,960\,z^3 + 30\,240\,z^2 - 1\,077\,300\,z + 893\,025\right)I_3\left(2\sqrt{z}\right) + 20\sqrt{z}\,\left(-256\,z^4 + 18\,144\,z^2 + 30\,240\,z + 116\,235\right)I_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5587.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, 4; -z\right) =$$

$$\frac{1}{297\,675\,z^{3/2}}\left(2\left(\left(1024\,z^5 + 11\,520\,z^4 + 120\,960\,z^3 + 30\,240\,z^2 + 1\,077\,300\,z + 893\,025\right)J_3\left(2\sqrt{z}\right) + 20\sqrt{z}\,\left(256\,z^4 - 18\,144\,z^2 + 30\,240\,z - 116\,235\right)J_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5588.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, \frac{9}{2}; z\right) = \left(-\frac{64\,z^3}{8505} + \frac{32\,z^2}{189} + \frac{140\,z}{81} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(16\,z^2 - 3360\,z - 8505\right)\sinh\left(2\sqrt{z}\right)}{8505}$$

07.22.03.5589.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, \frac{9}{2}; -z\right) = \left(\frac{64\,z^3}{8505} + \frac{32\,z^2}{189} - \frac{140\,z}{81} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(16\,z^2 + 3360\,z - 8505\right)\sin\left(2\sqrt{z}\right)}{8505}$$

07.22.03.5590.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, 5; z\right) =$$
$$-\frac{1}{297\,675\,z^2}\left(8\left(\left(1024\,z^5 - 11\,520\,z^4 - 17\,280\,z^3 - 514\,080\,z^2 - 1\,281\,420\,z - 893\,025\right)I_4\left(2\sqrt{z}\right) + 720\sqrt{z}\right.\right.$$
$$\left.\left.\left(64\,z^3 + 336\,z^2 + 3276\,z + 11\,655\right)I_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5591.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, 5; -z\right) =$$
$$\frac{1}{297\,675\,z^2}\left(8\left(\left(1024\,z^5 + 11\,520\,z^4 - 17\,280\,z^3 + 514\,080\,z^2 - 1\,281\,420\,z + 893\,025\right)J_4\left(2\sqrt{z}\right) - 720\sqrt{z}\right.\right.$$
$$\left.\left.\left(64\,z^3 - 336\,z^2 + 3276\,z - 11\,655\right)J_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5592.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, \frac{11}{2}; z\right) = \left(\frac{16\,z^2}{63} + \frac{16\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\,\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5593.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, \frac{11}{2}; -z\right) = \left(\frac{16\,z^2}{63} - \frac{16\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\,\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5594.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, 6; z\right) =$$
$$-\frac{1}{59\,535\,z^{5/2}}\left(8\left(\left(1024\,z^5 + 8960\,z^4 + 259\,200\,z^3 + 3\,322\,080\,z^2 + 22\,184\,820\,z - 893\,025\right)I_5\left(2\sqrt{z}\right) - 20\sqrt{z}\right.\right.$$
$$\left.\left.\left(256\,z^4 + 4608\,z^3 + 95\,904\,z^2 + 1\,173\,312\,z + 6\,556\,221\right)I_6\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5595.01

$${}_1F_2\left(\frac{11}{2}; -\frac{9}{2}, 6; -z\right) =$$
$$\frac{1}{59\,535\,z^{5/2}}\left(8\left(\left(1024\,z^5 - 8960\,z^4 + 259\,200\,z^3 - 3\,322\,080\,z^2 + 22\,184\,820\,z + 893\,025\right)J_5\left(2\sqrt{z}\right) - 20\sqrt{z}\right.\right.$$
$$\left.\left.\left(256\,z^4 - 4608\,z^3 + 95\,904\,z^2 - 1\,173\,312\,z + 6\,556\,221\right)J_6\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 = -\frac{7}{2}$

07.22.03.5596.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, -\frac{7}{2}; z\right) = \frac{1}{10\,418\,625}$$
$$\left(\left(290\,816\,z^6 + 21\,264\,384\,z^5 + 30\,481\,920\,z^4 + 11\,612\,160\,z^3 + 18\,733\,680\,z^2 + 25\,515\,000\,z + 10\,418\,625\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(4096\,z^6 + 1\,870\,848\,z^5 + 25\,165\,824\,z^4 - 5\,080\,320\,z^3 - 6\,940\,080\,z^2 - 11\,623\,500\,z - 10\,418\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5597.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, -\frac{7}{2}; -z\right) = \frac{1}{10\,418\,625}$$
$$\left(\left(290\,816\,z^6 - 21\,264\,384\,z^5 + 30\,481\,920\,z^4 - 11\,612\,160\,z^3 + 18\,733\,680\,z^2 - 25\,515\,000\,z + 10\,418\,625\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4096\,z^6 - 1\,870\,848\,z^5 + 25\,165\,824\,z^4 + 5\,080\,320\,z^3 - 6\,940\,080\,z^2 + 11\,623\,500\,z - 10\,418\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5598.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, -\frac{5}{2}; z\right) = \left(-\frac{4096\,z^6}{1\,488\,375} - \frac{533\,504\,z^5}{496\,125} - \frac{512\,z^4}{45} + \frac{256\,z^3}{75} + \frac{432\,z^2}{175} + \frac{92\,z}{35} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(22\,528\,z^5 + 1\,371\,904\,z^4 + 1\,128\,960\,z^3 + 544\,320\,z^2 + 642\,600\,z + 496\,125\right)\sinh\left(2\sqrt{z}\right)}{496\,125}$$

07.22.03.5599.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, -\frac{5}{2}; -z\right) = \left(-\frac{4096\,z^6}{1\,488\,375} + \frac{533\,504\,z^5}{496\,125} - \frac{512\,z^4}{45} - \frac{256\,z^3}{75} + \frac{432\,z^2}{175} - \frac{92\,z}{35} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(22\,528\,z^5 - 1\,371\,904\,z^4 + 1\,128\,960\,z^3 - 544\,320\,z^2 + 642\,600\,z - 496\,125\right)\sin\left(2\sqrt{z}\right)}{496\,125}$$

07.22.03.5600.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, -\frac{3}{2}; z\right) = \left(\frac{4096\,z^5}{19\,845} + \frac{256\,z^4}{27} - \frac{128\,z^3}{45} + \frac{192\,z^2}{35} + \frac{64\,z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(1024\,z^5 + 323\,328\,z^4 + 2\,116\,800\,z^3 - 1\,058\,400\,z^2 - 510\,300\,z - 297\,675\right)\sinh\left(2\sqrt{z}\right)}{297\,675}$$

07.22.03.5601.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, -\frac{3}{2}; -z\right) = \left(-\frac{4096\,z^5}{19\,845} + \frac{256\,z^4}{27} + \frac{128\,z^3}{45} + \frac{192\,z^2}{35} - \frac{64\,z}{21} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(1024\,z^5 - 323\,328\,z^4 + 2\,116\,800\,z^3 + 1\,058\,400\,z^2 - 510\,300\,z + 297\,675\right)\sin\left(2\sqrt{z}\right)}{297\,675}$$

07.22.03.5602.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, -\frac{1}{2}; z\right) = \left(-\frac{1024\,z^5}{99\,225} - \frac{256\,z^4}{105} - \frac{320\,z^3}{63} - \frac{128\,z^2}{105} + \frac{36\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(13\,568\,z^4 + 403\,200\,z^3 - 589\,680\,z^2 + 378\,000\,z + 99\,225\right)\sinh\left(2\sqrt{z}\right)}{99\,225}$$

07.22.03.5603.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, -\frac{1}{2}; -z\right) = \left(\frac{1024\,z^5}{99\,225} - \frac{256\,z^4}{105} + \frac{320\,z^3}{63} - \frac{128\,z^2}{105} - \frac{36\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(13\,568\,z^4 - 403\,200\,z^3 - 589\,680\,z^2 - 378\,000\,z + 99\,225\right)\sin\left(2\sqrt{z}\right)}{99\,225}$$

07.22.03.5604.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, \frac{1}{2}; z\right) = \frac{1}{99\,225}\left(45\left(256\,z^4 + 3584\,z^3 - 6384\,z^2 - 2520\,z + 2205\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(256\,z^4 + 40\,320\,z^3 - 75\,600\,z^2 + 245\,700\,z - 99\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5605.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, \frac{1}{2}; -z\right) = \frac{1}{99\,225}\left(45\left(256\,z^4 - 3584\,z^3 - 6384\,z^2 + 2520\,z + 2205\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-256\,z^4 + 40\,320\,z^3 + 75\,600\,z^2 + 245\,700\,z + 99\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5606.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, 1; z\right) = \frac{1}{99\,225}\left(\left(10\,496\,z^4 + 83\,712\,z^3 - 82\,080\,z^2 - 277\,200\,z + 99\,225\right)I_0\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(256\,z^4 + 30\,464\,z^3 - 102\,816\,z^2 + 212\,400\,z + 11\,025\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5607.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, 1; -z\right) = \frac{1}{99\,225}\left(\left(10\,496\,z^4 - 83\,712\,z^3 - 82\,080\,z^2 + 277\,200\,z + 99\,225\right)J_0\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-256\,z^4 + 30\,464\,z^3 + 102\,816\,z^2 + 212\,400\,z - 11\,025\right)J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5608.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, \frac{3}{2}; z\right) = \frac{1}{99\,225}\left(\left(256\,z^4 + 21\,888\,z^3 - 87\,696\,z^2 + 94\,500\,z + 99\,225\right)\cosh\left(2\sqrt{z}\right) + 18\sqrt{z}\,\left(256\,z^3 + 224\,z^2 + 4200\,z - 11\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5609.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, \frac{3}{2}; -z\right) = \frac{1}{99\,225}\left(\left(256\,z^4 - 21\,888\,z^3 - 87\,696\,z^2 - 94\,500\,z + 99\,225\right)\cos\left(2\sqrt{z}\right) + 18\sqrt{z}\,\left(256\,z^3 - 224\,z^2 + 4200\,z + 11\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5610.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, 2; z\right) = \frac{1}{99\,225}\left(\frac{3\left(2816\,z^4 - 1280\,z^3 + 43\,680\,z^2 - 75\,600\,z + 33\,075\right)I_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 2\left(256\,z^4 + 14\,592\,z^3 - 53\,280\,z^2 - 25\,200\,z + 99\,225\right)I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5611.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, 2; -z\right) = \frac{1}{99\,225}\left(\frac{3\left(2816 z^4 + 1280 z^3 + 43\,680 z^2 + 75\,600 z + 33\,075\right) J_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 2\left(256 z^4 - 14\,592 z^3 - 53\,280 z^2 + 25\,200 z + 99\,225\right) J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5612.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, \frac{5}{2}; z\right) = \frac{1}{33\,075}\left(\left(1664 z^3 - 11\,808 z^2 + 45\,360 z + 33\,075\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64 z^3 + 1728 z^2 - 1260 z - 33\,075\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5613.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, \frac{5}{2}; -z\right) = \frac{1}{33\,075}\left(2\sqrt{z}\left(64 z^3 - 1728 z^2 - 1260 z + 33\,075\right)\sin\left(2\sqrt{z}\right) - \left(1664 z^3 + 11\,808 z^2 + 45\,360 z - 33\,075\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.5614.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, 3; z\right) = \frac{1}{99\,225 z}\left(2\left(5\left(1280 z^4 - 5376 z^3 + 18\,144 z^2 - 15\,120 z + 19\,845\right) I_2\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256 z^4 + 3840 z^3 + 10\,080 z^2 - 75\,600 z - 14\,175\right) I_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5615.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, 3; -z\right) = \frac{1}{99\,225 z}\left(2\left(5\left(1280 z^4 + 5376 z^3 + 18\,144 z^2 + 15\,120 z + 19\,845\right) J_2\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256 z^4 - 3840 z^3 + 10\,080 z^2 + 75\,600 z - 14\,175\right) J_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5616.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, \frac{7}{2}; z\right) = \left(\frac{64 z^3}{6615} - \frac{32 z^2}{315} + \frac{76 z}{49} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{441}\sqrt{z}\left(16 z^2 - 96 z - 441\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5617.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, \frac{7}{2}; -z\right) = \frac{-\left(64 z^3 + 672 z^2 + 10\,260 z - 6615\right)\cos\left(2\sqrt{z}\right) - 30\sqrt{z}\left(16 z^2 + 96 z - 441\right)\sin\left(2\sqrt{z}\right)}{6615}$$

07.22.03.5618.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, 4; z\right) = \frac{1}{33\,075 z^{3/2}}\left(2\left(\left(4352 z^4 - 16\,128 z^3 + 18\,144 z^2 - 105\,840 z + 99\,225\right) I_3\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256 z^4 - 1792 z^3 + 18\,144 z^2 + 15\,120 z + 84\,105\right) I_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5619.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, 4; -z\right) = \frac{1}{33\,075 z^{3/2}}\left(2\left(\left(4352 z^4 + 16\,128 z^3 + 18\,144 z^2 + 105\,840 z + 99\,225\right) J_3\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256 z^4 + 1792 z^3 + 18\,144 z^2 - 15\,120 z + 84\,105\right) J_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5620.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, \frac{9}{2}; z\right) = \frac{1}{945}\left(3\left(16z^2+520z+315\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\left(16z^2-300z-945\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5621.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, \frac{9}{2}; -z\right) = \frac{1}{945}\left(3\left(16z^2-520z+315\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\left(16z^2+300z-945\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5622.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, 5; z\right) = \frac{1}{33\,075\,z^2}\left(8\left(9\left(256z^4-256z^3+4704z^2+5040z+11\,025\right)I_4\left(2\sqrt{z}\right)+2\sqrt{z}\left(256z^4-2304z^3-6048z^2-75\,600z-240\,975\right)I_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5623.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, 5; -z\right) = \frac{1}{33\,075\,z^2}\left(8\left(9\left(256z^4+256z^3+4704z^2-5040z+11\,025\right)J_4\left(2\sqrt{z}\right)-2\sqrt{z}\left(256z^4+2304z^3-6048z^2+75\,600z-240\,975\right)J_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5624.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, \frac{11}{2}; z\right) = \left(\frac{16z^2}{105}+\frac{12z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\left(8z+21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5625.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, \frac{11}{2}; -z\right) = \left(\frac{16z^2}{105}-\frac{12z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}\left(21-8z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5626.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, 6; z\right) = \frac{1}{6615\,z^{5/2}}\left(8\left(\left(256z^4-16\,128z^3-168\,480z^2-1\,194\,480z+99\,225\right)I_5\left(2\sqrt{z}\right)+2\sqrt{z}\left(256z^4+2304z^3+52\,704z^2+619\,920z+3\,455\,865\right)I_6\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5627.01

$${}_1F_2\left(\frac{11}{2}; -\frac{7}{2}, 6; -z\right) = \frac{1}{6615\,z^{5/2}}\left(8\left(\left(256z^4+16\,128z^3-168\,480z^2+1\,194\,480z+99\,225\right)J_5\left(2\sqrt{z}\right)-2\sqrt{z}\left(256z^4-2304z^3+52\,704z^2-619\,920z+3\,455\,865\right)J_6\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 = -\frac{5}{2}$

07.22.03.5628.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, -\frac{5}{2}; z\right) = \frac{1}{212\,625}\left(\left(63\,488z^5+3\,410\,688z^4+3\,386\,880z^3+786\,240z^2+612\,360z+212\,625\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\left(1024z^5+352\,512z^4+3\,380\,928z^3-423\,360z^2-328\,860z-212\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5629.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, -\frac{5}{2}; -z\right) = \frac{1}{212\,625}\left(\left(-63\,488z^5+3\,410\,688z^4-3\,386\,880z^3+786\,240z^2-612\,360z+212\,625\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(1024z^5-352\,512z^4+3\,380\,928z^3+423\,360z^2-328\,860z+212\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5630.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, -\frac{3}{2}; z\right) = \left(-\frac{1024\,z^5}{42\,525} - \frac{98\,048\,z^4}{14\,175} - \frac{448\,z^3}{9} + \frac{448\,z^2}{45} + \frac{52\,z}{15} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(4864\,z^4 + 210\,688\,z^3 + 105\,840\,z^2 + 30\,240\,z + 14\,175\right)\sinh\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.5631.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, -\frac{3}{2}; -z\right) = \left(\frac{1024\,z^5}{42\,525} - \frac{98\,048\,z^4}{14\,175} + \frac{448\,z^3}{9} + \frac{448\,z^2}{45} - \frac{52\,z}{15} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(4864\,z^4 - 210\,688\,z^3 + 105\,840\,z^2 - 30\,240\,z + 14\,175\right)\sin\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.5632.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, -\frac{1}{2}; z\right) = \left(\frac{4352\,z^4}{4725} + \frac{256\,z^3}{9} - \frac{48\,z^2}{5} + \frac{32\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(256\,z^4 + 57\,216\,z^3 + 226\,800\,z^2 - 71\,820\,z - 14\,175\right)\sinh\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.5633.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, -\frac{1}{2}; -z\right) = \left(\frac{4352\,z^4}{4725} - \frac{256\,z^3}{9} - \frac{48\,z^2}{5} - \frac{32\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(256\,z^4 - 57\,216\,z^3 + 226\,800\,z^2 + 71\,820\,z - 14\,175\right)\sin\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.5634.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, \frac{1}{2}; z\right) = \left(-\frac{256\,z^4}{14\,175} - \frac{128\,z^3}{45} - \frac{16\,z^2}{9} - \frac{12\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(2816\,z^3 + 50\,400\,z^2 - 52\,920\,z + 14\,175\right)\sinh\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.5635.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, \frac{1}{2}; -z\right) = \left(-\frac{256\,z^4}{14\,175} + \frac{128\,z^3}{45} - \frac{16\,z^2}{9} + \frac{12\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(-2816\,z^3 + 50\,400\,z^2 + 52\,920\,z + 14\,175\right)\sin\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.5636.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, 1; z\right) = \frac{1}{14\,175}\left(\left(-256\,z^4 - 33\,024\,z^3 + 15\,264\,z^2 - 52\,560\,z + 14\,175\right)I_0\left(2\sqrt{z}\right) + 32\sqrt{z}\,\left(-160\,z^3 - 1824\,z^2 + 1998\,z + 225\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5637.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, 1; -z\right) = \frac{1}{14\,175}\left(\left(-256\,z^4 + 33\,024\,z^3 + 15\,264\,z^2 + 52\,560\,z + 14\,175\right)J_0\left(2\sqrt{z}\right) + 32\sqrt{z}\,\left(-160\,z^3 + 1824\,z^2 + 1998\,z - 225\right)J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5638.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, \frac{3}{2}; z\right) = \left(-\frac{256\,z^3}{1575} - \frac{224\,z^2}{225} + \frac{8\,z}{15} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(64\,z^3 + 6048\,z^2 - 11\,340\,z + 14\,175\right)\sinh\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.5639.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, \frac{3}{2}; -z\right) =$$

$$\frac{1}{14\,175}\left(9\left(256\,z^3 - 1568\,z^2 - 840\,z + 1575\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-64\,z^3 + 6048\,z^2 + 11\,340\,z + 14\,175\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5640.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, 2; z\right) = \frac{\frac{\left(-256\,z^4 - 20\,736\,z^3 + 32\,160\,z^2 - 35\,280\,z + 14\,175\right) I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 16\left(256\,z^3 + 528\,z^2 + 1080\,z - 1575\right) I_2\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.5641.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, 2; -z\right) = \frac{\frac{\left(-256\,z^4 + 20\,736\,z^3 + 32\,160\,z^2 + 35\,280\,z + 14\,175\right) J_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 16\left(256\,z^3 - 528\,z^2 + 1080\,z + 1575\right) J_2\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.5642.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, \frac{5}{2}; z\right) = \left(-\frac{64\,z^3}{4725} - \frac{96\,z^2}{175} + \frac{28\,z}{25} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{525}\sqrt{z}\,\left(48\,z^2 - 112\,z + 525\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5643.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, \frac{5}{2}; -z\right) = \left(\frac{64\,z^3}{4725} - \frac{96\,z^2}{175} - \frac{28\,z}{25} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{525}\sqrt{z}\,\left(48\,z^2 + 112\,z + 525\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5644.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, 3; z\right) =$$

$$-\frac{1}{14\,175\,z}\left(2\left(192\left(16\,z^2 - 40\,z + 105\right) I_3\left(2\sqrt{z}\right) z^{3/2} + \left(256\,z^4 + 11\,520\,z^3 - 16\,800\,z^2 + 15\,120\,z - 14\,175\right) I_2\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5645.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, 3; -z\right) =$$

$$\frac{1}{14\,175\,z}\left(\left(-512\,z^4 + 23\,040\,z^3 + 33\,600\,z^2 + 30\,240\,z + 28\,350\right) J_2\left(2\sqrt{z}\right) - 384\,z^{3/2}\left(16\,z^2 + 40\,z + 105\right) J_3\left(2\sqrt{z}\right)\right)$$

07.22.03.5646.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, \frac{7}{2}; z\right) = \left(-\frac{272\,z^2}{945} + \frac{48\,z}{35} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\,\left(16\,z^2 + 36\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5647.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, \frac{7}{2}; -z\right) = \left(-\frac{272\,z^2}{945} - \frac{48\,z}{35} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\,\left(16\,z^2 - 36\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5648.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, 4; z\right) =$$
$$-\frac{1}{4725\, z^{3/2}}\left(2\left(\left(256\, z^4 + 5376\, z^3 - 6048\, z^2 + 15\,120\, z - 14\,175\right) I_3\left(2\sqrt{z}\right) + 16\sqrt{z}\,\left(128\, z^3 - 336\, z^2 - 945\right) I_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5649.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, 4; -z\right) =$$
$$-\frac{1}{4725\, z^{3/2}}\left(2\left(\left(256\, z^4 - 5376\, z^3 - 6048\, z^2 - 15\,120\, z - 14\,175\right) J_3\left(2\sqrt{z}\right) + 16\sqrt{z}\,\left(128\, z^3 + 336\, z^2 + 945\right) J_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5650.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, \frac{9}{2}; z\right) = \left(-\frac{16\, z^2}{135} + \frac{68\, z}{45} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{45}\sqrt{z}\,(8\, z + 45)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5651.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, \frac{9}{2}; -z\right) = \left(-\frac{16\, z^2}{135} - \frac{68\, z}{45} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{45}(45 - 8\, z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5652.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, 5; z\right) =$$
$$-\frac{1}{4725\, z^2}\left(8\left(\left(256\, z^4 + 2304\, z^3 - 6048\, z^2 + 3024\, z - 14\,175\right) I_4\left(2\sqrt{z}\right) + 32\sqrt{z}\,\left(32\, z^3 + 378\, z + 945\right) I_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5653.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, 5; -z\right) =$$
$$-\frac{1}{4725\, z^2}\left(8\left(\left(256\, z^4 - 2304\, z^3 - 6048\, z^2 - 3024\, z - 14\,175\right) J_4\left(2\sqrt{z}\right) + 32\sqrt{z}\,\left(32\, z^3 + 378\, z - 945\right) J_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5654.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, \frac{11}{2}; z\right) = \left(\frac{8\, z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,(4\, z + 15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5655.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, \frac{11}{2}; -z\right) = \left(1 - \frac{8\, z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}(15 - 4\, z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5656.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, 6; z\right) = \frac{128\left(16\, z^2 + 168\, z + 945\right) I_6\left(2\sqrt{z}\right)}{35\, z^2} - \frac{8\left(256\, z^4 + 2304\, z^3 + 7776\, z^2 + 75\,600\, z - 14\,175\right) I_5\left(2\sqrt{z}\right)}{945\, z^{5/2}}$$

07.22.03.5657.01

$${}_1F_2\left(\frac{11}{2}; -\frac{5}{2}, 6; -z\right) =$$
$$-\frac{1}{945\, z^{5/2}}\left(8\left(\left(256\, z^4 - 2304\, z^3 + 7776\, z^2 - 75\,600\, z - 14\,175\right) J_5\left(2\sqrt{z}\right) + 432\sqrt{z}\,\left(16\, z^2 - 168\, z + 945\right) J_6\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 = -\frac{3}{2}$

07.22.03.5658.01

$$ {}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, -\frac{3}{2}; z\right) = \left(\frac{13\,568\,z^4}{8505} + \frac{24\,064\,z^3}{405} + \frac{112\,z^2}{3} + \frac{40\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(256\,z^4 + 63\,360\,z^3 + 402\,864\,z^2 - 26\,460\,z - 8505\right)\sinh\left(2\sqrt{z}\right)}{8505} $$

07.22.03.5659.01

$$ {}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, -\frac{3}{2}; -z\right) = \left(\frac{13\,568\,z^4}{8505} - \frac{24\,064\,z^3}{405} + \frac{112\,z^2}{3} - \frac{40\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256\,z^4 - 63\,360\,z^3 + 402\,864\,z^2 + 26\,460\,z - 8505\right)\sin\left(2\sqrt{z}\right)}{8505} $$

07.22.03.5660.01

$$ {}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, -\frac{1}{2}; z\right) = \left(-\frac{256\,z^4}{2835} - \frac{2432\,z^3}{135} - 80\,z^2 + \frac{28\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(1024\,z^3 + 29\,344\,z^2 + 7560\,z + 945\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.5661.01

$$ {}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, -\frac{1}{2}; -z\right) = \left(-\frac{256\,z^4}{2835} + \frac{2432\,z^3}{135} - 80\,z^2 - \frac{28\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(-1024\,z^3 + 29\,344\,z^2 - 7560\,z + 945\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.5662.01

$$ {}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, \frac{1}{2}; z\right) = \left(\frac{128\,z^3}{135} + \frac{160\,z^2}{9} - \frac{16\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(64\,z^3 + 9408\,z^2 + 18\,900\,z - 2835\right)\sinh\left(2\sqrt{z}\right)}{2835} $$

07.22.03.5663.01

$$ {}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, \frac{1}{2}; -z\right) = \left(-\frac{128\,z^3}{135} + \frac{160\,z^2}{9} + \frac{16\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(64\,z^3 - 9408\,z^2 + 18\,900\,z + 2835\right)\sin\left(2\sqrt{z}\right)}{2835} $$

07.22.03.5664.01

$$ {}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, 1; z\right) = \frac{1}{2835}\left(3\left(832\,z^3 + 12\,272\,z^2 - 5268\,z + 945\right)I_0\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64\,z^3 + 7632\,z^2 + 5388\,z + 1287\right)I_1\left(2\sqrt{z}\right)\right) $$

07.22.03.5665.01

$$ {}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, 1; -z\right) = \frac{1}{2835}\left(3\left(-832\,z^3 + 12\,272\,z^2 + 5268\,z + 945\right)J_0\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64\,z^3 - 7632\,z^2 + 5388\,z - 1287\right)J_1\left(2\sqrt{z}\right)\right) $$

07.22.03.5666.01

$$ {}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, \frac{3}{2}; z\right) = \left(\frac{64\,z^3}{2835} + \frac{32\,z^2}{15} - \frac{4\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{81}\sqrt{z}\left(16\,z^2 + 144\,z - 81\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.5667.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, \frac{3}{2}; -z\right) = \left(-\frac{64\,z^3}{2835} + \frac{32\,z^2}{15} + \frac{4\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{81}\sqrt{z}\left(-16\,z^2 + 144\,z + 81\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5668.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, 2; z\right) = \frac{\frac{3\left(704\,z^3+6064\,z^2-2940\,z+945\right)I_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 2\left(64\,z^3 + 4656\,z^2 - 3492\,z + 2205\right)I_2\left(2\sqrt{z}\right)}{2835}$$

07.22.03.5669.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, 2; -z\right) = \frac{\frac{3\left(-704\,z^3+6064\,z^2+2940\,z+945\right)J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 2\left(64\,z^3 - 4656\,z^2 - 3492\,z - 2205\right)J_2\left(2\sqrt{z}\right)}{2835}$$

07.22.03.5670.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, \frac{5}{2}; z\right) = \left(\frac{16\,z^2}{35} + \frac{8\,z}{15} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(16\,z^2 + 756\,z - 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5671.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, \frac{5}{2}; -z\right) = \left(\frac{16\,z^2}{35} - \frac{8\,z}{15} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(-16\,z^2 + 756\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5672.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, 3; z\right) =$$
$$\frac{1}{2835\,z}\left(2\left(3\left(576\,z^3 + 2800\,z^2 - 1540\,z + 945\right)I_2\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64\,z^3 + 2448\,z^2 - 2100\,z + 315\right)I_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5673.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, 3; -z\right) =$$
$$\frac{1}{2835\,z}\left(2\left(\left(-1728\,z^3 + 8400\,z^2 + 4620\,z + 2835\right)J_2\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64\,z^3 - 2448\,z^2 - 2100\,z - 315\right)J_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5674.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, \frac{7}{2}; z\right) = \left(\frac{16\,z^2}{189} + \frac{20\,z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{21}\sqrt{z}\,(8\,z - 21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5675.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, \frac{7}{2}; -z\right) = \left(\frac{16\,z^2}{189} - \frac{20\,z}{21} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}\sqrt{z}\,(8\,z + 21)\sin\left(2\sqrt{z}\right)$$

07.22.03.5676.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, 4; z\right) = \frac{2\left(64\,z^3 + 208\,z^2 - 180\,z + 135\right)I_3\left(2\sqrt{z}\right)}{45\,z^{3/2}} + \frac{4\left(64\,z^3 + 1008\,z^2 - 420\,z + 945\right)I_4\left(2\sqrt{z}\right)}{945\,z}$$

07.22.03.5677.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, 4; -z\right) = \frac{4\left(64\,z^3 - 1008\,z^2 - 420\,z - 945\right)J_4\left(2\sqrt{z}\right)}{945\,z} - \frac{2\left(64\,z^3 - 208\,z^2 - 180\,z - 135\right)J_3\left(2\sqrt{z}\right)}{45\,z^{3/2}}$$

07.22.03.5678.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, \frac{9}{2}; z\right) = \left(\frac{32\,z}{27} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{27}\sqrt{z}\,(4\,z - 27)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5679.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, \frac{9}{2}; -z\right) = \left(1 - \frac{32\,z}{27}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{27}\sqrt{z}\,(4\,z + 27)\sin\left(2\sqrt{z}\right)$$

07.22.03.5680.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, 5; z\right) = \frac{8\left(3\left(320\,z^3 + 1008\,z^2 - 756\,z + 945\right)I_4\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64\,z^3 + 336\,z^2 - 756\,z - 945\right)I_5\left(2\sqrt{z}\right)\right)}{945\,z^2}$$

07.22.03.5681.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, 5; -z\right) =$$

$$\frac{1}{945\,z^2}\left(8\left(\left(-960\,z^3 + 3024\,z^2 + 2268\,z + 2835\right)J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64\,z^3 - 336\,z^2 - 756\,z + 945\right)J_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5682.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, \frac{11}{2}; z\right) = \left(\frac{4\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.5683.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, \frac{11}{2}; -z\right) = \left(1 - \frac{4\,z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5684.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, 6; z\right) = \frac{8\left(9\left(64\,z^3 + 144\,z^2 - 756\,z + 315\right)I_5\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64\,z^3 + 432\,z^2 + 2268\,z + 13\,797\right)I_6\left(2\sqrt{z}\right)\right)}{189\,z^{5/2}}$$

07.22.03.5685.01

$${}_1F_2\left(\frac{11}{2}; -\frac{3}{2}, 6; -z\right) = \frac{8\left(2\sqrt{z}\left(64\,z^3 - 432\,z^2 + 2268\,z - 13\,797\right)J_6\left(2\sqrt{z}\right) - 9\left(64\,z^3 - 144\,z^2 - 756\,z - 315\right)J_5\left(2\sqrt{z}\right)\right)}{189\,z^{5/2}}$$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 = -\frac{1}{2}$

07.22.03.5686.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, -\frac{1}{2}; z\right) = \left(\frac{2816\,z^3}{945} + \frac{4448\,z^2}{63} + 24\,z + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(64\,z^3 + 10\,656\,z^2 + 40\,020\,z - 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5687.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, -\frac{1}{2}; -z\right) = \left(-\frac{2816\,z^3}{945} + \frac{4448\,z^2}{63} - 24\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(64\,z^3 - 10\,656\,z^2 + 40\,020\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5688.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, \frac{1}{2}; z\right) = \left(-\frac{64\,z^3}{945} - \frac{544\,z^2}{63} - 20\,z + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{315}\sqrt{z}\left(208\,z^2 + 3520\,z + 315\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5689.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, \frac{1}{2}; -z\right) = \left(\frac{64\,z^3}{945} - \frac{544\,z^2}{63} + 20\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{315}\sqrt{z}\left(208\,z^2 - 3520\,z + 315\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5690.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, 1; z\right) = \frac{1}{945}\left(-\left(64\,z^3 + 7056\,z^2 + 12\,828\,z - 945\right) I_0\left(2\sqrt{z}\right) - 48\sqrt{z}\,\left(24\,z^2 + 310\,z - 31\right) I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5691.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, 1; -z\right) = \frac{1}{945}\left(\left(64\,z^3 - 7056\,z^2 + 12\,828\,z + 945\right) J_0\left(2\sqrt{z}\right) + 48\sqrt{z}\,\left(24\,z^2 - 310\,z - 31\right) J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5692.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, \frac{3}{2}; z\right) = \left(-\frac{176\,z^2}{315} - \frac{16\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\,\left(16\,z^2 + 1380\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5693.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, \frac{3}{2}; -z\right) = \left(-\frac{176\,z^2}{315} + \frac{16\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\,\left(16\,z^2 - 1380\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5694.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, 2; z\right) = \frac{1}{945}\left(-\frac{\left(64\,z^3 + 5136\,z^2 + 6300\,z - 945\right) I_1\left(2\sqrt{z}\right)}{\sqrt{z}} - 12\left(80\,z^2 + 544\,z - 105\right) I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5695.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, 2; -z\right) = \frac{1}{945}\left(\frac{\left(64\,z^3 - 5136\,z^2 + 6300\,z + 945\right) J_1\left(2\sqrt{z}\right)}{\sqrt{z}} + 12\left(80\,z^2 - 544\,z - 105\right) J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5696.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, \frac{5}{2}; z\right) = \left(-\frac{16\,z^2}{315} - \frac{12\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{315}\sqrt{z}\,\left(104\,z + 315\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5697.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, \frac{5}{2}; -z\right) = \left(-\frac{16\,z^2}{315} + \frac{12\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{315}\left(315 - 104\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5698.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, 3; z\right) = -\frac{2\left(\left(64\,z^3 + 3600\,z^2 + 3900\,z - 945\right) I_2\left(2\sqrt{z}\right) + 24\sqrt{z}\,\left(32\,z^2 + 100\,z - 15\right) I_3\left(2\sqrt{z}\right)\right)}{945\,z}$$

07.22.03.5699.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, 3; -z\right) = \frac{2\left(\left(64\,z^3 - 3600\,z^2 + 3900\,z + 945\right) J_2\left(2\sqrt{z}\right) + 24\sqrt{z}\,\left(32\,z^2 - 100\,z - 15\right) J_3\left(2\sqrt{z}\right)\right)}{945\,z}$$

07.22.03.5700.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, \frac{7}{2}; z\right) = \left(1 - \frac{8\,z}{7}\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{63}\sqrt{z}\,\left(4\,z + 63\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5701.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, \frac{7}{2}; -z\right) = \left(\frac{8\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{63}\left(63 - 4\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5702.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, 4; z\right) = -\frac{2\left(\left(64\,z^3 + 2448\,z^2 + 2940\,z - 945\right) I_3\left(2\sqrt{z}\right) + 12\sqrt{z}\,\left(48\,z^2 + 80\,z - 35\right) I_4\left(2\sqrt{z}\right)\right)}{315\,z^{3/2}}$$

07.22.03.5703.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, 4; -z\right) = \frac{2\left(\left(64\,z^3 - 2448\,z^2 + 2940\,z + 945\right) J_3\left(2\sqrt{z}\right) + 12\sqrt{z}\,\left(48\,z^2 - 80\,z - 35\right) J_4\left(2\sqrt{z}\right)\right)}{315\,z^{3/2}}$$

07.22.03.5704.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, \frac{9}{2}; z\right) = \left(1 - \frac{4\,z}{9}\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.5705.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, \frac{9}{2}; -z\right) = \left(\frac{4\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5706.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, 5; z\right) = -\frac{8\left(96\,(4\,z + 7)\, I_5\left(2\sqrt{z}\right) z^{3/2} + \left(64\,z^3 + 1680\,z^2 + 2268\,z - 945\right) I_4\left(2\sqrt{z}\right)\right)}{315\,z^2}$$

07.22.03.5707.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, 5; -z\right) = \frac{8\left(96\,(4\,z - 7)\, J_5\left(2\sqrt{z}\right) z^{3/2} + \left(64\,z^3 - 1680\,z^2 + 2268\,z + 945\right) J_4\left(2\sqrt{z}\right)\right)}{315\,z^2}$$

07.22.03.5708.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, \frac{11}{2}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.5709.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, \frac{11}{2}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5710.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, 6; z\right) = -\frac{8\left(\left(64\,z^3 + 1296\,z^2 + 2268\,z - 945\right) I_5\left(2\sqrt{z}\right) + 12\sqrt{z}\,\left(16\,z^2 - 189\right) I_6\left(2\sqrt{z}\right)\right)}{63\,z^{5/2}}$$

07.22.03.5711.01

$${}_1F_2\left(\frac{11}{2}; -\frac{1}{2}, 6; -z\right) = \frac{8\left(\left(64\,z^3 - 1296\,z^2 + 2268\,z + 945\right) J_5\left(2\sqrt{z}\right) + 12\sqrt{z}\,\left(16\,z^2 - 189\right) J_6\left(2\sqrt{z}\right)\right)}{63\,z^{5/2}}$$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 = \frac{1}{2}$

07.22.03.5712.01

$${}_1F_2\left(\frac{11}{2}; \frac{1}{2}, \frac{1}{2}; z\right) = \frac{1}{945}\left(\left(560\,z^2 + 7320\,z + 945\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^2 + 1620\,z + 2895\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5713.01

$${}_1F_2\left(\frac{11}{2}; \frac{1}{2}, \frac{1}{2}; -z\right) = \frac{1}{945}\left(\left(560\,z^2 - 7320\,z + 945\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,z^2 - 1620\,z + 2895\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5714.01

$${}_1F_2\left(\frac{11}{2}; \frac{1}{2}, 1; z\right) = \frac{1}{945}\left(\left(528\,z^2 + 6072\,z + 945\right) I_0\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^2 + 1368\,z + 1689\right) I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5715.01

$${}_1F_2\left(\frac{11}{2};\frac{1}{2},1;-z\right)=\frac{1}{945}\left(\left(528z^2-6072z+945\right)J_0\left(2\sqrt{z}\right)-2\sqrt{z}\left(16z^2-1368z+1689\right)J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5716.01

$${}_1F_2\left(\frac{11}{2};\frac{1}{2},\frac{3}{2};z\right)=\left(\frac{16z^2}{945}+\frac{76z}{63}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{63}\sqrt{z}\left(8z+65\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5717.01

$${}_1F_2\left(\frac{11}{2};\frac{1}{2},\frac{3}{2};-z\right)=\left(\frac{16z^2}{945}-\frac{76z}{63}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{63}\sqrt{z}\left(8z-65\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5718.01

$${}_1F_2\left(\frac{11}{2};\frac{1}{2},2;z\right)=\frac{1}{945}\left(\frac{\left(464z^2+4200z+945\right)I_1\left(2\sqrt{z}\right)}{\sqrt{z}}+2\left(16z^2+936z+525\right)I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5719.01

$${}_1F_2\left(\frac{11}{2};\frac{1}{2},2;-z\right)=\frac{1}{945}\left(\frac{\left(464z^2-4200z+945\right)J_1\left(2\sqrt{z}\right)}{\sqrt{z}}-2\left(16z^2-936z+525\right)J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5720.01

$${}_1F_2\left(\frac{11}{2};\frac{1}{2},\frac{5}{2};z\right)=\frac{1}{315}\left(\left(96z+315\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\left(4z+165\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5721.01

$${}_1F_2\left(\frac{11}{2};\frac{1}{2},\frac{5}{2};-z\right)=\frac{1}{315}\left(\left(315-96z\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(4z-165\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5722.01

$${}_1F_2\left(\frac{11}{2};\frac{1}{2},3;z\right)=\frac{10\left(80z^2+600z+189\right)I_2\left(2\sqrt{z}\right)+4\sqrt{z}\left(16z^2+600z+225\right)I_3\left(2\sqrt{z}\right)}{945z}$$

07.22.03.5723.01

$${}_1F_2\left(\frac{11}{2};\frac{1}{2},3;-z\right)=\frac{10\left(80z^2-600z+189\right)J_2\left(2\sqrt{z}\right)-4\sqrt{z}\left(16z^2-600z+225\right)J_3\left(2\sqrt{z}\right)}{945z}$$

07.22.03.5724.01

$${}_1F_2\left(\frac{11}{2};\frac{1}{2},\frac{7}{2};z\right)=\left(\frac{4z}{63}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{34}{63}\sqrt{z}\sinh\left(2\sqrt{z}\right)$$

07.22.03.5725.01

$${}_1F_2\left(\frac{11}{2};\frac{1}{2},\frac{7}{2};-z\right)=\left(1-\frac{4z}{63}\right)\cos\left(2\sqrt{z}\right)-\frac{34}{63}\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.5726.01

$${}_1F_2\left(\frac{11}{2};\frac{1}{2},4;z\right)=\frac{2\left(3\left(112z^2+760z+315\right)I_3\left(2\sqrt{z}\right)+2\sqrt{z}\left(16z^2+360z+165\right)I_4\left(2\sqrt{z}\right)\right)}{315z^{3/2}}$$

07.22.03.5727.01

$${}_1F_2\left(\frac{11}{2};\frac{1}{2},4;-z\right)=\frac{2\left(3\left(112z^2-760z+315\right)J_3\left(2\sqrt{z}\right)-2\sqrt{z}\left(16z^2-360z+165\right)J_4\left(2\sqrt{z}\right)\right)}{315z^{3/2}}$$

07.22.03.5728.01

$${}_1F_2\left(\frac{11}{2}; \frac{1}{2}, \frac{9}{2}; z\right) = \cosh\left(2\sqrt{z}\right) + \frac{2}{9}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.5729.01

$${}_1F_2\left(\frac{11}{2}; \frac{1}{2}, \frac{9}{2}; -z\right) = \cos\left(2\sqrt{z}\right) - \frac{2}{9}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.5730.01

$${}_1F_2\left(\frac{11}{2}; \frac{1}{2}, 5; z\right) = \frac{8\left(\left(272z^2 + 1848z + 945\right) I_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16z^2 + 216z + 105\right) I_5\left(2\sqrt{z}\right)\right)}{315z^2}$$

07.22.03.5731.01

$${}_1F_2\left(\frac{11}{2}; \frac{1}{2}, 5; -z\right) = \frac{8\left(\left(272z^2 - 1848z + 945\right) J_4\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(16z^2 - 216z + 105\right) J_5\left(2\sqrt{z}\right)\right)}{315z^2}$$

07.22.03.5732.01

$${}_1F_2\left(\frac{11}{2}; \frac{1}{2}, \frac{11}{2}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.5733.01

$${}_1F_2\left(\frac{11}{2}; \frac{1}{2}, \frac{11}{2}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.5734.01

$${}_1F_2\left(\frac{11}{2}; \frac{1}{2}, 6; z\right) = \frac{8\left(\left(208z^2 + 1512z + 945\right) I_5\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16z^2 + 168z + 189\right) I_6\left(2\sqrt{z}\right)\right)}{63z^{5/2}}$$

07.22.03.5735.01

$${}_1F_2\left(\frac{11}{2}; \frac{1}{2}, 6; -z\right) = \frac{8\left(\left(208z^2 - 1512z + 945\right) J_5\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(16z^2 - 168z + 189\right) J_6\left(2\sqrt{z}\right)\right)}{63z^{5/2}}$$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 = 1$

07.22.03.5736.01

$${}_1F_2\left(\frac{11}{2}; 1, 1; z\right) =$$
$$\frac{1}{945}\left(\left(256z^2 + 3036z + 945\right) I_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\,\left(16z^2 + 1252z + 1689\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + 20z\left(12z + 95\right) I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.5737.01

$${}_1F_2\left(\frac{11}{2}; 1, 1; -z\right) =$$
$$\frac{1}{945}\left(\left(256z^2 - 3036z + 945\right) J_0\left(\sqrt{z}\right)^2 - 2\sqrt{z}\,\left(16z^2 - 1252z + 1689\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + 20\left(95 - 12z\right) z\, J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.5738.01

$${}_1F_2\left(\frac{11}{2}; 1, \frac{3}{2}; z\right) = \frac{1}{945}\left(\left(16z^2 + 1032z + 945\right) I_0\left(2\sqrt{z}\right) + 16\sqrt{z}\,\left(14z + 93\right) I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5739.01

$${}_1F_2\left(\frac{11}{2}; 1, \frac{3}{2}; -z\right) = \frac{1}{945}\left(\left(16 z^2 - 1032 z + 945\right) J_0\left(2\sqrt{z}\right) + 16\sqrt{z}\ (14 z - 93)\, J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5740.01

$${}_1F_2\left(\frac{11}{2}; 1, 2; z\right) = \frac{1}{945}\left(\left(16 z^2 + 936 z + 945\right) I_0\left(\sqrt{z}\right)^2 + 8\sqrt{z}\ (52 z + 291)\, I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(16 z^2 + 736 z + 105\right) I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.5741.01

$${}_1F_2\left(\frac{11}{2}; 1, 2; -z\right) =$$
$$\frac{1}{945}\left(\left(16 z^2 - 936 z + 945\right) J_0\left(\sqrt{z}\right)^2 + 8\sqrt{z}\ (52 z - 291)\, J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(-16 z^2 + 736 z - 105\right) J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.5742.01

$${}_1F_2\left(\frac{11}{2}; 1, \frac{5}{2}; z\right) = \frac{1}{315}\left(\left(92 z + 315\right) I_0\left(2\sqrt{z}\right) + 2\sqrt{z}\ (4 z + 143)\, I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5743.01

$${}_1F_2\left(\frac{11}{2}; 1, \frac{5}{2}; -z\right) = \frac{1}{315}\left(\left(315 - 92 z\right) J_0\left(2\sqrt{z}\right) + 2\sqrt{z}\ (4 z - 143)\, J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5744.01

$${}_1F_2\left(\frac{11}{2}; 1, 3; z\right) = \frac{1}{945 z}\left(4\left(12 z\left(7 z + 20\right) I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\ \left(16 z^2 + 432 z - 15\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(76 z^2 + 60 z + 15\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.5745.01

$${}_1F_2\left(\frac{11}{2}; 1, 3; -z\right) =$$
$$\frac{1}{945 z}\left(4\left(12\left(20 - 7 z\right) z\, J_0\left(\sqrt{z}\right)^2 + \sqrt{z}\ \left(16 z^2 - 432 z - 15\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(76 z^2 - 60 z + 15\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.5746.01

$${}_1F_2\left(\frac{11}{2}; 1, \frac{7}{2}; z\right) = \frac{1}{63}\left(\left(4 z + 63\right) I_0\left(2\sqrt{z}\right) + 32\sqrt{z}\ I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5747.01

$${}_1F_2\left(\frac{11}{2}; 1, \frac{7}{2}; -z\right) = \frac{1}{63}\left(\left(63 - 4 z\right) J_0\left(2\sqrt{z}\right) - 32\sqrt{z}\ J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5748.01

$${}_1F_2\left(\frac{11}{2}; 1, 4; z\right) =$$
$$\frac{1}{315 z^2}\left(4\left(2 z\left(4 z^2 + 42 z + 3\right) I_0\left(\sqrt{z}\right)^2 + 8\sqrt{z}\ \left(13 z^2 - 3 z - 3\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(8 z^3 + 36 z^2 + 27 z + 24\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.5749.01

$${}_1F_2\left(\frac{11}{2}; 1, 4; -z\right) =$$
$$-\frac{1}{315 z^2}\left(4\left(2 z\left(4 z^2 - 42 z + 3\right) J_0\left(\sqrt{z}\right)^2 + 8\sqrt{z}\ \left(13 z^2 + 3 z - 3\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(-8 z^3 + 36 z^2 - 27 z + 24\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.5750.01

$${}_1F_2\left(\frac{11}{2}; 1, \frac{9}{2}; z\right) = I_0\left(2\sqrt{z}\right) + \frac{2}{9}\sqrt{z}\, I_1\left(2\sqrt{z}\right)$$

07.22.03.5751.01

$${}_1F_2\left(\frac{11}{2}; 1, \frac{9}{2}; -z\right) = J_0\left(2\sqrt{z}\right) - \frac{2}{9}\sqrt{z}\, J_1\left(2\sqrt{z}\right)$$

07.22.03.5752.01

$${}_1F_2\left(\frac{11}{2}; 1, 5; z\right) = \frac{1}{315 z^3}$$
$$\left(16\left(3z\left(8z^2+5z+12\right) I_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\left(8z^3-12z^2-39z-72\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(16z^3+33z^2+96z+144\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.5753.01

$${}_1F_2\left(\frac{11}{2}; 1, 5; -z\right) = -\frac{1}{315 z^3}\left(16\left(-3z\left(8z^2-5z+12\right) J_0\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left. 2\sqrt{z}\left(8z^3+12z^2-39z+72\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(16z^3-33z^2+96z-144\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.5754.01

$${}_1F_2\left(\frac{11}{2}; 1, \frac{11}{2}; z\right) = I_0\left(2\sqrt{z}\right)$$

07.22.03.5755.01

$${}_1F_2\left(\frac{11}{2}; 1, \frac{11}{2}; -z\right) = J_0\left(2\sqrt{z}\right)$$

07.22.03.5756.01

$${}_1F_2\left(\frac{11}{2}; 1, 6; z\right) = \frac{1}{63 z^4}\left(32\left(z\left(4z^3+21z^2+162z+576\right) I_0\left(\sqrt{z}\right)^2 - \right.\right.$$
$$\left.\left. \sqrt{z}\left(16z^3+153z^2+936z+2304\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(4z^4+31z^3+258z^2+1224z+2304\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.5757.01

$${}_1F_2\left(\frac{11}{2}; 1, 6; -z\right) = \frac{1}{63 z^4}\left(32\left(z\left(4z^3-21z^2+162z-576\right) J_0\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left. \sqrt{z}\left(-16z^3+153z^2-936z+2304\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(-4z^4+31z^3-258z^2+1224z-2304\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 = \frac{3}{2}$

07.22.03.5758.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, \frac{3}{2}; z\right) = \frac{\sqrt{z}\,(104z+561)\cosh\left(2\sqrt{z}\right) + 2\left(4z^2+207z+96\right)\sinh\left(2\sqrt{z}\right)}{945\sqrt{z}}$$

07.22.03.5759.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, \frac{3}{2}; -z\right) = \frac{2\left(4z^2-207z+96\right)\sin\left(2\sqrt{z}\right) - \sqrt{z}\,(104z-561)\cos\left(2\sqrt{z}\right)}{945\sqrt{z}}$$

07.22.03.5760.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, 2; z\right) = \frac{1}{945}\left(\frac{\left(16 z^2 + 840 z + 945\right) I_1\left(2 \sqrt{z}\right)}{\sqrt{z}} + 24 (8 z + 35) I_2\left(2 \sqrt{z}\right)\right)$$

07.22.03.5761.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, 2; -z\right) = \frac{1}{945}\left(\frac{\left(16 z^2 - 840 z + 945\right) J_1\left(2 \sqrt{z}\right)}{\sqrt{z}} + 24 (8 z - 35) J_2\left(2 \sqrt{z}\right)\right)$$

07.22.03.5762.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, \frac{5}{2}; z\right) = \frac{\sqrt{z}\ (4 z + 123) \cosh\left(2 \sqrt{z}\right) + 6 (7 z + 16) \sinh\left(2 \sqrt{z}\right)}{315 \sqrt{z}}$$

07.22.03.5763.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, \frac{5}{2}; -z\right) = \frac{6 (16 - 7 z) \sin\left(2 \sqrt{z}\right) - \sqrt{z}\ (4 z - 123) \cos\left(2 \sqrt{z}\right)}{315 \sqrt{z}}$$

07.22.03.5764.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, 3; z\right) = \frac{2\left(\left(16 z^2 + 680 z + 945\right) I_2\left(2 \sqrt{z}\right) + 160 \sqrt{z}\ (z + 3) I_3\left(2 \sqrt{z}\right)\right)}{945 z}$$

07.22.03.5765.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, 3; -z\right) = \frac{2\left(\left(16 z^2 - 680 z + 945\right) J_2\left(2 \sqrt{z}\right) + 160 (z - 3) \sqrt{z}\ J_3\left(2 \sqrt{z}\right)\right)}{945 z}$$

07.22.03.5766.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, \frac{7}{2}; z\right) = \frac{15 \sqrt{z}\ \cosh\left(2 \sqrt{z}\right) + 2 (z + 12) \sinh\left(2 \sqrt{z}\right)}{63 \sqrt{z}}$$

07.22.03.5767.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, \frac{7}{2}; -z\right) = \frac{15 \sqrt{z}\ \cos\left(2 \sqrt{z}\right) - 2 (z - 12) \sin\left(2 \sqrt{z}\right)}{63 \sqrt{z}}$$

07.22.03.5768.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, 4; z\right) = \frac{2\left(\left(16 z^2 + 552 z + 945\right) I_3\left(2 \sqrt{z}\right) + 8 \sqrt{z}\ (16 z + 39) I_4\left(2 \sqrt{z}\right)\right)}{315 z^{3/2}}$$

07.22.03.5769.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, 4; -z\right) = \frac{2\left(\left(16 z^2 - 552 z + 945\right) J_3\left(2 \sqrt{z}\right) + 8 \sqrt{z}\ (16 z - 39) J_4\left(2 \sqrt{z}\right)\right)}{315 z^{3/2}}$$

07.22.03.5770.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, \frac{9}{2}; z\right) = \frac{1}{9}\left(\cosh\left(2 \sqrt{z}\right) + \frac{4 \sinh\left(2 \sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.5771.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, \frac{9}{2}; -z\right) = \frac{1}{9}\left(\cos\left(2\sqrt{z}\right) + \frac{4\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.5772.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, 5; z\right) = \frac{8\left(\left(16z^2 + 456z + 945\right) I_4\left(2\sqrt{z}\right) + 48\sqrt{z}\ (2z + 5)\, I_5\left(2\sqrt{z}\right)\right)}{315\, z^2}$$

07.22.03.5773.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, 5; -z\right) = \frac{8\left(\left(16z^2 - 456z + 945\right) J_4\left(2\sqrt{z}\right) + 48\sqrt{z}\ (2z - 5)\, J_5\left(2\sqrt{z}\right)\right)}{315\, z^2}$$

07.22.03.5774.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, \frac{11}{2}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.5775.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, \frac{11}{2}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.5776.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, 6; z\right) = \frac{8\left(\left(16z^2 + 392z + 945\right) I_5\left(2\sqrt{z}\right) + 8\sqrt{z}\ (8z + 21)\, I_6\left(2\sqrt{z}\right)\right)}{63\, z^{5/2}}$$

07.22.03.5777.01

$${}_1F_2\left(\frac{11}{2}; \frac{3}{2}, 6; -z\right) = \frac{8\left(\left(16z^2 - 392z + 945\right) J_5\left(2\sqrt{z}\right) + 8\sqrt{z}\ (8z - 21)\, J_6\left(2\sqrt{z}\right)\right)}{63\, z^{5/2}}$$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 = 2$

07.22.03.5778.01

$${}_1F_2\left(\frac{11}{2}; 2, 2; z\right) = \frac{2}{945}\left((92z + 420)\, I_0\left(\sqrt{z}\right)^2 + \frac{\left(16z^2 + 568z + 105\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right)}{\sqrt{z}} + 4\,(21z + 44)\, I_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.5779.01

$${}_1F_2\left(\frac{11}{2}; 2, 2; -z\right) = \frac{2}{945}\left((420 - 92z)\, J_0\left(\sqrt{z}\right)^2 + \frac{\left(16z^2 - 568z + 105\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right)}{\sqrt{z}} + 4\,(21z - 44)\, J_1\left(\sqrt{z}\right)^2\right)$$

07.22.03.5780.01

$${}_1F_2\left(\frac{11}{2}; 2, \frac{5}{2}; z\right) = \frac{(4z + 15)\, I_1\left(2\sqrt{z}\right)}{15\sqrt{z}} + \frac{2}{315}(4z + 105)\, I_2\left(2\sqrt{z}\right)$$

07.22.03.5781.01

$${}_1F_2\left(\frac{11}{2}; 2, \frac{5}{2}; -z\right) = \frac{(15 - 4z)\, J_1\left(2\sqrt{z}\right)}{15\sqrt{z}} + \frac{2}{315}(4z - 105)\, J_2\left(2\sqrt{z}\right)$$

07.22.03.5782.01

$${}_1F_2\left(\frac{11}{2}; 2, 3; z\right) = \frac{4\left(4z(2z+45) I_0\left(\sqrt{z}\right)^2 + 8\sqrt{z}\ (17z+15) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(8z^2+116z-15\right) I_1\left(\sqrt{z}\right)^2\right)}{945z}$$

07.22.03.5783.01

$${}_1F_2\left(\frac{11}{2}; 2, 3; -z\right) = -\frac{4\left(4z(2z-45) J_0\left(\sqrt{z}\right)^2 + 8\sqrt{z}\ (17z-15) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(-8z^2+116z+15\right) J_1\left(\sqrt{z}\right)^2\right)}{945z}$$

07.22.03.5784.01

$${}_1F_2\left(\frac{11}{2}; 2, \frac{7}{2}; z\right) = \frac{(4z+63) I_1\left(2\sqrt{z}\right)}{63\sqrt{z}} + \frac{4}{9} I_2\left(2\sqrt{z}\right)$$

07.22.03.5785.01

$${}_1F_2\left(\frac{11}{2}; 2, \frac{7}{2}; -z\right) = \frac{(63-4z) J_1\left(2\sqrt{z}\right)}{63\sqrt{z}} - \frac{4}{9} J_2\left(2\sqrt{z}\right)$$

07.22.03.5786.01

$${}_1F_2\left(\frac{11}{2}; 2, 4; z\right) = \frac{4\left(3z(16z-1) I_0\left(\sqrt{z}\right)^2 + 4\sqrt{z}\ \left(4z^2+18z+3\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(40z^2-21z-12\right) I_1\left(\sqrt{z}\right)^2\right)}{315z^2}$$

07.22.03.5787.01

$${}_1F_2\left(\frac{11}{2}; 2, 4; -z\right) =$$
$$-\frac{1}{315z^2}\left(4\left(-3z(16z+1) J_0\left(\sqrt{z}\right)^2 + 4\sqrt{z}\ \left(4z^2-18z+3\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(40z^2+21z-12\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.5788.01

$${}_1F_2\left(\frac{11}{2}; 2, \frac{9}{2}; z\right) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}} + \frac{2}{9} I_2\left(2\sqrt{z}\right)$$

07.22.03.5789.01

$${}_1F_2\left(\frac{11}{2}; 2, \frac{9}{2}; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}} - \frac{2}{9} J_2\left(2\sqrt{z}\right)$$

07.22.03.5790.01

$${}_1F_2\left(\frac{11}{2}; 2, 5; z\right) =$$
$$\frac{1}{315z^3}\left(32\left(z\left(4z^2-3z-6\right) I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\ \left(16z^2+15z+24\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(4z^3-9z^2-18z-24\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.5791.01

$${}_1F_2\left(\frac{11}{2}; 2, 5; -z\right) =$$
$$\frac{1}{315z^3}\left(32\left(z\left(4z^2+3z-6\right) J_0\left(\sqrt{z}\right)^2 + \sqrt{z}\ \left(16z^2-15z+24\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) - \left(4z^3+9z^2-18z+24\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.5792.01

$${}_1F_2\left(\frac{11}{2}; 2, \frac{11}{2}; z\right) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.5793.01

$${}_1F_2\left(\frac{11}{2}; 2, \frac{11}{2}; -z\right) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.5794.01

$${}_1F_2\left(\frac{11}{2}; 2, 6; z\right) = \frac{1}{63\,z^4}\left(32\left(-6\,z\left(z^2+7\,z+24\right)I_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\,\left(4\,z^3+21\,z^2+120\,z+288\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) - \left(10\,z^3+69\,z^2+312\,z+576\right)I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.5795.01

$${}_1F_2\left(\frac{11}{2}; 2, 6; -z\right) = \frac{1}{63\,z^4}\left(32\left(6\,z\left(z^2-7\,z+24\right)J_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\,\left(4\,z^3-21\,z^2+120\,z-288\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + \left(-10\,z^3+69\,z^2-312\,z+576\right)J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 = \frac{5}{2}$

07.22.03.5796.01

$${}_1F_2\left(\frac{11}{2}; \frac{5}{2}, \frac{5}{2}; z\right) = \frac{\sqrt{z}\,(17\,z+12)\cosh\left(2\sqrt{z}\right) + 2\left(z^2+18\,z-3\right)\sinh\left(2\sqrt{z}\right)}{105\,z^{3/2}}$$

07.22.03.5797.01

$${}_1F_2\left(\frac{11}{2}; \frac{5}{2}, \frac{5}{2}; -z\right) = \frac{\sqrt{z}\,(17\,z-12)\cos\left(2\sqrt{z}\right) - 2\left(z^2-18\,z-3\right)\sin\left(2\sqrt{z}\right)}{105\,z^{3/2}}$$

07.22.03.5798.01

$${}_1F_2\left(\frac{11}{2}; \frac{5}{2}, 3; z\right) = \frac{2\left((76\,z+315)\,I_2\left(2\sqrt{z}\right) + 2\sqrt{z}\,(4\,z+75)\,I_3\left(2\sqrt{z}\right)\right)}{315\,z}$$

07.22.03.5799.01

$${}_1F_2\left(\frac{11}{2}; \frac{5}{2}, 3; -z\right) = \frac{2\left((315-76\,z)\,J_2\left(2\sqrt{z}\right) + 2\sqrt{z}\,(4\,z-75)\,J_3\left(2\sqrt{z}\right)\right)}{315\,z}$$

07.22.03.5800.01

$${}_1F_2\left(\frac{11}{2}; \frac{5}{2}, \frac{7}{2}; z\right) = \frac{\sqrt{z}\,(z+6)\cosh\left(2\sqrt{z}\right) + 3\,(2\,z-1)\sinh\left(2\sqrt{z}\right)}{21\,z^{3/2}}$$

07.22.03.5801.01

$${}_1F_2\left(\frac{11}{2}; \frac{5}{2}, \frac{7}{2}; -z\right) = \frac{(z-6)\sqrt{z}\,\cos\left(2\sqrt{z}\right) + 3\,(2\,z+1)\sin\left(2\sqrt{z}\right)}{21\,z^{3/2}}$$

07.22.03.5802.01

$${}_1F_2\left(\frac{11}{2}; \frac{5}{2}, 4; z\right) = \frac{2\left((68\,z+315)\,I_3\left(2\sqrt{z}\right)+2\sqrt{z}\;(4\,z+53)\,I_4\left(2\sqrt{z}\right)\right)}{105\,z^{3/2}}$$

07.22.03.5803.01

$${}_1F_2\left(\frac{11}{2}; \frac{5}{2}, 4; -z\right) = \frac{2\left((315-68\,z)\,J_3\left(2\sqrt{z}\right)+2\sqrt{z}\;(4\,z-53)\,J_4\left(2\sqrt{z}\right)\right)}{105\,z^{3/2}}$$

07.22.03.5804.01

$${}_1F_2\left(\frac{11}{2}; \frac{5}{2}, \frac{9}{2}; z\right) = \frac{6\sqrt{z}\;\cosh\left(2\sqrt{z}\right)+(2\,z-3)\sinh\left(2\sqrt{z}\right)}{12\,z^{3/2}}$$

07.22.03.5805.01

$${}_1F_2\left(\frac{11}{2}; \frac{5}{2}, \frac{9}{2}; -z\right) = \frac{(2\,z+3)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\;\cos\left(2\sqrt{z}\right)}{12\,z^{3/2}}$$

07.22.03.5806.01

$${}_1F_2\left(\frac{11}{2}; \frac{5}{2}, 5; z\right) = \frac{8\left(15\,(4\,z+21)\,I_4\left(2\sqrt{z}\right)+2\sqrt{z}\;(4\,z+39)\,I_5\left(2\sqrt{z}\right)\right)}{105\,z^2}$$

07.22.03.5807.01

$${}_1F_2\left(\frac{11}{2}; \frac{5}{2}, 5; -z\right) = \frac{8\left((315-60\,z)\,J_4\left(2\sqrt{z}\right)+2\sqrt{z}\;(4\,z-39)\,J_5\left(2\sqrt{z}\right)\right)}{105\,z^2}$$

07.22.03.5808.01

$${}_1F_2\left(\frac{11}{2}; \frac{5}{2}, \frac{11}{2}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4\,z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.5809.01

$${}_1F_2\left(\frac{11}{2}; \frac{5}{2}, \frac{11}{2}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\;\cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.5810.01

$${}_1F_2\left(\frac{11}{2}; \frac{5}{2}, 6; z\right) = \frac{8\left((52\,z+315)\,I_5\left(2\sqrt{z}\right)+2\sqrt{z}\;(4\,z+33)\,I_6\left(2\sqrt{z}\right)\right)}{21\,z^{5/2}}$$

07.22.03.5811.01

$${}_1F_2\left(\frac{11}{2}; \frac{5}{2}, 6; -z\right) = \frac{8\left((315-52\,z)\,J_5\left(2\sqrt{z}\right)+2\sqrt{z}\;(4\,z-33)\,J_6\left(2\sqrt{z}\right)\right)}{21\,z^{5/2}}$$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 = 3$

07.22.03.5812.01

$${}_1F_2\left(\frac{11}{2}; 3, 3; z\right) = \frac{8\left(\sqrt{z}\;(56\,z+15)\,I_0\left(\sqrt{z}\right)^2+2\left(8\,z^2+68\,z-15\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right)+\sqrt{z}\;(48\,z-31)\,I_1\left(\sqrt{z}\right)^2\right)}{945\,z^{3/2}}$$

07.22.03.5813.01

$${}_1F_2\left(\frac{11}{2}; 3, 3; -z\right) = -\frac{8\left((15-56\,z)\sqrt{z}\,J_0\left(\sqrt{z}\right)^2 + 2\left(8\,z^2-68\,z-15\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + \sqrt{z}\,(48\,z+31)\,J_1\left(\sqrt{z}\right)^2\right)}{945\,z^{3/2}}$$

07.22.03.5814.01

$${}_1F_2\left(\frac{11}{2}; 3, \frac{7}{2}; z\right) = \frac{2\,(4\,z+63)\,I_2\left(2\sqrt{z}\right) + 48\sqrt{z}\,I_3\left(2\sqrt{z}\right)}{63\,z}$$

07.22.03.5815.01

$${}_1F_2\left(\frac{11}{2}; 3, \frac{7}{2}; -z\right) = \frac{(126-8\,z)\,J_2\left(2\sqrt{z}\right) - 48\sqrt{z}\,J_3\left(2\sqrt{z}\right)}{63\,z}$$

07.22.03.5816.01

$${}_1F_2\left(\frac{11}{2}; 3, 4; z\right) = \frac{16\left(z\,(4\,z+9)\,I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\,(32\,z-21)\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) + \left(4\,z^2-5\,z+6\right)I_1\left(\sqrt{z}\right)^2\right)}{315\,z^2}$$

07.22.03.5817.01

$${}_1F_2\left(\frac{11}{2}; 3, 4; -z\right) = \frac{16\left(z\,(4\,z-9)\,J_0\left(\sqrt{z}\right)^2 + \sqrt{z}\,(32\,z+21)\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) - \left(4\,z^2+5\,z+6\right)J_1\left(\sqrt{z}\right)^2\right)}{315\,z^2}$$

07.22.03.5818.01

$${}_1F_2\left(\frac{11}{2}; 3, \frac{9}{2}; z\right) = \frac{2\,I_2\left(2\sqrt{z}\right)}{z} + \frac{4\,I_3\left(2\sqrt{z}\right)}{9\sqrt{z}}$$

07.22.03.5819.01

$${}_1F_2\left(\frac{11}{2}; 3, \frac{9}{2}; -z\right) = \frac{2\,J_2\left(2\sqrt{z}\right)}{z} - \frac{4\,J_3\left(2\sqrt{z}\right)}{9\sqrt{z}}$$

07.22.03.5820.01

$${}_1F_2\left(\frac{11}{2}; 3, 5; z\right) = \frac{64\left(3\,z\,(2\,z+1)\,I_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\,\left(4\,z^2-9\,z-6\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) + 2\left(z^2+6\,z+6\right)I_1\left(\sqrt{z}\right)^2\right)}{315\,z^3}$$

07.22.03.5821.01

$${}_1F_2\left(\frac{11}{2}; 3, 5; -z\right) = \frac{64\left(3\,(1-2\,z)\,z\,J_0\left(\sqrt{z}\right)^2 + 2\sqrt{z}\,\left(4\,z^2+9\,z-6\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + 2\left(z^2-6\,z+6\right)J_1\left(\sqrt{z}\right)^2\right)}{315\,z^3}$$

07.22.03.5822.01

$${}_1F_2\left(\frac{11}{2}; 3, \frac{11}{2}; z\right) = \frac{2\,I_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.5823.01

$${}_1F_2\left(\frac{11}{2}; 3, \frac{11}{2}; -z\right) = \frac{2\,J_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.5824.01

$${}_1F_2\left(\frac{11}{2}; 3, 6; z\right) = \frac{1}{63\,z^4}\left(64\left(z\left(4\,z^2+15\,z+48\right) I_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(5\,z^2+21\,z+48\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(4\,z^3+27\,z^2+108\,z+192\right) I_1\left(\sqrt{z}\right)^2\right)\right)$$

07.22.03.5825.01

$${}_1F_2\left(\frac{11}{2}; 3, 6; -z\right) = -\frac{1}{63\,z^4}\left(64\left(z\left(4\,z^2-15\,z+48\right) J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(5\,z^2-21\,z+48\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(-4\,z^3+27\,z^2-108\,z+192\right) J_1\left(\sqrt{z}\right)^2\right)\right)$$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 = \frac{7}{2}$

07.22.03.5826.01

$${}_1F_2\left(\frac{11}{2}; \frac{7}{2}, \frac{7}{2}; z\right) = \frac{5\left(2\sqrt{z}\,(4\,z-3)\cosh\left(2\sqrt{z}\right) + \left(2\,z^2+3\right)\sinh\left(2\sqrt{z}\right)\right)}{84\,z^{5/2}}$$

07.22.03.5827.01

$${}_1F_2\left(\frac{11}{2}; \frac{7}{2}, \frac{7}{2}; -z\right) = \frac{5\left(\left(2\,z^2+3\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,(4\,z+3)\cos\left(2\sqrt{z}\right)\right)}{84\,z^{5/2}}$$

07.22.03.5828.01

$${}_1F_2\left(\frac{11}{2}; \frac{7}{2}, 4; z\right) = \frac{2\left((4\,z+63)\,I_3\left(2\sqrt{z}\right) + 20\sqrt{z}\,I_4\left(2\sqrt{z}\right)\right)}{21\,z^{3/2}}$$

07.22.03.5829.01

$${}_1F_2\left(\frac{11}{2}; \frac{7}{2}, 4; -z\right) = \frac{(126-8\,z)\,J_3\left(2\sqrt{z}\right) - 40\sqrt{z}\,J_4\left(2\sqrt{z}\right)}{21\,z^{3/2}}$$

07.22.03.5830.01

$${}_1F_2\left(\frac{11}{2}; \frac{7}{2}, \frac{9}{2}; z\right) = \frac{5\left(2\,(z-3)\sqrt{z}\,\cosh\left(2\sqrt{z}\right) + 3\,(z+1)\sinh\left(2\sqrt{z}\right)\right)}{24\,z^{5/2}}$$

07.22.03.5831.01

$${}_1F_2\left(\frac{11}{2}; \frac{7}{2}, \frac{9}{2}; -z\right) = -\frac{5\left(2\sqrt{z}\,(z+3)\cos\left(2\sqrt{z}\right) + 3\,(z-1)\sin\left(2\sqrt{z}\right)\right)}{24\,z^{5/2}}$$

07.22.03.5832.01

$${}_1F_2\left(\frac{11}{2}; \frac{7}{2}, 5; z\right) = \frac{8\left((4\,z+63)\,I_4\left(2\sqrt{z}\right) + 16\sqrt{z}\,I_5\left(2\sqrt{z}\right)\right)}{21\,z^2}$$

07.22.03.5833.01

$${}_1F_2\left(\frac{11}{2}; \frac{7}{2}, 5; -z\right) = -\frac{8\left((4\,z-63)\,J_4\left(2\sqrt{z}\right) + 16\sqrt{z}\,J_5\left(2\sqrt{z}\right)\right)}{21\,z^2}$$

07.22.03.5834.01

$${}_1F_2\left(\frac{11}{2}; \frac{7}{2}, \frac{11}{2}; z\right) = \frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.5835.01

$${}_1F_2\left(\frac{11}{2}; \frac{7}{2}, \frac{11}{2}; -z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.5836.01

$${}_1F_2\left(\frac{11}{2}; \frac{7}{2}, 6; z\right) = \frac{40\left((4z+63)\,I_5\left(2\sqrt{z}\right) + 12\sqrt{z}\,I_6\left(2\sqrt{z}\right)\right)}{21\,z^{5/2}}$$

07.22.03.5837.01

$${}_1F_2\left(\frac{11}{2}; \frac{7}{2}, 6; -z\right) = -\frac{40\left((4z-63)\,J_5\left(2\sqrt{z}\right) + 12\sqrt{z}\,J_6\left(2\sqrt{z}\right)\right)}{21\,z^{5/2}}$$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 = 4$

07.22.03.5838.01

$${}_1F_2\left(\frac{11}{2}; 4, 4; z\right) = \frac{16\left(2\sqrt{z}\,(5z-3)\,I_0\left(\sqrt{z}\right)^2 + 2\left(4z^2-11z+6\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) + \sqrt{z}\,(6z+7)\,I_1\left(\sqrt{z}\right)^2\right)}{105\,z^{5/2}}$$

07.22.03.5839.01

$${}_1F_2\left(\frac{11}{2}; 4, 4; -z\right) = \frac{16\left(-2\sqrt{z}\,(5z+3)\,J_0\left(\sqrt{z}\right)^2 + 2\left(4z^2+11z+6\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + \sqrt{z}\,(6z-7)\,J_1\left(\sqrt{z}\right)^2\right)}{105\,z^{5/2}}$$

07.22.03.5840.01

$${}_1F_2\left(\frac{11}{2}; 4, \frac{9}{2}; z\right) = \frac{6\,I_3\left(2\sqrt{z}\right)}{z^{3/2}} + \frac{4\,I_4\left(2\sqrt{z}\right)}{3z}$$

07.22.03.5841.01

$${}_1F_2\left(\frac{11}{2}; 4, \frac{9}{2}; -z\right) = \frac{6\,J_3\left(2\sqrt{z}\right)}{z^{3/2}} - \frac{4\,J_4\left(2\sqrt{z}\right)}{3z}$$

07.22.03.5842.01

$${}_1F_2\left(\frac{11}{2}; 4, 5; z\right) = \frac{64\left(z(4z-9)\,I_0\left(\sqrt{z}\right)^2 - 4(z-6)\sqrt{z}\,I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) + \left(4z^2-5z-12\right)I_1\left(\sqrt{z}\right)^2\right)}{105\,z^3}$$

07.22.03.5843.01

$${}_1F_2\left(\frac{11}{2}; 4, 5; -z\right) = -\frac{64\left(z(4z+9)\,J_0\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(z+6)\,J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + \left(-4z^2-5z+12\right)J_1\left(\sqrt{z}\right)^2\right)}{105\,z^3}$$

07.22.03.5844.01

$${}_1F_2\left(\frac{11}{2}; 4, \frac{11}{2}; z\right) = \frac{6\,I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.5845.01

$${}_1F_2\left(\frac{11}{2}; 4, \frac{11}{2}; -z\right) = \frac{6\, J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.5846.01

$${}_1F_2\left(\frac{11}{2}; 4, 6; z\right) = \frac{128\left(-6\, z\,(z+2)\, I_0\left(\sqrt{z}\right)^2 + \sqrt{z}\,\left(4\, z^2 + 27\, z + 48\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - 2\left(4\, z^2 + 15\, z + 24\right) I_1\left(\sqrt{z}\right)^2\right)}{21\, z^4}$$

07.22.03.5847.01

$${}_1F_2\left(\frac{11}{2}; 4, 6; -z\right) = -\frac{128\left(6\,(z-2)\, z\, J_0\left(\sqrt{z}\right)^2 + \sqrt{z}\,\left(4\, z^2 - 27\, z + 48\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) - 2\left(4\, z^2 - 15\, z + 24\right) J_1\left(\sqrt{z}\right)^2\right)}{21\, z^4}$$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 = \frac{9}{2}$

07.22.03.5848.01

$${}_1F_2\left(\frac{11}{2}; \frac{9}{2}, \frac{9}{2}; z\right) = \frac{35\left(\left(8\, z^2 - 18\, z - 15\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(2\, z - 15\right)\cosh\left(2\sqrt{z}\right)\right)}{192\, z^{7/2}}$$

07.22.03.5849.01

$${}_1F_2\left(\frac{11}{2}; \frac{9}{2}, \frac{9}{2}; -z\right) = -\frac{35\left(2\sqrt{z}\,\left(2\, z + 15\right)\cos\left(2\sqrt{z}\right) + \left(8\, z^2 + 18\, z - 15\right)\sin\left(2\sqrt{z}\right)\right)}{192\, z^{7/2}}$$

07.22.03.5850.01

$${}_1F_2\left(\frac{11}{2}; \frac{9}{2}, 5; z\right) = \frac{8\left(9\, I_4\left(2\sqrt{z}\right) + 2\sqrt{z}\, I_5\left(2\sqrt{z}\right)\right)}{3\, z^2}$$

07.22.03.5851.01

$${}_1F_2\left(\frac{11}{2}; \frac{9}{2}, 5; -z\right) = \frac{8\left(9\, J_4\left(2\sqrt{z}\right) - 2\sqrt{z}\, J_5\left(2\sqrt{z}\right)\right)}{3\, z^2}$$

07.22.03.5852.01

$${}_1F_2\left(\frac{11}{2}; \frac{9}{2}, \frac{11}{2}; z\right) = \frac{105\left(2\sqrt{z}\,\left(4\, z + 15\right)\cosh\left(2\sqrt{z}\right) - 3\left(8\, z + 5\right)\sinh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.5853.01

$${}_1F_2\left(\frac{11}{2}; \frac{9}{2}, \frac{11}{2}; -z\right) = \frac{105\left(2\sqrt{z}\,\left(4\, z - 15\right)\cos\left(2\sqrt{z}\right) + 3\left(5 - 8\, z\right)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.5854.01

$${}_1F_2\left(\frac{11}{2}; \frac{9}{2}, 6; z\right) = \frac{120\, I_5\left(2\sqrt{z}\right)}{z^{5/2}} + \frac{80\, I_6\left(2\sqrt{z}\right)}{3\, z^2}$$

07.22.03.5855.01

$${}_1F_2\left(\frac{11}{2}; \frac{9}{2}, 6; -z\right) = \frac{120\, J_5\left(2\sqrt{z}\right)}{z^{5/2}} - \frac{80\, J_6\left(2\sqrt{z}\right)}{3\, z^2}$$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 = 5$

07.22.03.5856.01

$$ {}_1F_2\left(\frac{11}{2}; 5, 5; z\right) = \frac{512\left(2\,(3-2\,z)\,\sqrt{z}\;I_0\left(\sqrt{z}\right)^2 + \left(4\,z^2+7\,z-12\right) I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) - \sqrt{z}\;(6\,z+1)\,I_1\left(\sqrt{z}\right)^2\right)}{105\,z^{7/2}} $$

07.22.03.5857.01

$$ {}_1F_2\left(\frac{11}{2}; 5, 5; -z\right) = -\frac{512\left(2\,\sqrt{z}\;(2\,z+3)\,J_0\left(\sqrt{z}\right)^2 + \left(4\,z^2-7\,z-12\right) J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + (1-6\,z)\,\sqrt{z}\;J_1\left(\sqrt{z}\right)^2\right)}{105\,z^{7/2}} $$

07.22.03.5858.01

$$ {}_1F_2\left(\frac{11}{2}; 5, \frac{11}{2}; z\right) = \frac{24\,I_4\left(2\,\sqrt{z}\right)}{z^2} $$

07.22.03.5859.01

$$ {}_1F_2\left(\frac{11}{2}; 5, \frac{11}{2}; -z\right) = \frac{24\,J_4\left(2\,\sqrt{z}\right)}{z^2} $$

07.22.03.5860.01

$$ {}_1F_2\left(\frac{11}{2}; 5, 6; z\right) = \frac{512\left(2\,z\,(z+9)\,I_0\left(\sqrt{z}\right)^2 - 20\,\sqrt{z}\;(z+3)\,I_1\left(\sqrt{z}\right) I_0\left(\sqrt{z}\right) + \left(2\,z^2+29\,z+48\right) I_1\left(\sqrt{z}\right)^2\right)}{21\,z^4} $$

07.22.03.5861.01

$$ {}_1F_2\left(\frac{11}{2}; 5, 6; -z\right) = \frac{512\left(2\,(z-9)\,z\,J_0\left(\sqrt{z}\right)^2 - 20\,(z-3)\,\sqrt{z}\;J_1\left(\sqrt{z}\right) J_0\left(\sqrt{z}\right) + \left(-2\,z^2+29\,z-48\right) J_1\left(\sqrt{z}\right)^2\right)}{21\,z^4} $$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 = \frac{11}{2}$

07.22.03.5862.01

$$ {}_1F_2\left(\frac{11}{2}; \frac{11}{2}, \frac{11}{2}; z\right) = \frac{945\left(\left(16\,z^2+180\,z+105\right)\sinh\left(2\,\sqrt{z}\right) - 10\,\sqrt{z}\;(8\,z+21)\cosh\left(2\,\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.5863.01

$$ {}_1F_2\left(\frac{11}{2}; \frac{11}{2}, \frac{11}{2}; -z\right) = \frac{945\left(10\,\sqrt{z}\;(8\,z-21)\cos\left(2\,\sqrt{z}\right) + \left(16\,z^2-180\,z+105\right)\sin\left(2\,\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.5864.01

$$ {}_1F_2\left(\frac{11}{2}; \frac{11}{2}, 6; z\right) = \frac{120\,I_5\left(2\,\sqrt{z}\right)}{z^{5/2}} $$

07.22.03.5865.01

$$ {}_1F_2\left(\frac{11}{2}; \frac{11}{2}, 6; -z\right) = \frac{120\,J_5\left(2\,\sqrt{z}\right)}{z^{5/2}} $$

For fixed z and $a_1 = \frac{11}{2}$, $b_1 = 6$

07.22.03.5866.01

$$ {}_1F_2\left(\frac{11}{2}; 6, 6; z\right) = \frac{2560\left(-\sqrt{z}\,(13z+48)\,I_0\left(\sqrt{z}\right)^2 + 4\left(z^2+22z+24\right)I_1\left(\sqrt{z}\right)I_0\left(\sqrt{z}\right) - 5\sqrt{z}\,(3z+20)\,I_1\left(\sqrt{z}\right)^2\right)}{21\,z^{9/2}} $$

07.22.03.5867.01

$$ {}_1F_2\left(\frac{11}{2}; 6, 6; -z\right) = \frac{2560\left(\sqrt{z}\,(13z-48)\,J_0\left(\sqrt{z}\right)^2 + 4\left(z^2-22z+24\right)J_1\left(\sqrt{z}\right)J_0\left(\sqrt{z}\right) + 5\,(20-3z)\sqrt{z}\,J_1\left(\sqrt{z}\right)^2\right)}{21\,z^{9/2}} $$

For fixed z and $a_1 = 6$, $b_1 \geq -\frac{11}{2}$

For fixed z and $a_1 = 6$, $b_1 = -\frac{11}{2}$

07.22.03.5868.01

$$ {}_1F_2\left(6; -\frac{11}{2}, -\frac{11}{2}; z\right) = \frac{1}{1\,620\,840\,375}\left(16\pi z^3\left(32\,\boldsymbol{L}_{-19}\left(2\sqrt{z}\right)z^6 + 4528\,\boldsymbol{L}_{-18}\left(2\sqrt{z}\right)z^{11/2} + 7\left(38\,432\,\boldsymbol{L}_{-17}\left(2\sqrt{z}\right)z^5 + 15\left(83\,816\,\boldsymbol{L}_{-16}\left(2\sqrt{z}\right)z^{9/2} + 1\,664\,546\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^4 + 20\,879\,743\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2} + 166\,970\,895\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3 + 840\,118\,926\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 2\,566\,146\,570\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2 + 4\,454\,631\,720\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 3\,910\,503\,240\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z + 1\,385\,359\,920\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 112\,326\,480\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right) $$

07.22.03.5869.01

$$ {}_1F_2\left(6; -\frac{11}{2}, -\frac{11}{2}; -z\right) = \frac{1}{1\,620\,840\,375}\left(16\pi z^3\left(32\,\boldsymbol{H}_{-19}\left(2\sqrt{z}\right)z^6 + 4528\,\boldsymbol{H}_{-18}\left(2\sqrt{z}\right)z^{11/2} + 7\left(38\,432\,\boldsymbol{H}_{-17}\left(2\sqrt{z}\right)z^5 + 15\left(83\,816\,\boldsymbol{H}_{-16}\left(2\sqrt{z}\right)z^{9/2} + 1\,664\,546\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^4 + 20\,879\,743\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2} + 166\,970\,895\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3 + 840\,118\,926\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 2\,566\,146\,570\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2 + 4\,454\,631\,720\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 3\,910\,503\,240\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z + 1\,385\,359\,920\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 112\,326\,480\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right) $$

07.22.03.5870.01

$$ {}_1F_2\left(6; -\frac{11}{2}, -\frac{9}{2}; z\right) = -\frac{1}{147\,349\,125}\left(8\pi z^3\left(32\,\boldsymbol{L}_{-18}\left(2\sqrt{z}\right)z^{11/2} + 7\left(592\,\boldsymbol{L}_{-17}\left(2\sqrt{z}\right)z^5 + 15\left(2128\,\boldsymbol{L}_{-16}\left(2\sqrt{z}\right)z^{9/2} + 62\,536\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^4 + 1\,101\,722\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2} + 12\,065\,967\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3 + 82\,509\,126\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2} + 345\,064\,170\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2 + 840\,825\,720\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2} + 1\,091\,328\,840\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z + 636\,516\,720\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z} + 112\,326\,480\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right) $$

07.22.03.5871.01

$${}_1F_2\left(6;-\frac{11}{2},-\frac{9}{2};-z\right)=$$
$$-\frac{1}{147\,349\,125}\left(8\pi z^3\left(32\,\boldsymbol{H}_{-18}\left(2\sqrt{z}\right)z^{11/2}+7\left(592\,\boldsymbol{H}_{-17}\left(2\sqrt{z}\right)z^5+15\left(2128\,\boldsymbol{H}_{-16}\left(2\sqrt{z}\right)z^{9/2}+62\,536\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^4+\right.\right.\right.\right.$$
$$1\,101\,722\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2}+12\,065\,967\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3+82\,509\,126\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+$$
$$345\,064\,170\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+840\,825\,720\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+$$
$$\left.\left.\left.\left.1\,091\,328\,840\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+636\,516\,720\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+112\,326\,480\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.5872.01

$${}_1F_2\left(6;-\frac{11}{2},-\frac{7}{2};z\right)=$$
$$\frac{1}{16\,372\,125}\left(4\pi z^3\left(32\,\boldsymbol{L}_{-17}\left(2\sqrt{z}\right)z^5+5\left(752\,\boldsymbol{L}_{-16}\left(2\sqrt{z}\right)z^{9/2}+36\,416\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^4+949\,096\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2}+\right.\right.\right.$$
$$14\,594\,298\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3+136\,630\,923\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+776\,275\,185\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+2\,588\,696\,460$$
$$\left.\left.\left.\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+4\,713\,857\,820\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+4\,062\,474\,360\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+1\,179\,428\,040\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5873.01

$${}_1F_2\left(6;-\frac{11}{2},-\frac{7}{2};-z\right)=$$
$$\frac{1}{16\,372\,125}\left(4\pi z^3\left(32\,\boldsymbol{H}_{-17}\left(2\sqrt{z}\right)z^5+5\left(752\,\boldsymbol{H}_{-16}\left(2\sqrt{z}\right)z^{9/2}+36\,416\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^4+949\,096\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2}+\right.\right.\right.$$
$$14\,594\,298\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3+136\,630\,923\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+776\,275\,185\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+2\,588\,696\,460\,\boldsymbol{H}_{-10}($$
$$\left.\left.\left.2\sqrt{z}\right)z^{3/2}+4\,713\,857\,820\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+4\,062\,474\,360\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+1\,179\,428\,040\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5874.01

$${}_1F_2\left(6;-\frac{11}{2},-\frac{5}{2};z\right)=$$
$$-\frac{1}{2\,338\,875}\left(2\pi z^3\left(32\,\boldsymbol{L}_{-16}\left(2\sqrt{z}\right)z^{9/2}+3376\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^4+144\,944\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2}+3\,296\,040\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3+\right.\right.$$
$$43\,307\,130\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+336\,697\,575\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+1\,524\,492\,900\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+$$
$$\left.\left.3\,796\,524\,900\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+4\,586\,664\,600\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+1\,965\,713\,400\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5875.01

$${}_1F_2\left(6;-\frac{11}{2},-\frac{5}{2};-z\right)=$$
$$-\frac{1}{2\,338\,875}\left(2\pi z^3\left(32\,\boldsymbol{H}_{-16}\left(2\sqrt{z}\right)z^{9/2}+3376\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^4+144\,944\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2}+3\,296\,040\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3+\right.\right.$$
$$43\,307\,130\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+336\,697\,575\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+1\,524\,492\,900\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+$$
$$\left.\left.3\,796\,524\,900\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+4\,586\,664\,600\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+1\,965\,713\,400\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5876.01

$${}_1F_2\left(6;-\frac{11}{2},-\frac{3}{2};z\right)=\frac{1}{467\,775}\left(\pi z^3\left(32\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^4+2992\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2}+\right.\right.$$
$$3\left(37\,344\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3+5\left(145\,048\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+115\left(13\,754\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+21\right.\right.\right.$$
$$\left.\left.\left.\left.\left.\left(4055\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+133\left(103\,z\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)+170\sqrt{z}\;\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)+102\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)\right)\right)$$

07.22.03.5877.01

$${}_1F_2\left(6;-\frac{11}{2},-\frac{3}{2};-z\right)=\frac{1}{467\,775}\left(\pi z^3\left(32\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^4+2992\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2}+\right.\right.$$
$$3\left(37\,344\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3+5\left(145\,048\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+115\left(13\,754\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+21\right.\right.\right.$$
$$\left.\left.\left.\left.\left.\left(4055\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+133\left(103\,z\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)+170\sqrt{z}\;\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)+102\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)\right)\right)$$

07.22.03.5878.01

$${}_1F_2\left(6;-\frac{11}{2},-\frac{1}{2};z\right)=$$
$$-\frac{1}{311\,850}\left(\pi z^3\left(32\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{7/2}+2608\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3+83\,344\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+1\,342\,280\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+\right.\right.$$
$$\left.\left.11\,645\,130\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+53\,731\,335\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+120\,126\,930\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+98\,285\,670\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5879.01

$${}_1F_2\left(6;-\frac{11}{2},-\frac{1}{2};-z\right)=$$
$$-\frac{1}{311\,850}\left(\pi z^3\left(32\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{7/2}+2608\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3+83\,344\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+1\,342\,280\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+\right.\right.$$
$$\left.\left.11\,645\,130\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+53\,731\,335\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+120\,126\,930\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+98\,285\,670\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5880.01

$${}_1F_2\left(6;-\frac{11}{2},\frac{1}{2};z\right)=\frac{1}{623\,700}\left(\pi z^3\left(32\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^3+2224\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{5/2}+115\right.\right.$$
$$\left.\left.\left(512\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^2+21\left(312\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{3/2}+2014\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z+6137\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+6783\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.5881.01

$${}_1F_2\left(6;-\frac{11}{2},\frac{1}{2};-z\right)=\frac{1}{623\,700}\left(\pi z^3\left(32\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^3+2224\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{5/2}+115\left(512\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^2+\right.\right.\right.$$
$$\left.\left.\left.21\left(312\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{3/2}+2014\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z+6137\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)\sqrt{z}+6783\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.5882.01

$${}_1F_2\left(6;-\frac{11}{2},1;z\right)=\left(\frac{28\,z^5}{22\,275}+\frac{2\,z^4}{2079}+\frac{152\,z^3}{1485}-\frac{12\,z^2}{11}+\frac{10\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\;\left(4\,z^5+650\,z^4-6600\,z^3+26\,460\,z^2+66\,150\,z-155\,925\right)\sinh\left(2\sqrt{z}\right)}{155\,925}$$

07.22.03.5883.01

$${}_1F_2\left(6;-\frac{11}{2},1;-z\right)=\left(-\frac{28\,z^5}{22\,275}+\frac{2\,z^4}{2079}-\frac{152\,z^3}{1485}-\frac{12\,z^2}{11}-\frac{10\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(4\,z^5-650\,z^4-6600\,z^3-26\,460\,z^2+66\,150\,z+155\,925\right)\sin\left(2\sqrt{z}\right)}{155\,925}$$

07.22.03.5884.01

$${}_1F_2\left(6;-\frac{11}{2},\frac{3}{2};z\right)=\frac{1}{1\,247\,400}\left(88\left(16\,z^5-102\,z^4+2190\,z^3-12\,600\,z^2+14\,175\right)+2\,\pi\sqrt{z}\,\left(16\,z^5+1800\,z^4-17\,955\,z^3+13\,230\,z^2+453\,600\,z-340\,200\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(688\,z^5-6120\,z^4+112\,455\,z^3-536\,760\,z^2-567\,000\,z+680\,400\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5885.01

$${}_1F_2\left(6;-\frac{11}{2},\frac{3}{2};-z\right)=\frac{1}{1\,247\,400}\left(-88\left(16\,z^5+102\,z^4+2190\,z^3+12\,600\,z^2-14\,175\right)+2\,\pi\sqrt{z}\,\left(16\,z^5-1800\,z^4-17\,955\,z^3-13\,230\,z^2+453\,600\,z+340\,200\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+\pi\left(688\,z^5+6120\,z^4+112\,455\,z^3+536\,760\,z^2-567\,000\,z-680\,400\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5886.01

$${}_1F_2\left(6;-\frac{11}{2},2;z\right)=\frac{1}{155\,925}\left(\left(8\,z^5+486\,z^4-2940\,z^3-44\,100\,z^2+226\,800\,z+155\,925\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(74\,z^4-1140\,z^3+13\,860\,z^2-18\,900\,z-155\,925\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5887.01

$${}_1F_2\left(6;-\frac{11}{2},2;-z\right)=\frac{1}{155\,925}\left(\left(-8\,z^5+486\,z^4+2940\,z^3-44\,100\,z^2-226\,800\,z+155\,925\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(74\,z^4+1140\,z^3+13\,860\,z^2+18\,900\,z-155\,925\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5888.01

$${}_1F_2\left(6;-\frac{11}{2},\frac{5}{2};z\right)=\frac{1}{2\,494\,800\sqrt{z}}\left(8\sqrt{z}\,\left(272\,z^5-3972\,z^4+39\,825\,z^3-50\,400\,z^2-189\,000\,z+311\,850\right)+3\,\pi\sqrt{z}\,\left(32\,z^5+1120\,z^4+1050\,z^3-187\,425\,z^2+428\,400\,z+264\,600\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)+3\,\pi\left(496\,z^5-9240\,z^4+71\,295\,z^3+239\,400\,z^2-945\,000\,z-529\,200\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5889.01

$${}_1F_2\left(6;-\frac{11}{2},\frac{5}{2};-z\right)=\frac{1}{2\,494\,800\sqrt{z}}\left(-8\sqrt{z}\,\left(272\,z^5+3972\,z^4+39\,825\,z^3+50\,400\,z^2-189\,000\,z-311\,850\right)+3\,\pi\sqrt{z}\,\left(32\,z^5-1120\,z^4+1050\,z^3+187\,425\,z^2+428\,400\,z-264\,600\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)+3\,\pi\left(496\,z^5+9240\,z^4+71\,295\,z^3-239\,400\,z^2-945\,000\,z+529\,200\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5890.01

$${}_1F_2\left(6;-\frac{11}{2},3;z\right)=\left(\frac{64\,z^4}{51\,975}-\frac{34\,z^3}{1485}+\frac{z^2}{99}+\frac{18\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(8\,z^4-90\,z^3+5985\,z^2-47\,250\,z-155\,925\right)\sinh\left(2\sqrt{z}\right)}{155\,925}$$

07.22.03.5891.01

$${}_1F_2\left(6; -\frac{11}{2}, 3; -z\right) =$$
$$\left(\frac{64 z^4}{51\,975} + \frac{34 z^3}{1485} + \frac{z^2}{99} - \frac{18 z}{11} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(8 z^4 + 90 z^3 + 5985 z^2 + 47\,250 z - 155\,925\right)\sin\left(2\sqrt{z}\right)}{155\,925}$$

07.22.03.5892.01

$${}_1F_2\left(6; -\frac{11}{2}, \frac{7}{2}; z\right) = \frac{1}{1\,663\,200 z}\left(32 z\left(32 z^5 - 470 z^4 + 1485 z^3 + 6300 z^2 - 9000 z + 51\,975\right) + \right.$$
$$10\pi\sqrt{z}\left(16 z^5 - 200 z^4 + 8925 z^3 - 43\,155 z^2 - 81\,900 z - 151\,200\right)\boldsymbol{L}_2\left(2\sqrt{z}\right) +$$
$$\left.5\pi\left(304 z^5 - 4200 z^4 - 33\,705 z^3 + 296\,100 z^2 + 567\,000 z + 907\,200\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.5893.01

$${}_1F_2\left(6; -\frac{11}{2}, \frac{7}{2}; -z\right) = \frac{1}{1\,663\,200 z}\left(-32 z\left(32 z^5 + 470 z^4 + 1485 z^3 - 6300 z^2 - 9000 z - 51\,975\right) + \right.$$
$$10\pi\sqrt{z}\left(16 z^5 + 200 z^4 + 8925 z^3 + 43\,155 z^2 - 81\,900 z + 151\,200\right)\boldsymbol{H}_2\left(2\sqrt{z}\right) +$$
$$\left.5\pi\left(304 z^5 + 4200 z^4 - 33\,705 z^3 - 296\,100 z^2 + 567\,000 z - 907\,200\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.5894.01

$${}_1F_2\left(6; -\frac{11}{2}, 4; z\right) = \left(\frac{16 z^4}{51\,975} - \frac{4 z^3}{297} + \frac{9 z^2}{55} + \frac{19 z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(8 z^3 + 63 z^2 - 4095 z - 10\,395\right)\sinh\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.5895.01

$${}_1F_2\left(6; -\frac{11}{2}, 4; -z\right) = \left(\frac{16 z^4}{51\,975} + \frac{4 z^3}{297} + \frac{9 z^2}{55} - \frac{19 z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(8 z^3 - 63 z^2 - 4095 z + 10\,395\right)\sin\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.5896.01

$${}_1F_2\left(6; -\frac{11}{2}, \frac{9}{2}; z\right) = \frac{1}{9\,979\,200 z^{3/2}}\left(32\left(112 z^5 - 708 z^4 - 4725 z^3 - 10\,080 z^2 - 151\,200 z + 311\,850\right) z^{3/2} + \right.$$
$$105\pi\left(32 z^5 - 960 z^4 + 8730 z^3 + 37\,485 z^2 + 211\,680 z + 680\,400\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z} +$$
$$\left.105\pi\left(112 z^5 + 2280 z^4 - 41\,265 z^3 - 187\,740 z^2 - 982\,800 z - 2\,721\,600\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.5897.01

$${}_1F_2\left(6; -\frac{11}{2}, \frac{9}{2}; -z\right) = \frac{1}{9\,979\,200 z^{3/2}}\left(-32\left(112 z^5 + 708 z^4 - 4725 z^3 + 10\,080 z^2 - 151\,200 z - 311\,850\right) z^{3/2} + \right.$$
$$105\pi\left(32 z^5 + 960 z^4 + 8730 z^3 - 37\,485 z^2 + 211\,680 z - 680\,400\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z} +$$
$$\left.105\pi\left(112 z^5 - 2280 z^4 - 41\,265 z^3 + 187\,740 z^2 - 982\,800 z + 2\,721\,600\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.5898.01

$${}_1F_2\left(6; -\frac{11}{2}, 5; z\right) = \left(-\frac{32 z^3}{10\,395} + \frac{128 z^2}{495} + \frac{98 z}{55} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(32 z^3 - 840 z^2 - 23\,310 z - 51\,975\right)\sinh\left(2\sqrt{z}\right)}{51\,975}$$

07.22.03.5899.01

$${}_1F_2\left(6; -\frac{11}{2}, 5; -z\right) = \left(\frac{32 z^3}{10\,395} + \frac{128 z^2}{495} - \frac{98 z}{55} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(32 z^3 + 840 z^2 - 23\,310 z + 51\,975\right)\sin\left(2\sqrt{z}\right)}{51\,975}$$

07.22.03.5900.01

$${}_1F_2\left(6; -\frac{11}{2}, \frac{11}{2}; z\right) = \frac{1}{19\,958\,400\,z^2}\left(128\left(16\,z^5 + 222\,z^4 + 2100\,z^3 + 30\,240\,z^2 + 113\,400\,z + 155\,925\right)z^2 + 1890\,\pi\left(16\,z^5 - 280\,z^4 - 2595\,z^3 - 34\,020\,z^2 - 332\,640\,z - 1\,587\,600\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} - 4725\,\pi\left(16\,z^5 - 696\,z^4 - 7035\,z^3 - 87\,696\,z^2 - 771\,120\,z - 3\,175\,200\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.5901.01

$${}_1F_2\left(6; -\frac{11}{2}, \frac{11}{2}; -z\right) = \frac{1}{19\,958\,400\,z^2}\left(-128\left(16\,z^5 - 222\,z^4 + 2100\,z^3 - 30\,240\,z^2 + 113\,400\,z - 155\,925\right)z^2 + 1890\,\pi\left(16\,z^5 + 280\,z^4 - 2595\,z^3 + 34\,020\,z^2 - 332\,640\,z + 1\,587\,600\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} - 4725\,\pi\left(16\,z^5 + 696\,z^4 - 7035\,z^3 + 87\,696\,z^2 - 771\,120\,z + 3\,175\,200\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.5902.01

$${}_1F_2\left(6; -\frac{11}{2}, 6; z\right) = \left(\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} + \frac{20\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16\,z^2 + 240\,z + 495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5903.01

$${}_1F_2\left(6; -\frac{11}{2}, 6; -z\right) = \left(-\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} - \frac{20\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(16\,z^2 - 240\,z + 495\right)\sin\left(2\sqrt{z}\right)$$

For fixed z and $a_1 = 6$, $b_1 = -\frac{9}{2}$

07.22.03.5904.01

$${}_1F_2\left(6; -\frac{9}{2}, -\frac{9}{2}; z\right) = \frac{1}{13\,395\,375}\left(4\,\pi\,z^{5/2}\left(32\,\boldsymbol{L}_{-17}\left(2\sqrt{z}\right)z^{11/2} + 3\left(1264\,\boldsymbol{L}_{-16}\left(2\sqrt{z}\right)z^5 + 5\left(12\,368\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^{9/2} + 326\,440\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^4 + 5\,100\,534\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 48\,758\,031\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^3 + 285\,015\,696\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 990\,370\,710\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^2 + 1\,924\,297\,200\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 1\,866\,410\,280\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z + 722\,796\,480\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 63\,488\,880\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.5905.01

$${}_1F_2\left(6; -\frac{9}{2}, -\frac{9}{2}; -z\right) = \frac{1}{13\,395\,375}\left(4\,\pi\,z^{5/2}\left(32\,\boldsymbol{H}_{-17}\left(2\sqrt{z}\right)z^{11/2} + 3\left(1264\,\boldsymbol{H}_{-16}\left(2\sqrt{z}\right)z^5 + 5\left(12\,368\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^{9/2} + 326\,440\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^4 + 5\,100\,534\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 48\,758\,031\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^3 + 285\,015\,696\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 990\,370\,710\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^2 + 1\,924\,297\,200\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 1\,866\,410\,280\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z + 722\,796\,480\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 63\,488\,880\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.5906.01

$${}_1F_2\left(6; -\frac{9}{2}, -\frac{7}{2}; z\right) =$$
$$-\frac{1}{1\,488\,375}\left(2\pi z^{5/2}\left(32\,\boldsymbol{L}_{-16}\left(2\sqrt{z}\right)z^5 + 5\left(688\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^{9/2} + 30\,224\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^4 + 707\,304\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 9\,643\,170\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^3 + 78\,771\,903\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 382\,415\,670\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^2 + 1\,059\,033\,780\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 1\,536\,756\,480\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z + 988\,961\,400\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 190\,466\,640\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5907.01

$${}_1F_2\left(6; -\frac{9}{2}, -\frac{7}{2}; -z\right) =$$
$$-\frac{1}{1\,488\,375}\left(2\pi z^{5/2}\left(32\,\boldsymbol{H}_{-16}\left(2\sqrt{z}\right)z^5 + 5\left(688\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^{9/2} + 30\,224\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^4 + 707\,304\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 9\,643\,170\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^3 + 78\,771\,903\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 382\,415\,670\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^2 + 1\,059\,033\,780\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 1\,536\,756\,480\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z + 988\,961\,400\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 190\,466\,640\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5908.01

$${}_1F_2\left(6; -\frac{9}{2}, -\frac{5}{2}; z\right) =$$
$$\frac{1}{212\,625}\left(\pi z^{5/2}\left(32\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^{9/2} + 3088\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^4 + 15\left(8016\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 163\,624\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^3 + 1\,905\,398\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 12\,919\,515\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^2 + 49\,954\,800\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 103\,237\,260\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z + 99\,303\,120\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 31\,744\,440\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5909.01

$${}_1F_2\left(6; -\frac{9}{2}, -\frac{5}{2}; -z\right) =$$
$$\frac{1}{212\,625}\left(\pi z^{5/2}\left(32\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^{9/2} + 3088\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^4 + 15\left(8016\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 163\,624\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^3 + 1\,905\,398\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 12\,919\,515\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^2 + 49\,954\,800\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 103\,237\,260\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z + 99\,303\,120\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 31\,744\,440\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5910.01

$${}_1F_2\left(6; -\frac{9}{2}, -\frac{3}{2}; z\right) =$$
$$-\frac{1}{85\,050}\left(\pi z^{5/2}\left(32\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^4 + 3\left(912\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 5\left(6192\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^3 + 107\,896\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 1\,042\,230\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^2 + 5\,623\,905\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 16\,211\,370\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z + 22\,180\,410\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 10\,581\,480\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.5911.01

$${}_1F_2\left(6; -\frac{9}{2}, -\frac{3}{2}; -z\right) =$$
$$-\frac{1}{85\,050}\left(\pi z^{5/2}\left(32\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^4 + 3\left(912\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 5\left(6192\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^3 + 107\,896\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 1\,042\,230\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^2 + 5\,623\,905\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 16\,211\,370\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z + 22\,180\,410\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 10\,581\,480\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.5912.01

$${}_1F_2\left(6; -\frac{9}{2}, -\frac{1}{2}; z\right) =$$
$$\frac{1}{56\,700}\left(\pi z^{5/2}\left(32\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 2384\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^3 + 69\,040\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 997\,080\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^2 + 7\,656\,810\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 30\,760\,905\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z + 58\,605\,120\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 39\,680\,550\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5913.01

$${}_1F_2\left(6; -\frac{9}{2}, -\frac{1}{2}; -z\right) =$$
$$\frac{1}{56\,700}\left(\pi z^{5/2}\left(32\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^{7/2} + 2384\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^3 + 69\,040\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 997\,080\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^2 + 7\,656\,810\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 30\,760\,905\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z + 58\,605\,120\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 39\,680\,550\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5914.01

$${}_1F_2\left(6; -\frac{9}{2}, \frac{1}{2}; z\right) =$$
$$-\frac{1}{113\,400}\left(\pi z^{5/2}\left(32\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^3 + 2032\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 105\left(464\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^2 + 5320\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 30\,362\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z + 80\,427\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 75\,582\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5915.01

$${}_1F_2\left(6; -\frac{9}{2}, \frac{1}{2}; -z\right) =$$
$$-\frac{1}{113\,400}\left(\pi z^{5/2}\left(32\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^3 + 2032\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^{5/2} + 105\left(464\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^2 + 5320\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{3/2} + 30\,362\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z + 80\,427\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\sqrt{z} + 75\,582\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5916.01

$${}_1F_2\left(6; -\frac{9}{2}, 1; z\right) =$$
$$\left(-\frac{4z^5}{14\,175} - \frac{10z^4}{189} + \frac{8z^3}{27} - \frac{4z^2}{3} + \frac{2z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(10z^4 + 120z^3 - 252z^2 - 1890z + 2835\right)\sinh\left(2\sqrt{z}\right)}{2835}$$

07.22.03.5917.01

$${}_1F_2\left(6; -\frac{9}{2}, 1; -z\right) =$$
$$\left(\frac{4z^5}{14\,175} - \frac{10z^4}{189} - \frac{8z^3}{27} - \frac{4z^2}{3} - \frac{2z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(10z^4 - 120z^3 - 252z^2 + 1890z + 2835\right)\sin\left(2\sqrt{z}\right)}{2835}$$

07.22.03.5918.01

$${}_1F_2\left(6; -\frac{9}{2}, \frac{3}{2}; z\right) =$$
$$\frac{1}{226\,800}\left(-4\left(16 z^5 + 2336 z^4 - 15\,303 z^3 + 51\,660 z^2 + 12\,600 z - 56\,700\right) - 45\pi\sqrt{z}\left(16 z^4 + 56 z^3 + 441 z^2 - 4284 z + 2520\right)\right.$$
$$\left.\boldsymbol{L}_0\left(2\sqrt{z}\right) - \pi\left(32 z^5 + 4320 z^4 - 30\,870 z^3 + 85\,995 z^2 + 136\,080 z - 113\,400\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5919.01

$${}_1F_2\left(6; -\frac{9}{2}, \frac{3}{2}; -z\right) =$$
$$\frac{1}{226\,800}\left(4\left(16 z^5 - 2336 z^4 - 15\,303 z^3 - 51\,660 z^2 + 12\,600 z + 56\,700\right) + 45\pi\sqrt{z}\left(16 z^4 - 56 z^3 + 441 z^2 + 4284 z + 2520\right)\right.$$
$$\left.\boldsymbol{H}_0\left(2\sqrt{z}\right) + \pi\left(-32 z^5 + 4320 z^4 + 30\,870 z^3 + 85\,995 z^2 - 136\,080 z - 113\,400\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5920.01

$${}_1F_2\left(6; -\frac{9}{2}, 2; z\right) = \left(-\frac{26 z^4}{4725} + \frac{4 z^3}{135} - \frac{4 z^2}{9} + \frac{4 z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(2 z^4 + 180 z^3 - 1260 z^2 + 14\,175\right)\sinh\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.5921.01

$${}_1F_2\left(6; -\frac{9}{2}, 2; -z\right) = \left(-\frac{26 z^4}{4725} - \frac{4 z^3}{135} - \frac{4 z^2}{9} - \frac{4 z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2 z^4 - 180 z^3 - 1260 z^2 + 14\,175\right)\sin\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.5922.01

$${}_1F_2\left(6; -\frac{9}{2}, \frac{5}{2}; z\right) = \frac{1}{453\,600\sqrt{z}}\left(-105\pi\sqrt{z}\left(16 z^4 - 120 z^3 + 1197 z^2 - 1980 z - 1080\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) - \right.$$
$$2\left(4\sqrt{z}\left(16 z^5 + 1248 z^4 - 7551 z^3 + 4500 z^2 + 37\,800 z - 56\,700\right) + \right.$$
$$\left.\left.3\pi\left(16 z^5 + 840 z^4 - 3675 z^3 - 30\,870 z^2 + 75\,600 z + 37\,800\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5923.01

$${}_1F_2\left(6; -\frac{9}{2}, \frac{5}{2}; -z\right) = \frac{1}{453\,600\sqrt{z}}\left(105\pi\sqrt{z}\left(16 z^4 + 120 z^3 + 1197 z^2 + 1980 z - 1080\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + \right.$$
$$2\left(4\sqrt{z}\left(16 z^5 - 1248 z^4 - 7551 z^3 - 4500 z^2 + 37\,800 z + 56\,700\right) - \right.$$
$$\left.\left.3\pi\left(16 z^5 - 840 z^4 - 3675 z^3 + 30\,870 z^2 + 75\,600 z - 37\,800\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5924.01

$${}_1F_2\left(6; -\frac{9}{2}, 3; z\right) = \left(-\frac{8 z^4}{14\,175} - \frac{2 z^3}{225} - \frac{z^2}{9} + \frac{14 z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(18 z^3 - 245 z^2 + 1050 z + 4725\right)\sinh\left(2\sqrt{z}\right)}{4725}$$

07.22.03.5925.01

$${}_1F_2\left(6; -\frac{9}{2}, 3; -z\right) = \left(-\frac{8 z^4}{14\,175} + \frac{2 z^3}{225} - \frac{z^2}{9} - \frac{14 z}{9} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(18 z^3 + 245 z^2 + 1050 z - 4725\right)\sin\left(2\sqrt{z}\right)}{4725}$$

07.22.03.5926.01

$${}_1F_2\left(6; -\frac{9}{2}, \frac{7}{2}; z\right) =$$
$$-\frac{1}{907\,200\,z}\left(16\,z\left(16\,z^5+480\,z^4-855\,z^3-7650\,z^2+16\,200\,z-56\,700\right)+75\,\pi\,\sqrt{z}\,\left(80\,z^4-840\,z^3+2709\,z^2+4410\,z+7560\right)\right.$$
$$\left.\boldsymbol{L}_2\left(2\,\sqrt{z}\right)+15\,\pi\left(32\,z^5+9450\,z^3-45\,675\,z^2-75\,600\,z-113\,400\right)\boldsymbol{L}_3\left(2\,\sqrt{z}\right)\right)$$

07.22.03.5927.01

$${}_1F_2\left(6; -\frac{9}{2}, \frac{7}{2}; -z\right) =$$
$$\frac{1}{907\,200\,z}\left(16\,z\left(16\,z^5-480\,z^4-855\,z^3+7650\,z^2+16\,200\,z+56\,700\right)+75\,\pi\,\sqrt{z}\,\left(80\,z^4+840\,z^3+2709\,z^2-4410\,z+7560\right)\right.$$
$$\left.\boldsymbol{H}_2\left(2\,\sqrt{z}\right)-15\,\pi\left(32\,z^5+9450\,z^3+45\,675\,z^2-75\,600\,z+113\,400\right)\boldsymbol{H}_3\left(2\,\sqrt{z}\right)\right)$$

07.22.03.5928.01

$${}_1F_2\left(6; -\frac{9}{2}, 4; z\right) = \left(-\frac{8\,z^3}{675}+\frac{z^2}{15}+\frac{5\,z}{3}+1\right)\cosh\left(2\,\sqrt{z}\right)-\frac{2\,\sqrt{z}\,\left(4\,z^3-105\,z^2+1575\,z+4725\right)\sinh\left(2\,\sqrt{z}\right)}{4725}$$

07.22.03.5929.01

$${}_1F_2\left(6; -\frac{9}{2}, 4; -z\right) = \left(\frac{8\,z^3}{675}+\frac{z^2}{15}-\frac{5\,z}{3}+1\right)\cos\left(2\,\sqrt{z}\right)-\frac{2\,\sqrt{z}\,\left(4\,z^3+105\,z^2+1575\,z-4725\right)\sin\left(2\,\sqrt{z}\right)}{4725}$$

07.22.03.5930.01

$${}_1F_2\left(6; -\frac{9}{2}, \frac{9}{2}; z\right) = \frac{1}{1\,814\,400\,z^{3/2}}$$
$$\left(-1575\,\pi\,\sqrt{z}\,\left(16\,z^4-88\,z^3-315\,z^2-1638\,z-5040\right)\boldsymbol{L}_3\left(2\,\sqrt{z}\right)-2\left(16\left(16\,z^5+32\,z^4+945\,z^3-630\,z^2+25\,200\,z-56\,700\right)\right.\right.$$
$$\left.\left.z^{3/2}+105\,\pi\left(16\,z^5-360\,z^4+3045\,z^3+11\,655\,z^2+56\,700\,z+151\,200\right)\boldsymbol{L}_4\left(2\,\sqrt{z}\right)\right)\right)$$

07.22.03.5931.01

$${}_1F_2\left(6; -\frac{9}{2}, \frac{9}{2}; -z\right) = \frac{1}{1\,814\,400\,z^{3/2}}\left(1575\,\pi\,\sqrt{z}\,\left(16\,z^4+88\,z^3-315\,z^2+1638\,z-5040\right)\boldsymbol{H}_3\left(2\,\sqrt{z}\right)+\right.$$
$$2\left(16\,z^{3/2}\left(16\,z^5-32\,z^4+945\,z^3+630\,z^2+25\,200\,z+56\,700\right)-\right.$$
$$\left.\left.105\,\pi\left(16\,z^5+360\,z^4+3045\,z^3-11\,655\,z^2+56\,700\,z-151\,200\right)\boldsymbol{H}_4\left(2\,\sqrt{z}\right)\right)\right)$$

07.22.03.5932.01

$${}_1F_2\left(6; -\frac{9}{2}, 5; z\right) = \left(-\frac{32\,z^3}{4725}+\frac{8\,z^2}{45}+\frac{26\,z}{15}+1\right)\cosh\left(2\,\sqrt{z}\right)-\frac{2}{5}\,\sqrt{z}\,\left(2\,z+5\right)\sinh\left(2\,\sqrt{z}\right)$$

07.22.03.5933.01

$${}_1F_2\left(6; -\frac{9}{2}, 5; -z\right) = \left(\frac{32\,z^3}{4725}+\frac{8\,z^2}{45}-\frac{26\,z}{15}+1\right)\cos\left(2\,\sqrt{z}\right)+\frac{2}{5}\left(5-2\,z\right)\sqrt{z}\,\sin\left(2\,\sqrt{z}\right)$$

07.22.03.5934.01

$${}_1F_2\left(6; -\frac{9}{2}, \frac{11}{2}; z\right) = -\frac{1}{3\,628\,800\,z^2}$$
$$\left(64\left(16\,z^5-96\,z^4-231\,z^3-7560\,z^2-15\,120\,z-56\,700\right)z^2+4725\,\pi\left(16\,z^4+120\,z^3+1449\,z^2+13\,608\,z+63\,504\right)\right.$$
$$\left.\boldsymbol{L}_4\left(2\,\sqrt{z}\right)\sqrt{z}+945\,\pi\left(32\,z^5-480\,z^4-3990\,z^3-46\,305\,z^2-393\,120\,z-1\,587\,600\right)\boldsymbol{L}_5\left(2\,\sqrt{z}\right)\right)$$

07.22.03.5935.01

$$ {}_1F_2\left(6; -\frac{9}{2}, \frac{11}{2}; -z\right) = \frac{1}{3\,628\,800\,z^2} \left(64\left(16\,z^5 + 96\,z^4 - 231\,z^3 + 7560\,z^2 - 15\,120\,z + 56\,700\right)z^2 + 4725\,\pi\left(16\,z^4 - 120\,z^3 + 1449\,z^2 - 13\,608\,z + 63\,504\right) \boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} - 945\,\pi\left(32\,z^5 + 480\,z^4 - 3990\,z^3 + 46\,305\,z^2 - 393\,120\,z + 1\,587\,600\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right) $$

07.22.03.5936.01

$$ {}_1F_2\left(6; -\frac{9}{2}, 6; z\right) = \left(\frac{16\,z^2}{63} + \frac{16\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.5937.01

$$ {}_1F_2\left(6; -\frac{9}{2}, 6; -z\right) = \left(\frac{16\,z^2}{63} - \frac{16\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right) $$

For fixed z and $a_1 = 6$, $b_1 = -\frac{7}{2}$

07.22.03.5938.01

$$ {}_1F_2\left(6; -\frac{7}{2}, -\frac{7}{2}; z\right) = \frac{1}{165\,375}\left(\pi z^2\left(32\,\boldsymbol{L}_{-15}\left(2\sqrt{z}\right)z^5 + 5\left(624\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{9/2} + 24\,608\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^4 + 510\,440\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{7/2} + 6\,070\,090\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^3 + 42\,351\,363\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 170\,658\,855\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^2 + 376\,398\,360\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 407\,561\,400\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z + 173\,838\,600\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 16\,628\,040\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.5939.01

$$ {}_1F_2\left(6; -\frac{7}{2}, -\frac{7}{2}; -z\right) = \frac{1}{165\,375}\left(\pi z^2\left(32\,\boldsymbol{H}_{-15}\left(2\sqrt{z}\right)z^5 + 5\left(624\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{9/2} + 24\,608\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^4 + 510\,440\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{7/2} + 6\,070\,090\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^3 + 42\,351\,363\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 170\,658\,855\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^2 + 376\,398\,360\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 407\,561\,400\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z + 173\,838\,600\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 16\,628\,040\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.5940.01

$$ {}_1F_2\left(6; -\frac{7}{2}, -\frac{5}{2}; z\right) = -\frac{1}{47\,250}\left(\pi z^2\left(32\,\boldsymbol{L}_{-14}\left(2\sqrt{z}\right)z^{9/2} + 5\left(560\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^4 + 19\,568\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{7/2} + 353\,896\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^3 + 3\,592\,818\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 20\,794\,455\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^2 + 66\,686\,580\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 109\,652\,040\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z + 78\,605\,280\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 16\,628\,040\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.5941.01

$${}_1F_2\left(6; -\frac{7}{2}, -\frac{5}{2}; -z\right) =$$
$$-\frac{1}{47\,250}\left(\pi z^2\left(32\,\boldsymbol{H}_{-14}\left(2\sqrt{z}\right)z^{9/2} + 5\left(560\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^4 + 19\,568\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{7/2} + 353\,896\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^3 + 3\,592\,818\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 20\,794\,455\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^2 + 66\,686\,580\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 109\,652\,040\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z + 78\,605\,280\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 16\,628\,040\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5942.01

$${}_1F_2\left(6; -\frac{7}{2}, -\frac{3}{2}; z\right) = \frac{1}{18\,900}\left(\pi z^2\left(32\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^4 + 5\left(496\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{7/2} + 15\,104\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^3 + 9\left(25\,896\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 95\left(2294\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^2 + 17\left(621\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 1483\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z + 1612\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 572\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)\right)\right)$$

07.22.03.5943.01

$${}_1F_2\left(6; -\frac{7}{2}, -\frac{3}{2}; -z\right) = \frac{1}{18\,900}\left(\pi z^2\left(32\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^4 + 5\left(496\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{7/2} + 15\,104\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^3 + 9\left(25\,896\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 95\left(2294\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^2 + 17\left(621\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 1483\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z + 1612\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 572\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)\right)\right)$$

07.22.03.5944.01

$${}_1F_2\left(6; -\frac{7}{2}, -\frac{1}{2}; z\right) =$$
$$-\frac{1}{12\,600}\left(\pi z^2\left(32\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^{7/2} + 5\left(432\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^3 + 11\,216\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 19\left(7544\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^2 + 17\left(2966\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 10\,149\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z + 15\,990\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 8580\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)\right)$$

07.22.03.5945.01

$${}_1F_2\left(6; -\frac{7}{2}, -\frac{1}{2}; -z\right) =$$
$$-\frac{1}{12\,600}\left(\pi z^2\left(32\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^{7/2} + 5\left(432\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^3 + 11\,216\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 19\left(7544\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^2 + 17\left(2966\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 10\,149\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z + 15\,990\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 8580\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)\right)$$

07.22.03.5946.01

$${}_1F_2\left(6; -\frac{7}{2}, \frac{1}{2}; z\right) =$$
$$\frac{1}{25\,200}\left(\pi z^2\left(32\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^3 + 5\left(368\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 19\left(416\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^2 + 4216\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 20\,910\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z + 47\,073\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 36\,465\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)$$

07.22.03.5947.01

$${}_1F_2\left(6; -\frac{7}{2}, \frac{1}{2}; -z\right) =$$
$$\frac{1}{25\,200}\left(\pi z^2\left(32\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^3 + 5\left(368\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{5/2} + 19\left(416\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^2 + 4216\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{3/2} + 20\,910\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z + 47\,073\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)\sqrt{z} + 36\,465\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\right)\right)\right)\right)\right)$$

07.22.03.5948.01

$${}_1F_2\left(6; -\frac{7}{2}, 1; z\right) =$$
$$\frac{1}{1575}\left(5\left(10z^4 + 200z^3 - 492z^2 + 90z + 315\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(z^4 + 200z^3 - 300z^2 + 1650z - 1575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5949.01

$${}_1F_2\left(6; -\frac{7}{2}, 1; -z\right) =$$
$$\frac{1}{1575}\left(5\left(10z^4 - 200z^3 - 492z^2 - 90z + 315\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-z^4 + 200z^3 + 300z^2 + 1650z + 1575\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5950.01

$${}_1F_2\left(6; -\frac{7}{2}, \frac{3}{2}; z\right) =$$
$$\frac{1}{50\,400}\left(8\left(184z^4 + 2476z^3 - 5229z^2 - 3420z + 6300\right) + 2\pi\sqrt{z}\left(16z^4 + 2520z^3 - 7875z^2 + 25\,515z - 11\,340\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) + 45\pi\left(16z^4 + 168z^3 - 259z^2 - 882z + 504\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5951.01

$${}_1F_2\left(6; -\frac{7}{2}, \frac{3}{2}; -z\right) =$$
$$\frac{1}{50\,400}\left(8\left(184z^4 - 2476z^3 - 5229z^2 + 3420z + 6300\right) + 2\pi\sqrt{z}\left(-16z^4 + 2520z^3 + 7875z^2 + 25\,515z + 11\,340\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) - 45\pi\left(16z^4 - 168z^3 - 259z^2 + 882z + 504\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5952.01

$${}_1F_2\left(6; -\frac{7}{2}, 2; z\right) =$$
$$\frac{1}{1575}\left(\left(2z^4 + 220z^3 - 1020z^2 + 1800z + 1575\right)\cosh\left(2\sqrt{z}\right) + 10\sqrt{z}\left(4z^3 + 12z^2 + 60z - 315\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5953.01

$${}_1F_2\left(6; -\frac{7}{2}, 2; -z\right) = \frac{1}{1575}\left(\left(2z^4 - 220z^3 - 1020z^2 - 1800z + 1575\right)\cos\left(2\sqrt{z}\right) + 10\sqrt{z}\left(4z^3 - 12z^2 + 60z + 315\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5954.01

$${}_1F_2\left(6; -\frac{7}{2}, \frac{5}{2}; z\right) = \frac{1}{100\,800\sqrt{z}}\left(32\sqrt{z}\left(76z^4 + 296z^3 + 222z^2 - 2475z + 3150\right) + 6\pi\sqrt{z}\left(16z^4 + 1400z^3 - 5775z^2 + 6720z + 3150\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) + 105\pi\left(16z^4 - 40z^3 + 537z^2 - 828z - 360\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5955.01

$${}_1F_2\left(6; -\frac{7}{2}, \frac{5}{2}; -z\right) = \frac{1}{100\,800\sqrt{z}}\left(32\sqrt{z}\left(76z^4 - 296z^3 + 222z^2 + 2475z + 3150\right) - 6\pi\sqrt{z}\left(16z^4 - 1400z^3 - 5775z^2 - 6720z + 3150\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) - 105\pi\left(16z^4 + 40z^3 + 537z^2 + 828z - 360\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5956.01

$${}_1F_2\left(6; -\frac{7}{2}, 3; z\right) = \frac{\left(58z^3 - 435z^2 + 2250z + 1575\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(2z^3 + 75z^2 - 150z - 1575\right)\sinh\left(2\sqrt{z}\right)}{1575}$$

07.22.03.5957.01

$${}_1F_2\left(6; -\frac{7}{2}, 3; -z\right) = \frac{2\sqrt{z}\left(2z^3 - 75z^2 - 150z + 1575\right)\sin\left(2\sqrt{z}\right) - \left(58z^3 + 435z^2 + 2250z - 1575\right)\cos\left(2\sqrt{z}\right)}{1575}$$

07.22.03.5958.01

$${}_1F_2\left(6; -\frac{7}{2}, \frac{7}{2}; z\right) =$$
$$\frac{1}{40\,320z}\left(32z\left(24z^4 - 28z^3 + 237z^2 - 540z + 1260\right) + 6\pi\sqrt{z}\left(16z^4 + 600z^3 - 1275z^2 - 1725z - 2700\right)\boldsymbol{L}_2\left(2\sqrt{z}\right) + \right.$$
$$\left. 15\pi\left(80z^4 - 600z^3 + 1689z^2 + 2340z + 3240\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.5959.01

$${}_1F_2\left(6; -\frac{7}{2}, \frac{7}{2}; -z\right) =$$
$$\frac{1}{40\,320z}\left(32z\left(24z^4 + 28z^3 + 237z^2 + 540z + 1260\right) - 6\pi\sqrt{z}\left(16z^4 - 600z^3 - 1275z^2 + 1725z - 2700\right)\boldsymbol{H}_2\left(2\sqrt{z}\right) - \right.$$
$$\left. 15\pi\left(80z^4 + 600z^3 + 1689z^2 - 2340z + 3240\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.5960.01

$${}_1F_2\left(6; -\frac{7}{2}, 4; z\right) = \frac{1}{525}\left(\left(4z^3 - 37z^2 + 825z + 525\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(17z^2 - 125z - 525\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5961.01

$${}_1F_2\left(6; -\frac{7}{2}, 4; -z\right) = \frac{1}{525}\left(-\left(4z^3 + 37z^2 + 825z - 525\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(17z^2 + 125z - 525\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5962.01

$${}_1F_2\left(6; -\frac{7}{2}, \frac{9}{2}; z\right) = \frac{1}{403\,200z^{3/2}}$$
$$\left(64\left(88z^4 - 200z^3 + 450z^2 - 2925z + 6300\right)z^{3/2} + 210\pi\left(16z^4 + 120z^3 + 345z^2 + 1620z + 4725\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z} + \right.$$
$$\left. 1575\pi\left(16z^4 - 72z^3 - 223z^2 - 990z - 2520\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.5963.01

$${}_1F_2\left(6; -\frac{7}{2}, \frac{9}{2}; -z\right) = \frac{1}{403\,200z^{3/2}}$$
$$\left(64\left(88z^4 + 200z^3 + 450z^2 + 2925z + 6300\right)z^{3/2} - 210\pi\left(16z^4 - 120z^3 + 345z^2 - 1620z + 4725\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z} - \right.$$
$$\left. 1575\pi\left(16z^4 + 72z^3 - 223z^2 + 990z - 2520\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.5964.01

$${}_1F_2\left(6; -\frac{7}{2}, 5; z\right) = \frac{1}{525}\left(\left(32z^2 + 870z + 525\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(8z^2 - 170z - 525\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5965.01

$${}_1F_2\left(6; -\frac{7}{2}, 5; -z\right) = \frac{1}{525}\left(\left(32z^2 - 870z + 525\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(8z^2 + 170z - 525\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5966.01

$${}_1F_2\left(6; -\frac{7}{2}, \frac{11}{2}; z\right) =$$
$$\frac{1}{806\,400\,z^2}\left(128\left(56\,z^4 - 68\,z^3 + 735\,z^2 - 360\,z + 6300\right)z^2 + 1890\,\pi\left(16\,z^4 - 40\,z^3 - 435\,z^2 - 3885\,z - 17\,640\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} + 4725\,\pi\left(16\,z^4 + 104\,z^3 + 1101\,z^2 + 8946\,z + 35\,280\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.5967.01

$${}_1F_2\left(6; -\frac{7}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{806\,400\,z^2}\left(128\left(56\,z^4 + 68\,z^3 + 735\,z^2 + 360\,z + 6300\right)z^2 - 1890\,\pi\left(16\,z^4 + 40\,z^3 - 435\,z^2 + 3885\,z - 17\,640\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} - 4725\,\pi\left(16\,z^4 - 104\,z^3 + 1101\,z^2 - 8946\,z + 35\,280\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.5968.01

$${}_1F_2\left(6; -\frac{7}{2}, 6; z\right) = \left(\frac{16\,z^2}{105} + \frac{12\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,(8\,z + 21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5969.01

$${}_1F_2\left(6; -\frac{7}{2}, 6; -z\right) = \left(\frac{16\,z^2}{105} - \frac{12\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}(21 - 8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

For fixed z and $a_1 = 6$, $b_1 = -\frac{5}{2}$

07.22.03.5970.01

$${}_1F_2\left(6; -\frac{5}{2}, -\frac{5}{2}; z\right) =$$
$$\frac{1}{13\,500}\left(\pi\,z^{3/2}\left(32\,\boldsymbol{L}_{-13}\left(2\sqrt{z}\right)z^{9/2} + 2512\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^4 + 77\,744\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^{7/2} + 1\,225\,272\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^3 + 10\,612\,458\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{5/2} + 50\,909\,985\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^2 + 129\,792\,960\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^{3/2} + 158\,881\,320\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z + 75\,263\,760\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 7\,876\,440\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5971.01

$${}_1F_2\left(6; -\frac{5}{2}, -\frac{5}{2}; -z\right) =$$
$$\frac{1}{13\,500}\left(\pi\,z^{3/2}\left(32\,\boldsymbol{H}_{-13}\left(2\sqrt{z}\right)z^{9/2} + 2512\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^4 + 77\,744\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^{7/2} + 1\,225\,272\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^3 + 10\,612\,458\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{5/2} + 50\,909\,985\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^2 + 129\,792\,960\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^{3/2} + 158\,881\,320\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z + 75\,263\,760\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 7\,876\,440\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5972.01

$${}_1F_2\left(6; -\frac{5}{2}, -\frac{3}{2}; z\right) =$$
$$-\frac{1}{5400}\left(\pi z^{3/2}\left(32\,\boldsymbol{L}_{-12}\left(2\sqrt{z}\right)z^4 + 2224\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^{7/2} + 59\,952\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^3 + 805\,608\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{5/2} + \right.\right.$$
$$5\,778\,810\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^2 + 22\,015\,935\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^{3/2} +$$
$$\left.\left.41\,729\,220\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z + 33\,693\,660\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 7\,876\,440\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5973.01

$${}_1F_2\left(6; -\frac{5}{2}, -\frac{3}{2}; -z\right) =$$
$$-\frac{1}{5400}\left(\pi z^{3/2}\left(32\,\boldsymbol{H}_{-12}\left(2\sqrt{z}\right)z^4 + 2224\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^{7/2} + 59\,952\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^3 + 805\,608\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{5/2} + \right.\right.$$
$$5\,778\,810\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^2 + 22\,015\,935\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^{3/2} +$$
$$\left.\left.41\,729\,220\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z + 33\,693\,660\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 7\,876\,440\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5974.01

$${}_1F_2\left(6; -\frac{5}{2}, -\frac{1}{2}; z\right) = \frac{1}{3600}$$
$$\left(\pi\left(32\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^5 + \left(1936\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^3 + 44\,464\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{5/2} + 494\,360\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^2 + 2\,812\,650\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^{3/2} + \right.\right.\right.$$
$$\left.\left.\left.7\,952\,685\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z + 9\,918\,480\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 3\,938\,220\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)z^{3/2}\right)\right)$$

07.22.03.5975.01

$${}_1F_2\left(6; -\frac{5}{2}, -\frac{1}{2}; -z\right) =$$
$$\frac{1}{3600}\left(\pi\left(32\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^5 + \left(1936\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^3 + 44\,464\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{5/2} + 494\,360\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^2 + 2\,812\,650\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)\right.\right.\right.$$
$$\left.\left.\left.z^{3/2} + 7\,952\,685\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z + 9\,918\,480\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 3\,938\,220\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)z^{3/2}\right)\right)$$

07.22.03.5976.01

$${}_1F_2\left(6; -\frac{5}{2}, \frac{1}{2}; z\right) = -\frac{1}{7200}\left(\pi z^{3/2}\left(32\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^3 + 1648\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^{5/2} + 85\right.\right.$$
$$\left.\left.\left(368\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^2 + 3240\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^{3/2} + 13\,650\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z + 25\,311\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 15\,444\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5977.01

$${}_1F_2\left(6; -\frac{5}{2}, \frac{1}{2}; -z\right) =$$
$$-\frac{1}{7200}\left(\pi z^{3/2}\left(32\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^3 + 1648\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^{5/2} + 85\left(368\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^2 + 3240\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^{3/2} + \right.\right.\right.$$
$$\left.\left.\left.13\,650\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z + 25\,311\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)\sqrt{z} + 15\,444\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.5978.01

$${}_1F_2\left(6; -\frac{5}{2}, 1; z\right) = \frac{1}{450}\left(-2\left(z^4 + 200\,z^3 + 300\,z^2 + 90\,z - 225\right)\cosh\left(2\sqrt{z}\right) - \sqrt{z}\,\left(49\,z^3 + 1200\,z^2 - 1560\,z + 900\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.5979.01

$${}_1F_2\left(6; -\frac{5}{2}, 1; -z\right) = \left(-\frac{z^4}{225} + \frac{8\,z^3}{9} - \frac{4\,z^2}{3} + \frac{2\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{450}\sqrt{z}\left(-49\,z^3 + 1200\,z^2 + 1560\,z + 900\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5980.01

$${}_1F_2\left(6; -\frac{5}{2}, \frac{3}{2}; z\right) = \frac{1}{14\,400}\left(-45\,\pi\sqrt{z}\left(16\,z^3 + 280\,z^2 - 399\,z + 126\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) - 2\left(32\,z^4 + 5392\,z^3 + 1974\,z^2 + 7740\,z + \pi\left(16\,z^4 + 2520\,z^3 - 1575\,z^2 + 7560\,z - 2835\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) - 7200\right)\right)$$

07.22.03.5981.01

$${}_1F_2\left(6; -\frac{5}{2}, \frac{3}{2}; -z\right) = \frac{1}{14\,400}\left(2\left(-32\,z^4 + 5392\,z^3 - 1974\,z^2 + 7740\,z + \pi\left(16\,z^4 - 2520\,z^3 - 1575\,z^2 - 7560\,z - 2835\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 7200\right) - 45\,\pi\sqrt{z}\left(16\,z^3 - 280\,z^2 - 399\,z - 126\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)\right)$$

07.22.03.5982.01

$${}_1F_2\left(6; -\frac{5}{2}, 2; z\right) = \left(-\frac{4\,z^3}{45} - \frac{4\,z^2}{5} + \frac{4\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{225}\sqrt{z}\left(z^3 + 120\,z^2 - 240\,z + 450\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5983.01

$${}_1F_2\left(6; -\frac{5}{2}, 2; -z\right) = \frac{1}{225}\left(5\left(4\,z^3 - 36\,z^2 - 36\,z + 45\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\left(-z^3 + 120\,z^2 + 240\,z + 450\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5984.01

$${}_1F_2\left(6; -\frac{5}{2}, \frac{5}{2}; z\right) = \frac{1}{28\,800\sqrt{z}}\left(-3\,\pi\sqrt{z}\left(592\,z^3 + 4200\,z^2 - 3255\,z - 1260\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) - 2\left(4\sqrt{z}\left(16\,z^4 + 1832\,z^3 - 1677\,z^2 + 3708\,z - 3600\right) + 3\,\pi\left(16\,z^4 + 1400\,z^3 - 3675\,z^2 + 3465\,z + 1260\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5985.01

$${}_1F_2\left(6; -\frac{5}{2}, \frac{5}{2}; -z\right) = \frac{1}{28\,800\sqrt{z}}\left(2\left(4\sqrt{z}\left(-16\,z^4 + 1832\,z^3 + 1677\,z^2 + 3708\,z + 3600\right) + 3\,\pi\left(16\,z^4 - 1400\,z^3 - 3675\,z^2 - 3465\,z + 1260\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right) - 3\,\pi\sqrt{z}\left(592\,z^3 - 4200\,z^2 - 3255\,z + 1260\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.5986.01

$${}_1F_2\left(6; -\frac{5}{2}, 3; z\right) = \left(-\frac{2\,z^3}{225} - \frac{7\,z^2}{15} + \frac{6\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\left(z^2 - 2\,z + 15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5987.01

$${}_1F_2\left(6; -\frac{5}{2}, 3; -z\right) = \left(\frac{2\,z^3}{225} - \frac{7\,z^2}{15} - \frac{6\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\left(z^2 + 2\,z + 15\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5988.01

$${}_1F_2\left(6; -\frac{5}{2}, \frac{7}{2}; z\right) =$$
$$-\frac{1}{57\,600\,z}\left(16\,z\left(16\,z^4+1160\,z^3-1365\,z^2+2340\,z-3600\right)+15\,\pi\sqrt{z}\,\left(464\,z^3+600\,z^2+645\,z+900\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)+\right.$$
$$\left.30\,\pi\left(16\,z^4+600\,z^3-975\,z^2-1080\,z-1350\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.5989.01

$${}_1F_2\left(6; -\frac{5}{2}, \frac{7}{2}; -z\right) =$$
$$\frac{1}{57\,600\,z}\left(2\left(8\,z\left(-16\,z^4+1160\,z^3+1365\,z^2+2340\,z+3600\right)+15\,\pi\left(16\,z^4-600\,z^3-975\,z^2+1080\,z-1350\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.15\,\pi\sqrt{z}\,\left(464\,z^3-600\,z^2+645\,z-900\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.5990.01

$${}_1F_2\left(6; -\frac{5}{2}, 4; z\right) = \left(-\frac{19\,z^2}{75}+\frac{7\,z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{75}\sqrt{z}\,\left(z^2+5\,z+75\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5991.01

$${}_1F_2\left(6; -\frac{5}{2}, 4; -z\right) = \left(-\frac{19\,z^2}{75}-\frac{7\,z}{5}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{75}\sqrt{z}\,\left(z^2-5\,z+75\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.5992.01

$${}_1F_2\left(6; -\frac{5}{2}, \frac{9}{2}; z\right) = \frac{1}{115\,200\,z^{3/2}}\left(-315\,\pi\sqrt{z}\,\left(112\,z^3-40\,z^2-165\,z-450\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)-\right.$$
$$\left.2\left(16\left(16\,z^4+680\,z^3-765\,z^2+2070\,z-3600\right)z^{3/2}+105\,\pi\left(16\,z^4+120\,z^3+285\,z^2+1125\,z+2700\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.5993.01

$${}_1F_2\left(6; -\frac{5}{2}, \frac{9}{2}; -z\right) = \frac{1}{115\,200\,z^{3/2}}\left(-32\left(16\,z^4-680\,z^3-765\,z^2-2070\,z-3600\right)z^{3/2}-\right.$$
$$\left.315\,\pi\left(112\,z^3+40\,z^2-165\,z+450\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z}+210\,\pi\left(16\,z^4-120\,z^3+285\,z^2-1125\,z+2700\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.5994.01

$${}_1F_2\left(6; -\frac{5}{2}, 5; z\right) = \left(-\frac{8\,z^2}{75}+\frac{38\,z}{25}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{75}\sqrt{z}\,\left(14\,z+75\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5995.01

$${}_1F_2\left(6; -\frac{5}{2}, 5; -z\right) = \frac{1}{75}\left(\left(-8\,z^2-114\,z+75\right)\cos\left(2\sqrt{z}\right)+2\left(75-14\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.5996.01

$${}_1F_2\left(6; -\frac{5}{2}, \frac{11}{2}; z\right) =$$
$$-\frac{1}{230\,400\,z^2}\left(64\left(16\,z^4+392\,z^3-645\,z^2+1170\,z-3600\right)z^2+945\,\pi\left(208\,z^3+120\,z^2+1005\,z+4410\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.1890\,\pi\left(16\,z^4-40\,z^3-375\,z^2-2880\,z-11\,025\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.5997.01

$${}_1F_2\left(6; -\frac{5}{2}, \frac{11}{2}; -z\right) =$$
$$\frac{1}{230\,400\,z^2}\left(-64\left(16\,z^4 - 392\,z^3 - 645\,z^2 - 1170\,z - 3600\right)z^2 - 945\,\pi\left(208\,z^3 - 120\,z^2 + 1005\,z - 4410\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} + 1890\,\pi\left(16\,z^4 + 40\,z^3 - 375\,z^2 + 2880\,z - 11\,025\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.5998.01

$${}_1F_2\left(6; -\frac{5}{2}, 6; z\right) = \left(\frac{8\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,(4\,z + 15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.5999.01

$${}_1F_2\left(6; -\frac{5}{2}, 6; -z\right) = \left(1 - \frac{8\,z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}(15 - 4\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

For fixed z and $a_1 = 6$, $b_1 = -\frac{3}{2}$

07.22.03.6000.01

$${}_1F_2\left(6; -\frac{3}{2}, -\frac{3}{2}; z\right) = \frac{1}{2160}$$
$$\left(\pi\,z\left(32\,\boldsymbol{L}_{-11}\left(2\sqrt{z}\right)z^4 + 1968\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{7/2} + 46\,176\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^3 + 528\,552\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{5/2} + 3\,136\,050\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^2 + 9\,471\,735\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{3/2} + 13\,314\,015\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z + 7\,065\,630\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\sqrt{z} + 810\,810\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6001.01

$${}_1F_2\left(6; -\frac{3}{2}, -\frac{3}{2}; -z\right) = \frac{1}{2160}$$
$$\left(\pi\,z\left(32\,\boldsymbol{H}_{-11}\left(2\sqrt{z}\right)z^4 + 1968\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{7/2} + 46\,176\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^3 + 528\,552\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{5/2} + 3\,136\,050\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^2 + 9\,471\,735\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{3/2} + 13\,314\,015\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z + 7\,065\,630\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\sqrt{z} + 810\,810\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6002.01

$${}_1F_2\left(6; -\frac{3}{2}, -\frac{1}{2}; z\right) =$$
$$-\frac{1}{1440}\left(\pi\,z\left(32\,\boldsymbol{L}_{-10}\left(2\sqrt{z}\right)z^{7/2} + 1712\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^3 + 34\,192\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{5/2} + 323\,400\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^2 + 1\,519\,050\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{3/2} + 3\,395\,535\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z + 3\,127\,410\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\sqrt{z} + 810\,810\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6003.01

$${}_1F_2\left(6; -\frac{3}{2}, -\frac{1}{2}; -z\right) =$$
$$-\frac{1}{1440}\left(\pi\,z\left(32\,\boldsymbol{H}_{-10}\left(2\sqrt{z}\right)z^{7/2} + 1712\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^3 + 34\,192\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{5/2} + 323\,400\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^2 + 1\,519\,050\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{3/2} + 3\,395\,535\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z + 3\,127\,410\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\sqrt{z} + 810\,810\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6004.01

$${}_1F_2\left(6; -\frac{3}{2}, \frac{1}{2}; z\right) = \frac{1}{2880}\left(\pi\,z\left(32\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^3 + 1456\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{5/2} + 15\left(1600\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^2 + 13\left(920\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{3/2} + 3190\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z + 4653\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)\sqrt{z} + 2079\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.6005.01

$${}_1F_2\left(6;-\frac{3}{2},\frac{1}{2};-z\right)=\frac{1}{2880}\left(\pi z\left(32\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^3+1456\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{5/2}+15\left(1600\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^2+13\left(920\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{3/2}+3190\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z+4653\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)\sqrt{z}+2079\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.6006.01

$${}_1F_2\left(6;-\frac{3}{2},1;z\right)=\left(\frac{47\,z^3}{180}+\frac{20\,z^2}{3}-2\,z+1\right)\cosh\left(2\sqrt{z}\right)+\frac{1}{360}\sqrt{z}\left(4\,z^3+753\,z^2+2400\,z-720\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.6007.01

$${}_1F_2\left(6;-\frac{3}{2},1;-z\right)=\left(-\frac{47\,z^3}{180}+\frac{20\,z^2}{3}+2\,z+1\right)\cos\left(2\sqrt{z}\right)+\frac{1}{360}\sqrt{z}\left(4\,z^3-753\,z^2+2400\,z+720\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.6008.01

$${}_1F_2\left(6;-\frac{3}{2},\frac{3}{2};z\right)=\frac{1}{5760}\left(8\left(176\,z^3+3738\,z^2-1605\,z+720\right)+2\pi\sqrt{z}\left(16\,z^3+2520\,z^2+4725\,z-945\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(688\,z^3+12\,600\,z^2-8505\,z+1890\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.6009.01

$${}_1F_2\left(6;-\frac{3}{2},\frac{3}{2};-z\right)=\frac{1}{5760}\left(8\left(-176\,z^3+3738\,z^2+1605\,z+720\right)+2\pi\sqrt{z}\left(16\,z^3-2520\,z^2+4725\,z+945\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+\pi\left(688\,z^3-12\,600\,z^2-8505\,z-1890\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.6010.01

$${}_1F_2\left(6;-\frac{3}{2},2;z\right)=\frac{1}{90}\left(z^3+120\,z^2+90\right)\cosh\left(2\sqrt{z}\right)+\frac{1}{60}\sqrt{z}\left(13\,z^2+160\,z-120\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.6011.01

$${}_1F_2\left(6;-\frac{3}{2},2;-z\right)=\left(-\frac{z^3}{90}+\frac{4\,z^2}{3}+1\right)\cos\left(2\sqrt{z}\right)+\frac{1}{60}\sqrt{z}\left(-13\,z^2+160\,z+120\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.6012.01

$${}_1F_2\left(6;-\frac{3}{2},\frac{5}{2};z\right)=\frac{1}{11\,520\sqrt{z}}\left(8\sqrt{z}\left(304\,z^3+4404\,z^2-2367\,z+1440\right)+3\pi\sqrt{z}\left(32\,z^3+3360\,z^2+1050\,z+315\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)+105\,\pi\left(16\,z^3+120\,z^2-63\,z-18\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.6013.01

$${}_1F_2\left(6;-\frac{3}{2},\frac{5}{2};-z\right)=\frac{1}{11\,520\sqrt{z}}\left(8\sqrt{z}\left(-304\,z^3+4404\,z^2+2367\,z+1440\right)+3\pi\sqrt{z}\left(32\,z^3-3360\,z^2+1050\,z-315\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)+105\,\pi\left(16\,z^3-120\,z^2-63\,z+18\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.6014.01

$${}_1F_2\left(6;-\frac{3}{2},3;z\right)=\frac{1}{3}\left(z^2+2\,z+3\right)\cosh\left(2\sqrt{z}\right)+\frac{1}{45}\sqrt{z}\left(z^2+60\,z-90\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.6015.01

$${}_1F_2\left(6;-\frac{3}{2},3;-z\right)=\frac{1}{3}\left(z^2-2\,z+3\right)\cos\left(2\sqrt{z}\right)-\frac{1}{45}\sqrt{z}\left(z^2-60\,z-90\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.6016.01

$${}_1F_2\left(6; -\frac{3}{2}, \frac{7}{2}; z\right) = \frac{1}{23\,040\,z}\left(64\,z\left(64\,z^3 + 645\,z^2 - 405\,z + 360\right) + 30\,\pi\,\sqrt{z}\,\left(16\,z^3 + 1032\,z^2 - 75\,z - 90\right)\boldsymbol{L}_2\left(2\,\sqrt{z}\right) + 45\,\pi\left(144\,z^3 + 200\,z^2 + 165\,z + 180\right)\boldsymbol{L}_3\left(2\,\sqrt{z}\right)\right)$$

07.22.03.6017.01

$${}_1F_2\left(6; -\frac{3}{2}, \frac{7}{2}; -z\right) = \frac{1}{23\,040\,z}\left(-64\,z\left(64\,z^3 - 645\,z^2 - 405\,z - 360\right) + 30\,\pi\,\sqrt{z}\,\left(16\,z^3 - 1032\,z^2 - 75\,z + 90\right)\boldsymbol{H}_2\left(2\,\sqrt{z}\right) + 45\,\pi\left(144\,z^3 - 200\,z^2 + 165\,z - 180\right)\boldsymbol{H}_3\left(2\,\sqrt{z}\right)\right)$$

07.22.03.6018.01

$${}_1F_2\left(6; -\frac{3}{2}, 4; z\right) = \left(\frac{z^2}{15} + z + 1\right)\cosh\left(2\,\sqrt{z}\right) + \frac{2}{3}\,(z-3)\,\sqrt{z}\,\sinh\left(2\,\sqrt{z}\right)$$

07.22.03.6019.01

$${}_1F_2\left(6; -\frac{3}{2}, 4; -z\right) = \left(\frac{z^2}{15} - z + 1\right)\cos\left(2\,\sqrt{z}\right) + \frac{2}{3}\,\sqrt{z}\,\,(z+3)\,\sin\left(2\,\sqrt{z}\right)$$

07.22.03.6020.01

$${}_1F_2\left(6; -\frac{3}{2}, \frac{9}{2}; z\right) = \frac{1}{46\,080\,z^{3/2}}\left(32\left(208\,z^3 + 1620\,z^2 - 1305\,z + 1440\right)z^{3/2} + 105\,\pi\left(32\,z^3 + 1152\,z^2 + 90\,z + 225\right)\boldsymbol{L}_3\left(2\,\sqrt{z}\right)\sqrt{z} + 105\,\pi\left(304\,z^3 - 120\,z^2 - 405\,z - 900\right)\boldsymbol{L}_4\left(2\,\sqrt{z}\right)\right)$$

07.22.03.6021.01

$${}_1F_2\left(6; -\frac{3}{2}, \frac{9}{2}; -z\right) = \frac{1}{46\,080\,z^{3/2}}\left(32\left(-208\,z^3 + 1620\,z^2 + 1305\,z + 1440\right)z^{3/2} + 105\,\pi\left(32\,z^3 - 1152\,z^2 + 90\,z - 225\right)\boldsymbol{H}_3\left(2\,\sqrt{z}\right)\sqrt{z} + 105\,\pi\left(304\,z^3 + 120\,z^2 - 405\,z + 900\right)\boldsymbol{H}_4\left(2\,\sqrt{z}\right)\right)$$

07.22.03.6022.01

$${}_1F_2\left(6; -\frac{3}{2}, 5; z\right) = \left(\frac{6\,z}{5} + 1\right)\cosh\left(2\,\sqrt{z}\right) + \frac{2}{15}\,\sqrt{z}\,\,(2\,z-15)\,\sinh\left(2\,\sqrt{z}\right)$$

07.22.03.6023.01

$${}_1F_2\left(6; -\frac{3}{2}, 5; -z\right) = \left(1 - \frac{6\,z}{5}\right)\cos\left(2\,\sqrt{z}\right) + \frac{2}{15}\,\sqrt{z}\,\,(2\,z+15)\,\sin\left(2\,\sqrt{z}\right)$$

07.22.03.6024.01

$${}_1F_2\left(6; -\frac{3}{2}, \frac{11}{2}; z\right) = \frac{1}{18\,432\,z^2}\left(128\left(16\,z^3 + 114\,z^2 - 99\,z + 144\right)z^2 + 378\,\pi\left(16\,z^3 + 312\,z^2 - 75\,z - 315\right)\boldsymbol{L}_4\left(2\,\sqrt{z}\right)\sqrt{z} + 189\,\pi\left(176\,z^3 + 120\,z^2 + 855\,z + 3150\right)\boldsymbol{L}_5\left(2\,\sqrt{z}\right)\right)$$

07.22.03.6025.01

$${}_1F_2\left(6; -\frac{3}{2}, \frac{11}{2}; -z\right) = \frac{1}{18\,432\,z^2}\left(-128\left(16\,z^3 - 114\,z^2 - 99\,z - 144\right)z^2 + 378\,\pi\left(16\,z^3 - 312\,z^2 - 75\,z + 315\right)\boldsymbol{H}_4\left(2\,\sqrt{z}\right)\sqrt{z} + 189\,\pi\left(176\,z^3 - 120\,z^2 + 855\,z - 3150\right)\boldsymbol{H}_5\left(2\,\sqrt{z}\right)\right)$$

07.22.03.6026.01

$${}_1F_2\left(6; -\frac{3}{2}, 6; z\right) = \left(\frac{4\,z}{3} + 1\right)\cosh\left(2\,\sqrt{z}\right) - 2\,\sqrt{z}\,\,\sinh\left(2\,\sqrt{z}\right)$$

07.22.03.6027.01

$${}_1F_2\left(6; -\frac{3}{2}, 6; -z\right) = \left(1 - \frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

For fixed z and $a_1 = 6$, $b_1 = -\frac{1}{2}$

07.22.03.6028.01

$${}_1F_2\left(6; -\frac{1}{2}, -\frac{1}{2}; z\right) =$$
$$\frac{1}{960}\pi\left(32\,\boldsymbol{L}_{-9}\left(2\sqrt{z}\right)z^4 + 1488\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{7/2} + 25\,264\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^3 + 197\,080\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{5/2} + 730\,730\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z^2 + 1\,203\,345\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 720\,720\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)z + 90\,090\,\boldsymbol{L}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)$$

07.22.03.6029.01

$${}_1F_2\left(6; -\frac{1}{2}, -\frac{1}{2}; -z\right) =$$
$$\frac{1}{960}\pi\left(32\,\boldsymbol{H}_{-9}\left(2\sqrt{z}\right)z^4 + 1488\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{7/2} + 25\,264\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^3 + 197\,080\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{5/2} + 730\,730\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z^2 + 1\,203\,345\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 720\,720\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)z + 90\,090\,\boldsymbol{H}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)$$

07.22.03.6030.01

$${}_1F_2\left(6; -\frac{1}{2}, \frac{1}{2}; z\right) = -\frac{1}{1920}\left(\pi\left(32\,\boldsymbol{L}_{-8}\left(2\sqrt{z}\right)z^{7/2} + 1264\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^3 + 65\left(272\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{5/2} + 1672\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z^2 + 4554\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 4851\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)z + 1386\,\boldsymbol{L}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)\right)\right)$$

07.22.03.6031.01

$${}_1F_2\left(6; -\frac{1}{2}, \frac{1}{2}; -z\right) =$$
$$-\frac{1}{1920}\left(\pi\left(32\,\boldsymbol{H}_{-8}\left(2\sqrt{z}\right)z^{7/2} + 1264\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^3 + 65\left(272\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{5/2} + 1672\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z^2 + 4554\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 4851\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)z + 1386\,\boldsymbol{H}_{-2}\left(2\sqrt{z}\right)\sqrt{z}\right)\right)\right)$$

07.22.03.6032.01

$${}_1F_2\left(6; -\frac{1}{2}, 1; z\right) = \left(-\frac{z^3}{60} - \frac{133\,z^2}{48} - 10\,z + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{480}\sqrt{z}\,\left(176\,z^2 + 4135\,z + 960\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.6033.01

$${}_1F_2\left(6; -\frac{1}{2}, 1; -z\right) = \left(\frac{z^3}{60} - \frac{133\,z^2}{48} + 10\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{480}\sqrt{z}\,\left(176\,z^2 - 4135\,z + 960\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.6034.01

$${}_1F_2\left(6; -\frac{1}{2}, \frac{3}{2}; z\right) = \frac{1}{3840}\left(-4\left(16\,z^3 + 2352\,z^2 + 7365\,z - 960\right) - \pi\sqrt{z}\,\left(656\,z^2 + 12\,600\,z + 945\right)\boldsymbol{L}_0\left(2\sqrt{z}\right) - \pi\left(32\,z^3 + 4384\,z^2 + 9450\,z - 945\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.6035.01

$${}_1F_2\left(6; -\frac{1}{2}, \frac{3}{2}; -z\right) = \frac{1}{3840}\left(4\left(16\,z^3 - 2352\,z^2 + 7365\,z + 960\right) + \pi\sqrt{z}\,\left(656\,z^2 - 12\,600\,z + 945\right)\boldsymbol{H}_0\left(2\sqrt{z}\right) - \pi\left(32\,z^3 - 4384\,z^2 + 9450\,z + 945\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.6036.01

$${}_1F_2\left(6; -\frac{1}{2}, 2; z\right) = \left(-\frac{37\,z^2}{120} - 4\,z + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{240}\sqrt{z}\,\left(4\,z^2 + 443\,z + 480\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.6037.01

$${}_1F_2\left(6; -\frac{1}{2}, 2; -z\right) = \left(-\frac{37\,z^2}{120} + 4\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{240}\sqrt{z}\,\left(4\,z^2 - 443\,z + 480\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.6038.01

$${}_1F_2\left(6; -\frac{1}{2}, \frac{5}{2}; z\right) = \frac{1}{7680\sqrt{z}}\left(-105\,\pi\sqrt{z}\,\left(16\,z^2 + 200\,z - 3\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) - 2\left(4\sqrt{z}\,\left(16\,z^3 + 1808\,z^2 + 4629\,z - 960\right) + 3\,\pi\left(16\,z^3 + 1400\,z^2 + 525\,z + 105\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6039.01

$${}_1F_2\left(6; -\frac{1}{2}, \frac{5}{2}; -z\right) = \frac{1}{7680\sqrt{z}}\left(105\,\pi\sqrt{z}\,\left(16\,z^2 - 200\,z - 3\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 2\left(4\sqrt{z}\,\left(16\,z^3 - 1808\,z^2 + 4629\,z + 960\right) + 3\,\pi\left(-16\,z^3 + 1400\,z^2 - 525\,z + 105\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6040.01

$${}_1F_2\left(6; -\frac{1}{2}, 3; z\right) = \left(-\frac{z^2}{30} - 2\,z + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{60}\sqrt{z}\,\left(29\,z + 120\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.6041.01

$${}_1F_2\left(6; -\frac{1}{2}, 3; -z\right) = \left(-\frac{z^2}{30} + 2\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{60}\left(120 - 29\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.6042.01

$${}_1F_2\left(6; -\frac{1}{2}, \frac{7}{2}; z\right) = -\frac{1}{15\,360\,z}\left(16\,z\left(16\,z^3 + 1360\,z^2 + 3285\,z - 960\right) + 15\,\pi\sqrt{z}\,\left(464\,z^2 + 3800\,z + 45\right)\boldsymbol{L}_2\left(2\sqrt{z}\right) + 15\,\pi\left(32\,z^3 + 1600\,z^2 - 150\,z - 135\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.6043.01

$${}_1F_2\left(6; -\frac{1}{2}, \frac{7}{2}; -z\right) = \frac{1}{15\,360\,z}\left(16\,z\left(16\,z^3 - 1360\,z^2 + 3285\,z + 960\right) + 15\,\pi\sqrt{z}\,\left(464\,z^2 - 3800\,z + 45\right)\boldsymbol{H}_2\left(2\sqrt{z}\right) - 15\,\pi\left(32\,z^3 - 1600\,z^2 - 150\,z + 135\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.6044.01

$${}_1F_2\left(6; -\frac{1}{2}, 4; z\right) = -\left(z - 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{10}\sqrt{z}\,\left(z + 20\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.6045.01

$${}_1F_2\left(6; -\frac{1}{2}, 4; -z\right) = \left(z + 1\right)\cos\left(2\sqrt{z}\right) - \frac{1}{10}\left(z - 20\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.6046.01

$${}_1F_2\left(6; -\frac{1}{2}, \frac{9}{2}; z\right) = \frac{1}{30\,720\,z^{3/2}}\left(-105\,\pi\sqrt{z}\,\left(368\,z^2 + 2232\,z - 45\right)\boldsymbol{L}_3\left(2\sqrt{z}\right) - 2\left(16\left(16\,z^3 + 1008\,z^2 + 2565\,z - 960\right)z^{3/2} + 105\,\pi\left(16\,z^3 + 392\,z^2 + 45\,z + 90\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6047.01

$${}_1F_2\left(6; -\frac{1}{2}, \frac{9}{2}; -z\right) = \frac{1}{30\,720\,z^{3/2}}\left(32\left(16\,z^3 - 1008\,z^2 + 2565\,z + 960\right)z^{3/2} + 105\,\pi\left(368\,z^2 - 2232\,z - 45\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z} - 210\,\pi\left(16\,z^3 - 392\,z^2 + 45\,z - 90\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.6048.01

$${}_1F_2\left(6; -\frac{1}{2}, 5; z\right) = \left(1 - \frac{2\,z}{5}\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.6049.01

$${}_1F_2\left(6; -\frac{1}{2}, 5; -z\right) = \left(\frac{2\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.6050.01

$${}_1F_2\left(6; -\frac{1}{2}, \frac{11}{2}; z\right) = -\frac{1}{61\,440\,z^2}\left(64\left(16\,z^3 + 752\,z^2 + 2085\,z - 960\right)z^2 + 945\,\pi\left(272\,z^2 + 1528\,z + 105\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z} + 945\,\pi\left(32\,z^3 + 352\,z^2 - 150\,z - 525\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.6051.01

$${}_1F_2\left(6; -\frac{1}{2}, \frac{11}{2}; -z\right) = \frac{1}{61\,440\,z^2}\left(64\left(16\,z^3 - 752\,z^2 + 2085\,z + 960\right)z^2 + 945\,\pi\left(272\,z^2 - 1528\,z + 105\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z} - 945\,\pi\left(32\,z^3 - 352\,z^2 - 150\,z + 525\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.6052.01

$${}_1F_2\left(6; -\frac{1}{2}, 6; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.6053.01

$${}_1F_2\left(6; -\frac{1}{2}, 6; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

For fixed z and $a_1 = 6$, $b_1 = \frac{1}{2}$

07.22.03.6054.01

$${}_1F_2\left(6; \frac{1}{2}, \frac{1}{2}; z\right) = \frac{1}{3840}\left(\pi\left(32\,\boldsymbol{L}_{-7}\left(2\sqrt{z}\right)z^3 + 1072\,\boldsymbol{L}_{-6}\left(2\sqrt{z}\right)z^{5/2} + 55\left(224\,\boldsymbol{L}_{-5}\left(2\sqrt{z}\right)z^2 + 9\left(120\,\boldsymbol{L}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 238\,\boldsymbol{L}_{-3}\left(2\sqrt{z}\right)z + 161\,\boldsymbol{L}_{-2}\left(2\sqrt{z}\right)\sqrt{z} + 21\,\boldsymbol{L}_{-1}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.6055.01

$${}_1F_2\left(6; \frac{1}{2}, \frac{1}{2}; -z\right) = \frac{1}{3840}\left(\pi\left(32\,\boldsymbol{H}_{-7}\left(2\sqrt{z}\right)z^3 + 1072\,\boldsymbol{H}_{-6}\left(2\sqrt{z}\right)z^{5/2} + 55\left(224\,\boldsymbol{H}_{-5}\left(2\sqrt{z}\right)z^2 + 9\left(120\,\boldsymbol{H}_{-4}\left(2\sqrt{z}\right)z^{3/2} + 238\,\boldsymbol{H}_{-3}\left(2\sqrt{z}\right)z + 161\,\boldsymbol{H}_{-2}\left(2\sqrt{z}\right)\sqrt{z} + 21\,\boldsymbol{H}_{-1}\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.6056.01

$${}_1F_2\left(6; \frac{1}{2}, 1; z\right) = \left(\frac{z^2}{6} + \frac{203\,z}{64} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{\sqrt{z}\,\left(16\,z^2 + 2180\,z + 6555\right)\sinh\left(2\sqrt{z}\right)}{1920}$$

07.22.03.6057.01

$${}_1F_2\left(6; \frac{1}{2}, 1; -z\right) = \left(\frac{z^2}{6} - \frac{203\,z}{64} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{\sqrt{z}\,\left(16\,z^2 - 2180\,z + 6555\right)\sin\left(2\sqrt{z}\right)}{1920}$$

07.22.03.6058.01

$${}_1F_2\left(6;\frac{1}{2},\frac{3}{2};z\right)=$$
$$\frac{1}{7680}\left(64\left(19z^2+330z+120\right)+2\pi\sqrt{z}\left(16z^2+1896z+4725\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+\pi\left(592z^2+8808z+945\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.6059.01

$${}_1F_2\left(6;\frac{1}{2},\frac{3}{2};-z\right)=$$
$$\frac{1}{7680}\left(64\left(19z^2-330z+120\right)-2\pi\sqrt{z}\left(16z^2-1896z+4725\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+\pi\left(-592z^2+8808z-945\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)\right)$$

07.22.03.6060.01

$${}_1F_2\left(6;\frac{1}{2},2;z\right)=\frac{1}{960}\left(\left(8z^2+750z+960\right)\cosh\left(2\sqrt{z}\right)+\sqrt{z}\,(136z+1545)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.6061.01

$${}_1F_2\left(6;\frac{1}{2},2;-z\right)=\frac{1}{960}\left(\left(8z^2-750z+960\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\,(136z-1545)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.6062.01

$${}_1F_2\left(6;\frac{1}{2},\frac{5}{2};z\right)=$$
$$\frac{1}{15360\sqrt{z}}\left(64\sqrt{z}\left(34z^2+501z+240\right)+6\pi\sqrt{z}\left(16z^2+1400z+2625\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)+3\pi\left(496z^2+4200z-105\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.6063.01

$${}_1F_2\left(6;\frac{1}{2},\frac{5}{2};-z\right)=\frac{1}{15360\sqrt{z}}$$
$$\left(64\sqrt{z}\left(34z^2-501z+240\right)-6\pi\sqrt{z}\left(16z^2-1400z+2625\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)+3\pi\left(-496z^2+4200z+105\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.6064.01

$${}_1F_2\left(6;\frac{1}{2},3;z\right)=\left(\frac{9z}{40}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{1}{240}\sqrt{z}\,(4z+213)\sinh\left(2\sqrt{z}\right)$$

07.22.03.6065.01

$${}_1F_2\left(6;\frac{1}{2},3;-z\right)=\left(1-\frac{9z}{40}\right)\cos\left(2\sqrt{z}\right)+\frac{1}{240}\sqrt{z}\,(4z-213)\sin\left(2\sqrt{z}\right)$$

07.22.03.6066.01

$${}_1F_2\left(6;\frac{1}{2},\frac{7}{2};z\right)=\frac{1}{2048z}\left(256z\left(z^2+13z+8\right)+2\pi\sqrt{z}\left(16z^2+1000z+1725\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)+5\pi\left(80z^2+360z+9\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.6067.01

$${}_1F_2\left(6;\frac{1}{2},\frac{7}{2};-z\right)=$$
$$\frac{1}{2048z}\left(256z\left(z^2-13z+8\right)-2\pi\sqrt{z}\left(16z^2-1000z+1725\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)-5\pi\left(80z^2-360z+9\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.6068.01

$${}_1F_2\left(6;\frac{1}{2},4;z\right)=\frac{1}{40}\left(2(z+20)\cosh\left(2\sqrt{z}\right)+19\sqrt{z}\,\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.6069.01

$${}_1F_2\left(6;\ \frac{1}{2},\ 4;\ -z\right) = \left(1 - \frac{z}{20}\right)\cos\left(2\sqrt{z}\right) - \frac{19}{40}\sqrt{z}\ \sin\left(2\sqrt{z}\right)$$

07.22.03.6070.01

$${}_1F_2\left(6;\ \frac{1}{2},\ \frac{9}{2};\ z\right) = \frac{1}{61\,440\,z^{3/2}}$$
$$\left(256\left(26z^2 + 315z + 240\right)z^{3/2} + 210\pi\left(16z^2 + 696z + 1305\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\sqrt{z}\ + 105\pi\left(304z^2 + 840z - 45\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.6071.01

$${}_1F_2\left(6;\ \frac{1}{2},\ \frac{9}{2};\ -z\right) = \frac{1}{61\,440\,z^{3/2}}$$
$$\left(256\left(26z^2 - 315z + 240\right)z^{3/2} - 210\pi\left(16z^2 - 696z + 1305\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\sqrt{z}\ - 105\pi\left(304z^2 - 840z - 45\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.6072.01

$${}_1F_2\left(6;\ \frac{1}{2},\ 5;\ z\right) = \cosh\left(2\sqrt{z}\right) + \frac{1}{5}\sqrt{z}\ \sinh\left(2\sqrt{z}\right)$$

07.22.03.6073.01

$${}_1F_2\left(6;\ \frac{1}{2},\ 5;\ -z\right) = \cos\left(2\sqrt{z}\right) - \frac{1}{5}\sqrt{z}\ \sin\left(2\sqrt{z}\right)$$

07.22.03.6074.01

$${}_1F_2\left(6;\ \frac{1}{2},\ \frac{11}{2};\ z\right) = \frac{1}{122\,880\,z^2}$$
$$\left(1024\left(11z^2 + 132z + 120\right)z^2 + 1890\pi\left(16z^2 + 488z + 1029\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}\ + 945\pi\left(208z^2 + 552z + 105\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.6075.01

$${}_1F_2\left(6;\ \frac{1}{2},\ \frac{11}{2};\ -z\right) = \frac{1}{122\,880\,z^2}$$
$$\left(1024\left(11z^2 - 132z + 120\right)z^2 - 1890\pi\left(16z^2 - 488z + 1029\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}\ - 945\pi\left(208z^2 - 552z + 105\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)$$

07.22.03.6076.01

$${}_1F_2\left(6;\ \frac{1}{2},\ 6;\ z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.6077.01

$${}_1F_2\left(6;\ \frac{1}{2},\ 6;\ -z\right) = \cos\left(2\sqrt{z}\right)$$

For fixed z and $a_1 = 6$, $b_1 = 1$

07.22.03.6078.01

$${}_1F_2(6;\ 1,\ 1;\ z) = \frac{1}{120}\left(\left(19z^2 + 326z + 120\right)I_0\left(2\sqrt{z}\right) + \sqrt{z}\ \left(z^2 + 118z + 274\right)I_1\left(2\sqrt{z}\right)\right)$$

07.22.03.6079.01

$${}_1F_2(6;\ 1,\ 1;\ -z) = \frac{1}{120}\left(\left(19z^2 - 326z + 120\right)J_0\left(2\sqrt{z}\right) - \sqrt{z}\ \left(z^2 - 118z + 274\right)J_1\left(2\sqrt{z}\right)\right)$$

07.22.03.6080.01

$${}_1F_2\left(6;\,1,\,\frac{3}{2};\,z\right)=\frac{2\sqrt{z}\,\left(16\,z^2+1620\,z+2895\right)\cosh\left(2\sqrt{z}\right)+5\left(112\,z^2+1464\,z+189\right)\sinh\left(2\sqrt{z}\right)}{7680\sqrt{z}}$$

07.22.03.6081.01

$${}_1F_2\left(6;\,1,\,\frac{3}{2};\,-z\right)=\frac{2\sqrt{z}\,\left(16\,z^2-1620\,z+2895\right)\cos\left(2\sqrt{z}\right)+5\left(112\,z^2-1464\,z+189\right)\sin\left(2\sqrt{z}\right)}{7680\sqrt{z}}$$

07.22.03.6082.01

$${}_1F_2(6;\,1,\,2;\,z)=\frac{1}{120}\left(\frac{\left(17\,z^2+240\,z+120\right)I_1\left(2\sqrt{z}\right)}{\sqrt{z}}+\left(z^2+86\,z+120\right)I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.6083.01

$${}_1F_2(6;\,1,\,2;\,-z)=\frac{1}{120}\left(\frac{\left(17\,z^2-240\,z+120\right)J_1\left(2\sqrt{z}\right)}{\sqrt{z}}-\left(z^2-86\,z+120\right)J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.6084.01

$${}_1F_2\left(6;\,1,\,\frac{5}{2};\,z\right)=\frac{2\sqrt{z}\,\left(464\,z^2+3160\,z-105\right)\cosh\left(2\sqrt{z}\right)+\left(64\,z^3+4160\,z^2+2100\,z+105\right)\sinh\left(2\sqrt{z}\right)}{10\,240\,z^{3/2}}$$

07.22.03.6085.01

$${}_1F_2\left(6;\,1,\,\frac{5}{2};\,-z\right)=\frac{\left(64\,z^3-4160\,z^2+2100\,z-105\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(464\,z^2-3160\,z-105\right)\cos\left(2\sqrt{z}\right)}{10\,240\,z^{3/2}}$$

07.22.03.6086.01

$${}_1F_2(6;\,1,\,3;\,z)=\frac{15\left(z^2+12\,z+8\right)I_2\left(2\sqrt{z}\right)+\sqrt{z}\,\left(z^2+60\,z+60\right)I_3\left(2\sqrt{z}\right)}{60\,z}$$

07.22.03.6087.01

$${}_1F_2(6;\,1,\,3;\,-z)=\frac{15\left(z^2-12\,z+8\right)J_2\left(2\sqrt{z}\right)-\sqrt{z}\,\left(z^2-60\,z+60\right)J_3\left(2\sqrt{z}\right)}{60\,z}$$

07.22.03.6088.01

$${}_1F_2\left(6;\,1,\,\frac{7}{2};\,z\right)=\frac{1}{8192\,z^{5/2}}\left(2\sqrt{z}\,\left(64\,z^3+2048\,z^2-300\,z-135\right)\cosh\left(2\sqrt{z}\right)+\left(1408\,z^3+2400\,z^2+480\,z+135\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.6089.01

$${}_1F_2\left(6;\,1,\,\frac{7}{2};\,-z\right)=\frac{\left(-1408\,z^3+2400\,z^2-480\,z+135\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(64\,z^3-2048\,z^2-300\,z+135\right)\cos\left(2\sqrt{z}\right)}{8192\,z^{5/2}}$$

07.22.03.6090.01

$${}_1F_2(6;\,1,\,4;\,z)=\frac{\left(13\,z^2+140\,z+120\right)I_3\left(2\sqrt{z}\right)+\sqrt{z}\,\left(z^2+40\,z+40\right)I_4\left(2\sqrt{z}\right)}{20\,z^{3/2}}$$

07.22.03.6091.01

$${}_1F_2(6;\,1,\,4;\,-z)=\frac{\left(13\,z^2-140\,z+120\right)J_3\left(2\sqrt{z}\right)-\sqrt{z}\,\left(z^2-40\,z+40\right)J_4\left(2\sqrt{z}\right)}{20\,z^{3/2}}$$

07.22.03.6092.01

$${}_1F_2\left(6;\,1,\,\frac{9}{2};\,z\right)=$$
$$\frac{1}{32\,768\,z^{7/2}}\left(7\left(2\sqrt{z}\,\left(896\,z^3-480\,z^2-720\,z-675\right)\cosh\left(2\sqrt{z}\right)+\left(256\,z^4+1920\,z^3+1200\,z^2+1620\,z+675\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6093.01

$${}_1F_2\left(6;\,1,\,\frac{9}{2};\,-z\right)=$$
$$-\frac{1}{32\,768\,z^{7/2}}\left(7\left(\left(256\,z^4-1920\,z^3+1200\,z^2-1620\,z+675\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(896\,z^3+480\,z^2-720\,z+675\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6094.01

$${}_1F_2(6;\,1,\,5;\,z)=\frac{\left(11\,z^2+114\,z+120\right)I_4\left(2\sqrt{z}\right)+\sqrt{z}\,\left(z^2+26\,z+30\right)I_5\left(2\sqrt{z}\right)}{5\,z^2}$$

07.22.03.6095.01

$${}_1F_2(6;\,1,\,5;\,-z)=\frac{\left(11\,z^2-114\,z+120\right)J_4\left(2\sqrt{z}\right)-\sqrt{z}\,\left(z^2-26\,z+30\right)J_5\left(2\sqrt{z}\right)}{5\,z^2}$$

07.22.03.6096.01

$${}_1F_2\left(6;\,1,\,\frac{11}{2};\,z\right)=\frac{1}{131\,072\,z^{9/2}}\left(63\left(2\sqrt{z}\,\left(256\,z^4-640\,z^3-2640\,z^2-8700\,z-11\,025\right)\cosh\left(2\sqrt{z}\right)+5\left(256\,z^4+512\,z^3+2064\,z^2+4680\,z+2205\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6097.01

$${}_1F_2\left(6;\,1,\,\frac{11}{2};\,-z\right)=\frac{1}{131\,072\,z^{9/2}}\left(63\left(2\sqrt{z}\,\left(256\,z^4+640\,z^3-2640\,z^2+8700\,z-11\,025\right)\cos\left(2\sqrt{z}\right)+5\left(256\,z^4-512\,z^3+2064\,z^2-4680\,z+2205\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6098.01

$${}_1F_2(6;\,1,\,6;\,z)=I_0\left(2\sqrt{z}\right)$$

07.22.03.6099.01

$${}_1F_2(6;\,1,\,6;\,-z)=J_0\left(2\sqrt{z}\right)$$

For fixed z and $a_1 = 6$, $b_1 = \frac{3}{2}$

07.22.03.6100.01

$${}_1F_2\left(6;\,\frac{3}{2},\,\frac{3}{2};\,z\right)=$$
$$\frac{1}{15\,360\,\sqrt{z}}\left(3\pi\left(176\,z^2+2024\,z+315\right)\boldsymbol{L}_0\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(32\,z^2+2992\,z+\pi\left(16\,z^2+1368\,z+1689\right)\boldsymbol{L}_1\left(2\sqrt{z}\right)+5790\right)\right)$$

07.22.03.6101.01

$${}_1F_2\left(6;\,\frac{3}{2},\,\frac{3}{2};\,-z\right)=$$
$$\frac{1}{15\,360\,\sqrt{z}}\left(3\pi\left(176\,z^2-2024\,z+315\right)\boldsymbol{H}_0\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(32\,z^2-2992\,z+\pi\left(-16\,z^2+1368\,z-1689\right)\boldsymbol{H}_1\left(2\sqrt{z}\right)+5790\right)\right)$$

07.22.03.6102.01

$${}_1F_2\left(6;\ \frac{3}{2},\ 2;\ z\right) = \frac{30\sqrt{z}\ (8z+65)\cosh\left(2\sqrt{z}\right) + \left(16z^2+1140z+945\right)\sinh\left(2\sqrt{z}\right)}{3840\sqrt{z}}$$

07.22.03.6103.01

$${}_1F_2\left(6;\ \frac{3}{2},\ 2;\ -z\right) = \frac{\left(16z^2-1140z+945\right)\sin\left(2\sqrt{z}\right) - 30\sqrt{z}\ (8z-65)\cos\left(2\sqrt{z}\right)}{3840\sqrt{z}}$$

07.22.03.6104.01

$${}_1F_2\left(6;\ \frac{3}{2},\ \frac{5}{2};\ z\right) =$$

$$\frac{1}{30\,720z}\left(3\pi\left(464z^2+4200z+945\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) + 2\left(4z\left(16z^2+1272z+2895\right) + 3\pi\sqrt{z}\ \left(16z^2+936z+525\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6105.01

$${}_1F_2\left(6;\ \frac{3}{2},\ \frac{5}{2};\ -z\right) =$$

$$\frac{1}{30\,720z}\left(8z\left(16z^2-1272z+2895\right) + 3\pi\left(464z^2-4200z+945\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) - 6\pi\sqrt{z}\ \left(16z^2-936z+525\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.6106.01

$${}_1F_2\left(6;\ \frac{3}{2},\ 3;\ z\right) = \frac{2\sqrt{z}\ (4z+165)\cosh\left(2\sqrt{z}\right) + 3(32z+105)\sinh\left(2\sqrt{z}\right)}{960\sqrt{z}}$$

07.22.03.6107.01

$${}_1F_2\left(6;\ \frac{3}{2},\ 3;\ -z\right) = \frac{3(105-32z)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\ (4z-165)\cos\left(2\sqrt{z}\right)}{960\sqrt{z}}$$

07.22.03.6108.01

$${}_1F_2\left(6;\ \frac{3}{2},\ \frac{7}{2};\ z\right) =$$

$$\frac{1}{61\,440z^{3/2}}\left(75\pi\left(80z^2+600z+189\right)\boldsymbol{L}_2\left(2\sqrt{z}\right) + 2\sqrt{z}\ \left(8z\left(16z^2+1080z+2895\right) + 15\pi\left(16z^2+600z+225\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6109.01

$${}_1F_2\left(6;\ \frac{3}{2},\ \frac{7}{2};\ -z\right) =$$

$$\frac{1}{61\,440z^{3/2}}\left(75\pi\left(80z^2-600z+189\right)\boldsymbol{H}_2\left(2\sqrt{z}\right) + 2\sqrt{z}\ \left(8z\left(16z^2-1080z+2895\right) - 15\pi\left(16z^2-600z+225\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6110.01

$${}_1F_2\left(6;\ \frac{3}{2},\ 4;\ z\right) = \frac{34\sqrt{z}\ \cosh\left(2\sqrt{z}\right) + (4z+63)\sinh\left(2\sqrt{z}\right)}{160\sqrt{z}}$$

07.22.03.6111.01

$${}_1F_2\left(6;\ \frac{3}{2},\ 4;\ -z\right) = \frac{34\sqrt{z}\ \cos\left(2\sqrt{z}\right) + (63-4z)\sin\left(2\sqrt{z}\right)}{160\sqrt{z}}$$

07.22.03.6112.01

$${}_1F_2\left(6;\ \frac{3}{2},\ \frac{9}{2};\ z\right) =$$
$$\frac{1}{122\,880\,z^2}\left(32\left(16\,z^2+920\,z+2895\right)z^2+210\,\pi\left(16\,z^2+360\,z+165\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}+315\,\pi\left(112\,z^2+760\,z+315\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.6113.01

$${}_1F_2\left(6;\ \frac{3}{2},\ \frac{9}{2};\ -z\right) =$$
$$\frac{1}{122\,880\,z^2}\left(32\left(16\,z^2-920\,z+2895\right)z^2-210\,\pi\left(16\,z^2-360\,z+165\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}+315\,\pi\left(112\,z^2-760\,z+315\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.6114.01

$${}_1F_2\left(6;\ \frac{3}{2},\ 5;\ z\right) = \frac{1}{20}\left(2\cosh\left(2\sqrt{z}\right)+\frac{9\sinh\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.6115.01

$${}_1F_2\left(6;\ \frac{3}{2},\ 5;\ -z\right) = \frac{1}{20}\left(2\cos\left(2\sqrt{z}\right)+\frac{9\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.6116.01

$${}_1F_2\left(6;\ \frac{3}{2},\ \frac{11}{2};\ z\right) = \frac{1}{245\,760\,z^{5/2}}$$
$$\left(945\,\pi\left(272\,z^2+1848\,z+945\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)+2\sqrt{z}\left(32\left(16\,z^2+792\,z+2895\right)z^2+945\,\pi\left(16\,z^2+216\,z+105\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6117.01

$${}_1F_2\left(6;\ \frac{3}{2},\ \frac{11}{2};\ -z\right) = \frac{1}{245\,760\,z^{5/2}}$$
$$\left(945\,\pi\left(272\,z^2-1848\,z+945\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)+2\sqrt{z}\left(32\,z^2\left(16\,z^2-792\,z+2895\right)-945\,\pi\left(16\,z^2-216\,z+105\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6118.01

$${}_1F_2\left(6;\ \frac{3}{2},\ 6;\ z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.6119.01

$${}_1F_2\left(6;\ \frac{3}{2},\ 6;\ -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

For fixed z and $a_1 = 6$, $b_1 = 2$

07.22.03.6120.01

$${}_1F_2(6;\ 2,\ 2;\ z) = \frac{1}{120}\left(\frac{\left(z^2+72\,z+120\right)I_1\left(2\sqrt{z}\right)}{\sqrt{z}}+2\,(7\,z+48)\,I_2\left(2\sqrt{z}\right)\right)$$

07.22.03.6121.01

$${}_1F_2(6;\,2,\,2;\,-z) = \frac{1}{120}\left(\frac{\left(z^2-72\,z+120\right)J_1\left(2\sqrt{z}\right)}{\sqrt{z}}+2\,(7\,z-48)\,J_2\left(2\sqrt{z}\right)\right)$$

07.22.03.6122.01

$${}_1F_2\left(6;\,2,\,\frac{5}{2};\,z\right) = \frac{2\sqrt{z}\,\left(16\,z^2+740\,z+105\right)\cosh\left(2\sqrt{z}\right)+5\left(80\,z^2+336\,z-21\right)\sinh\left(2\sqrt{z}\right)}{5120\,z^{3/2}}$$

07.22.03.6123.01

$${}_1F_2\left(6;\,2,\,\frac{5}{2};\,-z\right) = \frac{5\left(-80\,z^2+336\,z+21\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(16\,z^2-740\,z+105\right)\cos\left(2\sqrt{z}\right)}{5120\,z^{3/2}}$$

07.22.03.6124.01

$${}_1F_2(6;\,2,\,3;\,z) = \frac{\left(z^2+60\,z+120\right)I_2\left(2\sqrt{z}\right)+12\sqrt{z}\,\,(z+5)\,I_3\left(2\sqrt{z}\right)}{60\,z}$$

07.22.03.6125.01

$${}_1F_2(6;\,2,\,3;\,-z) = \frac{\left(z^2-60\,z+120\right)J_2\left(2\sqrt{z}\right)+12\,(z-5)\sqrt{z}\,\,J_3\left(2\sqrt{z}\right)}{60\,z}$$

07.22.03.6126.01

$${}_1F_2\left(6;\,2,\,\frac{7}{2};\,z\right) = \frac{2\sqrt{z}\,\left(304\,z^2+240\,z+45\right)\cosh\left(2\sqrt{z}\right)+\left(64\,z^3+1440\,z^2-300\,z-45\right)\sinh\left(2\sqrt{z}\right)}{4096\,z^{5/2}}$$

07.22.03.6127.01

$${}_1F_2\left(6;\,2,\,\frac{7}{2};\,-z\right) = \frac{2\sqrt{z}\,\left(304\,z^2-240\,z+45\right)\cos\left(2\sqrt{z}\right)+\left(-64\,z^3+1440\,z^2+300\,z-45\right)\sin\left(2\sqrt{z}\right)}{4096\,z^{5/2}}$$

07.22.03.6128.01

$${}_1F_2(6;\,2,\,4;\,z) = \frac{\left(z^2+50\,z+120\right)I_3\left(2\sqrt{z}\right)}{20\,z^{3/2}}+\frac{(z+4)\,I_4\left(2\sqrt{z}\right)}{2\,z}$$

07.22.03.6129.01

$${}_1F_2(6;\,2,\,4;\,-z) = \frac{\left(z^2-50\,z+120\right)J_3\left(2\sqrt{z}\right)}{20\,z^{3/2}}+\frac{(z-4)\,J_4\left(2\sqrt{z}\right)}{2\,z}$$

07.22.03.6130.01

$${}_1F_2\left(6;\,2,\,\frac{9}{2};\,z\right) = \frac{1}{16\,384\,z^{7/2}}\left(7\left(2\sqrt{z}\,\left(64\,z^3+288\,z^2+180\,z+135\right)\cosh\left(2\sqrt{z}\right)+3\left(256\,z^3-160\,z^2-120\,z-45\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6131.01

$${}_1F_2\left(6;\,2,\,\frac{9}{2};\,-z\right) = \frac{7\left(2\sqrt{z}\,\left(64\,z^3-288\,z^2+180\,z-135\right)\cos\left(2\sqrt{z}\right)+3\left(256\,z^3+160\,z^2-120\,z+45\right)\sin\left(2\sqrt{z}\right)\right)}{16\,384\,z^{7/2}}$$

07.22.03.6132.01

$${}_1F_2(6;\,2,\,5;\,z) = \frac{\left(z^2+42\,z+120\right) I_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,z+15\right) I_5\left(2\sqrt{z}\right)}{5\,z^2}$$

07.22.03.6133.01

$${}_1F_2(6;\,2,\,5;\,-z) = \frac{\left(z^2-42\,z+120\right) J_4\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,z-15\right) J_5\left(2\sqrt{z}\right)}{5\,z^2}$$

07.22.03.6134.01

$${}_1F_2\left(6;\,2,\,\frac{11}{2};\,z\right) = \frac{1}{65\,536\,z^{9/2}}$$
$$\left(63\left(2\sqrt{z}\,\left(256\,z^3+480\,z^2+1320\,z+1575\right)\cosh\left(2\sqrt{z}\right) + \left(256\,z^4-640\,z^3-1680\,z^2-3420\,z-1575\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6135.01

$${}_1F_2\left(6;\,2,\,\frac{11}{2};\,-z\right) =$$
$$\frac{1}{65\,536\,z^{9/2}}\left(63\left(\left(256\,z^4+640\,z^3-1680\,z^2+3420\,z-1575\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(256\,z^3-480\,z^2+1320\,z-1575\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6136.01

$${}_1F_2(6;\,2,\,6;\,z) = \frac{I_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

07.22.03.6137.01

$${}_1F_2(6;\,2,\,6;\,-z) = \frac{J_1\left(2\sqrt{z}\right)}{\sqrt{z}}$$

For fixed z and $a_1 = 6$, $b_1 = \frac{5}{2}$

07.22.03.6138.01

$${}_1F_2\left(6;\,\frac{5}{2},\,\frac{5}{2};\,z\right) = \frac{1}{20\,480\,z^2}$$
$$\left(8\,z\left(208\,z^2+1580\,z+105\right) + 3\,\pi\left(32\,z^3+1504\,z^2+1050\,z-105\right)\boldsymbol{L}_1\left(2\sqrt{z}\right) + 3\,\pi\sqrt{z}\,\left(368\,z^2+1192\,z-105\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.6139.01

$${}_1F_2\left(6;\,\frac{5}{2},\,\frac{5}{2};\,-z\right) = \frac{1}{20\,480\,z^2}$$
$$\left(-8\,z\left(208\,z^2-1580\,z+105\right) + 3\,\pi\left(32\,z^3-1504\,z^2+1050\,z+105\right)\boldsymbol{H}_1\left(2\sqrt{z}\right) + 3\,\pi\sqrt{z}\,\left(368\,z^2-1192\,z-105\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)\right)$$

07.22.03.6140.01

$${}_1F_2\left(6;\,\frac{5}{2},\,3;\,z\right) = \frac{10\sqrt{z}\,\left(16\,z+21\right)\cosh\left(2\sqrt{z}\right) + \left(16\,z^2+420\,z-105\right)\sinh\left(2\sqrt{z}\right)}{1280\,z^{3/2}}$$

07.22.03.6141.01

$${}_1F_2\left(6;\,\frac{5}{2},\,3;\,-z\right) = \frac{10\sqrt{z}\,\left(16\,z-21\right)\cos\left(2\sqrt{z}\right) + \left(-16\,z^2+420\,z+105\right)\sin\left(2\sqrt{z}\right)}{1280\,z^{3/2}}$$

07.22.03.6142.01

$$ {}_1F_2\left(6; \frac{5}{2}, \frac{7}{2}; z\right) = \frac{1}{40\,960\, z^{5/2}} \left(30\pi\left(16z^3+600z^2+525z-105\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)+\sqrt{z}\,\left(32z\left(96z^2+790z+105\right)+15\pi\left(304z^2+600z-105\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6143.01

$$ {}_1F_2\left(6; \frac{5}{2}, \frac{7}{2}; -z\right) = \frac{1}{40\,960\, z^{5/2}} \left(30\pi\left(16z^3-600z^2+525z+105\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)-\sqrt{z}\,\left(32z\left(96z^2-790z+105\right)+15\pi\left(-304z^2+600z+105\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6144.01

$$ {}_1F_2\left(6; \frac{5}{2}, 4; z\right) = \frac{3\left(2\sqrt{z}\,(4z+35)\cosh\left(2\sqrt{z}\right)+7(8z-5)\sinh\left(2\sqrt{z}\right)\right)}{640\, z^{3/2}} $$

07.22.03.6145.01

$$ {}_1F_2\left(6; \frac{5}{2}, 4; -z\right) = \frac{3\left(2\sqrt{z}\,(4z-35)\cos\left(2\sqrt{z}\right)+7(8z+5)\sin\left(2\sqrt{z}\right)\right)}{640\, z^{3/2}} $$

07.22.03.6146.01

$$ {}_1F_2\left(6; \frac{5}{2}, \frac{9}{2}; z\right) = \frac{1}{81\,920\, z^3} \left(32\left(176z^2+1580z+315\right)z^2+1575\pi\left(16z^2+24z-7\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}\,+105\pi\left(32z^3+960z^2+1050z-315\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right) $$

07.22.03.6147.01

$$ {}_1F_2\left(6; \frac{5}{2}, \frac{9}{2}; -z\right) = \frac{1}{81\,920\, z^3} \left(-32\left(176z^2-1580z+315\right)z^2+1575\pi\left(16z^2-24z-7\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}\,+105\pi\left(32z^3-960z^2+1050z+315\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right) $$

07.22.03.6148.01

$$ {}_1F_2\left(6; \frac{5}{2}, 5; z\right) = \frac{3\left(14\sqrt{z}\,\cosh\left(2\sqrt{z}\right)+(4z-7)\sinh\left(2\sqrt{z}\right)\right)}{80\, z^{3/2}} $$

07.22.03.6149.01

$$ {}_1F_2\left(6; \frac{5}{2}, 5; -z\right) = \frac{3\left((4z+7)\sin\left(2\sqrt{z}\right)-14\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{80\, z^{3/2}} $$

07.22.03.6150.01

$$ {}_1F_2\left(6; \frac{5}{2}, \frac{11}{2}; z\right) = \frac{1}{32\,768\, z^{7/2}} \left(378\pi\left(16z^3+392z^2+525z-210\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)+\sqrt{z}\,\left(256\left(8z^2+79z+21\right)z^2+189\pi\left(176z^2+280z-105\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6151.01

$$ {}_1F_2\left(6; \frac{5}{2}, \frac{11}{2}; -z\right) = \frac{1}{32\,768\, z^{7/2}} \left(378\pi\left(16z^3-392z^2+525z+210\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)+\sqrt{z}\,\left(189\pi\left(176z^2-280z-105\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)-256z^2\left(8z^2-79z+21\right)\right)\right) $$

07.22.03.6152.01

$${}_1F_2\left(6;\ \frac{5}{2},\ 6;\ z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.6153.01

$${}_1F_2\left(6;\ \frac{5}{2},\ 6;\ -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\ \cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}}$$

For fixed z and $a_1 = 6$, $b_1 = 3$

07.22.03.6154.01

$${}_1F_2(6;\ 3,\ 3;\ z) = \frac{(11z + 60)\, I_2\left(2\sqrt{z}\right) + \sqrt{z}\ (z + 27)\, I_3\left(2\sqrt{z}\right)}{30z}$$

07.22.03.6155.01

$${}_1F_2(6;\ 3,\ 3;\ -z) = \frac{(60 - 11z)\, J_2\left(2\sqrt{z}\right) + (z - 27)\sqrt{z}\ J_3\left(2\sqrt{z}\right)}{30z}$$

07.22.03.6156.01

$${}_1F_2\left(6;\ 3,\ \frac{7}{2};\ z\right) = \frac{2\sqrt{z}\ \left(16z^2 + 180z - 45\right)\cosh\left(2\sqrt{z}\right) + 15\left(16z^2 - 8z + 3\right)\sinh\left(2\sqrt{z}\right)}{1024z^{5/2}}$$

07.22.03.6157.01

$${}_1F_2\left(6;\ 3,\ \frac{7}{2};\ -z\right) = \frac{2\sqrt{z}\ \left(16z^2 - 180z - 45\right)\cos\left(2\sqrt{z}\right) + 15\left(16z^2 + 8z + 3\right)\sin\left(2\sqrt{z}\right)}{1024z^{5/2}}$$

07.22.03.6158.01

$${}_1F_2(6;\ 3,\ 4;\ z) = \frac{(z + 6)\, I_3\left(2\sqrt{z}\right)}{z^{3/2}} + \frac{(z + 20)\, I_4\left(2\sqrt{z}\right)}{10z}$$

07.22.03.6159.01

$${}_1F_2(6;\ 3,\ 4;\ -z) = \frac{(z - 20)\, J_4\left(2\sqrt{z}\right)}{10z} - \frac{(z - 6)\, J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.6160.01

$${}_1F_2\left(6;\ 3,\ \frac{9}{2};\ z\right) = \frac{7\left(6\sqrt{z}\ \left(48z^2 - 40z - 15\right)\cosh\left(2\sqrt{z}\right) + \left(64z^3 + 180z + 45\right)\sinh\left(2\sqrt{z}\right)\right)}{4096z^{7/2}}$$

07.22.03.6161.01

$${}_1F_2\left(6;\ 3,\ \frac{9}{2};\ -z\right) = \frac{7\left(\left(64z^3 + 180z - 45\right)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\ \left(48z^2 + 40z - 15\right)\cos\left(2\sqrt{z}\right)\right)}{4096z^{7/2}}$$

07.22.03.6162.01

$${}_1F_2(6;\ 3,\ 5;\ z) = \frac{2\left((9z + 60)\, I_4\left(2\sqrt{z}\right) + \sqrt{z}\ (z + 15)\, I_5\left(2\sqrt{z}\right)\right)}{5z^2}$$

07.22.03.6163.01

$${}_1F_2(6;\,3,\,5;\,-z) = \frac{2\left((60-9\,z)\,J_4\left(2\sqrt{z}\right)+(z-15)\sqrt{z}\;J_5\left(2\sqrt{z}\right)\right)}{5\,z^2}$$

07.22.03.6164.01

$${}_1F_2\left(6;\,3,\,\frac{11}{2};\,z\right) =$$
$$\frac{1}{16\,384\,z^{9/2}}\left(63\left(2\sqrt{z}\,\left(64\,z^3-192\,z^2-300\,z-315\right)\cosh\left(2\sqrt{z}\right)+\left(128\,z^3+480\,z^2+720\,z+315\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6165.01

$${}_1F_2\left(6;\,3,\,\frac{11}{2};\,-z\right) =$$
$$-\frac{1}{16\,384\,z^{9/2}}\left(63\left(2\sqrt{z}\,\left(64\,z^3+192\,z^2-300\,z+315\right)\cos\left(2\sqrt{z}\right)+\left(128\,z^3-480\,z^2+720\,z-315\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6166.01

$${}_1F_2(6;\,3,\,6;\,z) = \frac{2\,I_2\left(2\sqrt{z}\right)}{z}$$

07.22.03.6167.01

$${}_1F_2(6;\,3,\,6;\,-z) = \frac{2\,J_2\left(2\sqrt{z}\right)}{z}$$

For fixed z and $a_1 = 6$, $b_1 = \frac{7}{2}$

07.22.03.6168.01

$${}_1F_2\left(6;\,\frac{7}{2},\,\frac{7}{2};\,z\right) = \frac{1}{16\,384\,z^{7/2}}\left(15\,\pi\left(272\,z^3+600\,z^2-255\,z+90\right)\boldsymbol{L}_2\left(2\sqrt{z}\right)+\right.$$
$$\left.\sqrt{z}\,\left(16\,z\left(16\,z^3+512\,z^2+225\,z-90\right)+15\,\pi\left(32\,z^3+384\,z^2-150\,z+45\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6169.01

$${}_1F_2\left(6;\,\frac{7}{2},\,\frac{7}{2};\,-z\right) = \frac{1}{16\,384\,z^{7/2}}\left(-15\,\pi\left(272\,z^3-600\,z^2-255\,z-90\right)\boldsymbol{H}_2\left(2\sqrt{z}\right)-\right.$$
$$\left.\sqrt{z}\,\left(16\,z\left(16\,z^3-512\,z^2+225\,z+90\right)+15\,\pi\left(-32\,z^3+384\,z^2+150\,z+45\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6170.01

$${}_1F_2\left(6;\,\frac{7}{2},\,4;\,z\right) = \frac{3\left(10\sqrt{z}\,\left(8\,z-9\right)\cosh\left(2\sqrt{z}\right)+\left(16\,z^2+20\,z+45\right)\sinh\left(2\sqrt{z}\right)\right)}{512\,z^{5/2}}$$

07.22.03.6171.01

$${}_1F_2\left(6;\,\frac{7}{2},\,4;\,-z\right) = \frac{3\left(\left(16\,z^2-20\,z+45\right)\sin\left(2\sqrt{z}\right)-10\sqrt{z}\,\left(8\,z+9\right)\cos\left(2\sqrt{z}\right)\right)}{512\,z^{5/2}}$$

07.22.03.6172.01

$${}_1F_2\left(6;\,\frac{7}{2},\,\frac{9}{2};\,z\right) = \frac{1}{32\,768\,z^4}\left(1575\,\pi\left(16\,z^3+40\,z^2-27\,z+18\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)+\right.$$
$$\left.2\left(16\left(16\,z^3+512\,z^2+345\,z-270\right)z^2+105\,\pi\left(16\,z^3+120\,z^2-75\,z+45\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}\right)\right)$$

07.22.03.6173.01

$${}_1F_2\left(6;\frac{7}{2},\frac{9}{2};-z\right)=\frac{1}{32\,768\,z^4}\left(2\sqrt{z}\,\left(105\,\pi\left(16\,z^3-120\,z^2-75\,z-45\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)-16\,z^{3/2}\left(16\,z^3-512\,z^2+345\,z+270\right)\right)-1575\,\pi\left(16\,z^3-40\,z^2-27\,z-18\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)$$

07.22.03.6174.01

$${}_1F_2\left(6;\frac{7}{2},5;z\right)=\frac{6\sqrt{z}\,\left(4\,z-15\right)\cosh\left(2\sqrt{z}\right)+3\left(16\,z+15\right)\sinh\left(2\sqrt{z}\right)}{64\,z^{5/2}}$$

07.22.03.6175.01

$${}_1F_2\left(6;\frac{7}{2},5;-z\right)=-\frac{3\left(2\sqrt{z}\,\left(4\,z+15\right)\cos\left(2\sqrt{z}\right)+\left(16\,z-15\right)\sin\left(2\sqrt{z}\right)\right)}{64\,z^{5/2}}$$

07.22.03.6176.01

$${}_1F_2\left(6;\frac{7}{2},\frac{11}{2};z\right)=\frac{1}{65\,536\,z^{9/2}}\left(945\,\pi\left(208\,z^3+600\,z^2-555\,z+540\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)+\sqrt{z}\,\left(64\left(16\,z^3+512\,z^2+465\,z-540\right)z^2+945\,\pi\left(32\,z^3+160\,z^2-150\,z+135\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6177.01

$${}_1F_2\left(6;\frac{7}{2},\frac{11}{2};-z\right)=\frac{1}{65\,536\,z^{9/2}}\left(\sqrt{z}\,\left(945\,\pi\left(32\,z^3-160\,z^2-150\,z-135\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)-64\,z^2\left(16\,z^3-512\,z^2+465\,z+540\right)\right)-945\,\pi\left(208\,z^3-600\,z^2-555\,z-540\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)$$

07.22.03.6178.01

$${}_1F_2\left(6;\frac{7}{2},6;z\right)=\frac{15\left(\left(4\,z+3\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.6179.01

$${}_1F_2\left(6;\frac{7}{2},6;-z\right)=-\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+\left(4\,z-3\right)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

For fixed z and $a_1 = 6$, $b_1 = 4$

07.22.03.6180.01

$${}_1F_2(6;4,4;z)=\frac{3\left(z+20\right)I_3\left(2\sqrt{z}\right)}{10\,z^{3/2}}+\frac{9\,I_4\left(2\sqrt{z}\right)}{5\,z}$$

07.22.03.6181.01

$${}_1F_2(6;4,4;-z)=-\frac{3\left(\left(z-20\right)J_3\left(2\sqrt{z}\right)+6\sqrt{z}\,J_4\left(2\sqrt{z}\right)\right)}{10\,z^{3/2}}$$

07.22.03.6182.01

$${}_1F_2\left(6;4,\frac{9}{2};z\right)=\frac{21\left(2\sqrt{z}\,\left(16\,z^2-60\,z+45\right)\cosh\left(2\sqrt{z}\right)+5\left(16\,z^2-9\right)\sinh\left(2\sqrt{z}\right)\right)}{2048\,z^{7/2}}$$

07.22.03.6183.01

$${}_1F_2\left(6;\,4,\,\frac{9}{2};\,-z\right)=-\frac{21\left(2\sqrt{z}\,\left(16z^2+60z+45\right)\cos\left(2\sqrt{z}\right)+5\left(16z^2-9\right)\sin\left(2\sqrt{z}\right)\right)}{2048\,z^{7/2}}$$

07.22.03.6184.01

$${}_1F_2(6;\,4,\,5;\,z)=\frac{6\,(z+20)\,I_4\left(2\sqrt{z}\right)}{5\,z^2}+\frac{6\,I_5\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.6185.01

$${}_1F_2(6;\,4,\,5;\,-z)=-\frac{6\left((z-20)\,J_4\left(2\sqrt{z}\right)+5\sqrt{z}\;J_5\left(2\sqrt{z}\right)\right)}{5\,z^2}$$

07.22.03.6186.01

$${}_1F_2\left(6;\,4,\,\frac{11}{2};\,z\right)=\frac{189\left(\left(64z^3-160z^2-300z-105\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(16z^2-160z-105\right)\cosh\left(2\sqrt{z}\right)\right)}{8192\,z^{9/2}}$$

07.22.03.6187.01

$${}_1F_2\left(6;\,4,\,\frac{11}{2};\,-z\right)=-\frac{189\left(2\sqrt{z}\,\left(16z^2+160z-105\right)\cos\left(2\sqrt{z}\right)+\left(64z^3+160z^2-300z+105\right)\sin\left(2\sqrt{z}\right)\right)}{8192\,z^{9/2}}$$

07.22.03.6188.01

$${}_1F_2(6;\,4,\,6;\,z)=\frac{6\,I_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

07.22.03.6189.01

$${}_1F_2(6;\,4,\,6;\,-z)=\frac{6\,J_3\left(2\sqrt{z}\right)}{z^{3/2}}$$

For fixed z and $a_1 = 6$, $b_1 = \frac{9}{2}$

07.22.03.6190.01

$${}_1F_2\left(6;\,\frac{9}{2},\,\frac{9}{2};\,z\right)=\frac{1}{65\,536\,z^5}\left(7\left(64\left(56z^3+96z^2-150z+135\right)z^2+\right.\right.$$
$$\left.\left.105\,\pi\left(112z^3-120z^2+135z-90\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)\sqrt{z}\,+210\,\pi\left(16z^4+120z^3-135z^2+180z-135\right)\boldsymbol{L}_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6191.01

$${}_1F_2\left(6;\,\frac{9}{2},\,\frac{9}{2};\,-z\right)=$$
$$-\frac{1}{65\,536\,z^5}\left(7\left(64\left(-56z^3+96z^2+150z+135\right)z^2+105\,\pi\left(112z^3+120z^2+135z+90\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\sqrt{z}\,+210\right.\right.$$
$$\left.\left.\pi\left(16z^4-120z^3-135z^2-180z-135\right)\boldsymbol{H}_3\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6192.01

$${}_1F_2\left(6;\,\frac{9}{2},\,5;\,z\right)=\frac{21\left(90\sqrt{z}\,\cosh\left(2\sqrt{z}\right)+\left(16z^2-60z-45\right)\sinh\left(2\sqrt{z}\right)\right)}{256\,z^{7/2}}$$

07.22.03.6193.01

$${}_1F_2\left(6;\frac{9}{2},5;-z\right)=-\frac{21\left(90\sqrt{z}\,\cos\left(2\sqrt{z}\right)+\left(16z^2+60z-45\right)\sin\left(2\sqrt{z}\right)\right)}{256\,z^{7/2}}$$

07.22.03.6194.01

$${}_1F_2\left(6;\frac{9}{2},\frac{11}{2};z\right)=\frac{1}{131\,072\,z^{11/2}}\left(7\left(1890\pi\left(16z^4+120z^3-195z^2+405z-540\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)+\sqrt{z}\left(128\left(56z^3+132z^2-315z+540\right)z^2+4725\pi\left(16z^3-24z^2+45z-54\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6195.01

$${}_1F_2\left(6;\frac{9}{2},\frac{11}{2};-z\right)=-\frac{1}{131\,072\,z^{11/2}}\left(7\left(1890\pi\left(16z^4-120z^3-195z^2-405z-540\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)+\sqrt{z}\left(4725\pi\left(16z^3+24z^2+45z+54\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)-128z^2\left(56z^3-132z^2-315z-540\right)\right)\right)\right)$$

07.22.03.6196.01

$${}_1F_2\left(6;\frac{9}{2},6;z\right)=\frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right)-3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.6197.01

$${}_1F_2\left(6;\frac{9}{2},6;-z\right)=\frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right)+3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

For fixed z and $a_1 = 6$, $b_1 = 5$

07.22.03.6198.01

$${}_1F_2(6;5,5;z)=\frac{24\left(5\,I_4\left(2\sqrt{z}\right)+\sqrt{z}\,I_5\left(2\sqrt{z}\right)\right)}{5\,z^2}$$

07.22.03.6199.01

$${}_1F_2(6;5,5;-z)=-\frac{24\left(\sqrt{z}\,J_5\left(2\sqrt{z}\right)-5\,J_4\left(2\sqrt{z}\right)\right)}{5\,z^2}$$

07.22.03.6200.01

$${}_1F_2\left(6;5,\frac{11}{2};z\right)=\frac{189\left(2\sqrt{z}\,\left(16z^2+20z-105\right)\cosh\left(2\sqrt{z}\right)+5\left(-16z^2+24z+21\right)\sinh\left(2\sqrt{z}\right)\right)}{1024\,z^{9/2}}$$

07.22.03.6201.01

$${}_1F_2\left(6;5,\frac{11}{2};-z\right)=\frac{189\left(2\sqrt{z}\,\left(16z^2-20z-105\right)\cos\left(2\sqrt{z}\right)-5\left(16z^2+24z-21\right)\sin\left(2\sqrt{z}\right)\right)}{1024\,z^{9/2}}$$

07.22.03.6202.01

$${}_1F_2(6;5,6;z)=\frac{24\,I_4\left(2\sqrt{z}\right)}{z^2}$$

07.22.03.6203.01

$${}_1F_2(6;5,6;-z)=\frac{24\,J_4\left(2\sqrt{z}\right)}{z^2}$$

For fixed z and $a_1 = 6$, $b_1 = \frac{11}{2}$

07.22.03.6204.01

$$ {}_1F_2\left(6;\ \frac{11}{2},\ \frac{11}{2};\ z\right) = \frac{1}{262\,144\,z^{13/2}}\left(63\left(4725\,\pi\left(16\,z^4-40\,z^3+129\,z^2-342\,z+504\right)\boldsymbol{L}_4\left(2\sqrt{z}\right)+2\sqrt{z}\left(32\left(16\,z^4+104\,z^3-381\,z^2+1290\,z-2520\right)z^2+945\,\pi\left(16\,z^4-40\,z^3+105\,z^2-240\,z+315\right)\boldsymbol{L}_5\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6205.01

$$ {}_1F_2\left(6;\ \frac{11}{2},\ \frac{11}{2};\ -z\right) = -\frac{1}{262\,144\,z^{13/2}}\left(63\left(2\sqrt{z}\left(32\left(-16\,z^4+104\,z^3+381\,z^2+1290\,z+2520\right)z^2+945\,\pi\left(16\,z^4+40\,z^3+105\,z^2+240\,z+315\right)\boldsymbol{H}_5\left(2\sqrt{z}\right)\right)-4725\,\pi\left(16\,z^4+40\,z^3+129\,z^2+342\,z+504\right)\boldsymbol{H}_4\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6206.01

$$ {}_1F_2\left(6;\ \frac{11}{2},\ 6;\ z\right) = \frac{945\left(\left(16\,z^2+180\,z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,\left(8\,z+21\right)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.6207.01

$$ {}_1F_2\left(6;\ \frac{11}{2},\ 6;\ -z\right) = \frac{945\left(10\sqrt{z}\,\left(8\,z-21\right)\cos\left(2\sqrt{z}\right)+\left(16\,z^2-180\,z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

For fixed z and $a_1 = 6$, $b_1 = 6$

07.22.03.6208.01

$$ {}_1F_2(6;\ 6,\ 6;\ z) = \frac{120\,I_5\left(2\sqrt{z}\right)}{z^{5/2}} $$

07.22.03.6209.01

$$ {}_1F_2(6;\ 6,\ 6;\ -z) = \frac{120\,J_5\left(2\sqrt{z}\right)}{z^{5/2}} $$

For rational parameters with larger denominators and fixed z

For fixed z and $a_1 = 1$, $b_1 \geq -\frac{23}{4}$

For fixed z and $a_1 = 1$, $b_1 = -\frac{23}{4}$

07.22.03.6210.01

$$ {}_1F_2\left(1;\ -\frac{23}{4},\ -\frac{21}{4};\ z\right) = \frac{1}{316\,234\,143\,225}\left(e^{-2\sqrt{z}}\left(8\,388\,608\,e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{25/4}-8\,388\,608\,\sqrt{2\,\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{25/4}+e^{2\sqrt{z}}\left(16\,777\,216\,z^6+3\,145\,728\,z^5+6\,881\,280\,z^4+42\,577\,920\,z^3+518\,918\,400\,z^2+10\,475\,665\,200\,z+316\,234\,143\,225\right)\right)\right) $$

07.22.03.6211.01

$${}_1F_2\left(1;-\frac{23}{4},-\frac{21}{4};-z\right)=$$
$$\frac{1}{316\,234\,143\,225}\left(33\,554\,432\sqrt{\pi}\,\cos\left(2\sqrt{z}\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{25/4}-33\,554\,432\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)z^{25/4}+16\,777\,216\,z^6-\right.$$
$$\left.3\,145\,728\,z^5+6\,881\,280\,z^4-42\,577\,920\,z^3+518\,918\,400\,z^2-10\,475\,665\,200\,z+316\,234\,143\,225\right)$$

07.22.03.6212.01

$${}_1F_2\left(1;-\frac{23}{4},-\frac{17}{4};z\right)=\frac{1}{15\,058\,768\,725}$$
$$\left(e^{-2\sqrt{z}}\left(-1\,048\,576\,e^{4\sqrt{z}}\sqrt{2\pi}\left(2\sqrt{z}-1\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}-1\,048\,576\sqrt{2\pi}\left(2\sqrt{z}+1\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+\right.\right.$$
$$\left.\left.3\,e^{2\sqrt{z}}\left(1\,048\,576\,z^5+458\,752\,z^4+1\,576\,960\,z^3+13\,305\,600\,z^2+205\,405\,200\,z+5\,019\,589\,575\right)\right)\right)$$

07.22.03.6213.01

$${}_1F_2\left(1;-\frac{23}{4},-\frac{17}{4};-z\right)=\frac{1}{15\,058\,768\,725}\left(-4\,194\,304\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)z^{21/4}-\right.$$
$$4\,194\,304\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{21/4}-3\,145\,728\,z^5+$$
$$\left.1\,376\,256\,z^4-4\,730\,880\,z^3+39\,916\,800\,z^2-616\,215\,600\,z+15\,058\,768\,725\right)$$

07.22.03.6214.01

$${}_1F_2\left(1;-\frac{23}{4},-\frac{13}{4};z\right)=\frac{1}{885\,809\,925}$$
$$\left(e^{-2\sqrt{z}}\left(131\,072\,e^{4\sqrt{z}}\sqrt{2\pi}\left(4z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}-131\,072\sqrt{2\pi}\left(4z+6\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\left(1\,048\,576\,z^5+1\,376\,256\,z^4+946\,176\,z^3+4\,435\,200\,z^2+47\,401\,200\,z+885\,809\,925\right)\right)\right)$$

07.22.03.6215.01

$${}_1F_2\left(1;-\frac{23}{4},-\frac{13}{4};-z\right)=$$
$$\frac{1}{885\,809\,925}\left(-1\,048\,576\,z^5-524\,288\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4z-3)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{17/4}+524\,288\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left.\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)z^{17/4}+1\,376\,256\,z^4-946\,176\,z^3+4\,435\,200\,z^2-47\,401\,200\,z+885\,809\,925\right)$$

07.22.03.6216.01

$${}_1F_2\left(1;-\frac{23}{4},-\frac{9}{4};z\right)=\frac{1}{68\,139\,225}$$
$$\left(e^{-2\sqrt{z}}\left(-16\,384\,e^{4\sqrt{z}}\sqrt{2\pi}\left(8z^{3/2}-24z+30\sqrt{z}-15\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-16\,384\sqrt{2\pi}\left(8z^{3/2}+24z+30\sqrt{z}+15\right)\right.\right.$$
$$\left.\left.\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+e^{2\sqrt{z}}\left(851\,968\,z^4+946\,176\,z^3+887\,040\,z^2+5\,266\,800\,z+68\,139\,225\right)\right)\right)$$

07.22.03.6217.01

$$ {}_1F_2\left(1; -\frac{23}{4}, -\frac{9}{4}; -z\right) = \frac{1}{68\,139\,225}$$
$$\left(851\,968\,z^4 + 65\,536\,\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;(4z-15)\cos\left(2\sqrt{z}\right) + 3\,(5-8z)\sin\left(2\sqrt{z}\right)\right)z^{13/4} + 65\,536\,\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left.\left(3\,(8z-5)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\;(4z-15)\sin\left(2\sqrt{z}\right)\right)z^{13/4} - 946\,176\,z^3 + 887\,040\,z^2 - 5\,266\,800\,z + 68\,139\,225\right)$$

07.22.03.6218.01

$$ {}_1F_2\left(1; -\frac{23}{4}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{7\,571\,025}\left(e^{-2\sqrt{z}}\left(2048\,e^{4\sqrt{z}}\;\sqrt{2\pi}\;\left(16z^2 - 80z^{3/2} + 180z - 210\sqrt{z} + 105\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{9/4} - 2048\,\sqrt{2\pi}\right.\right.$$
$$\left(16z^2 + 80z^{3/2} + 180z + 210\sqrt{z} + 105\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{9/4} +$$
$$\left.\left.e^{2\sqrt{z}}\left(65\,536\,z^4 + 831\,488\,z^3 + 887\,040\,z^2 + 1\,053\,360\,z + 7\,571\,025\right)\right)\right)$$

07.22.03.6219.01

$$ {}_1F_2\left(1; -\frac{23}{4}, -\frac{5}{4}; -z\right) = \frac{1}{7\,571\,025}$$
$$\left(65\,536\,z^4 - 831\,488\,z^3 + 8192\,\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16z^2 - 180z + 105\right)\cos\left(2\sqrt{z}\right) + 10\,(21-8z)\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)z^{9/4} -\right.$$
$$8192\,\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\;(8z-21)\cos\left(2\sqrt{z}\right) + \left(16z^2 - 180z + 105\right)\sin\left(2\sqrt{z}\right)\right)z^{9/4} +$$
$$\left.887\,040\,z^2 - 1\,053\,360\,z + 7\,571\,025\right)$$

07.22.03.6220.01

$$ {}_1F_2\left(1; -\frac{23}{4}, -\frac{1}{4}; z\right) =$$
$$\frac{1}{1\,514\,205}\left(e^{-2\sqrt{z}}\left(-256\,e^{4\sqrt{z}}\;\sqrt{2\pi}\;\left(32z^{5/2} - 240z^2 + 840z^{3/2} - 1680z + 1890\sqrt{z} - 945\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{5/4} -\right.\right.$$
$$256\,\sqrt{2\pi}\;\left(32z^{5/2} + 240z^2 + 840z^{3/2} + 1680z + 1890\sqrt{z} + 945\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{5/4} +$$
$$\left.\left.e^{2\sqrt{z}}\left(126\,976\,z^3 + 994\,560\,z^2 + 1\,053\,360\,z + 1\,514\,205\right)\right)\right)$$

07.22.03.6221.01

$$ {}_1F_2\left(1; -\frac{23}{4}, -\frac{1}{4}; -z\right) = \frac{1}{1\,514\,205}\left(-126\,976\,z^3 + 994\,560\,z^2 - 1024\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(16\,z^2 - 112\,z + 63\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right)\right)z^{5/4} - 1024\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(16\,z^2 - 420\,z + 945\right)\cos\left(2\sqrt{z}\right) - 15\left(16\,z^2 - 112\,z + 63\right)\sin\left(2\sqrt{z}\right)\right)z^{5/4} - 1\,053\,360\,z + 1\,514\,205\right) $$

07.22.03.6222.01

$$ {}_1F_2\left(1; -\frac{23}{4}, \frac{3}{4}; z\right) = \frac{1}{1\,514\,205}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\,\left(4096\,z^3 + 226\,560\,z^2 + 1\,422\,960\,z + 1\,514\,205\right) + 32\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\,\left(64\,z^3 - 672\,z^{5/2} + 3360\,z^2 - 10\,080\,z^{3/2} + 18\,900\,z - 20\,790\sqrt{z} + 10\,395\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 32\sqrt{2\pi}\,\sqrt[4]{z}\,\left(64\,z^3 + 672\,z^{5/2} + 3360\,z^2 + 10\,080\,z^{3/2} + 18\,900\,z + 20\,790\sqrt{z} + 10\,395\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6223.01

$$ {}_1F_2\left(1; -\frac{23}{4}, \frac{3}{4}; -z\right) = \frac{1}{1\,514\,205}\left(-4096\,z^3 + 226\,560\,z^2 - 1\,422\,960\,z - 128\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64\,z^3 - 3360\,z^2 + 18\,900\,z - 10\,395\right)\cos\left(2\sqrt{z}\right) - 42\sqrt{z}\,\left(16\,z^2 - 240\,z + 495\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + 128\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(42\sqrt{z}\,\left(16\,z^2 - 240\,z + 495\right)\cos\left(2\sqrt{z}\right) + \left(64\,z^3 - 3360\,z^2 + 18\,900\,z - 10\,395\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + 1\,514\,205\right) $$

07.22.03.6224.01

$$ {}_1F_2\left(1; -\frac{23}{4}, \frac{7}{4}; z\right) = \frac{1}{504\,735\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(-3\,e^{2\sqrt{z}}\,z^{3/4}\left(4864\,z^2 + 143\,440\,z + 792\,715\right) + 4\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(128\,z^{7/2} - 1792\,z^3 + 12\,096\,z^{5/2} - 50\,400\,z^2 + 138\,600\,z^{3/2} - 249\,480\,z + 270\,270\sqrt{z} - 135\,135\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + 4\sqrt{2\pi}\,\left(128\,z^{7/2} + 1792\,z^3 + 12\,096\,z^{5/2} + 50\,400\,z^2 + 138\,600\,z^{3/2} + 249\,480\,z + 270\,270\sqrt{z} + 135\,135\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6225.01

$$ {}_1F_2\left(1; -\frac{23}{4}, \frac{7}{4}; -z\right) = \frac{1}{504\,735\,z^{3/4}}\left(-3\,z^{3/4}\left(4864\,z^2 - 143\,440\,z + 792\,715\right) - 16\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(7\left(256\,z^3 - 7200\,z^2 + 35\,640\,z - 19\,305\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(64\,z^3 - 6048\,z^2 + 69\,300\,z - 135\,135\right)\sin\left(2\sqrt{z}\right)\right) - 16\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(64\,z^3 - 6048\,z^2 + 69\,300\,z - 135\,135\right)\cos\left(2\sqrt{z}\right) - 7\left(256\,z^3 - 7200\,z^2 + 35\,640\,z - 19\,305\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6226.01

$$ {}_1F_2\left(1; -\frac{23}{4}, \frac{11}{4}; z\right) = \frac{1}{144\,210\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(2\, e^{2\sqrt{z}}\, z^{3/4} \left(256 z^3 + 41\,520 z^2 + 895\,785 z + 5\,405\,400\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \left(256 z^4 - 4608 z^{7/2} + 40\,320 z^3 - 221\,760 z^{5/2} + 831\,600 z^2 - 2\,162\,160 z^{3/2} + 3\,783\,780 z - 4\,054\,050 \sqrt{z} + 2\,027\,025\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi} \left(256 z^4 + 4608 z^{7/2} + 40\,320 z^3 + 221\,760 z^{5/2} + 831\,600 z^2 + 2\,162\,160 z^{3/2} + 3\,783\,780 z + 4\,054\,050 \sqrt{z} + 2\,027\,025\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6227.01

$$ {}_1F_2\left(1; -\frac{23}{4}, \frac{11}{4}; -z\right) = \frac{1}{72\,105\, z^{7/4}} \left(z^{3/4} \left(256 z^3 - 41\,520 z^2 + 895\,785 z - 5\,405\,400\right) + 2\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(256 z^4 - 40\,320 z^3 + 831\,600 z^2 - 3\,783\,780 z + 2\,027\,025\right) \cos\left(2\sqrt{z}\right) + 18\sqrt{z} \left(-256 z^3 + 12\,320 z^2 - 120\,120 z + 225\,225\right) \sin\left(2\sqrt{z}\right)\right) - 2\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(18\sqrt{z} \left(256 z^3 - 12\,320 z^2 + 120\,120 z - 225\,225\right) \cos\left(2\sqrt{z}\right) + \left(256 z^4 - 40\,320 z^3 + 831\,600 z^2 - 3\,783\,780 z + 2\,027\,025\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6228.01

$$ {}_1F_2\left(1; -\frac{23}{4}, \frac{15}{4}; z\right) = \frac{1}{104\,880\, z^{11/4}} \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(1456 z^3 + 115\,125 z^2 + 1\,930\,500 z + 11\,486\,475\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \left(512 z^{9/2} - 11\,520 z^4 + 126\,720 z^{7/2} - 887\,040 z^3 + 4\,324\,320 z^{5/2} - 15\,135\,120 z^2 + 37\,837\,800 z^{3/2} - 64\,864\,800 z + 68\,918\,850 \sqrt{z} - 34\,459\,425\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(512 z^{9/2} + 11\,520 z^4 + 126\,720 z^{7/2} + 887\,040 z^3 + 4\,324\,320 z^{5/2} + 15\,135\,120 z^2 + 37\,837\,800 z^{3/2} + 64\,864\,800 z + 68\,918\,850 \sqrt{z} + 34\,459\,425\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6229.01

$$ {}_1F_2\left(1; -\frac{23}{4}, \frac{15}{4}; -z\right) = \frac{1}{26\,220\, z^{11/4}} \left(4 z^{3/4} \left(1456 z^3 - 115\,125 z^2 + 1\,930\,500 z - 11\,486\,475\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(45 \left(256 z^4 - 19\,712 z^3 + 336\,336 z^2 - 1\,441\,440 z + 765\,765\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z} \left(256 z^4 - 63\,360 z^3 + 2\,162\,160 z^2 - 18\,918\,900 z + 34\,459\,425\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(256 z^4 - 63\,360 z^3 + 2\,162\,160 z^2 - 18\,918\,900 z + 34\,459\,425\right) \cos\left(2\sqrt{z}\right) - 45 \left(256 z^4 - 19\,712 z^3 + 336\,336 z^2 - 1\,441\,440 z + 765\,765\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6230.01

$$ {}_1F_2\left(1; -\frac{23}{4}, \frac{19}{4}; z\right) = \frac{1}{55\,936\, z^{15/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(128\, z^4 + 48\,424\, z^3 + 2\,723\,760\, z^2 + 39\,382\,200\, z + 218\,243\,025\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\right.\right. \left(1024\, z^5 - 28\,160\, z^{9/2} + 380\,160\, z^4 - 3\,294\,720\, z^{7/2} + 20\,180\,160\, z^3 - 90\,810\,720\, z^{5/2} + 302\,702\,400\, z^2 - 735\,134\,400\, z^{3/2} + 1\,240\,539\,300\, z - 1\,309\,458\,150\sqrt{z} + 654\,729\,075\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi} \left(1024\, z^5 + 28\,160\, z^{9/2} + 380\,160\, z^4 + 3\,294\,720\, z^{7/2} + 20\,180\,160\, z^3 + 90\,810\,720\, z^{5/2} + 302\,702\,400\, z^2 + 735\,134\,400\, z^{3/2} + 1\,240\,539\,300\, z + 1\,309\,458\,150\sqrt{z} + 654\,729\,075\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\left.\right)\right) $$

07.22.03.6231.01

$$ {}_1F_2\left(1; -\frac{23}{4}, \frac{19}{4}; -z\right) = \frac{1}{13\,984\, z^{15/4}} \left(-4\, z^{3/4} \left(128\, z^4 - 48\,424\, z^3 + 2\,723\,760\, z^2 - 39\,382\,200\, z + 218\,243\,025\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(1024\, z^5 - 380\,160\, z^4 + 20\,180\,160\, z^3 - 302\,702\,400\, z^2 + 1\,240\,539\,300\, z - 654\,729\,075\right) \cos\left(2\sqrt{z}\right) - 110\sqrt{z} \left(256\, z^4 - 29\,952\, z^3 + 825\,552\, z^2 - 6\,683\,040\, z + 11\,904\,165\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(110\sqrt{z} \left(256\, z^4 - 29\,952\, z^3 + 825\,552\, z^2 - 6\,683\,040\, z + 11\,904\,165\right) \cos\left(2\sqrt{z}\right) + \left(1024\, z^5 - 380\,160\, z^4 + 20\,180\,160\, z^3 - 302\,702\,400\, z^2 + 1\,240\,539\,300\, z - 654\,729\,075\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6232.01

$$ {}_1F_2\left(1; -\frac{23}{4}, \frac{23}{4}; z\right) = \frac{1}{23\,552\, z^{19/4}} \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(8512\, z^4 + 1\,430\,208\, z^3 + 64\,920\,960\, z^2 + 872\,972\,100\, z + 4\,583\,103\,525\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\right.\right. \left(2048\, z^{11/2} - 67\,584\, z^5 + 1\,098\,240\, z^{9/2} - 11\,531\,520\, z^4 + 86\,486\,400\, z^{7/2} - 484\,323\,840\, z^3 + 2\,058\,376\,320\, z^{5/2} - 6\,616\,209\,600\, z^2 + 15\,713\,497\,800\, z^{3/2} - 26\,189\,163\,000\, z + 27\,498\,621\,150\sqrt{z} - 13\,749\,310\,575\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(2048\, z^{11/2} + 67\,584\, z^5 + 1\,098\,240\, z^{9/2} + 11\,531\,520\, z^4 + 86\,486\,400\, z^{7/2} + 484\,323\,840\, z^3 + 2\,058\,376\,320\, z^{5/2} + 6\,616\,209\,600\, z^2 + 15\,713\,497\,800\, z^{3/2} + 26\,189\,163\,000\, z + 27\,498\,621\,150\sqrt{z} + 13\,749\,310\,575\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\left.\right)\right) $$

07.22.03.6233.01

$$ {}_1F_2\left(1; -\frac{23}{4}, \frac{23}{4}; -z\right) = \frac{1}{5888\, z^{19/4}}\left(-4\, z^{3/4}\left(8512\, z^4 - 1\,430\,208\, z^3 + 64\,920\,960\, z^2 - 872\,972\,100\, z + 4\,583\,103\,525\right) - \right.$$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(33\left(2048\, z^5 - 349\,440\, z^4 + 14\,676\,480\, z^3 - 200\,491\,200\, z^2 + 793\,611\,000\, z - 416\,645\,775\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left.\left. 2\sqrt{z}\left(1024\, z^5 - 549\,120\, z^4 + 43\,243\,200\, z^3 - 1\,029\,188\,160\, z^2 + 7\,856\,748\,900\, z - 13\,749\,310\,575\right)\sin\left(2\sqrt{z}\right)\right) - \right.$$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(1024\, z^5 - 549\,120\, z^4 + 43\,243\,200\, z^3 - 1\,029\,188\,160\, z^2 + 7\,856\,748\,900\, z - 13\,749\,310\,575\right)\cos\right. $$
$$ \left.\left.\left(2\sqrt{z}\right) - 33\left(2048\, z^5 - 349\,440\, z^4 + 14\,676\,480\, z^3 - 200\,491\,200\, z^2 + 793\,611\,000\, z - 416\,645\,775\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 1$, $b_1 = -\frac{21}{4}$

07.22.03.6234.01

$$ {}_1F_2\left(1; -\frac{21}{4}, -\frac{19}{4}; z\right) = $$
$$ \frac{1}{13\,749\,310\,575}\left(e^{-2\sqrt{z}}\left(-2\,097\,152\, e^{4\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{23/4} - 2\,097\,152\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{23/4} + \right.\right.$$
$$ \left.\left. e^{2\sqrt{z}}\left(1\,048\,576\, z^5 + 983\,040\, z^4 + 3\,870\,720\, z^3 + 34\,594\,560\, z^2 + 551\,350\,800\, z + 13\,749\,310\,575\right)\right)\right) $$

07.22.03.6235.01

$$ {}_1F_2\left(1; -\frac{21}{4}, -\frac{19}{4}; -z\right) = $$
$$ \frac{1}{13\,749\,310\,575}\left(-8\,388\,608\,\sqrt{\pi}\,\cos\left(2\sqrt{z}\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{23/4} - 8\,388\,608\,\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right) z^{23/4} - \right.$$
$$ \left. 1\,048\,576\, z^5 + 983\,040\, z^4 - 3\,870\,720\, z^3 + 34\,594\,560\, z^2 - 551\,350\,800\, z + 13\,749\,310\,575\right) $$

07.22.03.6236.01

$$ {}_1F_2\left(1; -\frac{21}{4}, -\frac{15}{4}; z\right) = $$
$$ \frac{1}{723\,647\,925}\left(e^{-2\sqrt{z}}\left(262\,144\, e^{4\sqrt{z}}\,\sqrt{2\pi}\left(2\sqrt{z} - 1\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{19/4} - 262\,144\,\sqrt{2\pi}\left(2\sqrt{z} + 1\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{19/4} + \right.\right.$$
$$ \left.\left. e^{2\sqrt{z}}\left(1\,048\,576\, z^5 + 327\,680\, z^4 + 552\,960\, z^3 + 3\,144\,960\, z^2 + 36\,756\,720\, z + 723\,647\,925\right)\right)\right) $$

07.22.03.6237.01

$${}_1F_2\left(1;-\frac{21}{4},-\frac{15}{4};-z\right)=$$
$$\frac{1}{723\,647\,925}\left(-1\,048\,576\,z^5-1\,048\,576\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)z^{19/4}+1\,048\,576\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left.\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{19/4}+327\,680\,z^4-552\,960\,z^3+3\,144\,960\,z^2-36\,756\,720\,z+723\,647\,925\right)$$

07.22.03.6238.01

$${}_1F_2\left(1;-\frac{21}{4},-\frac{11}{4};z\right)=\frac{1}{48\,243\,195}$$
$$\left(e^{-2\sqrt{z}}\left(-32\,768\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(4z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}-32\,768\sqrt{2\pi}\,\left(4z+6\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\,\left(458\,752\,z^4+184\,320\,z^3+449\,280\,z^2+3\,341\,520\,z+48\,243\,195\right)\right)\right)$$

07.22.03.6239.01

$${}_1F_2\left(1;-\frac{21}{4},-\frac{11}{4};-z\right)=$$
$$\frac{1}{48\,243\,195}\left(458\,752\,z^4+131\,072\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4z-3)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{15/4}+131\,072\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left.\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)z^{15/4}-184\,320\,z^3+449\,280\,z^2-3\,341\,520\,z+48\,243\,195\right)$$

07.22.03.6240.01

$${}_1F_2\left(1;-\frac{21}{4},-\frac{7}{4};z\right)=\frac{1}{4\,385\,745}$$
$$\left(e^{-2\sqrt{z}}\left(4096\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(8z^{3/2}-24z+30\sqrt{z}-15\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}-4096\sqrt{2\pi}\,\left(8z^{3/2}+24z+30\sqrt{z}+15\right)\right.\right.$$
$$\left.\left.\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+e^{2\sqrt{z}}\,\left(65\,536\,z^4+307\,200\,z^3+149\,760\,z^2+477\,360\,z+4\,385\,745\right)\right)\right)$$

07.22.03.6241.01

$${}_1F_2\left(1;-\frac{21}{4},-\frac{7}{4};-z\right)=$$
$$\frac{1}{4\,385\,745}\left(65\,536\,z^4-307\,200\,z^3+16\,384\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right)+3\,(5-8z)\sin\left(2\sqrt{z}\right)\right)z^{11/4}-\right.$$
$$\left.16\,384\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\,(8z-5)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(4z-15)\sin\left(2\sqrt{z}\right)\right)z^{11/4}+149\,760\,z^2-477\,360\,z+4\,385\,745\right)$$

07.22.03.6242.01

$${}_1F_2\left(1;-\frac{21}{4},-\frac{3}{4};z\right)=$$
$$\frac{1}{626\,535}\left(e^{-2\sqrt{z}}\left(-512\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(16z^2-80z^{3/2}+180z-210\sqrt{z}+105\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}-512\sqrt{2\pi}\right.\right.$$
$$\left.\left.\left(16z^2+80z^{3/2}+180z+210\sqrt{z}+105\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+3\,e^{2\sqrt{z}}\,\left(28\,672\,z^3+93\,440\,z^2+53\,040\,z+208\,845\right)\right)\right)$$

07.22.03.6243.01

$$ {}_1F_2\left(1;-\frac{21}{4},-\frac{3}{4};-z\right)=\frac{1}{626\,535}\left(\left(-86\,016\,z^3+280\,320\,z^2-2048\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z^2-180\,z+105\right)\cos\left(2\sqrt{z}\right)+10\,(21-8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{7/4}-2048\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\,(8\,z-21)\cos\left(2\sqrt{z}\right)+\left(16\,z^2-180\,z+105\right)\sin\left(2\sqrt{z}\right)\right)z^{7/4}-159\,120\,z+626\,535\right)\right) $$

07.22.03.6244.01

$$ {}_1F_2\left(1;-\frac{21}{4},\frac{1}{4};z\right)=\frac{1}{208\,845}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\left(4096\,z^3+115\,968\,z^2+324\,720\,z+208\,845\right)+64\,e^{4\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(32\,z^{5/2}-240\,z^2+840\,z^{3/2}-1680\,z+1890\sqrt{z}-945\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-64\sqrt{2\pi}\,z^{3/4}\left(32\,z^{5/2}+240\,z^2+840\,z^{3/2}+1680\,z+1890\sqrt{z}+945\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6245.01

$$ {}_1F_2\left(1;-\frac{21}{4},\frac{1}{4};-z\right)=\frac{1}{208\,845}\left(-4096\,z^3+115\,968\,z^2-324\,720\,z+256\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(16\,z^2-112\,z+63\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(16\,z^2-420\,z+945\right)\sin\left(2\sqrt{z}\right)\right)z^{3/4}-256\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(16\,z^2-420\,z+945\right)\cos\left(2\sqrt{z}\right)-15\left(16\,z^2-112\,z+63\right)\sin\left(2\sqrt{z}\right)\right)z^{3/4}+208\,845\right) $$

07.22.03.6246.01

$$ {}_1F_2\left(1;-\frac{21}{4},\frac{5}{4};z\right)=\frac{1}{208\,845\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt[4]{z}\left(11\,008\,z^2+176\,976\,z+456\,435\right)+8\,e^{4\sqrt{z}}\sqrt{2\pi}\left(64\,z^3-672\,z^{5/2}+3360\,z^2-10\,080\,z^{3/2}+18\,900\,z-20\,790\sqrt{z}+10\,395\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+8\sqrt{2\pi}\left(64\,z^3+672\,z^{5/2}+3360\,z^2+10\,080\,z^{3/2}+18\,900\,z+20\,790\sqrt{z}+10\,395\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6247.01

$$ {}_1F_2\left(1;-\frac{21}{4},\frac{5}{4};-z\right)=\frac{1}{208\,845\sqrt[4]{z}}\left(\sqrt[4]{z}\left(-11\,008\,z^2+176\,976\,z-456\,435\right)-32\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64\,z^3-3360\,z^2+18\,900\,z-10\,395\right)\cos\left(2\sqrt{z}\right)-42\sqrt{z}\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)\right)-32\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(42\sqrt{z}\left(16\,z^2-240\,z+495\right)\cos\left(2\sqrt{z}\right)+\left(64\,z^3-3360\,z^2+18\,900\,z-10\,395\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6248.01

$$ {}_1F_2\left(1; -\frac{21}{4}, \frac{9}{4}; z\right) = \frac{1}{41\,769\, z^{5/4}} \left(e^{-2\sqrt{z}} \left(e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(256\, z^3 + 25\,136\, z^2 + 307\,881\, z + 1\,081\,080\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(128\, z^{7/2} - 1792\, z^3 + 12\,096\, z^{5/2} - 50\,400\, z^2 + 138\,600\, z^{3/2} - 249\,480\, z + 270\,270\, \sqrt{z} - 135\,135\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi}\, \left(128\, z^{7/2} + 1792\, z^3 + 12\,096\, z^{5/2} + 50\,400\, z^2 + 138\,600\, z^{3/2} + 249\,480\, z + 270\,270\, \sqrt{z} + 135\,135\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6249.01

$$ {}_1F_2\left(1; -\frac{21}{4}, \frac{9}{4}; -z\right) = \frac{1}{41\,769\, z^{5/4}} \left(\sqrt[4]{z}\, \left(256\, z^3 - 25\,136\, z^2 + 307\,881\, z - 1\,081\,080\right) - 4\, \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(7\, \left(256\, z^3 - 7200\, z^2 + 35\,640\, z - 19\,305\right) \cos\left(2\, \sqrt{z}\right) + 2\, \sqrt{z}\, \left(64\, z^3 - 6048\, z^2 + 69\,300\, z - 135\,135\right) \sin\left(2\, \sqrt{z}\right)\right) + 4\, \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\, \sqrt{z}\, \left(64\, z^3 - 6048\, z^2 + 69\,300\, z - 135\,135\right) \cos\left(2\, \sqrt{z}\right) - 7\, \left(256\, z^3 - 7200\, z^2 + 35\,640\, z - 19\,305\right) \sin\left(2\, \sqrt{z}\right)\right)\right) $$

07.22.03.6250.01

$$ {}_1F_2\left(1; -\frac{21}{4}, \frac{13}{4}; z\right) = \frac{1}{37\,128\, z^{9/4}} \left(e^{-2\sqrt{z}} \left(-8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(1168\, z^3 + 58\,191\, z^2 + 540\,540\, z + 2\,027\,025\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(256\, z^4 - 4608\, z^{7/2} + 40\,320\, z^3 - 221\,760\, z^{5/2} + 831\,600\, z^2 - 2\,162\,160\, z^{3/2} + 3\,783\,780\, z - 4\,054\,050\, \sqrt{z} + 2\,027\,025\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(256\, z^4 + 4608\, z^{7/2} + 40\,320\, z^3 + 221\,760\, z^{5/2} + 831\,600\, z^2 + 2\,162\,160\, z^{3/2} + 3\,783\,780\, z + 4\,054\,050\, \sqrt{z} + 2\,027\,025\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6251.01

$$ {}_1F_2\left(1; -\frac{21}{4}, \frac{13}{4}; -z\right) = \frac{1}{9282\, z^{9/4}} \left(2\, \sqrt[4]{z}\, \left(1168\, z^3 - 58\,191\, z^2 + 540\,540\, z - 2\,027\,025\right) + \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(256\, z^4 - 40\,320\, z^3 + 831\,600\, z^2 - 3\,783\,780\, z + 2\,027\,025\right) \cos\left(2\, \sqrt{z}\right) + 18\, \sqrt{z}\, \left(-256\, z^3 + 12\,320\, z^2 - 120\,120\, z + 225\,225\right) \sin\left(2\, \sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(18\, \sqrt{z}\, \left(256\, z^3 - 12\,320\, z^2 + 120\,120\, z - 225\,225\right) \cos\left(2\, \sqrt{z}\right) + \left(256\, z^4 - 40\,320\, z^3 + 831\,600\, z^2 - 3\,783\,780\, z + 2\,027\,025\right) \sin\left(2\, \sqrt{z}\right)\right)\right) $$

07.22.03.6252.01

$$ {}_1F_2\left(1; -\frac{21}{4}, \frac{17}{4}; z\right) = \frac{1}{22\,848\, z^{13/4}} \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(128 z^4 + 32\,424 z^3 + 1\,201\,200 z^2 + 9\,729\,720 z + 34\,459\,425\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\right.\right. $$
$$ \left(512 z^{9/2} - 11\,520 z^4 + 126\,720 z^{7/2} - 887\,040 z^3 + 4\,324\,320 z^{5/2} - 15\,135\,120 z^2 + 37\,837\,800 z^{3/2} - 64\,864\,800 z + \right. $$
$$ \left. 68\,918\,850 \sqrt{z} - 34\,459\,425\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi}\, \left(512 z^{9/2} + 11\,520 z^4 + 126\,720 z^{7/2} + 887\,040 z^3 + \right. $$
$$ \left.\left. \left. 4\,324\,320 z^{5/2} + 15\,135\,120 z^2 + 37\,837\,800 z^{3/2} + 64\,864\,800 z + 68\,918\,850 \sqrt{z} + 34\,459\,425\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6253.01

$$ {}_1F_2\left(1; -\frac{21}{4}, \frac{17}{4}; -z\right) = \frac{1}{5712\, z^{13/4}} \left(-2\, \sqrt[4]{z}\, \left(128 z^4 - 32\,424 z^3 + 1\,201\,200 z^2 - 9\,729\,720 z + 34\,459\,425\right) + \right. $$
$$ \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(45 \left(256 z^4 - 19\,712 z^3 + 336\,336 z^2 - 1\,441\,440 z + 765\,765\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\, \left(256 z^4 - 63\,360 z^3 + 2\,162\,160 z^2 - 18\,918\,900 z + 34\,459\,425\right) \sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(256 z^4 - 63\,360 z^3 + 2\,162\,160 z^2 - 18\,918\,900 z + 34\,459\,425\right) \cos\left(2\sqrt{z}\right) - \right. $$
$$ \left. \left. 45 \left(256 z^4 - 19\,712 z^3 + 336\,336 z^2 - 1\,441\,440 z + 765\,765\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6254.01

$$ {}_1F_2\left(1; -\frac{21}{4}, \frac{21}{4}; z\right) = \frac{1}{10\,752\, z^{17/4}} \left(e^{-2\sqrt{z}} \left(-24\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(2368 z^4 + 271\,040 z^3 + 8\,328\,320 z^2 + 64\,324\,260 z + 218\,243\,025\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\right.\right. $$
$$ \left(1024 z^5 - 28\,160 z^{9/2} + 380\,160 z^4 - 3\,294\,720 z^{7/2} + 20\,180\,160 z^3 - 90\,810\,720 z^{5/2} + 302\,702\,400 z^2 - \right. $$
$$ \left. 735\,134\,400 z^{3/2} + 1\,240\,539\,300 z - 1\,309\,458\,150 \sqrt{z} + 654\,729\,075\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\, \left(1024 z^5 + 28\,160 z^{9/2} + 380\,160 z^4 + 3\,294\,720 z^{7/2} + 20\,180\,160 z^3 + 90\,810\,720 z^{5/2} + \right. $$
$$ \left.\left. \left. 302\,702\,400 z^2 + 735\,134\,400 z^{3/2} + 1\,240\,539\,300 z + 1\,309\,458\,150 \sqrt{z} + 654\,729\,075\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6255.01

$${}_1F_2\left(1;-\frac{21}{4},\frac{21}{4};-z\right)=\frac{1}{2688\,z^{17/4}}\left(-6\sqrt[4]{z}\left(2368\,z^4-271\,040\,z^3+8\,328\,320\,z^2-64\,324\,260\,z+218\,243\,025\right)-\right.$$
$$\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\,z^5-380\,160\,z^4+20\,180\,160\,z^3-302\,702\,400\,z^2+1\,240\,539\,300\,z-654\,729\,075\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.110\sqrt{z}\left(256\,z^4-29\,952\,z^3+825\,552\,z^2-6\,683\,040\,z+11\,904\,165\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(110\sqrt{z}\left(256\,z^4-29\,952\,z^3+825\,552\,z^2-6\,683\,040\,z+11\,904\,165\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(1024\,z^5-380\,160\,z^4+20\,180\,160\,z^3-302\,702\,400\,z^2+1\,240\,539\,300\,z-654\,729\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = -\frac{19}{4}$

07.22.03.6256.01

$${}_1F_2\left(1;-\frac{19}{4},-\frac{17}{4};z\right)=$$
$$\frac{1}{654\,729\,075}\left(e^{-2\sqrt{z}}\left(524\,288\,e^{4\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}-524\,288\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+e^{2\sqrt{z}}\right.\right.$$
$$\left.\left.\left(1\,048\,576\,z^5+196\,608\,z^4+430\,080\,z^3+2\,661\,120\,z^2+32\,432\,400\,z+654\,729\,075\right)\right)\right)$$

07.22.03.6257.01

$${}_1F_2\left(1;-\frac{19}{4},-\frac{17}{4};-z\right)=$$
$$\frac{1}{654\,729\,075}\left(-2\,097\,152\sqrt{\pi}\,\cos\left(2\sqrt{z}\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4}+2\,097\,152\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)z^{21/4}-\right.$$
$$\left.1\,048\,576\,z^5+196\,608\,z^4-430\,080\,z^3+2\,661\,120\,z^2-32\,432\,400\,z+654\,729\,075\right)$$

07.22.03.6258.01

$${}_1F_2\left(1;-\frac{19}{4},-\frac{13}{4};z\right)=$$
$$\frac{1}{38\,513\,475}\left(e^{-2\sqrt{z}}\left(-65\,536\,e^{4\sqrt{z}}\sqrt{2\pi}\left(2\sqrt{z}-1\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}-65\,536\sqrt{2\pi}\left(2\sqrt{z}+1\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+\right.\right.$$
$$\left.\left.3\,e^{2\sqrt{z}}\left(65\,536\,z^4+28\,672\,z^3+98\,560\,z^2+831\,600\,z+12\,837\,825\right)\right)\right)$$

07.22.03.6259.01

$${}_1F_2\left(1;-\frac{19}{4},-\frac{13}{4};-z\right)=\frac{1}{38\,513\,475}$$
$$\left(262\,144\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)z^{17/4}+262\,144\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)\right.$$
$$\left.z^{17/4}+3\left(65\,536\,z^4-28\,672\,z^3+98\,560\,z^2-831\,600\,z+12\,837\,825\right)\right)$$

07.22.03.6260.01

$${}_1F_2\left(1;-\frac{19}{4},-\frac{9}{4};z\right)=$$
$$\frac{1}{2\,962\,575}\left(e^{-2\sqrt{z}}\left(8192\,e^{4\sqrt{z}}\;\sqrt{2\pi}\;\left(4z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{13/4}-8192\sqrt{2\pi}\;\left(4z+6\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{13/4}+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\;\left(65\,536\,z^4+86\,016\,z^3+59\,136\,z^2+277\,200\,z+2\,962\,575\right)\right)\right)$$

07.22.03.6261.01

$${}_1F_2\left(1;-\frac{19}{4},-\frac{9}{4};-z\right)=\frac{1}{2\,962\,575}\left(65\,536\,z^4+32\,768\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4z-3)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)z^{13/4}-\right.$$
$$\left.32\,768\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\;\cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)z^{13/4}-86\,016\,z^3+59\,136\,z^2-277\,200\,z+2\,962\,575\right)$$

07.22.03.6262.01

$${}_1F_2\left(1;-\frac{19}{4},-\frac{5}{4};z\right)=\frac{1}{329\,175}\left(e^{-2\sqrt{z}}\left(-1024\,e^{4\sqrt{z}}\;\sqrt{2\pi}\;\left(8z^{3/2}-24z+30\sqrt{z}-15\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{9/4}-\right.\right.$$
$$\left.\left.1024\sqrt{2\pi}\;\left(8z^{3/2}+24z+30\sqrt{z}+15\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{9/4}+e^{2\sqrt{z}}\;\left(53\,248\,z^3+59\,136\,z^2+55\,440\,z+329\,175\right)\right)\right)$$

07.22.03.6263.01

$${}_1F_2\left(1;-\frac{19}{4},-\frac{5}{4};-z\right)=\frac{1}{329\,175}\left(-53\,248\,z^3-4096\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;(4z-15)\cos\left(2\sqrt{z}\right)+3(5-8z)\sin\left(2\sqrt{z}\right)\right)z^{9/4}-\right.$$
$$\left.4096\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3(8z-5)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;(4z-15)\sin\left(2\sqrt{z}\right)\right)z^{9/4}+59\,136\,z^2-55\,440\,z+329\,175\right)$$

07.22.03.6264.01

$${}_1F_2\left(1;-\frac{19}{4},-\frac{1}{4};z\right)=$$
$$\frac{1}{65\,835}\left(e^{-2\sqrt{z}}\left(128\,e^{4\sqrt{z}}\;\sqrt{2\pi}\;\left(16z^2-80z^{3/2}+180z-210\sqrt{z}+105\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{5/4}-128\sqrt{2\pi}\right.\right.$$
$$\left.\left.\left(16z^2+80z^{3/2}+180z+210\sqrt{z}+105\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\;\left(4096\,z^3+51\,968\,z^2+55\,440\,z+65\,835\right)\right)\right)$$

07.22.03.6265.01

$$ {}_1F_2\left(1; -\frac{19}{4}, -\frac{1}{4}; -z\right) = $$
$$ \frac{1}{65\,835}\left(-4096\,z^3 + 51\,968\,z^2 - 512\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z^2 - 180\,z + 105\right)\cos\left(2\sqrt{z}\right) + 10\,(21 - 8\,z)\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{5/4} + \right. $$
$$ \left. 512\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\,\sqrt{z}\,(8\,z - 21)\cos\left(2\sqrt{z}\right) + \left(16\,z^2 - 180\,z + 105\right)\sin\left(2\sqrt{z}\right)\right)z^{5/4} - 55\,440\,z + 65\,835\right) $$

07.22.03.6266.01

$$ {}_1F_2\left(1; -\frac{19}{4}, \frac{3}{4}; z\right) = \frac{1}{65\,835} $$
$$ \left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\left(7936\,z^2 + 62\,160\,z + 65\,835\right) - 16\,e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\sqrt[4]{z}\,\left(32\,z^{5/2} - 240\,z^2 + 840\,z^{3/2} - 1680\,z + 1890\,\sqrt{z} - 945\right)\right.\right. $$
$$ \left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 16\,\sqrt{2\,\pi}\,\sqrt[4]{z}\,\left(32\,z^{5/2} + 240\,z^2 + 840\,z^{3/2} + 1680\,z + 1890\,\sqrt{z} + 945\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6267.01

$$ {}_1F_2\left(1; -\frac{19}{4}, \frac{3}{4}; -z\right) = \frac{1}{65\,835} $$
$$ \left(7936\,z^2 - 62\,160\,z + 64\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(16\,z^2 - 112\,z + 63\right)\cos\left(2\sqrt{z}\right) + 2\,\sqrt{z}\,\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + \right. $$
$$ \left. 64\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\,\left(16\,z^2 - 420\,z + 945\right)\cos\left(2\sqrt{z}\right) - 15\left(16\,z^2 - 112\,z + 63\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + 65\,835\right) $$

07.22.03.6268.01

$$ {}_1F_2\left(1; -\frac{19}{4}, \frac{7}{4}; z\right) = \frac{1}{21\,945\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\,z^{3/4}\left(256\,z^2 + 14\,160\,z + 88\,935\right) - \right.\right. $$
$$ 2\,e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(64\,z^3 - 672\,z^{5/2} + 3360\,z^2 - 10\,080\,z^{3/2} + 18\,900\,z - 20\,790\,\sqrt{z} + 10\,395\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ \left.\left. 2\,\sqrt{2\,\pi}\,\left(64\,z^3 + 672\,z^{5/2} + 3360\,z^2 + 10\,080\,z^{3/2} + 18\,900\,z + 20\,790\,\sqrt{z} + 10\,395\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6269.01

$$ {}_1F_2\left(1; -\frac{19}{4}, \frac{7}{4}; -z\right) = \frac{1}{21\,945\,z^{3/4}}\left(z^{3/4}\left(-256\,z^2 + 14\,160\,z - 88\,935\right) - \right. $$
$$ 8\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64\,z^3 - 3360\,z^2 + 18\,900\,z - 10\,395\right)\cos\left(2\sqrt{z}\right) - 42\,\sqrt{z}\,\left(16\,z^2 - 240\,z + 495\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \left. 8\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(42\,\sqrt{z}\,\left(16\,z^2 - 240\,z + 495\right)\cos\left(2\sqrt{z}\right) + \left(64\,z^3 - 3360\,z^2 + 18\,900\,z - 10\,395\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6270.01

$$ {}_1F_2\left(1; -\frac{19}{4}, \frac{11}{4}; z\right) = \frac{1}{12\,540\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(12\, e^{2\sqrt{z}}\, z^{3/4} \left(304 z^2 + 8965 z + 60\,060\right) - e^{4\sqrt{z}}\, \sqrt{2\pi} \left(128 z^{7/2} - 1792 z^3 + 12\,096 z^{5/2} - 50\,400 z^2 + 138\,600 z^{3/2} - 249\,480 z + 270\,270 \sqrt{z} - 135\,135\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi} \left(128 z^{7/2} + 1792 z^3 + 12\,096 z^{5/2} + 50\,400 z^2 + 138\,600 z^{3/2} + 249\,480 z + 270\,270 \sqrt{z} + 135\,135\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6271.01

$$ {}_1F_2\left(1; -\frac{19}{4}, \frac{11}{4}; -z\right) = \frac{1}{3135\, z^{7/4}} \left(-3 z^{3/4} \left(304 z^2 - 8965 z + 60\,060\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(7 \left(256 z^3 - 7200 z^2 + 35\,640 z - 19\,305\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z} \left(64 z^3 - 6048 z^2 + 69\,300 z - 135\,135\right) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(64 z^3 - 6048 z^2 + 69\,300 z - 135\,135\right) \cos\left(2\sqrt{z}\right) - 7 \left(256 z^3 - 7200 z^2 + 35\,640 z - 19\,305\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6272.01

$$ {}_1F_2\left(1; -\frac{19}{4}, \frac{15}{4}; z\right) = \frac{1}{9120\, z^{11/4}} \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(32 z^3 + 5190 z^2 + 102\,960 z + 675\,675\right) - e^{4\sqrt{z}}\, \sqrt{2\pi} \left(256 z^4 - 4608 z^{7/2} + 40\,320 z^3 - 221\,760 z^{5/2} + 831\,600 z^2 - 2\,162\,160 z^{3/2} + 3\,783\,780 z - 4\,054\,050 \sqrt{z} + 2\,027\,025\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(256 z^4 + 4608 z^{7/2} + 40\,320 z^3 + 221\,760 z^{5/2} + 831\,600 z^2 + 2\,162\,160 z^{3/2} + 3\,783\,780 z + 4\,054\,050 \sqrt{z} + 2\,027\,025\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6273.01

$$ {}_1F_2\left(1; -\frac{19}{4}, \frac{15}{4}; -z\right) = \frac{1}{2280\, z^{11/4}} \left(4 z^{3/4} \left(32 z^3 - 5190 z^2 + 102\,960 z - 675\,675\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(256 z^4 - 40\,320 z^3 + 831\,600 z^2 - 3\,783\,780 z + 2\,027\,025\right) \cos\left(2\sqrt{z}\right) + 18\sqrt{z} \left(-256 z^3 + 12\,320 z^2 - 120\,120 z + 225\,225\right) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(18\sqrt{z} \left(256 z^3 - 12\,320 z^2 + 120\,120 z - 225\,225\right) \cos\left(2\sqrt{z}\right) + \left(256 z^4 - 40\,320 z^3 + 831\,600 z^2 - 3\,783\,780 z + 2\,027\,025\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6274.01

$$ {}_1F_2\left(1; -\frac{19}{4}, \frac{19}{4}; z\right) = \frac{1}{4864\, z^{15/4}} \left(e^{-2\sqrt{z}} \left(208\, e^{2\sqrt{z}}\, z^{3/4} \left(112\, z^3 + 9360\, z^2 + 148\,500\, z + 883\,575\right) - e^{4\sqrt{z}}\, \sqrt{2\pi} \left(512\, z^{9/2} - 11\,520\, z^4 + 126\,720\, z^{7/2} - 887\,040\, z^3 + 4\,324\,320\, z^{5/2} - 15\,135\,120\, z^2 + 37\,837\,800\, z^{3/2} - 64\,864\,800\, z + 68\,918\,850\sqrt{z} - 34\,459\,425\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi} \left(512\, z^{9/2} + 11\,520\, z^4 + 126\,720\, z^{7/2} + 887\,040\, z^3 + 4\,324\,320\, z^{5/2} + 15\,135\,120\, z^2 + 37\,837\,800\, z^{3/2} + 64\,864\,800\, z + 68\,918\,850\sqrt{z} + 34\,459\,425\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right)$$

07.22.03.6275.01

$$ {}_1F_2\left(1; -\frac{19}{4}, \frac{19}{4}; -z\right) = \frac{1}{1216\, z^{15/4}} \left(52\, z^{3/4} \left(112\, z^3 - 9360\, z^2 + 148\,500\, z - 883\,575\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(45 \left(256\, z^4 - 19\,712\, z^3 + 336\,336\, z^2 - 1\,441\,440\, z + 765\,765\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z} \left(256\, z^4 - 63\,360\, z^3 + 2\,162\,160\, z^2 - 18\,918\,900\, z + 34\,459\,425\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(256\, z^4 - 63\,360\, z^3 + 2\,162\,160\, z^2 - 18\,918\,900\, z + 34\,459\,425\right) \cos\left(2\sqrt{z}\right) - 45 \left(256\, z^4 - 19\,712\, z^3 + 336\,336\, z^2 - 1\,441\,440\, z + 765\,765\right) \sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6276.01

$$ {}_1F_2\left(1; -\frac{19}{4}, \frac{23}{4}; z\right) = \frac{1}{2048\, z^{19/4}} \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(128\, z^4 + 44\,928\, z^3 + 2\,723\,760\, z^2 + 39\,382\,200\, z + 218\,243\,025\right) - e^{4\sqrt{z}}\, \sqrt{2\pi} \left(1024\, z^5 - 28\,160\, z^{9/2} + 380\,160\, z^4 - 3\,294\,720\, z^{7/2} + 20\,180\,160\, z^3 - 90\,810\,720\, z^{5/2} + 302\,702\,400\, z^2 - 735\,134\,400\, z^{3/2} + 1\,240\,539\,300\, z - 1\,309\,458\,150\sqrt{z} + 654\,729\,075\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(1024\, z^5 + 28\,160\, z^{9/2} + 380\,160\, z^4 + 3\,294\,720\, z^{7/2} + 20\,180\,160\, z^3 + 90\,810\,720\, z^{5/2} + 302\,702\,400\, z^2 + 735\,134\,400\, z^{3/2} + 1\,240\,539\,300\, z + 1\,309\,458\,150\sqrt{z} + 654\,729\,075\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right)$$

07.22.03.6277.01

$${}_1F_2\left(1;-\frac{19}{4},\frac{23}{4};-z\right)=\frac{1}{512\,z^{19/4}}\left(-4\,z^{3/4}\left(128\,z^4-44\,928\,z^3+2\,723\,760\,z^2-39\,382\,200\,z+218\,243\,025\right)-\right.$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\,z^5-380\,160\,z^4+20\,180\,160\,z^3-302\,702\,400\,z^2+1\,240\,539\,300\,z-654\,729\,075\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.110\sqrt{z}\,\left(256\,z^4-29\,952\,z^3+825\,552\,z^2-6\,683\,040\,z+11\,904\,165\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(110\sqrt{z}\,\left(256\,z^4-29\,952\,z^3+825\,552\,z^2-6\,683\,040\,z+11\,904\,165\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(1024\,z^5-380\,160\,z^4+20\,180\,160\,z^3-302\,702\,400\,z^2+1\,240\,539\,300\,z-654\,729\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = -\frac{17}{4}$

07.22.03.6278.01

$${}_1F_2\left(1;-\frac{17}{4},-\frac{15}{4};z\right)=$$
$$\frac{1}{34\,459\,425}\left(e^{-2\sqrt{z}}\left(-131\,072\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}-131\,072\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+e^{2\sqrt{z}}\right.\right.$$
$$\left.\left.\left(65\,536\,z^4+61\,440\,z^3+241\,920\,z^2+2\,162\,160\,z+34\,459\,425\right)\right)\right)$$

07.22.03.6279.01

$${}_1F_2\left(1;-\frac{17}{4},-\frac{15}{4};-z\right)=\frac{1}{34\,459\,425}\left(524\,288\,\sqrt{\pi}\,\cos\left(2\sqrt{z}\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}+\right.$$
$$\left.524\,288\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)z^{19/4}+65\,536\,z^4-61\,440\,z^3+241\,920\,z^2-2\,162\,160\,z+34\,459\,425\right)$$

07.22.03.6280.01

$${}_1F_2\left(1;-\frac{17}{4},-\frac{11}{4};z\right)=$$
$$\frac{1}{2\,297\,295}\left(e^{-2\sqrt{z}}\left(16\,384\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(2\sqrt{z}-1\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}-16\,384\,\sqrt{2\pi}\,\left(2\sqrt{z}+1\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\left(65\,536\,z^4+20\,480\,z^3+34\,560\,z^2+196\,560\,z+2\,297\,295\right)\right)\right)$$

07.22.03.6281.01

$${}_1F_2\left(1;-\frac{17}{4},-\frac{11}{4};-z\right)=\frac{1}{2\,297\,295}\left(65\,536\,z^4+65\,536\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)z^{15/4}-\right.$$
$$\left.65\,536\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{15/4}-20\,480\,z^3+34\,560\,z^2-196\,560\,z+2\,297\,295\right)$$

07.22.03.6282.01

$${}_1F_2\left(1;-\frac{17}{4},-\frac{7}{4};z\right)=$$
$$\frac{1}{208\,845}\left(e^{-2\sqrt{z}}\left(-2048\,e^{4\sqrt{z}}\sqrt{2\pi}\left(4z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-2048\sqrt{2\pi}\left(4z+6\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\left(28\,672z^3+11\,520z^2+28\,080z+208\,845\right)\right)\right)$$

07.22.03.6283.01

$${}_1F_2\left(1;-\frac{17}{4},-\frac{7}{4};-z\right)=\frac{1}{208\,845}\left(-28\,672z^3-8192\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4z-3)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{11/4}-\right.$$
$$\left.8192\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)z^{11/4}+11\,520z^2-28\,080z+208\,845\right)$$

07.22.03.6284.01

$${}_1F_2\left(1;-\frac{17}{4},-\frac{3}{4};z\right)=$$
$$\frac{1}{29\,835}\left(e^{-2\sqrt{z}}\left(256\,e^{4\sqrt{z}}\sqrt{2\pi}\left(8z^{3/2}-24z+30\sqrt{z}-15\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-256\sqrt{2\pi}\left(8z^{3/2}+24z+30\sqrt{z}+15\right)\right.\right.$$
$$\left.\left.\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\left(4096z^3+19\,200z^2+9360z+29\,835\right)\right)\right)$$

07.22.03.6285.01

$${}_1F_2\left(1;-\frac{17}{4},-\frac{3}{4};-z\right)=$$
$$\frac{1}{29\,835}\left(-4096z^3+19\,200z^2-1024\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right)+3(5-8z)\sin\left(2\sqrt{z}\right)\right)z^{7/4}+\right.$$
$$\left.1024\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3(8z-5)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(4z-15)\sin\left(2\sqrt{z}\right)\right)z^{7/4}-9360z+29\,835\right)$$

07.22.03.6286.01

$${}_1F_2\left(1;-\frac{17}{4},\frac{1}{4};z\right)=\frac{1}{9945}$$
$$\left(e^{-2\sqrt{z}}\left(3\,e^{2\sqrt{z}}\left(1792z^2+5840z+3315\right)-32\,e^{4\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(16z^2-80z^{3/2}+180z-210\sqrt{z}+105\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.32\sqrt{2\pi}\,z^{3/4}\left(16z^2+80z^{3/2}+180z+210\sqrt{z}+105\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6287.01

$${}_1F_2\left(1;-\frac{17}{4},\frac{1}{4};-z\right)=$$
$$\frac{1}{9945}\left(5376z^2-17\,520z+128\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16z^2-180z+105\right)\cos\left(2\sqrt{z}\right)+10(21-8z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{3/4}+\right.$$
$$\left.128\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)z^{3/4}+9945\right)$$

07.22.03.6288.01

$$ {}_1F_2\left(1; -\frac{17}{4}, \frac{5}{4}; z\right) = \frac{1}{9945\sqrt[4]{z}} \left(e^{-2\sqrt{z}} \left(-e^{2\sqrt{z}}\sqrt[4]{z}\left(256z^2+7248z+20\,295\right) - 4e^{4\sqrt{z}}\sqrt{2\pi}\left(32z^{5/2}-240z^2+840z^{3/2}-1680z+1890\sqrt{z}-945\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+4\sqrt{2\pi}\left(32z^{5/2}+240z^2+840z^{3/2}+1680z+1890\sqrt{z}+945\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6289.01

$$ {}_1F_2\left(1; -\frac{17}{4}, \frac{5}{4}; -z\right) = \frac{1}{9945\sqrt[4]{z}} \left(\sqrt[4]{z}\left(-256z^2+7248z-20\,295\right)+\right.$$
$$16\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(16z^2-112z+63\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(16z^2-420z+945\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\left.16\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(16z^2-420z+945\right)\cos\left(2\sqrt{z}\right)-15\left(16z^2-112z+63\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6290.01

$$ {}_1F_2\left(1; -\frac{17}{4}, \frac{9}{4}; z\right) = \frac{1}{3978z^{5/4}} \left(e^{-2\sqrt{z}}\left(2e^{2\sqrt{z}}\sqrt[4]{z}\left(688z^2+11\,061z+41\,580\right)-\right.\right.$$
$$e^{4\sqrt{z}}\sqrt{2\pi}\left(64z^3-672z^{5/2}+3360z^2-10\,080z^{3/2}+18\,900z-20\,790\sqrt{z}+10\,395\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.\left.\sqrt{2\pi}\left(64z^3+672z^{5/2}+3360z^2+10\,080z^{3/2}+18\,900z+20\,790\sqrt{z}+10\,395\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6291.01

$$ {}_1F_2\left(1; -\frac{17}{4}, \frac{9}{4}; -z\right) = \frac{1}{1989z^{5/4}} \left(\sqrt[4]{z}\left(-688z^2+11\,061z-41\,580\right)-\right.$$
$$2\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64z^3-3360z^2+18\,900z-10\,395\right)\cos\left(2\sqrt{z}\right)-42\sqrt{z}\left(16z^2-240z+495\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\left.2\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(42\sqrt{z}\left(16z^2-240z+495\right)\cos\left(2\sqrt{z}\right)+\left(64z^3-3360z^2+18\,900z-10\,395\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6292.01

$$ {}_1F_2\left(1; -\frac{17}{4}, \frac{13}{4}; z\right) =$$
$$\frac{1}{3536z^{9/4}} \left(e^{-2\sqrt{z}}\left(-8e^{2\sqrt{z}}\sqrt[4]{z}\left(32z^3+3142z^2+33\,264z+135\,135\right)-e^{4\sqrt{z}}\sqrt{2\pi}\left(128z^{7/2}-1792z^3+\right.\right.$$
$$12\,096z^{5/2}-50\,400z^2+138\,600z^{3/2}-249\,480z+270\,270\sqrt{z}-135\,135\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}$$
$$\left.\left.\left(128z^{7/2}+1792z^3+12\,096z^{5/2}+50\,400z^2+138\,600z^{3/2}+249\,480z+270\,270\sqrt{z}+135\,135\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6293.01

$$ {}_1F_2\left(1; -\frac{17}{4}, \frac{13}{4}; -z\right) = \frac{1}{884\, z^{9/4}}\left(2\sqrt[4]{z}\left(32 z^3 - 3142 z^2 + 33\,264 z - 135\,135\right) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(7\left(256 z^3 - 7200 z^2 + 35\,640 z - 19\,305\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64 z^3 - 6048 z^2 + 69\,300 z - 135\,135\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(64 z^3 - 6048 z^2 + 69\,300 z - 135\,135\right)\cos\left(2\sqrt{z}\right) - 7\left(256 z^3 - 7200 z^2 + 35\,640 z - 19\,305\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6294.01

$$ {}_1F_2\left(1; -\frac{17}{4}, \frac{17}{4}; z\right) = \frac{1}{2176\, z^{13/4}}\left(e^{-2\sqrt{z}}\left(8\, e^{2\sqrt{z}}\sqrt[4]{z}\left(1168 z^3 + 62\,832 z^2 + 540\,540 z + 2\,027\,025\right) - e^{4\sqrt{z}}\sqrt{2\pi}\left(256 z^4 - 4608 z^{7/2} + 40\,320 z^3 - 221\,760 z^{5/2} + 831\,600 z^2 - 2\,162\,160 z^{3/2} + 3\,783\,780 z - 4\,054\,050\sqrt{z} + 2\,027\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - \sqrt{2\pi}\left(256 z^4 + 4608 z^{7/2} + 40\,320 z^3 + 221\,760 z^{5/2} + 831\,600 z^2 + 2\,162\,160 z^{3/2} + 3\,783\,780 z + 4\,054\,050\sqrt{z} + 2\,027\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6295.01

$$ {}_1F_2\left(1; -\frac{17}{4}, \frac{17}{4}; -z\right) = \frac{1}{544\, z^{13/4}}\left(2\sqrt[4]{z}\left(1168 z^3 - 62\,832 z^2 + 540\,540 z - 2\,027\,025\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256 z^4 - 40\,320 z^3 + 831\,600 z^2 - 3\,783\,780 z + 2\,027\,025\right)\cos\left(2\sqrt{z}\right) + 18\sqrt{z}\left(-256 z^3 + 12\,320 z^2 - 120\,120 z + 225\,225\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(18\sqrt{z}\left(256 z^3 - 12\,320 z^2 + 120\,120 z - 225\,225\right)\cos\left(2\sqrt{z}\right) + \left(256 z^4 - 40\,320 z^3 + 831\,600 z^2 - 3\,783\,780 z + 2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6296.01

$$ {}_1F_2\left(1; -\frac{17}{4}, \frac{21}{4}; z\right) = \frac{1}{1024\, z^{17/4}}\left(e^{-2\sqrt{z}}\left(-8\, e^{2\sqrt{z}}\sqrt[4]{z}\left(128 z^4 + 29\,568 z^3 + 1\,201\,200 z^2 + 9\,729\,720 z + 34\,459\,425\right) - e^{4\sqrt{z}}\sqrt{2\pi}\left(512 z^{9/2} - 11\,520 z^4 + 126\,720 z^{7/2} - 887\,040 z^3 + 4\,324\,320 z^{5/2} - 15\,135\,120 z^2 + 37\,837\,800 z^{3/2} - 64\,864\,800 z + 68\,918\,850\sqrt{z} - 34\,459\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\left(512 z^{9/2} + 11\,520 z^4 + 126\,720 z^{7/2} + 887\,040 z^3 + 4\,324\,320 z^{5/2} + 15\,135\,120 z^2 + 37\,837\,800 z^{3/2} + 64\,864\,800 z + 68\,918\,850\sqrt{z} + 34\,459\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6297.01

$${}_1F_2\left(1;-\frac{17}{4},\frac{21}{4};-z\right)=\frac{1}{256\,z^{17/4}}\left(-2\sqrt[4]{z}\left(128\,z^4-29\,568\,z^3+1\,201\,200\,z^2-9\,729\,720\,z+34\,459\,425\right)+\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(45\left(256\,z^4-19\,712\,z^3+336\,336\,z^2-1\,441\,440\,z+765\,765\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(256\,z^4-63\,360\,z^3+2\,162\,160\,z^2-18\,918\,900\,z+34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(256\,z^4-63\,360\,z^3+2\,162\,160\,z^2-18\,918\,900\,z+34\,459\,425\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.45\left(256\,z^4-19\,712\,z^3+336\,336\,z^2-1\,441\,440\,z+765\,765\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = -\frac{15}{4}$

07.22.03.6298.01

$${}_1F_2\left(1;-\frac{15}{4},-\frac{13}{4};z\right)=\frac{1}{2\,027\,025}\left(e^{-2\sqrt{z}}\left(32\,768\,e^{4\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}-\right.\right.$$
$$\left.\left.32\,768\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+e^{2\sqrt{z}}\left(65\,536\,z^4+12\,288\,z^3+26\,880\,z^2+166\,320\,z+2\,027\,025\right)\right)\right)$$

07.22.03.6299.01

$${}_1F_2\left(1;-\frac{15}{4},-\frac{13}{4};-z\right)=\frac{1}{2\,027\,025}\left(131\,072\sqrt{\pi}\cos\left(2\sqrt{z}\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}-\right.$$
$$\left.131\,072\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)z^{17/4}+65\,536\,z^4-12\,288\,z^3+26\,880\,z^2-166\,320\,z+2\,027\,025\right)$$

07.22.03.6300.01

$${}_1F_2\left(1;-\frac{15}{4},-\frac{9}{4};z\right)=$$
$$\frac{1}{155\,925}\left(e^{-2\sqrt{z}}\left(-4096\,e^{4\sqrt{z}}\sqrt{2\pi}\left(2\sqrt{z}-1\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-4096\sqrt{2\pi}\left(2\sqrt{z}+1\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+\right.\right.$$
$$\left.\left.3\,e^{2\sqrt{z}}\left(4096\,z^3+1792\,z^2+6160\,z+51\,975\right)\right)\right)$$

07.22.03.6301.01

$${}_1F_2\left(1;-\frac{15}{4},-\frac{9}{4};-z\right)=\frac{1}{155\,925}\left(-16\,384\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)z^{13/4}-\right.$$
$$\left.16\,384\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\sin\left(2\sqrt{z}\right)\right)z^{13/4}+3\left(-4096\,z^3+1792\,z^2-6160\,z+51\,975\right)\right)$$

07.22.03.6302.01

$${}_1F_2\left(1;-\frac{15}{4},-\frac{5}{4};z\right)=$$
$$\frac{1}{17\,325}\left(e^{-2\sqrt{z}}\left(512\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(4z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}-512\sqrt{2\pi}\,\left(4z+6\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\left(4096z^3+5376z^2+3696z+17\,325\right)\right)\right)$$

07.22.03.6303.01

$${}_1F_2\left(1;-\frac{15}{4},-\frac{5}{4};-z\right)=\frac{1}{17\,325}\left(-4096z^3-2048\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4z-3)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{9/4}+\right.$$
$$\left.2048\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)z^{9/4}+5376z^2-3696z+17\,325\right)$$

07.22.03.6304.01

$${}_1F_2\left(1;-\frac{15}{4},-\frac{1}{4};z\right)=\frac{1}{3465}\left(e^{-2\sqrt{z}}\left(-64\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(8z^{3/2}-24z+30\sqrt{z}-15\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}-\right.\right.$$
$$\left.\left.64\sqrt{2\pi}\,\left(8z^{3/2}+24z+30\sqrt{z}+15\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\left(3328z^2+3696z+3465\right)\right)\right)$$

07.22.03.6305.01

$${}_1F_2\left(1;-\frac{15}{4},-\frac{1}{4};-z\right)=\frac{1}{3465}\left(3328z^2+256\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right)+3(5-8z)\sin\left(2\sqrt{z}\right)\right)z^{5/4}+\right.$$
$$\left.256\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3(8z-5)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(4z-15)\sin\left(2\sqrt{z}\right)\right)z^{5/4}-3696z+3465\right)$$

07.22.03.6306.01

$${}_1F_2\left(1;-\frac{15}{4},\frac{3}{4};z\right)=$$
$$\frac{1}{3465}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\left(256z^2+3248z+3465\right)+8\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\,\left(16z^2-80z^{3/2}+180z-210\sqrt{z}+105\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.8\sqrt{2\pi}\,\sqrt[4]{z}\,\left(16z^2+80z^{3/2}+180z+210\sqrt{z}+105\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6307.01

$${}_1F_2\left(1;-\frac{15}{4},\frac{3}{4};-z\right)=$$
$$\frac{1}{3465}\left(256z^2-3248z+32\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16z^2-180z+105\right)\cos\left(2\sqrt{z}\right)+10(21-8z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z}-\right.$$
$$\left.32\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z}+3465\right)$$

07.22.03.6308.01

$${}_1F_2\left(1;-\frac{15}{4},\frac{7}{4};z\right)=\frac{1}{1155\,z^{3/4}}$$
$$\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\,z^{3/4}\left(496\,z+3885\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(32\,z^{5/2}-240\,z^2+840\,z^{3/2}-1680\,z+1890\,\sqrt{z}\,-945\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\,\pi}\,\left(32\,z^{5/2}+240\,z^2+840\,z^{3/2}+1680\,z+1890\,\sqrt{z}\,+945\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6309.01

$${}_1F_2\left(1;-\frac{15}{4},\frac{7}{4};-z\right)=$$
$$\frac{1}{1155\,z^{3/4}}\left(z^{3/4}\left(496\,z-3885\right)+4\,\sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(16\,z^2-112\,z+63\right)\cos\left(2\,\sqrt{z}\right)+2\,\sqrt{z}\,\left(16\,z^2-420\,z+945\right)\sin\left(2\,\sqrt{z}\right)\right)+\right.$$
$$\left.4\,\sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\,\left(16\,z^2-420\,z+945\right)\cos\left(2\,\sqrt{z}\right)-15\left(16\,z^2-112\,z+63\right)\sin\left(2\,\sqrt{z}\right)\right)\right)$$

07.22.03.6310.01

$${}_1F_2\left(1;-\frac{15}{4},\frac{11}{4};z\right)=\frac{1}{1320\,z^{7/4}}\left(e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\,z^{3/4}\left(16\,z^2+885\,z+6930\right)+\right.\right.$$
$$e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(64\,z^3-672\,z^{5/2}+3360\,z^2-10\,080\,z^{3/2}+18\,900\,z-20\,790\,\sqrt{z}\,+10\,395\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.\left.\sqrt{2\,\pi}\,\left(64\,z^3+672\,z^{5/2}+3360\,z^2+10\,080\,z^{3/2}+18\,900\,z+20\,790\,\sqrt{z}\,+10\,395\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6311.01

$${}_1F_2\left(1;-\frac{15}{4},\frac{11}{4};-z\right)=\frac{1}{330\,z^{7/4}}\left(-2\,z^{3/4}\left(16\,z^2-885\,z+6930\right)-\right.$$
$$\sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64\,z^3-3360\,z^2+18\,900\,z-10\,395\right)\cos\left(2\,\sqrt{z}\right)-42\,\sqrt{z}\,\left(16\,z^2-240\,z+495\right)\sin\left(2\,\sqrt{z}\right)\right)+$$
$$\left.\sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(42\,\sqrt{z}\,\left(16\,z^2-240\,z+495\right)\cos\left(2\,\sqrt{z}\right)+\left(64\,z^3-3360\,z^2+18\,900\,z-10\,395\right)\sin\left(2\,\sqrt{z}\right)\right)\right)$$

07.22.03.6312.01

$${}_1F_2\left(1;-\frac{15}{4},\frac{15}{4};z\right)=$$
$$\frac{1}{960\,z^{11/4}}\left(e^{-2\sqrt{z}}\left(-48\,e^{2\sqrt{z}}\,z^{3/4}\left(76\,z^2+1980\,z+15\,015\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(128\,z^{7/2}-1792\,z^3+12\,096\,z^{5/2}-\right.\right.\right.$$
$$\left.\left.50\,400\,z^2+138\,600\,z^{3/2}-249\,480\,z+270\,270\,\sqrt{z}\,-135\,135\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\right.$$
$$\left.\left.\left.\left(128\,z^{7/2}+1792\,z^3+12\,096\,z^{5/2}+50\,400\,z^2+138\,600\,z^{3/2}+249\,480\,z+270\,270\,\sqrt{z}\,+135\,135\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\right)$$

07.22.03.6313.01

$$ {}_1F_2\left(1; -\frac{15}{4}, \frac{15}{4}; -z\right) = \frac{1}{240\, z^{11/4}}\left(-12\, z^{3/4}\left(76\, z^2 - 1980\, z + 15\,015\right) - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(7\left(256\, z^3 - 7200\, z^2 + 35\,640\, z - 19\,305\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64\, z^3 - 6048\, z^2 + 69\,300\, z - 135\,135\right)\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(64\, z^3 - 6048\, z^2 + 69\,300\, z - 135\,135\right)\cos\left(2\sqrt{z}\right) - 7\left(256\, z^3 - 7200\, z^2 + 35\,640\, z - 19\,305\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6314.01

$$ {}_1F_2\left(1; -\frac{15}{4}, \frac{19}{4}; z\right) = \frac{1}{512\, z^{15/4}}\left(e^{-2\sqrt{z}}\left(16\, e^{2\sqrt{z}}\, z^{3/4}\left(32\, z^3 + 5760\, z^2 + 102\,960\, z + 675\,675\right) + e^{4\sqrt{z}}\sqrt{2\pi}\left(256\, z^4 - 4608\, z^{7/2} + 40\,320\, z^3 - 221\,760\, z^{5/2} + 831\,600\, z^2 - 2\,162\,160\, z^{3/2} + 3\,783\,780\, z - 4\,054\,050\sqrt{z} + 2\,027\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - \sqrt{2\pi}\left(256\, z^4 + 4608\, z^{7/2} + 40\,320\, z^3 + 221\,760\, z^{5/2} + 831\,600\, z^2 + 2\,162\,160\, z^{3/2} + 3\,783\,780\, z + 4\,054\,050\sqrt{z} + 2\,027\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6315.01

$$ {}_1F_2\left(1; -\frac{15}{4}, \frac{19}{4}; -z\right) = \frac{1}{128\, z^{15/4}}\left(4\, z^{3/4}\left(32\, z^3 - 5760\, z^2 + 102\,960\, z - 675\,675\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\, z^4 - 40\,320\, z^3 + 831\,600\, z^2 - 3\,783\,780\, z + 2\,027\,025\right)\cos\left(2\sqrt{z}\right) + 18\sqrt{z}\left(-256\, z^3 + 12\,320\, z^2 - 120\,120\, z + 225\,225\right)\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(18\sqrt{z}\left(256\, z^3 - 12\,320\, z^2 + 120\,120\, z - 225\,225\right)\cos\left(2\sqrt{z}\right) + \left(256\, z^4 - 40\,320\, z^3 + 831\,600\, z^2 - 3\,783\,780\, z + 2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6316.01

$$ {}_1F_2\left(1; -\frac{15}{4}, \frac{23}{4}; z\right) = \frac{1}{4096\, z^{19/4}}\left(19\, e^{-2\sqrt{z}}\left(-144\, e^{2\sqrt{z}}\, z^{3/4}\left(128\, z^3 + 13\,520\, z^2 + 214\,500\, z + 1\,276\,275\right) + e^{4\sqrt{z}}\sqrt{2\pi}\left(512\, z^{9/2} - 11\,520\, z^4 + 126\,720\, z^{7/2} - 887\,040\, z^3 + 4\,324\,320\, z^{5/2} - 15\,135\,120\, z^2 + 37\,837\,800\, z^{3/2} - 64\,864\,800\, z + 68\,918\,850\sqrt{z} - 34\,459\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\left(512\, z^{9/2} + 11\,520\, z^4 + 126\,720\, z^{7/2} + 887\,040\, z^3 + 4\,324\,320\, z^{5/2} + 15\,135\,120\, z^2 + 37\,837\,800\, z^{3/2} + 64\,864\,800\, z + 68\,918\,850\sqrt{z} + 34\,459\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6317.01

$${}_1F_2\left(1;-\frac{15}{4},\frac{23}{4};-z\right)=\frac{1}{1024\,z^{19/4}}$$
$$\left(19\left(36\,z^{3/4}\left(128\,z^3-13\,520\,z^2+214\,500\,z-1\,276\,275\right)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(45\left(256\,z^4-19\,712\,z^3+336\,336\,z^2-1\,441\,440\,z+765\,765\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(256\,z^4-63\,360\,z^3+2\,162\,160\,z^2-18\,918\,900\,z+34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(256\,z^4-63\,360\,z^3+2\,162\,160\,z^2-18\,918\,900\,z+34\,459\,425\right)\cos\left(2\sqrt{z}\right)-45\left(256\,z^4-19\,712\,z^3+336\,336\,z^2-1\,441\,440\,z+765\,765\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = -\frac{13}{4}$

07.22.03.6318.01

$${}_1F_2\left(1;-\frac{13}{4},-\frac{11}{4};z\right)=\frac{1}{135\,135}\left(e^{-2\sqrt{z}}\left(-8192\,e^{4\sqrt{z}}\;\sqrt{2\pi}\;\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{15/4}-8192\,\sqrt{2\pi}\;\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{15/4}+e^{2\sqrt{z}}\left(4096\,z^3+3840\,z^2+15\,120\,z+135\,135\right)\right)\right)$$

07.22.03.6319.01

$${}_1F_2\left(1;-\frac{13}{4},-\frac{11}{4};-z\right)=\frac{1}{135\,135}$$
$$\left(-32\,768\,\sqrt{\pi}\;\cos\left(2\sqrt{z}\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}-32\,768\,\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)z^{15/4}-4096\,z^3+3840\,z^2-15\,120\,z+135\,135\right)$$

07.22.03.6320.01

$${}_1F_2\left(1;-\frac{13}{4},-\frac{7}{4};z\right)=$$
$$\frac{1}{12\,285}\left(e^{-2\sqrt{z}}\left(1024\,e^{4\sqrt{z}}\;\sqrt{2\pi}\left(2\sqrt{z}-1\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{11/4}-1024\,\sqrt{2\pi}\left(2\sqrt{z}+1\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{11/4}+e^{2\sqrt{z}}\left(4096\,z^3+1280\,z^2+2160\,z+12\,285\right)\right)\right)$$

07.22.03.6321.01

$${}_1F_2\left(1;-\frac{13}{4},-\frac{7}{4};-z\right)=\frac{1}{12\,285}\left(-4096\,z^3-4096\,\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)z^{11/4}+4096\,\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)z^{11/4}+1280\,z^2-2160\,z+12\,285\right)$$

07.22.03.6322.01

$${}_1F_2\left(1;-\frac{13}{4},-\frac{3}{4};z\right)=\frac{1}{1755}\left(e^{-2\sqrt{z}}\left(-128\,e^{4\sqrt{z}}\;\sqrt{2\pi}\left(4\,z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{7/4}-128\,\sqrt{2\pi}\left(4\,z+6\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\left(1792\,z^2+720\,z+1755\right)\right)\right)$$

07.22.03.6323.01

$${}_1F_2\left(1;-\frac{13}{4},-\frac{3}{4};-z\right)=\frac{1}{1755}\left(1792\,z^2+512\,\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4\,z-3)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)z^{7/4}+\right.$$
$$\left.512\,\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\;\cos\left(2\sqrt{z}\right)+(4\,z-3)\sin\left(2\sqrt{z}\right)\right)z^{7/4}-720\,z+1755\right)$$

07.22.03.6324.01

$${}_1F_2\left(1;-\frac{13}{4},\frac{1}{4};z\right)=$$
$$\frac{1}{585}e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\left(256\,z^2+1200\,z+585\right)+16\,e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;z^{3/4}\left(8\,z^{3/2}-24\,z+30\sqrt{z}\;-15\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\right.$$
$$\left.16\sqrt{2\,\pi}\;z^{3/4}\left(8\,z^{3/2}+24\,z+30\sqrt{z}\;+15\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)$$

07.22.03.6325.01

$${}_1F_2\left(1;-\frac{13}{4},\frac{1}{4};-z\right)=\frac{1}{585}\left(256\,z^2-1200\,z+64\,\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;(4\,z-15)\cos\left(2\sqrt{z}\right)+3\,(5-8\,z)\sin\left(2\sqrt{z}\right)\right)z^{3/4}-\right.$$
$$\left.64\,\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\,(8\,z-5)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;(4\,z-15)\sin\left(2\sqrt{z}\right)\right)z^{3/4}+585\right)$$

07.22.03.6326.01

$${}_1F_2\left(1;-\frac{13}{4},\frac{5}{4};z\right)=$$
$$\frac{1}{585\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-3\,e^{2\sqrt{z}}\;\sqrt[4]{z}\;(112\,z+365)+2\,e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(16\,z^2-80\,z^{3/2}+180\,z-210\sqrt{z}\;+105\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{2\,\pi}\;\left(16\,z^2+80\,z^{3/2}+180\,z+210\sqrt{z}\;+105\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6327.01

$${}_1F_2\left(1;-\frac{13}{4},\frac{5}{4};-z\right)=$$
$$\frac{1}{585\sqrt[4]{z}}\left(3\sqrt[4]{z}\;(112\,z-365)+8\,\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z^2-180\,z+105\right)\cos\left(2\sqrt{z}\right)+10\,(21-8\,z)\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.8\,\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\;(8\,z-21)\cos\left(2\sqrt{z}\right)+\left(16\,z^2-180\,z+105\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6328.01

$${}_1F_2\left(1;-\frac{13}{4},\frac{9}{4};z\right)=$$
$$\frac{1}{468\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(4\,e^{2\sqrt{z}}\;\sqrt[4]{z}\;\left(16\,z^2+453\,z+1890\right)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(32\,z^{5/2}-240\,z^2+840\,z^{3/2}-1680\,z+1890\sqrt{z}\;-945\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\sqrt{2\,\pi}\;\left(32\,z^{5/2}+240\,z^2+840\,z^{3/2}+1680\,z+1890\sqrt{z}\;+945\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6329.01

$$ {}_1F_2\left(1; -\frac{13}{4}, \frac{9}{4}; -z\right) = \frac{1}{117\, z^{5/4}}\left(\sqrt[4]{z}\,\left(-16\, z^2 + 453\, z - 1890\right) + \right.$$

$$\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(16\, z^2 - 112\, z + 63\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\, z^2 - 420\, z + 945\right)\sin\left(2\sqrt{z}\right)\right) -$$

$$\left.\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(16\, z^2 - 420\, z + 945\right)\cos\left(2\sqrt{z}\right) - 15\left(16\, z^2 - 112\, z + 63\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6330.01

$$ {}_1F_2\left(1; -\frac{13}{4}, \frac{13}{4}; z\right) = \frac{1}{416\, z^{9/4}}\left(e^{-2\sqrt{z}}\,\left(-8\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(172\, z^2 + 2268\, z + 10\,395\right) + \right.\right.$$

$$e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(64\, z^3 - 672\, z^{5/2} + 3360\, z^2 - 10\,080\, z^{3/2} + 18\,900\, z - 20\,790\sqrt{z} + 10\,395\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) +$$

$$\left.\left.\sqrt{2\pi}\,\left(64\, z^3 + 672\, z^{5/2} + 3360\, z^2 + 10\,080\, z^{3/2} + 18\,900\, z + 20\,790\sqrt{z} + 10\,395\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6331.01

$$ {}_1F_2\left(1; -\frac{13}{4}, \frac{13}{4}; -z\right) = \frac{1}{104\, z^{9/4}}\left(-2\sqrt[4]{z}\,\left(172\, z^2 - 2268\, z + 10\,395\right) - \right.$$

$$\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64\, z^3 - 3360\, z^2 + 18\,900\, z - 10\,395\right)\cos\left(2\sqrt{z}\right) - 42\sqrt{z}\,\left(16\, z^2 - 240\, z + 495\right)\sin\left(2\sqrt{z}\right)\right) -$$

$$\left.\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(42\sqrt{z}\,\left(16\, z^2 - 240\, z + 495\right)\cos\left(2\sqrt{z}\right) + \left(64\, z^3 - 3360\, z^2 + 18\,900\, z - 10\,395\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6332.01

$$ {}_1F_2\left(1; -\frac{13}{4}, \frac{17}{4}; z\right) =$$

$$\frac{1}{256\, z^{13/4}}\left(e^{-2\sqrt{z}}\,\left(8\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(32\, z^3 + 3584\, z^2 + 33\,264\, z + 135\,135\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(128\, z^{7/2} - 1792\, z^3 + 12\,096\, z^{5/2} - \right.\right.\right.$$

$$\left.\left.\left.50\,400\, z^2 + 138\,600\, z^{3/2} - 249\,480\, z + 270\,270\sqrt{z} - 135\,135\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - \sqrt{2\pi}\right.\right.$$

$$\left.\left.\left(128\, z^{7/2} + 1792\, z^3 + 12\,096\, z^{5/2} + 50\,400\, z^2 + 138\,600\, z^{3/2} + 249\,480\, z + 270\,270\sqrt{z} + 135\,135\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6333.01

$$ {}_1F_2\left(1; -\frac{13}{4}, \frac{17}{4}; -z\right) =$$

$$\frac{1}{64\, z^{13/4}}\left(2\sqrt[4]{z}\,\left(32\, z^3 - 3584\, z^2 + 33\,264\, z - 135\,135\right) - \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(7\left(256\, z^3 - 7200\, z^2 + 35\,640\, z - 19\,305\right)\cos\left(2\sqrt{z}\right) + \right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(64\, z^3 - 6048\, z^2 + 69\,300\, z - 135\,135\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$

$$\left.\left(2\sqrt{z}\,\left(64\, z^3 - 6048\, z^2 + 69\,300\, z - 135\,135\right)\cos\left(2\sqrt{z}\right) - 7\left(256\, z^3 - 7200\, z^2 + 35\,640\, z - 19\,305\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6334.01

$${}_1F_2\left(1; -\frac{13}{4}, \frac{21}{4}; z\right) =$$
$$\frac{1}{2048\, z^{17/4}}\left(17\, e^{-2\sqrt{z}}\left(-56\, e^{2\sqrt{z}}\sqrt[4]{z}\left(128\, z^3+8976\, z^2+77\,220\, z+289\,575\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(256\, z^4-4608\, z^{7/2}+40\,320\, z^3-\right.\right.\right.$$
$$\left.\left.\left.221\,760\, z^{5/2}+831\,600\, z^2-2\,162\,160\, z^{3/2}+3\,783\,780\, z-4\,054\,050\sqrt{z}+2\,027\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\right.\right.$$
$$\sqrt{2\pi}\left(256\, z^4+4608\, z^{7/2}+40\,320\, z^3+221\,760\, z^{5/2}+831\,600\, z^2+2\,162\,160\, z^{3/2}+\right.$$
$$\left.\left.3\,783\,780\, z+4\,054\,050\sqrt{z}+2\,027\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.6335.01

$${}_1F_2\left(1; -\frac{13}{4}, \frac{21}{4}; -z\right) =$$
$$\frac{1}{512\, z^{17/4}}\left(17\left(14\sqrt[4]{z}\left(128\, z^3-8976\, z^2+77\,220\, z-289\,575\right)+\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\, z^4-40\,320\, z^3+831\,600\, z^2-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.3\,783\,780\, z+2\,027\,025\right)\cos\left(2\sqrt{z}\right)+18\sqrt{z}\left(-256\, z^3+12\,320\, z^2-120\,120\, z+225\,225\right)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(18\sqrt{z}\left(256\, z^3-12\,320\, z^2+120\,120\, z-225\,225\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(256\, z^4-40\,320\, z^3+831\,600\, z^2-3\,783\,780\, z+2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = -\frac{11}{4}$

07.22.03.6336.01

$${}_1F_2\left(1; -\frac{11}{4}, -\frac{9}{4}; z\right) = \frac{1}{10\,395}\left(e^{-2\sqrt{z}}\right.$$
$$\left.\left(2048\, e^{4\sqrt{z}}\sqrt{2\pi}\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-2048\sqrt{2\pi}\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+e^{2\sqrt{z}}\left(4096\, z^3+768\, z^2+1680\, z+10\,395\right)\right)\right)$$

07.22.03.6337.01

$${}_1F_2\left(1; -\frac{11}{4}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{10\,395}\left(-8192\sqrt{\pi}\cos\left(2\sqrt{z}\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}+8192\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)z^{13/4}-4096\, z^3+768\, z^2-1680\, z+10\,395\right)$$

07.22.03.6338.01

$${}_1F_2\left(1; -\frac{11}{4}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{1155}\left(e^{-2\sqrt{z}}\left(-256\, e^{4\sqrt{z}}\sqrt{2\pi}\left(2\sqrt{z}-1\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-256\sqrt{2\pi}\left(2\sqrt{z}+1\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+\right.\right.$$
$$\left.\left.3\, e^{2\sqrt{z}}\left(256\, z^2+112\, z+385\right)\right)\right)$$

07.22.03.6339.01

$$ {}_1F_2\left(1; -\frac{11}{4}, -\frac{5}{4}; -z\right) = \frac{1}{1155}\left(1024\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\ \cos\left(2\sqrt{z}\right) - \sin\left(2\sqrt{z}\right)\right)z^{9/4} + \right.$$
$$ \left. 1024\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\ \sin\left(2\sqrt{z}\right)\right)z^{9/4} + 768z^2 - 336z + 1155\right) $$

07.22.03.6340.01

$$ {}_1F_2\left(1; -\frac{11}{4}, -\frac{1}{4}; z\right) = \frac{1}{231}e^{-2\sqrt{z}}\left(32e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(4z - 6\sqrt{z} + 3\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{5/4} - \right.$$
$$ \left. 32\sqrt{2\pi}\ \left(4z + 6\sqrt{z} + 3\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{5/4} + e^{2\sqrt{z}}\ \left(256z^2 + 336z + 231\right)\right) $$

07.22.03.6341.01

$$ {}_1F_2\left(1; -\frac{11}{4}, -\frac{1}{4}; -z\right) = \frac{1}{231}\left(256z^2 + 128\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4z-3)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\ \sin\left(2\sqrt{z}\right)\right)z^{5/4} - \right.$$
$$ \left. 128\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\ \cos\left(2\sqrt{z}\right) + (4z-3)\sin\left(2\sqrt{z}\right)\right)z^{5/4} - 336z + 231\right) $$

07.22.03.6342.01

$$ {}_1F_2\left(1; -\frac{11}{4}, \frac{3}{4}; z\right) = \frac{1}{231}e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\ (208z + 231) - \right.$$
$$ \left. 4e^{4\sqrt{z}}\ \sqrt{2\pi}\ \sqrt[4]{z}\ \left(8z^{3/2} - 24z + 30\sqrt{z} - 15\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) - 4\sqrt{2\pi}\ \sqrt[4]{z}\ \left(8z^{3/2} + 24z + 30\sqrt{z} + 15\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right) $$

07.22.03.6343.01

$$ {}_1F_2\left(1; -\frac{11}{4}, \frac{3}{4}; -z\right) = \frac{1}{231}\left(-208z - 16\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\ (4z-15)\cos\left(2\sqrt{z}\right) + 3(5-8z)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} - \right.$$
$$ \left. 16\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3(8z-5)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\ (4z-15)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + 231\right) $$

07.22.03.6344.01

$$ {}_1F_2\left(1; -\frac{11}{4}, \frac{7}{4}; z\right) = $$
$$ \frac{1}{154z^{3/4}}\left(e^{-2\sqrt{z}}\left(-2e^{2\sqrt{z}}\ z^{3/4}(16z + 203) - e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(16z^2 - 80z^{3/2} + 180z - 210\sqrt{z} + 105\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) + \right.\right.$$
$$ \left.\left. \sqrt{2\pi}\ \left(16z^2 + 80z^{3/2} + 180z + 210\sqrt{z} + 105\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6345.01

$$ {}_1F_2\left(1; -\frac{11}{4}, \frac{7}{4}; -z\right) = $$
$$ \frac{1}{77z^{3/4}}\left(z^{3/4}(16z - 203) + 2\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16z^2 - 180z + 105\right)\cos\left(2\sqrt{z}\right) + 10(21 - 8z)\sqrt{z}\ \sin\left(2\sqrt{z}\right)\right) - \right.$$
$$ \left. 2\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\ (8z - 21)\cos\left(2\sqrt{z}\right) + \left(16z^2 - 180z + 105\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6346.01

$$ {}_1F_2\left(1; -\frac{11}{4}, \frac{11}{4}; z\right) = \frac{1}{176\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} (31\, z + 315) - e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(32\, z^{5/2} - 240\, z^2 + 840\, z^{3/2} - 1680\, z + 1890\, \sqrt{z} - 945\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi}\, \left(32\, z^{5/2} + 240\, z^2 + 840\, z^{3/2} + 1680\, z + 1890\, \sqrt{z} + 945\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6347.01

$$ {}_1F_2\left(1; -\frac{11}{4}, \frac{11}{4}; -z\right) = \frac{1}{44\, z^{7/4}} \left(4\, z^{3/4} (31\, z - 315) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(15 \left(16\, z^2 - 112\, z + 63\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(16\, z^2 - 420\, z + 945\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(16\, z^2 - 420\, z + 945\right) \cos\left(2\sqrt{z}\right) - 15 \left(16\, z^2 - 112\, z + 63\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6348.01

$$ {}_1F_2\left(1; -\frac{11}{4}, \frac{15}{4}; z\right) = \frac{1}{128\, z^{11/4}} \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(8\, z^2 + 360\, z + 3465\right) - e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(64\, z^3 - 672\, z^{5/2} + 3360\, z^2 - 10\,080\, z^{3/2} + 18\,900\, z - 20\,790\, \sqrt{z} + 10\,395\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(64\, z^3 + 672\, z^{5/2} + 3360\, z^2 + 10\,080\, z^{3/2} + 18\,900\, z + 20\,790\, \sqrt{z} + 10\,395\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6349.01

$$ {}_1F_2\left(1; -\frac{11}{4}, \frac{15}{4}; -z\right) = \frac{1}{32\, z^{11/4}} \left(-4\, z^{3/4} \left(8\, z^2 - 360\, z + 3465\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(64\, z^3 - 3360\, z^2 + 18\,900\, z - 10\,395\right) \cos\left(2\sqrt{z}\right) - 42\sqrt{z}\, \left(16\, z^2 - 240\, z + 495\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(42\sqrt{z}\, \left(16\, z^2 - 240\, z + 495\right) \cos\left(2\sqrt{z}\right) + \left(64\, z^3 - 3360\, z^2 + 18\,900\, z - 10\,395\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6350.01

$$ {}_1F_2\left(1; -\frac{11}{4}, \frac{19}{4}; z\right) = -\frac{1}{1024\, z^{15/4}} \left(15\, e^{-2\sqrt{z}} \left(-144\, e^{2\sqrt{z}}\, z^{3/4} \left(32\, z^2 + 660\, z + 5005\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(128\, z^{7/2} - 1792\, z^3 + 12\,096\, z^{5/2} - 50\,400\, z^2 + 138\,600\, z^{3/2} - 249\,480\, z + 270\,270\, \sqrt{z} - 135\,135\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(128\, z^{7/2} + 1792\, z^3 + 12\,096\, z^{5/2} + 50\,400\, z^2 + 138\,600\, z^{3/2} + 249\,480\, z + 270\,270\, \sqrt{z} + 135\,135\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6351.01

$$ {}_1F_2\left(1; -\frac{11}{4}, \frac{19}{4}; -z\right) = -\frac{1}{256\, z^{15/4}}\left(15\left(36\, z^{3/4}\left(32\, z^2 - 660\, z + 5005\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(7\left(256\, z^3 - 7200\, z^2 + 35\,640\, z - 19\,305\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64\, z^3 - 6048\, z^2 + 69\,300\, z - 135\,135\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(64\, z^3 - 6048\, z^2 + 69\,300\, z - 135\,135\right)\cos\left(2\sqrt{z}\right) - 7\left(256\, z^3 - 7200\, z^2 + 35\,640\, z - 19\,305\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6352.01

$$ {}_1F_2\left(1; -\frac{11}{4}, \frac{23}{4}; z\right) = -\frac{1}{8192\, z^{19/4}}\left(285\, e^{-2\sqrt{z}}\left(720\, e^{2\sqrt{z}}\, z^{3/4}\left(128\, z^2 + 2288\, z + 15\,015\right) + e^{4\sqrt{z}}\sqrt{2\pi}\left(256\, z^4 - 4608\, z^{7/2} + 40\,320\, z^3 - 221\,760\, z^{5/2} + 831\,600\, z^2 - 2\,162\,160\, z^{3/2} + 3\,783\,780\, z - 4\,054\,050\sqrt{z} + 2\,027\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - \sqrt{2\pi}\left(256\, z^4 + 4608\, z^{7/2} + 40\,320\, z^3 + 221\,760\, z^{5/2} + 831\,600\, z^2 + 2\,162\,160\, z^{3/2} + 3\,783\,780\, z + 4\,054\,050\sqrt{z} + 2\,027\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6353.01

$$ {}_1F_2\left(1; -\frac{11}{4}, \frac{23}{4}; -z\right) = -\frac{1}{2048\, z^{19/4}}\left(285\left(180\, z^{3/4}\left(128\, z^2 - 2288\, z + 15\,015\right) - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\, z^4 - 40\,320\, z^3 + 831\,600\, z^2 - 3\,783\,780\, z + 2\,027\,025\right)\cos\left(2\sqrt{z}\right) + 18\sqrt{z}\left(-256\, z^3 + 12\,320\, z^2 - 120\,120\, z + 225\,225\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(18\sqrt{z}\left(256\, z^3 - 12\,320\, z^2 + 120\,120\, z - 225\,225\right)\cos\left(2\sqrt{z}\right) + \left(256\, z^4 - 40\,320\, z^3 + 831\,600\, z^2 - 3\,783\,780\, z + 2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 1$, $b_1 = -\frac{9}{4}$

07.22.03.6354.01

$$ {}_1F_2\left(1; -\frac{9}{4}, -\frac{7}{4}; z\right) = \frac{1}{945}\left(-512\, e^{2\sqrt{z}}\sqrt{2\pi}\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{11/4} - 512\, e^{-2\sqrt{z}}\sqrt{2\pi}\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{11/4} + 256\, z^2 + 240\, z + 945\right) $$

07.22.03.6355.01

$${}_1F_2\left(1;-\frac{9}{4},-\frac{7}{4};-z\right)=$$

$$\frac{1}{945}\left(2048\sqrt{\pi}\,\cos\left(2\sqrt{z}\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2048\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)z^{11/4}+256\,z^2-240\,z+945\right)$$

07.22.03.6356.01

$${}_1F_2\left(1;-\frac{9}{4},-\frac{3}{4};z\right)=\frac{1}{135}e^{-2\sqrt{z}}$$

$$\left(64\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(2\sqrt{z}-1\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}-64\sqrt{2\pi}\,\left(2\sqrt{z}+1\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\,\left(256\,z^2+80\,z+135\right)\right)$$

07.22.03.6357.01

$${}_1F_2\left(1;-\frac{9}{4},-\frac{3}{4};-z\right)=\frac{1}{135}\left(256\,z^2+256\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)z^{7/4}-\right.$$

$$\left.256\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{7/4}-80\,z+135\right)$$

07.22.03.6358.01

$${}_1F_2\left(1;-\frac{9}{4},\frac{1}{4};z\right)=\frac{1}{45}e^{-2\sqrt{z}}$$

$$\left(e^{2\sqrt{z}}\,(112\,z+45)-8\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(4\,z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-8\sqrt{2\pi}\,z^{3/4}\left(4\,z+6\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)$$

07.22.03.6359.01

$${}_1F_2\left(1;-\frac{9}{4},\frac{1}{4};-z\right)=\frac{1}{45}\left(-112\,z-32\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4\,z-3)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{3/4}-\right.$$

$$\left.32\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4\,z-3)\sin\left(2\sqrt{z}\right)\right)z^{3/4}+45\right)$$

07.22.03.6360.01

$${}_1F_2\left(1;-\frac{9}{4},\frac{5}{4};z\right)=\frac{1}{45\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\,\sqrt[4]{z}\,(16\,z+75)-\right.\right.$$

$$\left.\left.e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(8\,z^{3/2}-24\,z+30\sqrt{z}-15\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\,\left(8\,z^{3/2}+24\,z+30\sqrt{z}+15\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6361.01

$${}_1F_2\left(1;-\frac{9}{4},\frac{5}{4};-z\right)=\frac{1}{45\sqrt[4]{z}}\left(\sqrt[4]{z}\,(16\,z-75)+4\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(4\,z-15)\cos\left(2\sqrt{z}\right)+3\,(5-8\,z)\sin\left(2\sqrt{z}\right)\right)-\right.$$

$$\left.4\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\,(8\,z-5)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(4\,z-15)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6362.01

$$ {}_1F_2\left(1; -\frac{9}{4}, \frac{9}{4}; z\right) = \frac{1}{72\, z^{5/4}} \left(e^{-2\sqrt{z}} \left(168\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, (z+5) - e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(16\, z^2 - 80\, z^{3/2} + 180\, z - 210\sqrt{z} + 105\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi}\, \left(16\, z^2 + 80\, z^{3/2} + 180\, z + 210\sqrt{z} + 105\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6363.01

$$ {}_1F_2\left(1; -\frac{9}{4}, \frac{9}{4}; -z\right) = \frac{1}{18\, z^{5/4}} \left(42\, \sqrt[4]{z}\, (z-5) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(16\, z^2 - 180\, z + 105\right) \cos\left(2\sqrt{z}\right) + 10\, (21 - 8\, z)\, \sqrt{z}\, \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(10\sqrt{z}\, (8\, z - 21) \cos\left(2\sqrt{z}\right) + \left(16\, z^2 - 180\, z + 105\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6364.01

$$ {}_1F_2\left(1; -\frac{9}{4}, \frac{13}{4}; z\right) = \frac{1}{64\, z^{9/4}} \left(e^{-2\sqrt{z}} \left(-8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(8\, z^2 + 168\, z + 945\right) - e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(32\, z^{5/2} - 240\, z^2 + 840\, z^{3/2} - 1680\, z + 1890\sqrt{z} - 945\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(32\, z^{5/2} + 240\, z^2 + 840\, z^{3/2} + 1680\, z + 1890\sqrt{z} + 945\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6365.01

$$ {}_1F_2\left(1; -\frac{9}{4}, \frac{13}{4}; -z\right) = \frac{1}{16\, z^{9/4}} \left(-2\, \sqrt[4]{z}\, \left(8\, z^2 - 168\, z + 945\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(15\, \left(16\, z^2 - 112\, z + 63\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(16\, z^2 - 420\, z + 945\right) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(16\, z^2 - 420\, z + 945\right) \cos\left(2\sqrt{z}\right) - 15\, \left(16\, z^2 - 112\, z + 63\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6366.01

$$ {}_1F_2\left(1; -\frac{9}{4}, \frac{17}{4}; z\right) = -\frac{1}{512\, z^{13/4}} \left(13\, e^{-2\sqrt{z}} \left(-56\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(32\, z^2 + 324\, z + 1485\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(64\, z^3 - 672\, z^{5/2} + 3360\, z^2 - 10\,080\, z^{3/2} + 18\,900\, z - 20\,790\sqrt{z} + 10\,395\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(64\, z^3 + 672\, z^{5/2} + 3360\, z^2 + 10\,080\, z^{3/2} + 18\,900\, z + 20\,790\sqrt{z} + 10\,395\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6367.01

$${}_1F_2\left(1;-\frac{9}{4},\frac{17}{4};-z\right)=-\frac{1}{128\,z^{13/4}}\left(13\left(14\sqrt[4]{z}\,\left(32\,z^2-324\,z+1485\right)+\right.\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64\,z^3-3360\,z^2+18\,900\,z-10\,395\right)\cos\left(2\sqrt{z}\right)-42\sqrt{z}\,\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(42\sqrt{z}\,\left(16\,z^2-240\,z+495\right)\cos\left(2\sqrt{z}\right)+\left(64\,z^3-3360\,z^2+18\,900\,z-10\,395\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6368.01

$${}_1F_2\left(1;-\frac{9}{4},\frac{21}{4};z\right)=$$
$$-\frac{1}{4096\,z^{17/4}}\left(221\,e^{-2\sqrt{z}}\left(56\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(512\,z^2+4752\,z+19\,305\right)+e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(128\,z^{7/2}-1792\,z^3+12\,096\,z^{5/2}-\right.\right.\right.$$
$$\left.\left.50\,400\,z^2+138\,600\,z^{3/2}-249\,480\,z+270\,270\sqrt{z}-135\,135\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\sqrt{2\pi}$$
$$\left.\left.\left(128\,z^{7/2}+1792\,z^3+12\,096\,z^{5/2}+50\,400\,z^2+138\,600\,z^{3/2}+249\,480\,z+270\,270\sqrt{z}+135\,135\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6369.01

$${}_1F_2\left(1;-\frac{9}{4},\frac{21}{4};-z\right)=$$
$$-\frac{1}{1024\,z^{17/4}}\left(221\left(14\sqrt[4]{z}\,\left(512\,z^2-4752\,z+19\,305\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(7\left(256\,z^3-7200\,z^2+35\,640\,z-19\,305\right)\cos\left(2\sqrt{z}\right)+\right.\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(64\,z^3-6048\,z^2+69\,300\,z-135\,135\right)\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left.\left.\left(2\sqrt{z}\,\left(64\,z^3-6048\,z^2+69\,300\,z-135\,135\right)\cos\left(2\sqrt{z}\right)-7\left(256\,z^3-7200\,z^2+35\,640\,z-19\,305\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = -\frac{7}{4}$

07.22.03.6370.01

$${}_1F_2\left(1;-\frac{7}{4},-\frac{5}{4};z\right)=\frac{1}{105}\left(128\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}-128\,e^{-2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}+256\,z^2+48\,z+105\right)$$

07.22.03.6371.01

$${}_1F_2\left(1;-\frac{7}{4},-\frac{5}{4};-z\right)=\frac{1}{105}\left(512\sqrt{\pi}\,\cos\left(2\sqrt{z}\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}-512\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)z^{9/4}+256\,z^2-48\,z+105\right)$$

07.22.03.6372.01

$${}_1F_2\left(1;-\frac{7}{4},-\frac{1}{4};z\right)=$$
$$\frac{1}{21}\,e^{-2\sqrt{z}}\left(-16\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(2\sqrt{z}-1\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}-16\sqrt{2\pi}\,\left(2\sqrt{z}+1\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+3\,e^{2\sqrt{z}}\,\left(16\,z+7\right)\right)$$

07.22.03.6373.01

$${}_1F_2\left(1;-\frac{7}{4},-\frac{1}{4};-z\right)=\frac{1}{21}\left(-64\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)z^{5/4}-\right.$$
$$\left.64\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{5/4}-48z+21\right)$$

07.22.03.6374.01

$${}_1F_2\left(1;-\frac{7}{4},\frac{3}{4};z\right)=\frac{1}{21}e^{-2\sqrt{z}}$$
$$\left(e^{2\sqrt{z}}\,(16z+21)+2e^{4\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\,\left(4z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-2\sqrt{2\pi}\,\sqrt[4]{z}\,\left(4z+6\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)$$

07.22.03.6375.01

$${}_1F_2\left(1;-\frac{7}{4},\frac{3}{4};-z\right)=\frac{1}{21}\left(-16z-8\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4z-3)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z}+\right.$$
$$\left.8\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z}+21\right)$$

07.22.03.6376.01

$${}_1F_2\left(1;-\frac{7}{4},\frac{7}{4};z\right)=\frac{1}{28z^{3/4}}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(8z^{3/2}-24z+30\sqrt{z}-15\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\pi}\,\left(8z^{3/2}+24z+30\sqrt{z}+15\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)-52e^{2\sqrt{z}}\,z^{3/4}\right)\right)$$

07.22.03.6377.01

$${}_1F_2\left(1;-\frac{7}{4},\frac{7}{4};-z\right)=\frac{1}{7z^{3/4}}\left(-\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right)+3(5-8z)\sin\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3(8z-5)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(4z-15)\sin\left(2\sqrt{z}\right)\right)-13z^{3/4}\right)$$

07.22.03.6378.01

$${}_1F_2\left(1;-\frac{7}{4},\frac{11}{4};z\right)=$$
$$\frac{1}{32z^{7/4}}\left(e^{-2\sqrt{z}}\left(16e^{2\sqrt{z}}\,z^{3/4}(2z+35)+e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(16z^2-80z^{3/2}+180z-210\sqrt{z}+105\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.\sqrt{2\pi}\,\left(16z^2+80z^{3/2}+180z+210\sqrt{z}+105\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6379.01

$${}_1F_2\left(1;-\frac{7}{4},\frac{11}{4};-z\right)=$$
$$\frac{1}{8z^{7/4}}\left(4z^{3/4}(2z-35)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16z^2-180z+105\right)\cos\left(2\sqrt{z}\right)+10(21-8z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6380.01

$${}_1F_2\left(1;-\frac{7}{4},\frac{15}{4};z\right)=\frac{1}{256\,z^{11/4}}$$
$$\left(11\,e^{-2\sqrt{z}}\left(-80\,e^{2\sqrt{z}}\,z^{3/4}\,(4\,z+63)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(32\,z^{5/2}-240\,z^2+840\,z^{3/2}-1680\,z+1890\,\sqrt{z}-945\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\,\pi}\,\left(32\,z^{5/2}+240\,z^2+840\,z^{3/2}+1680\,z+1890\,\sqrt{z}+945\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6381.01

$${}_1F_2\left(1;-\frac{7}{4},\frac{15}{4};-z\right)=$$
$$\frac{1}{64\,z^{11/4}}\left(11\left(20\,z^{3/4}\,(4\,z-63)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(16\,z^2-112\,z+63\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(16\,z^2-420\,z+945\right)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(16\,z^2-420\,z+945\right)\cos\left(2\sqrt{z}\right)-15\left(16\,z^2-112\,z+63\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6382.01

$${}_1F_2\left(1;-\frac{7}{4},\frac{19}{4};z\right)=\frac{1}{2048\,z^{15/4}}\left(165\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(16\,z^2+360\,z+3465\right)+\right.\right.$$
$$e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(64\,z^3-672\,z^{5/2}+3360\,z^2-10\,080\,z^{3/2}+18\,900\,z-20\,790\,\sqrt{z}+10\,395\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.\left.\sqrt{2\,\pi}\,\left(64\,z^3+672\,z^{5/2}+3360\,z^2+10\,080\,z^{3/2}+18\,900\,z+20\,790\,\sqrt{z}+10\,395\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6383.01

$${}_1F_2\left(1;-\frac{7}{4},\frac{19}{4};-z\right)=\frac{1}{512\,z^{15/4}}\left(165\left(-4\,z^{3/4}\left(16\,z^2-360\,z+3465\right)-\right.\right.$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64\,z^3-3360\,z^2+18\,900\,z-10\,395\right)\cos\left(2\sqrt{z}\right)-42\sqrt{z}\,\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(42\sqrt{z}\,\left(16\,z^2-240\,z+495\right)\cos\left(2\sqrt{z}\right)+\left(64\,z^3-3360\,z^2+18\,900\,z-10\,395\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6384.01

$${}_1F_2\left(1;-\frac{7}{4},\frac{23}{4};z\right)=$$
$$\frac{1}{16\,384\,z^{19/4}}\left(209\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(64\,z^3-4320\,z^2-89\,100\,z-675\,675\right)+15\,e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(128\,z^{7/2}-1792\,z^3+\right.\right.\right.$$
$$\left.\left.12\,096\,z^{5/2}-50\,400\,z^2+138\,600\,z^{3/2}-249\,480\,z+270\,270\,\sqrt{z}-135\,135\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+15\,\sqrt{2\,\pi}$$
$$\left.\left.\left(128\,z^{7/2}+1792\,z^3+12\,096\,z^{5/2}+50\,400\,z^2+138\,600\,z^{3/2}+249\,480\,z+270\,270\,\sqrt{z}+135\,135\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6385.01

$${}_1F_2\left(1;-\frac{7}{4},\frac{23}{4};-z\right)=$$
$$-\frac{1}{4096\,z^{19/4}}\left(209\left(4\,z^{3/4}\left(64\,z^3+4320\,z^2-89\,100\,z+675\,675\right)+15\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(7\left(256\,z^3-7200\,z^2+35\,640\,z-19\,305\right)\right.\right.\right.$$
$$\left.\left.\left.\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(64\,z^3-6048\,z^2+69\,300\,z-135\,135\right)\sin\left(2\sqrt{z}\right)\right)+15\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right.$$
$$\left.\left.\left(2\sqrt{z}\left(64\,z^3-6048\,z^2+69\,300\,z-135\,135\right)\cos\left(2\sqrt{z}\right)-7\left(256\,z^3-7200\,z^2+35\,640\,z-19\,305\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = -\frac{5}{4}$

07.22.03.6386.01

$${}_1F_2\left(1;-\frac{5}{4},-\frac{3}{4};z\right)=\frac{1}{15}\left(-32\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{7/4}-32\,e^{-2\sqrt{z}}\;\sqrt{2\pi}\;\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{7/4}+16\,z+15\right)$$

07.22.03.6387.01

$${}_1F_2\left(1;-\frac{5}{4},-\frac{3}{4};-z\right)=\frac{1}{15}\left(-128\sqrt{\pi}\;\cos\left(2\sqrt{z}\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}-128\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)z^{7/4}-16\,z+15\right)$$

07.22.03.6388.01

$${}_1F_2\left(1;-\frac{5}{4},\frac{1}{4};z\right)=$$
$$\frac{1}{5}\,e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\;(16\,z+5)+4\,e^{4\sqrt{z}}\;\sqrt{2\pi}\;\left(2\sqrt{z}\;-1\right)z^{3/4}\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-4\sqrt{2\pi}\;\left(2\sqrt{z}\;+1\right)z^{3/4}\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)$$

07.22.03.6389.01

$${}_1F_2\left(1;-\frac{5}{4},\frac{1}{4};-z\right)=\frac{1}{5}\left(-16\,z-16\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)z^{3/4}+\right.$$
$$\left.16\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)z^{3/4}+5\right)$$

07.22.03.6390.01

$${}_1F_2\left(1;-\frac{5}{4},\frac{5}{4};z\right)=$$
$$\frac{1}{10\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\;\sqrt{2\pi}\;\left(4\,z-6\sqrt{z}\;+3\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+\sqrt{2\pi}\;\left(4\,z+6\sqrt{z}\;+3\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)-14\,e^{2\sqrt{z}}\;\sqrt[4]{z}\right)\right)$$

07.22.03.6391.01

$${}_1F_2\left(1;-\frac{5}{4},\frac{5}{4};-z\right)=\frac{1}{5\sqrt[4]{z}}\left(-2\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4\,z-3)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.2\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\;\cos\left(2\sqrt{z}\right)+(4\,z-3)\sin\left(2\sqrt{z}\right)\right)-7\sqrt[4]{z}\right)$$

07.22.03.6392.01

$$ {}_1F_2\left(1; -\frac{5}{4}, \frac{9}{4}; z\right) = \frac{1}{16\, z^{5/4}} \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, (2z+15) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(8\, z^{3/2} - 24\, z + 30\sqrt{z} - 15\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi}\, \left(8\, z^{3/2} + 24\, z + 30\sqrt{z} + 15\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6393.01

$$ {}_1F_2\left(1; -\frac{5}{4}, \frac{9}{4}; -z\right) = \frac{1}{4\, z^{5/4}} \left(2\sqrt[4]{z}\, (2z-15) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, (4z-15) \cos\left(2\sqrt{z}\right) + 3\,(5-8z) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(3\,(8z-5) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, (4z-15) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6394.01

$$ {}_1F_2\left(1; -\frac{5}{4}, \frac{13}{4}; z\right) = \frac{1}{128\, z^{9/4}} \left(9\, e^{-2\sqrt{z}} \left(-24\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, (4z+35) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(16\, z^2 - 80\, z^{3/2} + 180\, z - 210\sqrt{z} + 105\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(16\, z^2 + 80\, z^{3/2} + 180\, z + 210\sqrt{z} + 105\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6395.01

$$ {}_1F_2\left(1; -\frac{5}{4}, \frac{13}{4}; -z\right) = \frac{1}{32\, z^{9/4}} \left(9 \left(6\sqrt[4]{z}\, (4z-35) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(16\, z^2 - 180\, z + 105\right) \cos\left(2\sqrt{z}\right) + 10\,(21-8z)\sqrt{z}\, \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(10\sqrt{z}\, (8z-21) \cos\left(2\sqrt{z}\right) + \left(16\, z^2 - 180\, z + 105\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6396.01

$$ {}_1F_2\left(1; -\frac{5}{4}, \frac{17}{4}; z\right) = \frac{1}{1024\, z^{13/4}} \left(117\, e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(16\, z^2 + 168\, z + 945\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(32\, z^{5/2} - 240\, z^2 + 840\, z^{3/2} - 1680\, z + 1890\sqrt{z} - 945\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi}\, \left(32\, z^{5/2} + 240\, z^2 + 840\, z^{3/2} + 1680\, z + 1890\sqrt{z} + 945\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6397.01

$$ {}_1F_2\left(1; -\frac{5}{4}, \frac{17}{4}; -z\right) = \frac{1}{256\, z^{13/4}} \left(117 \left(-2\sqrt[4]{z}\, \left(16\, z^2 - 168\, z + 945\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(15\, \left(16\, z^2 - 112\, z + 63\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(16\, z^2 - 420\, z + 945\right) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(16\, z^2 - 420\, z + 945\right) \cos\left(2\sqrt{z}\right) - 15\, \left(16\, z^2 - 112\, z + 63\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6398.01

$${}_1F_2\left(1; -\frac{5}{4}, \frac{21}{4}; z\right) = \frac{1}{8192\, z^{17/4}}\left(153\, e^{-2\sqrt{z}}\left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\left(64\, z^3 - 2912\, z^2 - 29\,484\, z - 135\,135\right) + \right.\right.$$
$$13\, e^{4\sqrt{z}}\, \sqrt{2\pi}\left(64\, z^3 - 672\, z^{5/2} + 3360\, z^2 - 10\,080\, z^{3/2} + 18\,900\, z - 20\,790\, \sqrt{z} + 10\,395\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) +$$
$$\left.\left.13\, \sqrt{2\pi}\left(64\, z^3 + 672\, z^{5/2} + 3360\, z^2 + 10\,080\, z^{3/2} + 18\,900\, z + 20\,790\, \sqrt{z} + 10\,395\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right)$$

07.22.03.6399.01

$${}_1F_2\left(1; -\frac{5}{4}, \frac{21}{4}; -z\right) = -\frac{1}{2048\, z^{17/4}}\left(153\left(2\, \sqrt[4]{z}\left(64\, z^3 + 2912\, z^2 - 29\,484\, z + 135\,135\right) + \right.\right.$$
$$13\, \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64\, z^3 - 3360\, z^2 + 18\,900\, z - 10\,395\right) \cos\left(2\, \sqrt{z}\right) - 42\, \sqrt{z}\left(16\, z^2 - 240\, z + 495\right) \sin\left(2\, \sqrt{z}\right)\right) +$$
$$\left.\left.13\, \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right)\left(42\, \sqrt{z}\left(16\, z^2 - 240\, z + 495\right) \cos\left(2\, \sqrt{z}\right) + \left(64\, z^3 - 3360\, z^2 + 18\,900\, z - 10\,395\right) \sin\left(2\, \sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = -\frac{3}{4}$

07.22.03.6400.01

$${}_1F_2\left(1; -\frac{3}{4}, -\frac{1}{4}; z\right) = \frac{1}{3}\left(8\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{5/4} - 8\, e^{-2\sqrt{z}}\, \sqrt{2\pi}\, \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{5/4} + 16\, z + 3\right)$$

07.22.03.6401.01

$${}_1F_2\left(1; -\frac{3}{4}, -\frac{1}{4}; -z\right) = \frac{1}{3}\left(-32\, \sqrt{\pi}\, \cos\left(2\, \sqrt{z}\right) S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) z^{5/4} + 32\, \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \sin\left(2\, \sqrt{z}\right) z^{5/4} - 16\, z + 3\right)$$

07.22.03.6402.01

$${}_1F_2\left(1; -\frac{3}{4}, \frac{3}{4}; z\right) = \frac{1}{3}\, e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\, \sqrt{2\pi}\left(2\, \sqrt{z} - 1\right) \sqrt[4]{z}\, \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + 3\, e^{2\sqrt{z}} - \sqrt{2\pi}\left(2\, \sqrt{z} + 1\right) \sqrt[4]{z}\, \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)$$

07.22.03.6403.01

$${}_1F_2\left(1; -\frac{3}{4}, \frac{3}{4}; -z\right) =$$
$$\frac{1}{3}\left(4\, \sqrt{\pi}\, \sqrt[4]{z}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\, \sqrt{z}\, \cos\left(2\, \sqrt{z}\right) - \sin\left(2\, \sqrt{z}\right)\right) + 4\, \sqrt{\pi}\, \sqrt[4]{z}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\, \sqrt{z}\right) + 2\, \sqrt{z}\, \sin\left(2\, \sqrt{z}\right)\right) + 3\right)$$

07.22.03.6404.01

$${}_1F_2\left(1; -\frac{3}{4}, \frac{7}{4}; z\right) =$$
$$\frac{1}{8\, z^{3/4}}\left(e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\, \sqrt{2\pi}\left(4\, z - 6\, \sqrt{z} + 3\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\left(4\, z + 6\, \sqrt{z} + 3\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) - 8\, e^{2\sqrt{z}}\, z^{3/4}\right)\right)$$

07.22.03.6405.01

$${}_1F_2\left(1;-\frac{3}{4},\frac{7}{4};-z\right)=\frac{1}{2\,z^{3/4}}\left(-\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4\,z-3)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\;\cos\left(2\sqrt{z}\right)+(4\,z-3)\sin\left(2\sqrt{z}\right)\right)-2\,z^{3/4}\right)$$

07.22.03.6406.01

$${}_1F_2\left(1;-\frac{3}{4},\frac{11}{4};z\right)=-\frac{1}{64\,z^{7/4}}\left(7\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(8\,z^{3/2}-24\,z+30\sqrt{z}\;-15\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\,\pi}\;\left(8\,z^{3/2}+24\,z+30\sqrt{z}\;+15\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)-80\,e^{2\sqrt{z}}\;z^{3/4}\right)\right)$$

07.22.03.6407.01

$${}_1F_2\left(1;-\frac{3}{4},\frac{11}{4};-z\right)=-\frac{1}{16\,z^{7/4}}\left(7\left(\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;(4\,z-15)\cos\left(2\sqrt{z}\right)+3\,(5-8\,z)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\,(8\,z-5)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;(4\,z-15)\sin\left(2\sqrt{z}\right)\right)+20\,z^{3/4}\right)\right)$$

07.22.03.6408.01

$${}_1F_2\left(1;-\frac{3}{4},\frac{15}{4};z\right)=-\frac{1}{512\,z^{11/4}}\left(77\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(16\,z^2-80\,z^{3/2}+180\,z-210\sqrt{z}\;+105\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.\sqrt{2\,\pi}\;\left(16\,z^2+80\,z^{3/2}+180\,z+210\sqrt{z}\;+105\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)+560\,e^{2\sqrt{z}}\;z^{3/4}\right)\right)$$

07.22.03.6409.01

$${}_1F_2\left(1;-\frac{3}{4},\frac{15}{4};-z\right)=$$
$$-\frac{1}{128\,z^{11/4}}\left(77\left(-\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z^2-180\,z+105\right)\cos\left(2\sqrt{z}\right)+10\,(21-8\,z)\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right.$$
$$\left.\left.\left(10\sqrt{z}\;(8\,z-21)\cos\left(2\sqrt{z}\right)+\left(16\,z^2-180\,z+105\right)\sin\left(2\sqrt{z}\right)\right)+140\,z^{3/4}\right)\right)$$

07.22.03.6410.01

$${}_1F_2\left(1;-\frac{3}{4},\frac{19}{4};z\right)=-\frac{1}{4096\,z^{15/4}}\left(105\,e^{-2\sqrt{z}}\right.$$
$$\left(-16\,e^{2\sqrt{z}}\;z^{3/4}\left(16\,z^2+220\,z+3465\right)+11\,e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(32\,z^{5/2}-240\,z^2+840\,z^{3/2}-1680\,z+1890\sqrt{z}\;-945\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+11\sqrt{2\,\pi}\;\left(32\,z^{5/2}+240\,z^2+840\,z^{3/2}+1680\,z+1890\sqrt{z}\;+945\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6411.01

$$ {}_1F_2\left(1; -\frac{3}{4}, \frac{19}{4}; -z\right) = \frac{1}{1024\, z^{15/4}} \left(105 \left(-4\, z^{3/4} \left(16\, z^2 - 220\, z + 3465\right) + 11 \sqrt{\pi}\, S\left(\frac{2 \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(15 \left(16\, z^2 - 112\, z + 63\right) \cos\left(2 \sqrt{z}\right) + 2 \sqrt{z}\, \left(16\, z^2 - 420\, z + 945\right) \sin\left(2 \sqrt{z}\right)\right) + 11 \sqrt{\pi}\, C\left(\frac{2 \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2 \sqrt{z}\, \left(16\, z^2 - 420\, z + 945\right) \cos\left(2 \sqrt{z}\right) - 15 \left(16\, z^2 - 112\, z + 63\right) \sin\left(2 \sqrt{z}\right)\right)\right)\right) $$

07.22.03.6412.01

$$ {}_1F_2\left(1; -\frac{3}{4}, \frac{23}{4}; z\right) = \frac{1}{32\,768\, z^{19/4}} \left(133\, e^{-2 \sqrt{z}} \left(16\, e^{2 \sqrt{z}}\, z^{3/4} \left(128\, z^3 - 2640\, z^2 - 59\,400\, z - 571\,725\right) - 165\, e^{4 \sqrt{z}}\, \sqrt{2 \pi}\, \left(64\, z^3 - 672\, z^{5/2} + 3360\, z^2 - 10\,080\, z^{3/2} + 18\,900\, z - 20\,790 \sqrt{z} + 10\,395\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + 165 \sqrt{2 \pi}\, \left(64\, z^3 + 672\, z^{5/2} + 3360\, z^2 + 10\,080\, z^{3/2} + 18\,900\, z + 20\,790 \sqrt{z} + 10\,395\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6413.01

$$ {}_1F_2\left(1; -\frac{3}{4}, \frac{23}{4}; -z\right) = -\frac{1}{8192\, z^{19/4}} \left(133 \left(4\, z^{3/4} \left(128\, z^3 + 2640\, z^2 - 59\,400\, z + 571\,725\right) + 165 \sqrt{\pi}\, S\left(\frac{2 \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(64\, z^3 - 3360\, z^2 + 18\,900\, z - 10\,395\right) \cos\left(2 \sqrt{z}\right) - 42 \sqrt{z}\, \left(16\, z^2 - 240\, z + 495\right) \sin\left(2 \sqrt{z}\right)\right) - 165 \sqrt{\pi}\, C\left(\frac{2 \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(42 \sqrt{z}\, \left(16\, z^2 - 240\, z + 495\right) \cos\left(2 \sqrt{z}\right) + \left(64\, z^3 - 3360\, z^2 + 18\,900\, z - 10\,395\right) \sin\left(2 \sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 1$, $b_1 = -\frac{1}{4}$

07.22.03.6414.01

$$ {}_1F_2\left(1; -\frac{1}{4}, \frac{1}{4}; z\right) = -2\, e^{2 \sqrt{z}}\, \sqrt{2 \pi}\, z^{3/4} \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - 2\, e^{-2 \sqrt{z}}\, \sqrt{2 \pi}\, z^{3/4} \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) + 1 $$

07.22.03.6415.01

$$ {}_1F_2\left(1; -\frac{1}{4}, \frac{1}{4}; -z\right) = 8 \sqrt{\pi}\, z^{3/4} \cos\left(2 \sqrt{z}\right) C\left(\frac{2 \sqrt[4]{z}}{\sqrt{\pi}}\right) + 8 \sqrt{\pi}\, z^{3/4} S\left(\frac{2 \sqrt[4]{z}}{\sqrt{\pi}}\right) \sin\left(2 \sqrt{z}\right) + 1 $$

07.22.03.6416.01

$$ {}_1F_2\left(1; -\frac{1}{4}, \frac{5}{4}; z\right) = \frac{e^{-2 \sqrt{z}} \left(-e^{4 \sqrt{z}}\, \sqrt{2 \pi}\, \left(2 \sqrt{z} - 1\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2 \pi}\, \left(2 \sqrt{z} + 1\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) - 4\, e^{2 \sqrt{z}}\, \sqrt[4]{z}\right)}{4 \sqrt[4]{z}} $$

07.22.03.6417.01

$$ {}_1F_2\left(1; -\frac{1}{4}, \frac{5}{4}; -z\right) = \frac{1}{\sqrt[4]{z}} \left(-\sqrt{\pi}\, S\left(\frac{2 \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2 \sqrt{z}\, \cos\left(2 \sqrt{z}\right) - \sin\left(2 \sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2 \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\cos\left(2 \sqrt{z}\right) + 2 \sqrt{z}\, \sin\left(2 \sqrt{z}\right)\right) - \sqrt[4]{z}\right) $$

07.22.03.6418.01

$${}_1F_2\left(1;-\frac{1}{4},\frac{9}{4};z\right)=$$
$$-\frac{1}{32\,z^{5/4}}\left(5\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(4z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\,\left(4z+6\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)-24\,e^{2\sqrt{z}}\,\sqrt[4]{z}\right)\right)$$

07.22.03.6419.01

$${}_1F_2\left(1;-\frac{1}{4},\frac{9}{4};-z\right)=-\frac{1}{8\,z^{5/4}}\left(5\left(\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4z-3)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)+6\sqrt[4]{z}\right)\right)$$

07.22.03.6420.01

$${}_1F_2\left(1;-\frac{1}{4},\frac{13}{4};z\right)=-\frac{1}{256\,z^{9/4}}\left(45\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(8z^{3/2}-24z+30\sqrt{z}-15\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.\sqrt{2\pi}\,\left(8z^{3/2}+24z+30\sqrt{z}+15\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)+120\,e^{2\sqrt{z}}\,\sqrt[4]{z}\right)\right)$$

07.22.03.6421.01

$${}_1F_2\left(1;-\frac{1}{4},\frac{13}{4};-z\right)=-\frac{1}{64\,z^{9/4}}\left(45\left(-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right)+3\,(5-8z)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\,(8z-5)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(4z-15)\sin\left(2\sqrt{z}\right)\right)+30\sqrt[4]{z}\right)\right)$$

07.22.03.6422.01

$${}_1F_2\left(1;-\frac{1}{4},\frac{17}{4};z\right)=$$
$$-\frac{1}{2048\,z^{13/4}}\left(65\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(16z^2+108z+945\right)+9\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(16z^2-80z^{3/2}+180z-210\sqrt{z}+105\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+9\sqrt{2\pi}\,\left(16z^2+80z^{3/2}+180z+210\sqrt{z}+105\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6423.01

$${}_1F_2\left(1;-\frac{1}{4},\frac{17}{4};-z\right)=\frac{1}{512\,z^{13/4}}$$
$$\left(65\left(-2\sqrt[4]{z}\,\left(16z^2-108z+945\right)+9\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16z^2-180z+105\right)\cos\left(2\sqrt{z}\right)+10\,(21-8z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.9\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6424.01

$${}_1F_2\left(1;-\frac{1}{4},\frac{21}{4};z\right)=-\frac{1}{16\,384\,z^{17/4}}\left(85\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(128z^3-1872z^2-19\,656z-110\,565\right)+\right.\right.$$
$$117\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(32z^{5/2}-240z^2+840z^{3/2}-1680z+1890\sqrt{z}-945\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.\left.117\sqrt{2\pi}\,\left(32z^{5/2}+240z^2+840z^{3/2}+1680z+1890\sqrt{z}+945\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6425.01

$${}_1F_2\left(1;-\frac{1}{4},\frac{21}{4};-z\right)=-\frac{1}{4096\,z^{17/4}}\left(85\left(2\sqrt[4]{z}\left(128\,z^3+1872\,z^2-19\,656\,z+110\,565\right)-\right.\right.$$
$$117\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(16\,z^2-112\,z+63\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(16\,z^2-420\,z+945\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.117\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(16\,z^2-420\,z+945\right)\cos\left(2\sqrt{z}\right)-15\left(16\,z^2-112\,z+63\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = \frac{1}{4}$

07.22.03.0103.01

$${}_1F_2\left(1;\frac{1}{4},\frac{3}{4};z\right)=1+\sqrt{\frac{\pi}{2}}\,\sqrt[4]{z}\left(e^{2\sqrt{z}}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{-2\sqrt{z}}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)$$

07.22.03.6426.01

$${}_1F_2\left(1;\frac{1}{4},\frac{3}{4};-z\right)=2\sqrt{\pi}\,\sqrt[4]{z}\,\cos\left(2\sqrt{z}\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt{\pi}\,\sqrt[4]{z}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)+1$$

07.22.03.6427.01

$${}_1F_2\left(1;\frac{1}{4},\frac{7}{4};z\right)=\frac{3\,e^{-2\sqrt{z}}\sqrt{\frac{\pi}{2}}\left(e^{4\sqrt{z}}\left(2\sqrt{z}-1\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\left(2\sqrt{z}+1\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)}{8\,z^{3/4}}$$

07.22.03.6428.01

$${}_1F_2\left(1;\frac{1}{4},\frac{7}{4};-z\right)=\frac{3\sqrt{\pi}\left(C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)+S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)}{4\,z^{3/4}}$$

07.22.03.6429.01

$${}_1F_2\left(1;\frac{1}{4},\frac{11}{4};z\right)=$$
$$\frac{1}{128\,z^{7/4}}\left(21\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\,\sqrt{2\pi}\left(4\,z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\sqrt{2\pi}\left(4\,z+6\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)+16\,e^{2\sqrt{z}}\,z^{3/4}\right)\right)$$

07.22.03.6430.01

$${}_1F_2\left(1;\frac{1}{4},\frac{11}{4};-z\right)=\frac{1}{32\,z^{7/4}}\left(21\left(-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4\,z-3\right)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+\left(4\,z-3\right)\sin\left(2\sqrt{z}\right)\right)-4\,z^{3/4}\right)\right)$$

07.22.03.6431.01

$${}_1F_2\left(1;\frac{1}{4},\frac{15}{4};z\right)=\frac{1}{1024\,z^{11/4}}\left(33\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(4\,z-35\right)+\right.\right.$$
$$\left.\left.7\,e^{4\sqrt{z}}\,\sqrt{2\pi}\left(8\,z^{3/2}-24\,z+30\sqrt{z}-15\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+7\sqrt{2\pi}\left(8\,z^{3/2}+24\,z+30\sqrt{z}+15\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6432.01

$${}_1F_2\left(1;\frac{1}{4},\frac{15}{4};-z\right)=$$
$$-\frac{1}{256\,z^{11/4}}\left(33\left(4\,z^{3/4}\,(4\,z+35)+7\,\sqrt{\pi}\;C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\;(4\,z-15)\cos\left(2\,\sqrt{z}\right)+3\,(5-8\,z)\sin\left(2\,\sqrt{z}\right)\right)+7\right.$$
$$\left.\sqrt{\pi}\;S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\,(8\,z-5)\cos\left(2\,\sqrt{z}\right)+2\,\sqrt{z}\;(4\,z-15)\sin\left(2\,\sqrt{z}\right)\right)\right)$$

07.22.03.6433.01

$${}_1F_2\left(1;\frac{1}{4},\frac{19}{4};z\right)=$$
$$\frac{1}{8192\,z^{15/4}}\left(45\,e^{-2\,\sqrt{z}}\left(16\,e^{2\,\sqrt{z}}\;z^{3/4}\left(32\,z^2+2695\right)+77\,e^{4\,\sqrt{z}}\;\sqrt{2\,\pi}\;\left(16\,z^2-80\,z^{3/2}+180\,z-210\,\sqrt{z}\;+105\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.77\,\sqrt{2\,\pi}\;\left(16\,z^2+80\,z^{3/2}+180\,z+210\,\sqrt{z}\;+105\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6434.01

$${}_1F_2\left(1;\frac{1}{4},\frac{19}{4};-z\right)=$$
$$-\frac{1}{2048\,z^{15/4}}\left(45\left(4\,z^{3/4}\left(32\,z^2+2695\right)-77\,\sqrt{\pi}\;S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z^2-180\,z+105\right)\cos\left(2\,\sqrt{z}\right)+10\,(21-8\,z)\,\sqrt{z}\;\sin\left(2\,\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.77\,\sqrt{\pi}\;C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\,\sqrt{z}\;(8\,z-21)\cos\left(2\,\sqrt{z}\right)+\left(16\,z^2-180\,z+105\right)\sin\left(2\,\sqrt{z}\right)\right)\right)$$

07.22.03.6435.01

$${}_1F_2\left(1;\frac{1}{4},\frac{23}{4};z\right)=\frac{1}{65\,536\,z^{19/4}}\left(57\,e^{-2\,\sqrt{z}}\left(16\,e^{2\,\sqrt{z}}\;z^{3/4}\left(256\,z^3-1680\,z^2-23\,100\,z-363\,825\right)+\right.\right.$$
$$1155\,e^{4\,\sqrt{z}}\;\sqrt{2\,\pi}\;\left(32\,z^{5/2}-240\,z^2+840\,z^{3/2}-1680\,z+1890\,\sqrt{z}\;-945\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+$$
$$\left.\left.1155\,\sqrt{2\,\pi}\;\left(32\,z^{5/2}+240\,z^2+840\,z^{3/2}+1680\,z+1890\,\sqrt{z}\;+945\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6436.01

$${}_1F_2\left(1;\frac{1}{4},\frac{23}{4};-z\right)=\frac{1}{16\,384\,z^{19/4}}\left(57\left(-4\,z^{3/4}\left(256\,z^3+1680\,z^2-23\,100\,z+363\,825\right)+\right.\right.$$
$$1155\,\sqrt{\pi}\;S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(16\,z^2-112\,z+63\right)\cos\left(2\,\sqrt{z}\right)+2\,\sqrt{z}\;\left(16\,z^2-420\,z+945\right)\sin\left(2\,\sqrt{z}\right)\right)+$$
$$\left.\left.1155\,\sqrt{\pi}\;C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\;\left(16\,z^2-420\,z+945\right)\cos\left(2\,\sqrt{z}\right)-15\left(16\,z^2-112\,z+63\right)\sin\left(2\,\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = \frac{3}{4}$

07.22.03.0104.01

$${}_1F_2\left(1;\frac{3}{4},\frac{5}{4};z\right)==\frac{e^{-2\sqrt{z}}}{4\sqrt[4]{z}}\sqrt{\frac{\pi}{2}}\left(e^{4\sqrt{z}}\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)$$

07.22.03.6437.01

$${}_1F_2\left(1;\frac{3}{4},\frac{5}{4};-z\right)=\frac{\sqrt{\pi}\left(\cos\left(2\sqrt{z}\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)\right)}{2\sqrt[4]{z}}$$

07.22.03.6438.01

$${}_1F_2\left(1;\frac{3}{4},\frac{9}{4};z\right)=\frac{5\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(2\sqrt{z}-1\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\sqrt{2\pi}\left(2\sqrt{z}+1\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)+8\,e^{2\sqrt{z}}\sqrt[4]{z}\right)}{64\,z^{5/4}}$$

07.22.03.6439.01

$${}_1F_2\left(1;\frac{3}{4},\frac{9}{4};-z\right)=$$

$$\frac{1}{16\,z^{5/4}}\left(5\left(-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)-2\sqrt[4]{z}\right)\right)$$

07.22.03.6440.01

$${}_1F_2\left(1;\frac{3}{4},\frac{13}{4};z\right)=\frac{1}{512\,z^{9/4}}$$

$$\left(9\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\,(4z-15)+5\,e^{4\sqrt{z}}\sqrt{2\pi}\left(4z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+5\sqrt{2\pi}\left(4z+6\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6441.01

$${}_1F_2\left(1;\frac{3}{4},\frac{13}{4};-z\right)=$$

$$-\frac{1}{128\,z^{9/4}}\left(9\left(2\sqrt[4]{z}\,(4z+15)+5\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4z-3)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+5\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right.$$

$$\left.\left.\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6442.01

$${}_1F_2\left(1;\frac{3}{4},\frac{17}{4};z\right)=$$

$$\frac{1}{4096\,z^{13/4}}\left(13\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(32z^2+675\right)+45\,e^{4\sqrt{z}}\sqrt{2\pi}\left(8z^{3/2}-24z+30\sqrt{z}-15\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\right.\right.$$

$$\left.\left.45\sqrt{2\pi}\left(8z^{3/2}+24z+30\sqrt{z}+15\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6443.01

$${}_1F_2\left(1;\frac{3}{4},\frac{17}{4};-z\right)=$$
$$-\frac{1}{1024\,z^{13/4}}\left(13\left(2\sqrt[4]{z}\,\left(32\,z^2+675\right)-45\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(4\,z-15\right)\cos\left(2\sqrt{z}\right)+3\left(5-8\,z\right)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.45\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(8\,z-5\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(4\,z-15\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6444.01

$${}_1F_2\left(1;\frac{3}{4},\frac{21}{4};z\right)=\frac{1}{32\,768\,z^{17/4}}$$
$$\left(17\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(256\,z^3-1040\,z^2-7020\,z-61\,425\right)+585\,e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(16\,z^2-80\,z^{3/2}+180\,z-210\sqrt{z}+105\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+585\sqrt{2\,\pi}\,\left(16\,z^2+80\,z^{3/2}+180\,z+210\sqrt{z}+105\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6445.01

$${}_1F_2\left(1;\frac{3}{4},\frac{21}{4};-z\right)=\frac{1}{8192\,z^{17/4}}\left(17\left(-2\sqrt[4]{z}\,\left(256\,z^3+1040\,z^2-7020\,z+61\,425\right)+\right.\right.$$
$$585\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z^2-180\,z+105\right)\cos\left(2\sqrt{z}\right)+10\left(21-8\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.585\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\,\left(8\,z-21\right)\cos\left(2\sqrt{z}\right)+\left(16\,z^2-180\,z+105\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = \frac{5}{4}$

07.22.03.0105.01

$${}_1F_2\left(1;\frac{5}{4},\frac{7}{4};z\right)=\frac{3\,e^{-2\sqrt{z}}}{16\,z^{3/4}}\sqrt{\frac{\pi}{2}}\,\left(e^{4\sqrt{z}}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)$$

07.22.03.6446.01

$${}_1F_2\left(1;\frac{5}{4},\frac{7}{4};-z\right)=\frac{3\sqrt{\pi}\,\left(C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)-\cos\left(2\sqrt{z}\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)}{8\,z^{3/4}}$$

07.22.03.6447.01

$${}_1F_2\left(1;\frac{5}{4},\frac{11}{4};z\right)=$$
$$\frac{1}{256\,z^{7/4}}\left(7\,e^{-2\sqrt{z}}\left(3\,e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(2\sqrt{z}-1\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+3\sqrt{2\,\pi}\,\left(2\sqrt{z}+1\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)-16\,e^{2\sqrt{z}}\,z^{3/4}\right)\right)$$

07.22.03.6448.01

$${}_1F_2\left(1;\frac{5}{4},\frac{11}{4};-z\right)=$$
$$\frac{1}{64\,z^{7/4}}\left(7\left(-3\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)-3\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)+4z^{3/4}\right)\right)$$

07.22.03.6449.01

$${}_1F_2\left(1;\frac{5}{4},\frac{15}{4};z\right)=\frac{1}{2048\,z^{11/4}}\left(11\,e^{-2\sqrt{z}}\right.$$
$$\left.\left(-16\,e^{2\sqrt{z}}\;z^{3/4}\left(8z-21\right)+21\,e^{4\sqrt{z}}\;\sqrt{2\pi}\;\left(4z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-21\sqrt{2\pi}\;\left(4z+6\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6450.01

$${}_1F_2\left(1;\frac{5}{4},\frac{15}{4};-z\right)=\frac{1}{512\,z^{11/4}}\left(11\left(4z^{3/4}\left(8z+21\right)+21\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4z-3\right)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)-\right.\right.$$
$$\left.\left.21\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\;\cos\left(2\sqrt{z}\right)+\left(4z-3\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6451.01

$${}_1F_2\left(1;\frac{5}{4},\frac{19}{4};z\right)=$$
$$\frac{1}{16\,384\,z^{15/4}}\left(15\,e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\;z^{3/4}\left(64z^2-132z+1155\right)+231\,e^{4\sqrt{z}}\;\sqrt{2\pi}\;\left(8z^{3/2}-24z+30\sqrt{z}-15\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.231\sqrt{2\pi}\;\left(8z^{3/2}+24z+30\sqrt{z}+15\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6452.01

$${}_1F_2\left(1;\frac{5}{4},\frac{19}{4};-z\right)=$$
$$\frac{1}{4096\,z^{15/4}}\left(15\left(4z^{3/4}\left(64z^2+132z+1155\right)+231\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\left(4z-15\right)\cos\left(2\sqrt{z}\right)+3\left(5-8z\right)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.231\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(8z-5\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;\left(4z-15\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6453.01

$${}_1F_2\left(1;\frac{5}{4},\frac{23}{4};z\right)=\frac{1}{131\,072\,z^{19/4}}$$
$$\left(19\,e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\;z^{3/4}\left(512z^3-1440z^2-121\,275\right)+3465\,e^{4\sqrt{z}}\;\sqrt{2\pi}\;\left(16z^2-80z^{3/2}+180z-210\sqrt{z}+105\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-3465\sqrt{2\pi}\;\left(16z^2+80z^{3/2}+180z+210\sqrt{z}+105\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6454.01

$$ {}_1F_2\left(1;\frac{5}{4},\frac{23}{4};-z\right)=\frac{1}{32\,768\,z^{19/4}}\left(19\left(4\,z^{3/4}\left(512\,z^3+1440\,z^2+121\,275\right)-3465\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z^2-180\,z+105\right)\cos\left(2\sqrt{z}\right)+10\,(21-8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+3465\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\,(8\,z-21)\cos\left(2\sqrt{z}\right)+\left(16\,z^2-180\,z+105\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 1$, $b_1 = \frac{7}{4}$

07.22.03.0119.01

$$ {}_1F_2\left(1;\frac{7}{4},\frac{9}{4};z\right)=\frac{15\,e^{-2\sqrt{z}}}{128\,z^{5/4}}\left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}+e^{4\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right) $$

07.22.03.6455.01

$$ {}_1F_2\left(1;\frac{7}{4},\frac{9}{4};-z\right)=-\frac{15\left(\sqrt{\pi}\,\cos\left(2\sqrt{z}\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)-2\sqrt[4]{z}\right)}{32\,z^{5/4}} $$

07.22.03.6456.01

$$ {}_1F_2\left(1;\frac{7}{4},\frac{13}{4};z\right)=\frac{1}{1024\,z^{9/4}}\left(27\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,(8\,z-5)+5\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(2\sqrt{z}-1\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-5\sqrt{2\pi}\,\left(2\sqrt{z}+1\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6457.01

$$ {}_1F_2\left(1;\frac{7}{4},\frac{13}{4};-z\right)=\frac{1}{256\,z^{9/4}}\left(27\left(2\,\sqrt[4]{z}\,(8\,z+5)+5\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)-5\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6458.01

$$ {}_1F_2\left(1;\frac{7}{4},\frac{17}{4};z\right)=\frac{1}{8192\,z^{13/4}}\left(39\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(64\,z^2-36\,z+135\right)+45\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(4\,z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+45\sqrt{2\pi}\,\left(4\,z+6\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6459.01

$$ {}_1F_2\left(1;\frac{7}{4},\frac{17}{4};-z\right)=\frac{1}{2048\,z^{13/4}}\left(39\left(2\,\sqrt[4]{z}\,\left(64\,z^2+36\,z+135\right)+45\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4\,z-3)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+45\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4\,z-3)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6460.01

$$ {}_1F_2\left(1;\frac{7}{4},\frac{21}{4};z\right)=\frac{1}{65\,536\,z^{17/4}}\left(51\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(512\,z^3-416\,z^2-8775\right)+585\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(8\,z^{3/2}-24\,z+30\sqrt{z}-15\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-585\sqrt{2\pi}\,\left(8\,z^{3/2}+24\,z+30\sqrt{z}+15\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6461.01

$$ {}_1F_2\left(1;\frac{7}{4},\frac{21}{4};-z\right)=\frac{1}{16\,384\,z^{17/4}}\left(51\left(2\sqrt[4]{z}\,\left(512\,z^3+416\,z^2+8775\right)-585\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(4\,z-15)\cos\left(2\sqrt{z}\right)+3\,(5-8\,z)\sin\left(2\sqrt{z}\right)\right)+585\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\,(8\,z-5)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(4\,z-15)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = \frac{9}{4}$

07.22.03.6462.01

$$ {}_1F_2\left(1;\frac{9}{4},\frac{11}{4};z\right)=\frac{35\,e^{-2\sqrt{z}}\left(3\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-3\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)-32\,e^{2\sqrt{z}}\,z^{3/4}\right)}{512\,z^{7/4}}$$

07.22.03.6463.01

$$ {}_1F_2\left(1;\frac{9}{4},\frac{11}{4};-z\right)=\frac{35\left(3\sqrt{\pi}\,\cos\left(2\sqrt{z}\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-3\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)+8\,z^{3/4}\right)}{128\,z^{7/4}}$$

07.22.03.6464.01

$$ {}_1F_2\left(1;\frac{9}{4},\frac{15}{4};z\right)=\frac{1}{4096\,z^{11/4}}\left(55\,e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\,(16\,z+7)+21\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(2\sqrt{z}-1\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+21\sqrt{2\pi}\,\left(2\sqrt{z}+1\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6465.01

$$ {}_1F_2\left(1;\frac{9}{4},\frac{15}{4};-z\right)=\frac{1}{1024\,z^{11/4}}\left(55\left(4\,z^{3/4}\,(16\,z-7)+21\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)+21\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6466.01

$$ {}_1F_2\left(1;\frac{9}{4},\frac{19}{4};z\right)=\frac{1}{32\,768\,z^{15/4}}\left(75\,e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\left(128\,z^2+88\,z-231\right)+231\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(4\,z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-231\sqrt{2\pi}\,\left(4\,z+6\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6467.01

$$ {}_1F_2\left(1;\frac{9}{4},\frac{19}{4};-z\right)= \frac{1}{8192\,z^{15/4}}\left(75\left(4\,z^{3/4}\left(128\,z^2-88\,z-231\right)-231\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4\,z-3)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)+231 \sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\;\cos\left(2\sqrt{z}\right)+(4\,z-3)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6468.01

$$ {}_1F_2\left(1;\frac{9}{4},\frac{23}{4};z\right)= \frac{1}{262\,144\,z^{19/4}}\left(95\,e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\;z^{3/4}\left(1024\,z^3+960\,z^2-1980\,z+17\,325\right)+3465\,e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(8\,z^{3/2}-24\,z+30\sqrt{z}\;-15\right)\right.\right. \left.\left.\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+3465\sqrt{2\,\pi}\;\left(8\,z^{3/2}+24\,z+30\sqrt{z}\;+15\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6469.01

$$ {}_1F_2\left(1;\frac{9}{4},\frac{23}{4};-z\right)= -\frac{1}{65\,536\,z^{19/4}}\left(95\left(4\,z^{3/4}\left(-1024\,z^3+960\,z^2+1980\,z+17\,325\right)+3465\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;(4\,z-15)\cos\left(2\sqrt{z}\right)+ 3\,(5-8\,z)\sin\left(2\sqrt{z}\right)\right)+3465\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\,(8\,z-5)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;(4\,z-15)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 1$, $b_1 = \frac{11}{4}$

07.22.03.6470.01

$$ {}_1F_2\left(1;\frac{11}{4},\frac{13}{4};z\right)= \frac{63\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\;\sqrt[4]{z}\;(16\,z+15)+15\,e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+15\sqrt{2\,\pi}\;\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)}{2048\,z^{9/4}} $$

07.22.03.6471.01

$$ {}_1F_2\left(1;\frac{11}{4},\frac{13}{4};-z\right)= \frac{63\left(2\sqrt[4]{z}\;(16\,z-15)+15\sqrt{\pi}\;\cos\left(2\sqrt{z}\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+15\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/4}} $$

07.22.03.6472.01

$$ {}_1F_2\left(1;\frac{11}{4},\frac{17}{4};z\right)= \frac{1}{16\,384\,z^{13/4}}\left(91\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\;\sqrt[4]{z}\;\left(128\,z^2+216\,z-135\right)+135\,e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(2\sqrt{z}\;-1\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)- 135\sqrt{2\,\pi}\;\left(2\sqrt{z}\;+1\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6473.01

$${}_1F_2\left(1;\frac{11}{4},\frac{17}{4};-z\right)=\frac{1}{4096\,z^{13/4}}\left(91\left(2\sqrt[4]{z}\left(128\,z^2-216\,z-135\right)-135\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)+135\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6474.01

$${}_1F_2\left(1;\frac{11}{4},\frac{21}{4};z\right)=\frac{1}{131\,072\,z^{17/4}}\left(119\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(1024\,z^3+2496\,z^2-1404\,z+5265\right)+1755\,e^{4\sqrt{z}}\sqrt{2\pi}\left(4\,z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+1755\sqrt{2\pi}\left(4\,z+6\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6475.01

$${}_1F_2\left(1;\frac{11}{4},\frac{21}{4};-z\right)=-\frac{1}{32\,768\,z^{17/4}}\left(119\left(2\sqrt[4]{z}\left(-1024\,z^3+2496\,z^2+1404\,z+5265\right)+1755\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4\,z-3)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+1755\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4\,z-3)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = \frac{13}{4}$

07.22.03.6476.01

$${}_1F_2\left(1;\frac{13}{4},\frac{15}{4};z\right)=\frac{99\,e^{-2\sqrt{z}}\left(-32\,e^{2\sqrt{z}}\,z^{3/4}\left(16\,z+35\right)+105\,e^{4\sqrt{z}}\sqrt{2\pi}\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-105\sqrt{2\pi}\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)}{8192\,z^{11/4}}$$

07.22.03.6477.01

$${}_1F_2\left(1;\frac{13}{4},\frac{15}{4};-z\right)=\frac{99\left(8\,z^{3/4}\left(16\,z-35\right)-105\sqrt{\pi}\,\cos\left(2\sqrt{z}\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+105\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)\right)}{2048\,z^{11/4}}$$

07.22.03.6478.01

$${}_1F_2\left(1;\frac{13}{4},\frac{19}{4};z\right)=\frac{1}{65\,536\,z^{15/4}}\left(135\,e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\left(256\,z^2+880\,z+385\right)+1155\,e^{4\sqrt{z}}\sqrt{2\pi}\left(2\sqrt{z}-1\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+1155\sqrt{2\pi}\left(2\sqrt{z}+1\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6479.01

$${}_1F_2\left(1;\frac{13}{4},\frac{19}{4};-z\right)=\frac{1}{16\,384\,z^{15/4}}\left(135\left(4\,z^{3/4}\left(256\,z^2-880\,z+385\right)-1155\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)-1155\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6480.01

$${}_1F_2\left(1;\frac{13}{4},\frac{23}{4};z\right)=\frac{1}{524\,288\,z^{19/4}}\left(171\,e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\left(2048\,z^3+9600\,z^2+6600\,z-17\,325\right)+\right.\right.$$
$$\left.\left.17\,325\,e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(4\,z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-17\,325\,\sqrt{2\,\pi}\,\left(4\,z+6\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6481.01

$${}_1F_2\left(1;\frac{13}{4},\frac{23}{4};-z\right)=\frac{1}{131\,072\,z^{19/4}}$$
$$\left(171\left(4\,z^{3/4}\left(2048\,z^3-9600\,z^2+6600\,z+17\,325\right)+17\,325\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4\,z-3)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)-\right.\right.$$
$$\left.\left.17\,325\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4\,z-3)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = \frac{15}{4}$

07.22.03.6482.01

$${}_1F_2\left(1;\frac{15}{4},\frac{17}{4};z\right)=$$
$$\frac{1}{32\,768\,z^{13/4}}\left(143\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\left(256\,z^2+1008\,z+945\right)+945\,e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+945\,\sqrt{2\,\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6483.01

$${}_1F_2\left(1;\frac{15}{4},\frac{17}{4};-z\right)=$$
$$\frac{1}{8192\,z^{13/4}}\left(143\left(2\sqrt[4]{z}\left(256\,z^2-1008\,z+945\right)-945\,\sqrt{\pi}\,\cos\left(2\sqrt{z}\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-945\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6484.01

$${}_1F_2\left(1;\frac{15}{4},\frac{21}{4};z\right)=\frac{1}{262\,144\,z^{17/4}}\left(187\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\left(2048\,z^3+11\,648\,z^2+19\,656\,z-12\,285\right)+\right.\right.$$
$$\left.\left.12\,285\,e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(2\sqrt{z}-1\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-12\,285\,\sqrt{2\,\pi}\,\left(2\sqrt{z}+1\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6485.01

$${}_1F_2\left(1;\frac{15}{4},\frac{21}{4};-z\right)=$$
$$\frac{1}{65\,536\,z^{17/4}}\left(187\left(2\sqrt[4]{z}\left(2048\,z^3-11\,648\,z^2+19\,656\,z+12\,285\right)+12\,285\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)-\right.\right.$$
$$\left.\left.12\,285\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = \frac{17}{4}$

07.22.03.6486.01

$${}_1F_2\left(1;\frac{17}{4},\frac{19}{4};z\right)=\frac{1}{131\,072\,z^{15/4}}$$
$$\left(195\,e^{-2\sqrt{z}}\left(-32\,e^{2\sqrt{z}}\,z^{3/4}\left(256\,z^2+1584\,z+3465\right)+10\,395\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-10\,395\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6487.01

$${}_1F_2\left(1;\frac{17}{4},\frac{19}{4};-z\right)=$$
$$\frac{1}{32\,768\,z^{15/4}}\left(195\left(8\,z^{3/4}\left(256\,z^2-1584\,z+3465\right)+10\,395\,\sqrt{\pi}\,\cos\left(2\sqrt{z}\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-10\,395\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6488.01

$${}_1F_2\left(1;\frac{17}{4},\frac{23}{4};z\right)=$$
$$\frac{1}{1\,048\,576\,z^{19/4}}\left(247\,e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\left(4096\,z^3+34\,560\,z^2+118\,800\,z+51\,975\right)+155\,925\,e^{4\sqrt{z}}\,\sqrt{2\pi}\right.\right.$$
$$\left.\left.\left(2\sqrt{z}-1\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+155\,925\,\sqrt{2\pi}\left(2\sqrt{z}+1\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6489.01

$${}_1F_2\left(1;\frac{17}{4},\frac{23}{4};-z\right)=\frac{1}{262\,144\,z^{19/4}}$$
$$\left(247\left(4\,z^{3/4}\left(4096\,z^3-34\,560\,z^2+118\,800\,z-51\,975\right)+155\,925\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.155\,925\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = \frac{19}{4}$

07.22.03.6490.01

$${}_1F_2\left(1;\frac{19}{4},\frac{21}{4};z\right)=$$
$$\frac{1}{524\,288\,z^{17/4}}\left(255\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\left(4096\,z^3+36\,608\,z^2+144\,144\,z+135\,135\right)+135\,135\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.135\,135\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6491.01

$${}_1F_2\left(1;\frac{19}{4},\frac{21}{4};-z\right)=$$
$$\frac{1}{131\,072\,z^{17/4}}\left(255\left(2\,\sqrt[4]{z}\left(4096\,z^3-36\,608\,z^2+144\,144\,z-135\,135\right)+135\,135\,\sqrt{\pi}\,\cos\left(2\sqrt{z}\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.135\,135\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 1$, $b_1 = \frac{21}{4}$

07.22.03.6492.01

$$ {}_1F_2\left(1; \frac{21}{4}, \frac{23}{4}; z\right) = \frac{1}{2\,097\,152\, z^{19/4}} \left(323\, e^{-2\sqrt{z}} \left(-32\, e^{2\sqrt{z}}\, z^{3/4} \left(4096 z^3 + 49\,920 z^2 + 308\,880 z + 675\,675\right) + 2\,027\,025\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - 2\,027\,025 \sqrt{2\pi}\, \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6493.01

$$ {}_1F_2\left(1; \frac{21}{4}, \frac{23}{4}; -z\right) = \frac{1}{524\,288\, z^{19/4}} \left(323 \left(8 z^{3/4} \left(4096 z^3 - 49\,920 z^2 + 308\,880 z - 675\,675\right) - 2\,027\,025 \sqrt{\pi}\, \cos\left(2\sqrt{z}\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\,027\,025 \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 1$, $b_1 = \frac{23}{4}$

07.22.03.6494.01

$$ {}_1F_2\left(1; \frac{23}{4}, \frac{25}{4}; z\right) = \frac{1}{8\,388\,608\, z^{21/4}} \left(399\, e^{-2\sqrt{z}} \left(-8\, e^{2\sqrt{z}}\, \sqrt[4]{z} \left(65\,536 z^4 + 1\,044\,480 z^3 + 9\,335\,040 z^2 + 36\,756\,720 z + 34\,459\,425\right) + 34\,459\,425\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + 34\,459\,425 \sqrt{2\pi}\, \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6495.01

$$ {}_1F_2\left(1; \frac{23}{4}, \frac{25}{4}; -z\right) = \frac{1}{2\,097\,152\, z^{21/4}} \left(399 \left(2\sqrt[4]{z} \left(65\,536 z^4 - 1\,044\,480 z^3 + 9\,335\,040 z^2 - 36\,756\,720 z + 34\,459\,425\right) - 34\,459\,425 \sqrt{\pi}\, \cos\left(2\sqrt{z}\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 34\,459\,425 \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 2$, $b_1 \geq -\frac{23}{4}$

For fixed z and $a_1 = 2$, $b_1 = -\frac{23}{4}$

07.22.03.6496.01

$$ {}_1F_2\left(2; -\frac{23}{4}, -\frac{21}{4}; z\right) = \frac{1}{316\,234\,143\,225} \left(e^{-2\sqrt{z}} \left(2\,097\,152\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(4\sqrt{z} + 29\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{25/4} + 2\,097\,152\, \sqrt{2\pi}\, \left(4\sqrt{z} - 29\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{25/4} + e^{2\sqrt{z}} \left(117\,440\,512\, z^6 + 18\,874\,368\, z^5 + 34\,406\,400\, z^4 + 170\,311\,680\, z^3 + 1\,556\,755\,200\, z^2 + 20\,951\,330\,400\, z + 316\,234\,143\,225\right)\right)\right) $$

07.22.03.6497.01

$$ {}_1F_2\left(2; -\frac{23}{4}, -\frac{21}{4}; -z\right) = \frac{1}{316\,234\,143\,225} \left(-8\,388\,608\, \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(4\sqrt{z}\, \cos\left(2\sqrt{z}\right) + 29 \sin\left(2\sqrt{z}\right)\right) z^{25/4} - 8\,388\,608\, \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(4\sqrt{z}\, \sin\left(2\sqrt{z}\right) - 29 \cos\left(2\sqrt{z}\right)\right) z^{25/4} + 117\,440\,512\, z^6 - 18\,874\,368\, z^5 + 34\,406\,400\, z^4 - 170\,311\,680\, z^3 + 1\,556\,755\,200\, z^2 - 20\,951\,330\,400\, z + 316\,234\,143\,225\right) $$

07.22.03.6498.01

$$ {}_1F_2\left(2; -\frac{23}{4}, -\frac{17}{4}; z\right) = \frac{1}{15\,058\,768\,725} \left(e^{-2\sqrt{z}} \left(-262\,144\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(8z + 50\sqrt{z} - 25\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{21/4} + 262\,144\, \sqrt{2\pi}\, \left(8z - 50\sqrt{z} - 25\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{21/4} + e^{2\sqrt{z}} \left(-4\,194\,304\, z^6 + 18\,874\,368\, z^5 + 6\,881\,280\, z^4 + 18\,923\,520\, z^3 + 119\,750\,400\, z^2 + 1\,232\,431\,200\, z + 15\,058\,768\,725\right)\right)\right) $$

07.22.03.6499.01

$$ {}_1F_2\left(2; -\frac{23}{4}, -\frac{17}{4}; -z\right) = \frac{1}{15\,058\,768\,725} \left(-4\,194\,304\, z^6 - 1\,048\,576\, \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left((8z + 25) \cos\left(2\sqrt{z}\right) + 50\sqrt{z}\, \sin\left(2\sqrt{z}\right)\right) z^{21/4} + 1\,048\,576\, \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left((8z + 25) \sin\left(2\sqrt{z}\right) - 50\sqrt{z}\, \cos\left(2\sqrt{z}\right)\right) z^{21/4} - 18\,874\,368\, z^5 + 6\,881\,280\, z^4 - 18\,923\,520\, z^3 + 119\,750\,400\, z^2 - 1\,232\,431\,200\, z + 15\,058\,768\,725\right) $$

07.22.03.6500.01

$$ {}_1F_2\left(2; -\frac{23}{4}, -\frac{13}{4}; z\right) = \frac{1}{885\,809\,925} \left(e^{-2\sqrt{z}} \left(32\,768\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(16 z^{3/2} + 76z - 126\sqrt{z} + 63\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{17/4} + 32\,768\, \sqrt{2\pi}\, \left(16 z^{3/2} - 76z - 126\sqrt{z} - 63\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{17/4} + 3\, e^{2\sqrt{z}} \left(1\,572\,864\, z^5 + 2\,293\,760\, z^4 + 1\,261\,568\, z^3 + 4\,435\,200\, z^2 + 31\,600\,800\, z + 295\,269\,975\right)\right)\right) $$

07.22.03.6501.01

$$ {}_1F_2\left(2; -\frac{23}{4}, -\frac{13}{4}; -z\right) = $$
$$ \frac{1}{885\,809\,925}\left(-4\,718\,592\,z^5 + 131\,072\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((63-76\,z)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,(8\,z+63)\sin\left(2\sqrt{z}\right)\right)z^{17/4} + \right. $$
$$ 131\,072\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(8\,z+63)\cos\left(2\sqrt{z}\right) + (76\,z-63)\sin\left(2\sqrt{z}\right)\right)z^{17/4} + $$
$$ \left. 6\,881\,280\,z^4 - 3\,784\,704\,z^3 + 13\,305\,600\,z^2 - 94\,802\,400\,z + 885\,809\,925\right) $$

07.22.03.6502.01

$$ {}_1F_2\left(2; -\frac{23}{4}, -\frac{9}{4}; z\right) = $$
$$ \frac{1}{68\,139\,225}\left(e^{-2\sqrt{z}}\left(-4096\,e^{4\sqrt{z}}\sqrt{2\pi}\left(32\,z^2 + 88\,z^{3/2} - 384\,z + 510\sqrt{z} - 255\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4} + 4096\right.\right. $$
$$ \sqrt{2\pi}\left(32\,z^2 - 88\,z^{3/2} - 384\,z - 510\sqrt{z} - 255\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4} + $$
$$ \left.\left. e^{2\sqrt{z}}\left(-262\,144\,z^5 + 3\,276\,800\,z^4 + 3\,784\,704\,z^3 + 2\,661\,120\,z^2 + 10\,533\,600\,z + 68\,139\,225\right)\right)\right) $$

07.22.03.6503.01

$$ {}_1F_2\left(2; -\frac{23}{4}, -\frac{9}{4}; -z\right) = \frac{1}{68\,139\,225} $$
$$ \left(262\,144\,z^5 + 3\,276\,800\,z^4 + 16\,384\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,z^2 + 384\,z - 255\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,(44\,z-255)\sin\left(2\sqrt{z}\right)\right)z^{13/4} - \right. $$
$$ 16\,384\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,z^2 + 384\,z - 255\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,(44\,z-255)\cos\left(2\sqrt{z}\right)\right)z^{13/4} - $$
$$ \left. 3\,784\,704\,z^3 + 2\,661\,120\,z^2 - 10\,533\,600\,z + 68\,139\,225\right) $$

07.22.03.6504.01

$$ {}_1F_2\left(2; -\frac{23}{4}, -\frac{5}{4}; z\right) = $$
$$ \frac{1}{7\,571\,025}\left(e^{-2\sqrt{z}}\left(512\,e^{4\sqrt{z}}\sqrt{2\pi}\left(64\,z^{5/2} + 16\,z^2 - 800\,z^{3/2} + 2220\,z - 2730\sqrt{z} + 1365\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4} + \right.\right. $$
$$ 512\sqrt{2\pi}\left(64\,z^{5/2} - 16\,z^2 - 800\,z^{3/2} - 2220\,z - 2730\sqrt{z} - 1365\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4} + $$
$$ \left.\left. 7\,e^{2\sqrt{z}}\left(352\,256\,z^3 + 380\,160\,z^2 + 300\,960\,z + 1\,081\,575\right)\right)\right) $$

07.22.03.6505.01

$${}_1F_2\left(2;-\frac{23}{4},-\frac{5}{4};-z\right)=$$
$$\frac{1}{7\,571\,025}\left(-2048\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\left(32z^2+400z-1365\right)\cos\left(2\sqrt{z}\right)+\left(16z^2-2220z+1365\right)\sin\left(2\sqrt{z}\right)\right)z^{9/4}-\right.$$
$$2048\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-16z^2+2220z-1365\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;\left(32z^2+400z-1365\right)\sin\left(2\sqrt{z}\right)\right)z^{9/4}+$$
$$\left.7\left(-352\,256z^3+380\,160z^2-300\,960z+1\,081\,575\right)\right)$$

07.22.03.6506.01

$${}_1F_2\left(2;-\frac{23}{4},-\frac{1}{4};z\right)=\frac{1}{1\,514\,205}$$
$$\left(e^{-2\sqrt{z}}\left(-64e^{4\sqrt{z}}\sqrt{2\pi}\left(128z^3-352z^{5/2}-720z^2+5880z^{3/2}-14\,280z+17\,010\sqrt{z}-8505\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+\right.\right.$$
$$64\sqrt{2\pi}\left(128z^3+352z^{5/2}-720z^2-5880z^{3/2}-14\,280z-17\,010\sqrt{z}-8505\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+$$
$$\left.\left.e^{2\sqrt{z}}\left(-16\,384z^4+77\,824z^3+2\,016\,000z^2+2\,106\,720z+1\,514\,205\right)\right)\right)$$

07.22.03.6507.01

$${}_1F_2\left(2;-\frac{23}{4},-\frac{1}{4};-z\right)=\frac{1}{1\,514\,205}\left(-16\,384z^4-77\,824z^3+2\,016\,000z^2-\right.$$
$$256\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128z^3+720z^2-14\,280z+8505\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\;\left(176z^2+2940z-8505\right)\sin\left(2\sqrt{z}\right)\right)z^{5/4}+$$
$$256\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\left(176z^2+2940z-8505\right)\cos\left(2\sqrt{z}\right)+\left(128z^3+720z^2-14\,280z+8505\right)\sin\left(2\sqrt{z}\right)\right)z^{5/4}-$$
$$\left.2\,106\,720z+1\,514\,205\right)$$

07.22.03.6508.01

$${}_1F_2\left(2;-\frac{23}{4},\frac{3}{4};z\right)=$$
$$\frac{1}{1\,514\,205}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\left(-26\,624z^3+34\,560z^2+1\,515\,360z+1\,514\,205\right)+8e^{4\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(256z^{7/2}-1600z^3+\right.\right.\right.$$
$$\left.3360z^{5/2}+3360z^2-35\,280z^{3/2}+86\,940z-103\,950\sqrt{z}+51\,975\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+8\sqrt{2\pi}\sqrt[4]{z}$$
$$\left.\left.\left(256z^{7/2}+1600z^3+3360z^{5/2}-3360z^2-35\,280z^{3/2}-86\,940z-103\,950\sqrt{z}-51\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6509.01

$$ {}_1F_2\left(2; -\frac{23}{4}, \frac{3}{4}; -z\right) = \frac{1}{1\,514\,205}\left(26\,624 z^3 + 34\,560 z^2 - 1\,515\,360 z + 32\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left(5\left(320 z^3 + 672 z^2 - 17\,388 z + 10\,395\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(128 z^3 - 1680 z^2 - 17\,640 z + 51\,975\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} +$$
$$32\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(128 z^3 - 1680 z^2 - 17\,640 z + 51\,975\right)\cos\left(2\sqrt{z}\right) -\right.$$
$$\left.\left.5\left(320 z^3 + 672 z^2 - 17\,388 z + 10\,395\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + 1\,514\,205\right) $$

07.22.03.6510.01

$$ {}_1F_2\left(2; -\frac{23}{4}, \frac{7}{4}; z\right) = \frac{1}{504\,735 z^{3/4}}$$
$$\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\, z^{3/4}\left(1024 z^3 + 52\,992 z^2 + 248\,160 z - 215\,985\right) + e^{4\sqrt{z}}\sqrt{2\pi}\left(512 z^4 - 5248 z^{7/2} + 25\,088 z^3 - 68\,544 z^{5/2} +\right.\right.\right.$$
$$\left.\left.100\,800 z^2 - 27\,720 z^{3/2} - 166\,320 z + 270\,270\sqrt{z} - 135\,135\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - \sqrt{2\pi}\left(512 z^4 + 5248 z^{7/2} +\right.$$
$$\left.\left.\left.25\,088 z^3 + 68\,544 z^{5/2} + 100\,800 z^2 + 27\,720 z^{3/2} - 166\,320 z - 270\,270\sqrt{z} - 135\,135\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6511.01

$$ {}_1F_2\left(2; -\frac{23}{4}, \frac{7}{4}; -z\right) = \frac{1}{504\,735 z^{3/4}}\left(-z^{3/4}\left(1024 z^3 - 52\,992 z^2 + 248\,160 z + 215\,985\right) -\right.$$
$$4\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512 z^4 - 25\,088 z^3 + 100\,800 z^2 + 166\,320 z - 135\,135\right)\cos\left(2\sqrt{z}\right) -\right.$$
$$\left.2\sqrt{z}\left(2624 z^3 - 34\,272 z^2 + 13\,860 z + 135\,135\right)\sin\left(2\sqrt{z}\right)\right) +$$
$$4\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2624 z^3 - 34\,272 z^2 + 13\,860 z + 135\,135\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.\left.\left(512 z^4 - 25\,088 z^3 + 100\,800 z^2 + 166\,320 z - 135\,135\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6512.01

$$ {}_1F_2\left(2; -\frac{23}{4}, \frac{11}{4}; z\right) = \frac{1}{576\,840 z^{7/4}}$$
$$\left(e^{-2\sqrt{z}}\left(-120\, e^{2\sqrt{z}}\, z^{3/4}\left(256 z^3 + 9248 z^2 + 84\,425 z + 270\,270\right) + e^{4\sqrt{z}}\sqrt{2\pi}\left(1024 z^{9/2} - 15\,104 z^4 + 110\,592 z^{7/2} -\right.\right.\right.$$
$$\left.\left.524\,160 z^3 + 1\,774\,080 z^{5/2} - 4\,490\,640 z^2 + 8\,648\,640 z^{3/2} - 12\,432\,420 z + 12\,162\,150\sqrt{z} - 6\,081\,075\right)$$
$$\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\left(1024 z^{9/2} + 15\,104 z^4 + 110\,592 z^{7/2} + 524\,160 z^3 + 1\,774\,080 z^{5/2} +\right.$$
$$\left.\left.\left.4\,490\,640 z^2 + 8\,648\,640 z^{3/2} + 12\,432\,420 z + 12\,162\,150\sqrt{z} + 6\,081\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6513.01

$$ {}_1F_2\left(2; -\frac{23}{4}, \frac{11}{4}; -z\right) = \frac{1}{144\,210\, z^{7/4}}\left(-30\, z^{3/4}\left(256\, z^3 - 9248\, z^2 + 84\,425\, z - 270\,270\right) - \right.$$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(512\, z^4 - 55\,296\, z^3 + 887\,040\, z^2 - 4\,324\,320\, z + 6\,081\,075\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left.\left(-15\,104\, z^4 + 524\,160\, z^3 - 4\,490\,640\, z^2 + 12\,432\,420\, z - 6\,081\,075\right)\sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(15\,104\, z^4 - 524\,160\, z^3 + 4\,490\,640\, z^2 - 12\,432\,420\, z + 6\,081\,075\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left.\left.2\sqrt{z}\left(512\, z^4 - 55\,296\, z^3 + 887\,040\, z^2 - 4\,324\,320\, z + 6\,081\,075\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6514.01

$$ {}_1F_2\left(2; -\frac{23}{4}, \frac{15}{4}; z\right) = $$
$$ \frac{1}{419\,520\, z^{11/4}}\left(e^{-2\sqrt{z}}\left(16\, e^{2\sqrt{z}}\, z^{3/4}\left(256\, z^4 + 51\,712\, z^3 + 1\,701\,660\, z^2 + 18\,918\,900\, z + 80\,405\,325\right) + e^{4\sqrt{z}}\right.\right. $$
$$ \sqrt{2\pi}\left(2048\, z^5 - 40\,448\, z^{9/2} + 403\,200\, z^4 - 2\,661\,120\, z^{7/2} + 12\,862\,080\, z^3 - 47\,567\,520\, z^{5/2} + \right. $$
$$ \left.136\,216\,080\, z^2 - 297\,297\,000\, z^{3/2} + 470\,269\,800\, z - 482\,431\,950\sqrt{z} + 241\,215\,975\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ \sqrt{2\pi}\left(2048\, z^5 + 40\,448\, z^{9/2} + 403\,200\, z^4 + 2\,661\,120\, z^{7/2} + 12\,862\,080\, z^3 + 47\,567\,520\, z^{5/2} + \right. $$
$$ \left.\left.\left.136\,216\,080\, z^2 + 297\,297\,000\, z^{3/2} + 470\,269\,800\, z + 482\,431\,950\sqrt{z} + 241\,215\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6515.01

$$ {}_1F_2\left(2; -\frac{23}{4}, \frac{15}{4}; -z\right) = \frac{1}{104\,880\, z^{11/4}}\left(4\, z^{3/4}\left(256\, z^4 - 51\,712\, z^3 + 1\,701\,660\, z^2 - 18\,918\,900\, z + 80\,405\,325\right) + \right. $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\, z^5 - 403\,200\, z^4 + 12\,862\,080\, z^3 - 136\,216\,080\, z^2 + 470\,269\,800\, z - 241\,215\,975\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.2\sqrt{z}\left(20\,224\, z^4 - 1\,330\,560\, z^3 + 23\,783\,760\, z^2 - 148\,648\,500\, z + 241\,215\,975\right)\sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(20\,224\, z^4 - 1\,330\,560\, z^3 + 23\,783\,760\, z^2 - 148\,648\,500\, z + 241\,215\,975\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left(2048\, z^5 - 403\,200\, z^4 + 12\,862\,080\, z^3 - 136\,216\,080\, z^2 + 470\,269\,800\, z - 241\,215\,975\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6516.01

$$ {}_1F_2\left(2; -\frac{23}{4}, \frac{19}{4}; z\right) = \frac{1}{223\,744\, z^{15/4}} \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(13\,056\, z^4 + 1\,453\,664\, z^3 + 45\,405\,360\, z^2 + 525\,096\,000\, z + 2\,400\,673\,275\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \left(4096\, z^{11/2} - 103\,424\, z^5 + 1\,323\,520\, z^{9/2} - 11\,278\,080\, z^4 + 70\,836\,480\, z^{7/2} - 343\,062\,720\, z^3 + 1\,301\,620\,320\, z^{5/2} - 3\,848\,644\,800\, z^2 + 8\,637\,829\,200\, z^{3/2} - 13\,921\,607\,700\, z + 14\,404\,039\,650\, \sqrt{z} - 7\,202\,019\,825\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(4096\, z^{11/2} + 103\,424\, z^5 + 1\,323\,520\, z^{9/2} + 11\,278\,080\, z^4 + 70\,836\,480\, z^{7/2} + 343\,062\,720\, z^3 + 1\,301\,620\,320\, z^{5/2} + 3\,848\,644\,800\, z^2 + 8\,637\,829\,200\, z^{3/2} + 13\,921\,607\,700\, z + 14\,404\,039\,650\, \sqrt{z} + 7\,202\,019\,825\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6517.01

$$ {}_1F_2\left(2; -\frac{23}{4}, \frac{19}{4}; -z\right) = \frac{1}{55\,936\, z^{15/4}} \left(4\, z^{3/4} \left(13\,056\, z^4 - 1\,453\,664\, z^3 + 45\,405\,360\, z^2 - 525\,096\,000\, z + 2\,400\,673\,275\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(2048\, z^5 - 661\,760\, z^4 + 35\,418\,240\, z^3 - 650\,810\,160\, z^2 + 4\,318\,914\,600\, z - 7\,202\,019\,825\right) \cos\left(2\sqrt{z}\right) + \left(-103\,424\, z^5 + 11\,278\,080\, z^4 - 343\,062\,720\, z^3 + 3\,848\,644\,800\, z^2 - 13\,921\,607\,700\, z + 7\,202\,019\,825\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(103\,424\, z^5 - 11\,278\,080\, z^4 + 343\,062\,720\, z^3 - 3\,848\,644\,800\, z^2 + 13\,921\,607\,700\, z - 7\,202\,019\,825\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z} \left(2048\, z^5 - 661\,760\, z^4 + 35\,418\,240\, z^3 - 650\,810\,160\, z^2 + 4\,318\,914\,600\, z - 7\,202\,019\,825\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6518.01

$$ {}_1F_2\left(2; -\frac{23}{4}, \frac{23}{4}; z\right) = \frac{1}{94\,208\, z^{19/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(1024\, z^5 + 515\,072\, z^4 + 43\,243\,200\, z^3 + 1\,288\,872\,000\, z^2 + 14\,840\,525\,700\, z + 68\,746\,552\,875\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \left(8192\, z^6 - 256\,000\, z^{11/2} + 4\,055\,040\, z^5 - 42\,831\,360\, z^{9/2} + 334\,414\,080\, z^4 - 2\,023\,781\,760\, z^{7/2} + 9\,686\,476\,800\, z^3 - 36\,756\,720\,000\, z^{5/2} + 109\,167\,458\,400\, z^2 - 246\,178\,132\,200\, z^{3/2} + 398\,075\,277\,600\, z - 412\,479\,317\,250\, \sqrt{z} + 206\,239\,658\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi} \left(8192\, z^6 + 256\,000\, z^{11/2} + 4\,055\,040\, z^5 + 42\,831\,360\, z^{9/2} + 334\,414\,080\, z^4 + 2\,023\,781\,760\, z^{7/2} + 9\,686\,476\,800\, z^3 + 36\,756\,720\,000\, z^{5/2} + 109\,167\,458\,400\, z^2 + 246\,178\,132\,200\, z^{3/2} + 398\,075\,277\,600\, z + 412\,479\,317\,250\, \sqrt{z} + 206\,239\,658\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6519.01

$$ {}_1F_2\left(2; -\frac{23}{4}, \frac{23}{4}; -z\right) = \frac{1}{23\,552\, z^{19/4}}\left(4 z^{3/4}\left(-1024 z^5 + 515\,072 z^4 - 43\,243\,200 z^3 + 1\,288\,872\,000 z^2 - 14\,840\,525\,700 z + 68\,746\,552\,875\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192 z^6 - 4\,055\,040 z^5 + 334\,414\,080 z^4 - 9\,686\,476\,800 z^3 + 109\,167\,458\,400 z^2 - 398\,075\,277\,600 z + 206\,239\,658\,625\right)\cos\left(2\sqrt{z}\right) - 10\sqrt{z}\left(25\,600 z^5 - 4\,283\,136 z^4 + 202\,378\,176 z^3 - 3\,675\,672\,000 z^2 + 24\,617\,813\,220 z - 41\,247\,931\,725\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\left(25\,600 z^5 - 4\,283\,136 z^4 + 202\,378\,176 z^3 - 3\,675\,672\,000 z^2 + 24\,617\,813\,220 z - 41\,247\,931\,725\right)\cos\left(2\sqrt{z}\right) + \left(8192 z^6 - 4\,055\,040 z^5 + 334\,414\,080 z^4 - 9\,686\,476\,800 z^3 + 109\,167\,458\,400 z^2 - 398\,075\,277\,600 z + 206\,239\,658\,625\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 2$, $b_1 = -\frac{21}{4}$

07.22.03.6520.01

$$ {}_1F_2\left(2; -\frac{21}{4}, -\frac{19}{4}; z\right) = \frac{1}{13\,749\,310\,575}\left(e^{-2\sqrt{z}}\left(-524\,288\, e^{4\sqrt{z}}\sqrt{2\pi}\left(4\sqrt{z}+27\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{23/4} + 524\,288\sqrt{2\pi}\left(4\sqrt{z}-27\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{23/4} + e^{2\sqrt{z}}\left(-4\,194\,304 z^6 + 6\,291\,456 z^5 + 4\,915\,200 z^4 + 15\,482\,880 z^3 + 103\,783\,680 z^2 + 1\,102\,701\,600 z + 13\,749\,310\,575\right)\right)\right) $$

07.22.03.6521.01

$$ {}_1F_2\left(2; -\frac{21}{4}, -\frac{19}{4}; -z\right) = \frac{1}{13\,749\,310\,575}\left(-4\,194\,304 z^6 - 2\,097\,152\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\cos\left(2\sqrt{z}\right) + 27\sin\left(2\sqrt{z}\right)\right) z^{23/4} + 2\,097\,152\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\sin\left(2\sqrt{z}\right) - 27\cos\left(2\sqrt{z}\right)\right) z^{23/4} - 6\,291\,456 z^5 + 4\,915\,200 z^4 - 15\,482\,880 z^3 + 103\,783\,680 z^2 - 1\,102\,701\,600 z + 13\,749\,310\,575\right) $$

07.22.03.6522.01

$$ {}_1F_2\left(2; -\frac{21}{4}, -\frac{15}{4}; z\right) = \frac{1}{723\,647\,925}\left(e^{-2\sqrt{z}}\left(65\,536\, e^{4\sqrt{z}}\sqrt{2\pi}\left(8z+46\sqrt{z}-23\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{19/4} + 65\,536\sqrt{2\pi}\left(8z-46\sqrt{z}-23\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{19/4} + e^{2\sqrt{z}}\left(5\,767\,168 z^5 + 1\,638\,400 z^4 + 2\,211\,840 z^3 + 9\,434\,880 z^2 + 73\,513\,440 z + 723\,647\,925\right)\right)\right) $$

07.22.03.6523.01

$$ {}_1F_2\left(2; -\frac{21}{4}, -\frac{15}{4}; -z\right) = $$
$$ \frac{1}{723\,647\,925}\left(-5\,767\,168\,z^5 + 262\,144\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+23)\cos\left(2\sqrt{z}\right) + 46\sqrt{z}\ \sin\left(2\sqrt{z}\right)\right)z^{19/4} + \right. $$
$$ 262\,144\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+23)\sin\left(2\sqrt{z}\right) - 46\sqrt{z}\ \cos\left(2\sqrt{z}\right)\right)z^{19/4} + $$
$$ \left. 1\,638\,400\,z^4 - 2\,211\,840\,z^3 + 9\,434\,880\,z^2 - 73\,513\,440\,z + 723\,647\,925\right) $$

07.22.03.6524.01

$$ {}_1F_2\left(2; -\frac{21}{4}, -\frac{11}{4}; z\right) = \frac{1}{48\,243\,195} $$
$$ \left(e^{-2\sqrt{z}}\left(-8192\,e^{4\sqrt{z}}\sqrt{2\pi}\left(16z^{3/2} + 68z - 114\sqrt{z} + 57\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4} + 8192\sqrt{2\pi}\left(16z^{3/2} - 68z - 114\sqrt{z} - 57\right)\right.\right. $$
$$ \left.\left.\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4} + e^{2\sqrt{z}}\left(-262\,144\,z^5 + 2\,097\,152\,z^4 + 737\,280\,z^3 + 1\,347\,840\,z^2 + 6\,683\,040\,z + 48\,243\,195\right)\right)\right) $$

07.22.03.6525.01

$$ {}_1F_2\left(2; -\frac{21}{4}, -\frac{11}{4}; -z\right) = $$
$$ \frac{1}{48\,243\,195}\left(262\,144\,z^5 + 2\,097\,152\,z^4 - 32\,768\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((57-68z)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\ (8z+57)\sin\left(2\sqrt{z}\right)\right)z^{15/4} + \right. $$
$$ 32\,768\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\ (8z+57)\cos\left(2\sqrt{z}\right) + (68z-57)\sin\left(2\sqrt{z}\right)\right)z^{15/4} - $$
$$ \left. 737\,280\,z^3 + 1\,347\,840\,z^2 - 6\,683\,040\,z + 48\,243\,195\right) $$

07.22.03.6526.01

$$ {}_1F_2\left(2; -\frac{21}{4}, -\frac{7}{4}; z\right) = $$
$$ \frac{1}{4\,385\,745}\left(e^{-2\sqrt{z}}\left(1024\,e^{4\sqrt{z}}\sqrt{2\pi}\left(32z^2 + 72z^{3/2} - 336z + 450\sqrt{z} - 225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4} + 1024\right.\right. $$
$$ \sqrt{2\pi}\left(32z^2 - 72z^{3/2} - 336z - 450\sqrt{z} - 225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4} + $$
$$ \left.\left.e^{2\sqrt{z}}\left(131\,072\,z^4 + 1\,105\,920\,z^3 + 449\,280\,z^2 + 954\,720\,z + 4\,385\,745\right)\right)\right) $$

07.22.03.6527.01

$${}_1F_2\left(2;-\frac{21}{4},-\frac{7}{4};-z\right)=\frac{1}{4\,385\,745}$$
$$\left(131\,072\,z^4-1\,105\,920\,z^3-4096\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,z^2+336\,z-225\right)\cos\left(2\sqrt{z}\right)+18\sqrt{z}\;(4\,z-25)\sin\left(2\sqrt{z}\right)\right)z^{11/4}-\right.$$
$$4096\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,z^2+336\,z-225\right)\sin\left(2\sqrt{z}\right)-18\sqrt{z}\;(4\,z-25)\cos\left(2\sqrt{z}\right)\right)z^{11/4}+$$
$$\left.449\,280\,z^2-954\,720\,z+4\,385\,745\right)$$

07.22.03.6528.01

$${}_1F_2\left(2;-\frac{21}{4},-\frac{3}{4};z\right)=$$
$$\frac{1}{626\,535}\left(e^{-2\sqrt{z}}\left(-128\,e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(64\,z^{5/2}-16\,z^2-640\,z^{3/2}+1860\,z-2310\sqrt{z}\;+1155\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{7/4}+\right.\right.$$
$$128\sqrt{2\,\pi}\;\left(64\,z^{5/2}+16\,z^2-640\,z^{3/2}-1860\,z-2310\sqrt{z}\;-1155\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{7/4}+$$
$$\left.\left.e^{2\sqrt{z}}\;\left(-16\,384\,z^4+159\,744\,z^3+733\,440\,z^2+318\,240\,z+626\,535\right)\right)\right)$$

07.22.03.6529.01

$${}_1F_2\left(2;-\frac{21}{4},-\frac{3}{4};-z\right)=\frac{1}{626\,535}\left(-16\,384\,z^4-159\,744\,z^3+733\,440\,z^2-\right.$$
$$512\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\left(32\,z^2+320\,z-1155\right)\cos\left(2\sqrt{z}\right)+\left(-16\,z^2-1860\,z+1155\right)\sin\left(2\sqrt{z}\right)\right)z^{7/4}+512\sqrt{\pi}$$
$$\left.C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z^2+1860\,z-1155\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;\left(32\,z^2+320\,z-1155\right)\sin\left(2\sqrt{z}\right)\right)z^{7/4}-318\,240\,z+626\,535\right)$$

07.22.03.6530.01

$${}_1F_2\left(2;-\frac{21}{4},\frac{1}{4};z\right)=\frac{1}{208\,845}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\;\left(-14\,336\,z^3+132\,864\,z^2+528\,480\,z+208\,845\right)+\right.\right.$$
$$16\,e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;z^{3/4}\left(128\,z^3-416\,z^{5/2}-240\,z^2+4200\,z^{3/2}-10\,920\,z+13\,230\sqrt{z}\;-6615\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+$$
$$\left.\left.16\sqrt{2\,\pi}\;z^{3/4}\left(128\,z^3+416\,z^{5/2}-240\,z^2-4200\,z^{3/2}-10\,920\,z-13\,230\sqrt{z}\;-6615\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6531.01

$${}_1F_2\left(2;-\frac{21}{4},\frac{1}{4};-z\right)=\frac{1}{208\,845}\left(14\,336\,z^3+132\,864\,z^2-528\,480\,z+64\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left(\left(128\,z^3+240\,z^2-10\,920\,z+6615\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\;\left(208\,z^2+2100\,z-6615\right)\sin\left(2\sqrt{z}\right)\right)z^{3/4}+64\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)$$
$$\left.\left(2\sqrt{z}\;\left(208\,z^2+2100\,z-6615\right)\cos\left(2\sqrt{z}\right)+\left(128\,z^3+240\,z^2-10\,920\,z+6615\right)\sin\left(2\sqrt{z}\right)\right)z^{3/4}+208\,845\right)$$

07.22.03.6532.01

$$ {}_1F_2\left(2; -\frac{21}{4}, \frac{5}{4}; z\right) = \frac{1}{208\,845\,\sqrt[4]{z}} \left(e^{-2\sqrt{z}} \left(e^{2\sqrt{z}}\ \sqrt[4]{z}\ \left(1024 z^3 + 20\,736 z^2 - 51\,552 z - 290\,115\right) + 2 e^{4\sqrt{z}}\ \sqrt{2\pi}\right.\right. $$
$$ \left(256 z^{7/2} - 1728 z^3 + 4704 z^{5/2} - 3360 z^2 - 15\,120 z^{3/2} + 49\,140 z - 62\,370\sqrt{z} + 31\,185\right) \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) + $$
$$ \left.\left. 2\sqrt{2\pi}\ \left(-256 z^{7/2} - 1728 z^3 - 4704 z^{5/2} - 3360 z^2 + 15\,120 z^{3/2} + 49\,140 z + 62\,370\sqrt{z} + 31\,185\right) \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6533.01

$$ {}_1F_2\left(2; -\frac{21}{4}, \frac{5}{4}; -z\right) = $$
$$ \frac{1}{208\,845\,\sqrt[4]{z}} \left(\sqrt[4]{z}\ \left(-1024 z^3 + 20\,736 z^2 + 51\,552 z - 290\,115\right) - 8\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\ \left(128 z^3 - 2352 z^2 - 7560 z + 31\,185\right)\right.\right. $$
$$ \cos\left(2\sqrt{z}\right) + 3\left(-576 z^3 + 1120 z^2 + 16\,380 z - 10\,395\right) \sin\left(2\sqrt{z}\right)\Big) + 8\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left.\left. \left(3\left(576 z^3 - 1120 z^2 - 16\,380 z + 10\,395\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\ \left(128 z^3 - 2352 z^2 - 7560 z + 31\,185\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6534.01

$$ {}_1F_2\left(2; -\frac{21}{4}, \frac{9}{4}; z\right) = $$
$$ \frac{1}{167\,076 z^{5/4}} \left(e^{-2\sqrt{z}} \left(-4 e^{2\sqrt{z}}\ \sqrt[4]{z}\ \left(2816 z^3 + 50\,528 z^2 + 191\,079 z + 270\,270\right) + e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(512 z^4 - 5504 z^{7/2} + \right.\right.\right. $$
$$ \left.\left. 28\,672 z^3 - 92\,736 z^{5/2} + 201\,600 z^2 - 304\,920 z^{3/2} + 332\,640 z - 270\,270\sqrt{z} + 135\,135\right) \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\ \left(512 z^4 + 5504 z^{7/2} + 28\,672 z^3 + 92\,736 z^{5/2} + 201\,600 z^2 + 304\,920 z^{3/2} + 332\,640 z + 270\,270\sqrt{z} + 135\,135\right) $$
$$ \left.\left. \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6535.01

$$ {}_1F_2\left(2; -\frac{21}{4}, \frac{9}{4}; -z\right) = \frac{1}{41\,769 z^{5/4}} $$
$$ \left(\sqrt[4]{z}\ \left(-2816 z^3 + 50\,528 z^2 - 191\,079 z + 270\,270\right) - \sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(512 z^4 - 28\,672 z^3 + 201\,600 z^2 - 332\,640 z + 135\,135\right)\right.\right. $$
$$ \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\ \left(-2752 z^3 + 46\,368 z^2 - 152\,460 z + 135\,135\right) \sin\left(2\sqrt{z}\right)\Big) - $$
$$ \sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\ \left(2752 z^3 - 46\,368 z^2 + 152\,460 z - 135\,135\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. \left(512 z^4 - 28\,672 z^3 + 201\,600 z^2 - 332\,640 z + 135\,135\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6536.01

$$ {}_1F_2\left(2; -\frac{21}{4}, \frac{13}{4}; z\right) = \frac{1}{148\,512\, z^{9/4}} \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(256\, z^4 + 30\,976\, z^3 + 598\,836\, z^2 + 3\,783\,780\, z + 10\,135\,125\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\right.\right. $$
$$ \left(1024\, z^{9/2} - 15\,616\, z^4 + 119\,808\, z^{7/2} - 604\,800\, z^3 + 2\,217\,600\, z^{5/2} - 6\,153\,840\, z^2 + 12\,972\,960\, z^{3/2} - 19\,999\,980\, z + \right. $$
$$ \left. 20\,270\,250\sqrt{z} - 10\,135\,125\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi}\, \left(1024\, z^{9/2} + 15\,616\, z^4 + 119\,808\, z^{7/2} + 604\,800\, z^3 + \right. $$
$$ \left.\left. \left. 2\,217\,600\, z^{5/2} + 6\,153\,840\, z^2 + 12\,972\,960\, z^{3/2} + 19\,999\,980\, z + 20\,270\,250\sqrt{z} + 10\,135\,125\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6537.01

$$ {}_1F_2\left(2; -\frac{21}{4}, \frac{13}{4}; -z\right) = \frac{1}{37\,128\, z^{9/4}} \left(2\, \sqrt[4]{z}\, \left(256\, z^4 - 30\,976\, z^3 + 598\,836\, z^2 - 3\,783\,780\, z + 10\,135\,125\right) + \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(512\, z^4 - 59\,904\, z^3 + 1\,108\,800\, z^2 - 6\,486\,480\, z + 10\,135\,125\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. \left(-15\,616\, z^4 + 604\,800\, z^3 - 6\,153\,840\, z^2 + 19\,999\,980\, z - 10\,135\,125\right) \sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(15\,616\, z^4 - 604\,800\, z^3 + 6\,153\,840\, z^2 - 19\,999\,980\, z + 10\,135\,125\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. \left. 2\sqrt{z}\, \left(512\, z^4 - 59\,904\, z^3 + 1\,108\,800\, z^2 - 6\,486\,480\, z + 10\,135\,125\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6538.01

$$ {}_1F_2\left(2; -\frac{21}{4}, \frac{17}{4}; z\right) = \frac{1}{91\,392\, z^{13/4}} \left(e^{-2\sqrt{z}} \left(-8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(10\,496\, z^4 + 757\,344\, z^3 + 15\,135\,120\, z^2 + 103\,783\,680\, z + 310\,134\,825\right) + \right. \right. $$
$$ e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(2048\, z^5 - 41\,472\, z^{9/2} + 426\,240\, z^4 - 2\,914\,560\, z^{7/2} + 14\,636\,160\, z^3 - 56\,216\,160\, z^{5/2} + \right. $$
$$ \left. 166\,486\,320\, z^2 - 372\,972\,600\, z^{3/2} + 599\,999\,400\, z - 620\,269\,650\sqrt{z} + 310\,134\,825\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\, \left(2048\, z^5 + 41\,472\, z^{9/2} + 426\,240\, z^4 + 2\,914\,560\, z^{7/2} + 14\,636\,160\, z^3 + 56\,216\,160\, z^{5/2} + \right. $$
$$ \left.\left. 166\,486\,320\, z^2 + 372\,972\,600\, z^{3/2} + 599\,999\,400\, z + 620\,269\,650\sqrt{z} + 310\,134\,825\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right) $$

07.22.03.6539.01

$$ {}_1F_2\left(2; -\frac{21}{4}, \frac{17}{4}; -z\right) = \frac{1}{22\,848\, z^{13/4}}\left(2\sqrt[4]{z}\left(10\,496\, z^4 - 757\,344\, z^3 + 15\,135\,120\, z^2 - 103\,783\,680\, z + 310\,134\,825\right) + \right.$$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\, z^5 - 426\,240\, z^4 + 14\,636\,160\, z^3 - 166\,486\,320\, z^2 + 599\,999\,400\, z - 310\,134\,825\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$ \left.\left. 18\sqrt{z}\left(2304\, z^4 - 161\,920\, z^3 + 3\,123\,120\, z^2 - 20\,720\,700\, z + 34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right) + \right.$$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(18\sqrt{z}\left(2304\, z^4 - 161\,920\, z^3 + 3\,123\,120\, z^2 - 20\,720\,700\, z + 34\,459\,425\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left.\left.\left(2048\, z^5 - 426\,240\, z^4 + 14\,636\,160\, z^3 - 166\,486\,320\, z^2 + 599\,999\,400\, z - 310\,134\,825\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6540.01

$$ {}_1F_2\left(2; -\frac{21}{4}, \frac{21}{4}; z\right) = $$
$$ \frac{1}{43\,008\, z^{17/4}}\left(e^{-2\sqrt{z}}\left(8\, e^{2\sqrt{z}}\sqrt[4]{z}\left(1024\, z^5 + 351\,744\, z^4 + 20\,180\,160\, z^3 + 402\,642\,240\, z^2 + 2\,784\,321\,540\, z + 8\,511\,477\,975\right) + \right.\right. $$
$$ e^{4\sqrt{z}}\sqrt{2\pi}\left(4096\, z^{11/2} - 105\,472\, z^5 + 1\,379\,840\, z^{9/2} - 12\,038\,400\, z^4 + 77\,425\,920\, z^{7/2} - \right. $$
$$ 383\,423\,040\, z^3 + 1\,483\,241\,760\, z^{5/2} - 4\,454\,049\,600\, z^2 + 10\,108\,098\,000\, z^{3/2} - 16\,402\,686\,300\, z + $$
$$ 17\,022\,955\,950\sqrt{z} - 8\,511\,477\,975\Big)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - \sqrt{2\pi}\left(4096\, z^{11/2} + 105\,472\, z^5 + 1\,379\,840\, z^{9/2} + \right. $$
$$ 12\,038\,400\, z^4 + 77\,425\,920\, z^{7/2} + 383\,423\,040\, z^3 + 1\,483\,241\,760\, z^{5/2} + 4\,454\,049\,600\, z^2 + $$
$$ \left.\left.\left. 10\,108\,098\,000\, z^{3/2} + 16\,402\,686\,300\, z + 17\,022\,955\,950\sqrt{z} + 8\,511\,477\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6541.01

$$ {}_1F_2\left(2; -\frac{21}{4}, \frac{21}{4}; -z\right) = \frac{1}{10\,752\, z^{17/4}} $$
$$ \left(2\sqrt[4]{z}\left(-1024\, z^5 + 351\,744\, z^4 - 20\,180\,160\, z^3 + 402\,642\,240\, z^2 - 2\,784\,321\,540\, z + 8\,511\,477\,975\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right. $$
$$ \left(2\sqrt{z}\left(2048\, z^5 - 689\,920\, z^4 + 38\,712\,960\, z^3 - 741\,620\,880\, z^2 + 5\,054\,049\,000\, z - 8\,511\,477\,975\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left(-105\,472\, z^5 + 12\,038\,400\, z^4 - 383\,423\,040\, z^3 + 4\,454\,049\,600\, z^2 - 16\,402\,686\,300\, z + 8\,511\,477\,975\right) $$
$$ \left.\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left(\left(105\,472\, z^5 - 12\,038\,400\, z^4 + 383\,423\,040\, z^3 - 4\,454\,049\,600\, z^2 + 16\,402\,686\,300\, z - 8\,511\,477\,975\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 2\sqrt{z}\left(2048\, z^5 - 689\,920\, z^4 + 38\,712\,960\, z^3 - 741\,620\,880\, z^2 + 5\,054\,049\,000\, z - 8\,511\,477\,975\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 2$, $b_1 = -\frac{19}{4}$

07.22.03.6542.01

$${}_1F_2\left(2;-\frac{19}{4},-\frac{17}{4};z\right)=$$
$$\frac{1}{654\,729\,075}\left(e^{-2\sqrt{z}}\left(131\,072\,e^{4\sqrt{z}}\sqrt{2\pi}\left(4\sqrt{z}+25\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+131\,072\sqrt{2\pi}\left(4\sqrt{z}-25\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+\right.\right.$$
$$\left.\left.3\,e^{2\sqrt{z}}\left(2\,097\,152\,z^5+327\,680\,z^4+573\,440\,z^3+2\,661\,120\,z^2+21\,621\,600\,z+218\,243\,025\right)\right)\right)$$

07.22.03.6543.01

$${}_1F_2\left(2;-\frac{19}{4},-\frac{17}{4};-z\right)=\frac{1}{654\,729\,075}\left(524\,288\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\cos\left(2\sqrt{z}\right)+25\sin\left(2\sqrt{z}\right)\right)z^{21/4}+\right.$$
$$524\,288\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\sin\left(2\sqrt{z}\right)-25\cos\left(2\sqrt{z}\right)\right)z^{21/4}-6\,291\,456\,z^5+$$
$$\left.983\,040\,z^4-1\,720\,320\,z^3+7\,983\,360\,z^2-64\,864\,800\,z+654\,729\,075\right)$$

07.22.03.6544.01

$${}_1F_2\left(2;-\frac{19}{4},-\frac{13}{4};z\right)=$$
$$\frac{1}{38\,513\,475}\left(e^{-2\sqrt{z}}\left(-16\,384\,e^{4\sqrt{z}}\sqrt{2\pi}\left(8z+42\sqrt{z}-21\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+16\,384\sqrt{2\pi}\left(8z-42\sqrt{z}-21\right)\right.\right.$$
$$\left.\left.\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+e^{2\sqrt{z}}\left(-262\,144\,z^5+983\,040\,z^4+344\,064\,z^3+887\,040\,z^2+4\,989\,600\,z+38\,513\,475\right)\right)\right)$$

07.22.03.6545.01

$${}_1F_2\left(2;-\frac{19}{4},-\frac{13}{4};-z\right)=$$
$$\frac{1}{38\,513\,475}\left(262\,144\,z^5+65\,536\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+21)\cos\left(2\sqrt{z}\right)+42\sqrt{z}\sin\left(2\sqrt{z}\right)\right)z^{17/4}-65\,536\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left.\left((8z+21)\sin\left(2\sqrt{z}\right)-42\sqrt{z}\cos\left(2\sqrt{z}\right)\right)z^{17/4}+983\,040\,z^4-344\,064\,z^3+887\,040\,z^2-4\,989\,600\,z+38\,513\,475\right)$$

07.22.03.6546.01

$${}_1F_2\left(2;-\frac{19}{4},-\frac{9}{4};z\right)=\frac{1}{2\,962\,575}$$
$$\left(e^{-2\sqrt{z}}\left(2048\,e^{4\sqrt{z}}\sqrt{2\pi}\left(16z^{3/2}+60z-102\sqrt{z}+51\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+2048\sqrt{2\pi}\left(16z^{3/2}-60z-102\sqrt{z}-51\right)\right.\right.$$
$$\left.\left.\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+7\,e^{2\sqrt{z}}\left(32\,768\,z^4+49\,152\,z^3+25\,344\,z^2+79\,200\,z+423\,225\right)\right)\right)$$

07.22.03.6547.01

$${}_1F_2\left(2;-\frac{19}{4},-\frac{9}{4};-z\right)=\frac{1}{2\,962\,575}\left(-8192\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((51-60\,z)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;(8\,z+51)\sin\left(2\sqrt{z}\right)\right)z^{13/4}-\right.$$

$$8192\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;(8\,z+51)\cos\left(2\sqrt{z}\right)+3\,(20\,z-17)\sin\left(2\sqrt{z}\right)\right)z^{13/4}+$$

$$\left.7\left(32\,768\,z^4-49\,152\,z^3+25\,344\,z^2-79\,200\,z+423\,225\right)\right)$$

07.22.03.6548.01

$${}_1F_2\left(2;-\frac{19}{4},-\frac{5}{4};z\right)=\frac{1}{329\,175}$$

$$\left(e^{-2\sqrt{z}}\left(-256\,e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(32\,z^2+56\,z^{3/2}-288\,z+390\sqrt{z}\;-195\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{9/4}+256\sqrt{2\,\pi}\;\left(32\,z^2-56\,z^{3/2}-288\,z-\right.\right.\right.$$

$$\left.\left.\left.390\sqrt{z}\;-195\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{9/4}+e^{2\sqrt{z}}\;\left(-16\,384\,z^4+151\,552\,z^3+177\,408\,z^2+110\,880\,z+329\,175\right)\right)\right)$$

07.22.03.6549.01

$${}_1F_2\left(2;-\frac{19}{4},-\frac{5}{4};-z\right)=\frac{1}{329\,175}$$

$$\left(-16\,384\,z^4-151\,552\,z^3-1024\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,z^2+288\,z-195\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;(28\,z-195)\sin\left(2\sqrt{z}\right)\right)z^{9/4}+\right.$$

$$1024\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,z^2+288\,z-195\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\;(28\,z-195)\cos\left(2\sqrt{z}\right)\right)z^{9/4}+$$

$$\left.177\,408\,z^2-110\,880\,z+329\,175\right)$$

07.22.03.6550.01

$${}_1F_2\left(2;-\frac{19}{4},-\frac{1}{4};z\right)=$$

$$\frac{1}{65\,835}\left(e^{-2\sqrt{z}}\left(32\,e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(64\,z^{5/2}-48\,z^2-480\,z^{3/2}+1500\,z-1890\sqrt{z}\;+945\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{5/4}+\right.\right.$$

$$32\sqrt{2\,\pi}\;\left(64\,z^{5/2}+48\,z^2-480\,z^{3/2}-1500\,z-1890\sqrt{z}\;-945\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{5/4}+$$

$$\left.\left.e^{2\sqrt{z}}\;\left(-4096\,z^3+102\,144\,z^2+110\,880\,z+65\,835\right)\right)\right)$$

07.22.03.6551.01

$${}_1F_2\left(2;-\frac{19}{4},-\frac{1}{4};-z\right)=\frac{1}{65\,835}\left(4096\,z^3+102\,144\,z^2+\right.$$

$$128\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\left(32\,z^2+240\,z-945\right)\cos\left(2\sqrt{z}\right)-3\left(16\,z^2+500\,z-315\right)\sin\left(2\sqrt{z}\right)\right)z^{5/4}+128\sqrt{\pi}$$

$$\left.S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(16\,z^2+500\,z-315\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;\left(32\,z^2+240\,z-945\right)\sin\left(2\sqrt{z}\right)\right)z^{5/4}-110\,880\,z+65\,835\right)$$

07.22.03.6552.01

$$ {}_1F_2\left(2;-\frac{19}{4},\frac{3}{4};z\right)=\frac{1}{65\,835}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\left(-1024z^3-3072z^2+63\,840z+65\,835\right)-\right.\right.$$
$$ 4e^{4\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(128z^3-480z^{5/2}+240z^2+2520z^{3/2}-7560z+9450\sqrt{z}-4725\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$ \left.\left.4\sqrt{2\pi}\sqrt[4]{z}\left(128z^3+480z^{5/2}+240z^2-2520z^{3/2}-7560z-9450\sqrt{z}-4725\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6553.01

$$ {}_1F_2\left(2;-\frac{19}{4},\frac{3}{4};-z\right)=\frac{1}{65\,835}\left(1024z^3-3072z^2-63\,840z+\right.$$
$$ 16\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128z^3-240z^2-7560z+4725\right)\cos\left(2\sqrt{z}\right)-30\sqrt{z}\left(16z^2+84z-315\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z}- $$
$$ \left.16\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(30\sqrt{z}\left(16z^2+84z-315\right)\cos\left(2\sqrt{z}\right)+\left(128z^3-240z^2-7560z+4725\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z}+65\,835\right) $$

07.22.03.6554.01

$$ {}_1F_2\left(2;-\frac{19}{4},\frac{7}{4};z\right)=\frac{1}{43\,890z^{3/4}}\left(e^{-2\sqrt{z}}\left(30e^{2\sqrt{z}}z^{3/4}\left(128z^2+800z-385\right)-\right.\right.$$
$$ e^{4\sqrt{z}}\sqrt{2\pi}\left(256z^{7/2}-1856z^3+6048z^{5/2}-10\,080z^2+5040z^{3/2}+11\,340z-20\,790\sqrt{z}+10\,395\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)- $$
$$ \left.\left.\sqrt{2\pi}\left(256z^{7/2}+1856z^3+6048z^{5/2}+10\,080z^2+5040z^{3/2}-11\,340z-20\,790\sqrt{z}-10\,395\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6555.01

$$ {}_1F_2\left(2;-\frac{19}{4},\frac{7}{4};-z\right)= $$
$$ \frac{1}{21\,945z^{3/4}}\left(15z^{3/4}\left(128z^2-800z-385\right)+2\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(128z^3-3024z^2+2520z+10\,395\right)\cos\left(2\sqrt{z}\right)+\right.\right. $$
$$ \left.\left(-1856z^3+10\,080z^2+11\,340z-10\,395\right)\sin\left(2\sqrt{z}\right)\right)+2\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left.\left(\left(1856z^3-10\,080z^2-11\,340z+10\,395\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(128z^3-3024z^2+2520z+10\,395\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6556.01

$$ {}_1F_2\left(2;-\frac{19}{4},\frac{11}{4};z\right)=\frac{1}{50\,160z^{7/4}} $$
$$ \left(e^{-2\sqrt{z}}\left(-16e^{2\sqrt{z}}z^{3/4}\left(64z^3+4224z^2+42\,405z+135\,135\right)-e^{4\sqrt{z}}\sqrt{2\pi}\left(512z^4-5760z^{7/2}+32\,256z^3-116\,928z^{5/2}+\right.\right. $$
$$ 302\,400z^2-582\,120z^{3/2}+831\,600z-810\,810\sqrt{z}+405\,405\left.\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(512z^4+5760z^{7/2}+\right. $$
$$ \left.\left.\left.32\,256z^3+116\,928z^{5/2}+302\,400z^2+582\,120z^{3/2}+831\,600z+810\,810\sqrt{z}+405\,405\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6557.01

$$ {}_1F_2\left(2; -\frac{19}{4}, \frac{11}{4}; -z\right) = \frac{1}{12\,540\, z^{7/4}} $$
$$ \left(4 z^{3/4}\left(-64 z^3 + 4224 z^2 - 42\,405 z + 135\,135\right) - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512 z^4 - 32\,256 z^3 + 302\,400 z^2 - 831\,600 z + 405\,405\right)\right.\right. $$
$$ \cos\left(2\sqrt{z}\right) - 18\sqrt{z}\left(320 z^3 - 6496 z^2 + 32\,340 z - 45\,045\right)\sin\left(2\sqrt{z}\right)\Big) + $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(18\sqrt{z}\left(320 z^3 - 6496 z^2 + 32\,340 z - 45\,045\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left(512 z^4 - 32\,256 z^3 + 302\,400 z^2 - 831\,600 z + 405\,405\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6558.01

$$ {}_1F_2\left(2; -\frac{19}{4}, \frac{15}{4}; z\right) = \frac{1}{36\,480\, z^{11/4}} $$
$$ \left(e^{-2\sqrt{z}}\left(16 e^{2\sqrt{z}}\, z^{3/4}\left(2048 z^3 + 90\,120 z^2 + 1\,081\,080 z + 4\,729\,725\right) - e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(1024 z^{9/2} - 16\,128 z^4 + 129\,024 z^{7/2} - \right.\right.\right. $$
$$ \left.\left.\left. 685\,440 z^3 + 2\,661\,120 z^{5/2} - 7\,817\,040 z^2 + 17\,297\,280 z^{3/2} - 27\,567\,540 z + 28\,378\,350\sqrt{z} - 14\,189\,175\right)\right. $$
$$ \left.\left.\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - \sqrt{2\pi}\,\left(1024 z^{9/2} + 16\,128 z^4 + 129\,024 z^{7/2} + 685\,440 z^3 + 2\,661\,120 z^{5/2} + \right.\right.\right. $$
$$ \left.\left.\left. 7\,817\,040 z^2 + 17\,297\,280 z^{3/2} + 27\,567\,540 z + 28\,378\,350\sqrt{z} + 14\,189\,175\right)\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6559.01

$$ {}_1F_2\left(2; -\frac{19}{4}, \frac{15}{4}; -z\right) = \frac{1}{9120\, z^{11/4}}\left(4 z^{3/4}\left(-2048 z^3 + 90\,120 z^2 - 1\,081\,080 z + 4\,729\,725\right) - \right. $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(512 z^4 - 64\,512 z^3 + 1\,330\,560 z^2 - 8\,648\,640 z + 14\,189\,175\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.63\left(256 z^4 - 10\,880 z^3 + 124\,080 z^2 - 437\,580 z + 225\,225\right)\sin\left(2\sqrt{z}\right)\right) - \right. $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(63\left(256 z^4 - 10\,880 z^3 + 124\,080 z^2 - 437\,580 z + 225\,225\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left.2\sqrt{z}\left(512 z^4 - 64\,512 z^3 + 1\,330\,560 z^2 - 8\,648\,640 z + 14\,189\,175\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6560.01

$$ {}_1F_2\left(2; -\frac{19}{4}, \frac{19}{4}; z\right) = \frac{1}{19\,456\, z^{15/4}} \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(256\, z^4 + 57\,536\, z^3 + 2\,162\,160\, z^2 + 26\,640\,900\, z + 126\,351\,225\right) - e^{4\sqrt{z}} \right.\right. $$
$$ \sqrt{2\pi} \left(2048\, z^5 - 42\,496\, z^{9/2} + 449\,280\, z^4 - 3\,168\,000\, z^{7/2} + 16\,410\,240\, z^3 - 64\,864\,800\, z^{5/2} + \right. $$
$$ \left. 196\,756\,560\, z^2 - 448\,648\,200\, z^{3/2} + 729\,729\,000\, z - 758\,107\,350\sqrt{z} + 379\,053\,675\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \left.\sqrt{2\pi} \left(2048\, z^5 + 42\,496\, z^{9/2} + 449\,280\, z^4 + 3\,168\,000\, z^{7/2} + 16\,410\,240\, z^3 + 64\,864\,800\, z^{5/2} + \right.\right. $$
$$ \left.\left. 196\,756\,560\, z^2 + 448\,648\,200\, z^{3/2} + 729\,729\,000\, z + 758\,107\,350\sqrt{z} + 379\,053\,675\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6561.01

$$ {}_1F_2\left(2; -\frac{19}{4}, \frac{19}{4}; -z\right) = \frac{1}{4864\, z^{15/4}} \left(4\, z^{3/4} \left(256\, z^4 - 57\,536\, z^3 + 2\,162\,160\, z^2 - 26\,640\,900\, z + 126\,351\,225\right) + \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(2048\, z^5 - 449\,280\, z^4 + 16\,410\,240\, z^3 - 196\,756\,560\, z^2 + 729\,729\,000\, z - 379\,053\,675\right) \cos\left(2\sqrt{z}\right) - \right. $$
$$ \left. 2\sqrt{z} \left(21\,248\, z^4 - 1\,584\,000\, z^3 + 32\,432\,400\, z^2 - 224\,324\,100\, z + 379\,053\,675\right) \sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(21\,248\, z^4 - 1\,584\,000\, z^3 + 32\,432\,400\, z^2 - 224\,324\,100\, z + 379\,053\,675\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. \left(2048\, z^5 - 449\,280\, z^4 + 16\,410\,240\, z^3 - 196\,756\,560\, z^2 + 729\,729\,000\, z - 379\,053\,675\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6562.01

$$ {}_1F_2\left(2; -\frac{19}{4}, \frac{23}{4}; z\right) = \frac{1}{8192\, z^{19/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(13\,568\, z^4 + 1\,647\,360\, z^3 + 56\,300\,400\, z^2 + 682\,624\,800\, z + 3\,273\,645\,375\right) - e^{4\sqrt{z}}\, \sqrt{2\pi} \right.\right. $$
$$ \left(4096\, z^{11/2} - 107\,520\, z^5 + 1\,436\,160\, z^{9/2} - 12\,798\,720\, z^4 + 84\,015\,360\, z^{7/2} - 423\,783\,360\, z^3 + 1\,664\,863\,200\, z^{5/2} - \right. $$
$$ \left. 5\,059\,454\,400\, z^2 + 11\,578\,366\,800\, z^{3/2} - 18\,883\,764\,900\, z + 19\,641\,872\,250\sqrt{z} - 9\,820\,936\,125\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi} \left(4096\, z^{11/2} + 107\,520\, z^5 + 1\,436\,160\, z^{9/2} + 12\,798\,720\, z^4 + 84\,015\,360\, z^{7/2} + \right. $$
$$ 423\,783\,360\, z^3 + 1\,664\,863\,200\, z^{5/2} + 5\,059\,454\,400\, z^2 + 11\,578\,366\,800\, z^{3/2} + $$
$$ \left.\left.\left. 18\,883\,764\,900\, z + 19\,641\,872\,250\sqrt{z} + 9\,820\,936\,125\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6563.01

$${}_1F_2\left(2;-\frac{19}{4},\frac{23}{4};-z\right)=\frac{1}{2048\,z^{19/4}}\left(4\,z^{3/4}\left(13\,568\,z^4-1\,647\,360\,z^3+56\,300\,400\,z^2-682\,624\,800\,z+3\,273\,645\,375\right)+\right.$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(7168\,z^5-853\,248\,z^4+28\,252\,224\,z^3-337\,296\,960\,z^2+1\,258\,917\,660\,z-654\,729\,075\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$2\sqrt{z}\left(2048\,z^5-718\,080\,z^4+42\,007\,680\,z^3-832\,431\,600\,z^2+5\,789\,183\,400\,z-9\,820\,936\,125\right)$$
$$\left.\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)$$
$$\left(2\sqrt{z}\left(2048\,z^5-718\,080\,z^4+42\,007\,680\,z^3-832\,431\,600\,z^2+5\,789\,183\,400\,z-9\,820\,936\,125\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.15\left(7168\,z^5-853\,248\,z^4+28\,252\,224\,z^3-337\,296\,960\,z^2+1\,258\,917\,660\,z-654\,729\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = -\frac{17}{4}$

07.22.03.6564.01

$${}_1F_2\left(2;-\frac{17}{4},-\frac{15}{4};z\right)=$$
$$\frac{1}{34\,459\,425}\left(e^{-2\sqrt{z}}\left(-32\,768\,e^{4\sqrt{z}}\,\sqrt{2\pi}\left(4\sqrt{z}+23\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+32\,768\sqrt{2\pi}\left(4\sqrt{z}-23\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\left(-262\,144\,z^5+327\,680\,z^4+245\,760\,z^3+725\,760\,z^2+4\,324\,320\,z+34\,459\,425\right)\right)\right)$$

07.22.03.6565.01

$${}_1F_2\left(2;-\frac{17}{4},-\frac{15}{4};-z\right)=$$
$$\frac{1}{34\,459\,425}\left(262\,144\,z^5+131\,072\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\cos\left(2\sqrt{z}\right)+23\sin\left(2\sqrt{z}\right)\right)z^{19/4}-131\,072\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left.\left(4\sqrt{z}\sin\left(2\sqrt{z}\right)-23\cos\left(2\sqrt{z}\right)\right)z^{19/4}+327\,680\,z^4-245\,760\,z^3+725\,760\,z^2-4\,324\,320\,z+34\,459\,425\right)$$

07.22.03.6566.01

$${}_1F_2\left(2;-\frac{17}{4},-\frac{11}{4};z\right)=\frac{1}{2\,297\,295}$$
$$\left(e^{-2\sqrt{z}}\left(4096\,e^{4\sqrt{z}}\,\sqrt{2\pi}\left(8z+38\sqrt{z}-19\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+4096\sqrt{2\pi}\left(8z-38\sqrt{z}-19\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\left(294\,912\,z^4+81\,920\,z^3+103\,680\,z^2+393\,120\,z+2\,297\,295\right)\right)\right)$$

07.22.03.6567.01

$${}_1F_2\left(2;-\frac{17}{4},-\frac{11}{4};-z\right)=\frac{1}{2\,297\,295}\left(294\,912\,z^4-16\,384\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+19)\cos\left(2\sqrt{z}\right)+38\sqrt{z}\sin\left(2\sqrt{z}\right)\right)z^{15/4}-\right.$$
$$\left.16\,384\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+19)\sin\left(2\sqrt{z}\right)-38\sqrt{z}\cos\left(2\sqrt{z}\right)\right)z^{15/4}-81\,920\,z^3+103\,680\,z^2-393\,120\,z+2\,297\,295\right)$$

07.22.03.6568.01

$${}_1F_2\left(2;-\frac{17}{4},-\frac{7}{4};z\right)=\frac{1}{208\,845}$$
$$\left(e^{-2\sqrt{z}}\left(-512\,e^{4\sqrt{z}}\sqrt{2\pi}\left(16z^{3/2}+52z-90\sqrt{z}+45\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+512\sqrt{2\pi}\left(16z^{3/2}-52z-90\sqrt{z}-45\right)\right.\right.$$
$$\left.\left.\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+e^{2\sqrt{z}}\left(-16\,384z^4+102\,400z^3+34\,560z^2+56\,160z+208\,845\right)\right)\right)$$

07.22.03.6569.01

$${}_1F_2\left(2;-\frac{17}{4},-\frac{7}{4};-z\right)=$$
$$\frac{1}{208\,845}\left(-16\,384z^4-102\,400z^3+2048\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((45-52z)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(8z+45)\sin\left(2\sqrt{z}\right)\right)z^{11/4}-\right.$$
$$\left.2048\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(8z+45)\cos\left(2\sqrt{z}\right)+(52z-45)\sin\left(2\sqrt{z}\right)\right)z^{11/4}+34\,560z^2-56\,160z+208\,845\right)$$

07.22.03.6570.01

$${}_1F_2\left(2;-\frac{17}{4},-\frac{3}{4};z\right)=\frac{1}{29\,835}\left(e^{-2\sqrt{z}}\left(64\,e^{4\sqrt{z}}\sqrt{2\pi}\left(32z^2+40z^{3/2}-240z+330\sqrt{z}-165\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+64\sqrt{2\pi}\right.\right.$$
$$\left.\left.\left(32z^2-40z^{3/2}-240z-330\sqrt{z}-165\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\left(4096z^3+49\,920z^2+18\,720z+29\,835\right)\right)\right)$$

07.22.03.6571.01

$${}_1F_2\left(2;-\frac{17}{4},-\frac{3}{4};-z\right)=$$
$$\frac{1}{29\,835}\left(-4096z^3+49\,920z^2+256\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32z^2+240z-165\right)\cos\left(2\sqrt{z}\right)+10\sqrt{z}\,(4z-33)\sin\left(2\sqrt{z}\right)\right)z^{7/4}+\right.$$
$$\left.256\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32z^2+240z-165\right)\sin\left(2\sqrt{z}\right)-10\sqrt{z}\,(4z-33)\cos\left(2\sqrt{z}\right)\right)z^{7/4}-18\,720z+29\,835\right)$$

07.22.03.6572.01

$${}_1F_2\left(2;-\frac{17}{4},\frac{1}{4};z\right)=\frac{1}{9945}$$
$$\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\left(-1024z^3+4608z^2+28\,320z+9945\right)-8\,e^{4\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(64z^{5/2}-80z^2-320z^{3/2}+1140z-1470\sqrt{z}+\right.\right.\right.$$
$$\left.\left.\left.735\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+8\sqrt{2\pi}\,z^{3/4}\left(64z^{5/2}+80z^2-320z^{3/2}-1140z-1470\sqrt{z}-735\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6573.01

$${}_1F_2\left(2;-\frac{17}{4},\frac{1}{4};-z\right)=\frac{1}{9945}\left(1024z^3+4608z^2-28\,320z+\right.$$
$$32\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(32z^2+160z-735\right)\cos\left(2\sqrt{z}\right)-5\left(16z^2+228z-147\right)\sin\left(2\sqrt{z}\right)\right)z^{3/4}-$$
$$\left.32\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(5\left(16z^2+228z-147\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(32z^2+160z-735\right)\sin\left(2\sqrt{z}\right)\right)z^{3/4}+9945\right)$$

07.22.03.6574.01

$$ {}_1F_2\left(2;-\frac{17}{4},\frac{5}{4};z\right)=\frac{1}{9945\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\right.$$
$$\left(3e^{2\sqrt{z}}\sqrt[4]{z}\left(384z^2-352z-4245\right)-e^{4\sqrt{z}}\sqrt{2\pi}\left(128z^3-544z^{5/2}+720z^2+840z^{3/2}-4200z+5670\sqrt{z}-2835\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(-128z^3-544z^{5/2}-720z^2+840z^{3/2}+4200z+5670\sqrt{z}+2835\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6575.01

$$ {}_1F_2\left(2;-\frac{17}{4},\frac{5}{4};-z\right)=\frac{1}{9945\sqrt[4]{z}}\left(3\sqrt[4]{z}\left(384z^2+352z-4245\right)+\right.$$
$$4\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128z^3-720z^2-4200z+2835\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\left(272z^2+420z-2835\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.4\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(272z^2+420z-2835\right)\cos\left(2\sqrt{z}\right)+\left(128z^3-720z^2-4200z+2835\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6576.01

$$ {}_1F_2\left(2;-\frac{17}{4},\frac{9}{4};z\right)=\frac{1}{15912z^{5/4}}\left(e^{-2\sqrt{z}}\left(-8e^{2\sqrt{z}}\sqrt[4]{z}\left(64z^3+1984z^2+7839z+10395\right)-e^{4\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left(256z^{7/2}-1984z^3+7392z^{5/2}-16800z^2+25200z^{3/2}-26460z+20790\sqrt{z}-10395\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\pi}\left(256z^{7/2}+1984z^3+7392z^{5/2}+16800z^2+25200z^{3/2}+26460z+20790\sqrt{z}+10395\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6577.01

$$ {}_1F_2\left(2;-\frac{17}{4},\frac{9}{4};-z\right)=\frac{1}{3978z^{5/4}}$$
$$\left(2\sqrt[4]{z}\left(-64z^3+1984z^2-7839z+10395\right)-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(128z^3-3696z^2+12600z-10395\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left(-1984z^3+16800z^2-26460z+10395\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)$$
$$\left.\left(\left(1984z^3-16800z^2+26460z-10395\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(128z^3-3696z^2+12600z-10395\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6578.01

$$ {}_1F_2\left(2;-\frac{17}{4},\frac{13}{4};z\right)=$$
$$\frac{1}{14144z^{9/4}}\left(e^{-2\sqrt{z}}\left(8e^{2\sqrt{z}}\sqrt[4]{z}\left(1536z^3+37832z^2+249480z+675675\right)-e^{4\sqrt{z}}\sqrt{2\pi}\left(512z^4-6016z^{7/2}+35840z^3-\right.\right.\right.$$
$$\left.\left.141120z^{5/2}+403200z^2-859320z^{3/2}+1330560z-1351350\sqrt{z}+675675\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\sqrt{2\pi}\left(512z^4+6016z^{7/2}+35840z^3+141120z^{5/2}+403200z^2+859320z^{3/2}+\right.$$
$$\left.\left.\left.1330560z+1351350\sqrt{z}+675675\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6579.01

$$ {}_1F_2\left(2; -\frac{17}{4}, \frac{13}{4}; -z\right) = \frac{1}{3536\, z^{9/4}}\left(2\sqrt[4]{z}\,\left(-1536\, z^3 + 37\,832\, z^2 - 249\,480\, z + 675\,675\right) - \right.$$

$$\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512\, z^4 - 35\,840\, z^3 + 403\,200\, z^2 - 1\,330\,560\, z + 675\,675\right)\cos\left(2\sqrt{z}\right) + \right.$$

$$\left. 2\sqrt{z}\,\left(-3008\, z^3 + 70\,560\, z^2 - 429\,660\, z + 675\,675\right)\sin\left(2\sqrt{z}\right)\right) -$$

$$\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(3008\, z^3 - 70\,560\, z^2 + 429\,660\, z - 675\,675\right)\cos\left(2\sqrt{z}\right) + \right.$$

$$\left.\left.\left(512\, z^4 - 35\,840\, z^3 + 403\,200\, z^2 - 1\,330\,560\, z + 675\,675\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6580.01

$$ {}_1F_2\left(2; -\frac{17}{4}, \frac{17}{4}; z\right) =$$

$$\frac{1}{8704\, z^{13/4}}\left(e^{-2\sqrt{z}}\left(-8\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(256\, z^4 + 35\,648\, z^3 + 831\,600\, z^2 + 5\,945\,940\, z + 18\,243\,225\right) - e^{4\sqrt{z}}\,\sqrt{2\pi}\right.\right.$$

$$\left(1024\, z^{9/2} - 16\,640\, z^4 + 138\,240\, z^{7/2} - 766\,080\, z^3 + 3\,104\,640\, z^{5/2} - 9\,480\,240\, z^2 + 21\,621\,600\, z^{3/2} - 35\,135\,100\, z + \right.$$

$$\left.\left.\left.\left.36\,486\,450\sqrt{z} - 18\,243\,225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\left(1024\, z^{9/2} + 16\,640\, z^4 + 138\,240\, z^{7/2} + 766\,080\, z^3 + \right.\right.\right.\right.$$

$$\left.\left.\left.\left.3\,104\,640\, z^{5/2} + 9\,480\,240\, z^2 + 21\,621\,600\, z^{3/2} + 35\,135\,100\, z + 36\,486\,450\sqrt{z} + 18\,243\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6581.01

$$ {}_1F_2\left(2; -\frac{17}{4}, \frac{17}{4}; -z\right) = \frac{1}{2176\, z^{13/4}}\left(2\sqrt[4]{z}\,\left(256\, z^4 - 35\,648\, z^3 + 831\,600\, z^2 - 5\,945\,940\, z + 18\,243\,225\right) - \right.$$

$$\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(5\left(3328\, z^4 - 153\,216\, z^3 + 1\,896\,048\, z^2 - 7\,027\,020\, z + 3\,648\,645\right)\cos\left(2\sqrt{z}\right) + \right.$$

$$\left. 2\sqrt{z}\,\left(512\, z^4 - 69\,120\, z^3 + 1\,552\,320\, z^2 - 10\,810\,800\, z + 18\,243\,225\right)\sin\left(2\sqrt{z}\right)\right) +$$

$$\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(512\, z^4 - 69\,120\, z^3 + 1\,552\,320\, z^2 - 10\,810\,800\, z + 18\,243\,225\right)\cos\left(2\sqrt{z}\right) - \right.$$

$$\left.\left.5\left(3328\, z^4 - 153\,216\, z^3 + 1\,896\,048\, z^2 - 7\,027\,020\, z + 3\,648\,645\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6582.01

$$ {}_1F_2\left(2; -\frac{17}{4}, \frac{21}{4}; z\right) = \frac{1}{4096\, z^{17/4}} \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(11\,008\, z^4 + 887\,040\, z^3 + 19\,939\,920\, z^2 + 142\,702\,560\, z + 447\,972\,525\right) - e^{4\sqrt{z}}\right.\right. $$
$$ \sqrt{2\pi}\, \left(2048\, z^5 - 43\,520\, z^{9/2} + 472\,320\, z^4 - 3\,421\,440\, z^{7/2} + 18\,184\,320\, z^3 - 73\,513\,440\, z^{5/2} + \right. $$
$$ \left. 227\,026\,800\, z^2 - 524\,323\,800\, z^{3/2} + 859\,458\,600\, z - 895\,945\,050\, \sqrt{z} + 447\,972\,525\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - $$
$$ \left.\left. \sqrt{2\pi}\, \left(2048\, z^5 + 43\,520\, z^{9/2} + 472\,320\, z^4 + 3\,421\,440\, z^{7/2} + 18\,184\,320\, z^3 + 73\,513\,440\, z^{5/2} + \right.\right. $$
$$ \left.\left. 227\,026\,800\, z^2 + 524\,323\,800\, z^{3/2} + 859\,458\,600\, z + 895\,945\,050\, \sqrt{z} + 447\,972\,525\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6583.01

$$ {}_1F_2\left(2; -\frac{17}{4}, \frac{21}{4}; -z\right) = \frac{1}{1024\, z^{17/4}} \left(2\, \sqrt[4]{z}\, \left(11\,008\, z^4 - 887\,040\, z^3 + 19\,939\,920\, z^2 - 142\,702\,560\, z + 447\,972\,525\right) + \right. $$
$$ \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(2048\, z^5 - 472\,320\, z^4 + 18\,184\,320\, z^3 - 227\,026\,800\, z^2 + 859\,458\,600\, z - 447\,972\,525\right) \cos\left(2\, \sqrt{z}\right) - \right. $$
$$ \left.\left. 10\, \sqrt{z}\, \left(4352\, z^4 - 342\,144\, z^3 + 7\,351\,344\, z^2 - 52\,432\,380\, z + 89\,594\,505\right) \sin\left(2\, \sqrt{z}\right)\right) + \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(10\, \sqrt{z}\, \left(4352\, z^4 - 342\,144\, z^3 + 7\,351\,344\, z^2 - 52\,432\,380\, z + 89\,594\,505\right) \cos\left(2\, \sqrt{z}\right) + \right. $$
$$ \left.\left. \left(2048\, z^5 - 472\,320\, z^4 + 18\,184\,320\, z^3 - 227\,026\,800\, z^2 + 859\,458\,600\, z - 447\,972\,525\right) \sin\left(2\, \sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 2$, $b_1 = -\frac{15}{4}$

07.22.03.6584.01

$$ {}_1F_2\left(2; -\frac{15}{4}, -\frac{13}{4}; z\right) = \frac{1}{2\,027\,025} \left(e^{-2\sqrt{z}} \left(8192\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(4\, \sqrt{z} + 21\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{17/4} + 8192\, \sqrt{2\pi}\, \left(4\, \sqrt{z} - 21\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{17/4} + \right.\right. $$
$$ \left.\left. e^{2\sqrt{z}}\, \left(327\,680\, z^4 + 49\,152\, z^3 + 80\,640\, z^2 + 332\,640\, z + 2\,027\,025\right)\right)\right) $$

07.22.03.6585.01

$$ {}_1F_2\left(2; -\frac{15}{4}, -\frac{13}{4}; -z\right) = \frac{1}{2\,027\,025} \left(-32\,768\, \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(4\, \sqrt{z}\, \cos\left(2\, \sqrt{z}\right) + 21 \sin\left(2\, \sqrt{z}\right)\right) z^{17/4} - 32\,768\, \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \right. $$
$$ \left. \left(4\, \sqrt{z}\, \sin\left(2\, \sqrt{z}\right) - 21 \cos\left(2\, \sqrt{z}\right)\right) z^{17/4} + 327\,680\, z^4 - 49\,152\, z^3 + 80\,640\, z^2 - 332\,640\, z + 2\,027\,025\right) $$

07.22.03.6586.01

$${}_1F_2\left(2;-\frac{15}{4},-\frac{9}{4};z\right)=\frac{1}{155\,925}$$
$$\left(e^{-2\sqrt{z}}\left(-1024\,e^{4\sqrt{z}}\sqrt{2\pi}\left(8z+34\sqrt{z}-17\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+1024\sqrt{2\pi}\left(8z-34\sqrt{z}-17\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\left(-16\,384z^4+49\,152z^3+16\,128z^2+36\,960z+155\,925\right)\right)\right)$$

07.22.03.6587.01

$${}_1F_2\left(2;-\frac{15}{4},-\frac{9}{4};-z\right)=\frac{1}{155\,925}\left(-16\,384z^4-4096\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+17)\cos\left(2\sqrt{z}\right)+34\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{13/4}+\right.$$
$$\left.4096\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+17)\sin\left(2\sqrt{z}\right)-34\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)z^{13/4}-49\,152z^3+16\,128z^2-36\,960z+155\,925\right)$$

07.22.03.6588.01

$${}_1F_2\left(2;-\frac{15}{4},-\frac{5}{4};z\right)=$$
$$\frac{1}{17\,325}\left(e^{-2\sqrt{z}}\left(128\,e^{4\sqrt{z}}\sqrt{2\pi}\left(16z^{3/2}+44z-78\sqrt{z}+39\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+128\sqrt{2\pi}\left(16z^{3/2}-44z-78\sqrt{z}-39\right)\right.\right.$$
$$\left.\left.\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+e^{2\sqrt{z}}\left(10\,240z^3+16\,128z^2+7392z+17\,325\right)\right)\right)$$

07.22.03.6589.01

$${}_1F_2\left(2;-\frac{15}{4},-\frac{5}{4};-z\right)=\frac{1}{17\,325}\left(-10\,240z^3+512\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((39-44z)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(8z+39)\sin\left(2\sqrt{z}\right)\right)z^{9/4}+\right.$$
$$\left.512\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(8z+39)\cos\left(2\sqrt{z}\right)+(44z-39)\sin\left(2\sqrt{z}\right)\right)z^{9/4}+16\,128z^2-7392z+17\,325\right)$$

07.22.03.6590.01

$${}_1F_2\left(2;-\frac{15}{4},-\frac{1}{4};z\right)=\frac{1}{3465}\left(e^{-2\sqrt{z}}\left(-16\,e^{4\sqrt{z}}\sqrt{2\pi}\left(32z^2+24z^{3/2}-192z+270\sqrt{z}-135\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+\right.\right.$$
$$\left.\left.16\sqrt{2\pi}\left(32z^2-24z^{3/2}-192z-270\sqrt{z}-135\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\left(-1024z^3+6144z^2+7392z+3465\right)\right)\right)$$

07.22.03.6591.01

$${}_1F_2\left(2;-\frac{15}{4},-\frac{1}{4};-z\right)=$$
$$\frac{1}{3465}\left(1024z^3+6144z^2+64\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32z^2+192z-135\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\,(4z-45)\sin\left(2\sqrt{z}\right)\right)z^{5/4}-\right.$$
$$\left.64\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32z^2+192z-135\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\,(4z-45)\cos\left(2\sqrt{z}\right)\right)z^{5/4}-7392z+3465\right)$$

07.22.03.6592.01

$$ {}_1F_2\left(2; -\frac{15}{4}, \frac{3}{4}; z\right) = \frac{1}{3465}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\left(-512z^2+3136z+3465\right)+2e^{4\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(64z^{5/2}-112z^2-160z^{3/2}+780z-1050\sqrt{z}+525\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+2\sqrt{2\pi}\sqrt[4]{z}\left(64z^{5/2}+112z^2-160z^{3/2}-780z-1050\sqrt{z}-525\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6593.01

$$ {}_1F_2\left(2; -\frac{15}{4}, \frac{3}{4}; -z\right) = \frac{1}{3465}\left(-512z^2-3136z-8\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(32z^2+80z-525\right)\cos\left(2\sqrt{z}\right)+\left(-112z^2-780z+525\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z}-\right.$$
$$\left.8\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(112z^2+780z-525\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(32z^2+80z-525\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z}+3465\right)$$

07.22.03.6594.01

$$ {}_1F_2\left(2; -\frac{15}{4}, \frac{7}{4}; z\right) = \frac{1}{4620z^{3/4}}\left(e^{-2\sqrt{z}}\left(4e^{2\sqrt{z}}z^{3/4}\left(64z^2+688z-105\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(128z^3-608z^{5/2}+1200z^2-840z^{3/2}-840z+1890\sqrt{z}-945\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(-128z^3-608z^{5/2}-1200z^2-840z^{3/2}+840z+1890\sqrt{z}+945\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6595.01

$$ {}_1F_2\left(2; -\frac{15}{4}, \frac{7}{4}; -z\right) = \frac{1}{1155z^{3/4}}\left(z^{3/4}\left(64z^2-688z-105\right)+\right.$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128z^3-1200z^2-840z+945\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(-304z^2+420z+945\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(304z^2-420z-945\right)\cos\left(2\sqrt{z}\right)+\left(128z^3-1200z^2-840z+945\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6596.01

$$ {}_1F_2\left(2; -\frac{15}{4}, \frac{11}{4}; z\right) = \frac{1}{5280z^{7/4}}\left(e^{-2\sqrt{z}}\left(-16e^{2\sqrt{z}}z^{3/4}\left(272z^2+3270z+10\,395\right)+e^{4\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left(256z^{7/2}-2112z^3+8736z^{5/2}-23\,520z^2+45\,360z^{3/2}-64\,260z+62\,370\sqrt{z}-31\,185\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\pi}\left(256z^{7/2}+2112z^3+8736z^{5/2}+23\,520z^2+45\,360z^{3/2}+64\,260z+62\,370\sqrt{z}+31\,185\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6597.01

$$ {}_1F_2\left(2; -\frac{15}{4}, \frac{11}{4}; -z\right) = $$
$$ \frac{1}{1320\, z^{7/4}}\left(4\, z^{3/4}\left(272\, z^2 - 3270\, z + 10\,395\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(128\, z^3 - 4368\, z^2 + 22\,680\, z - 31\,185\right)\cos\left(2\sqrt{z}\right) + \right.\right. $$
$$ \left. 3\left(-704\, z^3 + 7840\, z^2 - 21\,420\, z + 10\,395\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left.\left(3\left(704\, z^3 - 7840\, z^2 + 21\,420\, z - 10\,395\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(128\, z^3 - 4368\, z^2 + 22\,680\, z - 31\,185\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6598.01

$$ {}_1F_2\left(2; -\frac{15}{4}, \frac{15}{4}; z\right) = $$
$$ \frac{1}{3840\, z^{11/4}}\left(e^{-2\sqrt{z}}\left(16\, e^{2\sqrt{z}}\, z^{3/4}\left(64\, z^3 + 5136\, z^2 + 69\,300\, z + 315\,315\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(512\, z^4 - 6272\, z^{7/2} + 39\,424\, z^3 - \right.\right.\right. $$
$$ \left. 165\,312\, z^{5/2} + 504\,000\, z^2 - 1\,136\,520\, z^{3/2} + 1\,829\,520\, z - 1\,891\,890\sqrt{z} + 945\,945\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$
$$ \left.\left.\sqrt{2\pi}\,\left(512\, z^4 + 6272\, z^{7/2} + 39\,424\, z^3 + 165\,312\, z^{5/2} + 504\,000\, z^2 + 1\,136\,520\, z^{3/2} + \right.\right.\right. $$
$$ \left.\left. 1\,829\,520\, z + 1\,891\,890\sqrt{z} + 945\,945\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6599.01

$$ {}_1F_2\left(2; -\frac{15}{4}, \frac{15}{4}; -z\right) = \frac{1}{960\, z^{11/4}} $$
$$ \left(-4\, z^{3/4}\left(64\, z^3 - 5136\, z^2 + 69\,300\, z - 315\,315\right) - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512\, z^4 - 39\,424\, z^3 + 504\,000\, z^2 - 1\,829\,520\, z + 945\,945\right)\right.\right. $$
$$ \left.\cos\left(2\sqrt{z}\right) - 14\sqrt{z}\,\left(448\, z^3 - 11\,808\, z^2 + 81\,180\, z - 135\,135\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(14\sqrt{z}\,\left(448\, z^3 - 11\,808\, z^2 + 81\,180\, z - 135\,135\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left(512\, z^4 - 39\,424\, z^3 + 504\,000\, z^2 - 1\,829\,520\, z + 945\,945\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6600.01

$$ {}_1F_2\left(2; -\frac{15}{4}, \frac{19}{4}; z\right) = \frac{1}{2048\, z^{15/4}} $$
$$ \left(e^{-2\sqrt{z}}\left(-16\, e^{2\sqrt{z}}\, z^{3/4}\left(2176\, z^3 + 110\,880\, z^2 + 1\,492\,920\, z + 7\,432\,425\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(1024\, z^{9/2} - 17\,152\, z^4 + 147\,456\, z^{7/2} - \right.\right.\right. $$
$$ \left. 846\,720\, z^3 + 3\,548\,160\, z^{5/2} - 11\,143\,440\, z^2 + 25\,945\,920\, z^{3/2} - 42\,702\,660\, z + 44\,594\,550\sqrt{z} - 22\,297\,275\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\left(1024\, z^{9/2} + 17\,152\, z^4 + 147\,456\, z^{7/2} + 846\,720\, z^3 + 3\,548\,160\, z^{5/2} + \right. $$
$$ \left.\left.\left. 11\,143\,440\, z^2 + 25\,945\,920\, z^{3/2} + 42\,702\,660\, z + 44\,594\,550\sqrt{z} + 22\,297\,275\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6601.01

$$ {}_1F_2\left(2; -\frac{15}{4}, \frac{19}{4}; -z\right) = \frac{1}{512\, z^{15/4}} \left(4\, z^{3/4} \left(-2176\, z^3 + 110\,880\, z^2 - 1\,492\,920\, z + 7\,432\,425\right) - \right.$$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(512\, z^4 - 73\,728\, z^3 + 1\,774\,080\, z^2 - 12\,972\,960\, z + 22\,297\,275\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left.\left(-17\,152\, z^4 + 846\,720\, z^3 - 11\,143\,440\, z^2 + 42\,702\,660\, z - 22\,297\,275\right)\sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(17\,152\, z^4 - 846\,720\, z^3 + 11\,143\,440\, z^2 - 42\,702\,660\, z + 22\,297\,275\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left.\left.2\sqrt{z}\left(512\, z^4 - 73\,728\, z^3 + 1\,774\,080\, z^2 - 12\,972\,960\, z + 22\,297\,275\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6602.01

$$ {}_1F_2\left(2; -\frac{15}{4}, \frac{23}{4}; z\right) = $$
$$ \frac{1}{16\,384\, z^{19/4}} \left(19\, e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\; z^{3/4}\left(256\, z^4 + 63\,360\, z^3 + 2\,648\,880\, z^2 + 34\,362\,900\, z + 172\,297\,125\right) + e^{4\sqrt{z}}\right.\right. $$
$$ \sqrt{2\pi}\left(2048\, z^5 - 44\,544\, z^{9/2} + 495\,360\, z^4 - 3\,674\,880\, z^{7/2} + 19\,958\,400\, z^3 - 82\,162\,080\, z^{5/2} + \right. $$
$$ \left.\left.257\,297\,040\, z^2 - 599\,999\,400\, z^{3/2} + 989\,188\,200\, z - 1\,033\,782\,750\sqrt{z} + 516\,891\,375\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right) - \right. $$
$$ \left.\sqrt{2\pi}\left(2048\, z^5 + 44\,544\, z^{9/2} + 495\,360\, z^4 + 3\,674\,880\, z^{7/2} + 19\,958\,400\, z^3 + 82\,162\,080\, z^{5/2} + \right.\right. $$
$$ \left.\left.257\,297\,040\, z^2 + 599\,999\,400\, z^{3/2} + 989\,188\,200\, z + 1\,033\,782\,750\sqrt{z} + 516\,891\,375\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6603.01

$$ {}_1F_2\left(2; -\frac{15}{4}, \frac{23}{4}; -z\right) = $$
$$ -\frac{1}{4096\, z^{19/4}} \left(19\left(-4\, z^{3/4}\left(256\, z^4 - 63\,360\, z^3 + 2\,648\,880\, z^2 - 34\,362\,900\, z + 172\,297\,125\right) - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right. $$
$$ \left(\left(2048\, z^5 - 495\,360\, z^4 + 19\,958\,400\, z^3 - 257\,297\,040\, z^2 + 989\,188\,200\, z - 516\,891\,375\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.6\sqrt{z}\left(7424\, z^4 - 612\,480\, z^3 + 13\,693\,680\, z^2 - 99\,999\,900\, z + 172\,297\,125\right)\sin\left(2\sqrt{z}\right)\right) + \right. $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\left(7424\, z^4 - 612\,480\, z^3 + 13\,693\,680\, z^2 - 99\,999\,900\, z + 172\,297\,125\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left.\left(2048\, z^5 - 495\,360\, z^4 + 19\,958\,400\, z^3 - 257\,297\,040\, z^2 + 989\,188\,200\, z - 516\,891\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 2$, $b_1 = -\frac{13}{4}$

07.22.03.6604.01

$${}_1F_2\left(2;-\frac{13}{4},-\frac{11}{4};z\right)=$$
$$\frac{1}{135\,135}\left(e^{-2\sqrt{z}}\left(-2048\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(4\sqrt{z}+19\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+2048\,\sqrt{2\pi}\,\left(4\sqrt{z}-19\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\left(-16\,384\,z^4+16\,384\,z^3+11\,520\,z^2+30\,240\,z+135\,135\right)\right)\right)$$

07.22.03.6605.01

$${}_1F_2\left(2;-\frac{13}{4},-\frac{11}{4};-z\right)=\frac{1}{135\,135}\left(-16\,384\,z^4-8192\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\cos\left(2\sqrt{z}\right)+19\sin\left(2\sqrt{z}\right)\right)z^{15/4}+\right.$$
$$\left.8192\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\sin\left(2\sqrt{z}\right)-19\cos\left(2\sqrt{z}\right)\right)z^{15/4}-16\,384\,z^3+11\,520\,z^2-30\,240\,z+135\,135\right)$$

07.22.03.6606.01

$${}_1F_2\left(2;-\frac{13}{4},-\frac{7}{4};z\right)=$$
$$\frac{1}{12\,285}\left(e^{-2\sqrt{z}}\left(256\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(8z+30\sqrt{z}-15\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+256\,\sqrt{2\pi}\,\left(8z-30\sqrt{z}-15\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\left(14\,336\,z^3+3840\,z^2+4320\,z+12\,285\right)\right)\right)$$

07.22.03.6607.01

$${}_1F_2\left(2;-\frac{13}{4},-\frac{7}{4};-z\right)=\frac{1}{12\,285}\left(-14\,336\,z^3+1024\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+15)\cos\left(2\sqrt{z}\right)+30\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{11/4}+\right.$$
$$\left.1024\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+15)\sin\left(2\sqrt{z}\right)-30\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)z^{11/4}+3840\,z^2-4320\,z+12\,285\right)$$

07.22.03.6608.01

$${}_1F_2\left(2;-\frac{13}{4},-\frac{3}{4};z\right)=\frac{1}{1755}\left(e^{-2\sqrt{z}}\left(-32\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(16\,z^{3/2}+36z-66\sqrt{z}+33\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+\right.\right.$$
$$\left.\left.32\,\sqrt{2\pi}\,\left(16\,z^{3/2}-36z-66\sqrt{z}-33\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\left(-1024\,z^3+4608\,z^2+1440\,z+1755\right)\right)\right)$$

07.22.03.6609.01

$${}_1F_2\left(2;-\frac{13}{4},-\frac{3}{4};-z\right)=$$
$$\frac{1}{1755}\left(1024\,z^3+4608\,z^2-128\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((33-36z)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(8z+33)\sin\left(2\sqrt{z}\right)\right)z^{7/4}+\right.$$
$$\left.128\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(8z+33)\cos\left(2\sqrt{z}\right)+3\,(12z-11)\sin\left(2\sqrt{z}\right)\right)z^{7/4}-1440\,z+1755\right)$$

07.22.03.6610.01

$${}_1F_2\left(2;-\frac{13}{4},\frac{1}{4};z\right)=$$
$$\frac{1}{585}e^{-2\sqrt{z}}\left(15e^{2\sqrt{z}}\left(128z+39\right)+4e^{4\sqrt{z}}\sqrt{2\pi}\,z^{3/2}\left(32z^2+8z^{3/2}-144z+210\sqrt{z}-105\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.$$
$$\left.4\sqrt{2\pi}\,z^{3/2}\left(32z^2-8z^{3/2}-144z-210\sqrt{z}-105\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)$$

07.22.03.6611.01

$${}_1F_2\left(2;-\frac{13}{4},\frac{1}{4};-z\right)=$$
$$\frac{1}{585}\left(-1920z-16\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32z^2+144z-105\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(4z-105\right)\sin\left(2\sqrt{z}\right)\right)z^{3/2}-\right.$$
$$\left.16\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32z^2+144z-105\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(4z-105\right)\cos\left(2\sqrt{z}\right)\right)z^{3/2}+585\right)$$

07.22.03.6612.01

$${}_1F_2\left(2;-\frac{13}{4},\frac{5}{4};z\right)=$$
$$\frac{1}{1170\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(2e^{2\sqrt{z}}\sqrt[4]{z}\left(64z^2+48z-675\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(64z^{5/2}-144z^2+420z-630\sqrt{z}+315\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\pi}\left(-64z^{5/2}-144z^2+420z+630\sqrt{z}+315\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6613.01

$${}_1F_2\left(2;-\frac{13}{4},\frac{5}{4};-z\right)=$$
$$\frac{1}{585\sqrt[4]{z}}\left(\sqrt[4]{z}\left(64z^2-48z-675\right)-2\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(48z^2+140z-105\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(32z^2-315\right)\sin\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.2\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(32z^2-315\right)\cos\left(2\sqrt{z}\right)-3\left(48z^2+140z-105\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6614.01

$${}_1F_2\left(2;-\frac{13}{4},\frac{9}{4};z\right)=\frac{1}{1872z^{5/4}}\left(e^{-2\sqrt{z}}\right.$$
$$\left(-8e^{2\sqrt{z}}\sqrt[4]{z}\left(176z^2+774z+945\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(128z^3-672z^{5/2}+1680z^2-2520z^{3/2}+2520z-1890\sqrt{z}+945\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\left(128z^3+672z^{5/2}+1680z^2+2520z^{3/2}+2520z+1890\sqrt{z}+945\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6615.01

$$ {}_1F_2\left(2; -\frac{13}{4}, \frac{9}{4}; -z\right) = \frac{1}{468\, z^{5/4}} \left(2\sqrt[4]{z}\, \left(176\, z^2 - 774\, z + 945\right) + \right.$$

$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(128\, z^3 - 1680\, z^2 + 2520\, z - 945\right) \cos\left(2\sqrt{z}\right) - 42\sqrt{z}\, \left(16\, z^2 - 60\, z + 45\right) \sin\left(2\sqrt{z}\right) \right) + $$

$$ \left. \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(42\sqrt{z}\, \left(16\, z^2 - 60\, z + 45\right) \cos\left(2\sqrt{z}\right) + \left(128\, z^3 - 1680\, z^2 + 2520\, z - 945\right) \sin\left(2\sqrt{z}\right) \right) \right) $$

07.22.03.6616.01

$$ {}_1F_2\left(2; -\frac{13}{4}, \frac{13}{4}; z\right) = \frac{1}{1664\, z^{9/4}} \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(64\, z^3 + 2672\, z^2 + 18\,900\, z + 51\,975\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \right. \right. $$

$$ \left(256\, z^{7/2} - 2240\, z^3 + 10\,080\, z^{5/2} - 30\,240\, z^2 + 65\,520\, z^{3/2} - 102\,060\, z + 103\,950\sqrt{z} - 51\,975\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - $$

$$ \left. \left. \sqrt{2\pi}\, \left(256\, z^{7/2} + 2240\, z^3 + 10\,080\, z^{5/2} + 30\,240\, z^2 + 65\,520\, z^{3/2} + 102\,060\, z + 103\,950\sqrt{z} + 51\,975\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) \right) \right) $$

07.22.03.6617.01

$$ {}_1F_2\left(2; -\frac{13}{4}, \frac{13}{4}; -z\right) = \frac{1}{416\, z^{9/4}} \left(2\sqrt[4]{z}\, \left(-64\, z^3 + 2672\, z^2 - 18\,900\, z + 51\,975\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \right. $$

$$ \left(2\sqrt{z}\, \left(128\, z^3 - 5040\, z^2 + 32\,760\, z - 51\,975\right) \cos\left(2\sqrt{z}\right) - 35\left(64\, z^3 - 864\, z^2 + 2916\, z - 1485\right) \sin\left(2\sqrt{z}\right) \right) + \sqrt{\pi} $$

$$ \left. C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(35\left(64\, z^3 - 864\, z^2 + 2916\, z - 1485\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(128\, z^3 - 5040\, z^2 + 32\,760\, z - 51\,975\right) \sin\left(2\sqrt{z}\right) \right) \right) $$

07.22.03.6618.01

$$ {}_1F_2\left(2; -\frac{13}{4}, \frac{17}{4}; z\right) = $$

$$ \frac{1}{1024\, z^{13/4}} \left(e^{-2\sqrt{z}} \left(-8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(1664\, z^3 + 50\,400\, z^2 + 382\,536\, z + 1\,216\,215\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(512\, z^4 - 6528\, z^{7/2} + 43\,008\, z^3 - \right. \right. \right. $$

$$ \left. \left. 189\,504\, z^{5/2} + 604\,800\, z^2 - 1\,413\,720\, z^{3/2} + 2\,328\,480\, z - 2\,432\,430\sqrt{z} + 1\,216\,215\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \right. $$

$$ \left. \left. \sqrt{2\pi}\, \left(512\, z^4 + 6528\, z^{7/2} + 43\,008\, z^3 + 189\,504\, z^{5/2} + 604\,800\, z^2 + 1\,413\,720\, z^{3/2} + \right. \right. \right. $$

$$ \left. \left. \left. 2\,328\,480\, z + 2\,432\,430\sqrt{z} + 1\,216\,215\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) \right) \right) $$

07.22.03.6619.01

$$ {}_1F_2\left(2; -\frac{13}{4}, \frac{17}{4}; -z\right) = \frac{1}{256\, z^{13/4}} \left(2 \sqrt[4]{z}\, \left(-1664\, z^3 + 50\,400\, z^2 - 382\,536\, z + 1\,216\,215\right) - \right.$$
$$ \sqrt{\pi}\, C\left(\frac{2 \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(512\, z^4 - 43\,008\, z^3 + 604\,800\, z^2 - 2\,328\,480\, z + 1\,216\,215\right) \cos\left(2 \sqrt{z}\right) + \right.$$
$$ \left. 6 \sqrt{z}\, \left(-1088\, z^3 + 31\,584\, z^2 - 235\,620\, z + 405\,405\right) \sin\left(2 \sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, S\left(\frac{2 \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(6 \sqrt{z}\, \left(1088\, z^3 - 31\,584\, z^2 + 235\,620\, z - 405\,405\right) \cos\left(2 \sqrt{z}\right) + \right.$$
$$ \left. \left. \left(512\, z^4 - 43\,008\, z^3 + 604\,800\, z^2 - 2\,328\,480\, z + 1\,216\,215\right) \sin\left(2 \sqrt{z}\right)\right)\right) $$

07.22.03.6620.01

$$ {}_1F_2\left(2; -\frac{13}{4}, \frac{21}{4}; z\right) = $$
$$ \frac{1}{8192\, z^{17/4}} \left(17\, e^{-2 \sqrt{z}} \left(8\, e^{2 \sqrt{z}}\, \sqrt[4]{z}\, \left(256\, z^4 + 40\,320\, z^3 + 1\,082\,928\, z^2 + 8\,108\,100\, z + 26\,351\,325\right) + e^{4 \sqrt{z}}\, \sqrt{2\,\pi}\, \right.\right.$$
$$ \left(1024\, z^{9/2} - 17\,664\, z^4 + 156\,672\, z^{7/2} - 927\,360\, z^3 + 3\,991\,680\, z^{5/2} - 12\,806\,640\, z^2 + 30\,270\,240\, z^{3/2} - 50\,270\,220\, z + \right.$$
$$ \left. 52\,702\,650 \sqrt{z} - 26\,351\,325\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\,\pi}\, \left(1024\, z^{9/2} + 17\,664\, z^4 + 156\,672\, z^{7/2} + 927\,360\, z^3 + \right.$$
$$ \left. \left. 3\,991\,680\, z^{5/2} + 12\,806\,640\, z^2 + 30\,270\,240\, z^{3/2} + 50\,270\,220\, z + 52\,702\,650 \sqrt{z} + 26\,351\,325\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6621.01

$$ {}_1F_2\left(2; -\frac{13}{4}, \frac{21}{4}; -z\right) = $$
$$ -\frac{1}{2048\, z^{17/4}} \left(17 \left(-2 \sqrt[4]{z}\, \left(256\, z^4 - 40\,320\, z^3 + 1\,082\,928\, z^2 - 8\,108\,100\, z + 26\,351\,325\right) + \sqrt{\pi}\, C\left(\frac{2 \sqrt[4]{z}}{\sqrt{\pi}}\right) \right.\right.$$
$$ \left(3 \left(5888\, z^4 - 309\,120\, z^3 + 4\,268\,880\, z^2 - 16\,756\,740\, z + 8\,783\,775\right) \cos\left(2 \sqrt{z}\right) + \right.$$
$$ \left. 2 \sqrt{z}\, \left(512\, z^4 - 78\,336\, z^3 + 1\,995\,840\, z^2 - 15\,135\,120\, z + 26\,351\,325\right) \sin\left(2 \sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, S\left(\frac{2 \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2 \sqrt{z}\, \left(512\, z^4 - 78\,336\, z^3 + 1\,995\,840\, z^2 - 15\,135\,120\, z + 26\,351\,325\right) \cos\left(2 \sqrt{z}\right) - \right.$$
$$ \left. \left. \left. 3 \left(5888\, z^4 - 309\,120\, z^3 + 4\,268\,880\, z^2 - 16\,756\,740\, z + 8\,783\,775\right) \sin\left(2 \sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 2$, $b_1 = -\frac{11}{4}$

07.22.03.6622.01

$${}_1F_2\left(2;-\frac{11}{4},-\frac{9}{4};z\right)=$$
$$\frac{1}{10\,395}\left(e^{-2\sqrt{z}}\left(512\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(4\sqrt{z}+17\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}+512\,\sqrt{2\pi}\,\left(4\sqrt{z}-17\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\left(16\,384\,z^3+2304\,z^2+3360\,z+10\,395\right)\right)\right)$$

07.22.03.6623.01

$${}_1F_2\left(2;-\frac{11}{4},-\frac{9}{4};-z\right)=\frac{1}{10\,395}\left(2048\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\cos\left(2\sqrt{z}\right)+17\sin\left(2\sqrt{z}\right)\right)z^{13/4}+\right.$$
$$\left.2048\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\sin\left(2\sqrt{z}\right)-17\cos\left(2\sqrt{z}\right)\right)z^{13/4}-16\,384\,z^3+2304\,z^2-3360\,z+10\,395\right)$$

07.22.03.6624.01

$${}_1F_2\left(2;-\frac{11}{4},-\frac{5}{4};z\right)=$$
$$\frac{1}{1155}\left(e^{-2\sqrt{z}}\left(-64\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(8z+26\sqrt{z}-13\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}+64\,\sqrt{2\pi}\,\left(8z-26\sqrt{z}-13\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\left(-1024\,z^3+2304\,z^2+672\,z+1155\right)\right)\right)$$

07.22.03.6625.01

$${}_1F_2\left(2;-\frac{11}{4},-\frac{5}{4};-z\right)=\frac{1}{1155}\left(1024\,z^3+256\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+13)\cos\left(2\sqrt{z}\right)+26\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{9/4}-\right.$$
$$\left.256\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+13)\sin\left(2\sqrt{z}\right)-26\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)z^{9/4}+2304\,z^2-672\,z+1155\right)$$

07.22.03.6626.01

$${}_1F_2\left(2;-\frac{11}{4},-\frac{1}{4};z\right)=\frac{1}{231}\,e^{-2\sqrt{z}}\left(8\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(16\,z^{3/2}+28z-54\sqrt{z}+27\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+\right.$$
$$\left.8\,\sqrt{2\pi}\,\left(16\,z^{3/2}-28z-54\sqrt{z}-27\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+3\,e^{2\sqrt{z}}\left(128\,z^2+224\,z+77\right)\right)$$

07.22.03.6627.01

$${}_1F_2\left(2;-\frac{11}{4},-\frac{1}{4};-z\right)=\frac{1}{231}\left(384\,z^2-32\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((27-28z)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(8z+27)\sin\left(2\sqrt{z}\right)\right)z^{5/4}-\right.$$
$$\left.32\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(8z+27)\cos\left(2\sqrt{z}\right)+(28z-27)\sin\left(2\sqrt{z}\right)\right)z^{5/4}-672\,z+231\right)$$

07.22.03.6628.01

$${}_1F_2\left(2;-\frac{11}{4},\frac{3}{4};z\right)=$$
$$\frac{1}{231}\,e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\left(-64\,z^2+176\,z+231\right)-e^{4\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\,\left(32\,z^2-8\,z^{3/2}-96\,z+150\sqrt{z}-75\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.$$
$$\left.\sqrt{2\pi}\,\sqrt[4]{z}\,\left(32\,z^2+8\,z^{3/2}-96\,z-150\sqrt{z}-75\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)$$

07.22.03.6629.01

$$ {}_1F_2\left(2; -\frac{11}{4}, \frac{3}{4}; -z\right) = $$
$$ \frac{1}{231}\left(-64 z^2 - 176 z - 4\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32 z^2 + 96 z - 75\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\,(4 z + 75)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + \right. $$
$$ \left. 4\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(4 z + 75)\cos\left(2\sqrt{z}\right) + \left(32 z^2 + 96 z - 75\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + 231\right) $$

07.22.03.6630.01

$$ {}_1F_2\left(2; -\frac{11}{4}, \frac{7}{4}; z\right) = $$
$$ \frac{1}{616 z^{3/4}}\left(e^{-2\sqrt{z}}\left(8 e^{2\sqrt{z}}\, z^{3/4}(48 z + 7) - e^{4\sqrt{z}}\sqrt{2\pi}\left(64 z^{5/2} - 176 z^2 + 160 z^{3/2} + 60 z - 210\sqrt{z} + 105\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \right.\right. $$
$$ \left.\left. \sqrt{2\pi}\left(-64 z^{5/2} - 176 z^2 - 160 z^{3/2} + 60 z + 210\sqrt{z} + 105\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6631.01

$$ {}_1F_2\left(2; -\frac{11}{4}, \frac{7}{4}; -z\right) = $$
$$ \frac{1}{154 z^{3/4}}\left(2 z^{3/4}(7 - 48 z) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(32 z^2 - 80 z - 105\right)\cos\left(2\sqrt{z}\right) + \left(-176 z^2 - 60 z + 105\right)\sin\left(2\sqrt{z}\right)\right) - \right. $$
$$ \left. \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(176 z^2 + 60 z - 105\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(32 z^2 - 80 z - 105\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6632.01

$$ {}_1F_2\left(2; -\frac{11}{4}, \frac{11}{4}; z\right) = \frac{1}{704 z^{7/4}}\left(e^{-2\sqrt{z}}\right. $$
$$ \left(-16 e^{2\sqrt{z}}\, z^{3/4}\left(16 z^2 + 296 z + 945\right) - e^{4\sqrt{z}}\sqrt{2\pi}\left(128 z^3 - 736 z^{5/2} + 2160 z^2 - 4200 z^{3/2} + 5880 z - 5670\sqrt{z} + 2835\right)\right. $$
$$ \left.\left. \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\left(128 z^3 + 736 z^{5/2} + 2160 z^2 + 4200 z^{3/2} + 5880 z + 5670\sqrt{z} + 2835\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6633.01

$$ {}_1F_2\left(2; -\frac{11}{4}, \frac{11}{4}; -z\right) = \frac{1}{176 z^{7/4}}\left(4 z^{3/4}\left(16 z^2 - 296 z + 945\right) + \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128 z^3 - 2160 z^2 + 5880 z - 2835\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(368 z^2 - 2100 z + 2835\right)\sin\left(2\sqrt{z}\right)\right) - $$
$$ \left. \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(368 z^2 - 2100 z + 2835\right)\cos\left(2\sqrt{z}\right) + \left(128 z^3 - 2160 z^2 + 5880 z - 2835\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6634.01

$$ {}_1F_2\left(2; -\frac{11}{4}, \frac{15}{4}; z\right) = \frac{1}{512\, z^{11/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(304\, z^2 + 5040\, z + 24\,255\right) - e^{4\sqrt{z}}\, \sqrt{2\pi}\right.\right. $$
$$ \left(256\, z^{7/2} - 2368\, z^3 + 11\,424\, z^{5/2} - 36\,960\, z^2 + 85\,680\, z^{3/2} - 139\,860\, z + 145\,530\, \sqrt{z} - 72\,765\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - $$
$$ \left.\left.\sqrt{2\pi}\, \left(256\, z^{7/2} + 2368\, z^3 + 11\,424\, z^{5/2} + 36\,960\, z^2 + 85\,680\, z^{3/2} + 139\,860\, z + 145\,530\, \sqrt{z} + 72\,765\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6635.01

$$ {}_1F_2\left(2; -\frac{11}{4}, \frac{15}{4}; -z\right) = $$
$$ \frac{1}{128\, z^{11/4}} \left(4\, z^{3/4} \left(304\, z^2 - 5040\, z + 24\,255\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(128\, z^3 - 5712\, z^2 + 42\,840\, z - 72\,765\right) \cos\left(2\sqrt{z}\right) + \right.\right. $$
$$ \left.\left(-2368\, z^3 + 36\,960\, z^2 - 139\,860\, z + 72\,765\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left.\left(\left(2368\, z^3 - 36\,960\, z^2 + 139\,860\, z - 72\,765\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(128\, z^3 - 5712\, z^2 + 42\,840\, z - 72\,765\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6636.01

$$ {}_1F_2\left(2; -\frac{11}{4}, \frac{19}{4}; z\right) = $$
$$ -\frac{1}{4096\, z^{15/4}} \left(15\, e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(64\, z^3 + 6048\, z^2 + 93\,060\, z + 495\,495\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(512\, z^4 - 6784\, z^{7/2} + 46\,592\, z^3 - \right.\right.\right. $$
$$ \left.\left.213\,696\, z^{5/2} + 705\,600\, z^2 - 1\,690\,920\, z^{3/2} + 2\,827\,440\, z - 2\,972\,970\, \sqrt{z} + 1\,486\,485\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - $$
$$ \sqrt{2\pi}\, \left(512\, z^4 + 6784\, z^{7/2} + 46\,592\, z^3 + 213\,696\, z^{5/2} + 705\,600\, z^2 + 1\,690\,920\, z^{3/2} + \right. $$
$$ \left.\left.\left.2\,827\,440\, z + 2\,972\,970\, \sqrt{z} + 1\,486\,485\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6637.01

$$ {}_1F_2\left(2; -\frac{11}{4}, \frac{19}{4}; -z\right) = $$
$$ \frac{1}{1024\, z^{15/4}} \left(15 \left(-4\, z^{3/4} \left(64\, z^3 - 6048\, z^2 + 93\,060\, z - 495\,495\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(512\, z^4 - 46\,592\, z^3 + 705\,600\, z^2 - 2\,827\,440\, z + \right.\right.\right. $$
$$ \left.\left.1\,486\,485\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(-3392\, z^3 + 106\,848\, z^2 - 845\,460\, z + 1\,486\,485\right) \sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(3392\, z^3 - 106\,848\, z^2 + 845\,460\, z - 1\,486\,485\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left.\left(512\, z^4 - 46\,592\, z^3 + 705\,600\, z^2 - 2\,827\,440\, z + 1\,486\,485\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6638.01

$$ {}_1F_2\left(2; -\frac{11}{4}, \frac{23}{4}; z\right) = -\frac{1}{32\,768\, z^{19/4}} \left(285\, e^{-2\sqrt{z}} \left(-144\, e^{2\sqrt{z}}\, z^{3/4} \left(256 z^3 + 14\,880 z^2 + 211\,640 z + 1\,126\,125\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \left(1024 z^{9/2} - 18\,176 z^4 + 165\,888 z^{7/2} - 1\,008\,000 z^3 + 4\,435\,200 z^{5/2} - 14\,469\,840 z^2 + 34\,594\,560 z^{3/2} - 57\,837\,780 z + 60\,810\,750 \sqrt{z} - 30\,405\,375\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(1024 z^{9/2} + 18\,176 z^4 + 165\,888 z^{7/2} + 1\,008\,000 z^3 + 4\,435\,200 z^{5/2} + 14\,469\,840 z^2 + 34\,594\,560 z^{3/2} + 57\,837\,780 z + 60\,810\,750 \sqrt{z} + 30\,405\,375\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6639.01

$$ {}_1F_2\left(2; -\frac{11}{4}, \frac{23}{4}; -z\right) = -\frac{1}{8192\, z^{19/4}} \left(285 \left(36 z^{3/4} \left(256 z^3 - 14\,880 z^2 + 211\,640 z - 1\,126\,125\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(512 z^4 - 82\,944 z^3 + 2\,217\,600 z^2 - 17\,297\,280 z + 30\,405\,375\right) \cos\left(2\sqrt{z}\right) + \left(-18\,176 z^4 + 1\,008\,000 z^3 - 14\,469\,840 z^2 + 57\,837\,780 z - 30\,405\,375\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(18\,176 z^4 - 1\,008\,000 z^3 + 14\,469\,840 z^2 - 57\,837\,780 z + 30\,405\,375\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z} \left(512 z^4 - 82\,944 z^3 + 2\,217\,600 z^2 - 17\,297\,280 z + 30\,405\,375\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 2$, $b_1 = -\frac{9}{4}$

07.22.03.6640.01

$$ {}_1F_2\left(2; -\frac{9}{4}, -\frac{7}{4}; z\right) = \frac{1}{945} e^{-2\sqrt{z}} \left(-128\, e^{4\sqrt{z}}\, \sqrt{2\pi} \left(4\sqrt{z} + 15\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{11/4} + 128\sqrt{2\pi} \left(4\sqrt{z} - 15\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{11/4} + e^{2\sqrt{z}} \left(-1024 z^3 + 768 z^2 + 480 z + 945\right)\right) $$

07.22.03.6641.01

$$ {}_1F_2\left(2; -\frac{9}{4}, -\frac{7}{4}; -z\right) = \frac{1}{945} \left(1024 z^3 + 512 \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(4\sqrt{z} \cos\left(2\sqrt{z}\right) + 15 \sin\left(2\sqrt{z}\right)\right) z^{11/4} - 512\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(4\sqrt{z} \sin\left(2\sqrt{z}\right) - 15\cos\left(2\sqrt{z}\right)\right) z^{11/4} + 768 z^2 - 480 z + 945\right) $$

07.22.03.6642.01

$$ {}_1F_2\left(2; -\frac{9}{4}, -\frac{3}{4}; z\right) = \frac{1}{135} e^{-2\sqrt{z}} \left(16\, e^{4\sqrt{z}}\, \sqrt{2\pi} \left(8z + 22\sqrt{z} - 11\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{7/4} + 16\sqrt{2\pi} \left(8z - 22\sqrt{z} - 11\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{7/4} + 5\, e^{2\sqrt{z}} \left(128 z^2 + 32 z + 27\right)\right) $$

07.22.03.6643.01

$$ {}_1F_2\left(2; -\frac{9}{4}, -\frac{3}{4}; -z\right) = \frac{1}{135}\left(-64\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+11)\cos\left(2\sqrt{z}\right)+22\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{7/4} - 64\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+11)\sin\left(2\sqrt{z}\right)-22\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)z^{7/4}+5\left(128z^2-32z+27\right)\right) $$

07.22.03.6644.01

$$ {}_1F_2\left(2; -\frac{9}{4}, \frac{1}{4}; z\right) = \frac{1}{45}e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\left(-64z^2+176z+45\right)-2e^{4\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(16z^{3/2}+20z-42\sqrt{z}+21\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+2\sqrt{2\pi}\, z^{3/4}\left(16z^{3/2}-20z-42\sqrt{z}-21\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right) $$

07.22.03.6645.01

$$ {}_1F_2\left(2; -\frac{9}{4}, \frac{1}{4}; -z\right) = \frac{1}{45}\left(-64z^2-176z+8\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((21-20z)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(8z+21)\sin\left(2\sqrt{z}\right)\right)z^{3/4} - 8\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(8z+21)\cos\left(2\sqrt{z}\right)+(20z-21)\sin\left(2\sqrt{z}\right)\right)z^{3/4}+45\right) $$

07.22.03.6646.01

$$ {}_1F_2\left(2; -\frac{9}{4}, \frac{5}{4}; z\right) = \frac{1}{180\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(4e^{2\sqrt{z}}\sqrt[4]{z}\,(16z-45)-e^{4\sqrt{z}}\sqrt{2\pi}\left(32z^2-24z^{3/2}-48z+90\sqrt{z}-45\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\left(-32z^2-24z^{3/2}+48z+90\sqrt{z}+45\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6647.01

$$ {}_1F_2\left(2; -\frac{9}{4}, \frac{5}{4}; -z\right) = \frac{1}{45\sqrt[4]{z}}\left(-\sqrt[4]{z}\,(16z+45)-\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32z^2+48z-45\right)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\,(4z+15)\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\,(4z+15)\cos\left(2\sqrt{z}\right)+\left(32z^2+48z-45\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6648.01

$$ {}_1F_2\left(2; -\frac{9}{4}, \frac{9}{4}; z\right) = \frac{1}{288z^{5/4}}\left(e^{-2\sqrt{z}}\left(-8e^{2\sqrt{z}}\sqrt[4]{z}\left(16z^2+96z+105\right)-e^{4\sqrt{z}}\sqrt{2\pi}\left(64z^{5/2}-208z^2+320z^{3/2}-300z+210\sqrt{z}-105\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\left(64z^{5/2}+208z^2+320z^{3/2}+300z+210\sqrt{z}+105\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6649.01

$$ {}_1F_2\left(2; -\frac{9}{4}, \frac{9}{4}; -z\right) = \frac{1}{72\, z^{5/4}} $$
$$ \left(2\sqrt[4]{z}\,\left(16\,z^2 - 96\,z + 105\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(32\,z^2 - 160\,z + 105\right)\cos\left(2\sqrt{z}\right) + \left(-208\,z^2 + 300\,z - 105\right)\sin\left(2\sqrt{z}\right)\right) - \right. $$
$$ \left. \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(208\,z^2 - 300\,z + 105\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(32\,z^2 - 160\,z + 105\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6650.01

$$ {}_1F_2\left(2; -\frac{9}{4}, \frac{13}{4}; z\right) = \frac{1}{256\, z^{9/4}}\left(e^{-2\sqrt{z}}\left(8\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(208\,z^2 + 1680\,z + 4725\right) - \right.\right. $$
$$ e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(128\,z^3 - 800\,z^{5/2} + 2640\,z^2 - 5880\,z^{3/2} + 9240\,z - 9450\sqrt{z} + 4725\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$
$$ \left.\left.\sqrt{2\pi}\,\left(128\,z^3 + 800\,z^{5/2} + 2640\,z^2 + 5880\,z^{3/2} + 9240\,z + 9450\sqrt{z} + 4725\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6651.01

$$ {}_1F_2\left(2; -\frac{9}{4}, \frac{13}{4}; -z\right) = \frac{1}{64\, z^{9/4}}\left(2\sqrt[4]{z}\,\left(208\,z^2 - 1680\,z + 4725\right) + \right. $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^3 - 2640\,z^2 + 9240\,z - 4725\right)\cos\left(2\sqrt{z}\right) - 10\sqrt{z}\,\left(80\,z^2 - 588\,z + 945\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \left. \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\,\left(80\,z^2 - 588\,z + 945\right)\cos\left(2\sqrt{z}\right) + \left(128\,z^3 - 2640\,z^2 + 9240\,z - 4725\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6652.01

$$ {}_1F_2\left(2; -\frac{9}{4}, \frac{17}{4}; z\right) = $$
$$ -\frac{1}{2048\, z^{13/4}}\left(13\, e^{-2\sqrt{z}}\left(8\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(64\,z^3 + 3360\,z^2 + 27\,972\,z + 93\,555\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^{7/2} - 2496\,z^3 + \right.\right. $$
$$ \left. 12\,768\,z^{5/2} - 43\,680\,z^2 + 105\,840\,z^{3/2} - 177\,660\,z + 187\,110\sqrt{z} - 93\,555\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - \sqrt{2\pi} $$
$$ \left.\left.\left(256\,z^{7/2} + 2496\,z^3 + 12\,768\,z^{5/2} + 43\,680\,z^2 + 105\,840\,z^{3/2} + 177\,660\,z + 187\,110\sqrt{z} + 93\,555\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6653.01

$$ {}_1F_2\left(2; -\frac{9}{4}, \frac{17}{4}; -z\right) = $$
$$ \frac{1}{512\, z^{13/4}}\left(13\left(2\sqrt[4]{z}\,\left(-64\,z^3 + 3360\,z^2 - 27\,972\,z + 93\,555\right) - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(128\,z^3 - 6384\,z^2 + 52\,920\,z - 93\,555\right)\right.\right.\right. $$
$$ \left.\cos\left(2\sqrt{z}\right) + 3\left(-832\,z^3 + 14\,560\,z^2 - 59\,220\,z + 31\,185\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left.\left.\left.\left(3\left(832\,z^3 - 14\,560\,z^2 + 59\,220\,z - 31\,185\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(128\,z^3 - 6384\,z^2 + 52\,920\,z - 93\,555\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6654.01

$$ {}_1F_2\left(2; -\frac{9}{4}, \frac{21}{4}; z\right) = -\frac{1}{16\,384\, z^{17/4}} \left(221\, e^{-2\sqrt{z}} \left(-56\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(256 z^3 + 9248 z^2 + 73\,656 z + 250\,965\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(512 z^4 - 7040 z^{7/2} + 50\,176 z^3 - 237\,888 z^{5/2} + 806\,400 z^2 - 1\,968\,120 z^{3/2} + 3\,326\,400 z - 3\,513\,510 \sqrt{z} + 1\,756\,755\right) \right.\right. $$
$$ \left.\left. \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(512 z^4 + 7040 z^{7/2} + 50\,176 z^3 + 237\,888 z^{5/2} + 806\,400 z^2 + 1\,968\,120 z^{3/2} + 3\,326\,400 z + 3\,513\,510 \sqrt{z} + 1\,756\,755\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6655.01

$$ {}_1F_2\left(2; -\frac{9}{4}, \frac{21}{4}; -z\right) = -\frac{1}{4096\, z^{17/4}} \left(221 \left(14\, \sqrt[4]{z}\, \left(256 z^3 - 9248 z^2 + 73\,656 z - 250\,965\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(512 z^4 - 50\,176 z^3 + 806\,400 z^2 - 3\,326\,400 z + 1\,756\,755\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(-3520 z^3 + 118\,944 z^2 - 984\,060 z + 1\,756\,755\right) \sin\left(2\sqrt{z}\right)\right) + \right.\right. $$
$$ \left.\left. \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(3520 z^3 - 118\,944 z^2 + 984\,060 z - 1\,756\,755\right) \cos\left(2\sqrt{z}\right) + \left(512 z^4 - 50\,176 z^3 + 806\,400 z^2 - 3\,326\,400 z + 1\,756\,755\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 2$, $b_1 = -\frac{7}{4}$

07.22.03.6656.01

$$ {}_1F_2\left(2; -\frac{7}{4}, -\frac{5}{4}; z\right) = \frac{1}{105} e^{-2\sqrt{z}} \left(32\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(4\sqrt{z} + 13\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{9/4} + 32\sqrt{2\pi}\, \left(4\sqrt{z} - 13\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{9/4} + 3\, e^{2\sqrt{z}}\, \left(256 z^2 + 32 z + 35\right)\right) $$

07.22.03.6657.01

$$ {}_1F_2\left(2; -\frac{7}{4}, -\frac{5}{4}; -z\right) = \frac{1}{105} \left(-128\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(4\sqrt{z}\, \cos\left(2\sqrt{z}\right) + 13 \sin\left(2\sqrt{z}\right)\right) z^{9/4} - 128\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(4\sqrt{z}\, \sin\left(2\sqrt{z}\right) - 13\cos\left(2\sqrt{z}\right)\right) z^{9/4} + 768 z^2 - 96 z + 105\right) $$

07.22.03.6658.01

$$ {}_1F_2\left(2; -\frac{7}{4}, -\frac{1}{4}; z\right) = \frac{1}{21} e^{-2\sqrt{z}} \left(-4\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(8z + 18\sqrt{z} - 9\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{5/4} + 4\sqrt{2\pi}\, \left(8z - 18\sqrt{z} - 9\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{5/4} + e^{2\sqrt{z}}\, \left(-64 z^2 + 96 z + 21\right)\right) $$

07.22.03.6659.01

$$ {}_1F_2\left(2; -\frac{7}{4}, -\frac{1}{4}; -z\right) = \frac{1}{21}\left(-64 z^2 - 16\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+9)\cos\left(2\sqrt{z}\right) + 18\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right) z^{5/4} + \right.$$
$$ \left. 16\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+9)\sin\left(2\sqrt{z}\right) - 18\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right) z^{5/4} - 96z + 21\right) $$

07.22.03.6660.01

$$ {}_1F_2\left(2; -\frac{7}{4}, \frac{3}{4}; z\right) = \frac{1}{42} e^{-2\sqrt{z}}\left(2 e^{2\sqrt{z}}\,(8z+21) + \right.$$
$$ \left. e^{4\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\,\left(16 z^{3/2} + 12 z - 30\sqrt{z} + 15\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\sqrt[4]{z}\,\left(16 z^{3/2} - 12 z - 30\sqrt{z} - 15\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right) $$

07.22.03.6661.01

$$ {}_1F_2\left(2; -\frac{7}{4}, \frac{3}{4}; -z\right) = \frac{1}{21}\left(-8z + 2\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(8z+15)\cos\left(2\sqrt{z}\right) + 3(4z-5)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + \right.$$
$$ \left. 2\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(8z+15)\sin\left(2\sqrt{z}\right) - 3(4z-5)\cos\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + 21\right) $$

07.22.03.6662.01

$$ {}_1F_2\left(2; -\frac{7}{4}, \frac{7}{4}; z\right) = \frac{1}{112 z^{3/4}}\left(e^{-2\sqrt{z}}\left(32 e^{2\sqrt{z}}\, z^{3/4}(2z+1) + \right.\right.$$
$$ \left.\left. e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(32 z^2 - 40 z^{3/2} + 30\sqrt{z} - 15\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\left(-32 z^2 - 40 z^{3/2} + 30\sqrt{z} + 15\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6663.01

$$ {}_1F_2\left(2; -\frac{7}{4}, \frac{7}{4}; -z\right) = \frac{1}{28 z^{3/4}}\left(8 z^{3/4}(1-2z) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32 z^2 - 15\right)\cos\left(2\sqrt{z}\right) - 10\sqrt{z}\,(4z+3)\sin\left(2\sqrt{z}\right)\right) + \right.$$
$$ \left. \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\,(4z+3)\cos\left(2\sqrt{z}\right) + \left(32 z^2 - 15\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6664.01

$$ {}_1F_2\left(2; -\frac{7}{4}, \frac{11}{4}; z\right) = \frac{1}{128 z^{7/4}} $$
$$ \left(e^{-2\sqrt{z}}\left(-16 e^{2\sqrt{z}}\, z^{3/4}(32z+105) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(64 z^{5/2} - 240 z^2 + 480 z^{3/2} - 660 z + 630\sqrt{z} - 315\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \right.\right.$$
$$ \left.\left. \sqrt{2\pi}\,\left(64 z^{5/2} + 240 z^2 + 480 z^{3/2} + 660 z + 630\sqrt{z} + 315\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6665.01

$$ {}_1F_2\left(2; -\frac{7}{4}, \frac{11}{4}; -z\right) = $$
$$ \frac{1}{32 z^{7/4}}\left(4 z^{3/4}(105 - 32z) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(32 z^2 - 240 z + 315\right)\cos\left(2\sqrt{z}\right) - 15\left(16 z^2 - 44 z + 21\right)\sin\left(2\sqrt{z}\right)\right) - \right.$$
$$ \left. \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(16 z^2 - 44 z + 21\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(32 z^2 - 240 z + 315\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6666.01

$$ {}_1F_2\left(2;-\frac{7}{4},\frac{15}{4};z\right)=\frac{1}{1024\,z^{11/4}}\left(11\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(16\,z^2+420\,z+2205\right)+\right.\right.$$
$$ e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(128\,z^3-864\,z^{5/2}+3120\,z^2-7560\,z^{3/2}+12\,600\,z-13\,230\,\sqrt{z}+6615\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)- $$
$$ \left.\left.\sqrt{2\,\pi}\,\left(128\,z^3+864\,z^{5/2}+3120\,z^2+7560\,z^{3/2}+12\,600\,z+13\,230\,\sqrt{z}+6615\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6667.01

$$ {}_1F_2\left(2;-\frac{7}{4},\frac{15}{4};-z\right)=-\frac{1}{256\,z^{11/4}}\left(11\left(-4\,z^{3/4}\left(16\,z^2-420\,z+2205\right)-\right.\right.$$
$$ \sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^3-3120\,z^2+12\,600\,z-6615\right)\cos\left(2\sqrt{z}\right)-54\sqrt{z}\,\left(16\,z^2-140\,z+245\right)\sin\left(2\sqrt{z}\right)\right)+ $$
$$ \left.\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(54\sqrt{z}\,\left(16\,z^2-140\,z+245\right)\cos\left(2\sqrt{z}\right)+\left(128\,z^3-3120\,z^2+12\,600\,z-6615\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6668.01

$$ {}_1F_2\left(2;-\frac{7}{4},\frac{19}{4};z\right)= $$
$$ \frac{1}{8192\,z^{15/4}}\left(165\,e^{-2\sqrt{z}}\left(-48\,e^{2\sqrt{z}}\,z^{3/4}\left(112\,z^2+2160\,z+12\,705\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(256\,z^{7/2}-2624\,z^3+14\,112\,z^{5/2}-\right.\right.\right. $$
$$ \left.\left.\left.50\,400\,z^2+126\,000\,z^{3/2}-215\,460\,z+228\,690\,\sqrt{z}-114\,345\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\right.\right. $$
$$ \left.\left.\left(256\,z^{7/2}+2624\,z^3+14\,112\,z^{5/2}+50\,400\,z^2+126\,000\,z^{3/2}+215\,460\,z+228\,690\,\sqrt{z}+114\,345\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6669.01

$$ {}_1F_2\left(2;-\frac{7}{4},\frac{19}{4};-z\right)=\frac{1}{2048\,z^{15/4}} $$
$$ \left(165\left(12\,z^{3/4}\left(112\,z^2-2160\,z+12\,705\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(128\,z^3-7056\,z^2+63\,000\,z-114\,345\right)\cos\left(2\sqrt{z}\right)+\right.\right. $$
$$ \left.\left(-2624\,z^3+50\,400\,z^2-215\,460\,z+114\,345\right)\sin\left(2\sqrt{z}\right)\right)+ $$
$$ \sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2624\,z^3-50\,400\,z^2+215\,460\,z-114\,345\right)\cos\left(2\sqrt{z}\right)+\right. $$
$$ \left.\left.\left.2\sqrt{z}\,\left(128\,z^3-7056\,z^2+63\,000\,z-114\,345\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6670.01

$$ {}_1F_2\left(2;-\frac{7}{4},\frac{23}{4};z\right)=\frac{1}{65\,536\,z^{19/4}} $$
$$ \left(3135\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(64\,z^3+7200\,z^2+116\,820\,z+675\,675\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(512\,z^4-7296\,z^{7/2}+53\,760\,z^3-\right.\right.\right. $$
$$ \left.\left.\left.262\,080\,z^{5/2}+907\,200\,z^2-2\,245\,320\,z^{3/2}+3\,825\,360\,z-4\,054\,050\,\sqrt{z}+2\,027\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\right. $$
$$ \left.\left.\sqrt{2\,\pi}\,\left(512\,z^4+7296\,z^{7/2}+53\,760\,z^3+262\,080\,z^{5/2}+907\,200\,z^2+2\,245\,320\,z^{3/2}+\right.\right.\right. $$
$$ \left.\left.\left.3\,825\,360\,z+4\,054\,050\,\sqrt{z}+2\,027\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6671.01

$${}_1F_2\left(2;-\frac{7}{4},\frac{23}{4};-z\right)=$$
$$\frac{1}{16\,384\,z^{19/4}}\left(3135\left(4\,z^{3/4}\left(-64\,z^3+7200\,z^2-116\,820\,z+675\,675\right)-\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512\,z^4-53\,760\,z^3+907\,200\,z^2-\right.\right.\right.$$
$$\left.\left.\left.3\,825\,360\,z+2\,027\,025\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\left(-1216\,z^3+43\,680\,z^2-374\,220\,z+675\,675\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\left(1216\,z^3-43\,680\,z^2+374\,220\,z-675\,675\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(512\,z^4-53\,760\,z^3+907\,200\,z^2-3\,825\,360\,z+2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = -\frac{5}{4}$

07.22.03.6672.01

$${}_1F_2\left(2;-\frac{5}{4},-\frac{3}{4};z\right)=\frac{1}{15}\,e^{-2\sqrt{z}}$$
$$\left(-8\,e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(4\sqrt{z}+11\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+8\sqrt{2\,\pi}\,\left(4\sqrt{z}-11\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\left(-64\,z^2+32\,z+15\right)\right)$$

07.22.03.6673.01

$${}_1F_2\left(2;-\frac{5}{4},-\frac{3}{4};-z\right)=\frac{1}{15}\left(-64\,z^2-32\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\cos\left(2\sqrt{z}\right)+11\sin\left(2\sqrt{z}\right)\right)z^{7/4}+\right.$$
$$\left.32\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\sin\left(2\sqrt{z}\right)-11\cos\left(2\sqrt{z}\right)\right)z^{7/4}-32\,z+15\right)$$

07.22.03.6674.01

$${}_1F_2\left(2;-\frac{5}{4},\frac{1}{4};z\right)=$$
$$\frac{1}{5}\,e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\,(24\,z+5)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\;z^{3/4}\left(8\,z+14\sqrt{z}-7\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\;z^{3/4}\left(8\,z-14\sqrt{z}-7\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)$$

07.22.03.6675.01

$${}_1F_2\left(2;-\frac{5}{4},\frac{1}{4};-z\right)=\frac{1}{5}\left(-24\,z+4\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8\,z+7)\cos\left(2\sqrt{z}\right)+14\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{3/4}+\right.$$
$$\left.4\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8\,z+7)\sin\left(2\sqrt{z}\right)-14\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)z^{3/4}+5\right)$$

07.22.03.6676.01

$${}_1F_2\left(2;-\frac{5}{4},\frac{5}{4};z\right)=\frac{1}{40\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(32\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,(z-1)+\right.\right.$$
$$\left.\left.e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(16\,z^{3/2}+4\,z-18\sqrt{z}+9\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(-16\,z^{3/2}+4\,z+18\sqrt{z}+9\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6677.01

$${}_1F_2\left(2;-\frac{5}{4},\frac{5}{4};-z\right)=\frac{1}{10\sqrt[4]{z}}\left(-8\sqrt[4]{z}\,(z+1)-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(8z+9)\cos\left(2\sqrt{z}\right)+(4z-9)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((9-4z)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(8z+9)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6678.01

$${}_1F_2\left(2;-\frac{5}{4},\frac{9}{4};z\right)=\frac{1}{64z^{5/4}}\left(e^{-2\sqrt{z}}\left(-8e^{2\sqrt{z}}\sqrt[4]{z}\,(16z+15)+e^{4\sqrt{z}}\sqrt{2\pi}\left(32z^2-56z^{3/2}+48z-30\sqrt{z}+15\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(32z^2+56z^{3/2}+48z+30\sqrt{z}+15\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6679.01

$${}_1F_2\left(2;-\frac{5}{4},\frac{9}{4};-z\right)=\frac{1}{16z^{5/4}}\left(2\sqrt[4]{z}\,(15-16z)-\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32z^2-48z+15\right)\cos\left(2\sqrt{z}\right)+2(15-28z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(28z-15)\cos\left(2\sqrt{z}\right)+\left(32z^2-48z+15\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6680.01

$${}_1F_2\left(2;-\frac{5}{4},\frac{13}{4};z\right)=\frac{1}{512z^{9/4}}\left(9e^{-2\sqrt{z}}\left(8e^{2\sqrt{z}}\sqrt[4]{z}\left(16z^2+180z+525\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(64z^{5/2}-272z^2+640z^{3/2}-1020z+1050\sqrt{z}-525\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\sqrt{2\pi}\left(64z^{5/2}+272z^2+640z^{3/2}+1020z+1050\sqrt{z}+525\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6681.01

$${}_1F_2\left(2;-\frac{5}{4},\frac{13}{4};-z\right)=-\frac{1}{128z^{9/4}}\left(9\left(-2\sqrt[4]{z}\left(16z^2-180z+525\right)-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(32z^2-320z+525\right)\cos\left(2\sqrt{z}\right)+\left(-272z^2+1020z-525\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(272z^2-1020z+525\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(32z^2-320z+525\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6682.01

$${}_1F_2\left(2;-\frac{5}{4},\frac{17}{4};z\right)=\frac{1}{4096z^{13/4}}\left(117e^{-2\sqrt{z}}\left(-24e^{2\sqrt{z}}\sqrt[4]{z}\left(80z^2+784z+2835\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(128z^3-928z^{5/2}+3600z^2-9240z^{3/2}+15960z-17010\sqrt{z}+8505\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(128z^3+928z^{5/2}+3600z^2+9240z^{3/2}+15960z+17010\sqrt{z}+8505\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6683.01

$${}_1F_2\left(2;-\frac{5}{4},\frac{17}{4};-z\right)=\frac{1}{1024\,z^{13/4}}\left(117\left(6\sqrt[4]{z}\,\left(80\,z^2-784\,z+2835\right)+\right.\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^3-3600\,z^2+15\,960\,z-8505\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(464\,z^2-4620\,z+8505\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(464\,z^2-4620\,z+8505\right)\cos\left(2\sqrt{z}\right)+\left(128\,z^3-3600\,z^2+15\,960\,z-8505\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6684.01

$${}_1F_2\left(2;-\frac{5}{4},\frac{21}{4};z\right)=$$
$$\frac{1}{32\,768\,z^{17/4}}\left(1989\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(64\,z^3+4256\,z^2+37\,044\,z+135\,135\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(256\,z^{7/2}-2752\,z^3+\right.\right.\right.$$
$$\left.\left.15\,456\,z^{5/2}-57\,120\,z^2+146\,160\,z^{3/2}-253\,260\,z+270\,270\,\sqrt{z}-135\,135\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\sqrt{2\,\pi}$$
$$\left.\left.\left(256\,z^{7/2}+2752\,z^3+15\,456\,z^{5/2}+57\,120\,z^2+146\,160\,z^{3/2}+253\,260\,z+270\,270\,\sqrt{z}+135\,135\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6685.01

$${}_1F_2\left(2;-\frac{5}{4},\frac{21}{4};-z\right)=\frac{1}{8192\,z^{17/4}}$$
$$\left(1989\left(2\sqrt[4]{z}\,\left(-64\,z^3+4256\,z^2-37\,044\,z+135\,135\right)-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(128\,z^3-7728\,z^2+73\,080\,z-135\,135\right)\right.\right.\right.$$
$$\left.\cos\left(2\sqrt{z}\right)+\left(-2752\,z^3+57\,120\,z^2-253\,260\,z+135\,135\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2752\,z^3-57\,120\,z^2+253\,260\,z-135\,135\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.2\sqrt{z}\,\left(128\,z^3-7728\,z^2+73\,080\,z-135\,135\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = -\frac{3}{4}$

07.22.03.6686.01

$${}_1F_2\left(2;-\frac{3}{4},-\frac{1}{4};z\right)=$$
$$\frac{1}{3}\,e^{-2\sqrt{z}}\left(2\,e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(4\sqrt{z}+9\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+2\sqrt{2\,\pi}\,\left(4\sqrt{z}-9\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\,\left(32\,z+3\right)\right)$$

07.22.03.6687.01

$${}_1F_2\left(2;-\frac{3}{4},-\frac{1}{4};-z\right)=$$
$$\frac{1}{3}\left(8\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\cos\left(2\sqrt{z}\right)+9\sin\left(2\sqrt{z}\right)\right)z^{5/4}+8\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\sin\left(2\sqrt{z}\right)-9\cos\left(2\sqrt{z}\right)\right)z^{5/4}-32\,z+3\right)$$

07.22.03.6688.01

$$ {}_1F_2\left(2; -\frac{3}{4}, \frac{3}{4}; z\right) = \frac{1}{12} e^{-2\sqrt{z}} \left(-4 e^{2\sqrt{z}} (4z-3) - e^{4\sqrt{z}} \sqrt{2\pi}\, \sqrt[4]{z} \left(8z + 10\sqrt{z} - 5\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \sqrt[4]{z} \left(8z - 10\sqrt{z} - 5\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right) $$

07.22.03.6689.01

$$ {}_1F_2\left(2; -\frac{3}{4}, \frac{3}{4}; -z\right) = \frac{1}{3}\left(4z + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+5)\cos\left(2\sqrt{z}\right) + 10\sqrt{z}\, \sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+5)\sin\left(2\sqrt{z}\right) - 10\sqrt{z}\, \cos\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + 3\right) $$

07.22.03.6690.01

$$ {}_1F_2\left(2; -\frac{3}{4}, \frac{7}{4}; z\right) = \frac{1}{32 z^{3/4}}\left(e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\sqrt{2\pi}\left(16z^{3/2} - 4z - 6\sqrt{z} + 3\right)\operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\left(-16z^{3/2} - 4z + 6\sqrt{z} + 3\right)\operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) + 16 e^{2\sqrt{z}} z^{3/4}\right)\right) $$

07.22.03.6691.01

$$ {}_1F_2\left(2; -\frac{3}{4}, \frac{7}{4}; -z\right) = \frac{1}{8 z^{3/4}}\left(\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\, (8z+3)\cos\left(2\sqrt{z}\right) - (4z+3)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4z+3)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, (8z+3)\sin\left(2\sqrt{z}\right)\right) + 4 z^{3/4}\right) $$

07.22.03.6692.01

$$ {}_1F_2\left(2; -\frac{3}{4}, \frac{11}{4}; z\right) = -\frac{1}{256 z^{7/4}}\left(7 e^{-2\sqrt{z}}\left(16 e^{2\sqrt{z}} z^{3/4}(4z+15) + e^{4\sqrt{z}}\sqrt{2\pi}\left(32z^2 - 72z^{3/2} + 96z - 90\sqrt{z} + 45\right)\operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi}\left(32z^2 + 72z^{3/2} + 96z + 90\sqrt{z} + 45\right)\operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6693.01

$$ {}_1F_2\left(2; -\frac{3}{4}, \frac{11}{4}; -z\right) = \frac{1}{64 z^{7/4}}\left(7\left(4 z^{3/4}(15 - 4z) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32z^2 - 96z + 45\right)\cos\left(2\sqrt{z}\right) + 18(5 - 4z)\sqrt{z}\, \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(18\sqrt{z}\, (4z-5)\cos\left(2\sqrt{z}\right) + \left(32z^2 - 96z + 45\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6694.01

$$ {}_1F_2\left(2; -\frac{3}{4}, \frac{15}{4}; z\right) = -\frac{1}{2048 z^{11/4}}\left(77 e^{-2\sqrt{z}}\left(-80 e^{2\sqrt{z}} z^{3/4}(8z+49) + e^{4\sqrt{z}}\sqrt{2\pi}\left(64z^{5/2} - 304z^2 + 800z^{3/2} - 1380z + 1470\sqrt{z} - 735\right)\operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\left(64z^{5/2} + 304z^2 + 800z^{3/2} + 1380z + 1470\sqrt{z} + 735\right)\operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6695.01

$$ {}_1F_2\left(2;-\frac{3}{4},\frac{15}{4};-z\right)=-\frac{1}{512\,z^{11/4}}\left(77\left(20\,z^{3/4}\,(8\,z-49)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\left(32\,z^2-400\,z+735\right)\cos\left(2\sqrt{z}\right)+\left(-304\,z^2+1380\,z-735\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(304\,z^2-1380\,z+735\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;\left(32\,z^2-400\,z+735\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6696.01

$$ {}_1F_2\left(2;-\frac{3}{4},\frac{19}{4};z\right)=-\frac{1}{16\,384\,z^{15/4}}\left(1155\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\;z^{3/4}\left(16\,z^2+500\,z+3465\right)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(128\,z^3-992\,z^{5/2}+4080\,z^2-10\,920\,z^{3/2}+19\,320\,z-20\,790\sqrt{z}\;+10\,395\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\sqrt{2\,\pi}\;\left(128\,z^3+992\,z^{5/2}+4080\,z^2+10\,920\,z^{3/2}+19\,320\,z+20\,790\sqrt{z}\;+10\,395\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6697.01

$$ {}_1F_2\left(2;-\frac{3}{4},\frac{19}{4};-z\right)=-\frac{1}{4096\,z^{15/4}}\left(1155\left(-4\,z^{3/4}\left(16\,z^2-500\,z+3465\right)-\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^3-4080\,z^2+19\,320\,z-10\,395\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\;\left(496\,z^2-5460\,z+10\,395\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\left(496\,z^2-5460\,z+10\,395\right)\cos\left(2\sqrt{z}\right)+\left(128\,z^3-4080\,z^2+19\,320\,z-10\,395\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6698.01

$$ {}_1F_2\left(2;-\frac{3}{4},\frac{23}{4};z\right)=-\frac{1}{131\,072\,z^{19/4}}\left(21\,945\,e^{-2\sqrt{z}}\left(-80\,e^{2\sqrt{z}}\;z^{3/4}\left(80\,z^2+1584\,z+10\,395\right)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(256\,z^{7/2}-2880\,z^3+16\,800\,z^{5/2}-63\,840\,z^2+166\,320\,z^{3/2}-291\,060\,z+311\,850\sqrt{z}\;-155\,925\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+\sqrt{2\,\pi}\;\left(256\,z^{7/2}+2880\,z^3+16\,800\,z^{5/2}+63\,840\,z^2+166\,320\,z^{3/2}+291\,060\,z+311\,850\sqrt{z}\;+155\,925\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6699.01

$$ {}_1F_2\left(2;-\frac{3}{4},\frac{23}{4};-z\right)=\frac{1}{32\,768\,z^{19/4}}\left(21\,945\left(20\,z^{3/4}\left(80\,z^2-1584\,z+10\,395\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\left(128\,z^3-8400\,z^2+83\,160\,z-155\,925\right)\cos\left(2\sqrt{z}\right)+15\left(-192\,z^3+4256\,z^2-19\,404\,z+10\,395\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(192\,z^3-4256\,z^2+19\,404\,z-10\,395\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;\left(128\,z^3-8400\,z^2+83\,160\,z-155\,925\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 2$, $b_1 = -\frac{1}{4}$

07.22.03.6700.01

$$ {}_1F_2\left(2; -\frac{1}{4}, \frac{1}{4}; z\right) = \frac{1}{2} e^{-2\sqrt{z}} \left(-2 e^{2\sqrt{z}} (4z-1) - e^{4\sqrt{z}} \sqrt{2\pi} \left(4\sqrt{z}+7\right) z^{3/4} \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi} \left(4\sqrt{z}-7\right) z^{3/4} \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right) $$

07.22.03.6701.01

$$ {}_1F_2\left(2; -\frac{1}{4}, \frac{1}{4}; -z\right) = 4z + 2\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\cos\left(2\sqrt{z}\right) + 7\sin\left(2\sqrt{z}\right)\right) z^{3/4} - 2\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\sin\left(2\sqrt{z}\right) - 7\cos\left(2\sqrt{z}\right)\right) z^{3/4} + 1 $$

07.22.03.6702.01

$$ {}_1F_2\left(2; -\frac{1}{4}, \frac{5}{4}; z\right) = \frac{1}{16\sqrt[4]{z}} \left(e^{-2\sqrt{z}} \left(-e^{4\sqrt{z}} \sqrt{2\pi} \left(8z + 6\sqrt{z} - 3\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi} \left(-8z + 6\sqrt{z} + 3\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) - 8 e^{2\sqrt{z}} \sqrt[4]{z}\right)\right) $$

07.22.03.6703.01

$$ {}_1F_2\left(2; -\frac{1}{4}, \frac{5}{4}; -z\right) = \frac{1}{4\sqrt[4]{z}} \left(\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+3)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+3)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\cos\left(2\sqrt{z}\right)\right) - 2\sqrt[4]{z}\right) $$

07.22.03.6704.01

$$ {}_1F_2\left(2; -\frac{1}{4}, \frac{9}{4}; z\right) = -\frac{1}{128 z^{5/4}} \left(5 e^{-2\sqrt{z}} \left(8 e^{2\sqrt{z}} \sqrt[4]{z} (4z+3) + e^{4\sqrt{z}} \sqrt{2\pi} \left(16 z^{3/2} - 12z + 6\sqrt{z} - 3\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - \sqrt{2\pi} \left(16 z^{3/2} + 12z + 6\sqrt{z} + 3\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6705.01

$$ {}_1F_2\left(2; -\frac{1}{4}, \frac{9}{4}; -z\right) = \frac{1}{32 z^{5/4}} \left(5\left(2\sqrt[4]{z}(3-4z) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}(8z-3)\cos\left(2\sqrt{z}\right) + 3(1-4z)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3(4z-1)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}(8z-3)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6706.01

$$ {}_1F_2\left(2; -\frac{1}{4}, \frac{13}{4}; z\right) = -\frac{1}{1024 z^{9/4}} \left(45 e^{-2\sqrt{z}} \left(-24 e^{2\sqrt{z}} \sqrt[4]{z} (8z+25) + e^{4\sqrt{z}} \sqrt{2\pi} \left(32 z^2 - 88 z^{3/2} + 144 z - 150\sqrt{z} + 75\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi} \left(32 z^2 + 88 z^{3/2} + 144 z + 150\sqrt{z} + 75\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6707.01

$${}_1F_2\left(2;-\frac{1}{4},\frac{13}{4};-z\right)=$$
$$-\frac{1}{256\,z^{9/4}}\left(45\left(6\sqrt[4]{z}\,(8z-25)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32z^2-144z+75\right)\cos\left(2\sqrt{z}\right)+2\left(75-44z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(44z-75)\cos\left(2\sqrt{z}\right)+\left(32z^2-144z+75\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6708.01

$${}_1F_2\left(2;-\frac{1}{4},\frac{17}{4};z\right)=-\frac{1}{8192\,z^{13/4}}$$
$$\left(585\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(16z^2+228z+945\right)+e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(64z^{5/2}-336z^2+960z^{3/2}-1740z+1890\sqrt{z}-945\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\sqrt{2\pi}\,\left(64z^{5/2}+336z^2+960z^{3/2}+1740z+1890\sqrt{z}+945\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6709.01

$${}_1F_2\left(2;-\frac{1}{4},\frac{17}{4};-z\right)=-\frac{1}{2048\,z^{13/4}}\left(585\left(-2\sqrt[4]{z}\,\left(16z^2-228z+945\right)+\right.\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(112z^2-580z+315\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(32z^2-480z+945\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(32z^2-480z+945\right)\cos\left(2\sqrt{z}\right)-3\left(112z^2-580z+315\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6710.01

$${}_1F_2\left(2;-\frac{1}{4},\frac{21}{4};z\right)=-\frac{1}{65\,536\,z^{17/4}}\left(9945\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(304z^2+3024z+12\,285\right)+\right.\right.$$
$$e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(128z^3-1056z^{5/2}+4560z^2-12\,600z^{3/2}+22\,680z-24\,570\sqrt{z}+12\,285\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\pi}\,\left(128z^3+1056z^{5/2}+4560z^2+12\,600z^{3/2}+22\,680z+24\,570\sqrt{z}+12\,285\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6711.01

$${}_1F_2\left(2;-\frac{1}{4},\frac{21}{4};-z\right)=\frac{1}{16\,384\,z^{17/4}}\left(9945\left(2\sqrt[4]{z}\,\left(304z^2-3024z+12\,285\right)+\right.\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128z^3-4560z^2+22\,680z-12\,285\right)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\,\left(176z^2-2100z+4095\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\,\left(176z^2-2100z+4095\right)\cos\left(2\sqrt{z}\right)+\left(128z^3-4560z^2+22\,680z-12\,285\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = \frac{1}{4}$

07.22.03.6712.01

$${}_1F_2\left(2;\frac{1}{4},\frac{3}{4};z\right)=\frac{1}{8}\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(4\sqrt{z}+5\right)\sqrt[4]{z}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+8\,e^{2\sqrt{z}}+\sqrt{2\pi}\,\left(4\sqrt{z}-5\right)\sqrt[4]{z}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)$$

07.22.03.6713.01

$${}_1F_2\left(2;\frac{1}{4},\frac{3}{4};-z\right)=$$
$$\frac{1}{2}\left(-\sqrt{\pi}\ \sqrt[4]{z}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\ \cos\left(2\sqrt{z}\right)+5\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\ \sqrt[4]{z}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\ \sin\left(2\sqrt{z}\right)-5\cos\left(2\sqrt{z}\right)\right)+2\right)$$

07.22.03.6714.01

$${}_1F_2\left(2;\frac{1}{4},\frac{7}{4};z\right)=$$
$$\frac{1}{64\,z^{3/4}}\left(3\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(8z+2\sqrt{z}\ -1\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)+\sqrt{2\pi}\ \left(-8z+2\sqrt{z}\ +1\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)+16\,e^{2\sqrt{z}}\ z^{3/4}\right)\right)$$

07.22.03.6715.01

$${}_1F_2\left(2;\frac{1}{4},\frac{7}{4};-z\right)=\frac{1}{16\,z^{3/4}}\left(3\left(\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+1)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\ \sin\left(2\sqrt{z}\right)\right)-\right.\right.$$
$$\left.\left.\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z+1)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\ \cos\left(2\sqrt{z}\right)\right)+4\,z^{3/4}\right)\right)$$

07.22.03.6716.01

$${}_1F_2\left(2;\frac{1}{4},\frac{11}{4};z\right)=\frac{1}{512\,z^{7/4}}\left(21\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(16\,z^{3/2}-20z+18\sqrt{z}\ -9\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\pi}\ \left(16\,z^{3/2}+20z+18\sqrt{z}\ +9\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)-48\,e^{2\sqrt{z}}\ z^{3/4}\right)\right)$$

07.22.03.6717.01

$${}_1F_2\left(2;\frac{1}{4},\frac{11}{4};-z\right)=\frac{1}{128\,z^{7/4}}\left(21\left(\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\ (8z-9)\cos\left(2\sqrt{z}\right)+(9-20z)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((20z-9)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\ (8z-9)\sin\left(2\sqrt{z}\right)\right)+12\,z^{3/4}\right)\right)$$

07.22.03.6718.01

$${}_1F_2\left(2;\frac{1}{4},\frac{15}{4};z\right)=$$
$$\frac{1}{4096\,z^{11/4}}\left(231\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\ z^{3/4}\,(4z+35)+e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(32\,z^2-104\,z^{3/2}+192z-210\sqrt{z}\ +105\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.\sqrt{2\pi}\ \left(32\,z^2+104\,z^{3/2}+192z+210\sqrt{z}\ +105\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.6719.01

$${}_1F_2\left(2;\frac{1}{4},\frac{15}{4};-z\right)=$$
$$\frac{1}{1024\,z^{11/4}}\left(231\left(4\,z^{3/4}\,(35-4z)-\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,z^2-192z+105\right)\cos\left(2\sqrt{z}\right)+2\,(105-52z)\sqrt{z}\ \sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\ (52z-105)\cos\left(2\sqrt{z}\right)+\left(32\,z^2-192z+105\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6720.01

$$ {}_1F_2\left(2;\frac{1}{4},\frac{19}{4};z\right)= \frac{1}{32\,768\,z^{15/4}}\left(3465\,e^{-2\sqrt{z}}\left(-80\,e^{2\sqrt{z}}\,z^{3/4}\,(8z+77)+e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(64z^{5/2}-368z^2+1120z^{3/2}-2100z+2310\sqrt{z}-1155\right)\right.\right. \left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\,\left(64z^{5/2}+368z^2+1120z^{3/2}+2100z+2310\sqrt{z}+1155\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6721.01

$$ {}_1F_2\left(2;\frac{1}{4},\frac{19}{4};-z\right)= -\frac{1}{8192\,z^{15/4}}\left(3465\left(20z^{3/4}\,(8z-77)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(32z^2-560z+1155\right)\cos\left(2\sqrt{z}\right)+\left(-368z^2+2100z-1155\right)\sin\left(2\sqrt{z}\right)\right)+\right.\right. \left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(368z^2-2100z+1155\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(32z^2-560z+1155\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6722.01

$$ {}_1F_2\left(2;\frac{1}{4},\frac{23}{4};z\right)= \frac{1}{262\,144\,z^{19/4}}\left(5985\,e^{-2\sqrt{z}}\left(80\,e^{2\sqrt{z}}\,z^{3/4}\left(48z^2+1276z+10\,395\right)+\right.\right. 11\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(128z^3-1120z^{5/2}+5040z^2-14\,280z^{3/2}+26\,040z-28\,350\sqrt{z}+14\,175\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)- \left.\left.11\sqrt{2\pi}\,\left(128z^3+1120z^{5/2}+5040z^2+14\,280z^{3/2}+26\,040z+28\,350\sqrt{z}+14\,175\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6723.01

$$ {}_1F_2\left(2;\frac{1}{4},\frac{23}{4};-z\right)= -\frac{1}{65\,536\,z^{19/4}}\left(5985\left(-20z^{3/4}\left(48z^2-1276z+10\,395\right)-\right.\right. 11\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128z^3-5040z^2+26\,040z-14\,175\right)\cos\left(2\sqrt{z}\right)-70\sqrt{z}\,\left(16z^2-204z+405\right)\sin\left(2\sqrt{z}\right)\right)+ \left.\left.11\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(70\sqrt{z}\,\left(16z^2-204z+405\right)\cos\left(2\sqrt{z}\right)+\left(128z^3-5040z^2+26\,040z-14\,175\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 2$, $b_1 = \frac{3}{4}$

07.22.03.6724.01

$$ {}_1F_2\left(2;\frac{3}{4},\frac{5}{4};z\right)= \frac{e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(4\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\,\left(3-4\sqrt{z}\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)+8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\right)}{32\sqrt[4]{z}} $$

07.22.03.6725.01

$$ {}_1F_2\left(2;\frac{3}{4},\frac{5}{4};-z\right)= \frac{1}{8\sqrt[4]{z}}\left(\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\cos\left(2\sqrt{z}\right)+3\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\cos\left(2\sqrt{z}\right)-4\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+2\sqrt[4]{z}\right) $$

07.22.03.6726.01

$${}_1F_2\left(2;\frac{3}{4},\frac{9}{4};z\right)=\frac{1}{256\,z^{5/4}}\left(5\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(8z-2\sqrt{z}+1\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(8z+2\sqrt{z}+1\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)-8\,e^{2\sqrt{z}}\sqrt[4]{z}\right)\right)$$

07.22.03.6727.01

$${}_1F_2\left(2;\frac{3}{4},\frac{9}{4};-z\right)=\frac{1}{64\,z^{5/4}}\left(5\left(\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z-1)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(8z-1)\sin\left(2\sqrt{z}\right)\right)+2\sqrt[4]{z}\right)\right)$$

07.22.03.6728.01

$${}_1F_2\left(2;\frac{3}{4},\frac{13}{4};z\right)=\frac{1}{2048\,z^{9/4}}\left(45\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\,(4z+15)+e^{4\sqrt{z}}\sqrt{2\pi}\left(16z^{3/2}-28z+30\sqrt{z}-15\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\sqrt{2\pi}\left(16z^{3/2}+28z+30\sqrt{z}+15\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6729.01

$${}_1F_2\left(2;\frac{3}{4},\frac{13}{4};-z\right)=\frac{1}{512\,z^{9/4}}\left(45\left(2\sqrt[4]{z}\,(15-4z)-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(8z-15)\cos\left(2\sqrt{z}\right)+(15-28z)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((28z-15)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(8z-15)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6730.01

$${}_1F_2\left(2;\frac{3}{4},\frac{17}{4};z\right)=\frac{1}{16\,384\,z^{13/4}}\left(585\,e^{-2\sqrt{z}}\left(-24\,e^{2\sqrt{z}}\sqrt[4]{z}\,(8z+45)+e^{4\sqrt{z}}\sqrt{2\pi}\left(32z^2-120z^{3/2}+240z-270\sqrt{z}+135\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(32z^2+120z^{3/2}+240z+270\sqrt{z}+135\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6731.01

$${}_1F_2\left(2;\frac{3}{4},\frac{17}{4};-z\right)=-\frac{1}{4096\,z^{13/4}}\left(585\left(6\sqrt[4]{z}\,(8z-45)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32z^2-240z+135\right)\cos\left(2\sqrt{z}\right)+30\,(9-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(30\sqrt{z}\,(4z-9)\cos\left(2\sqrt{z}\right)+\left(32z^2-240z+135\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6732.01

$$ {}_1F_2\left(2;\frac{3}{4},\frac{21}{4};z\right)=\frac{1}{131\,072\,z^{17/4}}\left(1105\,e^{-2\sqrt{z}}\right.$$
$$\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(208\,z^2+2484\,z+12\,285\right)+9\,e^{4\sqrt{z}}\sqrt{2\,\pi}\left(64\,z^{5/2}-400\,z^2+1280\,z^{3/2}-2460\,z+2730\sqrt{z}-1365\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-9\sqrt{2\,\pi}\left(64\,z^{5/2}+400\,z^2+1280\,z^{3/2}+2460\,z+2730\sqrt{z}+1365\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6733.01

$$ {}_1F_2\left(2;\frac{3}{4},\frac{21}{4};-z\right)=-\frac{1}{32\,768\,z^{17/4}}\left(1105\left(-2\sqrt[4]{z}\left(208\,z^2-2484\,z+12\,285\right)+\right.\right.$$
$$9\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(5\left(80\,z^2-492\,z+273\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(32\,z^2-640\,z+1365\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\left.\left.9\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(32\,z^2-640\,z+1365\right)\cos\left(2\sqrt{z}\right)-5\left(80\,z^2-492\,z+273\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = \frac{5}{4}$

07.22.03.6734.01

$$ {}_1F_2\left(2;\frac{5}{4},\frac{7}{4};z\right)=\frac{3\,e^{-2\sqrt{z}}\sqrt{\frac{\pi}{2}}\left(e^{4\sqrt{z}}\left(4\sqrt{z}+1\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\left(4\sqrt{z}-1\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)}{64\,z^{3/4}}$$

07.22.03.6735.01

$$ {}_1F_2\left(2;\frac{5}{4},\frac{7}{4};-z\right)=\frac{3\sqrt{\pi}\left(C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\cos\left(2\sqrt{z}\right)+\sin\left(2\sqrt{z}\right)\right)+S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\sin\left(2\sqrt{z}\right)-\cos\left(2\sqrt{z}\right)\right)\right)}{32\,z^{3/4}}$$

07.22.03.6736.01

$$ {}_1F_2\left(2;\frac{5}{4},\frac{11}{4};z\right)=$$
$$\frac{1}{1024\,z^{7/4}}\left(21\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\,\pi}\left(8\,z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\sqrt{2\,\pi}\left(8\,z+6\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)+16\,e^{2\sqrt{z}}\,z^{3/4}\right)\right)$$

07.22.03.6737.01

$$ {}_1F_2\left(2;\frac{5}{4},\frac{11}{4};-z\right)=\frac{1}{256\,z^{7/4}}\left(21\left(-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8\,z-3\right)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\cos\left(2\sqrt{z}\right)+\left(8\,z-3\right)\sin\left(2\sqrt{z}\right)\right)-4\,z^{3/4}\right)\right)$$

07.22.03.6738.01

$$ {}_1F_2\left(2;\frac{5}{4},\frac{15}{4};z\right)=\frac{1}{8192\,z^{11/4}}\left(231\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\,\pi}\left(16\,z^{3/2}-36\,z+42\sqrt{z}-21\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\,\pi}\left(16\,z^{3/2}+36\,z+42\sqrt{z}+21\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)-112\,e^{2\sqrt{z}}\,z^{3/4}\right)\right)$$

07.22.03.6739.01

$${}_1F_2\left(2;\frac{5}{4},\frac{15}{4};-z\right)=-\frac{1}{2048\,z^{11/4}}\left(231\left(\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;(8z-21)\cos\left(2\sqrt{z}\right)+3\,(7-12z)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\,(12z-7)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;(8z-21)\sin\left(2\sqrt{z}\right)\right)+28\,z^{3/4}\right)\right)$$

07.22.03.6740.01

$${}_1F_2\left(2;\frac{5}{4},\frac{19}{4};z\right)=$$
$$\frac{1}{65\,536\,z^{15/4}}\left(495\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\;z^{3/4}\,(12z+385)+7\,e^{4\sqrt{z}}\;\sqrt{2\pi}\,\left(32z^2-136\,z^{3/2}+288z-330\sqrt{z}\;+165\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.7\sqrt{2\pi}\,\left(32z^2+136\,z^{3/2}+288z+330\sqrt{z}\;+165\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6741.01

$${}_1F_2\left(2;\frac{5}{4},\frac{19}{4};-z\right)=$$
$$\frac{1}{16\,384\,z^{15/4}}\left(495\left(4\,z^{3/4}\,(12z-385)+7\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32z^2-288z+165\right)\cos\left(2\sqrt{z}\right)+2\,(165-68z)\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)-\right.\right.$$
$$\left.\left.7\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;(68z-165)\cos\left(2\sqrt{z}\right)+\left(32z^2-288z+165\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6742.01

$${}_1F_2\left(2;\frac{5}{4},\frac{23}{4};z\right)=\frac{1}{524\,288\,z^{19/4}}\left(855\,e^{-2\sqrt{z}}\right.$$
$$\left(-16\,e^{2\sqrt{z}}\;z^{3/4}\left(128z^2+3080z+40\,425\right)+77\,e^{4\sqrt{z}}\;\sqrt{2\pi}\,\left(64\,z^{5/2}-432\,z^2+1440\,z^{3/2}-2820z+3150\sqrt{z}\;-1575\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+77\sqrt{2\pi}\,\left(64\,z^{5/2}+432\,z^2+1440\,z^{3/2}+2820z+3150\sqrt{z}\;+1575\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6743.01

$${}_1F_2\left(2;\frac{5}{4},\frac{23}{4};-z\right)=\frac{1}{131\,072\,z^{19/4}}\left(855\left(-4\,z^{3/4}\left(128z^2-3080z+40\,425\right)+\right.\right.$$
$$77\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(144z^2-940z+525\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;\left(32z^2-720z+1575\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.77\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\left(32z^2-720z+1575\right)\cos\left(2\sqrt{z}\right)-3\left(144z^2-940z+525\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = \frac{7}{4}$

07.22.03.6744.01

$${}_1F_2\left(2;\frac{7}{4},\frac{9}{4};z\right)=\frac{15\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\;\sqrt{2\pi}\,\left(4\sqrt{z}\;-1\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\sqrt{2\pi}\,\left(4\sqrt{z}\;+1\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)+8\,e^{2\sqrt{z}}\;\sqrt[4]{z}\right)}{512\,z^{5/4}}$$

07.22.03.6745.01

$${}_1F_2\left(2;\frac{7}{4},\frac{9}{4};-z\right)=$$
$$\frac{1}{128\,z^{5/4}}\left(15\left(-\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\;\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+4\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)-2\sqrt[4]{z}\right)\right)$$

07.22.03.6746.01

$${}_1F_2\left(2;\frac{7}{4},\frac{13}{4};z\right)=\frac{1}{4096\,z^{9/4}}$$
$$\left(135\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\;\sqrt{2\pi}\left(8z-10\sqrt{z}+5\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+\sqrt{2\pi}\left(8z+10\sqrt{z}+5\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)-40\,e^{2\sqrt{z}}\;\sqrt[4]{z}\right)\right)$$

07.22.03.6747.01

$${}_1F_2\left(2;\frac{7}{4},\frac{13}{4};-z\right)=-\frac{1}{1024\,z^{9/4}}\left(135\left(\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z-5)\cos\left(2\sqrt{z}\right)-10\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\;\cos\left(2\sqrt{z}\right)+(8z-5)\sin\left(2\sqrt{z}\right)\right)+10\sqrt[4]{z}\right)\right)$$

07.22.03.6748.01

$${}_1F_2\left(2;\frac{7}{4},\frac{17}{4};z\right)=$$
$$\frac{1}{32\,768\,z^{13/4}}\left(351\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\;\sqrt[4]{z}\;(4z+135)+5\,e^{4\sqrt{z}}\;\sqrt{2\pi}\left(16z^{3/2}-44z+54\sqrt{z}-27\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.5\sqrt{2\pi}\left(16z^{3/2}+44z+54\sqrt{z}+27\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6749.01

$${}_1F_2\left(2;\frac{7}{4},\frac{17}{4};-z\right)=$$
$$\frac{1}{8192\,z^{13/4}}\left(351\left(2\sqrt[4]{z}\;(4z-135)+5\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;(8z-27)\cos\left(2\sqrt{z}\right)+(27-44z)\sin\left(2\sqrt{z}\right)\right)-\right.\right.$$
$$\left.\left.5\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((44z-27)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;(8z-27)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6750.01

$${}_1F_2\left(2;\frac{7}{4},\frac{21}{4};z\right)=$$
$$\frac{1}{262\,144\,z^{17/4}}\left(663\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\;\sqrt[4]{z}\left(128z^2+1080z+8775\right)+45\,e^{4\sqrt{z}}\;\sqrt{2\pi}\left(32z^2-152z^{3/2}+336z-390\sqrt{z}+195\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+45\sqrt{2\pi}\left(32z^2+152z^{3/2}+336z+390\sqrt{z}+195\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6751.01

$${}_1F_2\left(2;\frac{7}{4},\frac{21}{4};-z\right)=\frac{1}{65\,536\,z^{17/4}}\left(663\left(-2\sqrt[4]{z}\left(128z^2-1080z+8775\right)+\right.\right.$$
$$45\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32z^2-336z+195\right)\cos\left(2\sqrt{z}\right)+2\left(195-76z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.45\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(76z-195\right)\cos\left(2\sqrt{z}\right)+\left(32z^2-336z+195\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = \frac{9}{4}$

07.22.03.6752.01

$${}_1F_2\left(2;\frac{9}{4},\frac{11}{4};z\right)=\frac{105\,e^{-2\sqrt{z}}\,\sqrt{\frac{\pi}{2}}\left(e^{4\sqrt{z}}\left(4\sqrt{z}-3\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\left(4\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)}{1024\,z^{7/4}}$$

07.22.03.6753.01

$${}_1F_2\left(2;\frac{9}{4},\frac{11}{4};-z\right)=$$
$$-\frac{1}{512\,z^{7/4}}\left(105\sqrt{\pi}\left(C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\cos\left(2\sqrt{z}\right)-3\sin\left(2\sqrt{z}\right)\right)+S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6754.01

$${}_1F_2\left(2;\frac{9}{4},\frac{15}{4};z\right)=\frac{1}{16\,384\,z^{11/4}}$$
$$\left(385\,e^{-2\sqrt{z}}\left(3\,e^{4\sqrt{z}}\,\sqrt{2\pi}\left(8z-14\sqrt{z}+7\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-3\sqrt{2\pi}\left(8z+14\sqrt{z}+7\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)+112\,e^{2\sqrt{z}}\,z^{3/4}\right)\right)$$

07.22.03.6755.01

$${}_1F_2\left(2;\frac{9}{4},\frac{15}{4};-z\right)=-\frac{1}{4096\,z^{11/4}}\left(385\left(-3\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8z-7\right)\cos\left(2\sqrt{z}\right)-14\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.3\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(14\sqrt{z}\,\cos\left(2\sqrt{z}\right)+\left(8z-7\right)\sin\left(2\sqrt{z}\right)\right)-28\,z^{3/4}\right)\right)$$

07.22.03.6756.01

$${}_1F_2\left(2;\frac{9}{4},\frac{19}{4};z\right)=$$
$$\frac{1}{131\,072\,z^{15/4}}\left(825\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(32z-231\right)+21\,e^{4\sqrt{z}}\,\sqrt{2\pi}\left(16z^{3/2}-52z+66\sqrt{z}-33\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.21\sqrt{2\pi}\left(16z^{3/2}+52z+66\sqrt{z}+33\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6757.01

$${}_1F_2\left(2;\frac{9}{4},\frac{19}{4};-z\right)=$$
$$\frac{1}{32\,768\,z^{15/4}}\left(825\left(4\,z^{3/4}\,(32\,z+231)+21\,\sqrt{\pi}\;C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\;(8\,z-33)\cos\left(2\,\sqrt{z}\right)+(33-52\,z)\sin\left(2\,\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.21\,\sqrt{\pi}\;S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((52\,z-33)\cos\left(2\,\sqrt{z}\right)+2\,\sqrt{z}\;(8\,z-33)\sin\left(2\,\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6758.01

$${}_1F_2\left(2;\frac{9}{4},\frac{23}{4};z\right)=\frac{1}{1\,048\,576\,z^{19/4}}$$
$$\left(1425\,e^{-2\,\sqrt{z}}\left(16\,e^{2\,\sqrt{z}}\;z^{3/4}\left(256\,z^2-132\,z+17\,325\right)+231\,e^{4\,\sqrt{z}}\;\sqrt{2\,\pi}\;\left(32\,z^2-168\,z^{3/2}+384\,z-450\,\sqrt{z}\;+225\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-231\,\sqrt{2\,\pi}\;\left(32\,z^2+168\,z^{3/2}+384\,z+450\,\sqrt{z}\;+225\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6759.01

$${}_1F_2\left(2;\frac{9}{4},\frac{23}{4};-z\right)=\frac{1}{262\,144\,z^{19/4}}\left(1425\right.$$
$$\left(4\,z^{3/4}\left(256\,z^2+132\,z+17\,325\right)-231\,\sqrt{\pi}\;S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,z^2-384\,z+225\right)\cos\left(2\,\sqrt{z}\right)+6\,(75-28\,z)\,\sqrt{z}\;\sin\left(2\,\sqrt{z}\right)\right)+\right.$$
$$\left.\left.231\,\sqrt{\pi}\;C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\,\sqrt{z}\;(28\,z-75)\cos\left(2\,\sqrt{z}\right)+\left(32\,z^2-384\,z+225\right)\sin\left(2\,\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = \frac{11}{4}$

07.22.03.6760.01

$${}_1F_2\left(2;\frac{11}{4},\frac{13}{4};z\right)=$$
$$\frac{1}{8192\,z^{9/4}}\left(945\,e^{-2\,\sqrt{z}}\left(e^{4\,\sqrt{z}}\;\sqrt{2\,\pi}\;\left(4\,\sqrt{z}\;-5\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\sqrt{2\,\pi}\;\left(4\,\sqrt{z}\;+5\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)+40\,e^{2\,\sqrt{z}}\;\sqrt[4]{z}\right)\right)$$

07.22.03.6761.01

$${}_1F_2\left(2;\frac{11}{4},\frac{13}{4};-z\right)=-\frac{1}{2048\,z^{9/4}}$$
$$\left(945\left(-\sqrt{\pi}\;S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\,\sqrt{z}\;\cos\left(2\,\sqrt{z}\right)-5\sin\left(2\,\sqrt{z}\right)\right)+\sqrt{\pi}\;C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(5\cos\left(2\,\sqrt{z}\right)+4\,\sqrt{z}\;\sin\left(2\,\sqrt{z}\right)\right)-10\,\sqrt[4]{z}\right)\right)$$

07.22.03.6762.01

$${}_1F_2\left(2;\frac{11}{4},\frac{17}{4};z\right)=\frac{1}{65\,536\,z^{13/4}}\left(2457\,e^{-2\,\sqrt{z}}\right.$$
$$\left.\left(8\,e^{2\,\sqrt{z}}\;\sqrt[4]{z}\;(32\,z-45)+5\,e^{4\,\sqrt{z}}\;\sqrt{2\,\pi}\;\left(8\,z-18\,\sqrt{z}\;+9\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+5\,\sqrt{2\,\pi}\;\left(8\,z+18\,\sqrt{z}\;+9\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6763.01

$${}_1F_2\left(2;\frac{11}{4},\frac{17}{4};-z\right)=$$
$$\frac{1}{16\,384\,z^{13/4}}\left(2457\left(2\sqrt[4]{z}\,(32z+45)+5\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z-9)\cos\left(2\sqrt{z}\right)-18\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+5\sqrt{\pi}\right.\right.$$
$$\left.\left.S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(18\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(8z-9)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6764.01

$${}_1F_2\left(2;\frac{11}{4},\frac{21}{4};z\right)=\frac{1}{524\,288\,z^{17/4}}$$
$$\left(4641\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(256z^2-108z+1755\right)+45\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(16z^{3/2}-60z+78\sqrt{z}-39\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.45\sqrt{2\pi}\,\left(16z^{3/2}+60z+78\sqrt{z}+39\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6765.01

$${}_1F_2\left(2;\frac{11}{4},\frac{21}{4};-z\right)=\frac{1}{131\,072\,z^{17/4}}$$
$$\left(4641\left(2\sqrt[4]{z}\,\left(256z^2+108z+1755\right)-45\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(8z-39)\cos\left(2\sqrt{z}\right)+3(13-20z)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.45\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((60z-39)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(8z-39)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = \frac{13}{4}$

07.22.03.6766.01

$${}_1F_2\left(2;\frac{13}{4},\frac{15}{4};z\right)=$$
$$\frac{1}{32\,768\,z^{11/4}}\left(3465\,e^{-2\sqrt{z}}\left(3\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(4\sqrt{z}-7\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+3\sqrt{2\pi}\,\left(4\sqrt{z}+7\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)+128\,e^{2\sqrt{z}}\,z^{3/4}\right)\right)$$

07.22.03.6767.01

$${}_1F_2\left(2;\frac{13}{4},\frac{15}{4};-z\right)=\frac{1}{8192\,z^{11/4}}$$
$$\left(3465\left(3\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\cos\left(2\sqrt{z}\right)-7\sin\left(2\sqrt{z}\right)\right)+3\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(7\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+32\,z^{3/4}\right)\right)$$

07.22.03.6768.01

$${}_1F_2\left(2;\frac{13}{4},\frac{19}{4};z\right)=\frac{1}{262\,144\,z^{15/4}}\left(7425\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\,(64z+77)+\right.\right.$$
$$\left.\left.21\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(8z-22\sqrt{z}+11\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-21\sqrt{2\pi}\,\left(8z+22\sqrt{z}+11\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6769.01

$$ {}_1F_2\left(2;\frac{13}{4},\frac{19}{4};-z\right)= \frac{1}{65\,536\,z^{15/4}}\left(7425\left(4\,z^{3/4}\,(64\,z-77)-21\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8\,z-11)\cos\left(2\sqrt{z}\right)-22\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+21\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(22\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(8\,z-11)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6770.01

$$ {}_1F_2\left(2;\frac{13}{4},\frac{23}{4};z\right)= \frac{1}{2\,097\,152\,z^{19/4}}\left(12\,825\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(512\,z^2+704\,z-3465\right)+231\,e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(16\,z^{3/2}-68\,z+90\sqrt{z}-45\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+231\sqrt{2\,\pi}\,\left(16\,z^{3/2}+68\,z+90\sqrt{z}+45\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6771.01

$$ {}_1F_2\left(2;\frac{13}{4},\frac{23}{4};-z\right)= \frac{1}{524\,288\,z^{19/4}}\left(12\,825\left(4\,z^{3/4}\left(512\,z^2-704\,z-3465\right)-231\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(8\,z-45)\cos\left(2\sqrt{z}\right)+(45-68\,z)\sin\left(2\sqrt{z}\right)\right)-231\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((68\,z-45)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(8\,z-45)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 2$, $b_1 = \frac{15}{4}$

07.22.03.6772.01

$$ {}_1F_2\left(2;\frac{15}{4},\frac{17}{4};z\right)= \frac{1}{131\,072\,z^{13/4}}\left(9009\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,(64\,z+135)+15\,e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(4\sqrt{z}-9\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-15\sqrt{2\,\pi}\,\left(4\sqrt{z}+9\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6773.01

$$ {}_1F_2\left(2;\frac{15}{4},\frac{17}{4};-z\right)= \frac{1}{32\,768\,z^{13/4}}\left(9009\left(2\sqrt[4]{z}\,(64\,z-135)-15\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\cos\left(2\sqrt{z}\right)-9\sin\left(2\sqrt{z}\right)\right)+15\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(9\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6774.01

$$ {}_1F_2\left(2;\frac{15}{4},\frac{21}{4};z\right)= \frac{1}{1\,048\,576\,z^{17/4}}\left(17\,017\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(512\,z^2+1728\,z-1755\right)+135\,e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(8\,z-26\sqrt{z}+13\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+135\sqrt{2\,\pi}\,\left(8\,z+26\sqrt{z}+13\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6775.01

$$ {}_1F_2\left(2;\frac{15}{4},\frac{21}{4};-z\right)= \frac{1}{262\,144\,z^{17/4}}\left(17\,017\left(2\sqrt[4]{z}\left(512z^2-1728z-1755\right)-135\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z-13)\cos\left(2\sqrt{z}\right)-26\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)-135\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(26\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(8z-13)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 2$, $b_1 = \frac{17}{4}$

07.22.03.6776.01

$$ {}_1F_2\left(2;\frac{17}{4},\frac{19}{4};z\right)= \frac{1}{524\,288\,z^{15/4}}\left(19\,305\,e^{-2\sqrt{z}}\left(256\,e^{2\sqrt{z}}\,z^{3/4}(8z+35)+105\,e^{4\sqrt{z}}\,\sqrt{2\pi}\left(4\sqrt{z}-11\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+105\sqrt{2\pi}\left(4\sqrt{z}+11\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6777.01

$$ {}_1F_2\left(2;\frac{17}{4},\frac{19}{4};-z\right)= -\frac{1}{131\,072\,z^{15/4}}\left(19\,305\left(64z^{3/4}(35-8z)+105\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\cos\left(2\sqrt{z}\right)-11\sin\left(2\sqrt{z}\right)\right)+105\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(11\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6778.01

$$ {}_1F_2\left(2;\frac{17}{4},\frac{23}{4};z\right)= \frac{1}{4\,194\,304\,z^{19/4}}\left(33\,345\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(1024z^2+7040z+5775\right)+1155\,e^{4\sqrt{z}}\,\sqrt{2\pi}\left(8z-30\sqrt{z}+15\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-1155\sqrt{2\pi}\left(8z+30\sqrt{z}+15\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6779.01

$$ {}_1F_2\left(2;\frac{17}{4},\frac{23}{4};-z\right)= \frac{1}{1\,048\,576\,z^{19/4}}\left(33\,345\left(4z^{3/4}\left(1024z^2-7040z+5775\right)+1155\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((8z-15)\cos\left(2\sqrt{z}\right)-30\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)-1155\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(30\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(8z-15)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 2$, $b_1 = \frac{19}{4}$

07.22.03.6780.01

$${}_1F_2\left(2;\frac{19}{4},\frac{21}{4};z\right)=\frac{1}{2\,097\,152\,z^{17/4}}\left(36\,465\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(1024\,z^2+8064\,z+12\,285\right)+945\,e^{4\sqrt{z}}\sqrt{2\pi}\left(4\sqrt{z}-13\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-945\sqrt{2\pi}\left(4\sqrt{z}+13\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6781.01

$${}_1F_2\left(2;\frac{19}{4},\frac{21}{4};-z\right)=\frac{1}{524\,288\,z^{17/4}}\left(36\,465\left(2\sqrt[4]{z}\left(1024\,z^2-8064\,z+12\,285\right)+945\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\cos\left(2\sqrt{z}\right)-13\sin\left(2\sqrt{z}\right)\right)-945\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(13\cos\left(2\sqrt{z}\right)+4\sqrt{z}\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = \frac{21}{4}$

07.22.03.6782.01

$${}_1F_2\left(2;\frac{21}{4},\frac{23}{4};z\right)=\frac{1}{8\,388\,608\,z^{19/4}}\left(62\,985\,e^{-2\sqrt{z}}\left(128\,e^{2\sqrt{z}}\,z^{3/4}\left(256\,z^2+3168\,z+10\,395\right)+10\,395\,e^{4\sqrt{z}}\sqrt{2\pi}\left(4\sqrt{z}-15\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+10\,395\sqrt{2\pi}\left(4\sqrt{z}+15\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6783.01

$${}_1F_2\left(2;\frac{21}{4},\frac{23}{4};-z\right)=\frac{1}{2\,097\,152\,z^{19/4}}\left(62\,985\left(32\,z^{3/4}\left(256\,z^2-3168\,z+10\,395\right)+10\,395\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\cos\left(2\sqrt{z}\right)-15\sin\left(2\sqrt{z}\right)\right)+10\,395\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\cos\left(2\sqrt{z}\right)+4\sqrt{z}\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 2$, $b_1 = \frac{23}{4}$

07.22.03.6784.01

$${}_1F_2\left(2;\frac{23}{4},\frac{25}{4};z\right)=\frac{1}{33\,554\,432\,z^{21/4}}\left(101\,745\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(16\,384\,z^3+292\,864\,z^2+1\,729\,728\,z+2\,297\,295\right)+135\,135\,e^{4\sqrt{z}}\sqrt{2\pi}\left(4\sqrt{z}-17\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-135\,135\sqrt{2\pi}\left(4\sqrt{z}+17\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6785.01

$${}_1F_2\left(2;\frac{23}{4},\frac{25}{4};-z\right)=$$
$$\frac{1}{8\,388\,608\,z^{21/4}}\left(101\,745\left(2\sqrt[4]{z}\left(16\,384\,z^3-292\,864\,z^2+1\,729\,728\,z-2\,297\,295\right)-135\,135\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right.$$
$$\left.\left.\left(4\sqrt{z}\cos\left(2\sqrt{z}\right)-17\sin\left(2\sqrt{z}\right)\right)+135\,135\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(17\cos\left(2\sqrt{z}\right)+4\sqrt{z}\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 \geq -\frac{23}{4}$

For fixed z and $a_1 = 3$, $b_1 = -\frac{23}{4}$

07.22.03.6786.01

$${}_1F_2\left(3;-\frac{23}{4},-\frac{21}{4};z\right)=$$
$$\frac{1}{316\,234\,143\,225}\left(e^{-2\sqrt{z}}\left(262\,144\,e^{4\sqrt{z}}\sqrt{2\pi}\left(16z+256\sqrt{z}+957\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{25/4}-262\,144\sqrt{2\pi}\right.\right.$$
$$\left(16z-256\sqrt{z}+957\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{25/4}+e^{2\sqrt{z}}\left(8\,388\,608\,z^7+469\,762\,048\,z^6+66\,060\,288\,z^5+\right.$$
$$\left.\left.\left.103\,219\,200\,z^4+425\,779\,200\,z^3+3\,113\,510\,400\,z^2+31\,426\,995\,600\,z+316\,234\,143\,225\right)\right)\right)$$

07.22.03.6787.01

$${}_1F_2\left(3;-\frac{23}{4},-\frac{21}{4};-z\right)=$$
$$\frac{1}{316\,234\,143\,225}\left(-8\,388\,608\,z^7-1\,048\,576\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16z-957)\cos\left(2\sqrt{z}\right)+256\sqrt{z}\sin\left(2\sqrt{z}\right)\right)z^{25/4}+\right.$$
$$1\,048\,576\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16z-957)\sin\left(2\sqrt{z}\right)-256\sqrt{z}\cos\left(2\sqrt{z}\right)\right)z^{25/4}+469\,762\,048\,z^6-$$
$$\left.66\,060\,288\,z^5+103\,219\,200\,z^4-425\,779\,200\,z^3+3\,113\,510\,400\,z^2-31\,426\,995\,600\,z+316\,234\,143\,225\right)$$

07.22.03.6788.01

$${}_1F_2\left(3;-\frac{23}{4},-\frac{17}{4};z\right)=$$
$$\frac{1}{15\,058\,768\,725}\left(e^{-2\sqrt{z}}\left(-32\,768\,e^{4\sqrt{z}}\sqrt{2\pi}\left(32z^{3/2}+464z+1450\sqrt{z}-725\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}-32\,768\right.\right.$$
$$\sqrt{2\pi}\left(32z^{3/2}-464z+1450\sqrt{z}+725\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}-3e^{2\sqrt{z}}$$
$$\left.\left.\left(9\,961\,472\,z^6-22\,020\,096\,z^5-6\,881\,280\,z^4-15\,769\,600\,z^3-79\,833\,600\,z^2-616\,215\,600\,z-5\,019\,589\,575\right)\right)\right)$$

07.22.03.6789.01

$$ {}_1F_2\left(3; -\frac{23}{4}, -\frac{17}{4}; -z\right) = $$
$$ \frac{1}{15\,058\,768\,725}\left(131\,072\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\ (16z-725)\sin\left(2\sqrt{z}\right)-29\,(16z+25)\cos\left(2\sqrt{z}\right)\right)z^{21/4}+\right. $$
$$ 131\,072\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\ (16z-725)\cos\left(2\sqrt{z}\right)+29\,(16z+25)\sin\left(2\sqrt{z}\right)\right)z^{21/4}- $$
$$ \left.3\left(9\,961\,472z^6+22\,020\,096z^5-6\,881\,280z^4+15\,769\,600z^3-79\,833\,600z^2+616\,215\,600z-5\,019\,589\,575\right)\right) $$

07.22.03.6790.01

$$ {}_1F_2\left(3; -\frac{23}{4}, -\frac{13}{4}; z\right) = $$
$$ \frac{1}{885\,809\,925}\left(e^{-2\sqrt{z}}\left(4096\,e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(64z^2+800z^{3/2}+1700z-3150\sqrt{z}\ +1575\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{17/4}-\right.\right. $$
$$ 4096\sqrt{2\pi}\ \left(64z^2-800z^{3/2}+1700z+3150\sqrt{z}\ +1575\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{17/4}+ $$
$$ \left.\left.e^{2\sqrt{z}}\ \left(524\,288z^6+12\,386\,304z^5+20\,643\,840z^4+9\,461\,760z^3+26\,611\,200z^2+142\,203\,600z+885\,809\,925\right)\right)\right) $$

07.22.03.6791.01

$$ {}_1F_2\left(3; -\frac{23}{4}, -\frac{13}{4}; -z\right) = \frac{1}{885\,809\,925} $$
$$ \left(524\,288z^6-12\,386\,304z^5+16\,384\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64z^2-1700z+1575\right)\cos\left(2\sqrt{z}\right)+50\sqrt{z}\ (16z+63)\sin\left(2\sqrt{z}\right)\right)\right. $$
$$ z^{17/4}-16\,384\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64z^2-1700z+1575\right)\sin\left(2\sqrt{z}\right)-50\sqrt{z}\ (16z+63)\cos\left(2\sqrt{z}\right)\right)z^{17/4}+ $$
$$ \left.20\,643\,840z^4-9\,461\,760z^3+26\,611\,200z^2-142\,203\,600z+885\,809\,925\right) $$

07.22.03.6792.01

$$ {}_1F_2\left(3; -\frac{23}{4}, -\frac{9}{4}; z\right) = $$
$$ \frac{1}{68\,139\,225}\left(e^{-2\sqrt{z}}\left(-512\,e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(128z^{5/2}+1280z^2+840z^{3/2}-7560z+10\,710\sqrt{z}\ -5355\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{13/4}-\right.\right. $$
$$ 512\sqrt{2\pi}\ \left(128z^{5/2}-1280z^2+840z^{3/2}+7560z+10\,710\sqrt{z}\ +5355\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{13/4}- $$
$$ \left.\left.3\,e^{2\sqrt{z}}\ \left(425\,984z^5-2\,580\,480z^4-3\,153\,920z^3-1\,774\,080z^2-5\,266\,800z-22\,713\,075\right)\right)\right) $$

07.22.03.6793.01

$${}_1F_2\left(3; -\frac{23}{4}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{68\,139\,225}\left(-2048\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(64z^2-420z+5355\right)\sin\left(2\sqrt{z}\right)-5\left(256z^2+1512z-1071\right)\cos\left(2\sqrt{z}\right)\right)z^{13/4}-\right.$$
$$2048\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(64z^2-420z+5355\right)\cos\left(2\sqrt{z}\right)+5\left(256z^2+1512z-1071\right)\sin\left(2\sqrt{z}\right)\right)z^{13/4}+$$
$$\left.3\left(425\,984z^5+2\,580\,480z^4-3\,153\,920z^3+1\,774\,080z^2-5\,266\,800z+22\,713\,075\right)\right)$$

07.22.03.6794.01

$${}_1F_2\left(3; -\frac{23}{4}, -\frac{5}{4}; z\right) = \frac{1}{7\,571\,025}$$
$$\left(e^{-2\sqrt{z}}\left(64e^{4\sqrt{z}}\sqrt{2\pi}\left(256z^3+1792z^{5/2}-2800z^2-9520z^{3/2}+35\,700z-46\,410\sqrt{z}+23\,205\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-\right.\right.$$
$$64\sqrt{2\pi}\left(256z^3-1792z^{5/2}-2800z^2+9520z^{3/2}+35\,700z+46\,410\sqrt{z}+23\,205\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+$$
$$\left.\left.e^{2\sqrt{z}}\left(32\,768z^5-409\,600z^4+4\,766\,720z^3+5\,322\,240z^2+3\,160\,080z+7\,571\,025\right)\right)\right)$$

07.22.03.6795.01

$${}_1F_2\left(3; -\frac{23}{4}, -\frac{5}{4}; -z\right) = \frac{1}{7\,571\,025}\left(-32\,768z^5-409\,600z^4-4\,766\,720z^3-\right.$$
$$256\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^3+2800z^2+35\,700z-23\,205\right)\cos\left(2\sqrt{z}\right)+14\sqrt{z}\,\left(128z^2+680z-3315\right)\sin\left(2\sqrt{z}\right)\right)z^{9/4}+$$
$$256\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^3+2800z^2+35\,700z-23\,205\right)\sin\left(2\sqrt{z}\right)-14\sqrt{z}\,\left(128z^2+680z-3315\right)\cos\left(2\sqrt{z}\right)\right)z^{9/4}+$$
$$\left.5\,322\,240z^2-3\,160\,080z+7\,571\,025\right)$$

07.22.03.6796.01

$${}_1F_2\left(3; -\frac{23}{4}, -\frac{1}{4}; z\right) = \frac{1}{1\,514\,205}$$
$$\left(e^{-2\sqrt{z}}\left(-8e^{4\sqrt{z}}\sqrt{2\pi}\left(512z^{7/2}+1792z^3-10\,976z^{5/2}+8400z^2+54\,600z^{3/2}-174\,720z+221\,130\sqrt{z}-110\,565\right)\right.\right.$$
$$\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-8\sqrt{2\pi}\left(512z^{7/2}-1792z^3-10\,976z^{5/2}-8400z^2+54\,600z^{3/2}+174\,720z+221\,130\sqrt{z}+\right.$$
$$\left.\left.\left.110\,565\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\left(-26\,624z^4-181\,760z^3+2\,943\,360z^2+3\,160\,080z+1\,514\,205\right)\right)\right)$$

07.22.03.6797.01

$${}_1F_2\left(3;-\frac{23}{4},-\frac{1}{4};-z\right)=\frac{1}{1\,514\,205}\left(-26\,624\,z^4+181\,760\,z^3+2\,943\,360\,z^2+32\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left(2\sqrt{z}\,\left(256\,z^3+5488\,z^2+27\,300\,z-110\,565\right)\cos\left(2\sqrt{z}\right)+7\left(256\,z^3-1200\,z^2-24\,960\,z+15\,795\right)\sin\left(2\sqrt{z}\right)\right)z^{5/4}+$$
$$32\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(256\,z^3+5488\,z^2+27\,300\,z-110\,565\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.7\left(256\,z^3-1200\,z^2-24\,960\,z+15\,795\right)\cos\left(2\sqrt{z}\right)\right)z^{5/4}-3\,160\,080\,z+1\,514\,205\right)$$

07.22.03.6798.01

$${}_1F_2\left(3;-\frac{23}{4},\frac{3}{4};z\right)=$$
$$\frac{1}{1\,514\,205}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\left(2048\,z^4-39\,680\,z^3-213\,120\,z^2+1\,441\,440\,z+1\,514\,205\right)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\sqrt[4]{z}\,\left(1024\,z^4-512\,z^{7/2}-\right.\right.\right.$$
$$\left.\left.20\,160\,z^3+77\,280\,z^{5/2}-84\,000\,z^2-181\,440\,z^{3/2}+714\,420\,z-935\,550\,\sqrt{z}+467\,775\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-$$
$$\sqrt{2\,\pi}\;\sqrt[4]{z}\,\left(1024\,z^4+512\,z^{7/2}-20\,160\,z^3-77\,280\,z^{5/2}-84\,000\,z^2+181\,440\,z^{3/2}+\right.$$
$$\left.\left.\left.714\,420\,z+935\,550\,\sqrt{z}+467\,775\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6799.01

$${}_1F_2\left(3;-\frac{23}{4},\frac{3}{4};-z\right)=\frac{1}{1\,514\,205}$$
$$\left(2048\,z^4+39\,680\,z^3-213\,120\,z^2-1\,441\,440\,z+4\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\,z^4+20\,160\,z^3-84\,000\,z^2-714\,420\,z+467\,775\right)\right.\right.$$
$$\left.\cos\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(256\,z^3+38\,640\,z^2+90\,720\,z-467\,775\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z}\;-$$
$$4\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(256\,z^3+38\,640\,z^2+90\,720\,z-467\,775\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(1024\,z^4+20\,160\,z^3-84\,000\,z^2-714\,420\,z+467\,775\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z}\;+1\,514\,205\right)$$

07.22.03.6800.01

$${}_1F_2\left(3;-\frac{23}{4},\frac{7}{4};z\right)=\frac{1}{4\,037\,880\,z^{3/4}}$$
$$\left(e^{-2\sqrt{z}}\left(-24\,e^{2\sqrt{z}}\;z^{3/4}\left(896\,z^3-12\,480\,z^2-114\,840\,z-18\,095\right)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\,\left(2048\,z^{9/2}-10\,240\,z^4+640\,z^{7/2}+\right.\right.\right.$$
$$\left.152\,320\,z^3-624\,960\,z^{5/2}+1\,199\,520\,z^2-970\,200\,z^{3/2}-415\,800\,z+1\,351\,350\,\sqrt{z}-675\,675\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+$$
$$\sqrt{2\,\pi}\,\left(2048\,z^{9/2}+10\,240\,z^4+640\,z^{7/2}-152\,320\,z^3-624\,960\,z^{5/2}-1\,199\,520\,z^2-\right.$$
$$\left.\left.\left.970\,200\,z^{3/2}+415\,800\,z+1\,351\,350\,\sqrt{z}+675\,675\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6801.01

$$ {}_1F_2\left(3; -\frac{23}{4}, \frac{7}{4}; -z\right) = \frac{1}{1\,009\,470\, z^{3/4}} $$
$$ \left(6 z^{3/4} \left(896 z^3 + 12\,480 z^2 - 114\,840 z + 18\,095\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(5\left(2048 z^4 + 30\,464 z^3 - 239\,904 z^2 - 83\,160 z + 135\,135\right)\right.\right. $$
$$ \left.\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1024 z^4 - 320 z^3 - 312\,480 z^2 + 485\,100 z + 675\,675\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(1024 z^4 - 320 z^3 - 312\,480 z^2 + 485\,100 z + 675\,675\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left. 5\left(2048 z^4 + 30\,464 z^3 - 239\,904 z^2 - 83\,160 z + 135\,135\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6802.01

$$ {}_1F_2\left(3; -\frac{23}{4}, \frac{11}{4}; z\right) = $$
$$ \frac{1}{4\,614\,720\, z^{7/4}}\left(e^{-2\sqrt{z}}\left(16 e^{2\sqrt{z}}\, z^{3/4}\left(512 z^4 + 24\,576 z^3 + 54\,720 z^2 - 741\,180 z - 2\,027\,025\right) + e^{4\sqrt{z}}\sqrt{2\pi}\right.\right. $$
$$ \left(4096 z^5 - 40\,960 z^{9/2} + 185\,600 z^4 - 437\,760 z^{7/2} + 282\,240 z^3 + 1\,552\,320 z^{5/2} - \right. $$
$$ \left. 5\,821\,200 z^2 + 10\,810\,800 z^{3/2} - 13\,513\,500 z + 12\,162\,150\sqrt{z} - 6\,081\,075\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\left(-4096 z^5 - 40\,960 z^{9/2} - 185\,600 z^4 - 437\,760 z^{7/2} - 282\,240 z^3 + 1\,552\,320 z^{5/2} + 5\,821\,200 z^2 + \right. $$
$$ \left.\left. 10\,810\,800 z^{3/2} + 13\,513\,500 z + 12\,162\,150\sqrt{z} + 6\,081\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6803.01

$$ {}_1F_2\left(3; -\frac{23}{4}, \frac{11}{4}; -z\right) = \frac{1}{1\,153\,680\, z^{7/4}}\left(-4 z^{3/4}\left(512 z^4 - 24\,576 z^3 + 54\,720 z^2 + 741\,180 z - 2\,027\,025\right) - \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096 z^5 - 185\,600 z^4 + 282\,240 z^3 + 5\,821\,200 z^2 - 13\,513\,500 z + 6\,081\,075\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 10\sqrt{z}\left(-4096 z^4 + 43\,776 z^3 + 155\,232 z^2 - 1\,081\,080 z + 1\,216\,215\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\left(4096 z^4 - 43\,776 z^3 - 155\,232 z^2 + 1\,081\,080 z - 1\,216\,215\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. \left(4096 z^5 - 185\,600 z^4 + 282\,240 z^3 + 5\,821\,200 z^2 - 13\,513\,500 z + 6\,081\,075\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6804.01

$$ {}_1F_2\left(3; -\frac{23}{4}, \frac{15}{4}; z\right) = $$

$$ \frac{1}{3\,356\,160\, z^{11/4}} \left(e^{-2\sqrt{z}} \left(-48\, e^{2\sqrt{z}}\, z^{3/4} \left(5376\, z^4 + 236\,672\, z^3 + 3\,390\,160\, z^2 + 24\,324\,300\, z + 80\,405\,325\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \right.\right. $$
$$ \left(8192\, z^{11/2} - 126\,976\, z^5 + 1\,006\,080\, z^{9/2} - 5\,402\,880\, z^4 + 22\,176\,000\, z^{7/2} - 74\,511\,360\, z^3 + 211\,891\,680\, z^{5/2} - \right. $$
$$ \left. 508\,107\,600\, z^2 + 989\,188\,200\, z^{3/2} - 1\,459\,458\,000\, z + 1\,447\,295\,850\, \sqrt{z} - 723\,647\,925\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \left.\left. \sqrt{2\pi}\, \left(8192\, z^{11/2} + 126\,976\, z^5 + 1\,006\,080\, z^{9/2} + 5\,402\,880\, z^4 + 22\,176\,000\, z^{7/2} + 74\,511\,360\, z^3 + 211\,891\,680\, z^{5/2} + \right.\right.\right. $$
$$ \left.\left.\left. 508\,107\,600\, z^2 + 989\,188\,200\, z^{3/2} + 1\,459\,458\,000\, z + 1\,447\,295\,850\, \sqrt{z} + 723\,647\,925\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6805.01

$$ {}_1F_2\left(3; -\frac{23}{4}, \frac{15}{4}; -z\right) = $$

$$ \frac{1}{839\,040\, z^{11/4}} \left(-12\, z^{3/4} \left(5376\, z^4 - 236\,672\, z^3 + 3\,390\,160\, z^2 - 24\,324\,300\, z + 80\,405\,325\right) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \right. $$
$$ \left(2\sqrt{z}\, \left(4096\, z^5 - 503\,040\, z^4 + 11\,088\,000\, z^3 - 105\,945\,840\, z^2 + 494\,594\,100\, z - 723\,647\,925\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. \left(-126\,976\, z^5 + 5\,402\,880\, z^4 - 74\,511\,360\, z^3 + 508\,107\,600\, z^2 - 1\,459\,458\,000\, z + 723\,647\,925\right) \sin\left(2\sqrt{z}\right)\right) - $$
$$ \left.\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(126\,976\, z^5 - 5\,402\,880\, z^4 + 74\,511\,360\, z^3 - 508\,107\,600\, z^2 + 1\,459\,458\,000\, z - 723\,647\,925\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 2\sqrt{z}\, \left(4096\, z^5 - 503\,040\, z^4 + 11\,088\,000\, z^3 - 105\,945\,840\, z^2 + 494\,594\,100\, z - 723\,647\,925\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6806.01

$$ {}_1F_2\left(3; -\frac{23}{4}, \frac{19}{4}; z\right) = \frac{1}{1\,789\,952\, z^{15/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(2048\, z^5 + 505\,088\, z^4 + 23\,788\,928\, z^3 + 469\,188\,720\, z^2 + 4\,318\,914\,600\, z + 16\,804\,712\,925\right) + \right.\right. $$
$$ e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(16\,384\, z^6 - 352\,256\, z^{11/2} + 3\,949\,568\, z^5 - 30\,553\,600\, z^{9/2} + 181\,843\,200\, z^4 - \right. $$
$$ 876\,395\,520\, z^{7/2} + 3\,491\,167\,680\, z^3 - 11\,489\,718\,240\, z^{5/2} + 30\,702\,672\,000\, z^2 - $$
$$ \left. 64\,324\,260\,000\, z^{3/2} + 99\,380\,981\,700\, z - 100\,828\,277\,550\, \sqrt{z} + 50\,414\,138\,775\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - $$
$$ \left.\sqrt{2\pi}\, \left(16\,384\, z^6 + 352\,256\, z^{11/2} + 3\,949\,568\, z^5 + 30\,553\,600\, z^{9/2} + 181\,843\,200\, z^4 + 876\,395\,520\, z^{7/2} + \right.\right. $$
$$ 3\,491\,167\,680\, z^3 + 11\,489\,718\,240\, z^{5/2} + 30\,702\,672\,000\, z^2 + 64\,324\,260\,000\, z^{3/2} + $$
$$ \left.\left. 99\,380\,981\,700\, z + 100\,828\,277\,550\, \sqrt{z} + 50\,414\,138\,775\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6807.01

$$ {}_1F_2\left(3; -\frac{23}{4}, \frac{19}{4}; -z\right) = \frac{1}{447\,488\, z^{15/4}} $$

$$ \left(4 z^{3/4} \left(2048 z^5 - 505\,088 z^4 + 23\,788\,928 z^3 - 469\,188\,720 z^2 + 4\,318\,914\,600 z - 16\,804\,712\,925\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right. $$
$$ \left(\left(16\,384 z^6 - 3\,949\,568 z^5 + 181\,843\,200 z^4 - 3\,491\,167\,680 z^3 + 30\,702\,672\,000 z^2 - 99\,380\,981\,700 z + 50\,414\,138\,775\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-176\,128 z^5 + 15\,276\,800 z^4 - 438\,197\,760 z^3 + \right. $$
$$ \left.\left. 5\,744\,859\,120 z^2 - 32\,162\,130\,000 z + 50\,414\,138\,775\right) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left(2\sqrt{z}\left(176\,128 z^5 - 15\,276\,800 z^4 + 438\,197\,760 z^3 - 5\,744\,859\,120 z^2 + 32\,162\,130\,000 z - 50\,414\,138\,775\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + \left(16\,384 z^6 - 3\,949\,568 z^5 + 181\,843\,200 z^4 - 3\,491\,167\,680 z^3 + \right. $$
$$ \left.\left.\left. 30\,702\,672\,000 z^2 - 99\,380\,981\,700 z + 50\,414\,138\,775\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6808.01

$$ {}_1F_2\left(3; -\frac{23}{4}, \frac{23}{4}; z\right) = \frac{1}{753\,664\, z^{19/4}} \left(e^{-2\sqrt{z}} \left(-16 e^{2\sqrt{z}}\, z^{3/4}\right.\right. $$
$$ \left(115\,712 z^5 + 17\,295\,104 z^4 + 838\,918\,080 z^3 + 18\,378\,360\,000 z^2 + 182\,451\,168\,900 z + 756\,212\,081\,625\right) + $$
$$ e^{4\sqrt{z}}\sqrt{2\pi}\left(32\,768 z^{13/2} - 917\,504 z^6 + 13\,404\,160 z^{11/2} - 134\,830\,080 z^5 + 1\,037\,836\,800 z^{9/2} - \right. $$
$$ 6\,423\,056\,640 z^4 + 32\,674\,561\,920 z^{7/2} - 137\,340\,403\,200 z^3 + 473\,426\,553\,600 z^{5/2} - 1\,312\,214\,904\,000 z^2 + $$
$$ \left. 2\,823\,191\,771\,400 z^{3/2} - 4\,436\,444\,212\,200 z + 4\,537\,272\,489\,750\sqrt{z} - 2\,268\,636\,244\,875\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\left(32\,768 z^{13/2} + 917\,504 z^6 + 13\,404\,160 z^{11/2} + 134\,830\,080 z^5 + 1\,037\,836\,800 z^{9/2} + 6\,423\,056\,640 z^4 + \right. $$
$$ 32\,674\,561\,920 z^{7/2} + 137\,340\,403\,200 z^3 + 473\,426\,553\,600 z^{5/2} + 1\,312\,214\,904\,000 z^2 + $$
$$ \left.\left. 2\,823\,191\,771\,400 z^{3/2} + 4\,436\,444\,212\,200 z + 4\,537\,272\,489\,750\sqrt{z} + 2\,268\,636\,244\,875\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6809.01

$${}_1F_2\left(3; -\frac{23}{4}, \frac{23}{4}; -z\right) =$$

$$\frac{1}{188\,416\,z^{19/4}}\left(4\,z^{3/4}\left(115\,712\,z^5 - 17\,295\,104\,z^4 + 838\,918\,080\,z^3 - 18\,378\,360\,000\,z^2 + 182\,451\,168\,900\,z - 756\,212\,081\,625\right) + \right.$$

$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(7\left(131\,072\,z^6 - 19\,261\,440\,z^5 + 917\,579\,520\,z^4 - 19\,620\,057\,600\,z^3 + 187\,459\,272\,000\,z^2 - \right.\right.$$

$$\left.633\,777\,744\,600\,z + 324\,090\,892\,125\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,384\,z^6 - 6\,702\,080\,z^5 + 518\,918\,400\,z^4 - \right.$$

$$\left.\left.16\,337\,280\,960\,z^3 + 236\,713\,276\,800\,z^2 - 1\,411\,595\,885\,700\,z + 2\,268\,636\,244\,875\right)\sin\left(2\sqrt{z}\right)\right) +$$

$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(16\,384\,z^6 - 6\,702\,080\,z^5 + 518\,918\,400\,z^4 - 16\,337\,280\,960\,z^3 + 236\,713\,276\,800\,z^2 - \right.\right.$$

$$\left.1\,411\,595\,885\,700\,z + 2\,268\,636\,244\,875\right)\cos\left(2\sqrt{z}\right) - 7\left(131\,072\,z^6 - 19\,261\,440\,z^5 + 917\,579\,520\,z^4 - \right.$$

$$\left.\left.\left.19\,620\,057\,600\,z^3 + 187\,459\,272\,000\,z^2 - 633\,777\,744\,600\,z + 324\,090\,892\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 = -\frac{21}{4}$

07.22.03.6810.01

$${}_1F_2\left(3; -\frac{21}{4}, -\frac{19}{4}; z\right) =$$

$$\frac{1}{13\,749\,310\,575}\left(e^{-2\sqrt{z}}\left(-65\,536\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(16\,z + 240\sqrt{z} + 837\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4} - 65\,536\,\sqrt{2\pi}\right.\right.$$

$$\left(16\,z - 240\sqrt{z} + 837\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4} + e^{2\sqrt{z}}\,\left(-30\,932\,992\,z^6 + 22\,020\,096\,z^5 + \right.$$

$$\left.\left.\left.14\,745\,600\,z^4 + 38\,707\,200\,z^3 + 207\,567\,360\,z^2 + 1\,654\,052\,400\,z + 13\,749\,310\,575\right)\right)\right)$$

07.22.03.6811.01

$${}_1F_2\left(3; -\frac{21}{4}, -\frac{19}{4}; -z\right) =$$

$$\frac{1}{13\,749\,310\,575}\left(-30\,932\,992\,z^6 + 262\,144\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z - 837\right)\cos\left(2\sqrt{z}\right) + 240\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{23/4} + \right.$$

$$262\,144\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z - 837\right)\sin\left(2\sqrt{z}\right) - 240\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)z^{23/4} - 22\,020\,096\,z^5 + $$

$$\left.14\,745\,600\,z^4 - 38\,707\,200\,z^3 + 207\,567\,360\,z^2 - 1\,654\,052\,400\,z + 13\,749\,310\,575\right)$$

07.22.03.6812.01

$$ {}_1F_2\left(3; -\frac{21}{4}, -\frac{15}{4}; z\right) = $$
$$ \frac{1}{723\,647\,925}\left(e^{-2\sqrt{z}}\left(8192\,e^{4\sqrt{z}}\sqrt{2\pi}\left(32z^{3/2}+432z+1242\sqrt{z}-621\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}-8192\sqrt{2\pi}\right.\right. $$
$$ \left(32z^{3/2}-432z+1242\sqrt{z}+621\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}+ $$
$$ \left.\left.e^{2\sqrt{z}}\left(524\,288z^6+18\,677\,760z^5+4\,915\,200z^4+5\,529\,600z^3+18\,869\,760z^2+110\,270\,160z+723\,647\,925\right)\right)\right) $$

07.22.03.6813.01

$$ {}_1F_2\left(3; -\frac{21}{4}, -\frac{15}{4}; -z\right) = \frac{1}{723\,647\,925} $$
$$ \left(524\,288z^6-18\,677\,760z^5-32\,768\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16z-621)\sin\left(2\sqrt{z}\right)-27(16z+23)\cos\left(2\sqrt{z}\right)\right)z^{19/4}+\right. $$
$$ 32\,768\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16z-621)\cos\left(2\sqrt{z}\right)+27(16z+23)\sin\left(2\sqrt{z}\right)\right)z^{19/4}+ $$
$$ \left.4\,915\,200z^4-5\,529\,600z^3+18\,869\,760z^2-110\,270\,160z+723\,647\,925\right) $$

07.22.03.6814.01

$$ {}_1F_2\left(3; -\frac{21}{4}, -\frac{11}{4}; z\right) = $$
$$ \frac{1}{48\,243\,195}\left(e^{-2\sqrt{z}}\left(-1024\,e^{4\sqrt{z}}\sqrt{2\pi}\left(64z^2+736z^{3/2}+1380z-2622\sqrt{z}+1311\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}-\right.\right. $$
$$ 1024\sqrt{2\pi}\left(64z^2-736z^{3/2}+1380z+2622\sqrt{z}+1311\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}- $$
$$ \left.\left.9\,e^{2\sqrt{z}}\left(163\,840z^5-647\,168z^4-204\,800z^3-299\,520z^2-1\,113\,840z-5\,360\,355\right)\right)\right) $$

07.22.03.6815.01

$$ {}_1F_2\left(3; -\frac{21}{4}, -\frac{11}{4}; -z\right) = $$
$$ \frac{1}{48\,243\,195}\left(-4096\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64z^2-1380z+1311\right)\cos\left(2\sqrt{z}\right)+46\sqrt{z}\,(16z+57)\sin\left(2\sqrt{z}\right)\right)z^{15/4}-\right. $$
$$ 4096\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64z^2-1380z+1311\right)\sin\left(2\sqrt{z}\right)-46\sqrt{z}\,(16z+57)\cos\left(2\sqrt{z}\right)\right)z^{15/4}+ $$
$$ \left.9\left(163\,840z^5+647\,168z^4-204\,800z^3+299\,520z^2-1\,113\,840z+5\,360\,355\right)\right) $$

07.22.03.6816.01

$$ {}_1F_2\left(3; -\frac{21}{4}, -\frac{7}{4}; z\right) = \frac{1}{4\,385\,745}\left(e^{-2\sqrt{z}}\left(128\,e^{4\sqrt{z}}\sqrt{2\pi}\left(128\,z^{5/2}+1152\,z^2+456\,z^{3/2}-5928\,z+8550\sqrt{z}-4275\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-128\sqrt{2\pi}\left(128\,z^{5/2}-1152\,z^2+456\,z^{3/2}+5928\,z+8550\sqrt{z}+4275\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+e^{2\sqrt{z}}\left(32\,768\,z^5+49\,152\,z^4+2\,534\,400\,z^3+898\,560\,z^2+1\,432\,080\,z+4\,385\,745\right)\right)\right) $$

07.22.03.6817.01

$$ {}_1F_2\left(3; -\frac{21}{4}, -\frac{7}{4}; -z\right) = \frac{1}{4\,385\,745}\left(-32\,768\,z^5+49\,152\,z^4-2\,534\,400\,z^3+512\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(64\,z^2-228\,z+4275\right)\sin\left(2\sqrt{z}\right)-3\left(384\,z^2+1976\,z-1425\right)\cos\left(2\sqrt{z}\right)\right)z^{11/4}-512\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(64\,z^2-228\,z+4275\right)\cos\left(2\sqrt{z}\right)+3\left(384\,z^2+1976\,z-1425\right)\sin\left(2\sqrt{z}\right)\right)z^{11/4}+898\,560\,z^2-1\,432\,080\,z+4\,385\,745\right) $$

07.22.03.6818.01

$$ {}_1F_2\left(3; -\frac{21}{4}, -\frac{3}{4}; z\right) = \frac{1}{626\,535}\left(e^{-2\sqrt{z}}\left(-16\,e^{4\sqrt{z}}\sqrt{2\pi}\left(256\,z^3+1536\,z^{5/2}-2928\,z^2-6000\,z^{3/2}+26\,100\,z-34\,650\sqrt{z}+17\,325\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-16\sqrt{2\pi}\left(256\,z^3-1536\,z^{5/2}-2928\,z^2+6000\,z^{3/2}+26\,100\,z+34\,650\sqrt{z}+17\,325\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\left(-47\,104\,z^4+161\,280\,z^3+1\,319\,040\,z^2+477\,360\,z+626\,535\right)\right)\right) $$

07.22.03.6819.01

$$ {}_1F_2\left(3; -\frac{21}{4}, -\frac{3}{4}; -z\right) = \frac{1}{626\,535}\left(-47\,104\,z^4-161\,280\,z^3+1\,319\,040\,z^2+64\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^3+2928\,z^2+26\,100\,z-17\,325\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\left(256\,z^2+1000\,z-5775\right)\sin\left(2\sqrt{z}\right)\right)z^{7/4}+64\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^3+2928\,z^2+26\,100\,z-17\,325\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\left(256\,z^2+1000\,z-5775\right)\cos\left(2\sqrt{z}\right)\right)z^{7/4}-477\,360\,z+626\,535\right) $$

07.22.03.6820.01

$$ {}_1F_2\left(3; -\frac{21}{4}, \frac{1}{4}; z\right) = \frac{1}{208\,845}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\left(2048 z^4 - 39\,680 z^3 + 91\,008 z^2 + 686\,880 z + 208\,845\right) + 2 e^{4\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(512 z^{7/2} + 1280 z^3 - 9696 z^{5/2} + 12\,240 z^2 + 27\,720 z^{3/2} - 110\,880 z + 145\,530\sqrt{z} - 72\,765\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 2\sqrt{2\pi}\, z^{3/4}\left(512 z^{7/2} - 1280 z^3 - 9696 z^{5/2} - 12\,240 z^2 + 27\,720 z^{3/2} + 110\,880 z + 145\,530\sqrt{z} + 72\,765\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6821.01

$$ {}_1F_2\left(3; -\frac{21}{4}, \frac{1}{4}; -z\right) = \frac{1}{208\,845}\left(2048 z^4 + 39\,680 z^3 + 91\,008 z^2 - 686\,880 z + 8\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(256 z^3 + 4848 z^2 + 13\,860 z - 72\,765\right)\cos\left(2\sqrt{z}\right) + 5\left(256 z^3 - 2448 z^2 - 22\,176 z + 14\,553\right)\sin\left(2\sqrt{z}\right)\right) z^{3/4} - 8\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(256 z^3 + 4848 z^2 + 13\,860 z - 72\,765\right)\sin\left(2\sqrt{z}\right) - 5\left(256 z^3 - 2448 z^2 - 22\,176 z + 14\,553\right)\cos\left(2\sqrt{z}\right)\right) z^{3/4} + 208\,845\right) $$

07.22.03.6822.01

$$ {}_1F_2\left(3; -\frac{21}{4}, \frac{5}{4}; z\right) = \frac{1}{835\,380\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4 e^{2\sqrt{z}}\sqrt[4]{z}\left(896 z^3 - 34\,752 z^2 - 20\,952 z + 227\,745\right) + e^{4\sqrt{z}}\sqrt{2\pi}\left(1024 z^4 - 1536 z^{7/2} - 14\,016 z^3 + 66\,528 z^{5/2} - 110\,880 z^2 + 291\,060 z - 436\,590\sqrt{z} + 218\,295\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\left(1024 z^4 + 1536 z^{7/2} - 14\,016 z^3 - 66\,528 z^{5/2} - 110\,880 z^2 + 291\,060 z + 436\,590\sqrt{z} + 218\,295\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6823.01

$$ {}_1F_2\left(3; -\frac{21}{4}, \frac{5}{4}; -z\right) = \frac{1}{208\,845\sqrt[4]{z}}\left(\sqrt[4]{z}\left(896 z^3 + 34\,752 z^2 - 20\,952 z - 227\,745\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024 z^4 + 14\,016 z^3 - 110\,880 z^2 - 291\,060 z + 218\,295\right)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\left(256 z^3 + 11\,088 z^2 - 72\,765\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\left(256 z^3 + 11\,088 z^2 - 72\,765\right)\cos\left(2\sqrt{z}\right) + \left(1024 z^4 + 14\,016 z^3 - 110\,880 z^2 - 291\,060 z + 218\,295\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6824.01

$$ {}_1F_2\left(3; -\frac{21}{4}, \frac{9}{4}; z\right) = \frac{1}{1\,336\,608\, z^{5/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(512 z^4 + 6144 z^3 - 101\,568 z^2 - 431\,676 z - 405\,405\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(2048 z^{9/2} - 12\,288 z^4 + \right.\right.\right. $$
$$ 21\,120 z^{7/2} + 59\,136 z^3 - 399\,168 z^{5/2} + 997\,920 z^2 - 1\,413\,720 z^{3/2} + 1\,247\,400 z - 810\,810 \sqrt{z} + 405\,405\Big) $$
$$ \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(-2048 z^{9/2} - 12\,288 z^4 - 21\,120 z^{7/2} + 59\,136 z^3 + 399\,168 z^{5/2} + \right. $$
$$ \left.\left.\left. 997\,920 z^2 + 1\,413\,720 z^{3/2} + 1\,247\,400 z + 810\,810 \sqrt{z} + 405\,405\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6825.01

$$ {}_1F_2\left(3; -\frac{21}{4}, \frac{9}{4}; -z\right) = \frac{1}{334\,152\, z^{5/4}} \left(2\, \sqrt[4]{z}\, \left(-512 z^4 + 6144 z^3 + 101\,568 z^2 - 431\,676 z + 405\,405\right) + \right. $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(3 \left(4096 z^4 + 19\,712 z^3 - 332\,640 z^2 + 415\,800 z - 135\,135\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 2\sqrt{z}\, \left(1024 z^4 - 10\,560 z^3 - 199\,584 z^2 + 706\,860 z - 405\,405\right) \sin\left(2\sqrt{z}\right)\right) - \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(1024 z^4 - 10\,560 z^3 - 199\,584 z^2 + 706\,860 z - 405\,405\right) \cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left. \left. 3 \left(4096 z^4 + 19\,712 z^3 - 332\,640 z^2 + 415\,800 z - 135\,135\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6826.01

$$ {}_1F_2\left(3; -\frac{21}{4}, \frac{13}{4}; z\right) = $$
$$ \frac{1}{1\,188\,096\, z^{9/4}} \left(e^{-2\sqrt{z}} \left(-24\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(3840 z^4 + 77\,696 z^3 + 454\,384 z^2 + 1\,621\,620 z + 3\,378\,375\right) + e^{4\sqrt{z}} \right.\right. $$
$$ \sqrt{2\pi}\, \left(4096 z^5 - 45\,056 z^{9/2} + 244\,992 z^4 - 861\,696 z^{7/2} + 2\,217\,600 z^3 - 4\,656\,960 z^{5/2} + \right. $$
$$ 8\,814\,960 z^2 - 15\,135\,120 z^{3/2} + 21\,081\,060 z - 20\,270\,250 \sqrt{z} + 10\,135\,125\Big) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\, \left(4096 z^5 + 45\,056 z^{9/2} + 244\,992 z^4 + 861\,696 z^{7/2} + 2\,217\,600 z^3 + 4\,656\,960 z^{5/2} + 8\,814\,960 z^2 + \right. $$
$$ \left.\left.\left. 15\,135\,120 z^{3/2} + 21\,081\,060 z + 20\,270\,250 \sqrt{z} + 10\,135\,125\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6827.01

$$ {}_1F_2\left(3; -\frac{21}{4}, \frac{13}{4}; -z\right) = \frac{1}{297\,024\, z^{9/4}}\left(-6\sqrt[4]{z}\left(3840 z^4 - 77\,696 z^3 + 454\,384 z^2 - 1\,621\,620 z + 3\,378\,375\right) - \right.$$
$$\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096 z^5 - 244\,992 z^4 + 2\,217\,600 z^3 - 8\,814\,960 z^2 + 21\,081\,060 z - 10\,135\,125\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left.\left. 22\sqrt{z}\left(2048 z^4 - 39\,168 z^3 + 211\,680 z^2 - 687\,960 z + 921\,375\right)\sin\left(2\sqrt{z}\right)\right) - \right.$$
$$\left.\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(22\sqrt{z}\left(2048 z^4 - 39\,168 z^3 + 211\,680 z^2 - 687\,960 z + 921\,375\right)\cos\left(2\sqrt{z}\right) + \right.\right.$$
$$\left.\left.\left(4096 z^5 - 244\,992 z^4 + 2\,217\,600 z^3 - 8\,814\,960 z^2 + 21\,081\,060 z - 10\,135\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6828.01

$$ {}_1F_2\left(3; -\frac{21}{4}, \frac{17}{4}; z\right) = \frac{1}{731\,136\, z^{13/4}}$$
$$\left(e^{-2\sqrt{z}}\left(8 e^{2\sqrt{z}}\sqrt[4]{z}\left(2048 z^5 + 300\,288 z^4 + 8\,577\,408 z^3 + 105\,945\,840 z^2 + 599\,999\,400 z + 1\,550\,674\,125\right) + e^{4\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left(8192 z^{11/2} - 135\,168 z^5 + 1\,165\,824 z^{9/2} - 6\,969\,600 z^4 + 32\,313\,600 z^{7/2} - 122\,411\,520 z^3 + 384\,864\,480 z^{5/2} - \right.$$
$$\left.\left.\left. 992\,431\,440 z^2 + 2\,027\,025\,000 z^{3/2} - 3\,081\,078\,000 z + 3\,101\,348\,250\sqrt{z} - 1\,550\,674\,125\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - \right.\right.$$
$$\left.\left.\sqrt{2\pi}\left(8192 z^{11/2} + 135\,168 z^5 + 1\,165\,824 z^{9/2} + 6\,969\,600 z^4 + 32\,313\,600 z^{7/2} + 122\,411\,520 z^3 + 384\,864\,480 z^{5/2} + \right.\right.\right.$$
$$\left.\left.\left. 992\,431\,440 z^2 + 2\,027\,025\,000 z^{3/2} + 3\,081\,078\,000 z + 3\,101\,348\,250\sqrt{z} + 1\,550\,674\,125\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6829.01

$$ {}_1F_2\left(3; -\frac{21}{4}, \frac{17}{4}; -z\right) =$$
$$\frac{1}{182\,784\, z^{13/4}}\left(2\sqrt[4]{z}\left(2048 z^5 - 300\,288 z^4 + 8\,577\,408 z^3 - 105\,945\,840 z^2 + 599\,999\,400 z - 1\,550\,674\,125\right) - \right.$$
$$\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(33\left(4096 z^5 - 211\,200 z^4 + 3\,709\,440 z^3 - 30\,073\,680 z^2 + 93\,366\,000 z - 46\,990\,125\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\left. 2\sqrt{z}\left(4096 z^5 - 582\,912 z^4 + 16\,156\,800 z^3 - 192\,432\,240 z^2 + 1\,013\,512\,500 z - 1\,550\,674\,125\right)\sin\left(2\sqrt{z}\right)\right) + \right.$$
$$\left.\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(4096 z^5 - 582\,912 z^4 + 16\,156\,800 z^3 - 192\,432\,240 z^2 + 1\,013\,512\,500 z - 1\,550\,674\,125\right)\right.\right.$$
$$\left.\left.\left.\cos\left(2\sqrt{z}\right) - 33\left(4096 z^5 - 211\,200 z^4 + 3\,709\,440 z^3 - 30\,073\,680 z^2 + 93\,366\,000 z - 46\,990\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6830.01

$$ {}_1F_2\left(3; -\frac{21}{4}, \frac{21}{4}; z\right) = \frac{1}{344\,064\, z^{17/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(-8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(93\,184\, z^5 + 9\,224\,448\, z^4 + 302\,702\,400\, z^3 + 4\,454\,049\,600\, z^2 + 27\,539\,972\,460\, z + 76\,603\,301\,775\right) + \right. \right. $$
$$ e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(16\,384\, z^6 - 368\,640\, z^{11/2} + 4\,359\,168\, z^5 - 35\,735\,040\, z^{9/2} + 225\,434\,880\, z^4 - \right. $$
$$ \left. 1\,146\,562\,560\, z^{7/2} + 4\,782\,697\,920\, z^3 - 16\,332\,956\,640\, z^{5/2} + 44\,886\,441\,600\, z^2 - \right. $$
$$ \left. 95\,935\,039\,200\, z^{3/2} + 150\,105\,255\,300\, z - 153\,206\,603\,550\, \sqrt{z} + 76\,603\,301\,775\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\, \left(16\,384\, z^6 + 368\,640\, z^{11/2} + 4\,359\,168\, z^5 + 35\,735\,040\, z^{9/2} + 225\,434\,880\, z^4 + 1\,146\,562\,560\, z^{7/2} + \right. $$
$$ 4\,782\,697\,920\, z^3 + 16\,332\,956\,640\, z^{5/2} + 44\,886\,441\,600\, z^2 + 95\,935\,039\,200\, z^{3/2} + $$
$$ \left. \left. 150\,105\,255\,300\, z + 153\,206\,603\,550\, \sqrt{z} + 76\,603\,301\,775\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6831.01

$$ {}_1F_2\left(3; -\frac{21}{4}, \frac{21}{4}; -z\right) = $$
$$ \frac{1}{86\,016\, z^{17/4}} \left(2\, \sqrt[4]{z}\, \left(93\,184\, z^5 - 9\,224\,448\, z^4 + 302\,702\,400\, z^3 - 4\,454\,049\,600\, z^2 + 27\,539\,972\,460\, z - 76\,603\,301\,775\right) + \right. $$
$$ \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(16\,384\, z^6 - 4\,359\,168\, z^5 + 225\,434\,880\, z^4 - 4\,782\,697\,920\, z^3 + \right. \right. $$
$$ \left. \left. 44\,886\,441\,600\, z^2 - 150\,105\,255\,300\, z + 76\,603\,301\,775\right) \cos\left(2\, \sqrt{z}\right) - \right. $$
$$ \left. 90\, \sqrt{z}\, \left(4096\, z^5 - 397\,056\, z^4 + 12\,739\,584\, z^3 - 181\,477\,296\, z^2 + 1\,065\,944\,880\, z - 1\,702\,295\,595\right) \sin\left(2\, \sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(90\, \sqrt{z}\, \left(4096\, z^5 - 397\,056\, z^4 + 12\,739\,584\, z^3 - 181\,477\,296\, z^2 + 1\,065\,944\,880\, z - 1\,702\,295\,595\right) \right. $$
$$ \cos\left(2\, \sqrt{z}\right) + \left(16\,384\, z^6 - 4\,359\,168\, z^5 + 225\,434\,880\, z^4 - 4\,782\,697\,920\, z^3 + \right. $$
$$ \left. \left. \left. 44\,886\,441\,600\, z^2 - 150\,105\,255\,300\, z + 76\,603\,301\,775\right) \sin\left(2\, \sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 3$, $b_1 = -\frac{19}{4}$

07.22.03.6832.01

$$ {}_1F_2\left(3; -\frac{19}{4}, -\frac{17}{4}; z\right) = \frac{1}{654\,729\,075} \left(e^{-2\sqrt{z}} \left(16\,384\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(16\, z + 224\, \sqrt{z} + 725\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{21/4} - \right. \right. $$
$$ 16\,384\, \sqrt{2\pi}\, \left(16\, z - 224\, \sqrt{z} + 725\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{21/4} + $$
$$ \left. \left. e^{2\sqrt{z}}\, \left(524\,288\, z^6 + 22\,020\,096\, z^5 + 2\,949\,120\, z^4 + 4\,300\,800\, z^3 + 15\,966\,720\, z^2 + 97\,297\,200\, z + 654\,729\,075\right)\right)\right) $$

07.22.03.6833.01

$${}_1F_2\left(3;-\frac{19}{4},-\frac{17}{4};-z\right)=$$
$$\frac{1}{654\,729\,075}\left(524\,288\,z^6+65\,536\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16\,z-725)\cos\left(2\sqrt{z}\right)+224\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{21/4}-\right.$$
$$65\,536\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16\,z-725)\sin\left(2\sqrt{z}\right)-224\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)z^{21/4}-$$
$$\left.22\,020\,096\,z^5+2\,949\,120\,z^4-4\,300\,800\,z^3+15\,966\,720\,z^2-97\,297\,200\,z+654\,729\,075\right)$$

07.22.03.6834.01

$${}_1F_2\left(3;-\frac{19}{4},-\frac{13}{4};z\right)=$$
$$\frac{1}{38\,513\,475}\left(e^{-2\sqrt{z}}\left(-2048\,e^{4\sqrt{z}}\sqrt{2\pi}\left(32\,z^{3/2}+400\,z+1050\sqrt{z}-525\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}-2048\sqrt{2\pi}\right.\right.$$
$$\left(32\,z^{3/2}-400\,z+1050\sqrt{z}+525\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}+$$
$$\left.\left.e^{2\sqrt{z}}\left(-1\,605\,632\,z^5+2\,949\,120\,z^4+860\,160\,z^3+1\,774\,080\,z^2+7\,484\,400\,z+38\,513\,475\right)\right)\right)$$

07.22.03.6835.01

$${}_1F_2\left(3;-\frac{19}{4},-\frac{13}{4};-z\right)=$$
$$\frac{1}{38\,513\,475}\left(1\,605\,632\,z^5-8192\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16\,z-525)\sin\left(2\sqrt{z}\right)-25\,(16\,z+21)\cos\left(2\sqrt{z}\right)\right)z^{17/4}-\right.$$
$$8192\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16\,z-525)\cos\left(2\sqrt{z}\right)+25\,(16\,z+21)\sin\left(2\sqrt{z}\right)\right)z^{17/4}+$$
$$\left.2\,949\,120\,z^4-860\,160\,z^3+1\,774\,080\,z^2-7\,484\,400\,z+38\,513\,475\right)$$

07.22.03.6836.01

$${}_1F_2\left(3;-\frac{19}{4},-\frac{9}{4};z\right)=$$
$$\frac{1}{2\,962\,575}\left(e^{-2\sqrt{z}}\left(256\,e^{4\sqrt{z}}\sqrt{2\pi}\left(64\,z^2+672\,z^{3/2}+1092\,z-2142\sqrt{z}+1071\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}-256\right.\right.$$
$$\sqrt{2\pi}\left(64\,z^2-672\,z^{3/2}+1092\,z+2142\sqrt{z}+1071\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}+$$
$$\left.\left.e^{2\sqrt{z}}\left(32\,768\,z^5+479\,232\,z^4+860\,160\,z^3+354\,816\,z^2+831\,600\,z+2\,962\,575\right)\right)\right)$$

07.22.03.6837.01

$${}_1F_2\left(3;-\frac{19}{4},-\frac{9}{4};-z\right)=\frac{1}{2\,962\,575}$$
$$\left(-32\,768\,z^5+479\,232\,z^4-1024\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64\,z^2-1092\,z+1071\right)\cos\left(2\sqrt{z}\right)+42\sqrt{z}\,(16\,z+51)\sin\left(2\sqrt{z}\right)\right)z^{13/4}+\right.$$
$$1024\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64\,z^2-1092\,z+1071\right)\sin\left(2\sqrt{z}\right)-42\sqrt{z}\,(16\,z+51)\cos\left(2\sqrt{z}\right)\right)z^{13/4}-$$
$$\left.860\,160\,z^3+354\,816\,z^2-831\,600\,z+2\,962\,575\right)$$

07.22.03.6838.01

$${}_1F_2\left(3;-\frac{19}{4},-\frac{5}{4};z\right)=$$
$$\frac{1}{329\,175}\left(e^{-2\sqrt{z}}\left(-32\,e^{4\sqrt{z}}\sqrt{2\pi}\left(128\,z^{5/2}+1024\,z^2+136\,z^{3/2}-4488\,z+6630\sqrt{z}-3315\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}-\right.\right.$$
$$32\sqrt{2\pi}\left(128\,z^{5/2}-1024\,z^2+136\,z^{3/2}+4488\,z+6630\sqrt{z}+3315\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}+$$
$$\left.\left.e^{2\sqrt{z}}\left(-63\,488\,z^4+279\,040\,z^3+354\,816\,z^2+166\,320\,z+329\,175\right)\right)\right)$$

07.22.03.6839.01

$${}_1F_2\left(3;-\frac{19}{4},-\frac{5}{4};-z\right)=\frac{1}{329\,175}\left(-63\,488\,z^4-279\,040\,z^3+\right.$$
$$128\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-1024\,z^2-4488\,z+3315\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(64\,z^2-68\,z+3315\right)\sin\left(2\sqrt{z}\right)\right)z^{9/4}+$$
$$128\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(64\,z^2-68\,z+3315\right)\cos\left(2\sqrt{z}\right)+\left(1024\,z^2+4488\,z-3315\right)\sin\left(2\sqrt{z}\right)\right)z^{9/4}+$$
$$\left.354\,816\,z^2-166\,320\,z+329\,175\right)$$

07.22.03.6840.01

$${}_1F_2\left(3;-\frac{19}{4},-\frac{1}{4};z\right)=$$
$$\frac{1}{65\,835}\left(e^{-2\sqrt{z}}\left(4\,e^{4\sqrt{z}}\sqrt{2\pi}\left(256\,z^3+1280\,z^{5/2}-2928\,z^2-3120\,z^{3/2}+17\,940\,z-24\,570\sqrt{z}+12\,285\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}-\right.\right.$$
$$4\sqrt{2\pi}\left(256\,z^3-1280\,z^{5/2}-2928\,z^2+3120\,z^{3/2}+17\,940\,z+24\,570\sqrt{z}+12\,285\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+$$
$$\left.\left.e^{2\sqrt{z}}\left(2048\,z^4-25\,600\,z^3+143\,808\,z^2+166\,320\,z+65\,835\right)\right)\right)$$

07.22.03.6841.01

$$ {}_1F_2\left(3; -\frac{19}{4}, -\frac{1}{4}; -z\right) = \frac{1}{65\,835}\left(2048\,z^4 + 25\,600\,z^3 + 143\,808\,z^2 + 16\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^3 + 2928\,z^2 + 17\,940\,z - 12\,285\right)\cos\left(2\sqrt{z}\right) + 10\sqrt{z}\,\left(128\,z^2 + 312\,z - 2457\right)\sin\left(2\sqrt{z}\right)\right)z^{5/4} - 16\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^3 + 2928\,z^2 + 17\,940\,z - 12\,285\right)\sin\left(2\sqrt{z}\right) - 10\sqrt{z}\,\left(128\,z^2 + 312\,z - 2457\right)\cos\left(2\sqrt{z}\right)\right)z^{5/4} - 166\,320\,z + 65\,835\right) $$

07.22.03.6842.01

$$ {}_1F_2\left(3; -\frac{19}{4}, \frac{3}{4}; z\right) = \frac{1}{131\,670}\left(e^{-2\sqrt{z}}\left(-2\,e^{2\sqrt{z}}\left(640\,z^3 + 16\,224\,z^2 - 57\,960\,z - 65\,835\right) - e^{4\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\left(512\,z^{7/2} + 768\,z^3 - 8160\,z^{5/2} + 14\,160\,z^2 + 7560\,z^{3/2} - 60\,480\,z + 85\,050\sqrt{z} - 42\,525\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - \sqrt{2\pi}\,\sqrt[4]{z}\left(512\,z^{7/2} - 768\,z^3 - 8160\,z^{5/2} - 14\,160\,z^2 + 7560\,z^{3/2} + 60\,480\,z + 85\,050\sqrt{z} + 42\,525\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6843.01

$$ {}_1F_2\left(3; -\frac{19}{4}, \frac{3}{4}; -z\right) = \frac{1}{65\,835}\left(640\,z^3 - 16\,224\,z^2 - 57\,960\,z - 2\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(256\,z^3 + 4080\,z^2 + 3780\,z - 42\,525\right)\cos\left(2\sqrt{z}\right) + 3\left(256\,z^3 - 4720\,z^2 - 20\,160\,z + 14\,175\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} - 2\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-768\,z^3 + 14\,160\,z^2 + 60\,480\,z - 42\,525\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(256\,z^3 + 4080\,z^2 + 3780\,z - 42\,525\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + 65\,835\right) $$

07.22.03.6844.01

$$ {}_1F_2\left(3; -\frac{19}{4}, \frac{7}{4}; z\right) = \frac{1}{351\,120\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(-64\,e^{2\sqrt{z}}\,z^{3/4}\left(32\,z^3 - 204\,z^2 - 3870\,z - 1155\right) - e^{4\sqrt{z}}\,\sqrt{2\pi}\left(1024\,z^4 - 2560\,z^{7/2} - 7360\,z^3 + 50\,400\,z^{5/2} - 110\,880\,z^2 + 100\,800\,z^{3/2} + 18\,900\,z - 103\,950\sqrt{z} + 51\,975\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\left(1024\,z^4 + 2560\,z^{7/2} - 7360\,z^3 - 50\,400\,z^{5/2} - 110\,880\,z^2 - 100\,800\,z^{3/2} + 18\,900\,z + 103\,950\sqrt{z} + 51\,975\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6845.01

$$ {}_1F_2\left(3; -\frac{19}{4}, \frac{7}{4}; -z\right) = \frac{1}{87\,780\, z^{3/4}} $$
$$ \left(16 z^{3/4}\left(32 z^3 + 204 z^2 - 3870 z + 1155\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024 z^4 + 7360 z^3 - 110\,880 z^2 - 18\,900 z + 51\,975\right)\cos\left(2\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. 10\sqrt{z}\left(-256 z^3 - 5040 z^2 + 10\,080 z + 10\,395\right)\sin\left(2\sqrt{z}\right)\right) - \right. $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\left(256 z^3 + 5040 z^2 - 10\,080 z - 10\,395\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left(1024 z^4 + 7360 z^3 - 110\,880 z^2 - 18\,900 z + 51\,975\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6846.01

$$ {}_1F_2\left(3; -\frac{19}{4}, \frac{11}{4}; z\right) = \frac{1}{401\,280\, z^{7/4}} $$
$$ \left(e^{-2\sqrt{z}}\left(16 e^{2\sqrt{z}}\, z^{3/4}\left(1856 z^3 + 7776 z^2 - 48\,180 z - 135\,135\right) - e^{4\sqrt{z}}\sqrt{2\pi}\left(2048 z^{9/2} - 14\,336 z^4 + 42\,624 z^{7/2} - \right.\right.\right. $$
$$ \left.\left.\left. 48\,384 z^3 - 76\,608 z^{5/2} + 393\,120 z^2 - 748\,440 z^{3/2} + 914\,760 z - 810\,810\sqrt{z} + 405\,405\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \right. $$
$$ \sqrt{2\pi}\left(-2048 z^{9/2} - 14\,336 z^4 - 42\,624 z^{7/2} - 48\,384 z^3 + 76\,608 z^{5/2} + 393\,120 z^2 + \right. $$
$$ \left.\left.\left. 748\,440 z^{3/2} + 914\,760 z + 810\,810\sqrt{z} + 405\,405\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6847.01

$$ {}_1F_2\left(3; -\frac{19}{4}, \frac{11}{4}; -z\right) = \frac{1}{100\,320\, z^{7/4}}\left(4 z^{3/4}\left(1856 z^3 - 7776 z^2 - 48\,180 z + 135\,135\right) + \right. $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(1024 z^4 - 21\,312 z^3 - 38\,304 z^2 + 374\,220 z - 405\,405\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 7\left(-2048 z^4 + 6912 z^3 + 56\,160 z^2 - 130\,680 z + 57\,915\right)\sin\left(2\sqrt{z}\right)\right) + \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(7\left(2048 z^4 - 6912 z^3 - 56\,160 z^2 + 130\,680 z - 57\,915\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 2\sqrt{z}\left(1024 z^4 - 21\,312 z^3 - 38\,304 z^2 + 374\,220 z - 405\,405\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6848.01

$$ {}_1F_2\left(3; -\frac{19}{4}, \frac{15}{4}; z\right) = \frac{1}{291\,840\, z^{11/4}} \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(512\, z^4 + 39\,936\, z^3 + 609\,600\, z^2 + 4\,324\,320\, z + 14\,189\,175\right) - e^{4\sqrt{z}} \right.\right. $$
$$ \sqrt{2\pi}\, \left(4096\, z^5 - 49\,152\, z^{9/2} + 306\,432\, z^4 - 1\,322\,496\, z^{7/2} + 4\,475\,520\, z^3 - 12\,640\,320\, z^{5/2} + \right. $$
$$ \left. 30\,103\,920\, z^2 - 58\,378\,320\, z^{3/2} + 85\,945\,860\, z - 85\,135\,050\, \sqrt{z} + 42\,567\,525\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \left.\left. \sqrt{2\pi}\, \left(4096\, z^5 + 49\,152\, z^{9/2} + 306\,432\, z^4 + 1\,322\,496\, z^{7/2} + 4\,475\,520\, z^3 + 12\,640\,320\, z^{5/2} + \right.\right. $$
$$ \left.\left. 30\,103\,920\, z^2 + 58\,378\,320\, z^{3/2} + 85\,945\,860\, z + 85\,135\,050\, \sqrt{z} + 42\,567\,525\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6849.01

$$ {}_1F_2\left(3; -\frac{19}{4}, \frac{15}{4}; -z\right) = \frac{1}{72\,960\, z^{11/4}} \left(-4\, z^{3/4} \left(512\, z^4 - 39\,936\, z^3 + 609\,600\, z^2 - 4\,324\,320\, z + 14\,189\,175\right) - \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(4096\, z^5 - 306\,432\, z^4 + 4\,475\,520\, z^3 - 30\,103\,920\, z^2 + 85\,945\,860\, z - 42\,567\,525\right) \cos\left(2\sqrt{z}\right) - \right. $$
$$ \left. 6\sqrt{z}\, \left(8192\, z^4 - 220\,416\, z^3 + 2\,106\,720\, z^2 - 9\,729\,720\, z + 14\,189\,175\right) \sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(6\sqrt{z}\, \left(8192\, z^4 - 220\,416\, z^3 + 2\,106\,720\, z^2 - 9\,729\,720\, z + 14\,189\,175\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. \left. \left(4096\, z^5 - 306\,432\, z^4 + 4\,475\,520\, z^3 - 30\,103\,920\, z^2 + 85\,945\,860\, z - 42\,567\,525\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6850.01

$$ {}_1F_2\left(3; -\frac{19}{4}, \frac{19}{4}; z\right) = \frac{1}{155\,648\, z^{15/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(18\,176\, z^4 + 1\,123\,712\, z^3 + 23\,783\,760\, z^2 + 224\,324\,100\, z + 884\,458\,575\right) - e^{4\sqrt{z}}\, \sqrt{2\pi} \right.\right. $$
$$ \left(8192\, z^{11/2} - 143\,360\, z^5 + 1\,329\,664\, z^{9/2} - 8\,628\,480\, z^4 + 43\,464\,960\, z^{7/2} - 177\,408\,000\, z^3 + 592\,431\,840\, z^{5/2} - \right. $$
$$ \left. 1\,597\,836\,240\, z^2 + 3\,367\,564\,200\, z^{3/2} - 5\,221\,616\,400\, z + 5\,306\,751\,450\, \sqrt{z} - 2\,653\,375\,725\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - $$
$$ \left.\left. \sqrt{2\pi}\, \left(8192\, z^{11/2} + 143\,360\, z^5 + 1\,329\,664\, z^{9/2} + 8\,628\,480\, z^4 + 43\,464\,960\, z^{7/2} + 177\,408\,000\, z^3 + 592\,431\,840\, z^{5/2} + \right.\right. $$
$$ \left.\left. 1\,597\,836\,240\, z^2 + 3\,367\,564\,200\, z^{3/2} + 5\,221\,616\,400\, z + 5\,306\,751\,450\, \sqrt{z} + 2\,653\,375\,725\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6851.01

$$ {}_1F_2\left(3; -\frac{19}{4}, \frac{19}{4}; -z\right) = \frac{1}{38\,912\, z^{15/4}}\left(-4\, z^{3/4}\left(18\,176\, z^4 - 1\,123\,712\, z^3 + 23\,783\,760\, z^2 - 224\,324\,100\, z + 884\,458\,575\right) - \right.$$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(35\left(4096\, z^5 - 246\,528\, z^4 + 5\,068\,800\, z^3 - 45\,652\,464\, z^2 + 149\,189\,040\, z - 75\,810\,735\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left. 2\sqrt{z}\left(4096\, z^5 - 664\,832\, z^4 + 21\,732\,480\, z^3 - 296\,215\,920\, z^2 + 1\,683\,782\,100\, z - 2\,653\,375\,725\right)\sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(4096\, z^5 - 664\,832\, z^4 + 21\,732\,480\, z^3 - 296\,215\,920\, z^2 + 1\,683\,782\,100\, z - 2\,653\,375\,725\right)\right. $$
$$ \left.\left. \cos\left(2\sqrt{z}\right) - 35\left(4096\, z^5 - 246\,528\, z^4 + 5\,068\,800\, z^3 - 45\,652\,464\, z^2 + 149\,189\,040\, z - 75\,810\,735\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6852.01

$$ {}_1F_2\left(3; -\frac{19}{4}, \frac{23}{4}; z\right) = \frac{1}{65\,536\, z^{19/4}} $$
$$ \left(e^{-2\sqrt{z}}\left(-16\, e^{2\sqrt{z}}\, z^{3/4}\left(2048\, z^5 + 609\,536\, z^4 + 35\,418\,240\, z^3 + 832\,431\,600\, z^2 + 8\,519\,682\,600\, z + 36\,010\,099\,125\right) - \right.\right. $$
$$ e^{4\sqrt{z}}\,\sqrt{2\pi}\left(16\,384\, z^6 - 385\,024\, z^{11/2} + 4\,776\,960\, z^5 - 41\,141\,760\, z^{9/2} + 272\,067\,840\, z^4 - \right. $$
$$ 1\,443\,087\,360\, z^{7/2} + 6\,235\,669\,440\, z^3 - 21\,902\,680\,800\, z^{5/2} + 61\,491\,830\,400\, z^2 - $$
$$ \left. 133\,426\,893\,600\, z^{3/2} + 210\,753\,843\,300\, z - 216\,060\,594\,750\sqrt{z} + 108\,030\,297\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\left(16\,384\, z^6 + 385\,024\, z^{11/2} + 4\,776\,960\, z^5 + 41\,141\,760\, z^{9/2} + 272\,067\,840\, z^4 + 1\,443\,087\,360\, z^{7/2} + \right. $$
$$ 6\,235\,669\,440\, z^3 + 21\,902\,680\,800\, z^{5/2} + 61\,491\,830\,400\, z^2 + 133\,426\,893\,600\, z^{3/2} + $$
$$ \left.\left. 210\,753\,843\,300\, z + 216\,060\,594\,750\sqrt{z} + 108\,030\,297\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6853.01

$$ {}_1F_2\left(3; -\frac{19}{4}, \frac{23}{4}; -z\right) = $$
$$ \frac{1}{16\,384\, z^{19/4}}\left(4\, z^{3/4}\left(2048\, z^5 - 609\,536\, z^4 + 35\,418\,240\, z^3 - 832\,431\,600\, z^2 + 8\,519\,682\,600\, z - 36\,010\,099\,125\right) + \right. $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,384\, z^6 - 4\,776\,960\, z^5 + 272\,067\,840\, z^4 - 6\,235\,669\,440\, z^3 + 61\,491\,830\,400\, z^2 - \right.\right. $$
$$ \left.\left. 210\,753\,843\,300\, z + 108\,030\,297\,375\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-192\,512\, z^5 + 20\,570\,880\, z^4 - \right.\right. $$
$$ \left.\left. 721\,543\,680\, z^3 + 10\,951\,340\,400\, z^2 - 66\,713\,446\,800\, z + 108\,030\,297\,375\right)\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left(2\sqrt{z}\left(192\,512\, z^5 - 20\,570\,880\, z^4 + 721\,543\,680\, z^3 - 10\,951\,340\,400\, z^2 + 66\,713\,446\,800\, z - 108\,030\,297\,375\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + \left(16\,384\, z^6 - 4\,776\,960\, z^5 + 272\,067\,840\, z^4 - 6\,235\,669\,440\, z^3 + \right. $$
$$ \left.\left. \left. 61\,491\,830\,400\, z^2 - 210\,753\,843\,300\, z + 108\,030\,297\,375\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 3$, $b_1 = -\frac{17}{4}$

07.22.03.6854.01

$$ {}_1F_2\left(3; -\frac{17}{4}, -\frac{15}{4}; z\right) = \frac{1}{34\,459\,425}\left(e^{-2\sqrt{z}}\left(-4096\,e^{4\sqrt{z}}\sqrt{2\pi}\left(16z+208\sqrt{z}+621\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4} - 4096\sqrt{2\pi}\left(16z-208\sqrt{z}+621\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4} - 3\,e^{2\sqrt{z}}\left(557\,056z^5 - 327\,680z^4 - 204\,800z^3 - 483\,840z^2 - 2\,162\,160z - 11\,486\,475\right)\right)\right) $$

07.22.03.6855.01

$$ {}_1F_2\left(3; -\frac{17}{4}, -\frac{15}{4}; -z\right) = \frac{1}{34\,459\,425}\left(-16\,384\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16z-621)\cos\left(2\sqrt{z}\right)+208\sqrt{z}\sin\left(2\sqrt{z}\right)\right)z^{19/4} - 16\,384\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16z-621)\sin\left(2\sqrt{z}\right)-208\sqrt{z}\cos\left(2\sqrt{z}\right)\right)z^{19/4} + 3\left(557\,056z^5 + 327\,680z^4 - 204\,800z^3 + 483\,840z^2 - 2\,162\,160z + 11\,486\,475\right)\right) $$

07.22.03.6856.01

$$ {}_1F_2\left(3; -\frac{17}{4}, -\frac{11}{4}; z\right) = \frac{1}{2\,297\,295}\left(e^{-2\sqrt{z}}\left(512\,e^{4\sqrt{z}}\sqrt{2\pi}\left(32z^{3/2}+368z+874\sqrt{z}-437\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4} - 512\sqrt{2\pi}\left(32z^{3/2}-368z+874\sqrt{z}+437\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4} + e^{2\sqrt{z}}\left(32\,768z^5 + 806\,912z^4 + 204\,800z^3 + 207\,360z^2 + 589\,680z + 2\,297\,295\right)\right)\right) $$

07.22.03.6857.01

$$ {}_1F_2\left(3; -\frac{17}{4}, -\frac{11}{4}; -z\right) = \frac{1}{2\,297\,295}\left(-32\,768z^5 + 806\,912z^4 + 2048\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16z-437)\sin\left(2\sqrt{z}\right)-23(16z+19)\cos\left(2\sqrt{z}\right)\right)z^{15/4} - 2048\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16z-437)\cos\left(2\sqrt{z}\right)+23(16z+19)\sin\left(2\sqrt{z}\right)\right)z^{15/4} - 204\,800z^3 + 207\,360z^2 - 589\,680z + 2\,297\,295\right) $$

07.22.03.6858.01

$$ {}_1F_2\left(3; -\frac{17}{4}, -\frac{7}{4}; z\right) = \frac{1}{208\,845}\left(e^{-2\sqrt{z}}\left(-64\,e^{4\sqrt{z}}\sqrt{2\pi}\left(64z^2+608z^{3/2}+836z-1710\sqrt{z}+855\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4} - 64\sqrt{2\pi}\left(64z^2-608z^{3/2}+836z+1710\sqrt{z}+855\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4} + e^{2\sqrt{z}}\left(-75\,776z^4 + 232\,960z^3 + 69\,120z^2 + 84\,240z + 208\,845\right)\right)\right) $$

07.22.03.6859.01

$$ {}_1F_2\left(3; -\frac{17}{4}, -\frac{7}{4}; -z\right) = \frac{1}{208\,845} $$
$$ \left(-75\,776 z^4 - 232\,960 z^3 + 256 \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64 z^2 - 836 z + 855\right)\cos\left(2\sqrt{z}\right) + 38\sqrt{z}\,(16 z + 45)\sin\left(2\sqrt{z}\right)\right) z^{11/4} + \right. $$
$$ 256 \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64 z^2 - 836 z + 855\right)\sin\left(2\sqrt{z}\right) - 38\sqrt{z}\,(16 z + 45)\cos\left(2\sqrt{z}\right)\right) z^{11/4} + $$
$$ \left. 69\,120 z^2 - 84\,240 z + 208\,845\right) $$

07.22.03.6860.01

$$ {}_1F_2\left(3; -\frac{17}{4}, -\frac{3}{4}; z\right) = $$
$$ \frac{1}{29\,835}\left(e^{-2\sqrt{z}}\left(8 e^{4\sqrt{z}}\sqrt{2\pi}\left(128 z^{5/2} + 896 z^2 - 120 z^{3/2} - 3240 z + 4950\sqrt{z} - 2475\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} - \right.\right. $$
$$ 8\sqrt{2\pi}\left(128 z^{5/2} - 896 z^2 - 120 z^{3/2} + 3240 z + 4950\sqrt{z} + 2475\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} + $$
$$ \left.\left. e^{2\sqrt{z}}\left(2048 z^4 - 5120 z^3 + 89\,280 z^2 + 28\,080 z + 29\,835\right)\right)\right) $$

07.22.03.6861.01

$$ {}_1F_2\left(3; -\frac{17}{4}, -\frac{3}{4}; -z\right) = \frac{1}{29\,835}\left(2048 z^4 + 5120 z^3 + 89\,280 z^2 - \right. $$
$$ 32\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-896 z^2 - 3240 z + 2475\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64 z^2 + 60 z + 2475\right)\sin\left(2\sqrt{z}\right)\right) z^{7/4} + $$
$$ \left. 32\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(64 z^2 + 60 z + 2475\right)\cos\left(2\sqrt{z}\right) + \left(896 z^2 + 3240 z - 2475\right)\sin\left(2\sqrt{z}\right)\right) z^{7/4} - 28\,080 z + 29\,835\right) $$

07.22.03.6862.01

$$ {}_1F_2\left(3; -\frac{17}{4}, \frac{1}{4}; z\right) = \frac{1}{9945}\left(e^{-2\sqrt{z}}\left(-3 e^{2\sqrt{z}}\left(640 z^3 - 32 z^2 - 12\,200 z - 3315\right) - \right.\right. $$
$$ e^{4\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(256 z^3 + 1024 z^{5/2} - 2800 z^2 - 880 z^{3/2} + 11\,220 z - 16\,170\sqrt{z} + 8085\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ \left.\left. \sqrt{2\pi}\, z^{3/4}\left(256 z^3 - 1024 z^{5/2} - 2800 z^2 + 880 z^{3/2} + 11\,220 z + 16\,170\sqrt{z} + 8085\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6863.01

$$ {}_1F_2\left(3; -\frac{17}{4}, \frac{1}{4}; -z\right) = \frac{1}{9945}\left(1920 z^3 + 96 z^2 - 36\,600 z - 4\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right. $$
$$ \left(\left(256 z^3 + 2800 z^2 + 11\,220 z - 8085\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(512 z^2 + 440 z - 8085\right)\sin\left(2\sqrt{z}\right)\right) z^{3/4} - 4\sqrt{\pi} $$
$$ \left. S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256 z^3 + 2800 z^2 + 11\,220 z - 8085\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\left(512 z^2 + 440 z - 8085\right)\cos\left(2\sqrt{z}\right)\right) z^{3/4} + 9945\right) $$

07.22.03.6864.01

$$ {}_1F_2\left(3; -\frac{17}{4}, \frac{5}{4}; z\right) = \frac{1}{79\,560\,\sqrt[4]{z}} \left(e^{-2\sqrt{z}} \left(-32\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(32 z^3 - 396 z^2 - 654 z + 2475\right) - \right.\right. $$
$$ e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(512 z^{7/2} + 256 z^3 - 6368 z^{5/2} + 14\,160 z^2 - 5880 z^{3/2} - 23\,520 z + 39\,690 \sqrt{z} - 19\,845\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \left.\left. \sqrt{2\pi}\, \left(512 z^{7/2} - 256 z^3 - 6368 z^{5/2} - 14\,160 z^2 - 5880 z^{3/2} + 23\,520 z + 39\,690 \sqrt{z} + 19\,845\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6865.01

$$ {}_1F_2\left(3; -\frac{17}{4}, \frac{5}{4}; -z\right) = $$
$$ \frac{1}{19\,890\,\sqrt[4]{z}} \left(8\, \sqrt[4]{z}\, \left(32 z^3 + 396 z^2 - 654 z - 2475\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(256 z^3 - 14\,160 z^2 - 23\,520 z + 19\,845\right) \cos\left(2\sqrt{z}\right) + \right.\right. $$
$$ \left. 2\sqrt{z}\, \left(-256 z^3 - 3184 z^2 + 2940 z + 19\,845\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left.\left(2\sqrt{z}\, \left(256 z^3 + 3184 z^2 - 2940 z - 19\,845\right) \cos\left(2\sqrt{z}\right) + \left(256 z^3 - 14\,160 z^2 - 23\,520 z + 19\,845\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6866.01

$$ {}_1F_2\left(3; -\frac{17}{4}, \frac{9}{4}; z\right) = $$
$$ \frac{1}{127\,296\, z^{5/4}} \left(e^{-2\sqrt{z}} \left(24\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(320 z^3 - 2336 z^2 - 12\,084 z - 10\,395\right) - e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(1024 z^4 - 3584 z^{7/2} - 192 z^3 + \right.\right.\right. $$
$$ \left.\left. 28\,896 z^{5/2} - 84\,000 z^2 + 120\,960 z^{3/2} - 102\,060 z + 62\,370 \sqrt{z} - 31\,185\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(-1024 z^4 - \right.\right. $$
$$ \left.\left.\left. 3584 z^{7/2} + 192 z^3 + 28\,896 z^{5/2} + 84\,000 z^2 + 120\,960 z^{3/2} + 102\,060 z + 62\,370 \sqrt{z} + 31\,185\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6867.01

$$ {}_1F_2\left(3; -\frac{17}{4}, \frac{9}{4}; -z\right) = \frac{1}{31\,824\, z^{5/4}} $$
$$ \left(6\, \sqrt[4]{z}\, \left(320 z^3 + 2336 z^2 - 12\,084 z + 10\,395\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(1024 z^4 + 192 z^3 - 84\,000 z^2 + 102\,060 z - 31\,185\right) \right.\right. $$
$$ \cos\left(2\sqrt{z}\right) - 14\sqrt{z}\, \left(256 z^3 + 2064 z^2 - 8640 z + 4455\right) \sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(14\sqrt{z}\, \left(256 z^3 + 2064 z^2 - 8640 z + 4455\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left(1024 z^4 + 192 z^3 - 84\,000 z^2 + 102\,060 z - 31\,185\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6868.01

$$ {}_1F_2\left(3; -\frac{17}{4}, \frac{13}{4}; z\right) = \frac{1}{113\,152\, z^{9/4}} \left(e^{-2\sqrt{z}} \left(-8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(512\, z^4 + 17\,408\, z^3 + 100\,544\, z^2 + 332\,640\, z + 675\,675\right) - e^{4\sqrt{z}}\, \sqrt{2\pi}\right.\right. $$
$$ \left(2048\, z^{9/2} - 16\,384\, z^4 + 65\,152\, z^{7/2} - 170\,240\, z^3 + 342\,720\, z^{5/2} - 614\,880\, z^2 + 1\,025\,640\, z^{3/2} - 1\,413\,720\, z + \right. $$
$$ \left.\left.\left. 1\,351\,350\sqrt{z} - 675\,675\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(2048\, z^{9/2} + 16\,384\, z^4 + 65\,152\, z^{7/2} + 170\,240\, z^3 + \right.\right.\right. $$
$$ \left.\left.\left. 342\,720\, z^{5/2} + 614\,880\, z^2 + 1\,025\,640\, z^{3/2} + 1\,413\,720\, z + 1\,351\,350\sqrt{z} + 675\,675\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6869.01

$$ {}_1F_2\left(3; -\frac{17}{4}, \frac{13}{4}; -z\right) = \frac{1}{28\,288\, z^{9/4}} \left(-2\, \sqrt[4]{z}\, \left(512\, z^4 - 17\,408\, z^3 + 100\,544\, z^2 - 332\,640\, z + 675\,675\right) - \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(1024\, z^4 - 32\,576\, z^3 + 171\,360\, z^2 - 512\,820\, z + 675\,675\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left(-16\,384\, z^4 + 170\,240\, z^3 - 614\,880\, z^2 + 1\,413\,720\, z - 675\,675\right) \sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(16\,384\, z^4 - 170\,240\, z^3 + 614\,880\, z^2 - 1\,413\,720\, z + 675\,675\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 2\sqrt{z}\, \left(1024\, z^4 - 32\,576\, z^3 + 171\,360\, z^2 - 512\,820\, z + 675\,675\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6870.01

$$ {}_1F_2\left(3; -\frac{17}{4}, \frac{17}{4}; z\right) = \frac{1}{69\,632\, z^{13/4}} \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(13\,568\, z^4 + 480\,896\, z^3 + 6\,153\,840\, z^2 + 35\,135\,100\, z + 91\,216\,125\right) - e^{4\sqrt{z}}\right.\right. $$
$$ \sqrt{2\pi}\, \left(4096\, z^5 - 53\,248\, z^{9/2} + 369\,920\, z^4 - 1\,820\,160\, z^{7/2} + 7\,056\,000\, z^3 - 22\,397\,760\, z^{5/2} + \right. $$
$$ \left. 58\,045\,680\, z^2 - 118\,918\,800\, z^{3/2} + 181\,080\,900\, z - 182\,432\,250\sqrt{z} + 91\,216\,125\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - $$
$$ \sqrt{2\pi}\, \left(4096\, z^5 + 53\,248\, z^{9/2} + 369\,920\, z^4 + 1\,820\,160\, z^{7/2} + 7\,056\,000\, z^3 + 22\,397\,760\, z^{5/2} + \right. $$
$$ \left.\left. 58\,045\,680\, z^2 + 118\,918\,800\, z^{3/2} + 181\,080\,900\, z + 182\,432\,250\sqrt{z} + 91\,216\,125\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6871.01

$$ {}_1F_2\left(3; -\frac{17}{4}, \frac{17}{4}; -z\right) = \frac{1}{17\,408\, z^{13/4}}\left(-2\sqrt[4]{z}\,\left(13\,568\, z^4 - 480\,896\, z^3 + 6\,153\,840\, z^2 - 35\,135\,100\, z + 91\,216\,125\right) - \right.$$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096\, z^5 - 369\,920\, z^4 + 7\,056\,000\, z^3 - 58\,045\,680\, z^2 + 181\,080\,900\, z - 91\,216\,125\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$ \left. 2\sqrt{z}\,\left(26\,624\, z^4 - 910\,080\, z^3 + 11\,198\,880\, z^2 - 59\,459\,400\, z + 91\,216\,125\right)\sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(26\,624\, z^4 - 910\,080\, z^3 + 11\,198\,880\, z^2 - 59\,459\,400\, z + 91\,216\,125\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left.\left.\left(4096\, z^5 - 369\,920\, z^4 + 7\,056\,000\, z^3 - 58\,045\,680\, z^2 + 181\,080\,900\, z - 91\,216\,125\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6872.01

$$ {}_1F_2\left(3; -\frac{17}{4}, \frac{21}{4}; z\right) = \frac{1}{32\,768\, z^{17/4}}\left(e^{-2\sqrt{z}}\right. $$
$$ \left(-8\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(2048\, z^5 + 384\,256\, z^4 + 14\,636\,160\, z^3 + 227\,026\,800\, z^2 + 1\,430\,268\,840\, z + 4\,031\,752\,725\right) - e^{4\sqrt{z}}\,\sqrt{2\pi}\right. $$
$$ \left(8192\, z^{11/2} - 151\,552\, z^5 + 1\,497\,600\, z^{9/2} - 10\,379\,520\, z^4 + 55\,630\,080\, z^{7/2} - 239\,500\,800\, z^3 + 834\,593\,760\, z^{5/2} - \right. $$
$$ \left. 2\,324\,322\,000\, z^2 + 5\,010\,805\,800\, z^{3/2} - 7\,881\,073\,200\, z + 8\,063\,505\,450\,\sqrt{z} - 4\,031\,752\,725\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\,\left(8192\, z^{11/2} + 151\,552\, z^5 + 1\,497\,600\, z^{9/2} + 10\,379\,520\, z^4 + 55\,630\,080\, z^{7/2} + 239\,500\,800\, z^3 + 834\,593\,760\, z^{5/2} + \right. $$
$$ \left.\left.\left. 2\,324\,322\,000\, z^2 + 5\,010\,805\,800\, z^{3/2} + 7\,881\,073\,200\, z + 8\,063\,505\,450\,\sqrt{z} + 4\,031\,752\,725\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6873.01

$$ {}_1F_2\left(3; -\frac{17}{4}, \frac{21}{4}; -z\right) = $$
$$ \frac{1}{8192\, z^{17/4}}\left(2\sqrt[4]{z}\,\left(2048\, z^5 - 384\,256\, z^4 + 14\,636\,160\, z^3 - 227\,026\,800\, z^2 + 1\,430\,268\,840\, z - 4\,031\,752\,725\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right. $$
$$ \left(2\sqrt{z}\,\left(4096\, z^5 - 748\,800\, z^4 + 27\,815\,040\, z^3 - 417\,296\,880\, z^2 + 2\,505\,402\,900\, z - 4\,031\,752\,725\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left(-151\,552\, z^5 + 10\,379\,520\, z^4 - 239\,500\,800\, z^3 + 2\,324\,322\,000\, z^2 - 7\,881\,073\,200\, z + 4\,031\,752\,725\right) $$
$$ \left.\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left(\left(151\,552\, z^5 - 10\,379\,520\, z^4 + 239\,500\,800\, z^3 - 2\,324\,322\,000\, z^2 + 7\,881\,073\,200\, z - 4\,031\,752\,725\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 2\sqrt{z}\,\left(4096\, z^5 - 748\,800\, z^4 + 27\,815\,040\, z^3 - 417\,296\,880\, z^2 + 2\,505\,402\,900\, z - 4\,031\,752\,725\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 3$, $b_1 = -\frac{15}{4}$

07.22.03.6874.01

$${}_1F_2\left(3;-\frac{15}{4},-\frac{13}{4};z\right)=$$
$$\frac{1}{2\,027\,025}\left(e^{-2\sqrt{z}}\left(1024\,e^{4\sqrt{z}}\sqrt{2\pi}\left(16z+192\sqrt{z}+525\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}-1024\sqrt{2\pi}\left(16z-192\sqrt{z}+525\right)\right.\right.$$
$$\left.\left.\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+e^{2\sqrt{z}}\left(32\,768z^5+983\,040z^4+122\,880z^3+161\,280z^2+498\,960z+2\,027\,025\right)\right)\right)$$

07.22.03.6875.01

$${}_1F_2\left(3;-\frac{15}{4},-\frac{13}{4};-z\right)=$$
$$\frac{1}{2\,027\,025}\left(-32\,768z^5-4096\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16z-525)\cos\left(2\sqrt{z}\right)+192\sqrt{z}\sin\left(2\sqrt{z}\right)\right)z^{17/4}+4096\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left.\left((16z-525)\sin\left(2\sqrt{z}\right)-192\sqrt{z}\cos\left(2\sqrt{z}\right)\right)z^{17/4}+983\,040z^4-122\,880z^3+161\,280z^2-498\,960z+2\,027\,025\right)$$

07.22.03.6876.01

$${}_1F_2\left(3;-\frac{15}{4},-\frac{9}{4};z\right)=$$
$$\frac{1}{155\,925}\left(e^{-2\sqrt{z}}\left(-128\,e^{4\sqrt{z}}\sqrt{2\pi}\left(32z^{3/2}+336z+714\sqrt{z}-357\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-128\sqrt{2\pi}\left(32z^{3/2}-336z+\right.\right.\right.$$
$$\left.\left.\left.714\sqrt{z}+357\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+e^{2\sqrt{z}}\left(-83\,968z^4+122\,880z^3+32\,256z^2+55\,440z+155\,925\right)\right)\right)$$

07.22.03.6877.01

$${}_1F_2\left(3;-\frac{15}{4},-\frac{9}{4};-z\right)=\frac{1}{155\,925}$$
$$\left(-83\,968z^4+512\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16z-357)\sin\left(2\sqrt{z}\right)-21\,(16z+17)\cos\left(2\sqrt{z}\right)\right)z^{13/4}+512\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left.\left(2\sqrt{z}\,(16z-357)\cos\left(2\sqrt{z}\right)+21\,(16z+17)\sin\left(2\sqrt{z}\right)\right)z^{13/4}-122\,880z^3+32\,256z^2-55\,440z+155\,925\right)$$

07.22.03.6878.01

$${}_1F_2\left(3;-\frac{15}{4},-\frac{5}{4};z\right)=$$
$$\frac{1}{17\,325}\left(e^{-2\sqrt{z}}\left(16\,e^{4\sqrt{z}}\sqrt{2\pi}\left(64z^2+544z^{3/2}+612z-1326\sqrt{z}+663\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-16\sqrt{2\pi}\left(64z^2-544z^{3/2}+\right.\right.\right.$$
$$\left.\left.\left.612z+1326\sqrt{z}+663\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+e^{2\sqrt{z}}\left(2048z^4+15\,616z^3+32\,256z^2+11\,088z+17\,325\right)\right)\right)$$

07.22.03.6879.01

$${}_1F_2\left(3;-\frac{15}{4},-\frac{5}{4};-z\right)=$$
$$\frac{1}{17\,325}\left(2048\,z^4-15\,616\,z^3+64\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64\,z^2-612\,z+663\right)\cos\left(2\sqrt{z}\right)+34\sqrt{z}\,\left(16\,z+39\right)\sin\left(2\sqrt{z}\right)\right)z^{9/4}-\right.$$
$$\left.64\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64\,z^2-612\,z+663\right)\sin\left(2\sqrt{z}\right)-34\sqrt{z}\,\left(16\,z+39\right)\cos\left(2\sqrt{z}\right)\right)z^{9/4}+32\,256\,z^2-11\,088\,z+17\,325\right)$$

07.22.03.6880.01

$${}_1F_2\left(3;-\frac{15}{4},-\frac{1}{4};z\right)=$$
$$\frac{1}{3465}\left(e^{-2\sqrt{z}}\left(-2\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(128\,z^{5/2}+768\,z^2-312\,z^{3/2}-2184\,z+3510\sqrt{z}\,-1755\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}-\right.\right.$$
$$2\sqrt{2\pi}\,\left(128\,z^{5/2}-768\,z^2-312\,z^{3/2}+2184\,z+3510\sqrt{z}\,+1755\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+$$
$$\left.\left.e^{2\sqrt{z}}\,\left(-2944\,z^3+7968\,z^2+11\,088\,z+3465\right)\right)\right)$$

07.22.03.6881.01

$${}_1F_2\left(3;-\frac{15}{4},-\frac{1}{4};-z\right)=\frac{1}{3465}$$
$$\left(2944\,z^3+7968\,z^2-8\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(64\,z^2+156\,z+1755\right)\sin\left(2\sqrt{z}\right)-3\left(256\,z^2+728\,z-585\right)\cos\left(2\sqrt{z}\right)\right)z^{5/4}-\right.$$
$$\left.8\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(64\,z^2+156\,z+1755\right)\cos\left(2\sqrt{z}\right)+3\left(256\,z^2+728\,z-585\right)\sin\left(2\sqrt{z}\right)\right)z^{5/4}-11\,088\,z+3465\right)$$

07.22.03.6882.01

$${}_1F_2\left(3;-\frac{15}{4},\frac{3}{4};z\right)=\frac{1}{13\,860}\left(e^{-2\sqrt{z}}\,\left(4\,e^{2\sqrt{z}}\,\left(128\,z^3-1344\,z^2+2604\,z+3465\right)+\right.\right.$$
$$e^{4\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\,\left(256\,z^3+768\,z^{5/2}-2544\,z^2+720\,z^{3/2}+5940\,z-9450\sqrt{z}\,+4725\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\pi}\,\sqrt[4]{z}\,\left(-256\,z^3+768\,z^{5/2}+2544\,z^2+720\,z^{3/2}-5940\,z-9450\sqrt{z}\,-4725\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6883.01

$${}_1F_2\left(3;-\frac{15}{4},\frac{3}{4};-z\right)=\frac{1}{3465}\left(-128\,z^3-1344\,z^2-2604\,z-\right.$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^3+2544\,z^2+5940\,z-4725\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\,\left(128\,z^2-120\,z-1575\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z}\,+$$
$$\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^3+2544\,z^2+5940\,z-4725\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\,\left(128\,z^2-120\,z-1575\right)\cos\left(2\sqrt{z}\right)\right)\sqrt[4]{z}\,+3465\right)$$

07.22.03.6884.01

$$ {}_1F_2\left(3; -\frac{15}{4}, \frac{7}{4}; z\right) = \frac{1}{36\,960\, z^{3/4}} \left(e^{-2\sqrt{z}} \left(-48\, e^{2\sqrt{z}}\, z^{3/4} \left(16 z^2 - 548 z - 245\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \left(512 z^{7/2} - 256 z^3 - 4320 z^{5/2} + 12\,240 z^2 - 12\,600 z^{3/2} + 9450\sqrt{z} - 4725\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(512 z^{7/2} + 256 z^3 - 4320 z^{5/2} - 12\,240 z^2 - 12\,600 z^{3/2} + 9450\sqrt{z} + 4725\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6885.01

$$ {}_1F_2\left(3; -\frac{15}{4}, \frac{7}{4}; -z\right) = \frac{1}{9240\, z^{3/4}} \left(-12 z^{3/4} \left(16 z^2 + 548 z - 245\right) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(256 z^3 + 2160 z^2 - 6300 z - 4725\right) \cos\left(2\sqrt{z}\right) + \left(-256 z^3 - 12\,240 z^2 + 4725\right) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(256 z^3 + 12\,240 z^2 - 4725\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z} \left(256 z^3 + 2160 z^2 - 6300 z - 4725\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6886.01

$$ {}_1F_2\left(3; -\frac{15}{4}, \frac{11}{4}; z\right) = \frac{1}{42\,240\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(128 z^3 + 1104 z^2 - 3480 z - 10\,395\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \left(1024 z^4 - 4608 z^{7/2} + 7488 z^3 + 2016 z^{5/2} - 30\,240 z^2 + 60\,480 z^{3/2} - 71\,820 z + 62\,370\sqrt{z} - 31\,185\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(-1024 z^4 - 4608 z^{7/2} - 7488 z^3 + 2016 z^{5/2} + 30\,240 z^2 + 60\,480 z^{3/2} + 71\,820 z + 62\,370\sqrt{z} + 31\,185\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6887.01

$$ {}_1F_2\left(3; -\frac{15}{4}, \frac{11}{4}; -z\right) = \frac{1}{10\,560\, z^{7/4}} \left(4 z^{3/4} \left(128 z^3 - 1104 z^2 - 3480 z + 10\,395\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(1024 z^4 - 7488 z^3 - 30\,240 z^2 + 71\,820 z - 31\,185\right) \cos\left(2\sqrt{z}\right) - 18\sqrt{z} \left(256 z^3 + 112 z^2 - 3360 z + 3465\right) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(18\sqrt{z} \left(256 z^3 + 112 z^2 - 3360 z + 3465\right) \cos\left(2\sqrt{z}\right) + \left(1024 z^4 - 7488 z^3 - 30\,240 z^2 + 71\,820 z - 31\,185\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6888.01

$$ {}_1F_2\left(3; -\frac{15}{4}, \frac{15}{4}; z\right) = \frac{1}{30\,720\, z^{11/4}} \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(2368 z^3 + 41\,568 z^2 + 291\,060 z + 945\,945\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \left(2048 z^{9/2} - 18\,432 z^4 + 88\,704 z^{7/2} - 306\,432 z^3 + 858\,816 z^{5/2} - 2\,026\,080 z^2 + 3\,908\,520 z^{3/2} - 5\,738\,040 z + 5\,675\,670\sqrt{z} - 2\,837\,835\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(2048 z^{9/2} + 18\,432 z^4 + 88\,704 z^{7/2} + 306\,432 z^3 + 858\,816 z^{5/2} + 2\,026\,080 z^2 + 3\,908\,520 z^{3/2} + 5\,738\,040 z + 5\,675\,670\sqrt{z} + 2\,837\,835\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6889.01

$$ {}_1F_2\left(3; -\frac{15}{4}, \frac{15}{4}; -z\right) = \frac{1}{7680\, z^{11/4}} \left(4\, z^{3/4} \left(2368\, z^3 - 41\,568\, z^2 + 291\,060\, z - 945\,945\right) + \right.$$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(9 \left(2048\, z^4 - 34\,048\, z^3 + 225\,120\, z^2 - 637\,560\, z + 315\,315\right) \cos\left(2\sqrt{z}\right) + \right.$$
$$ \left. 2\sqrt{z} \left(1024\, z^4 - 44\,352\, z^3 + 429\,408\, z^2 - 1\,954\,260\, z + 2\,837\,835\right) \sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(1024\, z^4 - 44\,352\, z^3 + 429\,408\, z^2 - 1\,954\,260\, z + 2\,837\,835\right) \cos\left(2\sqrt{z}\right) - \right.$$
$$ \left. \left. 9 \left(2048\, z^4 - 34\,048\, z^3 + 225\,120\, z^2 - 637\,560\, z + 315\,315\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6890.01

$$ {}_1F_2\left(3; -\frac{15}{4}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{16\,384\, z^{15/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(512\, z^4 + 56\,320\, z^3 + 1\,330\,560\, z^2 + 12\,972\,960\, z + 52\,026\,975\right) + e^{4\sqrt{z}} \right.\right. $$
$$ \sqrt{2\pi} \left(4096\, z^5 - 57\,344\, z^{9/2} + 435\,456\, z^4 - 2\,354\,688\, z^{7/2} + 9\,959\,040\, z^3 - 33\,929\,280\, z^{5/2} + \right. $$
$$ \left. 92\,640\,240\, z^2 - 196\,756\,560\, z^{3/2} + 306\,486\,180\, z - 312\,161\,850\sqrt{z} + 156\,080\,925\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$
$$ \sqrt{2\pi} \left(4096\, z^5 + 57\,344\, z^{9/2} + 435\,456\, z^4 + 2\,354\,688\, z^{7/2} + 9\,959\,040\, z^3 + 33\,929\,280\, z^{5/2} + \right. $$
$$ \left.\left. \left. 92\,640\,240\, z^2 + 196\,756\,560\, z^{3/2} + 306\,486\,180\, z + 312\,161\,850\sqrt{z} + 156\,080\,925\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6891.01

$$ {}_1F_2\left(3; -\frac{15}{4}, \frac{19}{4}; -z\right) = \frac{1}{4096\, z^{15/4}} \left(-4\, z^{3/4} \left(512\, z^4 - 56\,320\, z^3 + 1\,330\,560\, z^2 - 12\,972\,960\, z + 52\,026\,975\right) - \right. $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(4096\, z^5 - 435\,456\, z^4 + 9\,959\,040\, z^3 - 92\,640\,240\, z^2 + 306\,486\,180\, z - 156\,080\,925\right) \cos\left(2\sqrt{z}\right) - \right. $$
$$ \left. 14\sqrt{z} \left(4096\, z^4 - 168\,192\, z^3 + 2\,423\,520\, z^2 - 14\,054\,040\, z + 22\,297\,275\right) \sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(14\sqrt{z} \left(4096\, z^4 - 168\,192\, z^3 + 2\,423\,520\, z^2 - 14\,054\,040\, z + 22\,297\,275\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. \left. \left(4096\, z^5 - 435\,456\, z^4 + 9\,959\,040\, z^3 - 92\,640\,240\, z^2 + 306\,486\,180\, z - 156\,080\,925\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6892.01

$$ {}_1F_2\left(3; -\frac{15}{4}, \frac{23}{4}; z\right) = \frac{1}{131\,072\, z^{19/4}} \left(19\, e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(20\,224\, z^4 + 1\,584\,000\, z^3 + 41\,081\,040\, z^2 + 437\,451\,300\, z + 1\,895\,268\,375\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \left(8192\, z^{11/2} - 159\,744\, z^5 + 1\,669\,632\, z^{9/2} - 12\,222\,720\, z^4 + 68\,808\,960\, z^{7/2} - 308\,689\,920\, z^3 + 1\,111\,350\,240\, z^{5/2} - 3\,171\,888\,720\, z^2 + 6\,956\,749\,800\, z^{3/2} - 11\,059\,448\,400\, z + 11\,371\,610\,250\sqrt{z} - 5\,685\,805\,125\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(8192\, z^{11/2} + 159\,744\, z^5 + 1\,669\,632\, z^{9/2} + 12\,222\,720\, z^4 + 68\,808\,960\, z^{7/2} + 308\,689\,920\, z^3 + 1\,111\,350\,240\, z^{5/2} + 3\,171\,888\,720\, z^2 + 6\,956\,749\,800\, z^{3/2} + 11\,059\,448\,400\, z + 11\,371\,610\,250\sqrt{z} + 5\,685\,805\,125\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6893.01

$$ {}_1F_2\left(3; -\frac{15}{4}, \frac{23}{4}; -z\right) = -\frac{1}{32\,768\, z^{19/4}} \left(19 \left(4\, z^{3/4} \left(20\,224\, z^4 - 1\,584\,000\, z^3 + 41\,081\,040\, z^2 - 437\,451\,300\, z + 1\,895\,268\,375\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(4096\, z^5 - 834\,816\, z^4 + 34\,404\,480\, z^3 - 555\,675\,120\, z^2 + 3\,478\,374\,900\, z - 5\,685\,805\,125\right) \cos\left(2\sqrt{z}\right) + 3\left(-53\,248\, z^5 + 4\,074\,240\, z^4 - 102\,896\,640\, z^3 + 1\,057\,296\,240\, z^2 - 3\,686\,482\,800\, z + 1\,895\,268\,375\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(3\left(53\,248\, z^5 - 4\,074\,240\, z^4 + 102\,896\,640\, z^3 - 1\,057\,296\,240\, z^2 + 3\,686\,482\,800\, z - 1\,895\,268\,375\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z} \left(4096\, z^5 - 834\,816\, z^4 + 34\,404\,480\, z^3 - 555\,675\,120\, z^2 + 3\,478\,374\,900\, z - 5\,685\,805\,125\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 3$, $b_1 = -\frac{13}{4}$

07.22.03.6894.01

$$ {}_1F_2\left(3; -\frac{13}{4}, -\frac{11}{4}; z\right) = \frac{1}{135\,135} \left(e^{-2\sqrt{z}} \left(-256\, e^{4\sqrt{z}}\, \sqrt{2\pi} \left(16\, z + 176\sqrt{z} + 437\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{15/4} - 256\sqrt{2\pi} \left(16\, z - 176\sqrt{z} + 437\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{15/4} + e^{2\sqrt{z}} \left(-88\,064\, z^4 + 40\,960\, z^3 + 23\,040\, z^2 + 45\,360\, z + 135\,135\right)\right)\right) $$

07.22.03.6895.01

$$ {}_1F_2\left(3; -\frac{13}{4}, -\frac{11}{4}; -z\right) = \frac{1}{135\,135} \left(-88\,064\, z^4 + 1024\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left((16\, z - 437) \cos\left(2\sqrt{z}\right) + 176\sqrt{z}\, \sin\left(2\sqrt{z}\right)\right) z^{15/4} + 1024\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left((16\, z - 437) \sin\left(2\sqrt{z}\right) - 176\sqrt{z}\, \cos\left(2\sqrt{z}\right)\right) z^{15/4} - 40\,960\, z^3 + 23\,040\, z^2 - 45\,360\, z + 135\,135\right) $$

07.22.03.6896.01

$${}_1F_2\left(3;-\frac{13}{4},-\frac{7}{4};z\right)=\frac{1}{12\,285}$$
$$\left(e^{-2\sqrt{z}}\left(32\,e^{4\sqrt{z}}\sqrt{2\pi}\left(32\,z^{3/2}+304\,z+570\sqrt{z}-285\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-32\sqrt{2\pi}\left(32\,z^{3/2}-304\,z+570\sqrt{z}+285\right)\right.\right.$$
$$\left.\left.\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+e^{2\sqrt{z}}\left(2048\,z^4+32\,000\,z^3+7680\,z^2+6480\,z+12\,285\right)\right)\right)$$

07.22.03.6897.01

$${}_1F_2\left(3;-\frac{13}{4},-\frac{7}{4};-z\right)=$$
$$\frac{1}{12\,285}\left(2048\,z^4-32\,000\,z^3-128\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16\,z-285)\sin\left(2\sqrt{z}\right)-19\,(16\,z+15)\cos\left(2\sqrt{z}\right)\right)z^{11/4}+\right.$$
$$\left.128\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16\,z-285)\cos\left(2\sqrt{z}\right)+19\,(16\,z+15)\sin\left(2\sqrt{z}\right)\right)z^{11/4}+7680\,z^2-6480\,z+12\,285\right)$$

07.22.03.6898.01

$${}_1F_2\left(3;-\frac{13}{4},-\frac{3}{4};z\right)=\frac{1}{1755}\left(e^{-2\sqrt{z}}\left(-4\,e^{4\sqrt{z}}\sqrt{2\pi}\left(64\,z^2+480\,z^{3/2}+420\,z-990\sqrt{z}+495\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-\right.\right.$$
$$\left.\left.4\sqrt{2\pi}\left(64\,z^2-480\,z^{3/2}+420\,z+990\sqrt{z}+495\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\left(-3712\,z^3+8160\,z^2+2160\,z+1755\right)\right)\right)$$

07.22.03.6899.01

$${}_1F_2\left(3;-\frac{13}{4},-\frac{3}{4};-z\right)=$$
$$\frac{1}{1755}\left(3712\,z^3+8160\,z^2-16\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64\,z^2-420\,z+495\right)\cos\left(2\sqrt{z}\right)+30\sqrt{z}\,(16\,z+33)\sin\left(2\sqrt{z}\right)\right)z^{7/4}-\right.$$
$$\left.16\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64\,z^2-420\,z+495\right)\sin\left(2\sqrt{z}\right)-30\sqrt{z}\,(16\,z+33)\cos\left(2\sqrt{z}\right)\right)z^{7/4}-2160\,z+1755\right)$$

07.22.03.6900.01

$${}_1F_2\left(3;-\frac{13}{4},\frac{1}{4};z\right)=$$
$$\frac{1}{1170}\left(e^{-2\sqrt{z}}\left(2\,e^{2\sqrt{z}}\left(128\,z^3-576\,z^2+2460\,z+585\right)+e^{4\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(128\,z^{5/2}+640\,z^2-440\,z^{3/2}-1320\,z+2310\sqrt{z}-\right.\right.\right.$$
$$\left.\left.\left.1155\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\sqrt{2\pi}\,z^{3/4}\left(128\,z^{5/2}-640\,z^2-440\,z^{3/2}+1320\,z+2310\sqrt{z}+1155\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6901.01

$${}_1F_2\left(3;-\frac{13}{4},\frac{1}{4};-z\right)=\frac{1}{585}\left(-128\,z^3-576\,z^2-2460\,z+\right.$$
$$2\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(64\,z^2+220\,z+1155\right)\sin\left(2\sqrt{z}\right)-5\left(128\,z^2+264\,z-231\right)\cos\left(2\sqrt{z}\right)\right)z^{3/4}-$$
$$\left.2\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(64\,z^2+220\,z+1155\right)\cos\left(2\sqrt{z}\right)+5\left(128\,z^2+264\,z-231\right)\sin\left(2\sqrt{z}\right)\right)z^{3/4}+585\right)$$

07.22.03.6902.01

$$ {}_1F_2\left(3; -\frac{13}{4}, \frac{5}{4}; z\right) = \frac{1}{9360\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\right.$$
$$\left(8e^{2\sqrt{z}}\sqrt[4]{z}\left(112z^2+564z-1035\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(256z^3+512z^{5/2}-2160z^2+1680z^{3/2}+2100z-4410\sqrt{z}+2205\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(256z^3-512z^{5/2}-2160z^2-1680z^{3/2}+2100z+4410\sqrt{z}+2205\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6903.01

$$ {}_1F_2\left(3; -\frac{13}{4}, \frac{5}{4}; -z\right) = \frac{1}{2340\sqrt[4]{z}}\left(2\sqrt[4]{z}\left(112z^2-564z-1035\right)-\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^3+2160z^2+2100z-2205\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(256z^2-840z-2205\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^3+2160z^2+2100z-2205\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(256z^2-840z-2205\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6904.01

$$ {}_1F_2\left(3; -\frac{13}{4}, \frac{9}{4}; z\right) = \frac{1}{14976z^{5/4}}\left(e^{-2\sqrt{z}}\left(8e^{2\sqrt{z}}\sqrt[4]{z}\left(128z^3-432z^2-3672z-2835\right)+\right.\right.$$
$$e^{4\sqrt{z}}\sqrt{2\pi}\left(512z^{7/2}-768z^3-2016z^{5/2}+8400z^2-12600z^{3/2}+10080z-5670\sqrt{z}+2835\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\pi}\left(-512z^{7/2}-768z^3+2016z^{5/2}+8400z^2+12600z^{3/2}+10080z+5670\sqrt{z}+2835\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6905.01

$$ {}_1F_2\left(3; -\frac{13}{4}, \frac{9}{4}; -z\right) = \frac{1}{3744z^{5/4}}\left(2\sqrt[4]{z}\left(128z^3+432z^2-3672z+2835\right)-\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(256z^3+2800z^2-3360z+945\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(256z^3+1008z^2-6300z+2835\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(256z^3+1008z^2-6300z+2835\right)\cos\left(2\sqrt{z}\right)-3\left(256z^3+2800z^2-3360z+945\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6906.01

$$ {}_1F_2\left(3; -\frac{13}{4}, \frac{13}{4}; z\right) = \frac{1}{13312z^{9/4}}$$
$$\left(e^{-2\sqrt{z}}\left(-8e^{2\sqrt{z}}\sqrt[4]{z}\left(1472z^3+8864z^2+26460z+51975\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(1024z^4-5632z^{7/2}+15680z^3-30240z^{5/2}+\right.\right.\right.$$
$$50400z^2-80640z^{3/2}+109620z-103950\sqrt{z}+51975\left.\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(1024z^4+5632z^{7/2}+\right.$$
$$\left.\left.\left.15680z^3+30240z^{5/2}+50400z^2+80640z^{3/2}+109620z+103950\sqrt{z}+51975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6907.01

$$ {}_1F_2\left(3; -\frac{13}{4}, \frac{13}{4}; -z\right) = \frac{1}{3328\, z^{9/4}} $$

$$ \left(2\sqrt[4]{z}\,\left(1472\, z^3 - 8864\, z^2 + 26\,460\, z - 51\,975\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\, z^4 - 15\,680\, z^3 + 50\,400\, z^2 - 109\,620\, z + 51\,975\right)\right. \right. $$

$$ \left. \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-2816\, z^3 + 15\,120\, z^2 - 40\,320\, z + 51\,975\right)\sin\left(2\sqrt{z}\right)\right) + $$

$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(2816\, z^3 - 15\,120\, z^2 + 40\,320\, z - 51\,975\right)\cos\left(2\sqrt{z}\right) + \right. $$

$$ \left. \left. \left(1024\, z^4 - 15\,680\, z^3 + 50\,400\, z^2 - 109\,620\, z + 51\,975\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6908.01

$$ {}_1F_2\left(3; -\frac{13}{4}, \frac{17}{4}; z\right) = $$

$$ \frac{1}{8192\, z^{13/4}}\left(e^{-2\sqrt{z}}\left(8\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(512\, z^4 + 29\,696\, z^3 + 403\,200\, z^2 + 2\,328\,480\, z + 6\,081\,075\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\right.\right. $$

$$ \left(2048\, z^{9/2} - 20\,480\, z^4 + 113\,280\, z^{7/2} - 456\,960\, z^3 + 1\,471\,680\, z^{5/2} - 3\,840\,480\, z^2 + 7\,900\,200\, z^{3/2} - 12\,058\,200\, z + \right. $$

$$ \left. 12\,162\,150\sqrt{z} - 6\,081\,075\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - \sqrt{2\pi}\,\left(2048\, z^{9/2} + 20\,480\, z^4 + 113\,280\, z^{7/2} + 456\,960\, z^3 + \right. $$

$$ \left. \left. 1\,471\,680\, z^{5/2} + 3\,840\,480\, z^2 + 7\,900\,200\, z^{3/2} + 12\,058\,200\, z + 12\,162\,150\sqrt{z} + 6\,081\,075\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6909.01

$$ {}_1F_2\left(3; -\frac{13}{4}, \frac{17}{4}; -z\right) = \frac{1}{2048\, z^{13/4}}\left(-2\sqrt[4]{z}\,\left(512\, z^4 - 29\,696\, z^3 + 403\,200\, z^2 - 2\,328\,480\, z + 6\,081\,075\right) + \right. $$

$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(5\left(4096\, z^4 - 91\,392\, z^3 + 768\,096\, z^2 - 2\,411\,640\, z + 1\,216\,215\right)\cos\left(2\sqrt{z}\right) + \right. $$

$$ \left. 2\sqrt{z}\,\left(1024\, z^4 - 56\,640\, z^3 + 735\,840\, z^2 - 3\,950\,100\, z + 6\,081\,075\right)\sin\left(2\sqrt{z}\right)\right) - $$

$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(1024\, z^4 - 56\,640\, z^3 + 735\,840\, z^2 - 3\,950\,100\, z + 6\,081\,075\right)\cos\left(2\sqrt{z}\right) - \right. $$

$$ \left. \left. 5\left(4096\, z^4 - 91\,392\, z^3 + 768\,096\, z^2 - 2\,411\,640\, z + 1\,216\,215\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6910.01

$$ {}_1F_2\left(3; -\frac{13}{4}, \frac{21}{4}; z\right) = \frac{1}{65\,536\, z^{17/4}} \left(17\, e^{-2\sqrt{z}} \left(-8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(15\,616\, z^4 + 766\,080\, z^3 + 12\,806\,640\, z^2 + 82\,702\,620\, z + 237\,161\,925\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(4096\, z^5 - 61\,440\, z^{9/2} + 503\,040\, z^4 - 2\,926\,080\, z^{7/2} + 13\,184\,640\, z^3 - 47\,234\,880\, z^{5/2} + 133\,887\,600\, z^2 - 291\,891\,600\, z^{3/2} + 462\,161\,700\, z - 474\,323\,850\, \sqrt{z} + 237\,161\,925\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(4096\, z^5 + 61\,440\, z^{9/2} + 503\,040\, z^4 + 2\,926\,080\, z^{7/2} + 13\,184\,640\, z^3 + 47\,234\,880\, z^{5/2} + 133\,887\,600\, z^2 + 291\,891\,600\, z^{3/2} + 462\,161\,700\, z + 474\,323\,850\, \sqrt{z} + 237\,161\,925\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6911.01

$$ {}_1F_2\left(3; -\frac{13}{4}, \frac{21}{4}; -z\right) = -\frac{1}{16\,384\, z^{17/4}} \left(17 \left(2\, \sqrt[4]{z}\, \left(15\,616\, z^4 - 766\,080\, z^3 + 12\,806\,640\, z^2 - 82\,702\,620\, z + 237\,161\,925\right) + \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(4096\, z^5 - 503\,040\, z^4 + 13\,184\,640\, z^3 - 133\,887\,600\, z^2 + 462\,161\,700\, z - 237\,161\,925\right) \cos\left(2\, \sqrt{z}\right) - 30\, \sqrt{z}\, \left(2048\, z^4 - 97\,536\, z^3 + 1\,574\,496\, z^2 - 9\,729\,720\, z + 15\,810\,795\right) \sin\left(2\, \sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(30\, \sqrt{z}\, \left(2048\, z^4 - 97\,536\, z^3 + 1\,574\,496\, z^2 - 9\,729\,720\, z + 15\,810\,795\right) \cos\left(2\, \sqrt{z}\right) + \left(4096\, z^5 - 503\,040\, z^4 + 13\,184\,640\, z^3 - 133\,887\,600\, z^2 + 462\,161\,700\, z - 237\,161\,925\right) \sin\left(2\, \sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 3$, $b_1 = -\frac{11}{4}$

07.22.03.6912.01

$$ {}_1F_2\left(3; -\frac{11}{4}, -\frac{9}{4}; z\right) = \frac{1}{10\,395} \left(e^{-2\sqrt{z}} \left(64\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(16\, z + 160\, \sqrt{z} + 357\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{13/4} - 64\, \sqrt{2\pi}\, \left(16\, z - 160\, \sqrt{z} + 357\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{13/4} + e^{2\sqrt{z}}\, \left(2048\, z^4 + 40\,960\, z^3 + 4608\, z^2 + 5040\, z + 10\,395\right)\right)\right) $$

07.22.03.6913.01

$$ {}_1F_2\left(3; -\frac{11}{4}, -\frac{9}{4}; -z\right) = \frac{1}{10\,395} \left(2048\, z^4 + 256\, \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(16\, z - 357\right) \cos\left(2\, \sqrt{z}\right) + 160\, \sqrt{z}\, \sin\left(2\, \sqrt{z}\right)\right) z^{13/4} - 256\, \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(16\, z - 357\right) \sin\left(2\, \sqrt{z}\right) - 160\, \sqrt{z}\, \cos\left(2\, \sqrt{z}\right)\right) z^{13/4} - 40\,960\, z^3 + 4608\, z^2 - 5040\, z + 10\,395\right) $$

07.22.03.6914.01

$$ {}_1F_2\left(3; -\frac{11}{4}, -\frac{5}{4}; z\right) = \frac{1}{1155} \left(e^{-2\sqrt{z}} \left(-8\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(32\, z^{3/2} + 272\, z + 442\, \sqrt{z} - 221\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{9/4} - 8\, \sqrt{2\pi}\, \left(32\, z^{3/2} - 272\, z + 442\, \sqrt{z} + 221\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{9/4} - 3\, e^{2\sqrt{z}}\, \left(1408\, z^3 - 1536\, z^2 - 336\, z - 385\right)\right)\right) $$

07.22.03.6915.01

$${}_1F_2\left(3;-\frac{11}{4},-\frac{5}{4};-z\right)=\frac{1}{1155}\left(-32\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16z-221)\sin\left(2\sqrt{z}\right)-17(16z+13)\cos\left(2\sqrt{z}\right)\right)z^{9/4}-\right.$$
$$\left.32\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16z-221)\cos\left(2\sqrt{z}\right)+17(16z+13)\sin\left(2\sqrt{z}\right)\right)z^{9/4}+3\left(1408z^3+1536z^2-336z+385\right)\right)$$

07.22.03.6916.01

$${}_1F_2\left(3;-\frac{11}{4},-\frac{1}{4};z\right)=\frac{1}{231}e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(64z^2+416z^{3/2}+260z-702\sqrt{z}+351\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-\right.$$
$$\left.\sqrt{2\pi}\left(64z^2-416z^{3/2}+260z+702\sqrt{z}+351\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\left(128z^3+336z^2+1008z+231\right)\right)$$

07.22.03.6917.01

$${}_1F_2\left(3;-\frac{11}{4},-\frac{1}{4};-z\right)=$$
$$\frac{1}{231}\left(-128z^3+336z^2-4\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64z^2-260z+351\right)\cos\left(2\sqrt{z}\right)+26\sqrt{z}\,(16z+27)\sin\left(2\sqrt{z}\right)\right)z^{5/4}+\right.$$
$$\left.4\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64z^2-260z+351\right)\sin\left(2\sqrt{z}\right)-26\sqrt{z}\,(16z+27)\cos\left(2\sqrt{z}\right)\right)z^{5/4}-1008z+231\right)$$

07.22.03.6918.01

$${}_1F_2\left(3;-\frac{11}{4},\frac{3}{4};z\right)=$$
$$\frac{1}{1848}\left(e^{-2\sqrt{z}}\left(-24e^{2\sqrt{z}}\left(40z^2-38z-77\right)-e^{4\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(128z^{5/2}+512z^2-504z^{3/2}-648z+1350\sqrt{z}-675\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\sqrt{2\pi}\sqrt[4]{z}\left(128z^{5/2}-512z^2-504z^{3/2}+648z+1350\sqrt{z}+675\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6919.01

$${}_1F_2\left(3;-\frac{11}{4},\frac{3}{4};-z\right)=\frac{1}{462}$$
$$\left(-6\left(40z^2+38z-77\right)+\sqrt{\pi}\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-512z^2-648z+675\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(64z^2+252z+675\right)\sin\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.\sqrt{\pi}\sqrt[4]{z}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(64z^2+252z+675\right)\cos\left(2\sqrt{z}\right)+\left(512z^2+648z-675\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6920.01

$${}_1F_2\left(3;-\frac{11}{4},\frac{7}{4};z\right)=\frac{1}{4928z^{3/4}}\left(e^{-2\sqrt{z}}\right.$$
$$\left(-16e^{2\sqrt{z}}z^{3/4}\left(32z^2-208z-133\right)-e^{4\sqrt{z}}\sqrt{2\pi}\left(256z^3+256z^{5/2}-1648z^2+2000z^{3/2}-300z-1050\sqrt{z}+525\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(256z^3-256z^{5/2}-1648z^2-2000z^{3/2}-300z+1050\sqrt{z}+525\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6921.01

$${}_1F_2\left(3;-\frac{11}{4},\frac{7}{4};-z\right)=\frac{1}{1232\,z^{3/4}}\left(-4\,z^{3/4}\left(32\,z^2+208\,z-133\right)-\right.$$
$$\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^3+1648\,z^2-300\,z-525\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(128\,z^2-1000\,z-525\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^3+1648\,z^2-300\,z-525\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(128\,z^2-1000\,z-525\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6922.01

$${}_1F_2\left(3;-\frac{11}{4},\frac{11}{4};z\right)=\frac{1}{5632\,z^{7/4}}\left(e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(176\,z^2-268\,z-945\right)-\right.\right.$$
$$e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(512\,z^{7/2}-1280\,z^3+544\,z^{5/2}+2640\,z^2-5880\,z^{3/2}+6720\,z-5670\sqrt{z}+2835\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\,\pi}\,\left(-512\,z^{7/2}-1280\,z^3-544\,z^{5/2}+2640\,z^2+5880\,z^{3/2}+6720\,z+5670\sqrt{z}+2835\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6923.01

$${}_1F_2\left(3;-\frac{11}{4},\frac{11}{4};-z\right)=\frac{1}{1408\,z^{7/4}}\left(-4\,z^{3/4}\left(176\,z^2+268\,z-945\right)-\right.$$
$$\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(5\left(256\,z^3+528\,z^2-1344\,z+567\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(256\,z^3-272\,z^2-2940\,z+2835\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\left.\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(256\,z^3-272\,z^2-2940\,z+2835\right)\cos\left(2\sqrt{z}\right)-5\left(256\,z^3+528\,z^2-1344\,z+567\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6924.01

$${}_1F_2\left(3;-\frac{11}{4},\frac{15}{4};z\right)=\frac{1}{4096\,z^{11/4}}$$
$$\left(e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\left(128\,z^3+3280\,z^2+22\,680\,z+72\,765\right)-e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(1024\,z^4-6656\,z^{7/2}+24\,384\,z^3-67\,872\,z^{5/2}+\right.\right.\right.$$
$$\left.\left.157\,920\,z^2-302\,400\,z^{3/2}+442\,260\,z-436\,590\sqrt{z}+218\,295\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(1024\,z^4+6656\,z^{7/2}+\right.$$
$$\left.\left.\left.24\,384\,z^3+67\,872\,z^{5/2}+157\,920\,z^2+302\,400\,z^{3/2}+442\,260\,z+436\,590\sqrt{z}+218\,295\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6925.01

$${}_1F_2\left(3;-\frac{11}{4},\frac{15}{4};-z\right)=\frac{1}{1024\,z^{11/4}}$$
$$\left(4\,z^{3/4}\left(128\,z^3-3280\,z^2+22\,680\,z-72\,765\right)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\,z^4-24\,384\,z^3+157\,920\,z^2-442\,260\,z+218\,295\right)\right.\right.$$
$$\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(-3328\,z^3+33\,936\,z^2-151\,200\,z+218\,295\right)\sin\left(2\sqrt{z}\right)\Big)-$$
$$\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(3328\,z^3-33\,936\,z^2+151\,200\,z-218\,295\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(1024\,z^4-24\,384\,z^3+157\,920\,z^2-442\,260\,z+218\,295\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6926.01

$$ {}_1F_2\left(3; -\frac{11}{4}, \frac{19}{4}; z\right) = -\frac{1}{32\,768\, z^{15/4}} \left(15\, e^{-2\sqrt{z}} \left(-144\, e^{2\sqrt{z}}\, z^{3/4} \left(320 z^3 + 9184 z^2 + 93\,940 z + 385\,385\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(2048 z^{9/2} - 22\,528 z^4 + 138\,880 z^{7/2} - 621\,824 z^3 + 2\,181\,312 z^{5/2} - 6\,058\,080 z^2 + 13\,000\,680 z^{3/2} - 20\,374\,200 z + 20\,810\,790 \sqrt{z} - 10\,405\,395\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(2048 z^{9/2} + 22\,528 z^4 + 138\,880 z^{7/2} + 621\,824 z^3 + 2\,181\,312 z^{5/2} + 6\,058\,080 z^2 + 13\,000\,680 z^{3/2} + 20\,374\,200 z + 20\,810\,790 \sqrt{z} + 10\,405\,395\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6927.01

$$ {}_1F_2\left(3; -\frac{11}{4}, \frac{19}{4}; -z\right) = \frac{1}{8192\, z^{15/4}} \left(15 \left(36 z^{3/4} \left(320 z^3 - 9184 z^2 + 93\,940 z - 385\,385\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(1024 z^4 - 69\,440 z^3 + 1\,090\,656 z^2 - 6\,500\,340 z + 10\,405\,395\right) \cos\left(2\sqrt{z}\right) + \left(-22\,528 z^4 + 621\,824 z^3 - 6\,058\,080 z^2 + 20\,374\,200 z - 10\,405\,395\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(22\,528 z^4 - 621\,824 z^3 + 6\,058\,080 z^2 - 20\,374\,200 z + 10\,405\,395\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(1024 z^4 - 69\,440 z^3 + 1\,090\,656 z^2 - 6\,500\,340 z + 10\,405\,395\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6928.01

$$ {}_1F_2\left(3; -\frac{11}{4}, \frac{23}{4}; z\right) = -\frac{1}{262\,144\, z^{19/4}} \left(285\, e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(512 z^4 + 73\,728 z^3 + 2\,217\,600 z^2 + 24\,916\,320 z + 111\,486\,375\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(4096 z^5 - 65\,536 z^{9/2} + 572\,672 z^4 - 3\,534\,336 z^{7/2} + 16\,732\,800 z^3 - 62\,314\,560 z^{5/2} + 181\,787\,760 z^2 - 404\,323\,920 z^{3/2} + 648\,107\,460 z - 668\,918\,250 \sqrt{z} + 334\,459\,125\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi}\, \left(4096 z^5 + 65\,536 z^{9/2} + 572\,672 z^4 + 3\,534\,336 z^{7/2} + 16\,732\,800 z^3 + 62\,314\,560 z^{5/2} + 181\,787\,760 z^2 + 404\,323\,920 z^{3/2} + 648\,107\,460 z + 668\,918\,250 \sqrt{z} + 334\,459\,125\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6929.01

$$ {}_1F_2\left(3; -\frac{11}{4}, \frac{23}{4}; -z\right) = $$
$$ \frac{1}{65\,536\, z^{19/4}}\left(285\left(-4\, z^{3/4}\left(512\, z^4 - 73\,728\, z^3 + 2\,217\,600\, z^2 - 24\,916\,320\, z + 111\,486\,375\right) - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right. $$
$$ \left(\left(4096\, z^5 - 572\,672\, z^4 + 16\,732\,800\, z^3 - 181\,787\,760\, z^2 + 648\,107\,460\, z - 334\,459\,125\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.2\sqrt{z}\left(32\,768\, z^4 - 1\,767\,168\, z^3 + 31\,157\,280\, z^2 - 202\,161\,960\, z + 334\,459\,125\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(32\,768\, z^4 - 1\,767\,168\, z^3 + 31\,157\,280\, z^2 - 202\,161\,960\, z + 334\,459\,125\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left.\left(4096\, z^5 - 572\,672\, z^4 + 16\,732\,800\, z^3 - 181\,787\,760\, z^2 + 648\,107\,460\, z - 334\,459\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 3$, $b_1 = -\frac{9}{4}$

07.22.03.6930.01

$$ {}_1F_2\left(3; -\frac{9}{4}, -\frac{7}{4}; z\right) = \frac{1}{945}\, e^{-2\sqrt{z}}\left(-16\, e^{4\sqrt{z}}\sqrt{2\pi}\left(16\, z + 144\sqrt{z} + 285\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{11/4} - \right. $$
$$ \left. 16\sqrt{2\pi}\left(16\, z - 144\sqrt{z} + 285\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{11/4} + e^{2\sqrt{z}}\left(-4480\, z^3 + 1536\, z^2 + 720\, z + 945\right)\right) $$

07.22.03.6931.01

$$ {}_1F_2\left(3; -\frac{9}{4}, -\frac{7}{4}; -z\right) = \frac{1}{945}\left(4480\, z^3 - 64\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\, z - 285\right)\cos\left(2\sqrt{z}\right) + 144\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right) z^{11/4} - \right. $$
$$ \left. 64\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\, z - 285\right)\sin\left(2\sqrt{z}\right) - 144\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right) z^{11/4} + 1536\, z^2 - 720\, z + 945\right) $$

07.22.03.6932.01

$$ {}_1F_2\left(3; -\frac{9}{4}, -\frac{3}{4}; z\right) = \frac{1}{135}\, e^{-2\sqrt{z}}\left(2\, e^{4\sqrt{z}}\sqrt{2\pi}\left(32\, z^{3/2} + 240\, z + 330\sqrt{z} - 165\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{7/4} - \right. $$
$$ \left. 2\sqrt{2\pi}\left(32\, z^{3/2} - 240\, z + 330\sqrt{z} + 165\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{7/4} + e^{2\sqrt{z}}\left(128\, z^3 + 1104\, z^2 + 240\, z + 135\right)\right) $$

07.22.03.6933.01

$$ {}_1F_2\left(3; -\frac{9}{4}, -\frac{3}{4}; -z\right) = $$
$$ \frac{1}{135}\left(-128\, z^3 + 1104\, z^2 + 8\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(16\, z - 165\right)\sin\left(2\sqrt{z}\right) - 15\left(16\, z + 11\right)\cos\left(2\sqrt{z}\right)\right) z^{7/4} - \right. $$
$$ \left. 8\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(16\, z - 165\right)\cos\left(2\sqrt{z}\right) + 15\left(16\, z + 11\right)\sin\left(2\sqrt{z}\right)\right) z^{7/4} - 240\, z + 135\right) $$

07.22.03.6934.01

$$ {}_1F_2\left(3; -\frac{9}{4}, \frac{1}{4}; z\right) = \frac{1}{180} e^{-2\sqrt{z}} \left(-12 e^{2\sqrt{z}} \left(56 z^2 - 74 z - 15\right) - e^{4\sqrt{z}} \sqrt{2\pi}\, z^{3/4} \left(64 z^2 + 352 z^{3/2} + 132 z - 462 \sqrt{z} + 231\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi}\, z^{3/4} \left(64 z^2 - 352 z^{3/2} + 132 z + 462 \sqrt{z} + 231\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right) $$

07.22.03.6935.01

$$ {}_1F_2\left(3; -\frac{9}{4}, \frac{1}{4}; -z\right) = \frac{1}{45}\left(-3\left(56 z^2 + 74 z - 15\right) + \sqrt{\pi}\, z^{3/4} C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64 z^2 - 132 z + 231\right)\cos\left(2\sqrt{z}\right) + 22\sqrt{z}\,(16 z + 21)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, z^{3/4} S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64 z^2 - 132 z + 231\right)\sin\left(2\sqrt{z}\right) - 22\sqrt{z}\,(16 z + 21)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6936.01

$$ {}_1F_2\left(3; -\frac{9}{4}, \frac{5}{4}; z\right) = \frac{1}{1440\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-8 e^{2\sqrt{z}}\sqrt[4]{z}\left(32 z^2 - 144 z + 135\right) - e^{4\sqrt{z}}\sqrt{2\pi}\left(128 z^{5/2} + 384 z^2 - 504 z^{3/2} - 168 z + 630\sqrt{z} - 315\right)\right.\right. \left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\left(128 z^{5/2} - 384 z^2 - 504 z^{3/2} + 168 z + 630\sqrt{z} + 315\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6937.01

$$ {}_1F_2\left(3; -\frac{9}{4}, \frac{5}{4}; -z\right) = \frac{1}{360\sqrt[4]{z}}\left(-2\sqrt[4]{z}\left(32 z^2 + 144 z + 135\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(64 z^2 + 252 z + 315\right)\sin\left(2\sqrt{z}\right) - 3\left(128 z^2 + 56 z - 105\right)\cos\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(64 z^2 + 252 z + 315\right)\cos\left(2\sqrt{z}\right) + 3\left(128 z^2 + 56 z - 105\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6938.01

$$ {}_1F_2\left(3; -\frac{9}{4}, \frac{9}{4}; z\right) = \frac{1}{2304 z^{5/4}}\left(e^{-2\sqrt{z}}\left(8 e^{2\sqrt{z}}\sqrt[4]{z}\left(16 z^2 - 468 z - 315\right) - e^{4\sqrt{z}}\sqrt{2\pi}\left(256 z^3 - 1008 z^2 + 1680 z^{3/2} - 1260 z + 630\sqrt{z} - 315\right)\right.\right. \left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\left(-256 z^3 + 1008 z^2 + 1680 z^{3/2} + 1260 z + 630\sqrt{z} + 315\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6939.01

$$ {}_1F_2\left(3; -\frac{9}{4}, \frac{9}{4}; -z\right) = \frac{1}{576\, z^{5/4}} \left(-2\, \sqrt[4]{z}\, \left(16\, z^2 + 468\, z - 315\right) - \right.$$

$$ \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(256\, z^3 + 1008\, z^2 - 1260\, z + 315\right) \cos\left(2\, \sqrt{z}\right) + 210\, (3 - 8\, z)\, \sqrt{z}\, \sin\left(2\, \sqrt{z}\right) \right) - $$

$$ \left. \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(210\, \sqrt{z}\, (8\, z - 3) \cos\left(2\, \sqrt{z}\right) + \left(256\, z^3 + 1008\, z^2 - 1260\, z + 315\right) \sin\left(2\, \sqrt{z}\right) \right) \right) $$

07.22.03.6940.01

$$ {}_1F_2\left(3; -\frac{9}{4}, \frac{13}{4}; z\right) = \frac{1}{2048\, z^{9/4}} \left(e^{-2\, \sqrt{z}} \left(-8\, e^{2\, \sqrt{z}}\, \sqrt[4]{z}\, \left(128\, z^3 + 976\, z^2 + 2520\, z + 4725\right) - \right. \right. $$

$$ e^{4\, \sqrt{z}}\, \sqrt{2\, \pi}\, \left(512\, z^{7/2} - 1792\, z^3 + 3360\, z^{5/2} - 5040\, z^2 + 7560\, z^{3/2} - 10\,080\, z + 9450\, \sqrt{z} - 4725\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$

$$ \left. \left. \sqrt{2\, \pi}\, \left(512\, z^{7/2} + 1792\, z^3 + 3360\, z^{5/2} + 5040\, z^2 + 7560\, z^{3/2} + 10\,080\, z + 9450\, \sqrt{z} + 4725\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) \right) \right) $$

07.22.03.6941.01

$$ {}_1F_2\left(3; -\frac{9}{4}, \frac{13}{4}; -z\right) = \frac{1}{512\, z^{9/4}} \left(2\, \sqrt[4]{z}\, \left(128\, z^3 - 976\, z^2 + 2520\, z - 4725\right) - \right. $$

$$ \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(7\left(256\, z^3 - 720\, z^2 + 1440\, z - 675\right) \cos\left(2\, \sqrt{z}\right) + 2\, \sqrt{z}\, \left(256\, z^3 - 1680\, z^2 + 3780\, z - 4725\right) \sin\left(2\, \sqrt{z}\right) \right) + $$

$$ \left. \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\, \sqrt{z}\, \left(256\, z^3 - 1680\, z^2 + 3780\, z - 4725\right) \cos\left(2\, \sqrt{z}\right) - 7\left(256\, z^3 - 720\, z^2 + 1440\, z - 675\right) \sin\left(2\, \sqrt{z}\right) \right) \right) $$

07.22.03.6942.01

$$ {}_1F_2\left(3; -\frac{9}{4}, \frac{17}{4}; z\right) = $$

$$ -\frac{1}{16\,384\, z^{13/4}} \left(13\, e^{-2\, \sqrt{z}} \left(-8\, e^{2\, \sqrt{z}}\, \sqrt[4]{z}\, \left(1984\, z^3 + 30\,240\, z^2 + 177\,660\, z + 467\,775\right) + e^{4\, \sqrt{z}}\, \sqrt{2\, \pi}\, \left(1024\, z^4 - 7680\, z^{7/2} + \right. \right. \right. $$

$$ \left. 33\,600\, z^3 - 110\,880\, z^{5/2} + 292\,320\, z^2 - 604\,800\, z^{3/2} + 926\,100\, z - 935\,550\, \sqrt{z} + 467\,775\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$

$$ \sqrt{2\, \pi}\, \left(1024\, z^4 + 7680\, z^{7/2} + 33\,600\, z^3 + 110\,880\, z^{5/2} + 292\,320\, z^2 + 604\,800\, z^{3/2} + \right. $$

$$ \left. \left. \left. 926\,100\, z + 935\,550\, \sqrt{z} + 467\,775\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) \right) \right) $$

07.22.03.6943.01

$$ {}_1F_2\left(3; -\frac{9}{4}, \frac{17}{4}; -z\right) = \frac{1}{4096\, z^{13/4}}\left(13\left(2\sqrt[4]{z}\,\left(1984\, z^3 - 30\,240\, z^2 + 177\,660\, z - 467\,775\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\, z^4 - 33\,600\, z^3 + 292\,320\, z^2 - 926\,100\, z + 467\,775\right)\cos\left(2\sqrt{z}\right) - 30\sqrt{z}\,\left(256\, z^3 - 3696\, z^2 + 20\,160\, z - 31\,185\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(30\sqrt{z}\,\left(256\, z^3 - 3696\, z^2 + 20\,160\, z - 31\,185\right)\cos\left(2\sqrt{z}\right) + \left(1024\, z^4 - 33\,600\, z^3 + 292\,320\, z^2 - 926\,100\, z + 467\,775\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6944.01

$$ {}_1F_2\left(3; -\frac{9}{4}, \frac{21}{4}; z\right) = -\frac{1}{131\,072\, z^{17/4}}\left(221\, e^{-2\sqrt{z}}\left(8\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(512\, z^4 + 43\,008\, z^3 + 806\,400\, z^2 + 5\,388\,768\, z + 15\,810\,795\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(2048\, z^{9/2} - 24\,576\, z^4 + 165\,504\, z^{7/2} - 801\,024\, z^3 + 2\,987\,712\, z^{5/2} - 8\,678\,880\, z^2 + 19\,209\,960\, z^{3/2} - 30\,686\,040\, z + 31\,621\,590\sqrt{z} - 15\,810\,795\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - \sqrt{2\pi}\,\left(2048\, z^{9/2} + 24\,576\, z^4 + 165\,504\, z^{7/2} + 801\,024\, z^3 + 2\,987\,712\, z^{5/2} + 8\,678\,880\, z^2 + 19\,209\,960\, z^{3/2} + 30\,686\,040\, z + 31\,621\,590\sqrt{z} + 15\,810\,795\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6945.01

$$ {}_1F_2\left(3; -\frac{9}{4}, \frac{21}{4}; -z\right) = \frac{1}{32\,768\, z^{17/4}}\left(221\left(-2\sqrt[4]{z}\,\left(512\, z^4 - 43\,008\, z^3 + 806\,400\, z^2 - 5\,388\,768\, z + 15\,810\,795\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(8192\, z^4 - 267\,008\, z^3 + 2\,892\,960\, z^2 - 10\,228\,680\, z + 5\,270\,265\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(1024\, z^4 - 82\,752\, z^3 + 1\,493\,856\, z^2 - 9\,604\,980\, z + 15\,810\,795\right)\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(1024\, z^4 - 82\,752\, z^3 + 1\,493\,856\, z^2 - 9\,604\,980\, z + 15\,810\,795\right)\cos\left(2\sqrt{z}\right) - 3\left(8192\, z^4 - 267\,008\, z^3 + 2\,892\,960\, z^2 - 10\,228\,680\, z + 5\,270\,265\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 3$, $b_1 = -\frac{7}{4}$

07.22.03.6946.01

$$ {}_1F_2\left(3; -\frac{7}{4}, -\frac{5}{4}; z\right) = \frac{1}{105}\, e^{-2\sqrt{z}}\left(4\, e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(16\, z + 128\sqrt{z} + 221\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{9/4} - 4\sqrt{2\pi}\,\left(16\, z - 128\sqrt{z} + 221\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{9/4} + e^{2\sqrt{z}}\,\left(128\, z^3 + 1536\, z^2 + 144\, z + 105\right)\right) $$

07.22.03.6947.01

$${}_1F_2\left(3;-\frac{7}{4},-\frac{5}{4};-z\right)=\frac{1}{105}\left(-128\,z^3-16\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16\,z-221)\cos\left(2\sqrt{z}\right)+128\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)z^{9/4}+\right.$$
$$\left.16\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16\,z-221)\sin\left(2\sqrt{z}\right)-128\sqrt{z}\;\cos\left(2\sqrt{z}\right)\right)z^{9/4}+1536\,z^2-144\,z+105\right)$$

07.22.03.6948.01

$${}_1F_2\left(3;-\frac{7}{4},-\frac{1}{4};z\right)=\frac{1}{42}\,e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\;\sqrt{2\,\pi}\left(32\,z^{3/2}+208\,z+234\sqrt{z}-117\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{5/4}-\right.$$
$$\left.\sqrt{2\,\pi}\left(32\,z^{3/2}-208\,z+234\sqrt{z}+117\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{5/4}-2\,e^{2\sqrt{z}}\left(200\,z^2-144\,z-21\right)\right)$$

07.22.03.6949.01

$${}_1F_2\left(3;-\frac{7}{4},-\frac{1}{4};-z\right)=\frac{1}{21}\left(-200\,z^2+2\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;(16\,z-117)\sin\left(2\sqrt{z}\right)-13\,(16\,z+9)\cos\left(2\sqrt{z}\right)\right)z^{5/4}+\right.$$
$$\left.2\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;(16\,z-117)\cos\left(2\sqrt{z}\right)+13\,(16\,z+9)\sin\left(2\sqrt{z}\right)\right)z^{5/4}-144\,z+21\right)$$

07.22.03.6950.01

$${}_1F_2\left(3;-\frac{7}{4},\frac{3}{4};z\right)=$$
$$\frac{1}{336}\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\left(8\,z^2-3\,z+21\right)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\sqrt[4]{z}\left(64\,z^2+288\,z^{3/2}+36\,z-270\sqrt{z}+135\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\right.$$
$$\left.\sqrt{2\,\pi}\;\sqrt[4]{z}\left(64\,z^2-288\,z^{3/2}+36\,z+270\sqrt{z}+135\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)$$

07.22.03.6951.01

$${}_1F_2\left(3;-\frac{7}{4},\frac{3}{4};-z\right)=$$
$$\frac{1}{84}\left(4\left(8\,z^2+3\,z+21\right)+\sqrt{\pi}\;\sqrt[4]{z}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64\,z^2-36\,z+135\right)\cos\left(2\sqrt{z}\right)+18\sqrt{z}\;(16\,z+15)\sin\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.\sqrt{\pi}\;\sqrt[4]{z}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64\,z^2-36\,z+135\right)\sin\left(2\sqrt{z}\right)-18\sqrt{z}\;(16\,z+15)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6952.01

$${}_1F_2\left(3;-\frac{7}{4},\frac{7}{4};z\right)=$$
$$\frac{1}{896\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\;z^{3/4}\left(28\,z+31\right)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\left(128\,z^{5/2}+256\,z^2-440\,z^{3/2}+120\,z+150\sqrt{z}-75\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\,\pi}\left(128\,z^{5/2}-256\,z^2-440\,z^{3/2}-120\,z+150\sqrt{z}+75\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6953.01

$${}_1F_2\left(3;-\frac{7}{4},\frac{7}{4};-z\right)=$$
$$\frac{1}{224\,z^{3/4}}\left(4\,z^{3/4}\,(31-28\,z)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-256\,z^2+120\,z+75\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;\left(64\,z^2+220\,z+75\right)\sin\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\left(64\,z^2+220\,z+75\right)\cos\left(2\sqrt{z}\right)+\left(256\,z^2-120\,z-75\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6954.01

$${}_1F_2\left(3;-\frac{7}{4},\frac{11}{4};z\right)=\frac{1}{1024\,z^{7/4}}$$
$$\left(e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\;z^{3/4}\left(32\,z^2-16\,z-105\right)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(256\,z^3-256\,z^{5/2}-240\,z^2+720\,z^{3/2}-780\,z+630\sqrt{z}\;-315\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+\sqrt{2\,\pi}\;\left(-256\,z^3-256\,z^{5/2}+240\,z^2+720\,z^{3/2}+780\,z+630\sqrt{z}\;+315\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6955.01

$${}_1F_2\left(3;-\frac{7}{4},\frac{11}{4};-z\right)=\frac{1}{256\,z^{7/4}}\left(-4\,z^{3/4}\left(32\,z^2+16\,z-105\right)-\right.$$
$$\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^3+240\,z^2-780\,z+315\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\;\left(128\,z^2+360\,z-315\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\left(128\,z^2+360\,z-315\right)\cos\left(2\sqrt{z}\right)+\left(256\,z^3+240\,z^2-780\,z+315\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6956.01

$${}_1F_2\left(3;-\frac{7}{4},\frac{15}{4};z\right)=\frac{1}{8192\,z^{11/4}}\left(11\,e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\;z^{3/4}\left(304\,z^2+2100\,z+6615\right)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\right.\right.$$
$$\left(512\,z^{7/2}-2304\,z^3+6432\,z^{5/2}-14\,640\,z^2+27\,720\,z^{3/2}-40\,320\,z+39\,690\sqrt{z}\;-19\,845\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\,\pi}\;\left(512\,z^{7/2}+2304\,z^3+6432\,z^{5/2}+14\,640\,z^2+27\,720\,z^{3/2}+40\,320\,z+39\,690\sqrt{z}\;+19\,845\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6957.01

$${}_1F_2\left(3;-\frac{7}{4},\frac{15}{4};-z\right)=$$
$$-\frac{1}{2048\,z^{11/4}}\left(11\left(4\,z^{3/4}\left(304\,z^2-2100\,z+6615\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\left(256\,z^3-3216\,z^2+13\,860\,z-19\,845\right)\cos\left(2\sqrt{z}\right)+\right.\right.\right.$$
$$\left.\left.3\left(-768\,z^3+4880\,z^2-13\,440\,z+6615\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left.\left.\left.\left(3\left(768\,z^3-4880\,z^2+13\,440\,z-6615\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;\left(256\,z^3-3216\,z^2+13\,860\,z-19\,845\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.6958.01

$${}_1F_2\left(3;-\frac{7}{4},\frac{19}{4};z\right)=$$
$$\frac{1}{65\,536\,z^{15/4}}\left(165\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(128\,z^3+5712\,z^2+63\,000\,z+266\,805\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(1024\,z^4-8704\,z^{7/2}+\right.\right.\right.$$
$$\left.\left.43\,328\,z^3-159\,264\,z^{5/2}+453\,600\,z^2-987\,840\,z^{3/2}+1\,561\,140\,z-1\,600\,830\,\sqrt{z}+800\,415\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.\sqrt{2\,\pi}\,\left(1024\,z^4+8704\,z^{7/2}+43\,328\,z^3+159\,264\,z^{5/2}+453\,600\,z^2+987\,840\,z^{3/2}+\right.\right.$$
$$\left.\left.1\,561\,140\,z+1\,600\,830\,\sqrt{z}+800\,415\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Bigg)$$

07.22.03.6959.01

$${}_1F_2\left(3;-\frac{7}{4},\frac{19}{4};-z\right)=$$
$$\frac{1}{16\,384\,z^{15/4}}\left(165\left(4\,z^{3/4}\left(128\,z^3-5712\,z^2+63\,000\,z-266\,805\right)+\sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\,z^4-43\,328\,z^3+453\,600\,z^2-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.1\,561\,140\,z+800\,415\right)\cos\left(2\,\sqrt{z}\right)+2\,\sqrt{z}\,\left(-4352\,z^3+79\,632\,z^2-493\,920\,z+800\,415\right)\sin\left(2\,\sqrt{z}\right)\right)-\right.$$
$$\left.\sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\,\left(4352\,z^3-79\,632\,z^2+493\,920\,z-800\,415\right)\cos\left(2\,\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left.\left(1024\,z^4-43\,328\,z^3+453\,600\,z^2-1\,561\,140\,z+800\,415\right)\sin\left(2\,\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6960.01

$${}_1F_2\left(3;-\frac{7}{4},\frac{23}{4};z\right)=\frac{1}{524\,288\,z^{19/4}}\left(3135\,e^{-2\sqrt{z}}\right.$$
$$\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\left(3392\,z^3+131\,040\,z^2+1\,589\,940\,z+7\,432\,425\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(2048\,z^{9/2}-26\,624\,z^4+193\,152\,z^{7/2}-\right.\right.$$
$$\left.\left.994\,560\,z^3+3\,890\,880\,z^{5/2}-11\,702\,880\,z^2+26\,528\,040\,z^{3/2}-42\,993\,720\,z+44\,594\,550\,\sqrt{z}-22\,297\,275\right)$$
$$\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(2048\,z^{9/2}+26\,624\,z^4+193\,152\,z^{7/2}+994\,560\,z^3+3\,890\,880\,z^{5/2}+\right.$$
$$\left.\left.11\,702\,880\,z^2+26\,528\,040\,z^{3/2}+42\,993\,720\,z+44\,594\,550\,\sqrt{z}+22\,297\,275\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Bigg)$$

07.22.03.6961.01

$${}_1F_2\left(3;-\frac{7}{4},\frac{23}{4};-z\right)=\frac{1}{131\,072\,z^{19/4}}\left(3135\left(4\,z^{3/4}\left(3392\,z^3-131\,040\,z^2+1\,589\,940\,z-7\,432\,425\right)+\right.\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\,\left(1024\,z^4-96\,576\,z^3+1\,945\,440\,z^2-13\,264\,020\,z+22\,297\,275\right)\cos\left(2\,\sqrt{z}\right)+\right.$$
$$\left.\left(-26\,624\,z^4+994\,560\,z^3-11\,702\,880\,z^2+42\,993\,720\,z-22\,297\,275\right)\sin\left(2\,\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(26\,624\,z^4-994\,560\,z^3+11\,702\,880\,z^2-42\,993\,720\,z+22\,297\,275\right)\cos\left(2\,\sqrt{z}\right)+\right.$$
$$\left.\left.\left.2\,\sqrt{z}\,\left(1024\,z^4-96\,576\,z^3+1\,945\,440\,z^2-13\,264\,020\,z+22\,297\,275\right)\sin\left(2\,\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 = -\frac{5}{4}$

07.22.03.6962.01

$$ {}_1F_2\left(3; -\frac{5}{4}, -\frac{3}{4}; z\right) = \frac{1}{15} e^{-2\sqrt{z}} \left(-e^{4\sqrt{z}} \sqrt{2\pi} \left(16z + 112\sqrt{z} + 165\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} + \sqrt{2\pi} \left(-16z + 112\sqrt{z} - 165\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} - 3e^{2\sqrt{z}} \left(72z^2 - 16z - 5\right)\right) $$

07.22.03.6963.01

$$ {}_1F_2\left(3; -\frac{5}{4}, -\frac{3}{4}; -z\right) = \frac{1}{15}\left(4\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16z - 165)\cos\left(2\sqrt{z}\right) + 112\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right) z^{7/4} + 4\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16z - 165)\sin\left(2\sqrt{z}\right) - 112\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right) z^{7/4} - 3\left(72z^2 + 16z - 5\right)\right) $$

07.22.03.6964.01

$$ {}_1F_2\left(3; -\frac{5}{4}, \frac{1}{4}; z\right) = \frac{1}{40} e^{-2\sqrt{z}} \left(8e^{2\sqrt{z}} \left(8z^2 + 29z + 5\right) + e^{4\sqrt{z}} \sqrt{2\pi}\, z^{3/4} \left(32z^{3/2} + 176z + 154\sqrt{z} - 77\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - \sqrt{2\pi}\, z^{3/4} \left(32z^{3/2} - 176z + 154\sqrt{z} + 77\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right) $$

07.22.03.6965.01

$$ {}_1F_2\left(3; -\frac{5}{4}, \frac{1}{4}; -z\right) = \frac{1}{10}\left(2\left(8z^2 - 29z + 5\right) - \sqrt{\pi}\, z^{3/4}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16z - 77)\sin\left(2\sqrt{z}\right) - 11(16z + 7)\cos\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, z^{3/4}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16z - 77)\cos\left(2\sqrt{z}\right) + 11(16z + 7)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6966.01

$$ {}_1F_2\left(3; -\frac{5}{4}, \frac{5}{4}; z\right) = \frac{1}{320\sqrt[4]{z}} \left(e^{-2\sqrt{z}} \left(8e^{2\sqrt{z}}\sqrt[4]{z}\,(52z - 23) + e^{4\sqrt{z}} \sqrt{2\pi} \left(64z^2 + 224z^{3/2} - 28z - 126\sqrt{z} + 63\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi} \left(64z^2 - 224z^{3/2} - 28z + 126\sqrt{z} + 63\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6967.01

$$ {}_1F_2\left(3; -\frac{5}{4}, \frac{5}{4}; -z\right) = \frac{1}{80\sqrt[4]{z}}\left(-2\sqrt[4]{z}\,(52z + 23) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64z^2 + 28z + 63\right)\cos\left(2\sqrt{z}\right) + 14\sqrt{z}\,(16z + 9)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64z^2 + 28z + 63\right)\sin\left(2\sqrt{z}\right) - 14\sqrt{z}\,(16z + 9)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6968.01

$$ {}_1F_2\left(3; -\frac{5}{4}, \frac{9}{4}; z\right) = \frac{1}{512\, z^{5/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(32 z^2 - 80 z - 45\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(128 z^{5/2} + 128 z^2 - 312 z^{3/2} + 216 z - 90\sqrt{z} + 45\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \right. \right. $$
$$ \left. \left. \sqrt{2\pi}\, \left(-128 z^{5/2} + 128 z^2 + 312 z^{3/2} + 216 z + 90\sqrt{z} + 45\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6969.01

$$ {}_1F_2\left(3; -\frac{5}{4}, \frac{9}{4}; -z\right) = \frac{1}{128\, z^{5/4}} $$
$$ \left(-2\sqrt[4]{z}\, \left(32 z^2 + 80 z - 45\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-128 z^2 + 216 z - 45\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(64 z^2 + 156 z - 45\right) \sin\left(2\sqrt{z}\right)\right) - \right. $$
$$ \left. \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\, \left(64 z^2 + 156 z - 45\right) \cos\left(2\sqrt{z}\right) + \left(128 z^2 - 216 z + 45\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6970.01

$$ {}_1F_2\left(3; -\frac{5}{4}, \frac{13}{4}; z\right) = \frac{1}{4096\, z^{9/4}} \left(9\, e^{-2\sqrt{z}} \right. $$
$$ \left(-24\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(48 z^2 + 100 z + 175\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(256 z^3 - 512 z^{5/2} + 656 z^2 - 880 z^{3/2} + 1140 z - 1050\sqrt{z} + 525\right) \right. $$
$$ \left. \left. \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(256 z^3 + 512 z^{5/2} + 656 z^2 + 880 z^{3/2} + 1140 z + 1050\sqrt{z} + 525\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6971.01

$$ {}_1F_2\left(3; -\frac{5}{4}, \frac{13}{4}; -z\right) = -\frac{1}{1024\, z^{9/4}} \left(9\left(6\sqrt[4]{z}\, \left(48 z^2 - 100 z + 175\right) + \right.\right. $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256 z^3 - 656 z^2 + 1140 z - 525\right) \cos\left(2\sqrt{z}\right) - 2\sqrt{z}\, \left(256 z^2 - 440 z + 525\right) \sin\left(2\sqrt{z}\right)\right) + $$
$$ \left.\left. \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\, \left(256 z^2 - 440 z + 525\right) \cos\left(2\sqrt{z}\right) + \left(256 z^3 - 656 z^2 + 1140 z - 525\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6972.01

$$ {}_1F_2\left(3; -\frac{5}{4}, \frac{17}{4}; z\right) = \frac{1}{32\,768\, z^{13/4}} \left(117\, e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(128 z^3 + 2640 z^2 + 15\,960 z + 42\,525\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \right. \right. $$
$$ \left(512 z^{7/2} - 2816 z^3 + 9760 z^{5/2} - 26\,160 z^2 + 54\,600 z^{3/2} - 84\,000 z + 85\,050\sqrt{z} - 42\,525\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - $$
$$ \left. \left. \sqrt{2\pi}\, \left(512 z^{7/2} + 2816 z^3 + 9760 z^{5/2} + 26\,160 z^2 + 54\,600 z^{3/2} + 84\,000 z + 85\,050\sqrt{z} + 42\,525\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.6973.01

$$ {}_1F_2\left(3; -\frac{5}{4}, \frac{17}{4}; -z\right) = \frac{1}{8192\, z^{13/4}}\left(117\left(2\sqrt[4]{z}\,\left(128 z^3 - 2640 z^2 + 15\,960 z - 42\,525\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(256 z^3 - 4880 z^2 + 27\,300 z - 42\,525\right)\right.\right.\right. \cos\left(2\sqrt{z}\right) + \left(-2816 z^3 + 26\,160 z^2 - 84\,000 z + 42\,525\right)\sin\left(2\sqrt{z}\right)\Big) - \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left.\left.\left.\left(\left(2816 z^3 - 26\,160 z^2 + 84\,000 z - 42\,525\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(256 z^3 - 4880 z^2 + 27\,300 z - 42\,525\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)\right) $$

07.22.03.6974.01

$$ {}_1F_2\left(3; -\frac{5}{4}, \frac{21}{4}; z\right) = \frac{1}{262\,144\, z^{17/4}}\left(1989\, e^{-2\sqrt{z}}\left(-24\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(832 z^3 + 19\,040 z^2 + 133\,812 z + 405\,405\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(1024 z^4 - 9728 z^{7/2} + 53\,568 z^3 - 213\,024 z^{5/2} + 641\,760 z^2 - 1\,451\,520 z^{3/2} + 2\,347\,380 z - 2\,432\,430\sqrt{z} + 1\,216\,215\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\left(1024 z^4 + 9728 z^{7/2} + 53\,568 z^3 + 213\,024 z^{5/2} + 641\,760 z^2 + 1\,451\,520 z^{3/2} + 2\,347\,380 z + 2\,432\,430\sqrt{z} + 1\,216\,215\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6975.01

$$ {}_1F_2\left(3; -\frac{5}{4}, \frac{21}{4}; -z\right) = \frac{1}{65\,536\, z^{17/4}}\left(1989\left(6\sqrt[4]{z}\,\left(832 z^3 - 19\,040 z^2 + 133\,812 z - 405\,405\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024 z^4 - 53\,568 z^3 + 641\,760 z^2 - 2\,347\,380 z + 1\,216\,215\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-4864 z^3 + 106\,512 z^2 - 725\,760 z + 1\,216\,215\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(4864 z^3 - 106\,512 z^2 + 725\,760 z - 1\,216\,215\right)\cos\left(2\sqrt{z}\right) + \left(1024 z^4 - 53\,568 z^3 + 641\,760 z^2 - 2\,347\,380 z + 1\,216\,215\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 3$, $b_1 = -\frac{3}{4}$

07.22.03.6976.01

$$ {}_1F_2\left(3; -\frac{3}{4}, -\frac{1}{4}; z\right) = \frac{1}{12}\, e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(16 z + 96\sqrt{z} + 117\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{5/4} + \sqrt{2\pi}\,\left(-16 z + 96\sqrt{z} - 117\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{5/4} + 4\, e^{2\sqrt{z}}\,\left(8 z^2 + 48 z + 3\right)\right) $$

07.22.03.6977.01

$$ {}_1F_2\left(3; -\frac{3}{4}, -\frac{1}{4}; -z\right) = \frac{1}{3}\left(8z^2 + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16z-117)\cos\left(2\sqrt{z}\right) + 96\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{5/4} - \right.$$
$$ \left. \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16z-117)\sin\left(2\sqrt{z}\right) - 96\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)z^{5/4} - 48z + 3\right) $$

07.22.03.6978.01

$$ {}_1F_2\left(3; -\frac{3}{4}, \frac{3}{4}; z\right) = \frac{1}{96}e^{-2\sqrt{z}}\left(-16e^{2\sqrt{z}}\,(17z-6) - e^{4\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\,\left(32z^{3/2} + 144z + 90\sqrt{z} - 45\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - \right.$$
$$ \left. \sqrt{2\pi}\,\sqrt[4]{z}\,\left(32z^{3/2} - 144z + 90\sqrt{z} + 45\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right) $$

07.22.03.6979.01

$$ {}_1F_2\left(3; -\frac{3}{4}, \frac{3}{4}; -z\right) = \frac{1}{24}\left(68z - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16z-45)\sin\left(2\sqrt{z}\right) - 9(16z+5)\cos\left(2\sqrt{z}\right)\right)\sqrt[4]{z} - \right.$$
$$ \left. \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16z-45)\cos\left(2\sqrt{z}\right) + 9(16z+5)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + 24\right) $$

07.22.03.6980.01

$$ {}_1F_2\left(3; -\frac{3}{4}, \frac{7}{4}; z\right) = $$
$$ \frac{1}{256z^{3/4}}\left(e^{-2\sqrt{z}}\left(-16e^{2\sqrt{z}}\,z^{3/4}(8z-11) - e^{4\sqrt{z}}\,\sqrt{2\pi}\left(64z^2 + 160z^{3/2} - 60z - 30\sqrt{z} + 15\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \right.\right.$$
$$ \left.\left. \sqrt{2\pi}\left(64z^2 - 160z^{3/2} - 60z + 30\sqrt{z} + 15\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6981.01

$$ {}_1F_2\left(3; -\frac{3}{4}, \frac{7}{4}; -z\right) = \frac{1}{64z^{3/4}}\left(4z^{3/4}(8z+11) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64z^2 + 60z + 15\right)\cos\left(2\sqrt{z}\right) + 10\sqrt{z}\,(16z+3)\sin\left(2\sqrt{z}\right)\right) - \right.$$
$$ \left. \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64z^2 + 60z + 15\right)\sin\left(2\sqrt{z}\right) - 10\sqrt{z}\,(16z+3)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.6982.01

$$ {}_1F_2\left(3; -\frac{3}{4}, \frac{11}{4}; z\right) = $$
$$ -\frac{1}{2048z^{7/4}}\left(7e^{-2\sqrt{z}}\left(-16e^{2\sqrt{z}}\,z^{3/4}(4z-15) + e^{4\sqrt{z}}\,\sqrt{2\pi}\left(128z^{5/2} - 120z^{3/2} + 120z - 90\sqrt{z} + 45\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \right.\right.$$
$$ \left.\left. \sqrt{2\pi}\left(128z^{5/2} - 120z^{3/2} - 120z - 90\sqrt{z} - 45\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6983.01

$$ {}_1F_2\left(3; -\frac{3}{4}, \frac{11}{4}; -z\right) = \frac{1}{512\, z^{7/4}}\left(7\left(4\, z^{3/4}\,(4\,z+15) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(64\,z^2+60\,z-45\right)\cos\left(2\sqrt{z}\right) + 15\,(3-8\,z)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\,(8\,z-3)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(64\,z^2+60\,z-45\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6984.01

$$ {}_1F_2\left(3; -\frac{3}{4}, \frac{15}{4}; z\right) = -\frac{1}{16\,384\, z^{11/4}}\left(77\, e^{-2\sqrt{z}}\left(16\, e^{2\sqrt{z}}\, z^{3/4}\left(32\,z^2+240\,z+735\right) + e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(256\,z^3-768\,z^{5/2}+1680\,z^2-3120\,z^{3/2}+4500\,z-4410\sqrt{z}+2205\right)\right.\right. \left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - \sqrt{2\,\pi}\,\left(256\,z^3+768\,z^{5/2}+1680\,z^2+3120\,z^{3/2}+4500\,z+4410\sqrt{z}+2205\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6985.01

$$ {}_1F_2\left(3; -\frac{3}{4}, \frac{15}{4}; -z\right) = \frac{1}{4096\, z^{11/4}}\left(77\left(-4\, z^{3/4}\left(32\,z^2-240\,z+735\right) - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^3-1680\,z^2+4500\,z-2205\right)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(128\,z^2-520\,z+735\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\,\left(128\,z^2-520\,z+735\right)\cos\left(2\sqrt{z}\right) + \left(256\,z^3-1680\,z^2+4500\,z-2205\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6986.01

$$ {}_1F_2\left(3; -\frac{3}{4}, \frac{19}{4}; z\right) = -\frac{1}{131\,072\, z^{15/4}}\left(1155\, e^{-2\sqrt{z}}\left(-48\, e^{2\sqrt{z}}\, z^{3/4}\left(144\,z^2+1820\,z+8085\right) + e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(512\,z^{7/2}-3328\,z^3+13\,344\,z^{5/2}-39\,600\,z^2+88\,200\,z^{3/2}-141\,120\,z+145\,530\sqrt{z}-72\,765\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\,\pi}\,\left(512\,z^{7/2}+3328\,z^3+13\,344\,z^{5/2}+39\,600\,z^2+88\,200\,z^{3/2}+141\,120\,z+145\,530\sqrt{z}+72\,765\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.6987.01

$$ {}_1F_2\left(3; -\frac{3}{4}, \frac{19}{4}; -z\right) = -\frac{1}{32\,768\, z^{15/4}}\left(1155\left(12\, z^{3/4}\left(144\,z^2-1820\,z+8085\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(256\,z^3-6672\,z^2+44\,100\,z-72\,765\right)\cos\left(2\sqrt{z}\right) + \left(-3328\,z^3+39\,600\,z^2-141\,120\,z+72\,765\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(3328\,z^3-39\,600\,z^2+141\,120\,z-72\,765\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(256\,z^3-6672\,z^2+44\,100\,z-72\,765\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.6988.01

$${}_1F_2\left(3;-\frac{3}{4},\frac{23}{4};z\right)=$$
$$-\frac{1}{1\,048\,576\,z^{19/4}}\left(21\,945\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(128\,z^3+8400\,z^2+114\,840\,z+571\,725\right)+e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(1024\,z^4-10\,752\,z^{7/2}+\right.\right.\right.$$
$$\left.\left.\left.64\,320\,z^3-272\,160\,z^{5/2}+856\,800\,z^2-1\,995\,840\,z^{3/2}+3\,284\,820\,z-3\,430\,350\,\sqrt{z}+1\,715\,175\right)\right.$$
$$\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\sqrt{2\pi}\,\left(1024\,z^4+10\,752\,z^{7/2}+64\,320\,z^3+272\,160\,z^{5/2}+856\,800\,z^2+\right.\right.$$
$$\left.\left.1\,995\,840\,z^{3/2}+3\,284\,820\,z+3\,430\,350\,\sqrt{z}+1\,715\,175\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.6989.01

$${}_1F_2\left(3;-\frac{3}{4},\frac{23}{4};-z\right)=\frac{1}{262\,144\,z^{19/4}}\left(21\,945\left(4\,z^{3/4}\left(128\,z^3-8400\,z^2+114\,840\,z-571\,725\right)+\sqrt{\pi}\,\left(16\,z-165\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right.$$
$$\left.\left.\left(\left(64\,z^3-3360\,z^2+18\,900\,z-10\,395\right)\cos\left(2\sqrt{z}\right)-42\sqrt{z}\,\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,\left(16\,z-165\right)\right.\right.$$
$$\left.\left.C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(42\sqrt{z}\,\left(16\,z^2-240\,z+495\right)\cos\left(2\sqrt{z}\right)+\left(64\,z^3-3360\,z^2+18\,900\,z-10\,395\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 = -\frac{1}{4}$

07.22.03.6990.01

$${}_1F_2\left(3;-\frac{1}{4},\frac{1}{4};z\right)=\frac{1}{16}\,e^{-2\sqrt{z}}$$
$$\left(-8\,e^{2\sqrt{z}}\,\left(19\,z-2\right)-e^{4\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(16\,z+80\,\sqrt{z}+77\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\,\left(-16\,z+80\,\sqrt{z}-77\right)z^{3/4}\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)$$

07.22.03.6991.01

$${}_1F_2\left(3;-\frac{1}{4},\frac{1}{4};-z\right)=\frac{1}{4}\left(38\,z-\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z-77\right)\cos\left(2\sqrt{z}\right)+80\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)z^{3/4}-\right.$$
$$\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z-77\right)\sin\left(2\sqrt{z}\right)-80\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)z^{3/4}+4\right)$$

07.22.03.6992.01

$${}_1F_2\left(3;-\frac{1}{4},\frac{5}{4};z\right)=\frac{1}{128\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(8\,z+5\right)-\right.\right.$$
$$\left.\left.e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(32\,z^{3/2}+112\,z+42\,\sqrt{z}-21\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\,\left(32\,z^{3/2}-112\,z+42\,\sqrt{z}+21\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6993.01

$${}_1F_2\left(3;-\frac{1}{4},\frac{5}{4};-z\right)=\frac{1}{32\sqrt[4]{z}}\left(2\sqrt[4]{z}\,\left(8\,z-5\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(7\left(16\,z+3\right)\cos\left(2\sqrt{z}\right)+2\left(21-16\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(16\,z-21\right)\cos\left(2\sqrt{z}\right)+7\left(16\,z+3\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.6994.01

$${}_1F_2\left(3; -\frac{1}{4}, \frac{9}{4}; z\right) =$$
$$-\frac{1}{1024\, z^{5/4}}\left(5\, e^{-2\sqrt{z}}\left(8\, e^{2\sqrt{z}}\sqrt[4]{z}\,(20\, z+9)+e^{4\sqrt{z}}\sqrt{2\,\pi}\,\left(64\, z^2+96\, z^{3/2}-60\, z+18\sqrt{z}-9\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\,\pi}\,\left(64\, z^2-96\, z^{3/2}-60\, z-18\sqrt{z}-9\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6995.01

$${}_1F_2\left(3; -\frac{1}{4}, \frac{9}{4}; -z\right) =$$
$$\frac{1}{256\, z^{5/4}}\left(5\left(2\sqrt[4]{z}\,(9-20\, z)+\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64\, z^2+60\, z-9\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\,(16\, z-3)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64\, z^2+60\, z-9\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\,(16\, z-3)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6996.01

$${}_1F_2\left(3; -\frac{1}{4}, \frac{13}{4}; z\right) =$$
$$-\frac{1}{8192\, z^{9/4}}\left(45\, e^{-2\sqrt{z}}\left(8\, e^{2\sqrt{z}}\sqrt[4]{z}\,\left(32\, z^2+48\, z+75\right)+e^{4\sqrt{z}}\sqrt{2\,\pi}\,\left(128\, z^{5/2}-128\, z^2+136\, z^{3/2}-168\, z+150\sqrt{z}-75\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\sqrt{2\,\pi}\,\left(128\, z^{5/2}+128\, z^2+136\, z^{3/2}+168\, z+150\sqrt{z}+75\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6997.01

$${}_1F_2\left(3; -\frac{1}{4}, \frac{13}{4}; -z\right) = \frac{1}{2048\, z^{9/4}}$$
$$\left(45\left(-2\sqrt[4]{z}\,\left(32\, z^2-48\, z+75\right)-\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(64\, z^2-68\, z+75\right)\cos\left(2\sqrt{z}\right)+\left(-128\, z^2+168\, z-75\right)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\, z^2-168\, z+75\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(64\, z^2-68\, z+75\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.6998.01

$${}_1F_2\left(3; -\frac{1}{4}, \frac{17}{4}; z\right) = -\frac{1}{65\,536\, z^{13/4}}\left(585\, e^{-2\sqrt{z}}\left(-8\, e^{2\sqrt{z}}\sqrt[4]{z}\,\left(272\, z^2+1740\, z+4725\right)+\right.\right.$$
$$e^{4\sqrt{z}}\sqrt{2\,\pi}\,\left(256\, z^3-1024\, z^{5/2}+2832\, z^2-6000\, z^{3/2}+9300\, z-9450\sqrt{z}+4725\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\,\pi}\,\left(256\, z^3+1024\, z^{5/2}+2832\, z^2+6000\, z^{3/2}+9300\, z+9450\sqrt{z}+4725\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.6999.01

$$ {}_1F_2\left(3; -\frac{1}{4}, \frac{17}{4}; -z\right) = -\frac{1}{16\,384\, z^{13/4}}\left(585\left(2\sqrt[4]{z}\,\left(272 z^2 - 1740 z + 4725\right) + \right.\right.$$
$$\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256 z^3 - 2832 z^2 + 9300 z - 4725\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(512 z^2 - 3000 z + 4725\right)\sin\left(2\sqrt{z}\right)\right) +$$
$$\left.\left.\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(512 z^2 - 3000 z + 4725\right)\cos\left(2\sqrt{z}\right) + \left(256 z^3 - 2832 z^2 + 9300 z - 4725\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7000.01

$$ {}_1F_2\left(3; -\frac{1}{4}, \frac{21}{4}; z\right) =$$
$$-\frac{1}{524\,288\, z^{17/4}}\left(9945\, e^{-2\sqrt{z}}\left(8\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(128 z^3 + 4560 z^2 + 34\,776 z + 110\,565\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(512 z^{7/2} - 3840 z^3 + \right.\right.\right.$$
$$\left.\left.17\,184 z^{5/2} - 54\,960 z^2 + 128\,520 z^{3/2} - 211\,680 z + 221\,130\sqrt{z} - 110\,565\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - \sqrt{2\pi}$$
$$\left.\left.\left(512 z^{7/2} + 3840 z^3 + 17\,184 z^{5/2} + 54\,960 z^2 + 128\,520 z^{3/2} + 211\,680 z + 221\,130\sqrt{z} + 110\,565\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7001.01

$$ {}_1F_2\left(3; -\frac{1}{4}, \frac{21}{4}; -z\right) = \frac{1}{131\,072\, z^{17/4}}\left(9945\left(2\sqrt[4]{z}\,\left(128 z^3 - 4560 z^2 + 34\,776 z - 110\,565\right) - \right.\right.$$
$$\sqrt{\pi}\,(16 z - 117)\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(16 z^2 - 112 z + 63\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(16 z^2 - 420 z + 945\right)\sin\left(2\sqrt{z}\right)\right) +$$
$$\left.\left.\sqrt{\pi}\,(16 z - 117)\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(16 z^2 - 420 z + 945\right)\cos\left(2\sqrt{z}\right) - 15\left(16 z^2 - 112 z + 63\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 = \frac{1}{4}$

07.22.03.7002.01

$$ {}_1F_2\left(3; \frac{1}{4}, \frac{3}{4}; z\right) = \frac{1}{64}\, e^{-2\sqrt{z}}$$
$$\left(32\, e^{2\sqrt{z}}\,(z+2) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\,\left(16 z + 64\sqrt{z} + 45\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\left(-16 z + 64\sqrt{z} - 45\right)\sqrt[4]{z}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)$$

07.22.03.7003.01

$$ {}_1F_2\left(3; \frac{1}{4}, \frac{3}{4}; -z\right) = \frac{1}{16}\left(-8\,(z-2) - \sqrt{\pi}\,\sqrt[4]{z}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16 z - 45)\cos\left(2\sqrt{z}\right) + 64\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right) + \right.$$
$$\left.\sqrt{\pi}\,\sqrt[4]{z}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16 z - 45)\sin\left(2\sqrt{z}\right) - 64\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7004.01

$$ {}_1F_2\left(3; \frac{1}{4}, \frac{7}{4}; z\right) = \frac{1}{512\, z^{3/4}}\left(3\, e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(32 z^{3/2} + 80 z + 10\sqrt{z} - 5\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \right.\right.$$
$$\left.\left.\sqrt{2\pi}\,\left(32 z^{3/2} - 80 z + 10\sqrt{z} + 5\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) + 144\, e^{2\sqrt{z}}\, z^{3/4}\right)\right)$$

07.22.03.7005.01

$${}_1F_2\left(3;\frac{1}{4},\frac{7}{4};-z\right)=-\frac{1}{128\,z^{3/4}}\left(3\left(\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;(16z-5)\sin\left(2\sqrt{z}\right)-5\,(16z+1)\cos\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;(16z-5)\cos\left(2\sqrt{z}\right)+5\,(16z+1)\sin\left(2\sqrt{z}\right)\right)-36\,z^{3/4}\right)\right)$$

07.22.03.7006.01

$${}_1F_2\left(3;\frac{1}{4},\frac{11}{4};z\right)=$$
$$\frac{1}{4096\,z^{7/4}}\left(21\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\;z^{3/4}\,(8z-3)+e^{4\sqrt{z}}\;\sqrt{2\pi}\left(64z^2+32z^{3/2}-28z+18\sqrt{z}\;-9\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\pi}\left(-64z^2+32z^{3/2}+28z+18\sqrt{z}\;+9\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7007.01

$${}_1F_2\left(3;\frac{1}{4},\frac{11}{4};-z\right)=$$
$$\frac{1}{1024\,z^{7/4}}\left(21\left(4\,z^{3/4}\,(8z+3)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64z^2+28z-9\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;(16z-9)\sin\left(2\sqrt{z}\right)\right)-\right.\right.$$
$$\left.\left.\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64z^2+28z-9\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\;(16z-9)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7008.01

$${}_1F_2\left(3;\frac{1}{4},\frac{15}{4};z\right)=\frac{1}{32\,768\,z^{11/4}}$$
$$\left(231\,e^{-2\sqrt{z}}\left(-48\,e^{2\sqrt{z}}\;z^{3/4}\,(12z+35)+e^{4\sqrt{z}}\;\sqrt{2\pi}\left(128z^{5/2}-256z^2+456z^{3/2}-648z+630\sqrt{z}\;-315\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\pi}\left(128z^{5/2}+256z^2+456z^{3/2}+648z+630\sqrt{z}\;+315\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7009.01

$${}_1F_2\left(3;\frac{1}{4},\frac{15}{4};-z\right)=\frac{1}{8192\,z^{11/4}}$$
$$\left(231\left(12\,z^{3/4}\,(12z-35)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(64z^2-228z+315\right)\cos\left(2\sqrt{z}\right)+\left(-256z^2+648z-315\right)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^2-648z+315\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(64z^2-228z+315\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7010.01

$${}_1F_2\left(3;\frac{1}{4},\frac{19}{4};z\right)=\frac{1}{262\,144\,z^{15/4}}\left(3465\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\;z^{3/4}\left(32z^2+560z+2695\right)+\right.\right.$$
$$e^{4\sqrt{z}}\;\sqrt{2\pi}\left(256z^3-1280z^{5/2}+4112z^2-9520z^{3/2}+15\,540z-16\,170\sqrt{z}\;+8085\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-$$
$$\left.\left.\sqrt{2\pi}\left(256z^3+1280z^{5/2}+4112z^2+9520z^{3/2}+15\,540z+16\,170\sqrt{z}\;+8085\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7011.01

$${}_1F_2\left(3;\frac{1}{4},\frac{19}{4};-z\right)=\frac{1}{65\,536\,z^{15/4}}\left(3465\left(-4\,z^{3/4}\left(32\,z^2-560\,z+2695\right)-\right.\right.$$
$$\sqrt{\pi}\,(16\,z-77)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z^2-180\,z+105\right)\cos\left(2\sqrt{z}\right)+10\,(21-8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.\sqrt{\pi}\,(16\,z-77)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\,(8\,z-21)\cos\left(2\sqrt{z}\right)+\left(16\,z^2-180\,z+105\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7012.01

$${}_1F_2\left(3;\frac{1}{4},\frac{23}{4};z\right)=$$
$$\frac{1}{2\,097\,152\,z^{19/4}}\left(65\,835\,e^{-2\sqrt{z}}\left(-80\,e^{2\sqrt{z}}\,z^{3/4}\left(112\,z^2+1892\,z+10\,395\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(512\,z^{7/2}-4352\,z^3+\right.\right.\right.$$
$$\left.\left.21\,280\,z^{5/2}-72\,240\,z^2+175\,560\,z^{3/2}-295\,680\,z+311\,850\sqrt{z}-155\,925\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}$$
$$\left.\left.\left(512\,z^{7/2}+4352\,z^3+21\,280\,z^{5/2}+72\,240\,z^2+175\,560\,z^{3/2}+295\,680\,z+311\,850\sqrt{z}+155\,925\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7013.01

$${}_1F_2\left(3;\frac{1}{4},\frac{23}{4};-z\right)=$$
$$-\frac{1}{524\,288\,z^{19/4}}\left(65\,835\left(20\,z^{3/4}\left(112\,z^2-1892\,z+10\,395\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(256\,z^3-10\,640\,z^2+87\,780\,z-155\,925\right)\right.\right.\right.$$
$$\left.\cos\left(2\sqrt{z}\right)+\left(-4352\,z^3+72\,240\,z^2-295\,680\,z+155\,925\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4352\,z^3-72\,240\,z^2+295\,680\,z-155\,925\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.2\sqrt{z}\,\left(256\,z^3-10\,640\,z^2+87\,780\,z-155\,925\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 = \frac{3}{4}$

07.22.03.7014.01

$${}_1F_2\left(3;\frac{3}{4},\frac{5}{4};z\right)=\frac{1}{256\,\sqrt[4]{z}}$$
$$\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(16\,z+48\sqrt{z}+21\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(16\,z-48\sqrt{z}+21\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)+88\,e^{2\sqrt{z}}\,\sqrt[4]{z}\right)\right)$$

07.22.03.7015.01

$${}_1F_2\left(3;\frac{3}{4},\frac{5}{4};-z\right)=\frac{1}{64\,\sqrt[4]{z}}\left(-\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z-21\right)\cos\left(2\sqrt{z}\right)+48\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z-21\right)\sin\left(2\sqrt{z}\right)-48\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)+22\,\sqrt[4]{z}\right)$$

07.22.03.7016.01

$$ {}_1F_2\left(3;\frac{3}{4},\frac{9}{4};z\right)=\frac{1}{2048\,z^{5/4}}\left(5\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\,(8z-3)+e^{4\sqrt{z}}\sqrt{2\pi}\left(32z^{3/2}+48z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(-32z^{3/2}+48z+6\sqrt{z}+3\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7017.01

$$ {}_1F_2\left(3;\frac{3}{4},\frac{9}{4};-z\right)=\frac{1}{512\,z^{5/4}}\left(5\left(2\sqrt[4]{z}\,(8z+3)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16z+3)\cos\left(2\sqrt{z}\right)+3\,(16z-1)\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((3-48z)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(16z+3)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7018.01

$$ {}_1F_2\left(3;\frac{3}{4},\frac{13}{4};z\right)=\frac{1}{16\,384\,z^{9/4}}\left(45\,e^{-2\sqrt{z}}\left(-24\,e^{2\sqrt{z}}\sqrt[4]{z}\,(4z+5)+e^{4\sqrt{z}}\sqrt{2\pi}\left(64z^2-32z^{3/2}+36z-30\sqrt{z}+15\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(64z^2+32z^{3/2}+36z+30\sqrt{z}+15\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7019.01

$$ {}_1F_2\left(3;\frac{3}{4},\frac{13}{4};-z\right)=\frac{1}{4096\,z^{9/4}}\left(45\left(6\sqrt[4]{z}\,(4z-5)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64z^2-36z+15\right)\cos\left(2\sqrt{z}\right)+2\,(15-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16z-15)\cos\left(2\sqrt{z}\right)+\left(64z^2-36z+15\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7020.01

$$ {}_1F_2\left(3;\frac{3}{4},\frac{17}{4};z\right)=\frac{1}{131\,072\,z^{13/4}}\left(585\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(32z^2+240z+675\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(128z^{5/2}-384z^2+840z^{3/2}-1320z+1350\sqrt{z}-675\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\sqrt{2\pi}\left(128z^{5/2}+384z^2+840z^{3/2}+1320z+1350\sqrt{z}+675\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7021.01

$$ {}_1F_2\left(3;\frac{3}{4},\frac{17}{4};-z\right)=\frac{1}{32\,768\,z^{13/4}}\left(585\left(-2\sqrt[4]{z}\left(32z^2-240z+675\right)-\sqrt{\pi}\,(16z-45)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right)+3\,(5-8z)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,(16z-45)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\,(8z-5)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(4z-15)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7022.01

$${}_1F_2\left(3;\frac{3}{4},\frac{21}{4};z\right)=\frac{1}{1\,048\,576\,z^{17/4}}\left(9945\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(400\,z^2+3564\,z+12\,285\right)+\right.\right.$$
$$e^{4\sqrt{z}}\sqrt{2\pi}\left(256\,z^3-1536\,z^{5/2}+5520\,z^2-13\,680\,z^{3/2}+23\,220\,z-24\,570\sqrt{z}+12\,285\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\pi}\left(256\,z^3+1536\,z^{5/2}+5520\,z^2+13\,680\,z^{3/2}+23\,220\,z+24\,570\sqrt{z}+12\,285\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7023.01

$${}_1F_2\left(3;\frac{3}{4},\frac{21}{4};-z\right)=-\frac{1}{262\,144\,z^{17/4}}\left(9945\left(2\sqrt[4]{z}\left(400\,z^2-3564\,z+12\,285\right)+\right.\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^3-5520\,z^2+23\,220\,z-12\,285\right)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\left(256\,z^2-2280\,z+4095\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\left(256\,z^2-2280\,z+4095\right)\cos\left(2\sqrt{z}\right)+\left(256\,z^3-5520\,z^2+23\,220\,z-12\,285\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 = \frac{5}{4}$

07.22.03.7024.01

$${}_1F_2\left(3;\frac{5}{4},\frac{7}{4};z\right)=\frac{1}{1024\,z^{3/4}}$$
$$\left(3\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(16\,z+32\sqrt{z}+5\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(-16\,z+32\sqrt{z}-5\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)+32\,e^{2\sqrt{z}}\,z^{3/4}\right)\right)$$

07.22.03.7025.01

$${}_1F_2\left(3;\frac{5}{4},\frac{7}{4};-z\right)=\frac{1}{256\,z^{3/4}}\left(3\left(\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z-5\right)\cos\left(2\sqrt{z}\right)+32\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)-\right.\right.$$
$$\left.\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z-5\right)\sin\left(2\sqrt{z}\right)-32\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)+8\,z^{3/4}\right)\right)$$

07.22.03.7026.01

$${}_1F_2\left(3;\frac{5}{4},\frac{11}{4};z\right)=\frac{1}{8192\,z^{7/4}}\left(21\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(32\,z^{3/2}+16\,z-6\sqrt{z}+3\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\pi}\left(32\,z^{3/2}-16\,z-6\sqrt{z}-3\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)+16\,e^{2\sqrt{z}}\,z^{3/4}\right)\right)$$

07.22.03.7027.01

$${}_1F_2\left(3;\frac{5}{4},\frac{11}{4};-z\right)=\frac{1}{2048\,z^{7/4}}\left(21\left(\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(16\,z+3\right)\cos\left(2\sqrt{z}\right)+\left(16\,z-3\right)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(3-16\,z\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(16\,z+3\right)\sin\left(2\sqrt{z}\right)\right)-4\,z^{3/4}\right)\right)$$

07.22.03.7028.01

$$ {}_1F_2\left(3;\frac{5}{4},\frac{15}{4};z\right)= \frac{1}{65\,536\,z^{11/4}}\left(231\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\,(8\,z+21)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(64\,z^2-96\,z^{3/2}+132\,z-126\,\sqrt{z}+63\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\sqrt{2\,\pi}\,\left(64\,z^2+96\,z^{3/2}+132\,z+126\,\sqrt{z}+63\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7029.01

$$ {}_1F_2\left(3;\frac{5}{4},\frac{15}{4};-z\right)= \frac{1}{16\,384\,z^{11/4}}\left(231\left(4\,z^{3/4}\,(21-8\,z)-\sqrt{\pi}\,(16\,z-21)\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((4\,z-3)\cos\left(2\,\sqrt{z}\right)-6\,\sqrt{z}\,\sin\left(2\,\sqrt{z}\right)\right)+\sqrt{\pi}\,(16\,z-21)\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\,\sqrt{z}\,\cos\left(2\,\sqrt{z}\right)+(4\,z-3)\sin\left(2\,\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7030.01

$$ {}_1F_2\left(3;\frac{5}{4},\frac{19}{4};z\right)= \frac{1}{524\,288\,z^{15/4}}\left(3465\,e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\,(68\,z+385)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(128\,z^{5/2}-512\,z^2+1288\,z^{3/2}-2184\,z+2310\,\sqrt{z}-1155\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(128\,z^{5/2}+512\,z^2+1288\,z^{3/2}+2184\,z+2310\,\sqrt{z}+1155\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7031.01

$$ {}_1F_2\left(3;\frac{5}{4},\frac{19}{4};-z\right)= -\frac{1}{131\,072\,z^{15/4}}\left(3465\left(4\,z^{3/4}\,(68\,z-385)+\sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\,\left(64\,z^2-644\,z+1155\right)\cos\left(2\,\sqrt{z}\right)+\left(-512\,z^2+2184\,z-1155\right)\sin\left(2\,\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512\,z^2-2184\,z+1155\right)\cos\left(2\,\sqrt{z}\right)+2\,\sqrt{z}\,\left(64\,z^2-644\,z+1155\right)\sin\left(2\,\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7032.01

$$ {}_1F_2\left(3;\frac{5}{4},\frac{23}{4};z\right)= \frac{1}{4\,194\,304\,z^{19/4}}\left(65\,835\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(32\,z^2+880\,z+5775\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(256\,z^3-1792\,z^{5/2}+7056\,z^2-18\,480\,z^{3/2}+32\,340\,z-34\,650\,\sqrt{z}+17\,325\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\sqrt{2\,\pi}\,\left(256\,z^3+1792\,z^{5/2}+7056\,z^2+18\,480\,z^{3/2}+32\,340\,z+34\,650\,\sqrt{z}+17\,325\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7033.01

$${}_1F_2\left(3;\frac{5}{4},\frac{23}{4};-z\right)=-\frac{1}{1\,048\,576\,z^{19/4}}\left(65\,835\left(-4\,z^{3/4}\left(32\,z^2-880\,z+5775\right)-\right.\right.$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^3-7056\,z^2+32\,340\,z-17\,325\right)\cos\left(2\sqrt{z}\right)-14\sqrt{z}\,\left(128\,z^2-1320\,z+2475\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(14\sqrt{z}\,\left(128\,z^2-1320\,z+2475\right)\cos\left(2\sqrt{z}\right)+\left(256\,z^3-7056\,z^2+32\,340\,z-17\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 = \frac{7}{4}$

07.22.03.7034.01

$${}_1F_2\left(3;\frac{7}{4},\frac{9}{4};z\right)=\frac{1}{4096\,z^{5/4}}$$
$$\left(15\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(16\,z+16\sqrt{z}-3\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\,\left(16\,z-16\sqrt{z}-3\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)+24\,e^{2\sqrt{z}}\,\sqrt[4]{z}\right)\right)$$

07.22.03.7035.01

$${}_1F_2\left(3;\frac{7}{4},\frac{9}{4};-z\right)=\frac{1}{1024\,z^{5/4}}\left(15\left(\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z+3\right)\cos\left(2\sqrt{z}\right)+16\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,z+3\right)\sin\left(2\sqrt{z}\right)-16\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)-6\sqrt[4]{z}\right)\right)$$

07.22.03.7036.01

$${}_1F_2\left(3;\frac{7}{4},\frac{13}{4};z\right)=\frac{1}{32\,768\,z^{9/4}}\left(135\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(8\,z+5\right)+\right.\right.$$
$$\left.\left.e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(32\,z^{3/2}-16\,z+10\sqrt{z}-5\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\sqrt{2\pi}\,\left(32\,z^{3/2}+16\,z+10\sqrt{z}+5\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7037.01

$${}_1F_2\left(3;\frac{7}{4},\frac{13}{4};-z\right)=$$
$$\frac{1}{8192\,z^{9/4}}\left(135\left(2\sqrt[4]{z}\,\left(5-8\,z\right)-\sqrt{\pi}\,\left(16\,z-5\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,\left(16\,z-5\right)\right.\right.$$
$$\left.\left.C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7038.01

$${}_1F_2\left(3;\frac{7}{4},\frac{17}{4};z\right)=\frac{1}{262\,144\,z^{13/4}}$$
$$\left(1755\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(44\,z+135\right)+e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(64\,z^2-160\,z^{3/2}+260\,z-270\sqrt{z}+135\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\pi}\,\left(64\,z^2+160\,z^{3/2}+260\,z+270\sqrt{z}+135\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7039.01

$$ {}_1F_2\left(3;\frac{7}{4},\frac{17}{4};-z\right)= -\frac{1}{65\,536\,z^{13/4}}\left(1755\left(2\sqrt[4]{z}\,(44z-135)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64z^2-260z+135\right)\cos\left(2\sqrt{z}\right)+10\,(27-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\,(16z-27)\cos\left(2\sqrt{z}\right)+\left(64z^2-260z+135\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7040.01

$$ {}_1F_2\left(3;\frac{7}{4},\frac{21}{4};z\right)=\frac{1}{2\,097\,152\,z^{17/4}}\left(29\,835\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(32z^2+432z+1755\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(128z^{5/2}-640z^2+1800z^{3/2}-3240z+3510\sqrt{z}-1755\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\sqrt{2\pi}\left(128z^{5/2}+640z^2+1800z^{3/2}+3240z+3510\sqrt{z}+1755\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7041.01

$$ {}_1F_2\left(3;\frac{7}{4},\frac{21}{4};-z\right)=-\frac{1}{524\,288\,z^{17/4}}\left(29\,835\left(-2\sqrt[4]{z}\left(32z^2-432z+1755\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(5\left(128z^2-648z+351\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(64z^2-900z+1755\right)\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(64z^2-900z+1755\right)\cos\left(2\sqrt{z}\right)-5\left(128z^2-648z+351\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 3$, $b_1 = \frac{9}{4}$

07.22.03.7042.01

$$ {}_1F_2\left(3;\frac{9}{4},\frac{11}{4};z\right)=\frac{105\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\,(16z-3)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\,(3-16z)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)+32\,e^{2\sqrt{z}}z^{3/4}\right)}{16\,384\,z^{7/4}} $$

07.22.03.7043.01

$$ {}_1F_2\left(3;\frac{9}{4},\frac{11}{4};-z\right)=-\frac{105\left(\sqrt{\pi}\,(16z+3)\cos\left(2\sqrt{z}\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\sqrt{\pi}\,(16z+3)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\sin\left(2\sqrt{z}\right)+8z^{3/4}\right)}{4096\,z^{7/4}} $$

07.22.03.7044.01

$$ {}_1F_2\left(3;\frac{9}{4},\frac{15}{4};z\right)=\frac{1}{131\,072\,z^{11/4}}\left(1155\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(32z^{3/2}-48z+42\sqrt{z}-21\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(32z^{3/2}+48z+42\sqrt{z}+21\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)-112\,e^{2\sqrt{z}}z^{3/4}\right)\right) $$

07.22.03.7045.01

$$ {}_1F_2\left(3;\frac{9}{4},\frac{15}{4};-z\right)= -\frac{1}{32\,768\,z^{11/4}}\left(1155\left(\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16z-21)\cos\left(2\sqrt{z}\right)+3(7-16z)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3(16z-7)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(16z-21)\sin\left(2\sqrt{z}\right)\right)+28z^{3/4}\right)\right) $$

07.22.03.7046.01

$$ {}_1F_2\left(3;\frac{9}{4},\frac{19}{4};z\right)=\frac{1}{1\,048\,576\,z^{15/4}}\left(17\,325\,e^{-2\sqrt{z}}\left(16e^{2\sqrt{z}}\,z^{3/4}(8z+77)+e^{4\sqrt{z}}\,\sqrt{2\pi}\left(64z^2-224z^{3/2}+420z-462\sqrt{z}+231\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\sqrt{2\pi}\left(64z^2+224z^{3/2}+420z+462\sqrt{z}+231\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7047.01

$$ {}_1F_2\left(3;\frac{9}{4},\frac{19}{4};-z\right)= \frac{1}{262\,144\,z^{15/4}}\left(17\,325\left(4z^{3/4}(8z-77)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64z^2-420z+231\right)\cos\left(2\sqrt{z}\right)+14(33-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(14\sqrt{z}\,(16z-33)\cos\left(2\sqrt{z}\right)+\left(64z^2-420z+231\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7048.01

$$ {}_1F_2\left(3;\frac{9}{4},\frac{23}{4};z\right)=\frac{1}{8\,388\,608\,z^{19/4}}\left(47\,025\,e^{-2\sqrt{z}}\left(-176e^{2\sqrt{z}}\,z^{3/4}(52z+525)+7e^{4\sqrt{z}}\,\sqrt{2\pi}\left(128z^{5/2}-768z^2+2376z^{3/2}-4488z+4950\sqrt{z}-2475\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+7\sqrt{2\pi}\left(128z^{5/2}+768z^2+2376z^{3/2}+4488z+4950\sqrt{z}+2475\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7049.01

$$ {}_1F_2\left(3;\frac{9}{4},\frac{23}{4};-z\right)=\frac{1}{2\,097\,152\,z^{19/4}}\left(47\,025\left(44z^{3/4}(52z-525)+7\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(256z^2-1496z+825\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(64z^2-1188z+2475\right)\sin\left(2\sqrt{z}\right)\right)+7\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(64z^2-1188z+2475\right)\cos\left(2\sqrt{z}\right)-3\left(256z^2-1496z+825\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 3$, $b_1 = \frac{11}{4}$

07.22.03.7050.01

$$ {}_1F_2\left(3;\frac{11}{4},\frac{13}{4};z\right)=\frac{1}{65\,536\,z^{9/4}}\left(945\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(16z-16\sqrt{z}+5\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(16z+16\sqrt{z}+5\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)-40\,e^{2\sqrt{z}}\sqrt[4]{z}\right)\right) $$

07.22.03.7051.01

$$ {}_1F_2\left(3;\frac{11}{4},\frac{13}{4};-z\right)=-\frac{1}{16\,384\,z^{9/4}}\left(945\left(\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16z-5)\cos\left(2\sqrt{z}\right)-16\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(16\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(16z-5)\sin\left(2\sqrt{z}\right)\right)+10\sqrt[4]{z}\right)\right) $$

07.22.03.7052.01

$$ {}_1F_2\left(3;\frac{11}{4},\frac{17}{4};z\right)=\frac{1}{524\,288\,z^{13/4}}\left(12\,285\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\,(8z+45)+e^{4\sqrt{z}}\sqrt{2\pi}\left(32z^{3/2}-80z+90\sqrt{z}-45\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\sqrt{2\pi}\left(32z^{3/2}+80z+90\sqrt{z}+45\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7053.01

$$ {}_1F_2\left(3;\frac{11}{4},\frac{17}{4};-z\right)=\frac{1}{131\,072\,z^{13/4}}\left(12\,285\left(2\sqrt[4]{z}\,(8z-45)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16z-45)\cos\left(2\sqrt{z}\right)+5(9-16z)\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(5(16z-9)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(16z-45)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7054.01

$$ {}_1F_2\left(3;\frac{11}{4},\frac{21}{4};z\right)=\frac{1}{4\,194\,304\,z^{17/4}}\left(41\,769\,e^{-2\sqrt{z}}\left(-72\,e^{2\sqrt{z}}\sqrt[4]{z}\,(28z+195)+5\,e^{4\sqrt{z}}\sqrt{2\pi}\left(64z^2-288z^{3/2}+612z-702\sqrt{z}+351\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+5\sqrt{2\pi}\left(64z^2+288z^{3/2}+612z+702\sqrt{z}+351\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7055.01

$$ {}_1F_2\left(3;\frac{11}{4},\frac{21}{4};-z\right)=\frac{1}{1\,048\,576\,z^{17/4}}\left(41\,769\left(18\sqrt[4]{z}\,(28z-195)+5\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64z^2-612z+351\right)\cos\left(2\sqrt{z}\right)+18(39-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+5\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(18\sqrt{z}\,(16z-39)\cos\left(2\sqrt{z}\right)+\left(64z^2-612z+351\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 3$, $b_1 = \frac{13}{4}$

07.22.03.7056.01

$${}_1F_2\left(3;\frac{13}{4},\frac{15}{4};z\right)=\frac{1}{262\,144\,z^{11/4}}$$
$$\left(10\,395\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(16z-32\sqrt{z}+21\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\sqrt{2\pi}\left(16z+32\sqrt{z}+21\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)+32\,e^{2\sqrt{z}}z^{3/4}\right)\right)$$

07.22.03.7057.01

$${}_1F_2\left(3;\frac{13}{4},\frac{15}{4};-z\right)=-\frac{1}{65\,536\,z^{11/4}}\left(10\,395\left(-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16z-21)\cos\left(2\sqrt{z}\right)-32\sqrt{z}\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(32\sqrt{z}\cos\left(2\sqrt{z}\right)+(16z-21)\sin\left(2\sqrt{z}\right)\right)-8z^{3/4}\right)\right)$$

07.22.03.7058.01

$${}_1F_2\left(3;\frac{13}{4},\frac{19}{4};z\right)=\frac{1}{2\,097\,152\,z^{15/4}}\left(51\,975\,e^{-2\sqrt{z}}\left(3e^{4\sqrt{z}}\sqrt{2\pi}\left(32z^{3/2}-112z+154\sqrt{z}-77\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.3\sqrt{2\pi}\left(32z^{3/2}+112z+154\sqrt{z}+77\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)-1232\,e^{2\sqrt{z}}z^{3/4}\right)\right)$$

07.22.03.7059.01

$${}_1F_2\left(3;\frac{13}{4},\frac{19}{4};-z\right)=$$
$$\frac{1}{524\,288\,z^{15/4}}\left(51\,975\left(3\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(16z-77)\cos\left(2\sqrt{z}\right)+7(11-16z)\sin\left(2\sqrt{z}\right)\right)+3\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right.$$
$$\left.\left.\left(7(16z-11)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(16z-77)\sin\left(2\sqrt{z}\right)\right)+308z^{3/4}\right)\right)$$

07.22.03.7060.01

$${}_1F_2\left(3;\frac{13}{4},\frac{23}{4};z\right)=\frac{1}{16\,777\,216\,z^{19/4}}$$
$$\left(141\,075\,e^{-2\sqrt{z}}\left(-176\,e^{2\sqrt{z}}z^{3/4}(8z-315)+21\,e^{4\sqrt{z}}\sqrt{2\pi}\left(64z^2-352z^{3/2}+836z-990\sqrt{z}+495\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.21\sqrt{2\pi}\left(64z^2+352z^{3/2}+836z+990\sqrt{z}+495\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7061.01

$${}_1F_2\left(3;\frac{13}{4},\frac{23}{4};-z\right)=\frac{1}{4\,194\,304\,z^{19/4}}$$
$$\left(141\,075\left(44z^{3/4}(8z+315)-21\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(64z^2-836z+495\right)\cos\left(2\sqrt{z}\right)+22(45-16z)\sqrt{z}\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.21\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(22\sqrt{z}\,(16z-45)\cos\left(2\sqrt{z}\right)+\left(64z^2-836z+495\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 = \frac{15}{4}$

07.22.03.7062.01

$${}_1F_2\left(3;\ \frac{15}{4},\ \frac{17}{4};\ z\right)=\frac{1}{1\,048\,576\,z^{13/4}}\left(135\,135\,e^{-2\sqrt{z}}\right.$$
$$\left.\left(e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(16z-48\sqrt{z}\ +45\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)+\sqrt{2\pi}\ \left(16z+48\sqrt{z}\ +45\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)-360\,e^{2\sqrt{z}}\ \sqrt[4]{z}\right)\right)$$

07.22.03.7063.01

$${}_1F_2\left(3;\ \frac{15}{4},\ \frac{17}{4};\ -z\right)=\frac{1}{262\,144\,z^{13/4}}\left(135\,135\left(\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16z-45)\cos\left(2\sqrt{z}\right)-48\sqrt{z}\ \sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(48\sqrt{z}\ \cos\left(2\sqrt{z}\right)+(16z-45)\sin\left(2\sqrt{z}\right)\right)+90\sqrt[4]{z}\right)\right)$$

07.22.03.7064.01

$${}_1F_2\left(3;\ \frac{15}{4},\ \frac{21}{4};\ z\right)=$$
$$\frac{1}{8\,388\,608\,z^{17/4}}\left(459\,459\,e^{-2\sqrt{z}}\left(-72\,e^{2\sqrt{z}}\ \sqrt[4]{z}\ (24z-65)+5\,e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(32z^{3/2}-144z+234\sqrt{z}\ -117\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.5\sqrt{2\pi}\ \left(32z^{3/2}+144z+234\sqrt{z}\ +117\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.7065.01

$${}_1F_2\left(3;\ \frac{15}{4},\ \frac{21}{4};\ -z\right)=$$
$$\frac{1}{2\,097\,152\,z^{17/4}}\left(459\,459\left(18\sqrt[4]{z}\ (24z+65)-5\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\ (16z-117)\cos\left(2\sqrt{z}\right)+9(13-16z)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.5\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(9(16z-13)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\ (16z-117)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 = \frac{17}{4}$

07.22.03.7066.01

$${}_1F_2\left(3;\ \frac{17}{4},\ \frac{19}{4};\ z\right)=\frac{1}{4\,194\,304\,z^{15/4}}\left(675\,675\,e^{-2\sqrt{z}}\right.$$
$$\left.\left(3\,e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(16z-64\sqrt{z}\ +77\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)-3\sqrt{2\pi}\ \left(16z+64\sqrt{z}\ +77\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)-928\,e^{2\sqrt{z}}\ z^{3/4}\right)\right)$$

07.22.03.7067.01

$${}_1F_2\left(3;\ \frac{17}{4},\ \frac{19}{4};\ -z\right)=\frac{1}{1\,048\,576\,z^{15/4}}\left(675\,675\left(-3\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16z-77)\cos\left(2\sqrt{z}\right)-64\sqrt{z}\ \sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.3\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(64\sqrt{z}\ \cos\left(2\sqrt{z}\right)+(16z-77)\sin\left(2\sqrt{z}\right)\right)+232\,z^{3/4}\right)\right)$$

07.22.03.7068.01

$${}_1F_2\left(3;\frac{17}{4},\frac{23}{4};z\right)=\frac{1}{33\,554\,432\,z^{19/4}}$$
$$\left(1\,833\,975\,e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\,(512\,z+1155)+21\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(32\,z^{3/2}-176\,z+330\,\sqrt{z}-165\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.21\,\sqrt{2\pi}\,\left(32\,z^{3/2}+176\,z+330\,\sqrt{z}+165\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7069.01

$${}_1F_2\left(3;\frac{17}{4},\frac{23}{4};-z\right)=\frac{1}{8\,388\,608\,z^{19/4}}$$
$$\left(1\,833\,975\left(4\,z^{3/4}\,(512\,z-1155)-21\,\sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\,(16\,z-165)\cos\left(2\,\sqrt{z}\right)+11\,(15-16\,z)\sin\left(2\,\sqrt{z}\right)\right)-\right.\right.$$
$$\left.\left.21\,\sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(11\,(16\,z-15)\cos\left(2\,\sqrt{z}\right)+2\,\sqrt{z}\,(16\,z-165)\sin\left(2\,\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 = \frac{19}{4}$

07.22.03.7070.01

$${}_1F_2\left(3;\frac{19}{4},\frac{21}{4};z\right)=$$
$$\frac{1}{16\,777\,216\,z^{17/4}}\left(2\,297\,295\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,(512\,z+1755)+15\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(16\,z-80\,\sqrt{z}+117\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.15\,\sqrt{2\pi}\,\left(16\,z+80\,\sqrt{z}+117\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7071.01

$${}_1F_2\left(3;\frac{19}{4},\frac{21}{4};-z\right)=$$
$$\frac{1}{4\,194\,304\,z^{17/4}}\left(2\,297\,295\left(2\,\sqrt[4]{z}\,(512\,z-1755)-15\,\sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16\,z-117)\cos\left(2\,\sqrt{z}\right)-80\,\sqrt{z}\,\sin\left(2\,\sqrt{z}\right)\right)-\right.\right.$$
$$\left.\left.15\,\sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(80\,\sqrt{z}\,\cos\left(2\,\sqrt{z}\right)+(16\,z-117)\sin\left(2\,\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 = \frac{21}{4}$

07.22.03.7072.01

$${}_1F_2\left(3;\frac{21}{4},\frac{23}{4};z\right)=$$
$$\frac{1}{67\,108\,864\,z^{19/4}}\left(6\,235\,515\,e^{-2\sqrt{z}}\left(-32\,e^{2\sqrt{z}}\,z^{3/4}\,(512\,z+3255)+105\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(16\,z-96\,\sqrt{z}+165\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.105\,\sqrt{2\pi}\,\left(16\,z+96\,\sqrt{z}+165\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7073.01

$${}_1F_2\left(3;\ \frac{21}{4},\ \frac{23}{4};\ -z\right) =$$
$$\frac{1}{16\,777\,216\,z^{19/4}}\left(6\,235\,515\left(8\,z^{3/4}\,(512\,z-3255)+105\,\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16\,z-165)\cos\left(2\sqrt{z}\right)-96\sqrt{z}\ \sin\left(2\sqrt{z}\right)\right)-\right.\right.$$
$$\left.\left.105\,\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(96\sqrt{z}\ \cos\left(2\sqrt{z}\right)+(16\,z-165)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 3$, $b_1 = \frac{23}{4}$

07.22.03.7074.01

$${}_1F_2\left(3;\ \frac{23}{4},\ \frac{25}{4};\ z\right) = \frac{1}{268\,435\,456\,z^{21/4}}$$
$$\left(14\,549\,535\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\ \sqrt[4]{z}\ \left(8192\,z^2+96\,768\,z+208\,845\right)+945\,e^{4\sqrt{z}}\ \sqrt{2\,\pi}\ \left(16\,z-112\sqrt{z}\ +221\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.945\sqrt{2\,\pi}\ \left(16\,z+112\sqrt{z}\ +221\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.7075.01

$${}_1F_2\left(3;\ \frac{23}{4},\ \frac{25}{4};\ -z\right) = \frac{1}{67\,108\,864\,z^{21/4}}$$
$$\left(14\,549\,535\left(2\sqrt[4]{z}\ \left(8192\,z^2-96\,768\,z+208\,845\right)+945\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((16\,z-221)\cos\left(2\sqrt{z}\right)-112\sqrt{z}\ \sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.945\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(112\sqrt{z}\ \cos\left(2\sqrt{z}\right)+(16\,z-221)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 \geq -\frac{23}{4}$

For fixed z and $a_1 = 4$, $b_1 = -\frac{23}{4}$

07.22.03.7076.01

$${}_1F_2\left(4;\ -\frac{23}{4},\ -\frac{21}{4};\ z\right) =$$
$$\frac{1}{948\,702\,429\,675}\left(e^{-2\sqrt{z}}\left(65\,536\,e^{4\sqrt{z}}\ \sqrt{2\,\pi}\ \left(64\,z^{3/2}+1680\,z+13\,812\sqrt{z}\ +35\,409\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{25/4}+65\,536\sqrt{2\,\pi}\right.\right.$$
$$\left(64\,z^{3/2}-1680\,z+13\,812\sqrt{z}\ -35\,409\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{25/4}+e^{2\sqrt{z}}\ \left(218\,103\,808\,z^7+4\,227\,858\,432\,z^6+\right.$$
$$\left.\left.\left.528\,482\,304\,z^5+722\,534\,400\,z^4+2\,554\,675\,200\,z^3+15\,567\,552\,000\,z^2+125\,707\,982\,400\,z+948\,702\,429\,675\right)\right)\right)$$

07.22.03.7077.01

$$ {}_1F_2\left(4; -\frac{23}{4}, -\frac{21}{4}; -z\right) = \frac{1}{948\,702\,429\,675}$$
$$\left(-218\,103\,808\,z^7 + 262\,144\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((35\,409 - 1680\,z)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,(16\,z - 3453)\sin\left(2\sqrt{z}\right)\right)z^{25/4} + \right.$$
$$262\,144\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16\,z - 3453)\cos\left(2\sqrt{z}\right) + 3\,(560\,z - 11\,803)\sin\left(2\sqrt{z}\right)\right)z^{25/4} + 4\,227\,858\,432\,z^6 -$$
$$\left. 528\,482\,304\,z^5 + 722\,534\,400\,z^4 - 2\,554\,675\,200\,z^3 + 15\,567\,552\,000\,z^2 - 125\,707\,982\,400\,z + 948\,702\,429\,675\right)$$

07.22.03.7078.01

$$ {}_1F_2\left(4; -\frac{23}{4}, -\frac{17}{4}; z\right) =$$
$$\frac{1}{45\,176\,306\,175}\left(e^{-2\sqrt{z}}\left(-8192\,e^{4\sqrt{z}}\sqrt{2\pi}\left(128\,z^2 + 3104\,z^{3/2} + 22\,968\,z + 47\,850\sqrt{z} - 23\,925\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{21/4} + \right.\right.$$
$$8192\sqrt{2\pi}\left(128\,z^2 - 3104\,z^{3/2} + 22\,968\,z - 47\,850\sqrt{z} - 23\,925\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{21/4} +$$
$$e^{2\sqrt{z}}\left(-2\,097\,152\,z^7 - 363\,986\,944\,z^6 + 528\,482\,304\,z^5 + 144\,506\,880\,z^4 + \right.$$
$$\left.\left. 283\,852\,800\,z^3 + 1\,197\,504\,000\,z^2 + 7\,394\,587\,200\,z + 45\,176\,306\,175\right)\right)\Big)$$

07.22.03.7079.01

$$ {}_1F_2\left(4; -\frac{23}{4}, -\frac{17}{4}; -z\right) = \frac{1}{45\,176\,306\,175}\left(2\,097\,152\,z^7 - 363\,986\,944\,z^6 + \right.$$
$$32\,768\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2 - 22\,968\,z - 23\,925\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,(1552\,z - 23\,925)\sin\left(2\sqrt{z}\right)\right)z^{21/4} -$$
$$32\,768\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2 - 22\,968\,z - 23\,925\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,(1552\,z - 23\,925)\cos\left(2\sqrt{z}\right)\right)z^{21/4} -$$
$$\left. 528\,482\,304\,z^5 + 144\,506\,880\,z^4 - 283\,852\,800\,z^3 + 1\,197\,504\,000\,z^2 - 7\,394\,587\,200\,z + 45\,176\,306\,175\right)$$

07.22.03.7080.01

$$ {}_1F_2\left(4; -\frac{23}{4}, -\frac{13}{4}; z\right) = \frac{1}{2\,657\,429\,775}$$
$$\left(e^{-2\sqrt{z}}\left(1024\,e^{4\sqrt{z}}\sqrt{2\pi}\left(256\,z^{5/2} + 5568\,z^2 + 34\,800\,z^{3/2} + 43\,500\,z - 91\,350\sqrt{z} + 45\,675\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4} + \right.\right.$$
$$1024\sqrt{2\pi}\left(256\,z^{5/2} - 5568\,z^2 + 34\,800\,z^{3/2} - 43\,500\,z - 91\,350\sqrt{z} - 45\,675\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4} + e^{2\sqrt{z}}$$
$$\left.\left.\left(11\,272\,192\,z^6 + 73\,285\,632\,z^5 + 144\,506\,880\,z^4 + 56\,770\,560\,z^3 + 133\,056\,000\,z^2 + 568\,814\,400\,z + 2\,657\,429\,775\right)\right)\right)$$

07.22.03.7081.01

$$ {}_1F_2\left(4; -\frac{23}{4}, -\frac{13}{4}; -z\right) = \frac{1}{2\,657\,429\,775}\left(11\,272\,192\,z^6 - 73\,285\,632\,z^5 - \right.$$

$$4096\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(128\,z^2 - 17\,400\,z - 45\,675\right)\cos\left(2\sqrt{z}\right) + 87\left(64\,z^2 - 500\,z + 525\right)\sin\left(2\sqrt{z}\right)\right)z^{17/4} -$$

$$4096\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(128\,z^2 - 17\,400\,z - 45\,675\right)\sin\left(2\sqrt{z}\right) - 87\left(64\,z^2 - 500\,z + 525\right)\cos\left(2\sqrt{z}\right)\right)z^{17/4} +$$

$$\left. 144\,506\,880\,z^4 - 56\,770\,560\,z^3 + 133\,056\,000\,z^2 - 568\,814\,400\,z + 2\,657\,429\,775\right)$$

07.22.03.7082.01

$$ {}_1F_2\left(4; -\frac{23}{4}, -\frac{9}{4}; z\right) = \frac{1}{204\,417\,675}\left(e^{-2\sqrt{z}}\right.$$

$$\left(-128\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(512\,z^3 + 9600\,z^{5/2} + 45\,600\,z^2 - 4200\,z^{3/2} - 176\,400\,z + 267\,750\sqrt{z} - 133\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4} +\right.$$

$$128\sqrt{2\pi}\,\left(512\,z^3 - 9600\,z^{5/2} + 45\,600\,z^2 + 4200\,z^{3/2} - 176\,400\,z - 267\,750\sqrt{z} - 133\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4} +$$

$$\left.\left.e^{2\sqrt{z}}\,\left(-131\,072\,z^6 - 11\,083\,776\,z^5 + 43\,223\,040\,z^4 + 56\,770\,560\,z^3 + 26\,611\,200\,z^2 + 63\,201\,600\,z + 204\,417\,675\right)\right)\right)$$

07.22.03.7083.01

$$ {}_1F_2\left(4; -\frac{23}{4}, -\frac{9}{4}; -z\right) = \frac{1}{204\,417\,675}\left(-131\,072\,z^6 + 11\,083\,776\,z^5 + 43\,223\,040\,z^4 - 512\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$

$$\left(\left(512\,z^3 - 45\,600\,z^2 - 176\,400\,z + 133\,875\right)\cos\left(2\sqrt{z}\right) + 150\sqrt{z}\,\left(64\,z^2 + 28\,z + 1785\right)\sin\left(2\sqrt{z}\right)\right)z^{13/4} +$$

$$512\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512\,z^3 - 45\,600\,z^2 - 176\,400\,z + 133\,875\right)\sin\left(2\sqrt{z}\right) - 150\sqrt{z}\,\left(64\,z^2 + 28\,z + 1785\right)\cos\left(2\sqrt{z}\right)\right)$$

$$\left. z^{13/4} - 56\,770\,560\,z^3 + 26\,611\,200\,z^2 - 63\,201\,600\,z + 204\,417\,675\right)$$

07.22.03.7084.01

$$ {}_1F_2\left(4; -\frac{23}{4}, -\frac{5}{4}; z\right) =$$

$$\frac{1}{22\,713\,075}\left(e^{-2\sqrt{z}}\,\left(16\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(1024\,z^{7/2} + 15\,616\,z^3 + 44\,352\,z^{5/2} - 119\,280\,z^2 - 114\,240\,z^{3/2} + 706\,860\,z - \right.\right.\right.$$

$$\left.\left.974\,610\sqrt{z} + 487\,305\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4} +\right.$$

$$16\sqrt{2\pi}\,\left(1024\,z^{7/2} - 15\,616\,z^3 + 44\,352\,z^{5/2} + 119\,280\,z^2 - 114\,240\,z^{3/2} - 706\,860\,z - 974\,610\sqrt{z} - 487\,305\right)$$

$$\left.\left.\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4} + 15\,e^{2\sqrt{z}}\,\left(32\,768\,z^5 - 272\,384\,z^4 + 1\,510\,656\,z^3 + 1\,774\,080\,z^2 + 842\,688\,z + 1\,514\,205\right)\right)\right)$$

07.22.03.7085.01

$$ {}_1F_2\left(4; -\frac{23}{4}, -\frac{5}{4}; -z\right) = \frac{1}{22\,713\,075}\left(64\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(512z^3 - 22\,176z^2 - 57\,120z + 487\,305\right)\sin\left(2\sqrt{z}\right) - \left(15\,616z^3 + 119\,280z^2 + 706\,860z - 487\,305\right)\cos\left(2\sqrt{z}\right)\right)z^{9/4} + 64\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(512z^3 - 22\,176z^2 - 57\,120z + 487\,305\right)\cos\left(2\sqrt{z}\right) + \left(15\,616z^3 + 119\,280z^2 + 706\,860z - 487\,305\right)\sin\left(2\sqrt{z}\right)\right)z^{9/4} - 15\left(32\,768z^5 + 272\,384z^4 + 1\,510\,656z^3 - 1\,774\,080z^2 + 842\,688z - 1\,514\,205\right)\right) $$

07.22.03.7086.01

$$ {}_1F_2\left(4; -\frac{23}{4}, -\frac{1}{4}; z\right) = \frac{1}{4\,542\,615}\left(e^{-2\sqrt{z}}\left(-2e^{4\sqrt{z}}\sqrt{2\pi}\left(2048z^4 + 23\,040z^{7/2} + 8064z^3 - 262\,752z^{5/2} + 428\,400z^2 + 556\,920z^{3/2} - 2\,784\,600z + 3\,759\,210\sqrt{z} - 1\,879\,605\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4} + 2\sqrt{2\pi}\left(2048z^4 - 23\,040z^{7/2} + 8064z^3 + 262\,752z^{5/2} + 428\,400z^2 - 556\,920z^{3/2} - 2\,784\,600z - 3\,759\,210\sqrt{z} - 1\,879\,605\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4} + e^{2\sqrt{z}}\left(-8192z^5 - 10\,752z^4 - 1\,964\,160z^3 + 11\,178\,720z^2 + 12\,640\,320z + 4\,542\,615\right)\right)\right) $$

07.22.03.7087.01

$$ {}_1F_2\left(4; -\frac{23}{4}, -\frac{1}{4}; -z\right) = \frac{1}{4\,542\,615}\left(8192z^5 - 10\,752z^4 + 1\,964\,160z^3 + 11\,178\,720z^2 + 8\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048z^4 - 8064z^3 + 428\,400z^2 + 2\,784\,600z - 1\,879\,605\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(3840z^3 + 43\,792z^2 + 92\,820z - 626\,535\right)\sin\left(2\sqrt{z}\right)\right)z^{5/4} - 8\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048z^4 - 8064z^3 + 428\,400z^2 + 2\,784\,600z - 1\,879\,605\right)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\left(3840z^3 + 43\,792z^2 + 92\,820z - 626\,535\right)\cos\left(2\sqrt{z}\right)\right)z^{5/4} - 12\,640\,320z + 4\,542\,615\right) $$

07.22.03.7088.01

$$ {}_1F_2\left(4; -\frac{23}{4}, \frac{3}{4}; z\right) = \frac{1}{18\,170\,460}\left(e^{-2\sqrt{z}}\left(4e^{2\sqrt{z}}\left(13\,312z^4 - 83\,520z^3 - 1\,428\,480z^2 + 3\,894\,660z + 4\,542\,615\right) + e^{4\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(4096z^{9/2} + 27\,648z^4 - 94\,464z^{7/2} - 194\,880z^3 + 1\,441\,440z^{5/2} - 2\,489\,760z^2 - 589\,680z^{3/2} + 8\,402\,940z - 12\,162\,150\sqrt{z} + 6\,081\,075\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\sqrt[4]{z}\left(4096z^{9/2} - 27\,648z^4 - 94\,464z^{7/2} + 194\,880z^3 + 1\,441\,440z^{5/2} + 2\,489\,760z^2 - 589\,680z^{3/2} - 8\,402\,940z - 12\,162\,150\sqrt{z} - 6\,081\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7089.01

$$ {}_1F_2\left(4; -\frac{23}{4}, \frac{3}{4}; -z\right) = \frac{1}{4\,542\,615}\left(13\,312\,z^4 + 83\,520\,z^3 - 1\,428\,480\,z^2 - 3\,894\,660\,z - \right.$$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(2048\,z^4 + 47\,232\,z^3 + 720\,720\,z^2 + 294\,840\,z - 6\,081\,075\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$ \left.\left. 3\left(9216\,z^4 + 64\,960\,z^3 - 829\,920\,z^2 - 2\,800\,980\,z + 2\,027\,025\right)\cos\left(2\sqrt{z}\right)\right)\sqrt[4]{z} - \right.$$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(2048\,z^4 + 47\,232\,z^3 + 720\,720\,z^2 + 294\,840\,z - 6\,081\,075\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left.\left. 3\left(9216\,z^4 + 64\,960\,z^3 - 829\,920\,z^2 - 2\,800\,980\,z + 2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + 4\,542\,615\right) $$

07.22.03.7090.01

$$ {}_1F_2\left(4; -\frac{23}{4}, \frac{7}{4}; z\right) = $$
$$ \frac{1}{48\,454\,560\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(1024\,z^4 - 31\,936\,z^3 + 61\,920\,z^2 + 2\,271\,060\,z + 1\,001\,385\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\right.\right. $$
$$ \left(8192\,z^5 + 14\,336\,z^{9/2} - 253\,440\,z^4 + 624\,000\,z^{7/2} + 698\,880\,z^3 - 7\,076\,160\,z^{5/2} + 16\,511\,040\,z^2 - 16\,216\,200\,z^{3/2} + \right. $$
$$ \left. 12\,162\,150\sqrt{z} - 6\,081\,075\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\left(-8192\,z^5 + 14\,336\,z^{9/2} + 253\,440\,z^4 + 624\,000\,z^{7/2} - \right. $$
$$ \left.\left.\left. 698\,880\,z^3 - 7\,076\,160\,z^{5/2} - 16\,511\,040\,z^2 - 16\,216\,200\,z^{3/2} + 12\,162\,150\sqrt{z} + 6\,081\,075\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7091.01

$$ {}_1F_2\left(4; -\frac{23}{4}, \frac{7}{4}; -z\right) = \frac{1}{12\,113\,640\,z^{3/4}}\left(4\,z^{3/4}\left(1024\,z^4 + 31\,936\,z^3 + 61\,920\,z^2 - 2\,271\,060\,z + 1\,001\,385\right) + \right.$$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^5 + 253\,440\,z^4 + 698\,880\,z^3 - 16\,511\,040\,z^2 + 6\,081\,075\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left.\left. 2\sqrt{z}\,\left(7168\,z^4 - 312\,000\,z^3 - 3\,538\,080\,z^2 + 8\,108\,100\,z + 6\,081\,075\right)\sin\left(2\sqrt{z}\right)\right) - \right.$$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^5 + 253\,440\,z^4 + 698\,880\,z^3 - 16\,511\,040\,z^2 + 6\,081\,075\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$ \left.\left. 2\sqrt{z}\,\left(7168\,z^4 - 312\,000\,z^3 - 3\,538\,080\,z^2 + 8\,108\,100\,z + 6\,081\,075\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7092.01

$$ {}_1F_2\left(4; -\frac{23}{4}, \frac{11}{4}; z\right) = \frac{1}{55\,376\,640\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(8192\, z^4 - 272\,640\, z^3 - 1\,651\,680\, z^2 + 3\,488\,760\, z + 10\,135\,125\right) + e^{4\sqrt{z}} \right.\right. $$
$$ \sqrt{2\pi} \left(16\,384\, z^{11/2} - 61\,440\, z^5 - 199\,680\, z^{9/2} + 2\,146\,560\, z^4 - 7\,188\,480\, z^{7/2} + 11\,007\,360\, z^3 - \right. $$
$$ \left. 32\,432\,400\, z^2 + 64\,864\,800\, z^{3/2} - 72\,972\,900\, z + 60\,810\,750\sqrt{z} - 30\,405\,375\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \left.\left. \sqrt{2\pi} \left(16\,384\, z^{11/2} + 61\,440\, z^5 - 199\,680\, z^{9/2} - 2\,146\,560\, z^4 - 7\,188\,480\, z^{7/2} - 11\,007\,360\, z^3 + \right.\right. $$
$$ \left.\left. 32\,432\,400\, z^2 + 64\,864\,800\, z^{3/2} + 72\,972\,900\, z + 60\,810\,750\sqrt{z} + 30\,405\,375\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7093.01

$$ {}_1F_2\left(4; -\frac{23}{4}, \frac{11}{4}; -z\right) = \frac{1}{13\,844\,160\, z^{7/4}} \left(4\, z^{3/4} \left(8192\, z^4 + 272\,640\, z^3 - 1\,651\,680\, z^2 - 3\,488\,760\, z + 10\,135\,125\right) + \right. $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(8192\, z^5 + 99\,840\, z^4 - 3\,594\,240\, z^3 + 32\,432\,400\, z - 30\,405\,375\right) \cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left. 15 \left(4096\, z^5 + 143\,104\, z^4 - 733\,824\, z^3 - 2\,162\,160\, z^2 + 4\,864\,860\, z - 2\,027\,025\right) \sin\left(2\sqrt{z}\right)\right) + \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(15 \left(4096\, z^5 + 143\,104\, z^4 - 733\,824\, z^3 - 2\,162\,160\, z^2 + 4\,864\,860\, z - 2\,027\,025\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left. 2\sqrt{z} \left(8192\, z^5 + 99\,840\, z^4 - 3\,594\,240\, z^3 + 32\,432\,400\, z - 30\,405\,375\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7094.01

$$ {}_1F_2\left(4; -\frac{23}{4}, \frac{15}{4}; z\right) = \frac{1}{40\,273\,920\, z^{11/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(4096\, z^5 + 180\,480\, z^4 - 272\,256\, z^3 - 16\,099\,920\, z^2 - 89\,189\,100\, z - 241\,215\,975\right) + e^{4\sqrt{z}} \sqrt{2\pi} \right.\right. $$
$$ \left(32\,768\, z^6 - 319\,488\, z^{11/2} + 1\,357\,824\, z^5 - 2\,496\,000\, z^{9/2} - 3\,144\,960\, z^4 + 34\,594\,560\, z^{7/2} - 121\,080\,960\, z^3 + \right. $$
$$ \left. 298\,378\,080\, z^{5/2} - 616\,215\,600\, z^2 + 1\,086\,485\,400\, z^{3/2} - 1\,508\,106\,600\, z + 1\,447\,295\,850\sqrt{z} - 723\,647\,925\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(-32\,768\, z^6 - 319\,488\, z^{11/2} - 1\,357\,824\, z^5 - 2\,496\,000\, z^{9/2} + 3\,144\,960\, z^4 + \right. $$
$$ 34\,594\,560\, z^{7/2} + 121\,080\,960\, z^3 + 298\,378\,080\, z^{5/2} + 616\,215\,600\, z^2 + $$
$$ \left.\left.\left. 1\,086\,485\,400\, z^{3/2} + 1\,508\,106\,600\, z + 1\,447\,295\,850\sqrt{z} + 723\,647\,925\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7095.01

$$ {}_1F_2\left(4; -\frac{23}{4}, \frac{15}{4}; -z\right) = $$

$$ \frac{1}{10\,068\,480\, z^{11/4}} \left(4 z^{3/4} \left(-4096 z^5 + 180\,480 z^4 + 272\,256 z^3 - 16\,099\,920 z^2 + 89\,189\,100 z - 241\,215\,975\right) - \sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \right. $$
$$ \left(\left(32\,768 z^6 - 1\,357\,824 z^5 - 3\,144\,960 z^4 + 121\,080\,960 z^3 - 616\,215\,600 z^2 + 1\,508\,106\,600 z - 723\,647\,925\right) \right. $$
$$ \left. \cos\left(2\sqrt{z}\right) - 78\sqrt{z}\left(4096 z^5 - 32\,000 z^4 - 443\,520 z^3 + 3\,825\,360 z^2 - 13\,929\,300 z + 18\,555\,075\right) \sin\left(2\sqrt{z}\right) \right) + $$
$$ \sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(78\sqrt{z}\left(4096 z^5 - 32\,000 z^4 - 443\,520 z^3 + 3\,825\,360 z^2 - 13\,929\,300 z + 18\,555\,075\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left(32\,768 z^6 - 1\,357\,824 z^5 - 3\,144\,960 z^4 + 121\,080\,960 z^3 - 616\,215\,600 z^2 + 1\,508\,106\,600 z - 723\,647\,925\right) $$
$$ \left. \left. \sin\left(2\sqrt{z}\right)\right) \right) $$

07.22.03.7096.01

$$ {}_1F_2\left(4; -\frac{23}{4}, \frac{19}{4}; z\right) = \frac{1}{21\,479\,424\, z^{15/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(-48 e^{2\sqrt{z}}\ z^{3/4} \left(45\,056 z^5 + 2\,398\,464 z^4 + 50\,910\,208 z^3 + 663\,783\,120 z^2 + 4\,962\,157\,200 z + 16\,804\,712\,925\right) + \right. \right. $$
$$ e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(65\,536 z^{13/2} - 1\,064\,960 z^6 + 9\,105\,408 z^{11/2} - 55\,071\,744 z^5 + 269\,068\,800 z^{9/2} - \right. $$
$$ 1\,141\,620\,480 z^4 + 4\,324\,320\,000 z^{7/2} - 14\,538\,363\,840 z^3 + 42\,382\,660\,320 z^{5/2} - 103\,783\,680\,000 z^2 + $$
$$ \left. 204\,551\,146\,800 z^{3/2} - 303\,932\,128\,500 z + 302\,484\,832\,650\sqrt{z} - 151\,242\,416\,325\right) \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\ \left(65\,536 z^{13/2} + 1\,064\,960 z^6 + 9\,105\,408 z^{11/2} + 55\,071\,744 z^5 + 269\,068\,800 z^{9/2} + 1\,141\,620\,480 z^4 + \right. $$
$$ 4\,324\,320\,000 z^{7/2} + 14\,538\,363\,840 z^3 + 42\,382\,660\,320 z^{5/2} + 103\,783\,680\,000 z^2 + $$
$$ \left. \left. \left. 204\,551\,146\,800 z^{3/2} + 303\,932\,128\,500 z + 302\,484\,832\,650\sqrt{z} + 151\,242\,416\,325\right) \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7097.01

$$ {}_1F_2\left(4; -\frac{23}{4}, \frac{19}{4}; -z\right) = \frac{1}{5\,369\,856\, z^{15/4}} $$
$$ \left(-12 z^{3/4} \left(45\,056 z^5 - 2\,398\,464 z^4 + 50\,910\,208 z^3 - 663\,783\,120 z^2 + 4\,962\,157\,200 z - 16\,804\,712\,925\right) - \sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \right. $$
$$ \left(13\left(81\,920 z^6 - 4\,236\,288 z^5 + 87\,816\,960 z^4 - 1\,118\,335\,680 z^3 + 7\,983\,360\,000 z^2 - 23\,379\,394\,500 z + 11\,634\,032\,025\right) \right. $$
$$ \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(32\,768 z^6 - 4\,552\,704 z^5 + 134\,534\,400 z^4 - 2\,162\,160\,000 z^3 + \right. $$
$$ \left. \left. 21\,191\,330\,160 z^2 - 102\,275\,573\,400 z + 151\,242\,416\,325\right) \sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\left(32\,768 z^6 - 4\,552\,704 z^5 + 134\,534\,400 z^4 - 2\,162\,160\,000 z^3 + 21\,191\,330\,160 z^2 - \right. \right. $$
$$ 102\,275\,573\,400 z + 151\,242\,416\,325\right) \cos\left(2\sqrt{z}\right) - 13\left(81\,920 z^6 - 4\,236\,288 z^5 + 87\,816\,960 z^4 - $$
$$ \left. \left. 1\,118\,335\,680 z^3 + 7\,983\,360\,000 z^2 - 23\,379\,394\,500 z + 11\,634\,032\,025\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7098.01

$$ {}_1F_2\left(4; -\frac{23}{4}, \frac{23}{4}; z\right) = \frac{1}{9\,043\,968\, z^{19/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(16\,384\, z^6 + 4\,850\,688\, z^5 + 311\,377\,152\, z^4 + 9\,625\,936\,320\, z^3 + 163\,199\,836\,800\, z^2 + 1\,411\,595\,885\,700\, z + 5\,293\,484\,571\,375\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(131\,072\, z^7 - 3\,047\,424\, z^{13/2} + 38\,019\,072\, z^6 - 338\,257\,920\, z^{11/2} + 2\,398\,556\,160\, z^5 - 14\,276\,021\,760\, z^{9/2} + 72\,890\,737\,920\, z^4 - 320\,639\,679\,360\, z^{7/2} + 1\,207\,004\,198\,400\, z^3 - 3\,828\,579\,955\,200\, z^{5/2} + 9\,980\,552\,181\,600\, z^2 - 20\,568\,968\,620\,200\, z^{3/2} + 31\,458\,422\,595\,600\, z - 31\,760\,907\,428\,250\, \sqrt{z} + 15\,880\,453\,714\,125\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi}\, \left(131\,072\, z^7 + 3\,047\,424\, z^{13/2} + 38\,019\,072\, z^6 + 338\,257\,920\, z^{11/2} + 2\,398\,556\,160\, z^5 + 14\,276\,021\,760\, z^{9/2} + 72\,890\,737\,920\, z^4 + 320\,639\,679\,360\, z^{7/2} + 1\,207\,004\,198\,400\, z^3 + 3\,828\,579\,955\,200\, z^{5/2} + 9\,980\,552\,181\,600\, z^2 + 20\,568\,968\,620\,200\, z^{3/2} + 31\,458\,422\,595\,600\, z + 31\,760\,907\,428\,250\, \sqrt{z} + 15\,880\,453\,714\,125\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7099.01

$$ {}_1F_2\left(4; -\frac{23}{4}, \frac{23}{4}; -z\right) = \frac{1}{2\,260\,992\, z^{19/4}} \left(4\, z^{3/4} \left(16\,384\, z^6 - 4\,850\,688\, z^5 + 311\,377\,152\, z^4 - 9\,625\,936\,320\, z^3 + 163\,199\,836\,800\, z^2 - 1\,411\,595\,885\,700\, z + 5\,293\,484\,571\,375\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(131\,072\, z^7 - 38\,019\,072\, z^6 + 2\,398\,556\,160\, z^5 - 72\,890\,737\,920\, z^4 + 1\,207\,004\,198\,400\, z^3 - 9\,980\,552\,181\,600\, z^2 + 31\,458\,422\,595\,600\, z - 15\,880\,453\,714\,125\right) \cos\left(2\sqrt{z}\right) - 6\sqrt{z}\, \left(507\,904\, z^6 - 56\,376\,320\, z^5 + 2\,379\,336\,960\, z^4 - 53\,439\,946\,560\, z^3 + 638\,096\,659\,200\, z^2 - 3\,428\,161\,436\,700\, z + 5\,293\,484\,571\,375\right) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(6\sqrt{z}\, \left(507\,904\, z^6 - 56\,376\,320\, z^5 + 2\,379\,336\,960\, z^4 - 53\,439\,946\,560\, z^3 + 638\,096\,659\,200\, z^2 - 3\,428\,161\,436\,700\, z + 5\,293\,484\,571\,375\right) \cos\left(2\sqrt{z}\right) + \left(131\,072\, z^7 - 38\,019\,072\, z^6 + 2\,398\,556\,160\, z^5 - 72\,890\,737\,920\, z^4 + 1\,207\,004\,198\,400\, z^3 - 9\,980\,552\,181\,600\, z^2 + 31\,458\,422\,595\,600\, z - 15\,880\,453\,714\,125\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 4$, $b_1 = -\frac{21}{4}$

07.22.03.7100.01

$${}_1F_2\left(4;-\frac{21}{4},-\frac{19}{4};z\right)=$$
$$\frac{1}{41\,247\,931\,725}\left(e^{-2\sqrt{z}}\left(-16\,384\,e^{4\sqrt{z}}\sqrt{2\pi}\left(64z^{3/2}+1584z+12\,228\sqrt{z}+29\,295\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{23/4}+\right.\right.$$
$$16\,384\sqrt{2\pi}\left(64z^{3/2}-1584z+12\,228\sqrt{z}-29\,295\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{23/4}+e^{2\sqrt{z}}\left(-2\,097\,152z^7-388\,104\,192z^6+\right.$$
$$\left.\left.\left.176\,160\,768z^5+103\,219\,200z^4+232\,243\,200z^3+1\,037\,836\,800z^2+6\,616\,209\,600z+41\,247\,931\,725\right)\right)\right)$$

07.22.03.7101.01

$${}_1F_2\left(4;-\frac{21}{4},-\frac{19}{4};-z\right)=\frac{1}{41\,247\,931\,725}$$
$$\left(2\,097\,152z^7-388\,104\,192z^6-65\,536\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16z-3057)\sin\left(2\sqrt{z}\right)-9(176z-3255)\cos\left(2\sqrt{z}\right)\right)z^{23/4}+\right.$$
$$65\,536\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16z-3057)\cos\left(2\sqrt{z}\right)+9(176z-3255)\sin\left(2\sqrt{z}\right)\right)z^{23/4}-$$
$$\left.176\,160\,768z^5+103\,219\,200z^4-232\,243\,200z^3+1\,037\,836\,800z^2-6\,616\,209\,600z+41\,247\,931\,725\right)$$

07.22.03.7102.01

$${}_1F_2\left(4;-\frac{21}{4},-\frac{15}{4};z\right)=$$
$$\frac{1}{2\,170\,943\,775}\left(e^{-2\sqrt{z}}\left(2048\,e^{4\sqrt{z}}\sqrt{2\pi}\left(128z^2+2912z^{3/2}+20\,088z+38\,502\sqrt{z}-19\,251\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}+\right.\right.$$
$$2048\sqrt{2\pi}\left(128z^2-2912z^{3/2}+20\,088z-38\,502\sqrt{z}-19\,251\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}+$$
$$\left.\left.3e^{2\sqrt{z}}\left(3\,932\,160z^6+46\,415\,872z^5+11\,468\,800z^4+11\,059\,200z^3+31\,449\,600z^2+147\,026\,880z+723\,647\,925\right)\right)\right)$$

07.22.03.7103.01

$${}_1F_2\left(4;-\frac{21}{4},-\frac{15}{4};-z\right)=$$
$$\frac{1}{2\,170\,943\,775}\left(-8192\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128z^2-20\,088z-19\,251\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(1456z-19\,251)\sin\left(2\sqrt{z}\right)\right)z^{19/4}-\right.$$
$$8192\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128z^2-20\,088z-19\,251\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,(1456z-19\,251)\cos\left(2\sqrt{z}\right)\right)z^{19/4}+$$
$$\left.3\left(3\,932\,160z^6-46\,415\,872z^5+11\,468\,800z^4-11\,059\,200z^3+31\,449\,600z^2-147\,026\,880z+723\,647\,925\right)\right)$$

07.22.03.7104.01

$$ {}_1F_2\left(4; -\frac{21}{4}, -\frac{11}{4}; z\right) = \frac{1}{144\,729\,585} \left(e^{-2\sqrt{z}} \left(-256\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(256 z^{5/2} + 5184 z^2 + 29\,808 z^{3/2} + 32\,292 z - 70\,794 \sqrt{z} + 35\,397\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{15/4} + 256 \sqrt{2\pi}\, \left(256 z^{5/2} - 5184 z^2 + 29\,808 z^{3/2} - 32\,292 z - 70\,794 \sqrt{z} - 35\,397\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{15/4} + e^{2\sqrt{z}} \left(-131\,072 z^6 - 14\,622\,720 z^5 + 38\,086\,656 z^4 + 11\,059\,200 z^3 + 13\,478\,400 z^2 + 40\,098\,240 z + 144\,729\,585\right)\right)\right) $$

07.22.03.7105.01

$$ {}_1F_2\left(4; -\frac{21}{4}, -\frac{11}{4}; -z\right) = \frac{1}{144\,729\,585} \left(-131\,072 z^6 + 14\,622\,720 z^5 + 38\,086\,656 z^4 + 1024 \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(128 z^2 - 14\,904 z - 35\,397\right) \sin\left(2\sqrt{z}\right) - 27 \left(192 z^2 - 1196 z + 1311\right) \cos\left(2\sqrt{z}\right)\right) z^{15/4} - 1024 \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(128 z^2 - 14\,904 z - 35\,397\right) \cos\left(2\sqrt{z}\right) + 27 \left(192 z^2 - 1196 z + 1311\right) \sin\left(2\sqrt{z}\right)\right) z^{15/4} - 11\,059\,200 z^3 + 13\,478\,400 z^2 - 40\,098\,240 z + 144\,729\,585\right) $$

07.22.03.7106.01

$$ {}_1F_2\left(4; -\frac{21}{4}, -\frac{7}{4}; z\right) = \frac{1}{13\,157\,235} \left(e^{-2\sqrt{z}} \left(32\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(512 z^3 + 8832 z^{5/2} + 37\,536 z^2 - 10\,488 z^{3/2} - 125\,856 z + 196\,650 \sqrt{z} - 98\,325\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{11/4} + 32 \sqrt{2\pi}\, \left(512 z^3 - 8832 z^{5/2} + 37\,536 z^2 + 10\,488 z^{3/2} - 125\,856 z - 196\,650 \sqrt{z} - 98\,325\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{11/4} + e^{2\sqrt{z}} \left(557\,056 z^5 - 1\,173\,504 z^4 + 14\,112\,000 z^3 + 4\,492\,800 z^2 + 5\,728\,320 z + 13\,157\,235\right)\right)\right) $$

07.22.03.7107.01

$$ {}_1F_2\left(4; -\frac{21}{4}, -\frac{7}{4}; -z\right) = \frac{1}{13\,157\,235} \left(-557\,056 z^5 - 1\,173\,504 z^4 - 14\,112\,000 z^3 + 128 \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(512 z^3 - 37\,536 z^2 - 125\,856 z + 98\,325\right) \cos\left(2\sqrt{z}\right) + 138 \sqrt{z}\, \left(64 z^2 + 76 z + 1425\right) \sin\left(2\sqrt{z}\right)\right) z^{11/4} + 128 \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(512 z^3 - 37\,536 z^2 - 125\,856 z + 98\,325\right) \sin\left(2\sqrt{z}\right) - 138 \sqrt{z}\, \left(64 z^2 + 76 z + 1425\right) \cos\left(2\sqrt{z}\right)\right) z^{11/4} + 4\,492\,800 z^2 - 5\,728\,320 z + 13\,157\,235\right) $$

07.22.03.7108.01

$$ {}_1F_2\left(4; -\frac{21}{4}, -\frac{3}{4}; z\right) = \frac{1}{1\,879\,605} $$
$$ \left(e^{-2\sqrt{z}} \left(-4\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(1024\, z^{7/2} + 14\,080\, z^3 + 32\,832\, z^{5/2} - 103\,056\, z^2 - 45\,600\, z^{3/2} + 461\,700\, z - 658\,350\, \sqrt{z} + 329\,175\right)\right.\right. $$
$$ \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{7/4} + $$
$$ 4\sqrt{2\pi}\, \left(1024\, z^{7/2} - 14\,080\, z^3 + 32\,832\, z^{5/2} + 103\,056\, z^2 - 45\,600\, z^{3/2} - 461\,700\, z - 658\,350\, \sqrt{z} - 329\,175\right) $$
$$ \left.\left. \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{7/4} + e^{2\sqrt{z}} \left(-8192\, z^5 - 236\,032\, z^4 + 132\,480\, z^3 + 6\,040\,800\, z^2 + 1\,909\,440\, z + 1\,879\,605\right)\right)\right) $$

07.22.03.7109.01

$$ {}_1F_2\left(4; -\frac{21}{4}, -\frac{3}{4}; -z\right) = \frac{1}{1\,879\,605} $$
$$ \left(8192\, z^5 - 236\,032\, z^4 - 132\,480\, z^3 + 6\,040\,800\, z^2 - 16\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\, \left(512\, z^3 - 16\,416\, z^2 - 22\,800\, z + 329\,175\right)\right.\right. $$
$$ \sin\left(2\sqrt{z}\right) - \left(14\,080\, z^3 + 103\,056\, z^2 + 461\,700\, z - 329\,175\right) \cos\left(2\sqrt{z}\right)\Big) z^{7/4} + $$
$$ 16\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\, \left(512\, z^3 - 16\,416\, z^2 - 22\,800\, z + 329\,175\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left(14\,080\, z^3 + 103\,056\, z^2 + 461\,700\, z - 329\,175\right) \sin\left(2\sqrt{z}\right)\right) z^{7/4} - 1\,909\,440\, z + 1\,879\,605\right) $$

07.22.03.7110.01

$$ {}_1F_2\left(4; -\frac{21}{4}, \frac{1}{4}; z\right) = \frac{1}{1\,253\,070} $$
$$ \left(e^{-2\sqrt{z}} \left(2\, e^{2\sqrt{z}}\, \left(19\,456\, z^4 - 189\,120\, z^3 + 11\,520\, z^2 + 2\,456\,460\, z + 626\,535\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, z^{3/4} \left(2048\, z^4 + 19\,968\, z^{7/2} - \right.\right.\right. $$
$$ \left.\left. 4224\, z^3 - 193\,440\, z^{5/2} + 392\,400\, z^2 + 138\,600\, z^{3/2} - 1\,524\,600\, z + 2\,182\,950\, \sqrt{z} - 1\,091\,475\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\, z^{3/4} \left(2048\, z^4 - 19\,968\, z^{7/2} - 4224\, z^3 + 193\,440\, z^{5/2} + 392\,400\, z^2 - 138\,600\, z^{3/2} - \right. $$
$$ \left.\left.\left. 1\,524\,600\, z - 2\,182\,950\, \sqrt{z} - 1\,091\,475\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7111.01

$$ {}_1F_2\left(4; -\frac{21}{4}, \frac{1}{4}; -z\right) = \frac{1}{626\,535} \left(19\,456\, z^4 + 189\,120\, z^3 + 11\,520\, z^2 - 2\,456\,460\, z - \right. $$
$$ 2\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\, z^4 + 4224\, z^3 + 392\,400\, z^2 + 1\,524\,600\, z - 1\,091\,475\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 6\sqrt{z}\, \left(3328\, z^3 + 32\,240\, z^2 + 23\,100\, z - 363\,825\right) \sin\left(2\sqrt{z}\right)\right) z^{3/4} - \right. $$
$$ 2\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\, z^4 + 4224\, z^3 + 392\,400\, z^2 + 1\,524\,600\, z - 1\,091\,475\right) \sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.\left. 6\sqrt{z}\, \left(3328\, z^3 + 32\,240\, z^2 + 23\,100\, z - 363\,825\right) \cos\left(2\sqrt{z}\right)\right) z^{3/4} + 626\,535\right) $$

07.22.03.7112.01

$$ {}_1F_2\left(4; -\frac{21}{4}, \frac{5}{4}; z\right) = \frac{1}{10\,024\,560\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(8e^{2\sqrt{z}}\sqrt[4]{z}\left(1024z^4 - 24\,768z^3 + 236\,640z^2 + 458\,676z - 1\,148\,175\right) + e^{4\sqrt{z}}\sqrt{2\pi}\right.\right. $$
$$ \left(4096z^{9/2} + 21\,504z^4 - 94\,464z^{7/2} - 56\,256z^3 + 953\,568z^{5/2} - 2\,106\,720z^2 + 1\,164\,240z^{3/2} + 2\,619\,540z - \right. $$
$$ \left.\left.\left.4\,802\,490\sqrt{z} + 2\,401\,245\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\left(-4096z^{9/2} + 21\,504z^4 + 94\,464z^{7/2} - 56\,256z^3 - \right.\right.\right. $$
$$ \left.\left.\left.953\,568z^{5/2} - 2\,106\,720z^2 - 1\,164\,240z^{3/2} + 2\,619\,540z + 4\,802\,490\sqrt{z} + 2\,401\,245\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7113.01

$$ {}_1F_2\left(4; -\frac{21}{4}, \frac{5}{4}; -z\right) = \frac{1}{2\,506\,140\sqrt[4]{z}}\left(2\sqrt[4]{z}\left(1024z^4 + 24\,768z^3 + 236\,640z^2 - 458\,676z - 1\,148\,175\right) + \right. $$
$$ \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(7168z^4 + 18\,752z^3 - 702\,240z^2 - 873\,180z + 800\,415\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.2\sqrt{z}\left(2048z^4 + 47\,232z^3 + 476\,784z^2 - 582\,120z - 2\,401\,245\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2048z^4 + 47\,232z^3 + 476\,784z^2 - 582\,120z - 2\,401\,245\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.3\left(7168z^4 + 18\,752z^3 - 702\,240z^2 - 873\,180z + 800\,415\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7114.01

$$ {}_1F_2\left(4; -\frac{21}{4}, \frac{9}{4}; z\right) = \frac{1}{16\,039\,296z^{5/4}} $$
$$ \left(e^{-2\sqrt{z}}\left(24e^{2\sqrt{z}}\sqrt[4]{z}\left(60\,672z^3 - 209\,056z^2 - 1\,310\,904z - 945\,945\right) + e^{4\sqrt{z}}\sqrt{2\pi}\left(8192z^5 + 2048z^{9/2} - 198\,144z^4 + \right.\right.\right. $$
$$ 680\,064z^{7/2} - 473\,088z^3 - 2\,794\,176z^{5/2} + 9\,313\,920z^2 - 13\,388\,760z^{3/2} + 10\,478\,160z - 5\,675\,670\sqrt{z} + $$
$$ \left.2\,837\,835\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\left(8192z^5 - 2048z^{9/2} - 198\,144z^4 - 680\,064z^{7/2} - 473\,088z^3 + \right. $$
$$ \left.\left.\left.2\,794\,176z^{5/2} + 9\,313\,920z^2 + 13\,388\,760z^{3/2} + 10\,478\,160z + 5\,675\,670\sqrt{z} + 2\,837\,835\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7115.01

$$ {}_1F_2\left(4; -\frac{21}{4}, \frac{9}{4}; -z\right) = \frac{1}{4\,009\,824z^{5/4}}\left(6\sqrt[4]{z}\left(60\,672z^3 + 209\,056z^2 - 1\,310\,904z + 945\,945\right) + \right. $$
$$ \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192z^5 + 198\,144z^4 - 473\,088z^3 - 9\,313\,920z^2 + 10\,478\,160z - 2\,837\,835\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.2\sqrt{z}\left(1024z^4 - 340\,032z^3 - 1\,397\,088z^2 + 6\,694\,380z - 2\,837\,835\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192z^5 + 198\,144z^4 - 473\,088z^3 - 9\,313\,920z^2 + 10\,478\,160z - 2\,837\,835\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.2\sqrt{z}\left(1024z^4 - 340\,032z^3 - 1\,397\,088z^2 + 6\,694\,380z - 2\,837\,835\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7116.01

$$ {}_1F_2\left(4; -\frac{21}{4}, \frac{13}{4}; z\right) = \frac{1}{14\,257\,152\, z^{9/4}} \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(4096 z^5 + 14\,592 z^4 - 1\,511\,808 z^3 - 7\,542\,864 z^2 - 17\,837\,820 z - 30\,405\,375\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(16\,384 z^{11/2} - 86\,016 z^5 + 33\,792 z^{9/2} + 1\,208\,064 z^4 - 5\,778\,432 z^{7/2} + 14\,636\,160 z^3 - 25\,280\,640 z^{5/2} + 36\,424\,080 z^2 - 51\,891\,840 z^{3/2} + 66\,486\,420 z - 60\,810\,750 \sqrt{z} + 30\,405\,375\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(-16\,384 z^{11/2} - 86\,016 z^5 - 33\,792 z^{9/2} + 1\,208\,064 z^4 + 5\,778\,432 z^{7/2} + 14\,636\,160 z^3 + 25\,280\,640 z^{5/2} + 36\,424\,080 z^2 + 51\,891\,840 z^{3/2} + 66\,486\,420 z + 60\,810\,750 \sqrt{z} + 30\,405\,375\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7117.01

$$ {}_1F_2\left(4; -\frac{21}{4}, \frac{13}{4}; -z\right) = \frac{1}{3\,564\,288\, z^{9/4}} \left(2\, \sqrt[4]{z}\, \left(-4096 z^5 + 14\,592 z^4 + 1\,511\,808 z^3 - 7\,542\,864 z^2 + 17\,837\,820 z - 30\,405\,375\right) + \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(3 \left(28\,672 z^5 + 402\,688 z^4 - 4\,878\,720 z^3 + 12\,141\,360 z^2 - 22\,162\,140 z + 10\,135\,125\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(8192 z^5 - 16\,896 z^4 - 2\,889\,216 z^3 + 12\,640\,320 z^2 - 25\,945\,920 z + 30\,405\,375\right) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(8192 z^5 - 16\,896 z^4 - 2\,889\,216 z^3 + 12\,640\,320 z^2 - 25\,945\,920 z + 30\,405\,375\right) \cos\left(2\sqrt{z}\right) - 3 \left(28\,672 z^5 + 402\,688 z^4 - 4\,878\,720 z^3 + 12\,141\,360 z^2 - 22\,162\,140 z + 10\,135\,125\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7118.01

$$ {}_1F_2\left(4; -\frac{21}{4}, \frac{17}{4}; z\right) = \frac{1}{8\,773\,632\, z^{13/4}} \left(e^{-2\sqrt{z}} \left(-8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(94\,208 z^5 + 2\,164\,992 z^4 + 19\,482\,624 z^3 + 144\,864\,720 z^2 + 681\,080\,400 z + 1\,550\,674\,125\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(32\,768 z^6 - 368\,640 z^{11/2} + 2\,095\,104 z^5 - 8\,059\,392 z^{9/2} + 24\,710\,400 z^4 - 69\,569\,280 z^{7/2} + 192\,931\,200 z^3 - 505\,945\,440 z^{5/2} + 1\,161\,079\,920 z^2 - 2\,189\,187\,000 z^{3/2} + 3\,162\,159\,000 z - 3\,101\,348\,250 \sqrt{z} + 1\,550\,674\,125\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(32\,768 z^6 + 368\,640 z^{11/2} + 2\,095\,104 z^5 + 8\,059\,392 z^{9/2} + 24\,710\,400 z^4 + 69\,569\,280 z^{7/2} + 192\,931\,200 z^3 + 505\,945\,440 z^{5/2} + 1\,161\,079\,920 z^2 + 2\,189\,187\,000 z^{3/2} + 3\,162\,159\,000 z + 3\,101\,348\,250 \sqrt{z} + 1\,550\,674\,125\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7119.01

$$ {}_1F_2\left(4; -\frac{21}{4}, \frac{17}{4}; -z\right) = $$
$$ \frac{1}{2\,193\,408\, z^{13/4}} \left(2\sqrt[4]{z}\, \left(-94\,208\, z^5 + 2\,164\,992\, z^4 - 19\,482\,624\, z^3 + 144\,864\,720\, z^2 - 681\,080\,400\, z + 1\,550\,674\,125\right) - \right. $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768\, z^6 - 2\,095\,104\, z^5 + 24\,710\,400\, z^4 - 192\,931\,200\, z^3 + \right.\right. $$
$$ \left. 1\,161\,079\,920\, z^2 - 3\,162\,159\,000\, z + 1\,550\,674\,125\right) \cos\left(2\sqrt{z}\right) - $$
$$ \left.\left. 18\sqrt{z}\, \left(20\,480\, z^5 - 447\,744\, z^4 + 3\,864\,960\, z^3 - 28\,108\,080\, z^2 + 121\,621\,500\, z - 172\,297\,125\right) \sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(18\sqrt{z}\, \left(20\,480\, z^5 - 447\,744\, z^4 + 3\,864\,960\, z^3 - 28\,108\,080\, z^2 + 121\,621\,500\, z - 172\,297\,125\right) \right. $$
$$ \cos\left(2\sqrt{z}\right) + \left(32\,768\, z^6 - 2\,095\,104\, z^5 + 24\,710\,400\, z^4 - 192\,931\,200\, z^3 + \right. $$
$$ \left.\left. \left. 1\,161\,079\,920\, z^2 - 3\,162\,159\,000\, z + 1\,550\,674\,125\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7120.01

$$ {}_1F_2\left(4; -\frac{21}{4}, \frac{21}{4}; z\right) = $$
$$ \frac{1}{4\,128\,768\, z^{17/4}} \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(16\,384\, z^6 + 2\,868\,224\, z^5 + 114\,741\,504\, z^4 + 2\,361\,078\,720\, z^3 + 27\,070\,243\,200\, z^2 + \right.\right. \right. $$
$$ \left. 150\,105\,255\,300\, z + 383\,016\,508\,875\right) + $$
$$ e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(65\,536\, z^{13/2} - 1\,163\,264\, z^6 + 11\,169\,792\, z^{11/2} - 77\,552\,640\, z^5 + 437\,184\,000\, z^{9/2} - \right. $$
$$ 2\,106\,466\,560\, z^4 + 8\,811\,728\,640\, z^{7/2} - 31\,852\,941\,120\, z^3 + 97\,880\,983\,200\, z^{5/2} - 249\,080\,832\,000\, z^2 + $$
$$ \left. 504\,485\,982\,000\, z^{3/2} - 762\,931\,669\,500\, z + 766\,033\,017\,750\sqrt{z} - 383\,016\,508\,875\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - $$
$$ \sqrt{2\pi}\, \left(65\,536\, z^{13/2} + 1\,163\,264\, z^6 + 11\,169\,792\, z^{11/2} + 77\,552\,640\, z^5 + 437\,184\,000\, z^{9/2} + 2\,106\,466\,560\, z^4 + \right. $$
$$ 8\,811\,728\,640\, z^{7/2} + 31\,852\,941\,120\, z^3 + 97\,880\,983\,200\, z^{5/2} + 249\,080\,832\,000\, z^2 + $$
$$ \left.\left.\left. 504\,485\,982\,000\, z^{3/2} + 762\,931\,669\,500\, z + 766\,033\,017\,750\sqrt{z} + 383\,016\,508\,875\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7121.01

$${}_1F_2\left(4; -\frac{21}{4}, \frac{21}{4}; -z\right) =$$
$$\frac{1}{1\,032\,192\, z^{17/4}}\left(2\sqrt[4]{z}\,\left(16\,384\, z^6 - 2\,868\,224\, z^5 + 114\,741\,504\, z^4 - 2\,361\,078\,720\, z^3 + 27\,070\,243\,200\, z^2 - 150\,105\,255\,300\, z + 383\,016\,508\,875\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(32\,768\, z^6 - 5\,584\,896\, z^5 + 218\,592\,000\, z^4 - 4\,405\,864\,320\, z^3 + 48\,940\,491\,600\, z^2 - 252\,242\,991\,000\, z + 383\,016\,508\,875\right)\cos\left(2\sqrt{z}\right) + \left(-1\,163\,264\, z^6 + 77\,552\,640\, z^5 - 2\,106\,466\,560\, z^4 + 31\,852\,941\,120\, z^3 - 249\,080\,832\,000\, z^2 + 762\,931\,669\,500\, z - 383\,016\,508\,875\right)\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1\,163\,264\, z^6 - 77\,552\,640\, z^5 + 2\,106\,466\,560\, z^4 - 31\,852\,941\,120\, z^3 + 249\,080\,832\,000\, z^2 - 762\,931\,669\,500\, z + 383\,016\,508\,875\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(32\,768\, z^6 - 5\,584\,896\, z^5 + 218\,592\,000\, z^4 - 4\,405\,864\,320\, z^3 + 48\,940\,491\,600\, z^2 - 252\,242\,991\,000\, z + 383\,016\,508\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = -\frac{19}{4}$

07.22.03.7122.01

$${}_1F_2\left(4; -\frac{19}{4}, -\frac{17}{4}; z\right) =$$
$$\frac{1}{1\,964\,187\,225}\left(e^{-2\sqrt{z}}\left(4096\, e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(64\, z^{3/2} + 1488\, z + 10\,740\sqrt{z} + 23\,925\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{21/4} + 4096\,\sqrt{2\pi}\,\left(64\, z^{3/2} - 1488\, z + 10\,740\sqrt{z} - 23\,925\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{21/4} + e^{2\sqrt{z}}\left(12\,058\,624\, z^6 + 176\,160\,768\, z^5 + 20\,643\,840\, z^4 + 25\,804\,800\, z^3 + 79\,833\,600\, z^2 + 389\,188\,800\, z + 1\,964\,187\,225\right)\right)\right)$$

07.22.03.7123.01

$${}_1F_2\left(4; -\frac{19}{4}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{1\,964\,187\,225}\left(12\,058\,624\, z^6 - 16\,384\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16\, z - 2685)\sin\left(2\sqrt{z}\right) - 3\,(496\, z - 7975)\cos\left(2\sqrt{z}\right)\right) z^{21/4} - 16\,384\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16\, z - 2685)\cos\left(2\sqrt{z}\right) + 3\,(496\, z - 7975)\sin\left(2\sqrt{z}\right)\right) z^{21/4} - 176\,160\,768\, z^5 + 20\,643\,840\, z^4 - 25\,804\,800\, z^3 + 79\,833\,600\, z^2 - 389\,188\,800\, z + 1\,964\,187\,225\right)$$

07.22.03.7124.01

$${}_1F_2\left(4;-\frac{19}{4},-\frac{13}{4};z\right)=$$
$$\frac{1}{115\,540\,425}\left(e^{-2\sqrt{z}}\left(-512\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(128\,z^2+2720\,z^{3/2}+17\,400\,z+30\,450\,\sqrt{z}\,-15\,225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}+\right.\right.$$
$$512\,\sqrt{2\pi}\,\left(128\,z^2-2720\,z^{3/2}+17\,400\,z-30\,450\,\sqrt{z}\,-15\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}+$$
$$\left.\left.e^{2\sqrt{z}}\,\left(-131\,072\,z^6-17\,145\,856\,z^5+20\,643\,840\,z^4+5\,160\,960\,z^3+8\,870\,400\,z^2+29\,937\,600\,z+115\,540\,425\right)\right)\right)$$

07.22.03.7125.01

$${}_1F_2\left(4;-\frac{19}{4},-\frac{13}{4};-z\right)=\frac{1}{115\,540\,425}\left(-131\,072\,z^6+17\,145\,856\,z^5-\right.$$
$$2048\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2-17\,400\,z-15\,225\right)\cos\left(2\sqrt{z}\right)+10\,\sqrt{z}\,\left(272\,z-3045\right)\sin\left(2\sqrt{z}\right)\right)z^{17/4}+$$
$$2048\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2-17\,400\,z-15\,225\right)\sin\left(2\sqrt{z}\right)-10\,\sqrt{z}\,\left(272\,z-3045\right)\cos\left(2\sqrt{z}\right)\right)z^{17/4}+$$
$$\left.20\,643\,840\,z^4-5\,160\,960\,z^3+8\,870\,400\,z^2-29\,937\,600\,z+115\,540\,425\right)$$

07.22.03.7126.01

$${}_1F_2\left(4;-\frac{19}{4},-\frac{9}{4};z\right)=$$
$$\frac{1}{8\,887\,725}\left(e^{-2\sqrt{z}}\left(64\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^{5/2}+4800\,z^2+25\,200\,z^{3/2}+23\,100\,z-53\,550\,\sqrt{z}\,+26\,775\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}+\right.\right.$$
$$64\,\sqrt{2\pi}\,\left(256\,z^{5/2}-4800\,z^2+25\,200\,z^{3/2}-23\,100\,z-53\,550\,\sqrt{z}\,-26\,775\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}+$$
$$\left.\left.e^{2\sqrt{z}}\,\left(606\,208\,z^5+2\,257\,920\,z^4+5\,160\,960\,z^3+1\,774\,080\,z^2+3\,326\,400\,z+8\,887\,725\right)\right)\right)$$

07.22.03.7127.01

$${}_1F_2\left(4;-\frac{19}{4},-\frac{9}{4};-z\right)=\frac{1}{8\,887\,725}\left(-606\,208\,z^5+2\,257\,920\,z^4+\right.$$
$$256\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\,\left(128\,z^2-12\,600\,z-26\,775\right)\cos\left(2\sqrt{z}\right)+75\left(64\,z^2-308\,z+357\right)\sin\left(2\sqrt{z}\right)\right)z^{13/4}+$$
$$256\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\,\left(128\,z^2-12\,600\,z-26\,775\right)\sin\left(2\sqrt{z}\right)-75\left(64\,z^2-308\,z+357\right)\cos\left(2\sqrt{z}\right)\right)z^{13/4}-$$
$$\left.5\,160\,960\,z^3+1\,774\,080\,z^2-3\,326\,400\,z+8\,887\,725\right)$$

07.22.03.7128.01

$$ {}_1F_2\left(4; -\frac{19}{4}, -\frac{5}{4}; z\right) = \frac{1}{987\,525} \left(e^{-2\sqrt{z}} \left(-8\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(512\, z^3 + 8064\, z^{5/2} + 30\,240\, z^2 - 14\,280\, z^{3/2} - 85\,680\, z + 139\,230\, \sqrt{z} - 69\,615\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{9/4} + 8\, \sqrt{2\pi}\, \left(512\, z^3 - 8064\, z^{5/2} + 30\,240\, z^2 + 14\,280\, z^{3/2} - 85\,680\, z - 139\,230\, \sqrt{z} - 69\,615\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{9/4} + e^{2\sqrt{z}} \left(-8192\, z^5 - 453\,120\, z^4 + 1\,249\,920\, z^3 + 1\,774\,080\, z^2 + 665\,280\, z + 987\,525\right)\right)\right) $$

07.22.03.7129.01

$$ {}_1F_2\left(4; -\frac{19}{4}, -\frac{5}{4}; -z\right) = \frac{1}{987\,525} \left(8192\, z^5 - 453\,120\, z^4 - 1\,249\,920\, z^3 + 32\, \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(512\, z^3 - 30\,240\, z^2 - 85\,680\, z + 69\,615\right) \cos\left(2\, \sqrt{z}\right) + 42\, \sqrt{z}\, \left(192\, z^2 + 340\, z + 3315\right) \sin\left(2\, \sqrt{z}\right)\right) z^{9/4} - 32\, \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(512\, z^3 - 30\,240\, z^2 - 85\,680\, z + 69\,615\right) \sin\left(2\, \sqrt{z}\right) - 42\, \sqrt{z}\, \left(192\, z^2 + 340\, z + 3315\right) \cos\left(2\, \sqrt{z}\right)\right) z^{9/4} + 1\,774\,080\, z^2 - 665\,280\, z + 987\,525\right) $$

07.22.03.7130.01

$$ {}_1F_2\left(4; -\frac{19}{4}, -\frac{1}{4}; z\right) = \frac{1}{197\,505} \left(e^{-2\sqrt{z}} \left(e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(1024\, z^{7/2} + 12\,544\, z^3 + 22\,848\, z^{5/2} - 85\,680\, z^2 + 278\,460\, z - 417\,690\, \sqrt{z} + 208\,845\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{5/4} + \sqrt{2\pi}\, \left(1024\, z^{7/2} - 12\,544\, z^3 + 22\,848\, z^{5/2} + 85\,680\, z^2 - 278\,460\, z - 417\,690\, \sqrt{z} - 208\,845\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{5/4} + 3\, e^{2\sqrt{z}}\, \left(8192\, z^4 - 59\,520\, z^3 + 174\,160\, z^2 + 221\,760\, z + 65\,835\right)\right)\right) $$

07.22.03.7131.01

$$ {}_1F_2\left(4; -\frac{19}{4}, -\frac{1}{4}; -z\right) = \frac{1}{197\,505} \left(-4\, \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\, \sqrt{z}\, \left(512\, z^3 - 11\,424\, z^2 + 208\,845\right) \sin\left(2\, \sqrt{z}\right) - 7\, \left(1792\, z^3 + 12\,240\, z^2 + 39\,780\, z - 29\,835\right) \cos\left(2\, \sqrt{z}\right)\right) z^{5/4} - 4\, \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\, \sqrt{z}\, \left(512\, z^3 - 11\,424\, z^2 + 208\,845\right) \cos\left(2\, \sqrt{z}\right) + 7\, \left(1792\, z^3 + 12\,240\, z^2 + 39\,780\, z - 29\,835\right) \sin\left(2\, \sqrt{z}\right)\right) z^{5/4} + 3\, \left(8192\, z^4 + 59\,520\, z^3 + 174\,160\, z^2 - 221\,760\, z + 65\,835\right)\right) $$

07.22.03.7132.01

$$ {}_1F_2\left(4; -\frac{19}{4}, \frac{3}{4}; z\right) = \frac{1}{1\,580\,040}\left(e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\left(512\,z^4 - 4320\,z^3 + 88\,680\,z^2 - 146\,790\,z - 197\,505\right) - e^{4\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\left(2048\,z^4 + 16\,896\,z^{7/2} - 13\,440\,z^3 - 131\,040\,z^{5/2} + 327\,600\,z^2 - 98\,280\,z^{3/2} - 687\,960\,z + 1\,105\,650\,\sqrt{z} - 552\,825\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\sqrt[4]{z}\left(2048\,z^4 - 16\,896\,z^{7/2} - 13\,440\,z^3 + 131\,040\,z^{5/2} + 327\,600\,z^2 + 98\,280\,z^{3/2} - 687\,960\,z - 1\,105\,650\,\sqrt{z} - 552\,825\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7133.01

$$ {}_1F_2\left(4; -\frac{19}{4}, \frac{3}{4}; -z\right) = \frac{1}{395\,010}\left(-2\left(512\,z^4 + 4320\,z^3 + 88\,680\,z^2 + 146\,790\,z - 197\,505\right) - \sqrt{\pi}\,\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^4 + 13\,440\,z^3 + 327\,600\,z^2 + 687\,960\,z - 552\,825\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(2816\,z^3 + 21\,840\,z^2 - 16\,380\,z - 184\,275\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\,\sqrt[4]{z}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^4 + 13\,440\,z^3 + 327\,600\,z^2 + 687\,960\,z - 552\,825\right)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\left(2816\,z^3 + 21\,840\,z^2 - 16\,380\,z - 184\,275\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7134.01

$$ {}_1F_2\left(4; -\frac{19}{4}, \frac{7}{4}; z\right) = \frac{1}{4\,213\,440\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\left(1792\,z^3 + 8880\,z^2 - 197\,280\,z - 107\,415\right) - e^{4\sqrt{z}}\,\sqrt{2\pi}\left(4096\,z^{9/2} + 15\,360\,z^4 - 88\,320\,z^{7/2} + 47\,040\,z^3 + 514\,080\,z^{5/2} - 1\,481\,760\,z^2 + 1\,587\,600\,z^{3/2} - 170\,100\,z - 935\,550\,\sqrt{z} + 467\,775\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\left(-4096\,z^{9/2} + 15\,360\,z^4 + 88\,320\,z^{7/2} + 47\,040\,z^3 - 514\,080\,z^{5/2} - 1\,481\,760\,z^2 - 1\,587\,600\,z^{3/2} - 170\,100\,z + 935\,550\,\sqrt{z} + 467\,775\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7135.01

$$ {}_1F_2\left(4; -\frac{19}{4}, \frac{7}{4}; -z\right) = \frac{1}{1\,053\,360\,z^{3/4}}\left(4\,z^{3/4}\left(1792\,z^3 - 8880\,z^2 - 197\,280\,z + 107\,415\right) - \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2048\,z^4 + 44\,160\,z^3 + 257\,040\,z^2 - 793\,800\,z - 467\,775\right)\cos\left(2\sqrt{z}\right) + 15\left(1024\,z^4 - 3136\,z^3 - 98\,784\,z^2 + 11\,340\,z + 31\,185\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(1024\,z^4 - 3136\,z^3 - 98\,784\,z^2 + 11\,340\,z + 31\,185\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(2048\,z^4 + 44\,160\,z^3 + 257\,040\,z^2 - 793\,800\,z - 467\,775\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7136.01

$$ {}_1F_2\left(4; -\frac{19}{4}, \frac{11}{4}; z\right) = \frac{1}{4\,815\,360\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(1024 z^4 - 15\,808 z^3 - 162\,720 z^2 + 203\,940 z + 675\,675\right) - e^{4\sqrt{z}} \sqrt{2\pi}\right.\right. \left(8192 z^5 - 10\,240 z^{9/2} - 130\,560 z^4 + 616\,320 z^{7/2} - 1\,128\,960 z^3 + 423\,360 z^{5/2} + 2\,116\,800 z^2 - 4\,573\,800 z^{3/2} + 4\,989\,600 z - 4\,054\,050 \sqrt{z} + 2\,027\,025\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(8192 z^5 + 10\,240 z^{9/2} - 130\,560 z^4 - 616\,320 z^{7/2} - 1\,128\,960 z^3 - 423\,360 z^{5/2} + 2\,116\,800 z^2 + 4\,573\,800 z^{3/2} + 4\,989\,600 z + 4\,054\,050 \sqrt{z} + 2\,027\,025\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\left.\right)\right) $$

07.22.03.7137.01

$$ {}_1F_2\left(4; -\frac{19}{4}, \frac{11}{4}; -z\right) = \frac{1}{1\,203\,840\, z^{7/4}} \left(4 z^{3/4} \left(1024 z^4 + 15\,808 z^3 - 162\,720 z^2 - 203\,940 z + 675\,675\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(8192 z^5 + 130\,560 z^4 - 1\,128\,960 z^3 - 2\,116\,800 z^2 + 4\,989\,600 z - 2\,027\,025\right) \cos\left(2\sqrt{z}\right) - 10\sqrt{z} \left(1024 z^4 + 61\,632 z^3 - 42\,336 z^2 - 457\,380 z + 405\,405\right) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(10\sqrt{z} \left(1024 z^4 + 61\,632 z^3 - 42\,336 z^2 - 457\,380 z + 405\,405\right) \cos\left(2\sqrt{z}\right) + \left(8192 z^5 + 130\,560 z^4 - 1\,128\,960 z^3 - 2\,116\,800 z^2 + 4\,989\,600 z - 2\,027\,025\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7138.01

$$ {}_1F_2\left(4; -\frac{19}{4}, \frac{15}{4}; z\right) = \frac{1}{3\,502\,080\, z^{11/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(14\,336 z^4 + 22\,272 z^3 - 995\,040 z^2 - 5\,405\,400 z - 14\,189\,175\right) - e^{4\sqrt{z}} \sqrt{2\pi}\right.\right. \left(16\,384 z^{11/2} - 110\,592 z^5 + 291\,840 z^{9/2} - 80\,640 z^4 - 1\,935\,360 z^{7/2} + 7\,620\,480 z^3 - 18\,627\,840 z^{5/2} + 37\,422\,000 z^2 - 64\,864\,800 z^{3/2} + 89\,189\,100 z - 85\,135\,050 \sqrt{z} + 42\,567\,525\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(-16\,384 z^{11/2} - 110\,592 z^5 - 291\,840 z^{9/2} - 80\,640 z^4 + 1\,935\,360 z^{7/2} + 7\,620\,480 z^3 + 18\,627\,840 z^{5/2} + 37\,422\,000 z^2 + 64\,864\,800 z^{3/2} + 89\,189\,100 z + 85\,135\,050 \sqrt{z} + 42\,567\,525\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\left.\right)\right) $$

07.22.03.7139.01

$$ {}_1F_2\left(4;-\frac{19}{4},\frac{15}{4};-z\right)=\frac{1}{875\,520\,z^{11/4}}\left(4\,z^{3/4}\left(14\,336\,z^4-22\,272\,z^3-995\,040\,z^2+5\,405\,400\,z-14\,189\,175\right)+\right.$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(9\left(12\,288\,z^5-8960\,z^4-846\,720\,z^3+4\,158\,000\,z^2-9\,909\,900\,z+4\,729\,725\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(8192\,z^5-145\,920\,z^4-967\,680\,z^3+9\,313\,920\,z^2-32\,432\,400\,z+42\,567\,525\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(8192\,z^5-145\,920\,z^4-967\,680\,z^3+9\,313\,920\,z^2-32\,432\,400\,z+42\,567\,525\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.9\left(12\,288\,z^5-8960\,z^4-846\,720\,z^3+4\,158\,000\,z^2-9\,909\,900\,z+4\,729\,725\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7140.01

$$ {}_1F_2\left(4;-\frac{19}{4},\frac{19}{4};z\right)=\frac{1}{1\,867\,776\,z^{15/4}}$$
$$\left(e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\left(4096\,z^5+374\,016\,z^4+8\,247\,936\,z^3+105\,945\,840\,z^2+786\,485\,700\,z+2\,653\,375\,725\right)-\right.\right.$$
$$e^{4\sqrt{z}}\,\sqrt{2\pi}\left(32\,768\,z^6-417\,792\,z^{11/2}+2\,881\,536\,z^5-14\,568\,960\,z^{9/2}+61\,689\,600\,z^4-\right.$$
$$231\,517\,440\,z^{7/2}+773\,055\,360\,z^3-2\,244\,322\,080\,z^{5/2}+5\,481\,075\,600\,z^2-$$
$$\left.10\,783\,773\,000\,z^{3/2}+16\,005\,389\,400\,z-15\,920\,254\,350\sqrt{z}+7\,960\,127\,175\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\sqrt{2\pi}\left(32\,768\,z^6+417\,792\,z^{11/2}+2\,881\,536\,z^5+14\,568\,960\,z^{9/2}+61\,689\,600\,z^4+231\,517\,440\,z^{7/2}+\right.$$
$$773\,055\,360\,z^3+2\,244\,322\,080\,z^{5/2}+5\,481\,075\,600\,z^2+10\,783\,773\,000\,z^{3/2}+$$
$$\left.\left.\left.16\,005\,389\,400\,z+15\,920\,254\,350\sqrt{z}+7\,960\,127\,175\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7141.01

$$ {}_1F_2\left(4;-\frac{19}{4},\frac{19}{4};-z\right)=$$
$$\frac{1}{466\,944\,z^{15/4}}\left(-4\,z^{3/4}\left(4096\,z^5-374\,016\,z^4+8\,247\,936\,z^3-105\,945\,840\,z^2+786\,485\,700\,z-2\,653\,375\,725\right)-\right.$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768\,z^6-2\,881\,536\,z^5+61\,689\,600\,z^4-773\,055\,360\,z^3+\right.\right.$$
$$\left.5\,481\,075\,600\,z^2-16\,005\,389\,400\,z+7\,960\,127\,175\right)\cos\left(2\sqrt{z}\right)-$$
$$\left.6\sqrt{z}\left(69\,632\,z^5-2\,428\,160\,z^4+38\,586\,240\,z^3-374\,053\,680\,z^2+1\,797\,295\,500\,z-2\,653\,375\,725\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\left(69\,632\,z^5-2\,428\,160\,z^4+38\,586\,240\,z^3-374\,053\,680\,z^2+1\,797\,295\,500\,z-2\,653\,375\,725\right)\right.$$
$$\cos\left(2\sqrt{z}\right)+\left(32\,768\,z^6-2\,881\,536\,z^5+61\,689\,600\,z^4-773\,055\,360\,z^3+\right.$$
$$\left.\left.\left.5\,481\,075\,600\,z^2-16\,005\,389\,400\,z+7\,960\,127\,175\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7142.01

$$ {}_1F_2\left(4; -\frac{19}{4}, \frac{23}{4}; z\right) = \frac{1}{786\,432\, z^{19/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(48\, e^{2\sqrt{z}}\, z^{3/4} \left(53\,248\, z^5 + 4\,418\,816\, z^4 + 146\,065\,920\, z^3 + 2\,540\,538\,000\, z^2 + 22\,237\,815\,600\, z + 84\,023\,564\,625\right) - \right. \right. $$
$$ e^{4\sqrt{z}}\, \sqrt{2\pi} \left(65\,536\, z^{13/2} - 1\,261\,568\, z^6 + 13\,332\,480\, z^{11/2} - 102\,466\,560\, z^5 + 635\,712\,000\, z^{9/2} - \right. $$
$$ 3\,323\,738\,880\, z^4 + 14\,841\,066\,240\, z^{7/2} - 56\,432\,376\,000\, z^3 + 180\,259\,279\,200\, z^{5/2} - 472\,215\,744\,000\, z^2 + $$
$$ \left. 976\,442\,266\,800\, z^{3/2} - 1\,496\,503\,908\,900\, z + 1\,512\,424\,163\,250\, \sqrt{z} - 756\,212\,081\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - $$
$$ \sqrt{2\pi} \left(65\,536\, z^{13/2} + 1\,261\,568\, z^6 + 13\,332\,480\, z^{11/2} + 102\,466\,560\, z^5 + 635\,712\,000\, z^{9/2} + \right. $$
$$ 3\,323\,738\,880\, z^4 + 14\,841\,066\,240\, z^{7/2} + 56\,432\,376\,000\, z^3 + 180\,259\,279\,200\, z^{5/2} + 472\,215\,744\,000\, z^2 + $$
$$ \left. \left. \left. 976\,442\,266\,800\, z^{3/2} + 1\,496\,503\,908\,900\, z + 1\,512\,424\,163\,250\, \sqrt{z} + 756\,212\,081\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7143.01

$$ {}_1F_2\left(4; -\frac{19}{4}, \frac{23}{4}; -z\right) = $$
$$ \frac{1}{196\,608\, z^{19/4}} \left(-12\, z^{3/4} \left(53\,248\, z^5 - 4\,418\,816\, z^4 + 146\,065\,920\, z^3 - 2\,540\,538\,000\, z^2 + 22\,237\,815\,600\, z - 84\,023\,564\,625\right) - \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(7 \left(180\,224\, z^6 - 14\,638\,080\, z^5 + 474\,819\,840\, z^4 - 8\,061\,768\,000\, z^3 + 67\,459\,392\,000\, z^2 - \right. \right. $$
$$ \left. 213\,786\,272\,700\, z + 108\,030\,297\,375\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z} \left(32\,768\, z^6 - 6\,666\,240\, z^5 + 317\,856\,000\, z^4 - \right. $$
$$ \left. \left. 7\,420\,533\,120\, z^3 + 90\,129\,639\,600\, z^2 - 488\,221\,133\,400\, z + 756\,212\,081\,625\right) \sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(32\,768\, z^6 - 6\,666\,240\, z^5 + 317\,856\,000\, z^4 - 7\,420\,533\,120\, z^3 + 90\,129\,639\,600\, z^2 - \right. \right. $$
$$ 488\,221\,133\,400\, z + 756\,212\,081\,625\right) \cos\left(2\sqrt{z}\right) - 7 \left(180\,224\, z^6 - 14\,638\,080\, z^5 + 474\,819\,840\, z^4 - $$
$$ \left. \left. \left. 8\,061\,768\,000\, z^3 + 67\,459\,392\,000\, z^2 - 213\,786\,272\,700\, z + 108\,030\,297\,375\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 4$, $b_1 = -\frac{17}{4}$

07.22.03.7144.01

$$ {}_1F_2\left(4; -\frac{17}{4}, -\frac{15}{4}; z\right) = $$
$$ \frac{1}{103\,378\,275} \left(e^{-2\sqrt{z}} \left(-1024\, e^{4\sqrt{z}}\, \sqrt{2\pi} \left(64\, z^{3/2} + 1392\, z + 9348\, \sqrt{z} + 19\,251\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{19/4} + 1024 \right. \right. $$
$$ \sqrt{2\pi} \left(64\, z^{3/2} - 1392\, z + 9348\, \sqrt{z} - 19\,251\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{19/4} + $$
$$ \left. \left. e^{2\sqrt{z}} \left(-131\,072\, z^6 - 18\,456\,576\, z^5 + 6\,881\,280\, z^4 + 3\,686\,400\, z^3 + 7\,257\,600\, z^2 + 25\,945\,920\, z + 103\,378\,275\right)\right)\right) $$

07.22.03.7145.01

$$ {}_1F_2\left(4; -\frac{17}{4}, -\frac{15}{4}; -z\right) = \frac{1}{103\,378\,275}$$
$$\left(-131\,072\,z^6 + 18\,456\,576\,z^5 + 4096\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\ (16z - 2337)\sin\left(2\sqrt{z}\right) - 3\,(464z - 6417)\cos\left(2\sqrt{z}\right)\right)z^{19/4} -\right.$$
$$4096\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\ (16z - 2337)\cos\left(2\sqrt{z}\right) + 3\,(464z - 6417)\sin\left(2\sqrt{z}\right)\right)z^{19/4} +$$
$$\left.6\,881\,280\,z^4 - 3\,686\,400\,z^3 + 7\,257\,600\,z^2 - 25\,945\,920\,z + 103\,378\,275\right)$$

07.22.03.7146.01

$$ {}_1F_2\left(4; -\frac{17}{4}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{6\,891\,885}\left(e^{-2\sqrt{z}}\left(128\,e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(128z^2 + 2528z^{3/2} + 14\,904z + 23\,598\sqrt{z} - 11\,799\right)\mathrm{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{15/4} +\right.\right.$$
$$128\sqrt{2\pi}\ \left(128z^2 - 2528z^{3/2} + 14\,904z - 23\,598\sqrt{z} - 11\,799\right)\mathrm{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{15/4} +$$
$$\left.\left.3\,e^{2\sqrt{z}}\ \left(212\,992\,z^5 + 1\,733\,632\,z^4 + 409\,600\,z^3 + 345\,600\,z^2 + 786\,240\,z + 2\,297\,295\right)\right)\right)$$

07.22.03.7147.01

$$ {}_1F_2\left(4; -\frac{17}{4}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{6\,891\,885}\left(512\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128z^2 - 14\,904z - 11\,799\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\ (1264z - 11\,799)\sin\left(2\sqrt{z}\right)\right)z^{15/4} +\right.$$
$$512\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128z^2 - 14\,904z - 11\,799\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\ (1264z - 11\,799)\cos\left(2\sqrt{z}\right)\right)z^{15/4} +$$
$$\left.3\left(-212\,992\,z^5 + 1\,733\,632\,z^4 - 409\,600\,z^3 + 345\,600\,z^2 - 786\,240\,z + 2\,297\,295\right)\right)$$

07.22.03.7148.01

$$ {}_1F_2\left(4; -\frac{17}{4}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{626\,535}\left(e^{-2\sqrt{z}}\left(-16\,e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(256z^{5/2} + 4416z^2 + 20\,976z^{3/2} + 15\,732z - 39\,330\sqrt{z} + 19\,665\right)\mathrm{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{11/4} +\right.\right.$$
$$16\sqrt{2\pi}\ \left(256z^{5/2} - 4416z^2 + 20\,976z^{3/2} - 15\,732z - 39\,330\sqrt{z} - 19\,665\right)\mathrm{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{11/4} +$$
$$\left.\left.e^{2\sqrt{z}}\ \left(-8192\,z^5 - 637\,440\,z^4 + 1\,288\,320\,z^3 + 345\,600\,z^2 + 336\,960\,z + 626\,535\right)\right)\right)$$

07.22.03.7149.01

$${}_1F_2\left(4;-\frac{17}{4},-\frac{7}{4};-z\right)=\frac{1}{626\,535}\left(8192\,z^5-637\,440\,z^4-1\,288\,320\,z^3+\right.$$

$$64\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(128\,z^2-10\,488\,z-19\,665\right)\cos\left(2\sqrt{z}\right)+69\left(64\,z^2-228\,z+285\right)\sin\left(2\sqrt{z}\right)\right)z^{11/4}-$$

$$64\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(128\,z^2-10\,488\,z-19\,665\right)\sin\left(2\sqrt{z}\right)-69\left(64\,z^2-228\,z+285\right)\cos\left(2\sqrt{z}\right)\right)z^{11/4}+$$

$$\left.345\,600\,z^2-336\,960\,z+626\,535\right)$$

07.22.03.7150.01

$${}_1F_2\left(4;-\frac{17}{4},-\frac{3}{4};z\right)=\frac{1}{89\,505}$$

$$\left(e^{-2\sqrt{z}}\left(2\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(512\,z^3+7296\,z^{5/2}+23\,712\,z^2-15\,960\,z^{3/2}-54\,720\,z+94\,050\,\sqrt{z}-47\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+\right.\right.$$

$$2\sqrt{2\pi}\,\left(512\,z^3-7296\,z^{5/2}+23\,712\,z^2+15\,960\,z^{3/2}-54\,720\,z-94\,050\,\sqrt{z}-47\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+$$

$$\left.\left.e^{2\sqrt{z}}\,\left(28\,672\,z^4-82\,560\,z^3+406\,800\,z^2+112\,320\,z+89\,505\right)\right)\right)$$

07.22.03.7151.01

$${}_1F_2\left(4;-\frac{17}{4},-\frac{3}{4};-z\right)=\frac{1}{89\,505}\left(28\,672\,z^4+82\,560\,z^3+406\,800\,z^2-\right.$$

$$8\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512\,z^3-23\,712\,z^2-54\,720\,z+47\,025\right)\cos\left(2\sqrt{z}\right)+114\sqrt{z}\,\left(64\,z^2+140\,z+825\right)\sin\left(2\sqrt{z}\right)\right)z^{7/4}-$$

$$8\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512\,z^3-23\,712\,z^2-54\,720\,z+47\,025\right)\sin\left(2\sqrt{z}\right)-114\sqrt{z}\,\left(64\,z^2+140\,z+825\right)\cos\left(2\sqrt{z}\right)\right)z^{7/4}-$$

$$\left.112\,320\,z+89\,505\right)$$

07.22.03.7152.01

$${}_1F_2\left(4;-\frac{17}{4},\frac{1}{4};z\right)=$$

$$\frac{1}{119\,340}\left(e^{-2\sqrt{z}}\left(-4\,e^{2\sqrt{z}}\,\left(512\,z^4+5920\,z^3+21\,960\,z^2-130\,230\,z-29\,835\right)-e^{4\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(1024\,z^{7/2}+11\,008\,z^3+\right.\right.\right.$$

$$14\,400\,z^{5/2}-67\,920\,z^2+26\,400\,z^{3/2}+148\,500\,z-242\,550\,\sqrt{z}+121\,275\left.\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\,z^{3/4}$$

$$\left.\left.\left.\left(1024\,z^{7/2}-11\,008\,z^3+14\,400\,z^{5/2}+67\,920\,z^2+26\,400\,z^{3/2}-148\,500\,z-242\,550\,\sqrt{z}-121\,275\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\right)$$

07.22.03.7153.01

$$ {}_1F_2\left(4; -\frac{17}{4}, \frac{1}{4}; -z\right) = \frac{1}{29\,835}\left(-512\,z^4 + 5920\,z^3 - 21\,960\,z^2 - 130\,230\,z + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left(2\sqrt{z}\,\left(512\,z^3 - 7200\,z^2 + 13\,200\,z + 121\,275\right)\sin\left(2\sqrt{z}\right) - \left(11\,008\,z^3 + 67\,920\,z^2 + 148\,500\,z - 121\,275\right)\cos\left(2\sqrt{z}\right)\right)$$
$$z^{3/4} - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(512\,z^3 - 7200\,z^2 + 13\,200\,z + 121\,275\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.\left.\left(11\,008\,z^3 + 67\,920\,z^2 + 148\,500\,z - 121\,275\right)\sin\left(2\sqrt{z}\right)\right)z^{3/4} + 29\,835\right)$$

07.22.03.7154.01

$$ {}_1F_2\left(4; -\frac{17}{4}, \frac{5}{4}; z\right) =$$
$$\frac{1}{954\,720\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\;\sqrt[4]{z}\,\left(3328\,z^3 - 17\,520\,z^2 - 65\,376\,z + 98\,955\right) - e^{4\sqrt{z}}\;\sqrt{2\pi}\,\left(2048\,z^4 + 13\,824\,z^{7/2} -\right.\right.\right.$$
$$\left.\left.\left.19\,584\,z^3 - 77\,088\,z^{5/2} + 245\,520\,z^2 - 194\,040\,z^{3/2} - 194\,040\,z + 436\,590\,\sqrt{z} - 218\,295\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right) +\right.$$
$$\left.\sqrt{2\pi}\,\left(-2048\,z^4 + 13\,824\,z^{7/2} + 19\,584\,z^3 - 77\,088\,z^{5/2} - 245\,520\,z^2 - 194\,040\,z^{3/2} +\right.\right.$$
$$\left.\left.194\,040\,z + 436\,590\,\sqrt{z} + 218\,295\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.7155.01

$$ {}_1F_2\left(4; -\frac{17}{4}, \frac{5}{4}; -z\right) = \frac{1}{238\,680\sqrt[4]{z}}$$
$$\left(2\sqrt[4]{z}\,\left(3328\,z^3 + 17\,520\,z^2 - 65\,376\,z - 98\,955\right) - \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^4 + 19\,584\,z^3 + 245\,520\,z^2 + 194\,040\,z - 218\,295\right)\right.\right.$$
$$\left.\left.\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(2304\,z^3 + 12\,848\,z^2 - 32\,340\,z - 72\,765\right)\sin\left(2\sqrt{z}\right)\right) -\right.$$
$$\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^4 + 19\,584\,z^3 + 245\,520\,z^2 + 194\,040\,z - 218\,295\right)\sin\left(2\sqrt{z}\right) -\right.$$
$$\left.\left.6\sqrt{z}\,\left(2304\,z^3 + 12\,848\,z^2 - 32\,340\,z - 72\,765\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7156.01

$$ {}_1F_2\left(4; -\frac{17}{4}, \frac{9}{4}; z\right) =$$
$$\frac{1}{1\,527\,552\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\;\sqrt[4]{z}\,\left(1024\,z^4 - 19\,392\,z^3 + 28\,128\,z^2 + 332\,964\,z + 218\,295\right) - e^{4\sqrt{z}}\;\sqrt{2\pi}\right.\right.$$
$$\left(4096\,z^{9/2} + 9216\,z^4 - 76\,032\,z^{7/2} + 111\,936\,z^3 + 155\,232\,z^{5/2} - 776\,160\,z^2 + 1\,164\,240\,z^{3/2} - 873\,180\,z +\right.$$
$$\left.\left.436\,590\,\sqrt{z} - 218\,295\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right) + \sqrt{2\pi}\,\left(4096\,z^{9/2} - 9216\,z^4 - 76\,032\,z^{7/2} - 111\,936\,z^3 +\right.\right.$$
$$\left.\left.\left.155\,232\,z^{5/2} + 776\,160\,z^2 + 1\,164\,240\,z^{3/2} + 873\,180\,z + 436\,590\,\sqrt{z} + 218\,295\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7157.01

$$ {}_1F_2\left(4; -\frac{17}{4}, \frac{9}{4}; -z\right) = \frac{1}{381\,888\, z^{5/4}}\left(2\sqrt[4]{z}\,\left(1024 z^4 + 19\,392 z^3 + 28\,128 z^2 - 332\,964 z + 218\,295\right) - \right.$$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-9216 z^4 + 111\,936 z^3 + 776\,160 z^2 - 873\,180 z + 218\,295\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left. 2\sqrt{z}\,\left(2048 z^4 + 38\,016 z^3 + 77\,616 z^2 - 582\,120 z + 218\,295\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(2048 z^4 + 38\,016 z^3 + 77\,616 z^2 - 582\,120 z + 218\,295\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left. \left. 3\left(3072 z^4 - 37\,312 z^3 - 258\,720 z^2 + 291\,060 z - 72\,765\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7158.01

$$ {}_1F_2\left(4; -\frac{17}{4}, \frac{13}{4}; z\right) = $$
$$ \frac{1}{1\,357\,824 z^{9/4}}\left(e^{-2\sqrt{z}}\left(24 e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(2048 z^4 - 36\,096 z^3 - 197\,216 z^2 - 415\,800 z - 675\,675\right) - e^{4\sqrt{z}}\,\sqrt{2\pi}\right.\right. $$
$$ \left(8192 z^5 - 22\,528 z^{9/2} - 50\,688 z^4 + 426\,624 z^{7/2} - 1\,182\,720 z^3 + 1\,995\,840 z^{5/2} - \right. $$
$$ \left. 2\,661\,120 z^2 + 3\,575\,880 z^{3/2} - 4\,490\,640 z + 4\,054\,050\sqrt{z} - 2\,027\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\,\left(-8192 z^5 - 22\,528 z^{9/2} + 50\,688 z^4 + 426\,624 z^{7/2} + 1\,182\,720 z^3 + 1\,995\,840 z^{5/2} + \right. $$
$$ \left.\left. 2\,661\,120 z^2 + 3\,575\,880 z^{3/2} + 4\,490\,640 z + 4\,054\,050\sqrt{z} + 2\,027\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.7159.01

$$ {}_1F_2\left(4; -\frac{17}{4}, \frac{13}{4}; -z\right) = \frac{1}{339\,456 z^{9/4}}\left(6\sqrt[4]{z}\,\left(2048 z^4 + 36\,096 z^3 - 197\,216 z^2 + 415\,800 z - 675\,675\right) + \right.$$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192 z^5 + 50\,688 z^4 - 1\,182\,720 z^3 + 2\,661\,120 z^2 - 4\,490\,640 z + 2\,027\,025\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$ \left. 22\sqrt{z}\,\left(1024 z^4 + 19\,392 z^3 - 90\,720 z^2 + 162\,540 z - 184\,275\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(22\sqrt{z}\,\left(1024 z^4 + 19\,392 z^3 - 90\,720 z^2 + 162\,540 z - 184\,275\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left. \left. \left(8192 z^5 + 50\,688 z^4 - 1\,182\,720 z^3 + 2\,661\,120 z^2 - 4\,490\,640 z + 2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7160.01

$$ {}_1F_2\left(4; -\frac{17}{4}, \frac{17}{4}; z\right) = \frac{1}{835\,584\, z^{13/4}} \left(e^{-2\sqrt{z}} \left(-8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(4096 z^5 + 152\,832 z^4 + 1\,285\,248 z^3 + 8\,814\,960 z^2 + 40\,540\,500 z + 91\,216\,125\right) - e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(16\,384 z^{11/2} - 135\,168 z^5 + 574\,464 z^{9/2} - 1\,731\,840 z^4 + 4\,561\,920 z^{7/2} - 11\,975\,040 z^3 + 30\,602\,880 z^{5/2} - 69\,355\,440 z^2 + 129\,729\,600 z^{3/2} - 186\,486\,300 z + 182\,432\,250 \sqrt{z} - 91\,216\,125\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(16\,384 z^{11/2} + 135\,168 z^5 + 574\,464 z^{9/2} + 1\,731\,840 z^4 + 4\,561\,920 z^{7/2} + 11\,975\,040 z^3 + 30\,602\,880 z^{5/2} + 69\,355\,440 z^2 + 129\,729\,600 z^{3/2} + 186\,486\,300 z + 182\,432\,250 \sqrt{z} + 91\,216\,125\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7161.01

$$ {}_1F_2\left(4; -\frac{17}{4}, \frac{17}{4}; -z\right) = \frac{1}{208\,896\, z^{13/4}} \left(2\, \sqrt[4]{z}\, \left(-4096 z^5 + 152\,832 z^4 - 1\,285\,248 z^3 + 8\,814\,960 z^2 - 40\,540\,500 z + 91\,216\,125\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(8192 z^5 - 287\,232 z^4 + 2\,280\,960 z^3 - 15\,301\,440 z^2 + 64\,864\,800 z - 91\,216\,125\right) \cos\left(2\sqrt{z}\right) - 33 \left(4096 z^5 - 52\,480 z^4 + 362\,880 z^3 - 2\,101\,680 z^2 + 5\,651\,100 z - 2\,764\,125\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(33 \left(4096 z^5 - 52\,480 z^4 + 362\,880 z^3 - 2\,101\,680 z^2 + 5\,651\,100 z - 2\,764\,125\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(8192 z^5 - 287\,232 z^4 + 2\,280\,960 z^3 - 15\,301\,440 z^2 + 64\,864\,800 z - 91\,216\,125\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7162.01

$$ {}_1F_2\left(4; -\frac{17}{4}, \frac{21}{4}; z\right) = \frac{1}{393\,216\, z^{17/4}} \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(118\,784 z^5 + 5\,768\,448 z^4 + 122\,411\,520 z^3 + 1\,416\,214\,800 z^2 + 7\,881\,073\,200 z + 20\,158\,763\,625\right) - e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(32\,768 z^6 - 466\,944 z^{11/2} + 3\,717\,120 z^5 - 22\,049\,280 z^{9/2} + 108\,345\,600 z^4 - 457\,332\,480 z^{7/2} + 1\,661\,869\,440 z^3 - 5\,124\,319\,200 z^{5/2} + 13\,070\,257\,200 z^2 - 26\,513\,487\,000 z^{3/2} + 40\,135\,095\,000 z - 40\,317\,527\,250 \sqrt{z} + 20\,158\,763\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi}\, \left(32\,768 z^6 + 466\,944 z^{11/2} + 3\,717\,120 z^5 + 22\,049\,280 z^{9/2} + 108\,345\,600 z^4 + 457\,332\,480 z^{7/2} + 1\,661\,869\,440 z^3 + 5\,124\,319\,200 z^{5/2} + 13\,070\,257\,200 z^2 + 26\,513\,487\,000 z^{3/2} + 40\,135\,095\,000 z + 40\,317\,527\,250 \sqrt{z} + 20\,158\,763\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7163.01

$$ {}_1F_2\left(4; -\frac{17}{4}, \frac{21}{4}; -z\right) = $$
$$ \frac{1}{98\,304\, z^{17/4}}\left(2\sqrt[4]{z}\,\left(-118\,784\, z^5 + 5\,768\,448\, z^4 - 122\,411\,520\, z^3 + 1\,416\,214\,800\, z^2 - 7\,881\,073\,200\, z + 20\,158\,763\,625\right) - \right. $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768\, z^6 - 3\,717\,120\, z^5 + 108\,345\,600\, z^4 - 1\,661\,869\,440\, z^3 + \right.\right. $$
$$ \left. 13\,070\,257\,200\, z^2 - 40\,135\,095\,000\, z + 20\,158\,763\,625\right)\cos\left(2\sqrt{z}\right) - $$
$$ \left.\left. 6\sqrt{z}\,\left(77\,824\, z^5 - 3\,674\,880\, z^4 + 76\,222\,080\, z^3 - 854\,053\,200\, z^2 + 4\,418\,914\,500\, z - 6\,719\,587\,875\right)\sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\,\left(77\,824\, z^5 - 3\,674\,880\, z^4 + 76\,222\,080\, z^3 - 854\,053\,200\, z^2 + 4\,418\,914\,500\, z - 6\,719\,587\,875\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + \left(32\,768\, z^6 - 3\,717\,120\, z^5 + 108\,345\,600\, z^4 - 1\,661\,869\,440\, z^3 + \right. $$
$$ \left.\left. 13\,070\,257\,200\, z^2 - 40\,135\,095\,000\, z + 20\,158\,763\,625\right)\sin\left(2\sqrt{z}\right)\right)\Bigg) $$

For fixed z and $a_1 = 4$, $b_1 = -\frac{15}{4}$

07.22.03.7164.01

$$ {}_1F_2\left(4; -\frac{15}{4}, -\frac{13}{4}; z\right) = $$
$$ \frac{1}{6\,081\,075}\left(e^{-2\sqrt{z}}\,\left(256\, e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(64\, z^{3/2} + 1296\, z + 8052\sqrt{z} + 15\,225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{17/4} + 256\sqrt{2\pi}\right.\right. $$
$$ \left(64\, z^{3/2} - 1296\, z + 8052\sqrt{z} - 15\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{17/4} + $$
$$ \left.\left. 5\, e^{2\sqrt{z}}\,\left(131\,072\, z^5 + 1\,376\,256\, z^4 + 147\,456\, z^3 + 161\,280\, z^2 + 399\,168\, z + 1\,216\,215\right)\right)\right) $$

07.22.03.7165.01

$$ {}_1F_2\left(4; -\frac{15}{4}, -\frac{13}{4}; -z\right) = $$
$$ \frac{1}{6\,081\,075}\left(-655\,360\, z^5 + 1024\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16\, z - 2013)\sin\left(2\sqrt{z}\right) - 3\,(432\, z - 5075)\cos\left(2\sqrt{z}\right)\right) z^{17/4} + \right. $$
$$ 1024\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16\, z - 2013)\cos\left(2\sqrt{z}\right) + 3\,(432\, z - 5075)\sin\left(2\sqrt{z}\right)\right) z^{17/4} + $$
$$ \left. 6\,881\,280\, z^4 - 737\,280\, z^3 + 806\,400\, z^2 - 1\,995\,840\, z + 6\,081\,075\right) $$

07.22.03.7166.01

$$ {}_1F_2\left(4; -\frac{15}{4}, -\frac{9}{4}; z\right) = \frac{1}{467\,775}\left(e^{-2\sqrt{z}}\left(-32\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(128\,z^2+2336\,z^{3/2}+12\,600\,z+17\,850\,\sqrt{z}-8925\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}+\right.\right.$$
$$32\,\sqrt{2\pi}\,\left(128\,z^2-2336\,z^{3/2}+12\,600\,z-17\,850\,\sqrt{z}-8925\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}+$$
$$\left.\left.e^{2\sqrt{z}}\,\left(-8192\,z^5-770\,560\,z^4+737\,280\,z^3+161\,280\,z^2+221\,760\,z+467\,775\right)\right)\right)$$

07.22.03.7167.01

$$ {}_1F_2\left(4; -\frac{15}{4}, -\frac{9}{4}; -z\right) = \frac{1}{467\,775}$$
$$\left(8192\,z^5-770\,560\,z^4+128\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2-12\,600\,z-8925\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(1168\,z-8925\right)\sin\left(2\sqrt{z}\right)\right)z^{13/4}-\right.$$
$$128\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2-12\,600\,z-8925\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(1168\,z-8925\right)\cos\left(2\sqrt{z}\right)\right)z^{13/4}-$$
$$\left.737\,280\,z^3+161\,280\,z^2-221\,760\,z+467\,775\right)$$

07.22.03.7168.01

$$ {}_1F_2\left(4; -\frac{15}{4}, -\frac{5}{4}; z\right) = \frac{1}{51\,975}\left(e^{-2\sqrt{z}}\left(4\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^{5/2}+4032\,z^2+17\,136\,z^{3/2}+9996\,z-27\,846\,\sqrt{z}+13\,923\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}+\right.\right.$$
$$4\,\sqrt{2\pi}\,\left(256\,z^{5/2}-4032\,z^2+17\,136\,z^{3/2}-9996\,z-27\,846\,\sqrt{z}-13\,923\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}+$$
$$\left.\left.e^{2\sqrt{z}}\,\left(31\,744\,z^4+51\,264\,z^3+161\,280\,z^2+44\,352\,z+51\,975\right)\right)\right)$$

07.22.03.7169.01

$$ {}_1F_2\left(4; -\frac{15}{4}, -\frac{5}{4}; -z\right) = \frac{1}{51\,975}\left(31\,744\,z^4-51\,264\,z^3-\right.$$
$$16\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(128\,z^2-8568\,z-13\,923\right)\sin\left(2\sqrt{z}\right)-21\left(192\,z^2-476\,z+663\right)\cos\left(2\sqrt{z}\right)\right)z^{9/4}-$$
$$16\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(128\,z^2-8568\,z-13\,923\right)\cos\left(2\sqrt{z}\right)+21\left(192\,z^2-476\,z+663\right)\sin\left(2\sqrt{z}\right)\right)z^{9/4}+$$
$$\left.161\,280\,z^2-44\,352\,z+51\,975\right)$$

07.22.03.7170.01

$$ {}_1F_2\left(4; -\frac{15}{4}, -\frac{1}{4}; z\right) = \frac{1}{20\,790} $$
$$ \left(e^{-2\sqrt{z}} \left(-e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(512 z^3 + 6528 z^{5/2} + 17\,952 z^2 - 15\,912 z^{3/2} - 31\,824 z + 59\,670 \sqrt{z} - 29\,835\right) \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) z^{5/4} + \right.\right. $$
$$ \sqrt{2\pi}\ \left(512 z^3 - 6528 z^{5/2} + 17\,952 z^2 + 15\,912 z^{3/2} - 31\,824 z - 59\,670 \sqrt{z} - 29\,835\right) \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right) z^{5/4} - $$
$$ \left.\left. 2 e^{2\sqrt{z}} \left(512 z^4 + 16\,416 z^3 - 25\,800 z^2 - 44\,352 z - 10\,395\right)\right)\right) $$

07.22.03.7171.01

$$ {}_1F_2\left(4; -\frac{15}{4}, -\frac{1}{4}; -z\right) = \frac{1}{10\,395} \left(-512 z^4 + 16\,416 z^3 + 25\,800 z^2 - \right. $$
$$ 2\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(512 z^3 - 17\,952 z^2 - 31\,824 z + 29\,835\right) \cos\left(2\sqrt{z}\right) + 102\sqrt{z}\ \left(64 z^2 + 156 z + 585\right) \sin\left(2\sqrt{z}\right)\right) z^{5/4} + $$
$$ 2\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(512 z^3 - 17\,952 z^2 - 31\,824 z + 29\,835\right) \sin\left(2\sqrt{z}\right) - 102\sqrt{z}\ \left(64 z^2 + 156 z + 585\right) \cos\left(2\sqrt{z}\right)\right) z^{5/4} - $$
$$ \left. 44\,352 z + 10\,395\right) $$

07.22.03.7172.01

$$ {}_1F_2\left(4; -\frac{15}{4}, \frac{3}{4}; z\right) = $$
$$ \frac{1}{166\,320} \left(e^{-2\sqrt{z}} \left(48 e^{2\sqrt{z}} \left(384 z^3 - 2120 z^2 + 1897 z + 3465\right) + e^{4\sqrt{z}}\ \sqrt{2\pi}\ \sqrt[4]{z}\ \left(1024 z^{7/2} + 9472 z^3 + 7488 z^{5/2} - \right.\right.\right. $$
$$ \left.\left. 50\,544 z^2 + 37\,440 z^{3/2} + 63\,180 z - 122\,850 \sqrt{z} + 61\,425\right) \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) + \sqrt{2\pi}\ \sqrt[4]{z} $$
$$ \left.\left. \left(1024 z^{7/2} - 9472 z^3 + 7488 z^{5/2} + 50\,544 z^2 + 37\,440 z^{3/2} - 63\,180 z - 122\,850 \sqrt{z} - 61\,425\right) \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7173.01

$$ {}_1F_2\left(4; -\frac{15}{4}, \frac{3}{4}; -z\right) = \frac{1}{41\,580} $$
$$ \left(-12 \left(384 z^3 + 2120 z^2 + 1897 z - 3465\right) + \sqrt{\pi}\ \sqrt[4]{z}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\ \left(512 z^3 - 3744 z^2 + 18\,720 z + 61\,425\right) \sin\left(2\sqrt{z}\right) - \right. $$
$$ \left. \left(9472 z^3 + 50\,544 z^2 + 63\,180 z - 61\,425\right) \cos\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\ \sqrt[4]{z}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left. \left(2\sqrt{z}\ \left(512 z^3 - 3744 z^2 + 18\,720 z + 61\,425\right) \cos\left(2\sqrt{z}\right) + \left(9472 z^3 + 50\,544 z^2 + 63\,180 z - 61\,425\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7174.01

$$ {}_1F_2\left(4; -\frac{15}{4}, \frac{7}{4}; z\right) = \frac{1}{443\,520\, z^{3/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(256 z^3 - 3120 z^2 + 20\,004 z + 13\,545\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \left(2048 z^4 + 10\,752 z^{7/2} - 22\,656 z^3 - 33\,120 z^{5/2} + 157\,680 z^2 - 189\,000 z^{3/2} + 37\,800 z + 85\,050 \sqrt{z} - 42\,525\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(-2048 z^4 + 10\,752 z^{7/2} + 22\,656 z^3 - 33\,120 z^{5/2} - 157\,680 z^2 - 189\,000 z^{3/2} - 37\,800 z + 85\,050 \sqrt{z} + 42\,525\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7175.01

$$ {}_1F_2\left(4; -\frac{15}{4}, \frac{7}{4}; -z\right) = \frac{1}{110\,880\, z^{3/4}} \left(-4 z^{3/4} \left(256 z^3 + 3120 z^2 + 20\,004 z - 13\,545\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(2048 z^4 + 22\,656 z^3 + 157\,680 z^2 - 37\,800 z - 42\,525\right) \cos\left(2\sqrt{z}\right) + 6\sqrt{z} \left(1792 z^3 + 5520 z^2 - 31\,500 z - 14\,175\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(2048 z^4 + 22\,656 z^3 + 157\,680 z^2 - 37\,800 z - 42\,525\right) \sin\left(2\sqrt{z}\right) - 6\sqrt{z} \left(1792 z^3 + 5520 z^2 - 31\,500 z - 14\,175\right) \cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7176.01

$$ {}_1F_2\left(4; -\frac{15}{4}, \frac{11}{4}; z\right) = \frac{1}{506\,880\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(256 z^3 + 18\,672 z^2 - 11\,520 z - 51\,975\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \left(4096 z^{9/2} + 3072 z^4 - 57\,600 z^{7/2} + 135\,360 z^3 - 90\,720 z^{5/2} - 151\,200 z^2 + 378\,000 z^{3/2} - 396\,900 z + 311\,850 \sqrt{z} - 155\,925\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(4096 z^{9/2} - 3072 z^4 - 57\,600 z^{7/2} - 135\,360 z^3 - 90\,720 z^{5/2} + 151\,200 z^2 + 378\,000 z^{3/2} + 396\,900 z + 311\,850 \sqrt{z} + 155\,925\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7177.01

$$ {}_1F_2\left(4; -\frac{15}{4}, \frac{11}{4}; -z\right) = \frac{1}{126\,720\, z^{7/4}} \left(4 z^{3/4} \left(256 z^3 - 18\,672 z^2 - 11\,520 z + 51\,975\right) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(2048 z^4 + 28\,800 z^3 - 45\,360 z^2 - 189\,000 z + 155\,925\right) \cos\left(2\sqrt{z}\right) + 3\left(1024 z^4 - 45\,120 z^3 - 50\,400 z^2 + 132\,300 z - 51\,975\right) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(2048 z^4 + 28\,800 z^3 - 45\,360 z^2 - 189\,000 z + 155\,925\right) \sin\left(2\sqrt{z}\right) - 3\left(1024 z^4 - 45\,120 z^3 - 50\,400 z^2 + 132\,300 z - 51\,975\right) \cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7178.01

$$ {}_1F_2\left(4; -\frac{15}{4}, \frac{15}{4}; z\right) = \frac{1}{368\,640\, z^{11/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(1024 z^4 + 6464 z^3 - 69\,408 z^2 - 374\,220 z - 945\,945\right) + \right.\right. $$
$$ e^{4\sqrt{z}}\, \sqrt{2\pi} \left(8192 z^5 - 34\,816 z^{9/2} + 41\,472 z^4 + 104\,832 z^{7/2} - 548\,352 z^3 + 1\,342\,656 z^{5/2} - \right. $$
$$ \left. 2\,600\,640 z^2 + 4\,407\,480 z^{3/2} - 5\,987\,520 z + 5\,675\,670 \sqrt{z} - 2\,837\,835\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi} \left(-8192 z^5 - 34\,816 z^{9/2} - 41\,472 z^4 + 104\,832 z^{7/2} + 548\,352 z^3 + 1\,342\,656 z^{5/2} + 2\,600\,640 z^2 + \right. $$
$$ \left.\left. \left. 4\,407\,480 z^{3/2} + 5\,987\,520 z + 5\,675\,670 \sqrt{z} + 2\,837\,835\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7179.01

$$ {}_1F_2\left(4; -\frac{15}{4}, \frac{15}{4}; -z\right) = \frac{1}{92\,160\, z^{11/4}} \left(4 z^{3/4} \left(1024 z^4 - 6464 z^3 - 69\,408 z^2 + 374\,220 z - 945\,945\right) + \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(8192 z^5 - 41\,472 z^4 - 548\,352 z^3 + 2\,600\,640 z^2 - 5\,987\,520 z + 2\,837\,835\right) \cos\left(2\sqrt{z}\right) - \right. $$
$$ \left. 2\sqrt{z} \left(17\,408 z^4 + 52\,416 z^3 - 671\,328 z^2 + 2\,203\,740 z - 2\,837\,835\right) \sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(17\,408 z^4 + 52\,416 z^3 - 671\,328 z^2 + 2\,203\,740 z - 2\,837\,835\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. \left(8192 z^5 - 41\,472 z^4 - 548\,352 z^3 + 2\,600\,640 z^2 - 5\,987\,520 z + 2\,837\,835\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7180.01

$$ {}_1F_2\left(4; -\frac{15}{4}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{196\,608\, z^{15/4}} \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(20\,480 z^4 + 501\,504 z^3 + 6\,320\,160 z^2 + 46\,486\,440 z + 156\,080\,925\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \right.\right. $$
$$ \left(16\,384 z^{11/2} - 159\,744 z^5 + 881\,664 z^{9/2} - 3\,757\,824 z^4 + 13\,934\,592 z^{7/2} - 46\,085\,760 z^3 + 133\,056\,000 z^{5/2} - \right. $$
$$ \left. 323\,825\,040 z^2 + 635\,675\,040 z^{3/2} - 942\,161\,220 z + 936\,485\,550 \sqrt{z} - 468\,242\,775\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi} \left(16\,384 z^{11/2} + 159\,744 z^5 + 881\,664 z^{9/2} + 3\,757\,824 z^4 + 13\,934\,592 z^{7/2} + 46\,085\,760 z^3 + 133\,056\,000 z^{5/2} + \right. $$
$$ \left.\left. \left. 323\,825\,040 z^2 + 635\,675\,040 z^{3/2} + 942\,161\,220 z + 936\,485\,550 \sqrt{z} + 468\,242\,775\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7181.01

$$ {}_1F_2\left(4;-\frac{15}{4},\frac{19}{4};-z\right)=\frac{1}{49\,152\,z^{15/4}}\left(4\,z^{3/4}\left(20\,480\,z^4-501\,504\,z^3+6\,320\,160\,z^2-46\,486\,440\,z+156\,080\,925\right)+\right.$$
$$\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(8192\,z^5-440\,832\,z^4+6\,967\,296\,z^3-66\,528\,000\,z^2+317\,837\,520\,z-468\,242\,775\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.3\left(-53\,248\,z^5+1\,252\,608\,z^4-15\,361\,920\,z^3+107\,941\,680\,z^2-314\,053\,740\,z+156\,080\,925\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(53\,248\,z^5-1\,252\,608\,z^4+15\,361\,920\,z^3-107\,941\,680\,z^2+314\,053\,740\,z-156\,080\,925\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.2\sqrt{z}\left(8192\,z^5-440\,832\,z^4+6\,967\,296\,z^3-66\,528\,000\,z^2+317\,837\,520\,z-468\,242\,775\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7182.01

$$ {}_1F_2\left(4;-\frac{15}{4},\frac{23}{4};z\right)=\frac{1}{1\,572\,864\,z^{19/4}}$$
$$\left(19\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(4096\,z^5+592\,128\,z^4+21\,732\,480\,z^3+391\,350\,960\,z^2+3\,478\,374\,900\,z+13\,266\,878\,625\right)+\right.\right.$$
$$e^{4\sqrt{z}}\,\sqrt{2\pi}\left(32\,768\,z^6-516\,096\,z^{11/2}+4\,601\,856\,z^5-30\,524\,928\,z^{9/2}+165\,231\,360\,z^4-\right.$$
$$753\,096\,960\,z^{7/2}+2\,901\,951\,360\,z^3-9\,353\,504\,160\,z^{5/2}+24\,655\,110\,480\,z^2-$$
$$\left.51\,194\,543\,400\,z^{3/2}+78\,664\,786\,200\,z-79\,601\,271\,750\sqrt{z}+39\,800\,635\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\sqrt{2\pi}\left(32\,768\,z^6+516\,096\,z^{11/2}+4\,601\,856\,z^5+30\,524\,928\,z^{9/2}+165\,231\,360\,z^4+753\,096\,960\,z^{7/2}+\right.$$
$$2\,901\,951\,360\,z^3+9\,353\,504\,160\,z^{5/2}+24\,655\,110\,480\,z^2+51\,194\,543\,400\,z^{3/2}+$$
$$\left.\left.\left.78\,664\,786\,200\,z+79\,601\,271\,750\sqrt{z}+39\,800\,635\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7183.01

$$ {}_1F_2\left(4;-\frac{15}{4},\frac{23}{4};-z\right)=$$
$$\frac{1}{393\,216\,z^{19/4}}\left(19\left(-4\,z^{3/4}\left(4096\,z^5-592\,128\,z^4+21\,732\,480\,z^3-391\,350\,960\,z^2+3\,478\,374\,900\,z-13\,266\,878\,625\right)-\right.\right.$$
$$\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768\,z^6-4\,601\,856\,z^5+165\,231\,360\,z^4-2\,901\,951\,360\,z^3+\right.\right.$$
$$\left.24\,655\,110\,480\,z^2-78\,664\,786\,200\,z+39\,800\,635\,875\right)\cos\left(2\sqrt{z}\right)-42\sqrt{z}$$
$$\left.\left(12\,288\,z^5-726\,784\,z^4+17\,930\,880\,z^3-222\,702\,480\,z^2+1\,218\,917\,700\,z-1\,895\,268\,375\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(42\sqrt{z}\left(12\,288\,z^5-726\,784\,z^4+17\,930\,880\,z^3-222\,702\,480\,z^2+1\,218\,917\,700\,z-1\,895\,268\,375\right)\right.$$
$$\cos\left(2\sqrt{z}\right)+\left(32\,768\,z^6-4\,601\,856\,z^5+165\,231\,360\,z^4-2\,901\,951\,360\,z^3+\right.$$
$$\left.\left.\left.\left.24\,655\,110\,480\,z^2-78\,664\,786\,200\,z+39\,800\,635\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = -\frac{13}{4}$

07.22.03.7184.01

$$ {}_1F_2\left(4; -\frac{13}{4}, -\frac{11}{4}; z\right) = \frac{1}{405\,405}\left(e^{-2\sqrt{z}}\left(-64\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(64\,z^{3/2}+1200\,z+6852\,\sqrt{z}+11\,799\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+64\,\sqrt{2\pi}\,\left(64\,z^{3/2}-1200\,z+6852\,\sqrt{z}-11\,799\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+e^{2\sqrt{z}}\left(-8192\,z^5-840\,192\,z^4+245\,760\,z^3+115\,200\,z^2+181\,440\,z+405\,405\right)\right)\right) $$

07.22.03.7185.01

$$ {}_1F_2\left(4; -\frac{13}{4}, -\frac{11}{4}; -z\right) = \frac{1}{405\,405}\left(8192\,z^5-840\,192\,z^4-256\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16z-1713)\sin\left(2\sqrt{z}\right)-3\,(400z-3933)\cos\left(2\sqrt{z}\right)\right)z^{15/4}+256\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16z-1713)\cos\left(2\sqrt{z}\right)+3\,(400z-3933)\sin\left(2\sqrt{z}\right)\right)z^{15/4}-245\,760\,z^3+115\,200\,z^2-181\,440\,z+405\,405\right) $$

07.22.03.7186.01

$$ {}_1F_2\left(4; -\frac{13}{4}, -\frac{7}{4}; z\right) = \frac{1}{36\,855}\left(e^{-2\sqrt{z}}\left(8\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(128\,z^2+2144\,z^{3/2}+10\,488\,z+13\,110\,\sqrt{z}-6555\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+8\sqrt{2\pi}\,\left(128\,z^2-2144\,z^{3/2}+10\,488\,z-13\,110\,\sqrt{z}-6555\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+3\,e^{2\sqrt{z}}\left(11\,264\,z^4+57\,920\,z^3+12\,800\,z^2+8640\,z+12\,285\right)\right)\right) $$

07.22.03.7187.01

$$ {}_1F_2\left(4; -\frac{13}{4}, -\frac{7}{4}; -z\right) = \frac{1}{36\,855}\left(-32\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2-10\,488\,z-6555\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(1072z-6555)\sin\left(2\sqrt{z}\right)\right)z^{11/4}-32\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2-10\,488\,z-6555\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,(1072z-6555)\cos\left(2\sqrt{z}\right)\right)z^{11/4}+3\left(11\,264\,z^4-57\,920\,z^3+12\,800\,z^2-8640\,z+12\,285\right)\right) $$

07.22.03.7188.01

$$ {}_1F_2\left(4; -\frac{13}{4}, -\frac{3}{4}; z\right) = \frac{1}{5265}\left(e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\sqrt{2\pi}\left(256z^{5/2}+3648z^2+13\,680z^{3/2}+5700z-18\,810\sqrt{z}+9405\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+\sqrt{2\pi}\left(256z^{5/2}-3648z^2+13\,680z^{3/2}-5700z-18\,810\sqrt{z}-9405\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\left(-512z^4-25\,632z^3+36\,840z^2+8640z+5265\right)\right)\right)$$

07.22.03.7189.01

$$ {}_1F_2\left(4; -\frac{13}{4}, -\frac{3}{4}; -z\right) = \frac{1}{5265}\left(-512z^4+25\,632z^3+36\,840z^2-4\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(128z^2-6840z-9405\right)\cos\left(2\sqrt{z}\right)+57\left(64z^2-100z+165\right)\sin\left(2\sqrt{z}\right)\right)z^{7/4}+4\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(128z^2-6840z-9405\right)\sin\left(2\sqrt{z}\right)-57\left(64z^2-100z+165\right)\cos\left(2\sqrt{z}\right)\right)z^{7/4}-8640z+5265\right)$$

07.22.03.7190.01

$$ {}_1F_2\left(4; -\frac{13}{4}, \frac{1}{4}; z\right) = \frac{1}{14\,040}\left(e^{-2\sqrt{z}}\left(8e^{2\sqrt{z}}\left(1408z^3-4200z^2+8685z+1755\right)+e^{4\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(512z^3+5760z^{5/2}+12\,960z^2-14\,520z^{3/2}-15\,840z+34\,650\sqrt{z}-17\,325\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\,z^{3/4}\left(512z^3-5760z^{5/2}+12\,960z^2+14\,520z^{3/2}-15\,840z-34\,650\sqrt{z}-17\,325\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7191.01

$$ {}_1F_2\left(4; -\frac{13}{4}, \frac{1}{4}; -z\right) = \frac{1}{3510}\left(-2\left(1408z^3+4200z^2+8685z-1755\right)+\sqrt{\pi}\,z^{3/4}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512z^3-12\,960z^2-15\,840z+17\,325\right)\cos\left(2\sqrt{z}\right)+30\sqrt{z}\left(192z^2+484z+1155\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,z^{3/4}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512z^3-12\,960z^2-15\,840z+17\,325\right)\sin\left(2\sqrt{z}\right)-30\sqrt{z}\left(192z^2+484z+1155\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7192.01

$$ {}_1F_2\left(4; -\frac{13}{4}, \frac{5}{4}; z\right) = \frac{1}{112\,320\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(8e^{2\sqrt{z}}\sqrt[4]{z}\left(256z^3+80z^2+11\,124z-10\,215\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(1024z^{7/2}+7936z^3+2112z^{5/2}-34\,320z^2+36\,960z^{3/2}+13\,860z-48\,510\sqrt{z}+24\,255\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(-1024z^{7/2}+7936z^3-2112z^{5/2}-34\,320z^2-36\,960z^{3/2}+13\,860z+48\,510\sqrt{z}+24\,255\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7193.01

$$ {}_1F_2\left(4; -\frac{13}{4}, \frac{5}{4}; -z\right) = \frac{1}{28\,080\,\sqrt[4]{z}} \left(-2\sqrt[4]{z}\,\left(256 z^3 - 80 z^2 + 11\,124 z + 10\,215\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(512 z^3 - 1056 z^2 + 18\,480 z + 24\,255\right)\sin\left(2\sqrt{z}\right) - \left(7936 z^3 + 34\,320 z^2 + 13\,860 z - 24\,255\right)\cos\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(512 z^3 - 1056 z^2 + 18\,480 z + 24\,255\right)\cos\left(2\sqrt{z}\right) + \left(7936 z^3 + 34\,320 z^2 + 13\,860 z - 24\,255\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7194.01

$$ {}_1F_2\left(4; -\frac{13}{4}, \frac{9}{4}; z\right) = \frac{1}{179\,712 z^{5/4}} \left(e^{-2\sqrt{z}}\left(8 e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(1792 z^3 + 1488 z^2 - 33\,984 z - 19\,845\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(2048 z^4 + 7680 z^{7/2} - 22\,656 z^3 - 672 z^{5/2} + 75\,600 z^2 - 123\,480 z^{3/2} + 88\,200 z - 39\,690\sqrt{z} + 19\,845\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\left(2048 z^4 - 7680 z^{7/2} - 22\,656 z^3 + 672 z^{5/2} + 75\,600 z^2 + 123\,480 z^{3/2} + 88\,200 z + 39\,690\sqrt{z} + 19\,845\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7195.01

$$ {}_1F_2\left(4; -\frac{13}{4}, \frac{9}{4}; -z\right) = \frac{1}{44\,928 z^{5/4}} \left(2\sqrt[4]{z}\,\left(1792 z^3 - 1488 z^2 - 33\,984 z + 19\,845\right) - \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048 z^4 + 22\,656 z^3 + 75\,600 z^2 - 88\,200 z + 19\,845\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(1280 z^3 + 112 z^2 - 20\,580 z + 6615\right)\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048 z^4 + 22\,656 z^3 + 75\,600 z^2 - 88\,200 z + 19\,845\right)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(1280 z^3 + 112 z^2 - 20\,580 z + 6615\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7196.01

$$ {}_1F_2\left(4; -\frac{13}{4}, \frac{13}{4}; z\right) = \frac{1}{159\,744 z^{9/4}} \left(e^{-2\sqrt{z}}\left(8 e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(1024 z^4 - 7872 z^3 - 55\,968 z^2 - 102\,060 z - 155\,925\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(4096 z^{9/2} - 3072 z^4 - 33\,024 z^{7/2} + 114\,240 z^3 - 191\,520 z^{5/2} + 231\,840 z^2 - 287\,280 z^{3/2} + 351\,540 z - 311\,850\sqrt{z} + 155\,925\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\left(-4096 z^{9/2} - 3072 z^4 + 33\,024 z^{7/2} + 114\,240 z^3 + 191\,520 z^{5/2} + 231\,840 z^2 + 287\,280 z^{3/2} + 351\,540 z + 311\,850\sqrt{z} + 155\,925\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7197.01

$$ {}_1F_2\left(4; -\frac{13}{4}, \frac{13}{4}; -z\right) = \frac{1}{39\,936\, z^{9/4}}\left(2\sqrt[4]{z}\,\left(1024 z^4 + 7872 z^3 - 55\,968 z^2 + 102\,060 z - 155\,925\right) + \right.$$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(2048 z^4 + 16\,512 z^3 - 95\,760 z^2 + 143\,640 z - 155\,925\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$ \left.\left. 3\left(1024 z^4 + 38\,080 z^3 - 77\,280 z^2 + 117\,180 z - 51\,975\right)\sin\left(2\sqrt{z}\right)\right) - \right.$$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(1024 z^4 + 38\,080 z^3 - 77\,280 z^2 + 117\,180 z - 51\,975\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left.\left. 2\sqrt{z}\,\left(2048 z^4 + 16\,512 z^3 - 95\,760 z^2 + 143\,640 z - 155\,925\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7198.01

$$ {}_1F_2\left(4; -\frac{13}{4}, \frac{17}{4}; z\right) = $$
$$ \frac{1}{98\,304\, z^{13/4}}\left(e^{-2\sqrt{z}}\left(-24\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(4096 z^4 + 33\,536 z^3 + 204\,960 z^2 + 914\,760 z + 2\,027\,025\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\right.\right. $$
$$ \left(8192 z^5 - 47\,104 z^{9/2} + 145\,920 z^4 - 355\,200 z^{7/2} + 860\,160 z^3 - 2\,116\,800 z^{5/2} + \right. $$
$$ \left. 4\,717\,440 z^2 - 8\,731\,800 z^{3/2} + 12\,474\,000 z - 12\,162\,150\sqrt{z} + 6\,081\,075\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\,\left(8192 z^5 + 47\,104 z^{9/2} + 145\,920 z^4 + 355\,200 z^{7/2} + 860\,160 z^3 + 2\,116\,800 z^{5/2} + 4\,717\,440 z^2 + \right. $$
$$ \left.\left.\left. 8\,731\,800 z^{3/2} + 12\,474\,000 z + 12\,162\,150\sqrt{z} + 6\,081\,075\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7199.01

$$ {}_1F_2\left(4; -\frac{13}{4}, \frac{17}{4}; -z\right) = \frac{1}{24\,576\, z^{13/4}}\left(6\sqrt[4]{z}\,\left(4096 z^4 - 33\,536 z^3 + 204\,960 z^2 - 914\,760 z + 2\,027\,025\right) + \right. $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192 z^5 - 145\,920 z^4 + 860\,160 z^3 - 4\,717\,440 z^2 + 12\,474\,000 z - 6\,081\,075\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left. 2\sqrt{z}\,\left(23\,552 z^4 - 177\,600 z^3 + 1\,058\,400 z^2 - 4\,365\,900 z + 6\,081\,075\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(23\,552 z^4 - 177\,600 z^3 + 1\,058\,400 z^2 - 4\,365\,900 z + 6\,081\,075\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. \left(8192 z^5 - 145\,920 z^4 + 860\,160 z^3 - 4\,717\,440 z^2 + 12\,474\,000 z - 6\,081\,075\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7200.01

$$ {}_1F_2\left(4; -\frac{13}{4}, \frac{21}{4}; z\right) = \frac{1}{786\,432\, z^{17/4}} \left(17\, e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(4096 z^5 + 315\,648 z^4 + 7\,056\,000 z^3 + 82\,661\,040 z^2 + 462\,161\,700 z + 1\,185\,809\,625\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(16\,384 z^{11/2} - 184\,320 z^5 + 1\,213\,440 z^{9/2} - 6\,170\,880 z^4 + 26\,403\,840 z^{7/2} - 96\,647\,040 z^3 + 299\,376\,000 z^{5/2} - 765\,903\,600 z^2 + 1\,556\,755\,200 z^{3/2} - 2\,359\,457\,100 z + 2\,371\,619\,250 \sqrt{z} - 1\,185\,809\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi}\, \left(16\,384 z^{11/2} + 184\,320 z^5 + 1\,213\,440 z^{9/2} + 6\,170\,880 z^4 + 26\,403\,840 z^{7/2} + 96\,647\,040 z^3 + 299\,376\,000 z^{5/2} + 765\,903\,600 z^2 + 1\,556\,755\,200 z^{3/2} + 2\,359\,457\,100 z + 2\,371\,619\,250 \sqrt{z} + 1\,185\,809\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7201.01

$$ {}_1F_2\left(4; -\frac{13}{4}, \frac{21}{4}; -z\right) = \frac{1}{196\,608\, z^{17/4}} \left(17 \left(2\, \sqrt[4]{z}\, \left(-4096 z^5 + 315\,648 z^4 - 7\,056\,000 z^3 + 82\,661\,040 z^2 - 462\,161\,700 z + 1\,185\,809\,625\right) + \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(15 \left(12\,288 z^5 - 411\,392 z^4 + 6\,443\,136 z^3 - 51\,060\,240 z^2 + 157\,297\,140 z - 79\,053\,975\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(8192 z^5 - 606\,720 z^4 + 13\,201\,920 z^3 - 149\,688\,000 z^2 + 778\,377\,600 z - 1\,185\,809\,625\right) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(8192 z^5 - 606\,720 z^4 + 13\,201\,920 z^3 - 149\,688\,000 z^2 + 778\,377\,600 z - 1\,185\,809\,625\right) \cos\left(2\sqrt{z}\right) - 15 \left(12\,288 z^5 - 411\,392 z^4 + 6\,443\,136 z^3 - 51\,060\,240 z^2 + 157\,297\,140 z - 79\,053\,975\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 4$, $b_1 = -\frac{11}{4}$

07.22.03.7202.01

$$ {}_1F_2\left(4; -\frac{11}{4}, -\frac{9}{4}; z\right) = \frac{1}{31\,185} \left(e^{-2\sqrt{z}} \left(16\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(64 z^{3/2} + 1104 z + 5748 \sqrt{z} + 8925\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{13/4} + 16 \sqrt{2\pi}\, \left(64 z^{3/2} - 1104 z + 5748 \sqrt{z} - 8925\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{13/4} + e^{2\sqrt{z}}\, \left(34\,816 z^4 + 245\,760 z^3 + 23\,040 z^2 + 20\,160 z + 31\,185\right)\right)\right) $$

07.22.03.7203.01

$$ {}_1F_2\left(4; -\frac{11}{4}, -\frac{9}{4}; -z\right) = \frac{1}{31\,185} \left(34\,816 z^4 - 64 \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left((8925 - 1104 z) \cos\left(2\sqrt{z}\right) + 4\sqrt{z}\, (16 z - 1437) \sin\left(2\sqrt{z}\right)\right) z^{13/4} - 64 \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(4\sqrt{z}\, (16 z - 1437) \cos\left(2\sqrt{z}\right) + 3 (368 z - 2975) \sin\left(2\sqrt{z}\right)\right) z^{13/4} - 245\,760 z^3 + 23\,040 z^2 - 20\,160 z + 31\,185\right) $$

07.22.03.7204.01

$$ {}_1F_2\left(4; -\frac{11}{4}, -\frac{5}{4}; z\right) = \frac{1}{3465} \left(e^{-2\sqrt{z}} \left(-2 e^{4\sqrt{z}} \sqrt{2\pi} \left(128 z^2 + 1952 z^{3/2} + 8568 z + 9282 \sqrt{z} - 4641\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{9/4} + 2\sqrt{2\pi} \left(128 z^2 - 1952 z^{3/2} + 8568 z - 9282 \sqrt{z} - 4641\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{9/4} + e^{2\sqrt{z}} \left(-512 z^4 - 32\,416 z^3 + 23\,040 z^2 + 4032 z + 3465\right)\right)\right) $$

07.22.03.7205.01

$$ {}_1F_2\left(4; -\frac{11}{4}, -\frac{5}{4}; -z\right) = \frac{1}{3465} \left(-512 z^4 + 32\,416 z^3 - 8\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128 z^2 - 8568 z - 4641\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,(976 z - 4641)\sin\left(2\sqrt{z}\right)\right) z^{9/4} + 8\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128 z^2 - 8568 z - 4641\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,(976 z - 4641)\cos\left(2\sqrt{z}\right)\right) z^{9/4} + 23\,040 z^2 - 4032 z + 3465\right) $$

07.22.03.7206.01

$$ {}_1F_2\left(4; -\frac{11}{4}, -\frac{1}{4}; z\right) = \frac{1}{2772} \left(e^{-2\sqrt{z}} \left(e^{4\sqrt{z}} \sqrt{2\pi} \left(256 z^{5/2} + 3264 z^2 + 10\,608 z^{3/2} + 2652 z - 11\,934 \sqrt{z} + 5967\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{5/4} + \sqrt{2\pi} \left(256 z^{5/2} - 3264 z^2 + 10\,608 z^{3/2} - 2652 z - 11\,934 \sqrt{z} - 5967\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{5/4} + 4 e^{2\sqrt{z}} \left(1600 z^3 + 276 z^2 + 4032 z + 693\right)\right)\right) $$

07.22.03.7207.01

$$ {}_1F_2\left(4; -\frac{11}{4}, -\frac{1}{4}; -z\right) = \frac{1}{693} \left(-1600 z^3 + 276 z^2 + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(128 z^2 - 5304 z - 5967\right)\cos\left(2\sqrt{z}\right) + 51\left(64 z^2 - 52 z + 117\right)\sin\left(2\sqrt{z}\right)\right) z^{5/4} + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(128 z^2 - 5304 z - 5967\right)\sin\left(2\sqrt{z}\right) - 51\left(64 z^2 - 52 z + 117\right)\cos\left(2\sqrt{z}\right)\right) z^{5/4} - 4032 z + 693\right) $$

07.22.03.7208.01

$$ {}_1F_2\left(4; -\frac{11}{4}, \frac{3}{4}; z\right) = \frac{1}{22\,176} \left(e^{-2\sqrt{z}} \left(-16 e^{2\sqrt{z}} \left(64 z^3 + 948 z^2 - 237 z - 1386\right) - e^{4\sqrt{z}} \sqrt{2\pi}\, \sqrt[4]{z} \left(512 z^3 + 4992 z^{5/2} + 8736 z^2 - 12\,168 z^{3/2} - 5616 z + 17\,550 \sqrt{z} - 8775\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \sqrt[4]{z} \left(512 z^3 - 4992 z^{5/2} + 8736 z^2 + 12\,168 z^{3/2} - 5616 z - 17\,550 \sqrt{z} - 8775\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7209.01

$$ {}_1F_2\left(4; -\frac{11}{4}, \frac{3}{4}; -z\right) = \frac{1}{5544}\left(4\left(64 z^3 - 948 z^2 - 237 z + 1386\right) + \right.$$
$$ \sqrt{\pi}\ \sqrt[4]{z}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512 z^3 - 8736 z^2 - 5616 z + 8775\right)\cos\left(2\sqrt{z}\right) + 78\sqrt{z}\left(64 z^2 + 156 z + 225\right)\sin\left(2\sqrt{z}\right)\right) - $$
$$ \left.\sqrt{\pi}\ \sqrt[4]{z}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512 z^3 - 8736 z^2 - 5616 z + 8775\right)\sin\left(2\sqrt{z}\right) - 78\sqrt{z}\left(64 z^2 + 156 z + 225\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7210.01

$$ {}_1F_2\left(4; -\frac{11}{4}, \frac{7}{4}; z\right) = \frac{1}{59\,136 z^{3/4}}\left(e^{-2\sqrt{z}}\left(-48 e^{2\sqrt{z}} z^{3/4}\left(256 z^2 - 776 z - 707\right) - \right.\right.$$
$$ e^{4\sqrt{z}}\sqrt{2\pi}\left(1024 z^{7/2} + 6400 z^3 - 1728 z^{5/2} - 20\,016 z^2 + 28\,800 z^{3/2} - 8100 z - 9450\sqrt{z} + 4725\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ \left.\left.\sqrt{2\pi}\left(-1024 z^{7/2} + 6400 z^3 + 1728 z^{5/2} - 20\,016 z^2 - 28\,800 z^{3/2} - 8100 z + 9450\sqrt{z} + 4725\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7211.01

$$ {}_1F_2\left(4; -\frac{11}{4}, \frac{7}{4}; -z\right) = \frac{1}{14\,784 z^{3/4}}\left(-12 z^{3/4}\left(256 z^2 + 776 z - 707\right) + \sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right. $$
$$ \left(\left(-6400 z^3 - 20\,016 z^2 + 8100 z + 4725\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(512 z^3 + 864 z^2 + 14\,400 z + 4725\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi} $$
$$ \left.C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(512 z^3 + 864 z^2 + 14\,400 z + 4725\right)\cos\left(2\sqrt{z}\right) + \left(6400 z^3 + 20\,016 z^2 - 8100 z - 4725\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7212.01

$$ {}_1F_2\left(4; -\frac{11}{4}, \frac{11}{4}; z\right) = $$
$$ \frac{1}{67\,584 z^{7/4}}\left(e^{-2\sqrt{z}}\left(-16 e^{2\sqrt{z}} z^{3/4}\left(256 z^3 - 2544 z^2 + 276 z + 4725\right) - e^{4\sqrt{z}}\sqrt{2\pi}\left(2048 z^4 + 4608 z^{7/2} - 19\,584 z^3 + \right.\right.\right. $$
$$ \left.\left.\left.18\,720 z^{5/2} + 10\,800 z^2 - 37\,800 z^{3/2} + 37\,800 z - 28\,350\sqrt{z} + 14\,175\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\left(2048 z^4 - \right.\right.\right. $$
$$ \left.\left.\left.4608 z^{7/2} - 19\,584 z^3 - 18\,720 z^{5/2} + 10\,800 z^2 + 37\,800 z^{3/2} + 37\,800 z + 28\,350\sqrt{z} + 14\,175\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7213.01

$$ {}_1F_2\left(4; -\frac{11}{4}, \frac{11}{4}; -z\right) = $$
$$ \frac{1}{16\,896 z^{7/4}}\left(-4 z^{3/4}\left(256 z^3 + 2544 z^2 + 276 z - 4725\right) - \sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048 z^4 + 19\,584 z^3 + 10\,800 z^2 - 37\,800 z + 14\,175\right)\right.\right. $$
$$ \left.\cos\left(2\sqrt{z}\right) + 18\sqrt{z}\left(256 z^3 - 1040 z^2 - 2100 z + 1575\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048 z^4 + 19\,584 z^3 + 10\,800 z^2 - 37\,800 z + 14\,175\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.18\sqrt{z}\left(256 z^3 - 1040 z^2 - 2100 z + 1575\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7214.01

$$ {}_1F_2\left(4; -\frac{11}{4}, \frac{15}{4}; z\right) = \frac{1}{49\,152\, z^{11/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(1280 z^3 - 5424 z^2 - 30\,240 z - 72\,765\right) - e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(4096 z^{9/2} - 9216 z^4 - 2304 z^{7/2} + 45\,504 z^3 - 114\,912 z^{5/2} + 211\,680 z^2 - 347\,760 z^{3/2} + 464\,940 z - 436\,590 \sqrt{z} + 218\,295\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(-4096 z^{9/2} - 9216 z^4 + 2304 z^{7/2} + 45\,504 z^3 + 114\,912 z^{5/2} + 211\,680 z^2 + 347\,760 z^{3/2} + 464\,940 z + 436\,590 \sqrt{z} + 218\,295\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7215.01

$$ {}_1F_2\left(4; -\frac{11}{4}, \frac{15}{4}; -z\right) = \frac{1}{12\,288\, z^{11/4}} \left(-4 z^{3/4} \left(1280 z^3 + 5424 z^2 - 30\,240 z + 72\,765\right) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(2048 z^4 + 1152 z^3 - 57\,456 z^2 + 173\,880 z - 218\,295\right) \cos\left(2\sqrt{z}\right) - 9 \left(1024 z^4 + 5056 z^3 - 23\,520 z^2 + 51\,660 z - 24\,255\right) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(9 \left(1024 z^4 + 5056 z^3 - 23\,520 z^2 + 51\,660 z - 24\,255\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(2048 z^4 + 1152 z^3 - 57\,456 z^2 + 173\,880 z - 218\,295\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7216.01

$$ {}_1F_2\left(4; -\frac{11}{4}, \frac{19}{4}; z\right) = -\frac{1}{131\,072\, z^{15/4}} \left(5\, e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(1024 z^4 + 34\,880 z^3 + 429\,408 z^2 + 3\,118\,500 z + 10\,405\,395\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(8192 z^5 - 59\,392 z^{9/2} + 262\,656 z^4 - 959\,616 z^{7/2} + 3\,128\,832 z^3 - 8\,963\,136 z^{5/2} + 21\,712\,320 z^2 - 42\,494\,760 z^{3/2} + 62\,868\,960 z - 62\,432\,370 \sqrt{z} + 31\,216\,185\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi}\, \left(8192 z^5 + 59\,392 z^{9/2} + 262\,656 z^4 + 959\,616 z^{7/2} + 3\,128\,832 z^3 + 8\,963\,136 z^{5/2} + 21\,712\,320 z^2 + 42\,494\,760 z^{3/2} + 62\,868\,960 z + 62\,432\,370 \sqrt{z} + 31\,216\,185\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7217.01

$$ {}_1F_2\left(4; -\frac{11}{4}, \frac{19}{4}; -z\right) = -\frac{1}{32\,768\, z^{15/4}}\left(5\left(-4\, z^{3/4}\left(1024\, z^4 - 34\,880\, z^3 + 429\,408\, z^2 - 3\,118\,500\, z + 10\,405\,395\right) - \right.\right.$$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\, z^5 - 262\,656\, z^4 + 3\,128\,832\, z^3 - 21\,712\,320\, z^2 + 62\,868\,960\, z - 31\,216\,185\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$ \left. 2\sqrt{z}\left(29\,696\, z^4 - 479\,808\, z^3 + 4\,481\,568\, z^2 - 21\,247\,380\, z + 31\,216\,185\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(29\,696\, z^4 - 479\,808\, z^3 + 4\,481\,568\, z^2 - 21\,247\,380\, z + 31\,216\,185\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left.\left.\left.\left(8192\, z^5 - 262\,656\, z^4 + 3\,128\,832\, z^3 - 21\,712\,320\, z^2 + 62\,868\,960\, z - 31\,216\,185\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7218.01

$$ {}_1F_2\left(4; -\frac{11}{4}, \frac{23}{4}; z\right) = $$
$$ -\frac{1}{1\,048\,576\, z^{19/4}}\left(95\, e^{-2\sqrt{z}}\left(-16\, e^{2\sqrt{z}}\, z^{3/4}\left(26\,624\, z^4 + 1\,177\,344\, z^3 + 22\,286\,880\, z^2 + 202\,161\,960\, z + 780\,404\,625\right) + \right.\right. $$
$$ e^{4\sqrt{z}}\sqrt{2\pi}\left(16\,384\, z^{11/2} - 208\,896\, z^5 + 1\,569\,792\, z^{9/2} - 8\,983\,296\, z^4 + 42\,190\,848\, z^{7/2} - \right. $$
$$ 165\,594\,240\, z^3 + 540\,207\,360\, z^{5/2} - 1\,435\,507\,920\, z^2 + 2\,996\,753\,760\, z^{3/2} - $$
$$ \left. 4\,619\,995\,380\, z + 4\,682\,427\,750\sqrt{z} - 2\,341\,213\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi} $$
$$ \left.\left.\left(16\,384\, z^{11/2} + 208\,896\, z^5 + 1\,569\,792\, z^{9/2} + 8\,983\,296\, z^4 + 42\,190\,848\, z^{7/2} + 165\,594\,240\, z^3 + 540\,207\,360\, z^{5/2} + \right.\right.\right. $$
$$ \left.\left.\left. 1\,435\,507\,920\, z^2 + 2\,996\,753\,760\, z^{3/2} + 4\,619\,995\,380\, z + 4\,682\,427\,750\sqrt{z} + 2\,341\,213\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7219.01

$$ {}_1F_2\left(4; -\frac{11}{4}, \frac{23}{4}; -z\right) = $$
$$ \frac{1}{262\,144\, z^{19/4}}\left(95\left(4\, z^{3/4}\left(26\,624\, z^4 - 1\,177\,344\, z^3 + 22\,286\,880\, z^2 - 202\,161\,960\, z + 780\,404\,625\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right. $$
$$ \left(3\left(69\,632\, z^5 - 2\,994\,432\, z^4 + 55\,198\,080\, z^3 - 478\,502\,640\, z^2 + 1\,539\,998\,460\, z - 780\,404\,625\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ 2\sqrt{z}\left(8192\, z^5 - 784\,896\, z^4 + 21\,095\,424\, z^3 - 270\,103\,680\, z^2 + 1\,498\,376\,880\, z - 2\,341\,213\,875\right) $$
$$ \left.\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left(2\sqrt{z}\left(8192\, z^5 - 784\,896\, z^4 + 21\,095\,424\, z^3 - 270\,103\,680\, z^2 + 1\,498\,376\,880\, z - 2\,341\,213\,875\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.\left. 3\left(69\,632\, z^5 - 2\,994\,432\, z^4 + 55\,198\,080\, z^3 - 478\,502\,640\, z^2 + 1\,539\,998\,460\, z - 780\,404\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 4$, $b_1 = -\frac{9}{4}$

07.22.03.7220.01

$${}_1F_2\left(4;-\frac{9}{4},-\frac{7}{4};z\right)=\frac{1}{2835}\left(e^{-2\sqrt{z}}\left(-4\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(64\,z^{3/2}+1008\,z+4740\,\sqrt{z}+6555\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+4\sqrt{2\pi}\right.\right.$$
$$\left.\left.\left(64\,z^{3/2}-1008\,z+4740\,\sqrt{z}-6555\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+e^{2\sqrt{z}}\left(-512\,z^4-36\,000\,z^3+7680\,z^2+2880\,z+2835\right)\right)\right)$$

07.22.03.7221.01

$${}_1F_2\left(4;-\frac{9}{4},-\frac{7}{4};-z\right)=$$
$$\frac{1}{2835}\left(-512\,z^4+36\,000\,z^3+16\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(6555-1008\,z\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(16\,z-1185\right)\sin\left(2\sqrt{z}\right)\right)z^{11/4}-\right.$$
$$\left.16\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(16\,z-1185\right)\cos\left(2\sqrt{z}\right)+3\left(336\,z-2185\right)\sin\left(2\sqrt{z}\right)\right)z^{11/4}+7680\,z^2-2880\,z+2835\right)$$

07.22.03.7222.01

$${}_1F_2\left(4;-\frac{9}{4},-\frac{3}{4};z\right)=\frac{1}{810}\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(128\,z^2+1760\,z^{3/2}+6840\,z+6270\,\sqrt{z}-3135\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+\right.$$
$$\left.\sqrt{2\pi}\,\left(128\,z^2-1760\,z^{3/2}+6840\,z-6270\,\sqrt{z}-3135\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+6\,e^{2\sqrt{z}}\,\left(576\,z^3+1620\,z^2+320\,z+135\right)\right)$$

07.22.03.7223.01

$${}_1F_2\left(4;-\frac{9}{4},-\frac{3}{4};-z\right)=$$
$$\frac{1}{405}\left(-1728\,z^3+4860\,z^2+2\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2-6840\,z-3135\right)\cos\left(2\sqrt{z}\right)+110\sqrt{z}\,\left(16\,z-57\right)\sin\left(2\sqrt{z}\right)\right)z^{7/4}+\right.$$
$$\left.2\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2-6840\,z-3135\right)\sin\left(2\sqrt{z}\right)-110\sqrt{z}\,\left(16\,z-57\right)\cos\left(2\sqrt{z}\right)\right)z^{7/4}-960\,z+405\right)$$

07.22.03.7224.01

$${}_1F_2\left(4;-\frac{9}{4},\frac{1}{4};z\right)=\frac{1}{2160}\left(e^{-2\sqrt{z}}\right.$$
$$\left(-8\,e^{2\sqrt{z}}\,\left(64\,z^3+1812\,z^2-1545\,z-270\right)-e^{4\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(256\,z^{5/2}+2880\,z^2+7920\,z^{3/2}+660\,z-6930\,\sqrt{z}+3465\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\,z^{3/4}\left(256\,z^{5/2}-2880\,z^2+7920\,z^{3/2}-660\,z-6930\,\sqrt{z}-3465\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7225.01

$${}_1F_2\left(4;-\frac{9}{4},\frac{1}{4};-z\right)=\frac{1}{540}\left(128\,z^3-3624\,z^2-3090\,z-\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(128\,z^2-3960\,z-3465\right)\sin\left(2\sqrt{z}\right)-15\left(192\,z^2-44\,z+231\right)\cos\left(2\sqrt{z}\right)\right)z^{3/4}+$$
$$\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(128\,z^2-3960\,z-3465\right)\cos\left(2\sqrt{z}\right)+15\left(192\,z^2-44\,z+231\right)\sin\left(2\sqrt{z}\right)\right)z^{3/4}+540\right)$$

07.22.03.7226.01

$$ {}_1F_2\left(4; -\frac{9}{4}, \frac{5}{4}; z\right) = \frac{1}{17\,280\,\sqrt[4]{z}} \left(e^{-2\sqrt{z}} \left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(1024\,z^2 - 2472\,z + 1305\right) - e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(512\,z^3 + 4224\,z^{5/2} + 5280\,z^2 - 9240\,z^{3/2} + 6930\,\sqrt{z} - 3465\right) \right.\right. $$
$$ \left.\left. \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\,\pi}\,\left(-512\,z^3 + 4224\,z^{5/2} - 5280\,z^2 - 9240\,z^{3/2} + 6930\,\sqrt{z} + 3465\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7227.01

$$ {}_1F_2\left(4; -\frac{9}{4}, \frac{5}{4}; -z\right) = \frac{1}{4320\,\sqrt[4]{z}} \left(-2\,\sqrt[4]{z}\,\left(1024\,z^2 + 2472\,z + 1305\right) + \right. $$
$$ \sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512\,z^3 - 5280\,z^2 + 3465\right)\cos\left(2\,\sqrt{z}\right) + 66\,\sqrt{z}\,\left(64\,z^2 + 140\,z + 105\right)\sin\left(2\,\sqrt{z}\right)\right) + $$
$$ \left. \sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512\,z^3 - 5280\,z^2 + 3465\right)\sin\left(2\,\sqrt{z}\right) - 66\,\sqrt{z}\,\left(64\,z^2 + 140\,z + 105\right)\cos\left(2\,\sqrt{z}\right)\right)\right) $$

07.22.03.7228.01

$$ {}_1F_2\left(4; -\frac{9}{4}, \frac{9}{4}; z\right) = \frac{1}{27\,648\,z^{5/4}} \left(e^{-2\sqrt{z}} \left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(256\,z^3 - 1264\,z^2 + 4356\,z + 2205\right) - \right.\right. $$
$$ e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(1024\,z^{7/2} + 4864\,z^3 - 4032\,z^{5/2} - 8400\,z^2 + 16\,800\,z^{3/2} - 11\,340\,z + 4410\,\sqrt{z} - 2205\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ \left.\left. \sqrt{2\,\pi}\,\left(1024\,z^{7/2} - 4864\,z^3 - 4032\,z^{5/2} + 8400\,z^2 + 16\,800\,z^{3/2} + 11\,340\,z + 4410\,\sqrt{z} + 2205\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7229.01

$$ {}_1F_2\left(4; -\frac{9}{4}, \frac{9}{4}; -z\right) = \frac{1}{6912\,z^{5/4}} \left(-2\,\sqrt[4]{z}\,\left(256\,z^3 + 1264\,z^2 + 4356\,z - 2205\right) + \sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right) \right. $$
$$ \left(2\,\sqrt{z}\,\left(512\,z^3 + 2016\,z^2 + 8400\,z - 2205\right)\sin\left(2\,\sqrt{z}\right) - \left(4864\,z^3 + 8400\,z^2 - 11\,340\,z + 2205\right)\cos\left(2\,\sqrt{z}\right)\right) - $$
$$ \left. \sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\,\left(512\,z^3 + 2016\,z^2 + 8400\,z - 2205\right)\cos\left(2\,\sqrt{z}\right) + \left(4864\,z^3 + 8400\,z^2 - 11\,340\,z + 2205\right)\sin\left(2\,\sqrt{z}\right)\right)\right) $$

07.22.03.7230.01

$$ {}_1F_2\left(4; -\frac{9}{4}, \frac{13}{4}; z\right) = $$
$$ \frac{1}{24\,576\,z^{9/4}} \left(e^{-2\sqrt{z}} \left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(256\,z^3 + 6672\,z^2 + 10\,080\,z + 14\,175\right) - e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(2048\,z^4 + 1536\,z^{7/2} - 13\,440\,z^3 + \right.\right. $$
$$ \left.\left. 23\,520\,z^{5/2} - 25\,200\,z^2 + 27\,720\,z^{3/2} - 32\,760\,z + 28\,350\,\sqrt{z} - 14\,175\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\,\pi}\,\left(-2048\,z^4 + \right. \right. $$
$$ \left.\left. \left. 1536\,z^{7/2} + 13\,440\,z^3 + 23\,520\,z^{5/2} + 25\,200\,z^2 + 27\,720\,z^{3/2} + 32\,760\,z + 28\,350\,\sqrt{z} + 14\,175\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7231.01

$$ {}_1F_2\left(4; -\frac{9}{4}, \frac{13}{4}; -z\right) = \frac{1}{6144\, z^{9/4}} $$
$$ \left(2\sqrt[4]{z}\,\left(256 z^3 - 6672 z^2 + 10\,080 z - 14\,175\right) - \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048 z^4 + 13\,440 z^3 - 25\,200 z^2 + 32\,760 z - 14\,175\right)\right. \right. $$
$$ \left. \cos\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(256 z^3 - 3920 z^2 + 4620 z - 4725\right)\sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048 z^4 + 13\,440 z^3 - 25\,200 z^2 + 32\,760 z - 14\,175\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left. \left. 6\sqrt{z}\,\left(256 z^3 - 3920 z^2 + 4620 z - 4725\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7232.01

$$ {}_1F_2\left(4; -\frac{9}{4}, \frac{17}{4}; z\right) = $$
$$ -\frac{1}{196\,608\, z^{13/4}}\left(13\, e^{-2\sqrt{z}}\left(8\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(1024 z^4 + 9792 z^3 + 50\,400 z^2 + 215\,460 z + 467\,775\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\right.\right. $$
$$ \left(4096 z^{9/2} - 15\,360 z^4 + 34\,560 z^{7/2} - 73\,920 z^3 + 171\,360 z^{5/2} - 372\,960 z^2 + 680\,400 z^{3/2} - 963\,900 z + \right. $$
$$ \left. 935\,550\sqrt{z} - 467\,775\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - \sqrt{2\pi}\,\left(4096 z^{9/2} + 15\,360 z^4 + 34\,560 z^{7/2} + 73\,920 z^3 + \right. $$
$$ \left.\left. \left. 171\,360 z^{5/2} + 372\,960 z^2 + 680\,400 z^{3/2} + 963\,900 z + 935\,550\sqrt{z} + 467\,775\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7233.01

$$ {}_1F_2\left(4; -\frac{9}{4}, \frac{17}{4}; -z\right) = -\frac{1}{49\,152\, z^{13/4}}\left(13\left(-2\sqrt[4]{z}\,\left(1024 z^4 - 9792 z^3 + 50\,400 z^2 - 215\,460 z + 467\,775\right) - \right.\right. $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(2048 z^4 - 17\,280 z^3 + 85\,680 z^2 - 340\,200 z + 467\,775\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left. 15\left(1024 z^4 - 4928 z^3 + 24\,864 z^2 - 64\,260 z + 31\,185\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(1024 z^4 - 4928 z^3 + 24\,864 z^2 - 64\,260 z + 31\,185\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 2\sqrt{z}\,\left(2048 z^4 - 17\,280 z^3 + 85\,680 z^2 - 340\,200 z + 467\,775\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7234.01

$${}_1F_2\left(4; -\frac{9}{4}, \frac{21}{4}; z\right) =$$
$$-\frac{1}{1\,572\,864\, z^{17/4}}\left(221\, e^{-2\sqrt{z}}\left(-24\, e^{2\sqrt{z}}\sqrt[4]{z}\left(6144\, z^4 + 152\,320\, z^3 + 1\,817\,760\, z^2 + 10\,228\,680\, z + 26\,351\,325\right) + \right.\right.$$
$$e^{4\sqrt{z}}\sqrt{2\pi}\left(8192\, z^5 - 71\,680\, z^{9/2} + 391\,680\, z^4 - 1\,714\,560\, z^{7/2} + 6\,343\,680\, z^3 - 19\,776\,960\, z^{5/2} + \right.$$
$$\left.50\,803\,200\, z^2 - 103\,534\,200\, z^{3/2} + 157\,172\,400\, z - 158\,107\,950\sqrt{z} + 79\,053\,975\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) +$$
$$\sqrt{2\pi}\left(8192\, z^5 + 71\,680\, z^{9/2} + 391\,680\, z^4 + 1\,714\,560\, z^{7/2} + 6\,343\,680\, z^3 + 19\,776\,960\, z^{5/2} + \right.$$
$$\left.\left.\left.50\,803\,200\, z^2 + 103\,534\,200\, z^{3/2} + 157\,172\,400\, z + 158\,107\,950\sqrt{z} + 79\,053\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7235.01

$${}_1F_2\left(4; -\frac{9}{4}, \frac{21}{4}; -z\right) =$$
$$\frac{1}{393\,216\, z^{17/4}}\left(221\left(6\sqrt[4]{z}\left(6144\, z^4 - 152\,320\, z^3 + 1\,817\,760\, z^2 - 10\,228\,680\, z + 26\,351\,325\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right.$$
$$\left(\left(8192\, z^5 - 391\,680\, z^4 + 6\,343\,680\, z^3 - 50\,803\,200\, z^2 + 157\,172\,400\, z - 79\,053\,975\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left.10\sqrt{z}\left(7168\, z^4 - 171\,456\, z^3 + 1\,977\,696\, z^2 - 10\,353\,420\, z + 15\,810\,795\right)\sin\left(2\sqrt{z}\right)\right) +$$
$$\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\left(7168\, z^4 - 171\,456\, z^3 + 1\,977\,696\, z^2 - 10\,353\,420\, z + 15\,810\,795\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\left.\left.\left(8192\, z^5 - 391\,680\, z^4 + 6\,343\,680\, z^3 - 50\,803\,200\, z^2 + 157\,172\,400\, z - 79\,053\,975\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = -\frac{7}{4}$

07.22.03.7236.01

$${}_1F_2\left(4; -\frac{7}{4}, -\frac{5}{4}; z\right) = \frac{1}{315}\, e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(64\, z^{3/2} + 912\, z + 3828\sqrt{z} + 4641\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4} + \right.$$
$$\left.\sqrt{2\pi}\left(64\, z^{3/2} - 912\, z + 3828\sqrt{z} - 4641\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4} + e^{2\sqrt{z}}\left(1792\, z^3 + 7680\, z^2 + 576\, z + 315\right)\right)$$

07.22.03.7237.01

$${}_1F_2\left(4; -\frac{7}{4}, -\frac{5}{4}; -z\right) = \frac{1}{315}\left(-1792\, z^3 + 4\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4641 - 912\, z\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(16\, z - 957\right)\sin\left(2\sqrt{z}\right)\right)z^{9/4} + \right.$$
$$\left.4\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(16\, z - 957\right)\cos\left(2\sqrt{z}\right) + 3\left(304\, z - 1547\right)\sin\left(2\sqrt{z}\right)\right)z^{9/4} + 7680\, z^2 - 576\, z + 315\right)$$

07.22.03.7238.01

$${}_1F_2\left(4; -\frac{7}{4}, -\frac{1}{4}; z\right) = \frac{1}{504}\, e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\sqrt{2\pi}\left(128\, z^2 + 1568\, z^{3/2} + 5304\, z + 3978\sqrt{z} - 1989\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4} + \right.$$
$$\left.\sqrt{2\pi}\left(128\, z^2 - 1568\, z^{3/2} + 5304\, z - 3978\sqrt{z} - 1989\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4} - 8\, e^{2\sqrt{z}}\left(32\, z^3 + 1234\, z^2 - 576\, z - 63\right)\right)$$

07.22.03.7239.01

$$ {}_1F_2\left(4; -\frac{7}{4}, -\frac{1}{4}; -z\right) = $$
$$ \frac{1}{126}\left(\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128 z^2 - 5304 z - 1989\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(784 z - 1989\right)\sin\left(2\sqrt{z}\right)\right) z^{5/4} - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right. $$
$$ \left.\left(\left(128 z^2 - 5304 z - 1989\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(784 z - 1989\right)\cos\left(2\sqrt{z}\right)\right) z^{5/4} + 2\left(32 z^3 - 1234 z^2 - 576 z + 63\right)\right) $$

07.22.03.7240.01

$$ {}_1F_2\left(4; -\frac{7}{4}, \frac{3}{4}; z\right) = $$
$$ \frac{1}{4032}\left(e^{-2\sqrt{z}}\left(16 e^{2\sqrt{z}}\left(304 z^2 - 183 z + 252\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\left(256 z^{5/2} + 2496 z^2 + 5616 z^{3/2} - 468 z - 3510\sqrt{z} + 1755\right)\right.\right. $$
$$ \left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\sqrt[4]{z}\left(256 z^{5/2} - 2496 z^2 + 5616 z^{3/2} + 468 z - 3510\sqrt{z} - 1755\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7241.01

$$ {}_1F_2\left(4; -\frac{7}{4}, \frac{3}{4}; -z\right) = \frac{1}{1008}\left(4\left(304 z^2 + 183 z + 252\right) - \right. $$
$$ \sqrt{\pi}\,\sqrt[4]{z}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(128 z^2 - 2808 z - 1755\right)\cos\left(2\sqrt{z}\right) + 39\left(64 z^2 + 12 z + 45\right)\sin\left(2\sqrt{z}\right)\right) - $$
$$ \left.\sqrt{\pi}\,\sqrt[4]{z}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(128 z^2 - 2808 z - 1755\right)\sin\left(2\sqrt{z}\right) - 39\left(64 z^2 + 12 z + 45\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7242.01

$$ {}_1F_2\left(4; -\frac{7}{4}, \frac{7}{4}; z\right) = \frac{1}{10\,752 z^{3/4}}\left(e^{-2\sqrt{z}}\right. $$
$$ \left(16 e^{2\sqrt{z}}\, z^{3/4}\left(64 z^2 + 228 z + 447\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\left(512 z^3 + 3456 z^{5/2} + 2592 z^2 - 6120 z^{3/2} + 2160 z + 1350\sqrt{z} - 675\right)\right. $$
$$ \left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\left(-512 z^3 + 3456 z^{5/2} - 2592 z^2 - 6120 z^{3/2} - 2160 z + 1350\sqrt{z} + 675\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7243.01

$$ {}_1F_2\left(4; -\frac{7}{4}, \frac{7}{4}; -z\right) = \frac{1}{2688 z^{3/4}}\left(4 z^{3/4}\left(64 z^2 - 228 z + 447\right) + \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512 z^3 - 2592 z^2 + 2160 z + 675\right)\cos\left(2\sqrt{z}\right) + 18\sqrt{z}\,\left(192 z^2 + 340 z + 75\right)\sin\left(2\sqrt{z}\right)\right) - $$
$$ \left.\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512 z^3 - 2592 z^2 + 2160 z + 675\right)\sin\left(2\sqrt{z}\right) - 18\sqrt{z}\,\left(192 z^2 + 340 z + 75\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7244.01

$$ {}_1F_2\left(4; -\frac{7}{4}, \frac{11}{4}; z\right) = \frac{1}{12\,288\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(48\, e^{2\sqrt{z}}\, z^{3/4} \left(128\, z^2 + 56\, z - 175\right) + e^{4\sqrt{z}}\, \sqrt{2\,\pi} \left(1024\, z^{7/2} + 3328\, z^3 - 4800\, z^{5/2} - 240\, z^2 + 4800\, z^{3/2} - 4500\, z + 3150\sqrt{z} - 1575\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\,\pi} \left(1024\, z^{7/2} - 3328\, z^3 - 4800\, z^{5/2} + 240\, z^2 + 4800\, z^{3/2} + 4500\, z + 3150\sqrt{z} + 1575\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7245.01

$$ {}_1F_2\left(4; -\frac{7}{4}, \frac{11}{4}; -z\right) = \frac{1}{3072\, z^{7/4}} \left(12\, z^{3/4} \left(-128\, z^2 + 56\, z + 175\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(512\, z^3 + 2400\, z^2 + 2400\, z - 1575\right) \sin\left(2\sqrt{z}\right) - \left(3328\, z^3 + 240\, z^2 - 4500\, z + 1575\right) \cos\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(512\, z^3 + 2400\, z^2 + 2400\, z - 1575\right) \cos\left(2\sqrt{z}\right) + \left(3328\, z^3 + 240\, z^2 - 4500\, z + 1575\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7246.01

$$ {}_1F_2\left(4; -\frac{7}{4}, \frac{15}{4}; z\right) = \frac{1}{98\,304\, z^{11/4}} \left(11\, e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(256\, z^3 - 432\, z^2 - 2940\, z - 6615\right) + e^{4\sqrt{z}}\, \sqrt{2\,\pi} \left(2048\, z^4 - 1536\, z^{7/2} - 4224\, z^3 + 12\,192\, z^{5/2} - 20\,880\, z^2 + 32\,760\, z^{3/2} - 42\,840\, z + 39\,690\sqrt{z} - 19\,845\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\,\pi} \left(-2048\, z^4 - 1536\, z^{7/2} + 4224\, z^3 + 12\,192\, z^{5/2} + 20\,880\, z^2 + 32\,760\, z^{3/2} + 42\,840\, z + 39\,690\sqrt{z} + 19\,845\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7247.01

$$ {}_1F_2\left(4; -\frac{7}{4}, \frac{15}{4}; -z\right) = \frac{1}{24\,576\, z^{11/4}} \left(11 \left(-4\, z^{3/4} \left(256\, z^3 + 432\, z^2 - 2940\, z + 6615\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(2048\, z^4 + 4224\, z^3 - 20\,880\, z^2 + 42\,840\, z - 19\,845\right) \cos\left(2\sqrt{z}\right) - 6\sqrt{z} \left(256\, z^3 + 2032\, z^2 - 5460\, z + 6615\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(6\sqrt{z} \left(256\, z^3 + 2032\, z^2 - 5460\, z + 6615\right) \cos\left(2\sqrt{z}\right) + \left(2048\, z^4 + 4224\, z^3 - 20\,880\, z^2 + 42\,840\, z - 19\,845\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7248.01

$$ {}_1F_2\left(4; -\frac{7}{4}, \frac{19}{4}; z\right) = \frac{1}{262\,144\, z^{15/4}} \left(55\, e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(2816 z^3 + 33\,936 z^2 + 241\,920 z + 800\,415\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(4096 z^{9/2} - 21\,504 z^4 + 77\,568 z^{7/2} - 247\,104 z^3 + 699\,552 z^{5/2} - 1\,683\,360 z^2 + 3\,281\,040 z^{3/2} - 4\,842\,180 z + 4\,802\,490 \sqrt{z} - 2\,401\,245\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(4096 z^{9/2} + 21\,504 z^4 + 77\,568 z^{7/2} + 247\,104 z^3 + 699\,552 z^{5/2} + 1\,683\,360 z^2 + 3\,281\,040 z^{3/2} + 4\,842\,180 z + 4\,802\,490 \sqrt{z} + 2\,401\,245\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7249.01

$$ {}_1F_2\left(4; -\frac{7}{4}, \frac{19}{4}; -z\right) = -\frac{1}{65\,536\, z^{15/4}} \left(55 \left(4 z^{3/4} \left(2816 z^3 - 33\,936 z^2 + 241\,920 z - 800\,415\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(3 \left(7168 z^4 - 82\,368 z^3 + 561\,120 z^2 - 1\,614\,060 z + 800\,415\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(2048 z^4 - 38\,784 z^3 + 349\,776 z^2 - 1\,640\,520 z + 2\,401\,245\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(2048 z^4 - 38\,784 z^3 + 349\,776 z^2 - 1\,640\,520 z + 2\,401\,245\right) \cos\left(2\sqrt{z}\right) - 3 \left(7168 z^4 - 82\,368 z^3 + 561\,120 z^2 - 1\,614\,060 z + 800\,415\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7250.01

$$ {}_1F_2\left(4; -\frac{7}{4}, \frac{23}{4}; z\right) = \frac{1}{2\,097\,152\, z^{19/4}} \left(1045\, e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(1024 z^4 + 69\,440 z^3 + 1\,421\,280 z^2 + 13\,264\,020 z + 52\,026\,975\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(8192 z^5 - 83\,968 z^{9/2} + 532\,992 z^4 - 2\,626\,176 z^{7/2} + 10\,590\,720 z^3 - 35\,138\,880 z^{5/2} + 94\,409\,280 z^2 - 198\,502\,920 z^{3/2} + 307\,359\,360 z - 312\,161\,850 \sqrt{z} + 156\,080\,925\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi}\, \left(8192 z^5 + 83\,968 z^{9/2} + 532\,992 z^4 + 2\,626\,176 z^{7/2} + 10\,590\,720 z^3 + 35\,138\,880 z^{5/2} + 94\,409\,280 z^2 + 198\,502\,920 z^{3/2} + 307\,359\,360 z + 312\,161\,850 \sqrt{z} + 156\,080\,925\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7251.01

$${}_1F_2\left(4;-\frac{7}{4},\frac{23}{4};-z\right)=$$
$$-\frac{1}{524\,288\,z^{19/4}}\left(1045\left(-4\,z^{3/4}\left(1024\,z^4-69\,440\,z^3+1\,421\,280\,z^2-13\,264\,020\,z+52\,026\,975\right)-\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right.$$
$$\left(\left(8192\,z^5-532\,992\,z^4+10\,590\,720\,z^3-94\,409\,280\,z^2+307\,359\,360\,z-156\,080\,925\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(41\,984\,z^4-1\,313\,088\,z^3+17\,569\,440\,z^2-99\,251\,460\,z+156\,080\,925\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(41\,984\,z^4-1\,313\,088\,z^3+17\,569\,440\,z^2-99\,251\,460\,z+156\,080\,925\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(8192\,z^5-532\,992\,z^4+10\,590\,720\,z^3-94\,409\,280\,z^2+307\,359\,360\,z-156\,080\,925\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = -\frac{5}{4}$

07.22.03.7252.01

$${}_1F_2\left(4;-\frac{5}{4},-\frac{3}{4};z\right)=\frac{1}{180}e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\sqrt{2\pi}\left(64\,z^{3/2}+816\,z+3012\sqrt{z}+3135\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+\right.$$
$$\left.\sqrt{2\pi}\left(64\,z^{3/2}-816\,z+3012\sqrt{z}-3135\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-4\,e^{2\sqrt{z}}\left(32\,z^3+1410\,z^2-192\,z-45\right)\right)$$

07.22.03.7253.01

$${}_1F_2\left(4;-\frac{5}{4},-\frac{3}{4};-z\right)=\frac{1}{45}\left(32\,z^3-1410\,z^2-\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((3135-816\,z)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,(16\,z-753)\sin\left(2\sqrt{z}\right)\right)z^{7/4}+\right.$$
$$\left.\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16\,z-753)\cos\left(2\sqrt{z}\right)+3\,(272\,z-1045)\sin\left(2\sqrt{z}\right)\right)z^{7/4}-192\,z+45\right)$$

07.22.03.7254.01

$${}_1F_2\left(4;-\frac{5}{4},\frac{1}{4};z\right)=$$
$$\frac{1}{480}e^{-2\sqrt{z}}\left(24\,e^{2\sqrt{z}}\left(112\,z^2+129\,z+20\right)+e^{4\sqrt{z}}\sqrt{2\pi}\;z^{3/4}\left(128\,z^2+1376\,z^{3/2}+3960\,z+2310\sqrt{z}-1155\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\right.$$
$$\left.\sqrt{2\pi}\;z^{3/4}\left(128\,z^2-1376\,z^{3/2}+3960\,z-2310\sqrt{z}-1155\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)$$

07.22.03.7255.01

$${}_1F_2\left(4;-\frac{5}{4},\frac{1}{4};-z\right)=$$
$$\frac{1}{120}\left(672\,z^2-774\,z-\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2-3960\,z-1155\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(688\,z-1155)\sin\left(2\sqrt{z}\right)\right)z^{3/4}-\right.$$
$$\left.\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2-3960\,z-1155\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,(688\,z-1155)\cos\left(2\sqrt{z}\right)\right)z^{3/4}+120\right)$$

07.22.03.7256.01

$$ {}_1F_2\left(4; -\frac{5}{4}, \frac{5}{4}; z\right) = \frac{1}{3840\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(8e^{2\sqrt{z}}\sqrt[4]{z}\left(64z^2+804z-213\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(256z^{5/2}+2112z^2+3696z^{3/2}-924z-1386\sqrt{z}+693\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(-256z^{5/2}+2112z^2-3696z^{3/2}-924z+1386\sqrt{z}+693\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7257.01

$$ {}_1F_2\left(4; -\frac{5}{4}, \frac{5}{4}; -z\right) = \frac{1}{960\sqrt[4]{z}}\left(2\sqrt[4]{z}\left(64z^2-804z-213\right)+\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(33\left(64z^2+28z+21\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(-128z^2+1848z+693\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(128z^2-1848z-693\right)\cos\left(2\sqrt{z}\right)+33\left(64z^2+28z+21\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7258.01

$$ {}_1F_2\left(4; -\frac{5}{4}, \frac{9}{4}; z\right) = \frac{1}{6144z^{5/4}}\left(e^{-2\sqrt{z}}\right.$$
$$\left(8e^{2\sqrt{z}}\sqrt[4]{z}\left(640z^2-744z-315\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(512z^3+2688z^{5/2}+672z^2-3192z^{3/2}+2016z-630\sqrt{z}+315\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(512z^3-2688z^{5/2}+672z^2+3192z^{3/2}+2016z+630\sqrt{z}+315\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7259.01

$$ {}_1F_2\left(4; -\frac{5}{4}, \frac{9}{4}; -z\right) = \frac{1}{1536z^{5/4}}\left(-2\sqrt[4]{z}\left(640z^2+744z-315\right)+\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512z^3-672z^2+2016z-315\right)\cos\left(2\sqrt{z}\right)+42\sqrt{z}\left(64z^2+76z-15\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512z^3-672z^2+2016z-315\right)\sin\left(2\sqrt{z}\right)-42\sqrt{z}\left(64z^2+76z-15\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7260.01

$$ {}_1F_2\left(4; -\frac{5}{4}, \frac{13}{4}; z\right) = \frac{1}{16384z^{9/4}}\left(3e^{-2\sqrt{z}}\left(8e^{2\sqrt{z}}\sqrt[4]{z}\left(256z^3-1072z^2-1260z-1575\right)+\right.\right.$$
$$e^{4\sqrt{z}}\sqrt{2\pi}\left(1024z^{7/2}+1792z^3-4032z^{5/2}+3696z^2-3360z^{3/2}+3780z-3150\sqrt{z}+1575\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\pi}\left(-1024z^{7/2}+1792z^3+4032z^{5/2}+3696z^2+3360z^{3/2}+3780z+3150\sqrt{z}+1575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7261.01

$${}_1F_2\left(4;-\frac{5}{4},\frac{13}{4};-z\right)=$$
$$-\frac{1}{4096\,z^{9/4}}\left(3\left(2\sqrt[4]{z}\left(256\,z^3+1072\,z^2-1260\,z+1575\right)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(512\,z^3+2016\,z^2-1680\,z+1575\right)\right.\right.\right.$$
$$\left.\cos\left(2\sqrt{z}\right)+7\left(256\,z^3-528\,z^2+540\,z-225\right)\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)$$
$$\left.\left.\left.\left(2\sqrt{z}\left(512\,z^3+2016\,z^2-1680\,z+1575\right)\sin\left(2\sqrt{z}\right)-7\left(256\,z^3-528\,z^2+540\,z-225\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7262.01

$${}_1F_2\left(4;-\frac{5}{4},\frac{17}{4};z\right)=$$
$$\frac{1}{131\,072\,z^{13/4}}\left(39\,e^{-2\sqrt{z}}\left(-40\,e^{2\sqrt{z}}\sqrt[4]{z}\left(256\,z^3+1008\,z^2+4032\,z+8505\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(2048\,z^4-4608\,z^{7/2}+8064\,z^3-\right.\right.\right.$$
$$\left.16\,800\,z^{5/2}+35\,280\,z^2-63\,000\,z^{3/2}+88\,200\,z-85\,050\sqrt{z}+42\,525\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(2048\,z^4+$$
$$\left.\left.4608\,z^{7/2}+8064\,z^3+16\,800\,z^{5/2}+35\,280\,z^2+63\,000\,z^{3/2}+88\,200\,z+85\,050\sqrt{z}+42\,525\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7263.01

$${}_1F_2\left(4;-\frac{5}{4},\frac{17}{4};-z\right)=-\frac{1}{32\,768\,z^{13/4}}$$
$$\left(39\left(10\sqrt[4]{z}\left(256\,z^3-1008\,z^2+4032\,z-8505\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^4-8064\,z^3+35\,280\,z^2-88\,200\,z+42\,525\right)\right.\right.$$
$$\left.\cos\left(2\sqrt{z}\right)+6\sqrt{z}\left(-768\,z^3+2800\,z^2-10\,500\,z+14\,175\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\left(768\,z^3-2800\,z^2+10\,500\,z-14\,175\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(2048\,z^4-8064\,z^3+35\,280\,z^2-88\,200\,z+42\,525\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7264.01

$${}_1F_2\left(4;-\frac{5}{4},\frac{21}{4};z\right)=$$
$$\frac{1}{1\,048\,576\,z^{17/4}}\left(663\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(1024\,z^4+33\,600\,z^3+413\,280\,z^2+2\,347\,380\,z+6\,081\,075\right)+e^{4\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left(4096\,z^{9/2}-27\,648\,z^4+126\,720\,z^{7/2}-477\,120\,z^3+1\,501\,920\,z^{5/2}-3\,880\,800\,z^2+7\,938\,000\,z^{3/2}-12\,077\,100\,z+\right.$$
$$12\,162\,150\sqrt{z}-6\,081\,075\left)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\sqrt{2\pi}\left(4096\,z^{9/2}+27\,648\,z^4+126\,720\,z^{7/2}+477\,120\,z^3+\right.\right.$$
$$\left.\left.\left.1\,501\,920\,z^{5/2}+3\,880\,800\,z^2+7\,938\,000\,z^{3/2}+12\,077\,100\,z+12\,162\,150\sqrt{z}+6\,081\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7265.01

$$ {}_1F_2\left(4; -\frac{5}{4}, \frac{21}{4}; -z\right) = $$
$$ -\frac{1}{262\,144\, z^{17/4}}\left(663\left(-2\sqrt[4]{z}\left(1024 z^4 - 33\,600 z^3 + 413\,280 z^2 - 2\,347\,380 z + 6\,081\,075\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right. $$
$$ \left(3\left(9216 z^4 - 159\,040 z^3 + 1\,293\,600 z^2 - 4\,025\,700 z + 2\,027\,025\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.2\sqrt{z}\left(2048 z^4 - 63\,360 z^3 + 750\,960 z^2 - 3\,969\,000 z + 6\,081\,075\right)\sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2048 z^4 - 63\,360 z^3 + 750\,960 z^2 - 3\,969\,000 z + 6\,081\,075\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.\left.3\left(9216 z^4 - 159\,040 z^3 + 1\,293\,600 z^2 - 4\,025\,700 z + 2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 4$, $b_1 = -\frac{3}{4}$

07.22.03.7266.01

$$ {}_1F_2\left(4; -\frac{3}{4}, -\frac{1}{4}; z\right) = \frac{1}{144} e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(64 z^{3/2} + 720 z + 2292\sqrt{z} + 1989\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} + \right. $$
$$ \left.\sqrt{2\pi}\left(64 z^{3/2} - 720 z + 2292\sqrt{z} - 1989\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} + 16 e^{2\sqrt{z}}\left(88 z^2 + 192 z + 9\right)\right) $$

07.22.03.7267.01

$$ {}_1F_2\left(4; -\frac{3}{4}, -\frac{1}{4}; -z\right) = \frac{1}{36}\left(-\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16 z - 573)\sin\left(2\sqrt{z}\right) - 9(80 z - 221)\cos\left(2\sqrt{z}\right)\right) z^{5/4} - \right. $$
$$ \left.\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16 z - 573)\cos\left(2\sqrt{z}\right) + 9(80 z - 221)\sin\left(2\sqrt{z}\right)\right) z^{5/4} + 4\left(88 z^2 - 192 z + 9\right)\right) $$

07.22.03.7268.01

$$ {}_1F_2\left(4; -\frac{3}{4}, \frac{3}{4}; z\right) = \frac{1}{1152} $$
$$ \left(e^{-2\sqrt{z}}\left(-16 e^{2\sqrt{z}}\left(16 z^2 + 317 z - 72\right) - e^{4\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(128 z^2 + 1184 z^{3/2} + 2808 z + 1170\sqrt{z} - 585\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \right. \right. $$
$$ \left.\left.\sqrt{2\pi}\sqrt[4]{z}\left(128 z^2 - 1184 z^{3/2} + 2808 z - 1170\sqrt{z} - 585\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7269.01

$$ {}_1F_2\left(4; -\frac{3}{4}, \frac{3}{4}; -z\right) = $$
$$ \frac{1}{288}\left(-64 z^2 + 1268 z - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128 z^2 - 2808 z - 585\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,(592 z - 585)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + \right. $$
$$ \left.\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128 z^2 - 2808 z - 585\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,(592 z - 585)\cos\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + 288\right) $$

07.22.03.7270.01

$$ {}_1F_2\left(4; -\frac{3}{4}, \frac{7}{4}; z\right) = \frac{1}{3072\, z^{3/4}} \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} (208\, z - 147) - e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(256\, z^{5/2} + 1728\, z^2 + 2160\, z^{3/2} - 900\, z - 270\, \sqrt{z} + 135\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(-256\, z^{5/2} + 1728\, z^2 - 2160\, z^{3/2} - 900\, z + 270\, \sqrt{z} + 135\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7271.01

$$ {}_1F_2\left(4; -\frac{3}{4}, \frac{7}{4}; -z\right) = \frac{1}{768\, z^{3/4}} \left(4\, z^{3/4} (208\, z + 147) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(9 \left(192\, z^2 + 100\, z + 15\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(-128\, z^2 + 1080\, z + 135\right) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(128\, z^2 - 1080\, z - 135\right) \cos\left(2\sqrt{z}\right) + 9 \left(192\, z^2 + 100\, z + 15\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7272.01

$$ {}_1F_2\left(4; -\frac{3}{4}, \frac{11}{4}; z\right) = -\frac{1}{24\,576\, z^{7/4}} \left(7\, e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(64\, z^2 - 108\, z + 75\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(512\, z^3 + 1920\, z^{5/2} - 480\, z^2 - 840\, z^{3/2} + 720\, z - 450\, \sqrt{z} + 225\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi}\, \left(512\, z^3 - 1920\, z^{5/2} - 480\, z^2 + 840\, z^{3/2} + 720\, z + 450\, \sqrt{z} + 225\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7273.01

$$ {}_1F_2\left(4; -\frac{3}{4}, \frac{11}{4}; -z\right) = \frac{1}{6144\, z^{7/4}} \left(7 \left(4\, z^{3/4} \left(64\, z^2 + 108\, z + 75\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(512\, z^3 + 480\, z^2 + 720\, z - 225\right) \cos\left(2\sqrt{z}\right) + 30\sqrt{z}\, \left(64\, z^2 + 28\, z - 15\right) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(512\, z^3 + 480\, z^2 + 720\, z - 225\right) \sin\left(2\sqrt{z}\right) - 30\sqrt{z}\, \left(64\, z^2 + 28\, z - 15\right) \cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7274.01

$$ {}_1F_2\left(4; -\frac{3}{4}, \frac{15}{4}; z\right) = -\frac{1}{196\,608\, z^{11/4}} \left(77\, e^{-2\sqrt{z}} \left(240\, e^{2\sqrt{z}}\, z^{3/4} (24\, z + 49) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(1024\, z^{7/2} + 256\, z^3 - 1728\, z^{5/2} + 2640\, z^2 - 3840\, z^{3/2} + 4860\, z - 4410\, \sqrt{z} + 2205\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(1024\, z^{7/2} - 256\, z^3 - 1728\, z^{5/2} - 2640\, z^2 - 3840\, z^{3/2} - 4860\, z - 4410\, \sqrt{z} - 2205\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7275.01

$$ {}_1F_2\left(4; -\frac{3}{4}, \frac{15}{4}; -z\right) = $$
$$ \frac{1}{49\,152\, z^{11/4}}\left(77\left(60\, z^{3/4}\,(24\, z-49) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(512\, z^3+864\, z^2-1920\, z+2205\right)\cos\left(2\sqrt{z}\right)+\right.\right.\right. $$
$$ \left.\left.\left.\left(256\, z^3-2640\, z^2+4860\, z-2205\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right. $$
$$ \left.\left.\left(\left(-256\, z^3+2640\, z^2-4860\, z+2205\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(512\, z^3+864\, z^2-1920\, z+2205\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7276.01

$$ {}_1F_2\left(4; -\frac{3}{4}, \frac{19}{4}; z\right) = $$
$$ -\frac{1}{524\,288\, z^{15/4}}\left(385\, e^{-2\sqrt{z}}\left(16\, e^{2\sqrt{z}}\; z^{3/4}\left(256\, z^3+3216\, z^2+22\,260\, z+72\,765\right)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\,\left(2048\, z^4-7680\, z^{7/2}+\right.\right.\right. $$
$$ \left.\left.\left.23\,424\, z^3-64\,992\, z^{5/2}+154\,800\, z^2-299\,880\, z^{3/2}+441\,000\, z-436\,590\sqrt{z}\;+218\,295\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\right. $$
$$ \left.\sqrt{2\,\pi}\,\left(2048\, z^4+7680\, z^{7/2}+23\,424\, z^3+64\,992\, z^{5/2}+154\,800\, z^2+299\,880\, z^{3/2}+\right.\right. $$
$$ \left.\left.441\,000\, z+436\,590\sqrt{z}\;+218\,295\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7277.01

$$ {}_1F_2\left(4; -\frac{3}{4}, \frac{19}{4}; -z\right) = $$
$$ \frac{1}{131\,072\, z^{15/4}}\left(385\left(4\, z^{3/4}\left(-256\, z^3+3216\, z^2-22\,260\, z+72\,765\right)-\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\, z^4-23\,424\, z^3+154\,800\, z^2-\right.\right.\right.\right. $$
$$ \left.\left.\left.\left.441\,000\, z+218\,295\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\,\left(-1280\, z^3+10\,832\, z^2-49\,980\, z+72\,765\right)\sin\left(2\sqrt{z}\right)\right)+\right. $$
$$ \left.\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\,\left(1280\, z^3-10\,832\, z^2+49\,980\, z-72\,765\right)\cos\left(2\sqrt{z}\right)+\right.\right. $$
$$ \left.\left.\left.\left(2048\, z^4-23\,424\, z^3+154\,800\, z^2-441\,000\, z+218\,295\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7278.01

$$ {}_1F_2\left(4; -\frac{3}{4}, \frac{23}{4}; z\right) = $$
$$ -\frac{1}{4\,194\,304\, z^{19/4}}\left(7315\, e^{-2\sqrt{z}}\left(-16\, e^{2\sqrt{z}}\; z^{3/4}\left(4352\, z^3+102\,480\, z^2+997\,920\, z+4\,002\,075\right)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\right.\right. $$
$$ \left(4096\, z^{9/2}-33\,792\, z^4+182\,016\, z^{7/2}-767\,040\, z^3+2\,610\,720\, z^{5/2}-7\,126\,560\, z^2+15\,135\,120\, z^{3/2}-23\,575\,860\, z+\right. $$
$$ \left.24\,012\,450\sqrt{z}\;-12\,006\,225\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(4096\, z^{9/2}+33\,792\, z^4+182\,016\, z^{7/2}+767\,040\, z^3+\right. $$
$$ \left.\left.\left.2\,610\,720\, z^{5/2}+7\,126\,560\, z^2+15\,135\,120\, z^{3/2}+23\,575\,860\, z+24\,012\,450\sqrt{z}\;+12\,006\,225\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7279.01

$$ {}_1F_2\left(4; -\frac{3}{4}, \frac{23}{4}; -z\right) = -\frac{1}{1\,048\,576\, z^{19/4}}\left(7315\left(4\, z^{3/4}\left(4352\, z^3 - 102\,480\, z^2 + 997\,920\, z - 4\,002\,075\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(11\,264\, z^4 - 255\,680\, z^3 + 2\,375\,520\, z^2 - 7\,858\,620\, z + 4\,002\,075\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(2048\, z^4 - 91\,008\, z^3 + 1\,305\,360\, z^2 - 7\,567\,560\, z + 12\,006\,225\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2048\, z^4 - 91\,008\, z^3 + 1\,305\,360\, z^2 - 7\,567\,560\, z + 12\,006\,225\right)\cos\left(2\sqrt{z}\right) - 3\left(11\,264\, z^4 - 255\,680\, z^3 + 2\,375\,520\, z^2 - 7\,858\,620\, z + 4\,002\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 4$, $b_1 = -\frac{1}{4}$

07.22.03.7280.01

$$ {}_1F_2\left(4; -\frac{1}{4}, \frac{1}{4}; z\right) = \frac{1}{192}\, e^{-2\sqrt{z}}\left(-8\, e^{2\sqrt{z}}\left(16\, z^2 + 381\, z - 24\right) - e^{4\sqrt{z}}\sqrt{2\pi}\; z^{3/4}\left(64\, z^{3/2} + 624\, z + 1668\sqrt{z} + 1155\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right) + \sqrt{2\pi}\; z^{3/4}\left(64\, z^{3/2} - 624\, z + 1668\sqrt{z} - 1155\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right) $$

07.22.03.7281.01

$$ {}_1F_2\left(4; -\frac{1}{4}, \frac{1}{4}; -z\right) = \frac{1}{48}\left(-32\, z^2 + 762\, z + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((1155 - 624\, z)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,(16\, z - 417)\sin\left(2\sqrt{z}\right)\right) z^{3/4} - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16\, z - 417)\cos\left(2\sqrt{z}\right) + 3\,(208\, z - 385)\sin\left(2\sqrt{z}\right)\right) z^{3/4} + 48\right) $$

07.22.03.7282.01

$$ {}_1F_2\left(4; -\frac{1}{4}, \frac{5}{4}; z\right) = \frac{1}{1536\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-24\, e^{2\sqrt{z}}\sqrt[4]{z}\,(80\, z + 13) - e^{4\sqrt{z}}\sqrt{2\pi}\left(128\, z^2 + 992\, z^{3/2} + 1848\, z + 462\sqrt{z} - 231\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right) + \sqrt{2\pi}\left(-128\, z^2 + 992\, z^{3/2} - 1848\, z + 462\sqrt{z} + 231\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7283.01

$$ {}_1F_2\left(4; -\frac{1}{4}, \frac{5}{4}; -z\right) = \frac{1}{384\sqrt[4]{z}}\left(6\sqrt[4]{z}\,(80\, z - 13) - \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\, z^2 - 1848\, z - 231\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,(496\, z - 231)\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\, z^2 - 1848\, z - 231\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,(496\, z - 231)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7284.01

$${}_1F_2\left(4;-\frac{1}{4},\frac{9}{4};z\right)=-\frac{1}{12\,288\,z^{5/4}}$$
$$\left(5\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(64\,z^2+180\,z+63\right)+e^{4\sqrt{z}}\sqrt{2\,\pi}\left(256\,z^{5/2}+1344\,z^2+1008\,z^{3/2}-588\,z+126\sqrt{z}-63\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\sqrt{2\,\pi}\left(256\,z^{5/2}-1344\,z^2+1008\,z^{3/2}+588\,z+126\sqrt{z}+63\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7285.01

$${}_1F_2\left(4;-\frac{1}{4},\frac{9}{4};-z\right)=\frac{1}{3072\,z^{5/4}}$$
$$\left(5\left(2\sqrt[4]{z}\left(64\,z^2-180\,z+63\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(128\,z^2-504\,z+63\right)\cos\left(2\sqrt{z}\right)+21\left(64\,z^2+28\,z-3\right)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(21\left(64\,z^2+28\,z-3\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\left(128\,z^2-504\,z+63\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7286.01

$${}_1F_2\left(4;-\frac{1}{4},\frac{13}{4};z\right)=-\frac{1}{32\,768\,z^{9/4}}\left(15\,e^{-2\sqrt{z}}\right.$$
$$\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(256\,z^2+216\,z+225\right)+e^{4\sqrt{z}}\sqrt{2\,\pi}\left(512\,z^3+1152\,z^{5/2}-864\,z^2+552\,z^{3/2}-576\,z+450\sqrt{z}-225\right)\right.$$
$$\left.\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\,\pi}\left(512\,z^3-1152\,z^{5/2}-864\,z^2-552\,z^{3/2}-576\,z-450\sqrt{z}-225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)\right)$$

07.22.03.7287.01

$${}_1F_2\left(4;-\frac{1}{4},\frac{13}{4};-z\right)=\frac{1}{8192\,z^{9/4}}\left(15\left(-2\sqrt[4]{z}\left(256\,z^2-216\,z+225\right)+\right.\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512\,z^3+864\,z^2-576\,z+225\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\left(192\,z^2-92\,z+75\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512\,z^3+864\,z^2-576\,z+225\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\left(192\,z^2-92\,z+75\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7288.01

$${}_1F_2\left(4;-\frac{1}{4},\frac{17}{4};z\right)=-\frac{1}{262\,144\,z^{13/4}}\left(195\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(256\,z^3+656\,z^2+2340\,z+4725\right)+\right.\right.$$
$$e^{4\sqrt{z}}\sqrt{2\,\pi}\left(1024\,z^{7/2}-1280\,z^3+2112\,z^{5/2}-4176\,z^2+7200\,z^{3/2}-9900\,z+9450\sqrt{z}-4725\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.\left.\sqrt{2\,\pi}\left(1024\,z^{7/2}+1280\,z^3+2112\,z^{5/2}+4176\,z^2+7200\,z^{3/2}+9900\,z+9450\sqrt{z}+4725\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7289.01

$$ {}_1F_2\left(4; -\frac{1}{4}, \frac{17}{4}; -z\right) = \frac{1}{65\,536\, z^{13/4}} \left(\left(195\left(2\sqrt[4]{z}\left(-256 z^3 + 656 z^2 - 2340 z + 4725\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(512 z^3 - 1056 z^2 + 3600 z - 4725\right)\cos\left(2\sqrt{z}\right) + \left(-1280 z^3 + 4176 z^2 - 9900 z + 4725\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1280 z^3 - 4176 z^2 + 9900 z - 4725\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(512 z^3 - 1056 z^2 + 3600 z - 4725\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7290.01

$$ {}_1F_2\left(4; -\frac{1}{4}, \frac{21}{4}; z\right) = -\frac{1}{2\,097\,152\, z^{17/4}} \left(3315\, e^{-2\sqrt{z}}\left(-8\, e^{2\sqrt{z}}\sqrt[4]{z}\left(2816 z^3 + 36\,720 z^2 + 211\,680 z + 552\,825\right) + e^{4\sqrt{z}}\sqrt{2\pi}\left(2048 z^4 - 10\,752 z^{7/2} + 41\,856 z^3 - 133\,920 z^{5/2} + 349\,200 z^2 - 718\,200 z^{3/2} + 1\,096\,200 z - 1\,105\,650\sqrt{z} + 552\,825\right)\right.\right. \left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\left(2048 z^4 + 10\,752 z^{7/2} + 41\,856 z^3 + 133\,920 z^{5/2} + 349\,200 z^2 + 718\,200 z^{3/2} + 1\,096\,200 z + 1\,105\,650\sqrt{z} + 552\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7291.01

$$ {}_1F_2\left(4; -\frac{1}{4}, \frac{21}{4}; -z\right) = -\frac{1}{524\,288\, z^{17/4}} \left(3315\left(2\sqrt[4]{z}\left(2816 z^3 - 36\,720 z^2 + 211\,680 z - 552\,825\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048 z^4 - 41\,856 z^3 + 349\,200 z^2 - 1\,096\,200 z + 552\,825\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(-1792 z^3 + 22\,320 z^2 - 119\,700 z + 184\,275\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\left(1792 z^3 - 22\,320 z^2 + 119\,700 z - 184\,275\right)\cos\left(2\sqrt{z}\right) + \left(2048 z^4 - 41\,856 z^3 + 349\,200 z^2 - 1\,096\,200 z + 552\,825\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 4$, $b_1 = \frac{1}{4}$

07.22.03.7292.01

$$ {}_1F_2\left(4; \frac{1}{4}, \frac{3}{4}; z\right) = \frac{1}{768}\, e^{-2\sqrt{z}}\left(256\, e^{2\sqrt{z}}\left(4z + 3\right) + e^{4\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(64 z^{3/2} + 528 z + 1140\sqrt{z} + 585\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\sqrt[4]{z}\left(64 z^{3/2} - 528 z + 1140\sqrt{z} - 585\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right) $$

07.22.03.7293.01

$$ {}_1F_2\left(4;\frac{1}{4},\frac{3}{4};-z\right)=\frac{1}{192}\left(64\,(3-4\,z)+\sqrt{\pi}\,\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((585-528\,z)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,(16\,z-285)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,\sqrt[4]{z}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16\,z-285)\cos\left(2\sqrt{z}\right)+3\,(176\,z-195)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7294.01

$$ {}_1F_2\left(4;\frac{1}{4},\frac{7}{4};z\right)=\frac{1}{2048\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\,(16\,z+113)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\left(128\,z^2+800\,z^{3/2}+1080\,z+90\sqrt{z}-45\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\left(-128\,z^2+800\,z^{3/2}-1080\,z+90\sqrt{z}+45\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7295.01

$$ {}_1F_2\left(4;\frac{1}{4},\frac{7}{4};-z\right)=\frac{1}{512\,z^{3/4}}\left(4\,z^{3/4}\,(113-16\,z)-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2-1080\,z-45\right)\cos\left(2\sqrt{z}\right)+10\sqrt{z}\,(80\,z-9)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2-1080\,z-45\right)\sin\left(2\sqrt{z}\right)-10\sqrt{z}\,(80\,z-9)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7296.01

$$ {}_1F_2\left(4;\frac{1}{4},\frac{11}{4};z\right)=\frac{1}{16\,384\,z^{7/4}}\left(7\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\,(112\,z-15)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\left(256\,z^{5/2}+960\,z^2+240\,z^{3/2}-180\,z+90\sqrt{z}-45\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\left(256\,z^{5/2}-960\,z^2+240\,z^{3/2}+180\,z+90\sqrt{z}+45\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7297.01

$$ {}_1F_2\left(4;\frac{1}{4},\frac{11}{4};-z\right)=-\frac{1}{4096\,z^{7/4}}\left(7\left(-4\,z^{3/4}\,(112\,z+15)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(128\,z^2-120\,z+45\right)\cos\left(2\sqrt{z}\right)+15\left(64\,z^2+12\,z-3\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(128\,z^2-120\,z+45\right)\sin\left(2\sqrt{z}\right)-15\left(64\,z^2+12\,z-3\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7298.01

$$ {}_1F_2\left(4;\frac{1}{4},\frac{15}{4};z\right)=\frac{1}{131\,072\,z^{11/4}}\left(77\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(64\,z^2-60\,z-105\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\left(512\,z^3+384\,z^{5/2}-480\,z^2+600\,z^{3/2}-720\,z+630\sqrt{z}-315\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\left(-512\,z^3+384\,z^{5/2}+480\,z^2+600\,z^{3/2}+720\,z+630\sqrt{z}+315\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7299.01

$$ {}_1F_2\left(4;\frac{1}{4},\frac{15}{4};-z\right)=\frac{1}{32\,768\,z^{11/4}}\left(77\left(4\,z^{3/4}\left(64\,z^2+60\,z-105\right)+\right.\right.$$
$$\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512\,z^3+480\,z^2-720\,z+315\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\,\left(64\,z^2-100\,z+105\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\left.\left.\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512\,z^3+480\,z^2-720\,z+315\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\,\left(64\,z^2-100\,z+105\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7300.01

$$ {}_1F_2\left(4;\frac{1}{4},\frac{19}{4};z\right)=\frac{1}{1\,048\,576\,z^{15/4}}\left(1155\,e^{-2\sqrt{z}}\left(-48\,e^{2\sqrt{z}}\,z^{3/4}\left(128\,z^2+840\,z+2695\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\right.\right.$$
$$\left(1024\,z^{7/2}-2816\,z^3+7488\,z^{5/2}-17\,520\,z^2+33\,600\,z^{3/2}-49\,140\,z+48\,510\,\sqrt{z}-24\,255\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\,\pi}\,\left(1024\,z^{7/2}+2816\,z^3+7488\,z^{5/2}+17\,520\,z^2+33\,600\,z^{3/2}+49\,140\,z+48\,510\,\sqrt{z}+24\,255\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7301.01

$$ {}_1F_2\left(4;\frac{1}{4},\frac{19}{4};-z\right)=\frac{1}{262\,144\,z^{15/4}}$$
$$\left(1155\left(12\,z^{3/4}\left(128\,z^2-840\,z+2695\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(512\,z^3-3744\,z^2+16\,800\,z-24\,255\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left(-2816\,z^3+17\,520\,z^2-49\,140\,z+24\,255\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)$$
$$\left.\left.\left(\left(2816\,z^3-17\,520\,z^2+49\,140\,z-24\,255\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(512\,z^3-3744\,z^2+16\,800\,z-24\,255\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7302.01

$$ {}_1F_2\left(4;\frac{1}{4},\frac{23}{4};z\right)=\frac{1}{8\,388\,608\,z^{19/4}}$$
$$\left(21\,945\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(256\,z^3+8400\,z^2+87\,780\,z+363\,825\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(2048\,z^4-13\,824\,z^{7/2}+63\,360\,z^3-\right.\right.\right.$$
$$\left.\left.225\,120\,z^{5/2}+630\,000\,z^2-1\,358\,280\,z^{3/2}+2\,134\,440\,z-2\,182\,950\,\sqrt{z}+1\,091\,475\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\sqrt{2\,\pi}\,\left(2048\,z^4+13\,824\,z^{7/2}+63\,360\,z^3+225\,120\,z^{5/2}+630\,000\,z^2+1\,358\,280\,z^{3/2}+\right.$$
$$\left.\left.\left.2\,134\,440\,z+2\,182\,950\,\sqrt{z}+1\,091\,475\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7303.01

$${}_1F_2\left(4;\frac{1}{4},\frac{23}{4};-z\right)=$$
$$\frac{1}{2\,097\,152\,z^{19/4}}\left(21\,945\left(-4\,z^{3/4}\left(256\,z^3-8400\,z^2+87\,780\,z-363\,825\right)-\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^4-63\,360\,z^3+630\,000\,z^2-\right.\right.\right.$$
$$\left.\left.\left.2\,134\,440\,z+1\,091\,475\right)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\,\left(2304\,z^3-37\,520\,z^2+226\,380\,z-363\,825\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\,\left(2304\,z^3-37\,520\,z^2+226\,380\,z-363\,825\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(2048\,z^4-63\,360\,z^3+630\,000\,z^2-2\,134\,440\,z+1\,091\,475\right)\sin\left(2\sqrt{z}\right)\right)\right)\Bigg)$$

For fixed z and $a_1 = 4$, $b_1 = \frac{3}{4}$

07.22.03.7304.01

$${}_1F_2\left(4;\frac{3}{4},\frac{5}{4};z\right)=$$
$$\frac{1}{3072\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\;\sqrt[4]{z}\;(16\,z+153)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(64\,z^{3/2}+432\,z+708\sqrt{z}\;+231\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+\sqrt{2\,\pi}\right.\right.$$
$$\left.\left.\left(-64\,z^{3/2}+432\,z-708\sqrt{z}\;+231\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7305.01

$${}_1F_2\left(4;\frac{3}{4},\frac{5}{4};-z\right)=\frac{1}{768\sqrt[4]{z}}\left(2\sqrt[4]{z}\;(153-16\,z)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((231-432\,z)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\;(16\,z-177)\sin\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\;(16\,z-177)\cos\left(2\sqrt{z}\right)+3\,(144\,z-77)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7306.01

$${}_1F_2\left(4;\frac{3}{4},\frac{9}{4};z\right)=$$
$$\frac{1}{24\,576\,z^{5/4}}\left(5\,e^{-2\sqrt{z}}\left(24\,e^{2\sqrt{z}}\;\sqrt[4]{z}\;(48\,z-7)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(128\,z^2+608\,z^{3/2}+504\,z-42\sqrt{z}\;+21\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\,\pi}\;\left(128\,z^2-608\,z^{3/2}+504\,z+42\sqrt{z}\;+21\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7307.01

$${}_1F_2\left(4;\frac{3}{4},\frac{9}{4};-z\right)=$$
$$-\frac{1}{6144\,z^{5/4}}\left(5\left(-6\sqrt[4]{z}\;(48\,z+7)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2-504\,z+21\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;(304\,z+21)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2-504\,z+21\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\;(304\,z+21)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7308.01

$$ {}_1F_2\left(4;\frac{3}{4},\frac{13}{4};z\right)= \frac{1}{65\,536\,z^{9/4}}\left(15\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(64\,z^2-60\,z-45\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(256\,z^{5/2}+576\,z^2-144\,z^{3/2}+132\,z-90\sqrt{z}+45\right)\right.\right. \left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(-256\,z^{5/2}+576\,z^2+144\,z^{3/2}+132\,z+90\sqrt{z}+45\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7309.01

$$ {}_1F_2\left(4;\frac{3}{4},\frac{13}{4};-z\right)= \frac{1}{16\,384\,z^{9/4}}\left(15\left(2\sqrt[4]{z}\left(64\,z^2+60\,z-45\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(192\,z^2-44\,z+15\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\left(128\,z^2+72\,z-45\right)\sin\left(2\sqrt{z}\right)\right)+\right.\right. \left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(128\,z^2+72\,z-45\right)\cos\left(2\sqrt{z}\right)+3\left(192\,z^2-44\,z+15\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7310.01

$$ {}_1F_2\left(4;\frac{3}{4},\frac{17}{4};z\right)= \frac{1}{524\,288\,z^{13/4}}\left(195\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(128\,z^2+360\,z+675\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(512\,z^3-384\,z^{5/2}+672\,z^2-1080\,z^{3/2}+1440\,z-1350\sqrt{z}+675\right)\right.\right. \left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(512\,z^3+384\,z^{5/2}+672\,z^2+1080\,z^{3/2}+1440\,z+1350\sqrt{z}+675\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7311.01

$$ {}_1F_2\left(4;\frac{3}{4},\frac{17}{4};-z\right)= \frac{1}{131\,072\,z^{13/4}}\left(195\left(2\sqrt[4]{z}\left(128\,z^2-360\,z+675\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512\,z^3-672\,z^2+1440\,z-675\right)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\left(64\,z^2-180\,z+225\right)\sin\left(2\sqrt{z}\right)\right)+\right.\right. \left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\left(64\,z^2-180\,z+225\right)\cos\left(2\sqrt{z}\right)+\left(512\,z^3-672\,z^2+1440\,z-675\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7312.01

$$ {}_1F_2\left(4;\frac{3}{4},\frac{21}{4};z\right)= \frac{1}{4\,194\,304\,z^{17/4}}\left(3315\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(256\,z^3+3920\,z^2+23\,220\,z+61\,425\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(1024\,z^{7/2}-4352\,z^3+\right.\right.\right. \left.\left.\left.14\,400\,z^{5/2}-38\,160\,z^2+79\,200\,z^{3/2}-121\,500\,z+122\,850\sqrt{z}-61\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\sqrt{2\pi}\right. \left.\left.\left(1024\,z^{7/2}+4352\,z^3+14\,400\,z^{5/2}+38\,160\,z^2+79\,200\,z^{3/2}+121\,500\,z+122\,850\sqrt{z}+61\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7313.01

$${}_1F_2\left(4;\frac{3}{4},\frac{21}{4};-z\right)=\frac{1}{1\,048\,576\,z^{17/4}}$$
$$\left(3315\left(2\sqrt[4]{z}\,\left(-256z^3+3920z^2-23\,220z+61\,425\right)-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(512z^3-7200z^2+39\,600z-61\,425\right)\right.\right.\right.$$
$$\left.\left.\left.\cos\left(2\sqrt{z}\right)+\left(-4352z^3+38\,160z^2-121\,500z+61\,425\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right.$$
$$\left.\left.\left(\left(4352z^3-38\,160z^2+121\,500z-61\,425\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(512z^3-7200z^2+39\,600z-61\,425\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = \frac{5}{4}$

07.22.03.7314.01

$${}_1F_2\left(4;\frac{5}{4},\frac{7}{4};z\right)=\frac{1}{4096z^{3/4}}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(64z^{3/2}+336z+372\sqrt{z}+45\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\pi}\,\left(64z^{3/2}-336z+372\sqrt{z}-45\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)+640e^{2\sqrt{z}}\,z^{3/4}\right)\right)$$

07.22.03.7315.01

$${}_1F_2\left(4;\frac{5}{4},\frac{7}{4};-z\right)=\frac{1}{1024z^{3/4}}\left(\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((336z-45)\cos\left(2\sqrt{z}\right)+4(93-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16z-93)\cos\left(2\sqrt{z}\right)+3(112z-15)\sin\left(2\sqrt{z}\right)\right)+160z^{3/4}\right)$$

07.22.03.7316.01

$${}_1F_2\left(4;\frac{5}{4},\frac{11}{4};z\right)=$$
$$\frac{1}{32\,768z^{7/4}}\left(7e^{-2\sqrt{z}}\left(16e^{2\sqrt{z}}\,z^{3/4}(16z+5)+e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(128z^2+416z^{3/2}+120z-30\sqrt{z}+15\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.\sqrt{2\pi}\,\left(128z^2-416z^{3/2}+120z+30\sqrt{z}+15\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7317.01

$${}_1F_2\left(4;\frac{5}{4},\frac{11}{4};-z\right)=$$
$$\frac{1}{8192z^{7/4}}\left(7\left(4z^{3/4}(16z-5)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128z^2-120z+15\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(208z+15)\sin\left(2\sqrt{z}\right)\right)-\right.\right.$$
$$\left.\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128z^2-120z+15\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,(208z+15)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7318.01

$$ {}_1F_2\left(4;\frac{5}{4},\frac{15}{4};z\right)=\frac{1}{262\,144\,z^{11/4}}\left(77\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\,(16\,z+21)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(256\,z^{5/2}+192\,z^2-144\,z^{3/2}+156\,z-126\,\sqrt{z}+63\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(256\,z^{5/2}-192\,z^2-144\,z^{3/2}-156\,z-126\,\sqrt{z}-63\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7319.01

$$ {}_1F_2\left(4;\frac{5}{4},\frac{15}{4};-z\right)=\frac{1}{65\,536\,z^{11/4}}\left(77\left(4\,z^{3/4}\,(21-16\,z)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(128\,z^2+72\,z-63\right)\cos\left(2\sqrt{z}\right)+3\left(64\,z^2-52\,z+21\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(128\,z^2+72\,z-63\right)\sin\left(2\sqrt{z}\right)-3\left(64\,z^2-52\,z+21\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7320.01

$$ {}_1F_2\left(4;\frac{5}{4},\frac{19}{4};z\right)=\frac{1}{2\,097\,152\,z^{15/4}}\left(1155\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(64\,z^2+372\,z+1155\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(512\,z^3-1152\,z^{5/2}+2592\,z^2-4872\,z^{3/2}+7056\,z-6930\,\sqrt{z}+3465\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\sqrt{2\,\pi}\,\left(512\,z^3+1152\,z^{5/2}+2592\,z^2+4872\,z^{3/2}+7056\,z+6930\,\sqrt{z}+3465\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7321.01

$$ {}_1F_2\left(4;\frac{5}{4},\frac{19}{4};-z\right)=\frac{1}{524\,288\,z^{15/4}}\left(1155\left(-4\,z^{3/4}\left(64\,z^2-372\,z+1155\right)-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512\,z^3-2592\,z^2+7056\,z-3465\right)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\,\left(192\,z^2-812\,z+1155\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\,\left(192\,z^2-812\,z+1155\right)\cos\left(2\sqrt{z}\right)+\left(512\,z^3-2592\,z^2+7056\,z-3465\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7322.01

$$ {}_1F_2\left(4;\frac{5}{4},\frac{23}{4};z\right)=\frac{1}{16\,777\,216\,z^{19/4}}\left(21\,945\,e^{-2\sqrt{z}}\left(-48\,e^{2\sqrt{z}}\,z^{3/4}\left(256\,z^2+3080\,z+13\,475\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(1024\,z^{7/2}-5888\,z^3+22\,848\,z^{5/2}-66\,864\,z^2+147\,840\,z^{3/2}-235\,620\,z+242\,550\,\sqrt{z}-121\,275\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(1024\,z^{7/2}+5888\,z^3+22\,848\,z^{5/2}+66\,864\,z^2+147\,840\,z^{3/2}+235\,620\,z+242\,550\,\sqrt{z}+121\,275\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7323.01

$${}_1F_2\left(4;\frac{5}{4},\frac{23}{4};-z\right)=$$
$$-\frac{1}{4\,194\,304\,z^{19/4}}\left(21\,945\left(12\,z^{3/4}\left(256\,z^2-3080\,z+13\,475\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\left(512\,z^3-11\,424\,z^2+73\,920\,z-121\,275\right)\right.\right.\right.$$
$$\left.\left.\left.\cos\left(2\sqrt{z}\right)+\left(-5888\,z^3+66\,864\,z^2-235\,620\,z+121\,275\right)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(5888\,z^3-66\,864\,z^2+235\,620\,z-121\,275\right)\cos\left(2\sqrt{z}\right)+\right.\right.\right.$$
$$\left.\left.\left.2\sqrt{z}\;\left(512\,z^3-11\,424\,z^2+73\,920\,z-121\,275\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = \frac{7}{4}$

07.22.03.7324.01

$${}_1F_2\left(4;\frac{7}{4},\frac{9}{4};z\right)=\frac{1}{16\,384\,z^{5/4}}\left(5\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\;\sqrt[4]{z}\;(16\,z+21)+\right.\right.$$
$$\left.\left.e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(64\,z^{3/2}+240\,z+132\sqrt{z}\;-21\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\sqrt{2\,\pi}\;\left(64\,z^{3/2}-240\,z+132\sqrt{z}\;+21\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7325.01

$${}_1F_2\left(4;\frac{7}{4},\frac{9}{4};-z\right)=$$
$$\frac{1}{4096\,z^{5/4}}\left(5\left(2\sqrt[4]{z}\;(16\,z-21)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\,(80\,z+7)\cos\left(2\sqrt{z}\right)+4\,(33-16\,z)\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\right.\right.$$
$$\left.\left.S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\;(16\,z-33)\cos\left(2\sqrt{z}\right)+3\,(80\,z+7)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7326.01

$${}_1F_2\left(4;\frac{7}{4},\frac{13}{4};z\right)=$$
$$\frac{1}{131\,072\,z^{9/4}}\left(45\,e^{-2\sqrt{z}}\left(24\,e^{2\sqrt{z}}\;\sqrt[4]{z}\;(16\,z+5)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(128\,z^2+224\,z^{3/2}-72\,z+30\sqrt{z}\;-15\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\,\pi}\;\left(128\,z^2-224\,z^{3/2}-72\,z-30\sqrt{z}\;-15\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7327.01

$${}_1F_2\left(4;\frac{7}{4},\frac{13}{4};-z\right)=$$
$$\frac{1}{32\,768\,z^{9/4}}\left(45\left(6\sqrt[4]{z}\;(5-16\,z)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2+72\,z-15\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;(112\,z-15)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2+72\,z-15\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\;(112\,z-15)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7328.01

$$ {}_1F_2\left(4;\frac{7}{4},\frac{17}{4};z\right)=\frac{1}{1\,048\,576\,z^{13/4}}\left(585\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(64z^2+84z+135\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(256z^{5/2}-192z^2+240z^{3/2}-300z+270\sqrt{z}-135\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\sqrt{2\pi}\left(256z^{5/2}+192z^2+240z^{3/2}+300z+270\sqrt{z}+135\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7329.01

$$ {}_1F_2\left(4;\frac{7}{4},\frac{17}{4};-z\right)=\frac{1}{262\,144\,z^{13/4}}\left(585\left(-2\sqrt[4]{z}\left(64z^2-84z+135\right)-\right.\right.$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(128z^2-120z+135\right)\cos\left(2\sqrt{z}\right)-3\left(64z^2-100z+45\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(64z^2-100z+45\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(128z^2-120z+135\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7330.01

$$ {}_1F_2\left(4;\frac{7}{4},\frac{21}{4};z\right)=\frac{1}{8\,388\,608\,z^{17/4}}\left(9945\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(512z^2+3240z+8775\right)+\right.\right.$$
$$e^{4\sqrt{z}}\sqrt{2\pi}\left(512z^3-1920z^{5/2}+5280z^2-11\,160z^{3/2}+17\,280z-17\,550\sqrt{z}+8775\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\pi}\left(512z^3+1920z^{5/2}+5280z^2+11\,160z^{3/2}+17\,280z+17\,550\sqrt{z}+8775\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7331.01

$$ {}_1F_2\left(4;\frac{7}{4},\frac{21}{4};-z\right)=-\frac{1}{2\,097\,152\,z^{17/4}}\left(9945\left(2\sqrt[4]{z}\left(512z^2-3240z+8775\right)+\right.\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512z^3-5280z^2+17\,280z-8775\right)\cos\left(2\sqrt{z}\right)-30\sqrt{z}\left(64z^2-372z+585\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(30\sqrt{z}\left(64z^2-372z+585\right)\cos\left(2\sqrt{z}\right)+\left(512z^3-5280z^2+17\,280z-8775\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = \frac{9}{4}$

07.22.03.7332.01

$$ {}_1F_2\left(4;\frac{9}{4},\frac{11}{4};z\right)=\frac{1}{65\,536\,z^{7/4}}\left(35\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(64z^{3/2}+144z-12\sqrt{z}-15\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\pi}\left(64z^{3/2}-144z-12\sqrt{z}+15\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)+256\,e^{2\sqrt{z}}z^{3/4}\right)\right)$$

07.22.03.7333.01

$$ {}_1F_2\left(4;\frac{9}{4},\frac{11}{4};-z\right)=\frac{1}{16\,384\,z^{7/4}}\left(35\left(\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16z+3)\sin\left(2\sqrt{z}\right)-3\,(48z+5)\cos\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16z+3)\cos\left(2\sqrt{z}\right)+3\,(48z+5)\sin\left(2\sqrt{z}\right)\right)-64z^{3/4}\right)\right)$$

07.22.03.7334.01

$$ {}_1F_2\left(4;\frac{9}{4},\frac{15}{4};z\right)= \frac{1}{524\,288\,z^{11/4}}\left(385\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\,(16\,z-7)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(128\,z^2+32\,z^{3/2}-72\,z+42\,\sqrt{z}-21\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+ \sqrt{2\,\pi}\,\left(-128\,z^2+32\,z^{3/2}+72\,z+42\,\sqrt{z}+21\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7335.01

$$ {}_1F_2\left(4;\frac{9}{4},\frac{15}{4};-z\right)= -\frac{1}{131\,072\,z^{11/4}}\left(385\left(4\,z^{3/4}\,(16\,z+7)+\sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2+72\,z-21\right)\cos\left(2\,\sqrt{z}\right)+2\,\sqrt{z}\,(16\,z-21)\sin\left(2\,\sqrt{z}\right)\right)- \sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2+72\,z-21\right)\sin\left(2\,\sqrt{z}\right)-2\,\sqrt{z}\,(16\,z-21)\cos\left(2\,\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7336.01

$$ {}_1F_2\left(4;\frac{9}{4},\frac{19}{4};z\right)= \frac{1}{4\,194\,304\,z^{15/4}}\left(5775\,e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\,(80\,z+231)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(256\,z^{5/2}-576\,z^2+1008\,z^{3/2}-1428\,z+1386\,\sqrt{z}-693\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(256\,z^{5/2}+576\,z^2+1008\,z^{3/2}+1428\,z+1386\,\sqrt{z}+693\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7337.01

$$ {}_1F_2\left(4;\frac{9}{4},\frac{19}{4};-z\right)= -\frac{1}{1\,048\,576\,z^{15/4}}\left(5775\left(4\,z^{3/4}\,(80\,z-231)+\sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(192\,z^2-476\,z+231\right)\cos\left(2\,\sqrt{z}\right)+2\,\sqrt{z}\,\left(128\,z^2-504\,z+693\right)\sin\left(2\,\sqrt{z}\right)\right)+ \sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\,\left(128\,z^2-504\,z+693\right)\cos\left(2\,\sqrt{z}\right)-3\left(192\,z^2-476\,z+231\right)\sin\left(2\,\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7338.01

$$ {}_1F_2\left(4;\frac{9}{4},\frac{23}{4};z\right)= \frac{1}{33\,554\,432\,z^{19/4}}\left(109\,725\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(64\,z^2+1188\,z+5775\right)+ e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(512\,z^3-2688\,z^{5/2}+8736\,z^2-20\,328\,z^{3/2}+33\,264\,z-34\,650\,\sqrt{z}+17\,325\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)- \sqrt{2\,\pi}\,\left(512\,z^3+2688\,z^{5/2}+8736\,z^2+20\,328\,z^{3/2}+33\,264\,z+34\,650\,\sqrt{z}+17\,325\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7339.01

$${}_1F_2\left(4;\frac{9}{4},\frac{23}{4};-z\right)=-\frac{1}{8\,388\,608\,z^{19/4}}\left(109\,725\left(-4\,z^{3/4}\left(64\,z^2-1188\,z+5775\right)-\right.\right.$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(512\,z^3-8736\,z^2+33\,264\,z-17\,325\right)\cos\left(2\sqrt{z}\right)-42\sqrt{z}\,\left(64\,z^2-484\,z+825\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(42\sqrt{z}\,\left(64\,z^2-484\,z+825\right)\cos\left(2\sqrt{z}\right)+\left(512\,z^3-8736\,z^2+33\,264\,z-17\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = \frac{11}{4}$

07.22.03.7340.01

$${}_1F_2\left(4;\frac{11}{4},\frac{13}{4};z\right)=$$
$$\frac{1}{262\,144\,z^{9/4}}\left(315\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(16\,z-15\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(64\,z^{3/2}+48\,z-60\sqrt{z}\,+15\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\,\pi}\,\left(-64\,z^{3/2}+48\,z+60\sqrt{z}\,+15\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7341.01

$${}_1F_2\left(4;\frac{11}{4},\frac{13}{4};-z\right)=$$
$$-\frac{1}{65\,536\,z^{9/4}}\left(315\left(2\,\sqrt[4]{z}\,\left(16\,z+15\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(16\,z+15\right)\cos\left(2\sqrt{z}\right)+3\left(16\,z-5\right)\sin\left(2\sqrt{z}\right)\right)-\right.\right.$$
$$\left.\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(15-48\,z\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(16\,z+15\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7342.01

$${}_1F_2\left(4;\frac{11}{4},\frac{17}{4};z\right)=\frac{1}{2\,097\,152\,z^{13/4}}$$
$$\left(4095\,e^{-2\sqrt{z}}\left(-24\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(16\,z+15\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(128\,z^2-160\,z^{3/2}+120\,z-90\sqrt{z}\,+45\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\,\pi}\,\left(128\,z^2+160\,z^{3/2}+120\,z+90\sqrt{z}\,+45\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7343.01

$${}_1F_2\left(4;\frac{11}{4},\frac{17}{4};-z\right)=$$
$$-\frac{1}{524\,288\,z^{13/4}}\left(4095\left(6\,\sqrt[4]{z}\,\left(16\,z-15\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2-120\,z+45\right)\cos\left(2\sqrt{z}\right)+10\left(9-16\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\,\left(16\,z-9\right)\cos\left(2\sqrt{z}\right)+\left(128\,z^2-120\,z+45\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7344.01

$$ {}_1F_2\left(4;\ \frac{11}{4},\ \frac{21}{4};\ z\right) = \frac{1}{16\,777\,216\,z^{17/4}}\left(69\,615\,e^{-2\sqrt{z}}\right.$$
$$\left(8\,e^{2\sqrt{z}}\ \sqrt[4]{z}\ \left(64\,z^2+612\,z+1755\right)+e^{4\sqrt{z}}\ \sqrt{2\,\pi}\ \left(256\,z^{5/2}-960\,z^2+2160\,z^{3/2}-3420\,z+3510\,\sqrt{z}\ -1755\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)-\sqrt{2\,\pi}\ \left(256\,z^{5/2}+960\,z^2+2160\,z^{3/2}+3420\,z+3510\,\sqrt{z}\ +1755\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.7345.01

$$ {}_1F_2\left(4;\ \frac{11}{4},\ \frac{21}{4};\ -z\right) = -\frac{1}{4\,194\,304\,z^{17/4}}\left(69\,615\left(-2\,\sqrt[4]{z}\ \left(64\,z^2-612\,z+1755\right)-\right.\right.$$
$$\sqrt{\pi}\ S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\ \left(128\,z^2-1080\,z+1755\right)\cos\left(2\,\sqrt{z}\right)-15\left(64\,z^2-228\,z+117\right)\sin\left(2\,\sqrt{z}\right)\right)+$$
$$\left.\left.\sqrt{\pi}\ C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(64\,z^2-228\,z+117\right)\cos\left(2\,\sqrt{z}\right)+2\,\sqrt{z}\ \left(128\,z^2-1080\,z+1755\right)\sin\left(2\,\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = \frac{13}{4}$

07.22.03.7346.01

$$ {}_1F_2\left(4;\ \frac{13}{4},\ \frac{15}{4};\ z\right) = \frac{1}{1\,048\,576\,z^{11/4}}\left(3465\,e^{-2\sqrt{z}}\ \left(e^{4\sqrt{z}}\ \sqrt{2\,\pi}\ \left(64\,z^{3/2}-48\,z-12\,\sqrt{z}\ +21\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\,\pi}\ \left(64\,z^{3/2}+48\,z-12\,\sqrt{z}\ -21\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)-128\,e^{2\sqrt{z}}\ z^{3/4}\right)\right)$$

07.22.03.7347.01

$$ {}_1F_2\left(4;\ \frac{13}{4},\ \frac{15}{4};\ -z\right) =$$
$$-\frac{1}{262\,144\,z^{11/4}}\left(3465\left(\sqrt{\pi}\ S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\,(16\,z+7)\cos\left(2\,\sqrt{z}\right)+4\,\sqrt{z}\ (16\,z+3)\sin\left(2\,\sqrt{z}\right)\right)+\sqrt{\pi}\ C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right.$$
$$\left.\left.\left(4\,\sqrt{z}\ (16\,z+3)\cos\left(2\,\sqrt{z}\right)-3\,(16\,z+7)\sin\left(2\,\sqrt{z}\right)\right)+32\,z^{3/4}\right)\right)$$

07.22.03.7348.01

$$ {}_1F_2\left(4;\ \frac{13}{4},\ \frac{19}{4};\ z\right) = \frac{1}{8\,388\,608\,z^{15/4}}$$
$$\left(51\,975\,e^{-2\sqrt{z}}\ \left(16\,e^{2\sqrt{z}}\ z^{3/4}\,(16\,z+77)+e^{4\sqrt{z}}\ \sqrt{2\,\pi}\ \left(128\,z^2-352\,z^{3/2}+504\,z-462\,\sqrt{z}\ +231\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.\sqrt{2\,\pi}\ \left(128\,z^2+352\,z^{3/2}+504\,z+462\,\sqrt{z}\ +231\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.7349.01

$${}_1F_2\left(4;\frac{13}{4},\frac{19}{4};-z\right)=\frac{1}{2\,097\,152\,z^{15/4}}$$
$$\left(51\,975\left(4\,z^{3/4}\,(16\,z-77)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2-504\,z+231\right)\cos\left(2\sqrt{z}\right)+22\,(21-16\,z)\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(22\sqrt{z}\;(16\,z-21)\cos\left(2\sqrt{z}\right)+\left(128\,z^2-504\,z+231\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7350.01

$${}_1F_2\left(4;\frac{13}{4},\frac{23}{4};z\right)=\frac{1}{67\,108\,864\,z^{19/4}}$$
$$\left(987\,525\,e^{-2\sqrt{z}}\left(-176\,e^{2\sqrt{z}}\;z^{3/4}\,(16\,z+105)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(256\,z^{5/2}-1344\,z^2+3696\,z^{3/2}-6468\,z+6930\sqrt{z}\;-3465\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+\sqrt{2\,\pi}\;\left(256\,z^{5/2}+1344\,z^2+3696\,z^{3/2}+6468\,z+6930\sqrt{z}\;+3465\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7351.01

$${}_1F_2\left(4;\frac{13}{4},\frac{23}{4};-z\right)=\frac{1}{16\,777\,216\,z^{19/4}}\left(987\,525\right.$$
$$\left(44\,z^{3/4}\,(16\,z-105)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\left(128\,z^2-1848\,z+3465\right)\cos\left(2\sqrt{z}\right)-21\left(64\,z^2-308\,z+165\right)\sin\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.\left.\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(21\left(64\,z^2-308\,z+165\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;\left(128\,z^2-1848\,z+3465\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = \frac{15}{4}$

07.22.03.7352.01

$${}_1F_2\left(4;\frac{15}{4},\frac{17}{4};z\right)=$$
$$\frac{1}{4\,194\,304\,z^{13/4}}\left(45\,045\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\;\sqrt[4]{z}\;(16\,z+45)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(64\,z^{3/2}-144\,z+132\sqrt{z}\;-45\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.\sqrt{2\,\pi}\;\left(64\,z^{3/2}+144\,z+132\sqrt{z}\;+45\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7353.01

$${}_1F_2\left(4;\frac{15}{4},\frac{17}{4};-z\right)=$$
$$\frac{1}{1\,048\,576\,z^{13/4}}\left(45\,045\left(2\sqrt[4]{z}\;(16\,z-45)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\;(16\,z-33)\cos\left(2\sqrt{z}\right)+9\,(5-16\,z)\sin\left(2\sqrt{z}\right)\right)-\right.\right.$$
$$\left.\left.\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(9\,(16\,z-5)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\;(16\,z-33)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7354.01

$$ {}_1F_2\left(4;\frac{15}{4},\frac{21}{4};z\right)=\frac{1}{33\,554\,432\,z^{17/4}}\left(765\,765\,e^{-2\sqrt{z}}\left(-72\,e^{2\sqrt{z}}\sqrt[4]{z}\,(16z+65)+e^{4\sqrt{z}}\sqrt{2\pi}\left(128z^2-544z^{3/2}+1080z-1170\sqrt{z}+585\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(128z^2+544z^{3/2}+1080z+1170\sqrt{z}+585\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7355.01

$$ {}_1F_2\left(4;\frac{15}{4},\frac{21}{4};-z\right)=\frac{1}{8\,388\,608\,z^{17/4}}\left(765\,765\left(18\sqrt[4]{z}\,(16z-65)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128z^2-1080z+585\right)\cos\left(2\sqrt{z}\right)+2(585-272z)\sqrt{z}\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,(272z-585)\cos\left(2\sqrt{z}\right)+\left(128z^2-1080z+585\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 4$, $b_1 = \frac{17}{4}$

07.22.03.7356.01

$$ {}_1F_2\left(4;\frac{17}{4},\frac{19}{4};z\right)=\frac{1}{16\,777\,216\,z^{15/4}}\left(675\,675\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(64z^{3/2}-240z+372\sqrt{z}-231\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(64z^{3/2}+240z+372\sqrt{z}+231\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)-512\,e^{2\sqrt{z}}z^{3/4}\right)\right) $$

07.22.03.7357.01

$$ {}_1F_2\left(4;\frac{17}{4},\frac{19}{4};-z\right)=\frac{1}{4\,194\,304\,z^{15/4}}\left(675\,675\left(\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16z-93)\cos\left(2\sqrt{z}\right)+3(77-80z)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3(80z-77)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,(16z-93)\sin\left(2\sqrt{z}\right)\right)+128z^{3/4}\right)\right) $$

07.22.03.7358.01

$$ {}_1F_2\left(4;\frac{17}{4},\frac{23}{4};z\right)=\frac{1}{134\,217\,728\,z^{19/4}}\left(12\,837\,825\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}z^{3/4}(16z+385)+e^{4\sqrt{z}}\sqrt{2\pi}\left(128z^2-736z^{3/2}+1848z-2310\sqrt{z}+1155\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\sqrt{2\pi}\left(128z^2+736z^{3/2}+1848z+2310\sqrt{z}+1155\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7359.01

$${}_1F_2\left(4;\frac{17}{4},\frac{23}{4};-z\right)=\frac{1}{33\,554\,432\,z^{19/4}}$$
$$\left(12\,837\,825\left(4\,z^{3/4}\,(385-16\,z)-\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(128\,z^2-1848\,z+1155\right)\cos\left(2\sqrt{z}\right)+2\,(1155-368\,z)\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;(368\,z-1155)\cos\left(2\sqrt{z}\right)+\left(128\,z^2-1848\,z+1155\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = \frac{19}{4}$

07.22.03.7360.01

$${}_1F_2\left(4;\frac{19}{4},\frac{21}{4};z\right)=$$
$$\frac{1}{67\,108\,864\,z^{17/4}}\left(11\,486\,475\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\;\sqrt[4]{z}\;(16\,z+585)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(64\,z^{3/2}-336\,z+708\sqrt{z}\;-585\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.\sqrt{2\,\pi}\;\left(64\,z^{3/2}+336\,z+708\sqrt{z}\;+585\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7361.01

$${}_1F_2\left(4;\frac{19}{4},\frac{21}{4};-z\right)=\frac{1}{16\,777\,216\,z^{17/4}}$$
$$\left(11\,486\,475\left(2\,\sqrt[4]{z}\;(585-16\,z)-\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\;(16\,z-177)\cos\left(2\sqrt{z}\right)+3\,(195-112\,z)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left((336\,z-585)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\;(16\,z-177)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = \frac{21}{4}$

07.22.03.7362.01

$${}_1F_2\left(4;\frac{21}{4},\frac{23}{4};z\right)=$$
$$\frac{1}{268\,435\,456\,z^{19/4}}\left(218\,243\,025\,e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(64\,z^{3/2}-432\,z+1140\sqrt{z}\;-1155\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+\sqrt{2\,\pi}\right.\right.$$
$$\left.\left.\left(64\,z^{3/2}+432\,z+1140\sqrt{z}\;+1155\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)+3200\,e^{2\sqrt{z}}\;z^{3/4}\right)\right)$$

07.22.03.7363.01

$${}_1F_2\left(4;\frac{21}{4},\frac{23}{4};-z\right)=$$
$$-\frac{1}{67\,108\,864\,z^{19/4}}\left(218\,243\,025\left(\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\;(16\,z-285)\cos\left(2\sqrt{z}\right)+3\,(385-144\,z)\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\,(144\,z-385)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\;(16\,z-285)\sin\left(2\sqrt{z}\right)\right)-800\,z^{3/4}\right)\right)$$

For fixed z and $a_1 = 4$, $b_1 = \frac{23}{4}$

07.22.03.7364.01

$$ {}_1F_2\left(4;\frac{23}{4},\frac{25}{4};z\right) = \frac{1}{1\,073\,741\,824\,z^{21/4}} \left(916\,620\,705\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\,(2128z+9945)+5\,e^{4\sqrt{z}}\sqrt{2\pi}\left(64z^{3/2}-528z+1668\sqrt{z}-1989\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-5\sqrt{2\pi}\left(64z^{3/2}+528z+1668\sqrt{z}+1989\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7365.01

$$ {}_1F_2\left(4;\frac{23}{4},\frac{25}{4};-z\right) = \frac{1}{268\,435\,456\,z^{21/4}} \left(916\,620\,705\left(2\sqrt[4]{z}\,(2128z-9945)+5\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,(16z-417)\cos\left(2\sqrt{z}\right)+3(663-176z)\sin\left(2\sqrt{z}\right)\right)-5\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3(176z-663)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,(16z-417)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 5$, $b_1 \geq -\frac{23}{4}$

For fixed z and $a_1 = 5$, $b_1 = -\frac{23}{4}$

07.22.03.7366.01

$$ {}_1F_2\left(5;-\frac{23}{4},-\frac{21}{4};z\right) = \frac{1}{948\,702\,429\,675}\left(e^{-2\sqrt{z}}\left(4096\,e^{4\sqrt{z}}\sqrt{2\pi}\left(256z^2+9728z^{3/2}+130\,848z+735\,552\sqrt{z}+1\,451\,769\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{25/4}-4096\sqrt{2\pi}\left(256z^2-9728z^{3/2}+130\,848z-735\,552\sqrt{z}+1\,451\,769\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{25/4}+e^{2\sqrt{z}}\left(2\,097\,152z^8+1\,052\,377\,088z^7+10\,569\,646\,080z^6+1\,189\,085\,184z^5+1\,445\,068\,800z^4+4\,470\,681\,600z^3+23\,351\,328\,000z^2+157\,134\,978\,000z+948\,702\,429\,675\right)\right)\right) $$

07.22.03.7367.01

$$ {}_1F_2\left(5;-\frac{23}{4},-\frac{21}{4};-z\right) = \frac{1}{948\,702\,429\,675}\left(2\,097\,152z^8-1\,052\,377\,088z^7+16\,384\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^2-130\,848z+1\,451\,769\right)\cos\left(2\sqrt{z}\right)+64\sqrt{z}\,(152z-11\,493)\sin\left(2\sqrt{z}\right)\right)z^{25/4}-16\,384\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^2-130\,848z+1\,451\,769\right)\sin\left(2\sqrt{z}\right)-64\sqrt{z}\,(152z-11\,493)\cos\left(2\sqrt{z}\right)\right)z^{25/4}+10\,569\,646\,080z^6-1\,189\,085\,184z^5+1\,445\,068\,800z^4-4\,470\,681\,600z^3+23\,351\,328\,000z^2-157\,134\,978\,000z+948\,702\,429\,675\right) $$

07.22.03.7368.01

$$ {}_1F_2\left(5; -\frac{23}{4}, -\frac{17}{4}; z\right) = \frac{1}{45\,176\,306\,175} \left(e^{-2\sqrt{z}} \left(-512\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(512\, z^{5/2} + 18\,176\, z^2 + 225\,344\, z^{3/2} + 1\,133\,088\, z + 1\,770\,450\, \sqrt{z} - 885\,225\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{21/4} - 512\, \sqrt{2\pi}\, \left(512\, z^{5/2} - 18\,176\, z^2 + 225\,344\, z^{3/2} - 1\,133\,088\, z + 1\,770\,450\, \sqrt{z} + 885\,225\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{21/4} + e^{2\sqrt{z}} \left(-18\,481\,152\, z^7 - 1\,105\,960\,960\, z^6 + 1\,189\,085\,184\, z^5 + 289\,013\,760\, z^4 + 496\,742\,400\, z^3 + 1\,796\,256\,000\, z^2 + 9\,243\,234\,000\, z + 45\,176\,306\,175\right)\right)\right) $$

07.22.03.7369.01

$$ {}_1F_2\left(5; -\frac{23}{4}, -\frac{17}{4}; -z\right) = \frac{1}{45\,176\,306\,175} \left(18\,481\,152\, z^7 - 1\,105\,960\,960\, z^6 - 2048\, \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(-18\,176\, z^2 + 1\,133\,088\, z + 885\,225\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(256\, z^2 - 112\,672\, z + 885\,225\right) \sin\left(2\sqrt{z}\right)\right) z^{21/4} - 2048\, \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(256\, z^2 - 112\,672\, z + 885\,225\right) \cos\left(2\sqrt{z}\right) + \left(18\,176\, z^2 - 1\,133\,088\, z - 885\,225\right) \sin\left(2\sqrt{z}\right)\right) z^{21/4} - 1\,189\,085\,184\, z^5 + 289\,013\,760\, z^4 - 496\,742\,400\, z^3 + 1\,796\,256\,000\, z^2 - 9\,243\,234\,000\, z + 45\,176\,306\,175\right) $$

07.22.03.7370.01

$$ {}_1F_2\left(5; -\frac{23}{4}, -\frac{13}{4}; z\right) = \frac{1}{2\,657\,429\,775} \left(e^{-2\sqrt{z}} \left(64\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(1024\, z^3 + 33\,280\, z^{5/2} + 367\,488\, z^2 + 1\,531\,200\, z^{3/2} + 1\,244\,100\, z - 3\,014\,550\, \sqrt{z} + 1\,507\,275\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{17/4} - 64\, \sqrt{2\pi}\, \left(1024\, z^3 - 33\,280\, z^{5/2} + 367\,488\, z^2 - 1\,531\,200\, z^{3/2} + 1\,244\,100\, z + 3\,014\,550\, \sqrt{z} + 1\,507\,275\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{17/4} + e^{2\sqrt{z}} \left(131\,072\, z^7 + 45\,998\,080\, z^6 + 118\,121\,472\, z^5 + 289\,013\,760\, z^4 + 99\,348\,480\, z^3 + 199\,584\,000\, z^2 + 711\,018\,000\, z + 2\,657\,429\,775\right)\right)\right) $$

07.22.03.7371.01

$$ {}_1F_2\left(5; -\frac{23}{4}, -\frac{13}{4}; -z\right) = \frac{1}{2\,657\,429\,775} \left(-131\,072\, z^7 + 45\,998\,080\, z^6 - 118\,121\,472\, z^5 - 256\, \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(1024\, z^3 - 367\,488\, z^2 + 1\,244\,100\, z - 1\,507\,275\right) \cos\left(2\sqrt{z}\right) + 10\sqrt{z}\, \left(3328\, z^2 - 153\,120\, z - 301\,455\right) \sin\left(2\sqrt{z}\right)\right) z^{17/4} + 256\, \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(1024\, z^3 - 367\,488\, z^2 + 1\,244\,100\, z - 1\,507\,275\right) \sin\left(2\sqrt{z}\right) - 10\sqrt{z}\, \left(3328\, z^2 - 153\,120\, z - 301\,455\right) \cos\left(2\sqrt{z}\right)\right) z^{17/4} + 289\,013\,760\, z^4 - 99\,348\,480\, z^3 + 199\,584\,000\, z^2 - 711\,018\,000\, z + 2\,657\,429\,775\right) $$

07.22.03.7372.01

$${}_1F_2\left(5; -\frac{23}{4}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{204\,417\,675}\left(e^{-2\sqrt{z}}\left(-8\,e^{4\sqrt{z}}\sqrt{2\pi}\left(2048\,z^{7/2}+59\,392\,z^3+556\,800\,z^{5/2}+1\,670\,400\,z^2-852\,600\,z^{3/2}-4\,750\,200\,z+\right.\right.\right.$$
$$\left.\left.\left.7\,764\,750\sqrt{z}-3\,882\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-8\sqrt{2\pi}\left(2048\,z^{7/2}-59\,392\,z^3+556\,800\,z^{5/2}-\right.\right.\right.$$
$$\left.\left.\left.1\,670\,400\,z^2-852\,600\,z^{3/2}+4\,750\,200\,z+7\,764\,750\sqrt{z}+3\,882\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\left(-942\,080\,z^6-24\,669\,696\,z^5+69\,310\,080\,z^4+99\,348\,480\,z^3+39\,916\,800\,z^2+79\,002\,000\,z+204\,417\,675\right)\right)\right)$$

07.22.03.7373.01

$${}_1F_2\left(5; -\frac{23}{4}, -\frac{9}{4}; -z\right) = \frac{1}{204\,417\,675}$$
$$\left(-942\,080\,z^6+24\,669\,696\,z^5+69\,310\,080\,z^4+32\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(1024\,z^3-278\,400\,z^2-426\,300\,z-3\,882\,375\right)\right.\right.$$
$$\left.\sin\left(2\sqrt{z}\right)-29\left(2048\,z^3-57\,600\,z^2-163\,800\,z+133\,875\right)\cos\left(2\sqrt{z}\right)\right)z^{13/4}+$$
$$32\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(1024\,z^3-278\,400\,z^2-426\,300\,z-3\,882\,375\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.29\left(2048\,z^3-57\,600\,z^2-163\,800\,z+133\,875\right)\sin\left(2\sqrt{z}\right)\right)z^{13/4}-$$
$$\left.99\,348\,480\,z^3+39\,916\,800\,z^2-79\,002\,000\,z+204\,417\,675\right)$$

07.22.03.7374.01

$${}_1F_2\left(5; -\frac{23}{4}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{22\,713\,075}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(4096\,z^4+102\,400\,z^{7/2}+755\,200\,z^3+1\,075\,200\,z^{5/2}-4\,393\,200\,z^2-714\,000\,z^{3/2}+\right.\right.\right.$$
$$\left.\left.\left.16\,600\,500\,z-24\,365\,250\sqrt{z}+12\,182\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-\sqrt{2\pi}\left(4096\,z^4-102\,400\,z^{7/2}+755\,200\,z^3-\right.\right.\right.$$
$$\left.\left.\left.1\,075\,200\,z^{5/2}-4\,393\,200\,z^2+714\,000\,z^{3/2}+16\,600\,500\,z+24\,365\,250\sqrt{z}+12\,182\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\left(8192\,z^6+1\,460\,736\,z^5-9\,085\,440\,z^4+31\,857\,840\,z^3+39\,916\,800\,z^2+15\,800\,400\,z+22\,713\,075\right)\right)\right)$$

07.22.03.7375.01

$$ {}_1F_2\left(5;-\frac{23}{4},-\frac{5}{4};-z\right)=\frac{1}{22\,713\,075}\left(8192\,z^6-1\,460\,736\,z^5-9\,085\,440\,z^4-31\,857\,840\,z^3+\right.$$
$$4\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096\,z^4-755\,200\,z^3-4\,393\,200\,z^2-16\,600\,500\,z+12\,182\,625\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.50\sqrt{z}\,\left(2048\,z^3-21\,504\,z^2-14\,280\,z+487\,305\right)\sin\left(2\sqrt{z}\right)\right)z^{9/4}-$$
$$4\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096\,z^4-755\,200\,z^3-4\,393\,200\,z^2-16\,600\,500\,z+12\,182\,625\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.50\sqrt{z}\,\left(2048\,z^3-21\,504\,z^2-14\,280\,z+487\,305\right)\cos\left(2\sqrt{z}\right)\right)z^{9/4}+39\,916\,800\,z^2-15\,800\,400\,z+22\,713\,075\right)$$

07.22.03.7376.01

$$ {}_1F_2\left(5;-\frac{23}{4},-\frac{1}{4};z\right)=$$
$$\frac{1}{36\,340\,920}\left(e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(8192\,z^{9/2}+167\,936\,z^4+838\,656\,z^{7/2}-784\,896\,z^3-6\,431\,712\,z^{5/2}+14\,651\,280\,z^2+\right.\right.\right.$$
$$\left.\left.3\,898\,440\,z^{3/2}-54\,578\,160\,z+78\,943\,410\,\sqrt{z}-39\,471\,705\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}-$$
$$\sqrt{2\pi}\,\left(8192\,z^{9/2}-167\,936\,z^4+838\,656\,z^{7/2}+784\,896\,z^3-6\,431\,712\,z^{5/2}-14\,651\,280\,z^2+\right.$$
$$\left.\left.3\,898\,440\,z^{3/2}+54\,578\,160\,z+78\,943\,410\,\sqrt{z}+39\,471\,705\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}-$$
$$\left.24\,e^{2\sqrt{z}}\,\left(13\,824\,z^5-80\,416\,z^4+1\,331\,400\,z^3-4\,336\,290\,z^2-5\,266\,800\,z-1\,514\,205\right)\right)\Big)$$

07.22.03.7377.01

$$ {}_1F_2\left(5;-\frac{23}{4},-\frac{1}{4};-z\right)=$$
$$\frac{1}{9\,085\,230}\left(-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(4096\,z^4-419\,328\,z^3-3\,215\,856\,z^2-1\,949\,220\,z+39\,471\,705\right)\sin\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left(167\,936\,z^4+784\,896\,z^3+14\,651\,280\,z^2+54\,578\,160\,z-39\,471\,705\right)\cos\left(2\sqrt{z}\right)\right)z^{5/4}-$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(4096\,z^4-419\,328\,z^3-3\,215\,856\,z^2-1\,949\,220\,z+39\,471\,705\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(167\,936\,z^4+784\,896\,z^3+14\,651\,280\,z^2+54\,578\,160\,z-39\,471\,705\right)\sin\left(2\sqrt{z}\right)\right)z^{5/4}+$$
$$\left.6\left(13\,824\,z^5+80\,416\,z^4+1\,331\,400\,z^3+4\,336\,290\,z^2-5\,266\,800\,z+1\,514\,205\right)\right)$$

07.22.03.7378.01

$$ {}_1F_2\left(5; -\frac{23}{4}, \frac{3}{4}; z\right) = \frac{1}{290\,727\,360}\left(e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\left(2048\,z^5 + 59\,264\,z^4 + 136\,080\,z^3 - 8\,865\,720\,z^2 + 13\,392\,225\,z + 18\,170\,460\right) + e^{4\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(16\,384\,z^5 + 253\,952\,z^{9/2} + 534\,528\,z^4 - 3\,707\,904\,z^{7/2} + 114\,240\,z^3 + 28\,959\,840\,z^{5/2} - 64\,602\,720\,z^2 + 20\,049\,120\,z^{3/2} + 127\,813\,140\,z - 206\,756\,550\sqrt{z} + 103\,378\,275\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - \sqrt{2\pi}\,\sqrt[4]{z}\left(16\,384\,z^5 - 253\,952\,z^{9/2} + 534\,528\,z^4 + 3\,707\,904\,z^{7/2} + 114\,240\,z^3 - 28\,959\,840\,z^{5/2} - 64\,602\,720\,z^2 - 20\,049\,120\,z^{3/2} + 127\,813\,140\,z + 206\,756\,550\sqrt{z} + 103\,378\,275\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7379.01

$$ {}_1F_2\left(5; -\frac{23}{4}, \frac{3}{4}; -z\right) = \frac{1}{72\,681\,840}\left(-4\left(2048\,z^5 - 59\,264\,z^4 + 136\,080\,z^3 + 8\,865\,720\,z^2 + 13\,392\,225\,z - 18\,170\,460\right) - \sqrt{\pi}\,\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,384\,z^5 - 534\,528\,z^4 + 114\,240\,z^3 + 64\,602\,720\,z^2 + 127\,813\,140\,z - 103\,378\,275\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(126\,976\,z^4 + 1\,853\,952\,z^3 + 14\,479\,920\,z^2 - 10\,024\,560\,z - 103\,378\,275\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\,\sqrt[4]{z}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,384\,z^5 - 534\,528\,z^4 + 114\,240\,z^3 + 64\,602\,720\,z^2 + 127\,813\,140\,z - 103\,378\,275\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\left(126\,976\,z^4 + 1\,853\,952\,z^3 + 14\,479\,920\,z^2 - 10\,024\,560\,z - 103\,378\,275\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7380.01

$$ {}_1F_2\left(5; -\frac{23}{4}, \frac{7}{4}; z\right) = \frac{1}{775\,272\,960\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(39\,936\,z^4 - 582\,208\,z^3 - 2\,052\,000\,z^2 + 37\,313\,100\,z + 22\,103\,235\right) + e^{4\sqrt{z}}\sqrt{2\pi}\left(32\,768\,z^{11/2} + 327\,680\,z^5 - 569\,344\,z^{9/2} - 4\,853\,760\,z^4 + 19\,643\,520\,z^{7/2} - 10\,832\,640\,z^3 - 96\,707\,520\,z^{5/2} + 281\,867\,040\,z^2 - 308\,107\,800\,z^{3/2} + 48\,648\,600\,z + 158\,107\,950\sqrt{z} - 79\,053\,975\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\left(32\,768\,z^{11/2} - 327\,680\,z^5 - 569\,344\,z^{9/2} + 4\,853\,760\,z^4 + 19\,643\,520\,z^{7/2} + 10\,832\,640\,z^3 - 96\,707\,520\,z^{5/2} - 281\,867\,040\,z^2 - 308\,107\,800\,z^{3/2} - 48\,648\,600\,z + 158\,107\,950\sqrt{z} + 79\,053\,975\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7381.01

$$ {}_1F_2\left(5; -\frac{23}{4}, \frac{7}{4}; -z\right) = \frac{1}{193\,818\,240\, z^{3/4}} \left(4 z^{3/4} \left(39\,936 z^4 + 582\,208 z^3 - 2\,052\,000 z^2 - 37\,313\,100 z + 22\,103\,235\right) + \right. $$

$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(5 \left(65\,536 z^5 + 970\,752 z^4 - 2\,166\,528 z^3 - 56\,373\,408 z^2 + 9\,729\,720 z + 15\,810\,795\right) \cos\left(2\sqrt{z}\right) - \right. $$

$$ \left. 2\sqrt{z} \left(16\,384 z^5 + 284\,672 z^4 + 9\,821\,760 z^3 + 48\,353\,760 z^2 - 154\,053\,900 z - 79\,053\,975\right) \sin\left(2\sqrt{z}\right)\right) - $$

$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(16\,384 z^5 + 284\,672 z^4 + 9\,821\,760 z^3 + 48\,353\,760 z^2 - 154\,053\,900 z - 79\,053\,975\right) \cos\left(2\sqrt{z}\right) + \right. $$

$$ \left. \left. 5 \left(65\,536 z^5 + 970\,752 z^4 - 2\,166\,528 z^3 - 56\,373\,408 z^2 + 9\,729\,720 z + 15\,810\,795\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7382.01

$$ {}_1F_2\left(5; -\frac{23}{4}, \frac{11}{4}; z\right) = \frac{1}{886\,026\,240\, z^{7/4}} $$

$$ \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(8192 z^5 - 329\,216 z^4 + 2\,949\,120 z^3 + 33\,033\,600 z^2 - 23\,387\,760 z - 91\,216\,125\right) + e^{4\sqrt{z}} \sqrt{2\pi} \right. \right. $$

$$ \left(65\,536 z^6 + 262\,144 z^{11/2} - 2\,580\,480 z^5 + 3\,194\,880 z^{9/2} + 24\,910\,080 z^4 - 121\,305\,600 z^{7/2} + 231\,154\,560 z^3 - \right. $$

$$ \left. 129\,729\,600 z^{5/2} - 291\,891\,600 z^2 + 681\,080\,400 z^{3/2} - 705\,404\,700 z + 547\,296\,750 \sqrt{z} - 273\,648\,375\right) $$

$$ \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(-65\,536 z^6 + 262\,144 z^{11/2} + 2\,580\,480 z^5 + 3\,194\,880 z^{9/2} - 24\,910\,080 z^4 - \right. $$

$$ 121\,305\,600 z^{7/2} - 231\,154\,560 z^3 - 129\,729\,600 z^{5/2} + 291\,891\,600 z^2 + $$

$$ \left. \left. 681\,080\,400 z^{3/2} + 705\,404\,700 z + 547\,296\,750 \sqrt{z} + 273\,648\,375\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7383.01

$$ {}_1F_2\left(5; -\frac{23}{4}, \frac{11}{4}; -z\right) = $$

$$ \frac{1}{221\,506\,560\, z^{7/4}} \left(4 z^{3/4} \left(8192 z^5 + 329\,216 z^4 + 2\,949\,120 z^3 - 33\,033\,600 z^2 - 23\,387\,760 z + 91\,216\,125\right) + \right. $$

$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(65\,536 z^6 + 2\,580\,480 z^5 + 24\,910\,080 z^4 - \right. \right. $$

$$ \left. 231\,154\,560 z^3 - 291\,891\,600 z^2 + 705\,404\,700 z - 273\,648\,375\right) \cos\left(2\sqrt{z}\right) + $$

$$ \left. 2\sqrt{z} \left(131\,072 z^5 - 1\,597\,440 z^4 - 60\,652\,800 z^3 + 64\,864\,800 z^2 + 340\,540\,200 z - 273\,648\,375\right) \sin\left(2\sqrt{z}\right)\right) - $$

$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(65\,536 z^6 + 2\,580\,480 z^5 + 24\,910\,080 z^4 - 231\,154\,560 z^3 - 291\,891\,600 z^2 + \right. \right. $$

$$ \left. 705\,404\,700 z - 273\,648\,375\right) \sin\left(2\sqrt{z}\right) - $$

$$ \left. \left. 2\sqrt{z} \left(131\,072 z^5 - 1\,597\,440 z^4 - 60\,652\,800 z^3 + 64\,864\,800 z^2 + 340\,540\,200 z - 273\,648\,375\right) \cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7384.01

$$ {}_1F_2\left(5; -\frac{23}{4}, \frac{15}{4}; z\right) = \frac{1}{644\,382\,720\, z^{11/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(45\,056\, z^5 - 3\,083\,520\, z^4 - 11\,852\,160\, z^3 + 108\,409\,680\, z^2 + 527\,026\,500\, z + 1\,206\,079\,875\right) + \right.\right. $$
$$ e^{4\sqrt{z}}\, \sqrt{2\pi} \left(131\,072\, z^{13/2} - 327\,680\, z^6 - 3\,194\,880\, z^{11/2} + 23\,961\,600\, z^5 - 69\,987\,840\, z^{9/2} + \right. $$
$$ 72\,334\,080\, z^4 + 172\,972\,800\, z^{7/2} - 864\,864\,000\, z^3 + 2\,010\,808\,800\, z^{5/2} - 3\,664\,861\,200\, z^2 + $$
$$ \left. 5\,918\,913\,000\, z^{3/2} - 7\,783\,776\,000\, z + 7\,236\,479\,250\, \sqrt{z} - 3\,618\,239\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi} \left(131\,072\, z^{13/2} + 327\,680\, z^6 - 3\,194\,880\, z^{11/2} - 23\,961\,600\, z^5 - 69\,987\,840\, z^{9/2} - 72\,334\,080\, z^4 + \right. $$
$$ 172\,972\,800\, z^{7/2} + 864\,864\,000\, z^3 + 2\,010\,808\,800\, z^{5/2} + 3\,664\,861\,200\, z^2 + $$
$$ \left.\left. 5\,918\,913\,000\, z^{3/2} + 7\,783\,776\,000\, z + 7\,236\,479\,250\, \sqrt{z} + 3\,618\,239\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7385.01

$$ {}_1F_2\left(5; -\frac{23}{4}, \frac{15}{4}; -z\right) = \frac{1}{161\,095\,680\, z^{11/4}} $$
$$ \left(4\, z^{3/4} \left(45\,056\, z^5 + 3\,083\,520\, z^4 - 11\,852\,160\, z^3 - 108\,409\,680\, z^2 + 527\,026\,500\, z - 1\,206\,079\,875\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \right. $$
$$ \left(5 \left(65\,536\, z^6 + 4\,792\,320\, z^5 - 14\,466\,816\, z^4 - 172\,972\,800\, z^3 + 732\,972\,240\, z^2 - 1\,556\,755\,200\, z + 723\,647\,925\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + 2\sqrt{z} \left(65\,536\, z^6 + 1\,597\,440\, z^5 - 34\,993\,920\, z^4 - 86\,486\,400\, z^3 + \right. $$
$$ \left.\left. 1\,005\,404\,400\, z^2 - 2\,959\,456\,500\, z + 3\,618\,239\,625\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left(2\sqrt{z} \left(65\,536\, z^6 + 1\,597\,440\, z^5 - 34\,993\,920\, z^4 - 86\,486\,400\, z^3 + 1\,005\,404\,400\, z^2 - 2\,959\,456\,500\, z + 3\,618\,239\,625\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) - 5 \left(65\,536\, z^6 + 4\,792\,320\, z^5 - 14\,466\,816\, z^4 - 172\,972\,800\, z^3 + \right. $$
$$ \left.\left.\left. 732\,972\,240\, z^2 - 1\,556\,755\,200\, z + 723\,647\,925\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7386.01

$$ {}_1F_2\left(5; -\frac{23}{4}, \frac{19}{4}; z\right) = \frac{1}{343\,670\,784\, z^{15/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \right.\right. $$
$$ \left(32\,768\, z^6 + 1\,308\,672\, z^5 - 9\,373\,440\, z^4 - 281\,529\,984\, z^3 - 2\,704\,862\,160\, z^2 - 16\,816\,199\,400\, z - 50\,414\,138\,775\right) + $$
$$ e^{4\sqrt{z}}\, \sqrt{2\pi} \left(262\,144\, z^7 - 2\,490\,368\, z^{13/2} + 9\,797\,632\, z^6 - 10\,862\,592\, z^{11/2} - 80\,231\,424\, z^5 + 545\,825\,280\, z^{9/2} - \right. $$
$$ 2\,110\,268\,160\, z^4 + 6\,711\,344\,640\, z^{7/2} - 19\,468\,088\,640\, z^3 + 51\,074\,543\,520\, z^{5/2} - 115\,848\,532\,800\, z^2 + $$
$$ 216\,129\,513\,600\, z^{3/2} - 309\,721\,311\,900\, z + 302\,484\,832\,650\, \sqrt{z} - 151\,242\,416\,325\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi} \left(-262\,144\, z^7 - 2\,490\,368\, z^{13/2} - 9\,797\,632\, z^6 - 10\,862\,592\, z^{11/2} + 80\,231\,424\, z^5 + 545\,825\,280\, z^{9/2} + \right. $$
$$ 2\,110\,268\,160\, z^4 + 6\,711\,344\,640\, z^{7/2} + 19\,468\,088\,640\, z^3 + 51\,074\,543\,520\, z^{5/2} + 115\,848\,532\,800\, z^2 + $$
$$ \left.\left. 216\,129\,513\,600\, z^{3/2} + 309\,721\,311\,900\, z + 302\,484\,832\,650\, \sqrt{z} + 151\,242\,416\,325\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7387.01

$$ {}_1F_2\left(5; -\frac{23}{4}, \frac{19}{4}; -z\right) = \frac{1}{85\,917\,696\,z^{15/4}} $$
$$ \left(-4\,z^{3/4}\left(32\,768\,z^6 - 1\,308\,672\,z^5 - 9\,373\,440\,z^4 + 281\,529\,984\,z^3 - 2\,704\,862\,160\,z^2 + 16\,816\,199\,400\,z - 50\,414\,138\,775\right) - \right. $$
$$ \sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(262\,144\,z^7 - 9\,797\,632\,z^6 - 80\,231\,424\,z^5 + 2\,110\,268\,160\,z^4 - 19\,468\,088\,640\,z^3 + 115\,848\,532\,800\,z^2 - \right.\right. $$
$$ 309\,721\,311\,900\,z + 151\,242\,416\,325\big)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-1\,245\,184\,z^6 + 5\,431\,296\,z^5 + 272\,912\,640\,z^4 - \right. $$
$$ \left.\left. 3\,355\,672\,320\,z^3 + 25\,537\,271\,760\,z^2 - 108\,064\,756\,800\,z + 151\,242\,416\,325\big)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(1\,245\,184\,z^6 - 5\,431\,296\,z^5 - 272\,912\,640\,z^4 + 3\,355\,672\,320\,z^3 - 25\,537\,271\,760\,z^2 + \right.\right. $$
$$ 108\,064\,756\,800\,z - 151\,242\,416\,325\big)\cos\left(2\sqrt{z}\right) + \left(262\,144\,z^7 - 9\,797\,632\,z^6 - 80\,231\,424\,z^5 + \right. $$
$$ \left.\left.\left. 2\,110\,268\,160\,z^4 - 19\,468\,088\,640\,z^3 + 115\,848\,532\,800\,z^2 - 309\,721\,311\,900\,z + 151\,242\,416\,325\big)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7388.01

$$ {}_1F_2\left(5; -\frac{23}{4}, \frac{23}{4}; z\right) = $$
$$ \frac{1}{144\,703\,488\,z^{19/4}}\left(e^{-2\sqrt{z}}\left(-48\,e^{2\sqrt{z}}\,z^{3/4}\left(376\,832\,z^6 + 24\,038\,400\,z^5 + 718\,658\,816\,z^4 + 14\,936\,201\,280\,z^3 + \right.\right. $$
$$ 202\,897\,094\,400\,z^2 + 1\,546\,033\,589\,100\,z + 5\,293\,484\,571\,375\big) + $$
$$ e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(524\,288\,z^{15/2} - 8\,912\,896\,z^7 + 81\,985\,536\,z^{13/2} - 554\,631\,168\,z^6 + 3\,167\,324\,160\,z^{11/2} - \right. $$
$$ 16\,328\,632\,320\,z^5 + 77\,422\,625\,280\,z^{9/2} - 334\,979\,124\,480\,z^4 + 1\,300\,980\,320\,640\,z^{7/2} - $$
$$ 4\,451\,282\,035\,200\,z^3 + 13\,122\,149\,040\,000\,z^{5/2} - 32\,373\,113\,572\,800\,z^2 + 64\,126\,784\,521\,800\,z^{3/2} - $$
$$ \left. 95\,585\,207\,117\,400\,z + 95\,282\,722\,284\,750\sqrt{z} - 47\,641\,361\,142\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\,\left(524\,288\,z^{15/2} + 8\,912\,896\,z^7 + 81\,985\,536\,z^{13/2} + 554\,631\,168\,z^6 + 3\,167\,324\,160\,z^{11/2} + \right. $$
$$ 16\,328\,632\,320\,z^5 + 77\,422\,625\,280\,z^{9/2} + 334\,979\,124\,480\,z^4 + 1\,300\,980\,320\,640\,z^{7/2} + $$
$$ 4\,451\,282\,035\,200\,z^3 + 13\,122\,149\,040\,000\,z^{5/2} + 32\,373\,113\,572\,800\,z^2 + 64\,126\,784\,521\,800\,z^{3/2} + $$
$$ \left.\left. 95\,585\,207\,117\,400\,z + 95\,282\,722\,284\,750\sqrt{z} + 47\,641\,361\,142\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7389.01

$${}_1F_2\left(5; -\frac{23}{4}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{36\,175\,872\,z^{19/4}}\left(-12\,z^{3/4}\left(376\,832\,z^6 - 24\,038\,400\,z^5 + 718\,658\,816\,z^4 - 14\,936\,201\,280\,z^3 + 202\,897\,094\,400\,z^2 - 1\,546\,033\,589\,100\,z + 5\,293\,484\,571\,375\right) - \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(262\,144\,z^7 - 40\,992\,768\,z^6 + 1\,583\,662\,080\,z^5 - 38\,711\,312\,640\,z^4 + 650\,490\,160\,320\,z^3 - 6\,561\,074\,520\,000\,z^2 + 32\,063\,392\,260\,900\,z - 47\,641\,361\,142\,375\right)\cos\left(2\sqrt{z}\right) + \left(-8\,912\,896\,z^7 + 554\,631\,168\,z^6 - 16\,328\,632\,320\,z^5 + 334\,979\,124\,480\,z^4 - 4\,451\,282\,035\,200\,z^3 + 32\,373\,113\,572\,800\,z^2 - 95\,585\,207\,117\,400\,z + 47\,641\,361\,142\,375\right)\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8\,912\,896\,z^7 - 554\,631\,168\,z^6 + 16\,328\,632\,320\,z^5 - 334\,979\,124\,480\,z^4 + 4\,451\,282\,035\,200\,z^3 - 32\,373\,113\,572\,800\,z^2 + 95\,585\,207\,117\,400\,z - 47\,641\,361\,142\,375\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(262\,144\,z^7 - 40\,992\,768\,z^6 + 1\,583\,662\,080\,z^5 - 38\,711\,312\,640\,z^4 + 650\,490\,160\,320\,z^3 - 6\,561\,074\,520\,000\,z^2 + 32\,063\,392\,260\,900\,z - 47\,641\,361\,142\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 5$, $b_1 = -\frac{21}{4}$

07.22.03.7390.01

$${}_1F_2\left(5; -\frac{21}{4}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{41\,247\,931\,725}\left(e^{-2\sqrt{z}}\left(-1024\,e^{4\sqrt{z}}\,\sqrt{2\pi}\left(256\,z^2 + 9216\,z^{3/2} + 117\,024\,z + 618\,528\,\sqrt{z} + 1\,142\,505\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4} - 1024\,\sqrt{2\pi}\left(256\,z^2 - 9216\,z^{3/2} + 117\,024\,z - 618\,528\,\sqrt{z} + 1\,142\,505\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4} + e^{2\sqrt{z}}\left(-18\,743\,296\,z^7 - 1\,210\,245\,120\,z^6 + 396\,361\,728\,z^5 + 206\,438\,400\,z^4 + 406\,425\,600\,z^3 + 1\,556\,755\,200\,z^2 + 8\,270\,262\,000\,z + 41\,247\,931\,725\right)\right)\right)$$

07.22.03.7391.01

$${}_1F_2\left(5; -\frac{21}{4}, -\frac{19}{4}; -z\right) = \frac{1}{41\,247\,931\,725}\left(18\,743\,296\,z^7 - 1\,210\,245\,120\,z^6 - 4096\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^2 - 117\,024\,z + 1\,142\,505\right)\cos\left(2\sqrt{z}\right) + 96\sqrt{z}\,(96\,z - 6443)\sin\left(2\sqrt{z}\right)\right)z^{23/4} - 4096\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^2 - 117\,024\,z + 1\,142\,505\right)\sin\left(2\sqrt{z}\right) - 96\sqrt{z}\,(96\,z - 6443)\cos\left(2\sqrt{z}\right)\right)z^{23/4} - 396\,361\,728\,z^5 + 206\,438\,400\,z^4 - 406\,425\,600\,z^3 + 1\,556\,755\,200\,z^2 - 8\,270\,262\,000\,z + 41\,247\,931\,725\right)$$

07.22.03.7392.01

$$ {}_1F_2\left(5; -\frac{21}{4}, -\frac{15}{4}; z\right) = \frac{1}{2\,170\,943\,775} \left(e^{-2\sqrt{z}} \left(128\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(512\, z^{5/2} + 17\,152\, z^2 + 199\,744\, z^{3/2} + 937\,440\, z + 1\,347\,570\, \sqrt{z} - 673\,785\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{19/4} - 128\, \sqrt{2\pi}\, \left(512\, z^{5/2} - 17\,152\, z^2 + 199\,744\, z^{3/2} - 937\,440\, z + 1\,347\,570\, \sqrt{z} + 673\,785\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{19/4} + e^{2\sqrt{z}} \left(131\,072\, z^7 + 50\,061\,312\, z^6 + 293\,594\,112\, z^5 + 68\,812\,800\, z^4 + 58\,060\,800\, z^3 + 141\,523\,200\, z^2 + 551\,350\,800\, z + 2\,170\,943\,775\right)\right)\right) $$

07.22.03.7393.01

$$ {}_1F_2\left(5; -\frac{21}{4}, -\frac{15}{4}; -z\right) = \frac{1}{2\,170\,943\,775} \left(-131\,072\, z^7 + 50\,061\,312\, z^6 - 293\,594\,112\, z^5 + 512\, \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(-17\,152\, z^2 + 937\,440\, z + 673\,785\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(256\, z^2 - 99\,872\, z + 673\,785\right) \sin\left(2\sqrt{z}\right)\right) z^{19/4} - 512\, \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(256\, z^2 - 99\,872\, z + 673\,785\right) \cos\left(2\sqrt{z}\right) + \left(17\,152\, z^2 - 937\,440\, z - 673\,785\right) \sin\left(2\sqrt{z}\right)\right) z^{19/4} + 68\,812\,800\, z^4 - 58\,060\,800\, z^3 + 141\,523\,200\, z^2 - 551\,350\,800\, z + 2\,170\,943\,775\right) $$

07.22.03.7394.01

$$ {}_1F_2\left(5; -\frac{21}{4}, -\frac{11}{4}; z\right) = \frac{1}{144\,729\,585} \left(e^{-2\sqrt{z}} \left(-16\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(1024\, z^3 + 31\,232\, z^{5/2} + 321\,408\, z^2 + 1\,232\,064\, z^{3/2} + 847\,044\, z - 2\,194\,614\, \sqrt{z} + 1\,097\,307\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{15/4} - 16\, \sqrt{2\pi}\, \left(1024\, z^3 - 31\,232\, z^{5/2} + 321\,408\, z^2 - 1\,232\,064\, z^{3/2} + 847\,044\, z + 2\,194\,614\, \sqrt{z} + 1\,097\,307\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{15/4} + e^{2\sqrt{z}} \left(-991\,232\, z^6 - 37\,034\,496\, z^5 + 71\,642\,496\, z^4 + 19\,353\,600\, z^3 + 20\,217\,600\, z^2 + 50\,122\,800\, z + 144\,729\,585\right)\right)\right) $$

07.22.03.7395.01

$$ {}_1F_2\left(5; -\frac{21}{4}, -\frac{11}{4}; -z\right) = \frac{1}{144\,729\,585} \left(-991\,232\, z^6 + 37\,034\,496\, z^5 + 71\,642\,496\, z^4 + 64\, \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(1024\, z^3 - 321\,408\, z^2 + 847\,044\, z - 1\,097\,307\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(15\,616\, z^2 - 616\,032\, z - 1\,097\,307\right) \sin\left(2\sqrt{z}\right)\right) z^{15/4} + 64\, \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(1024\, z^3 - 321\,408\, z^2 + 847\,044\, z - 1\,097\,307\right) \sin\left(2\sqrt{z}\right) - 2\sqrt{z}\, \left(15\,616\, z^2 - 616\,032\, z - 1\,097\,307\right) \cos\left(2\sqrt{z}\right)\right) z^{15/4} - 19\,353\,600\, z^3 + 20\,217\,600\, z^2 - 50\,122\,800\, z + 144\,729\,585\right) $$

07.22.03.7396.01

$$ {}_1F_2\left(5; -\frac{21}{4}, -\frac{7}{4}; z\right) = \frac{1}{13\,157\,235}\left(e^{-2\sqrt{z}}\left(2\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(2048\,z^{7/2}+55\,296\,z^3+476\,928\,z^{5/2}+1\,271\,808\,z^2-849\,528\,z^{3/2}-3\,114\,936\,z+5\,309\,550\,\sqrt{z}-2\,654\,775\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}-2\,\sqrt{2\pi}\,\left(2048\,z^{7/2}-55\,296\,z^3+476\,928\,z^{5/2}-1\,271\,808\,z^2-849\,528\,z^{3/2}+3\,114\,936\,z+5\,309\,550\,\sqrt{z}+2\,654\,775\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+e^{2\sqrt{z}}\left(8192\,z^6+1\,853\,952\,z^5-4\,360\,704\,z^4+23\,122\,800\,z^3+6\,739\,200\,z^2+7\,160\,400\,z+13\,157\,235\right)\right)\right) $$

07.22.03.7397.01

$$ {}_1F_2\left(5; -\frac{21}{4}, -\frac{7}{4}; -z\right) = \frac{1}{13\,157\,235}\left(8192\,z^6-1\,853\,952\,z^5-4\,360\,704\,z^4-23\,122\,800\,z^3-8\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\,\left(1024\,z^3-238\,464\,z^2-424\,764\,z-2\,654\,775\right)\sin\left(2\,\sqrt{z}\right)-27\left(2048\,z^3-47\,104\,z^2-115\,368\,z+98\,325\right)\cos\left(2\,\sqrt{z}\right)\right)z^{11/4}+8\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\,\left(1024\,z^3-238\,464\,z^2-424\,764\,z-2\,654\,775\right)\cos\left(2\,\sqrt{z}\right)+27\left(2048\,z^3-47\,104\,z^2-115\,368\,z+98\,325\right)\sin\left(2\,\sqrt{z}\right)\right)z^{11/4}+6\,739\,200\,z^2-7\,160\,400\,z+13\,157\,235\right) $$

07.22.03.7398.01

$$ {}_1F_2\left(5; -\frac{21}{4}, -\frac{3}{4}; z\right) = \frac{1}{7\,518\,420}\left(e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^4+94\,208\,z^{7/2}+624\,128\,z^3+671\,232\,z^{5/2}-3\,377\,136\,z^2+524\,400\,z^{3/2}+9\,832\,500\,z-15\,142\,050\,\sqrt{z}+7\,571\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+\sqrt{2\pi}\,\left(-4096\,z^4+94\,208\,z^{7/2}-624\,128\,z^3+671\,232\,z^{5/2}+3\,377\,136\,z^2+524\,400\,z^{3/2}-9\,832\,500\,z-15\,142\,050\,\sqrt{z}-7\,571\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}-4\,e^{2\sqrt{z}}\left(46\,592\,z^5+265\,952\,z^4+691\,560\,z^3-8\,402\,850\,z^2-2\,386\,800\,z-1\,879\,605\right)\right)\right) $$

07.22.03.7399.01

$$ {}_1F_2\left(5; -\frac{21}{4}, -\frac{3}{4}; -z\right) = \frac{1}{1\,879\,605}\left(46\,592\,z^5 - 265\,952\,z^4 + 691\,560\,z^3 + 8\,402\,850\,z^2 - \right.$$
$$ \sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096\,z^4 - 624\,128\,z^3 - 3\,377\,136\,z^2 - 9\,832\,500\,z + 7\,571\,025\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left.\left. 46\sqrt{z}\left(2048\,z^3 - 14\,592\,z^2 + 11\,400\,z + 329\,175\right)\sin\left(2\sqrt{z}\right)\right)z^{7/4} - \right.$$
$$ \sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096\,z^4 - 624\,128\,z^3 - 3\,377\,136\,z^2 - 9\,832\,500\,z + 7\,571\,025\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$ \left.\left. 46\sqrt{z}\left(2048\,z^3 - 14\,592\,z^2 + 11\,400\,z + 329\,175\right)\cos\left(2\sqrt{z}\right)\right)z^{7/4} - 2\,386\,800\,z + 1\,879\,605\right) $$

07.22.03.7400.01

$$ {}_1F_2\left(5; -\frac{21}{4}, \frac{1}{4}; z\right) = $$
$$ \frac{1}{20\,049\,120}\left(e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\left(2048\,z^5 + 151\,424\,z^4 - 931\,440\,z^3 - 1\,455\,480\,z^2 + 11\,190\,825\,z + 2\,506\,140\right) + \right.\right.$$
$$ e^{4\sqrt{z}}\ \sqrt{2\pi}\ z^{3/4}\left(8192\,z^{9/2} + 151\,552\,z^4 + 642\,048\,z^{7/2} - 904\,704\,z^3 - 4\,040\,160\,z^{5/2} + \right.$$
$$ \left. 11\,149\,200\,z^2 - 2\,633\,400\,z^{3/2} - 26\,334\,000\,z + 41\,476\,050\sqrt{z} - 20\,738\,025\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) - $$
$$ \left.\left.\sqrt{2\pi}\ z^{3/4}\left(8192\,z^{9/2} - 151\,552\,z^4 + 642\,048\,z^{7/2} + 904\,704\,z^3 - 4\,040\,160\,z^{5/2} - 11\,149\,200\,z^2 - \right.\right.\right.$$
$$ \left.\left.\left. 2\,633\,400\,z^{3/2} + 26\,334\,000\,z + 41\,476\,050\sqrt{z} + 20\,738\,025\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7401.01

$$ {}_1F_2\left(5; -\frac{21}{4}, \frac{1}{4}; -z\right) = \frac{1}{5\,012\,280}\left(-4096\,z^5 + 302\,848\,z^4 + 1\,862\,880\,z^3 - 2\,910\,960\,z^2 - 22\,381\,650\,z + \right.$$
$$ \sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(4096\,z^4 - 321\,024\,z^3 - 2\,020\,080\,z^2 + 1\,316\,700\,z + 20\,738\,025\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$ \left.\left.\left(151\,552\,z^4 + 904\,704\,z^3 + 11\,149\,200\,z^2 + 26\,334\,000\,z - 20\,738\,025\right)\cos\left(2\sqrt{z}\right)\right)z^{3/4} - \right.$$
$$ \sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(4096\,z^4 - 321\,024\,z^3 - 2\,020\,080\,z^2 + 1\,316\,700\,z + 20\,738\,025\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left.\left.\left.\left(151\,552\,z^4 + 904\,704\,z^3 + 11\,149\,200\,z^2 + 26\,334\,000\,z - 20\,738\,025\right)\sin\left(2\sqrt{z}\right)\right)z^{3/4} + 5\,012\,280\right) $$

07.22.03.7402.01

$$ {}_1F_2\left(5; -\frac{21}{4}, \frac{5}{4}; z\right) = \frac{1}{160\,392\,960\,\sqrt[4]{z}} \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(54\,272\, z^4 - 749\,760\, z^3 + 3\,572\,640\, z^2 + 11\,793\,060\, z - 15\,969\,555\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(16\,384\, z^5 + 221\,184\, z^{9/2} + 288\,768\, z^4 - 2\,964\,480\, z^{7/2} + 2\,295\,360\, z^3 + 15\,412\,320\, z^{5/2} - 43\,797\,600\, z^2 + 34\,927\,200\, z^{3/2} + 30\,561\,300\, z - 72\,037\,350\, \sqrt{z} + 36\,018\,675\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(16\,384\, z^5 - 221\,184\, z^{9/2} + 288\,768\, z^4 + 2\,964\,480\, z^{7/2} + 2\,295\,360\, z^3 - 15\,412\,320\, z^{5/2} - 43\,797\,600\, z^2 - 34\,927\,200\, z^{3/2} + 30\,561\,300\, z + 72\,037\,350\, \sqrt{z} + 36\,018\,675\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7403.01

$$ {}_1F_2\left(5; -\frac{21}{4}, \frac{5}{4}; -z\right) = \frac{1}{40\,098\,240\,\sqrt[4]{z}} \left(2\, \sqrt[4]{z}\, \left(54\,272\, z^4 + 749\,760\, z^3 + 3\,572\,640\, z^2 - 11\,793\,060\, z - 15\,969\,555\right) - \sqrt{\pi}\, C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(16\,384\, z^5 - 288\,768\, z^4 + 2\,295\,360\, z^3 + 43\,797\,600\, z^2 + 30\,561\,300\, z - 36\,018\,675\right) \cos\left(2\,\sqrt{z}\right) + 6\,\sqrt{z}\, \left(36\,864\, z^4 + 494\,080\, z^3 + 2\,568\,720\, z^2 - 5\,821\,200\, z - 12\,006\,225\right) \sin\left(2\,\sqrt{z}\right)\right) - \sqrt{\pi}\, S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(16\,384\, z^5 - 288\,768\, z^4 + 2\,295\,360\, z^3 + 43\,797\,600\, z^2 + 30\,561\,300\, z - 36\,018\,675\right) \sin\left(2\,\sqrt{z}\right) - 6\,\sqrt{z}\, \left(36\,864\, z^4 + 494\,080\, z^3 + 2\,568\,720\, z^2 - 5\,821\,200\, z - 12\,006\,225\right) \cos\left(2\,\sqrt{z}\right)\right)\right) $$

07.22.03.7404.01

$$ {}_1F_2\left(5; -\frac{21}{4}, \frac{9}{4}; z\right) = \frac{1}{256\,628\,736\, z^{5/4}} \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(8192\, z^5 - 198\,144\, z^4 + 3\,895\,296\, z^3 - 3\,229\,440\, z^2 - 52\,445\,232\, z - 31\,216\,185\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(32\,768\, z^{11/2} + 262\,144\, z^5 - 733\,184\, z^{9/2} - 2\,629\,632\, z^4 + 15\,109\,248\, z^{7/2} - 22\,057\,728\, z^3 - 21\,422\,016\, z^{5/2} + 123\,409\,440\, z^2 - 185\,696\,280\, z^{3/2} + 134\,469\,720\, z - 62\,432\,370\, \sqrt{z} + 31\,216\,185\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(-32\,768\, z^{11/2} + 262\,144\, z^5 + 733\,184\, z^{9/2} - 2\,629\,632\, z^4 - 15\,109\,248\, z^{7/2} - 22\,057\,728\, z^3 + 21\,422\,016\, z^{5/2} + 123\,409\,440\, z^2 + 185\,696\,280\, z^{3/2} + 134\,469\,720\, z + 62\,432\,370\, \sqrt{z} + 31\,216\,185\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7405.01

$$ {}_1F_2\left(5; -\frac{21}{4}, \frac{9}{4}; -z\right) = \frac{1}{64\,157\,184\, z^{5/4}} \left(2\sqrt[4]{z}\, \left(8192 z^5 + 198\,144 z^4 + 3\,895\,296 z^3 + 3\,229\,440 z^2 - 52\,445\,232 z + 31\,216\,185\right) - \right.$$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-262\,144 z^5 - 2\,629\,632 z^4 + 22\,057\,728 z^3 + 123\,409\,440 z^2 - 134\,469\,720 z + 31\,216\,185\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left. 2\sqrt{z}\, \left(16\,384 z^5 + 366\,592 z^4 + 7\,554\,624 z^3 + 10\,711\,008 z^2 - 92\,848\,140 z + 31\,216\,185\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\, \left(16\,384 z^5 + 366\,592 z^4 + 7\,554\,624 z^3 + 10\,711\,008 z^2 - 92\,848\,140 z + 31\,216\,185\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left. \left.\left(262\,144 z^5 + 2\,629\,632 z^4 - 22\,057\,728 z^3 - 123\,409\,440 z^2 + 134\,469\,720 z - 31\,216\,185\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7406.01

$$ {}_1F_2\left(5; -\frac{21}{4}, \frac{13}{4}; z\right) = \frac{1}{228\,114\,432\, z^{9/4}} $$
$$ \left(e^{-2\sqrt{z}}\, \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(28\,672 z^5 + 1\,558\,272 z^4 - 15\,600\,000 z^3 - 84\,261\,744 z^2 - 147\,567\,420 z - 212\,837\,625\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \right.\right. $$
$$ \left(65\,536 z^6 + 131\,072 z^{11/2} - 2\,187\,264 z^5 + 5\,677\,056 z^{9/2} + 4\,671\,744 z^4 - 62\,802\,432 z^{7/2} + 176\,964\,480 z^3 - \right. $$
$$ \left. 284\,074\,560 z^{5/2} + 338\,793\,840 z^2 - 408\,648\,240 z^{3/2} + 488\,107\,620 z - 425\,675\,250\sqrt{z} + 212\,837\,625\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(65\,536 z^6 - 131\,072 z^{11/2} - 2\,187\,264 z^5 - 5\,677\,056 z^{9/2} + 4\,671\,744 z^4 + \right. $$
$$ 62\,802\,432 z^{7/2} + 176\,964\,480 z^3 + 284\,074\,560 z^{5/2} + 338\,793\,840 z^2 + $$
$$ \left.\left.\left. 408\,648\,240 z^{3/2} + 488\,107\,620 z + 425\,675\,250\sqrt{z} + 212\,837\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7407.01

$$ {}_1F_2\left(5; -\frac{21}{4}, \frac{13}{4}; -z\right) = \frac{1}{57\,028\,608\, z^{9/4}} $$
$$ \left(2\sqrt[4]{z}\, \left(-28\,672 z^5 + 1\,558\,272 z^4 + 15\,600\,000 z^3 - 84\,261\,744 z^2 + 147\,567\,420 z - 212\,837\,625\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \right. $$
$$ \left(\left(65\,536 z^6 + 2\,187\,264 z^5 + 4\,671\,744 z^4 - 176\,964\,480 z^3 + 338\,793\,840 z^2 - 488\,107\,620 z + 212\,837\,625\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ 2\sqrt{z}\, \left(65\,536 z^5 - 2\,838\,528 z^4 - 31\,401\,216 z^3 + 142\,037\,280 z^2 - 204\,324\,120 z + 212\,837\,625\right) $$
$$ \left. \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left(\left(65\,536 z^6 + 2\,187\,264 z^5 + 4\,671\,744 z^4 - 176\,964\,480 z^3 + 338\,793\,840 z^2 - 488\,107\,620 z + 212\,837\,625\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left. \left. 2\sqrt{z}\, \left(65\,536 z^5 - 2\,838\,528 z^4 - 31\,401\,216 z^3 + 142\,037\,280 z^2 - 204\,324\,120 z + 212\,837\,625\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7408.01

$$
{}_1F_2\left(5; -\frac{21}{4}, \frac{17}{4}; z\right) =
\frac{1}{140\,378\,112\, z^{13/4}} \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(32\,768\, z^6 - 165\,888\, z^5 - 18\,589\,440\, z^4 - 118\,790\,784\, z^3 - 577\,296\,720\, z^2 - 2\,286\,484\,200\, z - 4\,652\,022\,375\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(131\,072\, z^{13/2} - 589\,824\, z^6 - 835\,584\, z^{11/2} + 15\,949\,824\, z^5 - 70\,405\,632\, z^{9/2} + 191\,220\,480\, z^4 - 410\,952\,960\, z^{7/2} + 870\,186\,240\, z^3 - 1\,932\,971\,040\, z^{5/2} + 4\,015\,131\,120\, z^2 - 7\,054\,047\,000\, z^{3/2} + 9\,729\,720\,000\, z - 9\,304\,044\,750\, \sqrt{z} + 4\,652\,022\,375\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(-131\,072\, z^{13/2} - 589\,824\, z^6 + 835\,584\, z^{11/2} + 15\,949\,824\, z^5 + 70\,405\,632\, z^{9/2} + 191\,220\,480\, z^4 + 410\,952\,960\, z^{7/2} + 870\,186\,240\, z^3 + 1\,932\,971\,040\, z^{5/2} + 4\,015\,131\,120\, z^2 + 7\,054\,047\,000\, z^{3/2} + 9\,729\,720\,000\, z + 9\,304\,044\,750\, \sqrt{z} + 4\,652\,022\,375\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right)
$$

07.22.03.7409.01

$$
{}_1F_2\left(5; -\frac{21}{4}, \frac{17}{4}; -z\right) = \frac{1}{35\,094\,528\, z^{13/4}}
\left(-2\, \sqrt[4]{z}\, \left(32\,768\, z^6 + 165\,888\, z^5 - 18\,589\,440\, z^4 + 118\,790\,784\, z^3 - 577\,296\,720\, z^2 + 2\,286\,484\,200\, z - 4\,652\,022\,375\right) + \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(3\, \left(196\,608\, z^6 + 5\,316\,608\, z^5 - 63\,740\,160\, z^4 + 290\,062\,080\, z^3 - 1\,338\,377\,040\, z^2 + 3\,243\,240\,000\, z - 1\,550\,674\,125\right) \cos\left(2\, \sqrt{z}\right) + 2\, \sqrt{z}\, \left(65\,536\, z^6 + 417\,792\, z^5 - 35\,202\,816\, z^4 + 205\,476\,480\, z^3 - 966\,485\,520\, z^2 + 3\,527\,023\,500\, z - 4\,652\,022\,375\right) \sin\left(2\, \sqrt{z}\right)\right) - \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\, \sqrt{z}\, \left(65\,536\, z^6 + 417\,792\, z^5 - 35\,202\,816\, z^4 + 205\,476\,480\, z^3 - 966\,485\,520\, z^2 + 3\,527\,023\,500\, z - 4\,652\,022\,375\right) \cos\left(2\, \sqrt{z}\right) - 3\, \left(196\,608\, z^6 + 5\,316\,608\, z^5 - 63\,740\,160\, z^4 + 290\,062\,080\, z^3 - 1\,338\,377\,040\, z^2 + 3\,243\,240\,000\, z - 1\,550\,674\,125\right) \sin\left(2\, \sqrt{z}\right)\right)\right)
$$

07.22.03.7410.01

$$
{}_1F_2\left(5; -\frac{21}{4}, \frac{21}{4}; z\right) =
\frac{1}{66\,060\,288\, z^{17/4}} \left(e^{-2\sqrt{z}} \left(-8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(770\,048\, z^6 + 20\,188\,160\, z^5 + 270\,602\,496\, z^4 + 3\,519\,996\,480\, z^3 + 32\,518\,886\,400\, z^2 + 162\,510\,648\,300\, z + 383\,016\,508\,875\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(262\,144\, z^7 - 3\,014\,656\, z^{13/2} + 17\,924\,096\, z^6 - 75\,644\,928\, z^{11/2} + 275\,235\,840\, z^5 - 993\,738\,240\, z^{9/2} + 3\,649\,916\,160\, z^4 - 12\,859\,292\,160\, z^{7/2} + 41\,141\,580\,480\, z^3 - 115\,394\,479\,200\, z^{5/2} + 274\,378\,104\,000\, z^2 - 529\,296\,768\,000\, z^{3/2} + 775\,337\,062\,500\, z - 766\,033\,017\,750\, \sqrt{z} + 383\,016\,508\,875\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(262\,144\, z^7 + 3\,014\,656\, z^{13/2} + 17\,924\,096\, z^6 + 75\,644\,928\, z^{11/2} + 275\,235\,840\, z^5 + 993\,738\,240\, z^{9/2} + 3\,649\,916\,160\, z^4 + 12\,859\,292\,160\, z^{7/2} + 41\,141\,580\,480\, z^3 + 115\,394\,479\,200\, z^{5/2} + 274\,378\,104\,000\, z^2 + 529\,296\,768\,000\, z^{3/2} + 775\,337\,062\,500\, z + 766\,033\,017\,750\, \sqrt{z} + 383\,016\,508\,875\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right)
$$

07.22.03.7411.01

$$ {}_1F_2\left(5; -\frac{21}{4}, \frac{21}{4}; -z\right) = \frac{1}{16\,515\,072\, z^{17/4}}\left(-2\sqrt[4]{z}\,\left(770\,048\, z^6 - 20\,188\,160\, z^5 + 270\,602\,496\, z^4 - 3\,519\,996\,480\, z^3 + 32\,518\,886\,400\, z^2 - 162\,510\,648\,300\, z + 383\,016\,508\,875\right) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(262\,144\, z^7 - 17\,924\,096\, z^6 + 275\,235\,840\, z^5 - 3\,649\,916\,160\, z^4 + 41\,141\,580\,480\, z^3 - 274\,378\,104\,000\, z^2 + 775\,337\,062\,500\, z - 383\,016\,508\,875\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(1\,507\,328\, z^6 - 37\,822\,464\, z^5 + 496\,869\,120\, z^4 - 6\,429\,646\,080\, z^3 + 57\,697\,239\,600\, z^2 - 264\,648\,384\,000\, z + 383\,016\,508\,875\right)\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(1\,507\,328\, z^6 - 37\,822\,464\, z^5 + 496\,869\,120\, z^4 - 6\,429\,646\,080\, z^3 + 57\,697\,239\,600\, z^2 - 264\,648\,384\,000\, z + 383\,016\,508\,875\right)\cos\left(2\sqrt{z}\right) + \left(262\,144\, z^7 - 17\,924\,096\, z^6 + 275\,235\,840\, z^5 - 3\,649\,916\,160\, z^4 + 41\,141\,580\,480\, z^3 - 274\,378\,104\,000\, z^2 + 775\,337\,062\,500\, z - 383\,016\,508\,875\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 5$, $b_1 = -\frac{19}{4}$

07.22.03.7412.01

$$ {}_1F_2\left(5; -\frac{19}{4}, -\frac{17}{4}; z\right) = \frac{1}{1\,964\,187\,225}\left(e^{-2\sqrt{z}}\left(256\, e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(256\, z^2 + 8704\, z^{3/2} + 103\,968\, z + 514\,560\sqrt{z} + 885\,225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{21/4} - 256\sqrt{2\pi}\,\left(256\, z^2 - 8704\, z^{3/2} + 103\,968\, z - 514\,560\sqrt{z} + 885\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{21/4} + e^{2\sqrt{z}}\,\left(131\,072\, z^7 + 52\,142\,080\, z^6 + 396\,361\,728\, z^5 + 41\,287\,680\, z^4 + 45\,158\,400\, z^3 + 119\,750\,400\, z^2 + 486\,486\,000\, z + 1\,964\,187\,225\right)\right)\right) $$

07.22.03.7413.01

$$ {}_1F_2\left(5; -\frac{19}{4}, -\frac{17}{4}; -z\right) = \frac{1}{1\,964\,187\,225}\left(-131\,072\, z^7 + 52\,142\,080\, z^6 - 1024\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\, z^2 - 103\,968\, z + 885\,225\right)\cos\left(2\sqrt{z}\right) + 512\sqrt{z}\,\left(17\, z - 1005\right)\sin\left(2\sqrt{z}\right)\right) z^{21/4} + 1024\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\, z^2 - 103\,968\, z + 885\,225\right)\sin\left(2\sqrt{z}\right) - 512\sqrt{z}\,\left(17\, z - 1005\right)\cos\left(2\sqrt{z}\right)\right) z^{21/4} - 396\,361\,728\, z^5 + 41\,287\,680\, z^4 - 45\,158\,400\, z^3 + 119\,750\,400\, z^2 - 486\,486\,000\, z + 1\,964\,187\,225\right) $$

07.22.03.7414.01

$$ {}_1F_2\left(5; -\frac{19}{4}, -\frac{13}{4}; z\right) = \frac{1}{115\,540\,425} \left(e^{-2\sqrt{z}} \left(-32\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(512\, z^{5/2} + 16\,128\, z^2 + 175\,680\, z^{3/2} + 765\,600\, z + 1\,004\,850\, \sqrt{z} - 502\,425\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{17/4} - 32\, \sqrt{2\pi}\, \left(512\, z^{5/2} - 16\,128\, z^2 + 175\,680\, z^{3/2} - 765\,600\, z + 1\,004\,850\, \sqrt{z} + 502\,425\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{17/4} + e^{2\sqrt{z}} \left(-1\,024\,000\, z^6 - 46\,373\,376\, z^5 + 41\,287\,680\, z^4 + 9\,031\,680\, z^3 + 13\,305\,600\, z^2 + 37\,422\,000\, z + 115\,540\,425\right)\right)\right) $$

07.22.03.7415.01

$$ {}_1F_2\left(5; -\frac{19}{4}, -\frac{13}{4}; -z\right) = \frac{1}{115\,540\,425} \left(-1\,024\,000\, z^6 + 46\,373\,376\, z^5 + 128\, \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(-16\,128\, z^2 + 765\,600\, z + 502\,425\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\, \left(256\, z^2 - 87\,840\, z + 502\,425\right) \sin\left(2\sqrt{z}\right)\right) z^{17/4} + 128\, \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(256\, z^2 - 87\,840\, z + 502\,425\right) \cos\left(2\sqrt{z}\right) + 3\left(5376\, z^2 - 255\,200\, z - 167\,475\right) \sin\left(2\sqrt{z}\right)\right) z^{17/4} + 41\,287\,680\, z^4 - 9\,031\,680\, z^3 + 13\,305\,600\, z^2 - 37\,422\,000\, z + 115\,540\,425\right) $$

07.22.03.7416.01

$$ {}_1F_2\left(5; -\frac{19}{4}, -\frac{9}{4}; z\right) = \frac{1}{8\,887\,725} \left(e^{-2\sqrt{z}} \left(4\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(1024\, z^3 + 29\,184\, z^{5/2} + 278\,400\, z^2 + 974\,400\, z^{3/2} + 548\,100\, z - 1\,552\,950\, \sqrt{z} + 776\,475\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{13/4} - 4\, \sqrt{2\pi}\, \left(1024\, z^3 - 29\,184\, z^{5/2} + 278\,400\, z^2 - 974\,400\, z^{3/2} + 548\,100\, z + 1\,552\,950\, \sqrt{z} + 776\,475\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{13/4} + e^{2\sqrt{z}} \left(8192\, z^6 + 2\,170\,368\, z^5 + 2\,802\,240\, z^4 + 9\,031\,680\, z^3 + 2\,661\,120\, z^2 + 4\,158\,000\, z + 8\,887\,725\right)\right)\right) $$

07.22.03.7417.01

$$ {}_1F_2\left(5; -\frac{19}{4}, -\frac{9}{4}; -z\right) = \frac{1}{8\,887\,725} \left(8192\, z^6 - 2\,170\,368\, z^5 + 2\,802\,240\, z^4 + 16\, \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(1024\, z^3 - 278\,400\, z^2 + 548\,100\, z - 776\,475\right) \cos\left(2\sqrt{z}\right) + 6\sqrt{z}\, \left(4864\, z^2 - 162\,400\, z - 258\,825\right) \sin\left(2\sqrt{z}\right)\right) z^{13/4} - 16\, \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(1024\, z^3 - 278\,400\, z^2 + 548\,100\, z - 776\,475\right) \sin\left(2\sqrt{z}\right) - 6\sqrt{z}\, \left(4864\, z^2 - 162\,400\, z - 258\,825\right) \cos\left(2\sqrt{z}\right)\right) z^{13/4} - 9\,031\,680\, z^3 + 2\,661\,120\, z^2 - 4\,158\,000\, z + 8\,887\,725\right) $$

07.22.03.7418.01

$${}_1F_2\left(5;-\frac{19}{4},-\frac{5}{4};z\right)=$$
$$\frac{1}{1\,975\,050}\left(e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\sqrt{2\pi}\left(2048z^{7/2}+51\,200z^3+403\,200z^{5/2}+940\,800z^2-785\,400z^{3/2}-1\,927\,800z+\right.\right.\right.$$
$$\left.3\,480\,750\sqrt{z}-1\,740\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-$$
$$\sqrt{2\pi}\left(2048z^{7/2}-51\,200z^3+403\,200z^{5/2}-940\,800z^2-785\,400z^{3/2}+1\,927\,800z+3\,480\,750\sqrt{z}+1\,740\,375\right)$$
$$\left.\left.\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-6e^{2\sqrt{z}}\left(16\,896z^5+283\,040z^4-543\,480z^3-887\,040z^2-277\,200z-329\,175\right)\right)\right)$$

07.22.03.7419.01

$${}_1F_2\left(5;-\frac{19}{4},-\frac{5}{4};-z\right)=\frac{1}{987\,525}\left(-2\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(1024z^3-201\,600z^2-392\,700z-1\,740\,375\right)\sin\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.25\left(2048z^3-37\,632z^2-77\,112z+69\,615\right)\cos\left(2\sqrt{z}\right)\right)z^{9/4}-$$
$$2\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(1024z^3-201\,600z^2-392\,700z-1\,740\,375\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.25\left(2048z^3-37\,632z^2-77\,112z+69\,615\right)\sin\left(2\sqrt{z}\right)\right)z^{9/4}+$$
$$\left.3\left(16\,896z^5-283\,040z^4-543\,480z^3+887\,040z^2-277\,200z+329\,175\right)\right)$$

07.22.03.7420.01

$${}_1F_2\left(5;-\frac{19}{4},-\frac{1}{4};z\right)=$$
$$\frac{1}{3\,160\,080}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(4096z^4+86\,016z^{7/2}+505\,344z^3+365\,568z^{5/2}-2\,484\,720z^2+1\,113\,840z^{3/2}+\right.\right.\right.$$
$$\left.5\,290\,740z-8\,771\,490\sqrt{z}+4\,385\,745\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+\sqrt{2\pi}\left(-4096z^4+86\,016z^{7/2}-505\,344z^3+\right.$$
$$\left.365\,568z^{5/2}+2\,484\,720z^2+1\,113\,840z^{3/2}-5\,290\,740z-8\,771\,490\sqrt{z}-4\,385\,745\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+$$
$$\left.\left.16e^{2\sqrt{z}}\left(512z^5+60\,576z^4-312\,480z^3+574\,875z^2+831\,600z+197\,505\right)\right)\right)$$

07.22.03.7421.01

$${}_1F_2\left(5;-\frac{19}{4},-\frac{1}{4};-z\right)=$$
$$\frac{1}{790\,020}\left(-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096z^4-505\,344z^3-2\,484\,720z^2-5\,290\,740z+4\,385\,745\right)\cos\left(2\sqrt{z}\right)+42\right.\right.$$
$$\left.\sqrt{z}\left(2048z^3-8704z^2+26\,520z+208\,845\right)\sin\left(2\sqrt{z}\right)\right)z^{5/4}+$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096z^4-505\,344z^3-2\,484\,720z^2-5\,290\,740z+4\,385\,745\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.42\sqrt{z}\left(2048z^3-8704z^2+26\,520z+208\,845\right)\cos\left(2\sqrt{z}\right)\right)z^{5/4}+$$
$$\left.4\left(-512z^5+60\,576z^4+312\,480z^3+574\,875z^2-831\,600z+197\,505\right)\right)$$

07.22.03.7422.01

$$ {}_1F_2\left(5; -\frac{19}{4}, \frac{3}{4}; z\right) = \frac{1}{25\,280\,640}\left(e^{-2\sqrt{z}}\left(-80\,e^{2\sqrt{z}}\left(3328\,z^4 - 25\,200\,z^3 + 203\,004\,z^2 - 183\,015\,z - 316\,008\right) - e^{4\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\right.\right.$$
$$\left(8192\,z^{9/2} + 135\,168\,z^4 + 470\,016\,z^{7/2} - 913\,920\,z^3 - 2\,227\,680\,z^{5/2} + 7\,796\,880\,z^2 - 5\,012\,280\,z^{3/2} - 10\,024\,560\,z + \right.$$
$$\left.\left.18\,796\,050\,\sqrt{z} - 9\,398\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - \sqrt{2\pi}\,\sqrt[4]{z}\left(8192\,z^{9/2} - 135\,168\,z^4 + 470\,016\,z^{7/2} + 913\,920\,z^3 - \right.\right.$$
$$\left.\left.\left.2\,227\,680\,z^{5/2} - 7\,796\,880\,z^2 - 5\,012\,280\,z^{3/2} + 10\,024\,560\,z + 18\,796\,050\,\sqrt{z} + 9\,398\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7423.01

$$ {}_1F_2\left(5; -\frac{19}{4}, \frac{3}{4}; -z\right) = \frac{1}{6\,320\,160}\left(-20\left(3328\,z^4 + 25\,200\,z^3 + 203\,004\,z^2 + 183\,015\,z - 316\,008\right) + \right.$$
$$\sqrt{\pi}\,\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(4096\,z^4 - 235\,008\,z^3 - 1\,113\,840\,z^2 + 2\,506\,140\,z + 9\,398\,025\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$\left.\left.3\left(45\,056\,z^4 + 304\,640\,z^3 + 2\,598\,960\,z^2 + 3\,341\,520\,z - 3\,132\,675\right)\cos\left(2\sqrt{z}\right)\right) + \right.$$
$$\sqrt{\pi}\,\sqrt[4]{z}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(4096\,z^4 - 235\,008\,z^3 - 1\,113\,840\,z^2 + 2\,506\,140\,z + 9\,398\,025\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\left.\left.3\left(45\,056\,z^4 + 304\,640\,z^3 + 2\,598\,960\,z^2 + 3\,341\,520\,z - 3\,132\,675\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7424.01

$$ {}_1F_2\left(5; -\frac{19}{4}, \frac{7}{4}; z\right) = \frac{1}{67\,415\,040\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\left(2048\,z^4 + 6016\,z^3 + 470\,160\,z^2 - 3\,151\,800\,z - 2\,186\,415\right) - e^{4\sqrt{z}}\,\sqrt{2\pi}\right.\right.$$
$$\left(16\,384\,z^5 + 188\,416\,z^{9/2} + 92\,160\,z^4 - 2\,196\,480\,z^{7/2} + 3\,232\,320\,z^3 + 5\,896\,800\,z^{5/2} - \right.$$
$$\left.\left.24\,766\,560\,z^2 + 29\,484\,000\,z^{3/2} - 6\,633\,900\,z - 12\,162\,150\,\sqrt{z} + 6\,081\,075\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \right.$$
$$\sqrt{2\pi}\left(16\,384\,z^5 - 188\,416\,z^{9/2} + 92\,160\,z^4 + 2\,196\,480\,z^{7/2} + 3\,232\,320\,z^3 - 5\,896\,800\,z^{5/2} - \right.$$
$$\left.\left.\left.24\,766\,560\,z^2 - 29\,484\,000\,z^{3/2} - 6\,633\,900\,z + 12\,162\,150\,\sqrt{z} + 6\,081\,075\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7425.01

$$ {}_1F_2\left(5; -\frac{19}{4}, \frac{7}{4}; -z\right) = \frac{1}{16\,853\,760\, z^{3/4}} \left(-4\, z^{3/4} \left(2048\, z^4 - 6016\, z^3 + 470\,160\, z^2 + 3\,151\,800\, z - 2\,186\,415\right) - \right.$$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(16\,384\, z^5 - 92\,160\, z^4 + 3\,232\,320\, z^3 + 24\,766\,560\, z^2 - 6\,633\,900\, z - 6\,081\,075\right) \cos\left(2\sqrt{z}\right) + \right.$$
$$ \left. 2\sqrt{z} \left(94\,208\, z^4 + 1\,098\,240\, z^3 + 2\,948\,400\, z^2 - 14\,742\,000\, z - 6\,081\,075\right) \sin\left(2\sqrt{z}\right) \right) +$$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(16\,384\, z^5 - 92\,160\, z^4 + 3\,232\,320\, z^3 + 24\,766\,560\, z^2 - 6\,633\,900\, z - 6\,081\,075\right) \sin\left(2\sqrt{z}\right) - \right.$$
$$ \left. \left. 2\sqrt{z} \left(94\,208\, z^4 + 1\,098\,240\, z^3 + 2\,948\,400\, z^2 - 14\,742\,000\, z - 6\,081\,075\right) \cos\left(2\sqrt{z}\right) \right) \right) $$

07.22.03.7426.01

$$ {}_1F_2\left(5; -\frac{19}{4}, \frac{11}{4}; z\right) = $$
$$ \frac{1}{77\,045\,760\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(23\,552\, z^4 - 71\,232\, z^3 - 3\,042\,720\, z^2 + 976\,140\, z + 6\,081\,075\right) - e^{4\sqrt{z}}\, \sqrt{2\pi} \right.\right.$$
$$ \left(32\,768\, z^{11/2} + 196\,608\, z^5 - 798\,720\, z^{9/2} - 798\,720\, z^4 + 9\,659\,520\, z^{7/2} - 22\,014\,720\, z^3 + 16\,511\,040\, z^{5/2} + \right.$$
$$ \left. 17\,690\,400\, z^2 - 48\,648\,600\, z^{3/2} + 48\,648\,600\, z - 36\,486\,450\sqrt{z} + 18\,243\,225\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) +$$
$$ \sqrt{2\pi} \left(-32\,768\, z^{11/2} + 196\,608\, z^5 + 798\,720\, z^{9/2} - 798\,720\, z^4 - 9\,659\,520\, z^{7/2} - 22\,014\,720\, z^3 - \right.$$
$$ \left. \left. \left. 16\,511\,040\, z^{5/2} + 17\,690\,400\, z^2 + 48\,648\,600\, z^{3/2} + 48\,648\,600\, z + 36\,486\,450\sqrt{z} + 18\,243\,225\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) \right) \right) \right) $$

07.22.03.7427.01

$$ {}_1F_2\left(5; -\frac{19}{4}, \frac{11}{4}; -z\right) = \frac{1}{19\,261\,440\, z^{7/4}} \left(4\, z^{3/4} \left(23\,552\, z^4 + 71\,232\, z^3 - 3\,042\,720\, z^2 - 976\,140\, z + 6\,081\,075\right) - \right.$$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(16\,384\, z^5 + 399\,360\, z^4 + 4\,829\,760\, z^3 - 8\,255\,520\, z^2 - 24\,324\,300\, z + 18\,243\,225\right) \sin\left(2\sqrt{z}\right) - \right.$$
$$ \left. 3\left(65\,536\, z^5 + 266\,240\, z^4 - 7\,338\,240\, z^3 - 5\,896\,800\, z^2 + 16\,216\,200\, z - 6\,081\,075\right) \cos\left(2\sqrt{z}\right) \right) -$$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(16\,384\, z^5 + 399\,360\, z^4 + 4\,829\,760\, z^3 - 8\,255\,520\, z^2 - 24\,324\,300\, z + 18\,243\,225\right) \cos\left(2\sqrt{z}\right) + \right.$$
$$ \left. \left. 3\left(65\,536\, z^5 + 266\,240\, z^4 - 7\,338\,240\, z^3 - 5\,896\,800\, z^2 + 16\,216\,200\, z - 6\,081\,075\right) \sin\left(2\sqrt{z}\right) \right) \right) $$

07.22.03.7428.01

$$ {}_1F_2\left(5; -\frac{19}{4}, \frac{15}{4}; z\right) = \frac{1}{56\,033\,280\, z^{11/4}} \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(8192 z^5 - 198\,144 z^4 - 1\,413\,120 z^3 + 6\,606\,720 z^2 + 32\,432\,400 z + 70\,945\,875\right) - e^{4\sqrt{z}}\, \sqrt{2\pi} \left(65\,536 z^6 - 1\,597\,440 z^5 + 6\,389\,760 z^{9/2} - 9\,434\,880 z^4 - 6\,289\,920 z^{7/2} + 55\,036\,800 z^3 - 129\,729\,600 z^{5/2} + 227\,026\,800 z^2 - 356\,756\,400 z^{3/2} + 462\,161\,700 z - 425\,675\,250 \sqrt{z} + 212\,837\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(65\,536 z^6 - 1\,597\,440 z^5 - 6\,389\,760 z^{9/2} - 9\,434\,880 z^4 + 6\,289\,920 z^{7/2} + 55\,036\,800 z^3 + 129\,729\,600 z^{5/2} + 227\,026\,800 z^2 + 356\,756\,400 z^{3/2} + 462\,161\,700 z + 425\,675\,250 \sqrt{z} + 212\,837\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7429.01

$$ {}_1F_2\left(5; -\frac{19}{4}, \frac{15}{4}; -z\right) = \frac{1}{14\,008\,320\, z^{11/4}} \left(4 z^{3/4} \left(8192 z^5 + 198\,144 z^4 - 1\,413\,120 z^3 - 6\,606\,720 z^2 + 32\,432\,400 z - 70\,945\,875\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(65\,536 z^6 + 1\,597\,440 z^5 - 9\,434\,880 z^4 - 55\,036\,800 z^3 + 227\,026\,800 z^2 - 462\,161\,700 z + 212\,837\,625\right) \cos\left(2\sqrt{z}\right) - 390\sqrt{z} \left(16\,384 z^4 + 16\,128 z^3 - 332\,640 z^2 + 914\,760 z - 1\,091\,475\right) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(390\sqrt{z} \left(16\,384 z^4 + 16\,128 z^3 - 332\,640 z^2 + 914\,760 z - 1\,091\,475\right) \cos\left(2\sqrt{z}\right) + \left(65\,536 z^6 + 1\,597\,440 z^5 - 9\,434\,880 z^4 - 55\,036\,800 z^3 + 227\,026\,800 z^2 - 462\,161\,700 z + 212\,837\,625\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7430.01

$$ {}_1F_2\left(5; -\frac{19}{4}, \frac{19}{4}; z\right) = \frac{1}{29\,884\,416\, z^{15/4}} \left(e^{-2\sqrt{z}} \left(48\, e^{2\sqrt{z}}\, z^{3/4} \left(36\,864 z^5 - 65\,280 z^4 - 5\,402\,752 z^3 - 49\,729\,680 z^2 - 299\,999\,700 z - 884\,458\,575\right) - e^{4\sqrt{z}}\, \sqrt{2\pi} \left(131\,072 z^{13/2} - 851\,968 z^6 + 1\,916\,928 z^{11/2} + 2\,236\,416 z^5 - 30\,051\,840 z^{9/2} + 122\,653\,440 z^4 - 380\,540\,160 z^{7/2} + 1\,072\,431\,360 z^3 - 2\,763\,240\,480 z^{5/2} + 6\,194\,588\,400 z^2 - 11\,464\,853\,400 z^{3/2} + 16\,345\,929\,600 z - 15\,920\,254\,350 \sqrt{z} + 7\,960\,127\,175\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(-131\,072 z^{13/2} - 851\,968 z^6 - 1\,916\,928 z^{11/2} + 2\,236\,416 z^5 + 30\,051\,840 z^{9/2} + 122\,653\,440 z^4 + 380\,540\,160 z^{7/2} + 1\,072\,431\,360 z^3 + 2\,763\,240\,480 z^{5/2} + 6\,194\,588\,400 z^2 + 11\,464\,853\,400 z^{3/2} + 16\,345\,929\,600 z + 15\,920\,254\,350 \sqrt{z} + 7\,960\,127\,175\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7431.01

$$ {}_1F_2\left(5; -\frac{19}{4}, \frac{19}{4}; -z\right) = $$

$$ \frac{1}{7\,471\,104\,z^{15/4}}\left(12\,z^{3/4}\left(36\,864\,z^5 + 65\,280\,z^4 - 5\,402\,752\,z^3 + 49\,729\,680\,z^2 - 299\,999\,700\,z + 884\,458\,575\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right. $$
$$ \left(13\left(65\,536\,z^6 + 172\,032\,z^5 - 9\,434\,880\,z^4 + 82\,494\,720\,z^3 - 476\,506\,800\,z^2 + 1\,257\,379\,200\,z - 612\,317\,475\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(65\,536\,z^6 - 958\,464\,z^5 - 15\,025\,920\,z^4 + 190\,270\,080\,z^3 - \right. $$
$$ \left.\left. 1\,381\,620\,240\,z^2 + 5\,732\,426\,700\,z - 7\,960\,127\,175\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left(2\sqrt{z}\left(65\,536\,z^6 - 958\,464\,z^5 - 15\,025\,920\,z^4 + 190\,270\,080\,z^3 - 1\,381\,620\,240\,z^2 + 5\,732\,426\,700\,z - 7\,960\,127\,175\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) - 13\left(65\,536\,z^6 + 172\,032\,z^5 - 9\,434\,880\,z^4 + 82\,494\,720\,z^3 - \right. $$
$$ \left.\left.\left. 476\,506\,800\,z^2 + 1\,257\,379\,200\,z - 612\,317\,475\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7432.01

$$ {}_1F_2\left(5; -\frac{19}{4}, \frac{23}{4}; z\right) = $$

$$ \frac{1}{12\,582\,912\,z^{19/4}}\left(e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\left(32\,768\,z^6 + 3\,471\,360\,z^5 + 105\,752\,832\,z^4 + 2\,162\,160\,000\,z^3 + 29\,156\,727\,600\,z^2 + \right.\right.\right. $$
$$ \left. 221\,367\,346\,200\,z + 756\,212\,081\,625\right) - $$
$$ e^{4\sqrt{z}}\sqrt{2\pi}\left(262\,144\,z^7 - 3\,538\,944\,z^{13/2} + 26\,836\,992\,z^6 - 156\,549\,120\,z^{11/2} + 800\,916\,480\,z^5 - 3\,759\,275\,520\,z^{9/2} + \right. $$
$$ 16\,155\,659\,520\,z^4 - 62\,477\,775\,360\,z^{7/2} + 213\,145\,732\,800\,z^3 - 627\,048\,021\,600\,z^{5/2} + 1\,544\,690\,347\,200\,z^2 - $$
$$ \left. 3\,056\,688\,835\,200\,z^{3/2} + 4\,553\,192\,744\,100\,z - 4\,537\,272\,489\,750\sqrt{z} + 2\,268\,636\,244\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\left(262\,144\,z^7 + 3\,538\,944\,z^{13/2} + 26\,836\,992\,z^6 + 156\,549\,120\,z^{11/2} + 800\,916\,480\,z^5 + 3\,759\,275\,520\,z^{9/2} + \right. $$
$$ 16\,155\,659\,520\,z^4 + 62\,477\,775\,360\,z^{7/2} + 213\,145\,732\,800\,z^3 + 627\,048\,021\,600\,z^{5/2} + 1\,544\,690\,347\,200\,z^2 + $$
$$ \left.\left.\left. 3\,056\,688\,835\,200\,z^{3/2} + 4\,553\,192\,744\,100\,z + 4\,537\,272\,489\,750\sqrt{z} + 2\,268\,636\,244\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7433.01

$${}_1F_2\left(5; -\frac{19}{4}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{3\,145\,728\, z^{19/4}}\left(-4\, z^{3/4}\left(32\,768\, z^6 - 3\,471\,360\, z^5 + 105\,752\,832\, z^4 - 2\,162\,160\,000\, z^3 + 29\,156\,727\,600\, z^2 - \right.\right.$$
$$\left. 221\,367\,346\,200\, z + 756\,212\,081\,625\right) - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)$$
$$\left(\left(262\,144\, z^7 - 26\,836\,992\, z^6 + 800\,916\,480\, z^5 - 16\,155\,659\,520\, z^4 + 213\,145\,732\,800\, z^3 - 1\,544\,690\,347\,200\, z^2 + \right.\right.$$
$$\left. 4\,553\,192\,744\,100\, z - 2\,268\,636\,244\,875\right)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(589\,824\, z^6 - 26\,091\,520\, z^5 + 626\,545\,920\, z^4 - \right.$$
$$\left.\left. 10\,412\,962\,560\, z^3 + 104\,508\,003\,600\, z^2 - 509\,448\,139\,200\, z + 756\,212\,081\,625\right)\sin\left(2\sqrt{z}\right)\right) +$$
$$\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\,\left(589\,824\, z^6 - 26\,091\,520\, z^5 + 626\,545\,920\, z^4 - 10\,412\,962\,560\, z^3 + \right.\right.$$
$$\left. 104\,508\,003\,600\, z^2 - 509\,448\,139\,200\, z + 756\,212\,081\,625\right)\cos\left(2\sqrt{z}\right) +$$
$$\left.\left(262\,144\, z^7 - 26\,836\,992\, z^6 + 800\,916\,480\, z^5 - 16\,155\,659\,520\, z^4 + 213\,145\,732\,800\, z^3 - \right.\right.$$
$$\left.\left. 1\,544\,690\,347\,200\, z^2 + 4\,553\,192\,744\,100\, z - 2\,268\,636\,244\,875\right)\sin\left(2\sqrt{z}\right)\right)\Bigg)$$

For fixed z and $a_1 = 5$, $b_1 = -\frac{17}{4}$

07.22.03.7434.01

$${}_1F_2\left(5; -\frac{17}{4}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{103\,378\,275}\left(e^{-2\sqrt{z}}\left(-64\, e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(256\, z^2 + 8192\, z^{3/2} + 91\,680\, z + 422\,880\,\sqrt{z} + 673\,785\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{19/4} - \right.\right.$$
$$64\,\sqrt{2\pi}\,\left(256\, z^2 - 8192\, z^{3/2} + 91\,680\, z - 422\,880\,\sqrt{z} + 673\,785\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{19/4} +$$
$$\left.\left. e^{2\sqrt{z}}\,\left(-1\,040\,384\, z^6 - 51\,383\,808\, z^5 + 13\,762\,560\, z^4 + 6\,451\,200\, z^3 + 10\,886\,400\, z^2 + 32\,432\,400\, z + 103\,378\,275\right)\right)\right)$$

07.22.03.7435.01

$${}_1F_2\left(5; -\frac{17}{4}, -\frac{15}{4}; -z\right) = \frac{1}{103\,378\,275}\left(-1\,040\,384\, z^6 + 51\,383\,808\, z^5 + \right.$$
$$256\,\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\, z^2 - 91\,680\, z + 673\,785\right)\cos\left(2\sqrt{z}\right) + 32\sqrt{z}\,\left(256\, z - 13\,215\right)\sin\left(2\sqrt{z}\right)\right) z^{19/4} +$$
$$256\,\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\, z^2 - 91\,680\, z + 673\,785\right)\sin\left(2\sqrt{z}\right) - 32\sqrt{z}\,\left(256\, z - 13\,215\right)\cos\left(2\sqrt{z}\right)\right) z^{19/4} +$$
$$\left. 13\,762\,560\, z^4 - 6\,451\,200\, z^3 + 10\,886\,400\, z^2 - 32\,432\,400\, z + 103\,378\,275\right)$$

07.22.03.7436.01

$$ {}_1F_2\left(5; -\frac{17}{4}, -\frac{11}{4}; z\right) = \frac{1}{6\,891\,885} \left(e^{-2\sqrt{z}} \left(8\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(512\, z^{5/2} + 15\,104\, z^2 + 153\,152\, z^{3/2} + 616\,032\, z + 731\,538\, \sqrt{z} - 365\,769\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{15/4} - 8\, \sqrt{2\pi}\, \left(512\, z^{5/2} - 15\,104\, z^2 + 153\,152\, z^{3/2} - 616\,032\, z + 731\,538\, \sqrt{z} + 365\,769\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{15/4} + e^{2\sqrt{z}} \left(8192\, z^6 + 2\,391\,552\, z^5 + 9\,646\,656\, z^4 + 2\,150\,400\, z^3 + 1\,555\,200\, z^2 + 2\,948\,400\, z + 6\,891\,885\right)\right)\right) $$

07.22.03.7437.01

$$ {}_1F_2\left(5; -\frac{17}{4}, -\frac{11}{4}; -z\right) = \frac{1}{6\,891\,885} \left(8192\, z^6 - 2\,391\,552\, z^5 + 9\,646\,656\, z^4 - 32\, \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(-15\,104\, z^2 + 616\,032\, z + 365\,769\right) \cos\left(2\, \sqrt{z}\right) + 2\, \sqrt{z}\, \left(256\, z^2 - 76\,576\, z + 365\,769\right) \sin\left(2\, \sqrt{z}\right)\right) z^{15/4} + 32\, \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\, \sqrt{z}\, \left(256\, z^2 - 76\,576\, z + 365\,769\right) \cos\left(2\, \sqrt{z}\right) + \left(15\,104\, z^2 - 616\,032\, z - 365\,769\right) \sin\left(2\, \sqrt{z}\right)\right) z^{15/4} - 2\,150\,400\, z^3 + 1\,555\,200\, z^2 - 2\,948\,400\, z + 6\,891\,885\right) $$

07.22.03.7438.01

$$ {}_1F_2\left(5; -\frac{17}{4}, -\frac{7}{4}; z\right) = \frac{1}{626\,535} \left(e^{-2\sqrt{z}} \left(-e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(1024\, z^3 + 27\,136\, z^{5/2} + 238\,464\, z^2 + 755\,136\, z^{3/2} + 330\,372\, z - 1\,061\,910\, \sqrt{z} + 530\,955\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{11/4} - \sqrt{2\pi}\, \left(1024\, z^3 - 27\,136\, z^{5/2} + 238\,464\, z^2 - 755\,136\, z^{3/2} + 330\,372\, z + 1\,061\,910\, \sqrt{z} + 530\,955\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{11/4} - 3\, e^{2\sqrt{z}} \left(17\,920\, z^5 + 466\,912\, z^4 - 699\,080\, z^3 - 172\,800\, z^2 - 140\,400\, z - 208\,845\right)\right)\right) $$

07.22.03.7439.01

$$ {}_1F_2\left(5; -\frac{17}{4}, -\frac{7}{4}; -z\right) = \frac{1}{626\,535} \left(-4\, \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(1024\, z^3 - 238\,464\, z^2 + 330\,372\, z - 530\,955\right) \cos\left(2\, \sqrt{z}\right) + 2\, \sqrt{z}\, \left(13\,568\, z^2 - 377\,568\, z - 530\,955\right) \sin\left(2\, \sqrt{z}\right)\right) z^{11/4} - 4\, \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(1024\, z^3 - 238\,464\, z^2 + 330\,372\, z - 530\,955\right) \sin\left(2\, \sqrt{z}\right) - 2\, \sqrt{z}\, \left(13\,568\, z^2 - 377\,568\, z - 530\,955\right) \cos\left(2\, \sqrt{z}\right)\right) z^{11/4} + 3\, \left(17\,920\, z^5 - 466\,912\, z^4 - 699\,080\, z^3 + 172\,800\, z^2 - 140\,400\, z + 208\,845\right)\right) $$

07.22.03.7440.01

$${}_1F_2\left(5;-\frac{17}{4},-\frac{3}{4};z\right)=$$
$$\frac{1}{716\,040}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(2048z^{7/2}+47\,104z^3+335\,616z^{5/2}+671\,232z^2-681\,720z^{3/2}-1\,101\,240z+\right.\right.\right.$$
$$\left.\left.2\,163\,150\sqrt{z}-1\,081\,575\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-$$
$$\sqrt{2\pi}\left(2048z^{7/2}-47\,104z^3+335\,616z^{5/2}-671\,232z^2-681\,720z^{3/2}+1\,101\,240z+2\,163\,150\sqrt{z}+1\,081\,575\right)$$
$$\left.\left.\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+8e^{2\sqrt{z}}\left(512z^5+81\,056z^4-199\,200z^3+563\,175z^2+140\,400z+89\,505\right)\right)\right)$$

07.22.03.7441.01

$${}_1F_2\left(5;-\frac{17}{4},-\frac{3}{4};-z\right)=\frac{1}{179\,010}\left(\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(1024z^3-167\,808z^2-340\,860z-1\,081\,575\right)\sin\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.23\left(2048z^3-29\,184z^2-47\,880z+47\,025\right)\cos\left(2\sqrt{z}\right)\right)z^{7/4}-$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(1024z^3-167\,808z^2-340\,860z-1\,081\,575\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.23\left(2048z^3-29\,184z^2-47\,880z+47\,025\right)\sin\left(2\sqrt{z}\right)\right)z^{7/4}+\right.$$
$$\left.2\left(-512z^5+81\,056z^4+199\,200z^3+563\,175z^2-140\,400z+89\,505\right)\right)$$

07.22.03.7442.01

$${}_1F_2\left(5;-\frac{17}{4},\frac{1}{4};z\right)=$$
$$\frac{1}{1\,909\,440}\left(e^{-2\sqrt{z}}\left(-40e^{2\sqrt{z}}\left(3840z^4+2992z^3+82\,404z^2-236\,205z-47\,736\right)-e^{4\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(4096z^4+77\,824z^{7/2}+\right.\right.\right.$$
$$\left.\left.398\,848z^3+145\,920z^{5/2}-1\,728\,240z^2+1\,254\,000z^{3/2}+2\,445\,300z-4\,608\,450\sqrt{z}+2\,304\,225\right)$$
$$\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\,z^{3/4}\left(-4096z^4+77\,824z^{7/2}-398\,848z^3+145\,920z^{5/2}+1\,728\,240z^2+\right.$$
$$\left.\left.\left.1\,254\,000z^{3/2}-2\,445\,300z-4\,608\,450\sqrt{z}-2\,304\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7443.01

$${}_1F_2\left(5;-\frac{17}{4},\frac{1}{4};-z\right)=\frac{1}{477\,360}\left(-10\left(3840z^4-2992z^3+82\,404z^2+236\,205z-47\,736\right)+\right.$$
$$\sqrt{\pi}\,z^{3/4}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096z^4-398\,848z^3-1\,728\,240z^2-2\,445\,300z+2\,304\,225\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.38\sqrt{z}\left(2048z^3-3840z^2+33\,000z+121\,275\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\,z^{3/4}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096z^4-398\,848z^3-1\,728\,240z^2-2\,445\,300z+2\,304\,225\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.38\sqrt{z}\left(2048z^3-3840z^2+33\,000z+121\,275\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7444.01

$$ {}_1F_2\left(5; -\frac{17}{4}, \frac{5}{4}; z\right) = \frac{1}{15\,275\,520\,\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(2048\,z^4+73\,600\,z^3-174\,960\,z^2-1\,501\,560\,z+1\,364\,985\right)-e^{4\sqrt{z}}\,\sqrt{2\,\pi}\right.\right.$$
$$\left(8192\,z^{9/2}+118\,784\,z^4+322\,560\,z^{7/2}-837\,120\,z^3-945\,120\,z^{5/2}+4\,870\,800\,z^2-4\,851\,000\,z^{3/2}-1\,940\,400\,z+\right.$$
$$\left.\left.6\,548\,850\,\sqrt{z}-3\,274\,425\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(8192\,z^{9/2}-118\,784\,z^4+322\,560\,z^{7/2}+837\,120\,z^3-\right.\right.$$
$$\left.\left.\left.945\,120\,z^{5/2}-4\,870\,800\,z^2-4\,851\,000\,z^{3/2}+1\,940\,400\,z+6\,548\,850\,\sqrt{z}+3\,274\,425\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7445.01

$$ {}_1F_2\left(5; -\frac{17}{4}, \frac{5}{4}; -z\right) = \frac{1}{3\,818\,880\,\sqrt[4]{z}}\left(-2\,\sqrt[4]{z}\,\left(2048\,z^4-73\,600\,z^3-174\,960\,z^2+1\,501\,560\,z+1\,364\,985\right)+\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\,\left(4096\,z^4-161\,280\,z^3-472\,560\,z^2+2\,425\,500\,z+3\,274\,425\right)\sin\left(2\,\sqrt{z}\right)-\right.$$
$$\left.\left(118\,784\,z^4+837\,120\,z^3+4\,870\,800\,z^2+1\,940\,400\,z-3\,274\,425\right)\cos\left(2\,\sqrt{z}\right)\right)-$$
$$\sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\,\left(4096\,z^4-161\,280\,z^3-472\,560\,z^2+2\,425\,500\,z+3\,274\,425\right)\cos\left(2\,\sqrt{z}\right)+\right.$$
$$\left.\left.\left(118\,784\,z^4+837\,120\,z^3+4\,870\,800\,z^2+1\,940\,400\,z-3\,274\,425\right)\sin\left(2\,\sqrt{z}\right)\right)\right)$$

07.22.03.7446.01

$$ {}_1F_2\left(5; -\frac{17}{4}, \frac{9}{4}; z\right) = \frac{1}{24\,440\,832\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(37\,888\,z^4-353\,472\,z^3-213\,600\,z^2+4\,454\,244\,z+2\,401\,245\right)-e^{4\sqrt{z}}\right.\right.$$
$$\sqrt{2\,\pi}\,\left(16\,384\,z^5+155\,648\,z^{9/2}-55\,296\,z^4-1\,453\,056\,z^{7/2}+3\,195\,456\,z^3+155\,232\,z^{5/2}-\right.$$
$$\left.\left.10\,090\,080\,z^2+16\,299\,360\,z^{3/2}-11\,351\,340\,z+4\,802\,490\,\sqrt{z}-2\,401\,245\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.$$
$$\left.\sqrt{2\,\pi}\,\left(-16\,384\,z^5+155\,648\,z^{9/2}+55\,296\,z^4-1\,453\,056\,z^{7/2}-3\,195\,456\,z^3+155\,232\,z^{5/2}+\right.\right.$$
$$\left.\left.\left.10\,090\,080\,z^2+16\,299\,360\,z^{3/2}+11\,351\,340\,z+4\,802\,490\,\sqrt{z}+2\,401\,245\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7447.01

$$ {}_1F_2\left(5; -\frac{17}{4}, \frac{9}{4}; -z\right) = \frac{1}{6\,110\,208\, z^{5/4}} \left(2\sqrt[4]{z}\, \left(37\,888\, z^4 + 353\,472\, z^3 - 213\,600\, z^2 - 4\,454\,244\, z + 2\,401\,245\right) - \right.$$

$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(16\,384\, z^5 + 55\,296\, z^4 + 3\,195\,456\, z^3 + 10\,090\,080\, z^2 - 11\,351\,340\, z + 2\,401\,245\right) \cos\left(2\sqrt{z}\right) + \right.$$

$$ \left. 2\sqrt{z}\, \left(77\,824\, z^4 + 726\,528\, z^3 + 77\,616\, z^2 - 8\,149\,680\, z + 2\,401\,245\right) \sin\left(2\sqrt{z}\right) \right) -$$

$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(16\,384\, z^5 + 55\,296\, z^4 + 3\,195\,456\, z^3 + 10\,090\,080\, z^2 - 11\,351\,340\, z + 2\,401\,245\right) \sin\left(2\sqrt{z}\right) - \right.$$

$$ \left. \left. 2\sqrt{z}\, \left(77\,824\, z^4 + 726\,528\, z^3 + 77\,616\, z^2 - 8\,149\,680\, z + 2\,401\,245\right) \cos\left(2\sqrt{z}\right) \right) \right) $$

07.22.03.7448.01

$$ {}_1F_2\left(5; -\frac{17}{4}, \frac{13}{4}; z\right) = $$

$$ \frac{1}{21\,725\,184\, z^{9/4}} \left(e^{-2\sqrt{z}} \left(-8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(8192\, z^5 - 198\,144\, z^4 + 983\,040\, z^3 + 6\,805\,248\, z^2 + 10\,478\,160\, z + 14\,189\,175\right) - \right. \right.$$

$$ e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(32\,768\, z^{11/2} + 131\,072\, z^5 - 765\,952\, z^{9/2} + 540\,672\, z^4 + 4\,228\,224\, z^{7/2} - 14\,488\,320\, z^3 + 23\,284\,800\, z^{5/2} - \right.$$

$$ \left. 25\,613\,280\, z^2 + 28\,523\,880\, z^{3/2} - 33\,180\,840\, z + 28\,378\,350\sqrt{z} - 14\,189\,175\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) +$$

$$ \sqrt{2\pi}\, \left(32\,768\, z^{11/2} - 131\,072\, z^5 - 765\,952\, z^{9/2} - 540\,672\, z^4 + 4\,228\,224\, z^{7/2} + 14\,488\,320\, z^3 + \right.$$

$$ \left. \left. \left. 23\,284\,800\, z^{5/2} + 25\,613\,280\, z^2 + 28\,523\,880\, z^{3/2} + 33\,180\,840\, z + 28\,378\,350\sqrt{z} + 14\,189\,175\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) \right) \right) $$

07.22.03.7449.01

$$ {}_1F_2\left(5; -\frac{17}{4}, \frac{13}{4}; -z\right) = \frac{1}{5\,431\,296\, z^{9/4}} \left(2\sqrt[4]{z}\, \left(8192\, z^5 + 198\,144\, z^4 + 983\,040\, z^3 - 6\,805\,248\, z^2 + 10\,478\,160\, z - 14\,189\,175\right) - \right.$$

$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(-131\,072\, z^5 + 540\,672\, z^4 + 14\,488\,320\, z^3 - 25\,613\,280\, z^2 + 33\,180\,840\, z - 14\,189\,175\right) \cos\left(2\sqrt{z}\right) + \right.$$

$$ \left. 2\sqrt{z}\, \left(16\,384\, z^5 + 382\,976\, z^4 + 2\,114\,112\, z^3 - 11\,642\,400\, z^2 + 14\,261\,940\, z - 14\,189\,175\right) \sin\left(2\sqrt{z}\right) \right) +$$

$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(16\,384\, z^5 + 382\,976\, z^4 + 2\,114\,112\, z^3 - 11\,642\,400\, z^2 + 14\,261\,940\, z - 14\,189\,175\right) \cos\left(2\sqrt{z}\right) + \right.$$

$$ \left. \left. \left(131\,072\, z^5 - 540\,672\, z^4 - 14\,488\,320\, z^3 + 25\,613\,280\, z^2 - 33\,180\,840\, z + 14\,189\,175\right) \sin\left(2\sqrt{z}\right) \right) \right) $$

07.22.03.7450.01

$$ {}_1F_2\left(5; -\frac{17}{4}, \frac{17}{4}; z\right) = \frac{1}{13\,369\,344\, z^{13/4}} \left(e^{-2\sqrt{z}} \left(24\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(12\,288\, z^5 - 441\,600\, z^4 - 2\,862\,976\, z^3 - 12\,141\,360\, z^2 - 45\,945\,900\, z - 91\,216\,125\right) - e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(65\,536\, z^6 - 131\,072\, z^{11/2} - 811\,008\, z^5 + 5\,136\,384\, z^{9/2} - 14\,657\,280\, z^4 + 29\,652\,480\, z^{7/2} - 57\,214\,080\, z^3 + 120\,415\,680\, z^{5/2} - 243\,991\,440\, z^2 + 421\,621\,200\, z^{3/2} - 575\,675\,100\, z + 547\,296\,750\, \sqrt{z} - 273\,648\,375\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(-65\,536\, z^6 - 131\,072\, z^{11/2} + 811\,008\, z^5 + 5\,136\,384\, z^{9/2} + 14\,657\,280\, z^4 + 29\,652\,480\, z^{7/2} + 57\,214\,080\, z^3 + 120\,415\,680\, z^{5/2} + 243\,991\,440\, z^2 + 421\,621\,200\, z^{3/2} + 575\,675\,100\, z + 547\,296\,750\, \sqrt{z} + 273\,648\,375\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7451.01

$$ {}_1F_2\left(5; -\frac{17}{4}, \frac{17}{4}; -z\right) = \frac{1}{3\,342\,336\, z^{13/4}} \left(6\, \sqrt[4]{z}\, \left(12\,288\, z^5 + 441\,600\, z^4 - 2\,862\,976\, z^3 + 12\,141\,360\, z^2 - 45\,945\,900\, z + 91\,216\,125\right) + \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(65\,536\, z^6 + 811\,008\, z^5 - 14\,657\,280\, z^4 + 57\,214\,080\, z^3 - 243\,991\,440\, z^2 + 575\,675\,100\, z - 273\,648\,375\right) \cos\left(2\sqrt{z}\right) - 2\sqrt{z}\, \left(65\,536\, z^5 + 2\,568\,192\, z^4 - 14\,826\,240\, z^3 + 60\,207\,840\, z^2 - 210\,810\,600\, z + 273\,648\,375\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(65\,536\, z^5 + 2\,568\,192\, z^4 - 14\,826\,240\, z^3 + 60\,207\,840\, z^2 - 210\,810\,600\, z + 273\,648\,375\right) \cos\left(2\sqrt{z}\right) + \left(65\,536\, z^6 + 811\,008\, z^5 - 14\,657\,280\, z^4 + 57\,214\,080\, z^3 - 243\,991\,440\, z^2 + 575\,675\,100\, z - 273\,648\,375\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7452.01

$$ {}_1F_2\left(5; -\frac{17}{4}, \frac{21}{4}; z\right) = \frac{1}{6\,291\,456\, z^{17/4}} \left(e^{-2\sqrt{z}} \left(-8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(32\,768\, z^6 + 1\,341\,440\, z^5 + 16\,050\,432\, z^4 + 192\,931\,200\, z^3 + 1\,740\,538\,800\, z^2 + 8\,610\,802\,200\, z + 20\,158\,763\,625\right) - e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(131\,072\, z^{13/2} - 1\,114\,112\, z^6 + 5\,062\,656\, z^{11/2} - 17\,571\,840\, z^5 + 58\,544\,640\, z^{9/2} - 204\,145\,920\, z^4 + 702\,155\,520\, z^{7/2} - 2\,216\,712\,960\, z^3 + 6\,162\,156\,000\, z^{5/2} - 14\,562\,147\,600\, z^2 + 27\,972\,945\,000\, z^{3/2} - 40\,864\,824\,000\, z + 40\,317\,527\,250\, \sqrt{z} - 20\,158\,763\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(131\,072\, z^{13/2} + 1\,114\,112\, z^6 + 5\,062\,656\, z^{11/2} + 17\,571\,840\, z^5 + 58\,544\,640\, z^{9/2} + 204\,145\,920\, z^4 + 702\,155\,520\, z^{7/2} + 2\,216\,712\,960\, z^3 + 6\,162\,156\,000\, z^{5/2} + 14\,562\,147\,600\, z^2 + 27\,972\,945\,000\, z^{3/2} + 40\,864\,824\,000\, z + 40\,317\,527\,250\, \sqrt{z} + 20\,158\,763\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7453.01

$$ {}_1F_2\left(5; -\frac{17}{4}, \frac{21}{4}; -z\right) = \frac{1}{1\,572\,864\, z^{17/4}} $$
$$ \left(-2\sqrt[4]{z}\,\left(32\,768\, z^6 - 1\,341\,440\, z^5 + 16\,050\,432\, z^4 - 192\,931\,200\, z^3 + 1\,740\,538\,800\, z^2 - 8\,610\,802\,200\, z + 20\,158\,763\,625\right) - \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(65\,536\, z^6 - 2\,531\,328\, z^5 + 29\,272\,320\, z^4 - 351\,077\,760\, z^3 + 3\,081\,078\,000\, z^2 - \right.\right. $$
$$ \left. 13\,986\,472\,500\, z + 20\,158\,763\,625\right)\cos\left(2\sqrt{z}\right) + \left(-1\,114\,112\, z^6 + 17\,571\,840\, z^5 - 204\,145\,920\, z^4 + \right. $$
$$ \left.\left. 2\,216\,712\,960\, z^3 - 14\,562\,147\,600\, z^2 + 40\,864\,824\,000\, z - 20\,158\,763\,625\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1\,114\,112\, z^6 - 17\,571\,840\, z^5 + 204\,145\,920\, z^4 - 2\,216\,712\,960\, z^3 + 14\,562\,147\,600\, z^2 - \right.\right. $$
$$ \left. 40\,864\,824\,000\, z + 20\,158\,763\,625\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(65\,536\, z^6 - 2\,531\,328\, z^5 + 29\,272\,320\, z^4 - \right. $$
$$ \left.\left. \left. 351\,077\,760\, z^3 + 3\,081\,078\,000\, z^2 - 13\,986\,472\,500\, z + 20\,158\,763\,625\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 5$, $b_1 = -\frac{15}{4}$

07.22.03.7454.01

$$ {}_1F_2\left(5; -\frac{15}{4}, -\frac{13}{4}; z\right) = $$
$$ \frac{1}{6\,081\,075}\left(e^{-2\sqrt{z}}\,\left(16\, e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(256\, z^2 + 7680\, z^{3/2} + 80\,160\, z + 342\,720\sqrt{z} + 502\,425\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{17/4} - \right. $$
$$ 16\sqrt{2\pi}\,\left(256\, z^2 - 7680\, z^{3/2} + 80\,160\, z - 342\,720\sqrt{z} + 502\,425\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{17/4} + $$
$$ \left. e^{2\sqrt{z}}\,\left(8192\, z^6 + 2\,505\,216\, z^5 + 13\,762\,560\, z^4 + 1\,290\,240\, z^3 + 1\,209\,600\, z^2 + 2\,494\,800\, z + 6\,081\,075\right)\right)\right) $$

07.22.03.7455.01

$$ {}_1F_2\left(5; -\frac{15}{4}, -\frac{13}{4}; -z\right) = \frac{1}{6\,081\,075} $$
$$ \left(8192\, z^6 - 2\,505\,216\, z^5 + 64\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\, z^2 - 80\,160\, z + 502\,425\right)\cos\left(2\sqrt{z}\right) + 960\sqrt{z}\,\left(8\, z - 357\right)\sin\left(2\sqrt{z}\right)\right)\right. $$
$$ z^{17/4} - 64\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\, z^2 - 80\,160\, z + 502\,425\right)\sin\left(2\sqrt{z}\right) - 960\sqrt{z}\,\left(8\, z - 357\right)\cos\left(2\sqrt{z}\right)\right) z^{17/4} + $$
$$ \left. 13\,762\,560\, z^4 - 1\,290\,240\, z^3 + 1\,209\,600\, z^2 - 2\,494\,800\, z + 6\,081\,075\right) $$

07.22.03.7456.01

$$ {}_1F_2\left(5; -\frac{15}{4}, -\frac{9}{4}; z\right) = \frac{1}{467\,775} $$
$$ \left(e^{-2\sqrt{z}}\left(-2\,e^{4\sqrt{z}}\sqrt{2\pi}\left(512\,z^{5/2}+14\,080\,z^2+132\,160\,z^{3/2}+487\,200\,z+517\,650\sqrt{z}-258\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-\right.\right. $$
$$ 2\sqrt{2\pi}\left(512\,z^{5/2}-14\,080\,z^2+132\,160\,z^{3/2}-487\,200\,z+517\,650\sqrt{z}+258\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+ $$
$$ \left.\left.e^{2\sqrt{z}}\left(-55\,808\,z^5-1\,826\,720\,z^4+1\,290\,240\,z^3+241\,920\,z^2+277\,200\,z+467\,775\right)\right)\right) $$

07.22.03.7457.01

$$ {}_1F_2\left(5; -\frac{15}{4}, -\frac{9}{4}; -z\right) = \frac{1}{467\,775}\left(55\,808\,z^5-1\,826\,720\,z^4-\right. $$
$$ 8\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(256\,z^2-66\,080\,z+258\,825\right)\sin\left(2\sqrt{z}\right)-5\left(2816\,z^2-97\,440\,z-51\,765\right)\cos\left(2\sqrt{z}\right)\right)z^{13/4}- $$
$$ 8\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(256\,z^2-66\,080\,z+258\,825\right)\cos\left(2\sqrt{z}\right)+5\left(2816\,z^2-97\,440\,z-51\,765\right)\sin\left(2\sqrt{z}\right)\right)z^{13/4}- $$
$$ \left.1\,290\,240\,z^3+241\,920\,z^2-277\,200\,z+467\,775\right) $$

07.22.03.7458.01

$$ {}_1F_2\left(5; -\frac{15}{4}, -\frac{5}{4}; z\right) = $$
$$ \frac{1}{207\,900}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(1024\,z^3+25\,088\,z^{5/2}+201\,600\,z^2+571\,200\,z^{3/2}+178\,500\,z-696\,150\sqrt{z}+348\,075\right)\right.\right. $$
$$ \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-\sqrt{2\pi}\left(1024\,z^3-25\,088\,z^{5/2}+201\,600\,z^2-571\,200\,z^{3/2}+178\,500\,z+696\,150\sqrt{z}+348\,075\right) $$
$$ \left.\left.\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+4\,e^{2\sqrt{z}}\left(512\,z^5+97\,760\,z^4+34\,020\,z^3+241\,920\,z^2+55\,440\,z+51\,975\right)\right)\right) $$

07.22.03.7459.01

$$ {}_1F_2\left(5; -\frac{15}{4}, -\frac{5}{4}; -z\right) = \frac{1}{51\,975}\left(-512\,z^5+97\,760\,z^4-34\,020\,z^3-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right. $$
$$ \left(\left(1024\,z^3-201\,600\,z^2+178\,500\,z-348\,075\right)\cos\left(2\sqrt{z}\right)+14\sqrt{z}\left(1792\,z^2-40\,800\,z-49\,725\right)\sin\left(2\sqrt{z}\right)\right)z^{9/4}+\sqrt{\pi} $$
$$ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\,z^3-201\,600\,z^2+178\,500\,z-348\,075\right)\sin\left(2\sqrt{z}\right)-14\sqrt{z}\left(1792\,z^2-40\,800\,z-49\,725\right)\cos\left(2\sqrt{z}\right)\right) $$
$$ \left.z^{9/4}+241\,920\,z^2-55\,440\,z+51\,975\right) $$

07.22.03.7460.01

$$ {}_1F_2\left(5; -\frac{15}{4}, -\frac{1}{4}; z\right) = \frac{1}{332\,640}\left(e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\sqrt{2\pi}\left(2048 z^{7/2} + 43\,008 z^3 + 274\,176 z^{5/2} + 456\,960 z^2 - 556\,920 z^{3/2} - 556\,920 z + 1\,253\,070\sqrt{z} - 626\,535\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} - \sqrt{2\pi}\left(2048 z^{7/2} - 43\,008 z^3 + 274\,176 z^{5/2} - 456\,960 z^2 - 556\,920 z^{3/2} + 556\,920 z + 1\,253\,070\sqrt{z} + 626\,535\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} - 16 e^{2\sqrt{z}}\left(5312 z^4 + 49\,500 z^3 - 47\,565 z^2 - 110\,880 z - 20\,790\right)\right)\right) $$

07.22.03.7461.01

$$ {}_1F_2\left(5; -\frac{15}{4}, -\frac{1}{4}; -z\right) = \frac{1}{83\,160}\left(\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(1024 z^3 - 137\,088 z^2 - 278\,460 z - 626\,535\right)\sin\left(2\sqrt{z}\right) - 21\left(2048 z^3 - 21\,760 z^2 - 26\,520 z + 29\,835\right)\cos\left(2\sqrt{z}\right)\right) z^{5/4} + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(1024 z^3 - 137\,088 z^2 - 278\,460 z - 626\,535\right)\cos\left(2\sqrt{z}\right) + 21\left(2048 z^3 - 21\,760 z^2 - 26\,520 z + 29\,835\right)\sin\left(2\sqrt{z}\right)\right) z^{5/4} + 4\left(-5312 z^4 + 49\,500 z^3 + 47\,565 z^2 - 110\,880 z + 20\,790\right)\right) $$

07.22.03.7462.01

$$ {}_1F_2\left(5; -\frac{15}{4}, \frac{3}{4}; z\right) = \frac{1}{2\,661\,120}\left(e^{-2\sqrt{z}}\left(16 e^{2\sqrt{z}}\left(512 z^4 + 36\,000 z^3 - 133\,920 z^2 + 52\,395 z + 166\,320\right) + e^{4\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(4096 z^4 + 69\,632 z^{7/2} + 304\,640 z^3 - 1\,113\,840 z^2 + 1\,113\,840 z^{3/2} + 835\,380 z - 2\,088\,450\sqrt{z} + 1\,044\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - \sqrt{2\pi}\sqrt[4]{z}\left(4096 z^4 - 69\,632 z^{7/2} + 304\,640 z^3 - 1\,113\,840 z^2 - 1\,113\,840 z^{3/2} + 835\,380 z + 2\,088\,450\sqrt{z} + 1\,044\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7463.01

$$ {}_1F_2\left(5; -\frac{15}{4}, \frac{3}{4}; -z\right) = \frac{1}{665\,280}\left(4\left(512 z^4 - 36\,000 z^3 - 133\,920 z^2 - 52\,395 z + 166\,320\right) + \sqrt{\pi}\sqrt[4]{z}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096 z^4 - 304\,640 z^3 - 1\,113\,840 z^2 - 835\,380 z + 1\,044\,225\right)\cos\left(2\sqrt{z}\right) + 34\sqrt{z}\left(2048 z^3 + 32\,760 z + 61\,425\right)\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\sqrt[4]{z}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096 z^4 - 304\,640 z^3 - 1\,113\,840 z^2 - 835\,380 z + 1\,044\,225\right)\sin\left(2\sqrt{z}\right) - 34\sqrt{z}\left(2048 z^3 + 32\,760 z + 61\,425\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7464.01

$$ {}_1F_2\left(5; -\frac{15}{4}, \frac{7}{4}; z\right) = \frac{1}{7\,096\,320\, z^{3/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(12\,544\, z^3 - 91\,440\, z^2 + 305\,580\, z + 259\,245\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(8192\, z^{9/2} + 102\,400\, z^4 + 199\,680\, z^{7/2} - 698\,880\, z^3 - 131\,040\, z^{5/2} + 2\,555\,280\, z^2 - 3\,439\,800\, z^{3/2} + 982\,800\, z + 1\,105\,650\, \sqrt{z} - 552\,825\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(8192\, z^{9/2} - 102\,400\, z^4 + 199\,680\, z^{7/2} + 698\,880\, z^3 - 131\,040\, z^{5/2} - 2\,555\,280\, z^2 - 3\,439\,800\, z^{3/2} - 982\,800\, z + 1\,105\,650\, \sqrt{z} + 552\,825\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7465.01

$$ {}_1F_2\left(5; -\frac{15}{4}, \frac{7}{4}; -z\right) = \frac{1}{1\,774\,080\, z^{3/4}} \left(-4\, z^{3/4} \left(12\,544\, z^3 + 91\,440\, z^2 + 305\,580\, z - 259\,245\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(4096\, z^4 - 99\,840\, z^3 - 65\,520\, z^2 + 1\,719\,900\, z + 552\,825\right) \sin\left(2\sqrt{z}\right) - 5\left(20\,480\, z^4 + 139\,776\, z^3 + 511\,056\, z^2 - 196\,560\, z - 110\,565\right) \cos\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(4096\, z^4 - 99\,840\, z^3 - 65\,520\, z^2 + 1\,719\,900\, z + 552\,825\right) \cos\left(2\sqrt{z}\right) + 5\left(20\,480\, z^4 + 139\,776\, z^3 + 511\,056\, z^2 - 196\,560\, z - 110\,565\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7466.01

$$ {}_1F_2\left(5; -\frac{15}{4}, \frac{11}{4}; z\right) = \frac{1}{8\,110\,080\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(2048\, z^4 - 22\,656\, z^3 + 328\,080\, z^2 + 4680\, z - 467\,775\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(16\,384\, z^5 + 122\,880\, z^{9/2} - 153\,600\, z^4 - 783\,360\, z^{7/2} + 2\,479\,680\, z^3 - 2\,328\,480\, z^{5/2} - 1\,058\,400\, z^2 + 4\,082\,400\, z^{3/2} - 3\,912\,300\, z + 2\,806\,650\, \sqrt{z} - 1\,403\,325\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(-16\,384\, z^5 + 122\,880\, z^{9/2} + 153\,600\, z^4 - 783\,360\, z^{7/2} - 2\,479\,680\, z^3 - 2\,328\,480\, z^{5/2} + 1\,058\,400\, z^2 + 4\,082\,400\, z^{3/2} + 3\,912\,300\, z + 2\,806\,650\, \sqrt{z} + 1\,403\,325\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7467.01

$$ {}_1F_2\left(5; -\frac{15}{4}, \frac{11}{4}; -z\right) = \frac{1}{2\,027\,520\, z^{7/4}} \left(-4\, z^{3/4} \left(2048\, z^4 + 22\,656\, z^3 + 328\,080\, z^2 - 4680\, z - 467\,775\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(16\,384\, z^5 + 153\,600\, z^4 + 2\,479\,680\, z^3 + 1\,058\,400\, z^2 - 3\,912\,300\, z + 1\,403\,325\right) \cos\left(2\sqrt{z}\right) + 30\sqrt{z}\, \left(4096\, z^4 + 26\,112\, z^3 - 77\,616\, z^2 - 136\,080\, z + 93\,555\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(16\,384\, z^5 + 153\,600\, z^4 + 2\,479\,680\, z^3 + 1\,058\,400\, z^2 - 3\,912\,300\, z + 1\,403\,325\right) \sin\left(2\sqrt{z}\right) - 30\sqrt{z}\, \left(4096\, z^4 + 26\,112\, z^3 - 77\,616\, z^2 - 136\,080\, z + 93\,555\right) \cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7468.01

$$ {}_1F_2\left(5; -\frac{15}{4}, \frac{15}{4}; z\right) = \frac{1}{5\,898\,240\, z^{11/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(7168\, z^4 + 181\,696\, z^3 - 439\,200\, z^2 - 2\,286\,900\, z - 4\,729\,725\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \right.\right. $$
$$ \left(32\,768\, z^{11/2} + 65\,536\, z^5 - 634\,880\, z^{9/2} + 1\,290\,240\, z^4 - 201\,600\, z^{7/2} - 3\,951\,360\, z^3 + 9\,737\,280\, z^{5/2} - \right. $$
$$ \left. 16\,178\,400\, z^2 + 24\,532\,200\, z^{3/2} - 31\,185\,000\, z + 28\,378\,350\, \sqrt{z} - 14\,189\,175\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \left.\sqrt{2\pi}\, \left(32\,768\, z^{11/2} - 65\,536\, z^5 - 634\,880\, z^{9/2} - 1\,290\,240\, z^4 - 201\,600\, z^{7/2} + 3\,951\,360\, z^3 + 9\,737\,280\, z^{5/2} + \right.\right. $$
$$ \left.\left. 16\,178\,400\, z^2 + 24\,532\,200\, z^{3/2} + 31\,185\,000\, z + 28\,378\,350\, \sqrt{z} + 14\,189\,175\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7469.01

$$ {}_1F_2\left(5; -\frac{15}{4}, \frac{15}{4}; -z\right) = \frac{1}{1\,474\,560\, z^{11/4}} \left(4\, z^{3/4} \left(7168\, z^4 - 181\,696\, z^3 - 439\,200\, z^2 + 2\,286\,900\, z - 4\,729\,725\right) + \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(65\,536\, z^5 - 1\,290\,240\, z^4 - 3\,951\,360\, z^3 + 16\,178\,400\, z^2 - 31\,185\,000\, z + 14\,189\,175\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\, \left(-16\,384\, z^5 - 317\,440\, z^4 + 100\,800\, z^3 + 4\,868\,640\, z^2 - 12\,266\,100\, z + 14\,189\,175\right) \sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(16\,384\, z^5 + 317\,440\, z^4 - 100\,800\, z^3 - 4\,868\,640\, z^2 + 12\,266\,100\, z - 14\,189\,175\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. \left(65\,536\, z^5 - 1\,290\,240\, z^4 - 3\,951\,360\, z^3 + 16\,178\,400\, z^2 - 31\,185\,000\, z + 14\,189\,175\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7470.01

$$ {}_1F_2\left(5; -\frac{15}{4}, \frac{19}{4}; z\right) = \frac{1}{3\,145\,728\, z^{15/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(8192\, z^5 + 31\,232\, z^4 - 1\,056\,768\, z^3 - 9\,313\,920\, z^2 - 54\,054\,000\, z - 156\,080\,925\right) + \right. \right. $$
$$ e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(65\,536\, z^6 - 262\,144\, z^{11/2} + 172\,032\, z^5 + 1\,720\,320\, z^{9/2} - 8\,144\,640\, z^4 + 24\,675\,840\, z^{7/2} - 66\,890\,880\, z^3 + \right. $$
$$ \left. 168\,315\,840\, z^{5/2} - 371\,725\,200\, z^2 + 681\,080\,400\, z^{3/2} - 964\,863\,900\, z + 936\,485\,550\, \sqrt{z} - 468\,242\,775\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(-65\,536\, z^6 - 262\,144\, z^{11/2} - 172\,032\, z^5 + 1\,720\,320\, z^{9/2} + 8\,144\,640\, z^4 + \right. $$
$$ 24\,675\,840\, z^{7/2} + 66\,890\,880\, z^3 + 168\,315\,840\, z^{5/2} + 371\,725\,200\, z^2 + $$
$$ \left.\left. 681\,080\,400\, z^{3/2} + 964\,863\,900\, z + 936\,485\,550\, \sqrt{z} + 468\,242\,775\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7471.01

$$ {}_1F_2\left(5; -\frac{15}{4}, \frac{19}{4}; -z\right) = $$

$$ \frac{1}{786\,432\, z^{15/4}} \left(4 z^{3/4} \left(8192 z^5 - 31\,232 z^4 - 1\,056\,768 z^3 + 9\,313\,920 z^2 - 54\,054\,000 z + 156\,080\,925\right) + \sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \right. $$
$$ \left(\left(65\,536 z^6 - 172\,032 z^5 - 8\,144\,640 z^4 + 66\,890\,880 z^3 - 371\,725\,200 z^2 + 964\,863\,900 z - 468\,242\,775\right) \cos\left(2\sqrt{z}\right) - \right. $$
$$ \left. 2\sqrt{z} \left(131\,072 z^5 + 860\,160 z^4 - 12\,337\,920 z^3 + 84\,157\,920 z^2 - 340\,540\,200 z + 468\,242\,775\right) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi} $$
$$ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(131\,072 z^5 + 860\,160 z^4 - 12\,337\,920 z^3 + 84\,157\,920 z^2 - 340\,540\,200 z + 468\,242\,775\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. \left. \left(65\,536 z^6 - 172\,032 z^5 - 8\,144\,640 z^4 + 66\,890\,880 z^3 - 371\,725\,200 z^2 + 964\,863\,900 z - 468\,242\,775\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7472.01

$$ {}_1F_2\left(5; -\frac{15}{4}, \frac{23}{4}; z\right) = \frac{1}{25\,165\,824\, z^{19/4}} \left(19\, e^{-2\sqrt{z}} \right. $$
$$ \left(-16\, e^{2\sqrt{z}}\ z^{3/4} \left(176\,128 z^5 + 5\,788\,416 z^4 + 115\,758\,720 z^3 + 1\,545\,944\,400 z^2 + 11\,683\,772\,100 z + 39\,800\,635\,875\right) + \right. $$
$$ e^{4\sqrt{z}}\ \sqrt{2\pi} \left(131\,072 z^{13/2} - 1\,376\,256 z^6 + 8\,601\,600 z^{11/2} - 43\,868\,160 z^5 + 203\,051\,520 z^{9/2} - \right. $$
$$ 864\,380\,160 z^4 + 3\,323\,738\,880 z^{7/2} - 11\,296\,454\,400 z^3 + 33\,145\,912\,800 z^{5/2} - 81\,502\,621\,200 z^2 + $$
$$ \left. 161\,075\,514\,600 z^{3/2} - 239\,740\,300\,800 z + 238\,803\,815\,250\sqrt{z} - 119\,401\,907\,625\right) \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi} \left(131\,072 z^{13/2} + 1\,376\,256 z^6 + 8\,601\,600 z^{11/2} + 43\,868\,160 z^5 + 203\,051\,520 z^{9/2} + 864\,380\,160 z^4 + \right. $$
$$ 3\,323\,738\,880 z^{7/2} + 11\,296\,454\,400 z^3 + 33\,145\,912\,800 z^{5/2} + 81\,502\,621\,200 z^2 + $$
$$ \left. \left. 161\,075\,514\,600 z^{3/2} + 239\,740\,300\,800 z + 238\,803\,815\,250\sqrt{z} + 119\,401\,907\,625\right) \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7473.01

$$ {}_1F_2\left(5; -\frac{15}{4}, \frac{23}{4}; -z\right) = $$

$$ \frac{1}{6\,291\,456\, z^{19/4}} \left(19 \left(4 z^{3/4} \left(176\,128 z^5 - 5\,788\,416 z^4 + 115\,758\,720 z^3 - 1\,545\,944\,400 z^2 + 11\,683\,772\,100 z - 39\,800\,635\,875\right) + \right. $$
$$ \sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(21 \left(65\,536 z^6 - 2\,088\,960 z^5 + 41\,160\,960 z^4 - 537\,926\,400 z^3 + 3\,881\,077\,200 z^2 - \right. \right. $$
$$ \left. 11\,416\,204\,800 z + 5\,685\,805\,125\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z} \left(65\,536 z^6 - 4\,300\,800 z^5 + 101\,525\,760 z^4 - \right. $$
$$ \left. \left. 1\,661\,869\,440 z^3 + 16\,572\,956\,400 z^2 - 80\,537\,757\,300 z + 119\,401\,907\,625\right) \sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(65\,536 z^6 - 4\,300\,800 z^5 + 101\,525\,760 z^4 - 1\,661\,869\,440 z^3 + 16\,572\,956\,400 z^2 - \right. \right. $$
$$ 80\,537\,757\,300 z + 119\,401\,907\,625\right) \cos\left(2\sqrt{z}\right) - 21 \left(65\,536 z^6 - 2\,088\,960 z^5 + 41\,160\,960 z^4 - $$
$$ \left. \left. \left. 537\,926\,400 z^3 + 3\,881\,077\,200 z^2 - 11\,416\,204\,800 z + 5\,685\,805\,125\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 5$, $b_1 = -\frac{13}{4}$

07.22.03.7474.01

$$
{}_1F_2\left(5; -\frac{13}{4}, -\frac{11}{4}; z\right) =
\frac{1}{405\,405}\left(e^{-2\sqrt{z}}\left(-4\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2+7168\,z^{3/2}+69\,408\,z+273\,312\,\sqrt{z}+365\,769\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}-\right.\right.
$$
$$
4\sqrt{2\pi}\,\left(256\,z^2-7168\,z^{3/2}+69\,408\,z-273\,312\,\sqrt{z}+365\,769\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}-
$$
$$
\left.\left.3\,e^{2\sqrt{z}}\,\left(18\,944\,z^5+685\,984\,z^4-143\,360\,z^3-57\,600\,z^2-75\,600\,z-135\,135\right)\right)\right)
$$

07.22.03.7475.01

$$
{}_1F_2\left(5; -\frac{13}{4}, -\frac{11}{4}; -z\right) =
\frac{1}{405\,405}\left(-16\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^2-69\,408\,z+365\,769\right)\cos\left(2\sqrt{z}\right)+32\sqrt{z}\,\left(224\,z-8541\right)\sin\left(2\sqrt{z}\right)\right)z^{15/4}-\right.
$$
$$
16\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^2-69\,408\,z+365\,769\right)\sin\left(2\sqrt{z}\right)-32\sqrt{z}\,\left(224\,z-8541\right)\cos\left(2\sqrt{z}\right)\right)z^{15/4}+
$$
$$
\left.3\left(18\,944\,z^5-685\,984\,z^4-143\,360\,z^3+57\,600\,z^2-75\,600\,z+135\,135\right)\right)
$$

07.22.03.7476.01

$$
{}_1F_2\left(5; -\frac{13}{4}, -\frac{7}{4}; z\right) =
\frac{1}{73\,710}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(512\,z^{5/2}+13\,056\,z^2+112\,704\,z^{3/2}+377\,568\,z+353\,970\,\sqrt{z}-176\,985\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}-\right.\right.
$$
$$
\sqrt{2\pi}\,\left(512\,z^{5/2}-13\,056\,z^2+112\,704\,z^{3/2}-377\,568\,z+353\,970\,\sqrt{z}+176\,985\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+
$$
$$
\left.\left.2\,e^{2\sqrt{z}}\,\left(512\,z^5+109\,536\,z^4+277\,860\,z^3+57\,600\,z^2+32\,400\,z+36\,855\right)\right)\right)
$$

07.22.03.7477.01

$$
{}_1F_2\left(5; -\frac{13}{4}, -\frac{7}{4}; -z\right) = \frac{1}{36\,855}\left(-512\,z^5+109\,536\,z^4-277\,860\,z^3+\right.
$$
$$
2\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-13\,056\,z^2+377\,568\,z+176\,985\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(256\,z^2-56\,352\,z+176\,985\right)\sin\left(2\sqrt{z}\right)\right)z^{11/4}-
$$
$$
2\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(256\,z^2-56\,352\,z+176\,985\right)\cos\left(2\sqrt{z}\right)+3\left(4352\,z^2-125\,856\,z-58\,995\right)\sin\left(2\sqrt{z}\right)\right)z^{11/4}+
$$
$$
\left.57\,600\,z^2-32\,400\,z+36\,855\right)
$$

07.22.03.7478.01

$$ {}_1F_2\left(5; -\frac{13}{4}, -\frac{3}{4}; z\right) = \frac{1}{84\,240}\left(e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\sqrt{2\pi}\left(1024z^3+23\,040z^{5/2}+167\,808z^2+419\,520z^{3/2}+78\,660z-432\,630\sqrt{z}+216\,315\right)\right.\right. $$
$$ \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-\sqrt{2\pi}\left(1024z^3-23\,040z^{5/2}+167\,808z^2-419\,520z^{3/2}+78\,660z+432\,630\sqrt{z}+216\,315\right) $$
$$ \left.\left.\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-8e^{2\sqrt{z}}\left(5696z^4+95\,412z^3-101\,115z^2-21\,600z-10\,530\right)\right)\right) $$

07.22.03.7479.01

$$ {}_1F_2\left(5; -\frac{13}{4}, -\frac{3}{4}; -z\right) = \frac{1}{21\,060}\left(-11\,392z^4+190\,824z^3+202\,230z^2+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right. $$
$$ \left(\left(1024z^3-167\,808z^2+78\,660z-216\,315\right)\cos\left(2\sqrt{z}\right)+30\sqrt{z}\left(768z^2-13\,984z-14\,421\right)\sin\left(2\sqrt{z}\right)\right)z^{7/4}+ $$
$$ \sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024z^3-167\,808z^2+78\,660z-216\,315\right)\sin\left(2\sqrt{z}\right)-30\sqrt{z}\left(768z^2-13\,984z-14\,421\right)\cos\left(2\sqrt{z}\right)\right) $$
$$ \left.z^{7/4}-43\,200z+21\,060\right) $$

07.22.03.7480.01

$$ {}_1F_2\left(5; -\frac{13}{4}, \frac{1}{4}; z\right) = \frac{1}{224\,640}\left(e^{-2\sqrt{z}}\left(8e^{2\sqrt{z}}\left(512z^4+52\,384z^3-116\,640z^2+156\,375z+28\,080\right)+e^{4\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(2048z^{7/2}+38\,912z^3+\right.\right.\right. $$
$$ \left.\left.218\,880z^{5/2}+291\,840z^2-426\,360z^{3/2}-225\,720z+658\,350\sqrt{z}-329\,175\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)- $$
$$ \sqrt{2\pi}\,z^{3/4}\left(2048z^{7/2}-38\,912z^3+218\,880z^{5/2}-291\,840z^2-426\,360z^{3/2}+225\,720z+658\,350\sqrt{z}+329\,175\right) $$
$$ \left.\left.\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7481.01

$$ {}_1F_2\left(5; -\frac{13}{4}, \frac{1}{4}; -z\right) = \frac{1}{56\,160}\left(2\left(512z^4-52\,384z^3-116\,640z^2-156\,375z+28\,080\right)-\right. $$
$$ \sqrt{\pi}\,z^{3/4}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(1024z^3-109\,440z^2-213\,180z-329\,175\right)\sin\left(2\sqrt{z}\right)-\right. $$
$$ \left.19\left(2048z^3-15\,360z^2-11\,880z+17\,325\right)\cos\left(2\sqrt{z}\right)\right)+ $$
$$ \sqrt{\pi}\,z^{3/4}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(1024z^3-109\,440z^2-213\,180z-329\,175\right)\cos\left(2\sqrt{z}\right)+\right. $$
$$ \left.\left.19\left(2048z^3-15\,360z^2-11\,880z+17\,325\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7482.01

$$ {}_1F_2\left(5; -\frac{13}{4}, \frac{5}{4}; z\right) = \frac{1}{1\,797\,120\,\sqrt[4]{z}} \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(15\,104\, z^3 - 32\,400\, z^2 + 236\,340\, z - 139\,185\right) + e^{4\sqrt{z}}\, \sqrt{2\,\pi}\, \left(4096\, z^4 + 61\,440\, z^{7/2} + 222\,720\, z^3 - 84\,480\, z^{5/2} - 641\,520\, z^2 + 831\,600\, z^{3/2} + 69\,300\, z - 727\,650\, \sqrt{z} + 363\,825\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\,\pi}\, \left(4096\, z^4 - 61\,440\, z^{7/2} + 222\,720\, z^3 + 84\,480\, z^{5/2} - 641\,520\, z^2 - 831\,600\, z^{3/2} + 69\,300\, z + 727\,650\, \sqrt{z} + 363\,825\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7483.01

$$ {}_1F_2\left(5; -\frac{13}{4}, \frac{5}{4}; -z\right) = \frac{1}{449\,280\,\sqrt[4]{z}} \left(-2\, \sqrt[4]{z}\, \left(15\,104\, z^3 + 32\,400\, z^2 + 236\,340\, z + 139\,185\right) + \sqrt{\pi}\, C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(4096\, z^4 - 222\,720\, z^3 - 641\,520\, z^2 - 69\,300\, z + 363\,825\right) \cos\left(2\,\sqrt{z}\right) + 30\,\sqrt{z}\, \left(2048\, z^3 + 2816\, z^2 + 27\,720\, z + 24\,255\right) \sin\left(2\,\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(4096\, z^4 - 222\,720\, z^3 - 641\,520\, z^2 - 69\,300\, z + 363\,825\right) \sin\left(2\,\sqrt{z}\right) - 30\,\sqrt{z}\, \left(2048\, z^3 + 2816\, z^2 + 27\,720\, z + 24\,255\right) \cos\left(2\,\sqrt{z}\right)\right)\right) $$

07.22.03.7484.01

$$ {}_1F_2\left(5; -\frac{13}{4}, \frac{9}{4}; z\right) = \frac{1}{2\,875\,392\, z^{5/4}} \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(2048\, z^4 + 20\,352\, z^3 + 105\,360\, z^2 - 455\,544\, z - 218\,295\right) + e^{4\sqrt{z}}\, \sqrt{2\,\pi}\, \left(8192\, z^{9/2} + 86\,016\, z^4 + 101\,376\, z^{7/2} - 523\,776\, z^3 + 288\,288\, z^{5/2} + 942\,480\, z^2 - 1\,746\,360\, z^{3/2} + 1\,164\,240\, z - 436\,590\, \sqrt{z} + 218\,295\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\,\pi}\, \left(-8192\, z^{9/2} + 86\,016\, z^4 - 101\,376\, z^{7/2} - 523\,776\, z^3 - 288\,288\, z^{5/2} + 942\,480\, z^2 + 1\,746\,360\, z^{3/2} + 1\,164\,240\, z + 436\,590\, \sqrt{z} + 218\,295\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7485.01

$$ {}_1F_2\left(5; -\frac{13}{4}, \frac{9}{4}; -z\right) = \frac{1}{718\,848\, z^{5/4}}\left(-2\sqrt[4]{z}\,\left(2048 z^4 - 20\,352 z^3 + 105\,360 z^2 + 455\,544 z - 218\,295\right) + \right.$$

$$\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(4096 z^4 - 50\,688 z^3 + 144\,144 z^2 + 873\,180 z - 218\,295\right)\sin\left(2\sqrt{z}\right) - \right.$$

$$\left. 3\left(28\,672 z^4 + 174\,592 z^3 + 314\,160 z^2 - 388\,080 z + 72\,765\right)\cos\left(2\sqrt{z}\right)\right) -$$

$$\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(4096 z^4 - 50\,688 z^3 + 144\,144 z^2 + 873\,180 z - 218\,295\right)\cos\left(2\sqrt{z}\right) + \right.$$

$$\left.\left. 3\left(28\,672 z^4 + 174\,592 z^3 + 314\,160 z^2 - 388\,080 z + 72\,765\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7486.01

$$ {}_1F_2\left(5; -\frac{13}{4}, \frac{13}{4}; z\right) =$$

$$\frac{1}{2\,555\,904\, z^{9/4}}\left(e^{-2\sqrt{z}}\left(24\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(7168 z^4 - 14\,400 z^3 - 221\,216 z^2 - 291\,060 z - 363\,825\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\right.\right.$$

$$\left(16\,384 z^5 + 90\,112 z^{9/2} - 202\,752 z^4 - 236\,544 z^{7/2} + 1\,404\,480 z^3 - 2\,328\,480 z^{5/2} + \right.$$

$$\left. 2\,328\,480 z^2 - 2\,328\,480 z^{3/2} + 2\,619\,540 z - 2\,182\,950\sqrt{z} + 1\,091\,475\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) +$$

$$\sqrt{2\pi}\,\left(16\,384 z^5 - 90\,112 z^{9/2} - 202\,752 z^4 + 236\,544 z^{7/2} + 1\,404\,480 z^3 + 2\,328\,480 z^{5/2} + \right.$$

$$\left.\left.\left. 2\,328\,480 z^2 + 2\,328\,480 z^{3/2} + 2\,619\,540 z + 2\,182\,950\sqrt{z} + 1\,091\,475\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7487.01

$$ {}_1F_2\left(5; -\frac{13}{4}, \frac{13}{4}; -z\right) = \frac{1}{638\,976\, z^{9/4}}\left(6\sqrt[4]{z}\,\left(7168 z^4 + 14\,400 z^3 - 221\,216 z^2 + 291\,060 z - 363\,825\right) - \right.$$

$$\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,384 z^5 + 202\,752 z^4 + 1\,404\,480 z^3 - 2\,328\,480 z^2 + 2\,619\,540 z - 1\,091\,475\right)\cos\left(2\sqrt{z}\right) + \right.$$

$$\left. 22\sqrt{z}\,\left(4096 z^4 + 10\,752 z^3 - 105\,840 z^2 + 105\,840 z - 99\,225\right)\sin\left(2\sqrt{z}\right)\right) -$$

$$\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,384 z^5 + 202\,752 z^4 + 1\,404\,480 z^3 - 2\,328\,480 z^2 + 2\,619\,540 z - 1\,091\,475\right)\sin\left(2\sqrt{z}\right) - \right.$$

$$\left.\left. 22\sqrt{z}\,\left(4096 z^4 + 10\,752 z^3 - 105\,840 z^2 + 105\,840 z - 99\,225\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7488.01

$$
{}_1F_2\left(5; -\frac{13}{4}, \frac{17}{4}; z\right) =
$$

$$
\frac{1}{1\,572\,864\, z^{13/4}} \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(8192\, z^5 - 99\,840\, z^4 - 749\,568\, z^3 - 2\,661\,120\, z^2 - 9\,480\,240\, z - 18\,243\,225\right) + \right.\right.
$$

$$
e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(32\,768\, z^{11/2} - 405\,504\, z^{9/2} + 1\,351\,680\, z^4 - 2\,597\,760\, z^{7/2} + 4\,435\,200\, z^3 - 8\,648\,640\, z^{5/2} + \right.
$$

$$
\left. 16\,964\,640\, z^2 - 28\,690\,200\, z^{3/2} + 38\,669\,400\, z - 36\,486\,450\, \sqrt{z} + 18\,243\,225\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) +
$$

$$
\sqrt{2\pi}\, \left(-32\,768\, z^{11/2} + 405\,504\, z^{9/2} + 1\,351\,680\, z^4 + 2\,597\,760\, z^{7/2} + 4\,435\,200\, z^3 + 8\,648\,640\, z^{5/2} + \right.
$$

$$
\left.\left. 16\,964\,640\, z^2 + 28\,690\,200\, z^{3/2} + 38\,669\,400\, z + 36\,486\,450\, \sqrt{z} + 18\,243\,225\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right)
$$

07.22.03.7489.01

$$
{}_1F_2\left(5; -\frac{13}{4}, \frac{17}{4}; -z\right) = \frac{1}{393\,216\, z^{13/4}} \left(2\, \sqrt[4]{z}\, \left(8192\, z^5 + 99\,840\, z^4 - 749\,568\, z^3 + 2\,661\,120\, z^2 - 9\,480\,240\, z + 18\,243\,225\right) + \right.
$$

$$
\sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\, \sqrt{z}\, \left(16\,384\, z^5 + 202\,752\, z^4 - 1\,298\,880\, z^3 + 4\,324\,320\, z^2 - 14\,345\,100\, z + 18\,243\,225\right) \cos\left(2\, \sqrt{z}\right) - \right.
$$

$$
\left. 165\, \left(8192\, z^4 - 26\,880\, z^3 + 102\,816\, z^2 - 234\,360\, z + 110\,565\right) \sin\left(2\, \sqrt{z}\right)\right) -
$$

$$
\sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(165\, \left(8192\, z^4 - 26\,880\, z^3 + 102\,816\, z^2 - 234\,360\, z + 110\,565\right) \cos\left(2\, \sqrt{z}\right) + \right.
$$

$$
\left.\left. 2\, \sqrt{z}\, \left(16\,384\, z^5 + 202\,752\, z^4 - 1\,298\,880\, z^3 + 4\,324\,320\, z^2 - 14\,345\,100\, z + 18\,243\,225\right) \sin\left(2\, \sqrt{z}\right)\right)\right)
$$

07.22.03.7490.01

$$
{}_1F_2\left(5; -\frac{13}{4}, \frac{21}{4}; z\right) = \frac{1}{12\,582\,912\, z^{17/4}}
$$

$$
\left(17\, e^{-2\sqrt{z}} \left(-8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(102\,400\, z^5 + 1\,120\,512\, z^4 + 11\,975\,040\, z^3 + 104\,615\,280\, z^2 + 510\,810\,300\, z + 1\,185\,809\,625\right) + \right.\right.
$$

$$
e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(65\,536\, z^6 - 393\,216\, z^{11/2} + 1\,351\,680\, z^5 - 4\,055\,040\, z^{9/2} + 13\,052\,160\, z^4 - 43\,338\,240\, z^{7/2} + \right.
$$

$$
134\,386\,560\, z^3 - 369\,230\,400\, z^{5/2} + 865\,695\,600\, z^2 - 1\,654\,052\,400\, z^{3/2} + 2\,408\,105\,700\, z - \right.
$$

$$
\left. 2\,371\,619\,250\, \sqrt{z} + 1\,185\,809\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(65\,536\, z^6 + 393\,216\, z^{11/2} + 1\,351\,680\, z^5 + \right.
$$

$$
4\,055\,040\, z^{9/2} + 13\,052\,160\, z^4 + 43\,338\,240\, z^{7/2} + 134\,386\,560\, z^3 + 369\,230\,400\, z^{5/2} + 865\,695\,600\, z^2 + \right.
$$

$$
\left.\left.\left. 1\,654\,052\,400\, z^{3/2} + 2\,408\,105\,700\, z + 2\,371\,619\,250\, \sqrt{z} + 1\,185\,809\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right)
$$

07.22.03.7491.01

$$ {}_1F_2\left(5; -\frac{13}{4}, \frac{21}{4}; -z\right) = $$
$$ \frac{1}{3\,145\,728\, z^{17/4}}\left(17\left(2\sqrt[4]{z}\,\left(102\,400\, z^5 - 1\,120\,512\, z^4 + 11\,975\,040\, z^3 - 104\,615\,280\, z^2 + 510\,810\,300\, z - 1\,185\,809\,625\right) + \right.\right. $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(65\,536\, z^6 - 1\,351\,680\, z^5 + 13\,052\,160\, z^4 - 134\,386\,560\, z^3 + \right.\right. $$
$$ \left.\left. 865\,695\,600\, z^2 - 2\,408\,105\,700\, z + 1\,185\,809\,625\right)\cos\left(2\sqrt{z}\right) - $$
$$ \left. 6\sqrt{z}\,\left(65\,536\, z^5 - 675\,840\, z^4 + 7\,223\,040\, z^3 - 61\,538\,400\, z^2 + 275\,675\,400\, z - 395\,269\,875\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\,\left(65\,536\, z^5 - 675\,840\, z^4 + 7\,223\,040\, z^3 - 61\,538\,400\, z^2 + 275\,675\,400\, z - 395\,269\,875\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + \left(65\,536\, z^6 - 1\,351\,680\, z^5 + 13\,052\,160\, z^4 - 134\,386\,560\, z^3 + \right. $$
$$ \left.\left.\left. 865\,695\,600\, z^2 - 2\,408\,105\,700\, z + 1\,185\,809\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 5$, $b_1 = -\frac{11}{4}$

07.22.03.7492.01

$$ {}_1F_2\left(5; -\frac{11}{4}, -\frac{9}{4}; z\right) = $$
$$ \frac{1}{31\,185}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(256\, z^2 + 6656\, z^{3/2} + 59\,424\, z + 213\,888\sqrt{z} + 258\,825\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{13/4} + \right.\right. $$
$$ \sqrt{2\pi}\,\left(-256\, z^2 + 6656\, z^{3/2} - 59\,424\, z + 213\,888\sqrt{z} - 258\,825\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{13/4} + $$
$$ \left.\left. e^{2\sqrt{z}}\,\left(512\, z^5 + 115\,616\, z^4 + 430\,080\, z^3 + 34\,560\, z^2 + 25\,200\, z + 31\,185\right)\right)\right) $$

07.22.03.7493.01

$$ {}_1F_2\left(5; -\frac{11}{4}, -\frac{9}{4}; -z\right) = \frac{1}{31\,185} $$
$$ \left(-512\, z^5 + 115\,616\, z^4 - 4\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\, z^2 - 59\,424\, z + 258\,825\right)\cos\left(2\sqrt{z}\right) + 128\sqrt{z}\,\left(52\, z - 1671\right)\sin\left(2\sqrt{z}\right)\right)\right. $$
$$ z^{13/4} + 4\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\, z^2 - 59\,424\, z + 258\,825\right)\sin\left(2\sqrt{z}\right) - 128\sqrt{z}\,\left(52\, z - 1671\right)\cos\left(2\sqrt{z}\right)\right) $$
$$ \left. z^{13/4} - 430\,080\, z^3 + 34\,560\, z^2 - 25\,200\, z + 31\,185\right) $$

07.22.03.7494.01

$${}_1F_2\left(5;-\frac{11}{4},-\frac{5}{4};z\right)=$$
$$\frac{1}{27720}\left(e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\sqrt{2\pi}\left(512z^{5/2}+12032z^2+94784z^{3/2}+285600z+232050\sqrt{z}-116025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-\right.\right.$$
$$\sqrt{2\pi}\left(512z^{5/2}-12032z^2+94784z^{3/2}-285600z+232050\sqrt{z}+116025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-$$
$$\left.\left.8e^{2\sqrt{z}}\left(2976z^4+66010z^3-34560z^2-5040z-3465\right)\right)\right)$$

07.22.03.7495.01

$${}_1F_2\left(5;-\frac{11}{4},-\frac{5}{4};-z\right)=\frac{1}{6930}\left(-5952z^4+132020z^3+\right.$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-12032z^2+285600z+116025\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(256z^2-47392z+116025\right)\sin\left(2\sqrt{z}\right)\right)z^{9/4}+$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(256z^2-47392z+116025\right)\cos\left(2\sqrt{z}\right)+\left(12032z^2-285600z-116025\right)\sin\left(2\sqrt{z}\right)\right)z^{9/4}+$$
$$\left.69120z^2-10080z+6930\right)$$

07.22.03.7496.01

$${}_1F_2\left(5;-\frac{11}{4},-\frac{1}{4};z\right)=$$
$$\frac{1}{44352}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(1024z^3+20992z^{5/2}+137088z^2+297024z^{3/2}+18564z-250614\sqrt{z}+125307\right)\right.\right.$$
$$\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-\sqrt{2\pi}\left(1024z^3-20992z^{5/2}+137088z^2-297024z^{3/2}+18564z+250614\sqrt{z}+125307\right)$$
$$\left.\left.\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+16e^{2\sqrt{z}}\left(128z^4+16504z^3-4311z^2+20160z+2772\right)\right)\right)$$

07.22.03.7497.01

$${}_1F_2\left(5;-\frac{11}{4},-\frac{1}{4};-z\right)=\frac{1}{11088}\left(\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left(\left(1024z^3-137088z^2+18564z-125307\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(10496z^2-148512z-125307\right)\sin\left(2\sqrt{z}\right)\right)z^{5/4}-$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024z^3-137088z^2+18564z-125307\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.2\sqrt{z}\left(10496z^2-148512z-125307\right)\cos\left(2\sqrt{z}\right)\right)z^{5/4}+4\left(128z^4-16504z^3-4311z^2-20160z+2772\right)\right)$$

07.22.03.7498.01

$$ {}_1F_2\left(5; -\frac{11}{4}, \frac{3}{4}; z\right) = \frac{1}{354\,816}\left(e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\left(4288\,z^3+16\,668\,z^2+4035\,z-22\,176\right)-e^{4\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(2048\,z^{7/2}+34\,816\,z^3+169\,728\,z^{5/2}+169\,728\,z^2-302\,328\,z^{3/2}-47\,736\,z+298\,350\sqrt{z}-149\,175\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\sqrt{2\pi}\sqrt[4]{z}\left(2048\,z^{7/2}-34\,816\,z^3+169\,728\,z^{5/2}-169\,728\,z^2-302\,328\,z^{3/2}+47\,736\,z+298\,350\sqrt{z}+149\,175\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7499.01

$$ {}_1F_2\left(5; -\frac{11}{4}, \frac{3}{4}; -z\right) = \frac{1}{88\,704}\left(4\left(4288\,z^3-16\,668\,z^2+4035\,z+22\,176\right)-\sqrt{\pi}\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(1024\,z^3-84\,864\,z^2-151\,164\,z-149\,175\right)\sin\left(2\sqrt{z}\right)-17\left(2048\,z^3-9984\,z^2-2808\,z+8775\right)\cos\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\sqrt[4]{z}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(1024\,z^3-84\,864\,z^2-151\,164\,z-149\,175\right)\cos\left(2\sqrt{z}\right)+17\left(2048\,z^3-9984\,z^2-2808\,z+8775\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7500.01

$$ {}_1F_2\left(5; -\frac{11}{4}, \frac{7}{4}; z\right) = \frac{1}{946\,176\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\left(512\,z^3+17\,568\,z^2-32\,160\,z-38\,661\right)-e^{4\sqrt{z}}\sqrt{2\pi}\left(4096\,z^4+53\,248\,z^{7/2}+153\,088\,z^3-119\,808\,z^{5/2}-305\,136\,z^2+514\,800\,z^{3/2}-175\,500\,z-122\,850\sqrt{z}+61\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(4096\,z^4-53\,248\,z^{7/2}+153\,088\,z^3+119\,808\,z^{5/2}-305\,136\,z^2-514\,800\,z^{3/2}-175\,500\,z+122\,850\sqrt{z}+61\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7501.01

$$ {}_1F_2\left(5; -\frac{11}{4}, \frac{7}{4}; -z\right) = \frac{1}{236\,544\,z^{3/4}}\left(4\,z^{3/4}\left(512\,z^3-17\,568\,z^2-32\,160\,z+38\,661\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096\,z^4-153\,088\,z^3-305\,136\,z^2+175\,500\,z+61\,425\right)\cos\left(2\sqrt{z}\right)+26\sqrt{z}\left(2048\,z^3+4608\,z^2+19\,800\,z+4725\right)\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096\,z^4-153\,088\,z^3-305\,136\,z^2+175\,500\,z+61\,425\right)\sin\left(2\sqrt{z}\right)-26\sqrt{z}\left(2048\,z^3+4608\,z^2+19\,800\,z+4725\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7502.01

$$ {}_1F_2\left(5; -\frac{11}{4}, \frac{11}{4}; z\right) = \frac{1}{1\,081\,344\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(-48\, e^{2\sqrt{z}}\, z^{3/4} \left(2816 z^3 - 13\,840 z^2 - 4828 z + 14\,175\right) - e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(8192 z^{9/2} + 69\,632 z^4 + 27\,648 z^{7/2} - 336\,384 z^3 + 398\,880 z^{5/2} + 32\,400 z^2 - 415\,800 z^{3/2} + 378\,000 z - 255\,150 \sqrt{z} + 127\,575\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(-8192 z^{9/2} + 69\,632 z^4 - 27\,648 z^{7/2} - 336\,384 z^3 - 398\,880 z^{5/2} + 32\,400 z^2 + 415\,800 z^{3/2} + 378\,000 z + 255\,150 \sqrt{z} + 127\,575\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7503.01

$$ {}_1F_2\left(5; -\frac{11}{4}, \frac{11}{4}; -z\right) = \frac{1}{270\,336\, z^{7/4}} \left(12 z^{3/4} \left(-2816 z^3 - 13\,840 z^2 + 4828 z + 14\,175\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(4096 z^4 - 13\,824 z^3 + 199\,440 z^2 + 207\,900 z - 127\,575\right) \sin\left(2\sqrt{z}\right) - \left(69\,632 z^4 + 336\,384 z^3 + 32\,400 z^2 - 378\,000 z + 127\,575\right) \cos\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(4096 z^4 - 13\,824 z^3 + 199\,440 z^2 + 207\,900 z - 127\,575\right) \cos\left(2\sqrt{z}\right) + \left(69\,632 z^4 + 336\,384 z^3 + 32\,400 z^2 - 378\,000 z + 127\,575\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7504.01

$$ {}_1F_2\left(5; -\frac{11}{4}, \frac{15}{4}; z\right) = \frac{1}{786\,432\, z^{11/4}} \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(2048 z^4 - 26\,752 z^3 + 29\,328 z^2 + 189\,000 z + 363\,825\right) - e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(16\,384 z^5 + 57\,344 z^{9/2} - 202\,752 z^4 + 138\,240 z^{7/2} + 313\,920 z^3 - 876\,960 z^{5/2} + 1\,360\,800 z^2 - 1\,965\,600 z^{3/2} + 2\,438\,100 z - 2\,182\,950 \sqrt{z} + 1\,091\,475\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(16\,384 z^5 - 57\,344 z^{9/2} - 202\,752 z^4 - 138\,240 z^{7/2} + 313\,920 z^3 + 876\,960 z^{5/2} + 1\,360\,800 z^2 + 1\,965\,600 z^{3/2} + 2\,438\,100 z + 2\,182\,950 \sqrt{z} + 1\,091\,475\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7505.01

$$ {}_1F_2\left(5; -\frac{11}{4}, \frac{15}{4}; -z\right) = \frac{1}{196\,608\, z^{11/4}}\left(-4\, z^{3/4}\left(2048\, z^4 + 26\,752\, z^3 + 29\,328\, z^2 - 189\,000\, z + 363\,825\right) - \right.$$

$$\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,384\, z^5 + 202\,752\, z^4 + 313\,920\, z^3 - 1\,360\,800\, z^2 + 2\,438\,100\, z - 1\,091\,475\right)\cos\left(2\sqrt{z}\right) + \right.$$

$$\left. 2\sqrt{z}\left(28\,672\, z^4 - 69\,120\, z^3 - 438\,480\, z^2 + 982\,800\, z - 1\,091\,475\right)\sin\left(2\sqrt{z}\right)\right) +$$

$$\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,384\, z^5 + 202\,752\, z^4 + 313\,920\, z^3 - 1\,360\,800\, z^2 + 2\,438\,100\, z - 1\,091\,475\right)\sin\left(2\sqrt{z}\right) - \right.$$

$$\left.\left. 2\sqrt{z}\left(28\,672\, z^4 - 69\,120\, z^3 - 438\,480\, z^2 + 982\,800\, z - 1\,091\,475\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7506.01

$$ {}_1F_2\left(5; -\frac{11}{4}, \frac{19}{4}; z\right) =$$

$$-\frac{1}{2\,097\,152\, z^{15/4}}\left(5\, e^{-2\sqrt{z}}\left(-16\, e^{2\sqrt{z}}\; z^{3/4}\left(9216\, z^4 - 78\,272\, z^3 - 671\,328\, z^2 - 3\,700\,620\, z - 10\,405\,395\right) + e^{4\sqrt{z}}\;\sqrt{2\pi}\right.\right.$$

$$\left(32\,768\, z^{11/2} - 65\,536\, z^5 - 77\,824\, z^{9/2} + 626\,688\, z^4 - 1\,878\,912\, z^{7/2} + 4\,822\,272\, z^3 - 11\,745\,216\, z^{5/2} + \right.$$

$$\left. 25\,431\,840\, z^2 - 45\,987\,480\, z^{3/2} + 64\,615\,320\, z - 62\,432\,370\sqrt{z} + 31\,216\,185\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right) +$$

$$\sqrt{2\pi}\left(32\,768\, z^{11/2} + 65\,536\, z^5 - 77\,824\, z^{9/2} - 626\,688\, z^4 - 1\,878\,912\, z^{7/2} - 4\,822\,272\, z^3 - 11\,745\,216\, z^{5/2} - \right.$$

$$\left.\left.\left. 25\,431\,840\, z^2 - 45\,987\,480\, z^{3/2} - 64\,615\,320\, z - 62\,432\,370\sqrt{z} - 31\,216\,185\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7507.01

$$ {}_1F_2\left(5; -\frac{11}{4}, \frac{19}{4}; -z\right) = -\frac{1}{524\,288\, z^{15/4}}\left(5\left(4\, z^{3/4}\left(9216\, z^4 + 78\,272\, z^3 - 671\,328\, z^2 + 3\,700\,620\, z - 10\,405\,395\right) + \right.\right.$$

$$\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(65\,536\, z^5 + 626\,688\, z^4 - 4\,822\,272\, z^3 + 25\,431\,840\, z^2 - 64\,615\,320\, z + 31\,216\,185\right)\cos\left(2\sqrt{z}\right) + \right.$$

$$\left. 2\sqrt{z}\left(16\,384\, z^5 + 38\,912\, z^4 - 939\,456\, z^3 + 5\,872\,608\, z^2 - 22\,993\,740\, z + 31\,216\,185\right)\sin\left(2\sqrt{z}\right)\right) +$$

$$\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(16\,384\, z^5 + 38\,912\, z^4 - 939\,456\, z^3 + 5\,872\,608\, z^2 - 22\,993\,740\, z + 31\,216\,185\right)\cos\left(2\sqrt{z}\right) - \right.$$

$$\left.\left.\left.\left(65\,536\, z^5 + 626\,688\, z^4 - 4\,822\,272\, z^3 + 25\,431\,840\, z^2 - 64\,615\,320\, z + 31\,216\,185\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7508.01

$$ {}_1F_2\left(5; -\frac{11}{4}, \frac{23}{4}; z\right) = -\frac{1}{16\,777\,216\, z^{19/4}} $$
$$ \left(95\, e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(8192\, z^5 + 358\,912\, z^4 + 6\,967\,296\, z^3 + 91\,808\,640\, z^2 + 689\,729\,040\, z + 2\,341\,213\,875\right) + \right.\right. $$
$$ e^{4\sqrt{z}}\, \sqrt{2\pi} \left(65\,536\, z^6 - 524\,288\, z^{11/2} + 2\,727\,936\, z^5 - 12\,386\,304\, z^{9/2} + 51\,980\,544\, z^4 - \right. $$
$$ 198\,277\,632\, z^{7/2} + 670\,481\,280\, z^3 - 1\,960\,580\,160\, z^{5/2} + 4\,809\,475\,440\, z^2 - $$
$$ \left. 9\,489\,720\,240\, z^{3/2} + 14\,109\,715\,620\, z - 14\,047\,283\,250\, \sqrt{z} + 7\,023\,641\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - $$
$$ \sqrt{2\pi} \left(65\,536\, z^6 + 524\,288\, z^{11/2} + 2\,727\,936\, z^5 + 12\,386\,304\, z^{9/2} + 51\,980\,544\, z^4 + 198\,277\,632\, z^{7/2} + \right. $$
$$ 670\,481\,280\, z^3 + 1\,960\,580\,160\, z^{5/2} + 4\,809\,475\,440\, z^2 + 9\,489\,720\,240\, z^{3/2} + $$
$$ \left.\left. 14\,109\,715\,620\, z + 14\,047\,283\,250\, \sqrt{z} + 7\,023\,641\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7509.01

$$ {}_1F_2\left(5; -\frac{11}{4}, \frac{23}{4}; -z\right) = $$
$$ \frac{1}{4\,194\,304\, z^{19/4}} \left(95 \left(4\, z^{3/4} \left(8192\, z^5 - 358\,912\, z^4 + 6\,967\,296\, z^3 - 91\,808\,640\, z^2 + 689\,729\,040\, z - 2\,341\,213\,875\right) + \right. \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(65\,536\, z^6 - 2\,727\,936\, z^5 + 51\,980\,544\, z^4 - 670\,481\,280\, z^3 + \right. \right. $$
$$ \left. 4\,809\,475\,440\, z^2 - 14\,109\,715\,620\, z + 7\,023\,641\,625\right) \cos\left(2\sqrt{z}\right) - 2\sqrt{z} $$
$$ \left.\left(262\,144\, z^5 - 6\,193\,152\, z^4 + 99\,138\,816\, z^3 - 980\,290\,080\, z^2 + 4\,744\,860\,120\, z - 7\,023\,641\,625\right) \sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(262\,144\, z^5 - 6\,193\,152\, z^4 + 99\,138\,816\, z^3 - 980\,290\,080\, z^2 + 4\,744\,860\,120\, z - 7\,023\,641\,625\right) \right. $$
$$ \cos\left(2\sqrt{z}\right) + \left(65\,536\, z^6 - 2\,727\,936\, z^5 + 51\,980\,544\, z^4 - 670\,481\,280\, z^3 + \right. $$
$$ \left.\left.\left. 4\,809\,475\,440\, z^2 - 14\,109\,715\,620\, z + 7\,023\,641\,625\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 5$, $b_1 = -\frac{9}{4}$

07.22.03.7510.01

$$ {}_1F_2\left(5; -\frac{9}{4}, -\frac{7}{4}; z\right) = $$
$$ \frac{1}{11\,340} \left(e^{-2\sqrt{z}} \left(-e^{4\sqrt{z}}\, \sqrt{2\pi} \left(256\, z^2 + 6144\, z^{3/2} + 50\,208\, z + 163\,680\, \sqrt{z} + 176\,985\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{11/4} + \right. \right. $$
$$ \sqrt{2\pi} \left(-256\, z^2 + 6144\, z^{3/2} - 50\,208\, z + 163\,680\, \sqrt{z} - 176\,985\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{11/4} - $$
$$ \left.\left. 20\, e^{2\sqrt{z}} \left(608\, z^4 + 15\,222\, z^3 - 2304\, z^2 - 720\, z - 567\right)\right)\right) $$

07.22.03.7511.01

$${}_1F_2\left(5;-\frac{9}{4},-\frac{7}{4};-z\right)=$$
$$\frac{1}{2835}\left(\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^2-50\,208z+176\,985\right)\cos\left(2\sqrt{z}\right)+96\sqrt{z}\ (64z-1705)\sin\left(2\sqrt{z}\right)\right)z^{11/4}+\right.$$
$$\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^2-50\,208z+176\,985\right)\sin\left(2\sqrt{z}\right)-96\sqrt{z}\ (64z-1705)\cos\left(2\sqrt{z}\right)\right)z^{11/4}+$$
$$\left.5\left(-608z^4+15\,222z^3+2304z^2-720z+567\right)\right)$$

07.22.03.7512.01

$${}_1F_2\left(5;-\frac{9}{4},-\frac{3}{4};z\right)=$$
$$\frac{1}{12\,960}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(512z^{5/2}+11\,008z^2+78\,400z^{3/2}+209\,760z+144\,210\sqrt{z}\ -72\,105\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{7/4}-\right.\right.$$
$$\sqrt{2\pi}\ \left(512z^{5/2}-11\,008z^2+78\,400z^{3/2}-209\,760z+144\,210\sqrt{z}\ +72\,105\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{7/4}+$$
$$\left.\left.8e^{2\sqrt{z}}\ \left(128z^4+18\,936z^3+26\,025z^2+4800z+1620\right)\right)\right)$$

07.22.03.7513.01

$${}_1F_2\left(5;-\frac{9}{4},-\frac{3}{4};-z\right)=\frac{1}{3240}\left(256z^4-37\,872z^3+52\,050z^2-\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left(\left(-11\,008z^2+209\,760z+72\,105\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\ \left(256z^2-39\,200z+72\,105\right)\sin\left(2\sqrt{z}\right)\right)z^{7/4}+\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)$$
$$\left.\left(2\sqrt{z}\ \left(256z^2-39\,200z+72\,105\right)\cos\left(2\sqrt{z}\right)+\left(11\,008z^2-209\,760z-72\,105\right)\sin\left(2\sqrt{z}\right)\right)z^{7/4}-9600z+3240\right)$$

07.22.03.7514.01

$${}_1F_2\left(5;-\frac{9}{4},\frac{1}{4};z\right)=\frac{1}{34\,560}\left(e^{-2\sqrt{z}}\left(-8e^{2\sqrt{z}}\ \left(4672z^3+44\,148z^2-27\,435z-4320\right)-e^{4\sqrt{z}}\ \sqrt{2\pi}\ z^{3/4}\right.\right.$$
$$\left(1024z^3+18\,944z^{5/2}+109\,440z^2+200\,640z^{3/2}-12\,540z-131\,670\sqrt{z}\ +65\,835\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\pi}\ z^{3/4}\left(-1024z^3+18\,944z^{5/2}-109\,440z^2+200\,640z^{3/2}+12\,540z-131\,670\sqrt{z}\ -65\,835\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.7515.01

$$ {}_1F_2\left(5; -\frac{9}{4}, \frac{1}{4}; -z\right) = $$
$$ \frac{1}{8640}\left(9344 z^3 - 88\,296 z^2 - 54\,870 z - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024 z^3 - 109\,440 z^2 - 12\,540 z - 65\,835\right)\cos\left(2\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. 2\sqrt{z}\left(9472 z^2 - 100\,320 z - 65\,835\right)\sin\left(2\sqrt{z}\right)\right) z^{3/4} - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \right. $$
$$ \left.\left(\left(1024 z^3 - 109\,440 z^2 - 12\,540 z - 65\,835\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\left(9472 z^2 - 100\,320 z - 65\,835\right)\cos\left(2\sqrt{z}\right)\right) z^{3/4} + 8640\right) $$

07.22.03.7516.01

$$ {}_1F_2\left(5; -\frac{9}{4}, \frac{5}{4}; z\right) = $$
$$ \frac{1}{276\,480\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-8 e^{2\sqrt{z}}\sqrt[4]{z}\left(512 z^3 + 29\,856 z^2 - 49\,440 z + 17\,415\right) - e^{4\sqrt{z}}\sqrt{2\pi}\left(2048 z^{7/2} + 30\,720 z^3 + \right.\right.\right. $$
$$ \left.\left.\left. 126\,720 z^{5/2} + 84\,480 z^2 - 194\,040 z^{3/2} + 27\,720 z + 103\,950\sqrt{z} - 51\,975\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi} \right. $$
$$ \left.\left.\left(2048 z^{7/2} - 30\,720 z^3 + 126\,720 z^{5/2} - 84\,480 z^2 - 194\,040 z^{3/2} - 27\,720 z + 103\,950\sqrt{z} + 51\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7517.01

$$ {}_1F_2\left(5; -\frac{9}{4}, \frac{5}{4}; -z\right) = \frac{1}{69\,120\sqrt[4]{z}} $$
$$ \left(2\sqrt[4]{z}\left(512 z^3 - 29\,856 z^2 - 49\,440 z - 17\,415\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(2048 z^3 - 5632 z^2 + 1848 z + 3465\right)\cos\left(2\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. 2\sqrt{z}\left(-1024 z^3 + 63\,360 z^2 + 97\,020 z + 51\,975\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \right. $$
$$ \left.\left(2\sqrt{z}\left(1024 z^3 - 63\,360 z^2 - 97\,020 z - 51\,975\right)\cos\left(2\sqrt{z}\right) + 15\left(2048 z^3 - 5632 z^2 + 1848 z + 3465\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7518.01

$$ {}_1F_2\left(5; -\frac{9}{4}, \frac{9}{4}; z\right) = $$
$$ \frac{1}{442\,368 z^{5/4}}\left(e^{-2\sqrt{z}}\left(-8 e^{2\sqrt{z}}\sqrt[4]{z}\left(11\,008 z^3 - 33\,680 z^2 + 58\,356 z + 24\,255\right) - e^{4\sqrt{z}}\sqrt{2\pi}\left(4096 z^4 + 45\,056 z^{7/2} + \right.\right.\right. $$
$$ \left.\left.\left. 95\,744 z^3 - 118\,272 z^{5/2} - 92\,400 z^2 + 240\,240 z^{3/2} - 152\,460 z + 48\,510\sqrt{z} - 24\,255\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \right. $$
$$ \left.\sqrt{2\pi}\left(-4096 z^4 + 45\,056 z^{7/2} - 95\,744 z^3 - 118\,272 z^{5/2} + 92\,400 z^2 + 240\,240 z^{3/2} + \right.\right. $$
$$ \left.\left. 152\,460 z + 48\,510\sqrt{z} + 24\,255\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7519.01

$$ {}_1F_2\left(5; -\frac{9}{4}, \frac{9}{4}; -z\right) = \frac{1}{110\,592\, z^{5/4}} $$
$$ \left(-2\sqrt[4]{z}\,\left(11\,008\, z^3 + 33\,680\, z^2 + 58\,356\, z - 24\,255\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096\, z^4 - 95\,744\, z^3 - 92\,400\, z^2 + 152\,460\, z - 24\,255\right)\right.\right. $$
$$ \left.\cos\left(2\sqrt{z}\right) + 22\sqrt{z}\,\left(2048\, z^3 + 5376\, z^2 + 10\,920\, z - 2205\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096\, z^4 - 95\,744\, z^3 - 92\,400\, z^2 + 152\,460\, z - 24\,255\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left. 22\sqrt{z}\,\left(2048\, z^3 + 5376\, z^2 + 10\,920\, z - 2205\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7520.01

$$ {}_1F_2\left(5; -\frac{9}{4}, \frac{13}{4}; z\right) = $$
$$ \frac{1}{393\,216\, z^{9/4}}\left(e^{-2\sqrt{z}}\,\left(-8\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(2048\, z^4 - 8320\, z^3 + 81\,552\, z^2 + 88\,200\, z + 99\,225\right) - e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(8192\, z^{9/2} + 53\,248\, z^4 - \right.\right.\right. $$
$$ \left.\left.\left. 21\,504\, z^{7/2} - 161\,280\, z^3 + 299\,040\, z^{5/2} - 267\,120\, z^2 + 229\,320\, z^{3/2} - 246\,960\, z + 198\,450\sqrt{z} - 99\,225\right)\right. $$
$$ \left.\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\left(8192\, z^{9/2} - 53\,248\, z^4 - 21\,504\, z^{7/2} + 161\,280\, z^3 + 299\,040\, z^{5/2} + \right.\right. $$
$$ \left.\left. 267\,120\, z^2 + 229\,320\, z^{3/2} + 246\,960\, z + 198\,450\sqrt{z} + 99\,225\right)\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right) $$

07.22.03.7521.01

$$ {}_1F_2\left(5; -\frac{9}{4}, \frac{13}{4}; -z\right) = \frac{1}{98\,304\, z^{9/4}}\left(-2\sqrt[4]{z}\,\left(2048\, z^4 + 8320\, z^3 + 81\,552\, z^2 - 88\,200\, z + 99\,225\right) + \right. $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-53\,248\, z^4 - 161\,280\, z^3 + 267\,120\, z^2 - 246\,960\, z + 99\,225\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 2\sqrt{z}\,\left(4096\, z^4 + 10\,752\, z^3 + 149\,520\, z^2 - 114\,660\, z + 99\,225\right)\sin\left(2\sqrt{z}\right)\right) - \right. $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(4096\, z^4 + 10\,752\, z^3 + 149\,520\, z^2 - 114\,660\, z + 99\,225\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left. \left(53\,248\, z^4 + 161\,280\, z^3 - 267\,120\, z^2 + 246\,960\, z - 99\,225\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7522.01

$$ {}_1F_2\left(5; -\frac{9}{4}, \frac{17}{4}; z\right) = -\frac{1}{3\,145\,728\, z^{13/4}} \left(13\, e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(5120 z^4 + 82\,752 z^3 + 231\,840 z^2 + 759\,780 z + 1\,403\,325\right) + e^{4\sqrt{z}}\right.\right. $$
$$ \sqrt{2\pi}\, \left(16\,384 z^5 + 24\,576 z^{9/2} - 153\,600 z^4 + 291\,840 z^{7/2} - 423\,360 z^3 + 735\,840 z^{5/2} - \right. $$
$$ \left. 1\,380\,960 z^2 + 2\,268\,000 z^{3/2} - 3\,005\,100 z + 2\,806\,650 \sqrt{z} - 1\,403\,325\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\, \left(16\,384 z^5 - 24\,576 z^{9/2} - 153\,600 z^4 - 291\,840 z^{7/2} - 423\,360 z^3 - 735\,840 z^{5/2} - \right. $$
$$ \left.\left. 1\,380\,960 z^2 - 2\,268\,000 z^{3/2} - 3\,005\,100 z - 2\,806\,650 \sqrt{z} - 1\,403\,325\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7523.01

$$ {}_1F_2\left(5; -\frac{9}{4}, \frac{17}{4}; -z\right) = -\frac{1}{786\,432\, z^{13/4}} \left(13 \left(-2\, \sqrt[4]{z}\, \left(5120 z^4 - 82\,752 z^3 + 231\,840 z^2 - 759\,780 z + 1\,403\,325\right) + \right.\right. $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(16\,384 z^5 + 153\,600 z^4 - 423\,360 z^3 + 1\,380\,960 z^2 - 3\,005\,100 z + 1\,403\,325\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 6\sqrt{z}\, \left(4096 z^4 - 48\,640 z^3 + 122\,640 z^2 - 378\,000 z + 467\,775\right) \sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(16\,384 z^5 + 153\,600 z^4 - 423\,360 z^3 + 1\,380\,960 z^2 - 3\,005\,100 z + 1\,403\,325\right) \sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left. 6\sqrt{z}\, \left(4096 z^4 - 48\,640 z^3 + 122\,640 z^2 - 378\,000 z + 467\,775\right) \cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7524.01

$$ {}_1F_2\left(5; -\frac{9}{4}, \frac{21}{4}; z\right) = -\frac{1}{25\,165\,824\, z^{17/4}} \left(221\, e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(8192 z^5 + 96\,768 z^4 + 860\,160 z^3 + 7\,176\,960 z^2 + 34\,428\,240 z + 79\,053\,975\right) + \right.\right. $$
$$ e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(32\,768 z^{11/2} - 131\,072 z^5 + 348\,160 z^{9/2} - 983\,040 z^4 + 3\,085\,440 z^{7/2} - 9\,327\,360 z^3 + 25\,220\,160 z^{5/2} - \right. $$
$$ \left. 58\,514\,400 z^2 + 111\,018\,600 z^{3/2} - 160\,914\,600 z + 158\,107\,950 \sqrt{z} - 79\,053\,975\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - $$
$$ \sqrt{2\pi}\, \left(32\,768 z^{11/2} + 131\,072 z^5 + 348\,160 z^{9/2} + 983\,040 z^4 + 3\,085\,440 z^{7/2} + 9\,327\,360 z^3 + 25\,220\,160 z^{5/2} + \right. $$
$$ \left.\left. 58\,514\,400 z^2 + 111\,018\,600 z^{3/2} + 160\,914\,600 z + 158\,107\,950 \sqrt{z} + 79\,053\,975\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7525.01

$${}_1F_2\left(5; -\frac{9}{4}, \frac{21}{4}; -z\right) =$$
$$\frac{1}{6\,291\,456\,z^{17/4}}\left(221\left(2\sqrt[4]{z}\left(8192\,z^5 - 96\,768\,z^4 + 860\,160\,z^3 - 7\,176\,960\,z^2 + 34\,428\,240\,z - 79\,053\,975\right) + \sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right.$$
$$\left(2\sqrt{z}\left(16\,384\,z^5 - 174\,080\,z^4 + 1\,542\,720\,z^3 - 12\,610\,080\,z^2 + 55\,509\,300\,z - 79\,053\,975\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.\left(-131\,072\,z^5 + 983\,040\,z^4 - 9\,327\,360\,z^3 + 58\,514\,400\,z^2 - 160\,914\,600\,z + 79\,053\,975\right)\sin\left(2\sqrt{z}\right)\right) -$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(131\,072\,z^5 - 983\,040\,z^4 + 9\,327\,360\,z^3 - 58\,514\,400\,z^2 + 160\,914\,600\,z - 79\,053\,975\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.\left.\left.2\sqrt{z}\left(16\,384\,z^5 - 174\,080\,z^4 + 1\,542\,720\,z^3 - 12\,610\,080\,z^2 + 55\,509\,300\,z - 79\,053\,975\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 5$, $b_1 = -\frac{7}{4}$

07.22.03.7526.01

$${}_1F_2\left(5; -\frac{7}{4}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{5040}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(256\,z^2 + 5632\,z^{3/2} + 41\,760\,z + 121\,920\sqrt{z} + 116\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4} + \sqrt{2\pi}\right.\right.$$
$$\left(-256\,z^2 + 5632\,z^{3/2} - 41\,760\,z + 121\,920\sqrt{z} - 116\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4} +$$
$$\left.\left.16\,e^{2\sqrt{z}}\left(32\,z^4 + 5050\,z^3 + 11\,520\,z^2 + 720\,z + 315\right)\right)\right)$$

07.22.03.7527.01

$${}_1F_2\left(5; -\frac{7}{4}, -\frac{5}{4}; -z\right) = \frac{1}{1260}\left(\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^2 - 41\,760\,z + 116\,025\right)\cos\left(2\sqrt{z}\right) + 64\sqrt{z}\,(88\,z - 1905)\sin\left(2\sqrt{z}\right)\right)z^{9/4} -\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^2 - 41\,760\,z + 116\,025\right)\sin\left(2\sqrt{z}\right) - 64\sqrt{z}\,(88\,z - 1905)\cos\left(2\sqrt{z}\right)\right)z^{9/4} +$$
$$\left.4\left(32\,z^4 - 5050\,z^3 + 11\,520\,z^2 - 720\,z + 315\right)\right)$$

07.22.03.7528.01

$${}_1F_2\left(5; -\frac{7}{4}, -\frac{1}{4}; z\right) =$$
$$\frac{1}{8064}\left(e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\sqrt{2\pi}\left(512\,z^{5/2} + 9984\,z^2 + 63\,552\,z^{3/2} + 148\,512\,z + 83\,538\sqrt{z} - 41\,769\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4} -\right.\right.$$
$$\sqrt{2\pi}\left(512\,z^{5/2} - 9984\,z^2 + 63\,552\,z^{3/2} - 148\,512\,z + 83\,538\sqrt{z} + 41\,769\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4} -$$
$$\left.\left.16\,e^{2\sqrt{z}}\left(1232\,z^3 + 16\,797\,z^2 - 5760\,z - 504\right)\right)\right)$$

07.22.03.7529.01

$$ {}_1F_2\left(5; -\frac{7}{4}, -\frac{1}{4}; -z\right) = \frac{1}{2016}\left(-\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(256z^2 - 31\,776z + 41\,769\right)\sin\left(2\sqrt{z}\right) - 39\left(256z^2 - 3808z - 1071\right)\cos\left(2\sqrt{z}\right)\right)z^{5/4} - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(256z^2 - 31\,776z + 41\,769\right)\cos\left(2\sqrt{z}\right) + 39\left(256z^2 - 3808z - 1071\right)\sin\left(2\sqrt{z}\right)\right)z^{5/4} + 4\left(1232z^3 - 16\,797z^2 - 5760z + 504\right)\right) $$

07.22.03.7530.01

$$ {}_1F_2\left(5; -\frac{7}{4}, \frac{3}{4}; z\right) = \frac{1}{64\,512}\left(e^{-2\sqrt{z}}\left(16e^{2\sqrt{z}}\left(128z^3 + 10\,104z^2 - 5415z + 4032\right) + e^{4\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(1024z^3 + 16\,896z^{5/2} + 84\,864z^2 + 127\,296z^{3/2} - 23\,868z - 59\,670\sqrt{z} + 29\,835\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\sqrt[4]{z}\left(-1024z^3 + 16\,896z^{5/2} - 84\,864z^2 + 127\,296z^{3/2} + 23\,868z - 59\,670\sqrt{z} - 29\,835\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7531.01

$$ {}_1F_2\left(5; -\frac{7}{4}, \frac{3}{4}; -z\right) = \frac{1}{16\,128}\left(-512z^3 + 40\,416z^2 + 21\,660z - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024z^3 - 84\,864z^2 - 23\,868z - 29\,835\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(2816z^2 - 21\,216z - 9945\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024z^3 - 84\,864z^2 - 23\,868z - 29\,835\right)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(2816z^2 - 21\,216z - 9945\right)\cos\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + 16\,128\right) $$

07.22.03.7532.01

$$ {}_1F_2\left(5; -\frac{7}{4}, \frac{7}{4}; z\right) = \frac{1}{172\,032\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(48e^{2\sqrt{z}}\,z^{3/4}\left(1088z^2 + 500z + 2609\right) + e^{4\sqrt{z}}\sqrt{2\pi}\left(2048z^{7/2} + 26\,624z^3 + 89\,856z^{5/2} + 29\,952z^2 - 107\,640z^{3/2} + 42\,120z + 17\,550\sqrt{z} - 8775\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\left(2048z^{7/2} - 26\,624z^3 + 89\,856z^{5/2} - 29\,952z^2 - 107\,640z^{3/2} - 42\,120z + 17\,550\sqrt{z} + 8775\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7533.01

$$ {}_1F_2\left(5; -\frac{7}{4}, \frac{7}{4}; -z\right) = \frac{1}{43\,008\, z^{3/4}}\left(12\, z^{3/4}\left(1088\, z^2 - 500\, z + 2609\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(13\left(2048\, z^3 - 2304\, z^2 + 3240\, z + 675\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-1024\, z^3 + 44\,928\, z^2 + 53\,820\, z + 8775\right)\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(1024\, z^3 - 44\,928\, z^2 - 53\,820\, z - 8775\right)\cos\left(2\sqrt{z}\right) + 13\left(2048\, z^3 - 2304\, z^2 + 3240\, z + 675\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7534.01

$$ {}_1F_2\left(5; -\frac{7}{4}, \frac{11}{4}; z\right) = \frac{1}{196\,608\, z^{7/4}}\left(e^{-2\sqrt{z}}\left(16\, e^{2\sqrt{z}}\; z^{3/4}\left(512\, z^3 + 5280\, z^2 + 5088\, z - 4725\right) + e^{4\sqrt{z}}\;\sqrt{2\pi}\left(4096\, z^4 + 36\,864\, z^{7/2} + 50\,688\, z^3 - 92\,160\, z^{5/2} + 15\,120\, z^2 + 54\,000\, z^{3/2} - 45\,900\, z + 28\,350\sqrt{z} - 14\,175\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right) + \sqrt{2\pi}\left(-4096\, z^4 + 36\,864\, z^{7/2} - 50\,688\, z^3 - 92\,160\, z^{5/2} - 15\,120\, z^2 + 54\,000\, z^{3/2} + 45\,900\, z + 28\,350\sqrt{z} + 14\,175\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7535.01

$$ {}_1F_2\left(5; -\frac{7}{4}, \frac{11}{4}; -z\right) = \frac{1}{49\,152\, z^{7/4}}\left(4\, z^{3/4}\left(512\, z^3 - 5280\, z^2 + 5088\, z + 4725\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096\, z^4 - 50\,688\, z^3 + 15\,120\, z^2 + 45\,900\, z - 14\,175\right)\cos\left(2\sqrt{z}\right) + 18\sqrt{z}\left(2048\, z^3 + 5120\, z^2 + 3000\, z - 1575\right)\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096\, z^4 - 50\,688\, z^3 + 15\,120\, z^2 + 45\,900\, z - 14\,175\right)\sin\left(2\sqrt{z}\right) - 18\sqrt{z}\left(2048\, z^3 + 5120\, z^2 + 3000\, z - 1575\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7536.01

$$ {}_1F_2\left(5; -\frac{7}{4}, \frac{15}{4}; z\right) = \frac{1}{1\,572\,864\, z^{11/4}}\left(11\, e^{-2\sqrt{z}}\left(16\, e^{2\sqrt{z}}\; z^{3/4}\left(4352\, z^3 - 816\, z^2 - 18\,900\, z - 33\,075\right) + e^{4\sqrt{z}}\;\sqrt{2\pi}\left(8192\, z^{9/2} + 36\,864\, z^4 - 46\,080\, z^{7/2} - 23\,040\, z^3 + 99\,360\, z^{5/2} - 140\,400\, z^2 + 189\,000\, z^{3/2} - 226\,800\, z + 198\,450\sqrt{z} - 99\,225\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right) + \sqrt{2\pi}\left(8192\, z^{9/2} - 36\,864\, z^4 - 46\,080\, z^{7/2} + 23\,040\, z^3 + 99\,360\, z^{5/2} + 140\,400\, z^2 + 189\,000\, z^{3/2} + 226\,800\, z + 198\,450\sqrt{z} + 99\,225\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7537.01

$$ {}_1F_2\left(5; -\frac{7}{4}, \frac{15}{4}; -z\right) = \frac{1}{393\,216\, z^{11/4}}\left(11\left(-4\, z^{3/4}\left(4352\, z^3 + 816\, z^2 - 18\,900\, z + 33\,075\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(4096\, z^4 + 23\,040\, z^3 + 49\,680\, z^2 - 94\,500\, z + 99\,225\right)\cos\left(2\sqrt{z}\right) + 9\left(4096\, z^4 + 2560\, z^3 - 15\,600\, z^2 + 25\,200\, z - 11\,025\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(4096\, z^4 + 23\,040\, z^3 + 49\,680\, z^2 - 94\,500\, z + 99\,225\right)\sin\left(2\sqrt{z}\right) - 9\left(4096\, z^4 + 2560\, z^3 - 15\,600\, z^2 + 25\,200\, z - 11\,025\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7538.01

$$ {}_1F_2\left(5; -\frac{7}{4}, \frac{19}{4}; z\right) = \frac{1}{4\,194\,304\, z^{15/4}}\left(55\, e^{-2\sqrt{z}}\left(16\, e^{2\sqrt{z}}\, z^{3/4}\left(2048\, z^4 - 6272\, z^3 - 57\,456\, z^2 - 294\,840\, z - 800\,415\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\left(16\,384\, z^5 - 8192\, z^{9/2} - 55\,296\, z^4 + 175\,104\, z^{7/2} - 414\,144\, z^3 + 961\,632\, z^{5/2} - 2\,026\,080\, z^2 + 3\,598\,560\, z^{3/2} - 5\,000\,940\, z + 4\,802\,490\sqrt{z} - 2\,401\,245\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\left(-16\,384\, z^5 - 8192\, z^{9/2} + 55\,296\, z^4 + 175\,104\, z^{7/2} + 414\,144\, z^3 + 961\,632\, z^{5/2} + 2\,026\,080\, z^2 + 3\,598\,560\, z^{3/2} + 5\,000\,940\, z + 4\,802\,490\sqrt{z} + 2\,401\,245\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7539.01

$$ {}_1F_2\left(5; -\frac{7}{4}, \frac{19}{4}; -z\right) = \frac{1}{1\,048\,576\, z^{15/4}}\left(55\left(-4\, z^{3/4}\left(2048\, z^4 + 6272\, z^3 - 57\,456\, z^2 + 294\,840\, z - 800\,415\right) - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(16\,384\, z^5 + 55\,296\, z^4 - 414\,144\, z^3 + 2\,026\,080\, z^2 - 5\,000\,940\, z + 2\,401\,245\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(4096\, z^4 + 87\,552\, z^3 - 480\,816\, z^2 + 1\,799\,280\, z - 2\,401\,245\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(4096\, z^4 + 87\,552\, z^3 - 480\,816\, z^2 + 1\,799\,280\, z - 2\,401\,245\right)\cos\left(2\sqrt{z}\right) + \left(16\,384\, z^5 + 55\,296\, z^4 - 414\,144\, z^3 + 2\,026\,080\, z^2 - 5\,000\,940\, z + 2\,401\,245\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7540.01

$$ {}_1F_2\left(5; -\frac{7}{4}, \frac{23}{4}; z\right) = \frac{1}{33\,554\,432\, z^{19/4}} \left(1045\, e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(25\,600\, z^4 + 479\,808\, z^3 + 6\,199\,200\, z^2 + 46\,195\,380\, z + 156\,080\,925\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \left(32\,768\, z^{11/2} - 196\,608\, z^5 + 872\,448\, z^{9/2} - 3\,575\,808\, z^4 + 13\,474\,944\, z^{7/2} - 45\,239\,040\, z^3 + 131\,664\,960\, z^{5/2} - 321\,965\,280\, z^2 + 633\,928\,680\, z^{3/2} - 941\,288\,040\, z + 936\,485\,550\sqrt{z} - 468\,242\,775\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(32\,768\, z^{11/2} + 196\,608\, z^5 + 872\,448\, z^{9/2} + 3\,575\,808\, z^4 + 13\,474\,944\, z^{7/2} + 45\,239\,040\, z^3 + 131\,664\,960\, z^{5/2} + 321\,965\,280\, z^2 + 633\,928\,680\, z^{3/2} + 941\,288\,040\, z + 936\,485\,550\sqrt{z} + 468\,242\,775\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7541.01

$$ {}_1F_2\left(5; -\frac{7}{4}, \frac{23}{4}; -z\right) = -\frac{1}{8\,388\,608\, z^{19/4}} \left(1045 \left(4\, z^{3/4} \left(25\,600\, z^4 - 479\,808\, z^3 + 6\,199\,200\, z^2 - 46\,195\,380\, z + 156\,080\,925\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(16\,384\, z^5 - 436\,224\, z^4 + 6\,737\,472\, z^3 - 65\,832\,480\, z^2 + 316\,964\,340\, z - 468\,242\,775\right) \cos\left(2\sqrt{z}\right) + 3\left(-65\,536\, z^5 + 1\,191\,936\, z^4 - 15\,079\,680\, z^3 + 107\,321\,760\, z^2 - 313\,762\,680\, z + 156\,080\,925\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(3\left(65\,536\, z^5 - 1\,191\,936\, z^4 + 15\,079\,680\, z^3 - 107\,321\,760\, z^2 + 313\,762\,680\, z - 156\,080\,925\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z} \left(16\,384\, z^5 - 436\,224\, z^4 + 6\,737\,472\, z^3 - 65\,832\,480\, z^2 + 316\,964\,340\, z - 468\,242\,775\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 5$, $b_1 = -\frac{5}{4}$

07.22.03.7542.01

$$ {}_1F_2\left(5; -\frac{5}{4}, -\frac{3}{4}; z\right) = \frac{1}{2880} \left(e^{-2\sqrt{z}} \left(-e^{4\sqrt{z}}\, \sqrt{2\pi} \left(256\, z^2 + 5120\, z^{3/2} + 34\,080\, z + 87\,840\sqrt{z} + 72\,105\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{7/4} + \sqrt{2\pi} \left(-256\, z^2 + 5120\, z^{3/2} - 34\,080\, z + 87\,840\sqrt{z} - 72\,105\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{7/4} - 8\, e^{2\sqrt{z}} \left(1264\, z^3 + 20\,055\, z^2 - 1920\, z - 360\right)\right)\right) $$

07.22.03.7543.01

$$ {}_1F_2\left(5; -\frac{5}{4}, -\frac{3}{4}; -z\right) = \frac{1}{720} \left(2528\, z^3 - 40\,110\, z^2 - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(256\, z^2 - 34\,080\, z + 72\,105\right) \cos\left(2\sqrt{z}\right) + 160\sqrt{z} \left(32\, z - 549\right) \sin\left(2\sqrt{z}\right)\right) z^{7/4} - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(256\, z^2 - 34\,080\, z + 72\,105\right) \sin\left(2\sqrt{z}\right) - 160\sqrt{z} \left(32\, z - 549\right) \cos\left(2\sqrt{z}\right)\right) z^{7/4} - 3840\, z + 720\right) $$

07.22.03.7544.01

$$ {}_1F_2\left(5;-\frac{5}{4},\frac{1}{4};z\right)=\frac{1}{7680}\left(e^{-2\sqrt{z}}\left(8e^{2\sqrt{z}}\left(128z^3+12\,024z^2+6585z+960\right)+\right.\right.$$
$$ e^{4\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(512z^{5/2}+8960z^2+50\,240z^{3/2}+100\,320z+43\,890\sqrt{z}-21\,945\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$ \left.\left.\sqrt{2\pi}\,z^{3/4}\left(512z^{5/2}-8960z^2+50\,240z^{3/2}-100\,320z+43\,890\sqrt{z}+21\,945\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7545.01

$$ {}_1F_2\left(5;-\frac{5}{4},\frac{1}{4};-z\right)=\frac{1}{1920}\left(-256z^3+24\,048z^2-13\,170z+\right.$$
$$ \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-8960z^2+100\,320z+21\,945\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(256z^2-25\,120z+21\,945\right)\sin\left(2\sqrt{z}\right)\right)z^{3/4}-$$
$$ \left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(256z^2-25\,120z+21\,945\right)\cos\left(2\sqrt{z}\right)+5\left(1792z^2-20\,064z-4389\right)\sin\left(2\sqrt{z}\right)\right)z^{3/4}+1920\right) $$

07.22.03.7546.01

$$ {}_1F_2\left(5;-\frac{5}{4},\frac{5}{4};z\right)=\frac{1}{61\,440\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(24e^{2\sqrt{z}}\sqrt[4]{z}\left(1216z^2+5052z-905\right)+\right.\right.$$
$$ e^{4\sqrt{z}}\sqrt{2\pi}\left(1024z^3+14\,848z^{5/2}+63\,360z^2+73\,920z^{3/2}-23\,100z-20\,790\sqrt{z}+10\,395\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$ \left.\left.\sqrt{2\pi}\left(1024z^3-14\,848z^{5/2}+63\,360z^2-73\,920z^{3/2}-23\,100z+20\,790\sqrt{z}+10\,395\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7547.01

$$ {}_1F_2\left(5;-\frac{5}{4},\frac{5}{4};-z\right)=\frac{1}{15\,360\sqrt[4]{z}}\left(6\sqrt[4]{z}\left(1216z^2-5052z-905\right)-\right.$$
$$ \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024z^3-63\,360z^2-23\,100z-10\,395\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(7424z^2-36\,960z-10\,395\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$ \left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024z^3-63\,360z^2-23\,100z-10\,395\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(7424z^2-36\,960z-10\,395\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7548.01

$$ {}_1F_2\left(5;-\frac{5}{4},\frac{9}{4};z\right)=\frac{1}{98\,304z^{5/4}}\left(e^{-2\sqrt{z}}\left(8e^{2\sqrt{z}}\sqrt[4]{z}\left(512z^3+13\,472z^2-9888z-3465\right)+\right.\right.$$
$$ e^{4\sqrt{z}}\sqrt{2\pi}\left(2048z^{7/2}+22\,528z^3+59\,136z^{5/2}-46\,200z^{3/2}+27\,720z-6930\sqrt{z}+3465\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$ \left.\left.\sqrt{2\pi}\left(-2048z^{7/2}+22\,528z^3-59\,136z^{5/2}+46\,200z^{3/2}+27\,720z+6930\sqrt{z}+3465\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7549.01

$$ {}_1F_2\left(5; -\frac{5}{4}, \frac{9}{4}; -z\right) = \frac{1}{24\,576\, z^{5/4}}\left(2\sqrt[4]{z}\,\left(512\, z^3 - 13\,472\, z^2 - 9888\, z + 3465\right) + \right.$$

$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(11\left(2048\, z^3 + 2520\, z - 315\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-1024\, z^3 + 29\,568\, z^2 + 23\,100\, z - 3465\right)\sin\left(2\sqrt{z}\right)\right) + $$

$$ \left.\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(1024\, z^3 - 29\,568\, z^2 - 23\,100\, z + 3465\right)\cos\left(2\sqrt{z}\right) + 11\left(2048\, z^3 + 2520\, z - 315\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7550.01

$$ {}_1F_2\left(5; -\frac{5}{4}, \frac{13}{4}; z\right) = \frac{1}{262\,144\, z^{9/4}} $$

$$ \left(3\, e^{-2\sqrt{z}}\,\left(8\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(6912\, z^3 - 13\,456\, z^2 - 11\,340\, z - 11\,025\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\, z^4 + 28\,672\, z^{7/2} + 17\,920\, z^3 - \right.\right. $$

$$ \left. 53\,760\, z^{5/2} + 42\,000\, z^2 - 28\,560\, z^{3/2} + 28\,980\, z - 22\,050\sqrt{z} + 11\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\left(4096\, z^4 - \right. $$

$$ \left.\left. 28\,672\, z^{7/2} + 17\,920\, z^3 + 53\,760\, z^{5/2} + 42\,000\, z^2 + 28\,560\, z^{3/2} + 28\,980\, z + 22\,050\sqrt{z} + 11\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7551.01

$$ {}_1F_2\left(5; -\frac{5}{4}, \frac{13}{4}; -z\right) = \frac{1}{65\,536\, z^{9/4}} $$

$$ \left(3\left(-2\sqrt[4]{z}\,\left(6912\, z^3 + 13\,456\, z^2 - 11\,340\, z + 11\,025\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096\, z^4 - 17\,920\, z^3 + 42\,000\, z^2 - 28\,980\, z + 11\,025\right)\right.\right. $$

$$ \cos\left(2\sqrt{z}\right) + 14\sqrt{z}\,\left(2048\, z^3 + 3840\, z^2 - 2040\, z + 1575\right)\sin\left(2\sqrt{z}\right)\Big) + $$

$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096\, z^4 - 17\,920\, z^3 + 42\,000\, z^2 - 28\,980\, z + 11\,025\right)\sin\left(2\sqrt{z}\right) - \right. $$

$$ \left.\left. 14\sqrt{z}\,\left(2048\, z^3 + 3840\, z^2 - 2040\, z + 1575\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7552.01

$$ {}_1F_2\left(5; -\frac{5}{4}, \frac{17}{4}; z\right) = $$

$$ \frac{1}{2\,097\,152\, z^{13/4}}\left(39\, e^{-2\sqrt{z}}\,\left(8\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(2048\, z^4 - 12\,416\, z^3 - 25\,200\, z^2 - 73\,080\, z - 127\,575\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\right.\right. $$

$$ \left(8192\, z^{9/2} + 20\,480\, z^4 - 46\,080\, z^{7/2} + 53\,760\, z^3 - 77\,280\, z^{5/2} + 136\,080\, z^2 - 214\,200\, z^{3/2} + 277\,200\, z - \right. $$

$$ 255\,150\sqrt{z} + 127\,575\Big)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\left(-8192\, z^{9/2} + 20\,480\, z^4 + 46\,080\, z^{7/2} + 53\,760\, z^3 + \right. $$

$$ \left.\left.\left. 77\,280\, z^{5/2} + 136\,080\, z^2 + 214\,200\, z^{3/2} + 277\,200\, z + 255\,150\sqrt{z} + 127\,575\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7553.01

$$ {}_1F_2\left(5; -\frac{5}{4}, \frac{17}{4}; -z\right) = -\frac{1}{524\,288\, z^{13/4}}\left(39\left(2\sqrt[4]{z}\left(2048 z^4 + 12\,416 z^3 - 25\,200 z^2 + 73\,080 z - 127\,575\right) + \right.\right.$$
$$\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(4096 z^4 + 23\,040 z^3 - 38\,640 z^2 + 107\,100 z - 127\,575\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left. 5\left(4096 z^4 - 10\,752 z^3 + 27\,216 z^2 - 55\,440 z + 25\,515\right)\sin\left(2\sqrt{z}\right)\right) +$$
$$\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(5\left(4096 z^4 - 10\,752 z^3 + 27\,216 z^2 - 55\,440 z + 25\,515\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left.\left. 2\sqrt{z}\left(4096 z^4 + 23\,040 z^3 - 38\,640 z^2 + 107\,100 z - 127\,575\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7554.01

$$ {}_1F_2\left(5; -\frac{5}{4}, \frac{21}{4}; z\right) =$$
$$\frac{1}{16\,777\,216 z^{17/4}}\left(663 e^{-2\sqrt{z}}\left(-8 e^{2\sqrt{z}}\sqrt[4]{z}\left(11\,264 z^4 + 73\,920 z^3 + 574\,560 z^2 + 2\,687\,580 z + 6\,081\,075\right) + \right.\right.$$
$$e^{4\sqrt{z}}\sqrt{2\pi}\left(16\,384 z^5 - 40\,960 z^{9/2} + 92\,160 z^4 - 261\,120 z^{7/2} + 759\,360 z^3 - 2\,005\,920 z^{5/2} + \right.$$
$$\left. 4\,586\,400 z^2 - 8\,618\,400 z^{3/2} + 12\,417\,300 z - 12\,162\,150\sqrt{z} + 6\,081\,075\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) +$$
$$\sqrt{2\pi}\left(16\,384 z^5 + 40\,960 z^{9/2} + 92\,160 z^4 + 261\,120 z^{7/2} + 759\,360 z^3 + 2\,005\,920 z^{5/2} + 4\,586\,400 z^2 + \right.$$
$$\left.\left. 8\,618\,400 z^{3/2} + 12\,417\,300 z + 12\,162\,150\sqrt{z} + 6\,081\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7555.01

$$ {}_1F_2\left(5; -\frac{5}{4}, \frac{21}{4}; -z\right) =$$
$$-\frac{1}{4\,194\,304 z^{17/4}}\left(663\left(2\sqrt[4]{z}\left(11\,264 z^4 - 73\,920 z^3 + 574\,560 z^2 - 2\,687\,580 z + 6\,081\,075\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right.$$
$$\left(\left(16\,384 z^5 - 92\,160 z^4 + 759\,360 z^3 - 4\,586\,400 z^2 + 12\,417\,300 z - 6\,081\,075\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left. 10\sqrt{z}\left(4096 z^4 - 26\,112 z^3 + 200\,592 z^2 - 861\,840 z + 1\,216\,215\right)\sin\left(2\sqrt{z}\right)\right) +$$
$$\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\left(4096 z^4 - 26\,112 z^3 + 200\,592 z^2 - 861\,840 z + 1\,216\,215\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\left.\left(16\,384 z^5 - 92\,160 z^4 + 759\,360 z^3 - 4\,586\,400 z^2 + 12\,417\,300 z - 6\,081\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 5$, $b_1 = -\frac{3}{4}$

07.22.03.7556.01

$${}_1F_2\left(5;-\frac{3}{4},-\frac{1}{4};z\right)=$$
$$\frac{1}{2304}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(256z^2+4608z^{3/2}+27\,168z+60\,672\sqrt{z}+41\,769\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+\sqrt{2\pi}\left(-256z^2+\right.\right.\right.$$
$$\left.\left.\left.4608z^{3/2}-27\,168z+60\,672\sqrt{z}-41\,769\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+32e^{2\sqrt{z}}\left(16z^3+1629z^2+1920z+72\right)\right)\right)$$

07.22.03.7557.01

$${}_1F_2\left(5;-\frac{3}{4},-\frac{1}{4};-z\right)=$$
$$\frac{1}{576}\left(-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^2-27\,168z+41\,769\right)\cos\left(2\sqrt{z}\right)+768\sqrt{z}\,(6z-79)\sin\left(2\sqrt{z}\right)\right)z^{5/4}+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left.\left(\left(256z^2-27\,168z+41\,769\right)\sin\left(2\sqrt{z}\right)-768\sqrt{z}\,(6z-79)\cos\left(2\sqrt{z}\right)\right)z^{5/4}-8\left(16z^3-1629z^2+1920z-72\right)\right)$$

07.22.03.7558.01

$${}_1F_2\left(5;-\frac{3}{4},\frac{3}{4};z\right)=\frac{1}{18\,432}\left(e^{-2\sqrt{z}}\left(-16e^{2\sqrt{z}}\left(976z^2+6925z-1152\right)-\right.\right.$$
$$e^{4\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(512z^{5/2}+7936z^2+38\,464z^{3/2}+63\,648z+19\,890\sqrt{z}-9945\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.\left.\sqrt{2\pi}\sqrt[4]{z}\left(512z^{5/2}-7936z^2+38\,464z^{3/2}-63\,648z+19\,890\sqrt{z}+9945\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7559.01

$${}_1F_2\left(5;-\frac{3}{4},\frac{3}{4};-z\right)=\frac{1}{4608}\left(-3904z^2+27\,700z+\right.$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-7936z^2+63\,648z+9945\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(256z^2-19\,232z+9945\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z}+$$
$$\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(256z^2-19\,232z+9945\right)\cos\left(2\sqrt{z}\right)+\left(7936z^2-63\,648z-9945\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z}+4608\right)$$

07.22.03.7560.01

$${}_1F_2\left(5;-\frac{3}{4},\frac{7}{4};z\right)=\frac{1}{49\,152z^{3/4}}\left(e^{-2\sqrt{z}}\left(-16e^{2\sqrt{z}}z^{3/4}\left(128z^2+5240z-2487\right)-\right.\right.$$
$$e^{4\sqrt{z}}\sqrt{2\pi}\left(1024z^3+12\,800z^{5/2}+44\,928z^2+37\,440z^{3/2}-16\,380z-3510\sqrt{z}+1755\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\pi}\left(1024z^3-12\,800z^{5/2}+44\,928z^2-37\,440z^{3/2}-16\,380z+3510\sqrt{z}+1755\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7561.01

$$ {}_1F_2\left(5; -\frac{3}{4}, \frac{7}{4}; -z\right) = \frac{1}{12\,288\, z^{3/4}}\left(4\, z^{3/4}\left(-128\, z^2 + 5240\, z + 2487\right) - \right.$$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\, z^3 - 44\,928\, z^2 - 16\,380\, z - 1755\right)\cos\left(2\sqrt{z}\right) + 10\sqrt{z}\,\left(1280\, z^2 - 3744\, z - 351\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \left.\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\, z^3 - 44\,928\, z^2 - 16\,380\, z - 1755\right)\sin\left(2\sqrt{z}\right) - 10\sqrt{z}\,\left(1280\, z^2 - 3744\, z - 351\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7562.01

$$ {}_1F_2\left(5; -\frac{3}{4}, \frac{11}{4}; z\right) = $$
$$ -\frac{1}{393\,216\, z^{7/4}}\left(7\, e^{-2\sqrt{z}}\left(16\, e^{2\sqrt{z}}\; z^{3/4}\left(2240\, z^2 - 2148\, z + 675\right) + e^{4\sqrt{z}}\;\sqrt{2\pi}\,\left(2048\, z^{7/2} + 18\,432\, z^3 + 34\,560\, z^{5/2} - \right.\right.\right. $$
$$ \left.\left.\left. 11\,520\, z^2 - 9720\, z^{3/2} + 7560\, z - 4050\sqrt{z} + 2025\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right) + \right. $$
$$ \left.\left.\sqrt{2\pi}\,\left(2048\, z^{7/2} - 18\,432\, z^3 + 34\,560\, z^{5/2} + 11\,520\, z^2 - 9720\, z^{3/2} - 7560\, z - 4050\sqrt{z} - 2025\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7563.01

$$ {}_1F_2\left(5; -\frac{3}{4}, \frac{11}{4}; -z\right) = $$
$$ -\frac{1}{98\,304\, z^{7/4}}\left(7\left(-4\, z^{3/4}\left(2240\, z^2 + 2148\, z + 675\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(1024\, z^3 - 17\,280\, z^2 - 4860\, z + 2025\right)\sin\left(2\sqrt{z}\right) - \right.\right.\right. $$
$$ \left.\left.\left. 9\left(2048\, z^3 + 1280\, z^2 + 840\, z - 225\right)\cos\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right. $$
$$ \left.\left.\left(2\sqrt{z}\,\left(1024\, z^3 - 17\,280\, z^2 - 4860\, z + 2025\right)\cos\left(2\sqrt{z}\right) + 9\left(2048\, z^3 + 1280\, z^2 + 840\, z - 225\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7564.01

$$ {}_1F_2\left(5; -\frac{3}{4}, \frac{15}{4}; z\right) = $$
$$ -\frac{1}{3\,145\,728\, z^{11/4}}\left(77\, e^{-2\sqrt{z}}\left(16\, e^{2\sqrt{z}}\; z^{3/4}\left(512\, z^3 - 864\, z^2 + 2400\, z + 3675\right) + e^{4\sqrt{z}}\;\sqrt{2\pi}\,\left(4096\, z^4 + 20\,480\, z^{7/2} - 2560\, z^3 - \right.\right.\right. $$
$$ \left.\left.\left. 15\,360\, z^{5/2} + 18\,960\, z^2 - 22\,800\, z^{3/2} + 26\,100\, z - 22\,050\sqrt{z} + 11\,025\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right) - \sqrt{2\pi}\,\left(4096\, z^4 - \right.\right. $$
$$ \left.\left. 20\,480\, z^{7/2} - 2560\, z^3 + 15\,360\, z^{5/2} + 18\,960\, z^2 + 22\,800\, z^{3/2} + 26\,100\, z + 22\,050\sqrt{z} + 11\,025\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7565.01

$$ {}_1F_2\left(5; -\frac{3}{4}, \frac{15}{4}; -z\right) = \frac{1}{786\,432\, z^{11/4}} $$
$$ \left(77\left(4 z^{3/4}\left(512 z^3 + 864 z^2 + 2400 z - 3675\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096 z^4 + 2560 z^3 + 18\,960 z^2 - 26\,100 z + 11\,025\right)\right.\right. $$
$$ \left.\cos\left(2\sqrt{z}\right) + 10\sqrt{z}\left(2048 z^3 + 1536 z^2 - 2280 z + 2205\right)\sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096 z^4 + 2560 z^3 + 18\,960 z^2 - 26\,100 z + 11\,025\right)\sin\left(2\sqrt{z}\right) - $$
$$ \left.\left.10\sqrt{z}\left(2048 z^3 + 1536 z^2 - 2280 z + 2205\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7566.01

$$ {}_1F_2\left(5; -\frac{3}{4}, \frac{19}{4}; z\right) = $$
$$ -\frac{1}{8\,388\,608\, z^{15/4}}\left(385\, e^{-2\sqrt{z}}\left(16\, e^{2\sqrt{z}}\, z^{3/4}\left(256 z^3 + 6096 z^2 + 28\,140 z + 72\,765\right) + e^{4\sqrt{z}}\sqrt{2\pi}\left(8192 z^{9/2} + 4096 z^4 - \right.\right.\right. $$
$$ \left.21\,504 z^{7/2} + 44\,544 z^3 - 95\,712 z^{5/2} + 193\,680 z^2 - 335\,160 z^{3/2} + 458\,640 z - 436\,590\sqrt{z} + 218\,295\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\left(8192 z^{9/2} - 4096 z^4 - 21\,504 z^{7/2} - 44\,544 z^3 - 95\,712 z^{5/2} - \right. $$
$$ \left.\left.\left.193\,680 z^2 - 335\,160 z^{3/2} - 458\,640 z - 436\,590\sqrt{z} - 218\,295\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7567.01

$$ {}_1F_2\left(5; -\frac{3}{4}, \frac{19}{4}; -z\right) = $$
$$ \frac{1}{2\,097\,152\, z^{15/4}}\left(385\left(-4 z^{3/4}\left(256 z^3 - 6096 z^2 + 28\,140 z - 72\,765\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(4096 z^4 + 10\,752 z^3 - 47\,856 z^2 + \right.\right.\right. $$
$$ \left.\left.167\,580 z - 218\,295\right)\cos\left(2\sqrt{z}\right) + \left(4096 z^4 - 44\,544 z^3 + 193\,680 z^2 - 458\,640 z + 218\,295\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-4096 z^4 + 44\,544 z^3 - 193\,680 z^2 + 458\,640 z - 218\,295\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left.2\sqrt{z}\left(4096 z^4 + 10\,752 z^3 - 47\,856 z^2 + 167\,580 z - 218\,295\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7568.01

$$ {}_1F_2\left(5; -\frac{3}{4}, \frac{23}{4}; z\right) = -\frac{1}{67\,108\,864\, z^{19/4}} \left(7315\, e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(2048 z^4 + 38\,784 z^3 + 485\,520 z^2 + 3\,575\,880 z + 12\,006\,225\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \left(16\,384 z^5 - 73\,728 z^{9/2} + 288\,768 z^4 - 1\,065\,984 z^{7/2} + 3\,539\,520 z^3 - 10\,231\,200 z^{5/2} + 24\,907\,680 z^2 - 48\,898\,080 z^{3/2} + 72\,473\,940 z - 72\,037\,350 \sqrt{z} + 36\,018\,675\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - \sqrt{2\pi} \left(16\,384 z^5 + 73\,728 z^{9/2} + 288\,768 z^4 + 1\,065\,984 z^{7/2} + 3\,539\,520 z^3 + 10\,231\,200 z^{5/2} + 24\,907\,680 z^2 + 48\,898\,080 z^{3/2} + 72\,473\,940 z + 72\,037\,350 \sqrt{z} + 36\,018\,675\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7569.01

$$ {}_1F_2\left(5; -\frac{3}{4}, \frac{23}{4}; -z\right) = \frac{1}{16\,777\,216\, z^{19/4}} \left(7315 \left(-4 z^{3/4} \left(2048 z^4 - 38\,784 z^3 + 485\,520 z^2 - 3\,575\,880 z + 12\,006\,225\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(16\,384 z^5 - 288\,768 z^4 + 3\,539\,520 z^3 - 24\,907\,680 z^2 + 72\,473\,940 z - 36\,018\,675\right) \cos\left(2\sqrt{z}\right) - 6\sqrt{z} \left(12\,288 z^4 - 177\,664 z^3 + 1\,705\,200 z^2 - 8\,149\,680 z + 12\,006\,225\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(6\sqrt{z} \left(12\,288 z^4 - 177\,664 z^3 + 1\,705\,200 z^2 - 8\,149\,680 z + 12\,006\,225\right) \cos\left(2\sqrt{z}\right) + \left(16\,384 z^5 - 288\,768 z^4 + 3\,539\,520 z^3 - 24\,907\,680 z^2 + 72\,473\,940 z - 36\,018\,675\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 5$, $b_1 = -\frac{1}{4}$

07.22.03.7570.01

$$ {}_1F_2\left(5; -\frac{1}{4}, \frac{1}{4}; z\right) = \frac{1}{3072} \left(e^{-2\sqrt{z}} \left(-24\, e^{2\sqrt{z}} \left(336 z^2 + 2925 z - 128\right) - e^{4\sqrt{z}}\, \sqrt{2\pi}\, z^{3/4} \left(256 z^2 + 4096 z^{3/2} + 21\,024 z + 39\,648 \sqrt{z} + 21\,945\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, z^{3/4} \left(-256 z^2 + 4096 z^{3/2} - 21\,024 z + 39\,648 \sqrt{z} - 21\,945\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7571.01

$$ {}_1F_2\left(5; -\frac{1}{4}, \frac{1}{4}; -z\right) = \frac{1}{768} \left(-2016 z^2 + 17\,550 z + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(256 z^2 - 21\,024 z + 21\,945\right) \cos\left(2\sqrt{z}\right) + 32\sqrt{z}\, (128 z - 1239) \sin\left(2\sqrt{z}\right)\right) z^{3/4} + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(256 z^2 - 21\,024 z + 21\,945\right) \sin\left(2\sqrt{z}\right) - 32\sqrt{z}\, (128 z - 1239) \cos\left(2\sqrt{z}\right)\right) z^{3/4} + 768\right) $$

07.22.03.7572.01

$$ {}_1F_2\left(5;-\frac{1}{4},\frac{5}{4};z\right)=\frac{1}{24\,576\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\right.$$
$$\left(-8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(128\,z^2+6648\,z+393\right)-e^{4\sqrt{z}}\sqrt{2\,\pi}\left(512\,z^{5/2}+6912\,z^2+28\,224\,z^{3/2}+36\,960\,z+6930\sqrt{z}-3465\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\,\pi}\left(512\,z^{5/2}-6912\,z^2+28\,224\,z^{3/2}-36\,960\,z+6930\sqrt{z}+3465\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7573.01

$$ {}_1F_2\left(5;-\frac{1}{4},\frac{5}{4};-z\right)=\frac{1}{6144\sqrt[4]{z}}\left(-2\sqrt[4]{z}\left(128\,z^2-6648\,z+393\right)+\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-6912\,z^2+36\,960\,z+3465\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(256\,z^2-14\,112\,z+3465\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(256\,z^2-14\,112\,z+3465\right)\cos\left(2\sqrt{z}\right)+3\left(2304\,z^2-12\,320\,z-1155\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7574.01

$$ {}_1F_2\left(5;-\frac{1}{4},\frac{9}{4};z\right)=-\frac{1}{196\,608\,z^{5/4}}\left(5\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(2624\,z^2+2292\,z+693\right)+\right.\right.$$
$$e^{4\sqrt{z}}\sqrt{2\,\pi}\left(1024\,z^3+10\,752\,z^{5/2}+29\,568\,z^2+14\,784\,z^{3/2}-8316\,z+1386\sqrt{z}-693\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\,\pi}\left(1024\,z^3-10\,752\,z^{5/2}+29\,568\,z^2-14\,784\,z^{3/2}-8316\,z-1386\sqrt{z}-693\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7575.01

$$ {}_1F_2\left(5;-\frac{1}{4},\frac{9}{4};-z\right)=-\frac{1}{49\,152\,z^{5/4}}\left(5\left(-2\sqrt[4]{z}\left(2624\,z^2-2292\,z+693\right)+\right.\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\,z^3-29\,568\,z^2-8316\,z+693\right)\cos\left(2\sqrt{z}\right)+42\sqrt{z}\left(256\,z^2-352\,z+33\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\,z^3-29\,568\,z^2-8316\,z+693\right)\sin\left(2\sqrt{z}\right)-42\sqrt{z}\left(256\,z^2-352\,z+33\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7576.01

$$ {}_1F_2\left(5;-\frac{1}{4},\frac{13}{4};z\right)=$$
$$-\frac{1}{524\,288\,z^{9/4}}\left(15\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(512\,z^3+3232\,z^2+2016\,z+1575\right)+e^{4\sqrt{z}}\sqrt{2\,\pi}\left(2048\,z^{7/2}+14\,336\,z^3+\right.\right.\right.$$
$$\left.16\,128\,z^{5/2}-10\,752\,z^2+4872\,z^{3/2}-4536\,z+3150\sqrt{z}-1575\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.\left.\sqrt{2\,\pi}\left(2048\,z^{7/2}-14\,336\,z^3+16\,128\,z^{5/2}+10\,752\,z^2+4872\,z^{3/2}+4536\,z+3150\sqrt{z}+1575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7577.01

$${}_1F_2\left(5; -\frac{1}{4}, \frac{13}{4}; -z\right) =$$
$$\frac{1}{131\,072\,z^{9/4}}\left(15\left(2\sqrt[4]{z}\,\left(512\,z^3-3232\,z^2+2016\,z-1575\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(7\left(2048\,z^3+1536\,z^2-648\,z+225\right)\cos\left(2\sqrt{z}\right)+\right.\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(-1024\,z^3+8064\,z^2-2436\,z+1575\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)$$
$$\left.\left.\left(2\sqrt{z}\,\left(1024\,z^3-8064\,z^2+2436\,z-1575\right)\cos\left(2\sqrt{z}\right)+7\left(2048\,z^3+1536\,z^2-648\,z+225\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7578.01

$${}_1F_2\left(5; -\frac{1}{4}, \frac{17}{4}; z\right) =$$
$$-\frac{1}{4\,194\,304\,z^{13/4}}\left(195\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(2816\,z^3+3696\,z^2+8820\,z+14\,175\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(4096\,z^4+12\,288\,z^{7/2}-\right.\right.\right.$$
$$\left.\left.10\,752\,z^3+10\,752\,z^{5/2}-17\,136\,z^2+25\,200\,z^{3/2}-31\,500\,z+28\,350\sqrt{z}-14\,175\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.\sqrt{2\,\pi}\,\left(4096\,z^4-12\,288\,z^{7/2}-10\,752\,z^3-10\,752\,z^{5/2}-17\,136\,z^2-25\,200\,z^{3/2}-31\,500\,z-28\,350\sqrt{z}-14\,175\right)\right.$$
$$\left.\left.\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7579.01

$${}_1F_2\left(5; -\frac{1}{4}, \frac{17}{4}; -z\right) = \frac{1}{1\,048\,576\,z^{13/4}}$$
$$\left(195\left(2\sqrt[4]{z}\,\left(-2816\,z^3+3696\,z^2-8820\,z+14\,175\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096\,z^4+10\,752\,z^3-17\,136\,z^2+31\,500\,z-14\,175\right)\right.\right.$$
$$\left.\cos\left(2\sqrt{z}\right)+6\sqrt{z}\,\left(2048\,z^3-1792\,z^2+4200\,z-4725\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096\,z^4+10\,752\,z^3-17\,136\,z^2+31\,500\,z-14\,175\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left.6\sqrt{z}\,\left(2048\,z^3-1792\,z^2+4200\,z-4725\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7580.01

$${}_1F_2\left(5; -\frac{1}{4}, \frac{21}{4}; z\right) =$$
$$-\frac{1}{33\,554\,432\,z^{17/4}}\left(3315\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(2048\,z^4+8064\,z^3+55\,440\,z^2+249\,480\,z+552\,825\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\right.\right.$$
$$\left(8192\,z^{9/2}-12\,288\,z^4+27\,648\,z^{7/2}-75\,264\,z^3+191\,520\,z^{5/2}-428\,400\,z^2+793\,800\,z^{3/2}-1\,134\,000\,z+\right.$$
$$\left.1\,105\,650\sqrt{z}-552\,825\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\sqrt{2\,\pi}\,\left(8192\,z^{9/2}+12\,288\,z^4+27\,648\,z^{7/2}+75\,264\,z^3+\right.$$
$$\left.\left.\left.191\,520\,z^{5/2}+428\,400\,z^2+793\,800\,z^{3/2}+1\,134\,000\,z+1\,105\,650\sqrt{z}+552\,825\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7581.01

$${}_1F_2\left(5;-\frac{1}{4},\frac{21}{4};-z\right)=\frac{1}{8\,388\,608\,z^{17/4}}\left(3315\left(-2\sqrt[4]{z}\left(2048\,z^4-8064\,z^3+55\,440\,z^2-249\,480\,z+552\,825\right)-\right.\right.$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(4096\,z^4-13\,824\,z^3+95\,760\,z^2-396\,900\,z+552\,825\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.3\left(4096\,z^4-25\,088\,z^3+142\,800\,z^2-378\,000\,z+184\,275\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(4096\,z^4-25\,088\,z^3+142\,800\,z^2-378\,000\,z+184\,275\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.2\sqrt{z}\left(4096\,z^4-13\,824\,z^3+95\,760\,z^2-396\,900\,z+552\,825\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 5$, $b_1 = \frac{1}{4}$

07.22.03.7582.01

$${}_1F_2\left(5;\frac{1}{4},\frac{3}{4};z\right)=$$
$$\frac{1}{12\,288}\left(e^{-2\sqrt{z}}\left(32\,e^{2\sqrt{z}}\left(16\,z^2+925\,z+384\right)+e^{4\sqrt{z}}\sqrt{2\,\pi}\,\sqrt[4]{z}\left(256\,z^2+3584\,z^{3/2}+15\,648\,z+24\,000\sqrt{z}+9945\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\sqrt[4]{z}\left(-256\,z^2+3584\,z^{3/2}-15\,648\,z+24\,000\sqrt{z}-9945\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7583.01

$${}_1F_2\left(5;\frac{1}{4},\frac{3}{4};-z\right)=$$
$$\frac{1}{3072}\left(8\left(16\,z^2-925\,z+384\right)+\sqrt{\pi}\,\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^2-15\,648\,z+9945\right)\cos\left(2\sqrt{z}\right)+64\sqrt{z}\left(56\,z-375\right)\sin\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.\sqrt{\pi}\,\sqrt[4]{z}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^2-15\,648\,z+9945\right)\sin\left(2\sqrt{z}\right)-64\sqrt{z}\left(56\,z-375\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7584.01

$${}_1F_2\left(5;\frac{1}{4},\frac{7}{4};z\right)=$$
$$\frac{1}{32\,768\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(720\,z+1853\right)+e^{4\sqrt{z}}\sqrt{2\,\pi}\left(512\,z^{5/2}+5888\,z^2+19\,520\,z^{3/2}+18\,720\,z+1170\sqrt{z}-585\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\left(512\,z^{5/2}-5888\,z^2+19\,520\,z^{3/2}-18\,720\,z+1170\sqrt{z}+585\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7585.01

$$ {}_1F_2\left(5;\frac{1}{4},\frac{7}{4};-z\right)=\frac{1}{8192\,z^{3/4}}\left(4\,z^{3/4}\,(1853-720\,z)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-5888\,z^2+18\,720\,z+585\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(256\,z^2-9760\,z+585\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(256\,z^2-9760\,z+585\right)\cos\left(2\sqrt{z}\right)+\left(5888\,z^2-18\,720\,z-585\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7586.01

$$ {}_1F_2\left(5;\frac{1}{4},\frac{11}{4};z\right)=\frac{1}{262\,144\,z^{7/4}}\left(7\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(128\,z^2+1912\,z-135\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(1024\,z^3+8704\,z^{5/2}+17\,280\,z^2+2880\,z^{3/2}-1980\,z+810\sqrt{z}-405\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(-1024\,z^3+8704\,z^{5/2}-17\,280\,z^2+2880\,z^{3/2}+1980\,z+810\sqrt{z}+405\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7587.01

$$ {}_1F_2\left(5;\frac{1}{4},\frac{11}{4};-z\right)=\frac{1}{65\,536\,z^{7/4}}\left(7\left(4\,z^{3/4}\left(-128\,z^2+1912\,z+135\right)-\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\,z^3-17\,280\,z^2-1980\,z+405\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(4352\,z^2-1440\,z+405\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\,z^3-17\,280\,z^2-1980\,z+405\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(4352\,z^2-1440\,z+405\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7588.01

$$ {}_1F_2\left(5;\frac{1}{4},\frac{15}{4};z\right)=\frac{1}{2\,097\,152\,z^{11/4}}\left(77\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(1216\,z^2-420\,z-525\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(2048\,z^{7/2}+10\,240\,z^3+3840\,z^{5/2}-3840\,z^2+3720\,z^{3/2}-3960\,z+3150\sqrt{z}-1575\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(2048\,z^{7/2}-10\,240\,z^3+3840\,z^{5/2}+3840\,z^2+3720\,z^{3/2}+3960\,z+3150\sqrt{z}+1575\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7589.01

$$ {}_1F_2\left(5;\frac{1}{4},\frac{15}{4};-z\right)=-\frac{1}{524\,288\,z^{11/4}}\left(77\left(-4\,z^{3/4}\left(1216\,z^2+420\,z-525\right)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(1024\,z^3-1920\,z^2+1860\,z-1575\right)\sin\left(2\sqrt{z}\right)-5\left(2048\,z^3+768\,z^2-792\,z+315\right)\cos\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(1024\,z^3-1920\,z^2+1860\,z-1575\right)\cos\left(2\sqrt{z}\right)+5\left(2048\,z^3+768\,z^2-792\,z+315\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7590.01

$$ {}_1F_2\left(5;\frac{1}{4},\frac{19}{4};z\right)= \frac{1}{16\,777\,216\,z^{15/4}}\left(1155\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(512\,z^3-864\,z^2-3360\,z-8085\right)+e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^4+4096\,z^{7/2}-6656\,z^3+12\,288\,z^{5/2}-23\,280\,z^2+38\,640\,z^{3/2}-51\,660\,z+48\,510\,\sqrt{z}-24\,255\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\,\left(-4096\,z^4+4096\,z^{7/2}+6656\,z^3+12\,288\,z^{5/2}+23\,280\,z^2+38\,640\,z^{3/2}+51\,660\,z+48\,510\,\sqrt{z}+24\,255\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7591.01

$$ {}_1F_2\left(5;\frac{1}{4},\frac{19}{4};-z\right)= \frac{1}{4\,194\,304\,z^{15/4}}\left(1155\left(4\,z^{3/4}\left(512\,z^3+864\,z^2-3360\,z+8085\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096\,z^4+6656\,z^3-23\,280\,z^2+51\,660\,z-24\,255\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(2048\,z^3-6144\,z^2+19\,320\,z-24\,255\right)\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096\,z^4+6656\,z^3-23\,280\,z^2+51\,660\,z-24\,255\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(2048\,z^3-6144\,z^2+19\,320\,z-24\,255\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7592.01

$$ {}_1F_2\left(5;\frac{1}{4},\frac{23}{4};z\right)= \frac{1}{134\,217\,728\,z^{19/4}}\left(21\,945\,e^{-2\sqrt{z}}\left(-240\,e^{2\sqrt{z}}\,z^{3/4}\left(256\,z^3+3024\,z^2+21\,868\,z+72\,765\right)+e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(8192\,z^{9/2}-28\,672\,z^4+101\,376\,z^{7/2}-330\,240\,z^3+944\,160\,z^{5/2}-2\,283\,120\,z^2+4\,462\,920\,z^{3/2}-6\,597\,360\,z+6\,548\,850\,\sqrt{z}-3\,274\,425\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\,\left(8192\,z^{9/2}+28\,672\,z^4+101\,376\,z^{7/2}+330\,240\,z^3+944\,160\,z^{5/2}+2\,283\,120\,z^2+4\,462\,920\,z^{3/2}+6\,597\,360\,z+6\,548\,850\,\sqrt{z}+3\,274\,425\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7593.01

$$ {}_1F_2\left(5;\frac{1}{4},\frac{23}{4};-z\right)= \frac{1}{33\,554\,432\,z^{19/4}}\left(21\,945\left(60\,z^{3/4}\left(256\,z^3-3024\,z^2+21\,868\,z-72\,765\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(4096\,z^4-50\,688\,z^3+472\,080\,z^2-2\,231\,460\,z+3\,274\,425\right)\cos\left(2\sqrt{z}\right)+\left(-28\,672\,z^4+330\,240\,z^3-2\,283\,120\,z^2+6\,597\,360\,z-3\,274\,425\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(28\,672\,z^4-330\,240\,z^3+2\,283\,120\,z^2-6\,597\,360\,z+3\,274\,425\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(4096\,z^4-50\,688\,z^3+472\,080\,z^2-2\,231\,460\,z+3\,274\,425\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 5$, $b_1 = \frac{3}{4}$

07.22.03.7594.01

$$ {}_1F_2\left(5;\frac{3}{4},\frac{5}{4};z\right)=\frac{1}{49\,152\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(376\,e^{2\sqrt{z}}\sqrt[4]{z}\,(16z+57)+e^{4\sqrt{z}}\sqrt{2\pi}\left(256z^2+3072z^{3/2}+11\,040z+12\,960\sqrt{z}+3465\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(256z^2-3072z^{3/2}+11\,040z-12\,960\sqrt{z}+3465\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7595.01

$$ {}_1F_2\left(5;\frac{3}{4},\frac{5}{4};-z\right)=\frac{1}{12\,288\sqrt[4]{z}}\left(94\sqrt[4]{z}\,(57-16z)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^2-11\,040z+3465\right)\cos\left(2\sqrt{z}\right)+96\sqrt{z}\,(32z-135)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^2-11\,040z+3465\right)\sin\left(2\sqrt{z}\right)-96\sqrt{z}\,(32z-135)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7596.01

$$ {}_1F_2\left(5;\frac{3}{4},\frac{9}{4};z\right)=\frac{1}{393\,216z^{5/4}}\left(5e^{-2\sqrt{z}}\left(8e^{2\sqrt{z}}\sqrt[4]{z}\left(128z^2+2808z-231\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(512z^{5/2}+4864z^2+12\,352z^{3/2}+7392z-462\sqrt{z}+231\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(-512z^{5/2}+4864z^2-12\,352z^{3/2}+7392z+462\sqrt{z}+231\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7597.01

$$ {}_1F_2\left(5;\frac{3}{4},\frac{9}{4};-z\right)=\frac{1}{98\,304z^{5/4}}\left(5\left(2\sqrt[4]{z}\left(-128z^2+2808z+231\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-4864z^2+7392z-231\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(256z^2-6176z-231\right)\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(256z^2-6176z-231\right)\cos\left(2\sqrt{z}\right)+\left(4864z^2-7392z+231\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7598.01

$$ {}_1F_2\left(5;\frac{3}{4},\frac{13}{4};z\right)=\frac{1}{1\,048\,576z^{9/4}}\left(15e^{-2\sqrt{z}}\left(8e^{2\sqrt{z}}\sqrt[4]{z}\left(1600z^2-588z-315\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(1024z^3+6656z^{5/2}+8064z^2-1344z^{3/2}+1092z-630\sqrt{z}+315\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(1024z^3-6656z^{5/2}+8064z^2+1344z^{3/2}+1092z+630\sqrt{z}+315\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7599.01

$$ {}_1F_2\left(5;\frac{3}{4},\frac{13}{4};-z\right)=-\frac{1}{262\,144\,z^{9/4}}\left(15\left(-2\sqrt[4]{z}\left(1600z^2+588z-315\right)+\right.\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024z^3-8064z^2+1092z-315\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(3328z^2+672z-315\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024z^3-8064z^2+1092z-315\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(3328z^2+672z-315\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7600.01

$$ {}_1F_2\left(5;\frac{3}{4},\frac{17}{4};z\right)=\frac{1}{8\,388\,608\,z^{13/4}}\left(195\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(512z^3-864z^2-1440z-2025\right)+\right.\right.$$
$$e^{4\sqrt{z}}\sqrt{2\pi}\left(2048z^{7/2}+6144z^3-2304z^{5/2}+3072z^2-3960z^{3/2}+4680z-4050\sqrt{z}+2025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\pi}\left(-2048z^{7/2}+6144z^3+2304z^{5/2}+3072z^2+3960z^{3/2}+4680z+4050\sqrt{z}+2025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7601.01

$$ {}_1F_2\left(5;\frac{3}{4},\frac{17}{4};-z\right)=\frac{1}{2\,097\,152\,z^{13/4}}$$
$$\left(195\left(2\sqrt[4]{z}\left(512z^3+864z^2-1440z+2025\right)-\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-6144z^3+3072z^2-4680z+2025\right)\cos\left(2\sqrt{z}\right)+\right.\right.\right.$$
$$\left.\left.2\sqrt{z}\left(1024z^3+1152z^2-1980z+2025\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left.\left.\left(2\sqrt{z}\left(1024z^3+1152z^2-1980z+2025\right)\cos\left(2\sqrt{z}\right)+3\left(2048z^3-1024z^2+1560z-675\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7602.01

$$ {}_1F_2\left(5;\frac{3}{4},\frac{21}{4};z\right)=\frac{1}{67\,108\,864\,z^{17/4}}$$
$$\left(3315\,e^{-2\sqrt{z}}\left(-40\,e^{2\sqrt{z}}\sqrt[4]{z}\left(256z^3+1360z^2+5724z+12\,285\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(4096z^4-4096z^{7/2}+9728z^3-\right.\right.\right.$$
$$\left.23\,040z^{5/2}+49\,680z^2-90\,000z^{3/2}+126\,900z-122\,850\sqrt{z}+61\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(4096z^4+$$
$$\left.\left.\left.4096z^{7/2}+9728z^3+23\,040z^{5/2}+49\,680z^2+90\,000z^{3/2}+126\,900z+122\,850\sqrt{z}+61\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7603.01

$$ {}_1F_2\left(5;\frac{3}{4},\frac{21}{4};-z\right)=\frac{1}{16\,777\,216\,z^{17/4}}\left(3315\left(10\sqrt[4]{z}\left(256z^3-1360z^2+5724z-12\,285\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096z^4-9728z^3+49\,680z^2-126\,900z+61\,425\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(-2048z^3+11\,520z^2-45\,000z+61\,425\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2048z^3-11\,520z^2+45\,000z-61\,425\right)\cos\left(2\sqrt{z}\right)+\left(4096z^4-9728z^3+49\,680z^2-126\,900z+61\,425\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 5$, $b_1 = \frac{5}{4}$

07.22.03.7604.01

$$ {}_1F_2\left(5;\frac{5}{4},\frac{7}{4};z\right)=\frac{1}{65\,536\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(32e^{2\sqrt{z}}z^{3/4}\left(16z+413\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(256z^2+2560z^{3/2}+7200z+5760\sqrt{z}+585\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(-256z^2+2560z^{3/2}-7200z+5760\sqrt{z}-585\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7605.01

$$ {}_1F_2\left(5;\frac{5}{4},\frac{7}{4};-z\right)=\frac{1}{16\,384\,z^{3/4}}\left(8z^{3/4}\left(413-16z\right)-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^2-7200z+585\right)\cos\left(2\sqrt{z}\right)+640\sqrt{z}\left(4z-9\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^2-7200z+585\right)\sin\left(2\sqrt{z}\right)-640\sqrt{z}\left(4z-9\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7606.01

$$ {}_1F_2\left(5;\frac{5}{4},\frac{11}{4};z\right)=\frac{1}{524\,288\,z^{7/4}}\left(7e^{-2\sqrt{z}}\left(16e^{2\sqrt{z}}z^{3/4}\left(464z+45\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(512z^{5/2}+3840z^2+6720z^{3/2}+1440z-270\sqrt{z}+135\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(512z^{5/2}-3840z^2+6720z^{3/2}-1440z-270\sqrt{z}-135\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7607.01

$$ {}_1F_2\left(5;\frac{5}{4},\frac{11}{4};-z\right)= -\frac{1}{131\,072\,z^{7/4}}\left(7\left(4\,z^{3/4}\,(45-464\,z)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\sin\left(2\sqrt{z}\right)(3-16\,z)^2+2\sqrt{z}\,\left(256\,z^2-3360\,z-135\right)\cos\left(2\sqrt{z}\right)\right)+ \sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(256\,z^2-3360\,z-135\right)\sin\left(2\sqrt{z}\right)-15\,(3-16\,z)^2\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7608.01

$$ {}_1F_2\left(5;\frac{5}{4},\frac{15}{4};z\right)=\frac{1}{4\,194\,304\,z^{11/4}}\left(77\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\;z^{3/4}\left(128\,z^2+120\,z+105\right)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\,\left(1024\,z^3+4608\,z^{5/2}+1920\,z^2-960\,z^{3/2}+900\,z-630\sqrt{z}\;+315\right)\right.\right. \left.\left.\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\sqrt{2\,\pi}\,\left(1024\,z^3-4608\,z^{5/2}+1920\,z^2+960\,z^{3/2}+900\,z+630\sqrt{z}\;+315\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7609.01

$$ {}_1F_2\left(5;\frac{5}{4},\frac{15}{4};-z\right)=\frac{1}{1\,048\,576\,z^{11/4}}\left(77\left(4\,z^{3/4}\left(128\,z^2-120\,z+105\right)+ \sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\,z^3-1920\,z^2+900\,z-315\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\,\left(768\,z^2+160\,z-105\right)\sin\left(2\sqrt{z}\right)\right)- \sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\,z^3-1920\,z^2+900\,z-315\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\,\left(768\,z^2+160\,z-105\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7610.01

$$ {}_1F_2\left(5;\frac{5}{4},\frac{19}{4};z\right)=\frac{1}{33\,554\,432\,z^{15/4}}\left(1155\,e^{-2\sqrt{z}}\left(48\,e^{2\sqrt{z}}\;z^{3/4}\left(64\,z^2+180\,z+385\right)+ e^{4\sqrt{z}}\;\sqrt{2\,\pi}\,\left(2048\,z^{7/2}+2048\,z^3-2304\,z^{5/2}+3840\,z^2-5880\,z^{3/2}+7560\,z-6930\sqrt{z}\;+3465\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+ \sqrt{2\,\pi}\,\left(2048\,z^{7/2}-2048\,z^3-2304\,z^{5/2}-3840\,z^2-5880\,z^{3/2}-7560\,z-6930\sqrt{z}\;-3465\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7611.01

$$ {}_1F_2\left(5;\frac{5}{4},\frac{19}{4};-z\right)= \frac{1}{8\,388\,608\,z^{15/4}}\left(1155\left(-12\,z^{3/4}\left(64\,z^2-180\,z+385\right)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-2048\,z^3+3840\,z^2-7560\,z+3465\right)\cos\left(2\sqrt{z}\right)+ 2\sqrt{z}\,\left(1024\,z^3+1152\,z^2-2940\,z+3465\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\,\left(1024\,z^3+1152\,z^2-2940\,z+3465\right)\cos\left(2\sqrt{z}\right)+\left(2048\,z^3-3840\,z^2+7560\,z-3465\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7612.01

$${}_1F_2\left(5;\frac{5}{4},\frac{23}{4};z\right)=$$
$$\frac{1}{268\,435\,456\,z^{19/4}}\left(21\,945\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(512\,z^3+5280\,z^2+36\,960\,z+121\,275\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(4096\,z^4-12\,288\,z^{7/2}+\right.\right.\right.$$
$$\left.\left.38\,400\,z^3-107\,520\,z^{5/2}+257\,040\,z^2-498\,960\,z^{3/2}+734\,580\,z-727\,650\,\sqrt{z}+363\,825\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\sqrt{2\,\pi}\,\left(4096\,z^4+12\,288\,z^{7/2}+38\,400\,z^3+107\,520\,z^{5/2}+257\,040\,z^2+498\,960\,z^{3/2}+\right.$$
$$\left.\left.\left.734\,580\,z+727\,650\,\sqrt{z}+363\,825\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7613.01

$${}_1F_2\left(5;\frac{5}{4},\frac{23}{4};-z\right)=$$
$$\frac{1}{67\,108\,864\,z^{19/4}}\left(21\,945\left(4\,z^{3/4}\left(-512\,z^3+5280\,z^2-36\,960\,z+121\,275\right)-\sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(4096\,z^4-38\,400\,z^3+257\,040\,z^2-\right.\right.\right.$$
$$\left.\left.734\,580\,z+363\,825\right)\cos\left(2\,\sqrt{z}\right)+6\,\sqrt{z}\,\left(-2048\,z^3+17\,920\,z^2-83\,160\,z+121\,275\right)\sin\left(2\,\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\,\sqrt{z}\,\left(2048\,z^3-17\,920\,z^2+83\,160\,z-121\,275\right)\cos\left(2\,\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(4096\,z^4-38\,400\,z^3+257\,040\,z^2-734\,580\,z+363\,825\right)\sin\left(2\,\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 5$, $b_1 = \frac{7}{4}$

07.22.03.7614.01

$${}_1F_2\left(5;\frac{7}{4},\frac{9}{4};z\right)=\frac{1}{262\,144\,z^{5/4}}$$
$$\left(5\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(496\,z+231\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(256\,z^2+2048\,z^{3/2}+4128\,z+1632\,\sqrt{z}-231\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\,\pi}\,\left(256\,z^2-2048\,z^{3/2}+4128\,z-1632\,\sqrt{z}-231\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7615.01

$${}_1F_2\left(5;\frac{7}{4},\frac{9}{4};-z\right)=$$
$$-\frac{1}{65\,536\,z^{5/4}}\left(5\left(2\,\sqrt[4]{z}\,\left(231-496\,z\right)+\sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^2-4128\,z-231\right)\cos\left(2\,\sqrt{z}\right)+32\,\sqrt{z}\,\left(64\,z-51\right)\sin\left(2\,\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^2-4128\,z-231\right)\sin\left(2\,\sqrt{z}\right)-32\,\sqrt{z}\,\left(64\,z-51\right)\cos\left(2\,\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7616.01

$$ {}_1F_2\left(5;\frac{7}{4},\frac{13}{4};z\right)=\frac{1}{2\,097\,152\,z^{9/4}}\left(45\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(128\,z^2+504\,z+105\right)+e^{4\sqrt{z}}\sqrt{2\,\pi}\left(512\,z^{5/2}+2816\,z^2+2624\,z^{3/2}-672\,z+210\sqrt{z}-105\right)\right.\right.$$
$$ \left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\sqrt{2\,\pi}\left(512\,z^{5/2}-2816\,z^2+2624\,z^{3/2}+672\,z+210\sqrt{z}+105\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7617.01

$$ {}_1F_2\left(5;\frac{7}{4},\frac{13}{4};-z\right)=\frac{1}{524\,288\,z^{9/4}}\left(45\left(2\sqrt[4]{z}\left(128\,z^2-504\,z+105\right)+\right.\right.$$
$$ \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2816\,z^2+672\,z-105\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\left(256\,z^2-1312\,z+105\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$ \left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(256\,z^2-1312\,z+105\right)\cos\left(2\sqrt{z}\right)+\left(2816\,z^2+672\,z-105\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7618.01

$$ {}_1F_2\left(5;\frac{7}{4},\frac{17}{4};z\right)=\frac{1}{16\,777\,216\,z^{13/4}}\left(585\,e^{-2\sqrt{z}}\right.$$
$$ \left(24\,e^{2\sqrt{z}}\sqrt[4]{z}\left(192\,z^2+124\,z+135\right)+e^{4\sqrt{z}}\sqrt{2\,\pi}\left(1024\,z^3+2560\,z^{5/2}-1152\,z^2+960\,z^{3/2}-1020\,z+810\sqrt{z}-405\right)\right.$$
$$ \left.\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\,\pi}\left(1024\,z^3-2560\,z^{5/2}-1152\,z^2-960\,z^{3/2}-1020\,z-810\sqrt{z}-405\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7619.01

$$ {}_1F_2\left(5;\frac{7}{4},\frac{17}{4};-z\right)=\frac{1}{4\,194\,304\,z^{13/4}}\left(585\left(-6\sqrt[4]{z}\left(192\,z^2-124\,z+135\right)+\right.\right.$$
$$ \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\,z^3+1152\,z^2-1020\,z+405\right)\cos\left(2\sqrt{z}\right)+10\sqrt{z}\left(256\,z^2-96\,z+81\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$ \left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\,z^3+1152\,z^2-1020\,z+405\right)\sin\left(2\sqrt{z}\right)-10\sqrt{z}\left(256\,z^2-96\,z+81\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7620.01

$$ {}_1F_2\left(5;\frac{7}{4},\frac{21}{4};z\right)=\frac{1}{134\,217\,728\,z^{17/4}}\left(9945\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(512\,z^3+1184\,z^2+4320\,z+8775\right)+\right.\right.$$
$$ e^{4\sqrt{z}}\sqrt{2\,\pi}\left(2048\,z^{7/2}-2048\,z^3+3840\,z^{5/2}-7680\,z^2+13\,320\,z^{3/2}-18\,360\,z+17\,550\sqrt{z}-8775\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$ \left.\left.\sqrt{2\,\pi}\left(2048\,z^{7/2}+2048\,z^3+3840\,z^{5/2}+7680\,z^2+13\,320\,z^{3/2}+18\,360\,z+17\,550\sqrt{z}+8775\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7621.01

$$ {}_1F_2\left(5;\frac{7}{4},\frac{21}{4};-z\right)=\frac{1}{33\,554\,432\,z^{17/4}}\left(9945\left(2\sqrt[4]{z}\left(-512z^3+1184z^2-4320z+8775\right)-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(1024z^3-1920z^2+6660z-8775\right)\cos\left(2\sqrt{z}\right)+\left(-2048z^3+7680z^2-18\,360z+8775\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048z^3-7680z^2+18\,360z-8775\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(1024z^3-1920z^2+6660z-8775\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 5$, $b_1 = \frac{9}{4}$

07.22.03.7622.01

$$ {}_1F_2\left(5;\frac{9}{4},\frac{11}{4};z\right)=\frac{1}{1\,048\,576\,z^{7/4}}\left(35e^{-2\sqrt{z}}\left(32e^{2\sqrt{z}}z^{3/4}\left(16z+93\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(256z^2+1536z^{3/2}+1824z-192\sqrt{z}-135\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(-256z^2+1536z^{3/2}-1824z-192\sqrt{z}+135\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7623.01

$$ {}_1F_2\left(5;\frac{9}{4},\frac{11}{4};-z\right)=\frac{1}{262\,144\,z^{7/4}}\left(35\left(8z^{3/4}\left(16z-93\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^2-1824z-135\right)\cos\left(2\sqrt{z}\right)+192\sqrt{z}\left(8z+1\right)\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^2-1824z-135\right)\sin\left(2\sqrt{z}\right)-192\sqrt{z}\left(8z+1\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7624.01

$$ {}_1F_2\left(5;\frac{9}{4},\frac{15}{4};z\right)=\frac{1}{8\,388\,608\,z^{11/4}}\left(385e^{-2\sqrt{z}}\left(16e^{2\sqrt{z}}z^{3/4}\left(208z-35\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(512z^{5/2}+1792z^2+64z^{3/2}-480z+210\sqrt{z}-105\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(512z^{5/2}-1792z^2+64z^{3/2}+480z+210\sqrt{z}+105\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7625.01

$$ {}_1F_2\left(5;\frac{9}{4},\frac{15}{4};-z\right)=\frac{1}{2\,097\,152\,z^{11/4}}\left(385\left(-4z^{3/4}\left(208z+35\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-1792z^2-480z+105\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(256z^2-32z+105\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(256z^2-32z+105\right)\cos\left(2\sqrt{z}\right)+\left(1792z^2+480z-105\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7626.01

$$ {}_1F_2\left(5;\frac{9}{4},\frac{19}{4};z\right)=\frac{1}{67\,108\,864\,z^{15/4}}\left(5775\,e^{-2\sqrt{z}}\right.$$
$$\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(128\,z^2-136\,z-231\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(1024\,z^3+512\,z^{5/2}-1152\,z^2+1344\,z^{3/2}-1596\,z+1386\,\sqrt{z}\,-693\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(-1024\,z^3+512\,z^{5/2}+1152\,z^2+1344\,z^{3/2}+1596\,z+1386\,\sqrt{z}\,+693\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7627.01

$$ {}_1F_2\left(5;\frac{9}{4},\frac{19}{4};-z\right)=-\frac{1}{16\,777\,216\,z^{15/4}}\left(5775\left(4\,z^{3/4}\left(128\,z^2+136\,z-231\right)+\right.\right.$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\,z^3+1152\,z^2-1596\,z+693\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(256\,z^2-672\,z+693\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\left.\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\,z^3+1152\,z^2-1596\,z+693\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(256\,z^2-672\,z+693\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7628.01

$$ {}_1F_2\left(5;\frac{9}{4},\frac{23}{4};z\right)=$$
$$\frac{1}{536\,870\,912\,z^{19/4}}\left(109\,725\,e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\left(832\,z^2+5412\,z+17\,325\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(2048\,z^{7/2}-6144\,z^3+\right.\right.\right.$$
$$\left.\left.16\,128\,z^{5/2}-37\,632\,z^2+72\,072\,z^{3/2}-105\,336\,z+103\,950\,\sqrt{z}\,-51\,975\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}$$
$$\left.\left.\left(2048\,z^{7/2}+6144\,z^3+16\,128\,z^{5/2}+37\,632\,z^2+72\,072\,z^{3/2}+105\,336\,z+103\,950\,\sqrt{z}\,+51\,975\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7629.01

$$ {}_1F_2\left(5;\frac{9}{4},\frac{23}{4};-z\right)=$$
$$-\frac{1}{134\,217\,728\,z^{19/4}}\left(109\,725\left(4\,z^{3/4}\left(832\,z^2-5412\,z+17\,325\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(1024\,z^3-8064\,z^2+36\,036\,z-51\,975\right)\right.\right.\right.$$
$$\left.\cos\left(2\sqrt{z}\right)+3\left(-2048\,z^3+12\,544\,z^2-35\,112\,z+17\,325\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(2048\,z^3-12\,544\,z^2+35\,112\,z-17\,325\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.2\sqrt{z}\,\left(1024\,z^3-8064\,z^2+36\,036\,z-51\,975\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 5$, $b_1 = \frac{11}{4}$

07.22.03.7630.01

$$ {}_1F_2\left(5;\frac{11}{4},\frac{13}{4};z\right)=\frac{1}{4\,194\,304\,z^{9/4}}$$
$$\left(315\,e^{-2\sqrt{z}}\left(120\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(16\,z-7\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(256\,z^2+1024\,z^{3/2}+288\,z-480\,\sqrt{z}\,+105\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\,\pi}\,\left(256\,z^2-1024\,z^{3/2}+288\,z+480\,\sqrt{z}\,+105\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7631.01

$$ {}_1F_2\left(5;\frac{11}{4},\frac{13}{4};-z\right)= \frac{1}{1\,048\,576\,z^{9/4}}\left(315\left(-30\sqrt[4]{z}\,(16z+7)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^2-288z+105\right)\cos\left(2\sqrt{z}\right)+32\sqrt{z}\,(32z+15)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^2-288z+105\right)\sin\left(2\sqrt{z}\right)-32\sqrt{z}\,(32z+15)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7632.01

$$ {}_1F_2\left(5;\frac{11}{4},\frac{17}{4};z\right)= \frac{1}{33\,554\,432\,z^{13/4}}\left(4095\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(128z^2-264z-135\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(512z^{5/2}+768z^2-960z^{3/2}+480z-270\sqrt{z}+135\right)\right.\right. \left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(-512z^{5/2}+768z^2+960z^{3/2}+480z+270\sqrt{z}+135\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7633.01

$$ {}_1F_2\left(5;\frac{11}{4},\frac{17}{4};-z\right)= -\frac{1}{8\,388\,608\,z^{13/4}}\left(4095\left(2\sqrt[4]{z}\left(128z^2+264z-135\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(256z^2+480z-135\right)\cos\left(2\sqrt{z}\right)+3\left(256z^2-160z+45\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(256z^2-160z+45\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\left(256z^2+480z-135\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7634.01

$$ {}_1F_2\left(5;\frac{11}{4},\frac{21}{4};z\right)= \frac{1}{268\,435\,456\,z^{17/4}}\left(69\,615\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(448z^2+972z+1755\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(1024z^3-1536z^{5/2}+1920z^2-2880z^{3/2}+3780z-3510\sqrt{z}+1755\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(1024z^3+1536z^{5/2}+1920z^2+2880z^{3/2}+3780z+3510\sqrt{z}+1755\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7635.01

$$ {}_1F_2\left(5;\frac{11}{4},\frac{21}{4};-z\right)= -\frac{1}{67\,108\,864\,z^{17/4}}\left(69\,615\left(2\sqrt[4]{z}\left(448z^2-972z+1755\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024z^3-1920z^2+3780z-1755\right)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\left(256z^2-480z+585\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(6\sqrt{z}\left(256z^2-480z+585\right)\cos\left(2\sqrt{z}\right)+\left(1024z^3-1920z^2+3780z-1755\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 5$, $b_1 = \frac{13}{4}$

07.22.03.7636.01

$$ {}_1F_2\left(5;\frac{13}{4},\frac{15}{4};z\right)= \frac{1}{16\,777\,216\,z^{11/4}}\left(3465\,e^{-2\sqrt{z}}\left(32\,e^{2\sqrt{z}}\,z^{3/4}\,(16\,z-35)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(256\,z^2+512\,z^{3/2}-480\,z+105\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+ \sqrt{2\,\pi}\,\left(-256\,z^2+512\,z^{3/2}+480\,z-105\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7637.01

$$ {}_1F_2\left(5;\frac{13}{4},\frac{15}{4};-z\right)= -\frac{1}{4\,194\,304\,z^{11/4}}\left(3465\left(8\,z^{3/4}\,(16\,z+35)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(512\sin\left(2\sqrt{z}\right)z^{3/2}+\left(256\,z^2+480\,z+105\right)\cos\left(2\sqrt{z}\right)\right)- \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^2+480\,z+105\right)\sin\left(2\sqrt{z}\right)-512\,z^{3/2}\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7638.01

$$ {}_1F_2\left(5;\frac{13}{4},\frac{19}{4};z\right)= \frac{1}{134\,217\,728\,z^{15/4}}\left(51\,975\,e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\,(48\,z-77)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(512\,z^{5/2}-256\,z^2-448\,z^{3/2}+672\,z-462\,\sqrt{z}+231\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(512\,z^{5/2}+256\,z^2-448\,z^{3/2}-672\,z-462\,\sqrt{z}-231\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7639.01

$$ {}_1F_2\left(5;\frac{13}{4},\frac{19}{4};-z\right)= -\frac{1}{33\,554\,432\,z^{15/4}}\left(51\,975\left(4\,z^{3/4}\,(48\,z+77)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(256\,z^2+224\,z-231\right)\cos\left(2\sqrt{z}\right)+\left(-256\,z^2-672\,z+231\right)\sin\left(2\sqrt{z}\right)\right)+ \sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^2+672\,z-231\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(256\,z^2+224\,z-231\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7640.01

$$ {}_1F_2\left(5;\frac{13}{4},\frac{23}{4};z\right)= \frac{1}{1\,073\,741\,824\,z^{19/4}}\left(987\,525\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(128\,z^2+1144\,z+3465\right)+ e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(1024\,z^3-3584\,z^{5/2}+8064\,z^2-14\,784\,z^{3/2}+21\,252\,z-20\,790\,\sqrt{z}+10\,395\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)- \sqrt{2\,\pi}\,\left(1024\,z^3+3584\,z^{5/2}+8064\,z^2+14\,784\,z^{3/2}+21\,252\,z+20\,790\,\sqrt{z}+10\,395\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7641.01

$${}_1F_2\left(5;\frac{13}{4},\frac{23}{4};-z\right)=-\frac{1}{268\,435\,456\,z^{19/4}}\left(987\,525\left(-4\,z^{3/4}\left(128\,z^2-1144\,z+3465\right)-\right.\right.$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1024\,z^3-8064\,z^2+21\,252\,z-10\,395\right)\cos\left(2\sqrt{z}\right)-14\sqrt{z}\,\left(256\,z^2-1056\,z+1485\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(14\sqrt{z}\,\left(256\,z^2-1056\,z+1485\right)\cos\left(2\sqrt{z}\right)+\left(1024\,z^3-8064\,z^2+21\,252\,z-10\,395\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 5$, $b_1 = \frac{15}{4}$

07.22.03.7642.01

$${}_1F_2\left(5;\frac{15}{4},\frac{17}{4};z\right)=$$
$$\frac{1}{67\,108\,864\,z^{13/4}}\left(45\,045\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,(16\,z-135)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(256\,z^2-480\,z+480\sqrt{z}-135\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.\sqrt{2\,\pi}\,\left(256\,z^2-480\,z-480\sqrt{z}-135\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7643.01

$${}_1F_2\left(5;\frac{15}{4},\frac{17}{4};-z\right)=$$
$$-\frac{1}{16\,777\,216\,z^{13/4}}\left(45\,045\left(2\sqrt[4]{z}\,(16\,z+135)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^2+480\,z-135\right)\cos\left(2\sqrt{z}\right)-480\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+\right.\right.$$
$$\left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(480\sqrt{z}\,\cos\left(2\sqrt{z}\right)+\left(256\,z^2+480\,z-135\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7644.01

$${}_1F_2\left(5;\frac{15}{4},\frac{21}{4};z\right)=\frac{1}{536\,870\,912\,z^{17/4}}\left(765\,765\,e^{-2\sqrt{z}}\right.$$
$$\left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(128\,z^2+504\,z+585\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(512\,z^{5/2}-1280\,z^2+1600\,z^{3/2}-1440\,z+1170\sqrt{z}-585\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\sqrt{2\,\pi}\,\left(512\,z^{5/2}+1280\,z^2+1600\,z^{3/2}+1440\,z+1170\sqrt{z}+585\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7645.01

$${}_1F_2\left(5;\frac{15}{4},\frac{21}{4};-z\right)=-\frac{1}{134\,217\,728\,z^{17/4}}\left(765\,765\left(-2\sqrt[4]{z}\,\left(128\,z^2-504\,z+585\right)+\right.\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(5\left(256\,z^2-288\,z+117\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(256\,z^2-800\,z+585\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(256\,z^2-800\,z+585\right)\cos\left(2\sqrt{z}\right)-5\left(256\,z^2-288\,z+117\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 5$, $b_1 = \frac{17}{4}$

07.22.03.7646.01

$$ {}_1F_2\left(5;\ \frac{17}{4},\ \frac{19}{4};\ z\right) = \frac{1}{268\,435\,456\,z^{15/4}} \left(675\,675\,e^{-2\sqrt{z}}\left(32\,e^{2\sqrt{z}}\,z^{3/4}\,(16z+29) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2 - 512z^{3/2} + 288z + 192\sqrt{z} - 231\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\left(-256z^2 - 512z^{3/2} - 288z + 192\sqrt{z} + 231\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7647.01

$$ {}_1F_2\left(5;\ \frac{17}{4},\ \frac{19}{4};\ -z\right) = -\frac{1}{67\,108\,864\,z^{15/4}} \left(675\,675\left(8z^{3/4}\,(29-16z) - \sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256z^2 - 288z - 231\right)\cos\left(2\sqrt{z}\right) - 64\sqrt{z}\,(8z+3)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(64\sqrt{z}\,(8z+3)\cos\left(2\sqrt{z}\right) + \left(256z^2 - 288z - 231\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7648.01

$$ {}_1F_2\left(5;\ \frac{17}{4},\ \frac{23}{4};\ z\right) = \frac{1}{2\,147\,483\,648\,z^{19/4}} \left(12\,837\,825\,e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\,(304z+1155) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(512z^{5/2} - 2304z^2 + 5184z^{3/2} - 7392z + 6930\sqrt{z} - 3465\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\left(512z^{5/2} + 2304z^2 + 5184z^{3/2} + 7392z + 6930\sqrt{z} + 3465\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7649.01

$$ {}_1F_2\left(5;\ \frac{17}{4},\ \frac{23}{4};\ -z\right) = \frac{1}{536\,870\,912\,z^{19/4}} \left(12\,837\,825\left(4z^{3/4}\,(304z-1155) + \sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(768z^2 - 2464z + 1155\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(256z^2 - 2592z + 3465\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(256z^2 - 2592z + 3465\right)\cos\left(2\sqrt{z}\right) - 3\left(768z^2 - 2464z + 1155\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 5$, $b_1 = \frac{19}{4}$

07.22.03.7650.01

$$ {}_1F_2\left(5;\ \frac{19}{4},\ \frac{21}{4};\ z\right) = \frac{1}{1\,073\,741\,824\,z^{17/4}} \left(11\,486\,475\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,(272z+585) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2 - 1024z^{3/2} + 1824z - 1632\sqrt{z} + 585\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\left(256z^2 + 1024z^{3/2} + 1824z + 1632\sqrt{z} + 585\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7651.01

$$ {}_1F_2\left(5;\frac{19}{4},\frac{21}{4};-z\right)=\frac{1}{268\,435\,456\,z^{17/4}}\left(11\,486\,475\left(2\sqrt[4]{z}\,(272\,z-585)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^2-1824\,z+585\right)\cos\left(2\sqrt{z}\right)+32\,(51-32\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(32\sqrt{z}\,(32\,z-51)\cos\left(2\sqrt{z}\right)+\left(256\,z^2-1824\,z+585\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 5$, $b_1 = \frac{21}{4}$

07.22.03.7652.01

$$ {}_1F_2\left(5;\frac{21}{4},\frac{23}{4};z\right)=\frac{1}{4\,294\,967\,296\,z^{19/4}}\left(218\,243\,025\,e^{-2\sqrt{z}}\left(32\,e^{2\sqrt{z}}\,z^{3/4}\,(16\,z+285)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(256\,z^2-1536\,z^{3/2}+4128\,z-5760\sqrt{z}+3465\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\sqrt{2\,\pi}\,\left(256\,z^2+1536\,z^{3/2}+4128\,z+5760\sqrt{z}+3465\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7653.01

$$ {}_1F_2\left(5;\frac{21}{4},\frac{23}{4};-z\right)=\frac{1}{1\,073\,741\,824\,z^{19/4}}\left(218\,243\,025\left(8\,z^{3/4}\,(285-16\,z)-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^2-4128\,z+3465\right)\cos\left(2\sqrt{z}\right)+384\,(15-4\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(384\sqrt{z}\,(4\,z-15)\cos\left(2\sqrt{z}\right)+\left(256\,z^2-4128\,z+3465\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 5$, $b_1 = \frac{23}{4}$

07.22.03.7654.01

$$ {}_1F_2\left(5;\frac{23}{4},\frac{25}{4};z\right)=\frac{1}{17\,179\,869\,184\,z^{21/4}}\left(4\,583\,103\,525\,e^{-2\sqrt{z}}\left(-24\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,(176\,z+3315)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(256\,z^2-2048\,z^{3/2}+7200\,z-12\,960\sqrt{z}+9945\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(256\,z^2+2048\,z^{3/2}+7200\,z+12\,960\sqrt{z}+9945\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7655.01

$$ {}_1F_2\left(5;\frac{23}{4},\frac{25}{4};-z\right)=-\frac{1}{4\,294\,967\,296\,z^{21/4}}\left(4\,583\,103\,525\left(6\sqrt[4]{z}\,(176\,z-3315)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(256\,z^2-7200\,z+9945\right)\cos\left(2\sqrt{z}\right)+32\,(405-64\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(32\sqrt{z}\,(64\,z-405)\cos\left(2\sqrt{z}\right)+\left(256\,z^2-7200\,z+9945\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 6$, $b_1 \geq -\frac{23}{4}$

For fixed z and $a_1 = 6$, $b_1 = -\frac{23}{4}$

07.22.03.7656.01

$$ {}_1F_2\left(6; -\frac{23}{4}, -\frac{21}{4}; z\right) = \frac{1}{4\,743\,512\,148\,375} \left(e^{-2\sqrt{z}} \left(1024\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(1024 z^{5/2} + 52\,480 z^2 + 1\,019\,520 z^{3/2} + 9\,353\,760 z + 40\,378\,020 \sqrt{z} + 65\,329\,605\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{25/4} + 1024 \sqrt{2\pi}\, \left(1024 z^{5/2} - 52\,480 z^2 + 1\,019\,520 z^{3/2} - 9\,353\,760 z + 40\,378\,020 \sqrt{z} - 65\,329\,605\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{25/4} + 3\, e^{2\sqrt{z}} \left(35\,651\,584 z^8 + 6\,218\,055\,680 z^7 + 38\,755\,368\,960 z^6 + 3\,963\,617\,280 z^5 + 4\,335\,206\,400 z^4 + 11\,921\,817\,600 z^3 + 54\,486\,432\,000 z^2 + 314\,269\,956\,000 z + 1\,581\,170\,716\,125\right)\right)\right) $$

07.22.03.7657.01

$$ {}_1F_2\left(6; -\frac{23}{4}, -\frac{21}{4}; -z\right) = \frac{1}{4\,743\,512\,148\,375} \left(-4096 \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(-52\,480 z^2 + 9\,353\,760 z - 65\,329\,605\right) \cos\left(2\sqrt{z}\right) + 4\sqrt{z}\, \left(256 z^2 - 254\,880 z + 10\,094\,505\right) \sin\left(2\sqrt{z}\right)\right) z^{25/4} - 4096 \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(4\sqrt{z}\, \left(256 z^2 - 254\,880 z + 10\,094\,505\right) \cos\left(2\sqrt{z}\right) + 5 \left(10\,496 z^2 - 1\,870\,752 z + 13\,065\,921\right) \sin\left(2\sqrt{z}\right)\right) z^{25/4} + 3 \left(35\,651\,584 z^8 - 6\,218\,055\,680 z^7 + 38\,755\,368\,960 z^6 - 3\,963\,617\,280 z^5 + 4\,335\,206\,400 z^4 - 11\,921\,817\,600 z^3 + 54\,486\,432\,000 z^2 - 314\,269\,956\,000 z + 1\,581\,170\,716\,125\right)\right) $$

07.22.03.7658.01

$$ {}_1F_2\left(6; -\frac{23}{4}, -\frac{17}{4}; z\right) = \frac{1}{225\,881\,530\,875} \left(e^{-2\sqrt{z}} \left(-128\, e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(2048 z^3 + 98\,816 z^{5/2} + 1\,792\,000 z^2 + 15\,123\,520 z^{3/2} + 58\,070\,760 z + 72\,588\,450 \sqrt{z} - 36\,294\,225\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{21/4} + 128 \sqrt{2\pi}\, \left(2048 z^3 - 98\,816 z^{5/2} + 1\,792\,000 z^2 - 15\,123\,520 z^{3/2} + 58\,070\,760 z - 72\,588\,450 \sqrt{z} - 36\,294\,225\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{21/4} + e^{2\sqrt{z}} \left(-524\,288 z^8 - 452\,526\,080 z^7 - 13\,978\,511\,360 z^6 + 11\,890\,851\,840 z^5 + 2\,601\,123\,840 z^4 + 3\,973\,939\,200 z^3 + 12\,573\,792\,000 z^2 + 55\,459\,404\,000 z + 225\,881\,530\,875\right)\right)\right) $$

07.22.03.7659.01

$$ {}_1F_2\left(6; -\frac{23}{4}, -\frac{17}{4}; -z\right) = \frac{1}{225\,881\,530\,875}\left(-524\,288\,z^8 + 452\,526\,080\,z^7 - 13\,978\,511\,360\,z^6 - 512\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3 - 1\,792\,000\,z^2 + 58\,070\,760\,z + 36\,294\,225\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(49\,408\,z^2 - 7\,561\,760\,z + 36\,294\,225\right)\sin\left(2\sqrt{z}\right)\right)z^{21/4} + 512\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3 - 1\,792\,000\,z^2 + 58\,070\,760\,z + 36\,294\,225\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\left(49\,408\,z^2 - 7\,561\,760\,z + 36\,294\,225\right)\cos\left(2\sqrt{z}\right)\right)z^{21/4} - 11\,890\,851\,840\,z^5 + 2\,601\,123\,840\,z^4 - 3\,973\,939\,200\,z^3 + 12\,573\,792\,000\,z^2 - 55\,459\,404\,000\,z + 225\,881\,530\,875\right) $$

07.22.03.7660.01

$$ {}_1F_2\left(6; -\frac{23}{4}, -\frac{13}{4}; z\right) = \frac{1}{13\,287\,148\,875}\left(e^{-2\sqrt{z}}\left(16\,e^{4\sqrt{z}}\sqrt{2\pi}\left(4096\,z^{7/2} + 183\,296\,z^3 + 3\,034\,112\,z^{5/2} + 22\,661\,760\,z^2 + 70\,818\,000\,z^{3/2} + 38\,949\,900\,z - 111\,538\,350\sqrt{z} + 55\,769\,175\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4} + 16\sqrt{2\pi}\left(4096\,z^{7/2} - 183\,296\,z^3 + 3\,034\,112\,z^{5/2} - 22\,661\,760\,z^2 + 70\,818\,000\,z^{3/2} - 38\,949\,900\,z - 111\,538\,350\sqrt{z} - 55\,769\,175\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4} + e^{2\sqrt{z}}\left(5\,832\,704\,z^7 + 701\,972\,480\,z^6 + 795\,352\,320\,z^5 + 2\,601\,123\,840\,z^4 + 794\,787\,840\,z^3 + 1\,397\,088\,000\,z^2 + 4\,266\,108\,000\,z + 13\,287\,148\,875\right)\right)\right) $$

07.22.03.7661.01

$$ {}_1F_2\left(6; -\frac{23}{4}, -\frac{13}{4}; -z\right) = \frac{1}{13\,287\,148\,875}\left(-5\,832\,704\,z^7 + 701\,972\,480\,z^6 - 795\,352\,320\,z^5 + 64\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-183\,296\,z^3 + 22\,661\,760\,z^2 - 38\,949\,900\,z + 55\,769\,175\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(2048\,z^3 - 1\,517\,056\,z^2 + 35\,409\,000\,z + 55\,769\,175\right)\sin\left(2\sqrt{z}\right)\right)z^{17/4} + 64\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2048\,z^3 - 1\,517\,056\,z^2 + 35\,409\,000\,z + 55\,769\,175\right)\cos\left(2\sqrt{z}\right) + \left(183\,296\,z^3 - 22\,661\,760\,z^2 + 38\,949\,900\,z - 55\,769\,175\right)\sin\left(2\sqrt{z}\right)\right)z^{17/4} + 2\,601\,123\,840\,z^4 - 794\,787\,840\,z^3 + 1\,397\,088\,000\,z^2 - 4\,266\,108\,000\,z + 13\,287\,148\,875\right) $$

07.22.03.7662.01

$$ {}_1F_2\left(6; -\frac{23}{4}, -\frac{9}{4}; z\right) = \frac{1}{1\,022\,088\,375}\left(e^{-2\sqrt{z}}\left(-2\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(8192\,z^4 + 333\,824\,z^{7/2} + 4\,899\,840\,z^3 + 30\,624\,000\,z^{5/2} + 65\,076\,000\,z^2 - 52\,252\,200\,z^{3/2} - 144\,698\,400\,z + 256\,236\,750\,\sqrt{z} - 128\,118\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4} + 2\sqrt{2\pi}\,\left(8192\,z^4 - 333\,824\,z^{7/2} + 4\,899\,840\,z^3 - 30\,624\,000\,z^{5/2} + 65\,076\,000\,z^2 + 52\,252\,200\,z^{3/2} - 144\,698\,400\,z - 256\,236\,750\,\sqrt{z} - 128\,118\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4} + e^{2\sqrt{z}}\,\left(-32\,768\,z^7 - 19\,271\,680\,z^6 - 233\,055\,360\,z^5 + 499\,554\,720\,z^4 + 794\,787\,840\,z^3 + 279\,417\,600\,z^2 + 474\,012\,000\,z + 1\,022\,088\,375\right)\right)\right) $$

07.22.03.7663.01

$$ {}_1F_2\left(6; -\frac{23}{4}, -\frac{9}{4}; -z\right) = \frac{1}{1\,022\,088\,375}\left(32\,768\,z^7 - 19\,271\,680\,z^6 + 233\,055\,360\,z^5 + 499\,554\,720\,z^4 + 8\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4 - 4\,899\,840\,z^3 + 65\,076\,000\,z^2 + 144\,698\,400\,z - 128\,118\,375\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(166\,912\,z^3 - 15\,312\,000\,z^2 - 26\,126\,100\,z - 128\,118\,375\right)\sin\left(2\sqrt{z}\right)\right)z^{13/4} - 8\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4 - 4\,899\,840\,z^3 + 65\,076\,000\,z^2 + 144\,698\,400\,z - 128\,118\,375\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(166\,912\,z^3 - 15\,312\,000\,z^2 - 26\,126\,100\,z - 128\,118\,375\right)\cos\left(2\sqrt{z}\right)\right)z^{13/4} - 794\,787\,840\,z^3 + 279\,417\,600\,z^2 - 474\,012\,000\,z + 1\,022\,088\,375\right) $$

07.22.03.7664.01

$$ {}_1F_2\left(6; -\frac{23}{4}, -\frac{5}{4}; z\right) = \frac{1}{454\,261\,500}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(16\,384\,z^{9/2} + 593\,920\,z^4 + 7\,424\,000\,z^{7/2} + 35\,264\,000\,z^3 + 24\,360\,000\,z^{5/2} - 165\,404\,400\,z^2 + 41\,412\,000\,z^{3/2} + 450\,355\,500\,z - 706\,592\,250\,\sqrt{z} + 353\,296\,125\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4} + \sqrt{2\pi}\,\left(16\,384\,z^{9/2} - 593\,920\,z^4 + 7\,424\,000\,z^{7/2} - 35\,264\,000\,z^3 + 24\,360\,000\,z^{5/2} + 165\,404\,400\,z^2 + 41\,412\,000\,z^{3/2} - 450\,355\,500\,z - 706\,592\,250\,\sqrt{z} - 353\,296\,125\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4} + 12\,e^{2\sqrt{z}}\,\left(98\,304\,z^6 + 5\,585\,920\,z^5 - 27\,732\,320\,z^4 + 68\,710\,740\,z^3 + 93\,139\,200\,z^2 + 31\,600\,800\,z + 37\,855\,125\right)\right)\right) $$

07.22.03.7665.01

$$ {}_1F_2\left(6; -\frac{23}{4}, -\frac{5}{4}; -z\right) = $$
$$ \frac{1}{113\,565\,375}\left(-\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\ \left(8192 z^4 - 3\,712\,000 z^3 + 12\,180\,000 z^2 - 20\,706\,000 z - 353\,296\,125\right)\cos\left(2\sqrt{z}\right) + \right.\right. $$
$$ 145\left(4096 z^4 - 243\,200 z^3 - 1\,140\,720 z^2 - 3\,105\,900 z + 2\,436\,525\right)\sin\left(2\sqrt{z}\right)\Big) z^{9/4} - $$
$$ \sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\ \left(8192 z^4 - 3\,712\,000 z^3 + 12\,180\,000 z^2 - 20\,706\,000 z - 353\,296\,125\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ 145\left(4096 z^4 - 243\,200 z^3 - 1\,140\,720 z^2 - 3\,105\,900 z + 2\,436\,525\right)\cos\left(2\sqrt{z}\right)\Big) z^{9/4} + $$
$$ \left.\left. 3\left(98\,304 z^6 - 5\,585\,920 z^5 - 27\,732\,320 z^4 - 68\,710\,740 z^3 + 93\,139\,200 z^2 - 31\,600\,800 z + 37\,855\,125\right)\right) $$

07.22.03.7666.01

$$ {}_1F_2\left(6; -\frac{23}{4}, -\frac{1}{4}; z\right) = \frac{1}{726\,818\,400} $$
$$ \left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(-32\,768 z^5 - 1\,024\,000 z^{9/2} - 10\,240\,000 z^4 - 29\,568\,000 z^{7/2} + 54\,768\,000 z^3 + 166\,504\,800 z^{5/2} - \right.\right.\right. $$
$$ 499\,086\,000 z^2 + 97\,461\,000 z^{3/2} + 1\,266\,993\,000 z - 1\,973\,585\,250\sqrt{z} + 986\,792\,625\Big)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) z^{5/4} + $$
$$ \sqrt{2\pi}\ \left(32\,768 z^5 - 1\,024\,000 z^{9/2} + 10\,240\,000 z^4 - 29\,568\,000 z^{7/2} - 54\,768\,000 z^3 + 166\,504\,800 z^{5/2} + \right. $$
$$ \left.\left. 499\,086\,000 z^2 + 97\,461\,000 z^{3/2} - 1\,266\,993\,000 z - 1\,973\,585\,250\sqrt{z} - 986\,792\,625\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right) z^{5/4} - $$
$$ \left.\left. 16 e^{2\sqrt{z}}\ \left(4096 z^6 + 1\,248\,768 z^5 - 7\,558\,320 z^4 + 65\,856\,420 z^3 - 142\,652\,475 z^2 - 189\,604\,800 z - 45\,426\,150\right)\right)\right) $$

07.22.03.7667.01

$$ {}_1F_2\left(6; -\frac{23}{4}, -\frac{1}{4}; -z\right) = \frac{1}{181\,704\,600} $$
$$ \left(-\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768 z^5 - 10\,240\,000 z^4 - 54\,768\,000 z^3 - 499\,086\,000 z^2 - 1\,266\,993\,000 z + 986\,792\,625\right)\cos\left(2\sqrt{z}\right) + \right.\right. $$
$$ 50\sqrt{z}\ \left(20\,480 z^4 - 591\,360 z^3 - 3\,330\,096 z^2 + 1\,949\,220 z + 39\,471\,705\right)\sin\left(2\sqrt{z}\right)\Big) z^{5/4} + $$
$$ \sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768 z^5 - 10\,240\,000 z^4 - 54\,768\,000 z^3 - 499\,086\,000 z^2 - 1\,266\,993\,000 z + 986\,792\,625\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ 50\sqrt{z}\ \left(20\,480 z^4 - 591\,360 z^3 - 3\,330\,096 z^2 + 1\,949\,220 z + 39\,471\,705\right)\cos\left(2\sqrt{z}\right)\Big) z^{5/4} + $$
$$ \left.\left. 4\left(-4096 z^6 + 1\,248\,768 z^5 + 7\,558\,320 z^4 + 65\,856\,420 z^3 + 142\,652\,475 z^2 - 189\,604\,800 z + 45\,426\,150\right)\right) $$

07.22.03.7668.01

$$ {}_1F_2\left(6; -\frac{23}{4}, \frac{3}{4}; z\right) = $$

$$ \frac{1}{5\,814\,547\,200}\left(e^{-2\sqrt{z}}\left(48\,e^{2\sqrt{z}}\left(69\,632\,z^5 + 93\,184\,z^4 + 6\,278\,160\,z^3 - 79\,405\,200\,z^2 + 72\,678\,375\,z + 121\,136\,400\right) + \right.\right. $$

$$ e^{4\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(65\,536\,z^{11/2} + 1\,687\,552\,z^5 + 12\,042\,240\,z^{9/2} + 4\,945\,920\,z^4 - 129\,319\,680\,z^{7/2} + 119\,609\,280\,z^3 + \right. $$

$$ \left. 639\,344\,160\,z^{5/2} - 1\,793\,282\,400\,z^2 + 1\,052\,578\,800\,z^{3/2} + 2\,368\,302\,300\,z - 4\,341\,887\,550\sqrt{z} + 2\,170\,943\,775\right) $$

$$ \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\sqrt[4]{z}\left(65\,536\,z^{11/2} - 1\,687\,552\,z^5 + 12\,042\,240\,z^{9/2} - 4\,945\,920\,z^4 - \right. $$

$$ 129\,319\,680\,z^{7/2} - 119\,609\,280\,z^3 + 639\,344\,160\,z^{5/2} + 1\,793\,282\,400\,z^2 + $$

$$ \left.\left.\left. 1\,052\,578\,800\,z^{3/2} - 2\,368\,302\,300\,z - 4\,341\,887\,550\sqrt{z} - 2\,170\,943\,775\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7669.01

$$ {}_1F_2\left(6; -\frac{23}{4}, \frac{3}{4}; -z\right) = $$

$$ \frac{1}{1\,453\,636\,800}\left(-12\left(69\,632\,z^5 - 93\,184\,z^4 + 6\,278\,160\,z^3 + 79\,405\,200\,z^2 + 72\,678\,375\,z - 121\,136\,400\right) + \sqrt{\pi}\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right. $$

$$ \left(2\sqrt{z}\left(32\,768\,z^5 - 6\,021\,120\,z^4 - 64\,659\,840\,z^3 - 319\,672\,080\,z^2 + 526\,289\,400\,z + 2\,170\,943\,775\right)\sin\left(2\sqrt{z}\right) - \right. $$

$$ \left(1\,687\,552\,z^5 - 4\,945\,920\,z^4 + 119\,609\,280\,z^3 + 1\,793\,282\,400\,z^2 + 2\,368\,302\,300\,z - 2\,170\,943\,775\right) $$

$$ \left.\left.\cos\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\sqrt[4]{z}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right. $$

$$ \left(2\sqrt{z}\left(32\,768\,z^5 - 6\,021\,120\,z^4 - 64\,659\,840\,z^3 - 319\,672\,080\,z^2 + 526\,289\,400\,z + 2\,170\,943\,775\right)\cos\left(2\sqrt{z}\right) + \right. $$

$$ \left.\left.\left(1\,687\,552\,z^5 - 4\,945\,920\,z^4 + 119\,609\,280\,z^3 + 1\,793\,282\,400\,z^2 + 2\,368\,302\,300\,z - 2\,170\,943\,775\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7670.01

$$ {}_1F_2\left(6; -\frac{23}{4}, \frac{7}{4}; z\right) = \frac{1}{15\,505\,459\,200\,z^{3/4}} $$

$$ \left(e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(16\,384\,z^5 + 1\,153\,024\,z^4 - 8\,808\,896\,z^3 - 105\,809\,760\,z^2 + 741\,460\,500\,z + 521\,118\,675\right) + \right.\right. $$

$$ e^{4\sqrt{z}}\sqrt{2\pi}\left(131\,072\,z^6 + 2\,588\,672\,z^{11/2} + 9\,846\,784\,z^5 - 39\,342\,080\,z^{9/2} - 81\,600\,000\,z^4 + \right. $$

$$ 565\,618\,560\,z^{7/2} - 700\,976\,640\,z^3 - 1\,483\,634\,880\,z^{5/2} + 5\,814\,244\,800\,z^2 - $$

$$ \left. 6\,891\,885\,000\,z^{3/2} + 1\,654\,052\,400\,z + 2\,687\,835\,150\sqrt{z} - 1\,343\,917\,575\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$

$$ \sqrt{2\pi}\left(-131\,072\,z^6 + 2\,588\,672\,z^{11/2} - 9\,846\,784\,z^5 - 39\,342\,080\,z^{9/2} + 81\,600\,000\,z^4 + 565\,618\,560\,z^{7/2} + \right. $$

$$ 700\,976\,640\,z^3 - 1\,483\,634\,880\,z^{5/2} - 5\,814\,244\,800\,z^2 - 6\,891\,885\,000\,z^{3/2} - $$

$$ \left.\left.\left. 1\,654\,052\,400\,z + 2\,687\,835\,150\sqrt{z} + 1\,343\,917\,575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7671.01

$$ {}_1F_2\left(6; -\frac{23}{4}, \frac{7}{4}; -z\right) = $$
$$ \frac{1}{3\,876\,364\,800\, z^{3/4}} \left(4 z^{3/4} \left(-16\,384 z^5 + 1\,153\,024 z^4 + 8\,808\,896 z^3 - 105\,809\,760 z^2 - 741\,460\,500 z + 521\,118\,675\right) - \right. $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(131\,072 z^6 - 9\,846\,784 z^5 - 81\,600\,000 z^4 + 700\,976\,640 z^3 + \right.\right. $$
$$ 5\,814\,244\,800 z^2 - 1\,654\,052\,400 z - 1\,343\,917\,575\big) \cos\left(2\sqrt{z}\right) + 2\sqrt{z} $$
$$ \left.\left(1\,294\,336 z^5 + 19\,671\,040 z^4 + 282\,809\,280 z^3 + 741\,817\,440 z^2 - 3\,445\,942\,500 z - 1\,343\,917\,575\right) \sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(131\,072 z^6 - 9\,846\,784 z^5 - 81\,600\,000 z^4 + 700\,976\,640 z^3 + 5\,814\,244\,800 z^2 - \right.\right. $$
$$ 1\,654\,052\,400 z - 1\,343\,917\,575\big) \sin\left(2\sqrt{z}\right) - 2\sqrt{z} $$
$$ \left.\left.\left.\left(1\,294\,336 z^5 + 19\,671\,040 z^4 + 282\,809\,280 z^3 + 741\,817\,440 z^2 - 3\,445\,942\,500 z - 1\,343\,917\,575\right) \cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7672.01

$$ {}_1F_2\left(6; -\frac{23}{4}, \frac{11}{4}; z\right) = \frac{1}{17\,720\,524\,800\, z^{7/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(16 e^{2\sqrt{z}}\, z^{3/4} \left(425\,984 z^5 - 8\,937\,472 z^4 + 21\,922\,560 z^3 + 727\,941\,600 z^2 - 127\,215\,000 z - 1\,185\,809\,625\right) + \right.\right. $$
$$ e^{4\sqrt{z}}\, \sqrt{2\pi} \left(262\,144 z^{13/2} + 3\,473\,408 z^6 - 1\,146\,880 z^{11/2} - 72\,376\,320 z^5 + 198\,681\,600 z^{9/2} + \right. $$
$$ 237\,169\,920 z^4 - 2\,350\,632\,960 z^{7/2} + 5\,259\,945\,600 z^3 - 4\,151\,347\,200 z^{5/2} - 3\,405\,402\,000 z^2 + $$
$$ 10\,118\,908\,800 z^{3/2} - 9\,802\,692\,900 z + 7\,114\,857\,750 \sqrt{z} - 3\,557\,428\,875\big) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi} \left(262\,144 z^{13/2} - 3\,473\,408 z^6 - 1\,146\,880 z^{11/2} + 72\,376\,320 z^5 + 198\,681\,600 z^{9/2} - \right. $$
$$ 237\,169\,920 z^4 - 2\,350\,632\,960 z^{7/2} - 5\,259\,945\,600 z^3 - 4\,151\,347\,200 z^{5/2} + 3\,405\,402\,000 z^2 + $$
$$ \left.\left.\left. 10\,118\,908\,800 z^{3/2} + 9\,802\,692\,900 z + 7\,114\,857\,750 \sqrt{z} + 3\,557\,428\,875\big) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7673.01

$$ {}_1F_2\left(6; -\frac{23}{4}, \frac{11}{4}; -z\right) = \frac{1}{4\,430\,131\,200\, z^{7/4}}\left(4 z^{3/4}\left(425\,984 z^5 + 8\,937\,472 z^4 + 21\,922\,560 z^3 - 727\,941\,600 z^2 - 127\,215\,000 z + 1\,185\,809\,625\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-3\,473\,408 z^6 - 72\,376\,320 z^5 - 237\,169\,920 z^4 + 5\,259\,945\,600 z^3 + 3\,405\,402\,000 z^2 - 9\,802\,692\,900 z + 3\,557\,428\,875\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(131\,072 z^6 + 573\,440 z^5 + 99\,340\,800 z^4 + 1\,175\,316\,480 z^3 - 2\,075\,673\,600 z^2 - 5\,059\,454\,400 z + 3\,557\,428\,875\right)\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(131\,072 z^6 + 573\,440 z^5 + 99\,340\,800 z^4 + 1\,175\,316\,480 z^3 - 2\,075\,673\,600 z^2 - 5\,059\,454\,400 z + 3\,557\,428\,875\right)\cos\left(2\sqrt{z}\right) + \left(3\,473\,408 z^6 + 72\,376\,320 z^5 + 237\,169\,920 z^4 - 5\,259\,945\,600 z^3 - 3\,405\,402\,000 z^2 + 9\,802\,692\,900 z - 3\,557\,428\,875\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7674.01

$$ {}_1F_2\left(6; -\frac{23}{4}, \frac{15}{4}; z\right) = \frac{1}{12\,887\,654\,400\, z^{11/4}}\left(e^{-2\sqrt{z}}\left(16 e^{2\sqrt{z}}\, z^{3/4}\left(65\,536 z^6 - 3\,039\,232 z^5 + 51\,344\,640 z^4 + 370\,938\,240 z^3 - 1\,162\,789\,200 z^2 - 5\,472\,967\,500 z - 10\,854\,718\,875\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(524\,288 z^7 + 3\,276\,800 z^{13/2} - 23\,592\,960 z^6 - 3\,194\,880 z^{11/2} + 414\,935\,040 z^5 - 1\,600\,335\,360 z^{9/2} + 2\,500\,243\,200 z^4 + 518\,918\,400 z^{7/2} - 10\,118\,908\,800 z^3 + 23\,545\,922\,400 z^{5/2} - 38\,626\,988\,400 z^2 + 57\,648\,591\,000 z^{3/2} - 72\,243\,171\,000 z + 65\,128\,313\,250\sqrt{z} - 32\,564\,156\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\left(-524\,288 z^7 + 3\,276\,800 z^{13/2} + 23\,592\,960 z^6 - 3\,194\,880 z^{11/2} - 414\,935\,040 z^5 - 1\,600\,335\,360 z^{9/2} - 2\,500\,243\,200 z^4 + 518\,918\,400 z^{7/2} + 10\,118\,908\,800 z^3 + 23\,545\,922\,400 z^{5/2} + 38\,626\,988\,400 z^2 + 57\,648\,591\,000 z^{3/2} + 72\,243\,171\,000 z + 65\,128\,313\,250\sqrt{z} + 32\,564\,156\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7675.01

$$ {}_1F_2\left(6; -\frac{23}{4}, \frac{15}{4}; -z\right) = \frac{1}{3\,221\,913\,600\, z^{11/4}} $$
$$ \left(4 z^{3/4} \left(65\,536 z^6 + 3\,039\,232 z^5 + 51\,344\,640 z^4 - 370\,938\,240 z^3 - 1\,162\,789\,200 z^2 + 5\,472\,967\,500 z - 10\,854\,718\,875\right) + \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(524\,288 z^7 + 23\,592\,960 z^6 + 414\,935\,040 z^5 - 2\,500\,243\,200 z^4 - 10\,118\,908\,800 z^3 + \right.\right. $$
$$ \left.\left. 38\,626\,988\,400 z^2 - 72\,243\,171\,000 z + 32\,564\,156\,625\right) \cos\left(2\sqrt{z}\right) + 10\sqrt{z}\, \left(327\,680 z^6 + 319\,488 z^5 - \right.\right. $$
$$ \left.\left. 160\,033\,536 z^4 - 51\,891\,840 z^3 + 2\,354\,592\,240 z^2 - 5\,764\,859\,100 z + 6\,512\,831\,325\right) \sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(524\,288 z^7 + 23\,592\,960 z^6 + 414\,935\,040 z^5 - 2\,500\,243\,200 z^4 - 10\,118\,908\,800 z^3 + \right.\right. $$
$$ \left.\left. 38\,626\,988\,400 z^2 - 72\,243\,171\,000 z + 32\,564\,156\,625\right) \sin\left(2\sqrt{z}\right) - 10\sqrt{z}\, \left(327\,680 z^6 + 319\,488 z^5 - \right.\right. $$
$$ \left.\left. \left. 160\,033\,536 z^4 - 51\,891\,840 z^3 + 2\,354\,592\,240 z^2 - 5\,764\,859\,100 z + 6\,512\,831\,325\right) \cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7676.01

$$ {}_1F_2\left(6; -\frac{23}{4}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{6\,873\,415\,680\, z^{15/4}} \left(e^{-2\sqrt{z}} \left(-48 e^{2\sqrt{z}}\, z^{3/4} \left(65\,536 z^6 - 10\,403\,840 z^5 - 15\,983\,360 z^4 + 758\,309\,120 z^3 + 5\,913\,507\,600 z^2 + \right.\right.\right. $$
$$ \left.\left.\left. 31\,243\,212\,000 z + 84\,023\,564\,625\right) + \right. $$
$$ e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(1\,048\,576 z^{15/2} - 1\,310\,720 z^7 - 38\,010\,880 z^{13/2} + 240\,680\,960 z^6 - 614\,215\,680 z^{11/2} + 177\,515\,520 z^5 + \right. $$
$$ 4\,112\,908\,800 z^{9/2} - 17\,470\,252\,800 z^4 + 49\,643\,193\,600 z^{7/2} - 126\,659\,332\,800 z^3 + 302\,724\,021\,600 z^{5/2} - $$
$$ \left. 641\,512\,872\,000 z^2 + 1\,138\,539\,402\,000 z^{3/2} - 1\,577\,552\,476\,500 z + 1\,512\,424\,163\,250\sqrt{z} - 756\,212\,081\,625\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(1\,048\,576 z^{15/2} + 1\,310\,720 z^7 - 38\,010\,880 z^{13/2} - 240\,680\,960 z^6 - \right. $$
$$ 614\,215\,680 z^{11/2} - 177\,515\,520 z^5 + 4\,112\,908\,800 z^{9/2} + 17\,470\,252\,800 z^4 + 49\,643\,193\,600 z^{7/2} + $$
$$ 126\,659\,332\,800 z^3 + 302\,724\,021\,600 z^{5/2} + 641\,512\,872\,000 z^2 + 1\,138\,539\,402\,000 z^{3/2} + $$
$$ \left.\left. 1\,577\,552\,476\,500 z + 1\,512\,424\,163\,250\sqrt{z} + 756\,212\,081\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7677.01

$$ {}_1F_2\left(6; -\frac{23}{4}, \frac{19}{4}; -z\right) = \frac{1}{1\,718\,353\,920\, z^{15/4}} $$

$$ \left(12\, z^{3/4}\left(65\,536\, z^6 + 10\,403\,840\, z^5 - 15\,983\,360\, z^4 - 758\,309\,120\, z^3 + 5\,913\,507\,600\, z^2 - 31\,243\,212\,000\, z + 84\,023\,564\,625\right) + \right. $$

$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(524\,288\, z^7 + 19\,005\,440\, z^6 - 307\,107\,840\, z^5 - 2\,056\,454\,400\, z^4 + \right.\right. $$

$$ \left.\left. 24\,821\,596\,800\, z^3 - 151\,362\,010\,800\, z^2 + 569\,269\,701\,000\, z - 756\,212\,081\,625\right)\cos\left(2\sqrt{z}\right) - \right. $$

$$ \left. 5\left(262\,144\, z^7 + 48\,136\,192\, z^6 - 35\,503\,104\, z^5 - 3\,494\,050\,560\, z^4 + 25\,331\,866\,560\, z^3 - \right.\right. $$

$$ \left.\left. 128\,302\,574\,400\, z^2 + 315\,510\,495\,300\, z - 151\,242\,416\,325\right)\sin\left(2\sqrt{z}\right)\right) + $$

$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(5\left(262\,144\, z^7 + 48\,136\,192\, z^6 - 35\,503\,104\, z^5 - 3\,494\,050\,560\, z^4 + 25\,331\,866\,560\, z^3 - \right.\right. $$

$$ \left.\left. 128\,302\,574\,400\, z^2 + 315\,510\,495\,300\, z - 151\,242\,416\,325\right)\cos\left(2\sqrt{z}\right) + \right. $$

$$ 2\sqrt{z}\,\left(524\,288\, z^7 + 19\,005\,440\, z^6 - 307\,107\,840\, z^5 - 2\,056\,454\,400\, z^4 + 24\,821\,596\,800\, z^3 - \right. $$

$$ \left.\left.\left. 151\,362\,010\,800\, z^2 + 569\,269\,701\,000\, z - 756\,212\,081\,625\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7678.01

$$ {}_1F_2\left(6; -\frac{23}{4}, \frac{23}{4}; z\right) = $$

$$ \frac{1}{2\,894\,069\,760\, z^{19/4}}\left(e^{-2\sqrt{z}}\,\left(16\, e^{2\sqrt{z}}\, z^{3/4}\left(262\,144\, z^7 + 9\,338\,880\, z^6 - 147\,102\,720\, z^5 - 4\,408\,216\,320\, z^4 - 66\,447\,501\,120\, z^3 - \right.\right.\right. $$

$$ \left. 743\,220\,878\,400\, z^2 - 5\,041\,413\,877\,500\, z - 15\,880\,453\,714\,125\right) + $$

$$ e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(2\,097\,152\, z^8 - 19\,398\,656\, z^{15/2} + 69\,468\,160\, z^7 - 4\,915\,200\, z^{13/2} - 1\,196\,482\,560\, z^6 + \right. $$

$$ 7\,533\,926\,400\, z^{11/2} - 33\,210\,777\,600\, z^5 + 131\,113\,382\,400\, z^{9/2} - 490\,723\,833\,600\, z^4 + 1\,709\,576\,668\,800\, z^{7/2} - $$

$$ 5\,378\,070\,297\,600\, z^3 + 14\,851\,185\,148\,800\, z^{5/2} - 34\,850\,884\,068\,000\, z^2 + 66\,546\,663\,183\,000\, z^{3/2} - $$

$$ \left. 96\,795\,146\,448\,000\, z + 95\,282\,722\,284\,750\sqrt{z} - 47\,641\,361\,142\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$

$$ \sqrt{2\pi}\,\left(-2\,097\,152\, z^8 - 19\,398\,656\, z^{15/2} - 69\,468\,160\, z^7 - 4\,915\,200\, z^{13/2} + 1\,196\,482\,560\, z^6 + \right. $$

$$ 7\,533\,926\,400\, z^{11/2} + 33\,210\,777\,600\, z^5 + 131\,113\,382\,400\, z^{9/2} + 490\,723\,833\,600\, z^4 + 1\,709\,576\,668\,800\, z^{7/2} + $$

$$ 5\,378\,070\,297\,600\, z^3 + 14\,851\,185\,148\,800\, z^{5/2} + 34\,850\,884\,068\,000\, z^2 + 66\,546\,663\,183\,000\, z^{3/2} + $$

$$ \left.\left.\left. 96\,795\,146\,448\,000\, z + 95\,282\,722\,284\,750\sqrt{z} + 47\,641\,361\,142\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7679.01

$$ {}_1F_2\left(6; -\frac{23}{4}, \frac{23}{4}; -z\right) = \frac{1}{723\,517\,440\, z^{19/4}}\left(-4 z^{3/4}\left(262\,144 z^7 - 9\,338\,880 z^6 - 147\,102\,720 z^5 + 4\,408\,216\,320 z^4 - 66\,447\,501\,120 z^3 + 743\,220\,878\,400 z^2 - 5\,041\,413\,877\,500 z + 15\,880\,453\,714\,125\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2\,097\,152 z^8 - 69\,468\,160 z^7 - 1\,196\,482\,560 z^6 + 33\,210\,777\,600 z^5 - 490\,723\,833\,600 z^4 + 5\,378\,070\,297\,600 z^3 - 34\,850\,884\,068\,000 z^2 + 96\,795\,146\,448\,000 z - 47\,641\,361\,142\,375\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(9\,699\,328 z^7 - 2\,457\,600 z^6 - 3\,766\,963\,200 z^5 + 65\,556\,691\,200 z^4 - 854\,788\,334\,400 z^3 + 7\,425\,592\,574\,400 z^2 - 33\,273\,331\,591\,500 z + 47\,641\,361\,142\,375\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(9\,699\,328 z^7 - 2\,457\,600 z^6 - 3\,766\,963\,200 z^5 + 65\,556\,691\,200 z^4 - 854\,788\,334\,400 z^3 + 7\,425\,592\,574\,400 z^2 - 33\,273\,331\,591\,500 z + 47\,641\,361\,142\,375\right)\cos\left(2\sqrt{z}\right) + \left(2\,097\,152 z^8 - 69\,468\,160 z^7 - 1\,196\,482\,560 z^6 + 33\,210\,777\,600 z^5 - 490\,723\,833\,600 z^4 + 5\,378\,070\,297\,600 z^3 - 34\,850\,884\,068\,000 z^2 + 96\,795\,146\,448\,000 z - 47\,641\,361\,142\,375\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 6$, $b_1 = -\frac{21}{4}$

07.22.03.7680.01

$$ {}_1F_2\left(6; -\frac{21}{4}, -\frac{19}{4}; z\right) = \frac{1}{206\,239\,658\,625}\left(e^{-2\sqrt{z}}\left(-256 e^{4\sqrt{z}}\sqrt{2\pi}\left(1024 z^{5/2} + 49\,920 z^2 + 919\,680 z^{3/2} + 7\,974\,240 z + 32\,403\,780\sqrt{z} + 49\,127\,715\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{23/4} + 256\sqrt{2\pi}\left(1024 z^{5/2} - 49\,920 z^2 + 919\,680 z^{3/2} - 7\,974\,240 z + 32\,403\,780\sqrt{z} - 49\,127\,715\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{23/4} + e^{2\sqrt{z}}\left(-524\,288 z^8 - 464\,584\,704 z^7 - 15\,652\,546\,560 z^6 + 3\,963\,617\,280 z^5 + 1\,857\,945\,600 z^4 + 3\,251\,404\,800 z^3 + 10\,897\,286\,400 z^2 + 49\,621\,572\,000 z + 206\,239\,658\,625\right)\right)\right) $$

07.22.03.7681.01

$$ {}_1F_2\left(6; -\frac{21}{4}, -\frac{19}{4}; -z\right) = \frac{1}{206\,239\,658\,625}\left(-524\,288 z^8 + 464\,584\,704 z^7 - 15\,652\,546\,560 z^6 + 1024\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\left(256 z^2 - 229\,920 z + 8\,100\,945\right)\sin\left(2\sqrt{z}\right) - 15\left(3328 z^2 - 531\,616 z + 3\,275\,181\right)\cos\left(2\sqrt{z}\right)\right) z^{23/4} - 1024\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\left(256 z^2 - 229\,920 z + 8\,100\,945\right)\cos\left(2\sqrt{z}\right) + 15\left(3328 z^2 - 531\,616 z + 3\,275\,181\right)\sin\left(2\sqrt{z}\right)\right) z^{23/4} - 3\,963\,617\,280 z^5 + 1\,857\,945\,600 z^4 - 3\,251\,404\,800 z^3 + 10\,897\,286\,400 z^2 - 49\,621\,572\,000 z + 206\,239\,658\,625\right) $$

07.22.03.7682.01

$$ {}_1F_2\left(6; -\frac{21}{4}, -\frac{15}{4}; z\right) = \frac{1}{10\,854\,718\,875}\left(e^{-2\sqrt{z}}\left(32\,e^{4\sqrt{z}}\sqrt{2\pi}\left(2048z^3+93\,696z^{5/2}+1\,605\,120z^2+12\,738\,240z^{3/2}+45\,700\,200z+52\,555\,230\sqrt{z}-26\,277\,615\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}+32\sqrt{2\pi}\left(2048z^3-93\,696z^{5/2}+1\,605\,120z^2-12\,738\,240z^{3/2}+45\,700\,200z-52\,555\,230\sqrt{z}-26\,277\,615\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}+7\,e^{2\sqrt{z}}\left(851\,968z^7+112\,951\,296z^6+394\,778\,880z^5+88\,473\,600z^4+66\,355\,200z^3+141\,523\,200z^2+472\,586\,400z+1\,550\,674\,125\right)\right)\right) $$

07.22.03.7683.01

$$ {}_1F_2\left(6; -\frac{21}{4}, -\frac{15}{4}; -z\right) = \frac{1}{10\,854\,718\,875}\left(128\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048z^3-1\,605\,120z^2+45\,700\,200z+26\,277\,615\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\left(15\,616z^2-2\,123\,040z+8\,759\,205\right)\sin\left(2\sqrt{z}\right)\right)z^{19/4}+128\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048z^3-1\,605\,120z^2+45\,700\,200z+26\,277\,615\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\left(15\,616z^2-2\,123\,040z+8\,759\,205\right)\cos\left(2\sqrt{z}\right)\right)z^{19/4}-7\left(851\,968z^7-112\,951\,296z^6+394\,778\,880z^5-88\,473\,600z^4+66\,355\,200z^3-141\,523\,200z^2+472\,586\,400z-1\,550\,674\,125\right)\right) $$

07.22.03.7684.01

$$ {}_1F_2\left(6; -\frac{21}{4}, -\frac{11}{4}; z\right) = \frac{1}{723\,647\,925}\left(e^{-2\sqrt{z}}\left(-4\,e^{4\sqrt{z}}\sqrt{2\pi}\left(4096z^{7/2}+173\,056z^3+2\,691\,072z^{5/2}+18\,748\,800z^2+53\,902\,800z^{3/2}+24\,256\,260z-76\,811\,490\sqrt{z}+38\,405\,745\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+4\sqrt{2\pi}\left(4096z^{7/2}-173\,056z^3+2\,691\,072z^{5/2}-18\,748\,800z^2+53\,902\,800z^{3/2}-24\,256\,260z-76\,811\,490\sqrt{z}-38\,405\,745\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+e^{2\sqrt{z}}\left(-32\,768z^7-21\,188\,608z^6-397\,450\,368z^5+609\,668\,640z^4+154\,828\,800z^3+141\,523\,200z^2+300\,736\,800z+723\,647\,925\right)\right)\right) $$

07.22.03.7685.01

$$ {}_1F_2\left(6; -\frac{21}{4}, -\frac{11}{4}; -z\right) = \frac{1}{723\,647\,925}\left(32\,768\,z^7 - 21\,188\,608\,z^6 + 397\,450\,368\,z^5 + 609\,668\,640\,z^4 - \right.$$
$$16\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-173\,056\,z^3 + 18\,748\,800\,z^2 - 24\,256\,260\,z + 38\,405\,745\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(2048\,z^3 - 1\,345\,536\,z^2 + 26\,951\,400\,z + 38\,405\,745\right)\sin\left(2\sqrt{z}\right)\right)z^{15/4} +$$
$$16\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2048\,z^3 - 1\,345\,536\,z^2 + 26\,951\,400\,z + 38\,405\,745\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\left(173\,056\,z^3 - 18\,748\,800\,z^2 + 24\,256\,260\,z - 38\,405\,745\right)\sin\left(2\sqrt{z}\right)\right)z^{15/4} -$$
$$\left.154\,828\,800\,z^3 + 141\,523\,200\,z^2 - 300\,736\,800\,z + 723\,647\,925\right)$$

07.22.03.7686.01

$$ {}_1F_2\left(6; -\frac{21}{4}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{131\,572\,350}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\,\sqrt{2\pi}\left(8192\,z^4 + 313\,344\,z^{7/2} + 4\,285\,440\,z^3 + 24\,641\,280\,z^{5/2} + 46\,202\,400\,z^2 - \right.\right.\right.$$
$$\left.\left.\left.43\,892\,280\,z^{3/2} - 87\,784\,560\,z + 164\,596\,050\sqrt{z} - 82\,298\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4} + \right.\right.$$
$$\sqrt{2\pi}\left(8192\,z^4 - 313\,344\,z^{7/2} + 4\,285\,440\,z^3 - 24\,641\,280\,z^{5/2} + 46\,202\,400\,z^2 + 43\,892\,280\,z^{3/2} - \right.$$
$$\left.\left.87\,784\,560\,z - 164\,596\,050\sqrt{z} - 82\,298\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4} + \right.$$
$$\left.2\,e^{2\sqrt{z}}\left(311\,296\,z^6 + 23\,626\,752\,z^5 - 51\,706\,080\,z^4 + 174\,363\,300\,z^3 + 47\,174\,400\,z^2 + 42\,962\,400\,z + 65\,786\,175\right)\right)\right)$$

07.22.03.7687.01

$$ {}_1F_2\left(6; -\frac{21}{4}, -\frac{7}{4}; -z\right) = \frac{1}{65\,786\,175}\left(311\,296\,z^6 - 23\,626\,752\,z^5 - 51\,706\,080\,z^4 - 174\,363\,300\,z^3 - \right.$$
$$2\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4 - 4\,285\,440\,z^3 + 46\,202\,400\,z^2 + 87\,784\,560\,z - 82\,298\,025\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.18\sqrt{z}\left(17\,408\,z^3 - 1\,368\,960\,z^2 - 2\,438\,460\,z - 9\,144\,225\right)\sin\left(2\sqrt{z}\right)\right)z^{11/4} -$$
$$2\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4 - 4\,285\,440\,z^3 + 46\,202\,400\,z^2 + 87\,784\,560\,z - 82\,298\,025\right)\sin\left(2\sqrt{z}\right) - 18\sqrt{z}\right.$$
$$\left.\left(17\,408\,z^3 - 1\,368\,960\,z^2 - 2\,438\,460\,z - 9\,144\,225\right)\cos\left(2\sqrt{z}\right)\right)z^{11/4} + 47\,174\,400\,z^2 - 42\,962\,400\,z + 65\,786\,175\Big)$$

07.22.03.7688.01

$$ {}_1F_2\left(6; -\frac{21}{4}, -\frac{3}{4}; z\right) = \frac{1}{150\,368\,400}\left(e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\sqrt{2\pi}\left(16\,384 z^{9/2} + 552\,960 z^4 + 6\,359\,040 z^{7/2} + 27\,025\,920 z^3 + 11\,327\,040 z^{5/2} - 116\,102\,160 z^2 + 56\,635\,200 z^{3/2} + 244\,239\,300 z - 408\,835\,350\sqrt{z} + 204\,417\,675\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} + \sqrt{2\pi}\left(16\,384 z^{9/2} - 552\,960 z^4 + 6\,359\,040 z^{7/2} - 27\,025\,920 z^3 + 11\,327\,040 z^{5/2} + 116\,102\,160 z^2 + 56\,635\,200 z^{3/2} - 244\,239\,300 z - 408\,835\,350\sqrt{z} - 204\,417\,675\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} - 8 e^{2\sqrt{z}}\left(4096 z^6 + 1\,555\,968 z^5 + 1\,410\,000 z^4 + 20\,897\,460 z^3 - 110\,068\,875 z^2 - 28\,641\,600 z - 18\,796\,050\right)\right)\right) $$

07.22.03.7689.01

$$ {}_1F_2\left(6; -\frac{21}{4}, -\frac{3}{4}; -z\right) = \frac{1}{37\,592\,100}\left(-8192 z^6 + 3\,111\,936 z^5 - 2\,820\,000 z^4 + 41\,794\,920 z^3 + 220\,137\,750 z^2 - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(8192 z^4 - 3\,179\,520 z^3 + 5\,663\,520 z^2 - 28\,317\,600 z - 204\,417\,675\right)\cos\left(2\sqrt{z}\right) + 135\left(4096 z^4 - 200\,192 z^3 - 860\,016 z^2 - 1\,809\,180 z + 1\,514\,205\right)\sin\left(2\sqrt{z}\right)\right) z^{7/4} + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(8192 z^4 - 3\,179\,520 z^3 + 5\,663\,520 z^2 - 28\,317\,600 z - 204\,417\,675\right)\sin\left(2\sqrt{z}\right) - 135\left(4096 z^4 - 200\,192 z^3 - 860\,016 z^2 - 1\,809\,180 z + 1\,514\,205\right)\cos\left(2\sqrt{z}\right)\right) z^{7/4} - 57\,283\,200 z + 37\,592\,100\right) $$

07.22.03.7690.01

$$ {}_1F_2\left(6; -\frac{21}{4}, \frac{1}{4}; z\right) = \frac{1}{400\,982\,400}\left(e^{-2\sqrt{z}}\left(24 e^{2\sqrt{z}}\left(77\,824 z^5 + 1\,515\,520 z^4 - 6\,218\,960 z^3 - 22\,362\,480 z^2 + 82\,613\,925 z + 16\,707\,600\right) + e^{4\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(32\,768 z^5 + 942\,080 z^{9/2} + 8\,478\,720 z^4 + 20\,136\,960 z^{7/2} - 47\,825\,280 z^3 - 88\,728\,480 z^{5/2} + 335\,091\,600 z^2 - 181\,704\,600 z^{3/2} - 545\,113\,800 z + 953\,949\,150\sqrt{z} - 476\,974\,575\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\, z^{3/4}\left(32\,768 z^5 - 942\,080 z^{9/2} + 8\,478\,720 z^4 - 20\,136\,960 z^{7/2} - 47\,825\,280 z^3 + 88\,728\,480 z^{5/2} + 335\,091\,600 z^2 + 181\,704\,600 z^{3/2} - 545\,113\,800 z - 953\,949\,150\sqrt{z} - 476\,974\,575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7691.01

$$ {}_1F_2\left(6; -\frac{21}{4}, \frac{1}{4}; -z\right) = $$
$$ \frac{1}{100\,245\,600}\left(-6\left(77\,824\,z^5 - 1\,515\,520\,z^4 - 6\,218\,960\,z^3 + 22\,362\,480\,z^2 + 82\,613\,925\,z - 16\,707\,600\right) + \sqrt{\pi}\; z^{3/4}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right. $$
$$ \left(\left(32\,768\,z^5 - 8\,478\,720\,z^4 - 47\,825\,280\,z^3 - 335\,091\,600\,z^2 - 545\,113\,800\,z + 476\,974\,575\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 230\sqrt{z}\left(4096\,z^4 - 87\,552\,z^3 - 385\,776\,z^2 + 790\,020\,z + 4\,147\,605\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; z^{3/4}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right. $$
$$ \left(\left(32\,768\,z^5 - 8\,478\,720\,z^4 - 47\,825\,280\,z^3 - 335\,091\,600\,z^2 - 545\,113\,800\,z + 476\,974\,575\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left. 230\sqrt{z}\left(4096\,z^4 - 87\,552\,z^3 - 385\,776\,z^2 + 790\,020\,z + 4\,147\,605\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7692.01

$$ {}_1F_2\left(6; -\frac{21}{4}, \frac{5}{4}; z\right) = \frac{1}{3\,207\,859\,200\,\sqrt[4]{z}} $$
$$ \left(e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\left(16\,384\,z^5 + 2\,242\,560\,z^4 - 21\,696\,960\,z^3 + 56\,236\,320\,z^2 + 313\,594\,740\,z - 283\,372\,425\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\right.\right. $$
$$ \left(65\,536\,z^{11/2} + 1\,523\,712\,z^5 + 9\,338\,880\,z^{9/2} - 1\,751\,040\,z^4 - 88\,646\,400\,z^{7/2} + 132\,805\,440\,z^3 + 271\,766\,880\,z^{5/2} - \right. $$
$$ \left.\left. 1\,042\,826\,400\,z^2 + 995\,425\,200\,z^{3/2} + 414\,760\,500\,z - 1\,368\,709\,650\sqrt{z} + 684\,354\,825\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \right. $$
$$ \sqrt{2\pi}\left(-65\,536\,z^{11/2} + 1\,523\,712\,z^5 - 9\,338\,880\,z^{9/2} - 1\,751\,040\,z^4 + 88\,646\,400\,z^{7/2} + 132\,805\,440\,z^3 - 271\,766\,880\right. $$
$$ \left.\left.\left. z^{5/2} - 1\,042\,826\,400\,z^2 - 995\,425\,200\,z^{3/2} + 414\,760\,500\,z + 1\,368\,709\,650\sqrt{z} + 684\,354\,825\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7693.01

$$ {}_1F_2\left(6; -\frac{21}{4}, \frac{5}{4}; -z\right) = $$
$$ \frac{1}{801\,964\,800\,\sqrt[4]{z}}\left(2\sqrt[4]{z}\left(-16\,384\,z^5 + 2\,242\,560\,z^4 + 21\,696\,960\,z^3 + 56\,236\,320\,z^2 - 313\,594\,740\,z - 283\,372\,425\right) - \right. $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(507\,904\,z^5 + 583\,680\,z^4 + 44\,268\,480\,z^3 + 347\,608\,800\,z^2 + 138\,253\,500\,z - 228\,118\,275\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ 2\sqrt{z}\left(-32\,768\,z^5 + 4\,669\,440\,z^4 + 44\,323\,200\,z^3 + 135\,883\,440\,z^2 - 497\,712\,600\,z - 684\,354\,825\right) $$
$$ \left.\left. \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right. $$
$$ \left(2\sqrt{z}\left(32\,768\,z^5 - 4\,669\,440\,z^4 - 44\,323\,200\,z^3 - 135\,883\,440\,z^2 + 497\,712\,600\,z + 684\,354\,825\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 3\left(507\,904\,z^5 + 583\,680\,z^4 + 44\,268\,480\,z^3 + 347\,608\,800\,z^2 + 138\,253\,500\,z - 228\,118\,275\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7694.01

$$ {}_1F_2\left(6; -\frac{21}{4}, \frac{9}{4}; z\right) = \frac{1}{5\,132\,574\,720\, z^{5/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(557\,056\, z^5 - 8\,970\,240\, z^4 + 87\,010\,560\, z^3 + 45\,902\,880\, z^2 - 914\,434\,920\, z - 468\,242\,775\right) + \right. \right. $$
$$ e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(131\,072\, z^6 + 2\,260\,992\, z^{11/2} + 6\,242\,304\, z^5 - 34\,713\,600\, z^{9/2} - 21\,081\,600\, z^4 + 349\,937\,280\, z^{7/2} - \right. $$
$$ 681\,246\,720\, z^3 - 41\,912\,640\, z^{5/2} + 2\,095\,632\,000\, z^2 - 3\,361\,743\,000\, z^{3/2} + 2\,305\,195\,200\, z - $$
$$ \left. 936\,485\,550\sqrt{z} + 468\,242\,775\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(131\,072\, z^6 - 2\,260\,992\, z^{11/2} + 6\,242\,304\, z^5 + \right. $$
$$ 34\,713\,600\, z^{9/2} - 21\,081\,600\, z^4 - 349\,937\,280\, z^{7/2} - 681\,246\,720\, z^3 + 41\,912\,640\, z^{5/2} + 2\,095\,632\,000\, z^2 + $$
$$ \left. \left. 3\,361\,743\,000\, z^{3/2} + 2\,305\,195\,200\, z + 936\,485\,550\sqrt{z} + 468\,242\,775\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7695.01

$$ {}_1F_2\left(6; -\frac{21}{4}, \frac{9}{4}; -z\right) = $$
$$ \frac{1}{1\,283\,143\,680\, z^{5/4}} \left(2\, \sqrt[4]{z}\, \left(557\,056\, z^5 + 8\,970\,240\, z^4 + 87\,010\,560\, z^3 - 45\,902\,880\, z^2 - 914\,434\,920\, z + 468\,242\,775\right) - \right. $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(131\,072\, z^6 - 6\,242\,304\, z^5 - 21\,081\,600\, z^4 + 681\,246\,720\, z^3 + \right. \right. $$
$$ \left. 2\,095\,632\,000\, z^2 - 2\,305\,195\,200\, z + 468\,242\,775\right) \cos\left(2\sqrt{z}\right) + $$
$$ \left. 6\sqrt{z}\, \left(376\,832\, z^5 + 5\,785\,600\, z^4 + 58\,322\,880\, z^3 + 6\,985\,440\, z^2 - 560\,290\,500\, z + 156\,080\,925\right) \sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(131\,072\, z^6 - 6\,242\,304\, z^5 - 21\,081\,600\, z^4 + 681\,246\,720\, z^3 + 2\,095\,632\,000\, z^2 - \right. \right. $$
$$ \left. 2\,305\,195\,200\, z + 468\,242\,775\right) \sin\left(2\sqrt{z}\right) - $$
$$ \left. \left. 6\sqrt{z}\, \left(376\,832\, z^5 + 5\,785\,600\, z^4 + 58\,322\,880\, z^3 + 6\,985\,440\, z^2 - 560\,290\,500\, z + 156\,080\,925\right) \cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7696.01

$$ {}_1F_2\left(6; -\frac{21}{4}, \frac{13}{4}; z\right) = $$
$$ \frac{1}{4\,562\,288\,640\, z^{9/4}} \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(65\,536\, z^6 - 1\,269\,760\, z^5 + 48\,303\,360\, z^4 - 197\,435\,520\, z^3 - 1\,346\,441\,040\, z^2 - \right. \right. \right. $$
$$ \left. 1\,872\,971\,100\, z - 2\,341\,213\,875\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(262\,144\, z^{13/2} + 2\,818\,048\, z^6 - 4\,423\,680\, z^{11/2} - \right. $$
$$ 45\,096\,960\, z^5 + 183\,321\,600\, z^{9/2} - 125\,072\,640\, z^4 - 862\,202\,880\, z^{7/2} + 2\,933\,884\,800\, z^3 - 4\,610\,390\,400\, z^{5/2} + $$
$$ \left. 4\,802\,490\,000\, z^2 - 4\,994\,589\,600\, z^{3/2} + 5\,618\,913\,300\, z - 4\,682\,427\,750\sqrt{z} + 2\,341\,213\,875\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\, \left(-262\,144\, z^{13/2} + 2\,818\,048\, z^6 + 4\,423\,680\, z^{11/2} - 45\,096\,960\, z^5 - 183\,321\,600\, z^{9/2} - \right. $$
$$ 125\,072\,640\, z^4 + 862\,202\,880\, z^{7/2} + 2\,933\,884\,800\, z^3 + 4\,610\,390\,400\, z^{5/2} + 4\,802\,490\,000\, z^2 + $$
$$ \left. \left. 4\,994\,589\,600\, z^{3/2} + 5\,618\,913\,300\, z + 4\,682\,427\,750\sqrt{z} + 2\,341\,213\,875\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7697.01

$$ {}_1F_2\left(6; -\frac{21}{4}, \frac{13}{4}; -z\right) = \frac{1}{1\,140\,572\,160\, z^{9/4}} $$

$$ \left(2\sqrt[4]{z}\,\left(65\,536\, z^6 + 1\,269\,760\, z^5 + 48\,303\,360\, z^4 + 197\,435\,520\, z^3 - 1\,346\,441\,040\, z^2 + 1\,872\,971\,100\, z - 2\,341\,213\,875\right) - \right. $$

$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-2\,818\,048\, z^6 - 45\,096\,960\, z^5 + 125\,072\,640\, z^4 + 2\,933\,884\,800\, z^3 - 4\,802\,490\,000\, z^2 + \right.\right. $$

$$ 5\,618\,913\,300\, z - 2\,341\,213\,875\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(131\,072\, z^6 + 2\,211\,840\, z^5 + 91\,660\,800\, z^4 + \right. $$

$$ \left.\left. 431\,101\,440\, z^3 - 2\,305\,195\,200\, z^2 + 2\,497\,294\,800\, z - 2\,341\,213\,875\right)\sin\left(2\sqrt{z}\right)\right) + $$

$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(131\,072\, z^6 + 2\,211\,840\, z^5 + 91\,660\,800\, z^4 + 431\,101\,440\, z^3 - 2\,305\,195\,200\, z^2 + \right.\right. $$

$$ 2\,497\,294\,800\, z - 2\,341\,213\,875\right)\cos\left(2\sqrt{z}\right) + \left(2\,818\,048\, z^6 + 45\,096\,960\, z^5 - 125\,072\,640\, z^4 - \right. $$

$$ \left.\left.\left. 2\,933\,884\,800\, z^3 + 4\,802\,490\,000\, z^2 - 5\,618\,913\,300\, z + 2\,341\,213\,875\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7698.01

$$ {}_1F_2\left(6; -\frac{21}{4}, \frac{17}{4}; z\right) = $$

$$ \frac{1}{2\,807\,562\,240\, z^{13/4}}\left(e^{-2\sqrt{z}}\,\left(8\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(458\,752\, z^6 + 11\,304\,960\, z^5 - 254\,926\,080\, z^4 - 1\,505\,629\,440\, z^3 - \right.\right.\right. $$

$$ 5\,221\,616\,400\, z^2 - 17\,708\,090\,400\, z - 32\,564\,156\,625\right) + $$

$$ e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(524\,288\, z^7 + 1\,966\,080\, z^{13/2} - 21\,626\,880\, z^6 + 39\,567\,360\, z^{11/2} + 149\,022\,720\, z^5 - 995\,258\,880\, z^{9/2} + \right. $$

$$ 2\,754\,259\,200\, z^4 - 5\,149\,267\,200\, z^{7/2} + 8\,801\,654\,400\, z^3 - 16\,799\,983\,200\, z^{5/2} + 32\,010\,778\,800\, z^2 - $$

$$ \left. 52\,783\,731\,000\, z^{3/2} + 69\,810\,741\,000\, z - 65\,128\,313\,250\sqrt{z} + 32\,564\,156\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$

$$ \sqrt{2\pi}\,\left(524\,288\, z^7 - 1\,966\,080\, z^{13/2} - 21\,626\,880\, z^6 - 39\,567\,360\, z^{11/2} + 149\,022\,720\, z^5 + 995\,258\,880\, z^{9/2} + \right. $$

$$ 2\,754\,259\,200\, z^4 + 5\,149\,267\,200\, z^{7/2} + 8\,801\,654\,400\, z^3 + 16\,799\,983\,200\, z^{5/2} + 32\,010\,778\,800\, z^2 + $$

$$ \left.\left.\left. 52\,783\,731\,000\, z^{3/2} + 69\,810\,741\,000\, z + 65\,128\,313\,250\sqrt{z} + 32\,564\,156\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7699.01

$$
{}_1F_2\left(6; -\frac{21}{4}, \frac{17}{4}; -z\right) =
$$

$$
\frac{1}{701\,890\,560\, z^{13/4}}\left(2\sqrt[4]{z}\,\left(-458\,752\, z^6 + 11\,304\,960\, z^5 + 254\,926\,080\, z^4 - 1\,505\,629\,440\, z^3 + 5\,221\,616\,400\, z^2 - \right.\right.
$$

$$
\left.\left. 17\,708\,090\,400\, z + 32\,564\,156\,625\right) +
$$

$$
\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(524\,288\, z^7 + 21\,626\,880\, z^6 + 149\,022\,720\, z^5 - 2\,754\,259\,200\, z^4 + 8\,801\,654\,400\, z^3 - \right.\right.
$$

$$
\left. 32\,010\,778\,800\, z^2 + 69\,810\,741\,000\, z - 32\,564\,156\,625\right)\cos\left(2\sqrt{z}\right) + 30\sqrt{z}\,\left(65\,536\, z^6 - 1\,318\,912\, z^5 - \right.
$$

$$
\left.\left. 33\,175\,296\, z^4 + 171\,642\,240\, z^3 - 559\,999\,440\, z^2 + 1\,759\,457\,700\, z - 2\,170\,943\,775\right)\sin\left(2\sqrt{z}\right)\right) +
$$

$$
\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(524\,288\, z^7 + 21\,626\,880\, z^6 + 149\,022\,720\, z^5 - 2\,754\,259\,200\, z^4 + 8\,801\,654\,400\, z^3 - \right.\right.
$$

$$
\left. 32\,010\,778\,800\, z^2 + 69\,810\,741\,000\, z - 32\,564\,156\,625\right)\sin\left(2\sqrt{z}\right) - 30\sqrt{z}\,\left(65\,536\, z^6 - 1\,318\,912\, z^5 - \right.
$$

$$
\left.\left.\left. 33\,175\,296\, z^4 + 171\,642\,240\, z^3 - 559\,999\,440\, z^2 + 1\,759\,457\,700\, z - 2\,170\,943\,775\right)\cos\left(2\sqrt{z}\right)\right)\right)
$$

07.22.03.7700.01

$$
{}_1F_2\left(6; -\frac{21}{4}, \frac{21}{4}; z\right) =
$$

$$
\frac{1}{1\,321\,205\,760\, z^{17/4}}\left(e^{-2\sqrt{z}}\,\left(8\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(262\,144\, z^7 - 3\,637\,248\, z^6 - 209\,280\,000\, z^5 - 1\,762\,133\,760\, z^4 - 15\,178\,363\,200\, z^3 - \right.\right.\right.
$$

$$
\left.\left. 115\,848\,532\,800\, z^2 - 524\,748\,123\,900\, z - 1\,149\,049\,526\,625\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\right.
$$

$$
\left(1\,048\,576\, z^{15/2} - 3\,932\,160\, z^7 - 15\,728\,640\, z^{13/2} + 181\,370\,880\, z^6 - 790\,179\,840\, z^{11/2} + 2\,355\,471\,360\, z^5 - \right.
$$

$$
6\,268\,838\,400\, z^{9/2} + 17\,911\,238\,400\, z^4 - 54\,041\,644\,800\, z^{7/2} + 155\,545\,790\,400\, z^3 - 402\,615\,813\,600\, z^{5/2} +
$$

$$
\left. 900\,972\,072\,000\, z^2 - 1\,662\,322\,662\,000\, z^{3/2} + 2\,363\,227\,366\,500\, z - 2\,298\,099\,053\,250\sqrt{z} + 1\,149\,049\,526\,625\right)
$$

$$
\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\left(-1\,048\,576\, z^{15/2} - 3\,932\,160\, z^7 + 15\,728\,640\, z^{13/2} + 181\,370\,880\, z^6 + \right.
$$

$$
790\,179\,840\, z^{11/2} + 2\,355\,471\,360\, z^5 + 6\,268\,838\,400\, z^{9/2} + 17\,911\,238\,400\, z^4 + 54\,041\,644\,800\, z^{7/2} +
$$

$$
155\,545\,790\,400\, z^3 + 402\,615\,813\,600\, z^{5/2} + 900\,972\,072\,000\, z^2 + 1\,662\,322\,662\,000\, z^{3/2} +
$$

$$
\left.\left. 2\,363\,227\,366\,500\, z + 2\,298\,099\,053\,250\sqrt{z} + 1\,149\,049\,526\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)
$$

07.22.03.7701.01

$$ {}_1F_2\left(6; -\frac{21}{4}, \frac{21}{4}; -z\right) = \frac{1}{330\,301\,440\, z^{17/4}}\left(-2\sqrt[4]{z}\left(262\,144\, z^7 + 3\,637\,248\, z^6 - 209\,280\,000\, z^5 + 1\,762\,133\,760\, z^4 - 15\,178\,363\,200\, z^3 + 115\,848\,532\,800\, z^2 - 524\,748\,123\,900\, z + 1\,149\,049\,526\,625\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(524\,288\, z^7 + 7\,864\,320\, z^6 - 395\,089\,920\, z^5 + 3\,134\,419\,200\, z^4 - 27\,020\,822\,400\, z^3 + 201\,307\,906\,800\, z^2 - 831\,161\,331\,000\, z + 1\,149\,049\,526\,625\right)\cos\left(2\sqrt{z}\right) - 15\left(262\,144\, z^7 + 12\,091\,392\, z^6 - 157\,031\,424\, z^5 + 1\,194\,082\,560\, z^4 - 10\,369\,719\,360\, z^3 + 60\,064\,804\,800\, z^2 - 157\,548\,491\,100\, z + 76\,603\,301\,775\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(262\,144\, z^7 + 12\,091\,392\, z^6 - 157\,031\,424\, z^5 + 1\,194\,082\,560\, z^4 - 10\,369\,719\,360\, z^3 + 60\,064\,804\,800\, z^2 - 157\,548\,491\,100\, z + 76\,603\,301\,775\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(524\,288\, z^7 + 7\,864\,320\, z^6 - 395\,089\,920\, z^5 + 3\,134\,419\,200\, z^4 - 27\,020\,822\,400\, z^3 + 201\,307\,906\,800\, z^2 - 831\,161\,331\,000\, z + 1\,149\,049\,526\,625\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 6$, $b_1 = -\frac{19}{4}$

07.22.03.7702.01

$$ {}_1F_2\left(6; -\frac{19}{4}, -\frac{17}{4}; z\right) = \frac{1}{9\,820\,936\,125}\left(e^{-2\sqrt{z}}\left(64\, e^{4\sqrt{z}}\sqrt{2\pi}\left(1024\, z^{5/2} + 47\,360\, z^2 + 824\,960\, z^{3/2} + 6\,736\,800\, z + 25\,666\,980\sqrt{z} + 36\,294\,225\right)\right.\right. \left.\left. \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{21/4} + 64\sqrt{2\pi}\left(1024\, z^{5/2} - 47\,360\, z^2 + 824\,960\, z^{3/2} - 6\,736\,800\, z + 25\,666\,980\sqrt{z} - 36\,294\,225\right)\right. \left. \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{21/4} + e^{2\sqrt{z}}\left(6\,029\,312\, z^7 + 837\,017\,600\, z^6 + 3\,963\,617\,280\, z^5 + 371\,589\,120\, z^4 + 361\,267\,200\, z^3 + 838\,252\,800\, z^2 + 2\,918\,916\,000\, z + 9\,820\,936\,125\right)\right)\right) $$

07.22.03.7703.01

$$ {}_1F_2\left(6; -\frac{19}{4}, -\frac{17}{4}; -z\right) = \frac{1}{9\,820\,936\,125}\left(-6\,029\,312\, z^7 + 837\,017\,600\, z^6 + 256\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\left(256\, z^2 - 206\,240\, z + 6\,416\,745\right)\sin\left(2\sqrt{z}\right) - 5\left(9472\, z^2 - 1\,347\,360\, z + 7\,258\,845\right)\cos\left(2\sqrt{z}\right)\right) z^{21/4} + 256\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\left(256\, z^2 - 206\,240\, z + 6\,416\,745\right)\cos\left(2\sqrt{z}\right) + 5\left(9472\, z^2 - 1\,347\,360\, z + 7\,258\,845\right)\sin\left(2\sqrt{z}\right)\right) z^{21/4} - 3\,963\,617\,280\, z^5 + 371\,589\,120\, z^4 - 361\,267\,200\, z^3 + 838\,252\,800\, z^2 - 2\,918\,916\,000\, z + 9\,820\,936\,125\right) $$

07.22.03.7704.01

$$ {}_1F_2\left(6; -\frac{19}{4}, -\frac{13}{4}; z\right) = \frac{1}{577\,702\,125}\left(e^{-2\sqrt{z}}\left(-8\,e^{4\sqrt{z}}\sqrt{2\pi}\left(2048 z^3 + 88\,576 z^{5/2} + 1\,428\,480 z^2 + 10\,616\,640 z^{3/2} + 35\,409\,000 z + 37\,179\,450\sqrt{z} - 18\,589\,725\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} + 8\sqrt{2\pi}\left(2048 z^3 - 88\,576 z^{5/2} + 1\,428\,480 z^2 - 10\,616\,640 z^{3/2} + 35\,409\,000 z - 37\,179\,450\sqrt{z} - 18\,589\,725\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} + e^{2\sqrt{z}}\left(-32\,768 z^7 - 22\,507\,520 z^6 - 528\,044\,160 z^5 + 371\,589\,120 z^4 + 72\,253\,440 z^3 + 93\,139\,200 z^2 + 224\,532\,000 z + 577\,702\,125\right)\right)\right) $$

07.22.03.7705.01

$$ {}_1F_2\left(6; -\frac{19}{4}, -\frac{13}{4}; -z\right) = \frac{1}{577\,702\,125}\left(32\,768 z^7 - 22\,507\,520 z^6 + 528\,044\,160 z^5 + 32\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048 z^3 - 1\,428\,480 z^2 + 35\,409\,000 z + 18\,589\,725\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(44\,288 z^2 - 5\,308\,320 z + 18\,589\,725\right)\sin\left(2\sqrt{z}\right)\right) z^{17/4} - 32\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048 z^3 - 1\,428\,480 z^2 + 35\,409\,000 z + 18\,589\,725\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\left(44\,288 z^2 - 5\,308\,320 z + 18\,589\,725\right)\cos\left(2\sqrt{z}\right)\right) z^{17/4} + 371\,589\,120 z^4 - 72\,253\,440 z^3 + 93\,139\,200 z^2 - 224\,532\,000 z + 577\,702\,125\right) $$

07.22.03.7706.01

$$ {}_1F_2\left(6; -\frac{19}{4}, -\frac{9}{4}; z\right) = \frac{1}{44\,438\,625}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(4096 z^{7/2} + 162\,816 z^3 + 2\,368\,512 z^{5/2} + 15\,312\,000 z^2 + 40\,194\,000 z^{3/2} + 14\,067\,900 z - 51\,247\,350\sqrt{z} + 25\,623\,675\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} + \sqrt{2\pi}\left(4096 z^{7/2} - 162\,816 z^3 + 2\,368\,512 z^{5/2} - 15\,312\,000 z^2 + 40\,194\,000 z^{3/2} - 14\,067\,900 z - 51\,247\,350\sqrt{z} - 25\,623\,675\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} + e^{2\sqrt{z}}\left(323\,584 z^6 + 29\,498\,880 z^5 + 12\,796\,560 z^4 + 72\,253\,440 z^3 + 18\,627\,840 z^2 + 24\,948\,000 z + 44\,438\,625\right)\right)\right) $$

07.22.03.7707.01

$$ {}_1F_2\left(6; -\frac{19}{4}, -\frac{9}{4}; -z\right) = \frac{1}{44\,438\,625} $$
$$ \left(323\,584\,z^6 - 29\,498\,880\,z^5 + 12\,796\,560\,z^4 - 4\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(2048\,z^3 - 1\,184\,256\,z^2 + 20\,097\,000\,z + 25\,623\,675\right)\right.\right. $$
$$ \left.\sin\left(2\sqrt{z}\right) - 3\left(54\,272\,z^3 - 5\,104\,000\,z^2 + 4\,689\,300\,z - 8\,541\,225\right)\cos\left(2\sqrt{z}\right)\right) z^{13/4} - $$
$$ 4\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(2048\,z^3 - 1\,184\,256\,z^2 + 20\,097\,000\,z + 25\,623\,675\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ 3\left(54\,272\,z^3 - 5\,104\,000\,z^2 + 4\,689\,300\,z - 8\,541\,225\right)\sin\left(2\sqrt{z}\right)\Big) z^{13/4} - $$
$$ \left.72\,253\,440\,z^3 + 18\,627\,840\,z^2 - 24\,948\,000\,z + 44\,438\,625\right) $$

07.22.03.7708.01

$$ {}_1F_2\left(6; -\frac{19}{4}, -\frac{5}{4}; z\right) = $$
$$ \frac{1}{39\,501\,000}\left(e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(8192\,z^4 + 292\,864\,z^{7/2} + 3\,712\,000\,z^3 + 19\,488\,000\,z^{5/2} + 31\,668\,000\,z^2 - \right.\right.\right. $$
$$ \left.35\,200\,200\,z^{3/2} - 49\,694\,400\,z + 100\,941\,750\sqrt{z} - 50\,470\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{9/4} + $$
$$ \sqrt{2\pi}\,\left(8192\,z^4 - 292\,864\,z^{7/2} + 3\,712\,000\,z^3 - 19\,488\,000\,z^{5/2} + 31\,668\,000\,z^2 + 35\,200\,200\,z^{3/2} - \right. $$
$$ \left.49\,694\,400\,z - 100\,941\,750\sqrt{z} - 50\,470\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{9/4} - $$
$$ \left.\left.8\,e^{2\sqrt{z}}\,\left(2048\,z^6 + 910\,080\,z^5 + 6\,856\,680\,z^4 - 9\,562\,770\,z^3 - 18\,627\,840\,z^2 - 4\,989\,600\,z - 4\,937\,625\right)\right)\right) $$

07.22.03.7709.01

$$ {}_1F_2\left(6; -\frac{19}{4}, -\frac{5}{4}; -z\right) = $$
$$ \frac{1}{9\,875\,250}\left(-\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4 - 3\,712\,000\,z^3 + 31\,668\,000\,z^2 + 49\,694\,400\,z - 50\,470\,875\right)\cos\left(2\sqrt{z}\right) + \right.\right. $$
$$ \left.2\sqrt{z}\,\left(146\,432\,z^3 - 9\,744\,000\,z^2 - 17\,600\,100\,z - 50\,470\,875\right)\sin\left(2\sqrt{z}\right)\right) z^{9/4} + $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4 - 3\,712\,000\,z^3 + 31\,668\,000\,z^2 + 49\,694\,400\,z - 50\,470\,875\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.2\sqrt{z}\,\left(146\,432\,z^3 - 9\,744\,000\,z^2 - 17\,600\,100\,z - 50\,470\,875\right)\cos\left(2\sqrt{z}\right)\right) z^{9/4} - $$
$$ \left.2\left(2048\,z^6 - 910\,080\,z^5 + 6\,856\,680\,z^4 + 9\,562\,770\,z^3 - 18\,627\,840\,z^2 + 4\,989\,600\,z - 4\,937\,625\right)\right) $$

07.22.03.7710.01

$$ {}_1F_2\left(6; -\frac{19}{4}, -\frac{1}{4}; z\right) = \frac{1}{63\,201\,600}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(16\,384 z^{9/2} + 512\,000 z^4 + 5\,376\,000 z^{7/2} + 20\,160\,000 z^3 + 2\,856\,000 z^{5/2} - 77\,540\,400 z^2 + 55\,692\,000 z^{3/2} + 118\,345\,500 z - 219\,287\,250\sqrt{z} + 109\,643\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} + \sqrt{2\pi}\left(16\,384 z^{9/2} - 512\,000 z^4 + 5\,376\,000 z^{7/2} - 20\,160\,000 z^3 + 2\,856\,000 z^{5/2} + 77\,540\,400 z^2 + 55\,692\,000 z^{3/2} - 118\,345\,500 z - 219\,287\,250\sqrt{z} - 109\,643\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} + 16 e^{2\sqrt{z}}\left(63\,488 z^5 + 2\,363\,520 z^4 - 9\,442\,440 z^3 + 11\,710\,755 z^2 + 19\,958\,400 z + 3\,950\,100\right)\right)\right) $$

07.22.03.7711.01

$$ {}_1F_2\left(6; -\frac{19}{4}, -\frac{1}{4}; -z\right) = \frac{1}{15\,800\,400}\left(\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(8192 z^4 - 2\,688\,000 z^3 + 1\,428\,000 z^2 - 27\,846\,000 z - 109\,643\,625\right)\sin\left(2\sqrt{z}\right) - 25\left(20\,480 z^4 - 806\,400 z^3 - 3\,101\,616 z^2 - 4\,733\,820 z + 4\,385\,745\right)\cos\left(2\sqrt{z}\right)\right) z^{5/4} + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(8192 z^4 - 2\,688\,000 z^3 + 1\,428\,000 z^2 - 27\,846\,000 z - 109\,643\,625\right)\cos\left(2\sqrt{z}\right) + 25\left(20\,480 z^4 - 806\,400 z^3 - 3\,101\,616 z^2 - 4\,733\,820 z + 4\,385\,745\right)\sin\left(2\sqrt{z}\right)\right) z^{5/4} + 4\left(-63\,488 z^5 + 2\,363\,520 z^4 + 9\,442\,440 z^3 + 11\,710\,755 z^2 - 19\,958\,400 z + 3\,950\,100\right)\right) $$

07.22.03.7712.01

$$ {}_1F_2\left(6; -\frac{19}{4}, \frac{3}{4}; z\right) = \frac{1}{505\,612\,800}\left(e^{-2\sqrt{z}}\left(-16 e^{2\sqrt{z}}\left(4096 z^5 + 834\,048 z^4 - 5\,145\,840 z^3 + 25\,914\,420 z^2 - 12\,563\,775 z - 31\,600\,800\right) + e^{4\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(-32\,768 z^5 - 860\,160 z^{9/2} - 6\,881\,280 z^4 - 12\,794\,880 z^{7/2} + 39\,070\,080 z^3 + 37\,870\,560 z^{5/2} - 206\,060\,400 z^2 + 175\,429\,800 z^{3/2} + 175\,429\,800 z - 394\,717\,050\sqrt{z} + 197\,358\,525\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\sqrt[4]{z}\left(32\,768 z^5 - 860\,160 z^{9/2} + 6\,881\,280 z^4 - 12\,794\,880 z^{7/2} - 39\,070\,080 z^3 + 37\,870\,560 z^{5/2} + 206\,060\,400 z^2 + 175\,429\,800 z^{3/2} - 175\,429\,800 z - 394\,717\,050\sqrt{z} - 197\,358\,525\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7713.01

$${}_1F_2\left(6; -\frac{19}{4}, \frac{3}{4}; -z\right) =$$

$$\frac{1}{126\,403\,200}\left(4\left(4096 z^5 - 834\,048 z^4 - 5\,145\,840 z^3 - 25\,914\,420 z^2 - 12\,563\,775 z + 31\,600\,800\right) + \sqrt{\pi}\ \sqrt[4]{z}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left(\left(32\,768 z^5 - 6\,881\,280 z^4 - 39\,070\,080 z^3 - 206\,060\,400 z^2 - 175\,429\,800 z + 197\,358\,525\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.210\sqrt{z}\left(4096 z^4 - 60\,928 z^3 - 180\,336 z^2 + 835\,380 z + 1\,879\,605\right)\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\ \sqrt[4]{z}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)$$
$$\left(\left(32\,768 z^5 - 6\,881\,280 z^4 - 39\,070\,080 z^3 - 206\,060\,400 z^2 - 175\,429\,800 z + 197\,358\,525\right)\sin\left(2\sqrt{z}\right) -\right.$$
$$\left.\left.210\sqrt{z}\left(4096 z^4 - 60\,928 z^3 - 180\,336 z^2 + 835\,380 z + 1\,879\,605\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7714.01

$${}_1F_2\left(6; -\frac{19}{4}, \frac{7}{4}; z\right) =$$

$$\frac{1}{1\,348\,300\,800 z^{3/4}}\left(e^{-2\sqrt{z}}\left(-16 e^{2\sqrt{z}}\ z^{3/4}\left(167\,936 z^4 - 905\,728 z^3 + 16\,112\,880 z^2 - 60\,901\,200 z - 49\,809\,375\right) - e^{4\sqrt{z}}\ \sqrt{2\pi}\right.\right.$$
$$\left(65\,536 z^{11/2} + 1\,359\,872 z^5 + 6\,963\,200 z^{9/2} - 5\,744\,640 z^4 - 55\,161\,600 z^{7/2} + 117\,324\,480 z^3 + 60\,147\,360 z^{5/2} -\right.$$
$$\left.501\,228\,000 z^2 + 651\,596\,400 z^{3/2} - 187\,960\,500 z - 206\,756\,550\sqrt{z} + 103\,378\,275\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) -$$
$$\sqrt{2\pi}\left(65\,536 z^{11/2} - 1\,359\,872 z^5 + 6\,963\,200 z^{9/2} + 5\,744\,640 z^4 - 55\,161\,600 z^{7/2} - 117\,324\,480 z^3 + 60\,147\,360\right.$$
$$\left.\left.\left.z^{5/2} + 501\,228\,000 z^2 + 651\,596\,400 z^{3/2} + 187\,960\,500 z - 206\,756\,550\sqrt{z} - 103\,378\,275\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.7715.01

$${}_1F_2\left(6; -\frac{19}{4}, \frac{7}{4}; -z\right) =$$

$$\frac{1}{337\,075\,200 z^{3/4}}\left(-4 z^{3/4}\left(167\,936 z^4 + 905\,728 z^3 + 16\,112\,880 z^2 + 60\,901\,200 z - 49\,809\,375\right) + \sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left(2\sqrt{z}\left(32\,768 z^5 - 3\,481\,600 z^4 - 27\,580\,800 z^3 - 30\,073\,680 z^2 + 325\,798\,200 z + 103\,378\,275\right)\sin\left(2\sqrt{z}\right) -\right.$$
$$\left.\left(1\,359\,872 z^5 + 5\,744\,640 z^4 + 117\,324\,480 z^3 + 501\,228\,000 z^2 - 187\,960\,500 z - 103\,378\,275\right)\cos\left(2\sqrt{z}\right)\right) + \sqrt{\pi}$$
$$C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(32\,768 z^5 - 3\,481\,600 z^4 - 27\,580\,800 z^3 - 30\,073\,680 z^2 + 325\,798\,200 z + 103\,378\,275\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.\left.\left(1\,359\,872 z^5 + 5\,744\,640 z^4 + 117\,324\,480 z^3 + 501\,228\,000 z^2 - 187\,960\,500 z - 103\,378\,275\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7716.01

$$ {}_1F_2\left(6; -\frac{19}{4}, \frac{11}{4}; z\right) = \frac{1}{1\,540\,915\,200\, z^{7/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(16\,384\, z^5 + 354\,304\, z^4 + 2\,835\,264\, z^3 - 64\,769\,760\, z^2 - 4\,801\,500\, z + 79\,053\,975\right) - e^{4\sqrt{z}}\, \sqrt{2\pi}\right.\right. $$
$$ \left(131\,072\, z^6 + 1\,933\,312\, z^{11/2} + 3\,293\,184\, z^5 - 27\,955\,200\, z^{9/2} + 15\,475\,200\, z^4 + 172\,748\,160\, z^{7/2} - 484\,323\,840\, z^3 + \right. $$
$$ \left. 450\,515\,520\, z^{5/2} + 176\,904\,000\, z^2 - 729\,729\,000\, z^{3/2} + 681\,080\,400\, z - 474\,323\,850\sqrt{z} + 237\,161\,925\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(131\,072\, z^6 - 1\,933\,312\, z^{11/2} + 3\,293\,184\, z^5 + 27\,955\,200\, z^{9/2} + \right. $$
$$ 15\,475\,200\, z^4 - 172\,748\,160\, z^{7/2} - 484\,323\,840\, z^3 - 450\,515\,520\, z^{5/2} + 176\,904\,000\, z^2 + $$
$$ \left.\left. 729\,729\,000\, z^{3/2} + 681\,080\,400\, z + 474\,323\,850\sqrt{z} + 237\,161\,925\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7717.01

$$ {}_1F_2\left(6; -\frac{19}{4}, \frac{11}{4}; -z\right) = $$
$$ \frac{1}{385\,228\,800\, z^{7/4}} \left(-4\, z^{3/4} \left(16\,384\, z^5 - 354\,304\, z^4 + 2\,835\,264\, z^3 + 64\,769\,760\, z^2 - 4\,801\,500\, z - 79\,053\,975\right) - \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(131\,072\, z^6 - 3\,293\,184\, z^5 + 15\,475\,200\, z^4 + \right.\right. $$
$$ \left. 484\,323\,840\, z^3 + 176\,904\,000\, z^2 - 681\,080\,400\, z + 237\,161\,925\right) \cos\left(2\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z} \left(966\,656\, z^5 + 13\,977\,600\, z^4 + 86\,374\,080\, z^3 - 225\,257\,760\, z^2 - 364\,864\,500\, z + 237\,161\,925\right) \sin\left(2\sqrt{z}\right)\right) + \right. $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(131\,072\, z^6 - 3\,293\,184\, z^5 + 15\,475\,200\, z^4 + 484\,323\,840\, z^3 + 176\,904\,000\, z^2 - \right.\right. $$
$$ \left. 681\,080\,400\, z + 237\,161\,925\right) \sin\left(2\sqrt{z}\right) - $$
$$ \left.\left.\left. 2\sqrt{z} \left(966\,656\, z^5 + 13\,977\,600\, z^4 + 86\,374\,080\, z^3 - 225\,257\,760\, z^2 - 364\,864\,500\, z + 237\,161\,925\right) \cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7718.01

$$ {}_1F_2\left(6; -\frac{19}{4}, \frac{15}{4}; z\right) = \frac{1}{1\,120\,665\,600\, z^{11/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(262\,144\, z^5 - 2\,353\,152\, z^4 - 37\,059\,840\, z^3 + 67\,269\,600\, z^2 + 340\,540\,200\, z + 638\,512\,875\right) - \right.\right. $$
$$ e^{4\sqrt{z}}\, \sqrt{2\pi} \left(262\,144\, z^{13/2} + 2\,162\,688\, z^6 - 6\,389\,760\, z^{11/2} - 20\,766\,720\, z^5 + 134\,784\,000\, z^{9/2} - \right. $$
$$ 261\,031\,680\, z^4 + 75\,479\,040\, z^{7/2} + 636\,854\,400\, z^3 - 1\,556\,755\,200\, z^{5/2} + 2\,432\,430\,000\, z^2 - $$
$$ \left. 3\,502\,699\,200\, z^{3/2} + 4\,305\,401\,100\, z - 3\,831\,077\,250\sqrt{z} + 1\,915\,538\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi} \left(-262\,144\, z^{13/2} + 2\,162\,688\, z^6 + 6\,389\,760\, z^{11/2} - 20\,766\,720\, z^5 - 134\,784\,000\, z^{9/2} - \right. $$
$$ 261\,031\,680\, z^4 - 75\,479\,040\, z^{7/2} + 636\,854\,400\, z^3 + 1\,556\,755\,200\, z^{5/2} + 2\,432\,430\,000\, z^2 + $$
$$ \left.\left. 3\,502\,699\,200\, z^{3/2} + 4\,305\,401\,100\, z + 3\,831\,077\,250\sqrt{z} + 1\,915\,538\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7719.01

$$ {}_1F_2\left(6; -\frac{19}{4}, \frac{15}{4}; -z\right) = \frac{1}{280\,166\,400\, z^{11/4}} $$
$$ \left(4\, z^{3/4}\left(262\,144\, z^5 + 2\,353\,152\, z^4 - 37\,059\,840\, z^3 - 67\,269\,600\, z^2 + 340\,540\,200\, z - 638\,512\,875\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right. $$
$$ \left(3\left(720\,896\, z^6 + 6\,922\,240\, z^5 - 87\,010\,560\, z^4 - 212\,284\,800\, z^3 + 810\,810\,000\, z^2 - 1\,435\,133\,700\, z + 638\,512\,875\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(131\,072\, z^6 + 3\,194\,880\, z^5 + 67\,392\,000\, z^4 - 37\,739\,520\, z^3 - \right. $$
$$ \left.\left. 778\,377\,600\, z^2 + 1\,751\,349\,600\, z - 1\,915\,538\,625\right)\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left(2\sqrt{z}\,\left(131\,072\, z^6 + 3\,194\,880\, z^5 + 67\,392\,000\, z^4 - 37\,739\,520\, z^3 - 778\,377\,600\, z^2 + 1\,751\,349\,600\, z - 1\,915\,538\,625\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + 3\left(720\,896\, z^6 + 6\,922\,240\, z^5 - 87\,010\,560\, z^4 - 212\,284\,800\, z^3 + \right. $$
$$ \left.\left.\left. 810\,810\,000\, z^2 - 1\,435\,133\,700\, z + 638\,512\,875\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7720.01

$$ {}_1F_2\left(6; -\frac{19}{4}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{597\,688\,320\, z^{15/4}}\left(e^{-2\sqrt{z}}\left(-16\, e^{2\sqrt{z}}\, z^{3/4}\left(65\,536\, z^6 - 2\,138\,112\, z^5 - 10\,325\,760\, z^4 + 133\,895\,040\, z^3 + 1\,005\,404\,400\, z^2 + \right.\right.\right. $$
$$ \left. 5\,067\,562\,500\, z + 13\,266\,878\,625\right) - e^{4\sqrt{z}}\,\sqrt{2\pi} $$
$$ \left(524\,288\, z^7 + 655\,360\, z^{13/2} - 17\,039\,360\, z^6 + 60\,702\,720\, z^{11/2} - 64\,296\,960\, z^5 - 200\,578\,560\, z^{9/2} + 1\,053\,561\,600\, z^4 - \right. $$
$$ 2\,940\,537\,600\, z^{7/2} + 7\,178\,371\,200\, z^3 - 16\,670\,253\,600\, z^{5/2} + 34\,670\,235\,600\, z^2 - 60\,729\,669\,000\, z^{3/2} + $$
$$ \left. 83\,432\,349\,000\, z - 79\,601\,271\,750\,\sqrt{z} + 39\,800\,635\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\,\left(524\,288\, z^7 - 655\,360\, z^{13/2} - 17\,039\,360\, z^6 - 60\,702\,720\, z^{11/2} - 64\,296\,960\, z^5 + 200\,578\,560\, z^{9/2} + \right. $$
$$ 1\,053\,561\,600\, z^4 + 2\,940\,537\,600\, z^{7/2} + 7\,178\,371\,200\, z^3 + 16\,670\,253\,600\, z^{5/2} + 34\,670\,235\,600\, z^2 + $$
$$ \left.\left. 60\,729\,669\,000\, z^{3/2} + 83\,432\,349\,000\, z + 79\,601\,271\,750\,\sqrt{z} + 39\,800\,635\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7721.01

$$ {}_1F_2\left(6; -\frac{19}{4}, \frac{19}{4}; -z\right) = \frac{1}{149\,422\,080\, z^{15/4}} $$

$$ \left(4 z^{3/4} \left(65\,536 z^6 + 2\,138\,112 z^5 - 10\,325\,760 z^4 - 133\,895\,040 z^3 + 1\,005\,404\,400 z^2 - 5\,067\,562\,500 z + 13\,266\,878\,625\right) + \right. $$

$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(524\,288 z^7 + 17\,039\,360 z^6 - 64\,296\,960 z^5 - 1\,053\,561\,600 z^4 + 7\,178\,371\,200 z^3 - \right.\right. $$

$$ \left.\left. 34\,670\,235\,600 z^2 + 83\,432\,349\,000 z - 39\,800\,635\,875\right) \cos\left(2\sqrt{z}\right) + 10\sqrt{z}\, \left(65\,536 z^6 - 6\,070\,272 z^5 - \right. \right. $$

$$ \left.\left. 20\,057\,856 z^4 + 294\,053\,760 z^3 - 1\,667\,025\,360 z^2 + 6\,072\,966\,900 z - 7\,960\,127\,175\right) \sin\left(2\sqrt{z}\right)\right) - $$

$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(524\,288 z^7 + 17\,039\,360 z^6 - 64\,296\,960 z^5 - 1\,053\,561\,600 z^4 + 7\,178\,371\,200 z^3 - \right.\right. $$

$$ \left.\left. 34\,670\,235\,600 z^2 + 83\,432\,349\,000 z - 39\,800\,635\,875\right) \sin\left(2\sqrt{z}\right) - 10\sqrt{z}\, \left(65\,536 z^6 - 6\,070\,272 z^5 - \right. \right. $$

$$ \left.\left. \left. 20\,057\,856 z^4 + 294\,053\,760 z^3 - 1\,667\,025\,360 z^2 + 6\,072\,966\,900 z - 7\,960\,127\,175\right) \cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7722.01

$$ {}_1F_2\left(6; -\frac{19}{4}, \frac{23}{4}; z\right) = $$

$$ \frac{1}{251\,658\,240\, z^{19/4}} \left(e^{-2\sqrt{z}} \left(16 e^{2\sqrt{z}}\, z^{3/4} \left(851\,968 z^6 - 5\,038\,080 z^5 - 235\,418\,880 z^4 - 3\,355\,672\,320 z^3 - 36\,356\,720\,400 z^2 - \right.\right.\right. $$

$$ \left.\left.\left. 242\,594\,352\,000 z - 756\,212\,081\,625\right) - e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(1\,048\,576 z^{15/2} - 6\,553\,600 z^7 + 11\,796\,480 z^{13/2} + \right.\right. $$

$$ 44\,728\,320 z^6 - 396\,963\,840 z^{11/2} + 1\,782\,144\,000 z^5 - 6\,803\,596\,800 z^{9/2} + 24\,735\,110\,400 z^4 - $$

$$ 84\,583\,699\,200 z^{7/2} + 262\,702\,440\,000 z^3 - 718\,766\,848\,800 z^{5/2} + 1\,675\,457\,784\,000 z^2 - $$

$$ \left.\left. 3\,184\,050\,870\,000 z^{3/2} + 4\,616\,873\,761\,500 z - 4\,537\,272\,489\,750\sqrt{z} + 2\,268\,636\,244\,875\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \right. $$

$$ \sqrt{2\pi}\, \left(-1\,048\,576 z^{15/2} - 6\,553\,600 z^7 - 11\,796\,480 z^{13/2} + 44\,728\,320 z^6 + 396\,963\,840 z^{11/2} + \right. $$

$$ 1\,782\,144\,000 z^5 + 6\,803\,596\,800 z^{9/2} + 24\,735\,110\,400 z^4 + 84\,583\,699\,200 z^{7/2} + $$

$$ 262\,702\,440\,000 z^3 + 718\,766\,848\,800 z^{5/2} + 1\,675\,457\,784\,000 z^2 + 3\,184\,050\,870\,000 z^{3/2} + $$

$$ \left.\left. 4\,616\,873\,761\,500 z + 4\,537\,272\,489\,750\sqrt{z} + 2\,268\,636\,244\,875\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7723.01

$$ {}_1F_2\left(6; -\frac{19}{4}, \frac{23}{4}; -z\right) = \frac{1}{62\,914\,560\, z^{19/4}}\left(4 z^{3/4}\left(851\,968 z^6 + 5\,038\,080 z^5 - 235\,418\,880 z^4 + 3\,355\,672\,320 z^3 - 36\,356\,720\,400 z^2 + 242\,594\,352\,000 z - 756\,212\,081\,625\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(5\left(1\,310\,720 z^7 + 8\,945\,664 z^6 - 356\,428\,800 z^5 + 4\,947\,022\,080 z^4 - 52\,540\,488\,000 z^3 + 335\,091\,556\,800 z^2 - 923\,374\,752\,300 z + 453\,727\,248\,975\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(524\,288 z^7 - 5\,898\,240 z^6 - 198\,481\,920 z^5 + 3\,401\,798\,400 z^4 - 42\,291\,849\,600 z^3 + 359\,383\,424\,400 z^2 - 1\,592\,025\,435\,000 z + 2\,268\,636\,244\,875\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(524\,288 z^7 - 5\,898\,240 z^6 - 198\,481\,920 z^5 + 3\,401\,798\,400 z^4 - 42\,291\,849\,600 z^3 + 359\,383\,424\,400 z^2 - 1\,592\,025\,435\,000 z + 2\,268\,636\,244\,875\right)\cos\left(2\sqrt{z}\right) - 5\left(1\,310\,720 z^7 + 8\,945\,664 z^6 - 356\,428\,800 z^5 + 4\,947\,022\,080 z^4 - 52\,540\,488\,000 z^3 + 335\,091\,556\,800 z^2 - 923\,374\,752\,300 z + 453\,727\,248\,975\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 6$, $b_1 = -\frac{17}{4}$

07.22.03.7724.01

$$ {}_1F_2\left(6; -\frac{17}{4}, -\frac{15}{4}; z\right) = \frac{1}{516\,891\,375}\left(e^{-2\sqrt{z}}\left(-16 e^{4\sqrt{z}}\sqrt{2\pi}\left(1024 z^{5/2} + 44\,800 z^2 + 735\,360 z^{3/2} + 5\,633\,760 z + 20\,033\,220\sqrt{z} + 26\,277\,615\right)\right.\right. \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{19/4} + 16\sqrt{2\pi}\left(1024 z^{5/2} - 44\,800 z^2 + 735\,360 z^{3/2} - 5\,633\,760 z + 20\,033\,220\sqrt{z} - 26\,277\,615\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{19/4} + e^{2\sqrt{z}}\left(-32\,768 z^7 - 23\,179\,264 z^6 - 600\,082\,560 z^5 + 123\,863\,040 z^4 + 51\,609\,600 z^3 + 76\,204\,800 z^2 + 194\,594\,400 z + 516\,891\,375\right)\Big)\Big) $$

07.22.03.7725.01

$$ {}_1F_2\left(6; -\frac{17}{4}, -\frac{15}{4}; -z\right) = \frac{1}{516\,891\,375}\left(32\,768 z^7 - 23\,179\,264 z^6 + 600\,082\,560 z^5 - 64\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\left(256 z^2 - 183\,840 z + 5\,008\,305\right)\sin\left(2\sqrt{z}\right) - 5\left(8960 z^2 - 1\,126\,752 z + 5\,255\,523\right)\cos\left(2\sqrt{z}\right)\right) z^{19/4} + 64\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\left(256 z^2 - 183\,840 z + 5\,008\,305\right)\cos\left(2\sqrt{z}\right) + 5\left(8960 z^2 - 1\,126\,752 z + 5\,255\,523\right)\sin\left(2\sqrt{z}\right)\right) z^{19/4} + 123\,863\,040 z^4 - 51\,609\,600 z^3 + 76\,204\,800 z^2 - 194\,594\,400 z + 516\,891\,375\right) $$

07.22.03.7726.01

$$ {}_1F_2\left(6; -\frac{17}{4}, -\frac{11}{4}; z\right) = \frac{1}{34\,459\,425} $$
$$ \left(e^{-2\sqrt{z}}\left(2\,e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(2048\,z^3+83\,456\,z^{5/2}+1\,262\,080\,z^2+8\,743\,360\,z^{3/2}+26\,951\,400\,z+25\,603\,830\,\sqrt{z}-12\,801\,915\right)\right.\right. $$
$$ \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+2\,\sqrt{2\pi}\,\left(2048\,z^3-83\,456\,z^{5/2}+1\,262\,080\,z^2-\right. $$
$$ \left.\left.8\,743\,360\,z^{3/2}+26\,951\,400\,z-25\,603\,830\,\sqrt{z}-12\,801\,915\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+ $$
$$ \left.\left.3\,e^{2\sqrt{z}}\,\left(110\,592\,z^6+11\,257\,344\,z^5+26\,989\,200\,z^4+5\,734\,400\,z^3+3\,628\,800\,z^2+5\,896\,800\,z+11\,486\,475\right)\right)\right) $$

07.22.03.7727.01

$$ {}_1F_2\left(6; -\frac{17}{4}, -\frac{11}{4}; -z\right) = $$
$$ \frac{1}{34\,459\,425}\left(-8\,\sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3-1\,262\,080\,z^2+26\,951\,400\,z+12\,801\,915\right)\cos\left(2\,\sqrt{z}\right)+2\,\sqrt{z}\right.\right. $$
$$ \left.\left(41\,728\,z^2-4\,371\,680\,z+12\,801\,915\right)\sin\left(2\,\sqrt{z}\right)\right)z^{15/4}- $$
$$ 8\,\sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3-1\,262\,080\,z^2+26\,951\,400\,z+12\,801\,915\right)\sin\left(2\,\sqrt{z}\right)-\right. $$
$$ \left.2\,\sqrt{z}\,\left(41\,728\,z^2-4\,371\,680\,z+12\,801\,915\right)\cos\left(2\,\sqrt{z}\right)\right)z^{15/4}+ $$
$$ \left.3\left(110\,592\,z^6-11\,257\,344\,z^5+26\,989\,200\,z^4-5\,734\,400\,z^3+3\,628\,800\,z^2-5\,896\,800\,z+11\,486\,475\right)\right) $$

07.22.03.7728.01

$$ {}_1F_2\left(6; -\frac{17}{4}, -\frac{7}{4}; z\right) = $$
$$ \frac{1}{12\,530\,700}\left(e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^{7/2}+152\,576\,z^3+2\,066\,432\,z^{5/2}+12\,320\,640\,z^2+29\,261\,520\,z^{3/2}+7\,315\,380\,z-\right.\right.\right. $$
$$ \left.\left.32\,919\,210\,\sqrt{z}+16\,459\,605\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+\sqrt{2\pi}\,\left(4096\,z^{7/2}-152\,576\,z^3+2\,066\,432\,z^{5/2}-\right. $$
$$ \left.\left.12\,320\,640\,z^2+29\,261\,520\,z^{3/2}-7\,315\,380\,z-32\,919\,210\,\sqrt{z}-16\,459\,605\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}- $$
$$ \left.\left.4\,e^{2\sqrt{z}}\,\left(2048\,z^6+1\,014\,528\,z^5+13\,267\,368\,z^4-15\,716\,010\,z^3-3\,628\,800\,z^2-2\,527\,200\,z-3\,132\,675\right)\right)\right) $$

07.22.03.7729.01

$$ {}_1F_2\left(6; -\frac{17}{4}, -\frac{7}{4}; -z\right) = \frac{1}{3\,132\,675}\left(-2048\,z^6 + 1\,014\,528\,z^5 - 13\,267\,368\,z^4 - 15\,716\,010\,z^3 + \sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-152\,576\,z^3 + 12\,320\,640\,z^2 - 7\,315\,380\,z + 16\,459\,605\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(2048\,z^3 - 1\,033\,216\,z^2 + 14\,630\,760\,z + 16\,459\,605\right)\sin\left(2\sqrt{z}\right)\right)z^{11/4} - \sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2048\,z^3 - 1\,033\,216\,z^2 + 14\,630\,760\,z + 16\,459\,605\right)\cos\left(2\sqrt{z}\right) + \left(152\,576\,z^3 - 12\,320\,640\,z^2 + 7\,315\,380\,z - 16\,459\,605\right)\sin\left(2\sqrt{z}\right)\right)z^{11/4} + 3\,628\,800\,z^2 - 2\,527\,200\,z + 3\,132\,675\right) $$

07.22.03.7730.01

$$ {}_1F_2\left(6; -\frac{17}{4}, -\frac{3}{4}; z\right) = \frac{1}{14\,320\,800}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\ \sqrt{2\pi}\left(8192\,z^4 + 272\,384\,z^{7/2} + 3\,179\,520\,z^3 + 15\,102\,720\,z^{5/2} + 20\,766\,240\,z^2 - 26\,901\,720\,z^{3/2} - 25\,485\,840\,z + 58\,405\,050\sqrt{z} - 29\,202\,525\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{7/4} + \sqrt{2\pi}\left(8192\,z^4 - 272\,384\,z^{7/2} + 3\,179\,520\,z^3 - 15\,102\,720\,z^{5/2} + 20\,766\,240\,z^2 + 26\,901\,720\,z^{3/2} - 25\,485\,840\,z - 58\,405\,050\sqrt{z} - 29\,202\,525\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{7/4} + 24\,e^{2\sqrt{z}}\left(22\,528\,z^5 + 1\,196\,416\,z^4 - 2\,491\,880\,z^3 + 4\,895\,775\,z^2 + 1\,123\,200\,z + 596\,700\right)\right)\right) $$

07.22.03.7731.01

$$ {}_1F_2\left(6; -\frac{17}{4}, -\frac{3}{4}; -z\right) = \frac{1}{3\,580\,200}\left(\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4 - 3\,179\,520\,z^3 + 20\,766\,240\,z^2 + 25\,485\,840\,z - 29\,202\,525\right)\cos\left(2\sqrt{z}\right) + 38\sqrt{z}\left(7168\,z^3 - 397\,440\,z^2 - 707\,940\,z - 1\,536\,975\right)\sin\left(2\sqrt{z}\right)\right)z^{7/4} + \sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4 - 3\,179\,520\,z^3 + 20\,766\,240\,z^2 + 25\,485\,840\,z - 29\,202\,525\right)\sin\left(2\sqrt{z}\right) - 38\sqrt{z}\left(7168\,z^3 - 397\,440\,z^2 - 707\,940\,z - 1\,536\,975\right)\cos\left(2\sqrt{z}\right)\right)z^{7/4} + 6\left(-22\,528\,z^5 + 1\,196\,416\,z^4 + 2\,491\,880\,z^3 + 4\,895\,775\,z^2 - 1\,123\,200\,z + 596\,700\right)\right) $$

07.22.03.7732.01

$$ {}_1F_2\left(6; -\frac{17}{4}, \frac{1}{4}; z\right) = \frac{1}{38\,188\,800}\left(e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\left(4096\,z^5 + 1\,090\,048\,z^4 - 1\,249\,520\,z^3 + 13\,981\,860\,z^2 - 26\,040\,375\,z - 4\,773\,600\right) - e^{4\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(16\,384\,z^{9/2} + 471\,040\,z^4 + 4\,474\,880\,z^{7/2} + 14\,543\,360\,z^3 - 2\,097\,600\,z^{5/2} - 48\,559\,440\,z^2 + 46\,147\,200\,z^{3/2} + 47\,589\,300\,z - 105\,994\,350\sqrt{z} + 52\,997\,175\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\,z^{3/4}\left(16\,384\,z^{9/2} - 471\,040\,z^4 + 4\,474\,880\,z^{7/2} - 14\,543\,360\,z^3 - 2\,097\,600\,z^{5/2} + 48\,559\,440\,z^2 + 46\,147\,200\,z^{3/2} - 47\,589\,300\,z - 105\,994\,350\sqrt{z} - 52\,997\,175\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7733.01

$$ {}_1F_2\left(6; -\frac{17}{4}, \frac{1}{4}; -z\right) = \frac{1}{9\,547\,200}\left(8192\,z^5 - 2\,180\,096\,z^4 - 2\,499\,040\,z^3 - 27\,963\,720\,z^2 - 52\,080\,750\,z + \sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(8192\,z^4 - 2\,237\,440\,z^3 - 1\,048\,800\,z^2 - 23\,073\,600\,z - 52\,997\,175\right)\cos\left(2\sqrt{z}\right) + 115\left(4096\,z^4 - 126\,464\,z^3 - 422\,256\,z^2 - 413\,820\,z + 460\,845\right)\sin\left(2\sqrt{z}\right)\right)z^{3/4} - \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(8192\,z^4 - 2\,237\,440\,z^3 - 1\,048\,800\,z^2 - 23\,073\,600\,z - 52\,997\,175\right)\sin\left(2\sqrt{z}\right) - 115\left(4096\,z^4 - 126\,464\,z^3 - 422\,256\,z^2 - 413\,820\,z + 460\,845\right)\cos\left(2\sqrt{z}\right)\right)z^{3/4} + 9\,547\,200\right) $$

07.22.03.7734.01

$$ {}_1F_2\left(6; -\frac{17}{4}, \frac{5}{4}; z\right) = \frac{1}{305\,510\,400\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(192\,512\,z^4 + 1\,518\,080\,z^3 - 28\,080\,z^2 - 37\,977\,840\,z + 24\,025\,275\right) - e^{4\sqrt{z}}\sqrt{2\pi}\left(32\,768\,z^5 + 778\,240\,z^{9/2} + 5\,447\,680\,z^4 + 7\,296\,000\,z^{7/2} - 29\,731\,200\,z^3 - 7\,925\,280\,z^{5/2} + 112\,107\,600\,z^2 - 129\,036\,600\,z^{3/2} - 18\,433\,800\,z + 124\,428\,150\sqrt{z} - 62\,214\,075\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\left(-32\,768\,z^5 + 778\,240\,z^{9/2} - 5\,447\,680\,z^4 + 7\,296\,000\,z^{7/2} + 29\,731\,200\,z^3 - 7\,925\,280\,z^{5/2} - 112\,107\,600\,z^2 - 129\,036\,600\,z^{3/2} + 18\,433\,800\,z + 124\,428\,150\sqrt{z} + 62\,214\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7735.01

$$ {}_1F_2\left(6; -\frac{17}{4}, \frac{5}{4}; -z\right) = \frac{1}{76\,377\,600\sqrt[4]{z}}\left(-2\sqrt[4]{z}\left(192\,512 z^4 - 1\,518\,080 z^3 - 28\,080 z^2 + 37\,977\,840 z + 24\,025\,275\right) + \right.$$
$$\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768 z^5 - 5\,447\,680 z^4 - 29\,731\,200 z^3 - 112\,107\,600 z^2 - 18\,433\,800 z + 62\,214\,075\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\left. 190\sqrt{z}\left(4096 z^4 - 38\,400 z^3 - 41\,712 z^2 + 679\,140 z + 654\,885\right)\sin\left(2\sqrt{z}\right)\right) + \right.$$
$$\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768 z^5 - 5\,447\,680 z^4 - 29\,731\,200 z^3 - 112\,107\,600 z^2 - 18\,433\,800 z + 62\,214\,075\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$\left.\left.\left. 190\sqrt{z}\left(4096 z^4 - 38\,400 z^3 - 41\,712 z^2 + 679\,140 z + 654\,885\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7736.01

$$ {}_1F_2\left(6; -\frac{17}{4}, \frac{9}{4}; z\right) =$$
$$\frac{1}{488\,816\,640 z^{5/4}}\left(e^{-2\sqrt{z}}\left(-8 e^{2\sqrt{z}}\sqrt[4]{z}\left(16\,384 z^5 + 1\,157\,120 z^4 - 6\,701\,760 z^3 - 15\,216\,480 z^2 + 77\,733\,540 z + 36\,018\,675\right) - \right.\right.$$
$$e^{4\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^{11/2} + 1\,196\,032 z^5 + 4\,915\,200 z^{9/2} - 7\,526\,400 z^4 - 29\,356\,800 z^{7/2} + 86\,898\,240 z^3 - 36\,479\,520\right.$$
$$\left. z^{5/2} - 166\,874\,400 z^2 + 296\,881\,200 z^{3/2} - 196\,465\,500 z + 72\,037\,350\sqrt{z} - 36\,018\,675\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$\left.\left.\sqrt{2\pi}\left(65\,536 z^{11/2} - 1\,196\,032 z^5 + 4\,915\,200 z^{9/2} + 7\,526\,400 z^4 - 29\,356\,800 z^{7/2} - 86\,898\,240 z^3 - 36\,479\,520 z^{5/2} + \right.\right.\right.$$
$$\left.\left.\left. 166\,874\,400 z^2 + 296\,881\,200 z^{3/2} + 196\,465\,500 z + 72\,037\,350\sqrt{z} + 36\,018\,675\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7737.01

$$ {}_1F_2\left(6; -\frac{17}{4}, \frac{9}{4}; -z\right) =$$
$$\frac{1}{122\,204\,160 z^{5/4}}\left(2\sqrt[4]{z}\left(-16\,384 z^5 + 1\,157\,120 z^4 + 6\,701\,760 z^3 - 15\,216\,480 z^2 - 77\,733\,540 z + 36\,018\,675\right) - \right.$$
$$\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(1\,196\,032 z^5 + 7\,526\,400 z^4 + 86\,898\,240 z^3 + 166\,874\,400 z^2 - 196\,465\,500 z + 36\,018\,675\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\left. 2\sqrt{z}\left(-32\,768 z^5 + 2\,457\,600 z^4 + 14\,678\,400 z^3 - 18\,239\,760 z^2 - 148\,440\,600 z + 36\,018\,675\right)\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\right.$$
$$S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(32\,768 z^5 - 2\,457\,600 z^4 - 14\,678\,400 z^3 + 18\,239\,760 z^2 + 148\,440\,600 z - 36\,018\,675\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\left.\left.\left(1\,196\,032 z^5 + 7\,526\,400 z^4 + 86\,898\,240 z^3 + 166\,874\,400 z^2 - 196\,465\,500 z + 36\,018\,675\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7738.01

$$ {}_1F_2\left(6; -\frac{17}{4}, \frac{13}{4}; z\right) = \frac{1}{434\,503\,680\, z^{9/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(-24\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(131\,072\, z^5 - 1\,669\,120\, z^4 + 3\,034\,880\, z^3 + 36\,830\,560\, z^2 + 44\,823\,240\, z + 52\,026\,975\right) - \right.\right. $$
$$ e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(131\,072\, z^6 + 1\,605\,632\, z^{11/2} + 999\,424\, z^5 - 20\,049\,920\, z^{9/2} + 31\,511\,040\, z^4 + 47\,752\,320\, z^{7/2} - \right. $$
$$ 240\,092\,160\, z^3 + 386\,527\,680\, z^{5/2} - 372\,556\,800\, z^2 + 352\,182\,600\, z^{3/2} - 384\,199\,200\, z + $$
$$ \left. 312\,161\,850\, \sqrt{z} - 156\,080\,925\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(-131\,072\, z^6 + 1\,605\,632\, z^{11/2} - \right. $$
$$ \left.\left. \left. 999\,424\, z^5 - 20\,049\,920\, z^{9/2} - 31\,511\,040\, z^4 + 47\,752\,320\, z^{7/2} + 240\,092\,160\, z^3 + 386\,527\,680\, z^{5/2} + \right.\right. \right. $$
$$ \left.\left.\left. 372\,556\,800\, z^2 + 352\,182\,600\, z^{3/2} + 384\,199\,200\, z + 312\,161\,850\, \sqrt{z} + 156\,080\,925\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7739.01

$$ {}_1F_2\left(6; -\frac{17}{4}, \frac{13}{4}; -z\right) = $$
$$ \frac{1}{108\,625\,920\, z^{9/4}} \left(6\, \sqrt[4]{z}\, \left(131\,072\, z^5 + 1\,669\,120\, z^4 + 3\,034\,880\, z^3 - 36\,830\,560\, z^2 + 44\,823\,240\, z - 52\,026\,975\right) - \sqrt{\pi}\right. $$
$$ C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(131\,072\, z^6 - 999\,424\, z^5 + 31\,511\,040\, z^4 + 240\,092\,160\, z^3 - 372\,556\,800\, z^2 + 384\,199\,200\, z - 156\,080\,925\right) \right. $$
$$ \cos\left(2\, \sqrt{z}\right) + 2\, \sqrt{z}\, \left(802\,816\, z^5 + 10\,024\,960\, z^4 + 23\,876\,160\, z^3 - 193\,263\,840\, z^2 + 176\,091\,300\, z - 156\,080\,925\right) $$
$$ \left. \sin\left(2\, \sqrt{z}\right)\right) - \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left(\left(131\,072\, z^6 - 999\,424\, z^5 + 31\,511\,040\, z^4 + 240\,092\,160\, z^3 - 372\,556\,800\, z^2 + 384\,199\,200\, z - 156\,080\,925\right) \sin\left(2\, \sqrt{z}\right) - \right. $$
$$ \left. \left. 2\, \sqrt{z}\, \left(802\,816\, z^5 + 10\,024\,960\, z^4 + 23\,876\,160\, z^3 - 193\,263\,840\, z^2 + 176\,091\,300\, z - 156\,080\,925\right) \cos\left(2\, \sqrt{z}\right)\right)\right) $$

07.22.03.7740.01

$$ {}_1F_2\left(6; -\frac{17}{4}, \frac{17}{4}; z\right) = $$
$$ \frac{1}{267\,386\,880\, z^{13/4}} \left(e^{-2\sqrt{z}} \left(-8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(65\,536\, z^6 - 1\,843\,200\, z^5 + 17\,137\,920\, z^4 + 114\,564\,480\, z^3 + 338\,793\,840\, z^2 + \right.\right.\right. $$
$$ 1\,078\,377\,300\, z + 1\,915\,538\,625\right) - e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(262\,144\, z^{13/2} + 1\,507\,328\, z^6 - 7\,045\,120\, z^{11/2} - \right. $$
$$ 1\,351\,680\, z^5 + 69\,780\,480\, z^{9/2} - 218\,507\,520\, z^4 + 393\,845\,760\, z^{7/2} - 605\,404\,800\, z^3 + 1\,071\,100\,800\, z^{5/2} - $$
$$ \left. 1\,973\,386\,800\, z^2 + 3\,178\,375\,200\, z^{3/2} - 4\,143\,239\,100\, z + 3\,831\,077\,250\, \sqrt{z} - 1\,915\,538\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\, \left(262\,144\, z^{13/2} - 1\,507\,328\, z^6 - 7\,045\,120\, z^{11/2} + 1\,351\,680\, z^5 + 69\,780\,480\, z^{9/2} + 218\,507\,520\, z^4 + \right. $$
$$ 393\,845\,760\, z^{7/2} + 605\,404\,800\, z^3 + 1\,071\,100\,800\, z^{5/2} + 1\,973\,386\,800\, z^2 + $$
$$ \left.\left.\left. 3\,178\,375\,200\, z^{3/2} + 4\,143\,239\,100\, z + 3\,831\,077\,250\, \sqrt{z} + 1\,915\,538\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7741.01

$$ {}_1F_2\left(6; -\frac{17}{4}, \frac{17}{4}; -z\right) = \frac{1}{66\,846\,720\, z^{13/4}} $$

$$ \left(2\sqrt[4]{z}\,\left(65\,536\, z^6 + 1\,843\,200\, z^5 + 17\,137\,920\, z^4 - 114\,564\,480\, z^3 + 338\,793\,840\, z^2 - 1\,078\,377\,300\, z + 1\,915\,538\,625\right) - \right. $$

$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-1\,507\,328\, z^6 - 1\,351\,680\, z^5 + 218\,507\,520\, z^4 - 605\,404\,800\, z^3 + 1\,973\,386\,800\, z^2 - \right.\right. $$

$$ \left.\left. 4\,143\,239\,100\, z + 1\,915\,538\,625\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(131\,072\, z^6 + 3\,522\,560\, z^5 + 34\,890\,240\, z^4 - \right.\right. $$

$$ \left.\left. 196\,922\,880\, z^3 + 535\,550\,400\, z^2 - 1\,589\,187\,600\, z + 1\,915\,538\,625\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$

$$ \left(2\sqrt{z}\,\left(131\,072\, z^6 + 3\,522\,560\, z^5 + 34\,890\,240\, z^4 - 196\,922\,880\, z^3 + 535\,550\,400\, z^2 - 1\,589\,187\,600\, z + 1\,915\,538\,625\right)\right. $$

$$ \cos\left(2\sqrt{z}\right) + \left(1\,507\,328\, z^6 + 1\,351\,680\, z^5 - 218\,507\,520\, z^4 + 605\,404\,800\, z^3 - \right. $$

$$ \left.\left. 1\,973\,386\,800\, z^2 + 4\,143\,239\,100\, z - 1\,915\,538\,625\right)\sin\left(2\sqrt{z}\right)\right)\Bigg) $$

07.22.03.7742.01

$$ {}_1F_2\left(6; -\frac{17}{4}, \frac{21}{4}; z\right) = $$

$$ \frac{1}{125\,829\,120\, z^{17/4}}\left(e^{-2\sqrt{z}}\,\left(24\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(65\,536\, z^6 - 4\,874\,240\, z^5 - 38\,954\,240\, z^4 - 290\,062\,080\, z^3 - 2\,108\,106\,000\, z^2 - \right.\right.\right. $$

$$ \left.\left.\left. 9\,340\,531\,200\, z - 20\,158\,763\,625\right) - e^{4\sqrt{z}}\,\sqrt{2\pi}\right. $$

$$ \left(524\,288\, z^7 - 655\,360\, z^{13/2} - 9\,830\,400\, z^6 + 56\,279\,040\, z^{11/2} - 169\,973\,760\, z^5 + 412\,853\,760\, z^{9/2} - 1\,070\,150\,400\, z^4 + \right. $$

$$ 3\,069\,792\,000\, z^{7/2} - 8\,602\,070\,400\, z^3 + 21\,859\,437\,600\, z^{5/2} - 48\,291\,843\,600\, z^2 + 88\,297\,209\,000\, z^{3/2} - $$

$$ \left. 124\,783\,659\,000\, z + 120\,952\,581\,750\,\sqrt{z} - 60\,476\,290\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$

$$ \sqrt{2\pi}\,\left(-524\,288\, z^7 - 655\,360\, z^{13/2} + 9\,830\,400\, z^6 + 56\,279\,040\, z^{11/2} + 169\,973\,760\, z^5 + 412\,853\,760\, z^{9/2} + \right. $$

$$ 1\,070\,150\,400\, z^4 + 3\,069\,792\,000\, z^{7/2} + 8\,602\,070\,400\, z^3 + 21\,859\,437\,600\, z^{5/2} + 48\,291\,843\,600\, z^2 + $$

$$ \left.\left. 88\,297\,209\,000\, z^{3/2} + 124\,783\,659\,000\, z + 120\,952\,581\,750\,\sqrt{z} + 60\,476\,290\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Bigg) $$

07.22.03.7743.01

$$ {}_1F_2\left(6; -\frac{17}{4}, \frac{21}{4}; -z\right) = \frac{1}{31\,457\,280\, z^{17/4}} $$

$$ \left(6\sqrt[4]{z}\left(65\,536\, z^6 + 4\,874\,240\, z^5 - 38\,954\,240\, z^4 + 290\,062\,080\, z^3 - 2\,108\,106\,000\, z^2 + 9\,340\,531\,200\, z - 20\,158\,763\,625\right) + \right. $$

$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(524\,288\, z^7 + 9\,830\,400\, z^6 - 169\,973\,760\, z^5 + 1\,070\,150\,400\, z^4 - 8\,602\,070\,400\, z^3 + \right.\right. $$

$$ 48\,291\,843\,600\, z^2 - 124\,783\,659\,000\, z + 60\,476\,290\,875\right)\cos\left(2\sqrt{z}\right) - 10\sqrt{z}\left(65\,536\, z^6 + 5\,627\,904\, z^5 - \right. $$

$$ \left.\left. 41\,285\,376\, z^4 + 306\,979\,200\, z^3 - 2\,185\,943\,760\, z^2 + 8\,829\,720\,900\, z - 12\,095\,258\,175\right)\sin\left(2\sqrt{z}\right)\right) + $$

$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(10\sqrt{z}\left(65\,536\, z^6 + 5\,627\,904\, z^5 - 41\,285\,376\, z^4 + 306\,979\,200\, z^3 - 2\,185\,943\,760\, z^2 + \right.\right. $$

$$ 8\,829\,720\,900\, z - 12\,095\,258\,175\right)\cos\left(2\sqrt{z}\right) + \left(524\,288\, z^7 + 9\,830\,400\, z^6 - 169\,973\,760\, z^5 + \right. $$

$$ \left.\left.\left. 1\,070\,150\,400\, z^4 - 8\,602\,070\,400\, z^3 + 48\,291\,843\,600\, z^2 - 124\,783\,659\,000\, z + 60\,476\,290\,875\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 6$, $b_1 = -\frac{15}{4}$

07.22.03.7744.01

$$ {}_1F_2\left(6; -\frac{15}{4}, -\frac{13}{4}; z\right) = \frac{1}{30\,405\,375}\left(e^{-2\sqrt{z}}\right. $$

$$ \left(4\, e^{4\sqrt{z}}\sqrt{2\pi}\left(1024\, z^{5/2} + 42\,240\, z^2 + 650\,880\, z^{3/2} + 4\,657\,440\, z + 15\,375\,780\sqrt{z} + 18\,589\,725\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} + \right. $$

$$ 4\sqrt{2\pi}\left(1024\, z^{5/2} - 42\,240\, z^2 + 650\,880\, z^{3/2} - 4\,657\,440\, z + 15\,375\,780\sqrt{z} - 18\,589\,725\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} + $$

$$ \left.\left. e^{2\sqrt{z}}\left(335\,872\, z^6 + 36\,019\,200\, z^5 + 123\,863\,040\, z^4 + 10\,321\,920\, z^3 + 8\,467\,200\, z^2 + 14\,968\,800\, z + 30\,405\,375\right)\right)\right) $$

07.22.03.7745.01

$$ {}_1F_2\left(6; -\frac{15}{4}, -\frac{13}{4}; -z\right) = \frac{1}{30\,405\,375}\left(335\,872\, z^6 - 36\,019\,200\, z^5 - 16\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right. $$

$$ \left(4\sqrt{z}\left(256\, z^2 - 162\,720\, z + 3\,843\,945\right)\sin\left(2\sqrt{z}\right) - 15\left(2816\, z^2 - 310\,496\, z + 1\,239\,315\right)\cos\left(2\sqrt{z}\right)\right) z^{17/4} - $$

$$ 16\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\left(256\, z^2 - 162\,720\, z + 3\,843\,945\right)\cos\left(2\sqrt{z}\right) + 15\left(2816\, z^2 - 310\,496\, z + 1\,239\,315\right)\sin\left(2\sqrt{z}\right)\right) $$

$$ \left. z^{17/4} + 123\,863\,040\, z^4 - 10\,321\,920\, z^3 + 8\,467\,200\, z^2 - 14\,968\,800\, z + 30\,405\,375\right) $$

07.22.03.7746.01

$$ {}_1F_2\left(6; -\frac{15}{4}, -\frac{9}{4}; z\right) = \frac{1}{4\,677\,750} \left(e^{-2\sqrt{z}} \left(-e^{4\sqrt{z}} \sqrt{2\pi} \left(2048 z^3 + 78\,336 z^{5/2} + 1\,105\,920 z^2 + 7\,103\,040 z^{3/2} + 20\,097\,000 z + 17\,082\,450 \sqrt{z} - 8\,541\,225\right) \right.\right. \\ \left. \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{13/4} + \sqrt{2\pi} \left(2048 z^3 - 78\,336 z^{5/2} + 1\,105\,920 z^2 - \right. \right. \\ \left. \left. 7\,103\,040 z^{3/2} + 20\,097\,000 z - 17\,082\,450 \sqrt{z} - 8\,541\,225\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{13/4} - \right. \\ \left. \left. 2 e^{2\sqrt{z}} \left(2048 z^6 + 1\,086\,720 z^5 + 18\,511\,080 z^4 - 10\,321\,920 z^3 - 1\,693\,440 z^2 - 1\,663\,200 z - 2\,338\,875\right)\right)\right) $$

07.22.03.7747.01

$$ {}_1F_2\left(6; -\frac{15}{4}, -\frac{9}{4}; -z\right) = \frac{1}{2\,338\,875} \left(-2048 z^6 + 1\,086\,720 z^5 - 18\,511\,080 z^4 - 2\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(2048 z^3 - 1\,105\,920 z^2 + 20\,097\,000 z + 8\,541\,225\right) \cos\left(2\sqrt{z}\right) + \right. \right. \\ \left. 6\sqrt{z} \left(13\,056 z^2 - 1\,183\,840 z + 2\,847\,075\right) \sin\left(2\sqrt{z}\right)\right) z^{13/4} + \\ 2\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(2048 z^3 - 1\,105\,920 z^2 + 20\,097\,000 z + 8\,541\,225\right) \sin\left(2\sqrt{z}\right) - 6\sqrt{z} \right. \\ \left. \left. \left(13\,056 z^2 - 1\,183\,840 z + 2\,847\,075\right) \cos\left(2\sqrt{z}\right)\right) z^{13/4} - 10\,321\,920 z^3 + 1\,693\,440 z^2 - 1\,663\,200 z + 2\,338\,875\right) $$

07.22.03.7748.01

$$ {}_1F_2\left(6; -\frac{15}{4}, -\frac{5}{4}; z\right) = \frac{1}{4\,158\,000} \left(e^{-2\sqrt{z}} \left(e^{4\sqrt{z}} \sqrt{2\pi} \left(4096 z^{7/2} + 142\,336 z^3 + 1\,784\,832 z^{5/2} + 9\,744\,000 z^2 + 20\,706\,000 z^{3/2} + 3\,105\,900 z - \right.\right.\right. \\ \left. 20\,188\,350 \sqrt{z} + 10\,094\,175\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{9/4} + \sqrt{2\pi} \left(4096 z^{7/2} - 142\,336 z^3 + 1\,784\,832 z^{5/2} - \\ \left. 9\,744\,000 z^2 + 20\,706\,000 z^{3/2} - 3\,105\,900 z - 20\,188\,350 \sqrt{z} - 10\,094\,175\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{9/4} + \\ \left. \left. 48 e^{2\sqrt{z}} \left(5888 z^5 + 388\,480 z^4 - 25\,305 z^3 + 564\,480 z^2 + 110\,880 z + 86\,625\right)\right)\right) $$

07.22.03.7749.01

$$ {}_1F_2\left(6; -\frac{15}{4}, -\frac{5}{4}; -z\right) = \frac{1}{1\,039\,500} \left(\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(-142\,336 z^3 + 9\,744\,000 z^2 - 3\,105\,900 z + 10\,094\,175\right) \cos\left(2\sqrt{z}\right) + \right. \right. \\ \left. 2\sqrt{z} \left(2048 z^3 - 892\,416 z^2 + 10\,353\,000 z + 10\,094\,175\right) \sin\left(2\sqrt{z}\right)\right) z^{9/4} + \\ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(2048 z^3 - 892\,416 z^2 + 10\,353\,000 z + 10\,094\,175\right) \cos\left(2\sqrt{z}\right) + \right. \\ \left. \left. \left(142\,336 z^3 - 9\,744\,000 z^2 + 3\,105\,900 z - 10\,094\,175\right) \sin\left(2\sqrt{z}\right)\right) z^{9/4} - \right. \\ \left. \left. 12 \left(5888 z^5 - 388\,480 z^4 - 25\,305 z^3 - 564\,480 z^2 + 110\,880 z - 86\,625\right)\right) $$

07.22.03.7750.01

$$ {}_1F_2\left(6; -\frac{15}{4}, -\frac{1}{4}; z\right) = $$

$$ \frac{1}{6\,652\,800}\left(e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\sqrt{2\pi}\left(8192z^4+251\,904z^{7/2}+2\,688\,000z^3+11\,424\,000z^{5/2}+12\,852\,000z^2-\right.\right.\right. $$

$$ \left.\left.\left.19\,492\,200z^{3/2}-11\,138\,400z+31\,326\,750\sqrt{z}-15\,663\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+\right. $$

$$ \sqrt{2\pi}\left(8192z^4-251\,904z^{7/2}+2\,688\,000z^3-11\,424\,000z^{5/2}+12\,852\,000z^2+19\,492\,200z^{3/2}-\right. $$

$$ \left.\left.11\,138\,400z-31\,326\,750\sqrt{z}-15\,663\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}- \right. $$

$$ \left.\left.16e^{2\sqrt{z}}\left(1024z^5+328\,320z^4+1\,305\,540z^3-705\,285z^2-2\,661\,120z-415\,800\right)\right)\right) $$

07.22.03.7751.01

$$ {}_1F_2\left(6; -\frac{15}{4}, -\frac{1}{4}; -z\right) = $$

$$ \frac{1}{1\,663\,200}\left(\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192z^4-2\,688\,000z^3+12\,852\,000z^2+11\,138\,400z-15\,663\,375\right)\cos\left(2\sqrt{z}\right)+\right.\right. $$

$$ \left.\left.6\sqrt{z}\left(41\,984z^3-1\,904\,000z^2-3\,248\,700z-5\,221\,125\right)\sin\left(2\sqrt{z}\right)\right)z^{5/4}- \right. $$

$$ \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192z^4-2\,688\,000z^3+12\,852\,000z^2+11\,138\,400z-15\,663\,375\right)\sin\left(2\sqrt{z}\right)- \right. $$

$$ \left.\left.6\sqrt{z}\left(41\,984z^3-1\,904\,000z^2-3\,248\,700z-5\,221\,125\right)\cos\left(2\sqrt{z}\right)\right)z^{5/4}+ \right. $$

$$ \left.4\left(1024z^5-328\,320z^4+1\,305\,540z^3+705\,285z^2-2\,661\,120z+415\,800\right)\right) $$

07.22.03.7752.01

$$ {}_1F_2\left(6; -\frac{15}{4}, \frac{3}{4}; z\right) = $$

$$ \frac{1}{53\,222\,400}\left(e^{-2\sqrt{z}}\left(16e^{2\sqrt{z}}\left(53\,248z^4+1\,152\,000z^3-3\,192\,840z^2+213\,255z+3\,326\,400\right)+e^{4\sqrt{z}}\sqrt{2\pi}\right.\right. $$

$$ \sqrt[4]{z}\left(16\,384z^{9/2}+430\,080z^4+3\,655\,680z^{7/2}+10\,053\,120z^3-4\,455\,360z^{5/2}-27\,846\,000z^2+\right. $$

$$ \left.\left.33\,415\,200z^{3/2}+12\,530\,700z-43\,857\,450\sqrt{z}+21\,928\,725\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\right. $$

$$ \sqrt{2\pi}\sqrt[4]{z}\left(16\,384z^{9/2}-430\,080z^4+3\,655\,680z^{7/2}-10\,053\,120z^3-4\,455\,360z^{5/2}+27\,846\,000z^2+\right. $$

$$ \left.\left.\left.33\,415\,200z^{3/2}-12\,530\,700z-43\,857\,450\sqrt{z}-21\,928\,725\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7753.01

$$ {}_1F_2\left(6; -\frac{15}{4}, \frac{3}{4}; -z\right) = \frac{1}{13\,305\,600}\left(4\left(53\,248\,z^4 - 1\,152\,000\,z^3 - 3\,192\,840\,z^2 - 213\,255\,z + 3\,326\,400\right) - \right.$$
$$\sqrt{\pi}\ \sqrt[4]{z}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\ \left(8192\,z^4 - 1\,827\,840\,z^3 - 2\,227\,680\,z^2 - 16\,707\,600\,z - 21\,928\,725\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\left. 105\left(4096\,z^4 - 95\,744\,z^3 - 265\,200\,z^2 - 119\,340\,z + 208\,845\right)\sin\left(2\sqrt{z}\right)\right) - \right.$$
$$\sqrt{\pi}\ \sqrt[4]{z}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\ \left(8192\,z^4 - 1\,827\,840\,z^3 - 2\,227\,680\,z^2 - 16\,707\,600\,z - 21\,928\,725\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$\left.\left.\left. 105\left(4096\,z^4 - 95\,744\,z^3 - 265\,200\,z^2 - 119\,340\,z + 208\,845\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7754.01

$$ {}_1F_2\left(6; -\frac{15}{4}, \frac{7}{4}; z\right) =$$
$$\frac{1}{141\,926\,400\,z^{3/4}}\left(e^{-2\sqrt{z}}\ \left(16\,e^{2\sqrt{z}}\ z^{3/4}\left(4096\,z^4 + 501\,248\,z^3 - 2\,625\,840\,z^2 + 5\,614\,020\,z + 5\,737\,725\right) + e^{4\sqrt{z}}\right.\right.$$
$$\sqrt{2\pi}\ \left(32\,768\,z^5 + 696\,320\,z^{9/2} + 4\,177\,920\,z^4 + 3\,394\,560\,z^{7/2} - 20\,791\,680\,z^3 + 6\,683\,040\,z^{5/2} + \right.$$
$$\left.\left.\left. 50\,122\,800\,z^2 - 75\,184\,200\,z^{3/2} + 25\,061\,400\,z + 18\,796\,050\sqrt{z} - 9\,398\,025\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) + \right.\right.$$
$$\left.\left.\sqrt{2\pi}\ \left(-32\,768\,z^5 + 696\,320\,z^{9/2} - 4\,177\,920\,z^4 + 3\,394\,560\,z^{7/2} + 20\,791\,680\,z^3 + 6\,683\,040\,z^{5/2} - \right.\right.\right.$$
$$\left.\left.\left.\left. 50\,122\,800\,z^2 - 75\,184\,200\,z^{3/2} - 25\,061\,400\,z + 18\,796\,050\sqrt{z} + 9\,398\,025\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.7755.01

$$ {}_1F_2\left(6; -\frac{15}{4}, \frac{7}{4}; -z\right) = \frac{1}{35\,481\,600\,z^{3/4}}\left(4\,z^{3/4}\left(4096\,z^4 - 501\,248\,z^3 - 2\,625\,840\,z^2 - 5\,614\,020\,z + 5\,737\,725\right) + \right.$$
$$\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768\,z^5 - 4\,177\,920\,z^4 - 20\,791\,680\,z^3 - 50\,122\,800\,z^2 + 25\,061\,400\,z + 9\,398\,025\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\left. 170\sqrt{z}\ \left(4096\,z^4 - 19\,968\,z^3 + 39\,312\,z^2 + 442\,260\,z + 110\,565\right)\sin\left(2\sqrt{z}\right)\right) - \right.$$
$$\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768\,z^5 - 4\,177\,920\,z^4 - 20\,791\,680\,z^3 - 50\,122\,800\,z^2 + 25\,061\,400\,z + 9\,398\,025\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$\left.\left.\left. 170\sqrt{z}\ \left(4096\,z^4 - 19\,968\,z^3 + 39\,312\,z^2 + 442\,260\,z + 110\,565\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7756.01

$$ {}_1F_2\left(6; -\frac{15}{4}, \frac{11}{4}; z\right) = \frac{1}{162\,201\,600\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(126\,976\, z^4 - 1\,026\,048\, z^3 + 6\,709\,680\, z^2 + 2\,134\,800\, z - 6\,081\,075\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \left(65\,536\, z^{11/2} + 1\,032\,192\, z^5 + 3\,194\,880\, z^{9/2} - 7\,587\,840\, z^4 - 11\,232\,000\, z^{7/2} + 52\,678\,080\, z^3 - 57\,788\,640\, z^{5/2} - 5\,896\,800\, z^2 + 61\,916\,400\, z^{3/2} - 55\,282\,500\, z + 36\,486\,450\sqrt{z} - 18\,243\,225\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(65\,536\, z^{11/2} - 1\,032\,192\, z^5 + 3\,194\,880\, z^{9/2} + 7\,587\,840\, z^4 - 11\,232\,000\, z^{7/2} - 52\,678\,080\, z^3 - 57\,788\,640\, z^{5/2} + 5\,896\,800\, z^2 + 61\,916\,400\, z^{3/2} + 55\,282\,500\, z + 36\,486\,450\sqrt{z} + 18\,243\,225\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7757.01

$$ {}_1F_2\left(6; -\frac{15}{4}, \frac{11}{4}; -z\right) = \frac{1}{40\,550\,400\, z^{7/4}} \left(-4\, z^{3/4} \left(126\,976\, z^4 + 1\,026\,048\, z^3 + 6\,709\,680\, z^2 - 2\,134\,800\, z - 6\,081\,075\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(3 \left(344\,064\, z^5 + 2\,529\,280\, z^4 + 17\,559\,360\, z^3 + 1\,965\,600\, z^2 - 18\,427\,500\, z + 6\,081\,075\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z} \left(-32\,768\, z^5 + 1\,597\,440\, z^4 + 5\,616\,000\, z^3 - 28\,894\,320\, z^2 - 30\,958\,200\, z + 18\,243\,225\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(32\,768\, z^5 - 1\,597\,440\, z^4 - 5\,616\,000\, z^3 + 28\,894\,320\, z^2 + 30\,958\,200\, z - 18\,243\,225\right) \cos\left(2\sqrt{z}\right) + 3 \left(344\,064\, z^5 + 2\,529\,280\, z^4 + 17\,559\,360\, z^3 + 1\,965\,600\, z^2 - 18\,427\,500\, z + 6\,081\,075\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7758.01

$$ {}_1F_2\left(6; -\frac{15}{4}, \frac{15}{4}; z\right) = \frac{1}{117\,964\,800\, z^{11/4}} \left(e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(16\,384\, z^5 - 116\,736\, z^4 + 4\,259\,904\, z^3 - 3\,915\,360\, z^2 - 24\,324\,300\, z - 42\,567\,525\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \left(131\,072\, z^6 + 1\,277\,952\, z^{11/2} - 638\,976\, z^5 - 11\,980\,800\, z^{9/2} + 31\,449\,600\, z^4 - 20\,442\,240\, z^{7/2} - 44\,029\,440\, z^3 + 120\,294\,720\, z^{5/2} - 176\,904\,000\, z^2 + 243\,243\,000\, z^{3/2} - 291\,891\,600\, z + 255\,405\,150\sqrt{z} - 127\,702\,575\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(-131\,072\, z^6 + 1\,277\,952\, z^{11/2} + 638\,976\, z^5 - 11\,980\,800\, z^{9/2} - 31\,449\,600\, z^4 - 20\,442\,240\, z^{7/2} + 44\,029\,440\, z^3 + 120\,294\,720\, z^{5/2} + 176\,904\,000\, z^2 + 243\,243\,000\, z^{3/2} + 291\,891\,600\, z + 255\,405\,150\sqrt{z} + 127\,702\,575\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7759.01

$$ {}_1F_2\left(6; -\frac{15}{4}, \frac{15}{4}; -z\right) = $$

$$ \frac{1}{29\,491\,200\, z^{11/4}} \left(-4 z^{3/4} \left(16\,384 z^5 + 116\,736 z^4 + 4\,259\,904 z^3 + 3\,915\,360 z^2 - 24\,324\,300 z + 42\,567\,525\right) - \sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \right. $$
$$ \left(\left(131\,072 z^6 + 638\,976 z^5 + 31\,449\,600 z^4 + 44\,029\,440 z^3 - 176\,904\,000 z^2 + 291\,891\,600 z - 127\,702\,575\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 78\sqrt{z} \left(16\,384 z^5 + 153\,600 z^4 - 262\,080 z^3 - 1\,542\,240 z^2 + 3\,118\,500 z - 3\,274\,425\right) \sin\left(2\sqrt{z}\right) \right) + \sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left(\left(131\,072 z^6 + 638\,976 z^5 + 31\,449\,600 z^4 + 44\,029\,440 z^3 - 176\,904\,000 z^2 + 291\,891\,600 z - 127\,702\,575\right) \sin\left(2\sqrt{z}\right) - \right. $$
$$ \left. \left. 78\sqrt{z} \left(16\,384 z^5 + 153\,600 z^4 - 262\,080 z^3 - 1\,542\,240 z^2 + 3\,118\,500 z - 3\,274\,425\right) \cos\left(2\sqrt{z}\right) \right) \right) $$

07.22.03.7760.01

$$ {}_1F_2\left(6; -\frac{15}{4}, \frac{19}{4}; z\right) = $$

$$ \frac{1}{62\,914\,560\, z^{15/4}} \left(e^{-2\sqrt{z}} \left(48 e^{2\sqrt{z}}\ z^{3/4} \left(32\,768 z^5 + 536\,576 z^4 - 2\,932\,480 z^3 - 21\,621\,600 z^2 - 102\,702\,600 z - 260\,134\,875\right) + \right. \right. $$
$$ e^{4\sqrt{z}}\ \sqrt{2\pi} \left(262\,144 z^{13/2} + 851\,968 z^6 - 6\,389\,760 z^{11/2} + 11\,182\,080 z^5 + 6\,988\,800 z^{9/2} - \right. $$
$$ 72\,334\,080 z^4 + 201\,277\,440 z^{7/2} - 463\,881\,600 z^3 + 1\,037\,836\,800 z^{5/2} - 2\,108\,106\,000 z^2 + $$
$$ \left. 3\,632\,428\,800 z^{3/2} - 4\,937\,832\,900 z + 4\,682\,427\,750\sqrt{z} - 2\,341\,213\,875\right) \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi} \left(262\,144 z^{13/2} - 851\,968 z^6 - 6\,389\,760 z^{11/2} - 11\,182\,080 z^5 + 6\,988\,800 z^{9/2} + 72\,334\,080 z^4 + \right. $$
$$ 201\,277\,440 z^{7/2} + 463\,881\,600 z^3 + 1\,037\,836\,800 z^{5/2} + 2\,108\,106\,000 z^2 + $$
$$ \left. \left. \left. 3\,632\,428\,800 z^{3/2} + 4\,937\,832\,900 z + 4\,682\,427\,750\sqrt{z} + 2\,341\,213\,875\right) \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right) \right) \right) \right) $$

07.22.03.7761.01

$$ {}_1F_2\left(6; -\frac{15}{4}, \frac{19}{4}; -z\right) = \frac{1}{15\,728\,640\, z^{15/4}} $$
$$ \left(12 z^{3/4} \left(32\,768 z^5 - 536\,576 z^4 - 2\,932\,480 z^3 + 21\,621\,600 z^2 - 102\,702\,600 z + 260\,134\,875\right) - \sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \right. $$
$$ \left(2\sqrt{z} \left(131\,072 z^6 + 3\,194\,880 z^5 + 3\,494\,400 z^4 - 100\,638\,720 z^3 + 518\,918\,400 z^2 - 1\,816\,214\,400 z + 2\,341\,213\,875\right) \right. $$
$$ \cos\left(2\sqrt{z}\right) + 13 \left(65\,536 z^6 - 860\,160 z^5 - 5\,564\,160 z^4 + 35\,683\,200 z^3 - \right. $$
$$ \left. \left. 162\,162\,000 z^2 + 379\,833\,300 z - 180\,093\,375\right) \sin\left(2\sqrt{z}\right) \right) - \sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left(2\sqrt{z} \left(131\,072 z^6 + 3\,194\,880 z^5 + 3\,494\,400 z^4 - 100\,638\,720 z^3 + 518\,918\,400 z^2 - 1\,816\,214\,400 z + 2\,341\,213\,875\right) \right. $$
$$ \sin\left(2\sqrt{z}\right) - 13 \left(65\,536 z^6 - 860\,160 z^5 - 5\,564\,160 z^4 + 35\,683\,200 z^3 - \right. $$
$$ \left. \left. \left. 162\,162\,000 z^2 + 379\,833\,300 z - 180\,093\,375\right) \cos\left(2\sqrt{z}\right) \right) \right) $$

07.22.03.7762.01

$$ {}_1F_2\left(6; -\frac{15}{4}, \frac{23}{4}; z\right) = \frac{1}{503\,316\,480\, z^{19/4}} \left(19\, e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(65\,536\, z^6 + 73\,728\, z^5 - 14\,242\,560\, z^4 - 190\,270\,080\, z^3 - 1\,978\,376\,400\, z^2 - 12\,932\,419\,500\, z - 39\,800\,635\,875\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(524\,288\, z^7 - 1\,966\,080\, z^{13/2} + 22\,364\,160\, z^{11/2} - 109\,025\,280\, z^5 + 400\,458\,240\, z^{9/2} - 1\,399\,507\,200\, z^4 + 4\,670\,265\,600\, z^{7/2} - 14\,270\,256\,000\, z^3 + 38\,594\,556\,000\, z^{5/2} - 89\,221\,532\,400\, z^2 + 168\,567\,399\,000\, z^{3/2} - 243\,486\,243\,000\, z + 238\,803\,815\,250\, \sqrt{z} - 119\,401\,907\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(-524\,288\, z^7 - 1\,966\,080\, z^{13/2} + 22\,364\,160\, z^{11/2} + 109\,025\,280\, z^5 + 400\,458\,240\, z^{9/2} + 1\,399\,507\,200\, z^4 + 4\,670\,265\,600\, z^{7/2} + 14\,270\,256\,000\, z^3 + 38\,594\,556\,000\, z^{5/2} + 89\,221\,532\,400\, z^2 + 168\,567\,399\,000\, z^{3/2} + 243\,486\,243\,000\, z + 238\,803\,815\,250\, \sqrt{z} + 119\,401\,907\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7763.01

$$ {}_1F_2\left(6; -\frac{15}{4}, \frac{23}{4}; -z\right) = -\frac{1}{125\,829\,120\, z^{19/4}} \left(19 \left(4\, z^{3/4} \left(-65\,536\, z^6 + 73\,728\, z^5 + 14\,242\,560\, z^4 - 190\,270\,080\, z^3 + 1\,978\,376\,400\, z^2 - 12\,932\,419\,500\, z + 39\,800\,635\,875\right) - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(524\,288\, z^7 - 109\,025\,280\, z^5 + 1\,399\,507\,200\, z^4 - 14\,270\,256\,000\, z^3 + 89\,221\,532\,400\, z^2 - 243\,486\,243\,000\, z + 119\,401\,907\,625\right) \cos\left(2\sqrt{z}\right) - 30\sqrt{z}\, \left(65\,536\, z^6 + 745\,472\, z^5 - 13\,348\,608\, z^4 + 155\,675\,520\, z^3 - 1\,286\,485\,200\, z^2 + 5\,618\,913\,300\, z - 7\,960\,127\,175\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(30\sqrt{z}\, \left(65\,536\, z^6 + 745\,472\, z^5 - 13\,348\,608\, z^4 + 155\,675\,520\, z^3 - 1\,286\,485\,200\, z^2 + 5\,618\,913\,300\, z - 7\,960\,127\,175\right) \cos\left(2\sqrt{z}\right) + \left(524\,288\, z^7 - 109\,025\,280\, z^5 + 1\,399\,507\,200\, z^4 - 14\,270\,256\,000\, z^3 + 89\,221\,532\,400\, z^2 - 243\,486\,243\,000\, z + 119\,401\,907\,625\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 6$, $b_1 = -\frac{13}{4}$

07.22.03.7764.01

$$ {}_1F_2\left(6; -\frac{13}{4}, -\frac{11}{4}; z\right) = \frac{1}{2\,027\,025} \left(e^{-2\sqrt{z}} \left(-e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(1024\, z^{5/2} + 39\,680\, z^2 + 571\,520\, z^{3/2} + 3\,800\,160\, z + 11\,575\,620\, \sqrt{z} + 12\,801\,915\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{15/4} + \sqrt{2\pi}\, \left(1024\, z^{5/2} - 39\,680\, z^2 + 571\,520\, z^{3/2} - 3\,800\,160\, z + 11\,575\,620\, \sqrt{z} - 12\,801\,915\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{15/4} + e^{2\sqrt{z}}\, \left(-2048\, z^6 - 1\,123\,584\, z^5 - 21\,447\,720\, z^4 + 3\,440\,640\, z^3 + 1\,209\,600\, z^2 + 1\,360\,800\, z + 2\,027\,025\right)\right)\right) $$

07.22.03.7765.01

$$ {}_1F_2\left(6; -\frac{13}{4}, -\frac{11}{4}; -z\right) = \frac{1}{2\,027\,025}\left(-2048\,z^6 + 1\,123\,584\,z^5 - 21\,447\,720\,z^4 + 4\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left(4\sqrt{z}\ \left(256\,z^2 - 142\,880\,z + 2\,893\,905\right)\sin\left(2\sqrt{z}\right) - 5\left(7936\,z^2 - 760\,032\,z + 2\,560\,383\right)\cos\left(2\sqrt{z}\right)\right)z^{15/4} -$$
$$4\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\ \left(256\,z^2 - 142\,880\,z + 2\,893\,905\right)\cos\left(2\sqrt{z}\right) + 5\left(7936\,z^2 - 760\,032\,z + 2\,560\,383\right)\sin\left(2\sqrt{z}\right)\right)$$
$$\left.z^{15/4} - 3\,440\,640\,z^3 + 1\,209\,600\,z^2 - 1\,360\,800\,z + 2\,027\,025\right)$$

07.22.03.7766.01

$$ {}_1F_2\left(6; -\frac{13}{4}, -\frac{7}{4}; z\right) = \frac{1}{1\,474\,200}$$
$$\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(2048\,z^3 + 73\,216\,z^{5/2} + 960\,000\,z^2 + 5\,680\,320\,z^{3/2} + 14\,630\,760\,z + 10\,973\,070\sqrt{z} - 5\,486\,535\right)\right.\right.$$
$$\mathrm{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{11/4} +$$
$$\sqrt{2\pi}\ \left(2048\,z^3 - 73\,216\,z^{5/2} + 960\,000\,z^2 - 5\,680\,320\,z^{3/2} + 14\,630\,760\,z - 10\,973\,070\sqrt{z} - 5\,486\,535\right)$$
$$\left.\left.\mathrm{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{11/4} + 8\,e^{2\sqrt{z}}\ \left(18\,176\,z^5 + 1\,363\,392\,z^4 + 2\,045\,895\,z^3 + 403\,200\,z^2 + 194\,400\,z + 184\,275\right)\right)\right)$$

07.22.03.7767.01

$$ {}_1F_2\left(6; -\frac{13}{4}, -\frac{7}{4}; -z\right) = \frac{1}{368\,550}$$
$$\left(-36\,352\,z^5 + 2\,726\,784\,z^4 - 4\,091\,790\,z^3 + \sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3 - 960\,000\,z^2 + 14\,630\,760\,z + 5\,486\,535\right)\cos\left(2\sqrt{z}\right) + \right.\right.$$
$$\left.2\sqrt{z}\ \left(36\,608\,z^2 - 2\,840\,160\,z + 5\,486\,535\right)\sin\left(2\sqrt{z}\right)\right)z^{11/4} + \sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)$$
$$\left(\left(2048\,z^3 - 960\,000\,z^2 + 14\,630\,760\,z + 5\,486\,535\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\ \left(36\,608\,z^2 - 2\,840\,160\,z + 5\,486\,535\right)\cos\left(2\sqrt{z}\right)\right)$$
$$\left.z^{11/4} + 806\,400\,z^2 - 388\,800\,z + 368\,550\right)$$

07.22.03.7768.01

$$ {}_1F_2\left(6; -\frac{13}{4}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{1\,684\,800}\left(e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\ \sqrt{2\pi}\ \left(4096\,z^{7/2} + 132\,096\,z^3 + 1\,523\,712\,z^{5/2} + 7\,551\,360\,z^2 + 14\,158\,800\,z^{3/2} + \right.\right.\right.$$
$$\left.\left.707\,940\,z - 11\,681\,010\sqrt{z} + 5\,840\,505\right)\mathrm{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{7/4} + \sqrt{2\pi}\right.$$
$$\left(4096\,z^{7/2} - 132\,096\,z^3 + 1\,523\,712\,z^{5/2} - 7\,551\,360\,z^2 + 14\,158\,800\,z^{3/2} - 707\,940\,z - 11\,681\,010\sqrt{z} - 5\,840\,505\right)$$
$$\left.\left.\mathrm{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{7/4} - 8\,e^{2\sqrt{z}}\ \left(1024\,z^5 + 372\,864\,z^4 + 3\,131\,844\,z^3 - 2\,614\,905\,z^2 - 518\,400\,z - 210\,600\right)\right)\right)$$

07.22.03.7769.01

$$ {}_1F_2\left(6; -\frac{13}{4}, -\frac{3}{4}; -z\right) = \frac{1}{421\,200}$$
$$\left(2048 z^5 - 745\,728 z^4 + 6\,263\,688 z^3 + 5\,229\,810 z^2 - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-132\,096 z^3 + 7\,551\,360 z^2 - 707\,940 z + 5\,840\,505\right)\right.\right.$$
$$\left.\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(2048 z^3 - 761\,856 z^2 + 7\,079\,400 z + 5\,840\,505\right)\sin\left(2\sqrt{z}\right)\right) z^{7/4} +$$
$$\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2048 z^3 - 761\,856 z^2 + 7\,079\,400 z + 5\,840\,505\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.\left.3\left(44\,032 z^3 - 2\,517\,120 z^2 + 235\,980 z - 1\,946\,835\right)\sin\left(2\sqrt{z}\right)\right) z^{7/4} - 1\,036\,800 z + 421\,200\right)$$

07.22.03.7770.01

$$ {}_1F_2\left(6; -\frac{13}{4}, \frac{1}{4}; z\right) =$$
$$\frac{1}{4\,492\,800}\left(e^{-2\sqrt{z}}\left(8 e^{2\sqrt{z}}\left(57\,344 z^4 + 1\,968\,128 z^3 - 3\,491\,640 z^2 + 3\,423\,825 z + 561\,600\right) + e^{4\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\right.\right.$$
$$\left(8192 z^4 + 231\,424 z^{7/2} + 2\,237\,440 z^3 + 8\,390\,400 z^{5/2} + 7\,341\,600 z^2 - 13\,267\,320 z^{3/2} - 3\,461\,040 z +\right.$$
$$\left.15\,142\,050\sqrt{z} - 7\,571\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\, z^{3/4}\left(8192 z^4 - 231\,424 z^{7/2} + 2\,237\,440 z^3 -\right.$$
$$\left.\left.\left.8\,390\,400 z^{5/2} + 7\,341\,600 z^2 + 13\,267\,320 z^{3/2} - 3\,461\,040 z - 15\,142\,050\sqrt{z} - 7\,571\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7771.01

$$ {}_1F_2\left(6; -\frac{13}{4}, \frac{1}{4}; -z\right) = \frac{1}{1\,123\,200}\left(2\left(57\,344 z^4 - 1\,968\,128 z^3 - 3\,491\,640 z^2 - 3\,423\,825 z + 561\,600\right) -\right.$$
$$\sqrt{\pi}\, z^{3/4} C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192 z^4 - 2\,237\,440 z^3 + 7\,341\,600 z^2 + 3\,461\,040 z - 7\,571\,025\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.2\sqrt{z}\left(115\,712 z^3 - 4\,195\,200 z^2 - 6\,633\,660 z - 7\,571\,025\right)\sin\left(2\sqrt{z}\right)\right) -$$
$$\sqrt{\pi}\, z^{3/4} S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192 z^4 - 2\,237\,440 z^3 + 7\,341\,600 z^2 + 3\,461\,040 z - 7\,571\,025\right)\sin\left(2\sqrt{z}\right) -\right.$$
$$\left.\left.2\sqrt{z}\left(115\,712 z^3 - 4\,195\,200 z^2 - 6\,633\,660 z - 7\,571\,025\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7772.01

$$ {}_1F_2\left(6; -\frac{13}{4}, \frac{5}{4}; z\right) = \frac{1}{35\,942\,400\,\sqrt[4]{z}} \left(e^{-2\sqrt{z}} \left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(4096\,z^4 + 706\,048\,z^3 - 1\,548\,720\,z^2 + 5\,741\,460\,z - 2\,419\,875\right) + e^{4\sqrt{z}}\right.\right. $$
$$ \sqrt{2\,\pi}\,\left(16\,384\,z^{9/2} + 389\,120\,z^4 + 2\,918\,400\,z^{7/2} + 6\,566\,400\,z^3 - 5\,016\,000\,z^{5/2} - \right. $$
$$ \left. 13\,994\,640\,z^2 + 21\,067\,200\,z^{3/2} - 1\,316\,700\,z - 13\,825\,350\,\sqrt{z} + 6\,912\,675\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ \sqrt{2\,\pi}\,\left(-16\,384\,z^{9/2} + 389\,120\,z^4 - 2\,918\,400\,z^{7/2} + 6\,566\,400\,z^3 + 5\,016\,000\,z^{5/2} - 13\,994\,640\,z^2 - \right. $$
$$ \left.\left. 21\,067\,200\,z^{3/2} - 1\,316\,700\,z + 13\,825\,350\,\sqrt{z} + 6\,912\,675\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7773.01

$$ {}_1F_2\left(6; -\frac{13}{4}, \frac{5}{4}; -z\right) = \frac{1}{8\,985\,600\,\sqrt[4]{z}} \left(2\,\sqrt[4]{z}\,\left(4096\,z^4 - 706\,048\,z^3 - 1\,548\,720\,z^2 - 5\,741\,460\,z - 2\,419\,875\right) + \right. $$
$$ \sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(95\left(4096\,z^4 - 69\,120\,z^3 - 147\,312\,z^2 + 13\,860\,z + 72\,765\right)\cos\left(2\,\sqrt{z}\right) + \right. $$
$$ \left. 2\,\sqrt{z}\,\left(-8192\,z^4 + 1\,459\,200\,z^3 + 2\,508\,000\,z^2 + 10\,533\,600\,z + 6\,912\,675\right)\sin\left(2\,\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\,\left(8192\,z^4 - 1\,459\,200\,z^3 - 2\,508\,000\,z^2 - 10\,533\,600\,z - 6\,912\,675\right)\cos\left(2\,\sqrt{z}\right) + \right. $$
$$ \left.\left. 95\left(4096\,z^4 - 69\,120\,z^3 - 147\,312\,z^2 + 13\,860\,z + 72\,765\right)\sin\left(2\,\sqrt{z}\right)\right)\right) $$

07.22.03.7774.01

$$ {}_1F_2\left(6; -\frac{13}{4}, \frac{9}{4}; z\right) = \frac{1}{57\,507\,840\,z^{5/4}} \left(e^{-2\sqrt{z}} \left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(151\,552\,z^4 + 46\,080\,z^3 + 3\,471\,120\,z^2 - 7\,946\,640\,z - 3\,274\,425\right) + e^{4\sqrt{z}}\right.\right. $$
$$ \sqrt{2\,\pi}\,\left(32\,768\,z^5 + 614\,400\,z^{9/2} + 3\,072\,000\,z^4 + 844\,800\,z^{7/2} - 12\,988\,800\,z^3 + 10\,977\,120\,z^{5/2} + \right. $$
$$ \left. 14\,691\,600\,z^2 - 32\,016\,600\,z^{3/2} + 20\,374\,200\,z - 6\,548\,850\,\sqrt{z} + 3\,274\,425\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ \sqrt{2\,\pi}\,\left(32\,768\,z^5 - 614\,400\,z^{9/2} + 3\,072\,000\,z^4 - 844\,800\,z^{7/2} - 12\,988\,800\,z^3 - 10\,977\,120\,z^{5/2} + \right. $$
$$ \left.\left. 14\,691\,600\,z^2 + 32\,016\,600\,z^{3/2} + 20\,374\,200\,z + 6\,548\,850\,\sqrt{z} + 3\,274\,425\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7775.01

$$ {}_1F_2\left(6; -\frac{13}{4}, \frac{9}{4}; -z\right) = \frac{1}{14\,376\,960\, z^{5/4}}\left(-2\sqrt[4]{z}\,\left(151\,552\, z^4 - 46\,080\, z^3 + 3\,471\,120\, z^2 + 7\,946\,640\, z - 3\,274\,425\right) + \right.$$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768\, z^5 - 3\,072\,000\, z^4 - 12\,988\,800\, z^3 - 14\,691\,600\, z^2 + 20\,374\,200\, z - 3\,274\,425\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left.30\sqrt{z}\,\left(20\,480\, z^4 - 28\,160\, z^3 + 365\,904\, z^2 + 1\,067\,220\, z - 218\,295\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768\, z^5 - 3\,072\,000\, z^4 - 12\,988\,800\, z^3 - 14\,691\,600\, z^2 + 20\,374\,200\, z - 3\,274\,425\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$ \left.\left.30\sqrt{z}\,\left(20\,480\, z^4 - 28\,160\, z^3 + 365\,904\, z^2 + 1\,067\,220\, z - 218\,295\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7776.01

$$ {}_1F_2\left(6; -\frac{13}{4}, \frac{13}{4}; z\right) = $$
$$ \frac{1}{51\,118\,080\, z^{9/4}}\left(e^{-2\sqrt{z}}\left(8\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(16\,384\, z^5 + 399\,360\, z^4 + 367\,680\, z^3 - 10\,944\,480\, z^2 - 11\,351\,340\, z - 12\,006\,225\right) + \right.\right. $$
$$ e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536\, z^{11/2} + 868\,352\, z^5 + 1\,802\,240\, z^{9/2} - 6\,420\,480\, z^4 - 295\,680\, z^{7/2} + 22\,989\,120\, z^3 - \right. $$
$$ \left.39\,584\,160\, z^{5/2} + 34\,927\,200\, z^2 - 29\,106\,000\, z^{3/2} + 30\,561\,300\, z - 24\,012\,450\sqrt{z} + 12\,006\,225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\,\left(-65\,536\, z^{11/2} + 868\,352\, z^5 - 1\,802\,240\, z^{9/2} - 6\,420\,480\, z^4 + 295\,680\, z^{7/2} + 22\,989\,120\, z^3 + \right. $$
$$ \left.\left.\left.39\,584\,160\, z^{5/2} + 34\,927\,200\, z^2 + 29\,106\,000\, z^{3/2} + 30\,561\,300\, z + 24\,012\,450\sqrt{z} + 12\,006\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7777.01

$$ {}_1F_2\left(6; -\frac{13}{4}, \frac{13}{4}; -z\right) = $$
$$ \frac{1}{12\,779\,520\, z^{9/4}}\left(-2\sqrt[4]{z}\,\left(16\,384\, z^5 - 399\,360\, z^4 + 367\,680\, z^3 + 10\,944\,480\, z^2 - 11\,351\,340\, z + 12\,006\,225\right) + \right. $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(32\,768\, z^5 - 901\,120\, z^4 - 147\,840\, z^3 + 19\,792\,080\, z^2 - 14\,553\,000\, z + 12\,006\,225\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left(868\,352\, z^5 + 6\,420\,480\, z^4 + 22\,989\,120\, z^3 - 34\,927\,200\, z^2 + 30\,561\,300\, z - 12\,006\,225\right)\cos\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(32\,768\, z^5 - 901\,120\, z^4 - 147\,840\, z^3 + 19\,792\,080\, z^2 - 14\,553\,000\, z + 12\,006\,225\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left(868\,352\, z^5 + 6\,420\,480\, z^4 + 22\,989\,120\, z^3 - 34\,927\,200\, z^2 + 30\,561\,300\, z - 12\,006\,225\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7778.01

$$ {}_1F_2\left(6; -\frac{13}{4}, \frac{17}{4}; z\right) = \frac{1}{31\,457\,280\, z^{13/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(229\,376\, z^5 - 1\,044\,480\, z^4 - 10\,556\,160\, z^3 - 25\,613\,280\, z^2 - 75\,093\,480\, z - 127\,702\,575\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\right.\right. $$
$$ \left(131\,072\, z^6 + 950\,272\, z^{11/2} - 1\,622\,016\, z^5 - 4\,730\,880\, z^{9/2} + 20\,697\,600\, z^4 - 36\,812\,160\, z^{7/2} + 49\,674\,240\, z^3 - \right. $$
$$ \left. 79\,168\,320\, z^{5/2} + 139\,708\,800\, z^2 - 218\,295\,000\, z^{3/2} + 279\,417\,600\, z - 255\,405\,150\, \sqrt{z} + 127\,702\,575\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(131\,072\, z^6 - 950\,272\, z^{11/2} - 1\,622\,016\, z^5 + 4\,730\,880\, z^{9/2} + \right. $$
$$ 20\,697\,600\, z^4 + 36\,812\,160\, z^{7/2} + 49\,674\,240\, z^3 + 79\,168\,320\, z^{5/2} + 139\,708\,800\, z^2 + $$
$$ \left.\left. 218\,295\,000\, z^{3/2} + 279\,417\,600\, z + 255\,405\,150\, \sqrt{z} + 127\,702\,575\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7779.01

$$ {}_1F_2\left(6; -\frac{13}{4}, \frac{17}{4}; -z\right) = $$
$$ \frac{1}{7\,864\,320\, z^{13/4}} \left(2\, \sqrt[4]{z}\, \left(229\,376\, z^5 + 1\,044\,480\, z^4 - 10\,556\,160\, z^3 + 25\,613\,280\, z^2 - 75\,093\,480\, z + 127\,702\,575\right) - \right. $$
$$ \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(131\,072\, z^6 + 1\,622\,016\, z^5 + 20\,697\,600\, z^4 - \right.\right. $$
$$ \left. 49\,674\,240\, z^3 + 139\,708\,800\, z^2 - 279\,417\,600\, z + 127\,702\,575\right) \cos\left(2\, \sqrt{z}\right) + $$
$$ \left. 2\, \sqrt{z}\, \left(475\,136\, z^5 + 2\,365\,440\, z^4 - 18\,406\,080\, z^3 + 39\,584\,160\, z^2 - 109\,147\,500\, z + 127\,702\,575\right) \sin\left(2\, \sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(131\,072\, z^6 + 1\,622\,016\, z^5 + 20\,697\,600\, z^4 - 49\,674\,240\, z^3 + 139\,708\,800\, z^2 - \right.\right. $$
$$ \left. 279\,417\,600\, z + 127\,702\,575\right) \sin\left(2\, \sqrt{z}\right) - $$
$$ \left.\left. 2\, \sqrt{z}\, \left(475\,136\, z^5 + 2\,365\,440\, z^4 - 18\,406\,080\, z^3 + 39\,584\,160\, z^2 - 109\,147\,500\, z + 127\,702\,575\right) \cos\left(2\, \sqrt{z}\right)\right)\right) $$

07.22.03.7780.01

$$ {}_1F_2\left(6; -\frac{13}{4}, \frac{21}{4}; z\right) = $$
$$ \frac{1}{251\,658\,240\, z^{17/4}} \left(17\, e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(65\,536\, z^6 - 1\,105\,920\, z^5 - 9\,358\,080\, z^4 - 57\,214\,080\, z^3 - 389\,687\,760\, z^2 - \right.\right.\right. $$
$$ 1\,678\,376\,700\, z - 3\,557\,428\,875\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(262\,144\, z^{13/2} + 196\,608\, z^6 - 4\,423\,680\, z^{11/2} + $$
$$ 14\,868\,480\, z^5 - 32\,947\,200\, z^{9/2} + 74\,638\,080\, z^4 - 199\,203\,840\, z^{7/2} + 538\,876\,800\, z^3 - 1\,337\,212\,800\, z^{5/2} + $$
$$ 2\,906\,442\,000\, z^2 - 5\,254\,048\,800\, z^{3/2} + 7\,370\,262\,900\, z - 7\,114\,857\,750\, \sqrt{z} + 3\,557\,428\,875\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\, \left(-262\,144\, z^{13/2} + 196\,608\, z^6 + 4\,423\,680\, z^{11/2} + 14\,868\,480\, z^5 + 32\,947\,200\, z^{9/2} + 74\,638\,080\, z^4 + \right. $$
$$ 199\,203\,840\, z^{7/2} + 538\,876\,800\, z^3 + 1\,337\,212\,800\, z^{5/2} + 2\,906\,442\,000\, z^2 + $$
$$ \left.\left.\left. 5\,254\,048\,800\, z^{3/2} + 7\,370\,262\,900\, z + 7\,114\,857\,750\, \sqrt{z} + 3\,557\,428\,875\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7781.01

$${}_1F_2\left(6; -\frac{13}{4}, \frac{21}{4}; -z\right) = \frac{1}{62\,914\,560\, z^{17/4}}$$
$$\left(17\left(2\sqrt[4]{z}\left(65\,536\, z^6 + 1\,105\,920\, z^5 - 9\,358\,080\, z^4 + 57\,214\,080\, z^3 - 389\,687\,760\, z^2 + 1\,678\,376\,700\, z - 3\,557\,428\,875\right) + \right.\right.$$
$$\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(131\,072\, z^6 + 2\,211\,840\, z^5 - 16\,473\,600\, z^4 + 99\,601\,920\, z^3 - 668\,606\,400\, z^2 + \right.\right.$$
$$\left.2\,627\,024\,400\, z - 3\,557\,428\,875\right)\cos\left(2\sqrt{z}\right) + 3\left(65\,536\, z^6 - 4\,956\,160\, z^5 + 24\,879\,360\, z^4 - \right.$$
$$\left.\left.179\,625\,600\, z^3 + 968\,814\,000\, z^2 - 2\,456\,754\,300\, z + 1\,185\,809\,625\right)\sin\left(2\sqrt{z}\right)\right) +$$
$$\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(3\left(65\,536\, z^6 - 4\,956\,160\, z^5 + 24\,879\,360\, z^4 - 179\,625\,600\, z^3 + 968\,814\,000\, z^2 - \right.\right.$$
$$\left.2\,456\,754\,300\, z + 1\,185\,809\,625\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(131\,072\, z^6 + 2\,211\,840\, z^5 - \right.$$
$$\left.\left.\left.16\,473\,600\, z^4 + 99\,601\,920\, z^3 - 668\,606\,400\, z^2 + 2\,627\,024\,400\, z - 3\,557\,428\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 6$, $b_1 = -\frac{11}{4}$

07.22.03.7782.01

$${}_1F_2\left(6; -\frac{11}{4}, -\frac{9}{4}; z\right) = \frac{1}{623\,700}$$
$$\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(1024\, z^{5/2} + 37\,120\, z^2 + 497\,280\, z^{3/2} + 3\,054\,240\, z + 8\,521\,380\sqrt{z} + 8\,541\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} + \right.\right.$$
$$\sqrt{2\pi}\left(1024\, z^{5/2} - 37\,120\, z^2 + 497\,280\, z^{3/2} - 3\,054\,240\, z + 8\,521\,380\sqrt{z} - 8\,541\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} +$$
$$\left.\left.12\, e^{2\sqrt{z}}\left(6144\, z^5 + 489\,440\, z^4 + 1\,146\,880\, z^3 + 80\,640\, z^2 + 50\,400\, z + 51\,975\right)\right)\right)$$

07.22.03.7783.01

$${}_1F_2\left(6; -\frac{11}{4}, -\frac{9}{4}; -z\right) = \frac{1}{155\,925}$$
$$\left(\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\left(256\, z^2 - 124\,320\, z + 2\,130\,345\right)\sin\left(2\sqrt{z}\right) - 5\left(7424\, z^2 - 610\,848\, z + 1\,708\,245\right)\cos\left(2\sqrt{z}\right)\right) z^{13/4} + \right.$$
$$\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\left(256\, z^2 - 124\,320\, z + 2\,130\,345\right)\cos\left(2\sqrt{z}\right) + 5\left(7424\, z^2 - 610\,848\, z + 1\,708\,245\right)\sin\left(2\sqrt{z}\right)\right)$$
$$\left. z^{13/4} - 3\left(6144\, z^5 - 489\,440\, z^4 + 1\,146\,880\, z^3 - 80\,640\, z^2 + 50\,400\, z - 51\,975\right)\right)$$

07.22.03.7784.01

$$ {}_1F_2\left(6; -\frac{11}{4}, -\frac{5}{4}; z\right) = \frac{1}{554\,400} \left(e^{-2\sqrt{z}} \left(-e^{4\sqrt{z}}\sqrt{2\pi}\left(2048z^3 + 68\,096z^{5/2} + 824\,320z^2 + 4\,459\,840z^{3/2} + 10\,353\,000z + 6\,729\,450\sqrt{z} - 3\,364\,725\right)\right.\right. \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{9/4} + \sqrt{2\pi}\left(2048z^3 - 68\,096z^{5/2} + 824\,320z^2 - 4\,459\,840z^{3/2} + 10\,353\,000z - 6\,729\,450\sqrt{z} - \left.\left. 3\,364\,725\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{9/4} - 16e^{2\sqrt{z}}\left(256z^5 + 100\,960z^4 + 1\,172\,185z^3 - 483\,840z^2 - 60\,480z - 34\,650\right)\right)\right) $$

07.22.03.7785.01

$$ {}_1F_2\left(6; -\frac{11}{4}, -\frac{5}{4}; -z\right) = \frac{1}{138\,600}\left(\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048z^3 - 824\,320z^2 + 10\,353\,000z + 3\,364\,725\right)\cos\left(2\sqrt{z}\right) + 14\sqrt{z}\left(4864z^2 - 318\,560z + 480\,675\right)\sin\left(2\sqrt{z}\right)\right) z^{9/4} - \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(2048z^3 - 824\,320z^2 + 10\,353\,000z + 3\,364\,725\right)\sin\left(2\sqrt{z}\right) - 14\sqrt{z}\left(4864z^2 - 318\,560z + 480\,675\right)\cos\left(2\sqrt{z}\right)\right) z^{9/4} + 4\left(256z^5 - 100\,960z^4 + 1\,172\,185z^3 + 483\,840z^2 - 60\,480z + 34\,650\right)\right) $$

07.22.03.7786.01

$$ {}_1F_2\left(6; -\frac{11}{4}, -\frac{1}{4}; z\right) = \frac{1}{887\,040}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(4096z^{7/2} + 121\,856z^3 + 1\,283\,072z^{5/2} + 5\,712\,000z^2 + 9\,282\,000z^{3/2} - 464\,100z - 6\,265\,350\sqrt{z} + 3\,132\,675\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} + \sqrt{2\pi}\left(4096z^{7/2} - 121\,856z^3 + 1\,283\,072z^{5/2} - 5\,712\,000z^2 + 9\,282\,000z^{3/2} + 464\,100z - 6\,265\,350\sqrt{z} - 3\,132\,675\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} + 16e^{2\sqrt{z}}\left(15\,104z^4 + 676\,640z^3 - 246\,015z^2 + 483\,840z + 55\,440\right)\right)\right) $$

07.22.03.7787.01

$$ {}_1F_2\left(6; -\frac{11}{4}, -\frac{1}{4}; -z\right) = \frac{1}{221\,760}\left(-\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2048z^3 - 641\,536z^2 + 4\,641\,000z + 3\,132\,675\right)\cos\left(2\sqrt{z}\right) + 119\left(1024z^3 - 48\,000z^2 - 3900z - 26\,325\right)\sin\left(2\sqrt{z}\right)\right) z^{5/4} - \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2048z^3 - 641\,536z^2 + 4\,641\,000z + 3\,132\,675\right)\sin\left(2\sqrt{z}\right) - 119\left(1024z^3 - 48\,000z^2 - 3900z - 26\,325\right)\cos\left(2\sqrt{z}\right)\right) z^{5/4} + 4\left(15\,104z^4 - 676\,640z^3 - 246\,015z^2 - 483\,840z + 55\,440\right)\right) $$

07.22.03.7788.01

$$ {}_1F_2\left(6; -\frac{11}{4}, \frac{3}{4}; z\right) = \frac{1}{7\,096\,320}\left(e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\left(1024\,z^4 + 222\,080\,z^3 + 315\,540\,z^2 + 246\,015\,z - 443\,520\right) - e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\sqrt[4]{z}\right.\right.$$
$$\left(8192\,z^4 + 210\,944\,z^{7/2} + 1\,827\,840\,z^3 + 5\,940\,480\,z^{5/2} + 3\,712\,800\,z^2 - 8\,353\,800\,z^{3/2} + 6\,265\,350\,\sqrt{z} - 3\,132\,675\right)$$
$$\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\,\pi}\,\sqrt[4]{z}\,\left(8192\,z^4 - 210\,944\,z^{7/2} + 1\,827\,840\,z^3 - 5\,940\,480\,z^{5/2} +\right.$$
$$\left.\left.\left.3\,712\,800\,z^2 + 8\,353\,800\,z^{3/2} - 6\,265\,350\,\sqrt{z} - 3\,132\,675\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7789.01

$$ {}_1F_2\left(6; -\frac{11}{4}, \frac{3}{4}; -z\right) = \frac{1}{1\,774\,080}$$
$$\left(-4096\,z^4 + 888\,320\,z^3 - 1\,262\,160\,z^2 + 984\,060\,z - \sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4 - 1\,827\,840\,z^3 + 3\,712\,800\,z^2 - 3\,132\,675\right)\right.\right.$$
$$\left.\cos\left(2\,\sqrt{z}\right) + 2\,\sqrt{z}\,\left(105\,472\,z^3 - 2\,970\,240\,z^2 - 4\,176\,900\,z - 3\,132\,675\right)\sin\left(2\,\sqrt{z}\right)\right)\sqrt[4]{z} +$$
$$\sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4 - 1\,827\,840\,z^3 + 3\,712\,800\,z^2 - 3\,132\,675\right)\sin\left(2\,\sqrt{z}\right) -\right.$$
$$\left.\left.2\,\sqrt{z}\,\left(105\,472\,z^3 - 2\,970\,240\,z^2 - 4\,176\,900\,z - 3\,132\,675\right)\cos\left(2\,\sqrt{z}\right)\right)\sqrt[4]{z} + 1\,774\,080\right)$$

07.22.03.7790.01

$$ {}_1F_2\left(6; -\frac{11}{4}, \frac{7}{4}; z\right) = \frac{1}{18\,923\,520\,z^{3/4}}$$
$$\left(e^{-2\sqrt{z}}\left(-48\,e^{2\sqrt{z}}\,z^{3/4}\left(14\,336\,z^3 + 144\,000\,z^2 - 171\,480\,z - 278\,215\right) - e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(16\,384\,z^{9/2} + 348\,160\,z^4 + 2\,263\,040\right.\right.\right.$$
$$\left.\left.z^{7/2} + 3\,960\,320\,z^3 - 4\,455\,360\,z^{5/2} - 5\,569\,200\,z^2 + 11\,138\,400\,z^{3/2} - 4\,176\,900\,z - 2\,088\,450\,\sqrt{z} + 1\,044\,225\right)$$
$$\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\,\pi}\,\left(-16\,384\,z^{9/2} + 348\,160\,z^4 - 2\,263\,040\,z^{7/2} + 3\,960\,320\,z^3 + 4\,455\,360\,z^{5/2} -\right.$$
$$\left.\left.\left.5\,569\,200\,z^2 - 11\,138\,400\,z^{3/2} - 4\,176\,900\,z + 2\,088\,450\,\sqrt{z} + 1\,044\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7791.01

$$ {}_1F_2\left(6; -\frac{11}{4}, \frac{7}{4}; -z\right) = \frac{1}{4\,730\,880\,z^{3/4}}\left(12\,z^{3/4}\left(14\,336\,z^3 - 144\,000\,z^2 - 171\,480\,z + 278\,215\right) +\right.$$
$$\sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(85\left(4096\,z^4 - 46\,592\,z^3 - 65\,520\,z^2 + 49\,140\,z + 12\,285\right)\cos\left(2\,\sqrt{z}\right) +\right.$$
$$\left.2\,\sqrt{z}\,\left(-8192\,z^4 + 1\,131\,520\,z^3 + 2\,227\,680\,z^2 + 5\,569\,200\,z + 1\,044\,225\right)\sin\left(2\,\sqrt{z}\right)\right) -$$
$$\sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\,\sqrt{z}\,\left(8192\,z^4 - 1\,131\,520\,z^3 - 2\,227\,680\,z^2 - 5\,569\,200\,z - 1\,044\,225\right)\cos\left(2\,\sqrt{z}\right) +\right.$$
$$\left.\left.85\left(4096\,z^4 - 46\,592\,z^3 - 65\,520\,z^2 + 49\,140\,z + 12\,285\right)\sin\left(2\,\sqrt{z}\right)\right)\right)$$

07.22.03.7792.01

$$ {}_1F_2\left(6; -\frac{11}{4}, \frac{11}{4}; z\right) = \frac{1}{21\,626\,880\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(4096 z^4 + 250\,368 z^3 - 797\,040 z^2 - 497\,580 z + 552\,825\right) - e^{4\sqrt{z}} \right.\right. $$
$$ \sqrt{2\pi} \left(32\,768 z^5 + 532\,480 z^{9/2} + 2\,129\,920 z^4 - 599\,040 z^{7/2} - 6\,814\,080 z^3 + 9\,303\,840 z^{5/2} - \right. $$
$$ \left. 982\,800 z^2 - 6\,388\,200 z^{3/2} + 5\,405\,400 z - 3\,316\,950 \sqrt{z} + 1\,658\,475\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \left. \sqrt{2\pi} \left(32\,768 z^5 - 532\,480 z^{9/2} + 2\,129\,920 z^4 + 599\,040 z^{7/2} - 6\,814\,080 z^3 - 9\,303\,840 z^{5/2} - \right.\right. $$
$$ \left.\left. 982\,800 z^2 + 6\,388\,200 z^{3/2} + 5\,405\,400 z + 3\,316\,950 \sqrt{z} + 1\,658\,475\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7793.01

$$ {}_1F_2\left(6; -\frac{11}{4}, \frac{11}{4}; -z\right) = \frac{1}{5\,406\,720\, z^{7/4}} \left(4 z^{3/4} \left(4096 z^4 - 250\,368 z^3 - 797\,040 z^2 + 497\,580 z + 552\,825\right) + \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(32\,768 z^5 - 2\,129\,920 z^4 - 6\,814\,080 z^3 + 982\,800 z^2 + 5\,405\,400 z - 1\,658\,475\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 130 \sqrt{z} \left(4096 z^4 + 4608 z^3 + 71\,568 z^2 + 49\,140 z - 25\,515\right) \sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(32\,768 z^5 - 2\,129\,920 z^4 - 6\,814\,080 z^3 + 982\,800 z^2 + 5\,405\,400 z - 1\,658\,475\right) \sin\left(2\sqrt{z}\right) - \right. $$
$$ \left. \left. 130 \sqrt{z} \left(4096 z^4 + 4608 z^3 + 71\,568 z^2 + 49\,140 z - 25\,515\right) \cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7794.01

$$ {}_1F_2\left(6; -\frac{11}{4}, \frac{15}{4}; z\right) = \frac{1}{15\,728\,640\, z^{11/4}} \left(e^{-2\sqrt{z}} \left(-48\, e^{2\sqrt{z}}\, z^{3/4} \left(28\,672 z^4 - 190\,976 z^3 + 49\,360 z^2 + 680\,400 z + 1\,091\,475\right) - e^{4\sqrt{z}} \sqrt{2\pi} \right.\right. $$
$$ \left(65\,536 z^{11/2} + 704\,512 z^5 + 737\,280 z^{9/2} - 4\,515\,840 z^4 + 4\,435\,200 z^{7/2} + 3\,084\,480 z^3 - 11\,219\,040 z^{5/2} + \right. $$
$$ \left. 15\,271\,200 z^2 - 19\,731\,600 z^{3/2} + 22\,963\,500 z - 19\,646\,550 \sqrt{z} + 9\,823\,275\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \left. \sqrt{2\pi} \left(-65\,536 z^{11/2} + 704\,512 z^5 - 737\,280 z^{9/2} - 4\,515\,840 z^4 - 4\,435\,200 z^{7/2} + 3\,084\,480 z^3 + \right.\right. $$
$$ \left.\left. 11\,219\,040 z^{5/2} + 15\,271\,200 z^2 + 19\,731\,600 z^{3/2} + 22\,963\,500 z + 19\,646\,550 \sqrt{z} + 9\,823\,275\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7795.01

$$ {}_1F_2\left(6; -\frac{11}{4}, \frac{15}{4}; -z\right) = \frac{1}{3\,932\,160\, z^{11/4}}\left(-12\, z^{3/4}\left(28\,672\, z^4 + 190\,976\, z^3 + 49\,360\, z^2 - 680\,400\, z + 1\,091\,475\right) + \right.$$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(32\,768\, z^5 - 368\,640\, z^4 + 2\,217\,600\, z^3 + 5\,609\,520\, z^2 - 9\,865\,800\, z + 9\,823\,275\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$ \left.\left(704\,512\, z^5 + 4\,515\,840\, z^4 + 3\,084\,480\, z^3 - 15\,271\,200\, z^2 + 22\,963\,500\, z - 9\,823\,275\right)\cos\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(32\,768\, z^5 - 368\,640\, z^4 + 2\,217\,600\, z^3 + 5\,609\,520\, z^2 - 9\,865\,800\, z + 9\,823\,275\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left.\left.\left(704\,512\, z^5 + 4\,515\,840\, z^4 + 3\,084\,480\, z^3 - 15\,271\,200\, z^2 + 22\,963\,500\, z - 9\,823\,275\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7796.01

$$ {}_1F_2\left(6; -\frac{11}{4}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{8\,388\,608\, z^{15/4}}\left(e^{-2\sqrt{z}}\left(-16\, e^{2\sqrt{z}}\, z^{3/4}\left(16\,384\, z^5 - 260\,096\, z^4 + 625\,984\, z^3 + 4\,868\,640\, z^2 + 21\,413\,700\, z + 52\,026\,975\right) - \right.\right. $$
$$ e^{4\sqrt{z}}\,\sqrt{2\pi}\left(131\,072\, z^6 + 622\,592\, z^{11/2} - 1\,949\,696\, z^5 + 716\,800\, z^{9/2} + 5\,644\,800\, z^4 - 16\,410\,240\, z^{7/2} + 34\,997\,760\right. $$
$$ \left. z^3 - 74\,450\,880\, z^{5/2} + 146\,664\,000\, z^2 - 247\,401\,000\, z^{3/2} + 331\,808\,400\, z - 312\,161\,850\sqrt{z} + 156\,080\,925\right) $$
$$ \left.\left.\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\left(131\,072\, z^6 - 622\,592\, z^{11/2} - 1\,949\,696\, z^5 - 716\,800\, z^{9/2} + 5\,644\,800\, z^4 + \right.\right.\right. $$
$$ 16\,410\,240\, z^{7/2} + 34\,997\,760\, z^3 + 74\,450\,880\, z^{5/2} + 146\,664\,000\, z^2 + $$
$$ \left.\left.\left.247\,401\,000\, z^{3/2} + 331\,808\,400\, z + 312\,161\,850\sqrt{z} + 156\,080\,925\right)\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7797.01

$$ {}_1F_2\left(6; -\frac{11}{4}, \frac{19}{4}; -z\right) = $$
$$ \frac{1}{2\,097\,152\, z^{15/4}}\left(-4\, z^{3/4}\left(16\,384\, z^5 + 260\,096\, z^4 + 625\,984\, z^3 - 4\,868\,640\, z^2 + 21\,413\,700\, z - 52\,026\,975\right) - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right. $$
$$ \left(\left(131\,072\, z^6 + 1\,949\,696\, z^5 + 5\,644\,800\, z^4 - 34\,997\,760\, z^3 + 146\,664\,000\, z^2 - 331\,808\,400\, z + 156\,080\,925\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ 2\sqrt{z}\left(311\,296\, z^5 - 358\,400\, z^4 - 8\,205\,120\, z^3 + 37\,225\,440\, z^2 - 123\,700\,500\, z + 156\,080\,925\right) $$
$$ \left.\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left(\left(131\,072\, z^6 + 1\,949\,696\, z^5 + 5\,644\,800\, z^4 - 34\,997\,760\, z^3 + 146\,664\,000\, z^2 - 331\,808\,400\, z + 156\,080\,925\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left. 2\sqrt{z}\left(311\,296\, z^5 - 358\,400\, z^4 - 8\,205\,120\, z^3 + 37\,225\,440\, z^2 - 123\,700\,500\, z + 156\,080\,925\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7798.01

$$ {}_1F_2\left(6; -\frac{11}{4}, \frac{23}{4}; z\right) = -\frac{1}{67\,108\,864\, z^{19/4}} \left(19\, e^{-2\sqrt{z}} \left(-16\, e^{2\sqrt{z}}\, z^{3/4} \left(65\,536\, z^5 - 985\,088\, z^4 - 12\,337\,920\, z^3 - 121\,413\,600\, z^2 - 772\,972\,200\, z - 2\,341\,213\,875\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \left(262\,144\, z^{13/2} - 458\,752\, z^6 - 1\,146\,880\, z^{11/2} + 7\,741\,440\, z^5 - 27\,417\,600\, z^{9/2} + 90\,558\,720\, z^4 - 292\,239\,360\, z^{7/2} + 873\,936\,000\, z^3 - 2\,328\,480\,000\, z^{5/2} + 5\,326\,398\,000\, z^2 - 9\,989\,179\,200\, z^{3/2} + 14\,359\,445\,100\, z - 14\,047\,283\,250\, \sqrt{z} + 7\,023\,641\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(262\,144\, z^{13/2} + 458\,752\, z^6 - 1\,146\,880\, z^{11/2} - 7\,741\,440\, z^5 - 27\,417\,600\, z^{9/2} - 90\,558\,720\, z^4 - 292\,239\,360\, z^{7/2} - 873\,936\,000\, z^3 - 2\,328\,480\,000\, z^{5/2} - 5\,326\,398\,000\, z^2 - 9\,989\,179\,200\, z^{3/2} - 14\,359\,445\,100\, z - 14\,047\,283\,250\, \sqrt{z} - 7\,023\,641\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7799.01

$$ {}_1F_2\left(6; -\frac{11}{4}, \frac{23}{4}; -z\right) = -\frac{1}{16\,777\,216\, z^{19/4}} \left(19 \left(4\, z^{3/4} \left(65\,536\, z^5 + 985\,088\, z^4 - 12\,337\,920\, z^3 + 121\,413\,600\, z^2 - 772\,972\,200\, z + 2\,341\,213\,875\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(131\,072\, z^6 + 573\,440\, z^5 - 13\,708\,800\, z^4 + 146\,119\,680\, z^3 - 1\,164\,240\,000\, z^2 + 4\,994\,589\,600\, z - 7\,023\,641\,625\right) \cos\left(2\sqrt{z}\right) - 7 \left(65\,536\, z^6 + 1\,105\,920\, z^5 - 12\,936\,960\, z^4 + 124\,848\,000\, z^3 - 760\,914\,000\, z^2 + 2\,051\,349\,300\, z - 1\,003\,377\,375\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(7 \left(65\,536\, z^6 + 1\,105\,920\, z^5 - 12\,936\,960\, z^4 + 124\,848\,000\, z^3 - 760\,914\,000\, z^2 + 2\,051\,349\,300\, z - 1\,003\,377\,375\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z} \left(131\,072\, z^6 + 573\,440\, z^5 - 13\,708\,800\, z^4 + 146\,119\,680\, z^3 - 1\,164\,240\,000\, z^2 + 4\,994\,589\,600\, z - 7\,023\,641\,625\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 6$, $b_1 = -\frac{9}{4}$

07.22.03.7800.01

$$ {}_1F_2\left(6; -\frac{9}{4}, -\frac{7}{4}; z\right) = \frac{1}{226\,800} \left(e^{-2\sqrt{z}} \left(-e^{4\sqrt{z}}\, \sqrt{2\pi} \left(1024\, z^{5/2} + 34\,560\, z^2 + 428\,160\, z^{3/2} + 2\,412\,000\, z + 6\,109\,380\, \sqrt{z} + 5\,486\,535\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{11/4} + \sqrt{2\pi} \left(1024\, z^{5/2} - 34\,560\, z^2 + 428\,160\, z^{3/2} - 2\,412\,000\, z + 6\,109\,380\, \sqrt{z} - 5\,486\,535\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{11/4} - 8\, e^{2\sqrt{z}} \left(256\, z^5 + 104\,928\, z^4 + 1\,394\,745\, z^3 - 161\,280\, z^2 - 43\,200\, z - 28\,350\right)\right)\right) $$

07.22.03.7801.01

$$ {}_1F_2\left(6; -\frac{9}{4}, -\frac{7}{4}; -z\right) = \frac{1}{56\,700}\left(512\,z^5 - 209\,856\,z^4 + 2\,789\,490\,z^3 - \right.$$
$$ \sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(256\,z^2 - 107\,040\,z + 1\,527\,345\right)\sin\left(2\sqrt{z}\right) - 45\left(768\,z^2 - 53\,600\,z + 121\,923\right)\cos\left(2\sqrt{z}\right)\right)z^{11/4} + $$
$$ \sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(256\,z^2 - 107\,040\,z + 1\,527\,345\right)\cos\left(2\sqrt{z}\right) + 45\left(768\,z^2 - 53\,600\,z + 121\,923\right)\sin\left(2\sqrt{z}\right)\right)z^{11/4} + $$
$$ \left. 322\,560\,z^2 - 86\,400\,z + 56\,700\right) $$

07.22.03.7802.01

$$ {}_1F_2\left(6; -\frac{9}{4}, -\frac{3}{4}; z\right) = $$
$$ \frac{1}{259\,200}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\ \sqrt{2\pi}\,\left(2048\,z^3 + 62\,976\,z^{5/2} + 698\,880\,z^2 + 3\,426\,240\,z^{3/2} + 7\,079\,400\,z + 3\,893\,670\sqrt{z} - 1\,946\,835\right)\right.\right. $$
$$ \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{7/4} + \sqrt{2\pi}\,\left(2048\,z^3 - 62\,976\,z^{5/2} + 698\,880\,z^2 - 3\,426\,240\,z^{3/2} + 7\,079\,400\,z - 3\,893\,670\sqrt{z} - \right. $$
$$ \left.\left. 1\,946\,835\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{7/4} + 8\,e^{2\sqrt{z}}\,\left(15\,616\,z^4 + 815\,712\,z^3 + 656\,595\,z^2 + 115\,200\,z + 32\,400\right)\right)\right) $$

07.22.03.7803.01

$$ {}_1F_2\left(6; -\frac{9}{4}, -\frac{3}{4}; -z\right) = \frac{1}{64\,800}\left(-\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3 - 698\,880\,z^2 + 7\,079\,400\,z + 1\,946\,835\right)\cos\left(2\sqrt{z}\right) + \right.\right. $$
$$ \left. 6\sqrt{z}\,\left(10\,496\,z^2 - 571\,040\,z + 648\,945\right)\sin\left(2\sqrt{z}\right)\right)z^{7/4} - \sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left(\left(2048\,z^3 - 698\,880\,z^2 + 7\,079\,400\,z + 1\,946\,835\right)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(10\,496\,z^2 - 571\,040\,z + 648\,945\right)\cos\left(2\sqrt{z}\right)\right) $$
$$ \left. z^{7/4} + 2\left(15\,616\,z^4 - 815\,712\,z^3 + 656\,595\,z^2 - 115\,200\,z + 32\,400\right)\right) $$

07.22.03.7804.01

$$ {}_1F_2\left(6; -\frac{9}{4}, \frac{1}{4}; z\right) = \frac{1}{691\,200} $$
$$ \left(e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\,\left(1024\,z^4 + 258\,944\,z^3 + 1\,223\,604\,z^2 - 592\,605\,z - 86\,400\right) - e^{4\sqrt{z}}\ \sqrt{2\pi}\ z^{3/4}\left(4096\,z^{7/2} + 111\,616\,z^3 + \right.\right. $$
$$ 1\,062\,912\,z^{5/2} + 4\,195\,200\,z^2 + 5\,768\,400\,z^{3/2} - 865\,260\,z - 3\,028\,410\sqrt{z} + 1\,514\,205\Big)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\ z^{3/4}\left(4096\,z^{7/2} - 111\,616\,z^3 + 1\,062\,912\,z^{5/2} - 4\,195\,200\,z^2 + 5\,768\,400\,z^{3/2} + \right. $$
$$ \left.\left. 865\,260\,z - 3\,028\,410\sqrt{z} - 1\,514\,205\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7805.01

$$ {}_1F_2\left(6; -\frac{9}{4}, \frac{1}{4}; -z\right) = \frac{1}{172\,800}\left(-2\left(1024 z^4 - 258\,944 z^3 + 1\,223\,604 z^2 + 592\,605 z - 86\,400\right) + \right.$$
$$ \sqrt{\pi}\, z^{3/4} C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-111\,616 z^3 + 4\,195\,200 z^2 + 865\,260 z + 1\,514\,205\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left. 2\sqrt{z}\left(2048 z^3 - 531\,456 z^2 + 2\,884\,200 z + 1\,514\,205\right)\sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, z^{3/4} S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2048 z^3 - 531\,456 z^2 + 2\,884\,200 z + 1\,514\,205\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left.\left.\left(111\,616 z^3 - 4\,195\,200 z^2 - 865\,260 z - 1\,514\,205\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7806.01

$$ {}_1F_2\left(6; -\frac{9}{4}, \frac{5}{4}; z\right) = $$
$$ \frac{1}{5\,529\,600\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-8 e^{2\sqrt{z}}\sqrt[4]{z}\left(47\,104 z^3 + 920\,448 z^2 - 1\,158\,840 z + 296\,325\right) - e^{4\sqrt{z}}\sqrt{2\pi}\left(8192 z^4 + 190\,464 z^{7/2} + \right.\right.\right. $$
$$ \left. 1\,459\,200 z^3 + 4\,012\,800 z^{5/2} + 1\,504\,800 z^2 - 4\,740\,120 z^{3/2} + 1\,053\,360 z + 1\,975\,050\sqrt{z} - 987\,525\right) $$
$$ \left.\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\left(-8192 z^4 + 190\,464 z^{7/2} - 1\,459\,200 z^3 + 4\,012\,800 z^{5/2} - 1\,504\,800 z^2 - \right.\right.\right. $$
$$ \left.\left.\left. 4\,740\,120 z^{3/2} - 1\,053\,360 z + 1\,975\,050\sqrt{z} + 987\,525\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7807.01

$$ {}_1F_2\left(6; -\frac{9}{4}, \frac{5}{4}; -z\right) = \frac{1}{1\,382\,400\sqrt[4]{z}}\left(2\sqrt[4]{z}\left(47\,104 z^3 - 920\,448 z^2 - 1\,158\,840 z - 296\,325\right) - \right.$$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192 z^4 - 1\,459\,200 z^3 + 1\,504\,800 z^2 - 1\,053\,360 z - 987\,525\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left. 6\sqrt{z}\left(31\,744 z^3 - 668\,800 z^2 - 790\,020 z - 329\,175\right)\sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192 z^4 - 1\,459\,200 z^3 + 1\,504\,800 z^2 - 1\,053\,360 z - 987\,525\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$ \left.\left. 6\sqrt{z}\left(31\,744 z^3 - 668\,800 z^2 - 790\,020 z - 329\,175\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7808.01

$$ {}_1F_2\left(6; -\frac{9}{4}, \frac{9}{4}; z\right) = \frac{1}{8\,847\,360\, z^{5/4}} \left(e^{-2\sqrt{z}} \left(-8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(4096 z^4 + 403\,968 z^3 - 900\,720 z^2 + 1\,014\,660 z + 363\,825\right) - e^{4\sqrt{z}}\, \sqrt{2\pi}\right.\right. $$
$$ \left(16\,384 z^{9/2} + 307\,200 z^4 + 1\,689\,600 z^{7/2} + 2\,112\,000 z^3 - 3\,326\,400 z^{5/2} - \right. $$
$$ \left. 1\,164\,240 z^2 + 4\,435\,200 z^{3/2} - 2\,702\,700 z + 727\,650 \sqrt{z} - 363\,825\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\, \left(16\,384 z^{9/2} - 307\,200 z^4 + 1\,689\,600 z^{7/2} - 2\,112\,000 z^3 - 3\,326\,400 z^{5/2} + 1\,164\,240 z^2 + \right. $$
$$ \left.\left. 4\,435\,200 z^{3/2} + 2\,702\,700 z + 727\,650 \sqrt{z} + 363\,825\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7809.01

$$ {}_1F_2\left(6; -\frac{9}{4}, \frac{9}{4}; -z\right) = \frac{1}{2\,211\,840\, z^{5/4}} \left(2\, \sqrt[4]{z}\, \left(4096 z^4 - 403\,968 z^3 - 900\,720 z^2 - 1\,014\,660 z + 363\,825\right) + \right. $$
$$ \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(15 \left(20\,480 z^4 - 140\,800 z^3 - 77\,616 z^2 + 180\,180 z - 24\,255\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\, \left(-8192 z^4 + 844\,800 z^3 + 1\,663\,200 z^2 + 2\,217\,600 z - 363\,825\right) \sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(8192 z^4 - 844\,800 z^3 - 1\,663\,200 z^2 - 2\,217\,600 z + 363\,825\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. \left. 15 \left(20\,480 z^4 - 140\,800 z^3 - 77\,616 z^2 + 180\,180 z - 24\,255\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7810.01

$$ {}_1F_2\left(6; -\frac{9}{4}, \frac{13}{4}; z\right) = \frac{1}{7\,864\,320\, z^{9/4}} \left(e^{-2\sqrt{z}} \left(-24\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(36\,864 z^4 - 120\,320 z^3 + 454\,640 z^2 + 388\,080 z + 363\,825\right) - e^{4\sqrt{z}}\right.\right. $$
$$ \sqrt{2\pi}\, \left(32\,768 z^5 + 450\,560 z^{9/2} + 1\,351\,680 z^4 - 1\,182\,720 z^{7/2} - 2\,513\,280 z^3 + 5\,211\,360 z^{5/2} - \right. $$
$$ \left. 4\,158\,000 z^2 + 2\,910\,600 z^{3/2} - 2\,910\,600 z + 2\,182\,950 \sqrt{z} - 1\,091\,475\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\, \left(-32\,768 z^5 + 450\,560 z^{9/2} - 1\,351\,680 z^4 - 1\,182\,720 z^{7/2} + 2\,513\,280 z^3 + 5\,211\,360 z^{5/2} + \right. $$
$$ \left.\left. 4\,158\,000 z^2 + 2\,910\,600 z^{3/2} + 2\,910\,600 z + 2\,182\,950 \sqrt{z} + 1\,091\,475\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7811.01

$$ {}_1F_2\left(6; -\frac{9}{4}, \frac{13}{4}; -z\right) = \frac{1}{1\,966\,080\, z^{9/4}}\left(-6\sqrt[4]{z}\,\left(36\,864\, z^4 + 120\,320\, z^3 + 454\,640\, z^2 - 388\,080\, z + 363\,825\right) + \right.$$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768\, z^5 - 1\,351\,680\, z^4 - 2\,513\,280\, z^3 + 4\,158\,000\, z^2 - 2\,910\,600\, z + 1\,091\,475\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$ \left. 110\sqrt{z}\,\left(4096\, z^4 + 10\,752\, z^3 + 47\,376\, z^2 - 26\,460\, z + 19\,845\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768\, z^5 - 1\,351\,680\, z^4 - 2\,513\,280\, z^3 + 4\,158\,000\, z^2 - 2\,910\,600\, z + 1\,091\,475\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$ \left.\left. 110\sqrt{z}\,\left(4096\, z^4 + 10\,752\, z^3 + 47\,376\, z^2 - 26\,460\, z + 19\,845\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7812.01

$$ {}_1F_2\left(6; -\frac{9}{4}, \frac{17}{4}; z\right) = $$
$$ -\frac{1}{62\,914\,560\, z^{13/4}}\left(13\, e^{-2\sqrt{z}}\left(8\, e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(16\,384\, z^5 - 30\,720\, z^4 + 1\,231\,680\, z^3 + 2\,328\,480\, z^2 + 6\,112\,260\, z + 9\,823\,275\right) + \right.\right. $$
$$ e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536\, z^{11/2} + 540\,672\, z^5 - 2\,365\,440\, z^4 + 4\,435\,200\, z^{7/2} - 5\,100\,480\, z^3 + 6\,985\,440\, z^{5/2} - \right. $$
$$ \left. 11\,642\,400\, z^2 + 17\,463\,600\, z^{3/2} - 21\,829\,500\, z + 19\,646\,550\sqrt{z} - 9\,823\,275\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$
$$ \sqrt{2\pi}\,\left(65\,536\, z^{11/2} - 540\,672\, z^5 + 2\,365\,440\, z^4 + 4\,435\,200\, z^{7/2} + 5\,100\,480\, z^3 + 6\,985\,440\, z^{5/2} + \right. $$
$$ \left.\left.\left. 11\,642\,400\, z^2 + 17\,463\,600\, z^{3/2} + 21\,829\,500\, z + 19\,646\,550\sqrt{z} + 9\,823\,275\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7813.01

$$ {}_1F_2\left(6; -\frac{9}{4}, \frac{17}{4}; -z\right) = $$
$$ -\frac{1}{15\,728\,640\, z^{13/4}}\left(13\left(2\sqrt[4]{z}\,\left(16\,384\, z^5 + 30\,720\, z^4 + 1\,231\,680\, z^3 - 2\,328\,480\, z^2 + 6\,112\,260\, z - 9\,823\,275\right) + \right.\right. $$
$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(32\,768\, z^5 + 2\,217\,600\, z^3 - 3\,492\,720\, z^2 + 8\,731\,800\, z - 9\,823\,275\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 33\left(16\,384\, z^5 + 71\,680\, z^4 - 154\,560\, z^3 + 352\,800\, z^2 - 661\,500\, z + 297\,675\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(33\left(16\,384\, z^5 + 71\,680\, z^4 - 154\,560\, z^3 + 352\,800\, z^2 - 661\,500\, z + 297\,675\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.\left. 2\sqrt{z}\,\left(32\,768\, z^5 + 2\,217\,600\, z^3 - 3\,492\,720\, z^2 + 8\,731\,800\, z - 9\,823\,275\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7814.01

$$ {}_1F_2\left(6; -\frac{9}{4}, \frac{21}{4}; z\right) = -\frac{1}{503\,316\,480\, z^{17/4}} $$
$$ \left(221\, e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(65\,536\, z^5 + 952\,320\, z^4 + 4\,435\,200\, z^3 + 27\,609\,120\, z^2 + 114\,511\,320\, z + 237\,161\,925\right) + e^{4\sqrt{z}}\right.\right. $$
$$ \sqrt{2\pi}\, \left(131\,072\, z^6 + 294\,912\, z^{11/2} - 1\,622\,016\, z^5 + 3\,379\,200\, z^{9/2} - 6\,336\,000\, z^4 + 15\,143\,040\, z^{7/2} - 39\,029\,760\, z^3 + \right. $$
$$ \left. 93\,804\,480\, z^{5/2} - 199\,584\,000\, z^2 + 355\,509\,000\, z^{3/2} - 493\,970\,400\, z + 474\,323\,850\, \sqrt{z} - 237\,161\,925\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(131\,072\, z^6 - 294\,912\, z^{11/2} - 1\,622\,016\, z^5 - 3\,379\,200\, z^{9/2} - \right. $$
$$ 6\,336\,000\, z^4 - 15\,143\,040\, z^{7/2} - 39\,029\,760\, z^3 - 93\,804\,480\, z^{5/2} - 199\,584\,000\, z^2 - $$
$$ \left.\left. 355\,509\,000\, z^{3/2} - 493\,970\,400\, z - 474\,323\,850\, \sqrt{z} - 237\,161\,925\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7815.01

$$ {}_1F_2\left(6; -\frac{9}{4}, \frac{21}{4}; -z\right) = $$
$$ -\frac{1}{125\,829\,120\, z^{17/4}} \left(221 \left(2\, \sqrt[4]{z}\, \left(-65\,536\, z^5 + 952\,320\, z^4 - 4\,435\,200\, z^3 + 27\,609\,120\, z^2 - 114\,511\,320\, z + 237\,161\,925\right) + \right. $$
$$ \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(131\,072\, z^6 + 1\,622\,016\, z^5 - 6\,336\,000\, z^4 + 39\,029\,760\, z^3 - \right.\right. $$
$$ \left.\left. 199\,584\,000\, z^2 + 493\,970\,400\, z - 237\,161\,925\right) \cos\left(2\, \sqrt{z}\right) + $$
$$ 6\, \sqrt{z}\, \left(49\,152\, z^5 - 563\,200\, z^4 + 2\,523\,840\, z^3 - 15\,634\,080\, z^2 + 59\,251\,500\, z - 79\,053\,975\right) \sin\left(2\, \sqrt{z}\right)\right) + $$
$$ \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(131\,072\, z^6 + 1\,622\,016\, z^5 - 6\,336\,000\, z^4 + 39\,029\,760\, z^3 - 199\,584\,000\, z^2 + \right.\right. $$
$$ \left. 493\,970\,400\, z - 237\,161\,925\right) \sin\left(2\, \sqrt{z}\right) - $$
$$ \left.\left. 6\, \sqrt{z}\, \left(49\,152\, z^5 - 563\,200\, z^4 + 2\,523\,840\, z^3 - 15\,634\,080\, z^2 + 59\,251\,500\, z - 79\,053\,975\right) \cos\left(2\, \sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 6$, $b_1 = -\frac{7}{4}$

07.22.03.7816.01

$$ {}_1F_2\left(6; -\frac{7}{4}, -\frac{5}{4}; z\right) = \frac{1}{100\,800} $$
$$ \left(e^{-2\sqrt{z}} \left(e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(1024\, z^{5/2} + 32\,000\, z^2 + 364\,160\, z^{3/2} + 1\,865\,760\, z + 4\,243\,620\, \sqrt{z} + 3\,364\,725\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{9/4} + \right.\right. $$
$$ \sqrt{2\pi}\, \left(1024\, z^{5/2} - 32\,000\, z^2 + 364\,160\, z^{3/2} - 1\,865\,760\, z + 4\,243\,620\, \sqrt{z} - 3\,364\,725\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{9/4} + $$
$$ \left.\left. 64\, e^{2\sqrt{z}}\, \left(992\, z^4 + 55\,640\, z^3 + 80\,640\, z^2 + 4320\, z + 1575\right)\right)\right) $$

07.22.03.7817.01

$$ {}_1F_2\left(6; -\frac{7}{4}, -\frac{5}{4}; -z\right) = \frac{1}{25\,200}$$
$$\left(-\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(256 z^2 - 91\,040 z + 1\,060\,905\right)\sin\left(2\sqrt{z}\right) - 5\left(6400 z^2 - 373\,152 z + 672\,945\right)\cos\left(2\sqrt{z}\right)\right) z^{9/4} - \right.$$
$$\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(256 z^2 - 91\,040 z + 1\,060\,905\right)\cos\left(2\sqrt{z}\right) + 5\left(6400 z^2 - 373\,152 z + 672\,945\right)\sin\left(2\sqrt{z}\right)\right) z^{9/4} +$$
$$\left. 16\left(992 z^4 - 55\,640 z^3 + 80\,640 z^2 - 4320 z + 1575\right)\right)$$

07.22.03.7818.01

$$ {}_1F_2\left(6; -\frac{7}{4}, -\frac{1}{4}; z\right) =$$
$$\frac{1}{161\,280}\left(e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(2048 z^3 + 57\,856 z^{5/2} + 583\,680 z^2 + 2\,564\,160 z^{3/2} + 4\,641\,000 z + 2\,088\,450\sqrt{z} - 1\,044\,225\right)\right.\right.$$
$$\left.\left.\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{5/4} + \sqrt{2\pi}\,\left(2048 z^3 - 57\,856 z^{5/2} + 583\,680 z^2 - 2\,564\,160 z^{3/2} + 4\,641\,000 z - 2\,088\,450\sqrt{z} - \right.\right.\right.$$
$$\left.\left.\left. 1\,044\,225\right)\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{5/4} - 16\, e^{2\sqrt{z}}\,\left(256 z^4 + 71\,200 z^3 + 512\,085 z^2 - 138\,240 z - 10\,080\right)\right)\right)$$

07.22.03.7819.01

$$ {}_1F_2\left(6; -\frac{7}{4}, -\frac{1}{4}; -z\right) = \frac{1}{40\,320}\left(-\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048 z^3 - 583\,680 z^2 + 4\,641\,000 z + 1\,044\,225\right)\cos\left(2\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 2\sqrt{z}\,\left(28\,928 z^2 - 1\,282\,080 z + 1\,044\,225\right)\sin\left(2\sqrt{z}\right)\right) z^{5/4} + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left(\left(2048 z^3 - 583\,680 z^2 + 4\,641\,000 z + 1\,044\,225\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(28\,928 z^2 - 1\,282\,080 z + 1\,044\,225\right)\cos\left(2\sqrt{z}\right)\right)$$
$$\left. z^{5/4} - 4\left(256 z^4 - 71\,200 z^3 + 512\,085 z^2 + 138\,240 z - 10\,080\right)\right)$$

07.22.03.7820.01

$$ {}_1F_2\left(6; -\frac{7}{4}, \frac{3}{4}; z\right) =$$
$$\frac{1}{1\,290\,240}\left(e^{-2\sqrt{z}}\left(16\, e^{2\sqrt{z}}\,\left(12\,544 z^3 + 346\,560 z^2 - 159\,795 z + 80\,640\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\,\left(4096 z^{7/2} + 101\,376 z^3 + \right.\right.\right.$$
$$\left.\left.\left. 863\,232 z^{5/2} + 2\,970\,240 z^2 + 3\,341\,520 z^{3/2} - 835\,380 z - 1\,253\,070\sqrt{z} + 626\,535\right)\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \right.$$
$$\left.\sqrt{2\pi}\,\sqrt[4]{z}\,\left(4096 z^{7/2} - 101\,376 z^3 + 863\,232 z^{5/2} - 2\,970\,240 z^2 + 3\,341\,520 z^{3/2} + \right.\right.$$
$$\left.\left. 835\,380 z - 1\,253\,070\sqrt{z} - 626\,535\right)\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7821.01

$$ {}_1F_2\left(6; -\frac{7}{4}, \frac{3}{4}; -z\right) = \frac{1}{322\,560} $$
$$ \left(-50\,176 z^3 + 1\,386\,240 z^2 + 639\,180 z + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-101\,376 z^3 + 2\,970\,240 z^2 + 835\,380 z + 626\,535\right)\cos\left(2\sqrt{z}\right) + \right.\right. $$
$$ 2\sqrt{z}\left(2048 z^3 - 431\,616 z^2 + 1\,670\,760 z + 626\,535\right)\sin\left(2\sqrt{z}\right)\Big)\sqrt[4]{z} + $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2048 z^3 - 431\,616 z^2 + 1\,670\,760 z + 626\,535\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 3\left(33\,792 z^3 - 990\,080 z^2 - 278\,460 z - 208\,845\right)\sin\left(2\sqrt{z}\right)\right)\sqrt[4]{z} + 322\,560\right) $$

07.22.03.7822.01

$$ {}_1F_2\left(6; -\frac{7}{4}, \frac{7}{4}; z\right) = $$
$$ \frac{1}{3\,440\,640 z^{3/4}}\left(e^{-2\sqrt{z}}\left(16 e^{2\sqrt{z}} z^{3/4}\left(1024 z^3 + 136\,320 z^2 - 17\,820 z + 165\,315\right) + e^{4\sqrt{z}}\sqrt{2\pi}\left(8192 z^4 + 169\,984 z^{7/2} + \right.\right.\right. $$
$$ \left.\left. 1\,131\,520 z^3 + 2\,545\,920 z^{5/2} + 318\,240 z^2 - 2\,307\,240 z^{3/2} + 954\,720 z + 298\,350\sqrt{z} - 149\,175\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\left(-8192 z^4 + 169\,984 z^{7/2} - 1\,131\,520 z^3 + 2\,545\,920 z^{5/2} - 318\,240 z^2 - 2\,307\,240 z^{3/2} - \right. $$
$$ \left.\left. 954\,720 z + 298\,350\sqrt{z} + 149\,175\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.7823.01

$$ {}_1F_2\left(6; -\frac{7}{4}, \frac{7}{4}; -z\right) = \frac{1}{860\,160 z^{3/4}}\left(4 z^{3/4}\left(-1024 z^3 + 136\,320 z^2 + 17\,820 z + 165\,315\right) - \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192 z^4 - 1\,131\,520 z^3 + 318\,240 z^2 - 954\,720 z - 149\,175\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ 2\sqrt{z}\left(84\,992 z^3 - 1\,272\,960 z^2 - 1\,153\,620 z - 149\,175\right)\sin\left(2\sqrt{z}\right)\Big) + $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192 z^4 - 1\,131\,520 z^3 + 318\,240 z^2 - 954\,720 z - 149\,175\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left. 2\sqrt{z}\left(84\,992 z^3 - 1\,272\,960 z^2 - 1\,153\,620 z - 149\,175\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7824.01

$$ {}_1F_2\left(6; -\frac{7}{4}, \frac{11}{4}; z\right) = \frac{1}{3\,932\,160 z^{7/4}} $$
$$ \left(e^{-2\sqrt{z}}\left(16 e^{2\sqrt{z}} z^{3/4}\left(32\,768 z^3 + 80\,640 z^2 + 128\,760 z - 61\,425\right) + e^{4\sqrt{z}}\sqrt{2\pi}\left(16\,384 z^{9/2} + 266\,240 z^4 + 1\,198\,080 z^{7/2} + \right.\right.\right. $$
$$ \left.\left. 898\,560 z^3 - 2\,059\,200 z^{5/2} + 533\,520 z^2 + 842\,400 z^{3/2} - 666\,900 z + 368\,550\sqrt{z} - 184\,275\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\left(16\,384 z^{9/2} - 266\,240 z^4 + 1\,198\,080 z^{7/2} - 898\,560 z^3 - 2\,059\,200 z^{5/2} - 533\,520 z^2 + \right. $$
$$ \left.\left. 842\,400 z^{3/2} + 666\,900 z + 368\,550\sqrt{z} + 184\,275\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.7825.01

$$ {}_1F_2\left(6; -\frac{7}{4}, \frac{11}{4}; -z\right) = \frac{1}{983\,040\, z^{7/4}} $$
$$ \left(4 z^{3/4} \left(32\,768 z^3 - 80\,640 z^2 + 128\,760 z + 61\,425\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(65\left(4096 z^4 - 13\,824 z^3 + 8208 z^2 + 10\,260 z - 2835\right)\right.\right. $$
$$ \left.\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-8192 z^4 + 599\,040 z^3 + 1\,029\,600 z^2 + 421\,200 z - 184\,275\right)\sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(8192 z^4 - 599\,040 z^3 - 1\,029\,600 z^2 - 421\,200 z + 184\,275\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 65\left(4096 z^4 - 13\,824 z^3 + 8208 z^2 + 10\,260 z - 2835\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7826.01

$$ {}_1F_2\left(6; -\frac{7}{4}, \frac{15}{4}; z\right) = $$
$$ \frac{1}{31\,457\,280\, z^{11/4}}\left(11\, e^{-2\sqrt{z}}\left(16\, e^{2\sqrt{z}}\, z^{3/4}\left(4096 z^4 + 81\,408 z^3 + 33\,360 z^2 - 207\,900 z - 297\,675\right) + e^{4\sqrt{z}}\sqrt{2\pi}\right.\right. $$
$$ \left(32\,768 z^5 + 368\,640 z^{9/2} + 737\,280 z^4 - 1\,152\,000 z^{7/2} - 86\,400 z^3 + 1\,326\,240 z^{5/2} - \right. $$
$$ \left. 1\,630\,800 z^2 + 1\,927\,800 z^{3/2} - 2\,154\,600 z + 1\,786\,050\sqrt{z} - 893\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ \sqrt{2\pi}\left(-32\,768 z^5 + 368\,640 z^{9/2} - 737\,280 z^4 - 1\,152\,000 z^{7/2} + 86\,400 z^3 + 1\,326\,240 z^{5/2} + \right. $$
$$ \left.\left. 1\,630\,800 z^2 + 1\,927\,800 z^{3/2} + 2\,154\,600 z + 1\,786\,050\sqrt{z} + 893\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7827.01

$$ {}_1F_2\left(6; -\frac{7}{4}, \frac{15}{4}; -z\right) = \frac{1}{7\,864\,320\, z^{11/4}}\left(11\left(4 z^{3/4}\left(4096 z^4 - 81\,408 z^3 + 33\,360 z^2 + 207\,900 z - 297\,675\right) + \right.\right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768 z^5 - 737\,280 z^4 - 86\,400 z^3 + 1\,630\,800 z^2 - 2\,154\,600 z + 893\,025\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 90\sqrt{z}\left(4096 z^4 + 12\,800 z^3 + 14\,736 z^2 - 21\,420 z + 19\,845\right)\sin\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768 z^5 - 737\,280 z^4 - 86\,400 z^3 + 1\,630\,800 z^2 - 2\,154\,600 z + 893\,025\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.\left. 90\sqrt{z}\left(4096 z^4 + 12\,800 z^3 + 14\,736 z^2 - 21\,420 z + 19\,845\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7828.01

$$ {}_1F_2\left(6; -\frac{7}{4}, \frac{19}{4}; z\right) = \frac{1}{16\,777\,216\, z^{15/4}} \left(11\, e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(45\,056\, z^4 - 37\,888\, z^3 - 438\,480\, z^2 - 1\,738\,800\, z - 4\,002\,075\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \left(65\,536\, z^{11/2} + 376\,832\, z^5 - 409\,600\, z^{9/2} - 460\,800\, z^4 + 1\,670\,400\, z^{7/2} - 3\,193\,920\, z^3 + 6\,320\,160\, z^{5/2} - 11\,944\,800\, z^2 + 19\,580\,400\, z^{3/2} - 25\,798\,500\, z + 24\,012\,450\, \sqrt{z} - 12\,006\,225\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(65\,536\, z^{11/2} - 376\,832\, z^5 - 409\,600\, z^{9/2} + 460\,800\, z^4 + 1\,670\,400\, z^{7/2} + 3\,193\,920\, z^3 + 6\,320\,160\, z^{5/2} + 11\,944\,800\, z^2 + 19\,580\,400\, z^{3/2} + 25\,798\,500\, z + 24\,012\,450\, \sqrt{z} + 12\,006\,225\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7829.01

$$ {}_1F_2\left(6; -\frac{7}{4}, \frac{19}{4}; -z\right) = \frac{1}{4\,194\,304\, z^{15/4}} \left(11 \left(-4\, z^{3/4} \left(45\,056\, z^4 + 37\,888\, z^3 - 438\,480\, z^2 + 1\,738\,800\, z - 4\,002\,075\right) + \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(32\,768\, z^5 + 204\,800\, z^4 + 835\,200\, z^3 - 3\,160\,080\, z^2 + 9\,790\,200\, z - 12\,006\,225\right) \sin\left(2\sqrt{z}\right) - \left(376\,832\, z^5 + 460\,800\, z^4 - 3\,193\,920\, z^3 + 11\,944\,800\, z^2 - 25\,798\,500\, z + 12\,006\,225\right) \cos\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z} \left(32\,768\, z^5 + 204\,800\, z^4 + 835\,200\, z^3 - 3\,160\,080\, z^2 + 9\,790\,200\, z - 12\,006\,225\right) \cos\left(2\sqrt{z}\right) + \left(376\,832\, z^5 + 460\,800\, z^4 - 3\,193\,920\, z^3 + 11\,944\,800\, z^2 - 25\,798\,500\, z + 12\,006\,225\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7830.01

$$ {}_1F_2\left(6; -\frac{7}{4}, \frac{23}{4}; z\right) = \frac{1}{134\,217\,728\, z^{19/4}} \left(209\, e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(16\,384\, z^5 - 75\,776\, z^4 - 939\,456\, z^3 - 8\,557\,920\, z^2 - 52\,598\,700\, z - 156\,080\,925\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \left(131\,072\, z^6 - 32\,768\, z^{11/2} - 638\,976\, z^5 + 2\,273\,280\, z^{9/2} - 6\,888\,960\, z^4 + 21\,168\,000\, z^{7/2} - 61\,447\,680\, z^3 + 160\,453\,440\, z^{5/2} - 361\,972\,800\, z^2 + 672\,348\,600\, z^{3/2} - 960\,498\,000\, z + 936\,485\,550\, \sqrt{z} - 468\,242\,775\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi} \left(-131\,072\, z^6 - 32\,768\, z^{11/2} + 638\,976\, z^5 + 2\,273\,280\, z^{9/2} + 6\,888\,960\, z^4 + 21\,168\,000\, z^{7/2} + 61\,447\,680\, z^3 + 160\,453\,440\, z^{5/2} + 361\,972\,800\, z^2 + 672\,348\,600\, z^{3/2} + 960\,498\,000\, z + 936\,485\,550\, \sqrt{z} + 468\,242\,775\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7831.01

$$ {}_1F_2\left(6; -\frac{7}{4}, \frac{23}{4}; -z\right) = \frac{1}{33\,554\,432\, z^{19/4}} $$
$$ \left(209\left(-4\, z^{3/4}\left(16\,384\, z^5 + 75\,776\, z^4 - 939\,456\, z^3 + 8\,557\,920\, z^2 - 52\,598\,700\, z + 156\,080\,925\right) - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(131\,072\, z^6 + 638\,976\, z^5 - 6\,888\,960\, z^4 + 61\,447\,680\, z^3 - 361\,972\,800\, z^2 + 960\,498\,000\, z - 468\,242\,775\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(16\,384\, z^5 + 1\,136\,640\, z^4 - 10\,584\,000\, z^3 + 80\,226\,720\, z^2 - 336\,174\,300\, z + 468\,242\,775\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(16\,384\, z^5 + 1\,136\,640\, z^4 - 10\,584\,000\, z^3 + 80\,226\,720\, z^2 - 336\,174\,300\, z + 468\,242\,775\right)\cos\left(2\sqrt{z}\right) + \left(131\,072\, z^6 + 638\,976\, z^5 - 6\,888\,960\, z^4 + 61\,447\,680\, z^3 - 361\,972\,800\, z^2 + 960\,498\,000\, z - 468\,242\,775\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 6$, $b_1 = -\frac{5}{4}$

07.22.03.7832.01

$$ {}_1F_2\left(6; -\frac{5}{4}, -\frac{3}{4}; z\right) = \frac{1}{57\,600} $$
$$ \left(e^{-2\sqrt{z}}\left(-e^{4\sqrt{z}}\sqrt{2\pi}\left(1024\, z^{5/2} + 29\,440\, z^2 + 305\,280\, z^{3/2} + 1\,407\,840\, z + 2\,835\,780\sqrt{z} + 1\,946\,835\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4} + \sqrt{2\pi}\left(1024\, z^{5/2} - 29\,440\, z^2 + 305\,280\, z^{3/2} - 1\,407\,840\, z + 2\,835\,780\sqrt{z} - 1\,946\,835\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4} - 8\, e^{2\sqrt{z}}\left(256\, z^4 + 74\,528\, z^3 + 633\,645\, z^2 - 46\,080\, z - 7200\right)\right)\right) $$

07.22.03.7833.01

$$ {}_1F_2\left(6; -\frac{5}{4}, -\frac{3}{4}; -z\right) = $$
$$ \frac{1}{14\,400}\left(\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\left(256\, z^2 - 76\,320\, z + 708\,945\right)\sin\left(2\sqrt{z}\right) - 5\left(5888\, z^2 - 281\,568\, z + 389\,367\right)\cos\left(2\sqrt{z}\right)\right)z^{7/4} - \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\left(256\, z^2 - 76\,320\, z + 708\,945\right)\cos\left(2\sqrt{z}\right) + 5\left(5888\, z^2 - 281\,568\, z + 389\,367\right)\sin\left(2\sqrt{z}\right)\right)z^{7/4} - 2\left(256\, z^4 - 74\,528\, z^3 + 633\,645\, z^2 + 46\,080\, z - 7200\right)\right) $$

07.22.03.7834.01

$$ {}_1F_2\left(6; -\frac{5}{4}, \frac{1}{4}; z\right) = $$
$$ \frac{1}{153\,600}\left(e^{-2\sqrt{z}}\left(24\, e^{2\sqrt{z}}\left(4352\, z^3 + 145\,664\, z^2 + 45\,365\, z + 6400\right) + e^{4\sqrt{z}}\sqrt{2\pi}\; z^{3/4}\left(2048\, z^3 + 52\,736\, z^{5/2} + 478\,720\, z^2 + 1\,858\,240\, z^{3/2} + 2\,884\,200\, z + 1\,009\,470\sqrt{z} - 504\,735\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\; z^{3/4}\left(2048\, z^3 - 52\,736\, z^{5/2} + 478\,720\, z^2 - 1\,858\,240\, z^{3/2} + 2\,884\,200\, z - 1\,009\,470\sqrt{z} - 504\,735\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7835.01

$${}_1F_2\left(6;-\frac{5}{4},\frac{1}{4};-z\right)=$$

$$\frac{1}{38\,400}\left(6\left(-4352\,z^3+145\,664\,z^2-45\,365\,z+6400\right)+\sqrt{\pi}\;z^{3/4}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3-478\,720\,z^2+2\,884\,200\,z+504\,735\right)\right.\right.$$
$$\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(26\,368\,z^2-929\,120\,z+504\,735\right)\sin\left(2\sqrt{z}\right)\Big)+\sqrt{\pi}\;z^{3/4}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)$$
$$\left.\left.\left(\left(2048\,z^3-478\,720\,z^2+2\,884\,200\,z+504\,735\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(26\,368\,z^2-929\,120\,z+504\,735\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7836.01

$${}_1F_2\left(6;-\frac{5}{4},\frac{5}{4};z\right)=\frac{1}{1\,228\,800\sqrt[4]{z}}$$
$$\left(e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\;\sqrt[4]{z}\,\left(1024\,z^3+165\,504\,z^2+340\,644\,z-43\,905\right)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\,\left(4096\,z^{7/2}+91\,136\,z^3+684\,032\,z^{5/2}+\right.\right.\right.$$
$$\left.\left.2\,006\,400\,z^2+1\,755\,600\,z^{3/2}-614\,460\,z-395\,010\sqrt{z}\;+197\,505\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(-4096\,z^{7/2}+\right.$$
$$\left.\left.\left.91\,136\,z^3-684\,032\,z^{5/2}+2\,006\,400\,z^2-1\,755\,600\,z^{3/2}-614\,460\,z+395\,010\sqrt{z}\;+197\,505\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7837.01

$${}_1F_2\left(6;-\frac{5}{4},\frac{5}{4};-z\right)=\frac{1}{307\,200\sqrt[4]{z}}$$
$$\left(-2\sqrt[4]{z}\,\left(1024\,z^3-165\,504\,z^2+340\,644\,z+43\,905\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-91\,136\,z^3+2\,006\,400\,z^2+614\,460\,z+197\,505\right)\right.\right.$$
$$\left.\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(2048\,z^3-342\,016\,z^2+877\,800\,z+197\,505\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(2048\,z^3-342\,016\,z^2+877\,800\,z+197\,505\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(91\,136\,z^3-2\,006\,400\,z^2-614\,460\,z-197\,505\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7838.01

$${}_1F_2\left(6;-\frac{5}{4},\frac{9}{4};z\right)=$$
$$\frac{1}{1\,966\,080\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(24\,e^{2\sqrt{z}}\;\sqrt[4]{z}\,\left(12\,288\,z^3+107\,776\,z^2-56\,680\,z-17\,325\right)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\,\left(8192\,z^4+149\,504\,z^{7/2}+\right.\right.\right.$$
$$\left.844\,800\,z^3+1\,478\,400\,z^{5/2}-184\,800\,z^2-859\,320\,z^{3/2}+498\,960\,z-103\,950\sqrt{z}\;+51\,975\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+$$
$$\sqrt{2\,\pi}\,\left(8192\,z^4-149\,504\,z^{7/2}+844\,800\,z^3-1\,478\,400\,z^{5/2}-184\,800\,z^2+859\,320\,z^{3/2}+\right.$$
$$\left.\left.\left.498\,960\,z+103\,950\sqrt{z}\;+51\,975\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7839.01

$$ {}_1F_2\left(6; -\frac{5}{4}, \frac{9}{4}; -z\right) = \frac{1}{491\,520\, z^{5/4}} \left(6 \sqrt[4]{z}\, \left(12\,288\, z^3 - 107\,776\, z^2 - 56\,680\, z + 17\,325\right) - \right. $$

$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(8192\, z^4 - 844\,800\, z^3 - 184\,800\, z^2 - 498\,960\, z + 51\,975\right) \cos\left(2\sqrt{z}\right) + \right. $$

$$ \left. 2\sqrt{z}\, \left(74\,752\, z^3 - 739\,200\, z^2 - 429\,660\, z + 51\,975\right) \sin\left(2\sqrt{z}\right) \right) - $$

$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(8192\, z^4 - 844\,800\, z^3 - 184\,800\, z^2 - 498\,960\, z + 51\,975\right) \sin\left(2\sqrt{z}\right) - \right. $$

$$ \left. \left. 2\sqrt{z}\, \left(74\,752\, z^3 - 739\,200\, z^2 - 429\,660\, z + 51\,975\right) \cos\left(2\sqrt{z}\right) \right) \right) $$

07.22.03.7840.01

$$ {}_1F_2\left(6; -\frac{5}{4}, \frac{13}{4}; z\right) = $$

$$ \frac{1}{5\,242\,880\, z^{9/4}} \left(3\, e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(4096\, z^4 + 183\,808\, z^3 - 227\,120\, z^2 - 152\,460\, z - 121\,275\right) + e^{4\sqrt{z}}\, \sqrt{2\pi} \right. \right. $$

$$ \left(16\,384\, z^{9/2} + 225\,280\, z^4 + 788\,480\, z^{7/2} + 197\,120\, z^3 - 960\,960\, z^{5/2} + 683\,760\, z^2 - 369\,600\, z^{3/2} + 346\,500\, z - \right. $$

$$ \left. 242\,550\sqrt{z} + 121\,275\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(-16\,384\, z^{9/2} + 225\,280\, z^4 - 788\,480\, z^{7/2} + 197\,120\, z^3 + \right. $$

$$ \left. \left. \left. 960\,960\, z^{5/2} + 683\,760\, z^2 + 369\,600\, z^{3/2} + 346\,500\, z + 242\,550\sqrt{z} + 121\,275\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) \right) \right) $$

07.22.03.7841.01

$$ {}_1F_2\left(6; -\frac{5}{4}, \frac{13}{4}; -z\right) = \frac{1}{1\,310\,720\, z^{9/4}} \left(3 \left(2\sqrt[4]{z}\, \left(4096\, z^4 - 183\,808\, z^3 - 227\,120\, z^2 + 152\,460\, z - 121\,275\right) + \right. \right. $$

$$ \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(55\left(4096\, z^4 - 3584\, z^3 + 12\,432\, z^2 - 6300\, z + 2205\right) \cos\left(2\sqrt{z}\right) + \right. $$

$$ \left. 2\sqrt{z}\, \left(-8192\, z^4 + 394\,240\, z^3 + 480\,480\, z^2 - 184\,800\, z + 121\,275\right) \sin\left(2\sqrt{z}\right) \right) + $$

$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(2\sqrt{z}\, \left(8192\, z^4 - 394\,240\, z^3 - 480\,480\, z^2 + 184\,800\, z - 121\,275\right) \cos\left(2\sqrt{z}\right) + \right. $$

$$ \left. \left. \left. 55\left(4096\, z^4 - 3584\, z^3 + 12\,432\, z^2 - 6300\, z + 2205\right) \sin\left(2\sqrt{z}\right) \right) \right) \right) $$

07.22.03.7842.01

$$ {}_1F_2\left(6; -\frac{5}{4}, \frac{17}{4}; z\right) = \frac{1}{41\,943\,040\, z^{13/4}} \left(39\, e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(69\,632\, z^4 - 194\,560\, z^3 - 267\,120\, z^2 - 599\,760\, z - 893\,025\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(32\,768\, z^5 + 286\,720\, z^{9/2} + 286\,720\, z^4 - 752\,640\, z^{7/2} + 712\,320\, z^3 - 769\,440\, z^{5/2} + 1\,184\,400\, z^2 - 1\,675\,800\, z^{3/2} + 2\,028\,600\, z - 1\,786\,050\, \sqrt{z} + 893\,025\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(32\,768\, z^5 - 286\,720\, z^{9/2} + 286\,720\, z^4 + 752\,640\, z^{7/2} + 712\,320\, z^3 + 769\,440\, z^{5/2} + 1\,184\,400\, z^2 + 1\,675\,800\, z^{3/2} + 2\,028\,600\, z + 1\,786\,050\, \sqrt{z} + 893\,025\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7843.01

$$ {}_1F_2\left(6; -\frac{5}{4}, \frac{17}{4}; -z\right) = \frac{1}{10\,485\,760\, z^{13/4}} \left(39 \left(-2\, \sqrt[4]{z}\, \left(69\,632\, z^4 + 194\,560\, z^3 - 267\,120\, z^2 + 599\,760\, z - 893\,025\right) + \sqrt{\pi}\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(32\,768\, z^5 - 286\,720\, z^4 + 712\,320\, z^3 - 1\,184\,400\, z^2 + 2\,028\,600\, z - 893\,025\right) \cos\left(2\sqrt{z}\right) + 70\, \sqrt{z}\, \left(4096\, z^4 + 10\,752\, z^3 - 10\,992\, z^2 + 23\,940\, z - 25\,515\right) \sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\, S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(32\,768\, z^5 - 286\,720\, z^4 + 712\,320\, z^3 - 1\,184\,400\, z^2 + 2\,028\,600\, z - 893\,025\right) \sin\left(2\sqrt{z}\right) - 70\, \sqrt{z}\, \left(4096\, z^4 + 10\,752\, z^3 - 10\,992\, z^2 + 23\,940\, z - 25\,515\right) \cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7844.01

$$ {}_1F_2\left(6; -\frac{5}{4}, \frac{21}{4}; z\right) = \frac{1}{335\,544\,320\, z^{17/4}} \left(663\, e^{-2\sqrt{z}} \left(8\, e^{2\sqrt{z}}\, \sqrt[4]{z}\, \left(16\,384\, z^5 - 133\,120\, z^4 - 423\,360\, z^3 - 2\,308\,320\, z^2 - 9\,083\,340\, z - 18\,243\,225\right) + e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(65\,536\, z^{11/2} + 212\,992\, z^5 - 491\,520\, z^{9/2} + 706\,560\, z^4 - 1\,401\,600\, z^{7/2} + 3\,366\,720\, z^3 - 7\,731\,360\, z^{5/2} + 15\,976\,800\, z^2 - 27\,896\,400\, z^{3/2} + 38\,272\,500\, z - 36\,486\,450\, \sqrt{z} + 18\,243\,225\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + \sqrt{2\pi}\, \left(-65\,536\, z^{11/2} + 212\,992\, z^5 + 491\,520\, z^{9/2} + 706\,560\, z^4 + 1\,401\,600\, z^{7/2} + 3\,366\,720\, z^3 + 7\,731\,360\, z^{5/2} + 15\,976\,800\, z^2 + 27\,896\,400\, z^{3/2} + 38\,272\,500\, z + 36\,486\,450\, \sqrt{z} + 18\,243\,225\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7845.01

$${}_1F_2\left(6; -\frac{5}{4}, \frac{21}{4}; -z\right) =$$
$$-\frac{1}{83\,886\,080\, z^{17/4}}\left(663\left(2\sqrt[4]{z}\left(16\,384\, z^5 + 133\,120\, z^4 - 423\,360\, z^3 + 2\,308\,320\, z^2 - 9\,083\,340\, z + 18\,243\,225\right) - \right.\right.$$
$$\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-212\,992\, z^5 + 706\,560\, z^4 - 3\,366\,720\, z^3 + 15\,976\,800\, z^2 - 38\,272\,500\, z + 18\,243\,225\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(32\,768\, z^5 + 245\,760\, z^4 - 700\,800\, z^3 + 3\,865\,680\, z^2 - 13\,948\,200\, z + 18\,243\,225\right)\sin\left(2\sqrt{z}\right)\right) +$$
$$\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(32\,768\, z^5 + 245\,760\, z^4 - 700\,800\, z^3 + 3\,865\,680\, z^2 - 13\,948\,200\, z + 18\,243\,225\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\left.\left.\left(212\,992\, z^5 - 706\,560\, z^4 + 3\,366\,720\, z^3 - 15\,976\,800\, z^2 + 38\,272\,500\, z - 18\,243\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 6$, $b_1 = -\frac{3}{4}$

07.22.03.7846.01

$${}_1F_2\left(6; -\frac{3}{4}, -\frac{1}{4}; z\right) = \frac{1}{46\,080}$$
$$\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\sqrt{2\pi}\left(1024\, z^{5/2} + 26\,880\, z^2 + 251\,520\, z^{3/2} + 1\,030\,560\, z + 1\,805\,220\sqrt{z} + 1\,044\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4} + \right.\right.$$
$$\sqrt{2\pi}\left(1024\, z^{5/2} - 26\,880\, z^2 + 251\,520\, z^{3/2} - 1\,030\,560\, z + 1\,805\,220\sqrt{z} - 1\,044\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4} + $$
$$\left.\left.128\, e^{2\sqrt{z}}\left(416\, z^3 + 15\,195\, z^2 + 11\,520\, z + 360\right)\right)\right)$$

07.22.03.7847.01

$${}_1F_2\left(6; -\frac{3}{4}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{11\,520}\left(\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\left(256\, z^2 - 62\,880\, z + 451\,305\right)\sin\left(2\sqrt{z}\right) - 15\left(1792\, z^2 - 68\,704\, z + 69\,615\right)\cos\left(2\sqrt{z}\right)\right)z^{5/4} + \right.$$
$$\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\left(256\, z^2 - 62\,880\, z + 451\,305\right)\cos\left(2\sqrt{z}\right) + 15\left(1792\, z^2 - 68\,704\, z + 69\,615\right)\sin\left(2\sqrt{z}\right)\right)z^{5/4} - $$
$$\left.32\left(416\, z^3 - 15\,195\, z^2 + 11\,520\, z - 360\right)\right)$$

07.22.03.7848.01

$${}_1F_2\left(6; -\frac{3}{4}, \frac{3}{4}; z\right) =$$
$$\frac{1}{368\,640}\left(e^{-2\sqrt{z}}\left(-16\, e^{2\sqrt{z}}\left(256\, z^3 + 46\,560\, z^2 + 176\,145\, z - 23\,040\right) - e^{4\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(2048\, z^3 + 47\,616\, z^{5/2} + \right.\right.\right.$$
$$\left.384\,000\, z^2 + 1\,293\,120\, z^{3/2} + 1\,670\,760\, z + 417\,690\sqrt{z} - 208\,845\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\sqrt[4]{z}$$
$$\left.\left.\left(2048\, z^3 - 47\,616\, z^{5/2} + 384\,000\, z^2 - 1\,293\,120\, z^{3/2} + 1\,670\,760\, z - 417\,690\sqrt{z} - 208\,845\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7849.01

$${}_1F_2\left(6;-\frac{3}{4},\frac{3}{4};-z\right)=$$
$$\frac{1}{92\,160}\left(4\left(256z^3-46\,560z^2+176\,145z+23\,040\right)+\sqrt{\pi}\,\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048z^3-384\,000z^2+1\,670\,760z+208\,845\right)\right.\right.$$
$$\cos\left(2\sqrt{z}\right)+6\sqrt{z}\left(7936z^2-215\,520z+69\,615\right)\sin\left(2\sqrt{z}\right)\Big)-\sqrt{\pi}\,\sqrt[4]{z}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)$$
$$\left.\left.\left(\left(2048z^3-384\,000z^2+1\,670\,760z+208\,845\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\left(7936z^2-215\,520z+69\,615\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7850.01

$${}_1F_2\left(6;-\frac{3}{4},\frac{7}{4};z\right)=$$
$$\frac{1}{983\,040z^{3/4}}\left(e^{-2\sqrt{z}}\left(-48e^{2\sqrt{z}}z^{3/4}\left(3328z^2+48\,160z-17\,165\right)-e^{4\sqrt{z}}\sqrt{2\pi}\left(4096z^{7/2}+80\,896z^3+525\,312z^{5/2}+\right.\right.\right.$$
$$\left.\left.\left.1\,272\,960z^2+795\,600z^{3/2}-358\,020z-59\,670\sqrt{z}+29\,835\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\left(-4096z^{7/2}+\right.\right.\right.$$
$$\left.\left.\left.80\,896z^3-525\,312z^{5/2}+1\,272\,960z^2-795\,600z^{3/2}-358\,020z+59\,670\sqrt{z}+29\,835\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7851.01

$${}_1F_2\left(6;-\frac{3}{4},\frac{7}{4};-z\right)=\frac{1}{245\,760z^{3/4}}$$
$$\left(12z^{3/4}\left(-3328z^2+48\,160z+17\,165\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-80\,896z^3+1\,272\,960z^2+358\,020z+29\,835\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(2048z^3-262\,656z^2+397\,800z+29\,835\right)\sin\left(2\sqrt{z}\right)\right)+\right.$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2048z^3-262\,656z^2+397\,800z+29\,835\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(80\,896z^3-1\,272\,960z^2-358\,020z-29\,835\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7852.01

$${}_1F_2\left(6;-\frac{3}{4},\frac{11}{4};z\right)=$$
$$-\frac{1}{7\,864\,320z^{7/4}}\left(7e^{-2\sqrt{z}}\left(16e^{2\sqrt{z}}z^{3/4}\left(1024z^3+71\,040z^2-47\,820z+8775\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(8192z^4+129\,024z^{7/2}+\right.\right.\right.$$
$$\left.\left.\left.599\,040z^3+748\,800z^{5/2}-280\,800z^2-154\,440z^{3/2}+112\,320z-52\,650\sqrt{z}+26\,325\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\right.$$
$$\sqrt{2\pi}\left(8192z^4-129\,024z^{7/2}+599\,040z^3-748\,800z^{5/2}-280\,800z^2+154\,440z^{3/2}+\right.$$
$$\left.\left.\left.112\,320z+52\,650\sqrt{z}+26\,325\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7853.01

$$ {}_1F_2\left(6; -\frac{3}{4}, \frac{11}{4}; -z\right) = \frac{1}{1\,966\,080\,z^{7/4}}\left(7\left(4\,z^{3/4}\left(-1024\,z^3+71\,040\,z^2+47\,820\,z+8775\right)-\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4-599\,040\,z^3-280\,800\,z^2-112\,320\,z+26\,325\right)\cos\left(2\sqrt{z}\right)+18\sqrt{z}\;\left(7168\,z^3-41\,600\,z^2-8580\,z+2925\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4-599\,040\,z^3-280\,800\,z^2-112\,320\,z+26\,325\right)\sin\left(2\sqrt{z}\right)-18\sqrt{z}\;\left(7168\,z^3-41\,600\,z^2-8580\,z+2925\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7854.01

$$ {}_1F_2\left(6; -\frac{3}{4}, \frac{15}{4}; z\right) = -\frac{1}{62\,914\,560\,z^{11/4}}\left(77\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\;z^{3/4}\left(22\,528\,z^3-24\,960\,z^2+27\,000\,z+33\,075\right)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(16\,384\,z^{9/2}+184\,320\,z^4+460\,800\,z^{7/2}-115\,200\,z^3-216\,000\,z^{5/2}+231\,120\,z^2-237\,600\,z^{3/2}+251\,100\,z-198\,450\sqrt{z}+99\,225\right)\right.\right.\left.\left.\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+\sqrt{2\,\pi}\;\left(16\,384\,z^{9/2}-184\,320\,z^4+460\,800\,z^{7/2}+115\,200\,z^3-216\,000\,z^{5/2}-231\,120\,z^2-237\,600\,z^{3/2}-251\,100\,z-198\,450\sqrt{z}-99\,225\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7855.01

$$ {}_1F_2\left(6; -\frac{3}{4}, \frac{15}{4}; -z\right) = -\frac{1}{15\,728\,640\,z^{11/4}}\left(77\left(-4\,z^{3/4}\left(22\,528\,z^3+24\,960\,z^2+27\,000\,z-33\,075\right)-\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(45\left(4096\,z^4+2560\,z^3+5136\,z^2-5580\,z+2205\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;\left(-8192\,z^4+230\,400\,z^3+108\,000\,z^2-118\,800\,z+99\,225\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\;\left(8192\,z^4-230\,400\,z^3-108\,000\,z^2+118\,800\,z-99\,225\right)\cos\left(2\sqrt{z}\right)+45\left(4096\,z^4+2560\,z^3+5136\,z^2-5580\,z+2205\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7856.01

$$ {}_1F_2\left(6; -\frac{3}{4}, \frac{19}{4}; z\right) = -\frac{1}{33\,554\,432\,z^{15/4}}\left(77\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\;z^{3/4}\left(4096\,z^4-5632\,z^3+49\,680\,z^2+170\,100\,z+363\,825\right)+e^{4\sqrt{z}}\;\sqrt{2\,\pi}\;\left(32\,768\,z^5+204\,800\,z^{9/2}-230\,400\,z^{7/2}+374\,400\,z^3-660\,960\,z^{5/2}+1\,177\,200\,z^2-1\,852\,200\,z^{3/2}+2\,381\,400\,z-2\,182\,950\sqrt{z}+1\,091\,475\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\sqrt{2\,\pi}\;\left(32\,768\,z^5-204\,800\,z^{9/2}+230\,400\,z^{7/2}+374\,400\,z^3+660\,960\,z^{5/2}+1\,177\,200\,z^2+1\,852\,200\,z^{3/2}+2\,381\,400\,z+2\,182\,950\sqrt{z}+1\,091\,475\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7857.01

$$ {}_1F_2\left(6; -\frac{3}{4}, \frac{19}{4}; -z\right) = \frac{1}{8\,388\,608\, z^{15/4}} \left(77 \left(4\, z^{3/4} \left(4096\, z^4 + 5632\, z^3 + 49\,680\, z^2 - 170\,100\, z + 363\,825\right) + \right.\right. $$

$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(32\,768\, z^5 + 374\,400\, z^3 - 1\,177\,200\, z^2 + 2\,381\,400\, z - 1\,091\,475\right) \cos\left(2\sqrt{z}\right) + \right. $$

$$ \left. 10\sqrt{z}\, \left(20\,480\, z^4 + 23\,040\, z^3 - 66\,096\, z^2 + 185\,220\, z - 218\,295\right) \sin\left(2\sqrt{z}\right)\right) - $$

$$ \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(32\,768\, z^5 + 374\,400\, z^3 - 1\,177\,200\, z^2 + 2\,381\,400\, z - 1\,091\,475\right) \sin\left(2\sqrt{z}\right) - \right. $$

$$ \left.\left. \left. 10\sqrt{z}\, \left(20\,480\, z^4 + 23\,040\, z^3 - 66\,096\, z^2 + 185\,220\, z - 218\,295\right) \cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7858.01

$$ {}_1F_2\left(6; -\frac{3}{4}, \frac{23}{4}; z\right) = $$

$$ -\frac{1}{268\,435\,456\, z^{19/4}} \left(1463\, e^{-2\sqrt{z}} \left(16\, e^{2\sqrt{z}}\, z^{3/4} \left(4096\, z^4 + 87\,552\, z^3 + 710\,640\, z^2 + 4\,158\,000\, z + 12\,006\,225\right) + \right. $$

$$ e^{4\sqrt{z}}\, \sqrt{2\pi}\, \left(65\,536\, z^{11/2} + 49\,152\, z^5 - 245\,760\, z^{9/2} + 645\,120\, z^4 - 1\,831\,680\, z^{7/2} + 5\,088\,960\, z^3 - 12\,912\,480\, z^{5/2} + \right. $$

$$ \left. 28\,576\,800\, z^2 - 52\,390\,800\, z^{3/2} + 74\,220\,300\, z - 72\,037\,350\sqrt{z} + 36\,018\,675\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$

$$ \sqrt{2\pi}\, \left(65\,536\, z^{11/2} - 49\,152\, z^5 - 245\,760\, z^{9/2} - 645\,120\, z^4 - 1\,831\,680\, z^{7/2} - 5\,088\,960\, z^3 - 12\,912\,480\, z^{5/2} - \right. $$

$$ \left.\left. 28\,576\,800\, z^2 - 52\,390\,800\, z^{3/2} - 74\,220\,300\, z - 72\,037\,350\sqrt{z} - 36\,018\,675\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.7859.01

$$ {}_1F_2\left(6; -\frac{3}{4}, \frac{23}{4}; -z\right) = $$

$$ \frac{1}{67\,108\,864\, z^{19/4}} \left(1463 \left(-4\, z^{3/4} \left(4096\, z^4 - 87\,552\, z^3 + 710\,640\, z^2 - 4\,158\,000\, z + 12\,006\,225\right) + \sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \right.\right. $$

$$ \left(2\sqrt{z}\, \left(32\,768\, z^5 + 122\,880\, z^4 - 915\,840\, z^3 + 6\,456\,240\, z^2 - 26\,195\,400\, z + 36\,018\,675\right) \cos\left(2\sqrt{z}\right) + \right. $$

$$ \left. 3\left(16\,384\, z^5 - 215\,040\, z^4 + 1\,696\,320\, z^3 - 9\,525\,600\, z^2 + 24\,740\,100\, z - 12\,006\,225\right) \sin\left(2\sqrt{z}\right)\right) + $$

$$ \sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) \left(\left(-49\,152\, z^5 + 645\,120\, z^4 - 5\,088\,960\, z^3 + 28\,576\,800\, z^2 - 74\,220\,300\, z + 36\,018\,675\right) \cos\left(2\sqrt{z}\right) + \right. $$

$$ \left.\left. \left. 2\sqrt{z}\, \left(32\,768\, z^5 + 122\,880\, z^4 - 915\,840\, z^3 + 6\,456\,240\, z^2 - 26\,195\,400\, z + 36\,018\,675\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 6$, $b_1 = -\frac{1}{4}$

07.22.03.7860.01

$$ {}_1F_2\left(6; -\frac{1}{4}, \frac{1}{4}; z\right) = \frac{1}{61\,440}\left(e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\left(256\,z^3+49\,248\,z^2+232\,545\,z-7680\right)-\right.\right.$$
$$e^{4\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(1024\,z^{5/2}+24\,320\,z^2+202\,880\,z^{3/2}+726\,240\,z+1\,078\,980\sqrt{z}+504\,735\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\pi}\,z^{3/4}\left(1024\,z^{5/2}-24\,320\,z^2+202\,880\,z^{3/2}-726\,240\,z+1\,078\,980\sqrt{z}-504\,735\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7861.01

$$ {}_1F_2\left(6; -\frac{1}{4}, \frac{1}{4}; -z\right) = \frac{1}{15\,360}\left(512\,z^3-98\,496\,z^2+465\,090\,z-\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left(4\sqrt{z}\left(256\,z^2-50\,720\,z+269\,745\right)\sin\left(2\sqrt{z}\right)-5\left(4864\,z^2-145\,248\,z+100\,947\right)\cos\left(2\sqrt{z}\right)\right)z^{3/4}+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)$$
$$\left.\left(4\sqrt{z}\left(256\,z^2-50\,720\,z+269\,745\right)\cos\left(2\sqrt{z}\right)+5\left(4864\,z^2-145\,248\,z+100\,947\right)\sin\left(2\sqrt{z}\right)\right)z^{3/4}+15\,360\right)$$

07.22.03.7862.01

$$ {}_1F_2\left(6; -\frac{1}{4}, \frac{5}{4}; z\right) = \frac{1}{491\,520\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(10\,496\,z^2+196\,512\,z+4395\right)-\right.\right.$$
$$e^{4\sqrt{z}}\sqrt{2\pi}\left(2048\,z^3+42\,496\,z^{5/2}+299\,520\,z^2+853\,440\,z^{3/2}+877\,800\,z+131\,670\sqrt{z}-65\,835\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\pi}\left(-2048\,z^3+42\,496\,z^{5/2}-299\,520\,z^2+853\,440\,z^{3/2}-877\,800\,z+131\,670\sqrt{z}+65\,835\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7863.01

$$ {}_1F_2\left(6; -\frac{1}{4}, \frac{5}{4}; -z\right) = \frac{1}{122\,880\sqrt[4]{z}}\left(-2\sqrt[4]{z}\left(10\,496\,z^2-196\,512\,z+4395\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left(\left(2048\,z^3-299\,520\,z^2+877\,800\,z+65\,835\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(21\,248\,z^2-426\,720\,z+65\,835\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}$$
$$\left.S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3-299\,520\,z^2+877\,800\,z+65\,835\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(21\,248\,z^2-426\,720\,z+65\,835\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7864.01

$$ {}_1F_2\left(6; -\frac{1}{4}, \frac{9}{4}; z\right) =$$
$$\frac{1}{786\,432\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(1024\,z^3+92\,544\,z^2+37\,524\,z+10\,395\right)-e^{4\sqrt{z}}\sqrt{2\pi}\left(4096\,z^{7/2}+70\,656\,z^3+\right.\right.$$
$$\left.387\,072\,z^{5/2}+739\,200\,z^2+277\,200\,z^{3/2}-152\,460\,z+20\,790\sqrt{z}-10\,395\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}$$
$$\left.\left.\left(4096\,z^{7/2}-70\,656\,z^3+387\,072\,z^{5/2}-739\,200\,z^2+277\,200\,z^{3/2}+152\,460\,z+20\,790\sqrt{z}+10\,395\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7865.01

$$ {}_1F_2\left(6; -\frac{1}{4}, \frac{9}{4}; -z\right) = \frac{1}{196\,608\, z^{5/4}} $$
$$ \left(2\sqrt[4]{z}\left(-1024 z^3 + 92\,544 z^2 - 37\,524 z + 10\,395\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2048 z^3 - 193\,536 z^2 + 138\,600 z - 10\,395\right)\right.\right. $$
$$ \left.\sin\left(2\sqrt{z}\right) - 3\left(23\,552 z^3 - 246\,400 z^2 - 50\,820 z + 3465\right)\cos\left(2\sqrt{z}\right)\right) - $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2048 z^3 - 193\,536 z^2 + 138\,600 z - 10\,395\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.3\left(23\,552 z^3 - 246\,400 z^2 - 50\,820 z + 3465\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7866.01

$$ {}_1F_2\left(6; -\frac{1}{4}, \frac{13}{4}; z\right) = $$
$$ -\frac{1}{2\,097\,152\, z^{9/4}}\left(3 e^{-2\sqrt{z}}\left(8 e^{2\sqrt{z}}\sqrt[4]{z}\left(26\,624 z^3 + 53\,888 z^2 + 27\,720 z + 17\,325\right) + e^{4\sqrt{z}}\sqrt{2\pi}\left(8192 z^4 + 108\,544 z^{7/2} + \right.\right.\right. $$
$$ \left.\left.394\,240 z^3 + 295\,680 z^{5/2} - 184\,800 z^2 + 64\,680 z^{3/2} - 55\,440 z + 34\,650\sqrt{z} - 17\,325\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \right. $$
$$ \left.\sqrt{2\pi}\left(8192 z^4 - 108\,544 z^{7/2} + 394\,240 z^3 - 295\,680 z^{5/2} - 184\,800 z^2 - 64\,680 z^{3/2} - \right.\right. $$
$$ \left.\left.\left.55\,440 z - 34\,650\sqrt{z} - 17\,325\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7867.01

$$ {}_1F_2\left(6; -\frac{1}{4}, \frac{13}{4}; -z\right) = $$
$$ -\frac{1}{524\,288\, z^{9/4}}\left(3\left(2\sqrt[4]{z}\left(-26\,624 z^3 + 53\,888 z^2 - 27\,720 z + 17\,325\right) + \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192 z^4 - 394\,240 z^3 - 184\,800 z^2 + \right.\right.\right.\right. $$
$$ \left.\left.\left.55\,440 z - 17\,325\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(54\,272 z^3 - 147\,840 z^2 + 32\,340 z - 17\,325\right)\sin\left(2\sqrt{z}\right)\right) + \right. $$
$$ \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192 z^4 - 394\,240 z^3 - 184\,800 z^2 + 55\,440 z - 17\,325\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.\left.2\sqrt{z}\left(54\,272 z^3 - 147\,840 z^2 + 32\,340 z - 17\,325\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7868.01

$$ {}_1F_2\left(6; -\frac{1}{4}, \frac{17}{4}; z\right) = $$
$$ -\frac{1}{16\,777\,216\, z^{13/4}}\left(39 e^{-2\sqrt{z}}\left(8 e^{2\sqrt{z}}\sqrt[4]{z}\left(4096 z^4 + 45\,568 z^3 + 42\,000 z^2 + 74\,340 z + 99\,225\right) + e^{4\sqrt{z}}\sqrt{2\pi}\right.\right. $$
$$ \left(16\,384 z^{9/2} + 143\,360 z^4 + 215\,040 z^{7/2} - 161\,280 z^3 + 114\,240 z^{5/2} - 156\,240 z^2 + 201\,600 z^{3/2} - 233\,100 z + \right. $$
$$ \left.198\,450\sqrt{z} - 99\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - \sqrt{2\pi}\left(16\,384 z^{9/2} - 143\,360 z^4 + 215\,040 z^{7/2} + 161\,280 z^3 + \right. $$
$$ \left.\left.\left.114\,240 z^{5/2} + 156\,240 z^2 + 201\,600 z^{3/2} + 233\,100 z + 198\,450\sqrt{z} + 99\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7869.01

$$ {}_1F_2\left(6; -\frac{1}{4}, \frac{17}{4}; -z\right) = \frac{1}{4\,194\,304\,z^{13/4}} \left(\left(39\left(2\sqrt[4]{z}\left(4096\,z^4 - 45\,568\,z^3 + 42\,000\,z^2 - 74\,340\,z + 99\,225\right) + \sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(8192\,z^4 - 107\,520\,z^3 + 57\,120\,z^2 - 100\,800\,z + 99\,225\right)\cos\left(2\sqrt{z}\right) + 35\left(4096\,z^4 + 4608\,z^3 - 4464\,z^2 + 6660\,z - 2835\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(35\left(4096\,z^4 + 4608\,z^3 - 4464\,z^2 + 6660\,z - 2835\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(8192\,z^4 - 107\,520\,z^3 + 57\,120\,z^2 - 100\,800\,z + 99\,225\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7870.01

$$ {}_1F_2\left(6; -\frac{1}{4}, \frac{21}{4}; z\right) = -\frac{1}{134\,217\,728\,z^{17/4}} \left(663\,e^{-2\sqrt{z}}\left(56\,e^{2\sqrt{z}}\sqrt[4]{z}\left(4096\,z^4 + 7680\,z^3 + 33\,840\,z^2 + 123\,120\,z + 236\,925\right) + e^{4\sqrt{z}}\sqrt{2\pi}\left(32\,768\,z^5 + 122\,880\,z^{9/2} - 122\,880\,z^4 + 168\,960\,z^{7/2} - 362\,880\,z^3 + 776\,160\,z^{5/2} - 1\,537\,200\,z^2 + 2\,608\,200\,z^{3/2} - 3\,515\,400\,z + 3\,316\,950\sqrt{z} - 1\,658\,475\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\left(32\,768\,z^5 - 122\,880\,z^{9/2} - 122\,880\,z^4 - 168\,960\,z^{7/2} - 362\,880\,z^3 - 776\,160\,z^{5/2} - 1\,537\,200\,z^2 - 2\,608\,200\,z^{3/2} - 3\,515\,400\,z - 3\,316\,950\sqrt{z} - 1\,658\,475\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7871.01

$$ {}_1F_2\left(6; -\frac{1}{4}, \frac{21}{4}; -z\right) = \frac{1}{33\,554\,432\,z^{17/4}} \left(663\left(-14\sqrt[4]{z}\left(4096\,z^4 - 7680\,z^3 + 33\,840\,z^2 - 123\,120\,z + 236\,925\right) + \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768\,z^5 + 122\,880\,z^4 - 362\,880\,z^3 + 1\,537\,200\,z^2 - 3\,515\,400\,z + 1\,658\,475\right)\cos\left(2\sqrt{z}\right) + 30\sqrt{z}\left(4096\,z^4 - 5632\,z^3 + 25\,872\,z^2 - 86\,940\,z + 110\,565\right)\sin\left(2\sqrt{z}\right)\right) + \sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768\,z^5 + 122\,880\,z^4 - 362\,880\,z^3 + 1\,537\,200\,z^2 - 3\,515\,400\,z + 1\,658\,475\right)\sin\left(2\sqrt{z}\right) - 30\sqrt{z}\left(4096\,z^4 - 5632\,z^3 + 25\,872\,z^2 - 86\,940\,z + 110\,565\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 6$, $b_1 = \frac{1}{4}$

07.22.03.7872.01

$$ {}_1F_2\left(6; \frac{1}{4}, \frac{3}{4}; z\right) = \frac{1}{245\,760}\left(e^{-2\sqrt{z}}\left(768\,e^{2\sqrt{z}}\left(56\,z^2 + 1175\,z + 320\right) + e^{4\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(1024\,z^{5/2} + 21\,760\,z^2 + 159\,360\,z^{3/2} + 487\,200\,z + 591\,780\sqrt{z} + 208\,845\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \sqrt{2\pi}\sqrt[4]{z}\left(1024\,z^{5/2} - 21\,760\,z^2 + 159\,360\,z^{3/2} - 487\,200\,z + 591\,780\sqrt{z} - 208\,845\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7873.01

$$ {}_1F_2\left(6;\frac{1}{4},\frac{3}{4};-z\right)=\frac{1}{61\,440}\left(192\left(56z^2-1175z+320\right)-\right.$$
$$\sqrt{\pi}\,\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\left(256z^2-39\,840z+147\,945\right)\sin\left(2\sqrt{z}\right)-5\left(4352z^2-97\,440z+41\,769\right)\cos\left(2\sqrt{z}\right)\right)-$$
$$\left.\sqrt{\pi}\,\sqrt[4]{z}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\left(256z^2-39\,840z+147\,945\right)\cos\left(2\sqrt{z}\right)+5\left(4352z^2-97\,440z+41\,769\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7874.01

$$ {}_1F_2\left(6;\frac{1}{4},\frac{7}{4};z\right)=\frac{1}{655\,360\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(16e^{2\sqrt{z}}z^{3/4}\left(256z^2+27\,040z+37\,645\right)+\right.\right.$$
$$e^{4\sqrt{z}}\sqrt{2\pi}\left(2048z^3+37\,376z^{5/2}+225\,280z^2+523\,840z^{3/2}+397\,800z+19\,890\sqrt{z}-9945\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\pi}\left(-2048z^3+37\,376z^{5/2}-225\,280z^2+523\,840z^{3/2}-397\,800z+19\,890\sqrt{z}+9945\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7875.01

$$ {}_1F_2\left(6;\frac{1}{4},\frac{7}{4};-z\right)=\frac{1}{163\,840\,z^{3/4}}\left(4z^{3/4}\left(256z^2-27\,040z+37\,645\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left(\left(2048z^3-225\,280z^2+397\,800z+9945\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(18\,688z^2-261\,920z+9945\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048z^3-225\,280z^2+397\,800z+9945\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(18\,688z^2-261\,920z+9945\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7876.01

$$ {}_1F_2\left(6;\frac{1}{4},\frac{11}{4};z\right)=$$
$$\frac{1}{5\,242\,880\,z^{7/4}}\left(7e^{-2\sqrt{z}}\left(16e^{2\sqrt{z}}z^{3/4}\left(7424z^2+39\,680z-1755\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(4096z^{7/2}+60\,416z^3+269\,312z^{5/2}+\right.\right.$$
$$\left.\left.374\,400z^2+46\,800z^{3/2}-30\,420z+10\,530\sqrt{z}-5265\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\right.$$
$$\left.\left.\left(4096z^{7/2}-60\,416z^3+269\,312z^{5/2}-374\,400z^2+46\,800z^{3/2}+30\,420z+10\,530\sqrt{z}+5265\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7877.01

$$ {}_1F_2\left(6;\frac{1}{4},\frac{11}{4};-z\right)=\frac{1}{1\,310\,720\,z^{7/4}}$$
$$\left(7\left(4z^{3/4}\left(-7424z^2+39\,680z+1755\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-60\,416z^3+374\,400z^2+30\,420z-5265\right)\cos\left(2\sqrt{z}\right)+\right.\right.\right.$$
$$\left.\left.2\sqrt{z}\left(2048z^3-134\,656z^2+23\,400z-5265\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2048z^3-134\,656z^2+23\,400z-5265\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(60\,416z^3-374\,400z^2-30\,420z+5265\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7878.01

$$ {}_1F_2\left(6;\frac{1}{4},\frac{15}{4};z\right)= \frac{1}{41\,943\,040\,z^{11/4}}\left(77\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(1024\,z^3+26\,240\,z^2-4860\,z-4725\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(8192\,z^4+88\,064\,z^{7/2}+230\,400\,z^3+57\,600\,z^{5/2}-50\,400\,z^2+39\,960\,z^{3/2}-38\,880\,z+28\,350\,\sqrt{z}-14\,175\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(-8192\,z^4+88\,064\,z^{7/2}-230\,400\,z^3+57\,600\,z^{5/2}+50\,400\,z^2+39\,960\,z^{3/2}+38\,880\,z+28\,350\,\sqrt{z}+14\,175\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7879.01

$$ {}_1F_2\left(6;\frac{1}{4},\frac{15}{4};-z\right)= \frac{1}{10\,485\,760\,z^{11/4}}\left(77\left(4\,z^{3/4}\left(-1024\,z^3+26\,240\,z^2+4860\,z-4725\right)-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4-230\,400\,z^3-50\,400\,z^2+38\,880\,z-14\,175\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(44\,032\,z^3-28\,800\,z^2+19\,980\,z-14\,175\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4-230\,400\,z^3-50\,400\,z^2+38\,880\,z-14\,175\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(44\,032\,z^3-28\,800\,z^2+19\,980\,z-14\,175\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7880.01

$$ {}_1F_2\left(6;\frac{1}{4},\frac{19}{4};z\right)= \frac{1}{67\,108\,864\,z^{15/4}}\left(231\,e^{-2\sqrt{z}}\left(48\,e^{2\sqrt{z}}\,z^{3/4}\left(4096\,z^3-2560\,z^2-7000\,z-13\,475\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(16\,384\,z^{9/2}+102\,400\,z^4+51\,200\,z^{7/2}-64\,000\,z^3+91\,200\,z^{5/2}-148\,080\,z^2+218\,400\,z^{3/2}-270\,900\,z+242\,550\,\sqrt{z}-121\,275\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(16\,384\,z^{9/2}-102\,400\,z^4+51\,200\,z^{7/2}+64\,000\,z^3+91\,200\,z^{5/2}+148\,080\,z^2+218\,400\,z^{3/2}+270\,900\,z+242\,550\,\sqrt{z}+121\,275\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7881.01

$$ {}_1F_2\left(6;\frac{1}{4},\frac{19}{4};-z\right)= -\frac{1}{16\,777\,216\,z^{15/4}}\left(231\left(-12\,z^{3/4}\left(4096\,z^3+2560\,z^2-7000\,z+13\,475\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(8192\,z^4-25\,600\,z^3+45\,600\,z^2-109\,200\,z+121\,275\right)\sin\left(2\sqrt{z}\right)-5\left(20\,480\,z^4+12\,800\,z^3-29\,616\,z^2+54\,180\,z-24\,255\right)\cos\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(8192\,z^4-25\,600\,z^3+45\,600\,z^2-109\,200\,z+121\,275\right)\cos\left(2\sqrt{z}\right)+5\left(20\,480\,z^4+12\,800\,z^3-29\,616\,z^2+54\,180\,z-24\,255\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7882.01

$$ {}_1F_2\left(6;\frac{1}{4},\frac{23}{4};z\right)= \frac{1}{536\,870\,912\,z^{19/4}}\left(4389\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(4096\,z^4-10\,752\,z^3-72\,240\,z^2-392\,700\,z-1\,091\,475\right)+e^{4\sqrt{z}}\right.\right. \sqrt{2\pi}\left(32\,768\,z^5+40\,960\,z^{9/2}-81\,920\,z^4+199\,680\,z^{7/2}-516\,480\,z^3+1\,253\,280\,z^{5/2}-\right. 2\,696\,400\,z^2+4\,851\,000\,z^{3/2}-6\,791\,400\,z+6\,548\,850\sqrt{z}-3\,274\,425\Big)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+ \sqrt{2\pi}\left(-32\,768\,z^5+40\,960\,z^{9/2}+81\,920\,z^4+199\,680\,z^{7/2}+516\,480\,z^3+1\,253\,280\,z^{5/2}+\right. \left.\left.\left. 2\,696\,400\,z^2+4\,851\,000\,z^{3/2}+6\,791\,400\,z+6\,548\,850\sqrt{z}+3\,274\,425\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7883.01

$$ {}_1F_2\left(6;\frac{1}{4},\frac{23}{4};-z\right)= \frac{1}{134\,217\,728\,z^{19/4}}\left(4389\left(4\,z^{3/4}\left(4096\,z^4+10\,752\,z^3-72\,240\,z^2+392\,700\,z-1\,091\,475\right)+\right.\right. \sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768\,z^5+81\,920\,z^4-516\,480\,z^3+2\,696\,400\,z^2-6\,791\,400\,z+3\,274\,425\right)\cos\left(2\sqrt{z}\right)+\right. 10\sqrt{z}\left(4096\,z^4-19\,968\,z^3+125\,328\,z^2-485\,100\,z+654\,885\right)\sin\left(2\sqrt{z}\right)\Big)- \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(32\,768\,z^5+81\,920\,z^4-516\,480\,z^3+2\,696\,400\,z^2-6\,791\,400\,z+3\,274\,425\right)\sin\left(2\sqrt{z}\right)-\right. \left.\left.\left. 10\sqrt{z}\left(4096\,z^4-19\,968\,z^3+125\,328\,z^2-485\,100\,z+654\,885\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 6$, $b_1 = \frac{3}{4}$

07.22.03.7884.01

$$ {}_1F_2\left(6;\frac{3}{4},\frac{5}{4};z\right)= \frac{1}{983\,040\,\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\left(256\,z^2+29\,088\,z+57\,045\right)+\right.\right. e^{4\sqrt{z}}\,\sqrt{2\pi}\left(1024\,z^{5/2}+19\,200\,z^2+120\,960\,z^{3/2}+305\,760\,z+286\,020\sqrt{z}+65\,835\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+ \left.\left.\sqrt{2\pi}\left(-1024\,z^{5/2}+19\,200\,z^2-120\,960\,z^{3/2}+305\,760\,z-286\,020\sqrt{z}+65\,835\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7885.01

$$ {}_1F_2\left(6;\frac{3}{4},\frac{5}{4};-z\right)= \frac{1}{245\,760\,\sqrt[4]{z}}\left(2\sqrt[4]{z}\left(256\,z^2-29\,088\,z+57\,045\right)+\right. \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(1280\,z^2-20\,384\,z+4389\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(256\,z^2-30\,240\,z+71\,505\right)\sin\left(2\sqrt{z}\right)\right)+ \left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\left(256\,z^2-30\,240\,z+71\,505\right)\cos\left(2\sqrt{z}\right)+15\left(1280\,z^2-20\,384\,z+4389\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7886.01

$$ {}_1F_2\left(6;\frac{3}{4},\frac{9}{4};z\right)=\frac{1}{1\,572\,864\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(7936\,z^2+63\,552\,z-3465\right)+\right.\right.$$
$$ e^{4\sqrt{z}}\sqrt{2\pi}\left(2048\,z^3+32\,256\,z^{5/2}+161\,280\,z^2+288\,960\,z^{3/2}+138\,600\,z-6930\sqrt{z}+3465\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$ \left.\left.\sqrt{2\pi}\left(2048\,z^3-32\,256\,z^{5/2}+161\,280\,z^2-288\,960\,z^{3/2}+138\,600\,z+6930\sqrt{z}+3465\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7887.01

$$ {}_1F_2\left(6;\frac{3}{4},\frac{9}{4};-z\right)=\frac{1}{393\,216\,z^{5/4}}\left(2\sqrt[4]{z}\left(-7936\,z^2+63\,552\,z+3465\right)+\right.$$
$$ \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3-161\,280\,z^2+138\,600\,z-3465\right)\cos\left(2\sqrt{z}\right)+42\sqrt{z}\left(768\,z^2-6880\,z-165\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$ \left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3-161\,280\,z^2+138\,600\,z-3465\right)\sin\left(2\sqrt{z}\right)-42\sqrt{z}\left(768\,z^2-6880\,z-165\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7888.01

$$ {}_1F_2\left(6;\frac{3}{4},\frac{13}{4};z\right)= $$
$$ \frac{1}{4\,194\,304\,z^{9/4}}\left(3\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(1024\,z^3+40\,064\,z^2-8316\,z-3465\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(4096\,z^{7/2}+50\,176\,z^3+\right.\right.\right.$$
$$ \left.\left.\left.172\,032\,z^{5/2}+147\,840\,z^2-18\,480\,z^{3/2}+13\,860\,z-6930\sqrt{z}+3465\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\right.\right.$$
$$ \left.\left.\left(-4096\,z^{7/2}+50\,176\,z^3-172\,032\,z^{5/2}+147\,840\,z^2+18\,480\,z^{3/2}+13\,860\,z+6930\sqrt{z}+3465\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7889.01

$$ {}_1F_2\left(6;\frac{3}{4},\frac{13}{4};-z\right)=\frac{1}{1\,048\,576\,z^{9/4}} $$
$$ \left(3\left(2\sqrt[4]{z}\left(-1024\,z^3+40\,064\,z^2+8316\,z-3465\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(2048\,z^3-86\,016\,z^2-9240\,z+3465\right)\sin\left(2\sqrt{z}\right)-\right.\right.\right.$$
$$ \left.\left.\left.7\left(7168\,z^3-21\,120\,z^2+1980\,z-495\right)\cos\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right.$$
$$ \left.\left.\left(2\sqrt{z}\left(2048\,z^3-86\,016\,z^2-9240\,z+3465\right)\cos\left(2\sqrt{z}\right)+7\left(7168\,z^3-21\,120\,z^2+1980\,z-495\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7890.01

$$ {}_1F_2\left(6;\frac{3}{4},\frac{17}{4};z\right)= $$
$$ \frac{1}{33\,554\,432\,z^{13/4}}\left(39\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(16\,384\,z^3-10\,752\,z^2-12\,600\,z-14\,175\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(8192\,z^4+67\,584\,z^{7/2}+\right.\right.\right.$$
$$ \left.\left.\left.107\,520\,z^3-26\,880\,z^{5/2}+30\,240\,z^2-32\,760\,z^{3/2}+35\,280\,z-28\,350\sqrt{z}+14\,175\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\right.\right.$$
$$ \left.\left.\sqrt{2\pi}\left(8192\,z^4-67\,584\,z^{7/2}+107\,520\,z^3+26\,880\,z^{5/2}+30\,240\,z^2+32\,760\,z^{3/2}+35\,280\,z+28\,350\sqrt{z}+14\,175\right)\right.\right.$$
$$ \left.\left.\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7891.01

$$ {}_1F_2\left(6;\frac{3}{4},\frac{17}{4};-z\right)= -\frac{1}{8\,388\,608\,z^{13/4}}\left(39\left(-2\sqrt[4]{z}\left(16\,384\,z^3+10\,752\,z^2-12\,600\,z+14\,175\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4-107\,520\,z^3+30\,240\,z^2-35\,280\,z+14\,175\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\left(11\,264\,z^3+4480\,z^2-5460\,z+4725\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4-107\,520\,z^3+30\,240\,z^2-35\,280\,z+14\,175\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\left(11\,264\,z^3+4480\,z^2-5460\,z+4725\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7892.01

$$ {}_1F_2\left(6;\frac{3}{4},\frac{21}{4};z\right)= \frac{1}{268\,435\,456\,z^{17/4}}\left(663\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(4096\,z^4-10\,752\,z^3-31\,920\,z^2-102\,060\,z-184\,275\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(16\,384\,z^{9/2}+61\,440\,z^4-30\,720\,z^{7/2}+53\,760\,z^3-100\,800\,z^{5/2}+186\,480\,z^2-302\,400\,z^{3/2}+396\,900\,z-368\,550\sqrt{z}+184\,275\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(-16\,384\,z^{9/2}+61\,440\,z^4+30\,720\,z^{7/2}+53\,760\,z^3+100\,800\,z^{5/2}+186\,480\,z^2+302\,400\,z^{3/2}+396\,900\,z+368\,550\sqrt{z}+184\,275\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7893.01

$$ {}_1F_2\left(6;\frac{3}{4},\frac{21}{4};-z\right)= \frac{1}{67\,108\,864\,z^{17/4}}\left(663\left(2\sqrt[4]{z}\left(4096\,z^4+10\,752\,z^3-31\,920\,z^2+102\,060\,z-184\,275\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\left(8192\,z^4+15\,360\,z^3-50\,400\,z^2+151\,200\,z-184\,275\right)\cos\left(2\sqrt{z}\right)+15\left(4096\,z^4-3584\,z^3+12\,432\,z^2-26\,460\,z+12\,285\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(4096\,z^4-3584\,z^3+12\,432\,z^2-26\,460\,z+12\,285\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\left(8192\,z^4+15\,360\,z^3-50\,400\,z^2+151\,200\,z-184\,275\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 6$, $b_1 = \frac{5}{4}$

07.22.03.7894.01

$$ {}_1F_2\left(6;\frac{5}{4},\frac{7}{4};z\right)= \frac{1}{1\,310\,720\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(128\,e^{2\sqrt{z}}\,z^{3/4}\left(256\,z+2425\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(1024\,z^{5/2}+16\,640\,z^2+87\,680\,z^{3/2}+174\,240\,z+111\,780\sqrt{z}+9945\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(1024\,z^{5/2}-16\,640\,z^2+87\,680\,z^{3/2}-174\,240\,z+111\,780\sqrt{z}-9945\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7895.01

$$ {}_1F_2\left(6;\frac{5}{4},\frac{7}{4};-z\right)=\frac{1}{327\,680\,z^{3/4}}\left(32\,z^{3/4}\left(2425-256\,z\right)+\right.$$
$$\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(256\,z^2-21\,920\,z+27\,945\right)\sin\left(2\sqrt{z}\right)-5\left(3328\,z^2-34\,848\,z+1989\right)\cos\left(2\sqrt{z}\right)\right)+$$
$$\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(256\,z^2-21\,920\,z+27\,945\right)\cos\left(2\sqrt{z}\right)+5\left(3328\,z^2-34\,848\,z+1989\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7896.01

$$ {}_1F_2\left(6;\frac{5}{4},\frac{11}{4};z\right)=\frac{1}{10\,485\,760\,z^{7/4}}\left(7\,e^{-2\sqrt{z}}\,\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(256\,z^2+12\,640\,z+585\right)+\right.\right.$$
$$e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(2048\,z^3+27\,136\,z^{5/2}+107\,520\,z^2+133\,440\,z^{3/2}+23\,400\,z-3510\sqrt{z}+1755\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.\left.\sqrt{2\,\pi}\,\left(2048\,z^3-27\,136\,z^{5/2}+107\,520\,z^2-133\,440\,z^{3/2}+23\,400\,z+3510\sqrt{z}+1755\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7897.01

$$ {}_1F_2\left(6;\frac{5}{4},\frac{11}{4};-z\right)=$$
$$\frac{1}{2\,621\,440\,z^{7/4}}\left(7\left(-4\,z^{3/4}\left(256\,z^2-12\,640\,z+585\right)-\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3-107\,520\,z^2+23\,400\,z-1755\right)\cos\left(2\sqrt{z}\right)+\right.\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(13\,568\,z^2-66\,720\,z-1755\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.$$
$$\left.\left.\left(\left(2048\,z^3-107\,520\,z^2+23\,400\,z-1755\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(13\,568\,z^2-66\,720\,z-1755\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7898.01

$$ {}_1F_2\left(6;\frac{5}{4},\frac{15}{4};z\right)=\frac{1}{83\,886\,080\,z^{11/4}}\left(77\,e^{-2\sqrt{z}}\,\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(4864\,z^2+1440\,z+945\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\right.\right.$$
$$\left(4096\,z^{7/2}+39\,936\,z^3+95\,232\,z^{5/2}+28\,800\,z^2-10\,800\,z^{3/2}+9180\,z-5670\sqrt{z}+2835\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\,\pi}\,\left(4096\,z^{7/2}-39\,936\,z^3+95\,232\,z^{5/2}-28\,800\,z^2-10\,800\,z^{3/2}-9180\,z-5670\sqrt{z}-2835\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7899.01

$$ {}_1F_2\left(6;\frac{5}{4},\frac{15}{4};-z\right)=$$
$$-\frac{1}{20\,971\,520\,z^{11/4}}\left(77\left(-4\,z^{3/4}\left(4864\,z^2-1440\,z+945\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(2048\,z^3-47\,616\,z^2-5400\,z+2835\right)\right.\right.\right.$$
$$\left.\sin\left(2\sqrt{z}\right)-3\left(13\,312\,z^3-9600\,z^2+3060\,z-945\right)\cos\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)$$
$$\left.\left.\left.\left(2\sqrt{z}\,\left(2048\,z^3-47\,616\,z^2-5400\,z+2835\right)\cos\left(2\sqrt{z}\right)+3\left(13\,312\,z^3-9600\,z^2+3060\,z-945\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

07.22.03.7900.01

$$ {}_1F_2\left(6;\frac{5}{4},\frac{19}{4};z\right)=\frac{1}{134\,217\,728\,z^{15/4}}\left(231\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(1024\,z^3+1920\,z^2+3540\,z+5775\right)+e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(8192\,z^4+47\,104\,z^{7/2}+25\,600\,z^3-19\,200\,z^{5/2}+26\,400\,z^2-34\,440\,z^{3/2}+40\,320\,z-34\,650\,\sqrt{z}+17\,325\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\sqrt{2\pi}\,\left(8192\,z^4-47\,104\,z^{7/2}+25\,600\,z^3+19\,200\,z^{5/2}+26\,400\,z^2+34\,440\,z^{3/2}+40\,320\,z+34\,650\,\sqrt{z}+17\,325\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7901.01

$$ {}_1F_2\left(6;\frac{5}{4},\frac{19}{4};-z\right)=\frac{1}{33\,554\,432\,z^{15/4}}\left(231\left(4\,z^{3/4}\left(1024\,z^3-1920\,z^2+3540\,z-5775\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4-25\,600\,z^3+26\,400\,z^2-40\,320\,z+17\,325\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(23\,552\,z^3+9600\,z^2-17\,220\,z+17\,325\right)\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4-25\,600\,z^3+26\,400\,z^2-40\,320\,z+17\,325\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(23\,552\,z^3+9600\,z^2-17\,220\,z+17\,325\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7902.01

$$ {}_1F_2\left(6;\frac{5}{4},\frac{23}{4};z\right)=\frac{1}{1\,073\,741\,824\,z^{19/4}}\left(4389\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(2048\,z^3+9600\,z^2+46\,200\,z+121\,275\right)+e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(16\,384\,z^{9/2}+20\,480\,z^4-30\,720\,z^{7/2}+69\,120\,z^3-154\,560\,z^{5/2}+317\,520\,z^2-554\,400\,z^{3/2}+762\,300\,z-727\,650\,\sqrt{z}+363\,825\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\,\left(16\,384\,z^{9/2}-20\,480\,z^4-30\,720\,z^{7/2}-69\,120\,z^3-154\,560\,z^{5/2}-317\,520\,z^2-554\,400\,z^{3/2}-762\,300\,z-727\,650\,\sqrt{z}-363\,825\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7903.01

$$ {}_1F_2\left(6;\frac{5}{4},\frac{23}{4};-z\right)=\frac{1}{268\,435\,456\,z^{19/4}}\left(4389\left(4\,z^{3/4}\left(-2048\,z^3+9600\,z^2-46\,200\,z+121\,275\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(8192\,z^4+15\,360\,z^3-77\,280\,z^2+277\,200\,z-363\,825\right)\cos\left(2\sqrt{z}\right)+5\left(4096\,z^4-13\,824\,z^3+63\,504\,z^2-152\,460\,z+72\,765\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(8192\,z^4+15\,360\,z^3-77\,280\,z^2+277\,200\,z-363\,825\right)\sin\left(2\sqrt{z}\right)-5\left(4096\,z^4-13\,824\,z^3+63\,504\,z^2-152\,460\,z+72\,765\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = 6$, $b_1 = \frac{7}{4}$

07.22.03.7904.01

$$ {}_1F_2\left(6;\frac{7}{4},\frac{9}{4};z\right)=\frac{1}{1\,048\,576\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(256\,z^2+14\,048\,z+3465\right)+\right.\right.$$
$$ e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(1024\,z^{5/2}+14\,080\,z^2+59\,520\,z^{3/2}+84\,960\,z+26\,820\,\sqrt{z}-3465\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)- $$
$$ \left.\left.\sqrt{2\,\pi}\,\left(1024\,z^{5/2}-14\,080\,z^2+59\,520\,z^{3/2}-84\,960\,z+26\,820\,\sqrt{z}+3465\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7905.01

$$ {}_1F_2\left(6;\frac{7}{4},\frac{9}{4};-z\right)=\frac{1}{262\,144\,z^{5/4}}\left(-2\,\sqrt[4]{z}\,\left(256\,z^2-14\,048\,z+3465\right)+\right. $$
$$ \sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-14\,080\,z^2+84\,960\,z+3465\right)\cos\left(2\,\sqrt{z}\right)+4\,\sqrt{z}\,\left(256\,z^2-14\,880\,z+6705\right)\sin\left(2\,\sqrt{z}\right)\right)- $$
$$ \left.\sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\,\sqrt{z}\,\left(256\,z^2-14\,880\,z+6705\right)\cos\left(2\,\sqrt{z}\right)+5\left(2816\,z^2-16\,992\,z-693\right)\sin\left(2\,\sqrt{z}\right)\right)\right) $$

07.22.03.7906.01

$$ {}_1F_2\left(6;\frac{7}{4},\frac{13}{4};z\right)=\frac{1}{8\,388\,608\,z^{9/4}}\left(9\,e^{-2\sqrt{z}}\left(168\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(256\,z^2+352\,z+55\right)+\right.\right. $$
$$ e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(2048\,z^3+22\,016\,z^{5/2}+64\,000\,z^2+41\,920\,z^{3/2}-9240\,z+2310\,\sqrt{z}-1155\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+ $$
$$ \left.\left.\sqrt{2\,\pi}\,\left(2048\,z^3-22\,016\,z^{5/2}+64\,000\,z^2-41\,920\,z^{3/2}-9240\,z-2310\,\sqrt{z}-1155\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7907.01

$$ {}_1F_2\left(6;\frac{7}{4},\frac{13}{4};-z\right)= $$
$$ -\frac{1}{2\,097\,152\,z^{9/4}}\left(9\left(-42\,\sqrt[4]{z}\,\left(256\,z^2-352\,z+55\right)+\sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3-64\,000\,z^2-9240\,z+1155\right)\cos\left(2\,\sqrt{z}\right)+\right.\right. $$
$$ \left.2\,\sqrt{z}\,\left(11\,008\,z^2-20\,960\,z+1155\right)\sin\left(2\,\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right) $$
$$ \left.\left.\left(\left(2048\,z^3-64\,000\,z^2-9240\,z+1155\right)\sin\left(2\,\sqrt{z}\right)-2\,\sqrt{z}\,\left(11\,008\,z^2-20\,960\,z+1155\right)\cos\left(2\,\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7908.01

$$ {}_1F_2\left(6;\frac{7}{4},\frac{17}{4};z\right)=\frac{1}{67\,108\,864\,z^{13/4}}\left(117\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(1024\,z^3+8064\,z^2+3444\,z+2835\right)+\right.\right. $$
$$ e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(4096\,z^{7/2}+29\,696\,z^3+38\,912\,z^{5/2}-13\,440\,z^2+8400\,z^{3/2}-7980\,z+5670\,\sqrt{z}-2835\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)- $$
$$ \left.\left.\sqrt{2\,\pi}\,\left(4096\,z^{7/2}-29\,696\,z^3+38\,912\,z^{5/2}+13\,440\,z^2+8400\,z^{3/2}+7980\,z+5670\,\sqrt{z}+2835\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7909.01

$$ {}_1F_2\left(6;\frac{7}{4},\frac{17}{4};-z\right)=\frac{1}{16\,777\,216\,z^{13/4}}$$
$$\left(117\left(2\sqrt[4]{z}\left(1024\,z^3-8064\,z^2+3444\,z-2835\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(29\,696\,z^3+13\,440\,z^2-7980\,z+2835\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.2\sqrt{z}\left(-2048\,z^3+19\,456\,z^2-4200\,z+2835\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)$$
$$\left.\left.\left(2\sqrt{z}\left(2048\,z^3-19\,456\,z^2+4200\,z-2835\right)\cos\left(2\sqrt{z}\right)+\left(29\,696\,z^3+13\,440\,z^2-7980\,z+2835\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7910.01

$$ {}_1F_2\left(6;\frac{7}{4},\frac{21}{4};z\right)=\frac{1}{536\,870\,912\,z^{17/4}}$$
$$\left(1989\,e^{-2\sqrt{z}}\left(24\,e^{2\sqrt{z}}\sqrt[4]{z}\left(2048\,z^3+2176\,z^2+5400\,z+8775\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(8192\,z^4+26\,624\,z^{7/2}-15\,360\,z^3+\right.\right.\right.$$
$$\left.19\,200\,z^{5/2}-31\,200\,z^2+46\,440\,z^{3/2}-58\,320\,z+52\,650\sqrt{z}-26\,325\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(8192\,z^4-$$
$$\left.\left.\left.26\,624\,z^{7/2}-15\,360\,z^3-19\,200\,z^{5/2}-31\,200\,z^2-46\,440\,z^{3/2}-58\,320\,z-52\,650\sqrt{z}-26\,325\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7911.01

$$ {}_1F_2\left(6;\frac{7}{4},\frac{21}{4};-z\right)=\frac{1}{134\,217\,728\,z^{17/4}}$$
$$\left(1989\left(-6\sqrt[4]{z}\left(2048\,z^3-2176\,z^2+5400\,z-8775\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4+15\,360\,z^3-31\,200\,z^2+58\,320\,z-26\,325\right)\right.\right.$$
$$\left.\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(13\,312\,z^3-9600\,z^2+23\,220\,z-26\,325\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4+15\,360\,z^3-31\,200\,z^2+58\,320\,z-26\,325\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.2\sqrt{z}\left(13\,312\,z^3-9600\,z^2+23\,220\,z-26\,325\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 6$, $b_1 = \frac{9}{4}$

07.22.03.7912.01

$$ {}_1F_2\left(6;\frac{9}{4},\frac{11}{4};z\right)=\frac{1}{4\,194\,304\,z^{7/4}}$$
$$\left(7\,e^{-2\sqrt{z}}\left(1024\,e^{2\sqrt{z}}\,z^{3/4}\left(22\,z+45\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(1024\,z^{5/2}+11\,520\,z^2+36\,480\,z^{3/2}+30\,240\,z-3420\sqrt{z}-1755\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(1024\,z^{5/2}-11\,520\,z^2+36\,480\,z^{3/2}-30\,240\,z-3420\sqrt{z}+1755\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7913.01

$$ {}_1F_2\left(6;\frac{9}{4},\frac{11}{4};-z\right)=-\frac{1}{1\,048\,576\,z^{7/4}}\left(7\left(256\,z^{3/4}\,(45-22\,z)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(256\,z^2-9120\,z-855\right)\sin\left(2\sqrt{z}\right)-45\left(256\,z^2-672\,z-39\right)\cos\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(256\,z^2-9120\,z-855\right)\cos\left(2\sqrt{z}\right)+45\left(256\,z^2-672\,z-39\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7914.01

$$ {}_1F_2\left(6;\frac{9}{4},\frac{15}{4};z\right)=\frac{1}{33\,554\,432\,z^{11/4}}\left(77\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(256\,z^2+3360\,z-315\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(2048\,z^3+16\,896\,z^{5/2}+30\,720\,z^2-960\,z^{3/2}-5400\,z+1890\sqrt{z}-945\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(-2048\,z^3+16\,896\,z^{5/2}-30\,720\,z^2-960\,z^{3/2}+5400\,z+1890\sqrt{z}+945\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7915.01

$$ {}_1F_2\left(6;\frac{9}{4},\frac{15}{4};-z\right)=\frac{1}{8\,388\,608\,z^{11/4}}\left(77\left(4\,z^{3/4}\left(256\,z^2-3360\,z-315\right)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3-30\,720\,z^2-5400\,z+945\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\,\left(2816\,z^2+160\,z+315\right)\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3-30\,720\,z^2-5400\,z+945\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\,\left(2816\,z^2+160\,z+315\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7916.01

$$ {}_1F_2\left(6;\frac{9}{4},\frac{19}{4};z\right)=\frac{1}{268\,435\,456\,z^{15/4}}\left(1155\,e^{-2\sqrt{z}}\left(48\,e^{2\sqrt{z}}\,z^{3/4}\left(768\,z^2-320\,z-385\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(4096\,z^{7/2}+19\,456\,z^3+3072\,z^{5/2}-9600\,z^2+8400\,z^{3/2}-8820\,z+6930\sqrt{z}-3465\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(4096\,z^{7/2}-19\,456\,z^3+3072\,z^{5/2}+9600\,z^2+8400\,z^{3/2}+8820\,z+6930\sqrt{z}+3465\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7917.01

$$ {}_1F_2\left(6;\frac{9}{4},\frac{19}{4};-z\right)=\frac{1}{67\,108\,864\,z^{15/4}}\left(1155\left(-12\,z^{3/4}\left(768\,z^2+320\,z-385\right)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(2048\,z^3-1536\,z^2+4200\,z-3465\right)\sin\left(2\sqrt{z}\right)-\left(19\,456\,z^3+9600\,z^2-8820\,z+3465\right)\cos\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(2048\,z^3-1536\,z^2+4200\,z-3465\right)\cos\left(2\sqrt{z}\right)+\left(19\,456\,z^3+9600\,z^2-8820\,z+3465\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7918.01

$${}_1F_2\left(6;\frac{9}{4},\frac{23}{4};z\right)=\frac{1}{2\,147\,483\,648\,z^{19/4}}\left(21\,945\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(1024\,z^3-1920\,z^2-7260\,z-17\,325\right)+e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(8192\,z^4+6144\,z^{7/2}-15\,360\,z^3+26\,880\,z^{5/2}-50\,400\,z^2+83\,160\,z^{3/2}-110\,880\,z+103\,950\,\sqrt{z}-51\,975\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\,\left(-8192\,z^4+6144\,z^{7/2}+15\,360\,z^3+26\,880\,z^{5/2}+50\,400\,z^2+83\,160\,z^{3/2}+110\,880\,z+103\,950\,\sqrt{z}+51\,975\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7919.01

$${}_1F_2\left(6;\frac{9}{4},\frac{23}{4};-z\right)=-\frac{1}{536\,870\,912\,z^{19/4}}\left(21\,945\left(4\,z^{3/4}\left(1024\,z^3+1920\,z^2-7260\,z+17\,325\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4+15\,360\,z^3-50\,400\,z^2+110\,880\,z-51\,975\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\,\left(1024\,z^3-4480\,z^2+13\,860\,z-17\,325\right)\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(8192\,z^4+15\,360\,z^3-50\,400\,z^2+110\,880\,z-51\,975\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\,\left(1024\,z^3-4480\,z^2+13\,860\,z-17\,325\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = 6$, $b_1 = \frac{11}{4}$

07.22.03.7920.01

$${}_1F_2\left(6;\frac{11}{4},\frac{13}{4};z\right)=\frac{1}{16\,777\,216\,z^{9/4}}\left(63\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(256\,z^2+4128\,z-1155\right)+e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(1024\,z^{5/2}+8960\,z^2+18\,560\,z^{3/2}+2400\,z-5820\,\sqrt{z}+1155\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\pi}\,\left(-1024\,z^{5/2}+8960\,z^2-18\,560\,z^{3/2}+2400\,z+5820\,\sqrt{z}+1155\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7921.01

$${}_1F_2\left(6;\frac{11}{4},\frac{13}{4};-z\right)=\frac{1}{4\,194\,304\,z^{9/4}}\left(63\left(2\sqrt[4]{z}\,\left(256\,z^2-4128\,z-1155\right)+\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(5\left(1792\,z^2-480\,z+231\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(-256\,z^2+4640\,z+1455\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(256\,z^2-4640\,z-1455\right)\cos\left(2\sqrt{z}\right)+5\left(1792\,z^2-480\,z+231\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7922.01

$$ {}_1F_2\left(6;\frac{11}{4},\frac{17}{4};z\right)=\frac{1}{134\,217\,728\,z^{13/4}}\left(819\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(2816\,z^2-2688\,z-945\right)+\right.\right.$$
$$ e^{4\sqrt{z}}\sqrt{2\pi}\left(2048\,z^3+11\,776\,z^{5/2}+7680\,z^2-10\,560\,z^{3/2}+4200\,z-1890\sqrt{z}+945\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$ \left.\left.\sqrt{2\pi}\left(2048\,z^3-11\,776\,z^{5/2}+7680\,z^2+10\,560\,z^{3/2}+4200\,z+1890\sqrt{z}+945\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7923.01

$$ {}_1F_2\left(6;\frac{11}{4},\frac{17}{4};-z\right)=\frac{1}{33\,554\,432\,z^{13/4}}\left(819\left(-2\sqrt[4]{z}\left(2816\,z^2+2688\,z-945\right)+\right.\right.$$
$$ \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3-7680\,z^2+4200\,z-945\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(5888\,z^2+5280\,z-945\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$ \left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3-7680\,z^2+4200\,z-945\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(5888\,z^2+5280\,z-945\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7924.01

$$ {}_1F_2\left(6;\frac{11}{4},\frac{21}{4};z\right)=\frac{1}{1\,073\,741\,824\,z^{17/4}}\left(13\,923\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(1024\,z^3-3456\,z^2-3996\,z-5265\right)+e^{4\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$ \left(4096\,z^{7/2}+9216\,z^3-12\,288\,z^{5/2}+9600\,z^2-10\,800\,z^{3/2}+12\,420\,z-10\,530\sqrt{z}+5265\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$ \left.\left.\sqrt{2\pi}\left(-4096\,z^{7/2}+9216\,z^3+12\,288\,z^{5/2}+9600\,z^2+10\,800\,z^{3/2}+12\,420\,z+10\,530\sqrt{z}+5265\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7925.01

$$ {}_1F_2\left(6;\frac{11}{4},\frac{21}{4};-z\right)=-\frac{1}{268\,435\,456\,z^{17/4}} $$
$$ \left(13\,923\left(2\sqrt[4]{z}\left(1024\,z^3+3456\,z^2-3996\,z+5265\right)-\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(-9216\,z^3+9600\,z^2-12\,420\,z+5265\right)\cos\left(2\sqrt{z}\right)+\right.\right.\right.$$
$$ \left.\left.2\sqrt{z}\left(2048\,z^3+6144\,z^2-5400\,z+5265\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right. $$
$$ \left.\left.\left(2\sqrt{z}\left(2048\,z^3+6144\,z^2-5400\,z+5265\right)\cos\left(2\sqrt{z}\right)+3\left(3072\,z^3-3200\,z^2+4140\,z-1755\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 6$, $b_1 = \frac{13}{4}$

07.22.03.7926.01

$$ {}_1F_2\left(6;\frac{13}{4},\frac{15}{4};z\right)=\frac{1}{67\,108\,864\,z^{11/4}} $$
$$ \left(693\,e^{-2\sqrt{z}}\left(384\,e^{2\sqrt{z}}\,z^{3/4}\left(32\,z-35\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(1024\,z^{5/2}+6400\,z^2+5760\,z^{3/2}-6240\,z+420\sqrt{z}+945\right)\right.\right.$$
$$ \left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(1024\,z^{5/2}-6400\,z^2+5760\,z^{3/2}+6240\,z+420\sqrt{z}-945\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7927.01

$$ {}_1F_2\left(6;\frac{13}{4},\frac{15}{4};-z\right)=\frac{1}{16\,777\,216\,z^{11/4}}\left(693\left(-96\,z^{3/4}\,(32\,z+35)+\right.\right.$$
$$\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(256\,z^2-1440\,z+105\right)\sin\left(2\sqrt{z}\right)-5\left(1280\,z^2+1248\,z+189\right)\cos\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(256\,z^2-1440\,z+105\right)\cos\left(2\sqrt{z}\right)+5\left(1280\,z^2+1248\,z+189\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7928.01

$$ {}_1F_2\left(6;\frac{13}{4},\frac{19}{4};z\right)=\frac{1}{536\,870\,912\,z^{15/4}}\left(10\,395\,e^{-2\sqrt{z}}\,\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(256\,z^2-800\,z+385\right)+\right.\right.$$
$$e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(2048\,z^3+6656\,z^{5/2}-5120\,z^2-2240\,z^{3/2}+4200\,z-2310\,\sqrt{z}\,+1155\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.\left.\sqrt{2\,\pi}\,\left(2048\,z^3-6656\,z^{5/2}-5120\,z^2+2240\,z^{3/2}+4200\,z+2310\,\sqrt{z}\,+1155\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7929.01

$$ {}_1F_2\left(6;\frac{13}{4},\frac{19}{4};-z\right)=-\frac{1}{134\,217\,728\,z^{15/4}}\left(10\,395\left(4\,z^{3/4}\left(256\,z^2+800\,z+385\right)+\right.\right.$$
$$\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3+5120\,z^2+4200\,z-1155\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(3328\,z^2+1120\,z-1155\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\left.\left.\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3+5120\,z^2+4200\,z-1155\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(3328\,z^2+1120\,z-1155\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7930.01

$$ {}_1F_2\left(6;\frac{13}{4},\frac{23}{4};z\right)=\frac{1}{4\,294\,967\,296\,z^{19/4}}\left(197\,505\,e^{-2\sqrt{z}}\,\left(-16\,e^{2\sqrt{z}}\,z^{3/4}\left(256\,z^2-1760\,z-3465\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\right.\right.$$
$$\left(4096\,z^{7/2}-1024\,z^3-7168\,z^{5/2}+13\,440\,z^2-18\,480\,z^{3/2}+23\,100\,z-20\,790\,\sqrt{z}\,+10\,395\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.\left.\sqrt{2\,\pi}\,\left(4096\,z^{7/2}+1024\,z^3-7168\,z^{5/2}-13\,440\,z^2-18\,480\,z^{3/2}-23\,100\,z-20\,790\,\sqrt{z}\,-10\,395\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7931.01

$$ {}_1F_2\left(6;\frac{13}{4},\frac{23}{4};-z\right)=$$
$$-\frac{1}{1\,073\,741\,824\,z^{19/4}}\left(197\,505\left(4\,z^{3/4}\left(256\,z^2+1760\,z-3465\right)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(2\sqrt{z}\,\left(2048\,z^3+3584\,z^2-9240\,z+10\,395\right)\right.\right.\right.$$
$$\left.\cos\left(2\sqrt{z}\right)-\left(1024\,z^3+13\,440\,z^2-23\,100\,z+10\,395\right)\sin\left(2\sqrt{z}\right)\right)+\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)$$
$$\left.\left.\left.\left(\left(1024\,z^3+13\,440\,z^2-23\,100\,z+10\,395\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(2048\,z^3+3584\,z^2-9240\,z+10\,395\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)\right)$$

For fixed z and $a_1 = 6$, $b_1 = \frac{15}{4}$

07.22.03.7932.01

$$ {}_1F_2\left(6;\frac{15}{4},\frac{17}{4};z\right)=\frac{1}{268\,435\,456\,z^{13/4}}\left(9009\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(256\,z^2-672\,z+945\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(1024\,z^{5/2}+3840\,z^2-1920\,z^{3/2}-3360\,z+3780\sqrt{z}-945\right)\right.\right.$$
$$ \left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\sqrt{2\pi}\left(1024\,z^{5/2}-3840\,z^2-1920\,z^{3/2}+3360\,z+3780\sqrt{z}+945\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7933.01

$$ {}_1F_2\left(6;\frac{15}{4},\frac{17}{4};-z\right)=-\frac{1}{67\,108\,864\,z^{13/4}}\left(9009\left(2\sqrt[4]{z}\left(256\,z^2+672\,z+945\right)+\right.\right.$$
$$ \sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\left(256\,z^2+480\,z+945\right)\cos\left(2\sqrt{z}\right)+15\left(256\,z^2+224\,z-63\right)\sin\left(2\sqrt{z}\right)\right)- $$
$$ \left.\left.\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\left(256\,z^2+480\,z+945\right)\sin\left(2\sqrt{z}\right)-15\left(256\,z^2+224\,z-63\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.7934.01

$$ {}_1F_2\left(6;\frac{15}{4},\frac{21}{4};z\right)=\frac{1}{2\,147\,483\,648\,z^{17/4}}\left(153\,153\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\sqrt[4]{z}\left(256\,z^2+2592\,z+1755\right)+\right.\right.$$
$$ e^{4\sqrt{z}}\sqrt{2\pi}\left(2048\,z^3+1536\,z^{5/2}-7680\,z^2+8640\,z^{3/2}-5400\,z+3510\sqrt{z}-1755\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$ \left.\left.\sqrt{2\pi}\left(2048\,z^3-1536\,z^{5/2}-7680\,z^2-8640\,z^{3/2}-5400\,z-3510\sqrt{z}-1755\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7935.01

$$ {}_1F_2\left(6;\frac{15}{4},\frac{21}{4};-z\right)=-\frac{1}{536\,870\,912\,z^{17/4}}\left(153\,153\left(-2\sqrt[4]{z}\left(256\,z^2-2592\,z+1755\right)+\right.\right.$$
$$ \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3+7680\,z^2-5400\,z+1755\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\left(256\,z^2-1440\,z+585\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$ \left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3+7680\,z^2-5400\,z+1755\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\left(256\,z^2-1440\,z+585\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 6$, $b_1 = \frac{17}{4}$

07.22.03.7936.01

$$ {}_1F_2\left(6;\frac{17}{4},\frac{19}{4};z\right)=\frac{1}{1\,073\,741\,824\,z^{15/4}}\left(135\,135\,e^{-2\sqrt{z}}\left(256\,e^{2\sqrt{z}}\,z^{3/4}\left(8\,z+35\right)+e^{4\sqrt{z}}\sqrt{2\pi}\left(1024\,z^{5/2}+1280\,z^2-4480\,z^{3/2}+3360\,z+420\sqrt{z}-1155\right)\right.\right.$$
$$ \left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\left(1024\,z^{5/2}-1280\,z^2-4480\,z^{3/2}-3360\,z+420\sqrt{z}+1155\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7937.01

$$ {}_1F_2\left(6;\frac{17}{4},\frac{19}{4};-z\right)=-\frac{1}{268\,435\,456\,z^{15/4}}\left(135\,135\right.$$
$$\left(64\,z^{3/4}\,(35-8\,z)+\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(256\,z^2+1120\,z+105\right)\cos\left(2\sqrt{z}\right)+5\left(256\,z^2-672\,z-231\right)\sin\left(2\sqrt{z}\right)\right)+\right.$$
$$\left.\left.\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(256\,z^2+1120\,z+105\right)\sin\left(2\sqrt{z}\right)-5\left(256\,z^2-672\,z-231\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.7938.01

$$ {}_1F_2\left(6;\frac{17}{4},\frac{23}{4};z\right)=\frac{1}{8\,589\,934\,592\,z^{19/4}}\left(2\,567\,565\,e^{-2\sqrt{z}}\right.$$
$$\left(16\,e^{2\sqrt{z}}\,z^{3/4}\left(256\,z^2+160\,z-1155\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(2048\,z^3-3584\,z^{5/2}+6720\,z^{3/2}-9240\,z+6930\sqrt{z}-3465\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(-2048\,z^3-3584\,z^{5/2}+6720\,z^{3/2}+9240\,z+6930\sqrt{z}+3465\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7939.01

$$ {}_1F_2\left(6;\frac{17}{4},\frac{23}{4};-z\right)=-\frac{1}{2\,147\,483\,648\,z^{19/4}}\left(2\,567\,565\left(4\,z^{3/4}\left(-256\,z^2+160\,z+1155\right)-\right.\right.$$
$$\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(\left(2048\,z^3-9240\,z+3465\right)\cos\left(2\sqrt{z}\right)-14\sqrt{z}\,\left(256\,z^2+480\,z-495\right)\sin\left(2\sqrt{z}\right)\right)+$$
$$\left.\left.\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(14\sqrt{z}\,\left(256\,z^2+480\,z-495\right)\cos\left(2\sqrt{z}\right)+\left(2048\,z^3-9240\,z+3465\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 6$, $b_1 = \frac{19}{4}$

07.22.03.7940.01

$$ {}_1F_2\left(6;\frac{19}{4},\frac{21}{4};z\right)=\frac{1}{4\,294\,967\,296\,z^{17/4}}\left(2\,297\,295\,e^{-2\sqrt{z}}\right.$$
$$\left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(256\,z^2-352\,z-1755\right)+e^{4\sqrt{z}}\,\sqrt{2\,\pi}\,\left(1024\,z^{5/2}-1280\,z^2-1920\,z^{3/2}+6240\,z-5820\sqrt{z}+1755\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\sqrt{2\,\pi}\,\left(-1024\,z^{5/2}-1280\,z^2+1920\,z^{3/2}+6240\,z+5820\sqrt{z}+1755\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.7941.01

$$ {}_1F_2\left(6;\frac{19}{4},\frac{21}{4};-z\right)=-\frac{1}{1\,073\,741\,824\,z^{17/4}}\left(2\,297\,295\left(-2\,\sqrt[4]{z}\,\left(256\,z^2+352\,z-1755\right)+\right.\right.$$
$$\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(5\left(256\,z^2+1248\,z-351\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(256\,z^2+480\,z-1455\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\left.\left.\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(256\,z^2+480\,z-1455\right)\cos\left(2\sqrt{z}\right)-5\left(256\,z^2+1248\,z-351\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = 6$, $b_1 = \frac{21}{4}$

07.22.03.7942.01

$$ {}_1F_2\left(6;\ \frac{21}{4},\ \frac{23}{4};\ z\right) = \frac{1}{17\,179\,869\,184\,z^{19/4}} \left(43\,648\,605\,e^{-2\sqrt{z}}\left(-128\,e^{2\sqrt{z}}\,z^{3/4}\,(64\,z+75) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(1024\,z^{5/2} - 3840\,z^2 + 5760\,z^{3/2} - 2400\,z - 3420\,\sqrt{z} + 3465\right)\right.\right. $$
$$ \left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \sqrt{2\pi}\,\left(1024\,z^{5/2} + 3840\,z^2 + 5760\,z^{3/2} + 2400\,z - 3420\,\sqrt{z} - 3465\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7943.01

$$ {}_1F_2\left(6;\ \frac{21}{4},\ \frac{23}{4};\ -z\right) = \frac{1}{4\,294\,967\,296\,z^{19/4}} \left(43\,648\,605\left(32\,z^{3/4}\,(64\,z-75) + \right.\right. $$
$$ \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(256\,z^2 - 1440\,z - 855\right)\cos\left(2\sqrt{z}\right) + 15\left(-256\,z^2 + 160\,z + 231\right)\sin\left(2\sqrt{z}\right)\right) + $$
$$ \left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(15\left(256\,z^2 - 160\,z - 231\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(256\,z^2 - 1440\,z - 855\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = 6$, $b_1 = \frac{23}{4}$

07.22.03.7944.01

$$ {}_1F_2\left(6;\ \frac{23}{4},\ \frac{25}{4};\ z\right) = \frac{1}{68\,719\,476\,736\,z^{21/4}} \left(916\,620\,705\,e^{-2\sqrt{z}}\right. $$
$$ \left(8\,e^{2\sqrt{z}}\,\sqrt[4]{z}\,\left(256\,z^2 + 5088\,z + 9945\right) + e^{4\sqrt{z}}\,\sqrt{2\pi}\,\left(1024\,z^{5/2} - 6400\,z^2 + 18\,560\,z^{3/2} - 30\,240\,z + 26\,820\,\sqrt{z} - 9945\right)\right. $$
$$ \left.\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - \sqrt{2\pi}\,\left(1024\,z^{5/2} + 6400\,z^2 + 18\,560\,z^{3/2} + 30\,240\,z + 26\,820\,\sqrt{z} + 9945\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7945.01

$$ {}_1F_2\left(6;\ \frac{23}{4},\ \frac{25}{4};\ -z\right) = \frac{1}{17\,179\,869\,184\,z^{21/4}} \left(916\,620\,705\left(-2\sqrt[4]{z}\,\left(256\,z^2 - 5088\,z + 9945\right) + \right.\right. $$
$$ \sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(5\left(1280\,z^2 - 6048\,z + 1989\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(256\,z^2 - 4640\,z + 6705\right)\sin\left(2\sqrt{z}\right)\right) - $$
$$ \left.\left.\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\left(4\sqrt{z}\,\left(256\,z^2 - 4640\,z + 6705\right)\cos\left(2\sqrt{z}\right) - 5\left(1280\,z^2 - 6048\,z + 1989\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = -\frac{23}{4}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = -\frac{23}{4}$, $b_{1.} = -\frac{11}{2}$

07.22.03.7946.01

$$ {}_1F_2\left(-\frac{23}{4};\ -\frac{11}{2},\ -\frac{23}{4};\ z\right) = \left(\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} + \frac{20\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\,\left(16\,z^2 + 240\,z + 495\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.7947.01

$${}_1F_2\left(-\frac{23}{4};-\frac{11}{2},-\frac{23}{4};-z\right)=\left(-\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}-\frac{20\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\,\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.7948.01

$${}_1F_2\left(-\frac{23}{4};-\frac{11}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{2\,170\,943\,775\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(131\,072\,z^6-303\,104\,z^5+1\,780\,224\,z^4+32\,970\,240\,z^3+1\,794\,199\,680\,z^2+\right.\right.\right.$$
$$\left.\left.3\,909\,578\,400\,z+2\,170\,943\,775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\,\left(16\,384\,z^5-27\,648\,z^4+226\,368\,z^3+210\,319\,200\,z^2+2\,172\,823\,380\,z+2\,170\,943\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.4\,z\left(-32\,768\,z^5+67\,584\,z^4-438\,912\,z^3+15\,842\,736\,z^2+436\,068\,360\,z+2\,170\,943\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.7949.01

$${}_1F_2\left(-\frac{23}{4};-\frac{11}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{2\,170\,943\,775\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(131\,072\,z^6+303\,104\,z^5+1\,780\,224\,z^4-32\,970\,240\,z^3+1\,794\,199\,680\,z^2-\right.\right.\right.$$
$$\left.\left.3\,909\,578\,400\,z+2\,170\,943\,775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\,\left(16\,384\,z^5+27\,648\,z^4+226\,368\,z^3-210\,319\,200\,z^2+2\,172\,823\,380\,z-2\,170\,943\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.4\,z\left(32\,768\,z^5+67\,584\,z^4+438\,912\,z^3+15\,842\,736\,z^2-436\,068\,360\,z+2\,170\,943\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.7950.01

$${}_1F_2\left(-\frac{23}{4};-\frac{11}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{1\,368\,709\,650}\left(e^{-2\sqrt{z}}\,\left(-65\,536\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4}-65\,536\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4}+\right.\right.$$
$$65\,536\,e^{4\sqrt{z}}\,z^{11/2}-65\,536\,z^{11/2}+16\,384\,e^{4\sqrt{z}}\,z^5+16\,384\,z^5+12\,288\,e^{4\sqrt{z}}\,z^{9/2}-12\,288\,z^{9/2}+15\,360\,e^{4\sqrt{z}}\,z^4+$$
$$15\,360\,z^4+26\,880\,e^{4\sqrt{z}}\,z^{7/2}-26\,880\,z^{7/2}+60\,480\,e^{4\sqrt{z}}\,z^3+60\,480\,z^3-24\,060\,960\,e^{4\sqrt{z}}\,z^{5/2}+24\,060\,960\,z^{5/2}+$$
$$176\,188\,320\,e^{4\sqrt{z}}\,z^2+176\,188\,320\,z^2-611\,226\,000\,e^{4\sqrt{z}}\,z^{3/2}+611\,226\,000\,z^{3/2}+1\,218\,086\,100\,e^{4\sqrt{z}}\,z+$$
$$\left.\left.1\,218\,086\,100\,z-1\,368\,709\,650\,e^{4\sqrt{z}}\,\sqrt{z}+1\,368\,709\,650\,\sqrt{z}+684\,354\,825\,e^{4\sqrt{z}}+684\,354\,825\right)\right)$$

07.22.03.7951.01

$${}_1F_2\left(-\frac{23}{4};-\frac{11}{2},-\frac{19}{4};-z\right)=\frac{1}{684\,354\,825}$$
$$\left(-131\,072\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{23/4}+2\left(32\,768\,z^5-6144\,z^4+13\,440\,z^3+12\,030\,480\,z^2-305\,613\,000\,z+684\,354\,825\right)\right.$$
$$\left.\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-16\,384\,z^5+15\,360\,z^4-60\,480\,z^3+176\,188\,320\,z^2-1\,218\,086\,100\,z+684\,354\,825\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.7952.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, -\frac{17}{4}; z\right) = -\frac{1}{103\,378\,275\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(65\,536 z^6 + 131\,072 z^5 - 328\,704 z^4 + 1\,470\,720 z^3 - 77\,323\,680 z^2 - 181\,326\,600 z - 103\,378\,275\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 4\sqrt{z}\left(-8192 z^5 - 21\,504 z^4 + 17\,088 z^3 + 5\,775\,840 z^2 + 98\,623\,980 z + 103\,378\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left. 4 z\left(16\,384 z^5 + 36\,864 z^4 - 67\,584 z^3 + 390\,096 z^2 + 15\,921\,360 z + 103\,378\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2 \Bigg) $$

07.22.03.7953.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, -\frac{17}{4}; -z\right) = -\frac{1}{103\,378\,275\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(65\,536 z^6 - 131\,072 z^5 - 328\,704 z^4 - 1\,470\,720 z^3 - 77\,323\,680 z^2 + 181\,326\,600 z - 103\,378\,275\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 4\sqrt{z}\left(8192 z^5 - 21\,504 z^4 - 17\,088 z^3 + 5\,775\,840 z^2 - 98\,623\,980 z + 103\,378\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 4 z\left(16\,384 z^5 - 36\,864 z^4 - 67\,584 z^3 - 390\,096 z^2 + 15\,921\,360 z - 103\,378\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2 \Bigg) $$

07.22.03.7954.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, -\frac{15}{4}; z\right) = \frac{1}{72\,037\,350} $$
$$ \left(e^{-2\sqrt{z}}\left(-16\,384 e^{4\sqrt{z}} z^{11/2} + 16\,384 z^{11/2} - 4096 e^{4\sqrt{z}} z^5 - 4096 z^5 + 1024 e^{2\sqrt{z}} \sqrt{2\pi}\,(16 z + 69)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{19/4} + \right. $$
$$ 1024 e^{2\sqrt{z}} \sqrt{2\pi}\,(16 z + 69)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{19/4} - 73\,728 e^{4\sqrt{z}} z^{9/2} + 73\,728 z^{9/2} - 21\,504 e^{4\sqrt{z}} z^4 - $$
$$ 21\,504 z^4 - 19\,968 e^{4\sqrt{z}} z^{7/2} + 19\,968 z^{7/2} - 31\,680 e^{4\sqrt{z}} z^3 - 31\,680 z^3 - 70\,560 e^{4\sqrt{z}} z^{5/2} + 70\,560 z^{5/2} + $$
$$ 5\,856\,480 e^{4\sqrt{z}} z^2 + 5\,856\,480 z^2 - 27\,941\,760 e^{4\sqrt{z}} z^{3/2} + 27\,941\,760 z^{3/2} + 61\,995\,780 e^{4\sqrt{z}} z + $$
$$ \left. 61\,995\,780 z - 72\,037\,350 e^{4\sqrt{z}} \sqrt{z} + 72\,037\,350\sqrt{z} + 36\,018\,675 e^{4\sqrt{z}} + 36\,018\,675\right)\Bigg) $$

07.22.03.7955.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, -\frac{15}{4}; -z\right) = $$
$$ \frac{1}{36\,018\,675}\left(2048\sqrt{\pi}\,(16 z - 69) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{19/4} + 2\left(-8192 z^5 + 36\,864 z^4 - 9984 z^3 + 35\,280 z^2 - 13\,970\,880 z + 36\,018\,675\right)\right. $$
$$ \left.\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(4096 z^5 - 21\,504 z^4 + 31\,680 z^3 + 5\,856\,480 z^2 - 61\,995\,780 z + 36\,018\,675\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.7956.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, -\frac{13}{4}; z\right) = \frac{1}{18\,243\,225\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(32\,768 z^6 + 206\,848 z^5 + 400\,896 z^4 - 898\,560 z^3 + 11\,531\,520 z^2 + 30\,618\,000 z + 18\,243\,225\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 4\sqrt{z}\left(4096 z^5 + 28\,416 z^4 + 73\,152 z^3 + 10\,080 z^2 + 16\,023\,420 z + 18\,243\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. \left. 4 z\left(-8192 z^5 - 53\,760 z^4 - 116\,352 z^3 + 164\,304 z^2 + 1\,428\,840 z + 18\,243\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.7957.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, -\frac{13}{4}; -z\right) = \frac{1}{18\,243\,225\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(32\,768 z^6 - 206\,848 z^5 + 400\,896 z^4 + 898\,560 z^3 + 11\,531\,520 z^2 - 30\,618\,000 z + 18\,243\,225\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 4\sqrt{z}\left(4096 z^5 - 28\,416 z^4 + 73\,152 z^3 - 10\,080 z^2 + 16\,023\,420 z - 18\,243\,225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. \left. 4 z\left(8192 z^5 - 53\,760 z^4 + 116\,352 z^3 + 164\,304 z^2 - 1\,428\,840 z + 18\,243\,225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.7958.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, -\frac{11}{4}; z\right) = $$
$$ \frac{1}{4\,802\,490}\left(e^{-2\sqrt{z}}\left(2048 e^{4\sqrt{z}} z^{11/2} - 2048 z^{11/2} + 512 e^{4\sqrt{z}} z^5 + 512 z^5 + 18\,048 e^{4\sqrt{z}} z^{9/2} - 18\,048 z^{9/2} + \right.\right. $$
$$ 4896 e^{4\sqrt{z}} z^4 + 4896 z^4 - 8 e^{2\sqrt{z}} \sqrt{2\pi}\left(256 z^2 + 2208 z + 9177\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{15/4} - $$
$$ 8 e^{2\sqrt{z}} \sqrt{2\pi}\left(256 z^2 + 2208 z + 9177\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{15/4} + 77\,568 e^{4\sqrt{z}} z^{7/2} - 77\,568 z^{7/2} + 24\,384 e^{4\sqrt{z}} z^3 + $$
$$ 24\,384 z^3 + 26\,208 e^{4\sqrt{z}} z^{5/2} - 26\,208 z^{5/2} + 50\,400 e^{4\sqrt{z}} z^2 + 50\,400 z^2 - 1\,375\,920 e^{4\sqrt{z}} z^{3/2} + 1\,375\,920 z^{3/2} + $$
$$ \left.\left. 3\,889\,620 e^{4\sqrt{z}} z + 3\,889\,620 z - 4\,802\,490 e^{4\sqrt{z}}\sqrt{z} + 4\,802\,490\sqrt{z} + 2\,401\,245 e^{4\sqrt{z}} + 2\,401\,245\right)\right) $$

07.22.03.7959.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) = \frac{1}{2\,401\,245} $$
$$ \left(-16\sqrt{\pi}\left(256 z^2 - 2208 z + 9177\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{15/4} + 2\left(1024 z^5 - 9024 z^4 + 38\,784 z^3 - 13\,104 z^2 - 687\,960 z + 2\,401\,245\right)\right. $$
$$ \left. \sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-512 z^5 + 4896 z^4 - 24\,384 z^3 + 50\,400 z^2 - 3\,889\,620 z + 2\,401\,245\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.7960.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, -\frac{9}{4}; z\right) = \frac{1}{7\,016\,625\sqrt{2}} \left(\sqrt[4]{z}\left(-\left(16\,384 z^6 + 174\,080 z^5 + 1\,070\,400 z^4 + 1\,670\,400 z^3 - 3\,276\,000 z^2 - 10\,773\,000 z - 7\,016\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048 z^5 + 23\,040 z^4 + 150\,840 z^3 + 352\,800 z^2 - 5\,159\,700 z - 7\,016\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^5 + 44\,544 z^4 + 280\,080 z^3 + 509\,040 z^2 - 453\,600 z + 7\,016\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.7961.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, -\frac{9}{4}; -z\right) = -\frac{1}{7\,016\,625\sqrt{2}} \left(\sqrt[4]{z}\left(\left(16\,384 z^6 - 174\,080 z^5 + 1\,070\,400 z^4 - 1\,670\,400 z^3 - 3\,276\,000 z^2 + 10\,773\,000 z - 7\,016\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048 z^5 - 23\,040 z^4 + 150\,840 z^3 - 352\,800 z^2 - 5\,159\,700 z + 7\,016\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^5 - 44\,544 z^4 + 280\,080 z^3 - 509\,040 z^2 - 453\,600 z - 7\,016\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.7962.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, -\frac{7}{4}; z\right) = \frac{1}{10\,478\,160} \left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 + 52\,992 z^2 + 440\,496 z + 1\,514\,205\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{11/4} + e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 + 52\,992 z^2 + 440\,496 z + 1\,514\,205\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{11/4} - 4\left(-1024 z^{11/2} + 256 z^5 - 13\,440 z^{9/2} + 3552 z^4 - 113\,028 z^{7/2} + 31\,581 z^3 - 407\,232 z^{5/2} + 141\,120 z^2 - 181\,440 z^{3/2} - 1\,837\,080 z - 2\,619\,540\sqrt{z} + e^{4\sqrt{z}}\left(1024 z^{11/2} + 256 z^5 + 13\,440 z^{9/2} + 3552 z^4 + 113\,028 z^{7/2} + 31\,581 z^3 + 407\,232 z^{5/2} + 141\,120 z^2 + 181\,440 z^{3/2} - 1\,837\,080 z + 2\,619\,540\sqrt{z} - 1\,309\,770\right) - 1\,309\,770\right)\right)\right) $$

07.22.03.7963.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, -\frac{7}{4}; -z\right) = \frac{1}{2\,619\,540} \left(\sqrt{\pi}\left(4096 z^3 - 52\,992 z^2 + 440\,496 z - 1\,514\,205\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{11/4} - 8\left(256 z^5 - 3360 z^4 + 28\,257 z^3 - 101\,808 z^2 + 45\,360 z - 654\,885\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(512 z^5 - 7104 z^4 + 63\,162 z^3 - 282\,240 z^2 - 3\,674\,160 z + 2\,619\,540\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.7964.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, -\frac{5}{4}; z\right) = \frac{1}{5\,457\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192z^6 + 122\,368z^5 + 1\,263\,840z^4 + 6\,391\,770z^3 + 7\,056\,000z^2 + 6\,350\,400z + 5\,457\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(4096z^5 + 63\,744z^4 + 677\,040z^3 + 3\,741\,255z^2 + 7\,938\,000z + 21\,829\,500\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2z\left(4096z^5 + 62\,208z^4 + 648\,816z^3 + 3\,385\,305z^2 + 4\,762\,800z - 10\,914\,750\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.7965.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, -\frac{5}{4}; -z\right) = \frac{1}{5\,457\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192z^6 - 122\,368z^5 + 1\,263\,840z^4 - 6\,391\,770z^3 + 7\,056\,000z^2 - 6\,350\,400z + 5\,457\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-4096z^5 + 63\,744z^4 - 677\,040z^3 + 3\,741\,255z^2 - 7\,938\,000z + 21\,829\,500\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(4096z^5 - 62\,208z^4 + 648\,816z^3 - 3\,385\,305z^2 + 4\,762\,800z + 10\,914\,750\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.7966.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, -\frac{3}{4}; z\right) = \frac{1}{383\,201\,280}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 1\,130\,496z^3 + 14\,095\,872z^2 + 96\,909\,120z + 249\,843\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4} - e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 1\,130\,496z^3 + 14\,095\,872z^2 + 96\,909\,120z + 249\,843\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4} + 4\left(-16\,384z^{11/2} + 4096z^5 - 285\,696z^{9/2} + 74\,496z^4 - 3\,583\,680z^{7/2} + 962\,352z^3 - 25\,045\,524z^{5/2} + 7\,278\,705z^2 - 69\,672\,960z^{3/2} + 29\,030\,400z + 95\,800\,320\sqrt{z} + e^{4\sqrt{z}}\left(16\,384z^{11/2} + 4096z^5 + 285\,696z^{9/2} + 74\,496z^4 + 3\,583\,680z^{7/2} + 962\,352z^3 + 25\,045\,524z^{5/2} + 7\,278\,705z^2 + 69\,672\,960z^{3/2} + 29\,030\,400z - 95\,800\,320\sqrt{z} + 47\,900\,160\right) + 47\,900\,160\right)\right)\right) $$

07.22.03.7967.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, -\frac{3}{4}; -z\right) = \frac{1}{95\,800\,320}\left(\sqrt{\pi}\left(-65\,536z^4 + 1\,130\,496z^3 - 14\,095\,872z^2 + 96\,909\,120z - 249\,843\,825\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4} + 2\left(\left(-4096z^5 + 74\,496z^4 - 962\,352z^3 + 7\,278\,705z^2 - 29\,030\,400z + 47\,900\,160\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(4096z^5 - 71\,424z^4 + 895\,920z^3 - 6\,261\,381z^2 + 17\,418\,240z + 23\,950\,080\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7968.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, -\frac{1}{4}; z\right) = \frac{1}{314\,344\,800\sqrt{2}}\left(\sqrt[4]{z}\left(-2\left(65\,536 z^6 + 1\,261\,568 z^5 + 18\,289\,152 z^4 + 155\,787\,840 z^3 + 584\,528\,805 z^2 + 342\,921\,600 z - 157\,172\,400\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(65\,536 z^5 + 1\,302\,528 z^4 + 19\,187\,712 z^3 + 170\,100\,000 z^2 + 737\,522\,415 z - 1\,257\,379\,200\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(65\,536 z^5 + 1\,277\,952 z^4 + 18\,630\,144 z^3 + 160\,973\,568 z^2 + 634\,163\,985 z + 628\,689\,600\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.7969.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) = \frac{1}{314\,344\,800\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-131\,072 z^6 + 2\,523\,136 z^5 - 36\,578\,304 z^4 + 311\,575\,680 z^3 - 1\,169\,057\,610 z^2 + 685\,843\,200 z + 314\,344\,800\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(65\,536 z^5 - 1\,302\,528 z^4 + 19\,187\,712 z^3 - 170\,100\,000 z^2 + 737\,522\,415 z + 1\,257\,379\,200\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(-65\,536 z^5 + 1\,277\,952 z^4 - 18\,630\,144 z^3 + 160\,973\,568 z^2 - 634\,163\,985 z + 628\,689\,600\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.7970.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) = \frac{1}{40\,874\,803\,200}\left(e^{-2\sqrt{z}}\left(-4\left(-262\,144 z^{11/2} + 65\,536 z^5 - 5\,701\,632 z^{9/2} + 1\,474\,560 z^4 - 95\,139\,840 z^{7/2} + 25\,059\,840 z^3 - 989\,694\,720 z^{5/2} + 271\,676\,160 z^2 - 5\,239\,577\,700 z^{3/2} + 1\,644\,153\,525 z - 10\,218\,700\,800\sqrt{z} + e^{4\sqrt{z}}\left(262\,144 z^{11/2} + 65\,536 z^5 + 5\,701\,632 z^{9/2} + 1\,474\,560 z^4 + 95\,139\,840 z^{7/2} + 25\,059\,840 z^3 + 989\,694\,720 z^{5/2} + 271\,676\,160 z^2 + 5\,239\,577\,700 z^{3/2} + 1\,644\,153\,525 z + 10\,218\,700\,800\sqrt{z} - 5\,109\,350\,400\right) - 5\,109\,350\,400\right) + e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(1\,048\,576 z^5 + 22\,609\,920 z^4 + 375\,889\,920 z^3 + 3\,876\,364\,800 z^2 + 19\,987\,506\,000 z + 33\,229\,228\,725\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(1\,048\,576 z^5 + 22\,609\,920 z^4 + 375\,889\,920 z^3 + 3\,876\,364\,800 z^2 + 19\,987\,506\,000 z + 33\,229\,228\,725\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7971.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) = \frac{1}{10\,218\,700\,800}\left(\sqrt{\pi}\, z^{3/4}\left(1\,048\,576 z^5 - 22\,609\,920 z^4 + 375\,889\,920 z^3 - 3\,876\,364\,800 z^2 + 19\,987\,506\,000 z - 33\,229\,228\,725\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\left(\left(65\,536 z^5 - 1\,474\,560 z^4 + 25\,059\,840 z^3 - 271\,676\,160 z^2 + 1\,644\,153\,525 z + 5\,109\,350\,400\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(-65\,536 z^5 + 1\,425\,408 z^4 - 23\,784\,960 z^3 + 247\,423\,680 z^2 - 1\,309\,894\,425 z + 2\,554\,675\,200\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.7972.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) = \frac{1}{110\,649\,369\,600\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(1\,048\,576 z^6 + 24\,707\,072 z^5 + 461\,070\,336 z^4 + 5\,517\,918\,720 z^3 + 35\,071\,399\,440 z^2 + 82\,357\,246\,125 z + 55\,324\,684\,800\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(1\,048\,576 z^5 + 25\,362\,432 z^4 + 478\,273\,536 z^3 + 5\,859\,786\,240 z^2 + 39\,745\,656\,720 z + 126\,363\,335\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2 z\left(1\,048\,576 z^5 + 24\,969\,216 z^4 + 467\,656\,704 z^3 + 5\,644\,767\,744 z^2 + 36\,696\,013\,200 z + 94\,935\,404\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.7973.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, \frac{3}{4}; -z\right) = \frac{1}{110\,649\,369\,600\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(1\,048\,576 z^6 - 24\,707\,072 z^5 + 461\,070\,336 z^4 - 5\,517\,918\,720 z^3 + 35\,071\,399\,440 z^2 - 82\,357\,246\,125 z + 55\,324\,684\,800\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-1\,048\,576 z^5 + 25\,362\,432 z^4 - 478\,273\,536 z^3 + 5\,859\,786\,240 z^2 - 39\,745\,656\,720 z + 126\,363\,335\,175\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2 z\left(1\,048\,576 z^5 - 24\,969\,216 z^4 + 467\,656\,704 z^3 - 5\,644\,767\,744 z^2 + 36\,696\,013\,200 z - 94\,935\,404\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.7974.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{15\,695\,924\,428\,800\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 109\,314\,048 z^{9/2} + 28\,114\,944 z^4 - 2\,277\,408\,768 z^{7/2} + 593\,141\,760 z^3 - 31\,488\,952\,320 z^{5/2} + 8\,416\,074\,240 z^2 - 246\,994\,816\,320 z^{3/2} + 70\,758\,530\,640 z - 866\,892\,064\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 109\,314\,048 z^{9/2} + 28\,114\,944 z^4 + 2\,277\,408\,768 z^{7/2} + 593\,141\,760 z^3 + 31\,488\,952\,320 z^{5/2} + 8\,416\,074\,240 z^2 + 246\,994\,816\,320 z^{3/2} + 70\,758\,530\,640 z + 866\,892\,064\,500\sqrt{z} + 330\,826\,228\,425\right) + 330\,826\,228\,425\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 434\,110\,464 z^5 + 9\,021\,358\,080 z^4 + 124\,043\,673\,600 z^3 + 959\,400\,288\,000 z^2 + 3\,190\,005\,957\,600 z + 2\,292\,816\,782\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 434\,110\,464 z^5 + 9\,021\,358\,080 z^4 + 124\,043\,673\,600 z^3 + 959\,400\,288\,000 z^2 + 3\,190\,005\,957\,600 z + 2\,292\,816\,782\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.7975.01

$${}_1F_2\left(-\frac{23}{4};-\frac{11}{2},\frac{5}{4};-z\right)=$$

$$\frac{1}{3\,923\,981\,107\,200\sqrt[4]{z}}\left(\sqrt{\pi}\left(16\,777\,216z^6-434\,110\,464z^5+9\,021\,358\,080z^4-124\,043\,673\,600z^3+\right.\right.$$

$$\left.959\,400\,288\,000z^2-3\,190\,005\,957\,600z+2\,292\,816\,782\,025\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$

$$2\sqrt[4]{z}\left(\left(-1\,048\,576z^5+28\,114\,944z^4-593\,141\,760z^3+8\,416\,074\,240z^2-70\,758\,530\,640z+330\,826\,228\,425\right)\right.$$

$$\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(1\,048\,576z^5-27\,328\,512z^4+569\,352\,192z^3-\right.$$

$$\left.\left.\left.7\,872\,238\,080z^2+61\,748\,704\,080z-216\,723\,016\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.7976.01

$${}_1F_2\left(-\frac{23}{4};-\frac{11}{2},\frac{7}{4};z\right)=$$

$$\left(\left(2\sqrt{z}\left(16\,777\,216z^6+467\,664\,896z^5+10\,673\,651\,712z^4+164\,507\,566\,080z^3+1\,471\,850\,714\,880z^2+\right.\right.\right.$$

$$\left.5\,951\,929\,183\,200z+5\,036\,405\,098\,725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,777\,216z^6+478\,150\,656z^5+10\,994\,122\,752z^4+\right.$$

$$\left.\left.172\,159\,303\,680z^3+1\,600\,655\,696\,640z^2+7\,402\,889\,894\,400z-7\,905\,853\,580\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.$$

$$2\sqrt{z}\left(16\,777\,216z^6+471\,859\,200z^5+10\,797\,121\,536z^4+167\,389\,544\,448z^3+1\,518\,320\,643\,840z^2+\right.$$

$$\left.\left.6\,418\,047\,636\,000z+7\,905\,853\,580\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(15\,343\,379\,251\,200\sqrt{2}\sqrt[4]{z}\right)$$

07.22.03.7977.01

$${}_1F_2\left(-\frac{23}{4};-\frac{11}{2},\frac{7}{4};-z\right)=$$

$$\left(\left(2\sqrt{z}\left(16\,777\,216z^6-467\,664\,896z^5+10\,673\,651\,712z^4-164\,507\,566\,080z^3+1\,471\,850\,714\,880z^2-\right.\right.\right.$$

$$\left.5\,951\,929\,183\,200z+5\,036\,405\,098\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-16\,777\,216z^6+478\,150\,656z^5-10\,994\,122\,752z^4+\right.$$

$$\left.\left.172\,159\,303\,680z^3-1\,600\,655\,696\,640z^2+7\,402\,889\,894\,400z+7\,905\,853\,580\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.$$

$$2\sqrt{z}\left(16\,777\,216z^6-471\,859\,200z^5+10\,797\,121\,536z^4-167\,389\,544\,448z^3+1\,518\,320\,643\,840z^2-\right.$$

$$\left.\left.6\,418\,047\,636\,000z+7\,905\,853\,580\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(15\,343\,379\,251\,200\sqrt{2}\sqrt[4]{z}\right)$$

07.22.03.7978.01

$$
{}_1F_2\left(-\frac{23}{4};-\frac{11}{2},\frac{9}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-67\,108\,864\,z^{13/2}+16\,777\,216\,z^{6}-2\,038\,431\,744\,z^{11/2}+522\,190\,848\,z^{5}-50\,926\,977\,024\,z^{9/2}+\right.\right.\right.
$$
$$
13\,166\,641\,152\,z^{4}-878\,779\,367\,424\,z^{7/2}+231\,340\,032\,000\,z^{3}-9\,145\,147\,898\,880\,z^{5/2}+
$$
$$
2\,514\,262\,705\,920\,z^{2}-46\,927\,947\,749\,760\,z^{3/2}+14\,968\,002\,661\,920\,z-82\,541\,404\,152\,900\sqrt{z}\;+
$$
$$
e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^{6}+2\,038\,431\,744\,z^{11/2}+522\,190\,848\,z^{5}+\right.
$$
$$
50\,926\,977\,024\,z^{9/2}+13\,166\,641\,152\,z^{4}+878\,779\,367\,424\,z^{7/2}+231\,340\,032\,000\,z^{3}+
$$
$$
\left.9\,145\,147\,898\,880\,z^{5/2}+2\,514\,262\,705\,920\,z^{2}+46\,927\,947\,749\,760\,z^{3/2}+\right.
$$
$$
\left.14\,968\,002\,661\,920\,z+82\,541\,404\,152\,900\sqrt{z}\;-61\,906\,053\,114\,675\right)-61\,906\,053\,114\,675\Big)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^{7}+8\,103\,395\,328\,z^{6}+202\,078\,420\,992\,z^{5}+3\,473\,222\,860\,800\,z^{4}+\right.
$$
$$
\left.35\,817\,610\,752\,000\,z^{3}+178\,640\,333\,625\,600\,z^{2}+256\,795\,479\,586\,800\,z-61\,906\,053\,114\,675\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^{7}+8\,103\,395\,328\,z^{6}+202\,078\,420\,992\,z^{5}+3\,473\,222\,860\,800\,z^{4}+\right.
$$
$$
35\,817\,610\,752\,000\,z^{3}+178\,640\,333\,625\,600\,z^{2}+256\,795\,479\,586\,800\,z-
$$
$$
\left.\left.\left.\left.61\,906\,053\,114\,675\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)\Big/\left(1\,406\,354\,828\,820\,480\,z^{5/4}\right)
$$

07.22.03.7979.01

$$
{}_1F_2\left(-\frac{23}{4};-\frac{11}{2},\frac{9}{4};-z\right)=
\frac{1}{351\,588\,707\,205\,120\,z^{5/4}}\left(\sqrt{\pi}\left(268\,435\,456\,z^{7}-8\,103\,395\,328\,z^{6}+202\,078\,420\,992\,z^{5}-3\,473\,222\,860\,800\,z^{4}+\right.\right.
$$
$$
\left.35\,817\,610\,752\,000\,z^{3}-178\,640\,333\,625\,600\,z^{2}+256\,795\,479\,586\,800\,z+61\,906\,053\,114\,675\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$
$$
2\sqrt[4]{z}\left(\left(-16\,777\,216\,z^{6}+522\,190\,848\,z^{5}-13\,166\,641\,152\,z^{4}+231\,340\,032\,000\,z^{3}-\right.\right.
$$
$$
\left.2\,514\,262\,705\,920\,z^{2}+14\,968\,002\,661\,920\,z+61\,906\,053\,114\,675\right)\cos\left(2\sqrt{z}\right)+
$$
$$
4\sqrt{z}\left(16\,777\,216\,z^{6}-509\,607\,936\,z^{5}+12\,731\,744\,256\,z^{4}-219\,694\,841\,856\,z^{3}+\right.
$$
$$
\left.\left.\left.2\,286\,286\,974\,720\,z^{2}-11\,731\,986\,937\,440\,z+20\,635\,351\,038\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)
$$

07.22.03.7980.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, \frac{11}{4}; z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 + 8\,640\,266\,240\,z^6 + 233\,145\,630\,720\,z^5 + 4\,395\,943\,526\,400\,z^4 + 50\,697\,845\,452\,800\,z^3 + 290\,097\,793\,440\,000\,z^2 + 471\,847\,149\,774\,000\,z + 229\,269\,753\,838\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(268\,435\,456\,z^7 + 8\,808\,038\,400\,z^6 + 238\,996\,684\,800\,z^5 + 4\,559\,295\,283\,200\,z^4 + 53\,979\,338\,649\,600\,z^3 + 334\,149\,719\,904\,000\,z^2 + 885\,455\,601\,030\,000\,z + 687\,809\,261\,514\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(268\,435\,456\,z^7 + 8\,707\,375\,104\,z^6 + 235\,410\,554\,880\,z^5 + 4\,458\,099\,179\,520\,z^4 + 51\,908\,813\,107\,200\,z^3 + 305\,168\,127\,264\,000\,z^2 + 581\,870\,823\,534\,000\,z - 687\,809\,261\,514\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(1\,052\,117\,434\,368\,000\sqrt{2}\,z^{5/4}\right) $$

07.22.03.7981.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, \frac{11}{4}; -z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 - 8\,640\,266\,240\,z^6 + 233\,145\,630\,720\,z^5 - 4\,395\,943\,526\,400\,z^4 + 50\,697\,845\,452\,800\,z^3 - 290\,097\,793\,440\,000\,z^2 + 471\,847\,149\,774\,000\,z - 229\,269\,753\,838\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-268\,435\,456\,z^7 + 8\,808\,038\,400\,z^6 - 238\,996\,684\,800\,z^5 + 4\,559\,295\,283\,200\,z^4 - 53\,979\,338\,649\,600\,z^3 + 334\,149\,719\,904\,000\,z^2 - 885\,455\,601\,030\,000\,z + 687\,809\,261\,514\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(268\,435\,456\,z^7 - 8\,707\,375\,104\,z^6 + 235\,410\,554\,880\,z^5 - 4\,458\,099\,179\,520\,z^4 + 51\,908\,813\,107\,200\,z^3 - 305\,168\,127\,264\,000\,z^2 + 581\,870\,823\,534\,000\,z + 687\,809\,261\,514\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(1\,052\,117\,434\,368\,000\sqrt{2}\,z^{5/4}\right) $$

07.22.03.7982.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) =
\left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 - 37\,245\,419\,520\,z^{13/2} + 9\,512\,681\,472\,z^6 - 1\,085\,137\,747\,968\,z^{11/2} + 279\,111\,008\,256\,z^5 - 22\,448\,623\,583\,232\,z^{9/2} + 5\,852\,797\,009\,920\,z^4 - 291\,278\,022\,819\,840\,z^{7/2} + 78\,286\,345\,482\,240\,z^3 - 1\,972\,891\,895\,546\,880\,z^{5/2} + 581\,324\,599\,215\,360\,z^2 - 4\,716\,651\,665\,880\,000\,z^{3/2} + 2\,311\,159\,316\,281\,200\,z + 12\,793\,917\,643\,699\,500\sqrt{z} + e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 + 37\,245\,419\,520\,z^{13/2} + 9\,512\,681\,472\,z^6 + 1\,085\,137\,747\,968\,z^{11/2} + 279\,111\,008\,256\,z^5 + 22\,448\,623\,583\,232\,z^{9/2} + 5\,852\,797\,009\,920\,z^4 + 291\,278\,022\,819\,840\,z^{7/2} + 78\,286\,345\,482\,240\,z^3 + 1\,972\,891\,895\,546\,880\,z^{5/2} + 581\,324\,599\,215\,360\,z^2 + 4\,716\,651\,665\,880\,000\,z^{3/2} + 2\,311\,159\,316\,281\,200\,z - 12\,793\,917\,643\,699\,500\sqrt{z} + 9\,595\,438\,232\,774\,625\right) + 9\,595\,438\,232\,774\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8 + 148\,176\,371\,712\,z^7 + 4\,311\,006\,314\,496\,z^6 + 88\,914\,505\,236\,480\,z^5 + 1\,146\,163\,544\,064\,000\,z^4 + 7\,621\,987\,568\,025\,600\,z^3 + 16\,434\,910\,693\,555\,200\,z^2 - 7\,923\,974\,798\,678\,400\,z + 9\,595\,438\,232\,774\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8 + 148\,176\,371\,712\,z^7 + 4\,311\,006\,314\,496\,z^6 + 88\,914\,505\,236\,480\,z^5 + 1\,146\,163\,544\,064\,000\,z^4 + 7\,621\,987\,568\,025\,600\,z^3 + 16\,434\,910\,693\,555\,200\,z^2 - 7\,923\,974\,798\,678\,400\,z + 9\,595\,438\,232\,774\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big/\left(80\,005\,963\,595\,120\,640\,z^{9/4}\right)
$$

07.22.03.7983.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) =
\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^8 - 148\,176\,371\,712\,z^7 + 4\,311\,006\,314\,496\,z^6 - 88\,914\,505\,236\,480\,z^5 + 1\,146\,163\,544\,064\,000\,z^4 - 7\,621\,987\,568\,025\,600\,z^3 + 16\,434\,910\,693\,555\,200\,z^2 + 7\,923\,974\,798\,678\,400\,z + 9\,595\,438\,232\,774\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(-268\,435\,456\,z^7 + 9\,512\,681\,472\,z^6 - 279\,111\,008\,256\,z^5 + 5\,852\,797\,009\,920\,z^4 - 78\,286\,345\,482\,240\,z^3 + 581\,324\,599\,215\,360\,z^2 - 2\,311\,159\,316\,281\,200\,z + 9\,595\,438\,232\,774\,625\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(268\,435\,456\,z^7 - 9\,311\,354\,880\,z^6 + 271\,284\,436\,992\,z^5 - 5\,612\,155\,895\,808\,z^4 + 72\,819\,505\,704\,960\,z^3 - 493\,222\,973\,886\,720\,z^2 + 1\,179\,162\,916\,470\,000\,z + 3\,198\,479\,410\,924\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(20\,001\,490\,898\,780\,160\,z^{9/4}\right)
$$

07.22.03.7984.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 156\,766\,306\,304\,z^7 + 4\,882\,169\,856\,000\,z^6 + 108\,852\,632\,616\,960\,z^5 + 1\,536\,575\,304\,499\,200\,z^4 + \right.\right.\right. $$

$$ \left.\left.\left. 11\,360\,885\,708\,390\,400\,z^3 + 26\,941\,205\,491\,200\,000\,z^2 - 29\,346\,528\,491\,280\,000\,z - 52\,961\,313\,136\,606\,875\right)\right. $$

$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4\,294\,967\,296\,z^8 + 159\,450\,660\,864\,z^7 + 4\,987\,363\,000\,320\,z^6 + 112\,217\,271\,828\,480\,z^5 + \right. $$

$$ 1\,615\,302\,859\,161\,600\,z^4 + 12\,600\,085\,994\,496\,000\,z^3 + 39\,668\,410\,926\,144\,000\,z^2 - $$

$$ \left. 330\,148\,445\,526\,900\,000\,z - 158\,883\,939\,409\,820\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$

$$ 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 157\,840\,048\,128\,z^7 + 4\,923\,039\,154\,176\,z^6 + 110\,142\,318\,182\,400\,z^5 + \right. $$

$$ 1\,566\,064\,204\,185\,600\,z^4 + 11\,800\,875\,018\,240\,000\,z^3 + 30\,763\,257\,452\,928\,000\,z^2 - $$

$$ \left. \left. 8\,803\,958\,547\,384\,000\,z + 158\,883\,939\,409\,820\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(52\,031\,989\,481\,472\,000\,\sqrt{2}\; z^{9/4}\right) $$

07.22.03.7985.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 156\,766\,306\,304\,z^7 + 4\,882\,169\,856\,000\,z^6 - 108\,852\,632\,616\,960\,z^5 + 1\,536\,575\,304\,499\,200\,z^4 - \right.\right.\right. $$

$$ \left.\left.\left. 11\,360\,885\,708\,390\,400\,z^3 + 26\,941\,205\,491\,200\,000\,z^2 + 29\,346\,528\,491\,280\,000\,z - 52\,961\,313\,136\,606\,875\right)\right. $$

$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4\,294\,967\,296\,z^8 + 159\,450\,660\,864\,z^7 - 4\,987\,363\,000\,320\,z^6 + 112\,217\,271\,828\,480\,z^5 - \right. $$

$$ 1\,615\,302\,859\,161\,600\,z^4 + 12\,600\,085\,994\,496\,000\,z^3 - 39\,668\,410\,926\,144\,000\,z^2 - $$

$$ \left. 330\,148\,445\,526\,900\,000\,z + 158\,883\,939\,409\,820\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 157\,840\,048\,128\,z^7 + 4\,923\,039\,154\,176\,z^6 - 110\,142\,318\,182\,400\,z^5 + \right. $$

$$ 1\,566\,064\,204\,185\,600\,z^4 - 11\,800\,875\,018\,240\,000\,z^3 + 30\,763\,257\,452\,928\,000\,z^2 + $$

$$ \left. \left. 8\,803\,958\,547\,384\,000\,z + 158\,883\,939\,409\,820\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(52\,031\,989\,481\,472\,000\,\sqrt{2}\; z^{9/4}\right) $$

07.22.03.7986.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) =
$$

$$
\left(13\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-17\,179\,869\,184\, z^{17/2} + 4\,294\,967\,296\, z^8 - 670\,014\,898\,176\, z^{15/2} + 170\,724\,950\,016\, z^7 - \right.\right.\right.
$$

$$
22\,302\,959\,861\,760\, z^{13/2} + 5\,714\,856\,640\,512\, z^6 - 537\,961\,162\,604\,544\, z^{11/2} + 139\,325\,111\,009\,280\, z^5 -
$$

$$
8\,363\,723\,453\,890\,560\, z^{9/2} + 2\,216\,348\,880\,076\,800\, z^4 - 70\,451\,639\,121\,346\,560\, z^{7/2} +
$$

$$
19\,902\,786\,253\,701\,120\, z^3 - 216\,245\,615\,285\,145\,600\, z^{5/2} + 84\,522\,397\,852\,569\,600\, z^2 -
$$

$$
1\,842\,324\,140\,692\,728\,000\, z - 4\,030\,084\,057\,765\,342\,500\sqrt{z} + e^{4\sqrt{z}}\left(17\,179\,869\,184\, z^{17/2} + \right.
$$

$$
4\,294\,967\,296\, z^8 + 670\,014\,898\,176\, z^{15/2} + 170\,724\,950\,016\, z^7 + 22\,302\,959\,861\,760\, z^{13/2} +
$$

$$
5\,714\,856\,640\,512\, z^6 + 537\,961\,162\,604\,544\, z^{11/2} + 139\,325\,111\,009\,280\, z^5 + 8\,363\,723\,453\,890\,560\, z^{9/2} +
$$

$$
2\,216\,348\,880\,076\,800\, z^4 + 70\,451\,639\,121\,346\,560\, z^{7/2} + 19\,902\,786\,253\,701\,120\, z^3 +
$$

$$
216\,245\,615\,285\,145\,600\, z^{5/2} + 84\,522\,397\,852\,569\,600\, z^2 - 1\,842\,324\,140\,692\,728\,000\, z +
$$

$$
\left.\left.\left.4\,030\,084\,057\,765\,342\,500\sqrt{z} - 3\,022\,563\,043\,324\,006\,875\right) - 3\,022\,563\,043\,324\,006\,875\right) +
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\, z^9 + 2\,667\,174\,690\,816\, z^8 + 88\,683\,558\,469\,632\, z^7 + 2\,133\,948\,125\,675\,520\, z^6 + \right.
$$

$$
33\,009\,510\,069\,043\,200\, z^5 + 274\,391\,552\,448\,921\,600\, z^4 + 788\,875\,713\,290\,649\,600\, z^3 -
$$

$$
\left.570\,526\,185\,504\,844\,800\, z^2 + 1\,381\,743\,105\,519\,546\,000\, z - 3\,022\,563\,043\,324\,006\,875\right) \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) +
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\, z^9 + 2\,667\,174\,690\,816\, z^8 + 88\,683\,558\,469\,632\, z^7 + 2\,133\,948\,125\,675\,520\, z^6 + \right.
$$

$$
33\,009\,510\,069\,043\,200\, z^5 + 274\,391\,552\,448\,921\,600\, z^4 + 788\,875\,713\,290\,649\,600\, z^3 -
$$

$$
\left.\left.\left.570\,526\,185\,504\,844\,800\, z^2 + 1\,381\,743\,105\,519\,546\,000\, z - 3\,022\,563\,043\,324\,006\,875\right)\right.\right.
$$

$$
\left.\left.\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right) \Big/ \left(46\,083\,435\,030\,789\,488\,640\, z^{13/4}\right)
$$

07.22.03.7987.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) =
$$

$$
\left(13\left(\sqrt{\pi}\left(68\,719\,476\,736\, z^9 - 2\,667\,174\,690\,816\, z^8 + 88\,683\,558\,469\,632\, z^7 - 2\,133\,948\,125\,675\,520\, z^6 + \right.\right.\right.
$$

$$
33\,009\,510\,069\,043\,200\, z^5 - 274\,391\,552\,448\,921\,600\, z^4 + 788\,875\,713\,290\,649\,600\, z^3 +
$$

$$
\left.570\,526\,185\,504\,844\,800\, z^2 + 1\,381\,743\,105\,519\,546\,000\, z + 3\,022\,563\,043\,324\,006\,875\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) -
$$

$$
2\sqrt[4]{z}\left(\left(-4\,294\,967\,296\, z^8 + 170\,724\,950\,016\, z^7 - 5\,714\,856\,640\,512\, z^6 + 139\,325\,111\,009\,280\, z^5 - \right.\right.
$$

$$
2\,216\,348\,880\,076\,800\, z^4 + 19\,902\,786\,253\,701\,120\, z^3 - 84\,522\,397\,852\,569\,600\, z^2 -
$$

$$
\left.1\,842\,324\,140\,692\,728\,000\, z + 3\,022\,563\,043\,324\,006\,875\right) \cos\left(2\sqrt{z}\right) +
$$

$$
4\sqrt{z}\left(4\,294\,967\,296\, z^8 - 167\,503\,724\,544\, z^7 + 5\,575\,739\,965\,440\, z^6 - 134\,490\,290\,651\,136\, z^5 + \right.
$$

$$
2\,090\,930\,863\,472\,640\, z^4 - 17\,612\,909\,780\,336\,640\, z^3 + 54\,061\,403\,821\,286\,400\, z^2 +
$$

$$
\left.\left.\left.1\,007\,521\,014\,441\,335\,625\right) \sin\left(2\sqrt{z}\right)\right)\right) \Big/ \left(11\,520\,858\,757\,697\,372\,160\, z^{13/4}\right)
$$

07.22.03.7988.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) =
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 2\,804\,613\,644\,288\,z^8 + 99\,007\,586\,107\,392\,z^7 + 2\,548\,068\,872\,355\,840\,z^6 + \right.\right.\right.
$$

$$
42\,547\,271\,989\,985\,280\,z^5 + 385\,561\,992\,491\,827\,200\,z^4 + 1\,196\,791\,840\,006\,963\,200\,z^3 -
$$

$$
\left.1\,455\,587\,813\,167\,488\,000\,z^2 + 16\,584\,456\,913\,634\,610\,000\,z + 21\,555\,254\,446\,598\,998\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 -
$$

$$
\left(68\,719\,476\,736\,z^9 + 2\,847\,563\,317\,248\,z^8 + 100\,875\,896\,881\,152\,z^7 + 2\,615\,458\,922\,496\,000\,z^6 + \right.
$$

$$
44\,349\,470\,634\,147\,840\,z^5 + 418\,259\,346\,643\,353\,600\,z^4 + 1\,571\,624\,661\,454\,848\,000\,z^3 +
$$

$$
\left.1\,831\,223\,377\,855\,872\,000\,z^2 + 148\,291\,676\,782\,499\,250\,000\,z + 64\,665\,763\,339\,796\,994\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)
$$

$$
I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 2\,821\,793\,513\,472\,z^8 + 99\,735\,583\,064\,064\,z^7 + 2\,574\,042\,821\,296\,128\,z^6 + \right.
$$

$$
43\,229\,407\,881\,461\,760\,z^5 + 397\,451\,333\,202\,739\,200\,z^4 + 1\,317\,879\,682\,301\,952\,000\,z^3 -
$$

$$
\left.\left.\left.798\,225\,574\,962\,816\,000\,z^2 - 10\,338\,048\,324\,265\,662\,000\,z - 64\,665\,763\,339\,796\,994\,375\right)\right.
$$

$$
\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(2\,109\,029\,973\,648\,998\,400\,\sqrt{2}\;z^{13/4}\right)
$$

07.22.03.7989.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) =
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 2\,804\,613\,644\,288\,z^8 + 99\,007\,586\,107\,392\,z^7 - 2\,548\,068\,872\,355\,840\,z^6 + \right.\right.\right.
$$

$$
42\,547\,271\,989\,985\,280\,z^5 - 385\,561\,992\,491\,827\,200\,z^4 + 1\,196\,791\,840\,006\,963\,200\,z^3 +
$$

$$
\left.1\,455\,587\,813\,167\,488\,000\,z^2 + 16\,584\,456\,913\,634\,610\,000\,z - 21\,555\,254\,446\,598\,998\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +
$$

$$
\left(-68\,719\,476\,736\,z^9 + 2\,847\,563\,317\,248\,z^8 - 100\,875\,896\,881\,152\,z^7 + 2\,615\,458\,922\,496\,000\,z^6 - \right.
$$

$$
44\,349\,470\,634\,147\,840\,z^5 + 418\,259\,346\,643\,353\,600\,z^4 - 1\,571\,624\,661\,454\,848\,000\,z^3 +
$$

$$
\left.1\,831\,223\,377\,855\,872\,000\,z^2 - 148\,291\,676\,782\,499\,250\,000\,z + 64\,665\,763\,339\,796\,994\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)
$$

$$
J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 2\,821\,793\,513\,472\,z^8 + 99\,735\,583\,064\,064\,z^7 - 2\,574\,042\,821\,296\,128\,z^6 + \right.
$$

$$
43\,229\,407\,881\,461\,760\,z^5 - 397\,451\,333\,202\,739\,200\,z^4 + 1\,317\,879\,682\,301\,952\,000\,z^3 +
$$

$$
\left.\left.\left.798\,225\,574\,962\,816\,000\,z^2 - 10\,338\,048\,324\,265\,662\,000\,z + 64\,665\,763\,339\,796\,994\,375\right)\right.
$$

$$
\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(2\,109\,029\,973\,648\,998\,400\,\sqrt{2}\;z^{13/4}\right)
$$

07.22.03.7990.01

$$
{}_1F_2\left(-\frac{23}{4};-\frac{11}{2},\frac{21}{4};z\right)=
$$

$$
\left(221\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}-11\,905\,649\,344\,512\,z^{17/2}+3\,027\,951\,943\,680\,z^{8}-\right.\right.\right.
$$

$$
445\,753\,180\,815\,360\,z^{15/2}+113\,886\,426\,562\,560\,z^{7}-12\,282\,689\,759\,477\,760\,z^{13/2}+
$$

$$
3\,165\,630\,140\,252\,160\,z^{6}-222\,570\,229\,845\,196\,800\,z^{11/2}+58\,416\,931\,012\,608\,000\,z^{5}-
$$

$$
2\,243\,059\,352\,587\,468\,800\,z^{9/2}+617\,730\,334\,624\,972\,800\,z^{4}-8\,447\,849\,011\,342\,540\,800\,z^{7/2}+
$$

$$
2\,919\,864\,653\,088\,768\,000\,z^{3}+3\,572\,992\,272\,858\,624\,000\,z^{5/2}+9\,825\,728\,750\,361\,216\,000\,z^{2}+
$$

$$
289\,244\,890\,088\,758\,296\,000\,z^{3/2}+1\,150\,992\,006\,897\,781\,818\,000\,z+2\,043\,252\,617\,287\,028\,647\,500\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\left(274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}+11\,905\,649\,344\,512\,z^{17/2}+3\,027\,951\,943\,680\,z^{8}+\right.
$$

$$
445\,753\,180\,815\,360\,z^{15/2}+113\,886\,426\,562\,560\,z^{7}+12\,282\,689\,759\,477\,760\,z^{13/2}+
$$

$$
3\,165\,630\,140\,252\,160\,z^{6}+222\,570\,229\,845\,196\,800\,z^{11/2}+58\,416\,931\,012\,608\,000\,z^{5}+
$$

$$
2\,243\,059\,352\,587\,468\,800\,z^{9/2}+617\,730\,334\,624\,972\,800\,z^{4}+8\,447\,849\,011\,342\,540\,800\,z^{7/2}+
$$

$$
2\,919\,864\,653\,088\,768\,000\,z^{3}-3\,572\,992\,272\,858\,624\,000\,z^{5/2}+9\,825\,728\,750\,361\,216\,000\,z^{2}-
$$

$$
289\,244\,890\,088\,758\,296\,000\,z^{3/2}+1\,150\,992\,006\,897\,781\,818\,000\,z-
$$

$$
\left.\left.2\,043\,252\,617\,287\,028\,647\,500\sqrt{z}\;+1\,532\,439\,462\,965\,271\,485\,625\right)+1\,532\,439\,462\,965\,271\,485\,625\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}+47\,416\,438\,947\,840\,z^{9}+1\,773\,671\,169\,392\,640\,z^{8}+\right.
$$

$$
48\,775\,957\,158\,297\,600\,z^{7}+880\,253\,601\,841\,152\,000\,z^{6}+8\,780\,529\,678\,365\,491\,200\,z^{5}+
$$

$$
31\,555\,028\,531\,625\,984\,000\,z^{4}-30\,428\,063\,226\,925\,056\,000\,z^{3}+110\,539\,448\,441\,563\,680\,000\,z^{2}-
$$

$$
\left.483\,610\,086\,931\,841\,100\,000\,z+1\,532\,439\,462\,965\,271\,485\,625\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}+47\,416\,438\,947\,840\,z^{9}+1\,773\,671\,169\,392\,640\,z^{8}+48\,775\,957\,158\,297\,600\,z^{7}+\right.
$$

$$
880\,253\,601\,841\,152\,000\,z^{6}+8\,780\,529\,678\,365\,491\,200\,z^{5}+31\,555\,028\,531\,625\,984\,000\,z^{4}-
$$

$$
30\,428\,063\,226\,925\,056\,000\,z^{3}+110\,539\,448\,441\,563\,680\,000\,z^{2}-483\,610\,086\,931\,841\,100\,000\,z+
$$

$$
\left.\left.\left.1\,532\,439\,462\,965\,271\,485\,625\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)\Big/\left(29\,493\,398\,419\,705\,272\,729\,600\,z^{17/4}\right)
$$

07.22.03.7991.01

$$
{}_1F_2\left(-\frac{23}{4};-\frac{11}{2},\frac{21}{4};-z\right)=
$$

$$
\left(221\left(\sqrt{\pi}\left(1\,099\,511\,627\,776\,z^{10}-47\,416\,438\,947\,840\,z^{9}+1\,773\,671\,169\,392\,640\,z^{8}-48\,775\,957\,158\,297\,600\,z^{7}+\right.\right.\right.
$$

$$
880\,253\,601\,841\,152\,000\,z^{6}-8\,780\,529\,678\,365\,491\,200\,z^{5}+31\,555\,028\,531\,625\,984\,000\,z^{4}+
$$

$$
30\,428\,063\,226\,925\,056\,000\,z^{3}+110\,539\,448\,441\,563\,680\,000\,z^{2}+
$$

$$
\left.\left.483\,610\,086\,931\,841\,100\,000\,z+1\,532\,439\,462\,965\,271\,485\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.
$$

$$
2\sqrt[4]{z}\left(\left(-68\,719\,476\,736\,z^{9}+3\,027\,951\,943\,680\,z^{8}-113\,886\,426\,562\,560\,z^{7}+3\,165\,630\,140\,252\,160\,z^{6}-\right.\right.
$$

$$
58\,416\,931\,012\,608\,000\,z^{5}+617\,730\,334\,624\,972\,800\,z^{4}-2\,919\,864\,653\,088\,768\,000\,z^{3}+
$$

$$
\left.9\,825\,728\,750\,361\,216\,000\,z^{2}-1\,150\,992\,006\,897\,781\,818\,000\,z+1\,532\,439\,462\,965\,271\,485\,625\right)
$$

$$
\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(68\,719\,476\,736\,z^{9}-2\,976\,412\,336\,128\,z^{8}+111\,438\,295\,203\,840\,z^{7}-\right.
$$

$$
3\,070\,672\,439\,869\,440\,z^{6}+55\,642\,557\,461\,299\,200\,z^{5}-560\,764\,838\,146\,867\,200\,z^{4}+
$$

$$
2\,111\,962\,252\,835\,635\,200\,z^{3}+893\,248\,068\,214\,656\,000\,z^{2}-72\,311\,222\,522\,189\,574\,000\,z+
$$

$$
\left.\left.\left.510\,813\,154\,321\,757\,161\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(7\,373\,349\,604\,926\,318\,182\,400\,z^{17/4}\right)
$$

07.22.03.7992.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) = \left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} + 49\,615\,462\,203\,392\,z^9 + 1\,957\,822\,187\,175\,936\,z^8 + 57\,120\,735\,017\,041\,920\,z^7 + 1\,101\,211\,714\,914\,877\,440\,z^6 + 11\,814\,370\,653\,870\,489\,600\,z^5 + 45\,263\,381\,238\,241\,689\,600\,z^4 - 63\,607\,622\,287\,233\,024\,000\,z^3 + 156\,886\,541\,314\,382\,880\,000\,z^2 - 11\,528\,981\,806\,866\,664\,140\,000\,z - 13\,256\,481\,484\,658\,383\,846\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(1\,099\,511\,627\,776\,z^{10} + 50\,302\,656\,970\,752\,z^9 + 1\,990\,678\,686\,990\,336\,z^8 + 58\,440\,503\,305\,175\,040\,z^7 + 1\,140\,949\,525\,431\,582\,720\,z^6 + 12\,632\,866\,084\,513\,382\,400\,z^5 + 55\,760\,127\,041\,912\,832\,000\,z^4 + 24\,040\,676\,140\,056\,576\,000\,z^3 - 9\,419\,003\,091\,504\,246\,240\,000\,z^2 - 95\,188\,003\,636\,181\,175\,720\,000\,z - 39\,769\,444\,453\,975\,151\,540\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} + 49\,890\,340\,110\,336\,z^9 + 1\,970\,655\,549\,456\,384\,z^8 + 57\,631\,595\,607\,097\,344\,z^7 + 1\,116\,368\,502\,836\,428\,800\,z^6 + 12\,116\,877\,610\,844\,160\,000\,z^5 + 48\,815\,001\,144\,999\,936\,000\,z^4 - 43\,111\,404\,808\,851\,456\,000\,z^3 + 274\,648\,290\,844\,191\,264\,000\,z^2 + 10\,346\,522\,134\,367\,519\,100\,000\,z + 39\,769\,444\,453\,975\,151\,540\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)\Big/\left(74\,593\,060\,120\,638\,259\,200\,\sqrt{2}\;z^{17/4}\right) $$

07.22.03.7993.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) = \left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} - 49\,615\,462\,203\,392\,z^9 + 1\,957\,822\,187\,175\,936\,z^8 - 57\,120\,735\,017\,041\,920\,z^7 + 1\,101\,211\,714\,914\,877\,440\,z^6 - 11\,814\,370\,653\,870\,489\,600\,z^5 + 45\,263\,381\,238\,241\,689\,600\,z^4 + 63\,607\,622\,287\,233\,024\,000\,z^3 + 156\,886\,541\,314\,382\,880\,000\,z^2 + 11\,528\,981\,806\,866\,664\,140\,000\,z - 13\,256\,481\,484\,658\,383\,846\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-1\,099\,511\,627\,776\,z^{10} + 50\,302\,656\,970\,752\,z^9 - 1\,990\,678\,686\,990\,336\,z^8 + 58\,440\,503\,305\,175\,040\,z^7 - 1\,140\,949\,525\,431\,582\,720\,z^6 + 12\,632\,866\,084\,513\,382\,400\,z^5 - 55\,760\,127\,041\,912\,832\,000\,z^4 + 24\,040\,676\,140\,056\,576\,000\,z^3 + 9\,419\,003\,091\,504\,246\,240\,000\,z^2 - 95\,188\,003\,636\,181\,175\,720\,000\,z + 39\,769\,444\,453\,975\,151\,540\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} - 49\,890\,340\,110\,336\,z^9 + 1\,970\,655\,549\,456\,384\,z^8 - 57\,631\,595\,607\,097\,344\,z^7 + 1\,116\,368\,502\,836\,428\,800\,z^6 - 12\,116\,877\,610\,844\,160\,000\,z^5 + 48\,815\,001\,144\,999\,936\,000\,z^4 + 43\,111\,404\,808\,851\,456\,000\,z^3 + 274\,648\,290\,844\,191\,264\,000\,z^2 - 10\,346\,522\,134\,367\,519\,100\,000\,z + 39\,769\,444\,453\,975\,151\,540\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)\Big/\left(74\,593\,060\,120\,638\,259\,200\,\sqrt{2}\;z^{17/4}\right) $$

For fixed z and $a_1 = -\frac{23}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.7994.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) = \left(\frac{16\,z^2}{63} + \frac{16\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\,\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.7995.01

$${}_1F_2\left(-\frac{23}{4};-\frac{9}{2},-\frac{23}{4};-z\right)=\left(\frac{16\,z^2}{63}-\frac{16\,z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\,\left(16\,z^2-420\,z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.7996.01

$${}_1F_2\left(-\frac{23}{4};-\frac{9}{2},-\frac{21}{4};z\right)=-\frac{1}{197\,358\,525\,\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(\left(262\,144\,z^6+147\,456\,z^5-584\,704\,z^4+2\,548\,800\,z^3-148\,430\,880\,z^2-346\,682\,700\,z-197\,358\,525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\,\left(-32\,768\,z^5-38\,912\,z^4+6528\,z^3+11\,428\,560\,z^2+188\,795\,880\,z+197\,358\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4\,z\left(65\,536\,z^5+53\,248\,z^4-111\,360\,z^3+735\,696\,z^2+30\,909\,060\,z+197\,358\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.7997.01

$${}_1F_2\left(-\frac{23}{4};-\frac{9}{2},-\frac{21}{4};-z\right)=-\frac{1}{197\,358\,525\,\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(\left(262\,144\,z^6-147\,456\,z^5-584\,704\,z^4-2\,548\,800\,z^3-148\,430\,880\,z^2+346\,682\,700\,z-197\,358\,525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\,\left(32\,768\,z^5-38\,912\,z^4-6528\,z^3+11\,428\,560\,z^2-188\,795\,880\,z+197\,358\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(65\,536\,z^5-53\,248\,z^4-111\,360\,z^3-735\,696\,z^2+30\,909\,060\,z-197\,358\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.7998.01

$${}_1F_2\left(-\frac{23}{4};-\frac{9}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{124\,428\,150}\left(e^{-2\sqrt{z}}\,\left(131\,072\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4}+131\,072\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4}-\right.\right.$$
$$131\,072\,e^{4\sqrt{z}}\,z^{11/2}+131\,072\,z^{11/2}-32\,768\,e^{4\sqrt{z}}\,z^5-32\,768\,z^5-24\,576\,e^{4\sqrt{z}}\,z^{9/2}+24\,576\,z^{9/2}-30\,720\,e^{4\sqrt{z}}\,z^4-$$
$$30\,720\,z^4-53\,760\,e^{4\sqrt{z}}\,z^{7/2}+53\,760\,z^{7/2}-120\,960\,e^{4\sqrt{z}}\,z^3-120\,960\,z^3-332\,640\,e^{4\sqrt{z}}\,z^{5/2}+332\,640\,z^{5/2}+$$
$$11\,032\,560\,e^{4\sqrt{z}}\,z^2+11\,032\,560\,z^2-49\,480\,200\,e^{4\sqrt{z}}\,z^{3/2}+49\,480\,200\,z^{3/2}+107\,692\,200\,e^{4\sqrt{z}}\,z+$$
$$\left.\left.107\,692\,200\,z-124\,428\,150\,e^{4\sqrt{z}}\,\sqrt{z}\,+124\,428\,150\,\sqrt{z}\,+62\,214\,075\,e^{4\sqrt{z}}\,+62\,214\,075\right)\right)$$

07.22.03.7999.01

$${}_1F_2\left(-\frac{23}{4};-\frac{9}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{62\,214\,075}\left(262\,144\,\sqrt{\pi}\,\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{23/4}+2\left(-65\,536\,z^5+12\,288\,z^4-26\,880\,z^3+166\,320\,z^2-24\,740\,100\,z+62\,214\,075\right)\right.$$
$$\left.\sin\left(2\sqrt{z}\right)\sqrt{z}\,+\left(32\,768\,z^5-30\,720\,z^4+120\,960\,z^3+11\,032\,560\,z^2-107\,692\,200\,z+62\,214\,075\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.8000.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{17}{4}; z\right) = \frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072 z^6 - 114\,688 z^5 + 72\,704 z^4 - 392\,640 z^3 + 6\,216\,480 z^2 + 15\,970\,500 z + 9\,398\,025\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384 z^5 - 4096 z^4 + 27\,648 z^3 + 123\,120 z^2 + 8\,452\,080 z + 9\,398\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-32\,768 z^5 + 20\,480 z^4 - 23\,808 z^3 + 44\,496 z^2 + 933\,660 z + 9\,398\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8001.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{17}{4}; -z\right) = \frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072 z^6 + 114\,688 z^5 + 72\,704 z^4 + 392\,640 z^3 + 6\,216\,480 z^2 - 15\,970\,500 z + 9\,398\,025\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384 z^5 + 4096 z^4 + 27\,648 z^3 - 123\,120 z^2 + 8\,452\,080 z - 9\,398\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(32\,768 z^5 + 20\,480 z^4 + 23\,808 z^3 + 44\,496 z^2 - 933\,660 z + 9\,398\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8002.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{15}{4}; z\right) = \frac{1}{6\,548\,850}\left(e^{-2\sqrt{z}}\left(32\,768 e^{4\sqrt{z}} z^{11/2} - 32\,768 z^{11/2} + 8192 e^{4\sqrt{z}} z^5 + 8192 z^5 - 2048 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-23)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{19/4} - 2048 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-23)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{19/4} - 40\,960 e^{4\sqrt{z}} z^{9/2} + 40\,960 z^{9/2} - 4096 e^{4\sqrt{z}} z^4 - 4096 z^4 + 4608 e^{4\sqrt{z}} z^{7/2} - 4608 z^{7/2} + 19\,200 e^{4\sqrt{z}} z^3 + 19\,200 z^3 + 63\,840 e^{4\sqrt{z}} z^{5/2} - 63\,840 z^{5/2} + 226\,800 e^{4\sqrt{z}} z^2 + 226\,800 z^2 - 2\,134\,440 e^{4\sqrt{z}} z^{3/2} + 2\,134\,440 z^{3/2} + 5\,433\,120 e^{4\sqrt{z}} z + 5\,433\,120 z - 6\,548\,850 e^{4\sqrt{z}}\sqrt{z} + 6\,548\,850\sqrt{z} + 3\,274\,425 e^{4\sqrt{z}} + 3\,274\,425\right)\right) $$

07.22.03.8003.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{3\,274\,425}\left(-4096\sqrt{\pi}\,(16z+23) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{19/4} + 2\left(16\,384 z^5 + 20\,480 z^4 + 2304 z^3 - 31\,920 z^2 - 1\,067\,220 z + 3\,274\,425\right) \sin\left(2\sqrt{z}\right)\sqrt{z} - \left(8192 z^5 + 4096 z^4 + 19\,200 z^3 - 226\,800 z^2 + 5\,433\,120 z - 3\,274\,425\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8004.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{13}{4}; z\right) = $$
$$ -\frac{1}{1\,658\,475\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536 z^6 - 151\,552 z^5 - 116\,736 z^4 + 123\,840 z^3 - 882\,720 z^2 - 2\,664\,900 z - 1\,658\,475\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(-8192 z^5 + 13\,824 z^4 + 12\,672 z^3 - 69\,840 z^2 + 1\,338\,120 z + 1\,658\,475\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 4 z\left(16\,384 z^5 - 33\,792 z^4 - 32\,256 z^3 + 39\,024 z^2 + 11\,340 z + 1\,658\,475\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8005.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{13}{4}; -z\right) = $$
$$ -\frac{1}{1\,658\,475\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536 z^6 + 151\,552 z^5 - 116\,736 z^4 - 123\,840 z^3 - 882\,720 z^2 + 2\,664\,900 z - 1\,658\,475\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z}\left(8192 z^5 + 13\,824 z^4 - 12\,672 z^3 - 69\,840 z^2 - 1\,338\,120 z + 1\,658\,475\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(16\,384 z^5 + 33\,792 z^4 - 32\,256 z^3 - 39\,024 z^2 + 11\,340 z - 1\,658\,475\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8006.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{11}{4}; z\right) = $$
$$ \frac{1}{436\,590}\left(e^{-2\sqrt{z}}\left(-4096 e^{4\sqrt{z}} z^{11/2} + 4096 z^{11/2} - 1024 e^{4\sqrt{z}} z^5 - 1024 z^5 + 11\,008 e^{4\sqrt{z}} z^{9/2} - 11\,008 z^{9/2} + \right.\right. $$
$$ 1984 e^{4\sqrt{z}} z^4 + 1984 z^4 + 16 e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2 - 736 z - 1311\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{15/4} + $$
$$ 16 e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2 - 736 z - 1311\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{15/4} + 21\,504 e^{4\sqrt{z}} z^{7/2} - 21\,504 z^{7/2} + $$
$$ 4224 e^{4\sqrt{z}} z^3 + 4224 z^3 - 1632 e^{4\sqrt{z}} z^{5/2} + 1632 z^{5/2} - 18\,000 e^{4\sqrt{z}} z^2 - 18\,000 z^2 - 88\,200 e^{4\sqrt{z}} z^{3/2} + $$
$$ \left.\left. 88\,200 z^{3/2} + 335\,160 e^{4\sqrt{z}} z + 335\,160 z - 436\,590 e^{4\sqrt{z}}\sqrt{z} + 436\,590\sqrt{z} + 218\,295 e^{4\sqrt{z}} + 218\,295\right)\right) $$

07.22.03.8007.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{11}{4}; -z\right) = $$
$$ \frac{1}{218\,295}\left(32\sqrt{\pi}\left(256 z^2 + 736 z - 1311\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{15/4} + 2\left(-2048 z^5 - 5504 z^4 + 10\,752 z^3 + 816 z^2 - 44\,100 z + 218\,295\right)\right. $$
$$ \left.\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(1024 z^5 + 1984 z^4 - 4224 z^3 - 18\,000 z^2 - 335\,160 z + 218\,295\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8008.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{9}{4}; z\right) = \frac{1}{637\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768 z^6 - 122\,880 z^5 - 302\,720 z^4 - 302\,400 z^3 + 237\,600 z^2 + 913\,500 z + 637\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4096 z^5 - 12\,800 z^4 - 40\,560 z^3 - 39\,600 z^2 + 403\,200 z + 637\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-8192 z^5 + 28\,672 z^4 + 80\,160 z^3 + 91\,440 z^2 - 107\,100 z + 637\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8009.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) = \frac{1}{637\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768 z^6 + 122\,880 z^5 - 302\,720 z^4 + 302\,400 z^3 + 237\,600 z^2 - 913\,500 z + 637\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4096 z^5 + 12\,800 z^4 - 40\,560 z^3 + 39\,600 z^2 + 403\,200 z - 637\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8192 z^5 + 28\,672 z^4 - 80\,160 z^3 + 91\,440 z^2 + 107\,100 z + 637\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8010.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) = \frac{1}{476\,280}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-4096 z^3 + 17\,664 z^2 + 62\,928 z + 137\,655\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{11/4} + e^{2\sqrt{z}}\sqrt{2\pi}\left(-4096 z^3 + 17\,664 z^2 + 62\,928 z + 137\,655\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{11/4} + 4\left(-1024 z^{11/2} + 256 z^5 + 4224 z^{9/2} - 864 z^4 + 16\,140 z^{7/2} - 4023 z^3 + 36\,576 z^{5/2} - 7920 z^2 - 7560 z^{3/2} + 75\,600 z + 119\,070\sqrt{z} + e^{4\sqrt{z}}\left(1024 z^{11/2} + 256 z^5 - 4224 z^{9/2} - 864 z^4 - 16\,140 z^{7/2} - 4023 z^3 - 36\,576 z^{5/2} - 7920 z^2 + 7560 z^{3/2} + 75\,600 z - 119\,070\sqrt{z} + 59\,535\right) + 59\,535\right)\right)\right) $$

07.22.03.8011.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) = \frac{1}{119\,070}\left(2\left(2\sqrt{z}\left(512 z^5 + 2112 z^4 - 8070 z^3 + 18\,288 z^2 + 3780 z + 59\,535\right)\sin\left(2\sqrt{z}\right) - \left(256 z^5 + 864 z^4 - 4023 z^3 + 7920 z^2 + 75\,600 z - 59\,535\right)\cos\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, z^{11/4}\left(4096 z^3 + 17\,664 z^2 - 62\,928 z + 137\,655\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.8012.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{5}{4}; z\right) = $$
$$ -\frac{1}{496\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384 z^6 - 84\,992 z^5 - 357\,440 z^4 - 1\,146\,180 z^3 - 957\,600 z^2 - 485\,100 z - 496\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 2\sqrt{z}\left(-4096 z^5 + 18\,688 z^4 + 95\,760 z^3 + 330\,435 z^2 + 176\,400 z + 992\,250\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(-4096 z^5 + 20\,224 z^4 + 93\,072 z^3 + 309\,645 z^2 + 308\,700 z - 496\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8013.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{5}{4}; -z\right) = $$
$$ -\frac{1}{496\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384 z^6 + 84\,992 z^5 - 357\,440 z^4 + 1\,146\,180 z^3 - 957\,600 z^2 + 485\,100 z - 496\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 2\sqrt{z}\left(4096 z^5 + 18\,688 z^4 - 95\,760 z^3 + 330\,435 z^2 - 176\,400 z + 992\,250\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(4096 z^5 + 20\,224 z^4 - 93\,072 z^3 + 309\,645 z^2 - 308\,700 z - 496\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8014.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) = $$
$$ \frac{1}{17\,418\,240}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 376\,832 z^3 - 2\,013\,696 z^2 - 8\,809\,920 z - 16\,656\,255\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} + \right.\right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 376\,832 z^3 - 2\,013\,696 z^2 - 8\,809\,920 z - 16\,656\,255\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} - $$
$$ 4\left(-16\,384 z^{11/2} + 4096 z^5 + 91\,136 z^{9/2} - 19\,712 z^4 + 514\,368 z^{7/2} - 132\,816 z^3 + \right. $$
$$ 2\,293\,932 z^{5/2} - 620\,415 z^2 + 4\,515\,840 z^{3/2} - 645\,120 z - 4\,354\,560\sqrt{z} + $$
$$ \left.\left.\left. e^{4\sqrt{z}}\left(16\,384 z^{11/2} + 4096 z^5 - 91\,136 z^{9/2} - 19\,712 z^4 - 514\,368 z^{7/2} - 132\,816 z^3 - 2\,293\,932 z^{5/2} - \right.\right.\right.\right. $$
$$ \left.\left.\left.\left. 620\,415 z^2 - 4\,515\,840 z^{3/2} - 645\,120 z + 4\,354\,560\sqrt{z} - 2\,177\,280\right) - 2\,177\,280\right)\right)\right) $$

07.22.03.8015.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{1}{4\,354\,560}\left(\sqrt{\pi}\left(65\,536 z^4 + 376\,832 z^3 - 2\,013\,696 z^2 + 8\,809\,920 z - 16\,656\,255\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} + \right. $$
$$ 2\left(\left(4096 z^5 + 19\,712 z^4 - 132\,816 z^3 + 620\,415 z^2 - 645\,120 z + 2\,177\,280\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 4\sqrt{z}\left(-4096 z^5 - 22\,784 z^4 + 128\,592 z^3 - 573\,483 z^2 + 1\,128\,960 z + 1\,088\,640\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8016.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) = \frac{1}{14\,288\,400\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(2\left(65\,536 z^6 - 434\,176 z^5 - 2\,589\,696 z^4 - 14\,018\,400 z^3 - 38\,439\,765 z^2 - 22\,226\,400 z + 7\,144\,200\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \sqrt{z}\left(-65\,536 z^5 + 393\,216 z^4 + 2\,750\,976 z^3 + 15\,603\,840 z^2 + 46\,372\,095 z - 57\,153\,600\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2z\left(-65\,536 z^5 + 417\,792 z^4 + 2\,672\,640 z^3 + 14\,714\,784 z^2 + 42\,533\,505 z + 28\,576\,800\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8017.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) = \frac{1}{14\,288\,400\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(2\left(65\,536 z^6 + 434\,176 z^5 - 2\,589\,696 z^4 + 14\,018\,400 z^3 - 38\,439\,765 z^2 + 22\,226\,400 z + 7\,144\,200\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \sqrt{z}\left(-65\,536 z^5 - 393\,216 z^4 + 2\,750\,976 z^3 - 15\,603\,840 z^2 + 46\,372\,095 z + 57\,153\,600\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2z\left(65\,536 z^5 + 417\,792 z^4 - 2\,672\,640 z^3 + 14\,714\,784 z^2 - 42\,533\,505 z + 28\,576\,800\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8018.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) = $$
$$ \frac{1}{1\,857\,945\,600}\left(e^{-2\sqrt{z}}\left(4\left(-262\,144 z^{11/2} + 65\,536 z^5 + 1\,835\,008 z^{9/2} - 409\,600 z^4 + 13\,670\,400 z^{7/2} - 3\,555\,840 z^3 + \right.\right.\right. $$
$$ 90\,723\,840 z^{5/2} - 24\,747\,840 z^2 + 351\,823\,500 z^{3/2} - 97\,399\,575 z + 464\,486\,400\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(262\,144 z^{11/2} + 65\,536 z^5 - 1\,835\,008 z^{9/2} - 409\,600 z^4 - 13\,670\,400 z^{7/2} - 3\,555\,840 z^3 - 90\,723\,840 z^{5/2} - \right. $$
$$ \left.\left. 24\,747\,840 z^2 - 351\,823\,500 z^{3/2} - 97\,399\,575 z - 464\,486\,400\sqrt{z} + 232\,243\,200\right) + 232\,243\,200\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(-1\,048\,576 z^5 + 7\,536\,640 z^4 + 53\,698\,560 z^3 + 352\,396\,800 z^2 + 1\,332\,500\,400 z + 1\,748\,906\,775\right) $$
$$ \left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\right.\right. $$
$$ \left.\left.\left(-1\,048\,576 z^5 + 7\,536\,640 z^4 + 53\,698\,560 z^3 + 352\,396\,800 z^2 + 1\,332\,500\,400 z + 1\,748\,906\,775\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8019.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) = $$
$$ \frac{1}{464\,486\,400}\left(2\left(\left(-65\,536 z^5 - 409\,600 z^4 + 3\,555\,840 z^3 - 24\,747\,840 z^2 + 97\,399\,575 z + 232\,243\,200\right)\cos\left(2\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. 4\sqrt{z}\left(65\,536 z^5 + 458\,752 z^4 - 3\,417\,600 z^3 + 22\,680\,960 z^2 - 87\,955\,875 z + 116\,121\,600\right)\sin\left(2\sqrt{z}\right)\right) - \right. $$
$$ \left.\sqrt{\pi}\, z^{3/4}\left(1\,048\,576 z^5 + 7\,536\,640 z^4 - 53\,698\,560 z^3 + 352\,396\,800 z^2 - 1\,332\,500\,400 z + 1\,748\,906\,775\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.8020.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) = -\frac{1}{5\,029\,516\,800\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(2\left(1\,048\,576 z^6 - 8\,454\,144 z^5 - 65\,363\,968 z^4 - 497\,733\,120 z^3 - 2\,314\,390\,320 z^2 - 4\,294\,330\,425 z - 2\,514\,758\,400\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-1\,048\,576 z^5 + 7\,798\,784 z^4 + 68\,886\,528 z^3 + 540\,587\,520 z^2 + \right. $$
$$ \left. 2\,669\,934\,960 z + 5\,059\,298\,475\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2 z\left(-1\,048\,576 z^5 + 8\,192\,000 z^4 + \right. $$
$$ \left.\left. 67\,067\,904 z^3 + 515\,446\,272 z^2 + 2\,460\,371\,760 z + 4\,999\,735\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.8021.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) = \frac{1}{5\,029\,516\,800\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(-2\left(1\,048\,576 z^6 + 8\,454\,144 z^5 - 65\,363\,968 z^4 + 497\,733\,120 z^3 - 2\,314\,390\,320 z^2 + 4\,294\,330\,425 z - 2\,514\,758\,400\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(1\,048\,576 z^5 + 7\,798\,784 z^4 - 68\,886\,528 z^3 + 540\,587\,520 z^2 - 2\,669\,934\,960 z + 5\,059\,298\,475\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 2 z\left(1\,048\,576 z^5 + 8\,192\,000 z^4 - 67\,067\,904 z^3 + 515\,446\,272 z^2 - 2\,460\,371\,760 z + 4\,999\,735\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.8022.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) = $$
$$ \frac{1}{713\,451\,110\,400\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 35\,389\,440 z^{9/2} - 8\,060\,928 z^4 + 327\,254\,016 z^{7/2} - \right.\right.\right. $$
$$ 85\,155\,840 z^3 + 2\,883\,778\,560 z^{5/2} - 779\,097\,600 z^2 + 16\,612\,827\,840 z^{3/2} - 4\,702\,607\,280 z + $$
$$ 45\,445\,862\,700\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 35\,389\,440 z^{9/2} - 8\,060\,928 z^4 - \right. $$
$$ 327\,254\,016 z^{7/2} - 85\,155\,840 z^3 - 2\,883\,778\,560 z^{5/2} - 779\,097\,600 z^2 - 16\,612\,827\,840 z^{3/2} - $$
$$ \left.\left. 4\,702\,607\,280 z - 45\,445\,862\,700\sqrt{z} - 10\,506\,297\,375\right) - 10\,506\,297\,375\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 144\,703\,488 z^5 - 1\,288\,765\,440 z^4 - 11\,276\,697\,600 z^3 - \right. $$
$$ \left. 63\,960\,019\,200 z^2 - 167\,895\,050\,400 z - 99\,687\,686\,175\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 144\,703\,488 z^5 - 1\,288\,765\,440 z^4 - 11\,276\,697\,600 z^3 - \right. $$
$$ \left.\left.\left. 63\,960\,019\,200 z^2 - 167\,895\,050\,400 z - 99\,687\,686\,175\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8023.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{5}{4}; -z\right) = \frac{1}{178\,362\,777\,600\sqrt[4]{z}}\left(\sqrt{\pi}\left(-16\,777\,216 z^6 - 144\,703\,488 z^5 + 1\,288\,765\,440 z^4 - 11\,276\,697\,600 z^3 + 63\,960\,019\,200 z^2 - 167\,895\,050\,400 z + 99\,687\,686\,175\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576 z^5 + 8\,847\,360 z^4 - 81\,813\,504 z^3 + 720\,944\,640 z^2 - 4\,153\,206\,960 z + 11\,361\,465\,675\right)\sin\left(2\sqrt{z}\right) - \left(1\,048\,576 z^5 + 8\,060\,928 z^4 - 85\,155\,840 z^3 + 779\,097\,600 z^2 - 4\,702\,607\,280 z + 10\,506\,297\,375\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8024.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{7}{4}; z\right) = -\frac{1}{697\,426\,329\,600\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(16\,777\,216 z^6 - 159\,383\,552 z^5 - 1\,514\,602\,496 z^4 - 14\,862\,581\,760 z^3 - 97\,385\,483\,520 z^2 - 309\,534\,825\,600 z - 243\,301\,783\,725\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,777\,216 z^6 + 148\,897\,792 z^5 + 1\,586\,036\,736 z^4 + 15\,881\,748\,480 z^3 + 108\,453\,945\,600 z^2 + 380\,302\,322\,400 z + 316\,234\,143\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-16\,777\,216 z^6 + 155\,189\,248 z^5 + 1\,547\,894\,784 z^4 + 15\,272\,607\,744 z^3 + 101\,673\,411\,840 z^2 + 339\,917\,497\,920 z + 316\,234\,143\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8025.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{7}{4}; -z\right) = \frac{1}{697\,426\,329\,600\sqrt{2}\,\sqrt[4]{z}}\left(\left(-2\sqrt{z}\left(16\,777\,216 z^6 + 159\,383\,552 z^5 - 1\,514\,602\,496 z^4 + 14\,862\,581\,760 z^3 - 97\,385\,483\,520 z^2 + 309\,534\,825\,600 z - 243\,301\,783\,725\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216 z^6 + 148\,897\,792 z^5 - 1\,586\,036\,736 z^4 + 15\,881\,748\,480 z^3 - 108\,453\,945\,600 z^2 + 380\,302\,322\,400 z + 316\,234\,143\,225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(16\,777\,216 z^6 + 155\,189\,248 z^5 - 1\,547\,894\,784 z^4 + 15\,272\,607\,744 z^3 - 101\,673\,411\,840 z^2 + 339\,917\,497\,920 z - 316\,234\,143\,225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8026.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{9}{4}; z\right) = \frac{1}{63\,925\,219\,491\,840\, z^{5/4}} \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(-67\,108\,864\, z^{13/2} + 16\,777\,216\, z^6 + 662\,700\,032\, z^{11/2} - 153\,092\,096\, z^5 + 7\,316\,176\,896\, z^{9/2} - 1\,900\,609\,536\, z^4 + 80\,396\,746\,752\, z^{7/2} - 21\,495\,398\,400\, z^3 + 614\,359\,065\,600\, z^{5/2} - 171\,149\,287\,680\, z^2 + 2\,492\,136\,823\,680\, z^{3/2} - 728\,697\,180\,960\, z + 3\,057\,089\,042\,700\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864\, z^{13/2} + 16\,777\,216\, z^6 - 662\,700\,032\, z^{11/2} - 153\,092\,096\, z^5 - 7\,316\,176\,896\, z^{9/2} - 1\,900\,609\,536\, z^4 - 80\,396\,746\,752\, z^{7/2} - 21\,495\,398\,400\, z^3 - 614\,359\,065\,600\, z^{5/2} - 171\,149\,287\,680\, z^2 - 2\,492\,136\,823\,680\, z^{3/2} - 728\,697\,180\,960\, z - 3\,057\,089\,042\,700\sqrt{z} + 2\,292\,816\,782\,025\right) + 2\,292\,816\,782\,025\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\, z^7 - 2\,701\,131\,776\, z^6 - 28\,868\,345\,856\, z^5 - 315\,747\,532\,800\, z^4 - 2\,387\,840\,716\,800\, z^3 - 9\,402\,122\,822\,400\, z^2 - 11\,165\,020\,851\,600\, z + 2\,292\,816\,782\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\, z^7 - 2\,701\,131\,776\, z^6 - 28\,868\,345\,856\, z^5 - 315\,747\,532\,800\, z^4 - 2\,387\,840\,716\,800\, z^3 - 9\,402\,122\,822\,400\, z^2 - 11\,165\,020\,851\,600\, z + 2\,292\,816\,782\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right) $$

07.22.03.8027.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = \frac{1}{15\,981\,304\,872\,960\, z^{5/4}} \left(\sqrt{\pi}\left(-268\,435\,456\, z^7 - 2\,701\,131\,776\, z^6 + 28\,868\,345\,856\, z^5 - 315\,747\,532\,800\, z^4 + 2\,387\,840\,716\,800\, z^3 - 9\,402\,122\,822\,400\, z^2 + 11\,165\,020\,851\,600\, z + 2\,292\,816\,782\,025\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216\, z^6 + 165\,675\,008\, z^5 - 1\,829\,044\,224\, z^4 + 20\,099\,186\,688\, z^3 - 153\,589\,766\,400\, z^2 + 623\,034\,205\,920\, z - 764\,272\,260\,675\right)\sin\left(2\sqrt{z}\right) - \left(16\,777\,216\, z^6 + 153\,092\,096\, z^5 - 1\,900\,609\,536\, z^4 + 21\,495\,398\,400\, z^3 - 171\,149\,287\,680\, z^2 + 728\,697\,180\,960\, z + 2\,292\,816\,782\,025\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8028.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = -\left(\left(2\sqrt{z}\left(268\,435\,456\, z^7 - 2\,936\,012\,800\, z^6 - 33\,108\,787\,200\, z^5 - 397\,585\,612\,800\, z^4 - 3\,360\,099\,225\,600\, z^3 - 15\,126\,707\,232\,000\, z^2 - 20\,297\,655\,378\,000\, z - 7\,905\,853\,580\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-268\,435\,456\, z^7 + 2\,768\,240\,640\, z^6 + 34\,492\,907\,520\, z^5 + 420\,087\,398\,400\, z^4 + 3\,656\,456\,294\,400\, z^3 + 17\,817\,063\,264\,000\, z^2 + 25\,298\,731\,458\,000\, z + 23\,717\,560\,741\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-268\,435\,456\, z^7 + 2\,868\,903\,936\, z^6 + 33\,737\,932\,800\, z^5 + 406\,515\,548\,160\, z^4 + 3\,472\,829\,337\,600\, z^3 + 16\,149\,259\,526\,400\, z^2 + 25\,298\,731\,458\,000\, z - 23\,717\,560\,741\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(47\,823\,519\,744\,000\sqrt{2}\, z^{5/4}\right) $$

07.22.03.8029.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = $$

$$ \left(\left(-2\sqrt{z}\,\left(268\,435\,456\,z^7 + 2\,936\,012\,800\,z^6 - 33\,108\,787\,200\,z^5 + 397\,585\,612\,800\,z^4 - 3\,360\,099\,225\,600\,z^3 + \right.\right.\right. $$

$$ 15\,126\,707\,232\,000\,z^2 - 20\,297\,655\,378\,000\,z + 7\,905\,853\,580\,625\big)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$

$$ \left(268\,435\,456\,z^7 + 2\,768\,240\,640\,z^6 - 34\,492\,907\,520\,z^5 + 420\,087\,398\,400\,z^4 - 3\,656\,456\,294\,400\,z^3 + \right. $$

$$ 17\,817\,063\,264\,000\,z^2 - 25\,298\,731\,458\,000\,z + 23\,717\,560\,741\,875\big)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\,\left(-268\,435\,456\,z^7 - 2\,868\,903\,936\,z^6 + 33\,737\,932\,800\,z^5 - 406\,515\,548\,160\,z^4 + \right. $$

$$ \left.\left.\left. 3\,472\,829\,337\,600\,z^3 - 16\,149\,259\,526\,400\,z^2 + 25\,298\,731\,458\,000\,z + 23\,717\,560\,741\,875\right)\right. $$

$$ \left.\left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(47\,823\,519\,744\,000\sqrt{2}\,z^{5/4}\right) $$

07.22.03.8030.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = $$

$$ \left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 + 12\,146\,704\,384\,z^{13/2} - 2\,835\,349\,504\,z^6 + 155\,839\,365\,120\,z^{11/2} - \right.\right.\right. $$

$$ 40\,394\,293\,248\,z^5 + 2\,051\,992\,190\,976\,z^{9/2} - 543\,820\,677\,120\,z^4 + 19\,542\,898\,851\,840\,z^{7/2} - $$

$$ 5\,352\,089\,702\,400\,z^3 + 104\,802\,127\,395\,840\,z^{5/2} - 30\,787\,663\,092\,480\,z^2 + $$

$$ 202\,641\,330\,830\,400\,z^{3/2} - 36\,685\,068\,512\,400\,z - 412\,707\,020\,764\,500\sqrt{z} + $$

$$ e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 - 12\,146\,704\,384\,z^{13/2} - 2\,835\,349\,504\,z^6 - 155\,839\,365\,120\,z^{11/2} - \right. $$

$$ 40\,394\,293\,248\,z^5 - 2\,051\,992\,190\,976\,z^{9/2} - 543\,820\,677\,120\,z^4 - 19\,542\,898\,851\,840\,z^{7/2} - $$

$$ 5\,352\,089\,702\,400\,z^3 - 104\,802\,127\,395\,840\,z^{5/2} - 30\,787\,663\,092\,480\,z^2 - 202\,641\,330\,830\,400\,z^{3/2} - $$

$$ \left.\left. 36\,685\,068\,512\,400\,z + 412\,707\,020\,764\,500\sqrt{z} - 309\,530\,265\,573\,375\right) - 309\,530\,265\,573\,375\right) - $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\,\left(4\,294\,967\,296\,z^8 - 49\,392\,123\,904\,z^7 - 615\,858\,044\,928\,z^6 - 8\,083\,136\,839\,680\,z^5 - \right. $$

$$ 76\,410\,902\,937\,600\,z^4 - 401\,157\,240\,422\,400\,z^3 - 714\,561\,334\,502\,400\,z^2 + $$

$$ 293\,480\,548\,099\,200\,z - 309\,530\,265\,573\,375\big)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\,\left(4\,294\,967\,296\,z^8 - 49\,392\,123\,904\,z^7 - 615\,858\,044\,928\,z^6 - 8\,083\,136\,839\,680\,z^5 - \right. $$

$$ 76\,410\,902\,937\,600\,z^4 - 401\,157\,240\,422\,400\,z^3 - 714\,561\,334\,502\,400\,z^2 + $$

$$ \left.\left.\left. 293\,480\,548\,099\,200\,z - 309\,530\,265\,573\,375\big)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(3\,636\,634\,708\,869\,120\,z^{9/4}\right) $$

07.22.03.8031.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = \frac{1}{909\,158\,677\,217\,280\, z^{9/4}} $$
$$ \left(\sqrt{\pi}\,\left(-4\,294\,967\,296\, z^8 - 49\,392\,123\,904\, z^7 + 615\,858\,044\,928\, z^6 - 8\,083\,136\,839\,680\, z^5 + 76\,410\,902\,937\,600\, z^4 - \right.\right. $$
$$ \left. 401\,157\,240\,422\,400\, z^3 + 714\,561\,334\,502\,400\, z^2 + 293\,480\,548\,099\,200\, z + 309\,530\,265\,573\,375\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(268\,435\,456\, z^7 + 3\,036\,676\,096\, z^6 - 38\,959\,841\,280\, z^5 + 512\,998\,047\,744\, z^4 - 4\,885\,724\,712\,960\, z^3 + \right.\right. $$
$$ 26\,200\,531\,848\,960\, z^2 - 50\,660\,332\,707\,600\, z - 103\,176\,755\,191\,125\big) \sin\left(2\sqrt{z}\right) - $$
$$ \left(268\,435\,456\, z^7 + 2\,835\,349\,504\, z^6 - 40\,394\,293\,248\, z^5 + 543\,820\,677\,120\, z^4 - 5\,352\,089\,702\,400\, z^3 + \right. $$
$$ \left.\left. \left. 30\,787\,663\,092\,480\, z^2 - 36\,685\,068\,512\,400\, z + 309\,530\,265\,573\,375\right) \cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8032.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{15}{4}; z\right) = $$
$$ -\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 - 53\,150\,220\,288\, z^7 - 693\,737\,881\,600\, z^6 - 9\,852\,703\,211\,520\, z^5 - 101\,953\,614\,643\,200\, z^4 - \right.\right.\right. $$
$$ 593\,630\,740\,684\,800\, z^3 - 1\,151\,003\,939\,904\,000\, z^2 + 758\,961\,943\,740\,000\, z + 1\,604\,888\,276\,866\,875\big) $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4\,294\,967\,296\, z^8 + 50\,465\,865\,728\, z^7 + 719\,742\,566\,400\, z^6 + 10\,325\,600\,501\,760\, z^5 + \right. $$
$$ 109\,224\,699\,494\,400\, z^4 + 675\,532\,376\,064\,000\, z^3 + 1\,619\,118\,813\,312\,000\, z^2 - $$
$$ 9\,613\,517\,954\,040\,000\, z - 4\,814\,664\,830\,600\,625\big) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\,\left(-4\,294\,967\,296\, z^8 + 52\,076\,478\,464\, z^7 + 705\,347\,715\,072\, z^6 + 10\,038\,993\,223\,680\, z^5 + \right. $$
$$ 104\,705\,556\,480\,000\, z^4 + 623\,820\,369\,715\,200\, z^3 + 1\,349\,265\,677\,760\,000\, z^2 - $$
$$ \left.\left.\left. 657\,767\,017\,908\,000\, z + 4\,814\,664\,830\,600\,625\big) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(2\,365\,090\,430\,976\,000\,\sqrt{2}\; z^{9/4}\right) $$

07.22.03.8033.01

$$
{}_1F_2\left(-\frac{23}{4};-\frac{9}{2},\frac{15}{4};-z\right)=
$$

$$
\left(\left(-2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+53\,150\,220\,288\,z^7-693\,737\,881\,600\,z^6+9\,852\,703\,211\,520\,z^5-101\,953\,614\,643\,200\,z^4+\right.\right.\right.
$$

$$
593\,630\,740\,684\,800\,z^3-1\,151\,003\,939\,904\,000\,z^2-758\,961\,943\,740\,000\,z+1\,604\,888\,276\,866\,875\Big)
$$

$$
J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4\,294\,967\,296\,z^8+50\,465\,865\,728\,z^7-719\,742\,566\,400\,z^6+10\,325\,600\,501\,760\,z^5-\right.
$$

$$
109\,224\,699\,494\,400\,z^4+675\,532\,376\,064\,000\,z^3-1\,619\,118\,813\,312\,000\,z^2-
$$

$$
\left.9\,613\,517\,954\,040\,000\,z+4\,814\,664\,830\,600\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+
$$

$$
2\sqrt{z}\,\left(-4\,294\,967\,296\,z^8-52\,076\,478\,464\,z^7+705\,347\,715\,072\,z^6-10\,038\,993\,223\,680\,z^5+\right.
$$

$$
104\,705\,556\,480\,000\,z^4-623\,820\,369\,715\,200\,z^3+1\,349\,265\,677\,760\,000\,z^2+
$$

$$
\left.\left.\left.657\,767\,017\,908\,000\,z+4\,814\,664\,830\,600\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(2\,365\,090\,430\,976\,000\,\sqrt{2}\,z^{9/4}\right)
$$

07.22.03.8034.01

$$
{}_1F_2\left(-\frac{23}{4};-\frac{9}{2},\frac{17}{4};z\right)=
$$

$$
-\Big(13\,e^{-2\sqrt{z}}\,\left(-4\,\sqrt[4]{z}\,\left(-17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^8+219\,043\,332\,096\,z^{15/2}-51\,539\,607\,552\,z^7+\right.\right.
$$

$$
3\,201\,898\,119\,168\,z^{13/2}-828\,056\,272\,896\,z^6+49\,140\,247\,560\,192\,z^{11/2}-12\,930\,452\,029\,440\,z^5+
$$

$$
560\,583\,805\,501\,440\,z^{9/2}-151\,404\,358\,533\,120\,z^4+3\,737\,647\,557\,181\,440\,z^{7/2}-1\,075\,328\,005\,570\,560\,z^3+
$$

$$
9\,513\,343\,481\,241\,600\,z^{5/2}-3\,018\,657\,066\,163\,200\,z^2-6\,791\,978\,398\,867\,200\,z^{3/2}+
$$

$$
47\,543\,848\,792\,070\,400\,z+115\,145\,258\,793\,295\,500\,\sqrt{z}+e^{4\sqrt{z}}\,\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^8-\right.
$$

$$
219\,043\,332\,096\,z^{15/2}-51\,539\,607\,552\,z^7-3\,201\,898\,119\,168\,z^{13/2}-828\,056\,272\,896\,z^6-
$$

$$
49\,140\,247\,560\,192\,z^{11/2}-12\,930\,452\,029\,440\,z^5-560\,583\,805\,501\,440\,z^{9/2}-151\,404\,358\,533\,120\,z^4-
$$

$$
3\,737\,647\,557\,181\,440\,z^{7/2}-1\,075\,328\,005\,570\,560\,z^3-9\,513\,343\,481\,241\,600\,z^{5/2}-
$$

$$
3\,018\,657\,066\,163\,200\,z^2+6\,791\,978\,398\,867\,200\,z^{3/2}+47\,543\,848\,792\,070\,400\,z-
$$

$$
\left.115\,145\,258\,793\,295\,500\,\sqrt{z}+86\,358\,944\,094\,971\,625\right)+86\,358\,944\,094\,971\,625\Big)+
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(68\,719\,476\,736\,z^9-889\,058\,230\,272\,z^8-12\,669\,079\,781\,376\,z^7-193\,995\,284\,152\,320\,z^6-\right.
$$

$$
2\,200\,634\,004\,602\,880\,z^5-14\,441\,660\,655\,206\,400\,z^4-34\,298\,944\,056\,115\,200\,z^3+
$$

$$
21\,130\,599\,463\,142\,400\,z^2-44\,572\,358\,242\,566\,000\,z+86\,358\,944\,094\,971\,625\Big)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(68\,719\,476\,736\,z^9-889\,058\,230\,272\,z^8-12\,669\,079\,781\,376\,z^7-193\,995\,284\,152\,320\,z^6-\right.
$$

$$
2\,200\,634\,004\,602\,880\,z^5-14\,441\,660\,655\,206\,400\,z^4-34\,298\,944\,056\,115\,200\,z^3+21\,130\,599\,463\,142\,400\,
$$

$$
\left.\left.z^2-44\,572\,358\,242\,566\,000\,z+86\,358\,944\,094\,971\,625\right)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)\Big/\left(2\,094\,701\,592\,308\,613\,120\,z^{13/4}\right)
$$

07.22.03.8035.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) =
$$

$$
\left(13\left(\sqrt{\pi}\,\left(-68\,719\,476\,736\,z^9 - 889\,058\,230\,272\,z^8 + 12\,669\,079\,781\,376\,z^7 - 193\,995\,284\,152\,320\,z^6 + \right.\right.\right.
$$

$$
2\,200\,634\,004\,602\,880\,z^5 - 14\,441\,660\,655\,206\,400\,z^4 + 34\,298\,944\,056\,115\,200\,z^3 +
$$

$$
\left.\left.\left.21\,130\,599\,463\,142\,400\,z^2 + 44\,572\,358\,242\,566\,000\,z + 86\,358\,944\,094\,971\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\right.\right.
$$

$$
\left(\left(-4\,294\,967\,296\,z^8 - 51\,539\,607\,552\,z^7 + 828\,056\,272\,896\,z^6 - 12\,930\,452\,029\,440\,z^5 + 151\,404\,358\,533\,120\,z^4 - \right.\right.
$$

$$
1\,075\,328\,005\,570\,560\,z^3 + 3\,018\,657\,066\,163\,200\,z^2 + 47\,543\,848\,792\,070\,400\,z - 86\,358\,944\,094\,971\,625\big)
$$

$$
\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 54\,760\,833\,024\,z^7 - 800\,474\,529\,792\,z^6 + \right.
$$

$$
12\,285\,061\,890\,048\,z^5 - 140\,145\,951\,375\,360\,z^4 + 934\,411\,889\,295\,360\,z^3 - 2\,378\,335\,870\,310\,400\,z^2 - \left.\left.\left.\left.
$$

$$
1\,697\,994\,599\,716\,800\,z - 28\,786\,314\,698\,323\,875\right)\sin\left(2\sqrt{z}\right)\right)\Bigg)\Bigg/\left(523\,675\,398\,077\,153\,280\,z^{13/4}\right)
$$

07.22.03.8036.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) =
$$

$$
-\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 949\,187\,772\,416\,z^8 - 14\,075\,681\,570\,816\,z^7 - 230\,770\,606\,080\,000\,z^6 - 2\,825\,272\,153\,866\,240\right.\right.\right.
$$

$$
z^5 - 20\,175\,391\,427\,788\,800\,z^4 - 51\,259\,519\,877\,529\,600\,z^3 +
$$

$$
\left.\left.\left.51\,811\,802\,025\,984\,000\,z^2 - 421\,856\,347\,062\,150\,000\,z - 582\,574\,444\,502\,675\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.
$$

$$
\left(-68\,719\,476\,736\,z^9 + 906\,238\,099\,456\,z^8 + 14\,553\,496\,682\,496\,z^7 + 240\,362\,811\,555\,840\,z^6 + \right.
$$

$$
2\,993\,461\,835\,857\,920\,z^5 + 22\,404\,946\,791\,628\,800\,z^4 + 69\,082\,402\,701\,312\,000\,z^3 -
$$

$$
\left.108\,480\,960\,491\,904\,000\,z^2 + 3\,928\,766\,501\,770\,110\,000\,z + 1\,747\,723\,333\,508\,026\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +
$$

$$
2\sqrt{z}\,\left(-68\,719\,476\,736\,z^9 + 932\,007\,903\,232\,z^8 + 14\,286\,134\,968\,320\,z^7 + 234\,533\,802\,737\,664\,z^6 + \right.
$$

$$
2\,888\,929\,357\,332\,480\,z^5 + 20\,992\,813\,999\,718\,400\,z^4 + 57\,790\,086\,875\,136\,000\,z^3 -
$$

$$
\left.\left.32\,382\,376\,266\,240\,000\,z^2 - 200\,290\,056\,952\,986\,000\,z - 1\,747\,723\,333\,508\,026\,875\right)\right.
$$

$$
\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Bigg/\left(95\,864\,998\,802\,227\,200\,\sqrt{2}\;z^{13/4}\right)
$$

07.22.03.8037.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) =
$$

$$
\left(\left(-2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 949\,187\,772\,416\,z^8 - 14\,075\,681\,570\,816\,z^7 + 230\,770\,606\,080\,000\,z^6 - 2\,825\,272\,153\,866\,240\right.\right.\right.
$$

$$
z^5 + 20\,175\,391\,427\,788\,800\,z^4 - 51\,259\,519\,877\,529\,600\,z^3 -
$$

$$
\left.51\,811\,802\,025\,984\,000\,z^2 - 421\,856\,347\,062\,150\,000\,z + 582\,574\,444\,502\,675\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +
$$

$$
\left(68\,719\,476\,736\,z^9 + 906\,238\,099\,456\,z^8 - 14\,553\,496\,682\,496\,z^7 + 240\,362\,811\,555\,840\,z^6 -\right.
$$

$$
2\,993\,461\,835\,857\,920\,z^5 + 22\,404\,946\,791\,628\,800\,z^4 - 69\,082\,402\,701\,312\,000\,z^3 -
$$

$$
\left.108\,480\,960\,491\,904\,000\,z^2 - 3\,928\,766\,501\,770\,110\,000\,z + 1\,747\,723\,333\,508\,026\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +
$$

$$
2\sqrt{z}\,\left(-68\,719\,476\,736\,z^9 - 932\,007\,903\,232\,z^8 + 14\,286\,134\,968\,320\,z^7 - 234\,533\,802\,737\,664\,z^6 +\right.
$$

$$
2\,888\,929\,357\,332\,480\,z^5 - 20\,992\,813\,999\,718\,400\,z^4 + 57\,790\,086\,875\,136\,000\,z^3 + 32\,382\,376\,266\,240\,000\,z^2 -
$$

$$
\left.\left.\left.200\,290\,056\,952\,986\,000\,z + 1\,747\,723\,333\,508\,026\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(95\,864\,998\,802\,227\,200\,\sqrt{2}\,z^{13/4}\right)
$$

07.22.03.8038.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) =
$$

$$
-\left(221\,e^{-2\sqrt{z}}\,\left(-4\sqrt[4]{z}\,\left(-274\,877\,906\,944\,z^{19/2} + 68\,719\,476\,736\,z^9 + 3\,899\,830\,304\,768\,z^{17/2} - 923\,417\,968\,640\,z^8 +\right.\right.\right.
$$

$$
63\,973\,537\,873\,920\,z^{15/2} - 16\,508\,780\,544\,000\,z^7 + 1\,121\,344\,825\,589\,760\,z^{13/2} -
$$

$$
293\,362\,036\,899\,840\,z^6 + 14\,906\,252\,958\,105\,600\,z^{11/2} - 3\,982\,454\,371\,123\,200\,z^5 +
$$

$$
118\,850\,097\,158\,553\,600\,z^{9/2} - 33\,485\,647\,645\,900\,800\,z^4 + 372\,727\,918\,957\,363\,200\,z^{7/2} -
$$

$$
124\,405\,260\,908\,544\,000\,z^3 - 203\,073\,293\,541\,888\,000\,z^{5/2} + 528\,264\,986\,578\,560\,000\,z^2 -
$$

$$
5\,526\,972\,422\,078\,184\,000\,z^{3/2} - 28\,095\,443\,145\,564\,102\,000\,z - 52\,391\,092\,750\,949\,452\,500\,\sqrt{z} +
$$

$$
e^{4\sqrt{z}}\,\left(274\,877\,906\,944\,z^{19/2} + 68\,719\,476\,736\,z^9 - 3\,899\,830\,304\,768\,z^{17/2} - 923\,417\,968\,640\,z^8 -\right.
$$

$$
63\,973\,537\,873\,920\,z^{15/2} - 16\,508\,780\,544\,000\,z^7 - 1\,121\,344\,825\,589\,760\,z^{13/2} -
$$

$$
293\,362\,036\,899\,840\,z^6 - 14\,906\,252\,958\,105\,600\,z^{11/2} - 3\,982\,454\,371\,123\,200\,z^5 -
$$

$$
118\,850\,097\,158\,553\,600\,z^{9/2} - 33\,485\,647\,645\,900\,800\,z^4 - 372\,727\,918\,957\,363\,200\,z^{7/2} -
$$

$$
124\,405\,260\,908\,544\,000\,z^3 + 203\,073\,293\,541\,888\,000\,z^{5/2} + 528\,264\,986\,578\,560\,000\,z^2 +
$$

$$
5\,526\,972\,422\,078\,184\,000\,z^{3/2} - 28\,095\,443\,145\,564\,102\,000\,z +
$$

$$
\left.\left.\left.52\,391\,092\,750\,949\,452\,500\,\sqrt{z} - 39\,293\,319\,563\,212\,089\,375\right) - 39\,293\,319\,563\,212\,089\,375\right) +
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(1\,099\,511\,627\,776\,z^{10} - 15\,805\,479\,649\,280\,z^9 - 253\,381\,595\,627\,520\,z^8 -\right.
$$

$$
4\,434\,177\,923\,481\,600\,z^7 - 58\,683\,573\,456\,076\,800\,z^6 - 462\,133\,140\,966\,604\,800\,z^5 -
$$

$$
1\,371\,957\,762\,244\,608\,000\,z^4 + 1\,126\,965\,304\,700\,928\,000\,z^3 - 3\,565\,788\,659\,405\,280\,000\,z^2 +
$$

$$
\left.13\,817\,431\,055\,195\,460\,000\,z - 39\,293\,319\,563\,212\,089\,375\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) +
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(1\,099\,511\,627\,776\,z^{10} - 15\,805\,479\,649\,280\,z^9 - 253\,381\,595\,627\,520\,z^8 - 4\,434\,177\,923\,481\,600\,z^7 -\right.
$$

$$
58\,683\,573\,456\,076\,800\,z^6 - 462\,133\,140\,966\,604\,800\,z^5 - 1\,371\,957\,762\,244\,608\,000\,z^4 +
$$

$$
1\,126\,965\,304\,700\,928\,000\,z^3 - 3\,565\,788\,659\,405\,280\,000\,z^2 + 13\,817\,431\,055\,195\,460\,000\,z -
$$

$$
\left.\left.39\,293\,319\,563\,212\,089\,375\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big) \Big/ \left(1\,340\,609\,019\,077\,512\,396\,800\,z^{17/4}\right)
$$

07.22.03.8039.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) = $$

$$ \left(221\left(\sqrt{\pi}\,\left(-1\,099\,511\,627\,776\,z^{10} - 15\,805\,479\,649\,280\,z^9 + 253\,381\,595\,627\,520\,z^8 - 4\,434\,177\,923\,481\,600\,z^7 + \right.\right.\right. $$

$$ 58\,683\,573\,456\,076\,800\,z^6 - 462\,133\,140\,966\,604\,800\,z^5 + 1\,371\,957\,762\,244\,608\,000\,z^4 + $$

$$ 1\,126\,965\,304\,700\,928\,000\,z^3 + 3\,565\,788\,659\,405\,280\,000\,z^2 + $$

$$ \left.\left.\left. 13\,817\,431\,055\,195\,460\,000\,z + 39\,293\,319\,563\,212\,089\,375\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. \right. $$

$$ 2\sqrt[4]{z}\,\left(\left(-68\,719\,476\,736\,z^9 - 923\,417\,968\,640\,z^8 + 16\,508\,780\,544\,000\,z^7 - 293\,362\,036\,899\,840\,z^6 + \right.\right. $$

$$ 3\,982\,454\,371\,123\,200\,z^5 - 33\,485\,647\,645\,900\,800\,z^4 + 124\,405\,260\,908\,544\,000\,z^3 + $$

$$ 528\,264\,986\,578\,560\,000\,z^2 + 28\,095\,443\,145\,564\,102\,000\,z - 39\,293\,319\,563\,212\,089\,375\right)\cos\left(2\sqrt{z}\right) + $$

$$ 4\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 974\,957\,576\,192\,z^8 - 15\,993\,384\,468\,480\,z^7 + 280\,336\,206\,397\,440\,z^6 - \right. $$

$$ 3\,726\,563\,239\,526\,400\,z^5 + 29\,712\,524\,289\,638\,400\,z^4 - 93\,181\,979\,739\,340\,800\,z^3 - $$

$$ \left.\left.\left. 50\,768\,323\,385\,472\,000\,z^2 + 1\,381\,743\,105\,519\,546\,000\,z - 13\,097\,773\,187\,737\,363\,125\right) \right. \right. $$

$$ \left.\left.\left. \sin\left(2\sqrt{z}\right)\right)\right)\right) \Big/ \left(335\,152\,254\,769\,378\,099\,200\,z^{17/4}\right) $$

07.22.03.8040.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) = $$

$$ -\left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} - 16\,767\,552\,323\,584\,z^9 - 278\,455\,614\,701\,568\,z^8 - 5\,175\,575\,178\,117\,120\,z^7 - \right.\right.\right. $$

$$ 73\,165\,722\,007\,633\,920\,z^6 - 618\,834\,968\,130\,355\,200\,z^5 - 1\,944\,140\,941\,364\,428\,800\,z^4 + $$

$$ 2\,400\,613\,493\,870\,592\,000\,z^3 - 10\,740\,829\,427\,808\,480\,000\,z^2 + 271\,646\,140\,979\,533\,320\,000\,z + $$

$$ \left.\left.\left. 323\,328\,816\,698\,984\,971\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-1\,099\,511\,627\,776\,z^{10} + 16\,080\,357\,556\,224\,z^9 + \right.\right. \right. $$

$$ 287\,088\,498\,966\,528\,z^8 + 5\,364\,983\,235\,870\,720\,z^7 + 76\,891\,606\,808\,002\,560\,z^6 + 675\,341\,227\,524\,096\,000\,z^5 + $$

$$ 2\,492\,280\,528\,224\,256\,000\,z^4 - 1\,191\,671\,446\,597\,632\,000\,z^3 - 165\,338\,341\,519\,871\,520\,000\,z^2 - $$

$$ \left.\left.\left. 2\,293\,013\,013\,562\,531\,260\,000\,z - 969\,986\,450\,096\,954\,915\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right. \right. $$

$$ 2\sqrt{z}\,\left(-1\,099\,511\,627\,776\,z^{10} + 16\,492\,674\,416\,640\,z^9 + 282\,218\,006\,052\,864\,z^8 + 5\,249\,714\,903\,580\,672\,z^7 + \right. $$

$$ 74\,578\,756\,852\,776\,960\,z^6 + 639\,610\,941\,918\,412\,800\,z^5 + 2\,137\,803\,403\,051\,008\,000\,z^4 - $$

$$ 1\,582\,252\,723\,408\,896\,000\,z^3 + 3\,415\,935\,916\,384\,992\,000\,z^2 + 223\,708\,586\,689\,027\,440\,000\,z + $$

$$ \left.\left.\left. 969\,986\,450\,096\,954\,915\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(3\,390\,593\,641\,847\,193\,600\,\sqrt{2}\,z^{17/4}\right) $$

07.22.03.8041.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) = $$
$$ \left(\left(-2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} + 16\,767\,552\,323\,584\,z^9 - 278\,455\,614\,701\,568\,z^8 + 5\,175\,575\,178\,117\,120\,z^7 - \right.\right.\right. $$
$$ 73\,165\,722\,007\,633\,920\,z^6 + 618\,834\,968\,130\,355\,200\,z^5 - 1\,944\,140\,941\,364\,428\,800\,z^4 - $$
$$ 2\,400\,613\,493\,870\,592\,000\,z^3 - 10\,740\,829\,427\,808\,480\,000\,z^2 - $$
$$ \left.\left.\left. 271\,646\,140\,979\,533\,320\,000\,z + 323\,328\,816\,698\,984\,971\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. \right. $$
$$ \left(1\,099\,511\,627\,776\,z^{10} + 16\,080\,357\,556\,224\,z^9 - 287\,088\,498\,966\,528\,z^8 + 5\,364\,983\,235\,870\,720\,z^7 - \right. $$
$$ 76\,891\,606\,808\,002\,560\,z^6 + 675\,341\,227\,524\,096\,000\,z^5 - 2\,492\,280\,528\,224\,256\,000\,z^4 - $$
$$ 1\,191\,671\,446\,597\,632\,000\,z^3 + 165\,338\,341\,519\,871\,520\,000\,z^2 - $$
$$ \left. 2\,293\,013\,013\,562\,531\,260\,000\,z + 969\,986\,450\,096\,954\,915\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\,\left(-1\,099\,511\,627\,776\,z^{10} - 16\,492\,674\,416\,640\,z^9 + 282\,218\,006\,052\,864\,z^8 - 5\,249\,714\,903\,580\,672\,z^7 + \right. $$
$$ 74\,578\,756\,852\,776\,960\,z^6 - 639\,610\,941\,918\,412\,800\,z^5 + 2\,137\,803\,403\,051\,008\,000\,z^4 + $$
$$ 1\,582\,252\,723\,408\,896\,000\,z^3 + 3\,415\,935\,916\,384\,992\,000\,z^2 - 223\,708\,586\,689\,027\,440\,000\,z + $$
$$ \left. \left. 969\,986\,450\,096\,954\,915\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(3\,390\,593\,641\,847\,193\,600\,\sqrt{2}\,z^{17/4}\right) $$

For fixed z and $a_1 = -\frac{23}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.8042.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) = \left(\frac{16\,z^2}{105} + \frac{12\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,(8\,z + 21)\sinh\left(2\sqrt{z}\right) $$

07.22.03.8043.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) = \left(\frac{16\,z^2}{105} - \frac{12\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}(21 - 8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.8044.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) = \frac{1}{109\,643\,625\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\,\left(\left(524\,288\,z^6 + 1\,802\,240\,z^5 + 1\,280\,000\,z^4 - 5\,059\,200\,z^3 + 70\,621\,200\,z^2 + 184\,977\,000\,z + 109\,643\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 4\sqrt{z}\,\left(65\,536\,z^5 + 266\,240\,z^4 + 410\,880\,z^3 + 608\,400\,z^2 + 97\,262\,100\,z + 109\,643\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left. \left. 4\,z\left(131\,072\,z^5 + 483\,328\,z^4 + 483\,840\,z^3 - 767\,520\,z^2 - 9\,547\,200\,z - 109\,643\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8045.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) = \frac{1}{109\,643\,625\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(524\,288 z^6 - 1\,802\,240 z^5 + 1\,280\,000 z^4 + 5\,059\,200 z^3 + 70\,621\,200 z^2 - 184\,977\,000 z + 109\,643\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z}\left(65\,536 z^5 - 266\,240 z^4 + 410\,880 z^3 - 608\,400 z^2 + 97\,262\,100 z - 109\,643\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(131\,072 z^5 - 483\,328 z^4 + 483\,840 z^3 + 767\,520 z^2 - 9\,547\,200 z + 109\,643\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8046.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) = $$
$$ \frac{1}{69\,126\,750}\left(e^{-2\sqrt{z}}\left(-262\,144 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{23/4} - 262\,144 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{23/4} + \right.\right. $$
$$ 262\,144 e^{4\sqrt{z}} z^{11/2} - 262\,144 z^{11/2} + 65\,536 e^{4\sqrt{z}} z^5 + 65\,536 z^5 + 49\,152 e^{4\sqrt{z}} z^{9/2} - 49\,152 z^{9/2} + $$
$$ 61\,440 e^{4\sqrt{z}} z^4 + 61\,440 z^4 + 107\,520 e^{4\sqrt{z}} z^{7/2} - 107\,520 z^{7/2} + 241\,920 e^{4\sqrt{z}} z^3 + 241\,920 z^3 + $$
$$ 665\,280 e^{4\sqrt{z}} z^{5/2} - 665\,280 z^{5/2} + 2\,162\,160 e^{4\sqrt{z}} z^2 + 2\,162\,160 z^2 - 22\,176\,000 e^{4\sqrt{z}} z^{3/2} + 22\,176\,000 z^{3/2} + $$
$$ \left.\left. 57\,172\,500 e^{4\sqrt{z}} z + 57\,172\,500 z - 69\,126\,750 e^{4\sqrt{z}}\sqrt{z} + 69\,126\,750\sqrt{z} + 34\,563\,375 e^{4\sqrt{z}} + 34\,563\,375\right)\right) $$

07.22.03.8047.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) = $$
$$ \frac{1}{34\,563\,375}\left(-524\,288\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{23/4} + 2\left(131\,072 z^5 - 24\,576 z^4 + 53\,760 z^3 - 332\,640 z^2 - 11\,088\,000 z + 34\,563\,375\right)\right. $$
$$ \left.\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-65\,536 z^5 + 61\,440 z^4 - 241\,920 z^3 + 2\,162\,160 z^2 - 57\,172\,500 z + 34\,563\,375\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8048.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) = \frac{1}{5\,221\,125\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(-262\,144 z^6 + 983\,040 z^5 + 184\,320 z^4 - 377\,600 z^3 + 2\,818\,800 z^2 + 8\,424\,000 z + 5\,221\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(32\,768 z^5 - 102\,400 z^4 - 44\,800 z^3 + 207\,600 z^2 - 4\,247\,100 z - 5\,221\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(65\,536 z^5 - 229\,376 z^4 - 81\,920 z^3 + 107\,520 z^2 + 70\,200 z + 5\,221\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8049.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, -\frac{17}{4}; -z\right) = -\frac{1}{5\,221\,125\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(262\,144 z^6 + 983\,040 z^5 - 184\,320 z^4 - 377\,600 z^3 - 2\,818\,800 z^2 + 8\,424\,000 z - 5\,221\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 4\sqrt{z}\left(32\,768 z^5 + 102\,400 z^4 - 44\,800 z^3 - 207\,600 z^2 - 4\,247\,100 z + 5\,221\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. \left. 4 z\left(65\,536 z^5 + 229\,376 z^4 - 81\,920 z^3 - 107\,520 z^2 + 70\,200 z - 5\,221\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8050.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, -\frac{15}{4}; z\right) = $$
$$ \frac{1}{3\,638\,250}\left(e^{-2\sqrt{z}}\left(-65\,536 e^{4\sqrt{z}} z^{11/2} + 65\,536 z^{11/2} - 16\,384 e^{4\sqrt{z}} z^5 - 16\,384 z^5 + 4096 e^{2\sqrt{z}} \sqrt{2\pi}\,(16 z - 115)\right.\right. $$
$$ \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{19/4} + 4096 e^{2\sqrt{z}} \sqrt{2\pi}\,(16 z - 115) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{19/4} + 458\,752 e^{4\sqrt{z}} z^{9/2} - $$
$$ 458\,752 z^{9/2} + 102\,400 e^{4\sqrt{z}} z^4 + 102\,400 z^4 + 61\,440 e^{4\sqrt{z}} z^{7/2} - 61\,440 z^{7/2} + 49\,920 e^{4\sqrt{z}} z^3 + $$
$$ 49\,920 z^3 + 26\,880 e^{4\sqrt{z}} z^{5/2} - 26\,880 z^{5/2} - 105\,840 e^{4\sqrt{z}} z^2 - 105\,840 z^2 - 831\,600 e^{4\sqrt{z}} z^{3/2} + 831\,600 z^{3/2} + $$
$$ \left.\left. 2\,841\,300 e^{4\sqrt{z}} z + 2\,841\,300 z - 3\,638\,250 e^{4\sqrt{z}} \sqrt{z} + 3\,638\,250\sqrt{z} + 1\,819\,125 e^{4\sqrt{z}} + 1\,819\,125\right)\right) $$

07.22.03.8051.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, -\frac{15}{4}; -z\right) = $$
$$ \frac{1}{1\,819\,125}\left(8192\sqrt{\pi}\,(16 z + 115) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{19/4} - 2\left(32\,768 z^5 + 229\,376 z^4 - 30\,720 z^3 + 13\,440 z^2 + 415\,800 z - 1\,819\,125\right)\right. $$
$$ \left. \sin\left(2\sqrt{z}\right)\sqrt{z} + \left(16\,384 z^5 + 102\,400 z^4 - 49\,920 z^3 - 105\,840 z^2 - 2\,841\,300 z + 1\,819\,125\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8052.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, -\frac{13}{4}; z\right) = $$
$$ \frac{1}{921\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072 z^6 - 1\,433\,600 z^5 + 614\,400 z^4 - 105\,600 z^3 + 370\,800 z^2 + 1\,377\,000 z + 921\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 4\sqrt{z}\left(16\,384 z^5 - 168\,960 z^4 - 7680 z^3 - 75\,600 z^2 + 639\,900 z + 921\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left. \left. 4 z\left(32\,768 z^5 - 350\,208 z^4 + 76\,800 z^3 - 67\,680 z^2 + 97\,200 z - 921\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8053.01

$${}_1F_2\left(-\frac{23}{4};-\frac{7}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{921\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072z^6+1\,433\,600z^5+614\,400z^4+105\,600z^3+370\,800z^2-1\,377\,000z+921\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(16\,384z^5+168\,960z^4-7680z^3+75\,600z^2+639\,900z-921\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(32\,768z^5+350\,208z^4+76\,800z^3+67\,680z^2+97\,200z+921\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8054.01

$${}_1F_2\left(-\frac{23}{4};-\frac{7}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{242\,550}\left(e^{-2\sqrt{z}}\left(8192e^{4\sqrt{z}}z^{11/2}-8192z^{11/2}+2048e^{4\sqrt{z}}z^5+2048z^5-116\,224e^{4\sqrt{z}}z^{9/2}+116\,224z^{9/2}-\right.\right.$$
$$27\,520e^{4\sqrt{z}}z^4-27\,520z^4-32e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-3680z+2185\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}-$$
$$32e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-3680z+2185\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+51\,200e^{4\sqrt{z}}z^{7/2}-51\,200z^{7/2}-$$
$$2560e^{4\sqrt{z}}z^3-2560z^3-14\,400e^{4\sqrt{z}}z^{5/2}+14\,400z^{5/2}-24\,720e^{4\sqrt{z}}z^2-24\,720z^2-16\,800e^{4\sqrt{z}}z^{3/2}+$$
$$\left.16\,800z^{3/2}+170\,100e^{4\sqrt{z}}z+170\,100z-242\,550e^{4\sqrt{z}}\sqrt{z}+242\,550\sqrt{z}+121\,275e^{4\sqrt{z}}+121\,275\right)\Big)$$

07.22.03.8055.01

$${}_1F_2\left(-\frac{23}{4};-\frac{7}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{121\,275}\left(-64\sqrt{\pi}\left(256z^2+3680z+2185\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+2\left(4096z^5+58\,112z^4+25\,600z^3+7200z^2-8400z+121\,275\right)\right.$$
$$\left.\sin\left(2\sqrt{z}\right)\sqrt{z}-\left(2048z^5+27\,520z^4-2560z^3+24\,720z^2+170\,100z-121\,275\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.8056.01

$${}_1F_2\left(-\frac{23}{4};-\frac{7}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{354\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-65\,536z^6+1\,187\,840z^5-1\,219\,840z^4-499\,200z^3+104\,400z^2+450\,000z+354\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(8192z^5-143\,360z^4+73\,440z^3+3600z^2-166\,500z-354\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(16\,384z^5-292\,864z^4+237\,120z^3+115\,200z^2-117\,000z+354\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8057.01

$${}_1F_2\left(-\frac{23}{4};-\frac{7}{2},-\frac{9}{4};-z\right)=$$
$$-\frac{1}{354\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536z^6+1\,187\,840z^5+1\,219\,840z^4-499\,200z^3-104\,400z^2+450\,000z-354\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(8192z^5+143\,360z^4+73\,440z^3-3600z^2-166\,500z+354\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(16\,384z^5+292\,864z^4+237\,120z^3-115\,200z^2-117\,000z-354\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8058.01

$${}_1F_2\left(-\frac{23}{4};-\frac{7}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{132\,300}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-88\,320z^2+104\,880z+98\,325\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left(4096z^3-88\,320z^2+104\,880z+98\,325\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-$$
$$2\left(-2048z^{11/2}+512z^5+43\,776z^{9/2}-10\,560z^4-45\,000z^{7/2}+4650z^3-46\,080z^{5/2}+720z^2+\right.$$
$$18\,000z^{3/2}-35\,100z-66\,150\sqrt{z}+e^{4\sqrt{z}}\left(2048z^{11/2}+512z^5-43\,776z^{9/2}-10\,560z^4+45\,000z^{7/2}+\right.$$
$$\left.\left.\left.\left.4650z^3+46\,080z^{5/2}+720z^2-18\,000z^{3/2}-35\,100z+66\,150\sqrt{z}-33\,075\right)-33\,075\right)\right)\right)$$

07.22.03.8059.01

$${}_1F_2\left(-\frac{23}{4};-\frac{7}{2},-\frac{7}{4};-z\right)=\frac{1}{33\,075}\left(\sqrt{\pi}\left(4096z^3+88\,320z^2+104\,880z-98\,325\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+\right.$$
$$2\left(-1024z^5-21\,888z^4-22\,500z^3+23\,040z^2+9000z+33\,075\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left.\left(512z^5+10\,560z^4+4650z^3-720z^2-35\,100z+33\,075\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.8060.01

$${}_1F_2\left(-\frac{23}{4};-\frac{7}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{275\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768z^6-829\,440z^5+1\,345\,920z^4+1\,661\,800z^3+982\,800z^2+189\,000z+275\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(4096z^5-101\,120z^4+110\,320z^3+186\,375z^2-31\,500z+275\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4z\left(8192z^5-205\,312z^4+287\,840z^3+433\,650z^2+252\,000z-275\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8061.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, -\frac{5}{4}; -z\right) = \frac{1}{275\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768 z^6 + 829\,440 z^5 + 1\,345\,920 z^4 - 1\,661\,800 z^3 + 982\,800 z^2 - 189\,000 z + 275\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4096 z^5 + 101\,120 z^4 + 110\,320 z^3 - 186\,375 z^2 - 31\,500 z - 275\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8192 z^5 + 205\,312 z^4 + 287\,840 z^3 - 433\,650 z^2 + 252\,000 z + 275\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8062.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, -\frac{3}{4}; z\right) = \frac{1}{4\,838\,400}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 1\,884\,160 z^3 + 3\,356\,160 z^2 + 6\,292\,800 z + 7\,571\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} - e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 1\,884\,160 z^3 + 3\,356\,160 z^2 + 6\,292\,800 z + 7\,571\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} + 4\left(-16\,384 z^{11/2} + 4096 z^5 + 467\,968 z^{9/2} - 113\,920 z^4 - 757\,440 z^{7/2} + 114\,480 z^3 - 1\,578\,900 z^{5/2} + 290\,385 z^2 - 1\,843\,200 z^{3/2} - 115\,200 z + 1\,209\,600\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^{11/2} + 4096 z^5 - 467\,968 z^{9/2} - 113\,920 z^4 + 757\,440 z^{7/2} + 114\,480 z^3 + 1\,578\,900 z^{5/2} + 290\,385 z^2 + 1\,843\,200 z^{3/2} - 115\,200 z - 1\,209\,600\sqrt{z} + 604\,800\right) + 604\,800\right)\right)\right) $$

07.22.03.8063.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) = \frac{1}{1\,209\,600}\left(2\left(\left(-4096 z^5 - 113\,920 z^4 - 114\,480 z^3 + 290\,385 z^2 + 115\,200 z + 604\,800\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(4096 z^5 + 116\,992 z^4 + 189\,360 z^3 - 394\,725 z^2 + 460\,800 z + 302\,400\right)\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, z^{7/4}\left(65\,536 z^4 + 1\,884\,160 z^3 + 3\,356\,160 z^2 - 6\,292\,800 z + 7\,571\,025\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.8064.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) = \frac{1}{3\,969\,000\sqrt{2}}\left(\sqrt[4]{z}\left(-2\left(65\,536 z^6 - 2\,129\,920 z^5 + 4\,723\,200 z^4 + 9\,993\,600 z^3 + 17\,506\,125 z^2 + 9\,072\,000 z - 1\,984\,500\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(65\,536 z^5 - 2\,088\,960 z^4 + 3\,502\,080 z^3 + 10\,130\,400 z^2 + 17\,137\,575 z - 15\,876\,000\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(65\,536 z^5 - 2\,113\,536 z^4 + 4\,216\,320 z^3 + 10\,463\,040 z^2 + 19\,150\,425 z + 7\,938\,000\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8065.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) = \frac{1}{3\,969\,000\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(-2\left(65\,536 z^6 + 2\,129\,920 z^5 + 4\,723\,200 z^4 - 9\,993\,600 z^3 + 17\,506\,125 z^2 - 9\,072\,000 z - 1\,984\,500\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \sqrt{z}\left(65\,536 z^5 + 2\,088\,960 z^4 + 3\,502\,080 z^3 - 10\,130\,400 z^2 + 17\,137\,575 z + 15\,876\,000\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 2 z\left(65\,536 z^5 + 2\,113\,536 z^4 + 4\,216\,320 z^3 - 10\,463\,040 z^2 + 19\,150\,425 z - 7\,938\,000\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8066.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) = $$
$$ \frac{1}{516\,096\,000}\left(e^{-2\sqrt{z}}\left(-4\left(-262\,144 z^{11/2} + 65\,536 z^5 + 9\,371\,648 z^{9/2} - 2\,293\,760 z^4 - 20\,715\,520 z^{7/2} + 3\,627\,520 z^3 - \right.\right.\right. $$
$$ 63\,924\,480 z^{5/2} + 14\,444\,160 z^2 - 156\,596\,100 z^{3/2} + 30\,008\,925 z - 129\,024\,000\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(262\,144 z^{11/2} + 65\,536 z^5 - 9\,371\,648 z^{9/2} - 2\,293\,760 z^4 + 20\,715\,520 z^{7/2} + 3\,627\,520 z^3 + 63\,924\,480\right. $$
$$ \left.\left. z^{5/2} + 14\,444\,160 z^2 + 156\,596\,100 z^{3/2} + 30\,008\,925 z + 129\,024\,000\sqrt{z} - 64\,512\,000\right) - 64\,512\,000\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(1\,048\,576 z^5 - 37\,683\,200 z^4 + 89\,497\,600 z^3 + 251\,712\,000 z^2 + 605\,682\,000 z + 582\,968\,925\right) $$
$$ \left.\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\right.\right.\right. $$
$$ \left.\left.\left.\left(1\,048\,576 z^5 - 37\,683\,200 z^4 + 89\,497\,600 z^3 + 251\,712\,000 z^2 + 605\,682\,000 z + 582\,968\,925\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)\right) $$

07.22.03.8067.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) = \frac{1}{129\,024\,000} $$
$$ \left(\sqrt{\pi}\, z^{3/4}\left(1\,048\,576 z^5 + 37\,683\,200 z^4 + 89\,497\,600 z^3 - 251\,712\,000 z^2 + 605\,682\,000 z - 582\,968\,925\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ 2\left(\left(65\,536 z^5 + 2\,293\,760 z^4 + 3\,627\,520 z^3 - 14\,444\,160 z^2 + 30\,008\,925 z + 64\,512\,000\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left. \left. 4\sqrt{z}\left(65\,536 z^5 + 2\,342\,912 z^4 + 5\,178\,880 z^3 - 15\,981\,120 z^2 + 39\,149\,025 z - 32\,256\,000\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8068.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) = \frac{1}{1\,397\,088\,000\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(2\left(1\,048\,576 z^6 - 41\,615\,360 z^5 + 117\,022\,720 z^4 + 353\,318\,400 z^3 + 1\,043\,182\,800 z^2 + 1\,450\,882\,125 z + 698\,544\,000\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(1\,048\,576 z^5 - 40\,960\,000 z^4 + 92\,774\,400 z^3 + 368\,755\,200 z^2 + 1\,140\,123\,600 z + 1\,159\,302\,375\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2 z\left(1\,048\,576 z^5 - 41\,353\,216 z^4 + 107\,028\,480 z^3 + \right. $$
$$ \left.\left. 368\,248\,320 z^2 + 1\,120\,165\,200 z + 1\,634\,873\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.8069.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) = \frac{1}{1\,397\,088\,000\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(2\left(1\,048\,576 z^6 + 41\,615\,360 z^5 + 117\,022\,720 z^4 - 353\,318\,400 z^3 + 1\,043\,182\,800 z^2 - 1\,450\,882\,125 z + 698\,544\,000\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(1\,048\,576 z^5 + 40\,960\,000 z^4 + 92\,774\,400 z^3 - 368\,755\,200 z^2 + 1\,140\,123\,600 z - 1\,159\,302\,375\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2 z\left(1\,048\,576 z^5 + 41\,353\,216 z^4 + 107\,028\,480 z^3 - \right. $$
$$ \left.\left. 368\,248\,320 z^2 + 1\,120\,165\,200 z - 1\,634\,873\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.8070.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) = $$
$$ \frac{1}{198\,180\,864\,000\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 180\,092\,928 z^{9/2} - 44\,236\,800 z^4 - \right.\right.\right. $$
$$ 504\,791\,040 z^{7/2} + 95\,723\,520 z^3 - 2\,050\,836\,480 z^{5/2} + 496\,949\,760 z^2 - 7\,536\,686\,400 z^{3/2} + $$
$$ 1\,844\,024\,400 z - 14\,567\,080\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 180\,092\,928 z^{9/2} - \right. $$
$$ 44\,236\,800 z^4 + 504\,791\,040 z^{7/2} + 95\,723\,520 z^3 + 2\,050\,836\,480 z^{5/2} + 496\,949\,760 z^2 + $$
$$ \left.\left. 7\,536\,686\,400 z^{3/2} + 1\,844\,024\,400 z + 14\,567\,080\,500\sqrt{z} + 1\,460\,993\,625\right) + 1\,460\,993\,625\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 723\,517\,440 z^5 + 2\,147\,942\,400 z^4 + 8\,054\,784\,000 z^3 + \right. $$
$$ \left. 29\,072\,736\,000 z^2 + 55\,965\,016\,800 z + 26\,233\,601\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 723\,517\,440 z^5 + 2\,147\,942\,400 z^4 + 8\,054\,784\,000 z^3 + \right. $$
$$ \left.\left. 29\,072\,736\,000 z^2 + 55\,965\,016\,800 z + 26\,233\,601\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Bigg) $$

07.22.03.8071.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = $$
$$ \frac{1}{49\,545\,216\,000\sqrt[4]{z}}\left(\sqrt{\pi}\left(16\,777\,216 z^6 + 723\,517\,440 z^5 + 2\,147\,942\,400 z^4 - 8\,054\,784\,000 z^3 + 29\,072\,736\,000 z^2 - \right.\right. $$
$$ \left. 55\,965\,016\,800 z + 26\,233\,601\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z} $$
$$ \left(\left(1\,048\,576 z^5 + 44\,236\,800 z^4 + 95\,723\,520 z^3 - 496\,949\,760 z^2 + 1\,844\,024\,400 z - 1\,460\,993\,625\right)\cos\left(2\sqrt{z}\right) - 4\sqrt{z}\right. $$
$$ \left.\left.\left(1\,048\,576 z^5 + 45\,023\,232 z^4 + 126\,197\,760 z^3 - 512\,709\,120 z^2 + 1\,884\,171\,600 z - 3\,641\,770\,125\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8072.01

$${}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) =$$
$$\frac{1}{193\,729\,536\,000\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6 - 786\,432\,000\,z^5 + 2\,678\,784\,000\,z^4 + 10\,537\,779\,200\,z^3 + 43\,851\,974\,400\,z^2 + 102\,440\,052\,000\,z + 71\,766\,820\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(16\,777\,216\,z^6 - 775\,946\,240\,z^5 + 2\,215\,444\,480\,z^4 + 11\,086\,233\,600\,z^3 + 48\,407\,673\,600\,z^2 + 113\,513\,400\,000\,z - 75\,293\,843\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,777\,216\,z^6 - 782\,237\,696\,z^5 + 2\,488\,729\,600\,z^4 + 10\,931\,159\,040\,z^3 + 46\,397\,894\,400\,z^2 + 113\,318\,805\,600\,z + 75\,293\,843\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8073.01

$${}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) =$$
$$\frac{1}{193\,729\,536\,000\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6 + 786\,432\,000\,z^5 + 2\,678\,784\,000\,z^4 - 10\,537\,779\,200\,z^3 + 43\,851\,974\,400\,z^2 - 102\,440\,052\,000\,z + 71\,766\,820\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,777\,216\,z^6 - 775\,946\,240\,z^5 - 2\,215\,444\,480\,z^4 + 11\,086\,233\,600\,z^3 - 48\,407\,673\,600\,z^2 + 113\,513\,400\,000\,z + 75\,293\,843\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216\,z^6 + 782\,237\,696\,z^5 + 2\,488\,729\,600\,z^4 - 10\,931\,159\,040\,z^3 + 46\,397\,894\,400\,z^2 - 113\,318\,805\,600\,z + 75\,293\,843\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8074.01

$${}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) =$$
$$\frac{1}{17\,757\,005\,414\,400\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 + 3\,363\,831\,808\,z^{11/2} - 828\,375\,040\,z^5 - 11\,422\,924\,800\,z^{9/2} + 2\,277\,703\,680\,z^4 - 57\,424\,281\,600\,z^{7/2} + 14\,352\,629\,760\,z^3 - 280\,357\,862\,400\,z^{5/2} + 73\,124\,755\,200\,z^2 - 825\,510\,268\,800\,z^{3/2} + 186\,870\,045\,600\,z - 664\,584\,574\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 - 3\,363\,831\,808\,z^{11/2} - 828\,375\,040\,z^5 + 11\,422\,924\,800\,z^{9/2} + 2\,277\,703\,680\,z^4 + 57\,424\,281\,600\,z^{7/2} + 14\,352\,629\,760\,z^3 + 280\,357\,862\,400\,z^{5/2} + 73\,124\,755\,200\,z^2 + 825\,510\,268\,800\,z^{3/2} + 186\,870\,045\,600\,z + 664\,584\,574\,500\sqrt{z} - 498\,438\,430\,875\right) - 498\,438\,430\,875\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456\,z^7 - 13\,505\,658\,880\,z^6 + 48\,113\,909\,760\,z^5 + 225\,533\,952\,000\,z^4 + 1\,085\,382\,144\,000\,z^3 + 3\,134\,040\,940\,800\,z^2 + 2\,938\,163\,382\,000\,z - 498\,438\,430\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456\,z^7 - 13\,505\,658\,880\,z^6 + 48\,113\,909\,760\,z^5 + 225\,533\,952\,000\,z^4 + 1\,085\,382\,144\,000\,z^3 + 3\,134\,040\,940\,800\,z^2 + 2\,938\,163\,382\,000\,z - 498\,438\,430\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.8075.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{9}{4}; -z\right) = \frac{1}{4\,439\,251\,353\,600\, z^{5/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\, z^7 + 13\,505\,658\,880\, z^6 + 48\,113\,909\,760\, z^5 - 225\,533\,952\,000\, z^4 + 1\,085\,382\,144\,000\, z^3 - 3\,134\,040\,940\,800\, z^2 + 2\,938\,163\,382\,000\, z + 498\,438\,430\,875\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\,\left(\left(-16\,777\,216\, z^6 - 828\,375\,040\, z^5 - 2\,277\,703\,680\, z^4 + 14\,352\,629\,760\, z^3 - 73\,124\,755\,200\, z^2 + 186\,870\,045\,600\, z + 498\,438\,430\,875\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(16\,777\,216\, z^6 + 840\,957\,952\, z^5 + 2\,855\,731\,200\, z^4 - 14\,356\,070\,400\, z^3 + 70\,089\,465\,600\, z^2 - 206\,377\,567\,200\, z + 166\,146\,143\,625\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8076.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{11}{4}; z\right) = \left(\left(2\sqrt{z}\,\left(268\,435\,456\, z^7 - 14\,512\,291\,840\, z^6 + 58\,054\,410\,240\, z^5 + 281\,842\,483\,200\, z^4 + 1\,513\,977\,753\,600\, z^3 + 4\,992\,190\,444\,800\, z^2 + 5\,437\,454\,022\,000\, z + 1\,581\,170\,716\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(268\,435\,456\, z^7 - 14\,344\,519\,680\, z^6 + 49\,435\,115\,520\, z^5 + 296\,873\,164\,800\, z^4 + 1\,660\,718\,592\,000\, z^3 + 5\,742\,869\,932\,800\, z^2 + 3\,614\,104\,494\,000\, z + 4\,743\,512\,148\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(268\,435\,456\, z^7 - 14\,445\,182\,976\, z^6 + 54\,531\,194\,880\, z^5 + 291\,181\,363\,200\, z^4 + 1\,585\,405\,440\,000\, z^3 + 5\,405\,572\,972\,800\, z^2 + 6\,505\,388\,089\,200\, z - 4\,743\,512\,148\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(13\,284\,311\,040\,000\sqrt{2}\; z^{5/4}\right) $$

07.22.03.8077.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{11}{4}; -z\right) = \left(\left(2\sqrt{z}\,\left(268\,435\,456\, z^7 + 14\,512\,291\,840\, z^6 + 58\,054\,410\,240\, z^5 - 281\,842\,483\,200\, z^4 + 1\,513\,977\,753\,600\, z^3 - 4\,992\,190\,444\,800\, z^2 + 5\,437\,454\,022\,000\, z - 1\,581\,170\,716\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(268\,435\,456\, z^7 + 14\,344\,519\,680\, z^6 + 49\,435\,115\,520\, z^5 - 296\,873\,164\,800\, z^4 + 1\,660\,718\,592\,000\, z^3 - 5\,742\,869\,932\,800\, z^2 + 3\,614\,104\,494\,000\, z - 4\,743\,512\,148\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(268\,435\,456\, z^7 + 14\,445\,182\,976\, z^6 + 54\,531\,194\,880\, z^5 - 291\,181\,363\,200\, z^4 + 1\,585\,405\,440\,000\, z^3 - 5\,405\,572\,972\,800\, z^2 + 6\,505\,388\,089\,200\, z + 4\,743\,512\,148\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(13\,284\,311\,040\,000\sqrt{2}\; z^{5/4}\right) $$

07.22.03.8078.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{13}{4}; z\right) = $$
$$ \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 + 61\,538\,828\,288\,z^{13/2} - 15\,183\,380\,480\,z^6 - 245\,471\,641\,600\,z^{11/2} + \right.\right.\right. $$
$$ 50\,672\,435\,200\,z^5 - 1\,468\,933\,079\,040\,z^{9/2} + 372\,875\,919\,360\,z^4 - 8\,935\,471\,104\,000\,z^{7/2} + $$
$$ 2\,377\,789\,747\,200\,z^3 - 35\,061\,922\,022\,400\,z^{5/2} + 9\,245\,028\,844\,800\,z^2 - $$
$$ 50\,128\,665\,048\,000\,z^{3/2} - 2\,658\,338\,298\,000\,z + 76\,427\,226\,067\,500\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 - 61\,538\,828\,288\,z^{13/2} - 15\,183\,380\,480\,z^6 + 245\,471\,641\,600\,z^{11/2} + \right. $$
$$ 50\,672\,435\,200\,z^5 + 1\,468\,933\,079\,040\,z^{9/2} + 372\,875\,919\,360\,z^4 + 8\,935\,471\,104\,000\,z^{7/2} + $$
$$ 2\,377\,789\,747\,200\,z^3 + 35\,061\,922\,022\,400\,z^{5/2} + 9\,245\,028\,844\,800\,z^2 + 50\,128\,665\,048\,000\,z^{3/2} - $$
$$ \left.\left.\left. 2\,658\,338\,298\,000\,z - 76\,427\,226\,067\,500\sqrt{z} + 57\,320\,419\,550\,625\right) + 57\,320\,419\,550\,625\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8 - 246\,960\,619\,520\,z^7 + 1\,026\,430\,074\,880\,z^6 + 5\,773\,669\,171\,200\,z^5 + \right. $$
$$ 34\,732\,228\,608\,000\,z^4 + 133\,719\,080\,140\,800\,z^3 + 188\,042\,456\,448\,000\,z^2 - $$
$$ \left. 63\,800\,119\,152\,000\,z + 57\,320\,419\,550\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8 - 246\,960\,619\,520\,z^7 + 1\,026\,430\,074\,880\,z^6 + 5\,773\,669\,171\,200\,z^5 + \right. $$
$$ 34\,732\,228\,608\,000\,z^4 + 133\,719\,080\,140\,800\,z^3 + 188\,042\,456\,448\,000\,z^2 - $$
$$ \left.\left. 63\,800\,119\,152\,000\,z + 57\,320\,419\,550\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big/\left(1\,010\,176\,308\,019\,200\,z^{9/4}\right) $$

07.22.03.8079.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) = \frac{1}{252\,544\,077\,004\,800\,z^{9/4}} $$
$$ \left(\sqrt{\pi}\left(4\,294\,967\,296\,z^8 + 246\,960\,619\,520\,z^7 + 1\,026\,430\,074\,880\,z^6 - 5\,773\,669\,171\,200\,z^5 + 34\,732\,228\,608\,000\,z^4 - \right.\right. $$
$$ \left. 133\,719\,080\,140\,800\,z^3 + 188\,042\,456\,448\,000\,z^2 + 63\,800\,119\,152\,000\,z + 57\,320\,419\,550\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - $$
$$ 2\sqrt[4]{z}\left(\left(-268\,435\,456\,z^7 - 15\,183\,380\,480\,z^6 - 50\,672\,435\,200\,z^5 + 372\,875\,919\,360\,z^4 - 2\,377\,789\,747\,200\,z^3 + \right.\right. $$
$$ \left. 9\,245\,028\,844\,800\,z^2 + 2\,658\,338\,298\,000\,z + 57\,320\,419\,550\,625\right)\cos\left(2\sqrt{z}\right) + $$
$$ 4\sqrt{z}\left(268\,435\,456\,z^7 + 15\,384\,707\,072\,z^6 + 61\,367\,910\,400\,z^5 - 367\,233\,269\,760\,z^4 + \right. $$
$$ \left.\left.\left. 2\,233\,867\,776\,000\,z^3 - 8\,765\,480\,505\,600\,z^2 + 12\,532\,166\,262\,000\,z + 19\,106\,806\,516\,875\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8080.01

$${}_1F_2\left(-\frac{23}{4};-\frac{7}{2},\frac{15}{4};z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-263\,066\,746\,880\,z^7+1\,208\,630\,640\,640\,z^6+6\,985\,718\,169\,600\,z^5+45\,978\,343\,833\,600\,z^4+\right.\right.\right.$$
$$\left.\left.\left.195\,996\,734\,668\,800\,z^3+300\,448\,092\,672\,000\,z^2-101\,194\,925\,832\,000\,z-276\,704\,875\,321\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$\left(4\,294\,967\,296\,z^8-260\,382\,392\,320\,z^7+1\,051\,428\,126\,720\,z^6+7\,349\,207\,040\,000\,z^5+49\,984\,634\,880\,000\,z^4+\right.$$
$$224\,199\,418\,060\,800\,z^3+346\,954\,031\,424\,000\,z^2-1\,568\,521\,350\,396\,000\,z-830\,114\,625\,965\,625\Big)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-261\,993\,005\,056\,z^7+1\,144\,541\,675\,520\,z^6+\right.$$
$$7\,193\,021\,644\,800\,z^5+47\,792\,701\,440\,000\,z^4+208\,956\,329\,164\,800\,z^3+354\,664\,121\,011\,200\,z^2-$$
$$\left.\left.202\,389\,851\,664\,000\,z+830\,114\,625\,965\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(656\,969\,564\,160\,000\sqrt{2}\;z^{9/4}\right)$$

07.22.03.8081.01

$${}_1F_2\left(-\frac{23}{4};-\frac{7}{2},\frac{15}{4};-z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+263\,066\,746\,880\,z^7+1\,208\,630\,640\,640\,z^6-6\,985\,718\,169\,600\,z^5+45\,978\,343\,833\,600\,z^4-\right.\right.\right.$$
$$\left.\left.\left.195\,996\,734\,668\,800\,z^3+300\,448\,092\,672\,000\,z^2+101\,194\,925\,832\,000\,z-276\,704\,875\,321\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$\left(4\,294\,967\,296\,z^8+260\,382\,392\,320\,z^7+1\,051\,428\,126\,720\,z^6-7\,349\,207\,040\,000\,z^5+49\,984\,634\,880\,000\,z^4-\right.$$
$$224\,199\,418\,060\,800\,z^3+346\,954\,031\,424\,000\,z^2+1\,568\,521\,350\,396\,000\,z-830\,114\,625\,965\,625\Big)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+261\,993\,005\,056\,z^7+1\,144\,541\,675\,520\,z^6-\right.$$
$$7\,193\,021\,644\,800\,z^5+47\,792\,701\,440\,000\,z^4-208\,956\,329\,164\,800\,z^3+354\,664\,121\,011\,200\,z^2+$$
$$\left.\left.202\,389\,851\,664\,000\,z+830\,114\,625\,965\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(656\,969\,564\,160\,000\sqrt{2}\;z^{9/4}\right)$$

07.22.03.8082.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) =
\left(13\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-17\,179\,869\,184\, z^{17/2} + 4\,294\,967\,296\, z^8 + 1\,108\,101\,562\,368\, z^{15/2} - 273\,804\,165\,120\, z^7 - \right.\right.\right.
$$
$$
5\,077\,456\,650\,240\, z^{13/2} + 1\,075\,084\,001\,280\, z^6 - 35\,219\,570\,688\,000\, z^{11/2} + 9\,013\,831\,925\,760\, z^5 -
$$
$$
256\,443\,560\,755\,200\, z^{9/2} + 68\,600\,925\,388\,800\, z^4 - 1\,254\,319\,511\,961\,600\, z^{7/2} +
$$
$$
345\,218\,601\,369\,600\, z^3 - 2\,465\,833\,176\,576\,000\, z^{5/2} + 437\,486\,531\,328\,000\, z^2 +
$$
$$
2\,515\,547\,555\,136\,000\, z^{3/2} - 6\,603\,312\,332\,232\,000\, z - 18\,571\,815\,934\,402\,500\,\sqrt{z} +
$$
$$
e^{4\sqrt{z}}\left(17\,179\,869\,184\, z^{17/2} + 4\,294\,967\,296\, z^8 - 1\,108\,101\,562\,368\, z^{15/2} - 273\,804\,165\,120\, z^7 + \right.
$$
$$
5\,077\,456\,650\,240\, z^{13/2} + 1\,075\,084\,001\,280\, z^6 + 35\,219\,570\,688\,000\, z^{11/2} + 9\,013\,831\,925\,760\, z^5 +
$$
$$
256\,443\,560\,755\,200\, z^{9/2} + 68\,600\,925\,388\,800\, z^4 + 1\,254\,319\,511\,961\,600\, z^{7/2} + 345\,218\,601\,369\,600\, z^3 +
$$
$$
\left.\left.\left.\left.2\,465\,833\,176\,576\,000\, z^{5/2} + 437\,486\,531\,328\,000\, z^2 - 2\,515\,547\,555\,136\,000\, z^{3/2} - 6\,603\,312\,332\,232\,000\right.\right.\right.\right.
$$
$$
\left.\left.\left.z + 18\,571\,815\,934\,402\,500\,\sqrt{z} - 13\,928\,861\,950\,801\,875\right) - 13\,928\,861\,950\,801\,875\right) +
$$
$$
e^{2\sqrt{z}}\,\sqrt{2\pi}\left(68\,719\,476\,736\, z^9 - 4\,445\,291\,151\,360\, z^8 + 21\,115\,132\,968\,960\, z^7 + 138\,568\,060\,108\,800\, z^6 + \right.
$$
$$
1\,000\,288\,183\,910\,400\, z^5 + 4\,813\,886\,885\,068\,800\, z^4 + 9\,026\,037\,909\,504\,000\, z^3 -
$$
$$
\left.4\,593\,608\,578\,944\,000\, z^2 + 8\,254\,140\,415\,290\,000\, z - 13\,928\,861\,950\,801\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) +
$$
$$
e^{2\sqrt{z}}\,\sqrt{2\pi}\left(68\,719\,476\,736\, z^9 - 4\,445\,291\,151\,360\, z^8 + 21\,115\,132\,968\,960\, z^7 + 138\,568\,060\,108\,800\, z^6 + \right.
$$
$$
1\,000\,288\,183\,910\,400\, z^5 + 4\,813\,886\,885\,068\,800\, z^4 + 9\,026\,037\,909\,504\,000\, z^3 - 4\,593\,608\,578\,944\,000\, z^2 +
$$
$$
\left.\left.\left.8\,254\,140\,415\,290\,000\, z - 13\,928\,861\,950\,801\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) \Big/ \left(581\,861\,553\,419\,059\,200\, z^{13/4}\right)
$$

07.22.03.8083.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) =
\left(13\left(\sqrt{\pi}\left(68\,719\,476\,736\, z^9 + 4\,445\,291\,151\,360\, z^8 + 21\,115\,132\,968\,960\, z^7 - 138\,568\,060\,108\,800\, z^6 + \right.\right.\right.
$$
$$
1\,000\,288\,183\,910\,400\, z^5 - 4\,813\,886\,885\,068\,800\, z^4 + 9\,026\,037\,909\,504\,000\, z^3 +
$$
$$
\left.4\,593\,608\,578\,944\,000\, z^2 + 8\,254\,140\,415\,290\,000\, z + 13\,928\,861\,950\,801\,875\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) -
$$
$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\, z^8 + 277\,025\,390\,592\, z^7 + 1\,269\,364\,162\,560\, z^6 - 8\,804\,892\,672\,000\, z^5 + \right.\right.
$$
$$
64\,110\,890\,188\,800\, z^4 - 313\,579\,877\,990\,400\, z^3 + 616\,458\,294\,144\,000\, z^2 + 628\,886\,888\,784\,000\, z +
$$
$$
4\,642\,953\,983\,600\,625\right)\sin\left(2\sqrt{z}\right) - \left(4\,294\,967\,296\, z^8 + 273\,804\,165\,120\, z^7 + 1\,075\,084\,001\,280\, z^6 - \right.
$$
$$
9\,013\,831\,925\,760\, z^5 + 68\,600\,925\,388\,800\, z^4 - 345\,218\,601\,369\,600\, z^3 + 437\,486\,531\,328\,000\, z^2 +
$$
$$
\left.\left.\left.\left.6\,603\,312\,332\,232\,000\, z - 13\,928\,861\,950\,801\,875\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) \Big/ \left(145\,465\,388\,354\,764\,800\, z^{13/4}\right)
$$

07.22.03.8084.01

$${}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 4\,702\,989\,189\,120\,z^8 + 24\,400\,782\,950\,400\,z^7 + 163\,671\,808\,409\,600\,z^6 + 1\,275\,187\,691\,520\,000\right.\right.\right.$$
$$z^5 + 6\,667\,968\,842\,956\,800\,z^4 + 13\,302\,122\,416\,128\,000\,z^3 -$$
$$\left.\left.\left.9\,714\,712\,879\,872\,000\,z^2 + 58\,819\,550\,639\,850\,000\,z + 88\,268\,855\,227\,678\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 -\right.$$
$$\left(68\,719\,476\,736\,z^9 - 4\,660\,039\,516\,160\,z^8 + 21\,576\,841\,953\,280\,z^7 + 171\,822\,179\,942\,400\,z^6 +\right.$$
$$1\,374\,483\,854\,131\,200\,z^5 + 7\,525\,393\,337\,548\,800\,z^4 + 16\,859\,395\,897\,344\,000\,z^3 -$$
$$\left.45\,335\,326\,772\,736\,000\,z^2 + 579\,973\,418\,674\,650\,000\,z + 264\,806\,565\,683\,034\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 4\,685\,809\,319\,936\,z^8 + 23\,251\,879\,198\,720\,z^7 + 168\,061\,399\,203\,840\,z^6 +\right.$$
$$1\,318\,260\,886\,732\,800\,z^5 + 7\,030\,591\,458\,508\,800\,z^4 + 15\,290\,491\,513\,651\,200\,z^3 - 8\,635\,300\,337\,664\,000\,z^2 -$$
$$\left.\left.15\,052\,745\,217\,510\,000\,z - 264\,806\,565\,683\,034\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(26\,629\,166\,333\,952\,000\sqrt{2}\; z^{13/4}\right)$$

07.22.03.8085.01

$${}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 4\,702\,989\,189\,120\,z^8 + 24\,400\,782\,950\,400\,z^7 - 163\,671\,808\,409\,600\,z^6 + 1\,275\,187\,691\,520\,000\right.\right.\right.$$
$$z^5 - 6\,667\,968\,842\,956\,800\,z^4 + 13\,302\,122\,416\,128\,000\,z^3 +$$
$$\left.\left.\left.9\,714\,712\,879\,872\,000\,z^2 + 58\,819\,550\,639\,850\,000\,z - 88\,268\,855\,227\,678\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 -\right.$$
$$\left(68\,719\,476\,736\,z^9 + 4\,660\,039\,516\,160\,z^8 + 21\,576\,841\,953\,280\,z^7 - 171\,822\,179\,942\,400\,z^6 +\right.$$
$$1\,374\,483\,854\,131\,200\,z^5 - 7\,525\,393\,337\,548\,800\,z^4 + 16\,859\,395\,897\,344\,000\,z^3 +$$
$$\left.45\,335\,326\,772\,736\,000\,z^2 + 579\,973\,418\,674\,650\,000\,z - 264\,806\,565\,683\,034\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 4\,685\,809\,319\,936\,z^8 + 23\,251\,879\,198\,720\,z^7 - 168\,061\,399\,203\,840\,z^6 +\right.$$
$$1\,318\,260\,886\,732\,800\,z^5 - 7\,030\,591\,458\,508\,800\,z^4 + 15\,290\,491\,513\,651\,200\,z^3 + 8\,635\,300\,337\,664\,000\,z^2 -$$
$$\left.\left.15\,052\,745\,217\,510\,000\,z + 264\,806\,565\,683\,034\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(26\,629\,166\,333\,952\,000\sqrt{2}\; z^{13/4}\right)$$

07.22.03.8086.01

$$
{}_1F_2\left(-\frac{23}{4};-\frac{7}{2},\frac{21}{4};z\right)=
$$

$$
\left(221\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}+19\,705\,309\,954\,048\,z^{17/2}-4\,874\,787\,880\,960\,z^{8}-\right.\right.\right.
$$

$$
101\,983\,998\,443\,520\,z^{15/2}+22\,017\,076\,101\,120\,z^{7}-804\,207\,124\,807\,680\,z^{13/2}+
$$

$$
206\,733\,217\,628\,160\,z^{6}-6\,818\,718\,390\,681\,600\,z^{11/2}+1\,823\,338\,974\,412\,800\,z^{5}-
$$

$$
39\,914\,713\,527\,091\,200\,z^{9/2}+11\,096\,232\,660\,172\,800\,z^{4}-98\,336\,366\,508\,441\,600\,z^{7/2}+
$$

$$
25\,771\,933\,845\,504\,000\,z^{3}+75\,009\,054\,371\,328\,000\,z^{5/2}-196\,212\,709\,300\,608\,000\,z^{2}+
$$

$$
449\,968\,568\,924\,952\,000\,z^{3/2}+3\,758\,935\,545\,123\,066\,000\,z+7\,484\,441\,821\,564\,207\,500\,\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\left(274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}-19\,705\,309\,954\,048\,z^{17/2}-4\,874\,787\,880\,960\,z^{8}+\right.
$$

$$
101\,983\,998\,443\,520\,z^{15/2}+22\,017\,076\,101\,120\,z^{7}+804\,207\,124\,807\,680\,z^{13/2}+206\,733\,217\,628\,160\,z^{6}+
$$

$$
6\,818\,718\,390\,681\,600\,z^{11/2}+1\,823\,338\,974\,412\,800\,z^{5}+39\,914\,713\,527\,091\,200\,z^{9/2}+
$$

$$
11\,096\,232\,660\,172\,800\,z^{4}+98\,336\,366\,508\,441\,600\,z^{7/2}+25\,771\,933\,845\,504\,000\,z^{3}-
$$

$$
75\,009\,054\,371\,328\,000\,z^{5/2}-196\,212\,709\,300\,608\,000\,z^{2}-449\,968\,568\,924\,952\,000\,z^{3/2}+
$$

$$
\left.3\,758\,935\,545\,123\,066\,000\,z-7\,484\,441\,821\,564\,207\,500\,\sqrt{z}\;+5\,613\,331\,366\,173\,155\,625\right)+
$$

$$
\left.5\,613\,331\,366\,173\,155\,625\right)+e^{2\sqrt{z}}\;\sqrt{2\,\pi}\;\left(1\,099\,511\,627\,776\,z^{10}-79\,027\,398\,246\,400\,z^{9}+\right.
$$

$$
422\,302\,659\,379\,200\,z^{8}+3\,167\,269\,945\,344\,000\,z^{7}+26\,674\,351\,570\,944\,000\,z^{6}+
$$

$$
154\,044\,380\,322\,201\,600\,z^{5}+361\,041\,516\,380\,160\,000\,z^{4}-244\,992\,457\,543\,680\,000\,z^{3}+
$$

$$
\left.660\,331\,233\,223\,200\,000\,z^{2}-2\,228\,617\,912\,128\,300\,000\,z+5\,613\,331\,366\,173\,155\,625\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\;\sqrt{2\,\pi}\;\left(1\,099\,511\,627\,776\,z^{10}-79\,027\,398\,246\,400\,z^{9}+422\,302\,659\,379\,200\,z^{8}+\right.
$$

$$
3\,167\,269\,945\,344\,000\,z^{7}+26\,674\,351\,570\,944\,000\,z^{6}+154\,044\,380\,322\,201\,600\,z^{5}+
$$

$$
361\,041\,516\,380\,160\,000\,z^{4}-244\,992\,457\,543\,680\,000\,z^{3}+660\,331\,233\,223\,200\,000\,z^{2}-
$$

$$
\left.\left.\left.2\,228\,617\,912\,128\,300\,000\,z+5\,613\,331\,366\,173\,155\,625\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)\Big/\left(372\,391\,394\,188\,197\,888\,000\,z^{17/4}\right)
$$

07.22.03.8087.01

$$
{}_1F_2\left(-\frac{23}{4};-\frac{7}{2},\frac{21}{4};-z\right)=
$$

$$
\left(221\left(\sqrt{\pi}\;\left(1\,099\,511\,627\,776\,z^{10}+79\,027\,398\,246\,400\,z^{9}+422\,302\,659\,379\,200\,z^{8}-3\,167\,269\,945\,344\,000\,z^{7}+\right.\right.\right.
$$

$$
26\,674\,351\,570\,944\,000\,z^{6}-154\,044\,380\,322\,201\,600\,z^{5}+361\,041\,516\,380\,160\,000\,z^{4}+
$$

$$
244\,992\,457\,543\,680\,000\,z^{3}+660\,331\,233\,223\,200\,000\,z^{2}+
$$

$$
\left.2\,228\,617\,912\,128\,300\,000\,z+5\,613\,331\,366\,173\,155\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$

$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(68\,719\,476\,736\,z^{9}+4\,926\,327\,488\,512\,z^{8}+25\,495\,999\,610\,880\,z^{7}-201\,051\,781\,201\,920\,z^{6}+\right.\right.
$$

$$
1\,704\,679\,597\,670\,400\,z^{5}-9\,978\,678\,381\,772\,800\,z^{4}+24\,584\,091\,627\,110\,400\,z^{3}+
$$

$$
\left.18\,752\,263\,592\,832\,000\,z^{2}-112\,492\,142\,231\,238\,000\,z+1\,871\,110\,455\,391\,051\,875\right)\sin\left(2\sqrt{z}\right)-
$$

$$
\left(68\,719\,476\,736\,z^{9}+4\,874\,787\,880\,960\,z^{8}+22\,017\,076\,101\,120\,z^{7}-206\,733\,217\,628\,160\,z^{6}+\right.
$$

$$
1\,823\,338\,974\,412\,800\,z^{5}-11\,096\,232\,660\,172\,800\,z^{4}+25\,771\,933\,845\,504\,000\,z^{3}+
$$

$$
196\,212\,709\,300\,608\,000\,z^{2}-3\,758\,935\,545\,123\,066\,000\,z-
$$

$$
\left.\left.\left.5\,613\,331\,366\,173\,155\,625\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(93\,097\,848\,547\,049\,472\,000\,z^{17/4}\right)
$$

07.22.03.8088.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = $$
$$ \left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} - 83\,150\,566\,850\,560\,z^9 + 480\,800\,113\,950\,720\,z^8 + 3\,672\,035\,976\,806\,400\,z^7 + \right.\right.\right. $$
$$ 33\,047\,425\,371\,340\,800\,z^6 + 204\,731\,078\,462\,668\,800\,z^5 + 504\,317\,053\,255\,680\,000\,z^4 - $$
$$ 500\,847\,419\,584\,512\,000\,z^3 + 2\,519\,753\,653\,216\,800\,000\,z^2 - 35\,105\,784\,707\,693\,700\,000\,z - $$
$$ 43\,693\,083\,337\,700\,671\,875\big) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-1\,099\,511\,627\,776\,z^{10} + 82\,463\,372\,083\,200\,z^9 - \right. $$
$$ 430\,677\,845\,606\,400\,z^8 - 3\,845\,660\,029\,747\,200\,z^7 - 35\,354\,356\,324\,761\,600\,z^6 - 227\,939\,742\,174\,412\,800\,z^5 - $$
$$ 642\,997\,748\,219\,904\,000\,z^4 + 984\,424\,238\,493\,696\,000\,z^3 + 11\,809\,447\,844\,594\,400\,000\,z^2 + $$
$$ \left.\left. 305\,057\,163\,666\,855\,600\,000\,z + 131\,079\,250\,013\,102\,015\,625\big) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right. $$
$$ 2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} - 82\,875\,688\,943\,616\,z^9 + 460\,441\,968\,967\,680\,z^8 + 3\,761\,779\,318\,456\,320\,z^7 + \right. $$
$$ 34\,020\,678\,382\,387\,200\,z^6 + 214\,124\,653\,235\,404\,800\,z^5 + 566\,600\,738\,173\,747\,200\,z^4 - $$
$$ 370\,653\,660\,647\,424\,000\,z^3 + 188\,222\,562\,047\,520\,000\,z^2 + 25\,421\,430\,305\,571\,300\,000\,z + $$
$$ \left.\left.\left. 131\,079\,250\,013\,102\,015\,625\big) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(941\,831\,567\,179\,776\,000\,\sqrt{2}\; z^{17/4}\right) $$

07.22.03.8089.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) = $$
$$ \left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} + 83\,150\,566\,850\,560\,z^9 + 480\,800\,113\,950\,720\,z^8 - 3\,672\,035\,976\,806\,400\,z^7 + \right.\right.\right. $$
$$ 33\,047\,425\,371\,340\,800\,z^6 - 204\,731\,078\,462\,668\,800\,z^5 + 504\,317\,053\,255\,680\,000\,z^4 + $$
$$ 500\,847\,419\,584\,512\,000\,z^3 + 2\,519\,753\,653\,216\,800\,000\,z^2 + 35\,105\,784\,707\,693\,700\,000\,z - $$
$$ 43\,693\,083\,337\,700\,671\,875\big) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(1\,099\,511\,627\,776\,z^{10} + 82\,463\,372\,083\,200\,z^9 + \right. $$
$$ 430\,677\,845\,606\,400\,z^8 - 3\,845\,660\,029\,747\,200\,z^7 + 35\,354\,356\,324\,761\,600\,z^6 - 227\,939\,742\,174\,412\,800\,z^5 + $$
$$ 642\,997\,748\,219\,904\,000\,z^4 + 984\,424\,238\,493\,696\,000\,z^3 - 11\,809\,447\,844\,594\,400\,000\,z^2 + $$
$$ \left.\left. 305\,057\,163\,666\,855\,600\,000\,z - 131\,079\,250\,013\,102\,015\,625\big) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right. $$
$$ 2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} + 82\,875\,688\,943\,616\,z^9 + 460\,441\,968\,967\,680\,z^8 - 3\,761\,779\,318\,456\,320\,z^7 + \right. $$
$$ 34\,020\,678\,382\,387\,200\,z^6 - 214\,124\,653\,235\,404\,800\,z^5 + 566\,600\,738\,173\,747\,200\,z^4 + $$
$$ 370\,653\,660\,647\,424\,000\,z^3 + 188\,222\,562\,047\,520\,000\,z^2 - 25\,421\,430\,305\,571\,300\,000\,z + $$
$$ \left.\left.\left. 131\,079\,250\,013\,102\,015\,625\big) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(941\,831\,567\,179\,776\,000\,\sqrt{2}\; z^{17/4}\right) $$

For fixed z and $a_1 = -\frac{23}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.8090.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) = \left(\frac{8z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,(4z + 15)\sinh\left(2\sqrt{z}\right) $$

07.22.03.8091.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{23}{4}; -z\right) = \left(1 - \frac{8z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}(15 - 4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.8092.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{21}{4}; z\right) = \frac{1}{140\,970\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-1\,048\,576 z^6 - 6\,619\,136 z^5 - 28\,938\,240 z^4 - 16\,554\,240 z^3 + 68\,655\,600 z^2 + 220\,182\,300 z + 140\,970\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072 z^5 + 909\,312 z^4 + 4\,354\,560 z^3 + 7\,244\,640 z^2 - 107\,406\,000 z - 140\,970\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(262\,144 z^5 + 1\,720\,320 z^4 + 7\,750\,656 z^3 + 7\,076\,160 z^2 - 5\,370\,300 z + 140\,970\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8093.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{21}{4}; -z\right) = -\frac{1}{140\,970\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,048\,576 z^6 - 6\,619\,136 z^5 + 28\,938\,240 z^4 - 16\,554\,240 z^3 - 68\,655\,600 z^2 + 220\,182\,300 z - 140\,970\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072 z^5 - 909\,312 z^4 + 4\,354\,560 z^3 - 7\,244\,640 z^2 - 107\,406\,000 z + 140\,970\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(262\,144 z^5 - 1\,720\,320 z^4 + 7\,750\,656 z^3 - 7\,076\,160 z^2 - 5\,370\,300 z - 140\,970\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8094.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{19}{4}; z\right) = \frac{1}{88\,877\,250}\left(e^{-2\sqrt{z}}\left(524\,288 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{23/4} + 524\,288 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{23/4} - 524\,288 e^{4\sqrt{z}} z^{11/2} + 524\,288 z^{11/2} - 131\,072 e^{4\sqrt{z}} z^5 - 131\,072 z^5 - 98\,304 e^{4\sqrt{z}} z^{9/2} + 98\,304 z^{9/2} - 122\,880 e^{4\sqrt{z}} z^4 - 122\,880 z^4 - 215\,040 e^{4\sqrt{z}} z^{7/2} + 215\,040 z^{7/2} - 483\,840 e^{4\sqrt{z}} z^3 - 483\,840 z^3 - 1\,330\,560 e^{4\sqrt{z}} z^{5/2} + 1\,330\,560 z^{5/2} - 4\,324\,320 e^{4\sqrt{z}} z^2 - 4\,324\,320 z^2 - 16\,216\,200 e^{4\sqrt{z}} z^{3/2} + 16\,216\,200 z^{3/2} + 67\,359\,600 e^{4\sqrt{z}} z + 67\,359\,600 z - 88\,877\,250 e^{4\sqrt{z}}\sqrt{z} + 88\,877\,250\sqrt{z} + 44\,438\,625 e^{4\sqrt{z}} + 44\,438\,625\right)\right) $$

07.22.03.8095.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{19}{4}; -z\right) = \frac{1}{44\,438\,625}\left(1\,048\,576\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{23/4} + 2\left(-262\,144 z^5 + 49\,152 z^4 - 107\,520 z^3 + 665\,280 z^2 - 8\,108\,100 z + 44\,438\,625\right) \sin\left(2\sqrt{z}\right)\sqrt{z} + \left(131\,072 z^5 - 122\,880 z^4 + 483\,840 z^3 - 4\,324\,320 z^2 - 67\,359\,600 z + 44\,438\,625\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8096.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{5}{2},-\frac{17}{4};z\right)=\frac{1}{6\,712\,875\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(524\,288\,z^6-3\,473\,408\,z^5-4\,608\,000\,z^4-1\,393\,920\,z^3+2\,559\,600\,z^2+9\,792\,900\,z+6\,712\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(65\,536\,z^5-393\,216\,z^4-737\,280\,z^3-501\,120\,z^2+4\,422\,600\,z+6\,712\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(-131\,072\,z^5+835\,584\,z^4+1\,317\,888\,z^3+734\,400\,z^2-947\,700\,z+6\,712\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8097.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{5}{2},-\frac{17}{4};-z\right)=\frac{1}{6\,712\,875\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(524\,288\,z^6+3\,473\,408\,z^5-4\,608\,000\,z^4+1\,393\,920\,z^3+2\,559\,600\,z^2-9\,792\,900\,z+6\,712\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(65\,536\,z^5+393\,216\,z^4-737\,280\,z^3+501\,120\,z^2+4\,422\,600\,z-6\,712\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(131\,072\,z^5+835\,584\,z^4-1\,317\,888\,z^3+734\,400\,z^2+947\,700\,z+6\,712\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8098.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{5}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{4\,677\,750}\left(e^{-2\sqrt{z}}\left(131\,072\,e^{4\sqrt{z}}\,z^{11/2}-131\,072\,z^{11/2}+32\,768\,e^{4\sqrt{z}}\,z^5+32\,768\,z^5-8192\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-207)\right.\right.$$
$$\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}-8192\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-207)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}-1\,671\,168\,e^{4\sqrt{z}}\,z^{9/2}+1\,671\,168\,z^{9/2}-$$
$$393\,216\,e^{4\sqrt{z}}\,z^4-393\,216\,z^4-264\,192\,e^{4\sqrt{z}}\,z^{7/2}+264\,192\,z^{7/2}-276\,480\,e^{4\sqrt{z}}\,z^3-276\,480\,z^3-$$
$$362\,880\,e^{4\sqrt{z}}\,z^{5/2}+362\,880\,z^{5/2}-483\,840\,e^{4\sqrt{z}}\,z^2-483\,840\,z^2-249\,480\,e^{4\sqrt{z}}\,z^{3/2}+249\,480\,z^{3/2}+$$
$$\left.\left.3\,243\,240\,e^{4\sqrt{z}}\,z+3\,243\,240\,z-4\,677\,750\,e^{4\sqrt{z}}\,\sqrt{z}+4\,677\,750\,\sqrt{z}+2\,338\,875\,e^{4\sqrt{z}}+2\,338\,875\right)\right)$$

07.22.03.8099.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{5}{2},-\frac{15}{4};-z\right)=\frac{1}{2\,338\,875}$$
$$\left(-16\,384\sqrt{\pi}\,(16z+207)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}+2\left(65\,536\,z^5+835\,584\,z^4-132\,096\,z^3+181\,440\,z^2-124\,740\,z+2\,338\,875\right)\right.$$
$$\left.\sin\left(2\sqrt{z}\right)\sqrt{z}-\left(32\,768\,z^5+393\,216\,z^4-276\,480\,z^3+483\,840\,z^2+3\,243\,240\,z-2\,338\,875\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.8100.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{13}{4}; z\right) = \frac{1}{1\,184\,625\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(-262\,144 z^6 + 5\,128\,192 z^5 - 8\,294\,400 z^4 - 760\,320 z^3 + 334\,800 z^2 + 1\,530\,900 z + 1\,184\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 4\sqrt{z}\left(32\,768 z^5 - 620\,544 z^4 + 691\,200 z^3 + 47\,520 z^2 - 583\,200 z - 1\,184\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 4 z\left(65\,536 z^5 - 1\,265\,664 z^4 + 1\,778\,688 z^3 + 328\,320 z^2 - 364\,500 z + 1\,184\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.8101.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{13}{4}; -z\right) = $$
$$ -\frac{1}{1\,184\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(262\,144 z^6 + 5\,128\,192 z^5 + 8\,294\,400 z^4 - 760\,320 z^3 - 334\,800 z^2 + 1\,530\,900 z - 1\,184\,625\right)\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(32\,768 z^5 + 620\,544 z^4 + 691\,200 z^3 - 47\,520 z^2 - 583\,200 z + 1\,184\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 4 z\left(65\,536 z^5 + 1\,265\,664 z^4 + 1\,778\,688 z^3 - 328\,320 z^2 - 364\,500 z - 1\,184\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.8102.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{11}{4}; z\right) = $$
$$ \frac{1}{311\,850}\left(e^{-2\sqrt{z}}\left(-16\,384 e^{4\sqrt{z}} z^{11/2} + 16\,384 z^{11/2} - 4096 e^{4\sqrt{z}} z^5 - 4096 z^5 + 420\,864 e^{4\sqrt{z}} z^{9/2} - 420\,864 z^{9/2} + \right. $$
$$ 102\,144 e^{4\sqrt{z}} z^4 + 102\,144 z^4 + 64 e^{2\sqrt{z}} \sqrt{2\pi}\left(256 z^2 - 6624 z + 19\,665\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{15/4} + $$
$$ 64 e^{2\sqrt{z}} \sqrt{2\pi}\left(256 z^2 - 6624 z + 19\,665\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{15/4} - 1\,185\,792 e^{4\sqrt{z}} z^{7/2} + 1\,185\,792 z^{7/2} - $$
$$ 230\,400 e^{4\sqrt{z}} z^3 - 230\,400 z^3 - 103\,680 e^{4\sqrt{z}} z^{5/2} + 103\,680 z^{5/2} - 38\,880 e^{4\sqrt{z}} z^2 - 38\,880 z^2 + 52\,920 e^{4\sqrt{z}} z^{3/2} - $$
$$ \left. 52\,920 z^{3/2} + 181\,440 e^{4\sqrt{z}} z + 181\,440 z - 311\,850 e^{4\sqrt{z}}\sqrt{z} + 311\,850\sqrt{z} + 155\,925 e^{4\sqrt{z}} + 155\,925\right)\Bigg) $$

07.22.03.8103.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{11}{4}; -z\right) = \frac{1}{155\,925}\left(128\sqrt{\pi}\left(256 z^2 + 6624 z + 19\,665\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{15/4} + \right. $$
$$ 2\left(-8192 z^5 - 210\,432 z^4 - 592\,896 z^3 + 51\,840 z^2 + 26\,460 z + 155\,925\right) \sin\left(2\sqrt{z}\right)\sqrt{z} + $$
$$ \left.\left(4096 z^5 + 102\,144 z^4 + 230\,400 z^3 - 38\,880 z^2 - 181\,440 z + 155\,925\right) \cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8104.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) = \frac{1}{455\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072 z^6 - 4\,259\,840 z^5 + 19\,514\,880 z^4 - 5\,184\,000 z^3 + 205\,200 z^2 + 445\,500 z + 455\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384 z^5 - 522\,240 z^4 + 2\,134\,080 z^3 + 172\,800 z^2 + 81\,000 z + 455\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(32\,768 z^5 - 1\,056\,768 z^4 + 4\,625\,280 z^3 - 432\,000 z^2 + 283\,500 z - 455\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8105.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) = \frac{1}{455\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072 z^6 + 4\,259\,840 z^5 + 19\,514\,880 z^4 + 5\,184\,000 z^3 + 205\,200 z^2 - 445\,500 z + 455\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384 z^5 + 522\,240 z^4 + 2\,134\,080 z^3 - 172\,800 z^2 + 81\,000 z - 455\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(32\,768 z^5 + 1\,056\,768 z^4 + 4\,625\,280 z^3 + 432\,000 z^2 + 283\,500 z + 455\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8106.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{7}{4}; z\right) = \frac{1}{85\,050}\left(e^{-2\sqrt{z}}\left(4096\, e^{4\sqrt{z}}\, z^{11/2} - 4096 z^{11/2} + 1024\, e^{4\sqrt{z}}\, z^5 + 1024 z^5 - 158\,208\, e^{4\sqrt{z}}\, z^{9/2} + 158\,208 z^{9/2} - 38\,784\, e^{4\sqrt{z}}\, z^4 - 38\,784 z^4 + 915\,792\, e^{4\sqrt{z}}\, z^{7/2} - 915\,792 z^{7/2} + 202\,500\, e^{4\sqrt{z}}\, z^3 + 202\,500 z^3 + e^{2\sqrt{z}}\sqrt{2\pi}\left(-4096 z^3 + 158\,976 z^2 - 943\,920 z + 294\,975\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{11/4} + e^{2\sqrt{z}}\sqrt{2\pi}\left(-4096 z^3 + 158\,976 z^2 - 943\,920 z + 294\,975\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{11/4} - 172\,800\, e^{4\sqrt{z}}\, z^{5/2} + 172\,800 z^{5/2} + 34\,560\, e^{4\sqrt{z}}\, z^2 + 34\,560 z^2 + 55\,080\, e^{4\sqrt{z}}\, z^{3/2} - 55\,080 z^{3/2} + 29\,160\, e^{4\sqrt{z}}\, z + 29\,160 z - 85\,050\, e^{4\sqrt{z}}\sqrt{z} + 85\,050\sqrt{z} + 42\,525\, e^{4\sqrt{z}} + 42\,525\right)\right) $$

07.22.03.8107.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{7}{4}; -z\right) = \frac{1}{42\,525}\left(-2\sqrt{\pi}\left(4096 z^3 + 158\,976 z^2 + 943\,920 z + 294\,975\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{11/4} + 2\left(2048 z^5 + 79\,104 z^4 + 457\,896 z^3 + 86\,400 z^2 + 27\,540 z + 42\,525\right)\sin\left(2\sqrt{z}\right)\sqrt{z} - \left(1024 z^5 + 38\,784 z^4 + 202\,500 z^3 - 34\,560 z^2 + 29\,160 z - 42\,525\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8108.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{5}{4}; z\right) = \frac{1}{354\,375\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(-65\,536 z^6 + 2\,977\,792 z^5 - 22\,475\,520 z^4 + 13\,240\,080 z^3 + 3\,250\,800 z^2 + 56\,700 z + 354\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 4\sqrt{z}\left(8192 z^5 - 367\,104 z^4 + 2\,590\,560 z^3 - 429\,030 z^2 + 226\,800 z - 354\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 4 z\left(16\,384 z^5 - 740\,352 z^4 + 5\,439\,168 z^3 - 2\,165\,940 z^2 - 510\,300 z + 354\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.8109.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{5}{4}; -z\right) = $$
$$ -\frac{1}{354\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536 z^6 + 2\,977\,792 z^5 + 22\,475\,520 z^4 + 13\,240\,080 z^3 - 3\,250\,800 z^2 + 56\,700 z - 354\,375\right)\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(8192 z^5 + 367\,104 z^4 + 2\,590\,560 z^3 + 429\,030 z^2 + 226\,800 z + 354\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 4 z\left(16\,384 z^5 + 740\,352 z^4 + 5\,439\,168 z^3 + 2\,165\,940 z^2 - 510\,300 z - 354\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.8110.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{3}{4}; z\right) = $$
$$ \frac{1}{3\,110\,400}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 3\,391\,488 z^3 + 30\,205\,440 z^2 - 18\,878\,400 z - 9\,734\,175\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} + \right.\right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 3\,391\,488 z^3 + 30\,205\,440 z^2 - 18\,878\,400 z - 9\,734\,175\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} - $$
$$ 4\left(-16\,384 z^{11/2} + 4096 z^5 + 844\,800 z^{9/2} - 208\,128 z^4 - 7\,399\,104 z^{7/2} + 1\,704\,240 z^3 + \right. $$
$$ 3\,609\,900 z^{5/2} - 57\,375 z^2 + 1\,866\,240 z^{3/2} + 414\,720 z - 777\,600\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(16\,384 z^{11/2} + 4096 z^5 - 844\,800 z^{9/2} - 208\,128 z^4 + 7\,399\,104 z^{7/2} + 1\,704\,240 z^3 - \right. $$
$$ \left.\left.\left. 3\,609\,900 z^{5/2} - 57\,375 z^2 - 1\,866\,240 z^{3/2} + 414\,720 z + 777\,600\sqrt{z} - 388\,800\right) - 388\,800\right)\right)\Bigg) $$

07.22.03.8111.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{3}{4}; -z\right) = \frac{1}{777\,600}\left(\sqrt{\pi}\left(65\,536 z^4 + 3\,391\,488 z^3 + 30\,205\,440 z^2 + 18\,878\,400 z - 9\,734\,175\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} + \right. $$
$$ 2\left(\left(4096 z^5 + 208\,128 z^4 + 1\,704\,240 z^3 + 57\,375 z^2 + 414\,720 z + 388\,800\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left. 4\sqrt{z}\left(4096 z^5 + 211\,200 z^4 + 1\,849\,776 z^3 + 902\,475 z^2 - 466\,560 z - 194\,400\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8112.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{1}{4}; z\right) = \frac{1}{2\,551\,500\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(2\left(65\,536 z^6 - 3\,825\,664 z^5 + 40\,227\,840 z^4 - 36\,473\,760 z^3 - 24\,007\,725 z^2 - 9\,185\,400 z + 1\,275\,750\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \sqrt{z}\left(-65\,536 z^5 + 3\,784\,704 z^4 - 37\,946\,880 z^3 + 16\,994\,880 z^2 + 13\,508\,775 z - 10\,206\,000\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2z\left(-65\,536 z^5 + 3\,809\,280 z^4 - 39\,297\,024 z^3 + 27\,790\,560 z^2 + 23\,232\,825 z + 5\,103\,000\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8113.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, -\frac{1}{4}; -z\right) = \frac{1}{2\,551\,500\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(2\left(65\,536 z^6 + 3\,825\,664 z^5 + 40\,227\,840 z^4 + 36\,473\,760 z^3 - 24\,007\,725 z^2 + 9\,185\,400 z + 1\,275\,750\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ \sqrt{z}\left(65\,536 z^5 + 3\,784\,704 z^4 + 37\,946\,880 z^3 + 16\,994\,880 z^2 - 13\,508\,775 z - 10\,206\,000\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2z\left(65\,536 z^5 + 3\,809\,280 z^4 + 39\,297\,024 z^3 + 27\,790\,560 z^2 - 23\,232\,825 z + 5\,103\,000\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8114.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{1}{4}; z\right) = $$
$$ \frac{1}{331\,776\,000}\left(e^{-2\sqrt{z}}\left(4\left(-262\,144 z^{11/2} + 65\,536 z^5 + 16\,908\,288 z^{9/2} - 4\,177\,920 z^4 - 198\,297\,600 z^{7/2} + 46\,609\,920 z^3 + \right.\right.\right. $$
$$ 157\,317\,120 z^{5/2} - 13\,487\,040 z^2 + 182\,414\,700 z^{3/2} - 12\,488\,175 z + 82\,944\,000\sqrt{z} + e^{4\sqrt{z}} $$
$$ \left(262\,144 z^{11/2} + 65\,536 z^5 - 16\,908\,288 z^{9/2} - 4\,177\,920 z^4 + 198\,297\,600 z^{7/2} + 46\,609\,920 z^3 - 157\,317\,120 \right. $$
$$ \left.\left.\left. z^{5/2} - 13\,487\,040 z^2 - 182\,414\,700 z^{3/2} - 12\,488\,175 z - 82\,944\,000\sqrt{z} + 41\,472\,000\right) + 41\,472\,000\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(-1\,048\,576 z^5 + 67\,829\,760 z^4 - 805\,478\,400 z^3 + 755\,136\,000 z^2 + 778\,734\,000 z + 476\,974\,575\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4} $$
$$ \left.\left.\left(-1\,048\,576 z^5 + 67\,829\,760 z^4 - 805\,478\,400 z^3 + 755\,136\,000 z^2 + 778\,734\,000 z + 476\,974\,575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8115.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) = $$
$$ \frac{1}{82\,944\,000}\left(2\left(4\sqrt{z}\left(65\,536 z^5 + 4\,227\,072 z^4 + 49\,574\,400 z^3 + 39\,329\,280 z^2 - 45\,603\,675 z + 20\,736\,000\right)\sin\left(2\sqrt{z}\right) - \right.\right. $$
$$ \left.\left(65\,536 z^5 + 4\,177\,920 z^4 + 46\,609\,920 z^3 + 13\,487\,040 z^2 - 12\,488\,175 z - 41\,472\,000\right)\cos\left(2\sqrt{z}\right)\right) - $$
$$ \left.\sqrt{\pi}\, z^{3/4}\left(1\,048\,576 z^5 + 67\,829\,760 z^4 + 805\,478\,400 z^3 + 755\,136\,000 z^2 - 778\,734\,000 z + 476\,974\,575\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.8116.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{3}{4}; z\right) = $$
$$ -\frac{1}{898\,128\,000\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(1\,048\,576 z^6 - 74\,776\,576 z^5 + 1\,008\,230\,400 z^4 - 1\,232\,202\,240 z^3 - 1\,372\,258\,800 z^2 - \right.\right.\right. $$
$$ \left.\left.\left. 1\,253\,169\,225 z - 449\,064\,000\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \sqrt{z}\left(-1\,048\,576 z^5 + 74\,121\,216 z^4 - 963\,256\,320 z^3 + 715\,461\,120 z^2 + 1\,155\,092\,400 z + 526\,246\,875\right) $$
$$ \left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2 z\left(-1\,048\,576 z^5 + 74\,514\,432 z^4 - 989\,945\,856 z^3 + \right.\right. $$
$$ \left.\left. 1\,007\,424\,000 z^2 + 1\,404\,572\,400 z + 1\,270\,009\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.8117.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) = $$
$$ \frac{1}{898\,128\,000\sqrt{2}}\left(\sqrt[4]{z}\left(-2\left(1\,048\,576 z^6 + 74\,776\,576 z^5 + 1\,008\,230\,400 z^4 + 1\,232\,202\,240 z^3 - 1\,372\,258\,800 z^2 + \right.\right.\right. $$
$$ \left.\left.\left. 1\,253\,169\,225 z - 449\,064\,000\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \sqrt{z}\left(1\,048\,576 z^5 + 74\,121\,216 z^4 + 963\,256\,320 z^3 + 715\,461\,120 z^2 - 1\,155\,092\,400 z + 526\,246\,875\right) $$
$$ \left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2 z\left(1\,048\,576 z^5 + 74\,514\,432 z^4 + 989\,945\,856 z^3 + \right.\right. $$
$$ \left.\left. 1\,007\,424\,000 z^2 - 1\,404\,572\,400 z + 1\,270\,009\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.8118.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{5}{4}; z\right) = $$
$$ \frac{1}{127\,401\,984\,000\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 324\,796\,416 z^{9/2} - 80\,412\,672 z^4 - \right.\right.\right. $$
$$ 4\,773\,543\,936 z^{7/2} + 1\,135\,779\,840 z^3 + 5\,257\,820\,160 z^{5/2} - 643\,438\,080 z^2 + 9\,191\,828\,160 z^{3/2} - $$
$$ 1\,426\,111\,920 z + 10\,863\,614\,700\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 324\,796\,416 z^{9/2} - \right. $$
$$ 80\,412\,672 z^4 + 4\,773\,543\,936 z^{7/2} + 1\,135\,779\,840 z^3 - 5\,257\,820\,160 z^{5/2} - 643\,438\,080 z^2 - $$
$$ \left.\left. 9\,191\,828\,160 z^{3/2} - 1\,426\,111\,920 z - 10\,863\,614\,700\sqrt{z} + 185\,087\,025\right) + 185\,087\,025\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 1\,302\,331\,392 z^5 + 19\,331\,481\,600 z^4 - 24\,164\,352\,000 z^3 - \right. $$
$$ \left. 37\,379\,232\,000 z^2 - 45\,789\,559\,200 z - 15\,740\,160\,975\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 1\,302\,331\,392 z^5 + 19\,331\,481\,600 z^4 - 24\,164\,352\,000 z^3 - \right. $$
$$ \left.\left. 37\,379\,232\,000 z^2 - 45\,789\,559\,200 z - 15\,740\,160\,975\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Bigg) $$

07.22.03.8119.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{5}{4}; -z\right) = \frac{1}{31\,850\,496\,000\,\sqrt[4]{z}} $$
$$ \left(2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576 z^5 + 81\,199\,104 z^4 + 1\,193\,385\,984 z^3 + 1\,314\,455\,040 z^2 - 2\,297\,957\,040 z + 2\,715\,903\,675\right)\right.\right. $$
$$ \sin\left(2\sqrt{z}\right) - \left(1\,048\,576 z^5 + 80\,412\,672 z^4 + 1\,135\,779\,840 z^3 + 643\,438\,080 z^2 - 1\,426\,111\,920 z - 185\,087\,025\right) $$
$$ \cos\left(2\sqrt{z}\right)\Big) - \sqrt{\pi}\left(16\,777\,216 z^6 + 1\,302\,331\,392 z^5 + 19\,331\,481\,600 z^4 + \right. $$
$$ \left.\left. 24\,164\,352\,000 z^3 - 37\,379\,232\,000 z^2 + 45\,789\,559\,200 z - 15\,740\,160\,975\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.8120.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) = $$
$$ \frac{1}{124\,540\,416\,000\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(-16\,777\,216 z^6 + 1\,413\,480\,448 z^5 - 23\,253\,811\,200 z^4 + 35\,731\,537\,920 z^3 + \right.\right. $$
$$ 56\,795\,731\,200 z^2 + 84\,898\,756\,800 z + 48\,983\,059\,125\Big) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ \left(16\,777\,216 z^6 - 1\,402\,994\,688 z^5 + 22\,398\,566\,400 z^4 - 23\,376\,936\,960 z^3 - 53\,893\,382\,400 z^2 - 72\,972\,900\,000 z + \right. $$
$$ 39\,861\,446\,625\Big) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216 z^6 - 1\,409\,286\,144 z^5 + 22\,906\,994\,688 z^4 - \right. $$
$$ \left.\left. 30\,439\,342\,080 z^3 - 58\,934\,304\,000 z^2 - 91\,070\,179\,200 z - 39\,861\,446\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.8121.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{7}{4}; -z\right) = $$
$$ \frac{1}{124\,540\,416\,000\sqrt{2}\,\sqrt[4]{z}}\left(\left(-2\sqrt{z}\left(16\,777\,216 z^6 + 1\,413\,480\,448 z^5 + 23\,253\,811\,200 z^4 + 35\,731\,537\,920 z^3 - \right.\right. $$
$$ 56\,795\,731\,200 z^2 + 84\,898\,756\,800 z - 48\,983\,059\,125\Big) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ \left(16\,777\,216 z^6 + 1\,402\,994\,688 z^5 + 22\,398\,566\,400 z^4 + 23\,376\,936\,960 z^3 - 53\,893\,382\,400 z^2 + 72\,972\,900\,000 z + \right. $$
$$ 39\,861\,446\,625\Big) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(16\,777\,216 z^6 + 1\,409\,286\,144 z^5 + 22\,906\,994\,688 z^4 + \right. $$
$$ \left.\left. 30\,439\,342\,080 z^3 - 58\,934\,304\,000 z^2 + 91\,070\,179\,200 z - 39\,861\,446\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.8122.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) = \frac{1}{11\,415\,217\,766\,400\, z^{5/4}} \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(-67\,108\,864\, z^{13/2} + 16\,777\,216\, z^6 + 6\,064\,963\,584\, z^{11/2} - 1\,503\,657\,984\, z^5 - 107\,144\,282\,112\, z^{9/2} + 25\,701\,580\,800\, z^4 + 151\,174\,840\,320\, z^{7/2} - 21\,970\,206\,720\, z^3 + 349\,534\,725\,120\, z^{5/2} - 68\,264\,259\,840\, z^2 + 647\,183\,779\,200\, z^{3/2} - 84\,153\,232\,800\, z + 314\,803\,219\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864\, z^{13/2} + 16\,777\,216\, z^6 - 6\,064\,963\,584\, z^{11/2} - 1\,503\,657\,984\, z^5 + 107\,144\,282\,112\, z^{9/2} + 25\,701\,580\,800\, z^4 - 151\,174\,840\,320\, z^{7/2} - 21\,970\,206\,720\, z^3 - 349\,534\,725\,120\, z^{5/2} - 68\,264\,259\,840\, z^2 - 647\,183\,779\,200\, z^{3/2} - 84\,153\,232\,800\, z - 314\,803\,219\,500\sqrt{z} + 236\,102\,414\,625\right) + 236\,102\,414\,625\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\, z^7 - 24\,310\,185\,984\, z^6 + 433\,025\,187\,840\, z^5 - 676\,601\,856\,000\, z^4 - 1\,395\,491\,328\,000\, z^3 - 2\,564\,215\,315\,200\, z^2 - 1\,762\,898\,029\,200\, z + 236\,102\,414\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\, z^7 - 24\,310\,185\,984\, z^6 + 433\,025\,187\,840\, z^5 - 676\,601\,856\,000\, z^4 - 1\,395\,491\,328\,000\, z^3 - 2\,564\,215\,315\,200\, z^2 - 1\,762\,898\,029\,200\, z + 236\,102\,414\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8123.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{9}{4}; -z\right) = \frac{1}{2\,853\,804\,441\,600\, z^{5/4}} \left(2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216\, z^6 + 1\,516\,240\,896\, z^5 + 26\,786\,070\,528\, z^4 + 37\,793\,710\,080\, z^3 - 87\,383\,681\,280\, z^2 + 161\,795\,944\,800\, z - 78\,700\,804\,875\right)\sin\left(2\sqrt{z}\right) - \left(16\,777\,216\, z^6 + 1\,503\,657\,984\, z^5 + 25\,701\,580\,800\, z^4 + 21\,970\,206\,720\, z^3 - 68\,264\,259\,840\, z^2 + 84\,153\,232\,800\, z + 236\,102\,414\,625\right)\cos\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\left(268\,435\,456\, z^7 + 24\,310\,185\,984\, z^6 + 433\,025\,187\,840\, z^5 + 676\,601\,856\,000\, z^4 - 1\,395\,491\,328\,000\, z^3 + 2\,564\,215\,315\,200\, z^2 - 1\,762\,898\,029\,200\, z - 236\,102\,414\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.8124.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{11}{4}; z\right) = -\left(\left(2\sqrt{z}\left(268\,435\,456\, z^7 - 26\,088\,570\,880\, z^6 + 506\,635\,223\,040\, z^5 - 937\,510\,502\,400\, z^4 - 1\,947\,035\,750\,400\, z^3 - 4\,080\,053\,203\,200\, z^2 - 3\,449\,950\,218\,000\, z - 677\,644\,592\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-268\,435\,456\, z^7 + 25\,920\,798\,720\, z^6 - 490\,780\,753\,920\, z^5 + 661\,561\,344\,000\, z^4 + 1\,943\,585\,280\,000\, z^3 + 4\,129\,181\,971\,200\, z^2 + 637\,783\,146\,000\, z + 2\,032\,933\,777\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-268\,435\,456\, z^7 + 26\,021\,462\,016\, z^6 - 500\,217\,937\,920\, z^5 + 820\,548\,403\,200\, z^4 + 2\,026\,529\,280\,000\, z^3 + 4\,398\,278\,227\,200\, z^2 + 3\,699\,142\,246\,800\, z - 2\,032\,933\,777\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(8\,539\,914\,240\,000\sqrt{2}\, z^{5/4}\right) $$

07.22.03.8125.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{11}{4}; -z\right) = $$

$$ -\left(\left(2\sqrt{z}\left(268\,435\,456\,z^7 + 26\,088\,570\,880\,z^6 + 506\,635\,223\,040\,z^5 + 937\,510\,502\,400\,z^4 - 1\,947\,035\,750\,400\,z^3 + 4\,080\,053\,203\,200\,z^2 - 3\,449\,950\,218\,000\,z + 677\,644\,592\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(268\,435\,456\,z^7 + 25\,920\,798\,720\,z^6 + 490\,780\,753\,920\,z^5 + 661\,561\,344\,000\,z^4 - 1\,943\,585\,280\,000\,z^3 + 4\,129\,181\,971\,200\,z^2 - 637\,783\,146\,000\,z + 2\,032\,933\,777\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(268\,435\,456\,z^7 + 26\,021\,462\,016\,z^6 + 500\,217\,937\,920\,z^5 + 820\,548\,403\,200\,z^4 - 2\,026\,529\,280\,000\,z^3 + 4\,398\,278\,227\,200\,z^2 - 3\,699\,142\,246\,800\,z - 2\,032\,933\,777\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(8\,539\,914\,240\,000\sqrt{2}\, z^{5/4}\right) $$

07.22.03.8126.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{13}{4}; z\right) = $$

$$ \frac{1}{649\,399\,055\,155\,200\,z^{9/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 + 110\,930\,952\,192\,z^{13/2} - 27\,531\,411\,456\,z^6 - 2\,289\,070\,768\,128\,z^{11/2} + 552\,311\,193\,600\,z^5 + 3\,940\,083\,302\,400\,z^{9/2} - 634\,983\,874\,560\,z^4 + 11\,277\,435\,617\,280\,z^{7/2} - 2\,450\,061\,250\,560\,z^3 + 28\,126\,756\,224\,000\,z^{5/2} - 5\,490\,944\,121\,600\,z^2 + 26\,623\,357\,992\,000\,z^{3/2} + 6\,296\,064\,390\,000\,z - 29\,906\,305\,852\,500\sqrt{z} + e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 - 110\,930\,952\,192\,z^{13/2} - 27\,531\,411\,456\,z^6 + 2\,289\,070\,768\,128\,z^{11/2} + 552\,311\,193\,600\,z^5 - 3\,940\,083\,302\,400\,z^{9/2} - 634\,983\,874\,560\,z^4 - 11\,277\,435\,617\,280\,z^{7/2} - 2\,450\,061\,250\,560\,z^3 - 28\,126\,756\,224\,000\,z^{5/2} - 5\,490\,944\,121\,600\,z^2 - 26\,623\,357\,992\,000\,z^{3/2} + 6\,296\,064\,390\,000\,z + 29\,906\,305\,852\,500\sqrt{z} - 22\,429\,729\,389\,375\right) - 22\,429\,729\,389\,375\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8 - 444\,529\,115\,136\,z^7 + 9\,237\,870\,673\,920\,z^6 - 17\,321\,007\,513\,600\,z^5 - 44\,655\,722\,496\,000\,z^4 - 109\,406\,520\,115\,200\,z^3 - 112\,825\,473\,868\,800\,z^2 + 30\,221\,109\,072\,000\,z - 22\,429\,729\,389\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8 - 444\,529\,115\,136\,z^7 + 9\,237\,870\,673\,920\,z^6 - 17\,321\,007\,513\,600\,z^5 - 44\,655\,722\,496\,000\,z^4 - 109\,406\,520\,115\,200\,z^3 - 112\,825\,473\,868\,800\,z^2 + 30\,221\,109\,072\,000\,z - 22\,429\,729\,389\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8127.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{13}{4}; -z\right) = \frac{1}{162\,349\,763\,788\,800\, z^{9/4}} $$
$$ \left(\sqrt{\pi}\,\left(-4\,294\,967\,296\, z^8 - 444\,529\,115\,136\, z^7 - 9\,237\,870\,673\,920\, z^6 - 17\,321\,007\,513\,600\, z^5 + 44\,655\,722\,496\,000\, z^4 - \right.\right. $$
$$ 109\,406\,520\,115\,200\, z^3 + 112\,825\,473\,868\,800\, z^2 + 30\,221\,109\,072\,000\, z + 22\,429\,729\,389\,375\big) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(268\,435\,456\, z^7 + 27\,732\,738\,048\, z^6 + 572\,267\,692\,032\, z^5 + 985\,020\,825\,600\, z^4 - \right.\right. $$
$$ 2\,819\,358\,904\,320\, z^3 + 7\,031\,689\,056\,000\, z^2 - 6\,655\,839\,498\,000\, z - 7\,476\,576\,463\,125\big) \sin\left(2\sqrt{z}\right) - $$
$$ \left(268\,435\,456\, z^7 + 27\,531\,411\,456\, z^6 + 552\,311\,193\,600\, z^5 + 634\,983\,874\,560\, z^4 - 2\,450\,061\,250\,560\, z^3 + \right. $$
$$ \left.\left. 5\,490\,944\,121\,600\, z^2 + 6\,296\,064\,390\,000\, z + 22\,429\,729\,389\,375\right) \cos\left(2\sqrt{z}\right)\right)\Bigg) $$

07.22.03.8128.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{15}{4}; z\right) = $$
$$ -\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 - 472\,983\,273\,472\, z^7 + 10\,589\,275\,422\,720\, z^6 - 22\,915\,087\,073\,280\, z^5 - 58\,919\,701\,708\,800\, z^4 - \right.\right.\right. $$
$$ 159\,340\,782\,182\,400\, z^3 - 183\,232\,230\,105\,600\, z^2 + 21\,684\,626\,964\,000\, z + 99\,613\,755\,115\,875\big) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ \left(-4\,294\,967\,296\, z^8 + 470\,298\,918\,912\, z^7 - 10\,300\,875\,079\,680\, z^6 + 17\,041\,289\,379\,840\, z^5 + 60\,286\,884\,249\,600\, z^4 + \right. $$
$$ 170\,562\,790\,195\,200\, z^3 + 138\,781\,612\,569\,600\, z^2 - 520\,431\,047\,136\,000\, z - 298\,841\,265\,347\,625\big) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-4\,294\,967\,296\, z^8 + 471\,909\,531\,648\, z^7 - 10\,472\,707\,325\,952\, z^6 + \right. $$
$$ 20\,444\,621\,045\,760\, z^5 + 61\,302\,649\,651\,200\, z^4 + 170\,930\,812\,723\,200\, z^3 + 208\,172\,418\,854\,400\, z^2 - $$
$$ \left.\left.\left. 117\,096\,985\,605\,600\, z + 298\,841\,265\,347\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(422\,337\,576\,960\,000\sqrt{2}\, z^{9/4}\right) $$

07.22.03.8129.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{15}{4}; -z\right) = $$
$$ \left(\left(-2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 + 472\,983\,273\,472\, z^7 + 10\,589\,275\,422\,720\, z^6 + 22\,915\,087\,073\,280\, z^5 - 58\,919\,701\,708\,800\, z^4 + \right.\right.\right. $$
$$ 159\,340\,782\,182\,400\, z^3 - 183\,232\,230\,105\,600\, z^2 - 21\,684\,626\,964\,000\, z + 99\,613\,755\,115\,875\big) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ \left(4\,294\,967\,296\, z^8 + 470\,298\,918\,912\, z^7 + 10\,300\,875\,079\,680\, z^6 + 17\,041\,289\,379\,840\, z^5 - 60\,286\,884\,249\,600\, z^4 + \right. $$
$$ 170\,562\,790\,195\,200\, z^3 - 138\,781\,612\,569\,600\, z^2 - 520\,431\,047\,136\,000\, z + 298\,841\,265\,347\,625\big) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 + 471\,909\,531\,648\, z^7 + 10\,472\,707\,325\,952\, z^6 + \right. $$
$$ 20\,444\,621\,045\,760\, z^5 - 61\,302\,649\,651\,200\, z^4 + 170\,930\,812\,723\,200\, z^3 - 208\,172\,418\,854\,400\, z^2 - $$
$$ \left.\left.\left. 117\,096\,985\,605\,600\, z - 298\,841\,265\,347\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(422\,337\,576\,960\,000\sqrt{2}\, z^{9/4}\right) $$

07.22.03.8130.01

$$
{}_1F_2\left(-\frac{23}{4};-\frac{5}{2},\frac{17}{4};z\right)=
$$

$$
-\Big(13\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}+1\,997\,159\,792\,640\,z^{15/2}-496\,068\,722\,688\,z^{7}-\right.\right.
$$

$$
47\,141\,024\,169\,984\,z^{13/2}+11\,424\,277\,463\,040\,z^{6}+95\,794\,967\,347\,200\,z^{11/2}-16\,550\,933\,299\,200\,z^{5}+
$$

$$
326\,066\,480\,087\,040\,z^{9/2}-75\,134\,948\,474\,880\,z^{4}+1\,018\,143\,970\,099\,200\,z^{7/2}-232\,213\,008\,384\,000\,z^{3}+
$$

$$
1\,389\,909\,362\,688\,000\,z^{5/2}-11\,512\,803\,456\,000\,z^{2}-1\,476\,517\,043\,232\,000\,z^{3/2}+1\,722\,603\,217\,104\,000\,z+
$$

$$
6\,190\,605\,311\,467\,500\sqrt{z}+e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}-1\,997\,159\,792\,640\,z^{15/2}-\right.
$$

$$
496\,068\,722\,688\,z^{7}+47\,141\,024\,169\,984\,z^{13/2}+11\,424\,277\,463\,040\,z^{6}-95\,794\,967\,347\,200\,z^{11/2}-
$$

$$
16\,550\,933\,299\,200\,z^{5}-326\,066\,480\,087\,040\,z^{9/2}-75\,134\,948\,474\,880\,z^{4}-
$$

$$
1\,018\,143\,970\,099\,200\,z^{7/2}-232\,213\,008\,384\,000\,z^{3}-1\,389\,909\,362\,688\,000\,z^{5/2}-
$$

$$
11\,512\,803\,456\,000\,z^{2}+1\,476\,517\,043\,232\,000\,z^{3/2}+1\,722\,603\,217\,104\,000\,z-
$$

$$
\left.\left.6\,190\,605\,311\,467\,500\sqrt{z}+4\,642\,953\,983\,600\,625\right)+4\,642\,953\,983\,600\,625\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-8\,001\,524\,072\,448\,z^{8}+190\,036\,196\,720\,640\,z^{7}-415\,704\,180\,326\,400\,z^{6}-\right.
$$

$$
1\,286\,084\,807\,884\,800\,z^{5}-3\,938\,634\,724\,147\,200\,z^{4}-5\,415\,622\,745\,702\,400\,z^{3}+
$$

$$
\left.2\,175\,919\,853\,184\,000\,z^{2}-3\,229\,881\,032\,070\,000\,z+4\,642\,953\,983\,600\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-8\,001\,524\,072\,448\,z^{8}+190\,036\,196\,720\,640\,z^{7}-415\,704\,180\,326\,400\,z^{6}-\right.
$$

$$
1\,286\,084\,807\,884\,800\,z^{5}-3\,938\,634\,724\,147\,200\,z^{4}-5\,415\,622\,745\,702\,400\,z^{3}+2\,175\,919\,853\,184\,000\,z^{2}-
$$

$$
\left.\left.3\,229\,881\,032\,070\,000\,z+4\,642\,953\,983\,600\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)\Big/\left(374\,053\,855\,769\,395\,200\,z^{13/4}\right)
$$

07.22.03.8131.01

$$
{}_1F_2\left(-\frac{23}{4};-\frac{5}{2},\frac{17}{4};-z\right)=
$$

$$
-\left(13\left(\sqrt{\pi}\left(68\,719\,476\,736\,z^{9}+8\,001\,524\,072\,448\,z^{8}+190\,036\,196\,720\,640\,z^{7}+415\,704\,180\,326\,400\,z^{6}-\right.\right.\right.
$$

$$
1\,286\,084\,807\,884\,800\,z^{5}+3\,938\,634\,724\,147\,200\,z^{4}-5\,415\,622\,745\,702\,400\,z^{3}-
$$

$$
\left.2\,175\,919\,853\,184\,000\,z^{2}-3\,229\,881\,032\,070\,000\,z-4\,642\,953\,983\,600\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}
$$

$$
\left(\left(4\,294\,967\,296\,z^{8}+496\,068\,722\,688\,z^{7}+11\,424\,277\,463\,040\,z^{6}+16\,550\,933\,299\,200\,z^{5}-75\,134\,948\,474\,880\,z^{4}+\right.\right.
$$

$$
232\,213\,008\,384\,000\,z^{3}-11\,512\,803\,456\,000\,z^{2}-1\,722\,603\,217\,104\,000\,z+4\,642\,953\,983\,600\,625\Big)
$$

$$
\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(4\,294\,967\,296\,z^{8}+499\,289\,948\,160\,z^{7}+11\,785\,256\,042\,496\,z^{6}+\right.
$$

$$
23\,948\,741\,836\,800\,z^{5}-81\,516\,620\,021\,760\,z^{4}+254\,535\,992\,524\,800\,z^{3}-347\,477\,340\,672\,000\,z^{2}-
$$

$$
\left.\left.\left.369\,129\,260\,808\,000\,z-1\,547\,651\,327\,866\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big)\Big/\left(93\,513\,463\,942\,348\,800\,z^{13/4}\right)
$$

07.22.03.8132.01

$${}_1F_2\left(-\frac{23}{4};-\frac{5}{2},\frac{19}{4};z\right)=$$

$$-\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-8\,456\,790\,605\,824\,z^8+214\,436\,979\,671\,040\,z^7-531\,221\,352\,284\,160\,z^6-\right.\right.\right.$$
$$\left.\left.\left.1\,631\,029\,926\,297\,600\,z^5-5\,410\,031\,557\,017\,600\,z^4-7\,969\,803\,367\,219\,200\,z^3+\right.\right.\right.$$
$$\left.\left.\left.3\,469\,540\,314\,240\,000\,z^2-16\,165\,889\,401\,662\,000\,z-27\,393\,782\,656\,865\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-68\,719\,476\,736\,z^9+8\,413\,840\,932\,864\,z^8-209\,266\,912\,788\,480\,z^7+410\,603\,571\,118\,080\,z^6+\right.$$
$$1\,690\,509\,665\,894\,400\,z^5+5\,911\,404\,016\,435\,200\,z^4+8\,141\,854\,604\,083\,200\,z^3-$$
$$\left.24\,980\,690\,262\,528\,000\,z^2+173\,726\,388\,922\,086\,000\,z+82\,181\,347\,970\,596\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-8\,439\,610\,736\,640\,z^8+212\,349\,625\,565\,184\,z^7-480\,789\,040\,988\,160\,z^6-\right.$$
$$1\,694\,357\,205\,811\,200\,z^5-5\,765\,560\,595\,251\,200\,z^4-9\,109\,767\,389\,184\,000\,z^3+5\,134\,919\,665\,075\,200\,z^2-$$
$$\left.\left.1\,593\,820\,081\,854\,000\,z+82\,181\,347\,970\,596\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(17\,118\,749\,786\,112\,000\sqrt{2}\,z^{13/4}\right)$$

07.22.03.8133.01

$${}_1F_2\left(-\frac{23}{4};-\frac{5}{2},\frac{19}{4};-z\right)=$$

$$\left(\left(-2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+8\,456\,790\,605\,824\,z^8+214\,436\,979\,671\,040\,z^7+531\,221\,352\,284\,160\,z^6-\right.\right.\right.$$
$$\left.\left.\left.1\,631\,029\,926\,297\,600\,z^5+5\,410\,031\,557\,017\,600\,z^4-7\,969\,803\,367\,219\,200\,z^3-\right.\right.\right.$$
$$\left.\left.\left.3\,469\,540\,314\,240\,000\,z^2-16\,165\,889\,401\,662\,000\,z+27\,393\,782\,656\,865\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(68\,719\,476\,736\,z^9+8\,413\,840\,932\,864\,z^8+209\,266\,912\,788\,480\,z^7+410\,603\,571\,118\,080\,z^6-\right.$$
$$1\,690\,509\,665\,894\,400\,z^5+5\,911\,404\,016\,435\,200\,z^4-8\,141\,854\,604\,083\,200\,z^3-$$
$$\left.24\,980\,690\,262\,528\,000\,z^2-173\,726\,388\,922\,086\,000\,z+82\,181\,347\,970\,596\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+8\,439\,610\,736\,640\,z^8+212\,349\,625\,565\,184\,z^7+480\,789\,040\,988\,160\,z^6-\right.$$
$$1\,694\,357\,205\,811\,200\,z^5+5\,765\,560\,595\,251\,200\,z^4-9\,109\,767\,389\,184\,000\,z^3-5\,134\,919\,665\,075\,200\,z^2-$$
$$\left.\left.1\,593\,820\,081\,854\,000\,z-82\,181\,347\,970\,596\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(17\,118\,749\,786\,112\,000\sqrt{2}\,z^{13/4}\right)$$

07.22.03.8134.01

$$
{}_1F_2\left(-\frac{23}{4};-\frac{5}{2},\frac{21}{4};z\right)=
$$

$$
-\Big(221\,e^{-2\sqrt{z}}\Big(-4\sqrt[4]{z}\Big(-274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}+35\,510\,789\,603\,328\,z^{17/2}-8\,826\,157\,793\,280\,z^{8}-
$$

$$
943\,625\,789\,767\,680\,z^{15/2}+229\,463\,996\,497\,920\,z^{7}+2\,211\,182\,039\,531\,520\,z^{13/2}-
$$

$$
401\,716\,008\,714\,240\,z^{6}+8\,711\,322\,992\,640\,000\,z^{11/2}-2\,080\,529\,606\,246\,400\,z^{5}+
$$

$$
32\,607\,889\,116\,364\,800\,z^{9/2}-8\,015\,561\,913\,139\,200\,z^{4}+57\,244\,170\,667\,622\,400\,z^{7/2}-
$$

$$
7\,719\,858\,026\,496\,000\,z^{3}-52\,259\,754\,742\,272\,000\,z^{5/2}+92\,528\,401\,375\,872\,000\,z^{2}-
$$

$$
2\,829\,990\,999\,528\,000\,z^{3/2}-995\,449\,334\,083\,974\,000\,z-2\,172\,902\,464\,325\,092\,500\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\Big(274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}-35\,510\,789\,603\,328\,z^{17/2}-8\,826\,157\,793\,280\,z^{8}+
$$

$$
943\,625\,789\,767\,680\,z^{15/2}+229\,463\,996\,497\,920\,z^{7}-2\,211\,182\,039\,531\,520\,z^{13/2}-
$$

$$
401\,716\,008\,714\,240\,z^{6}-8\,711\,322\,992\,640\,000\,z^{11/2}-2\,080\,529\,606\,246\,400\,z^{5}-
$$

$$
32\,607\,889\,116\,364\,800\,z^{9/2}-8\,015\,561\,913\,139\,200\,z^{4}-57\,244\,170\,667\,622\,400\,z^{7/2}-
$$

$$
7\,719\,858\,026\,496\,000\,z^{3}+52\,259\,754\,742\,272\,000\,z^{5/2}+92\,528\,401\,375\,872\,000\,z^{2}+
$$

$$
2\,829\,990\,999\,528\,000\,z^{3/2}-995\,449\,334\,083\,974\,000\,z+2\,172\,902\,464\,325\,092\,500\sqrt{z}\;-
$$

$$
1\,629\,676\,848\,243\,819\,375\Big)-1\,629\,676\,848\,243\,819\,375\Big)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\,\Big(1\,099\,511\,627\,776\,z^{10}-142\,249\,316\,843\,520\,z^{9}+3\,800\,723\,934\,412\,800\,z^{8}-
$$

$$
9\,501\,809\,836\,032\,000\,z^{7}-34\,295\,594\,876\,928\,000\,z^{6}-126\,036\,311\,172\,710\,400\,z^{5}-
$$

$$
216\,624\,909\,828\,096\,000\,z^{4}+116\,049\,058\,836\,480\,000\,z^{3}-258\,390\,482\,565\,600\,000\,z^{2}+
$$

$$
742\,872\,637\,376\,100\,000\,z-1\,629\,676\,848\,243\,819\,375\Big)\operatorname{erf}\Big(\sqrt{2}\;\sqrt[4]{z}\Big)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\,\Big(1\,099\,511\,627\,776\,z^{10}-142\,249\,316\,843\,520\,z^{9}+3\,800\,723\,934\,412\,800\,z^{8}-
$$

$$
9\,501\,809\,836\,032\,000\,z^{7}-34\,295\,594\,876\,928\,000\,z^{6}-126\,036\,311\,172\,710\,400\,z^{5}-
$$

$$
216\,624\,909\,828\,096\,000\,z^{4}+116\,049\,058\,836\,480\,000\,z^{3}-258\,390\,482\,565\,600\,000\,z^{2}+
$$

$$
742\,872\,637\,376\,100\,000\,z-1\,629\,676\,848\,243\,819\,375\Big)\operatorname{erfi}\Big(\sqrt{2}\;\sqrt[4]{z}\Big)\Big)\Big)\Big/\Big(239\,394\,467\,692\,412\,928\,000\,z^{17/4}\Big)
$$

07.22.03.8135.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) = $$

$$ \left(221\left(\sqrt{\pi}\,\left(-1\,099\,511\,627\,776\,z^{10} - 142\,249\,316\,843\,520\,z^9 - 3\,800\,723\,934\,412\,800\,z^8 - 9\,501\,809\,836\,032\,000\,z^7 + \right.\right.\right. $$

$$ 34\,295\,594\,876\,928\,000\,z^6 - 126\,036\,311\,172\,710\,400\,z^5 + 216\,624\,909\,828\,096\,000\,z^4 + $$

$$ 116\,049\,058\,836\,480\,000\,z^3 + 258\,390\,482\,565\,600\,000\,z^2 + $$

$$ \left.\left.\left. 742\,872\,637\,376\,100\,000\,z + 1\,629\,676\,848\,243\,819\,375\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right. $$

$$ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 8\,877\,697\,400\,832\,z^8 + 235\,906\,447\,441\,920\,z^7 + 552\,795\,509\,882\,880\,z^6 - \right.\right. $$

$$ 2\,177\,830\,748\,160\,000\,z^5 + 8\,151\,972\,279\,091\,200\,z^4 - 14\,311\,042\,666\,905\,600\,z^3 - $$

$$ \left.\left. 13\,064\,938\,685\,568\,000\,z^2 + 707\,497\,749\,882\,000\,z - 543\,225\,616\,081\,273\,125\right) \sin\left(2\sqrt{z}\right) - \right. $$

$$ \left(68\,719\,476\,736\,z^9 + 8\,826\,157\,793\,280\,z^8 + 229\,463\,996\,497\,920\,z^7 + 401\,716\,008\,714\,240\,z^6 - \right. $$

$$ 2\,080\,529\,606\,246\,400\,z^5 + 8\,015\,561\,913\,139\,200\,z^4 - 7\,719\,858\,026\,496\,000\,z^3 - $$

$$ \left.\left. \left. 92\,528\,401\,375\,872\,000\,z^2 - 995\,449\,334\,083\,974\,000\,z + 1\,629\,676\,848\,243\,819\,375\right) \right. \right. $$

$$ \left.\left.\left. \cos\left(2\sqrt{z}\right)\right)\right)\right) \Big/ \left(59\,848\,616\,923\,103\,232\,000\,z^{17/4}\right) $$

07.22.03.8136.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{23}{4}; z\right) = $$

$$ -\left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} - 149\,533\,581\,377\,536\,z^9 + 4\,235\,589\,373\,132\,800\,z^8 - 11\,819\,062\,803\,824\,640\,z^7 - \right.\right.\right. $$

$$ 42\,226\,634\,509\,516\,800\,z^6 - 166\,003\,664\,014\,540\,800\,z^5 - 299\,835\,192\,184\,012\,800\,z^4 + $$

$$ 207\,247\,208\,103\,936\,000\,z^3 - 1\,016\,401\,835\,056\,608\,000\,z^2 + 9\,016\,467\,891\,631\,200\,000\,z + $$

$$ \left.\left. 11\,916\,295\,455\,736\,546\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-1\,099\,511\,627\,776\,z^{10} + 148\,846\,386\,610\,176\,z^9 - \right.\right. $$

$$ 4\,143\,977\,720\,709\,120\,z^8 + 9\,410\,198\,183\,608\,320\,z^7 + 44\,067\,021\,284\,966\,400\,z^6 + $$

$$ 182\,543\,066\,018\,611\,200\,z^5 + 341\,160\,788\,724\,940\,800\,z^4 - 777\,177\,030\,389\,760\,000\,z^3 + $$

$$ \left.\left. 316\,942\,507\,705\,824\,000\,z^2 - 81\,523\,897\,186\,832\,100\,000\,z - 35\,748\,886\,367\,209\,640\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right. $$

$$ 2\sqrt{z}\,\left(-1\,099\,511\,627\,776\,z^{10} + 149\,258\,703\,470\,592\,z^9 - 4\,198\,635\,474\,518\,016\,z^8 + 10\,816\,553\,012\,428\,800\,z^7 + \right. $$

$$ 43\,781\,640\,840\,806\,400\,z^6 + 175\,805\,412\,094\,771\,200\,z^5 + 340\,035\,464\,518\,041\,600\,z^4 - $$

$$ 205\,652\,998\,810\,828\,800\,z^3 + 83\,789\,398\,588\,896\,000\,z^2 + 5\,259\,606\,270\,118\,200\,000\,z + $$

$$ \left.\left. \left. 35\,748\,886\,367\,209\,640\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(605\,463\,150\,329\,856\,000\,\sqrt{2}\,z^{17/4}\right) $$

07.22.03.8137.01

$${}_1F_2\left(-\frac{23}{4}; -\frac{5}{2}, \frac{23}{4}; -z\right) =$$

$$\left(\left(-2\sqrt{z}\left(1\,099\,511\,627\,776\,z^{10} + 149\,533\,581\,377\,536\,z^9 + 4\,235\,589\,373\,132\,800\,z^8 + 11\,819\,062\,803\,824\,640\,z^7 - \right.\right.\right.$$
$$42\,226\,634\,509\,516\,800\,z^6 + 166\,003\,664\,014\,540\,800\,z^5 - 299\,835\,192\,184\,012\,800\,z^4 -$$
$$207\,247\,208\,103\,936\,000\,z^3 - 1\,016\,401\,835\,056\,608\,000\,z^2 - 9\,016\,467\,891\,631\,200\,000\,z +$$
$$\left.11\,916\,295\,455\,736\,546\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1\,099\,511\,627\,776\,z^{10} + 148\,846\,386\,610\,176\,z^9 + \right.$$
$$4\,143\,977\,720\,709\,120\,z^8 + 9\,410\,198\,183\,608\,320\,z^7 - 44\,067\,021\,284\,966\,400\,z^6 +$$
$$182\,543\,066\,018\,611\,200\,z^5 - 341\,160\,788\,724\,940\,800\,z^4 - 777\,177\,030\,389\,760\,000\,z^3 -$$
$$\left.316\,942\,507\,705\,824\,000\,z^2 - 81\,523\,897\,186\,832\,100\,000\,z + 35\,748\,886\,367\,209\,640\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$2\sqrt{z}\left(1\,099\,511\,627\,776\,z^{10} + 149\,258\,703\,470\,592\,z^9 + 4\,198\,635\,474\,518\,016\,z^8 + 10\,816\,553\,012\,428\,800\,z^7 - \right.$$
$$43\,781\,640\,840\,806\,400\,z^6 + 175\,805\,412\,094\,771\,200\,z^5 - 340\,035\,464\,518\,041\,600\,z^4 -$$
$$205\,652\,998\,810\,828\,800\,z^3 - 83\,789\,398\,588\,896\,000\,z^2 + 5\,259\,606\,270\,118\,200\,000\,z -$$
$$\left.\left.\left.35\,748\,886\,367\,209\,640\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(605\,463\,150\,329\,856\,000\sqrt{2}\, z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{23}{4}$, $b_{1.} = -\frac{3}{2}$

07.22.03.8138.01

$${}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{23}{4}; z\right) = \left(\frac{4z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.8139.01

$${}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{23}{4}; -z\right) = \left(1 - \frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.8140.01

$${}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{366\,522\,975\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2\,097\,152\,z^6 + 19\,267\,584\,z^5 + 153\,591\,808\,z^4 + 583\,165\,440\,z^3 + 203\,692\,320\,z^2 + \right.\right.\right.$$
$$\left.465\,426\,000\,z + 366\,522\,975\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 -$$
$$4\sqrt{z}\left(262\,144\,z^5 + 2\,572\,288\,z^4 + 21\,144\,576\,z^3 + 91\,990\,080\,z^2 + 172\,207\,620\,z + 366\,522\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4z\left(524\,288\,z^5 + 4\,947\,968\,z^4 + 39\,806\,976\,z^3 + 158\,237\,568\,z^2 + 121\,010\,760\,z - 366\,522\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8141.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{21}{4}; -z\right) = \frac{1}{366\,522\,975\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2\,097\,152 z^6 - 19\,267\,584 z^5 + 153\,591\,808 z^4 - 583\,165\,440 z^3 + 203\,692\,320 z^2 - 465\,426\,000 z + 366\,522\,975\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(262\,144 z^5 - 2\,572\,288 z^4 + 21\,144\,576 z^3 - 91\,990\,080 z^2 + 172\,207\,620 z - 366\,522\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(524\,288 z^5 - 4\,947\,968 z^4 + 39\,806\,976 z^3 - 158\,237\,568 z^2 + 121\,010\,760 z + 366\,522\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8142.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{19}{4}; z\right) = \frac{1}{231\,080\,850}\left(e^{-2\sqrt{z}}\left(-1\,048\,576 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{23/4} - 1\,048\,576 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{23/4} + 1\,048\,576 e^{4\sqrt{z}} z^{11/2} - 1\,048\,576 z^{11/2} + 262\,144 e^{4\sqrt{z}} z^5 + 262\,144 z^5 + 196\,608 e^{4\sqrt{z}} z^{9/2} - 196\,608 z^{9/2} + 245\,760 e^{4\sqrt{z}} z^4 + 245\,760 z^4 + 430\,080 e^{4\sqrt{z}} z^{7/2} - 430\,080 z^{7/2} + 967\,680 e^{4\sqrt{z}} z^3 + 967\,680 z^3 + 2\,661\,120 e^{4\sqrt{z}} z^{5/2} - 2\,661\,120 z^{5/2} + 8\,648\,640 e^{4\sqrt{z}} z^2 + 8\,648\,640 z^2 + 32\,432\,400 e^{4\sqrt{z}} z^{3/2} - 32\,432\,400 z^{3/2} + 137\,837\,700 e^{4\sqrt{z}} z + 137\,837\,700 z - 231\,080\,850 e^{4\sqrt{z}}\sqrt{z} + 231\,080\,850\sqrt{z} + 115\,540\,425 e^{4\sqrt{z}} + 115\,540\,425\right)\right) $$

07.22.03.8143.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{19}{4}; -z\right) = \frac{1}{115\,540\,425}\left(-2\,097\,152\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{23/4} + 2\left(524\,288 z^5 - 98\,304 z^4 + 215\,040 z^3 - 1\,330\,560 z^2 + 16\,216\,200 z + 115\,540\,425\right) \sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-262\,144 z^5 + 245\,760 z^4 - 967\,680 z^3 + 8\,648\,640 z^2 - 137\,837\,700 z + 115\,540\,425\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8144.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{17}{4}; z\right) = -\frac{1}{17\,453\,475\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,048\,576 z^6 - 9\,961\,472 z^5 - 24\,854\,528 z^4 - 56\,309\,760 z^3 - 12\,467\,520 z^2 - 19\,164\,600 z - 17\,453\,475\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-131\,072 z^5 + 1\,163\,264 z^4 + 3\,664\,896 z^3 + 9\,547\,200 z^2 + 5\,201\,820 z + 17\,453\,475\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-262\,144 z^5 + 2\,424\,832 z^4 + 6\,733\,824 z^3 + 16\,121\,088 z^2 + 8\,760\,960 z - 17\,453\,475\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8145.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{3}{2},-\frac{17}{4};-z\right)=-\frac{1}{17\,453\,475\sqrt{2}}\left(\sqrt[4]{z}\right.$$
$$\left(\left(1\,048\,576 z^6+9\,961\,472 z^5-24\,854\,528 z^4+56\,309\,760 z^3-12\,467\,520 z^2+19\,164\,600 z-17\,453\,475\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(131\,072 z^5+1\,163\,264 z^4-3\,664\,896 z^3+9\,547\,200 z^2-5\,201\,820 z+17\,453\,475\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4 z\left(262\,144 z^5+2\,424\,832 z^4-6\,733\,824 z^3+16\,121\,088 z^2-8\,760\,960 z-17\,453\,475\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8146.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{3}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{12\,162\,150}\left(e^{-2\sqrt{z}}\left(-262\,144 e^{4\sqrt{z}} z^{11/2}+262\,144 z^{11/2}-65\,536 e^{4\sqrt{z}} z^5-65\,536 z^5+16\,384 e^{2\sqrt{z}}\sqrt{2\pi}\,(16 z-299)\right.\right.$$
$$\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{19/4}+16\,384 e^{2\sqrt{z}}\sqrt{2\pi}\,(16 z-299)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{19/4}+4\,849\,664 e^{4\sqrt{z}} z^{9/2}-4\,849\,664 z^{9/2}+$$
$$1\,163\,264 e^{4\sqrt{z}} z^4+1\,163\,264 z^4+811\,008 e^{4\sqrt{z}} z^{7/2}-811\,008 z^{7/2}+906\,240 e^{4\sqrt{z}} z^3+906\,240 z^3+$$
$$\left.1\,344\,000 e^{4\sqrt{z}} z^{5/2}-1\,344\,000 z^{5/2}+2\,358\,720 e^{4\sqrt{z}} z^2+2\,358\,720 z^2+4\,324\,320 e^{4\sqrt{z}} z^{3/2}-4\,324\,320 z^{3/2}+\right.$$
$$\left.5\,945\,940 e^{4\sqrt{z}} z+5\,945\,940 z-12\,162\,150 e^{4\sqrt{z}}\sqrt{z}+12\,162\,150\sqrt{z}+6\,081\,075 e^{4\sqrt{z}}+6\,081\,075\right)\Big)$$

07.22.03.8147.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{3}{2},-\frac{15}{4};-z\right)=\frac{1}{6\,081\,075}$$
$$\left(32\,768\sqrt{\pi}\,(16 z+299) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{19/4}+2\left(-131\,072 z^5-2\,424\,832 z^4+405\,504 z^3-672\,000 z^2+2\,162\,160 z+6\,081\,075\right)\right.$$
$$\left.\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(65\,536 z^5+1\,163\,264 z^4-906\,240 z^3+2\,358\,720 z^2-5\,945\,940 z+6\,081\,075\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.8148.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{3}{2},-\frac{13}{4};z\right)=\frac{1}{3\,080\,025\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(524\,288 z^6-14\,778\,368 z^5+41\,459\,712 z^4+26\,956\,800 z^3+4\,099\,680 z^2+2\,527\,200 z+3\,080\,025\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(65\,536 z^5-1\,806\,336 z^4+4\,137\,984 z^3+4\,268\,160 z^2+63\,180 z+3\,080\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4 z\left(131\,072 z^5-3\,661\,824 z^4+9\,492\,480 z^3+8\,128\,512 z^2+2\,400\,840 z-3\,080\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8149.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{13}{4}; -z\right) = \frac{1}{3\,080\,025\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(524\,288 z^6 + 14\,778\,368 z^5 + 41\,459\,712 z^4 - 26\,956\,800 z^3 + 4\,099\,680 z^2 - 2\,527\,200 z + 3\,080\,025\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 4\sqrt{z}\left(65\,536 z^5 + 1\,806\,336 z^4 + 4\,137\,984 z^3 - 4\,268\,160 z^2 + 63\,180 z - 3\,080\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. \left. 4 z\left(131\,072 z^5 + 3\,661\,824 z^4 + 9\,492\,480 z^3 - 8\,128\,512 z^2 + 2\,400\,840 z + 3\,080\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8150.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{11}{4}; z\right) = $$
$$ \frac{1}{810\,810}\left(e^{-2\sqrt{z}}\left(32\,768 e^{4\sqrt{z}} z^{11/2} - 32\,768 z^{11/2} + 8192 e^{4\sqrt{z}} z^5 + 8192 z^5 - 1\,218\,560 e^{4\sqrt{z}} z^{9/2} + 1\,218\,560 z^{9/2} - \right. \right. $$
$$ 298\,496 e^{4\sqrt{z}} z^4 - 298\,496 z^4 - 128 e^{2\sqrt{z}} \sqrt{2\pi}\left(256 z^2 - 9568 z + 51\,129\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{15/4} - 128 e^{2\sqrt{z}} \sqrt{2\pi} $$
$$ \left(256 z^2 - 9568 z + 51\,129\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{15/4} + 6\,328\,320 e^{4\sqrt{z}} z^{7/2} - 6\,328\,320 z^{7/2} + 1\,379\,328 e^{4\sqrt{z}} z^3 + $$
$$ 1\,379\,328 z^3 + 807\,936 e^{4\sqrt{z}} z^{5/2} - 807\,936 z^{5/2} + 673\,920 e^{4\sqrt{z}} z^2 + 673\,920 z^2 + 589\,680 e^{4\sqrt{z}} z^{3/2} - $$
$$ \left. 589\,680 z^{3/2} + 245\,700 e^{4\sqrt{z}} z + 245\,700 z - 810\,810 e^{4\sqrt{z}} \sqrt{z} + 810\,810\sqrt{z} + 405\,405 e^{4\sqrt{z}} + 405\,405\right)\right) $$

07.22.03.8151.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{11}{4}; -z\right) = \frac{1}{405\,405}\left(-256\sqrt{\pi}\left(256 z^2 + 9568 z + 51\,129\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{15/4} + \right. $$
$$ 2\left(16\,384 z^5 + 609\,280 z^4 + 3\,164\,160 z^3 - 403\,968 z^2 + 294\,840 z + 405\,405\right) \sin\left(2\sqrt{z}\right)\sqrt{z} - $$
$$ \left. \left(8192 z^5 + 298\,496 z^4 + 1\,379\,328 z^3 - 673\,920 z^2 + 245\,700 z - 405\,405\right) \cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8152.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) = \frac{1}{1\,184\,625\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(-262\,144 z^6 + 12\,288\,000 z^5 - 100\,029\,440 z^4 + 89\,856\,000 z^3 + 5\,054\,400 z^2 + 351\,000 z + 1\,184\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. \right. $$
$$ 4\sqrt{z}\left(32\,768 z^5 - 1\,515\,520 z^4 + 11\,598\,720 z^3 - 5\,616\,000 z^2 + 596\,700 z - 1\,184\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. \left. 4 z\left(65\,536 z^5 - 3\,055\,616 z^4 + 24\,264\,960 z^3 - 17\,291\,520 z^2 - 1\,544\,400 z + 1\,184\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8153.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{9}{4}; -z\right) = -\frac{1}{1\,184\,625\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(262\,144 z^6 + 12\,288\,000 z^5 + 100\,029\,440 z^4 + 89\,856\,000 z^3 - 5\,054\,400 z^2 + 351\,000 z - 1\,184\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 4\sqrt{z}\left(32\,768 z^5 + 1\,515\,520 z^4 + 11\,598\,720 z^3 + 5\,616\,000 z^2 + 596\,700 z + 1\,184\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. \left. 4 z\left(65\,536 z^5 + 3\,055\,616 z^4 + 24\,264\,960 z^3 + 17\,291\,520 z^2 - 1\,544\,400 z - 1\,184\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8154.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{7}{4}; z\right) = $$
$$ \frac{1}{221\,130}\left(e^{-2\sqrt{z}}\left(-8192 e^{4\sqrt{z}} z^{11/2} + 8192 z^{11/2} - 2048 e^{4\sqrt{z}} z^5 - 2048 z^5 + 457\,728 e^{4\sqrt{z}} z^{9/2} - 457\,728 z^{9/2} + \right.\right. $$
$$ 112\,896 e^{4\sqrt{z}} z^4 + 112\,896 z^4 - 4\,825\,632 e^{4\sqrt{z}} z^{7/2} + 4\,825\,632 z^{7/2} - 1\,127\,016 e^{4\sqrt{z}} z^3 - $$
$$ 1\,127\,016 z^3 + 2 e^{2\sqrt{z}} \sqrt{2\pi}\left(4096 z^3 - 229\,632 z^2 + 2\,454\,192 z - 3\,834\,675\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{11/4} + $$
$$ 2 e^{2\sqrt{z}} \sqrt{2\pi}\left(4096 z^3 - 229\,632 z^2 + 2\,454\,192 z - 3\,834\,675\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{11/4} + $$
$$ 6\,916\,608 e^{4\sqrt{z}} z^{5/2} - 6\,916\,608 z^{5/2} + 1\,123\,200 e^{4\sqrt{z}} z^2 + 1\,123\,200 z^2 + 336\,960 e^{4\sqrt{z}} z^{3/2} - $$
$$ \left.\left. 336\,960 z^{3/2} - 21\,060 e^{4\sqrt{z}} z - 21\,060 z - 221\,130 e^{4\sqrt{z}} \sqrt{z} + 221\,130\sqrt{z} + 110\,565 e^{4\sqrt{z}} + 110\,565\right)\right) $$

07.22.03.8155.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{7}{4}; -z\right) = \frac{1}{110\,565}\left(4\sqrt{\pi}\left(4096 z^3 + 229\,632 z^2 + 2\,454\,192 z + 3\,834\,675\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{11/4} - \right. $$
$$ 2\left(4096 z^5 + 228\,864 z^4 + 2\,412\,816 z^3 + 3\,458\,304 z^2 - 168\,480 z - 110\,565\right) \sin\left(2\sqrt{z}\right)\sqrt{z} + $$
$$ \left.\left(2048 z^5 + 112\,896 z^4 + 1\,127\,016 z^3 + 1\,123\,200 z^2 + 21\,060 z + 110\,565\right) \cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8156.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{5}{4}; z\right) = \frac{1}{921\,375\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(131\,072 z^6 - 8\,593\,408 z^5 + 115\,842\,560 z^4 - 284\,749\,920 z^3 + 49\,140\,000 z^2 - 982\,800 z + 921\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 4\sqrt{z}\left(16\,384 z^5 - 1\,063\,936 z^4 + 13\,836\,480 z^3 - 28\,157\,220 z^2 - 1\,719\,900 z + 921\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left. \left. 4 z\left(32\,768 z^5 - 2\,140\,160 z^4 + 28\,436\,352 z^3 - 64\,726\,200 z^2 + 2\,457\,000 z - 921\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8157.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{5}{4}; -z\right) = \frac{1}{921\,375\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(131\,072 z^6 + 8\,593\,408 z^5 + 115\,842\,560 z^4 + 284\,749\,920 z^3 + 49\,140\,000 z^2 + 982\,800 z + 921\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 4\sqrt{z}\left(16\,384 z^5 + 1\,063\,936 z^4 + 13\,836\,480 z^3 + 28\,157\,220 z^2 - 1\,719\,900 z - 921\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 4z\left(32\,768 z^5 + 2\,140\,160 z^4 + 28\,436\,352 z^3 + 64\,726\,200 z^2 + 2\,457\,000 z + 921\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8158.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{3}{4}; z\right) = $$
$$ \frac{1}{4\,043\,520}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536 z^4 + 4\,898\,816 z^3 - 78\,534\,144 z^2 + 245\,419\,200 z - 42\,181\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} + \right. \right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536 z^4 + 4\,898\,816 z^3 - 78\,534\,144 z^2 + 245\,419\,200 z - 42\,181\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} + $$
$$ 4\left(-16\,384 z^{11/2} + 4096 z^5 + 1\,221\,632 z^{9/2} - 302\,336 z^4 - 19\,410\,624 z^{7/2} + 4\,636\,464 z^3 + \right. $$
$$ 58\,134\,252 z^{5/2} - 11\,732\,175 z^2 - 4\,492\,800 z^{3/2} - 1\,572\,480 z + 1\,010\,880\sqrt{z} + $$
$$ \left. \left. e^{4\sqrt{z}}\left(16\,384 z^{11/2} + 4096 z^5 - 1\,221\,632 z^{9/2} - 302\,336 z^4 + 19\,410\,624 z^{7/2} + 4\,636\,464 z^3 - \right.\right.\right. $$
$$ \left.\left.\left. 58\,134\,252 z^{5/2} - 11\,732\,175 z^2 + 4\,492\,800 z^{3/2} - 1\,572\,480 z - 1\,010\,880\sqrt{z} + 505\,440\right) + 505\,440\right)\right)\right) $$

07.22.03.8159.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{3}{4}; -z\right) = $$
$$ \frac{1}{1\,010\,880}\left(2\left(4\sqrt{z}\left(4096 z^5 + 305\,408 z^4 + 4\,852\,656 z^3 + 14\,533\,563 z^2 + 1\,123\,200 z + 252\,720\right)\sin\left(2\sqrt{z}\right) - \right.\right. $$
$$ \left.\left(4096 z^5 + 302\,336 z^4 + 4\,636\,464 z^3 + 11\,732\,175 z^2 - 1\,572\,480 z - 505\,440\right)\cos\left(2\sqrt{z}\right)\right) - $$
$$ \left.\sqrt{\pi}\, z^{7/4}\left(65\,536 z^4 + 4\,898\,816 z^3 + 78\,534\,144 z^2 + 245\,419\,200 z + 42\,181\,425\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.8160.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, -\frac{1}{4}; z\right) = \frac{1}{3\,316\,950\sqrt{2}}\left(\sqrt[4]{z}\right. $$
$$ \left(-2\left(65\,536 z^6 - 5\,521\,408 z^5 + 103\,924\,224 z^4 - 417\,718\,080 z^3 + 150\,872\,085 z^2 + 22\,113\,000 z - 1\,658\,475\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \sqrt{z}\left(65\,536 z^5 - 5\,480\,448 z^4 + 100\,583\,424 z^3 - 361\,277\,280 z^2 + 10\,356\,255 z - 13\,267\,800\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2z\left(65\,536 z^5 - 5\,505\,024 z^4 + 102\,569\,472 z^3 - 393\,773\,184 z^2 + 78\,095\,745 z + 6\,633\,900\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8161.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{3}{2},-\frac{1}{4};-z\right)=\frac{1}{3\,316\,950\sqrt{2}}\left(\sqrt[4]{z}\right.$$
$$\left(-2\left(65\,536z^6+5\,521\,408z^5+103\,924\,224z^4+417\,718\,080z^3+150\,872\,085z^2-22\,113\,000z-1\,658\,475\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\sqrt{z}\left(65\,536z^5+5\,480\,448z^4+100\,583\,424z^3+361\,277\,280z^2+10\,356\,255z+13\,267\,800\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2z\left(65\,536z^5+5\,505\,024z^4+102\,569\,472z^3+393\,773\,184z^2+78\,095\,745z-6\,633\,900\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8162.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{3}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{431\,308\,800}\left(e^{-2\sqrt{z}}\left(-4\left(-262\,144z^{11/2}+65\,536z^5+24\,444\,928z^{9/2}-6\,062\,080z^4-519\,075\,840z^{7/2}+125\,391\,360z^3+\right.\right.\right.$$
$$2\,365\,405\,440z^{5/2}-511\,280\,640z^2-544\,155\,300z^{3/2}-48\,692\,475z-107\,827\,200\sqrt{z}+e^{4\sqrt{z}}$$
$$\left(262\,144z^{11/2}+65\,536z^5-24\,444\,928z^{9/2}-6\,062\,080z^4+519\,075\,840z^{7/2}+125\,391\,360z^3-2\,365\,405\,440\right.$$
$$\left.z^{5/2}-511\,280\,640z^2+544\,155\,300z^{3/2}-48\,692\,475z+107\,827\,200\sqrt{z}-53\,913\,600\right)-53\,913\,600\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(1\,048\,576z^5-97\,976\,320z^4+2\,094\,243\,840z^3-9\,816\,768\,000z^2+3\,374\,514\,000z+885\,809\,925\right)$$
$$\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}$$
$$\left.\left.\left(1\,048\,576z^5-97\,976\,320z^4+2\,094\,243\,840z^3-9\,816\,768\,000z^2+3\,374\,514\,000z+885\,809\,925\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.8163.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{3}{2},\frac{1}{4};-z\right)=\frac{1}{107\,827\,200}$$
$$\left(\sqrt{\pi}\,z^{3/4}\left(1\,048\,576z^5+97\,976\,320z^4+2\,094\,243\,840z^3+9\,816\,768\,000z^2+3\,374\,514\,000z-885\,809\,925\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$2\left(\left(65\,536z^5+6\,062\,080z^4+125\,391\,360z^3+511\,280\,640z^2-48\,692\,475z+53\,913\,600\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.4\sqrt{z}\left(65\,536z^5+6\,111\,232z^4+129\,768\,960z^3+591\,351\,360z^2+136\,038\,825z-26\,956\,800\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.8164.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{3}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{1\,167\,566\,400\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(1\,048\,576z^6-107\,937\,792z^5+2\,608\,259\,072z^4-14\,557\,570\,560z^3+7\,882\,926\,480z^2+\right.\right.\right.$$
$$\left.2\,674\,997\,325z+583\,783\,200\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\sqrt{z}\left(1\,048\,576z^5-107\,282\,432z^4+2\,542\,559\,232z^3-13\,096\,512\,000z^2+2\,073\,511\,440z+241\,215\,975\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2z\left(1\,048\,576z^5-107\,675\,648z^4+2\,581\,684\,224z^3-\right.$$
$$\left.\left.\left.13\,945\,738\,752z^2+5\,083\,238\,160z+2\,093\,916\,825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8165.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, \frac{3}{4}; -z\right) = \frac{1}{1\,167\,566\,400\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(1\,048\,576 z^6 + 107\,937\,792 z^5 + 2\,608\,259\,072 z^4 + 14\,557\,570\,560 z^3 + 7\,882\,926\,480 z^2 - 2\,674\,997\,325 z + 583\,783\,200\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(1\,048\,576 z^5 + 107\,282\,432 z^4 + 2\,542\,559\,232 z^3 + 13\,096\,512\,000 z^2 + 2\,073\,511\,440 z - 241\,215\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(1\,048\,576 z^5 + 107\,675\,648 z^4 + 2\,581\,684\,224 z^3 + 13\,945\,738\,752 z^2 + 5\,083\,238\,160 z - 2\,093\,916\,825\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8166.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, \frac{5}{4}; z\right) = \frac{1}{165\,622\,579\,200\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 469\,499\,904 z^{9/2} - 116\,588\,544 z^4 - 12\,479\,004\,672 z^{7/2} + 3\,035\,013\,120 z^3 + 76\,360\,366\,080 z^{5/2} - 17\,087\,915\,520 z^2 - 29\,859\,036\,480 z^{3/2} - 14\,405\,040 z - 16\,602\,966\,900\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 469\,499\,904 z^{9/2} - 116\,588\,544 z^4 + 12\,479\,004\,672 z^{7/2} + 3\,035\,013\,120 z^3 - 76\,360\,366\,080 z^{5/2} - 17\,087\,915\,520 z^2 + 29\,859\,036\,480 z^{3/2} - 14\,405\,040 z + 16\,602\,966\,900\sqrt{z} - 2\,100\,813\,975\right) - 2\,100\,813\,975\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 1\,881\,145\,344 z^5 + 50\,261\,852\,160 z^4 - 314\,136\,576\,000 z^3 + 161\,976\,672\,000 z^2 + 85\,037\,752\,800 z + 18\,602\,008\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 1\,881\,145\,344 z^5 + 50\,261\,852\,160 z^4 - 314\,136\,576\,000 z^3 + 161\,976\,672\,000 z^2 + 85\,037\,752\,800 z + 18\,602\,008\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8167.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, \frac{5}{4}; -z\right) = \frac{1}{41\,405\,644\,800\sqrt[4]{z}}\left(\sqrt{\pi}\left(16\,777\,216 z^6 + 1\,881\,145\,344 z^5 + 50\,261\,852\,160 z^4 + 314\,136\,576\,000 z^3 + 161\,976\,672\,000 z^2 + 85\,037\,752\,800 z + 18\,602\,008\,425\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(1\,048\,576 z^5 + 116\,588\,544 z^4 + 3\,035\,013\,120 z^3 + 17\,087\,915\,520 z^2 - 14\,405\,040 z + 2\,100\,813\,975\right)\cos\left(2\sqrt{z}\right) - 4\sqrt{z}\left(1\,048\,576 z^5 + 117\,374\,976 z^4 + 3\,119\,751\,168 z^3 + 19\,090\,091\,520 z^2 + 7\,464\,759\,120 z - 4\,150\,741\,725\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8168.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, \frac{7}{4}; z\right) = \frac{1}{161\,902\,540\,800\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\sqrt{z}\left(16\,777\,216 z^6 - 2\,040\,528\,896 z^5 + 60\,210\,479\,104 z^4 - 430\,110\,720\,000 z^3 + 309\,049\,378\,560 z^2 + \right.\right.\right. $$
$$ \left. 170\,498\,671\,200 z + 67\,664\,121\,525\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,777\,216 z^6 + 2\,030\,043\,136 z^5 - 58\,963\,329\,024 z^4 + \right. $$
$$ \left. 395\,711\,447\,040 z^3 - 120\,245\,748\,480 z^2 - 80\,691\,811\,200 z + 39\,861\,446\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ 2\sqrt{z}\left(16\,777\,216 z^6 - 2\,036\,334\,592 z^5 + 59\,706\,900\,480 z^4 - 415\,824\,297\,984 z^3 + \right. $$
$$ \left.\left. 221\,597\,925\,120 z^2 + 158\,075\,517\,600 z + 39\,861\,446\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.8169.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, \frac{7}{4}; -z\right) = $$
$$ \frac{1}{161\,902\,540\,800\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(16\,777\,216 z^6 + 2\,040\,528\,896 z^5 + 60\,210\,479\,104 z^4 + 430\,110\,720\,000 z^3 + \right.\right.\right. $$
$$ \left. 309\,049\,378\,560 z^2 - 170\,498\,671\,200 z + 67\,664\,121\,525\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ \left(16\,777\,216 z^6 + 2\,030\,043\,136 z^5 + 58\,963\,329\,024 z^4 + 395\,711\,447\,040 z^3 + 120\,245\,748\,480 z^2 - 80\,691\,811\,200 z - \right. $$
$$ \left. 39\,861\,446\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216 z^6 + 2\,036\,334\,592 z^5 + 59\,706\,900\,480 z^4 + \right. $$
$$ \left.\left. 415\,824\,297\,984 z^3 + 221\,597\,925\,120 z^2 - 158\,075\,517\,600 z + 39\,861\,446\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.8170.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, \frac{9}{4}; z\right) = \frac{1}{14\,839\,783\,096\,320 z^{5/4}} $$
$$ \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-67\,108\,864 z^{13/2} + 16\,777\,216 z^6 + 8\,766\,095\,360 z^{11/2} - 2\,178\,940\,928 z^5 - 279\,847\,895\,040 z^{9/2} + \right.\right.\right. $$
$$ 68\,371\,021\,824 z^4 + 2\,149\,611\,405\,312 z^{7/2} - 491\,318\,231\,040 z^3 - 1\,194\,719\,984\,640 z^{5/2} + 58\,732\,128\,000 z^2 - $$
$$ 1\,056\,767\,886\,720 z^{3/2} + 10\,188\,491\,040 z - 272\,829\,456\,900\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + \right. $$
$$ 16\,777\,216 z^6 - 8\,766\,095\,360 z^{11/2} - 2\,178\,940\,928 z^5 + 279\,847\,895\,040 z^{9/2} + 68\,371\,021\,824 z^4 - $$
$$ 2\,149\,611\,405\,312 z^{7/2} - 491\,318\,231\,040 z^3 + 1\,194\,719\,984\,640 z^{5/2} + 58\,732\,128\,000 z^2 + $$
$$ \left. 1\,056\,767\,886\,720 z^{3/2} + 10\,188\,491\,040 z + 272\,829\,456\,900\sqrt{z} - 204\,622\,092\,675\right) - 204\,622\,092\,675\Big) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 35\,114\,713\,088 z^6 + 1\,125\,865\,488\,384 z^5 - 8\,795\,824\,128\,000 z^4 + \right. $$
$$ \left. 6\,047\,129\,088\,000 z^3 + 4\,762\,114\,156\,800 z^2 + 2\,083\,424\,943\,600 z - 204\,622\,092\,675\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 35\,114\,713\,088 z^6 + 1\,125\,865\,488\,384 z^5 - 8\,795\,824\,128\,000 z^4 + \right. $$
$$ \left. 6\,047\,129\,088\,000 z^3 + 4\,762\,114\,156\,800 z^2 + 2\,083\,424\,943\,600 z - 204\,622\,092\,675\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\Big)\Big) $$

07.22.03.8171.01

$${}_1F_2\left(-\frac{23}{4};-\frac{3}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{3\,709\,945\,774\,080\,z^{5/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+35\,114\,713\,088\,z^6+1\,125\,865\,488\,384\,z^5+8\,795\,824\,128\,000\,z^4+\right.\right.$$
$$\left.6\,047\,129\,088\,000\,z^3-4\,762\,114\,156\,800\,z^2+2\,083\,424\,943\,600\,z+204\,622\,092\,675\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+2\,191\,523\,840\,z^5+69\,961\,973\,760\,z^4+537\,402\,851\,328\,z^3+298\,679\,996\,160\,z^2-\right.\right.$$
$$264\,191\,971\,680\,z+68\,207\,364\,225\big)\sin\left(2\sqrt{z}\right)-\left(16\,777\,216\,z^6+2\,178\,940\,928\,z^5+68\,371\,021\,824\,z^4+\right.$$
$$\left.\left.\left.491\,318\,231\,040\,z^3+58\,732\,128\,000\,z^2-10\,188\,491\,040\,z-204\,622\,092\,675\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.8172.01

$${}_1F_2\left(-\frac{23}{4};-\frac{3}{2},\frac{11}{4};z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-37\,664\,849\,920\,z^6+1\,312\,633\,651\,200\,z^5-11\,427\,382\,886\,400\,z^4+10\,215\,009\,792\,000\,z^3+\right.\right.\right.$$
$$\left.7\,934\,120\,812\,800\,z^2+4\,548\,713\,598\,000\,z+518\,198\,806\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(268\,435\,456\,z^7-37\,497\,077\,760\,z^6+1\,289\,544\,007\,680\,z^5-10\,667\,129\,241\,600\,z^4+4\,881\,445\,171\,200\,z^3+\right.$$
$$\left.5\,435\,966\,764\,800\,z^2-637\,783\,146\,000\,z+1\,554\,596\,418\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7-37\,597\,741\,056\,z^6+1\,303\,322\,296\,320\,z^5-11\,113\,443\,164\,160\,z^4+\right.$$
$$\left.\left.\left.7\,806\,581\,452\,800\,z^3+7\,826\,697\,964\,800\,z^2+3\,954\,255\,505\,200\,z-1\,554\,596\,418\,375\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(11\,101\,888\,512\,000\sqrt{2}\,z^{5/4}\right)$$

07.22.03.8173.01

$${}_1F_2\left(-\frac{23}{4};-\frac{3}{2},\frac{11}{4};-z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+37\,664\,849\,920\,z^6+1\,312\,633\,651\,200\,z^5+11\,427\,382\,886\,400\,z^4+10\,215\,009\,792\,000\,z^3-\right.\right.\right.$$
$$\left.7\,934\,120\,812\,800\,z^2+4\,548\,713\,598\,000\,z-518\,198\,806\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(268\,435\,456\,z^7+37\,497\,077\,760\,z^6+1\,289\,544\,007\,680\,z^5+10\,667\,129\,241\,600\,z^4+4\,881\,445\,171\,200\,z^3-\right.$$
$$\left.5\,435\,966\,764\,800\,z^2-637\,783\,146\,000\,z-1\,554\,596\,418\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+37\,597\,741\,056\,z^6+1\,303\,322\,296\,320\,z^5+11\,113\,443\,164\,160\,z^4+\right.$$
$$\left.\left.\left.7\,806\,581\,452\,800\,z^3-7\,826\,697\,964\,800\,z^2+3\,954\,255\,505\,200\,z+1\,554\,596\,418\,375\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(11\,101\,888\,512\,000\sqrt{2}\,z^{5/4}\right)$$

07.22.03.8174.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) = \frac{1}{844\,218\,771\,701\,760\, z^{9/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 + 160\,323\,076\,096\, z^{13/2} - 39\,879\,442\,432\, z^6 - 5\,974\,958\,014\,464\, z^{11/2} + 1\,464\,521\,981\,952\, z^5 + 55\,230\,524\,030\,976\, z^{9/2} - 12\,805\,270\,732\,800\, z^4 - 39\,910\,699\,745\,280\, z^{7/2} + 3\,259\,033\,989\,120\, z^3 - 47\,721\,736\,258\,560\, z^{5/2} + 4\,031\,514\,789\,120\, z^2 - 25\,568\,017\,675\,200\, z^{3/2} - 9\,821\,860\,448\,400\, z + 20\,462\,209\,267\,500\sqrt{z} + e^{4\sqrt{z}} \left(1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 - 160\,323\,076\,096\, z^{13/2} - 39\,879\,442\,432\, z^6 + 5\,974\,958\,014\,464\, z^{11/2} + 1\,464\,521\,981\,952\, z^5 - 55\,230\,524\,030\,976\, z^{9/2} - 12\,805\,270\,732\,800\, z^4 + 39\,910\,699\,745\,280\, z^{7/2} + 3\,259\,033\,989\,120\, z^3 + 47\,721\,736\,258\,560\, z^{5/2} + 4\,031\,514\,789\,120\, z^2 + 25\,568\,017\,675\,200\, z^{3/2} - 9\,821\,860\,448\,400\, z - 20\,462\,209\,267\,500\sqrt{z} + 15\,346\,656\,950\,625\right) + 15\,346\,656\,950\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\, z^8 - 642\,097\,610\,752\, z^7 + 24\,018\,463\,752\,192\, z^6 - 225\,173\,097\,676\,800\, z^5 + 193\,508\,130\,816\,000\, z^4 + 203\,183\,537\,356\,800\, z^3 + 133\,339\,196\,390\,400\, z^2 - 26\,191\,627\,862\,400\, z + 15\,346\,656\,950\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\, z^8 - 642\,097\,610\,752\, z^7 + 24\,018\,463\,752\,192\, z^6 - 225\,173\,097\,676\,800\, z^5 + 193\,508\,130\,816\,000\, z^4 + 203\,183\,537\,356\,800\, z^3 + 133\,339\,196\,390\,400\, z^2 - 26\,191\,627\,862\,400\, z + 15\,346\,656\,950\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8175.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) = \frac{1}{211\,054\,692\,925\,440\, z^{9/4}} \left(\sqrt{\pi}\left(4\,294\,967\,296\, z^8 + 642\,097\,610\,752\, z^7 + 24\,018\,463\,752\,192\, z^6 + 225\,173\,097\,676\,800\, z^5 + 193\,508\,130\,816\,000\, z^4 + 203\,183\,537\,356\,800\, z^3 + 133\,339\,196\,390\,400\, z^2 + 26\,191\,627\,862\,400\, z + 15\,346\,656\,950\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\, z^7 + 40\,080\,769\,024\, z^6 + 1\,493\,739\,503\,616\, z^5 + 13\,807\,631\,007\,744\, z^4 + 9\,977\,674\,936\,320\, z^3 - 11\,930\,434\,064\,640\, z^2 + 6\,392\,004\,418\,800\, z + 5\,115\,552\,316\,875\right)\sin\left(2\sqrt{z}\right) - \left(268\,435\,456\, z^7 + 39\,879\,442\,432\, z^6 + 1\,464\,521\,981\,952\, z^5 + 12\,805\,270\,732\,800\, z^4 + 3\,259\,033\,989\,120\, z^3 - 4\,031\,514\,789\,120\, z^2 - 9\,821\,860\,448\,400\, z - 15\,346\,656\,950\,625\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8176.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 682\,899\,800\,064\,z^7 + 27\,448\,196\,464\,640\,z^6 - 281\,838\,102\,773\,760\,z^5 + 301\,091\,497\,574\,400\,z^4 + 304\,171\,042\,406\,400\,z^3 + 231\,262\,818\,508\,800\,z^2 - 61\,665\,657\,928\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4\,294\,967\,296\,z^8 + 680\,215\,445\,504\,z^7 - 27\,028\,598\,292\,480\,z^6 + 265\,780\,073\,594\,880\,z^5 - 163\,773\,127\,065\,600\,z^4 - 246\,403\,913\,932\,800\,z^3 - 69\,390\,806\,284\,800\,z^2 + 281\,900\,150\,532\,000\,z + 184\,996\,973\,786\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 681\,826\,058\,240\,z^7 + 27\,279\,149\,236\,224\,z^6 - 275\,234\,905\,128\,960\,z^5 + 240\,176\,893\,132\,800\,z^4 + 308\,563\,059\,916\,800\,z^3 + 231\,302\,687\,616\,000\,z^2 - 112\,760\,060\,212\,800\,z + 184\,996\,973\,786\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(549\,038\,850\,048\,000\,\sqrt{2}\,z^{9/4}\right) $$

07.22.03.8177.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, \frac{15}{4}; -z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 682\,899\,800\,064\,z^7 + 27\,448\,196\,464\,640\,z^6 + 281\,838\,102\,773\,760\,z^5 + 301\,091\,497\,574\,400\,z^4 + 304\,171\,042\,406\,400\,z^3 + 231\,262\,818\,508\,800\,z^2 - 61\,665\,657\,928\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4\,294\,967\,296\,z^8 + 680\,215\,445\,504\,z^7 + 27\,028\,598\,292\,480\,z^6 + 265\,780\,073\,594\,880\,z^5 + 163\,773\,127\,065\,600\,z^4 - 246\,403\,913\,932\,800\,z^3 + 69\,390\,806\,284\,800\,z^2 + 281\,900\,150\,532\,000\,z - 184\,996\,973\,786\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 681\,826\,058\,240\,z^7 + 27\,279\,149\,236\,224\,z^6 + 275\,234\,905\,128\,960\,z^5 + 240\,176\,893\,132\,800\,z^4 - 308\,563\,059\,916\,800\,z^3 + 231\,302\,687\,616\,000\,z^2 + 112\,760\,060\,212\,800\,z + 184\,996\,973\,786\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(549\,038\,850\,048\,000\,\sqrt{2}\,z^{9/4}\right) $$

07.22.03.8178.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) =
\left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-17\,179\,869\,184\,z^{17/2} + 4\,294\,967\,296\,z^8 + 2\,886\,218\,022\,912\,z^{15/2} - 718\,333\,280\,256\,z^7 - \right.\right.\right.
$$

$$
122\,988\,804\,440\,064\,z^{13/2} + 30\,219\,524\,112\,384\,z^6 + 1\,329\,019\,446\,362\,112\,z^{11/2} - 311\,333\,643\,878\,400\,z^5 -
$$

$$
1\,183\,801\,186\,713\,600\,z^{9/2} + 124\,085\,126\,430\,720\,z^4 - 1\,770\,590\,943\,313\,920\,z^{7/2} + 232\,213\,983\,805\,440\,z^3 -
$$

$$
1\,425\,913\,038\,950\,400\,z^{5/2} - 239\,466\,311\,884\,800\,z^2 + 1\,346\,998\,004\,352\,000\,z^{3/2} -
$$

$$
589\,311\,626\,904\,000\,z - 3\,499\,037\,784\,742\,500\sqrt{z} + e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2} + 4\,294\,967\,296\,z^8 - \right.
$$

$$
2\,886\,218\,022\,912\,z^{15/2} - 718\,333\,280\,256\,z^7 + 122\,988\,804\,440\,064\,z^{13/2} + 30\,219\,524\,112\,384\,z^6 -
$$

$$
1\,329\,019\,446\,362\,112\,z^{11/2} - 311\,333\,643\,878\,400\,z^5 + 1\,183\,801\,186\,713\,600\,z^{9/2} +
$$

$$
124\,085\,126\,430\,720\,z^4 + 1\,770\,590\,943\,313\,920\,z^{7/2} + 232\,213\,983\,805\,440\,z^3 +
$$

$$
1\,425\,913\,038\,950\,400\,z^{5/2} - 239\,466\,311\,884\,800\,z^2 - 1\,346\,998\,004\,352\,000\,z^{3/2} -
$$

$$
\left.\left.\left.589\,311\,626\,904\,000\,z + 3\,499\,037\,784\,742\,500\sqrt{z} - 2\,624\,278\,338\,556\,875\right) - 2\,624\,278\,338\,556\,875\right) +
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9 - 11\,557\,756\,993\,536\,z^8 + 494\,094\,111\,473\,664\,z^7 - 5\,404\,154\,344\,243\,200\,z^6 +\right.
$$

$$
5\,573\,034\,167\,500\,800\,z^5 + 7\,314\,607\,344\,844\,800\,z^4 + 6\,400\,281\,426\,739\,200\,z^3 -
$$

$$
\left.1\,885\,797\,206\,092\,800\,z^2 + 2\,209\,918\,600\,890\,000\,z - 2\,624\,278\,338\,556\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) +
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9 - 11\,557\,756\,993\,536\,z^8 + 494\,094\,111\,473\,664\,z^7 - 5\,404\,154\,344\,243\,200\,z^6 +\right.
$$

$$
5\,573\,034\,167\,500\,800\,z^5 + 7\,314\,607\,344\,844\,800\,z^4 + 6\,400\,281\,426\,739\,200\,z^3 - 1\,885\,797\,206\,092\,800\,z^2 +
$$

$$
\left.\left.2\,209\,918\,600\,890\,000\,z - 2\,624\,278\,338\,556\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big/\left(37\,405\,385\,576\,939\,520\,z^{13/4}\right)
$$

07.22.03.8179.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) =
\left(\sqrt{\pi}\left(68\,719\,476\,736\,z^9 + 11\,557\,756\,993\,536\,z^8 + 494\,094\,111\,473\,664\,z^7 + 5\,404\,154\,344\,243\,200\,z^6 + \right.\right.
$$

$$
5\,573\,034\,167\,500\,800\,z^5 - 7\,314\,607\,344\,844\,800\,z^4 + 6\,400\,281\,426\,739\,200\,z^3 +
$$

$$
\left.1\,885\,797\,206\,092\,800\,z^2 + 2\,209\,918\,600\,890\,000\,z + 2\,624\,278\,338\,556\,875\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) -
$$

$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^8 + 721\,554\,505\,728\,z^7 + 30\,747\,201\,110\,016\,z^6 + 332\,254\,861\,590\,528\,z^5 + \right.\right.
$$

$$
295\,950\,296\,678\,400\,z^4 - 442\,647\,735\,828\,480\,z^3 + 356\,478\,259\,737\,600\,z^2 + 336\,749\,501\,088\,000\,z +
$$

$$
874\,759\,446\,185\,625\right)\sin\left(2\sqrt{z}\right) - \left(4\,294\,967\,296\,z^8 + 718\,333\,280\,256\,z^7 + 30\,219\,524\,112\,384\,z^6 + \right.
$$

$$
311\,333\,643\,878\,400\,z^5 + 124\,085\,126\,430\,720\,z^4 - 232\,213\,983\,805\,440\,z^3 - 239\,466\,311\,884\,800\,z^2 +
$$

$$
\left.\left.\left.589\,311\,626\,904\,000\,z - 2\,624\,278\,338\,556\,875\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(9\,351\,346\,394\,234\,880\,z^{13/4}\right)
$$

07.22.03.8180.01

$${}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 12\,210\,592\,022\,528\,z^8 + 556\,032\,908\,591\,104\,z^7 - 6\,578\,067\,556\,270\,080\,z^6 + \right.\right.\right.$$
$$8\,170\,680\,782\,684\,160\,z^5 + 10\,210\,656\,160\,972\,800\,z^4 + 9\,768\,609\,497\,088\,000\,z^3 -$$
$$\left.\left.1\,804\,160\,963\,404\,800\,z^2 + 6\,906\,553\,688\,034\,000\,z + 14\,244\,766\,981\,570\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 -$$
$$\left(68\,719\,476\,736\,z^9 - 12\,167\,642\,349\,568\,z^8 + 548\,516\,715\,823\,104\,z^7 - 6\,250\,257\,532\,846\,080\,z^6 + \right.$$
$$4\,862\,027\,476\,500\,480\,z^5 + 9\,066\,473\,275\,392\,000\,z^4 + 5\,921\,348\,802\,969\,600\,z^3 -$$
$$\left.19\,845\,770\,597\,452\,800\,z^2 + 85\,838\,595\,836\,994\,000\,z + 42\,734\,300\,944\,710\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 12\,193\,412\,153\,344\,z^8 + 553\,007\,104\,131\,072\,z^7 - 6\,443\,702\,591\,422\,464\,z^6 + \right.$$
$$6\,722\,167\,788\,011\,520\,z^5 + 10\,502\,345\,126\,707\,200\,z^4 + 10\,362\,360\,405\,196\,800\,z^3 - 5\,412\,482\,890\,214\,400\,z^2 +$$
$$\left.\left.5\,327\,912\,845\,054\,800\,z - 42\,734\,300\,944\,710\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(22\,254\,374\,721\,945\,600\,\sqrt{2}\; z^{13/4}\right)$$

07.22.03.8181.01

$${}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, \frac{19}{4}; -z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 12\,210\,592\,022\,528\,z^8 + 556\,032\,908\,591\,104\,z^7 + 6\,578\,067\,556\,270\,080\,z^6 + \right.\right.\right.$$
$$8\,170\,680\,782\,684\,160\,z^5 - 10\,210\,656\,160\,972\,800\,z^4 + 9\,768\,609\,497\,088\,000\,z^3 +$$
$$\left.\left.1\,804\,160\,963\,404\,800\,z^2 + 6\,906\,553\,688\,034\,000\,z - 14\,244\,766\,981\,570\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 -$$
$$\left(68\,719\,476\,736\,z^9 + 12\,167\,642\,349\,568\,z^8 + 548\,516\,715\,823\,104\,z^7 + 6\,250\,257\,532\,846\,080\,z^6 + \right.$$
$$4\,862\,027\,476\,500\,480\,z^5 - 9\,066\,473\,275\,392\,000\,z^4 + 5\,921\,348\,802\,969\,600\,z^3 +$$
$$\left.19\,845\,770\,597\,452\,800\,z^2 + 85\,838\,595\,836\,994\,000\,z - 42\,734\,300\,944\,710\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 12\,193\,412\,153\,344\,z^8 + 553\,007\,104\,131\,072\,z^7 + 6\,443\,702\,591\,422\,464\,z^6 + \right.$$
$$6\,722\,167\,788\,011\,520\,z^5 - 10\,502\,345\,126\,707\,200\,z^4 + 10\,362\,360\,405\,196\,800\,z^3 + 5\,412\,482\,890\,214\,400\,z^2 +$$
$$\left.\left.5\,327\,912\,845\,054\,800\,z + 42\,734\,300\,944\,710\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(22\,254\,374\,721\,945\,600\,\sqrt{2}\; z^{13/4}\right)$$

07.22.03.8182.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) =
\left(17\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-274\,877\,906\,944\, z^{19/2} + 68\,719\,476\,736\, z^9 + 51\,316\,269\,252\,608\, z^{17/2} - 12\,777\,527\,705\,600\, z^8 - \right.\right.\right.
$$
$$
2\,460\,951\,836\,098\,560\, z^{15/2} + 605\,831\,980\,646\,400\, z^7 + 30\,438\,039\,968\,808\,960\, z^{13/2} -
$$
$$
7\,186\,341\,628\,477\,440\, z^6 - 32\,254\,813\,274\,112\,000\, z^{11/2} + 3\,943\,013\,548\,032\,000\, z^5 -
$$
$$
57\,669\,657\,860\,505\,600\, z^{9/2} + 9\,363\,676\,092\,825\,600\, z^4 - 61\,361\,428\,281\,753\,600\, z^{7/2} -
$$
$$
1\,959\,269\,824\,512\,000\, z^3 + 57\,090\,945\,719\,808\,000\, z^{5/2} - 58\,519\,579\,966\,848\,000\, z^2 -
$$
$$
81\,577\,566\,638\,568\,000\, z^{3/2} + 417\,085\,303\,941\,306\,000\, z + 1\,046\,212\,297\,638\,007\,500\sqrt{z} +
$$
$$
e^{4\sqrt{z}}\left(274\,877\,906\,944\, z^{19/2} + 68\,719\,476\,736\, z^9 - 51\,316\,269\,252\,608\, z^{17/2} - 12\,777\,527\,705\,600\, z^8 + \right.
$$
$$
2\,460\,951\,836\,098\,560\, z^{15/2} + 605\,831\,980\,646\,400\, z^7 - 30\,438\,039\,968\,808\,960\, z^{13/2} -
$$
$$
7\,186\,341\,628\,477\,440\, z^6 + 32\,254\,813\,274\,112\,000\, z^{11/2} + 3\,943\,013\,548\,032\,000\, z^5 +
$$
$$
57\,669\,657\,860\,505\,600\, z^{9/2} + 9\,363\,676\,092\,825\,600\, z^4 + 61\,361\,428\,281\,753\,600\, z^{7/2} -
$$
$$
1\,959\,269\,824\,512\,000\, z^3 - 57\,090\,945\,719\,808\,000\, z^{5/2} - 58\,519\,579\,966\,848\,000\, z^2 +
$$
$$
81\,577\,566\,638\,568\,000\, z^{3/2} + 417\,085\,303\,941\,306\,000\, z -
$$
$$
\left.\left.\left.1\,046\,212\,297\,638\,007\,500\sqrt{z} + 784\,659\,223\,228\,505\,625\right) + 784\,659\,223\,228\,505\,625\right) +
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\, z^{10} - 205\,471\,235\,440\,640\, z^9 + 9\,881\,882\,229\,473\,280\, z^8 - \right.
$$
$$
123\,523\,527\,868\,416\,000\, z^7 + 148\,614\,244\,466\,688\,000\, z^6 + 234\,067\,435\,035\,033\,600\, z^5 +
$$
$$
256\,011\,257\,069\,568\,000\, z^4 - 100\,575\,850\,991\,616\,000\, z^3 + 176\,793\,488\,071\,200\,000\, z^2 -
$$
$$
\left.419\,884\,534\,169\,100\,000\, z + 784\,659\,223\,228\,505\,625\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) +
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\, z^{10} - 205\,471\,235\,440\,640\, z^9 + 9\,881\,882\,229\,473\,280\, z^8 - \right.
$$
$$
123\,523\,527\,868\,416\,000\, z^7 + 148\,614\,244\,466\,688\,000\, z^6 + 234\,067\,435\,035\,033\,600\, z^5 +
$$
$$
256\,011\,257\,069\,568\,000\, z^4 - 100\,575\,850\,991\,616\,000\, z^3 + 176\,793\,488\,071\,200\,000\, z^2 -
$$
$$
\left.\left.\left.419\,884\,534\,169\,100\,000\, z + 784\,659\,223\,228\,505\,625\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)\Big/\left(23\,939\,446\,769\,241\,292\,800\, z^{17/4}\right)
$$

07.22.03.8183.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) =
\left(17\left(\sqrt{\pi}\left(1\,099\,511\,627\,776\, z^{10} + 205\,471\,235\,440\,640\, z^9 + 9\,881\,882\,229\,473\,280\, z^8 + 123\,523\,527\,868\,416\,000\, z^7 + \right.\right.\right.
$$
$$
148\,614\,244\,466\,688\,000\, z^6 - 234\,067\,435\,035\,033\,600\, z^5 +
$$
$$
256\,011\,257\,069\,568\,000\, z^4 + 100\,575\,850\,991\,616\,000\, z^3 + 176\,793\,488\,071\,200\,000\, z^2 +
$$
$$
\left.419\,884\,534\,169\,100\,000\, z + 784\,659\,223\,228\,505\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) -
$$
$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(68\,719\,476\,736\, z^9 + 12\,829\,067\,313\,152\, z^8 + 615\,237\,959\,024\,640\, z^7 + 7\,609\,509\,992\,202\,240\, z^6 + \right.\right.
$$
$$
8\,063\,703\,318\,528\,000\, z^5 - 14\,417\,414\,465\,126\,400\, z^4 + 15\,340\,357\,070\,438\,400\, z^3 +
$$
$$
\left.14\,272\,736\,429\,952\,000\, z^2 + 20\,394\,391\,659\,642\,000\, z + 261\,553\,074\,409\,501\,875\right)\sin\left(2\sqrt{z}\right) -
$$
$$
\left(68\,719\,476\,736\, z^9 + 12\,777\,527\,705\,600\, z^8 + 605\,831\,980\,646\,400\, z^7 + 7\,186\,341\,628\,477\,440\, z^6 + \right.
$$
$$
3\,943\,013\,548\,032\,000\, z^5 - 9\,363\,676\,092\,825\,600\, z^4 - 1\,959\,269\,824\,512\,000\, z^3 +
$$
$$
58\,519\,579\,966\,848\,000\, z^2 + 417\,085\,303\,941\,306\,000\, z -
$$
$$
\left.\left.\left.784\,659\,223\,228\,505\,625\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(5\,984\,861\,692\,310\,323\,200\, z^{17/4}\right)
$$

07.22.03.8184.01

$${}_1F_2\left(-\frac{23}{4};-\frac{3}{2},\frac{23}{4};z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10}-215\,916\,595\,904\,512\,z^9+10\,985\,912\,162\,844\,672\,z^8-147\,131\,502\,805\,647\,360\,z^7+\right.\right.\right.$$
$$208\,263\,577\,054\,740\,480\,z^6+311\,020\,985\,253\,888\,000\,z^5+360\,771\,140\,704\,665\,600\,z^4-$$
$$134\,710\,685\,267\,558\,400\,z^3+615\,669\,928\,761\,888\,000\,z^2-3\,711\,779\,282\,054\,844\,000\,z-$$
$$5\,341\,787\,618\,088\,796\,875\big)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-1\,099\,511\,627\,776\,z^{10}+215\,229\,401\,137\,152\,z^9-\right.$$
$$10\,852\,811\,126\,341\,632\,z^8+140\,615\,189\,161\,574\,400\,z^7-132\,419\,094\,514\,237\,440\,z^6-$$
$$291\,921\,720\,665\,702\,400\,z^5-290\,146\,091\,345\,510\,400\,z^4+808\,264\,111\,605\,350\,400\,z^3-$$
$$\left.2\,131\,165\,138\,021\,920\,000\,z^2+35\,554\,938\,385\,999\,032\,000\,z+16\,025\,362\,854\,266\,390\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10}-215\,641\,717\,997\,568\,z^9+10\,932\,362\,510\,598\,144\,z^8-144\,467\,343\,181\,873\,152\,z^7+\right.$$
$$175\,395\,106\,361\,180\,160\,z^6+322\,174\,009\,737\,216\,000\,z^5+392\,550\,594\,173\,337\,600\,z^4-$$
$$217\,609\,568\,509\,132\,800\,z^3+161\,021\,365\,983\,878\,400\,z^2+1\,367\,497\,630\,230\,732\,000\,z+$$
$$\left.\left.\left.16\,025\,362\,854\,266\,390\,625\big)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(787\,102\,095\,428\,812\,800\,\sqrt{2}\;z^{17/4}\right)$$

07.22.03.8185.01

$${}_1F_2\left(-\frac{23}{4};-\frac{3}{2},\frac{23}{4};-z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10}+215\,916\,595\,904\,512\,z^9+10\,985\,912\,162\,844\,672\,z^8+147\,131\,502\,805\,647\,360\,z^7+\right.\right.\right.$$
$$208\,263\,577\,054\,740\,480\,z^6-311\,020\,985\,253\,888\,000\,z^5+360\,771\,140\,704\,665\,600\,z^4+$$
$$134\,710\,685\,267\,558\,400\,z^3+615\,669\,928\,761\,888\,000\,z^2+3\,711\,779\,282\,054\,844\,000\,z-$$
$$5\,341\,787\,618\,088\,796\,875\big)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(1\,099\,511\,627\,776\,z^{10}+215\,229\,401\,137\,152\,z^9+\right.$$
$$10\,852\,811\,126\,341\,632\,z^8+140\,615\,189\,161\,574\,400\,z^7+132\,419\,094\,514\,237\,440\,z^6-$$
$$291\,921\,720\,665\,702\,400\,z^5+290\,146\,091\,345\,510\,400\,z^4+808\,264\,111\,605\,350\,400\,z^3+$$
$$\left.2\,131\,165\,138\,021\,920\,000\,z^2+35\,554\,938\,385\,999\,032\,000\,z-16\,025\,362\,854\,266\,390\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10}+215\,641\,717\,997\,568\,z^9+10\,932\,362\,510\,598\,144\,z^8+144\,467\,343\,181\,873\,152\,z^7+\right.$$
$$175\,395\,106\,361\,180\,160\,z^6-322\,174\,009\,737\,216\,000\,z^5+392\,550\,594\,173\,337\,600\,z^4+$$
$$217\,609\,568\,509\,132\,800\,z^3+161\,021\,365\,983\,878\,400\,z^2-1\,367\,497\,630\,230\,732\,000\,z+$$
$$\left.\left.\left.16\,025\,362\,854\,266\,390\,625\big)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(787\,102\,095\,428\,812\,800\,\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1=-\frac{23}{4}$, $b_1=-\frac{1}{2}$

07.22.03.8186.01

$${}_1F_2\left(-\frac{23}{4};-\frac{1}{2},-\frac{23}{4};z\right)=\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.8187.01

$${}_1F_2\left(-\frac{23}{4};-\frac{1}{2},-\frac{23}{4};-z\right)=\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.8188.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{1}{2},-\frac{21}{4};z\right)=\frac{1}{2\,076\,963\,525\sqrt{2}}\left(\sqrt[4]{z}\right.$$
$$\left(-\left(4\,194\,304\,z^6+50\,593\,792\,z^5+584\,531\,968\,z^4+4\,065\,346\,560\,z^3+11\,691\,501\,120\,z^2+395\,612\,100\,z-2\,076\,963\,525\right)\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(524\,288\,z^5+6\,651\,904\,z^4+77\,899\,776\,z^3+570\,556\,800\,z^2+2\,057\,182\,920\,z-2\,076\,963\,525\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(1\,048\,576\,z^5+12\,910\,592\,z^4+149\,704\,704\,z^3+\right.$$
$$\left.\left.\left.1\,059\,740\,928\,z^2+3\,276\,873\,360\,z+2\,076\,963\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8189.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{1}{2},-\frac{21}{4};-z\right)=-\frac{1}{2\,076\,963\,525\sqrt{2}}\left(\sqrt[4]{z}\right.$$
$$\left(\left(4\,194\,304\,z^6-50\,593\,792\,z^5+584\,531\,968\,z^4-4\,065\,346\,560\,z^3+11\,691\,501\,120\,z^2-395\,612\,100\,z-2\,076\,963\,525\right)\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(524\,288\,z^5-6\,651\,904\,z^4+77\,899\,776\,z^3-570\,556\,800\,z^2+2\,057\,182\,920\,z+2\,076\,963\,525\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(1\,048\,576\,z^5-12\,910\,592\,z^4+149\,704\,704\,z^3-\right.$$
$$\left.\left.\left.1\,059\,740\,928\,z^2+3\,276\,873\,360\,z-2\,076\,963\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8190.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{1}{2},-\frac{19}{4};z\right)=\frac{1}{1\,309\,458\,150}$$
$$\left(e^{-2\sqrt{z}}\left(2\,097\,152\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4}+2\,097\,152\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4}-2\,097\,152\,e^{4\sqrt{z}}\,z^{11/2}+\right.\right.$$
$$2\,097\,152\,z^{11/2}-524\,288\,e^{4\sqrt{z}}\,z^5-524\,288\,z^5-393\,216\,e^{4\sqrt{z}}\,z^{9/2}+393\,216\,z^{9/2}-491\,520\,e^{4\sqrt{z}}\,z^4-$$
$$491\,520\,z^4-860\,160\,e^{4\sqrt{z}}\,z^{7/2}+860\,160\,z^{7/2}-1\,935\,360\,e^{4\sqrt{z}}\,z^3-1\,935\,360\,z^3-5\,322\,240\,e^{4\sqrt{z}}\,z^{5/2}+$$
$$\left.\left.5\,322\,240\,z^{5/2}-17\,297\,280\,e^{4\sqrt{z}}\,z^2-17\,297\,280\,z^2-64\,864\,800\,e^{4\sqrt{z}}\,z^{3/2}+64\,864\,800\,z^{3/2}-275\,675\,400\,e^{4\sqrt{z}}\,z-\right.\right.$$
$$\left.\left.275\,675\,400\,z-1\,309\,458\,150\,e^{4\sqrt{z}}\,\sqrt{z}+1\,309\,458\,150\,\sqrt{z}+654\,729\,075\,e^{4\sqrt{z}}+654\,729\,075\right)\right)$$

07.22.03.8191.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{1}{2},-\frac{19}{4};-z\right)=\frac{1}{654\,729\,075}$$
$$\left(4\,194\,304\,\sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{23/4}+2\left(-1\,048\,576\,z^5+196\,608\,z^4-430\,080\,z^3+2\,661\,120\,z^2-32\,432\,400\,z+654\,729\,075\right)\right.$$
$$\left.\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(524\,288\,z^5-491\,520\,z^4+1\,935\,360\,z^3-17\,297\,280\,z^2+275\,675\,400\,z+654\,729\,075\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.8192.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, -\frac{17}{4}; z\right) = \frac{1}{98\,903\,025\sqrt{2}}\left(\sqrt[4]{z}\right.$$
$$\left(\left(2\,097\,152 z^6 - 25\,952\,256 z^5 - 95\,305\,728 z^4 - 398\,658\,560 z^3 - 807\,693\,120 z^2 - 69\,813\,900 z + 98\,903\,025\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 -\right.$$
$$4\sqrt{z}\left(262\,144 z^5 - 3\,080\,192 z^4 - 13\,500\,416 z^3 - 59\,677\,440 z^2 - 148\,936\,320 z + 98\,903\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(-524\,288 z^5 + 6\,356\,992 z^4 + 25\,243\,648 z^3 + 107\,190\,528 z^2 + 238\,316\,400 z + 98\,903\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8193.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) = \frac{1}{98\,903\,025\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(2\,097\,152 z^6 + 25\,952\,256 z^5 - 95\,305\,728 z^4 + 398\,658\,560 z^3 - 807\,693\,120 z^2 + 69\,813\,900 z + 98\,903\,025\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 -$$
$$4\sqrt{z}\left(262\,144 z^5 + 3\,080\,192 z^4 - 13\,500\,416 z^3 + 59\,677\,440 z^2 - 148\,936\,320 z - 98\,903\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(524\,288 z^5 + 6\,356\,992 z^4 - 25\,243\,648 z^3 + 107\,190\,528 z^2 - 238\,316\,400 z + 98\,903\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8194.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{68\,918\,850}\left(e^{-2\sqrt{z}}\left(524\,288\, e^{4\sqrt{z}}\, z^{11/2} - 524\,288 z^{11/2} + 131\,072\, e^{4\sqrt{z}}\, z^5 + 131\,072 z^5 - 32\,768\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16 z - 391)\right.\right.$$
$$\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{19/4} - 32\,768\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16 z - 391)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{19/4} - 12\,713\,984\, e^{4\sqrt{z}}\, z^{9/2} + 12\,713\,984 z^{9/2} -$$
$$3\,080\,192\, e^{4\sqrt{z}}\, z^4 - 3\,080\,192 z^4 - 2\,187\,264\, e^{4\sqrt{z}}\, z^{7/2} + 2\,187\,264 z^{7/2} - 2\,519\,040\, e^{4\sqrt{z}}\, z^3 - 2\,519\,040 z^3 -$$
$$3\,924\,480\, e^{4\sqrt{z}}\, z^{5/2} + 3\,924\,480 z^{5/2} - 7\,499\,520\, e^{4\sqrt{z}}\, z^2 - 7\,499\,520 z^2 - 16\,299\,360\, e^{4\sqrt{z}}\, z^{3/2} + 16\,299\,360 z^{3/2} -$$
$$\left.\left.36\,756\,720\, e^{4\sqrt{z}}\, z - 36\,756\,720 z - 68\,918\,850\, e^{4\sqrt{z}}\,\sqrt{z} + 68\,918\,850\sqrt{z} + 34\,459\,425\, e^{4\sqrt{z}} + 34\,459\,425\right)\right)$$

07.22.03.8195.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) = \frac{1}{34\,459\,425}\left(-65\,536\sqrt{\pi}\,(16 z + 391) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{19/4} +\right.$$
$$2\left(262\,144 z^5 + 6\,356\,992 z^4 - 1\,093\,632 z^3 + 1\,962\,240 z^2 - 8\,149\,680 z + 34\,459\,425\right)\sin\left(2\sqrt{z}\right)\sqrt{z} +$$
$$\left.\left(-131\,072 z^5 - 3\,080\,192 z^4 + 2\,519\,040 z^3 - 7\,499\,520 z^2 + 36\,756\,720 z + 34\,459\,425\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.8196.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) = \frac{1}{17\,453\,475\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(-\left(1\,048\,576 z^6 - 38\,600\,704 z^5 + 154\,140\,672 z^4 + 192\,046\,080 z^3 + 232\,951\,680 z^2 + 26\,851\,500 z - 17\,453\,475\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ 4\sqrt{z}\left(131\,072 z^5 - 4\,743\,168 z^4 + 16\,472\,064 z^3 + 29\,468\,160 z^2 + 40\,814\,280 z - 17\,453\,475\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(262\,144 z^5 - 9\,584\,640 z^4 + 36\,225\,024 z^3 + 54\,358\,272 z^2 + 72\,416\,160 z + 17\,453\,475\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8197.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) = $$
$$ -\frac{1}{17\,453\,475\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,048\,576 z^6 + 38\,600\,704 z^5 + 154\,140\,672 z^4 - 192\,046\,080 z^3 + 232\,951\,680 z^2 - \right.\right.\right. $$
$$ 26\,851\,500 z - 17\,453\,475\Big) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ 4\sqrt{z}\left(131\,072 z^5 + 4\,743\,168 z^4 + 16\,472\,064 z^3 - 29\,468\,160 z^2 + 40\,814\,280 z + 17\,453\,475\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(262\,144 z^5 + 9\,584\,640 z^4 + 36\,225\,024 z^3 - 54\,358\,272 z^2 + 72\,416\,160 z - 17\,453\,475\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8198.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) = $$
$$ \frac{1}{4\,594\,590}\left(e^{-2\sqrt{z}}\left(-65\,536 e^{4\sqrt{z}} z^{11/2} + 65\,536 z^{11/2} - 16\,384 e^{4\sqrt{z}} z^5 - 16\,384 z^5 + 3\,190\,784 e^{4\sqrt{z}} z^{9/2} - 3\,190\,784 z^{9/2} + \right.\right. $$
$$ 785\,408 e^{4\sqrt{z}} z^4 + 785\,408 z^4 + 256 e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2 - 12\,512 z + 96\,577\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{15/4} + $$
$$ 256 e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2 - 12\,512 z + 96\,577\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{15/4} - 24\,150\,016 e^{4\sqrt{z}} z^{7/2} + $$
$$ 24\,150\,016 z^{7/2} - 5\,490\,688 e^{4\sqrt{z}} z^3 - 5\,490\,688 z^3 - 3\,488\,256 e^{4\sqrt{z}} z^{5/2} + 3\,488\,256 z^{5/2} - $$
$$ 3\,379\,200 e^{4\sqrt{z}} z^2 - 3\,379\,200 z^2 - 4\,038\,720 e^{4\sqrt{z}} z^{3/2} + 4\,038\,720 z^{3/2} - 5\,012\,280 e^{4\sqrt{z}} z - $$
$$ \left.\left. 5\,012\,280 z - 4\,594\,590 e^{4\sqrt{z}}\sqrt{z} + 4\,594\,590\sqrt{z} + 2\,297\,295 e^{4\sqrt{z}} + 2\,297\,295\right)\right) $$

07.22.03.8199.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, -\frac{11}{4}; -z\right) = \frac{1}{2\,297\,295}\left(512\sqrt{\pi}\left(256 z^2 + 12\,512 z + 96\,577\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{15/4} - \right. $$
$$ 2\left(32\,768 z^5 + 1\,595\,392 z^4 + 12\,075\,008 z^3 - 1\,744\,128 z^2 + 2\,019\,360 z - 2\,297\,295\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + $$
$$ \left.\left(16\,384 z^5 + 785\,408 z^4 + 5\,490\,688 z^3 - 3\,379\,200 z^2 + 5\,012\,280 z + 2\,297\,295\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8200.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, -\frac{9}{4}; z\right) = \frac{1}{6\,712\,875\sqrt{2}} \left(\sqrt[4]{z}\left(\left(524\,288 z^6 - 32\,112\,640 z^5 + 375\,756\,800 z^4 - 573\,619\,200 z^3 - 190\,944\,000 z^2 - 20\,884\,500 z + 6\,712\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(65\,536 z^5 - 3\,973\,120 z^4 + 44\,570\,880 z^3 - 48\,326\,400 z^2 - 26\,254\,800 z + 6\,712\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-131\,072 z^5 + 7\,995\,392 z^4 - 91\,983\,360 z^3 + 122\,814\,720 z^2 + 59\,227\,200 z + 6\,712\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8201.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, -\frac{9}{4}; -z\right) = \frac{1}{6\,712\,875\sqrt{2}} \left(\sqrt[4]{z}\left(\left(524\,288 z^6 + 32\,112\,640 z^5 + 375\,756\,800 z^4 + 573\,619\,200 z^3 - 190\,944\,000 z^2 + 20\,884\,500 z + 6\,712\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(65\,536 z^5 + 3\,973\,120 z^4 + 44\,570\,880 z^3 + 48\,326\,400 z^2 - 26\,254\,800 z - 6\,712\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(131\,072 z^5 + 7\,995\,392 z^4 + 91\,983\,360 z^3 + 122\,814\,720 z^2 - 59\,227\,200 z + 6\,712\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8202.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, -\frac{7}{4}; z\right) = \frac{1}{1\,253\,070}\left(e^{-2\sqrt{z}}\left(16\,384 e^{4\sqrt{z}} z^{11/2} - 16\,384 z^{11/2} + 4096 e^{4\sqrt{z}} z^5 + 4096 z^5 - 1\,198\,080 e^{4\sqrt{z}} z^{9/2} + 1\,198\,080 z^{9/2} - 296\,448 e^{4\sqrt{z}} z^4 - 296\,448 z^4 + 18\,324\,288 e^{4\sqrt{z}} z^{7/2} - 18\,324\,288 z^{7/2} + 4\,369\,296 e^{4\sqrt{z}} z^3 + 4\,369\,296 z^3 - 4 e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 - 300\,288 z^2 + 4\,635\,696 z - 13\,037\,895\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{11/4} - 4 e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 - 300\,288 z^2 + 4\,635\,696 z - 13\,037\,895\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{11/4} - 49\,125\,888 e^{4\sqrt{z}} z^{5/2} + 49\,125\,888 z^{5/2} - 9\,665\,280 e^{4\sqrt{z}} z^2 - 9\,665\,280 z^2 - 4\,714\,560 e^{4\sqrt{z}} z^{3/2} + 4\,714\,560 z^{3/2} - 2\,864\,160 e^{4\sqrt{z}} z - 2\,864\,160 z - 1\,253\,070 e^{4\sqrt{z}}\sqrt{z} + 1\,253\,070\sqrt{z} + 626\,535 e^{4\sqrt{z}} + 626\,535\right)\right) $$

07.22.03.8203.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) = \frac{1}{626\,535}\left(-8\sqrt{\pi}\left(4096 z^3 + 300\,288 z^2 + 4\,635\,696 z + 13\,037\,895\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{11/4} + 2\left(8192 z^5 + 599\,040 z^4 + 9\,162\,144 z^3 + 24\,562\,944 z^2 - 2\,357\,280 z + 626\,535\right)\sin\left(2\sqrt{z}\right)\sqrt{z} - \left(4096 z^5 + 296\,448 z^4 + 4\,369\,296 z^3 + 9\,665\,280 z^2 - 2\,864\,160 z - 626\,535\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8204.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) = \frac{1}{5\,221\,125\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(-262\,144 z^6 + 22\,462\,464 z^5 - 436\,116\,480 z^4 + 1\,888\,720\,960 z^3 - 1\,002\,456\,000 z^2 - 37\,592\,100 z + 5\,221\,125\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ 4\sqrt{z}\left(32\,768 z^5 - 2\,787\,328 z^4 + 52\,814\,720 z^3 - 206\,353\,560 z^2 + 41\,769\,000 z - 5\,221\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(65\,536 z^5 - 5\,599\,232 z^4 + 107\,650\,816 z^3 - 446\,995\,920 z^2 + 166\,042\,800 z + 5\,221\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8205.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, -\frac{5}{4}; -z\right) = $$
$$ -\frac{1}{5\,221\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(262\,144 z^6 + 22\,462\,464 z^5 + 436\,116\,480 z^4 + 1\,888\,720\,960 z^3 + 1\,002\,456\,000 z^2 - \right.\right.\right. $$
$$ 37\,592\,100 z - 5\,221\,125\left) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 4\sqrt{z}\left(32\,768 z^5 + 2\,787\,328 z^4 + 52\,814\,720 z^3 + 206\,353\,560 z^2 + 41\,769\,000 z + 5\,221\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(65\,536 z^5 + 5\,599\,232 z^4 + 107\,650\,816 z^3 + 446\,995\,920 z^2 + 166\,042\,800 z - 5\,221\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8206.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, -\frac{3}{4}; z\right) = $$
$$ \frac{1}{11\,456\,640}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 6\,406\,144 z^3 + 148\,342\,272 z^2 - 834\,425\,280 z + 717\,084\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} + \right.\right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 6\,406\,144 z^3 + 148\,342\,272 z^2 - 834\,425\,280 z + 717\,084\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} - $$
$$ 4\left(-16\,384 z^{11/2} + 4096 z^5 + 1\,598\,464 z^{9/2} - 396\,544 z^4 - 36\,792\,000 z^{7/2} + 8\,911\,152 z^3 + \right. $$
$$ 202\,268\,076 z^{5/2} - 44\,802\,495 z^2 - 151\,810\,560 z^{3/2} + 19\,094\,400 z - 2\,864\,160\sqrt{z} + $$
$$ \left.\left.\left. e^{4\sqrt{z}}\left(16\,384 z^{11/2} + 4096 z^5 - 1\,598\,464 z^{9/2} - 396\,544 z^4 + 36\,792\,000 z^{7/2} + 8\,911\,152 z^3 - 202\,268\,076 z^{5/2} - \right.\right.\right.\right. $$
$$ \left.\left.\left.\left. 44\,802\,495 z^2 + 151\,810\,560 z^{3/2} + 19\,094\,400 z + 2\,864\,160\sqrt{z} - 1\,432\,080\right) - 1\,432\,080\right)\right)\right) $$

07.22.03.8207.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, -\frac{3}{4}; -z\right) = $$
$$ \frac{1}{2\,864\,160}\left(\sqrt{\pi}\left(65\,536 z^4 + 6\,406\,144 z^3 + 148\,342\,272 z^2 + 834\,425\,280 z + 717\,084\,225\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} - \right. $$
$$ 8\left(4096 z^5 + 399\,616 z^4 + 9\,198\,000 z^3 + 50\,567\,019 z^2 + 37\,952\,640 z - 716\,040\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + $$
$$ \left. 2\left(4096 z^5 + 396\,544 z^4 + 8\,911\,152 z^3 + 44\,802\,495 z^2 + 19\,094\,400 z + 1\,432\,080\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8208.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) = \frac{1}{9\,398\,025\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(131\,072 z^6 - 14\,434\,304 z^5 + 391\,624\,704 z^4 - 2\,796\,073\,920 z^3 + 3\,892\,453\,110 z^2 - 413\,513\,100 z + 9\,398\,025\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ \sqrt{z}\left(65\,536 z^5 - 7\,176\,192 z^4 + 191\,411\,712 z^3 - 1\,287\,014\,400 z^2 + 1\,327\,627\,665 z + 37\,592\,100\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2 z\left(-65\,536 z^5 + 7\,200\,768 z^4 - 194\,033\,664 z^3 + 1\,351\,782\,432 z^2 - 1\,661\,142\,735 z + 18\,796\,050\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8209.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) = \frac{1}{9\,398\,025\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(131\,072 z^6 + 14\,434\,304 z^5 + 391\,624\,704 z^4 + 2\,796\,073\,920 z^3 + 3\,892\,453\,110 z^2 + 413\,513\,100 z + 9\,398\,025\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ \sqrt{z}\left(65\,536 z^5 + 7\,176\,192 z^4 + 191\,411\,712 z^3 + 1\,287\,014\,400 z^2 + 1\,327\,627\,665 z - 37\,592\,100\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2 z\left(65\,536 z^5 + 7\,200\,768 z^4 + 194\,033\,664 z^3 + 1\,351\,782\,432 z^2 + 1\,661\,142\,735 z + 18\,796\,050\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8210.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) = $$
$$ \frac{1}{1\,222\,041\,600}\left(e^{-2\sqrt{z}}\left(4\left(-262\,144 z^{11/2} + 65\,536 z^5 + 31\,981\,568 z^{9/2} - 7\,946\,240 z^4 - 983\,050\,240 z^{7/2} + \right.\right.\right. $$
$$ 239\,971\,840 z^3 + 8\,171\,297\,280 z^{5/2} - 1\,881\,675\,840 z^2 - 13\,109\,579\,700 z^{3/2} + 2\,312\,660\,025 z + $$
$$ 305\,510\,400\sqrt{z} + e^{4\sqrt{z}}\left(262\,144 z^{11/2} + 65\,536 z^5 - 31\,981\,568 z^{9/2} - 7\,946\,240 z^4 + \right. $$
$$ \left. 983\,050\,240 z^{7/2} + 239\,971\,840 z^3 - 8\,171\,297\,280 z^{5/2} - 1\,881\,675\,840 z^2 + 13\,109\,579\,700 z^{3/2} + \right. $$
$$ \left. 2\,312\,660\,025 z - 305\,510\,400\sqrt{z} + 152\,755\,200\right) + 152\,755\,200\Big) + e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4} $$
$$ \left(-1\,048\,576 z^5 + 128\,122\,880 z^4 - 3\,955\,793\,920 z^3 + 33\,377\,011\,200 z^2 - 57\,366\,738\,000 z + 5\,019\,589\,575\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(-1\,048\,576 z^5 + 128\,122\,880 z^4 - 3\,955\,793\,920 z^3 + \right. $$
$$ \left.\left.\left. 33\,377\,011\,200 z^2 - 57\,366\,738\,000 z + 5\,019\,589\,575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8211.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, \frac{1}{4}; -z\right) = \frac{1}{305\,510\,400} $$
$$ \left(2\left(4\sqrt{z}\left(65\,536 z^5 + 7\,995\,392 z^4 + 245\,762\,560 z^3 + 2\,042\,824\,320 z^2 + 3\,277\,394\,925 z + 76\,377\,600\right)\sin\left(2\sqrt{z}\right) - \right.\right. $$
$$ \left(65\,536 z^5 + 7\,946\,240 z^4 + 239\,971\,840 z^3 + 1\,881\,675\,840 z^2 + 2\,312\,660\,025 z - 152\,755\,200\right)\cos\left(2\sqrt{z}\right)\Big) - $$
$$ \sqrt{\pi}\, z^{3/4}\left(1\,048\,576 z^5 + 128\,122\,880 z^4 + 3\,955\,793\,920 z^3 + 33\,377\,011\,200 z^2 + 57\,366\,738\,000 z + 5\,019\,589\,575\right) $$
$$ \left.\left. C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right) $$

07.22.03.8212.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, \frac{3}{4}; z\right) = $$
$$ \frac{1}{3\,308\,104\,800\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-2\,097\,152 z^6 + 282\,198\,016 z^5 - 9\,834\,217\,472 z^4 + 97\,852\,124\,160 z^3 - 220\,424\,798\,880 z^2 + \right.\right.\right. $$
$$ \left.\left.\left. 47\,301\,304\,050 z + 3\,308\,104\,800\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \sqrt{z}\left(1\,048\,576 z^5 - 140\,443\,648 z^4 + 4\,830\,683\,136 z^3 - 46\,077\,672\,960 z^2 + 86\,415\,048\,720 z + 1\,826\,349\,525\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2 z\left(1\,048\,576 z^5 - 140\,836\,864 z^4 + 4\,882\,243\,584 z^3 - \right. $$
$$ \left.\left. 47\,749\,971\,456 z^2 + 99\,661\,438\,800 z - 8\,442\,559\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\Big)\Gamma\left(\frac{3}{4}\right)^2\Big) $$

07.22.03.8213.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, \frac{3}{4}; -z\right) = $$
$$ \frac{1}{3\,308\,104\,800\sqrt{2}}\left(\sqrt[4]{z}\left(-2\left(1\,048\,576 z^6 + 141\,099\,008 z^5 + 4\,917\,108\,736 z^4 + 48\,926\,062\,080 z^3 + 110\,212\,399\,440 z^2 + \right.\right.\right. $$
$$ \left.\left.\left. 23\,650\,652\,025 z - 1\,654\,052\,400\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \sqrt{z}\left(1\,048\,576 z^5 + 140\,443\,648 z^4 + 4\,830\,683\,136 z^3 + 46\,077\,672\,960 z^2 + 86\,415\,048\,720 z - 1\,826\,349\,525\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2 z\left(1\,048\,576 z^5 + 140\,836\,864 z^4 + 4\,882\,243\,584 z^3 + \right. $$
$$ \left.\left. 47\,749\,971\,456 z^2 + 99\,661\,438\,800 z + 8\,442\,559\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\Big)\Gamma\left(\frac{3}{4}\right)^2\Big) $$

07.22.03.8214.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, \frac{5}{4}; z\right) = \frac{1}{469\,263\,974\,400\sqrt[4]{z}} \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 614\,203\,392 z^{9/2} - 152\,764\,416 z^4 - 23\,621\,173\,248 z^{7/2} + 5\,793\,423\,360 z^3 + 262\,807\,418\,880 z^{5/2} - 61\,724\,136\,960 z^2 - 646\,639\,283\,520 z^{3/2} + 126\,900\,905\,040 z + 57\,080\,918\,700\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 614\,203\,392 z^{9/2} - 152\,764\,416 z^4 + 23\,621\,173\,248 z^{7/2} + 5\,793\,423\,360 z^3 - 262\,807\,418\,880 z^{5/2} - 61\,724\,136\,960 z^2 + 646\,639\,283\,520 z^{3/2} + 126\,900\,905\,040 z - 57\,080\,918\,700\sqrt{z} + 13\,481\,690\,625\right) + 13\,481\,690\,625\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 2\,459\,959\,296 z^5 + 94\,939\,054\,080 z^4 - 1\,068\,064\,358\,400 z^3 + 2\,753\,603\,424\,000 z^2 - 481\,880\,599\,200 z - 45\,176\,306\,175\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 2\,459\,959\,296 z^5 + 94\,939\,054\,080 z^4 - 1\,068\,064\,358\,400 z^3 + 2\,753\,603\,424\,000 z^2 - 481\,880\,599\,200 z - 45\,176\,306\,175\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8215.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, \frac{5}{4}; -z\right) = \frac{1}{117\,315\,993\,600\sqrt[4]{z}} \left(2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576 z^5 + 153\,550\,848 z^4 + 5\,905\,293\,312 z^3 + 65\,701\,854\,720 z^2 + 161\,659\,820\,880 z + 14\,270\,229\,675\right)\sin\left(2\sqrt{z}\right) - \left(1\,048\,576 z^5 + 152\,764\,416 z^4 + 5\,793\,423\,360 z^3 + 61\,724\,136\,960 z^2 + 126\,900\,905\,040 z - 13\,481\,690\,625\right)\cos\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\left(16\,777\,216 z^6 + 2\,459\,959\,296 z^5 + 94\,939\,054\,080 z^4 + 1\,068\,064\,358\,400 z^3 + 2\,753\,603\,424\,000 z^2 + 481\,880\,599\,200 z - 45\,176\,306\,175\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.8216.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, \frac{7}{4}; z\right) = \frac{1}{458\,723\,865\,600\sqrt{2}\sqrt[4]{z}} \left(\left(2\sqrt{z}\left(-16\,777\,216 z^6 + 2\,667\,577\,344 z^5 - 113\,548\,787\,712 z^4 + 1\,449\,039\,953\,920 z^3 - 4\,510\,502\,081\,280 z^2 + 1\,415\,238\,739\,200 z + 204\,263\,984\,925\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216 z^6 - 2\,657\,091\,584 z^5 + 111\,909\,732\,352 z^4 - 1\,382\,357\,483\,520 z^3 + 3\,767\,164\,727\,040 z^2 - 67\,999\,932\,000 z + 75\,293\,843\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216 z^6 - 2\,663\,383\,040 z^5 + 112\,888\,446\,976 z^4 - 1\,421\,663\,895\,552 z^3 + 4\,187\,999\,312\,640 z^2 - 688\,820\,932\,800 z - 75\,293\,843\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8217.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{1}{2},\frac{7}{4};-z\right)=-\frac{1}{458\,723\,865\,600\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(16\,777\,216z^6+2\,667\,577\,344z^5+113\,548\,787\,712z^4+1\,449\,039\,953\,920z^3+4\,510\,502\,081\,280z^2+\right.\right.\right.$$
$$\left.\left.\left.1\,415\,238\,739\,200z-204\,263\,984\,925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,777\,216z^6+2\,657\,091\,584z^5+111\,909\,732\,352z^4+\right.\right.\right.$$
$$\left.\left.\left.1\,382\,357\,483\,520z^3+3\,767\,164\,727\,040z^2+67\,999\,932\,000z+75\,293\,843\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(16\,777\,216z^6+2\,663\,383\,040z^5+112\,888\,446\,976z^4+1\,421\,663\,895\,552z^3+\right.\right.$$
$$\left.\left.4\,187\,999\,312\,640z^2+688\,820\,932\,800z-75\,293\,843\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.8218.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{1}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{42\,046\,052\,106\,240\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-67\,108\,864z^{13/2}+16\,777\,216z^6+11\,467\,227\,136z^{11/2}-2\,854\,223\,872z^5-\right.\right.\right.$$
$$529\,533\,763\,584z^{9/2}+130\,286\,026\,752z^4+7\,381\,302\,706\,176z^{7/2}-1\,754\,545\,766\,400z^3-$$
$$24\,489\,469\,025\,280z^{5/2}+5\,077\,559\,934\,720z^2+3\,957\,936\,877\,440z^{3/2}+533\,326\,641\,120z+$$
$$421\,645\,524\,300\sqrt{z}+e^4\sqrt{z}\left(67\,108\,864z^{13/2}+16\,777\,216z^6-11\,467\,227\,136z^{11/2}-\right.$$
$$2\,854\,223\,872z^5+529\,533\,763\,584z^{9/2}+130\,286\,026\,752z^4-7\,381\,302\,706\,176z^{7/2}-$$
$$\left.1\,754\,545\,766\,400z^3+24\,489\,469\,025\,280z^{5/2}+5\,077\,559\,934\,720z^2-3\,957\,936\,877\,440z^{3/2}+$$
$$\left.533\,326\,641\,120z-421\,645\,524\,300\sqrt{z}+316\,234\,143\,225\right)+316\,234\,143\,225\Big)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7-45\,919\,240\,192z^6+2\,126\,634\,811\,392z^5-29\,905\,802\,035\,200z^4+\right.$$
$$\left.102\,801\,194\,496\,000z^3-26\,985\,313\,555\,200z^2-5\,059\,746\,291\,600z+316\,234\,143\,225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7-45\,919\,240\,192z^6+2\,126\,634\,811\,392z^5-29\,905\,802\,035\,200z^4+\right.$$
$$\left.\left.102\,801\,194\,496\,000z^3-26\,985\,313\,555\,200z^2-5\,059\,746\,291\,600z+316\,234\,143\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.8219.01

$$ {}_1F_2\left(-\frac{23}{4};-\frac{1}{2},\frac{9}{4};-z\right)=\frac{1}{10\,511\,513\,026\,560\,z^{5/4}}$$
$$\left(2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216z^6+2\,866\,806\,784z^5+132\,383\,440\,896z^4+1\,845\,325\,676\,544z^3+6\,122\,367\,256\,320z^2+\right.\right.\right.$$
$$\left.\left.\left.989\,484\,219\,360z-105\,411\,381\,075\right)\sin\left(2\sqrt{z}\right)-\left(16\,777\,216z^6+2\,854\,223\,872z^5+130\,286\,026\,752z^4+\right.\right.\right.$$
$$\left.\left.\left.1\,754\,545\,766\,400z^3+5\,077\,559\,934\,720z^2-533\,326\,641\,120z+316\,234\,143\,225\right)\cos\left(2\sqrt{z}\right)\right)-$$
$$\sqrt{\pi}\left(268\,435\,456z^7+45\,919\,240\,192z^6+2\,126\,634\,811\,392z^5+29\,905\,802\,035\,200z^4+\right.$$
$$\left.\left.102\,801\,194\,496\,000z^3+26\,985\,313\,555\,200z^2-5\,059\,746\,291\,600z-316\,234\,143\,225\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.8220.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) = $$
$$ \left(\left(2\sqrt{z}\,\left(-268\,435\,456\,z^7 + 49\,241\,128\,960\,z^6 - 2\,476\,049\,694\,720\,z^5 + 38\,559\,512\,985\,600\,z^4 - 153\,183\,525\,580\,800\,z^3 + \right.\right.\right. $$
$$ \left.\left.\left. 62\,630\,357\,587\,200\,z^2 + 13\,490\,372\,610\,000\,z + 677\,644\,592\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(268\,435\,456\,z^7 - 49\,073\,356\,800\,z^6 + 2\,445\,724\,876\,800\,z^5 - 37\,091\,568\,844\,800\,z^4 + 132\,711\,884\,697\,600\,z^3 - \right. $$
$$ \left. 9\,619\,338\,643\,200\,z^2 + 3\,614\,104\,494\,000\,z - 2\,032\,933\,777\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7 - 49\,174\,020\,096\,z^6 + 2\,463\,844\,270\,080\,z^5 - 37\,959\,241\,236\,480\,z^4 + \right. $$
$$ 144\,425\,214\,259\,200\,z^3 - 35\,668\,301\,011\,200\,z^2 - 7\,951\,029\,886\,800\,z + $$
$$ \left. \left. 2\,032\,933\,777\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(31\,455\,350\,784\,000\,\sqrt{2}\; z^{5/4}\right) $$

07.22.03.8221.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = $$
$$ -\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 + 49\,241\,128\,960\,z^6 + 2\,476\,049\,694\,720\,z^5 + 38\,559\,512\,985\,600\,z^4 + 153\,183\,525\,580\,800\,z^3 + \right.\right.\right. $$
$$ \left.\left.\left. 62\,630\,357\,587\,200\,z^2 - 13\,490\,372\,610\,000\,z + 677\,644\,592\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ \left(268\,435\,456\,z^7 + 49\,073\,356\,800\,z^6 + 2\,445\,724\,876\,800\,z^5 + 37\,091\,568\,844\,800\,z^4 + 132\,711\,884\,697\,600\,z^3 + \right. $$
$$ \left. 9\,619\,338\,643\,200\,z^2 + 3\,614\,104\,494\,000\,z + 2\,032\,933\,777\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7 + 49\,174\,020\,096\,z^6 + 2\,463\,844\,270\,080\,z^5 + 37\,959\,241\,236\,480\,z^4 + \right. $$
$$ 144\,425\,214\,259\,200\,z^3 + 35\,668\,301\,011\,200\,z^2 - 7\,951\,029\,886\,800\,z - $$
$$ \left. \left. 2\,032\,933\,777\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(31\,455\,350\,784\,000\,\sqrt{2}\; z^{5/4}\right) $$

07.22.03.8222.01

$${}_1F_2\left(-\frac{23}{4};-\frac{1}{2},\frac{13}{4};z\right)=$$
$$\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}+209\,715\,200\,000\,z^{13/2}-52\,227\,473\,408\,z^{6}-11\,303\,133\,380\,608\,z^{11/2}+\right.\right.\right.$$
$$2\,787\,304\,800\,256\,z^{5}+189\,353\,871\,802\,368\,z^{9/2}-45\,375\,855\,329\,280\,z^{4}-790\,675\,083\,018\,240\,z^{7/2}+$$
$$169\,620\,473\,917\,440\,z^{3}+189\,182\,213\,176\,320\,z^{5/2}+13\,635\,165\,922\,560\,z^{2}+$$
$$43\,369\,253\,928\,000\,z^{3/2}+21\,925\,567\,263\,600\,z-23\,190\,503\,836\,500\sqrt{z}+e^{4\sqrt{z}}$$
$$\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-209\,715\,200\,000\,z^{13/2}-52\,227\,473\,408\,z^{6}+11\,303\,133\,380\,608\,z^{11/2}+\right.$$
$$2\,787\,304\,800\,256\,z^{5}-189\,353\,871\,802\,368\,z^{9/2}-45\,375\,855\,329\,280\,z^{4}+790\,675\,083\,018\,240\,z^{7/2}+$$
$$169\,620\,473\,917\,440\,z^{3}-189\,182\,213\,176\,320\,z^{5/2}+13\,635\,165\,922\,560\,z^{2}-43\,369\,253\,928\,000\,z^{3/2}+$$
$$\left.21\,925\,567\,263\,600\,z+23\,190\,503\,836\,500\sqrt{z}-17\,392\,877\,877\,375\right)-17\,392\,877\,877\,375\Big)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-839\,666\,106\,368\,z^{7}+45\,368\,209\,309\,696\,z^{6}-765\,588\,532\,101\,120\,z^{5}+\right.$$
$$3\,289\,638\,223\,872\,000\,z^{4}-1\,151\,373\,378\,355\,200\,z^{3}-323\,823\,762\,662\,400\,z^{2}+$$
$$\left.40\,477\,970\,332\,800\,z-17\,392\,877\,877\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-839\,666\,106\,368\,z^{7}+45\,368\,209\,309\,696\,z^{6}-765\,588\,532\,101\,120\,z^{5}+\right.$$
$$3\,289\,638\,223\,872\,000\,z^{4}-1\,151\,373\,378\,355\,200\,z^{3}-323\,823\,762\,662\,400\,z^{2}+$$
$$\left.\left.40\,477\,970\,332\,800\,z-17\,392\,877\,877\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)\Big/\left(2\,391\,953\,186\,488\,320\,z^{9/4}\right)$$

07.22.03.8223.01

$${}_1F_2\left(-\frac{23}{4};-\frac{1}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{597\,988\,296\,622\,080\,z^{9/4}}\left(2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^{7}+52\,428\,800\,000\,z^{6}+2\,825\,783\,345\,152\,z^{5}+47\,338\,467\,950\,592\,z^{4}+\right.\right.\right.$$
$$\left.197\,668\,770\,754\,560\,z^{3}+47\,295\,553\,294\,080\,z^{2}-10\,842\,313\,482\,000\,z-5\,797\,625\,959\,125\right)\sin\left(2\sqrt{z}\right)-$$
$$\left(268\,435\,456\,z^{7}+52\,227\,473\,408\,z^{6}+2\,787\,304\,800\,256\,z^{5}+45\,375\,855\,329\,280\,z^{4}+169\,620\,473\,917\,440\,z^{3}-\right.$$
$$\left.\left.13\,635\,165\,922\,560\,z^{2}+21\,925\,567\,263\,600\,z+17\,392\,877\,877\,375\right)\cos\left(2\sqrt{z}\right)\right)-\sqrt{\pi}$$
$$\left(4\,294\,967\,296\,z^{8}+839\,666\,106\,368\,z^{7}+45\,368\,209\,309\,696\,z^{6}+765\,588\,532\,101\,120\,z^{5}+3\,289\,638\,223\,872\,000\,z^{4}+\right.$$
$$\left.1\,151\,373\,378\,355\,200\,z^{3}-323\,823\,762\,662\,400\,z^{2}-40\,477\,970\,332\,800\,z-17\,392\,877\,877\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\Bigg)$$

07.22.03.8224.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) = $$

$$ \left(\left(-2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 892\,816\,326\,656\,z^7 + 51\,785\,393\,766\,400\,z^6 - 952\,066\,312\,765\,440\,z^5 + 4\,600\,781\,321\,011\,200\,z^4 - 2\,308\,342\,485\,196\,800\,z^3 - 662\,954\,742\,028\,800\,z^2 - 21\,684\,626\,964\,000\,z + 61\,665\,657\,928\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4\,294\,967\,296\,z^8 - 890\,131\,972\,096\,z^7 + 51\,234\,597\,765\,120\,z^6 - 921\,150\,129\,438\,720\,z^5 + 4\,083\,007\,183\,257\,600\,z^4 - 554\,222\,750\,515\,200\,z^3 + 46\,260\,537\,523\,200\,z^2 + 216\,846\,269\,640\,000\,z + 184\,996\,973\,786\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 891\,742\,584\,832\,z^7 + 51\,563\,867\,406\,336\,z^6 - 939\,460\,814\,438\,400\,z^5 + 4\,381\,429\,963\,161\,600\,z^4 - 1\,449\,948\,692\,275\,200\,z^3 - 485\,735\,643\,993\,600\,z^2 + 177\,813\,941\,104\,800\,z - 184\,996\,973\,786\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(1\,555\,610\,075\,136\,000\sqrt{2}\,z^{9/4}\right) $$

07.22.03.8225.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) = $$

$$ -\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 892\,816\,326\,656\,z^7 + 51\,785\,393\,766\,400\,z^6 + 952\,066\,312\,765\,440\,z^5 + 4\,600\,781\,321\,011\,200\,z^4 + 2\,308\,342\,485\,196\,800\,z^3 - 662\,954\,742\,028\,800\,z^2 + 21\,684\,626\,964\,000\,z + 61\,665\,657\,928\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4\,294\,967\,296\,z^8 + 890\,131\,972\,096\,z^7 + 51\,234\,597\,765\,120\,z^6 + 921\,150\,129\,438\,720\,z^5 + 4\,083\,007\,183\,257\,600\,z^4 + 554\,222\,750\,515\,200\,z^3 + 46\,260\,537\,523\,200\,z^2 - 216\,846\,269\,640\,000\,z + 184\,996\,973\,786\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 891\,742\,584\,832\,z^7 + 51\,563\,867\,406\,336\,z^6 + 939\,460\,814\,438\,400\,z^5 + 4\,381\,429\,963\,161\,600\,z^4 + 1\,449\,948\,692\,275\,200\,z^3 - 485\,735\,643\,993\,600\,z^2 - 177\,813\,941\,104\,800\,z - 184\,996\,973\,786\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(1\,555\,610\,075\,136\,000\sqrt{2}\,z^{9/4}\right) $$

07.22.03.8226.01

$$
{}_1F_2\left(-\frac{23}{4};-\frac{1}{2},\frac{17}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^8+3\,775\,276\,253\,184\,z^{15/2}-940\,597\,837\,824\,z^7-\right.\right.\right.
$$

$$
232\,620\,797\,460\,480\,z^{13/2}+57\,460\,823\,949\,312\,z^6+4\,551\,289\,451\,053\,056\,z^{11/2}-1\,097\,043\,195\,985\,920\,z^5-
$$

$$
22\,910\,748\,823\,388\,160\,z^{9/2}+5\,031\,155\,043\,532\,800\,z^4+7\,319\,421\,096\,099\,840\,z^{7/2}+205\,590\,412\,984\,320\,z^3+
$$

$$
2\,590\,590\,101\,299\,200\,z^{5/2}+878\,950\,212\,940\,800\,z^2-1\,908\,247\,172\,832\,000\,z^{3/2}+3\,130\,718\,017\,927\,500\sqrt{z}+
$$

$$
e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^8-3\,775\,276\,253\,184\,z^{15/2}-940\,597\,837\,824\,z^7+\right.
$$

$$
232\,620\,797\,460\,480\,z^{13/2}+57\,460\,823\,949\,312\,z^6-4\,551\,289\,451\,053\,056\,z^{11/2}-1\,097\,043\,195\,985\,920
$$

$$
z^5+22\,910\,748\,823\,388\,160\,z^{9/2}+5\,031\,155\,043\,532\,800\,z^4-7\,319\,421\,096\,099\,840\,z^{7/2}+
$$

$$
205\,590\,412\,984\,320\,z^3-2\,590\,590\,101\,299\,200\,z^{5/2}+878\,950\,212\,940\,800\,z^2+1\,908\,247\,172\,832\,000
$$

$$
\left.\left.z^{3/2}-3\,130\,718\,017\,927\,500\sqrt{z}+2\,348\,038\,513\,445\,625\right)+2\,348\,038\,513\,445\,625\right)-
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9-15\,113\,989\,914\,624\,z^8+933\,288\,877\,228\,032\,z^7-18\,374\,124\,770\,426\,880\,z^6+\right.
$$

$$
94\,741\,580\,847\,513\,600\,z^5-41\,449\,441\,620\,787\,200\,z^4-15\,543\,540\,607\,795\,200\,z^3+
$$

$$
\left.2\,914\,413\,863\,961\,600\,z^2-2\,504\,574\,414\,342\,000\,z+2\,348\,038\,513\,445\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9-15\,113\,989\,914\,624\,z^8+933\,288\,877\,228\,032\,z^7-18\,374\,124\,770\,426\,880\,z^6+\right.
$$

$$
94\,741\,580\,847\,513\,600\,z^5-41\,449\,441\,620\,787\,200\,z^4-15\,543\,540\,607\,795\,200\,z^3+2\,914\,413\,863\,961\,600\,z^2-
$$

$$
\left.\left.2\,504\,574\,414\,342\,000\,z+2\,348\,038\,513\,445\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big/\left(105\,981\,925\,801\,328\,640\,z^{13/4}\right)
$$

07.22.03.8227.01

$$
{}_1F_2\left(-\frac{23}{4};-\frac{1}{2},\frac{17}{4};-z\right)=
$$

$$
\left(2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^8+943\,819\,063\,296\,z^7+58\,155\,199\,365\,120\,z^6+1\,137\,822\,362\,763\,264\,z^5+\right.\right.\right.
$$

$$
5\,727\,687\,205\,847\,040\,z^4+1\,829\,855\,274\,024\,960\,z^3-647\,647\,525\,324\,800\,z^2-
$$

$$
\left.477\,061\,793\,208\,000\,z-782\,679\,504\,481\,875\right)\sin\left(2\sqrt{z}\right)-
$$

$$
\left(4\,294\,967\,296\,z^8+940\,597\,837\,824\,z^7+57\,460\,823\,949\,312\,z^6+1\,097\,043\,195\,985\,920\,z^5+5\,031\,155\,043\,532\,800\right.
$$

$$
\left.\left.z^4-205\,590\,412\,984\,320\,z^3+878\,950\,212\,940\,800\,z^2+2\,348\,038\,513\,445\,625\right)\cos\left(2\sqrt{z}\right)\right)-
$$

$$
\sqrt{\pi}\left(68\,719\,476\,736\,z^9+15\,113\,989\,914\,624\,z^8+933\,288\,877\,228\,032\,z^7+18\,374\,124\,770\,426\,880\,z^6+\right.
$$

$$
94\,741\,580\,847\,513\,600\,z^5+41\,449\,441\,620\,787\,200\,z^4-15\,543\,540\,607\,795\,200\,z^3-2\,914\,413\,863\,961\,600\,z^2-
$$

$$
\left.2\,504\,574\,414\,342\,000\,z-2\,348\,038\,513\,445\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\Bigg)\Big/\left(26\,495\,481\,450\,332\,160\,z^{13/4}\right)
$$

07.22.03.8228.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) =
$$

$$
\left(\left(2\sqrt{z}\,\left(-68\,719\,476\,736\,z^9 + 15\,964\,393\,439\,232\,z^8 - 1\,049\,188\,569\,710\,592\,z^7 + 22\,239\,484\,271\,656\,960\,z^6 - \right.\right.\right.
$$

$$
126\,589\,212\,850\,913\,280\,z^5 + 75\,097\,780\,273\,152\,000\,z^4 + 27\,102\,040\,219\,238\,400\,z^3 -
$$

$$
\left.\left.\left.832\,689\,675\,417\,600\,z^2 + 3\,805\,652\,032\,182\,000\,z + 11\,531\,478\,032\,699\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.\right.
$$

$$
\left(68\,719\,476\,736\,z^9 - 15\,921\,443\,766\,272\,z^8 + 1\,039\,326\,251\,057\,152\,z^7 - 21\,609\,757\,173\,350\,400\,z^6 +\right.
$$

$$
114\,276\,852\,396\,195\,840\,z^5 - 23\,385\,594\,190\,233\,600\,z^4 - 3\,454\,120\,135\,065\,600\,z^3 +
$$

$$
\left.22\,343\,839\,623\,705\,600\,z^2 - 64\,132\,284\,246\,030\,000\,z - 34\,594\,434\,098\,098\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +
$$

$$
2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 15\,947\,213\,570\,048\,z^8 + 1\,045\,224\,314\,896\,384\,z^7 - 21\,983\,296\,720\,207\,872\,z^6 +\right.
$$

$$
121\,411\,074\,533\,621\,760\,z^5 - 50\,481\,365\,336\,064\,000\,z^4 - 22\,451\,780\,877\,926\,400\,z^3 +
$$

$$
\left.9\,529\,670\,729\,779\,200\,z^2 - 9\,669\,175\,163\,247\,600\,z + 34\,594\,434\,098\,098\,875\right)
$$

$$
\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(63\,054\,061\,712\,179\,200\sqrt{2}\;z^{13/4}\right)
$$

07.22.03.8229.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) =
$$

$$
-\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 15\,964\,393\,439\,232\,z^8 + 1\,049\,188\,569\,710\,592\,z^7 + 22\,239\,484\,271\,656\,960\,z^6 +\right.\right.\right.
$$

$$
126\,589\,212\,850\,913\,280\,z^5 + 75\,097\,780\,273\,152\,000\,z^4 - 27\,102\,040\,219\,238\,400\,z^3 -
$$

$$
\left.\left.\left.832\,689\,675\,417\,600\,z^2 - 3\,805\,652\,032\,182\,000\,z + 11\,531\,478\,032\,699\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 -\right.\right.
$$

$$
\left(68\,719\,476\,736\,z^9 + 15\,921\,443\,766\,272\,z^8 + 1\,039\,326\,251\,057\,152\,z^7 + 21\,609\,757\,173\,350\,400\,z^6 +\right.
$$

$$
114\,276\,852\,396\,195\,840\,z^5 + 23\,385\,594\,190\,233\,600\,z^4 - 3\,454\,120\,135\,065\,600\,z^3 -
$$

$$
\left.22\,343\,839\,623\,705\,600\,z^2 - 64\,132\,284\,246\,030\,000\,z + 34\,594\,434\,098\,098\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +
$$

$$
2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 15\,947\,213\,570\,048\,z^8 + 1\,045\,224\,314\,896\,384\,z^7 + 21\,983\,296\,720\,207\,872\,z^6 +\right.
$$

$$
121\,411\,074\,533\,621\,760\,z^5 + 50\,481\,365\,336\,064\,000\,z^4 - 22\,451\,780\,877\,926\,400\,z^3 -
$$

$$
\left.9\,529\,670\,729\,779\,200\,z^2 - 9\,669\,175\,163\,247\,600\,z - 34\,594\,434\,098\,098\,875\right)
$$

$$
\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(63\,054\,061\,712\,179\,200\sqrt{2}\;z^{13/4}\right)
$$

07.22.03.8230.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) =
\left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z} \left(-274\,877\,906\,944\, z^{19/2} + 68\,719\,476\,736\, z^9 + 67\,121\,748\,901\,888\, z^{17/2} - 16\,728\,897\,617\,920\, z^8 - \right.\right.\right.
$$
$$
4\,653\,962\,137\,436\,160\, z^{15/2} + 1\,151\,121\,028\,546\,560\, z^7 + 104\,146\,894\,313\,226\,240\, z^{13/2} -
$$
$$
25\,214\,775\,554\,211\,840\, z^6 - 613\,675\,974\,839\,500\,800\, z^{11/2} + 137\,082\,956\,414\,976\,000\, z^5 +
$$
$$
246\,296\,247\,179\,673\,600\, z^{9/2} - 1\,200\,201\,272\,524\,800\, z^4 + 117\,440\,084\,592\,230\,400\, z^{7/2} +
$$
$$
25\,905\,901\,012\,992\,000\, z^3 - 95\,296\,707\,297\,792\,000\, z^{5/2} + 43\,253\,602\,584\,192\,000\, z^2 +
$$
$$
147\,412\,094\,101\,272\,000\, z^{3/2} - 242\,943\,718\,191\,174\,000\, z - 773\,287\,350\,428\,092\,500\sqrt{z} +
$$
$$
e^{4\sqrt{z}} \left(274\,877\,906\,944\, z^{19/2} + 68\,719\,476\,736\, z^9 - 67\,121\,748\,901\,888\, z^{17/2} - \right.
$$
$$
16\,728\,897\,617\,920\, z^8 + 4\,653\,962\,137\,436\,160\, z^{15/2} + 1\,151\,121\,028\,546\,560\, z^7 -
$$
$$
104\,146\,894\,313\,226\,240\, z^{13/2} - 25\,214\,775\,554\,211\,840\, z^6 + 613\,675\,974\,839\,500\,800\, z^{11/2} +
$$
$$
137\,082\,956\,414\,976\,000\, z^5 - 246\,296\,247\,179\,673\,600\, z^{9/2} - 1\,200\,201\,272\,524\,800\, z^4 -
$$
$$
117\,440\,084\,592\,230\,400\, z^{7/2} + 25\,905\,901\,012\,992\,000\, z^3 + 95\,296\,707\,297\,792\,000\, z^{5/2} +
$$
$$
43\,253\,602\,584\,192\,000\, z^2 - 147\,412\,094\,101\,272\,000\, z^{3/2} - 242\,943\,718\,191\,174\,000\, z +
$$
$$
\left.\left.773\,287\,350\,428\,092\,500\sqrt{z} - 579\,965\,512\,821\,069\,375\right) - 579\,965\,512\,821\,069\,375\right) -
$$
$$
e^{2\sqrt{z}} \sqrt{2\pi} \left(1\,099\,511\,627\,776\, z^{10} - 268\,693\,154\,037\,760\, z^9 + 18\,665\,777\,544\,560\,640\, z^8 - \right.
$$
$$
419\,979\,994\,752\,614\,400\, z^7 + 2\,526\,442\,155\,933\,696\,000\, z^6 - 1\,326\,382\,131\,865\,190\,400\, z^5 -
$$
$$
621\,741\,624\,311\,808\,000\, z^4 + 155\,435\,406\,077\,952\,000\, z^3 - 200\,365\,953\,147\,360\,000\, z^2 +
$$
$$
\left.375\,686\,162\,151\,300\,000\, z - 579\,965\,512\,821\,069\,375\right) \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) -
$$
$$
e^{2\sqrt{z}} \sqrt{2\pi} \left(1\,099\,511\,627\,776\, z^{10} - 268\,693\,154\,037\,760\, z^9 + 18\,665\,777\,544\,560\,640\, z^8 - \right.
$$
$$
419\,979\,994\,752\,614\,400\, z^7 + 2\,526\,442\,155\,933\,696\,000\, z^6 - 1\,326\,382\,131\,865\,190\,400\, z^5 -
$$
$$
621\,741\,624\,311\,808\,000\, z^4 + 155\,435\,406\,077\,952\,000\, z^3 - 200\,365\,953\,147\,360\,000\, z^2 +
$$
$$
\left.\left.\left.375\,686\,162\,151\,300\,000\, z - 579\,965\,512\,821\,069\,375\right) \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right) \Big/ \left(3\,989\,907\,794\,873\,548\,800\, z^{17/4}\right)
$$

07.22.03.8231.01

$$
{}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) =
\left(\sqrt{\pi} \left(-1\,099\,511\,627\,776\, z^{10} - 268\,693\,154\,037\,760\, z^9 - 18\,665\,777\,544\,560\,640\, z^8 - 419\,979\,994\,752\,614\,400\, z^7 - \right.\right.
$$
$$
2\,526\,442\,155\,933\,696\,000\, z^6 - 1\,326\,382\,131\,865\,190\,400\, z^5 +
$$
$$
621\,741\,624\,311\,808\,000\, z^4 + 155\,435\,406\,077\,952\,000\, z^3 + 200\,365\,953\,147\,360\,000\, z^2 +
$$
$$
\left.375\,686\,162\,151\,300\,000\, z + 579\,965\,512\,821\,069\,375\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) +
$$
$$
2\sqrt[4]{z} \left(4\sqrt{z} \left(68\,719\,476\,736\, z^9 + 16\,780\,437\,225\,472\, z^8 + 1\,163\,490\,534\,359\,040\, z^7 + 26\,036\,723\,578\,306\,560\, z^6 + \right.\right.
$$
$$
153\,418\,993\,709\,875\,200\, z^5 + 61\,574\,061\,794\,918\,400\, z^4 - 29\,360\,021\,148\,057\,600\, z^3 -
$$
$$
\left.23\,824\,176\,824\,448\,000\, z^2 - 36\,853\,023\,525\,318\,000\, z - 193\,321\,837\,607\,023\,125\right) \sin\left(2\sqrt{z}\right) -
$$
$$
\left(68\,719\,476\,736\, z^9 + 16\,728\,897\,617\,920\, z^8 + 1\,151\,121\,028\,546\,560\, z^7 + 25\,214\,775\,554\,211\,840\, z^6 + \right.
$$
$$
137\,082\,956\,414\,976\,000\, z^5 + 1\,200\,201\,272\,524\,800\, z^4 + 25\,905\,901\,012\,992\,000\, z^3 - 43\,253\,602\,584\,192\,000
$$
$$
\left.\left.\left.z^2 - 242\,943\,718\,191\,174\,000\, z + 579\,965\,512\,821\,069\,375\right) \cos\left(2\sqrt{z}\right)\right)\right) \Big/ \left(997\,476\,948\,718\,387\,200\, z^{17/4}\right)
$$

07.22.03.8232.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) = $$

$$ -\left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} - 282\,299\,610\,431\,488\,z^9 + 20\,731\,768\,483\,086\,336\,z^8 - 497\,747\,915\,314\,298\,880\,z^7 + \right.\right.\right. $$

$$ 3\,261\,098\,809\,035\,325\,440\,z^6 - 2\,230\,122\,603\,714\,969\,600\,z^5 - $$

$$ 973\,827\,216\,772\,300\,800\,z^4 + 113\,985\,964\,457\,164\,800\,z^3 - 520\,951\,478\,183\,136\,000\,z^2 + $$

$$ \left.\left.\left. 2\,214\,043\,782\,278\,328\,000\,z + 3\,632\,415\,580\,300\,381\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$

$$ \left(-1\,099\,511\,627\,776\,z^{10} + 281\,612\,415\,664\,128\,z^9 - 20\,557\,178\,062\,503\,936\,z^8 + \right. $$

$$ 485\,251\,944\,189\,788\,160\,z^7 - 2\,981\,716\,808\,140\,062\,720\,z^6 + 827\,111\,541\,886\,156\,800\,z^5 + $$

$$ 290\,146\,091\,345\,510\,400\,z^4 - 1\,150\,222\,004\,976\,844\,800\,z^3 + 3\,173\,068\,094\,388\,192\,000\,z^2 - $$

$$ \left. 23\,247\,459\,713\,922\,444\,000\,z - 10\,897\,246\,740\,901\,145\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\,\left(-1\,099\,511\,627\,776\,z^{10} + 282\,024\,732\,524\,544\,z^9 - 20\,661\,623\,077\,208\,064\,z^8 + 492\,673\,222\,475\,513\,856\,z^7 - \right. $$

$$ 3\,144\,261\,011\,138\,150\,400\,z^6 + 1\,576\,017\,426\,854\,707\,200\,z^5 + 870\,438\,274\,036\,531\,200\,z^4 - $$

$$ \left. 404\,132\,055\,802\,675\,200\,z^3 + 369\,401\,957\,257\,132\,800\,z^2 + 10\,897\,246\,740\,901\,145\,625\right) $$

$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(2\,230\,122\,603\,714\,969\,600\,\sqrt{2}\,z^{17/4}\right) $$

07.22.03.8233.01

$$ {}_1F_2\left(-\frac{23}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) = $$

$$ -\left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} + 282\,299\,610\,431\,488\,z^9 + 20\,731\,768\,483\,086\,336\,z^8 + 497\,747\,915\,314\,298\,880\,z^7 + \right.\right.\right. $$

$$ 3\,261\,098\,809\,035\,325\,440\,z^6 + 2\,230\,122\,603\,714\,969\,600\,z^5 - $$

$$ 973\,827\,216\,772\,300\,800\,z^4 - 113\,985\,964\,457\,164\,800\,z^3 - 520\,951\,478\,183\,136\,000\,z^2 - $$

$$ \left.\left.\left. 2\,214\,043\,782\,278\,328\,000\,z + 3\,632\,415\,580\,300\,381\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$

$$ \left(1\,099\,511\,627\,776\,z^{10} + 281\,612\,415\,664\,128\,z^9 + 20\,557\,178\,062\,503\,936\,z^8 + \right. $$

$$ 485\,251\,944\,189\,788\,160\,z^7 + 2\,981\,716\,808\,140\,062\,720\,z^6 + 827\,111\,541\,886\,156\,800\,z^5 - $$

$$ 290\,146\,091\,345\,510\,400\,z^4 - 1\,150\,222\,004\,976\,844\,800\,z^3 - 3\,173\,068\,094\,388\,192\,000\,z^2 - $$

$$ \left. 23\,247\,459\,713\,922\,444\,000\,z + 10\,897\,246\,740\,901\,145\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} + 282\,024\,732\,524\,544\,z^9 + 20\,661\,623\,077\,208\,064\,z^8 + 492\,673\,222\,475\,513\,856\,z^7 + \right. $$

$$ 3\,144\,261\,011\,138\,150\,400\,z^6 + 1\,576\,017\,426\,854\,707\,200\,z^5 - 870\,438\,274\,036\,531\,200\,z^4 - $$

$$ \left. 404\,132\,055\,802\,675\,200\,z^3 - 369\,401\,957\,257\,132\,800\,z^2 - 10\,897\,246\,740\,901\,145\,625\right) $$

$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(2\,230\,122\,603\,714\,969\,600\,\sqrt{2}\,z^{17/4}\right) $$

For fixed z and $a_1 = -\frac{23}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.8234.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) = \cosh\left(2\sqrt{z}\right) $$

07.22.03.8235.01

$${}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{23}{4};-z\right)=\cos\left(2\sqrt{z}\right)$$

07.22.03.8236.01

$${}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{43\,616\,234\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8\,388\,608\,z^6+125\,304\,832\,z^5+1\,895\,596\,032\,z^4+19\,137\,484\,800\,z^3+101\,791\,025\,280\,z^2+\right.\right.\right.$$
$$\left.\left.182\,772\,790\,200\,z+43\,616\,234\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\left(1\,048\,576\,z^5+16\,318\,464\,z^4+248\,500\,224\,z^3+2\,578\,786\,560\,z^2+14\,962\,888\,080\,z+43\,616\,234\,025\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-8\,z\left(1\,048\,576\,z^5+15\,925\,248\,z^4+241\,274\,880\,z^3+\right.$$
$$\left.\left.\left.2\,459\,471\,616\,z^2+13\,462\,863\,120\,z+28\,035\,726\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8237.01

$${}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{43\,616\,234\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8\,388\,608\,z^6-125\,304\,832\,z^5+1\,895\,596\,032\,z^4-19\,137\,484\,800\,z^3+101\,791\,025\,280\,z^2-\right.\right.\right.$$
$$\left.\left.182\,772\,790\,200\,z+43\,616\,234\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\left(1\,048\,576\,z^5-16\,318\,464\,z^4+248\,500\,224\,z^3-2\,578\,786\,560\,z^2+14\,962\,888\,080\,z-43\,616\,234\,025\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+8\,z\left(1\,048\,576\,z^5-15\,925\,248\,z^4+241\,274\,880\,z^3-\right.$$
$$\left.\left.\left.2\,459\,471\,616\,z^2+13\,462\,863\,120\,z-28\,035\,726\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8238.01

$${}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{27\,498\,621\,150}\left(e^{-2\sqrt{z}}\left(-4\,194\,304\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{23/4}-4\,194\,304\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{23/4}+\right.\right.$$
$$4\,194\,304\,e^{4\sqrt{z}}\,z^{11/2}-4\,194\,304\,z^{11/2}+1\,048\,576\,e^{4\sqrt{z}}\,z^5+1\,048\,576\,z^5+786\,432\,e^{4\sqrt{z}}\,z^{9/2}-$$
$$786\,432\,z^{9/2}+983\,040\,e^{4\sqrt{z}}\,z^4+983\,040\,z^4+1\,720\,320\,e^{4\sqrt{z}}\,z^{7/2}-1\,720\,320\,z^{7/2}+$$
$$3\,870\,720\,e^{4\sqrt{z}}\,z^3+3\,870\,720\,z^3+10\,644\,480\,e^{4\sqrt{z}}\,z^{5/2}-10\,644\,480\,z^{5/2}+34\,594\,560\,e^{4\sqrt{z}}\,z^2+$$
$$34\,594\,560\,z^2+129\,729\,600\,e^{4\sqrt{z}}\,z^{3/2}-129\,729\,600\,z^{3/2}+551\,350\,800\,e^{4\sqrt{z}}\,z+551\,350\,800\,z+$$
$$\left.\left.2\,618\,916\,300\,e^{4\sqrt{z}}\sqrt{z}-2\,618\,916\,300\sqrt{z}+13\,749\,310\,575\,e^{4\sqrt{z}}+13\,749\,310\,575\right)\right)$$

07.22.03.8239.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{19}{4};-z\right)=\frac{1}{13\,749\,310\,575}\left(-8\,388\,608\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{23/4}+4\left(1\,048\,576z^5-196\,608z^4+430\,080z^3-2\,661\,120z^2+32\,432\,400z-654\,729\,075\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-1\,048\,576z^5+983\,040z^4-3\,870\,720z^3+34\,594\,560z^2-551\,350\,800z+13\,749\,310\,575\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8240.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{17}{4};z\right)=-\frac{1}{2\,076\,963\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4\,194\,304z^6-63\,963\,136z^5-310\,444\,032z^4-1\,888\,481\,280z^3-7\,142\,849\,280z^2-9\,773\,946\,000z-2\,076\,963\,525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-524\,288z^5+7\,667\,712z^4+42\,921\,984z^3+267\,644\,160z^2+1\,116\,748\,080z+2\,076\,963\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-512z\left(8192z^5-122\,880z^4-634\,368z^3-3\,873\,744z^2-15\,187\,095z-24\,763\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8241.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{17}{4};-z\right)=-\frac{1}{2\,076\,963\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4\,194\,304z^6+63\,963\,136z^5-310\,444\,032z^4+1\,888\,481\,280z^3-7\,142\,849\,280z^2+9\,773\,946\,000z-2\,076\,963\,525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(524\,288z^5+7\,667\,712z^4-42\,921\,984z^3+267\,644\,160z^2-1\,116\,748\,080z+2\,076\,963\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+512z\left(8192z^5+122\,880z^4-634\,368z^3+3\,873\,744z^2-15\,187\,095z+24\,763\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8242.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{15}{4};z\right)=\frac{1}{1\,447\,295\,850}\left(e^{-2\sqrt{z}}\left(-1\,048\,576e^{4\sqrt{z}}z^{11/2}+1\,048\,576z^{11/2}-262\,144e^{4\sqrt{z}}z^5-262\,144z^5+65\,536e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-483)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}+65\,536e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-483)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}+31\,457\,280e^{4\sqrt{z}}z^{9/2}-31\,457\,280z^{9/2}+7\,667\,712e^{4\sqrt{z}}z^4+7\,667\,712z^4+5\,505\,024e^{4\sqrt{z}}z^{7/2}-5\,505\,024z^{7/2}+6\,451\,200e^{4\sqrt{z}}z^3+6\,451\,200z^3+10\,321\,920e^{4\sqrt{z}}z^{5/2}-10\,321\,920z^{5/2}+20\,563\,200e^{4\sqrt{z}}z^2+20\,563\,200z^2+47\,900\,160e^{4\sqrt{z}}z^{3/2}-47\,900\,160z^{3/2}+123\,243\,120e^{4\sqrt{z}}z+123\,243\,120z+324\,324\,000e^{4\sqrt{z}}\sqrt{z}-324\,324\,000\sqrt{z}+723\,647\,925e^{4\sqrt{z}}+723\,647\,925\right)\right) $$

07.22.03.8243.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{15}{4};-z\right)=\frac{1}{723\,647\,925}$$
$$\left(131\,072\sqrt{\pi}\,(16z+483)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}-32\left(32\,768z^5+983\,040z^4-172\,032z^3+322\,560z^2-1\,496\,880z+10\,135\,125\right)\right.$$
$$\left.\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(262\,144z^5+7\,667\,712z^4-6\,451\,200z^3+20\,563\,200z^2-123\,243\,120z+723\,647\,925\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.8244.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{13}{4};z\right)=\frac{1}{366\,522\,975\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(2\,097\,152z^6-95\,289\,344z^5+493\,682\,688z^4+915\,425\,280z^3+2\,080\,834\,560z^2+2\,029\,973\,400z+366\,522\,975\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(262\,144z^5-11\,747\,328z^4+54\,706\,176z^3+136\,039\,680z^2+337\,629\,600z+366\,522\,975\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.8z\left(262\,144z^5-11\,845\,632z^4+58\,834\,944z^3+125\,685\,504z^2+295\,777\,440z+341\,410\,545\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8245.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{13}{4};-z\right)=\frac{1}{366\,522\,975\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(2\,097\,152z^6+95\,289\,344z^5+493\,682\,688z^4-915\,425\,280z^3+2\,080\,834\,560z^2-2\,029\,973\,400z+366\,522\,975\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(262\,144z^5+11\,747\,328z^4+54\,706\,176z^3-136\,039\,680z^2+337\,629\,600z-366\,522\,975\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.8z\left(262\,144z^5+11\,845\,632z^4+58\,834\,944z^3-125\,685\,504z^2+295\,777\,440z-341\,410\,545\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8246.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{96\,486\,390}\left(e^{-2\sqrt{z}}\left(131\,072\,e^{4\sqrt{z}}\,z^{11/2}-131\,072\,z^{11/2}+32\,768\,e^{4\sqrt{z}}\,z^5+32\,768z^5-7\,888\,896\,e^{4\sqrt{z}}\,z^{9/2}+7\,888\,896z^{9/2}-\right.\right.$$
$$1\,947\,648\,e^{4\sqrt{z}}\,z^4-1\,947\,648z^4-512\,e^{2\sqrt{z}}\,\sqrt{2\pi}\left(256z^2-15\,456z+156\,009\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}-$$
$$512\,e^{2\sqrt{z}}\,\sqrt{2\pi}\left(256z^2-15\,456z+156\,009\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+78\,446\,592\,e^{4\sqrt{z}}\,z^{7/2}-$$
$$78\,446\,592z^{7/2}+18\,235\,392\,e^{4\sqrt{z}}\,z^3+18\,235\,392z^3+12\,063\,744\,e^{4\sqrt{z}}\,z^{5/2}-12\,063\,744z^{5/2}+$$
$$12\,499\,200\,e^{4\sqrt{z}}\,z^2+12\,499\,200z^2+16\,732\,800\,e^{4\sqrt{z}}\,z^{3/2}-16\,732\,800z^{3/2}+25\,673\,760\,e^{4\sqrt{z}}\,z+$$
$$\left.\left.25\,673\,760z+39\,792\,060\,e^{4\sqrt{z}}\,\sqrt{z}-39\,792\,060\sqrt{z}+48\,243\,195\,e^{4\sqrt{z}}+48\,243\,195\right)\right)$$

07.22.03.8247.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{11}{4};-z\right)=\frac{1}{48\,243\,195}\left(-1024\sqrt{\pi}\left(256z^2+15\,456z+156\,009\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+\right.$$
$$4\left(32\,768z^5+1\,972\,224z^4+19\,611\,648z^3-3\,015\,936z^2+4\,183\,200z-9\,948\,015\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\;-$$
$$\left.\left(32\,768z^5+1\,947\,648z^4+18\,235\,392z^3-12\,499\,200z^2+25\,673\,760z-48\,243\,195\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.8248.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{9}{4};z\right)=$$
$$-\frac{1}{140\,970\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,048\,576z^6-79\,298\,560z^5+1\,210\,306\,560z^4-2\,606\,284\,800z^3-1\,674\,892\,800z^2-\right.\right.\right.$$
$$\left.1\,002\,456\,000z-140\,970\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}$$
$$\left(-131\,072z^5+9\,830\,400z^4-145\,313\,280z^3+246\,355\,200z^2+253\,713\,600z+140\,970\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.32z\left(32\,768z^5-2\,469\,888z^4+37\,215\,360z^3-72\,898\,560z^2-61\,878\,600z-42\,000\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8249.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{9}{4};-z\right)=$$
$$-\frac{1}{140\,970\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,048\,576z^6+79\,298\,560z^5+1\,210\,306\,560z^4+2\,606\,284\,800z^3-1\,674\,892\,800z^2+\right.\right.\right.$$
$$\left.1\,002\,456\,000z-140\,970\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}$$
$$\left(131\,072z^5+9\,830\,400z^4+145\,313\,280z^3+246\,355\,200z^2-253\,713\,600z+140\,970\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.32z\left(32\,768z^5+2\,469\,888z^4+37\,215\,360z^3+72\,898\,560z^2-61\,878\,600z+42\,000\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8250.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{26\,314\,470}\left(e^{-2\sqrt{z}}\left(-32\,768e^{4\sqrt{z}}z^{11/2}+32\,768z^{11/2}-8192e^{4\sqrt{z}}z^5-8192z^5+2\,961\,408e^{4\sqrt{z}}z^{9/2}-2\,961\,408z^{9/2}+\right.\right.$$
$$734\,208e^{4\sqrt{z}}z^4+734\,208z^4-59\,364\,480e^{4\sqrt{z}}z^{7/2}+59\,364\,480z^{7/2}-14\,311\,584e^{4\sqrt{z}}z^3-$$
$$14\,311\,584z^3+8e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-370\,944z^2+7\,488\,432z-30\,421\,755\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+$$
$$8e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-370\,944z^2+7\,488\,432z-30\,421\,755\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+233\,275\,392e^{4\sqrt{z}}z^{5/2}-$$
$$233\,275\,392z^{5/2}+49\,271\,040e^{4\sqrt{z}}z^2+49\,271\,040z^2+27\,578\,880e^{4\sqrt{z}}z^{3/2}-27\,578\,880z^{3/2}+$$
$$\left.21\,924\,000e^{4\sqrt{z}}z+21\,924\,000z+19\,111\,680e^{4\sqrt{z}}\sqrt{z}-19\,111\,680\sqrt{z}+13\,157\,235e^{4\sqrt{z}}+13\,157\,235\right)\Big)$$

07.22.03.8251.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{7}{4};-z\right)=\frac{1}{13\,157\,235}\left(16\sqrt{\pi}\left(4096z^3+370\,944z^2+7\,488\,432z+30\,421\,755\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}-\right.$$
$$128\left(256z^5+23\,136z^4+463\,785z^3+1\,822\,464z^2-215\,460z+149\,310\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left.\left(8192z^5+734\,208z^4+14\,311\,584z^3+49\,271\,040z^2-21\,924\,000z+13\,157\,235\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.8252.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{109\,643\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(524\,288z^6-55\,476\,224z^5+1\,406\,392\,320z^4-8\,726\,040\,960z^3+7\,689\,628\,800z^2+\right.\right.\right.$$
$$\left.1\,228\,008\,600z+109\,643\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\left(65\,536z^5-6\,893\,568z^4+171\,575\,040z^3-991\,766\,160z^2+504\,327\,600z+109\,643\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.8z\left(65\,536z^5-6\,918\,144z^4+174\,091\,008z^3-1\,049\,393\,520z^2+745\,642\,800z+183\,665\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8253.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{109\,643\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(524\,288z^6+55\,476\,224z^5+1\,406\,392\,320z^4+8\,726\,040\,960z^3+7\,689\,628\,800z^2-\right.\right.\right.$$
$$\left.1\,228\,008\,600z+109\,643\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\left(65\,536z^5+6\,893\,568z^4+171\,575\,040z^3+991\,766\,160z^2+504\,327\,600z-109\,643\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.8z\left(65\,536z^5+6\,918\,144z^4+174\,091\,008z^3+1\,049\,393\,520z^2+745\,642\,800z-183\,665\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8254.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{3}{4};z\right)=\frac{1}{120\,294\,720}$$
$$\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536z^4+7\,913\,472z^3-239\,629\,824z^2+1\,946\,992\,320z-3\,011\,753\,745\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+\right.\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536z^4+7\,913\,472z^3-239\,629\,824z^2+1\,946\,992\,320z-3\,011\,753\,745\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+$$
$$4\left(-16\,384z^{11/2}+4096z^5+1\,975\,296z^{9/2}-490\,752z^4-59\,543\,232z^{7/2}+14\,528\,304z^3+\right.$$
$$476\,285\,292z^{5/2}-109\,336\,815z^2-681\,730\,560z^{3/2}+115\,274\,880z-42\,608\,160\sqrt{z}+$$
$$\left.\left.e^{4\sqrt{z}}\left(16\,384z^{11/2}+4096z^5-1\,975\,296z^{9/2}-490\,752z^4+59\,543\,232z^{7/2}+14\,528\,304z^3-476\,285\,292z^{5/2}-\right.\right.\right.$$
$$\left.\left.\left.109\,336\,815z^2+681\,730\,560z^{3/2}+115\,274\,880z+42\,608\,160\sqrt{z}+15\,036\,840\right)+15\,036\,840\right)\right)\right)$$

07.22.03.8255.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{3}{4};-z\right)= \frac{1}{30\,073\,680}\left(2\left(4\sqrt{z}\,\left(4096z^5+493\,824z^4+14\,885\,808z^3+119\,071\,323z^2+170\,432\,640z-10\,652\,040\right)\sin\left(2\sqrt{z}\right)-\left(4096z^5+490\,752z^4+14\,528\,304z^3+109\,336\,815z^2+115\,274\,880z-15\,036\,840\right)\cos\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,z^{7/4}\left(65\,536z^4+7\,913\,472z^3+239\,629\,824z^2+1\,946\,992\,320z+3\,011\,753\,745\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.8256.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{1}{4};z\right)= \frac{1}{197\,358\,525\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(-262\,144z^6+35\,651\,584z^5-1\,263\,568\,896z^4+12\,966\,912\,000z^3-31\,425\,457\,140z^2+9\,473\,209\,200z+197\,358\,525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+2\sqrt{z}\left(65\,536z^5-8\,871\,936z^4+310\,431\,744z^3-3\,058\,503\,840z^2+6\,267\,428\,055z-394\,717\,050\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(65\,536z^5-8\,896\,512z^4+313\,689\,600z^3-3\,166\,115\,904z^2+7\,154\,142\,345z-1\,233\,565\,200\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8257.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},-\frac{1}{4};-z\right)= -\frac{1}{197\,358\,525\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(262\,144z^6+35\,651\,584z^5+1\,263\,568\,896z^4+12\,966\,912\,000z^3+31\,425\,457\,140z^2+9\,473\,209\,200z-197\,358\,525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-2\sqrt{z}\left(65\,536z^5+8\,871\,936z^4+310\,431\,744z^3+3\,058\,503\,840z^2+6\,267\,428\,055z+394\,717\,050\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(65\,536z^5+8\,896\,512z^4+313\,689\,600z^3+3\,166\,115\,904z^2+7\,154\,142\,345z+1\,233\,565\,200\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8258.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{1}{4};z\right)= \frac{1}{12\,831\,436\,800}\left(e^{-2\sqrt{z}}\left(-4\left(-262\,144\,z^{11/2}+65\,536\,z^5+39\,518\,208\,z^{9/2}-9\,830\,400\,z^4-1\,590\,220\,800\,z^{7/2}+390\,351\,360\,z^3+19\,185\,949\,440\,z^{5/2}-4\,527\,411\,840\,z^2-57\,147\,394\,500\,z^{3/2}+11\,677\,898\,925\,z+20\,050\,329\,600\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^{11/2}+65\,536\,z^5-39\,518\,208\,z^{9/2}-9\,830\,400\,z^4+1\,590\,220\,800\,z^{7/2}+390\,351\,360\,z^3-19\,185\,949\,440\,z^{5/2}-4\,527\,411\,840\,z^2+57\,147\,394\,500\,z^{3/2}+11\,677\,898\,925\,z-20\,050\,329\,600\sqrt{z}-1\,603\,929\,600\right)-1\,603\,929\,600\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(1\,048\,576\,z^5-158\,269\,440\,z^4+6\,390\,128\,640\,z^3-77\,879\,692\,800\,z^2+240\,940\,299\,600\,z-105\,411\,381\,075\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(1\,048\,576\,z^5-158\,269\,440\,z^4+6\,390\,128\,640\,z^3-77\,879\,692\,800\,z^2+240\,940\,299\,600\,z-105\,411\,381\,075\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8259.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{1}{4};-z\right)= \frac{1}{3\,207\,859\,200}\left(\sqrt{\pi}\,z^{3/4}\left(1\,048\,576\,z^5+158\,269\,440\,z^4+6\,390\,128\,640\,z^3+77\,879\,692\,800\,z^2+240\,940\,299\,600\,z+105\,411\,381\,075\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\left(\left(65\,536\,z^5+9\,830\,400\,z^4+390\,351\,360\,z^3+4\,527\,411\,840\,z^2+11\,677\,898\,925\,z+1\,603\,929\,600\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(65\,536\,z^5+9\,879\,552\,z^4+397\,555\,200\,z^3+4\,796\,487\,360\,z^2+14\,286\,848\,625\,z+5\,012\,582\,400\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8260.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{3}{4};z\right)= \frac{1}{34\,735\,100\,400\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(1\,048\,576\,z^6-174\,260\,224\,z^5+7\,934\,779\,392\,z^4-113\,640\,952\,320\,z^3+450\,979\,840\,080\,z^2-336\,978\,717\,075\,z+17\,367\,550\,200\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-1\,048\,576\,z^5+173\,604\,864\,z^4-7\,827\,628\,032\,z^3+108\,962\,219\,520\,z^2-391\,418\,652\,240\,z+177\,293\,741\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(-1\,048\,576\,z^5+173\,998\,080\,z^4-7\,891\,623\,936\,z^3+111\,723\,397\,632\,z^2-425\,367\,890\,640\,z+256\,921\,208\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8261.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{3}{4};-z\right)= \frac{1}{34\,735\,100\,400\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(1\,048\,576 z^6+174\,260\,224 z^5+7\,934\,779\,392 z^4+113\,640\,952\,320 z^3+450\,979\,840\,080 z^2+336\,978\,717\,075 z+17\,367\,550\,200\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- \sqrt{z}\left(1\,048\,576 z^5+173\,604\,864 z^4+7\,827\,628\,032 z^3+108\,962\,219\,520 z^2+391\,418\,652\,240 z+177\,293\,741\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(1\,048\,576 z^5+173\,998\,080 z^4+7\,891\,623\,936 z^3+111\,723\,397\,632 z^2+425\,367\,890\,640 z+256\,921\,208\,775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8262.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{5}{4};z\right)= \frac{1}{4\,927\,271\,731\,200\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2}+1\,048\,576 z^5+758\,906\,880 z^{9/2}-188\,940\,288 z^4-38\,200\,049\,664 z^{7/2}+9\,411\,010\,560 z^3+616\,149\,596\,160 z^{5/2}-147\,439\,756\,800 z^2-2\,788\,391\,511\,360 z^{3/2}+606\,464\,727\,120 z+2\,166\,875\,757\,900\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2}+1\,048\,576 z^5-758\,906\,880 z^{9/2}-188\,940\,288 z^4+38\,200\,049\,664 z^{7/2}+9\,411\,010\,560 z^3-616\,149\,596\,160 z^{5/2}-147\,439\,756\,800 z^2+2\,788\,391\,511\,360 z^{3/2}+606\,464\,727\,120 z-2\,166\,875\,757\,900\sqrt{z}-299\,674\,823\,175\right)-299\,674\,823\,175\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6-3\,038\,773\,248 z^5+153\,363\,087\,360 z^4-2\,492\,150\,169\,600 z^3+11\,565\,134\,380\,800 z^2-10\,119\,492\,583\,200 z+316\,234\,143\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6-3\,038\,773\,248 z^5+153\,363\,087\,360 z^4-2\,492\,150\,169\,600 z^3+11\,565\,134\,380\,800 z^2-10\,119\,492\,583\,200 z+316\,234\,143\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8263.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{5}{4};-z\right)= \frac{1}{1\,231\,817\,932\,800\sqrt[4]{z}}\left(\sqrt{\pi}\left(16\,777\,216 z^6+3\,038\,773\,248 z^5+153\,363\,087\,360 z^4+2\,492\,150\,169\,600 z^3+11\,565\,134\,380\,800 z^2+10\,119\,492\,583\,200 z+316\,234\,143\,225\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576 z^5+189\,726\,720 z^4+9\,550\,012\,416 z^3+154\,037\,399\,040 z^2+697\,097\,877\,840 z+541\,718\,939\,475\right)\sin\left(2\sqrt{z}\right)-\left(1\,048\,576 z^5+188\,940\,288 z^4+9\,411\,010\,560 z^3+147\,439\,756\,800 z^2+606\,464\,727\,120 z+299\,674\,823\,175\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8264.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{7}{4};z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-3\,294\,625\,792\,z^5+183\,268\,737\,024\,z^4-3\,368\,959\,426\,560\,z^3+18\,577\,413\,953\,280\,z^2-\right.\right.\right.
$$

$$
\left.\left.22\,092\,626\,556\,000\,z+2\,302\,888\,913\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+
$$

$$
\left(-16\,777\,216\,z^6+3\,284\,140\,032\,z^5-181\,237\,776\,384\,z^4+3\,259\,755\,233\,280\,z^3-\right.
$$

$$
\left.16\,743\,940\,012\,800\,z^2+14\,465\,239\,588\,800\,z+316\,234\,143\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-
$$

$$
2\sqrt{z}\,\left(16\,777\,216\,z^6-3\,290\,431\,488\,z^5+182\,451\,634\,176\,z^4-3\,324\,398\,321\,664\,z^3+17\,801\,011\,388\,160\,z^2-\right.
$$

$$
\left.\left.\left.18\,482\,796\,652\,320\,z+316\,234\,143\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(4\,816\,600\,588\,800\,\sqrt{2}\,\sqrt[4]{z}\right)
$$

07.22.03.8265.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{7}{4};-z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+3\,294\,625\,792\,z^5+183\,268\,737\,024\,z^4+3\,368\,959\,426\,560\,z^3+18\,577\,413\,953\,280\,z^2+\right.\right.\right.
$$

$$
\left.\left.22\,092\,626\,556\,000\,z+2\,302\,888\,913\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,777\,216\,z^6+3\,284\,140\,032\,z^5+181\,237\,776\,384\,z^4+\right.\right.
$$

$$
\left.3\,259\,755\,233\,280\,z^3+16\,743\,940\,012\,800\,z^2+14\,465\,239\,588\,800\,z-316\,234\,143\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+
$$

$$
2\sqrt{z}\,\left(16\,777\,216\,z^6+3\,290\,431\,488\,z^5+182\,451\,634\,176\,z^4+3\,324\,398\,321\,664\,z^3+17\,801\,011\,388\,160\,z^2+\right.
$$

$$
\left.\left.\left.18\,482\,796\,652\,320\,z+316\,234\,143\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(4\,816\,600\,588\,800\,\sqrt{2}\,\sqrt[4]{z}\right)
$$

07.22.03.8266.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{9}{4};z\right)=
$$

$$
\frac{1}{441\,483\,547\,115\,520\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-67\,108\,864\,z^{13/2}+16\,777\,216\,z^6+14\,168\,358\,912\,z^{11/2}-3\,529\,506\,816\,z^5-\right.\right.\right.
$$

$$
856\,201\,887\,744\,z^{9/2}+211\,446\,595\,584\,z^4+17\,289\,666\,035\,712\,z^{7/2}-4\,172\,507\,136\,000\,z^3-
$$

$$
104\,988\,649\,651\,200\,z^{5/2}+23\,581\,062\,731\,520\,z^2+126\,806\,237\,873\,280\,z^{3/2}-20\,779\,168\,606\,560\,z-
$$

$$
1\,264\,936\,572\,900\,\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^6-14\,168\,358\,912\,z^{11/2}-\right.
$$

$$
3\,529\,506\,816\,z^5+856\,201\,887\,744\,z^{9/2}+211\,446\,595\,584\,z^4-17\,289\,666\,035\,712\,z^{7/2}-
$$

$$
4\,172\,507\,136\,000\,z^3+104\,988\,649\,651\,200\,z^{5/2}+23\,581\,062\,731\,520\,z^2-126\,806\,237\,873\,280\,z^{3/2}-
$$

$$
\left.\left.20\,779\,168\,606\,560\,z+1\,264\,936\,572\,900\,\sqrt{z}-948\,702\,429\,675\right)-948\,702\,429\,675\right)+
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7-56\,723\,767\,296\,z^6+3\,435\,333\,156\,864\,z^5-69\,780\,204\,748\,800\,z^4+\right.
$$

$$
\left.431\,765\,016\,883\,200\,z^3-566\,691\,584\,659\,200\,z^2+35\,418\,224\,041\,200\,z-948\,702\,429\,675\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7-56\,723\,767\,296\,z^6+3\,435\,333\,156\,864\,z^5-69\,780\,204\,748\,800\,z^4+\right.
$$

$$
\left.\left.\left.431\,765\,016\,883\,200\,z^3-566\,691\,584\,659\,200\,z^2+35\,418\,224\,041\,200\,z-948\,702\,429\,675\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)
$$

07.22.03.8267.01

$${}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{110\,370\,886\,778\,880\,z^{5/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+56\,723\,767\,296\,z^6+3\,435\,333\,156\,864\,z^5+69\,780\,204\,748\,800\,z^4+\right.\right.$$
$$\left.431\,765\,016\,883\,200\,z^3+566\,691\,584\,659\,200\,z^2+35\,418\,224\,041\,200\,z+948\,702\,429\,675\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+3\,542\,089\,728\,z^5+214\,050\,471\,936\,z^4+4\,322\,416\,508\,928\,z^3+26\,247\,162\,412\,800\,z^2+\right.\right.$$
$$\left.31\,701\,559\,468\,320\,z+316\,234\,143\,225\right)\sin\left(2\sqrt{z}\right)-\left(16\,777\,216\,z^6+3\,529\,506\,816\,z^5+211\,446\,595\,584\,z^4+\right.$$
$$\left.\left.\left.4\,172\,507\,136\,000\,z^3+23\,581\,062\,731\,520\,z^2+20\,779\,168\,606\,560\,z-948\,702\,429\,675\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.8268.01

$${}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{11}{4};z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-60\,817\,408\,000\,z^6+3\,996\,883\,353\,600\,z^5-89\,705\,639\,116\,800\,z^4+633\,367\,184\,486\,400\,z^3-\right.\right.\right.$$
$$\left.1\,032\,135\,915\,283\,200\,z^2+154\,298\,278\,134\,000\,z+1\,581\,170\,716\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(-268\,435\,456\,z^7+60\,649\,635\,840\,z^6-3\,959\,323\,361\,280\,z^5+87\,306\,618\,470\,400\,z^4-583\,349\,069\,721\,600\,z^3+\right.$$
$$\left.749\,034\,321\,235\,200\,z^2+25\,298\,731\,458\,000\,z-4\,743\,512\,148\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7-60\,750\,299\,136\,z^6+3\,981\,783\,859\,200\,z^5-88\,729\,680\,936\,960\,z^4+\right.$$
$$\left.\left.612\,395\,107\,430\,400\,z^3-902\,523\,119\,097\,600\,z^2+35\,418\,224\,041\,200\,z-4\,743\,512\,148\,375\right)$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(330\,281\,183\,232\,000\sqrt{2}\,z^{5/4}\right)$$

07.22.03.8269.01

$${}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{11}{4};-z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+60\,817\,408\,000\,z^6+3\,996\,883\,353\,600\,z^5+89\,705\,639\,116\,800\,z^4+633\,367\,184\,486\,400\,z^3+\right.\right.\right.$$
$$\left.1\,032\,135\,915\,283\,200\,z^2+154\,298\,278\,134\,000\,z-1\,581\,170\,716\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(268\,435\,456\,z^7+60\,649\,635\,840\,z^6+3\,959\,323\,361\,280\,z^5+87\,306\,618\,470\,400\,z^4+583\,349\,069\,721\,600\,z^3+\right.$$
$$\left.749\,034\,321\,235\,200\,z^2-25\,298\,731\,458\,000\,z-4\,743\,512\,148\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+60\,750\,299\,136\,z^6+3\,981\,783\,859\,200\,z^5+88\,729\,680\,936\,960\,z^4+\right.$$
$$\left.\left.612\,395\,107\,430\,400\,z^3+902\,523\,119\,097\,600\,z^2+35\,418\,224\,041\,200\,z+4\,743\,512\,148\,375\right)$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(330\,281\,183\,232\,000\sqrt{2}\,z^{5/4}\right)$$

07.22.03.8270.01

$${}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{13}{4};z\right)=$$
$$\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^7+259\,107\,323\,904\,z^{13/2}-64\,575\,504\,384\,z^6-18\,273\,596\,866\,560\right.\right.\right.$$
$$z^{11/2}+4\,520\,659\,648\,512\,z^5+443\,261\,609\,312\,256\,z^{9/2}-107\,584\,608\,337\,920\,z^4-$$
$$3\,377\,273\,807\,093\,760\,z^{7/2}+773\,770\,378\,752\,000\,z^3+5\,541\,087\,937\,674\,240\,z^{5/2}-$$
$$993\,206\,619\,175\,680\,z^2-141\,672\,896\,164\,800\,z^{3/2}-86\,015\,686\,957\,200\,z+44\,272\,780\,051\,500\sqrt{z}+e^{4\sqrt{z}}$$
$$\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^7-259\,107\,323\,904\,z^{13/2}-64\,575\,504\,384\,z^6+18\,273\,596\,866\,560\,z^{11/2}+\right.$$
$$4\,520\,659\,648\,512\,z^5-443\,261\,609\,312\,256\,z^{9/2}-107\,584\,608\,337\,920\,z^4+3\,377\,273\,807\,093\,760\,z^{7/2}+$$
$$773\,770\,378\,752\,000\,z^3-5\,541\,087\,937\,674\,240\,z^{5/2}-993\,206\,619\,175\,680\,z^2+141\,672\,896\,164\,800\,z^{3/2}-$$
$$\left.86\,015\,686\,957\,200\,z-44\,272\,780\,051\,500\sqrt{z}+33\,204\,585\,038\,625\right)+33\,204\,585\,038\,625\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-1\,037\,234\,601\,984\,z^7+73\,287\,107\,346\,432\,z^6-1\,786\,373\,241\,569\,280\,z^5+\right.$$
$$13\,816\,480\,540\,262\,400\,z^4-24\,178\,840\,945\,459\,200\,z^3+2\,266\,766\,338\,636\,800\,z^2-$$
$$\left.121\,433\,910\,998\,400\,z+33\,204\,585\,038\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-1\,037\,234\,601\,984\,z^7+73\,287\,107\,346\,432\,z^6-1\,786\,373\,241\,569\,280\,z^5+\right.$$
$$13\,816\,480\,540\,262\,400\,z^4-24\,178\,840\,945\,459\,200\,z^3+2\,266\,766\,338\,636\,800\,z^2-$$
$$\left.\left.\left.121\,433\,910\,998\,400\,z+33\,204\,585\,038\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(25\,115\,508\,458\,127\,360\,z^{9/4}\right)$$

07.22.03.8271.01

$${}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{13}{4};-z\right)=$$
$$\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^8+1\,037\,234\,601\,984\,z^7+73\,287\,107\,346\,432\,z^6+1\,786\,373\,241\,569\,280\,z^5+13\,816\,480\,540\,262\,400\,z^4+\right.\right.$$
$$\left.24\,178\,840\,945\,459\,200\,z^3+2\,266\,766\,338\,636\,800\,z^2+121\,433\,910\,998\,400\,z+33\,204\,585\,038\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^7+64\,776\,830\,976\,z^6+4\,568\,399\,216\,640\,z^5+110\,815\,402\,328\,064\,z^4+\right.\right.$$
$$844\,318\,451\,773\,440\,z^3+1\,385\,271\,984\,418\,560\,z^2+35\,418\,224\,041\,200\,z+11\,068\,195\,012\,875\Big)\sin\left(2\sqrt{z}\right)-$$
$$\left(268\,435\,456\,z^7+64\,575\,504\,384\,z^6+4\,520\,659\,648\,512\,z^5+107\,584\,608\,337\,920\,z^4+\right.$$
$$773\,770\,378\,752\,000\,z^3+993\,206\,619\,175\,680\,z^2-86\,015\,686\,957\,200\,z-$$
$$\left.\left.33\,204\,585\,038\,625\right)\cos\left(2\sqrt{z}\right)\right)\Bigg)\Big/\left(6\,278\,877\,114\,531\,840\,z^{9/4}\right)$$

07.22.03.8272.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{15}{4};z\right)= $$

$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-1\,102\,732\,853\,248\,z^7+83\,600\,867\,328\,000\,z^6-2\,215\,882\,700\,881\,920\,z^5+19\,071\,949\,278\,412\,800\right.\right.\right. $$

$$ \left.\left.\left. z^4-39\,462\,057\,363\,456\,000\,z^3+7\,527\,716\,375\,961\,600\,z^2+101\,194\,925\,832\,000\,z-99\,613\,755\,115\,875\right)\right. $$

$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4\,294\,967\,296\,z^8+1\,100\,048\,498\,688\,z^7-82\,918\,873\,497\,600\,z^6+\right. $$

$$ 2\,165\,434\,440\,744\,960\,z^5-17\,815\,287\,929\,241\,600\,z^4+30\,448\,922\,537\,779\,200\,z^3+ $$

$$ \left.1\,133\,383\,169\,318\,400\,z^2+151\,792\,388\,748\,000\,z+298\,841\,265\,347\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- $$

$$ 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-1\,101\,659\,111\,424\,z^7+83\,326\,861\,836\,288\,z^6-2\,195\,405\,332\,807\,680\,z^5+\right. $$

$$ 18\,548\,685\,324\,288\,000\,z^4-35\,424\,896\,480\,870\,400\,z^3+2\,266\,766\,338\,636\,800\,z^2- $$

$$ \left.\left.\left.485\,735\,643\,993\,600\,z+298\,841\,265\,347\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(16\,333\,905\,788\,928\,000\,\sqrt{2}\;z^{9/4}\right) $$

07.22.03.8273.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{15}{4};-z\right)= $$

$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,102\,732\,853\,248\,z^7+83\,600\,867\,328\,000\,z^6+2\,215\,882\,700\,881\,920\,z^5+19\,071\,949\,278\,412\,800\right.\right.\right. $$

$$ \left.\left.\left. z^4+39\,462\,057\,363\,456\,000\,z^3+7\,527\,716\,375\,961\,600\,z^2-101\,194\,925\,832\,000\,z-99\,613\,755\,115\,875\right)\right. $$

$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4\,294\,967\,296\,z^8+1\,100\,048\,498\,688\,z^7+82\,918\,873\,497\,600\,z^6+2\,165\,434\,440\,744\,960\,z^5+\right. $$

$$ 17\,815\,287\,929\,241\,600\,z^4+30\,448\,922\,537\,779\,200\,z^3-1\,133\,383\,169\,318\,400\,z^2+ $$

$$ \left.151\,792\,388\,748\,000\,z-298\,841\,265\,347\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,101\,659\,111\,424\,z^7+83\,326\,861\,836\,288\,z^6+2\,195\,405\,332\,807\,680\,z^5+\right. $$

$$ 18\,548\,685\,324\,288\,000\,z^4+35\,424\,896\,480\,870\,400\,z^3+2\,266\,766\,338\,636\,800\,z^2+ $$

$$ \left.\left.\left.485\,735\,643\,993\,600\,z+298\,841\,265\,347\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(16\,333\,905\,788\,928\,000\,\sqrt{2}\;z^{9/4}\right) $$

07.22.03.8274.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{17}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}+4\,664\,334\,483\,456\,z^{15/2}-1\,162\,862\,395\,392\,z^{7}-\right.\right.\right.
$$
$$
376\,037\,003\,231\,232\,z^{13/2}+93\,148\,176\,973\,824\,z^{6}+10\,649\,440\,566\,116\,352\,z^{11/2}-2\,595\,388\,485\,795\,840\,z^{5}-
$$
$$
97\,612\,265\,839\,656\,960\,z^{9/2}+22\,669\,165\,483\,130\,880\,z^{4}+202\,530\,587\,272\,151\,040\,z^{7/2}-
$$
$$
38\,426\,960\,754\,524\,160\,z^{3}-9\,067\,065\,354\,547\,200\,z^{5/2}-4\,533\,532\,677\,273\,600\,z^{2}+4\,371\,620\,795\,942\,400\,z^{3/2}+
$$
$$
1\,275\,056\,065\,483\,200\,z-4\,383\,005\,225\,098\,500\sqrt{z}+e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}-\right.
$$
$$
4\,664\,334\,483\,456\,z^{15/2}-1\,162\,862\,395\,392\,z^{7}+376\,037\,003\,231\,232\,z^{13/2}+93\,148\,176\,973\,824\,z^{6}-
$$
$$
10\,649\,440\,566\,116\,352\,z^{11/2}-2\,595\,388\,485\,795\,840\,z^{5}+97\,612\,265\,839\,656\,960\,z^{9/2}+
$$
$$
22\,669\,165\,483\,130\,880\,z^{4}-202\,530\,587\,272\,151\,040\,z^{7/2}-38\,426\,960\,754\,524\,160\,z^{3}+
$$
$$
9\,067\,065\,354\,547\,200\,z^{5/2}-4\,533\,532\,677\,273\,600\,z^{2}-4\,371\,620\,795\,942\,400\,z^{3/2}+
$$
$$
\left.\left.\left.1\,275\,056\,065\,483\,200\,z+4\,383\,005\,225\,098\,500\sqrt{z}-3\,287\,253\,918\,823\,875\right)-3\,287\,253\,918\,823\,875\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-18\,670\,222\,835\,712\,z^{8}+1\,507\,620\,493\,983\,744\,z^{7}-42\,872\,957\,797\,662\,720\,z^{6}+\right.
$$
$$
397\,914\,639\,559\,557\,120\,z^{5}-870\,438\,274\,036\,531\,200\,z^{4}+108\,804\,784\,254\,566\,400\,z^{3}-
$$
$$
\left.8\,743\,241\,591\,884\,800\,z^{2}+4\,781\,460\,245\,562\,000\,z-3\,287\,253\,918\,823\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-18\,670\,222\,835\,712\,z^{8}+1\,507\,620\,493\,983\,744\,z^{7}-\right.
$$
$$
42\,872\,957\,797\,662\,720\,z^{6}+397\,914\,639\,559\,557\,120\,z^{5}-870\,438\,274\,036\,531\,200\,z^{4}+
$$
$$
108\,804\,784\,254\,566\,400\,z^{3}-8\,743\,241\,591\,884\,800\,z^{2}+4\,781\,460\,245\,562\,000\,z-
$$
$$
\left.\left.\left.3\,287\,253\,918\,823\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(1\,112\,810\,220\,913\,950\,720\,z^{13/4}\right)
$$

07.22.03.8275.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{17}{4};-z\right)=
\left(\sqrt{\pi}\left(68\,719\,476\,736\,z^{9}+18\,670\,222\,835\,712\,z^{8}+1\,507\,620\,493\,983\,744\,z^{7}+42\,872\,957\,797\,662\,720\,z^{6}+\right.\right.
$$
$$
397\,914\,639\,559\,557\,120\,z^{5}+870\,438\,274\,036\,531\,200\,z^{4}+108\,804\,784\,254\,566\,400\,z^{3}+
$$
$$
\left.8\,743\,241\,591\,884\,800\,z^{2}+4\,781\,460\,245\,562\,000\,z+3\,287\,253\,918\,823\,875\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$
$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^{8}+1\,166\,083\,620\,864\,z^{7}+94\,009\,250\,807\,808\,z^{6}+2\,662\,360\,141\,529\,088\,z^{5}+\right.\right.
$$
$$
24\,403\,066\,459\,914\,240\,z^{4}+50\,632\,646\,818\,037\,760\,z^{3}+2\,266\,766\,338\,636\,800\,z^{2}+
$$
$$
1\,092\,905\,198\,985\,600\,z+1\,095\,751\,306\,274\,625\right)\sin\left(2\sqrt{z}\right)-
$$
$$
\left(4\,294\,967\,296\,z^{8}+1\,162\,862\,395\,392\,z^{7}+93\,148\,176\,973\,824\,z^{6}+2\,595\,388\,485\,795\,840\,z^{5}+\right.
$$
$$
22\,669\,165\,483\,130\,880\,z^{4}+38\,426\,960\,754\,524\,160\,z^{3}-4\,533\,532\,677\,273\,600\,z^{2}-
$$
$$
\left.\left.\left.1\,275\,056\,065\,483\,200\,z-3\,287\,253\,918\,823\,875\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(278\,202\,555\,228\,487\,680\,z^{13/4}\right)
$$

07.22.03.8276.01

$${}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{19}{4};z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-19\,718\,194\,855\,936\,z^8+1\,693\,903\,963\,029\,504\,z^7-51\,778\,088\,966\,553\,600\,z^6+\right.\right.\right.$$
$$\left.\left.525\,727\,746\,553\,282\,560\,z^5-1\,318\,581\,028\,896\,768\,000\,z^4+302\,705\,553\,011\,097\,600\,z^3+\right.\right.$$
$$\left.\left.2\,590\,590\,101\,299\,200\,z^2+1\,138\,442\,915\,610\,000\,z+14\,244\,766\,981\,570\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(-68\,719\,476\,736\,z^9+19\,675\,245\,182\,976\,z^8-1\,681\,695\,518\,490\,624\,z^7+50\,751\,719\,960\,739\,840\,z^6-\right.$$
$$\left.495\,993\,009\,450\,516\,480\,z^5+1\,060\,108\,672\,057\,344\,000\,z^4+36\,268\,261\,418\,188\,800\,z^3+\right.$$
$$\left.33\,030\,023\,791\,564\,800\,z^2-68\,534\,263\,519\,722\,000\,z-42\,734\,300\,944\,710\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-68\,719\,476\,736\,z^9+19\,701\,014\,986\,752\,z^8-1\,689\,001\,257\,861\,120\,z^7+51\,362\,188\,895\,453\,184\,z^6-\right.$$
$$\left.513\,409\,888\,938\,885\,120\,z^5+1\,204\,601\,669\,900\,697\,600\,z^4-108\,804\,784\,254\,566\,400\,z^3+\right.$$
$$\left.\left.29\,144\,138\,639\,616\,000\,z^2-22\,632\,245\,162\,326\,800\,z+42\,734\,300\,944\,710\,375\right)$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(662\,067\,647\,977\,881\,600\,\sqrt{2}\;z^{13/4}\right)$$

07.22.03.8277.01

$${}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{19}{4};-z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+19\,718\,194\,855\,936\,z^8+1\,693\,903\,963\,029\,504\,z^7+51\,778\,088\,966\,553\,600\,z^6+\right.\right.\right.$$
$$\left.\left.525\,727\,746\,553\,282\,560\,z^5+1\,318\,581\,028\,896\,768\,000\,z^4+302\,705\,553\,011\,097\,600\,z^3-\right.\right.$$
$$\left.\left.2\,590\,590\,101\,299\,200\,z^2+1\,138\,442\,915\,610\,000\,z-14\,244\,766\,981\,570\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(68\,719\,476\,736\,z^9+19\,675\,245\,182\,976\,z^8+1\,681\,695\,518\,490\,624\,z^7+50\,751\,719\,960\,739\,840\,z^6+\right.$$
$$\left.495\,993\,009\,450\,516\,480\,z^5+1\,060\,108\,672\,057\,344\,000\,z^4-36\,268\,261\,418\,188\,800\,z^3+\right.$$
$$\left.33\,030\,023\,791\,564\,800\,z^2+68\,534\,263\,519\,722\,000\,z-42\,734\,300\,944\,710\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+19\,701\,014\,986\,752\,z^8+1\,689\,001\,257\,861\,120\,z^7+51\,362\,188\,895\,453\,184\,z^6+\right.$$
$$\left.513\,409\,888\,938\,885\,120\,z^5+1\,204\,601\,669\,900\,697\,600\,z^4+108\,804\,784\,254\,566\,400\,z^3+\right.$$
$$\left.\left.29\,144\,138\,639\,616\,000\,z^2+22\,632\,245\,162\,326\,800\,z+42\,734\,300\,944\,710\,375\right)$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(662\,067\,647\,977\,881\,600\,\sqrt{2}\;z^{13/4}\right)$$

07.22.03.8278.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{21}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}+82\,927\,228\,551\,168\,z^{17/2}-20\,680\,267\,530\,240\,z^{8}-\right.\right.\right.
$$
$$
7\,522\,656\,693\,780\,480\,z^{15/2}+1\,865\,331\,140\,198\,400\,z^{7}+243\,608\,272\,722\,984\,960\,z^{13/2}-
$$
$$
59\,554\,649\,698\,467\,840\,z^{6}-2\,609\,718\,666\,618\,470\,400\,z^{11/2}+612\,080\,201\,288\,908\,800\,z^{5}+
$$
$$
6\,549\,860\,771\,758\,080\,000\,z^{9/2}-1\,293\,055\,297\,693\,286\,400\,z^{4}-435\,219\,137\,018\,265\,600\,z^{7/2}-
$$
$$
181\,341\,307\,090\,944\,000\,z^{3}+252\,582\,534\,876\,672\,000\,z^{5/2}-4\,857\,356\,439\,936\,000\,z^{2}-
$$
$$
310\,567\,227\,378\,408\,000\,z^{3/2}+157\,788\,188\,103\,546\,000\,z+854\,686\,018\,894\,207\,500\sqrt{z}+
$$
$$
e^{4\sqrt{z}}\left(274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}-82\,927\,228\,551\,168\,z^{17/2}-\right.
$$
$$
20\,680\,267\,530\,240\,z^{8}+7\,522\,656\,693\,780\,480\,z^{15/2}+1\,865\,331\,140\,198\,400\,z^{7}-
$$
$$
243\,608\,272\,722\,984\,960\,z^{13/2}-59\,554\,649\,698\,467\,840\,z^{6}+2\,609\,718\,666\,618\,470\,400\,z^{11/2}+
$$
$$
612\,080\,201\,288\,908\,800\,z^{5}-6\,549\,860\,771\,758\,080\,000\,z^{9/2}-1\,293\,055\,297\,693\,286\,400\,z^{4}+
$$
$$
435\,219\,137\,018\,265\,600\,z^{7/2}-181\,341\,307\,090\,944\,000\,z^{3}-252\,582\,534\,876\,672\,000\,z^{5/2}-
$$
$$
4\,857\,356\,439\,936\,000\,z^{2}+310\,567\,227\,378\,408\,000\,z^{3/2}+157\,788\,188\,103\,546\,000\,z-
$$
$$
\left.854\,686\,018\,894\,207\,500\sqrt{z}+641\,014\,514\,170\,655\,625\right)+641\,014\,514\,170\,655\,625\Big)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}-331\,915\,072\,634\,880\,z^{9}+30\,152\,409\,879\,674\,880\,z^{8}-\right.
$$
$$
979\,953\,321\,089\,433\,600\,z^{7}+10\,611\,057\,054\,921\,523\,200\,z^{6}-27\,854\,024\,769\,168\,998\,400\,z^{5}+
$$
$$
4\,352\,191\,370\,182\,656\,000\,z^{4}-466\,306\,218\,233\,856\,000\,z^{3}+382\,516\,819\,644\,960\,000\,z^{2}-
$$
$$
\left.525\,960\,627\,011\,820\,000\,z+641\,014\,514\,170\,655\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}-331\,915\,072\,634\,880\,z^{9}+30\,152\,409\,879\,674\,880\,z^{8}-\right.
$$
$$
979\,953\,321\,089\,433\,600\,z^{7}+10\,611\,057\,054\,921\,523\,200\,z^{6}-27\,854\,024\,769\,168\,998\,400\,z^{5}+
$$
$$
4\,352\,191\,370\,182\,656\,000\,z^{4}-466\,306\,218\,233\,856\,000\,z^{3}+382\,516\,819\,644\,960\,000\,z^{2}-
$$
$$
\left.\left.\left.525\,960\,627\,011\,820\,000\,z+641\,014\,514\,170\,655\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(41\,894\,031\,846\,172\,262\,400\,z^{17/4}\right)
$$

07.22.03.8279.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{1}{2},\frac{21}{4};-z\right)=
\left(\sqrt{\pi}\left(1\,099\,511\,627\,776\,z^{10}+331\,915\,072\,634\,880\,z^{9}+30\,152\,409\,879\,674\,880\,z^{8}+979\,953\,321\,089\,433\,600\,z^{7}+\right.\right.
$$
$$
10\,611\,057\,054\,921\,523\,200\,z^{6}+27\,854\,024\,769\,168\,998\,400\,z^{5}+
$$
$$
4\,352\,191\,370\,182\,656\,000\,z^{4}+466\,306\,218\,233\,856\,000\,z^{3}+382\,516\,819\,644\,960\,000\,z^{2}+
$$
$$
\left.525\,960\,627\,011\,820\,000\,z+641\,014\,514\,170\,655\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$
$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(68\,719\,476\,736\,z^{9}+20\,731\,807\,137\,792\,z^{8}+1\,880\,664\,173\,445\,120\,z^{7}+60\,902\,068\,180\,746\,240\,z^{6}+\right.\right.
$$
$$
652\,429\,666\,654\,617\,600\,z^{5}+1\,637\,465\,192\,939\,520\,000\,z^{4}+108\,804\,784\,254\,566\,400\,z^{3}+
$$
$$
\left.63\,145\,633\,719\,168\,000\,z^{2}+77\,641\,806\,844\,602\,000\,z+213\,671\,504\,723\,551\,875\right)\sin\left(2\sqrt{z}\right)-
$$
$$
\left(68\,719\,476\,736\,z^{9}+20\,680\,267\,530\,240\,z^{8}+1\,865\,331\,140\,198\,400\,z^{7}+59\,554\,649\,698\,467\,840\,z^{6}+\right.
$$
$$
612\,080\,201\,288\,908\,800\,z^{5}+1\,293\,055\,297\,693\,286\,400\,z^{4}-
$$
$$
181\,341\,307\,090\,944\,000\,z^{3}+4\,857\,356\,439\,936\,000\,z^{2}+157\,788\,188\,103\,546\,000\,z-
$$
$$
\left.\left.\left.641\,014\,514\,170\,655\,625\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(10\,473\,507\,961\,543\,065\,600\,z^{17/4}\right)
$$

07.22.03.8280.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{1}{2}, \frac{23}{4}; z\right) = $$

$$\left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} - 348\,682\,624\,958\,464\,z^9 + 33\,473\,158\,333\,857\,792\,z^8 - 1\,159\,150\,931\,615\,416\,320\,z^7 + \right.\right.\right.$$
$$13\,562\,189\,080\,669\,716\,480\,z^6 - 39\,964\,470\,320\,981\,606\,400\,z^5 +$$
$$10\,660\,404\,913\,127\,424\,000\,z^4 - 31\,087\,081\,215\,590\,400\,z^3 + 557\,381\,651\,482\,656\,000\,z^2 -$$
$$\left.\left.1\,758\,211\,238\,868\,084\,000\,z - 3\,632\,415\,580\,300\,381\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +$$
$$\left(-1\,099\,511\,627\,776\,z^{10} + 347\,995\,430\,191\,104\,z^9 - 33\,257\,078\,529\,196\,032\,z^8 + \right.$$
$$1\,138\,803\,094\,553\,886\,720\,z^7 - 12\,890\,059\,494\,276\,464\,640\,z^6 + 33\,096\,365\,963\,948\,851\,200\,z^5 +$$
$$870\,438\,274\,036\,531\,200\,z^4 + 2\,207\,182\,766\,306\,918\,400\,z^3 - 5\,366\,164\,527\,019\,296\,000\,z^2 +$$
$$\left.21\,879\,962\,083\,691\,712\,000\,z + 10\,897\,246\,740\,901\,145\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} - 348\,407\,747\,051\,520\,z^9 + 33\,386\,417\,174\,347\,776\,z^8 - 1\,150\,916\,822\,178\,988\,032\,z^7 + \right.$$
$$13\,284\,855\,434\,906\,173\,440\,z^6 - 36\,971\,236\,009\,967\,616\,000\,z^5 + 4\,352\,191\,370\,182\,656\,000\,z^4 -$$
$$1\,336\,744\,492\,270\,387\,200\,z^3 + 1\,093\,633\,802\,451\,590\,400\,z^2 - 1\,367\,497\,630\,230\,732\,000\,z +$$
$$\left.\left.\left.10\,897\,246\,740\,901\,145\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(23\,416\,287\,339\,007\,180\,800\,\sqrt{2}\;z^{17/4}\right)$$

07.22.03.8281.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{1}{2}, \frac{23}{4}; -z\right) = $$

$$\left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} + 348\,682\,624\,958\,464\,z^9 + 33\,473\,158\,333\,857\,792\,z^8 + 1\,159\,150\,931\,615\,416\,320\,z^7 + \right.\right.\right.$$
$$13\,562\,189\,080\,669\,716\,480\,z^6 + 39\,964\,470\,320\,981\,606\,400\,z^5 +$$
$$10\,660\,404\,913\,127\,424\,000\,z^4 + 31\,087\,081\,215\,590\,400\,z^3 + 557\,381\,651\,482\,656\,000\,z^2 +$$
$$\left.\left.1\,758\,211\,238\,868\,084\,000\,z - 3\,632\,415\,580\,300\,381\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 -$$
$$\left(1\,099\,511\,627\,776\,z^{10} + 347\,995\,430\,191\,104\,z^9 + 33\,257\,078\,529\,196\,032\,z^8 + 1\,138\,803\,094\,553\,886\,720\,z^7 + \right.$$
$$12\,890\,059\,494\,276\,464\,640\,z^6 + 33\,096\,365\,963\,948\,851\,200\,z^5 -$$
$$870\,438\,274\,036\,531\,200\,z^4 + 2\,207\,182\,766\,306\,918\,400\,z^3 + 5\,366\,164\,527\,019\,296\,000\,z^2 +$$
$$\left.21\,879\,962\,083\,691\,712\,000\,z - 10\,897\,246\,740\,901\,145\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} + 348\,407\,747\,051\,520\,z^9 + 33\,386\,417\,174\,347\,776\,z^8 + 1\,150\,916\,822\,178\,988\,032\,z^7 + \right.$$
$$13\,284\,855\,434\,906\,173\,440\,z^6 + 36\,971\,236\,009\,967\,616\,000\,z^5 + 4\,352\,191\,370\,182\,656\,000\,z^4 +$$
$$1\,336\,744\,492\,270\,387\,200\,z^3 + 1\,093\,633\,802\,451\,590\,400\,z^2 + 1\,367\,497\,630\,230\,732\,000\,z +$$
$$\left.\left.\left.10\,897\,246\,740\,901\,145\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(23\,416\,287\,339\,007\,180\,800\,\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{23}{4}$, $b_{1.} = \frac{3}{2}$

07.22.03.8282.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{3}{2}, -\frac{23}{4}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.8283.01

$${}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{23}{4};-z\right)=\frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.8284.01

$${}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{1\,090\,405\,850\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,777\,216\,z^6+298\,844\,160\,z^5+5\,587\,927\,040\,z^4+73\,927\,987\,200\,z^3+572\,359\,737\,600\,z^2+\right.\right.\right.$$
$$\left.\left.\left.1\,957\,951\,371\,600\,z+1\,090\,405\,850\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$8\sqrt{z}\left(1\,048\,576\,z^5+19\,333\,120\,z^4+362\,680\,320\,z^3+4\,882\,348\,800\,z^2+39\,627\,882\,000\,z+163\,066\,794\,975\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(16\,777\,216\,z^6+303\,038\,464\,z^5+5\,669\,191\,680\,z^4+75\,472\,588\,800\,z^3+\right.$$
$$\left.\left.\left.593\,887\,392\,000\,z^2+2\,151\,305\,427\,600\,z+2\,292\,816\,782\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8285.01

$${}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{1\,090\,405\,850\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,777\,216\,z^6-298\,844\,160\,z^5+5\,587\,927\,040\,z^4-73\,927\,987\,200\,z^3+\right.\right.\right.$$
$$\left.\left.\left.572\,359\,737\,600\,z^2-1\,957\,951\,371\,600\,z+1\,090\,405\,850\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$8\sqrt{z}\left(1\,048\,576\,z^5-19\,333\,120\,z^4+362\,680\,320\,z^3-4\,882\,348\,800\,z^2+39\,627\,882\,000\,z-163\,066\,794\,975\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,777\,216\,z^6-303\,038\,464\,z^5+5\,669\,191\,680\,z^4-75\,472\,588\,800\,z^3+\right.$$
$$\left.\left.\left.593\,887\,392\,000\,z^2-2\,151\,305\,427\,600\,z+2\,292\,816\,782\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8286.01

$${}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{1\,374\,931\,057\,500\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-16\,777\,216\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{25/4}-16\,777\,216\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{25/4}+\right.\right.$$
$$16\,777\,216\,e^{4\sqrt{z}}z^6-16\,777\,216\,z^6+4\,194\,304\,e^{4\sqrt{z}}z^{11/2}+4\,194\,304\,z^{11/2}+3\,145\,728\,e^{4\sqrt{z}}z^5-$$
$$3\,145\,728\,z^5+3\,932\,160\,e^{4\sqrt{z}}z^{9/2}+3\,932\,160\,z^{9/2}+6\,881\,280\,e^{4\sqrt{z}}z^4-6\,881\,280\,z^4+15\,482\,880\,e^{4\sqrt{z}}z^{7/2}+$$
$$15\,482\,880\,z^{7/2}+42\,577\,920\,e^{4\sqrt{z}}z^3-42\,577\,920\,z^3+138\,378\,240\,e^{4\sqrt{z}}z^{5/2}+138\,378\,240\,z^{5/2}+$$
$$518\,918\,400\,e^{4\sqrt{z}}z^2-518\,918\,400\,z^2+2\,205\,403\,200\,e^{4\sqrt{z}}z^{3/2}+2\,205\,403\,200\,z^{3/2}+10\,475\,665\,200\,e^{4\sqrt{z}}z-$$
$$\left.\left.10\,475\,665\,200\,z+54\,997\,242\,300\,e^{4\sqrt{z}}\sqrt{z}+54\,997\,242\,300\sqrt{z}+316\,234\,143\,225\,e^{4\sqrt{z}}-316\,234\,143\,225\right)\right)$$

07.22.03.8287.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{19}{4};-z\right)=\frac{1}{687\,465\,528\,750\sqrt{z}}\left(-33\,554\,432\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{25/4}-\right.$$
$$4\left(1\,048\,576z^5-983\,040z^4+3\,870\,720z^3-34\,594\,560z^2+551\,350\,800z-13\,749\,310\,575\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left(16\,777\,216z^6-3\,145\,728z^5+6\,881\,280z^4-42\,577\,920z^3+518\,918\,400z^2-10\,475\,665\,200z+316\,234\,143\,225\right)$$
$$\left.\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8288.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{17}{4};z\right)= $$
$$-\frac{1}{51\,924\,088\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8\,388\,608z^6-152\,043\,520z^5-917\,831\,680z^4-7\,319\,654\,400z^3-40\,413\,139\,200z^2-\right.\right.\right.$$
$$\left.106\,376\,029\,200z-51\,924\,088\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$32\sqrt{z}\left(131\,072z^5-2\,293\,760z^4-15\,605\,760z^3-125\,798\,400z^2-734\,202\,000z-2\,336\,857\,425\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-8\,388\,608z^6+149\,946\,368z^5+952\,565\,760z^4+7\,593\,062\,400z^3+\right.$$
$$\left.\left.\left.42\,725\,088\,000z^2+121\,098\,121\,200z+99\,687\,686\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8289.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{17}{4};-z\right)= $$
$$-\frac{1}{51\,924\,088\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8\,388\,608z^6+152\,043\,520z^5-917\,831\,680z^4+7\,319\,654\,400z^3-40\,413\,139\,200z^2+\right.\right.\right.$$
$$\left.106\,376\,029\,200z-51\,924\,088\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$32\sqrt{z}\left(131\,072z^5+2\,293\,760z^4-15\,605\,760z^3+125\,798\,400z^2-734\,202\,000z+2\,336\,857\,425\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(8\,388\,608z^6+149\,946\,368z^5-952\,565\,760z^4+7\,593\,062\,400z^3-\right.$$
$$\left.\left.\left.42\,725\,088\,000z^2+121\,098\,121\,200z-99\,687\,686\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8290.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{3}{2}, -\frac{15}{4}; z\right) = $$
$$ \frac{1}{72\,364\,792\,500\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-4\,194\,304\,e^{4\sqrt{z}}\,z^6 + 4\,194\,304\,z^6 - 1\,048\,576\,e^{4\sqrt{z}}\,z^{11/2} - 1\,048\,576\,z^{11/2} + \right.\right. $$
$$ 262\,144\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-575)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{21/4} + 262\,144\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-575)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{21/4} + $$
$$ 149\,946\,368\,e^{4\sqrt{z}}\,z^5 - 149\,946\,368\,z^5 + 36\,700\,160\,e^{4\sqrt{z}}\,z^{9/2} + 36\,700\,160\,z^{9/2} + 26\,542\,080\,e^{4\sqrt{z}}\,z^4 - $$
$$ 26\,542\,080\,z^4 + 31\,457\,280\,e^{4\sqrt{z}}\,z^{7/2} + 31\,457\,280\,z^{7/2} + 51\,179\,520\,e^{4\sqrt{z}}\,z^3 - 51\,179\,520\,z^3 + $$
$$ 104\,509\,440\,e^{4\sqrt{z}}\,z^{5/2} + 104\,509\,440\,z^{5/2} + 252\,806\,400\,e^{4\sqrt{z}}\,z^2 - 252\,806\,400\,z^2 + $$
$$ 691\,891\,200\,e^{4\sqrt{z}}\,z^{3/2} + 691\,891\,200\,z^{3/2} + 2\,043\,241\,200\,e^{4\sqrt{z}}\,z - 2\,043\,241\,200\,z + $$
$$ \left.\left.6\,064\,858\,800\,e^{4\sqrt{z}}\,\sqrt{z} + 6\,064\,858\,800\,\sqrt{z} + 15\,058\,768\,725\,e^{4\sqrt{z}} - 15\,058\,768\,725\right)\right) $$

07.22.03.8291.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{3}{2}, -\frac{15}{4}; -z\right) = \frac{1}{36\,182\,396\,250\sqrt{z}}\left(524\,288\sqrt{\pi}\,(16z+575)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4} + \right. $$
$$ 16\left(65\,536z^5 + 2\,293\,760z^4 - 1\,966\,080z^3 + 6\,531\,840z^2 - 43\,243\,200z + 379\,053\,675\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + $$
$$ \left(-4\,194\,304z^6 - 149\,946\,368z^5 + 26\,542\,080z^4 - 51\,179\,520z^3 + 252\,806\,400z^2 - 2\,043\,241\,200z + 15\,058\,768\,725\right) $$
$$ \left.\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8292.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{3}{2}, -\frac{13}{4}; z\right) = $$
$$ \frac{1}{9\,163\,074\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4\,194\,304z^6 - 226\,754\,560z^5 + 1\,444\,085\,760z^4 + 3\,564\,748\,800z^3 + 11\,856\,902\,400z^2 + \right.\right.\right. $$
$$ \left.\left.22\,138\,250\,400z + 9\,163\,074\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 8\sqrt{z}\left(262\,144z^5 - 14\,008\,320z^4 + 81\,838\,080z^3 + 258\,451\,200z^2 + 907\,956\,000z + 1\,958\,177\,025\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(4\,194\,304z^6 - 225\,705\,984z^5 + 1\,389\,035\,520z^4 + 3\,844\,915\,200z^3 + \right. $$
$$ \left.\left.\left.12\,972\,960\,000z^2 + 26\,308\,346\,400z + 15\,740\,160\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8293.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{13}{4};-z\right)= \frac{1}{9\,163\,074\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4\,194\,304\,z^6+226\,754\,560\,z^5+1\,444\,085\,760\,z^4-3\,564\,748\,800\,z^3+11\,856\,902\,400\,z^2-22\,138\,250\,400\,z+9\,163\,074\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- 8\sqrt{z}\left(262\,144\,z^5+14\,008\,320\,z^4+81\,838\,080\,z^3-258\,451\,200\,z^2+907\,956\,000\,z-1\,958\,177\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(4\,194\,304\,z^6+225\,705\,984\,z^5+1\,389\,035\,520\,z^4-3\,844\,915\,200\,z^3+12\,972\,960\,000\,z^2-26\,308\,346\,400\,z+15\,740\,160\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8294.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{11}{4};z\right)= \frac{1}{4\,824\,319\,500\sqrt{z}} \left(e^{-2\sqrt{z}}\left(524\,288\,e^{4\sqrt{z}}\,z^6-524\,288\,z^6+131\,072\,e^{4\sqrt{z}}\,z^{11/2}+131\,072\,z^{11/2}-37\,584\,896\,e^{4\sqrt{z}}\,z^5+37\,584\,896\,z^5- 9\,297\,920\,e^{4\sqrt{z}}\,z^{9/2}-9\,297\,920\,z^{9/2}-2048\,e^{2\sqrt{z}}\,\sqrt{2\pi}\left(256\,z^2-18\,400\,z+229\,425\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}- 2048\,e^{2\sqrt{z}}\,\sqrt{2\pi}\left(256\,z^2-18\,400\,z+229\,425\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}+463\,011\,840\,e^{4\sqrt{z}}\,z^4-463\,011\,840\,z^4+ 109\,117\,440\,e^{4\sqrt{z}}\,z^{7/2}+109\,117\,440\,z^{7/2}+73\,973\,760\,e^{4\sqrt{z}}\,z^3-73\,973\,760\,z^3+79\,672\,320\,e^{4\sqrt{z}}\,z^{5/2}+ 79\,672\,320\,z^{5/2}+113\,299\,200\,e^{4\sqrt{z}}\,z^2-113\,299\,200\,z^2+191\,721\,600\,e^{4\sqrt{z}}\,z^{3/2}+191\,721\,600\,z^{3/2}+354\,261\,600\, e^{4\sqrt{z}}\,z-354\,261\,600\,z+640\,539\,900\,e^{4\sqrt{z}}\,\sqrt{z}+640\,539\,900\sqrt{z}+885\,809\,925\,e^{4\sqrt{z}}-885\,809\,925\right)\right) $$

07.22.03.8295.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{11}{4};-z\right)= \frac{1}{2\,412\,159\,750\sqrt{z}}\left(-4096\sqrt{\pi}\left(256\,z^2+18\,400\,z+229\,425\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}- 4\left(32\,768\,z^5+2\,324\,480\,z^4+27\,279\,360\,z^3-19\,918\,080\,z^2+47\,930\,400\,z-160\,134\,975\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+ \left(524\,288\,z^6+37\,584\,896\,z^5+463\,011\,840\,z^4-73\,973\,760\,z^3+113\,299\,200\,z^2-354\,261\,600\,z+885\,809\,925\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8296.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{9}{4};z\right)= -\frac{1}{3\,524\,259\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2\,097\,152\,z^6-188\,743\,680\,z^5+3\,552\,993\,280\,z^4-9\,875\,865\,600\,z^3-9\,535\,276\,800\,z^2-10\,720\,936\,800\,z-3\,524\,259\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- 32\sqrt{z}\left(32\,768\,z^5-2\,928\,640\,z^4+53\,727\,360\,z^3-124\,185\,600\,z^2-181\,377\,000\,z-221\,919\,075\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-2\,097\,152\,z^6+188\,219\,392\,z^5-3\,506\,626\,560\,z^4+9\,057\,484\,800\,z^3+10\,924\,704\,000\,z^2+13\,249\,504\,800\,z+5\,246\,720\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8297.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{9}{4};-z\right)= $$
$$ -\frac{1}{3\,524\,259\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2\,097\,152\,z^6+188\,743\,680\,z^5+3\,552\,993\,280\,z^4+9\,875\,865\,600\,z^3-9\,535\,276\,800\,z^2+\right.\right.\right. $$
$$ \left.10\,720\,936\,800\,z-3\,524\,259\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- $$
$$ 32\sqrt{z}\left(32\,768\,z^5+2\,928\,640\,z^4+53\,727\,360\,z^3+124\,185\,600\,z^2-181\,377\,000\,z+221\,919\,075\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(2\,097\,152\,z^6+188\,219\,392\,z^5+3\,506\,626\,560\,z^4+9\,057\,484\,800\,z^3-\right. $$
$$ \left.\left.\left.10\,924\,704\,000\,z^2+13\,249\,504\,800\,z-5\,246\,720\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8298.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{7}{4};z\right)=\frac{1}{1\,315\,723\,500\sqrt{z}} $$
$$ \left(e^{-2\sqrt{z}}\left(-131\,072\,e^{4\sqrt{z}}\,z^6+131\,072\,z^6-32\,768\,e^{4\sqrt{z}}\,z^{11/2}-32\,768\,z^{11/2}+14\,106\,624\,e^{4\sqrt{z}}\,z^5-14\,106\,624\,z^5+\right.\right. $$
$$ 3\,502\,080\,e^{4\sqrt{z}}\,z^{9/2}+3\,502\,080\,z^{9/2}-349\,800\,960\,e^{4\sqrt{z}}\,z^4+349\,800\,960\,z^4-84\,908\,160\,e^{4\sqrt{z}}\,z^{7/2}- $$
$$ 84\,908\,160\,z^{7/2}+32\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3-441\,600\,z^2+11\,012\,400\,z-58\,503\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}+ $$
$$ 32\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3-441\,600\,z^2+11\,012\,400\,z-58\,503\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}+ $$
$$ 1\,811\,496\,960\,e^{4\sqrt{z}}\,z^3-1\,811\,496\,960\,z^3+397\,393\,920\,e^{4\sqrt{z}}\,z^{5/2}+397\,393\,920\,z^{5/2}+ $$
$$ 238\,291\,200\,e^{4\sqrt{z}}\,z^2-238\,291\,200\,z^2+212\,889\,600\,e^{4\sqrt{z}}\,z^{3/2}+212\,889\,600\,z^{3/2}+228\,765\,600\,e^{4\sqrt{z}}\,z- $$
$$ \left.\left.228\,765\,600\,z+249\,026\,400\,e^{4\sqrt{z}}\,\sqrt{z}+249\,026\,400\,\sqrt{z}+204\,417\,675\,e^{4\sqrt{z}}-204\,417\,675\right)\right) $$

07.22.03.8299.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{7}{4};-z\right)=\frac{1}{657\,861\,750\sqrt{z}}\left(64\sqrt{\pi}\,\left(4096\,z^3+441\,600\,z^2+11\,012\,400\,z+58\,503\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}+\right. $$
$$ 32\left(1024\,z^5+109\,440\,z^4+2\,653\,380\,z^3+12\,418\,560\,z^2-6\,652\,800\,z+7\,782\,075\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(131\,072\,z^6+\right. $$
$$ \left.\left.14\,106\,624\,z^5+349\,800\,960\,z^4+1\,811\,496\,960\,z^3-238\,291\,200\,z^2+228\,765\,600\,z-204\,417\,675\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8300.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{5}{4};z\right)= $$
$$ \frac{1}{2\,741\,090\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,048\,576\,z^6-132\,055\,040\,z^5+4\,131\,696\,640\,z^4-33\,379\,180\,800\,z^3+41\,020\,761\,600\,z^2+\right.\right.\right. $$
$$ \left.12\,404\,271\,600\,z+2\,741\,090\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- $$
$$ 8\sqrt{z}\left(65\,536\,z^5-8\,212\,480\,z^4+253\,182\,720\,z^3-1\,937\,905\,200\,z^2+1\,607\,886\,000\,z+814\,074\,975\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(1\,048\,576\,z^6-131\,792\,896\,z^5+4\,099\,092\,480\,z^4-32\,395\,910\,400\,z^3+\right. $$
$$ \left.\left.\left.34\,066\,368\,000\,z^2+15\,110\,247\,600\,z+3\,338\,822\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8301.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{5}{4};-z\right)= $$
$$ \frac{1}{2\,741\,090\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,048\,576z^6+132\,055\,040z^5+4\,131\,696\,640z^4+33\,379\,180\,800z^3+41\,020\,761\,600z^2-\right.\right.\right. $$
$$ \left.\left.\left.12\,404\,271\,600z+2\,741\,090\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- \right.\right. $$
$$ 8\sqrt{z}\left(65\,536z^5+8\,212\,480z^4+253\,182\,720z^3+1\,937\,905\,200z^2+1\,607\,886\,000z-814\,074\,975\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,048\,576z^6+131\,792\,896z^5+4\,099\,092\,480z^4+32\,395\,910\,400z^3+\right. $$
$$ \left.\left.\left.34\,066\,368\,000z^2-15\,110\,247\,600z+3\,338\,822\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8302.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{3}{4};z\right)=\frac{1}{1\,503\,684\,000\sqrt{z}} $$
$$ \left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536z^4+9\,420\,800z^3-352\,396\,800z^2+3\,744\,216\,000z-8\,365\,982\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+\right.\right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536z^4+9\,420\,800z^3-352\,396\,800z^2+3\,744\,216\,000z-8\,365\,982\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+ $$
$$ 4\left(-16\,384z^6+4096z^{11/2}+2\,352\,128z^5-584\,960z^{9/2}-87\,664\,320z^4+21\,487\,920z^{7/2}+\right. $$
$$ 920\,459\,820z^3-215\,403\,615z^{5/2}-1\,946\,649\,600z^2+367\,516\,800z^{3/2}-169\,192\,800z+ $$
$$ 97\,108\,200\sqrt{z}+e^{4\sqrt{z}}\left(16\,384z^6+4096z^{11/2}-2\,352\,128z^5-584\,960z^{9/2}+\right. $$
$$ \left.\left.\left.\left.87\,664\,320z^4+21\,487\,920z^{7/2}-920\,459\,820z^3-215\,403\,615z^{5/2}+1\,946\,649\,600z^2+\right.\right.\right. $$
$$ \left.\left.\left.\left.367\,516\,800z^{3/2}+169\,192\,800z+97\,108\,200\sqrt{z}+45\,426\,150\right)-45\,426\,150\right)\right)\right) $$

07.22.03.8303.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{3}{4};-z\right)=\frac{1}{375\,921\,000\sqrt{z}} $$
$$ \left(2\left(2\left(8192z^6+1\,176\,064z^5+43\,832\,160z^4+460\,229\,910z^3+973\,324\,800z^2-84\,596\,400z+22\,713\,075\right)\sin\left(2\sqrt{z}\right)-\right.\right. $$
$$ \left.\sqrt{z}\left(4096z^5+584\,960z^4+21\,487\,920z^3+215\,403\,615z^2+367\,516\,800z-97\,108\,200\right)\cos\left(2\sqrt{z}\right)\right)- $$
$$ \left.\sqrt{\pi}\,z^{9/4}\left(65\,536z^4+9\,420\,800z^3+352\,396\,800z^2+3\,744\,216\,000z+8\,365\,982\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.8304.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{1}{4};z\right)=
$$

$$
-\frac{1}{4\,933\,963\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(524\,288\,z^6-84\,869\,120\,z^5+3\,713\,310\,720\,z^4-49\,704\,710\,400\,z^3+171\,726\,571\,800\,z^2-\right.\right.\right.
$$

$$
\left.\left.83\,614\,129\,200\,z-4\,933\,963\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-
$$

$$
4\sqrt{z}\left(65\,536\,z^5-10\,567\,680\,z^4+457\,643\,520\,z^3-5\,940\,043\,200\,z^2+18\,249\,107\,625\,z-3\,503\,039\,400\right)
$$

$$
I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-524\,288\,z^6+84\,738\,048\,z^5-3\,692\,298\,240\,z^4+48\,808\,569\,600\,z^3-\right.
$$

$$
\left.\left.160\,604\,451\,000\,z^2+54\,672\,181\,200\,z+4\,292\,771\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)
$$

07.22.03.8305.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{3}{2},-\frac{1}{4};-z\right)=
$$

$$
-\frac{1}{4\,933\,963\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(524\,288\,z^6+84\,869\,120\,z^5+3\,713\,310\,720\,z^4+49\,704\,710\,400\,z^3+171\,726\,571\,800\,z^2+\right.\right.\right.
$$

$$
\left.\left.83\,614\,129\,200\,z-4\,933\,963\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-
$$

$$
4\sqrt{z}\left(65\,536\,z^5+10\,567\,680\,z^4+457\,643\,520\,z^3+5\,940\,043\,200\,z^2+18\,249\,107\,625\,z+3\,503\,039\,400\right)
$$

$$
J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(524\,288\,z^6+84\,738\,048\,z^5+3\,692\,298\,240\,z^4+48\,808\,569\,600\,z^3+\right.
$$

$$
\left.\left.160\,604\,451\,000\,z^2+54\,672\,181\,200\,z-4\,292\,771\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)
$$

07.22.03.8306.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{1}{4};z\right)=
$$

$$
\frac{1}{160\,392\,960\,000\sqrt{z}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-188\,416\,000\,z^4+9\,397\,248\,000\,z^3-149\,768\,640\,000\,z^2+\right.\right.\right.
$$

$$
\left.\left.669\,278\,610\,000\,z-527\,056\,905\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\sqrt{2\pi}\right.
$$

$$
\left(1\,048\,576\,z^5-188\,416\,000\,z^4+9\,397\,248\,000\,z^3-149\,768\,640\,000\,z^2+669\,278\,610\,000\,z-527\,056\,905\,375\right)
$$

$$
\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-4\left(-262\,144\,z^6+65\,536\,z^{11/2}+47\,054\,848\,z^5-11\,714\,560\,z^{9/2}-2\,340\,587\,520\,z^4+\right.
$$

$$
576\,529\,920\,z^{7/2}+37\,020\,318\,720\,z^3-8\,851\,227\,840\,z^{5/2}-161\,151\,398\,100\,z^2+34\,868\,419\,425\,z^{3/2}+
$$

$$
111\,079\,987\,200\,z-14\,234\,572\,800\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^6+65\,536\,z^{11/2}-47\,054\,848\,z^5-11\,714\,560\,z^{9/2}+\right.
$$

$$
2\,340\,587\,520\,z^4+576\,529\,920\,z^{7/2}-37\,020\,318\,720\,z^3-8\,851\,227\,840\,z^{5/2}+161\,151\,398\,100\,z^2+
$$

$$
\left.\left.\left.\left.34\,868\,419\,425\,z^{3/2}-111\,079\,987\,200\,z-14\,234\,572\,800\sqrt{z}-2\,907\,273\,600\right)+2\,907\,273\,600\right)\right)\right)
$$

07.22.03.8307.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{1}{4};-z\right)=\frac{1}{40\,098\,240\,000\sqrt{z}}$$
$$\left(\sqrt{\pi}\left(1\,048\,576\,z^5+188\,416\,000\,z^4+9\,397\,248\,000\,z^3+149\,768\,640\,000\,z^2+669\,278\,610\,000\,z+527\,056\,905\,375\right)\right.$$
$$C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+$$
$$2\left(\sqrt{z}\left(65\,536\,z^5+11\,714\,560\,z^4+576\,529\,920\,z^3+8\,851\,227\,840\,z^2+34\,868\,419\,425\,z+14\,234\,572\,800\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$4\left(65\,536\,z^6+11\,763\,712\,z^5+585\,146\,880\,z^4+9\,255\,079\,680\,z^3+\right.$$
$$\left.\left.\left.40\,287\,849\,525\,z^2+27\,769\,996\,800\,z-726\,818\,400\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.8308.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{434\,188\,755\,000\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2\,097\,152\,z^6-414\,842\,880\,z^5+23\,322\,542\,080\,z^4-436\,011\,033\,600\,z^3+2\,479\,017\,895\,200\,z^2-\right.\right.\right.$$
$$3\,163\,630\,828\,050\,z+434\,188\,755\,000\left.\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-1\,048\,576\,z^5+206\,766\,080\,z^4-\right.$$
$$\left.11\,533\,393\,920\,z^3+211\,053\,427\,200\,z^2-1\,120\,593\,474\,000\,z+1\,066\,424\,557\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\left(1\,048\,576\,z^6-207\,159\,296\,z^5+11\,609\,825\,280\,z^4-215\,169\,292\,800\,z^3+1\,189\,200\,474\,000\,z^2-\right.$$
$$\left.\left.\left.1\,339\,151\,415\,525\,z+62\,960\,643\,900\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8309.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{3}{4};-z\right)=$$
$$\frac{1}{434\,188\,755\,000\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2\,097\,152\,z^6+414\,842\,880\,z^5+23\,322\,542\,080\,z^4+436\,011\,033\,600\,z^3+2\,479\,017\,895\,200\,z^2+\right.\right.\right.$$
$$3\,163\,630\,828\,050\,z+434\,188\,755\,000\left.\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}$$
$$\left(1\,048\,576\,z^5+206\,766\,080\,z^4+11\,533\,393\,920\,z^3+211\,053\,427\,200\,z^2+1\,120\,593\,474\,000\,z+1\,066\,424\,557\,275\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(1\,048\,576\,z^6+207\,159\,296\,z^5+11\,609\,825\,280\,z^4+215\,169\,292\,800\,z^3+\right.$$
$$\left.\left.\left.1\,189\,200\,474\,000\,z^2+1\,339\,151\,415\,525\,z+62\,960\,643\,900\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8310.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{5}{4};z\right)=
$$

$$
\frac{1}{61\,590\,896\,640\,000\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-4\left(-4\,194\,304\,z^6+1\,048\,576\,z^{11/2}+903\,610\,368\,z^5-225\,116\,160\,z^{9/2}-\right.\right.\right.
$$

$$
56\,215\,633\,920\,z^4+13\,887\,774\,720\,z^{7/2}+1\,187\,937\,515\,520\,z^3-287\,122\,429\,440\,z^{5/2}-
$$

$$
7\,827\,650\,913\,600\,z^2+1\,772\,145\,118\,800\,z^{3/2}+11\,517\,178\,862\,700\,z-2\,025\,794\,624\,175\sqrt{z}+
$$

$$
e^{4\sqrt{z}}\left(4\,194\,304\,z^6+1\,048\,576\,z^{11/2}-903\,610\,368\,z^5-225\,116\,160\,z^{9/2}+56\,215\,633\,920\,z^4+13\,887\,774\,720\right.
$$

$$
z^{7/2}-1\,187\,937\,515\,520\,z^3-287\,122\,429\,440\,z^{5/2}+7\,827\,650\,913\,600\,z^2+1\,772\,145\,118\,800\,z^{3/2}-
$$

$$
\left.11\,517\,178\,862\,700\,z-2\,025\,794\,624\,175\sqrt{z}+1\,116\,393\,062\,400\right)-1\,116\,393\,062\,400\Big)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(16\,777\,216\,z^6-3\,617\,587\,200\,z^5+225\,533\,952\,000\,z^4-4\,792\,596\,480\,000\,z^3+\right.
$$

$$
\left.32\,125\,373\,280\,000\,z^2-50\,597\,462\,916\,000\,z+7\,905\,853\,580\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(16\,777\,216\,z^6-3\,617\,587\,200\,z^5+225\,533\,952\,000\,z^4-4\,792\,596\,480\,000\,z^3+\right.
$$

$$
\left.\left.\left.32\,125\,373\,280\,000\,z^2-50\,597\,462\,916\,000\,z+7\,905\,853\,580\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)
$$

07.22.03.8311.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{5}{4};-z\right)=
$$

$$
\frac{1}{15\,397\,724\,160\,000\sqrt{z}}\left(\sqrt{\pi}\sqrt[4]{z}\left(16\,777\,216\,z^6+3\,617\,587\,200\,z^5+225\,533\,952\,000\,z^4+4\,792\,596\,480\,000\,z^3+\right.\right.
$$

$$
\left.32\,125\,373\,280\,000\,z^2+50\,597\,462\,916\,000\,z+7\,905\,853\,580\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$

$$
2\left(4\left(1\,048\,576\,z^6+225\,902\,592\,z^5+14\,053\,908\,480\,z^4+296\,984\,378\,880\,z^3+1\,956\,912\,728\,400\,z^2+\right.\right.
$$

$$
2\,879\,294\,715\,675\,z+279\,098\,265\,600\Big)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(1\,048\,576\,z^5+225\,116\,160\,z^4+\right.
$$

$$
\left.\left.\left.13\,887\,774\,720\,z^3+287\,122\,429\,440\,z^2+1\,772\,145\,118\,800\,z+2\,025\,794\,624\,175\right)\cos\left(2\sqrt{z}\right)\right)\right)
$$

07.22.03.8312.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{7}{4};z\right)=
$$

$$
\left(\left(2\sqrt{z}\left(16\,777\,216\,z^6-3\,921\,674\,240\,z^5+269\,370\,327\,040\,z^4-6\,466\,309\,324\,800\,z^3+51\,200\,373\,369\,600\,z^2-\right.\right.\right.
$$

$$
105\,719\,548\,334\,400\,z+32\,739\,038\,206\,875\Big)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+
$$

$$
\left(-16\,777\,216\,z^6+3\,911\,188\,480\,z^5-266\,947\,461\,120\,z^4+6\,304\,344\,883\,200\,z^3-\right.
$$

$$
\left.47\,568\,384\,864\,000\,z^2+82\,001\,626\,106\,400\,z-7\,905\,853\,580\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-
$$

$$
2\sqrt{z}\left(16\,777\,216\,z^6-3\,917\,479\,936\,z^5+268\,396\,462\,080\,z^4-6\,400\,467\,763\,200\,z^3+49\,682\,112\,480\,000\,z^2-\right.
$$

$$
\left.\left.95\,017\,072\,550\,400\,z+18\,285\,774\,281\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(60\,207\,507\,360\,000\sqrt{2}\sqrt[4]{z}\right)
$$

07.22.03.8313.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{7}{4};-z\right)= $$

$$ \left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+3\,921\,674\,240\,z^5+269\,370\,327\,040\,z^4+6\,466\,309\,324\,800\,z^3+51\,200\,373\,369\,600\,z^2+\right.\right.\right. $$

$$ \left.\left.\left.105\,719\,548\,334\,400\,z+32\,739\,038\,206\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$

$$ \left(16\,777\,216\,z^6+3\,911\,188\,480\,z^5+266\,947\,461\,120\,z^4+6\,304\,344\,883\,200\,z^3+47\,568\,384\,864\,000\,z^2+\right. $$

$$ \left.82\,001\,626\,106\,400\,z+7\,905\,853\,580\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\,\left(16\,777\,216\,z^6+3\,917\,479\,936\,z^5+268\,396\,462\,080\,z^4+6\,400\,467\,763\,200\,z^3+49\,682\,112\,480\,000\,z^2+\right. $$

$$ \left.\left.95\,017\,072\,550\,400\,z+18\,285\,774\,281\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(60\,207\,507\,360\,000\,\sqrt{2}\,\sqrt[4]{z}\right) $$

07.22.03.8314.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{9}{4};z\right)= $$

$$ \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-67\,108\,864\,z^{13/2}+16\,777\,216\,z^6+16\,869\,490\,688\,z^{11/2}-4\,204\,789\,760\,z^5-1\,259\,852\,267\,520\,z^{9/2}+\right.\right. $$

$$ 311\,852\,728\,320\,z^4+33\,318\,118\,686\,720\,z^{7/2}-8\,106\,056\,663\,040\,z^3-294\,023\,789\,337\,600\,z^{5/2}+ $$

$$ 68\,131\,481\,644\,800\,z^2+663\,180\,061\,219\,200\,z^{3/2}-129\,358\,925\,488\,800\,z-156\,173\,559\,210\,900\,\sqrt{z}\,+ $$

$$ e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^6-16\,869\,490\,688\,z^{11/2}-4\,204\,789\,760\,z^5+\right. $$

$$ 1\,259\,852\,267\,520\,z^{9/2}+311\,852\,728\,320\,z^4-33\,318\,118\,686\,720\,z^{7/2}-8\,106\,056\,663\,040\,z^3+ $$

$$ 294\,023\,789\,337\,600\,z^{5/2}+68\,131\,481\,644\,800\,z^2-663\,180\,061\,219\,200\,z^{3/2}- $$

$$ \left.\left.129\,358\,925\,488\,800\,z+156\,173\,559\,210\,900\,\sqrt{z}\,+7\,905\,853\,580\,625\right)+7\,905\,853\,580\,625\right)+ $$

$$ e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(268\,435\,456\,z^7-67\,528\,294\,400\,z^6+5\,051\,960\,524\,800\,z^5-134\,192\,701\,440\,000\,z^4+\right. $$

$$ 1\,199\,347\,269\,120\,000\,z^3-2\,833\,457\,923\,296\,000\,z^2+885\,455\,601\,030\,000\,z+7\,905\,853\,580\,625\Big) $$

$$ \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(268\,435\,456\,z^7-67\,528\,294\,400\,z^6+5\,051\,960\,524\,800\,z^5-\right. $$

$$ 134\,192\,701\,440\,000\,z^4+1\,199\,347\,269\,120\,000\,z^3-2\,833\,457\,923\,296\,000\,z^2+ $$

$$ \left.\left.885\,455\,601\,030\,000\,z+7\,905\,853\,580\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)\Big/\left(5\,518\,544\,338\,944\,000\,z^{5/4}\right) $$

07.22.03.8315.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{9}{4};-z\right)= $$

$$ \left(\sqrt{\pi}\left(268\,435\,456\,z^7+67\,528\,294\,400\,z^6+5\,051\,960\,524\,800\,z^5+134\,192\,701\,440\,000\,z^4+1\,199\,347\,269\,120\,000\,z^3+\right.\right. $$

$$ \left.2\,833\,457\,923\,296\,000\,z^2+885\,455\,601\,030\,000\,z-7\,905\,853\,580\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)- $$

$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216\,z^6+4\,217\,372\,672\,z^5+314\,963\,066\,880\,z^4+8\,329\,529\,671\,680\,z^3+\right.\right. $$

$$ 73\,505\,947\,334\,400\,z^2+165\,795\,015\,304\,800\,z+39\,043\,389\,802\,725\big)\sin\big(2\sqrt{z}\big)- $$

$$ \left.\left(16\,777\,216\,z^6+4\,204\,789\,760\,z^5+311\,852\,728\,320\,z^4+8\,106\,056\,663\,040\,z^3+68\,131\,481\,644\,800\,z^2+\right.\right. $$

$$ \left.\left.129\,358\,925\,488\,800\,z+7\,905\,853\,580\,625\big)\cos\big(2\sqrt{z}\big)\right)\right)\Big/\left(1\,379\,636\,084\,736\,000\,z^{5/4}\right) $$

07.22.03.8316.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{11}{4};z\right)= $$

$$ \left(\left(2\sqrt{z}\left(268\,435\,456\,z^7-72\,393\,687\,040\,z^6+5\,875\,134\,627\,840\,z^5-172\,237\,499\,596\,800\,z^4+1\,748\,399\,921\,049\,600\,z^3-\right.\right.\right. $$

$$ \left.4\,988\,397\,063\,686\,400\,z^2+2\,371\,456\,277\,190\,000\,z-7\,905\,853\,580\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ $$

$$ \left(-268\,435\,456\,z^7+72\,225\,914\,880\,z^6-5\,830\,339\,461\,120\,z^5+168\,684\,016\,435\,200\,z^4-1\,649\,819\,598\,336\,000\,z^3+\right. $$

$$ 4\,126\,984\,500\,038\,400\,z^2-885\,455\,601\,030\,000\,z+23\,717\,560\,741\,875\big)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- $$

$$ 2\sqrt{z}\left(268\,435\,456\,z^7-72\,326\,578\,176\,z^6+5\,857\,141\,063\,680\,z^5-170\,796\,500\,582\,400\,z^4+\right. $$

$$ \left.\left.\left.1\,707\,507\,260\,928\,000\,z^3-4\,609\,023\,369\,350\,400\,z^2+1\,578\,343\,210\,844\,400\,z+23\,717\,560\,741\,875\right)\right. $$

$$ \left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(4\,128\,514\,790\,400\,000\sqrt{2}\,z^{5/4}\right) $$

07.22.03.8317.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{11}{4};-z\right)= $$

$$ \left(\left(2\sqrt{z}\left(268\,435\,456\,z^7+72\,393\,687\,040\,z^6+5\,875\,134\,627\,840\,z^5+172\,237\,499\,596\,800\,z^4+1\,748\,399\,921\,049\,600\,z^3+\right.\right.\right. $$

$$ \left.4\,988\,397\,063\,686\,400\,z^2+2\,371\,456\,277\,190\,000\,z+7\,905\,853\,580\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- $$

$$ \left(268\,435\,456\,z^7+72\,225\,914\,880\,z^6+5\,830\,339\,461\,120\,z^5+168\,684\,016\,435\,200\,z^4+1\,649\,819\,598\,336\,000\,z^3+\right. $$

$$ 4\,126\,984\,500\,038\,400\,z^2+885\,455\,601\,030\,000\,z+23\,717\,560\,741\,875\big)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\left(268\,435\,456\,z^7+72\,326\,578\,176\,z^6+5\,857\,141\,063\,680\,z^5+170\,796\,500\,582\,400\,z^4+\right. $$

$$ \left.\left.\left.1\,707\,507\,260\,928\,000\,z^3+4\,609\,023\,369\,350\,400\,z^2+1\,578\,343\,210\,844\,400\,z-23\,717\,560\,741\,875\right)\right. $$

$$ \left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(4\,128\,514\,790\,400\,000\sqrt{2}\,z^{5/4}\right) $$

07.22.03.8318.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{13}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}+308\,499\,447\,808\,z^{13/2}-76\,923\,535\,360\,z^{6}-26\,886\,348\,472\,320\right.\right.\right.
$$
$$
z^{11/2}+6\,664\,586\,526\,720\,z^{5}+853\,905\,219\,256\,320\,z^{9/2}-208\,669\,400\,432\,640\,z^{4}-
$$
$$
9\,444\,047\,851\,929\,600\,z^{7/2}+2\,219\,865\,590\,476\,800\,z^{3}+28\,717\,284\,700\,339\,200\,z^{5/2}-
$$
$$
5\,914\,514\,910\,124\,800\,z^{2}-10\,917\,005\,701\,694\,400\,z^{3/2}+885\,455\,601\,030\,000\,z-
$$
$$
158\,117\,071\,612\,500\sqrt{z}+e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-308\,499\,447\,808\,z^{13/2}-\right.
$$
$$
76\,923\,535\,360\,z^{6}+26\,886\,348\,472\,320\,z^{11/2}+6\,664\,586\,526\,720\,z^{5}-853\,905\,219\,256\,320\,z^{9/2}-
$$
$$
208\,669\,400\,432\,640\,z^{4}+9\,444\,047\,851\,929\,600\,z^{7/2}+2\,219\,865\,590\,476\,800\,z^{3}-
$$
$$
28\,717\,284\,700\,339\,200\,z^{5/2}-5\,914\,514\,910\,124\,800\,z^{2}+10\,917\,005\,701\,694\,400\,z^{3/2}+
$$
$$
\left.\left.885\,455\,601\,030\,000\,z+158\,117\,071\,612\,500\sqrt{z}-118\,587\,803\,709\,375\right)-118\,587\,803\,709\,375\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-1\,234\,803\,097\,600\,z^{7}+107\,775\,157\,862\,400\,z^{6}-3\,435\,333\,156\,864\,000\,z^{5}+\right.
$$
$$
38\,379\,112\,611\,840\,000\,z^{4}-120\,894\,204\,727\,296\,000\,z^{3}+56\,669\,158\,465\,920\,000\,z^{2}+
$$
$$
\left.1\,011\,949\,258\,320\,000\,z-118\,587\,803\,709\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-1\,234\,803\,097\,600\,z^{7}+107\,775\,157\,862\,400\,z^{6}-3\,435\,333\,156\,864\,000\,z^{5}+\right.
$$
$$
38\,379\,112\,611\,840\,000\,z^{4}-120\,894\,204\,727\,296\,000\,z^{3}+56\,669\,158\,465\,920\,000\,z^{2}+
$$
$$
\left.\left.1\,011\,949\,258\,320\,000\,z-118\,587\,803\,709\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big/\left(313\,943\,855\,726\,592\,000\,z^{9/4}\right)
$$

07.22.03.8319.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{13}{4};-z\right)=
$$
$$
\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^{8}+1\,234\,803\,097\,600\,z^{7}+107\,775\,157\,862\,400\,z^{6}+3\,435\,333\,156\,864\,000\,z^{5}+38\,379\,112\,611\,840\,000\right.\right.
$$
$$
\left.z^{4}+120\,894\,204\,727\,296\,000\,z^{3}+56\,669\,158\,465\,920\,000\,z^{2}-1\,011\,949\,258\,320\,000\,z-118\,587\,803\,709\,375\right)
$$
$$
C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^{7}+77\,124\,861\,952\,z^{6}+6\,721\,587\,118\,080\,z^{5}+213\,476\,304\,814\,080\,z^{4}+\right.\right.
$$
$$
\left.2\,361\,011\,962\,982\,400\,z^{3}+7\,179\,321\,175\,084\,800\,z^{2}+2\,729\,251\,425\,423\,600\,z-39\,529\,267\,903\,125\right)
$$
$$
\sin\left(2\sqrt{z}\right)-\left(268\,435\,456\,z^{7}+76\,923\,535\,360\,z^{6}+6\,664\,586\,526\,720\,z^{5}+208\,669\,400\,432\,640\,z^{4}+\right.
$$
$$
2\,219\,865\,590\,476\,800\,z^{3}+5\,914\,514\,910\,124\,800\,z^{2}+885\,455\,601\,030\,000\,z+
$$
$$
\left.\left.\left.118\,587\,803\,709\,375\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(78\,485\,963\,931\,648\,000\,z^{9/4}\right)
$$

07.22.03.8320.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{3}{2}, \frac{15}{4}; z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 1\,312\,649\,379\,840\,z^7 + 122\,894\,617\,149\,440\,z^6 - 4\,255\,570\,250\,956\,800\,z^5 + 52\,703\,425\,010\,073\,600\right.\right.\right. $$
$$ \left.\left.\left. z^4 - 191\,904\,063\,173\,222\,400\,z^3 + 122\,431\,033\,932\,480\,000\,z^2 - 758\,961\,943\,740\,000\,z + 276\,704\,875\,321\,875\right)\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4\,294\,967\,296\,z^8 + 1\,309\,965\,025\,280\,z^7 - 122\,081\,425\,489\,920\,z^6 + \right. $$
$$ 4\,180\,915\,991\,347\,200\,z^5 - 50\,235\,518\,140\,416\,000\,z^4 + 164\,872\,944\,952\,934\,400\,z^3 - $$
$$ \left. 56\,669\,158\,465\,920\,000\,z^2 + 1\,011\,949\,258\,320\,000\,z - 830\,114\,625\,965\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 1\,311\,575\,638\,016\,z^7 + 122\,568\,132\,526\,080\,z^6 - 4\,225\,351\,444\,070\,400\,z^5 + \right. $$
$$ 51\,685\,201\,870\,848\,000\,z^4 - 180\,187\,366\,767\,206\,400\,z^3 + 89\,105\,505\,359\,270\,400\,z^2 + $$
$$ \left. \left. 2\,782\,860\,460\,380\,000\,z - 830\,114\,625\,965\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(204\,173\,822\,361\,600\,000\,\sqrt{2}\; z^{9/4}\right) $$

07.22.03.8321.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{3}{2}, \frac{15}{4}; -z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 1\,312\,649\,379\,840\,z^7 + 122\,894\,617\,149\,440\,z^6 + 4\,255\,570\,250\,956\,800\,z^5 + 52\,703\,425\,010\,073\,600\right.\right.\right. $$
$$ \left.\left.\left. z^4 + 191\,904\,063\,173\,222\,400\,z^3 + 122\,431\,033\,932\,480\,000\,z^2 + 758\,961\,943\,740\,000\,z + 276\,704\,875\,321\,875\right)\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4\,294\,967\,296\,z^8 + 1\,309\,965\,025\,280\,z^7 + 122\,081\,425\,489\,920\,z^6 + \right. $$
$$ 4\,180\,915\,991\,347\,200\,z^5 + 50\,235\,518\,140\,416\,000\,z^4 + 164\,872\,944\,952\,934\,400\,z^3 + $$
$$ \left. 56\,669\,158\,465\,920\,000\,z^2 + 1\,011\,949\,258\,320\,000\,z + 830\,114\,625\,965\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 1\,311\,575\,638\,016\,z^7 + 122\,568\,132\,526\,080\,z^6 + 4\,225\,351\,444\,070\,400\,z^5 + \right. $$
$$ 51\,685\,201\,870\,848\,000\,z^4 + 180\,187\,366\,767\,206\,400\,z^3 + 89\,105\,505\,359\,270\,400\,z^2 - $$
$$ \left. \left. 2\,782\,860\,460\,380\,000\,z - 830\,114\,625\,965\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(204\,173\,822\,361\,600\,000\,\sqrt{2}\; z^{9/4}\right) $$

07.22.03.8322.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{17}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}+5\,553\,392\,713\,728\,z^{15/2}-1\,385\,126\,952\,960\,z^{7}-\right.\right.\right.
$$
$$
553\,237\,421\,752\,320\,z^{13/2}+137\,281\,583\,185\,920\,z^{6}+20\,510\,308\,376\,248\,320\,z^{11/2}-5\,028\,078\,409\,482\,240\,z^{5}-
$$
$$
272\,678\,628\,792\,729\,600\,z^{9/2}+64\,719\,403\,912\,396\,800\,z^{4}+1\,043\,444\,664\,144\,691\,200\,z^{7/2}-
$$
$$
222\,371\,506\,306\,252\,800\,z^{3}-551\,047\,150\,028\,390\,400\,z^{5/2}+56\,669\,158\,465\,920\,000\,z^{2}-
$$
$$
18\,215\,086\,649\,760\,000\,z^{3/2}-9\,107\,543\,324\,880\,000\,z+9\,961\,375\,511\,587\,500\sqrt{z}\;+
$$
$$
e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}-5\,553\,392\,713\,728\,z^{15/2}-1\,385\,126\,952\,960\,z^{7}+\right.
$$
$$
553\,237\,421\,752\,320\,z^{13/2}+137\,281\,583\,185\,920\,z^{6}-20\,510\,308\,376\,248\,320\,z^{11/2}-
$$
$$
5\,028\,078\,409\,482\,240\,z^{5}+272\,678\,628\,792\,729\,600\,z^{9/2}+64\,719\,403\,912\,396\,800\,z^{4}-
$$
$$
1\,043\,444\,664\,144\,691\,200\,z^{7/2}-222\,371\,506\,306\,252\,800\,z^{3}+551\,047\,150\,028\,390\,400\,z^{5/2}+
$$
$$
56\,669\,158\,465\,920\,000\,z^{2}+18\,215\,086\,649\,760\,000\,z^{3/2}-9\,107\,543\,324\,880\,000\,z-
$$
$$
\left.\left.\left.9\,961\,375\,511\,587\,500\sqrt{z}\;+7\,471\,031\,633\,690\,625\right)+7\,471\,031\,633\,690\,625\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-22\,226\,455\,756\,800\,z^{8}+2\,217\,088\,961\,740\,800\,z^{7}-82\,447\,995\,764\,736\,000\,z^{6}+\right.
$$
$$
1\,105\,318\,443\,220\,992\,000\,z^{5}-4\,352\,191\,370\,182\,656\,000\,z^{4}+2\,720\,119\,606\,364\,160\,000\,z^{3}+
$$
$$
\left.72\,860\,346\,599\,040\,000\,z^{2}-17\,076\,643\,734\,150\,000\,z+7\,471\,031\,633\,690\,625\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-22\,226\,455\,756\,800\,z^{8}+2\,217\,088\,961\,740\,800\,z^{7}-\right.
$$
$$
82\,447\,995\,764\,736\,000\,z^{6}+1\,105\,318\,443\,220\,992\,000\,z^{5}-4\,352\,191\,370\,182\,656\,000\,z^{4}+
$$
$$
2\,720\,119\,606\,364\,160\,000\,z^{3}+72\,860\,346\,599\,040\,000\,z^{2}-17\,076\,643\,734\,150\,000\,z+
$$
$$
\left.\left.\left.7\,471\,031\,633\,690\,625\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)\Big/\left(13\,910\,127\,761\,424\,384\,000\,z^{13/4}\right)
$$

07.22.03.8323.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{17}{4};-z\right)=
\left(\sqrt{\pi}\left(68\,719\,476\,736\,z^{9}+22\,226\,455\,756\,800\,z^{8}+2\,217\,088\,961\,740\,800\,z^{7}+82\,447\,995\,764\,736\,000\,z^{6}+\right.\right.
$$
$$
1\,105\,318\,443\,220\,992\,000\,z^{5}+4\,352\,191\,370\,182\,656\,000\,z^{4}+2\,720\,119\,606\,364\,160\,000\,z^{3}-
$$
$$
\left.72\,860\,346\,599\,040\,000\,z^{2}-17\,076\,643\,734\,150\,000\,z-7\,471\,031\,633\,690\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$
$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^{8}+1\,388\,348\,178\,432\,z^{7}+138\,309\,355\,438\,080\,z^{6}+5\,127\,577\,094\,062\,080\,z^{5}+\right.\right.
$$
$$
68\,169\,657\,198\,182\,400\,z^{4}+260\,861\,166\,036\,172\,800\,z^{3}+137\,761\,787\,507\,097\,600\,z^{2}-
$$
$$
\left.4\,553\,771\,662\,440\,000\,z-2\,490\,343\,877\,896\,875\right)\sin\left(2\sqrt{z}\right)-
$$
$$
\left(4\,294\,967\,296\,z^{8}+1\,385\,126\,952\,960\,z^{7}+137\,281\,583\,185\,920\,z^{6}+5\,028\,078\,409\,482\,240\,z^{5}+\right.
$$
$$
64\,719\,403\,912\,396\,800\,z^{4}+222\,371\,506\,306\,252\,800\,z^{3}+56\,669\,158\,465\,920\,000\,z^{2}+
$$
$$
\left.\left.\left.9\,107\,543\,324\,880\,000\,z+7\,471\,031\,633\,690\,625\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(3\,477\,531\,940\,356\,096\,000\,z^{13/4}\right)
$$

07.22.03.8324.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{19}{4};z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-23\,471\,996\,272\,640\,z^8+2\,490\,179\,088\,547\,840\,z^7-99\,456\,499\,109\,068\,800\,z^6+\right.\right.\right.
$$

$$
1\,453\,883\,749\,407\,129\,600\,z^5-6\,439\,472\,668\,223\,078\,400\,z^4+5\,143\,879\,215\,820\,800\,000\,z^3-
$$

$$
\left.40\,477\,970\,332\,800\,000\,z^2+10\,751\,960\,869\,650\,000\,z-27\,393\,782\,656\,865\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+
$$

$$
\left(-68\,719\,476\,736\,z^9+23\,429\,046\,599\,680\,z^8-2\,475\,624\,518\,123\,520\,z^7+97\,938\,763\,363\,123\,200\,z^6-\right.
$$

$$
1\,395\,643\,830\,239\,232\,000\,z^5+5\,672\,310\,286\,919\,270\,400\,z^4-2\,720\,119\,606\,364\,160\,000\,z^3-
$$

$$
\left.16\,191\,188\,133\,120\,000\,z^2+92\,972\,838\,108\,150\,000\,z+82\,181\,347\,970\,596\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-
$$

$$
2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-23\,454\,816\,403\,456\,z^8+2\,484\,337\,933\,025\,280\,z^7-98\,842\,996\,585\,267\,200\,z^6+\right.
$$

$$
1\,429\,950\,424\,154\,112\,000\,z^5-6\,110\,682\,865\,149\,542\,400\,z^4+3\,958\,155\,973\,236\,326\,400\,z^3+
$$

$$
\left.\left.186\,198\,663\,530\,880\,000\,z^2-82\,347\,370\,895\,790\,000\,z+82\,181\,347\,970\,596\,875\right)
$$

$$
\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(8\,275\,845\,599\,723\,520\,000\,\sqrt{2}\;z^{13/4}\right)
$$

07.22.03.8325.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{19}{4};-z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+23\,471\,996\,272\,640\,z^8+2\,490\,179\,088\,547\,840\,z^7+99\,456\,499\,109\,068\,800\,z^6+\right.\right.\right.
$$

$$
1\,453\,883\,749\,407\,129\,600\,z^5+6\,439\,472\,668\,223\,078\,400\,z^4+5\,143\,879\,215\,820\,800\,000\,z^3+
$$

$$
\left.40\,477\,970\,332\,800\,000\,z^2+10\,751\,960\,869\,650\,000\,z+27\,393\,782\,656\,865\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-
$$

$$
\left(68\,719\,476\,736\,z^9+23\,429\,046\,599\,680\,z^8+2\,475\,624\,518\,123\,520\,z^7+97\,938\,763\,363\,123\,200\,z^6+\right.
$$

$$
1\,395\,643\,830\,239\,232\,000\,z^5+5\,672\,310\,286\,919\,270\,400\,z^4+2\,720\,119\,606\,364\,160\,000\,z^3-
$$

$$
\left.16\,191\,188\,133\,120\,000\,z^2-92\,972\,838\,108\,150\,000\,z+82\,181\,347\,970\,596\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+
$$

$$
2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+23\,454\,816\,403\,456\,z^8+2\,484\,337\,933\,025\,280\,z^7+98\,842\,996\,585\,267\,200\,z^6+\right.
$$

$$
1\,429\,950\,424\,154\,112\,000\,z^5+6\,110\,682\,865\,149\,542\,400\,z^4+3\,958\,155\,973\,236\,326\,400\,z^3-
$$

$$
\left.\left.186\,198\,663\,530\,880\,000\,z^2-82\,347\,370\,895\,790\,000\,z-82\,181\,347\,970\,596\,875\right)
$$

$$
\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(8\,275\,845\,599\,723\,520\,000\,\sqrt{2}\;z^{13/4}\right)
$$

07.22.03.8326.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{21}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}+98\,732\,708\,200\,448\,z^{17/2}-24\,631\,637\,442\,560\,z^{8}-\right.\right.\right.
$$

$$
11\,067\,035\,505\,131\,520\,z^{15/2}+2\,748\,462\,315\,601\,920\,z^{7}+469\,092\,702\,848\,286\,720\,z^{13/2}-
$$

$$
115\,273\,595\,973\,795\,840\,z^{6}-7\,284\,757\,050\,792\,345\,600\,z^{11/2}+1\,741\,227\,564\,780\,748\,800\,z^{5}+
$$

$$
33\,603\,871\,050\,576\,691\,200\,z^{9/2}-7\,332\,758\,772\,911\,308\,800\,z^{4}-22\,785\,979\,839\,514\,214\,400\,z^{7/2}+
$$

$$
2\,720\,119\,606\,364\,160\,000\,z^{3}-1\,198\,147\,921\,850\,880\,000\,z^{5/2}-380\,492\,921\,128\,320\,000\,z^{2}+
$$

$$
942\,630\,734\,125\,080\,000\,z^{3/2}+55\,783\,702\,864\,890\,000\,z-1\,424\,476\,698\,157\,012\,500\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\left(274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}-98\,732\,708\,200\,448\,z^{17/2}-\right.
$$

$$
24\,631\,637\,442\,560\,z^{8}+11\,067\,035\,505\,131\,520\,z^{15/2}+2\,748\,462\,315\,601\,920\,z^{7}-
$$

$$
469\,092\,702\,848\,286\,720\,z^{13/2}-115\,273\,595\,973\,795\,840\,z^{6}+7\,284\,757\,050\,792\,345\,600\,z^{11/2}+
$$

$$
1\,741\,227\,564\,780\,748\,800\,z^{5}-33\,603\,871\,050\,576\,691\,200\,z^{9/2}-7\,332\,758\,772\,911\,308\,800\,z^{4}+
$$

$$
22\,785\,979\,839\,514\,214\,400\,z^{7/2}+2\,720\,119\,606\,364\,160\,000\,z^{3}+1\,198\,147\,921\,850\,880\,000\,z^{5/2}-
$$

$$
380\,492\,921\,128\,320\,000\,z^{2}-942\,630\,734\,125\,080\,000\,z^{3/2}+55\,783\,702\,864\,890\,000\,z+
$$

$$
\left.1\,424\,476\,698\,157\,012\,500\sqrt{z}\;-1\,068\,357\,523\,617\,759\,375\right)-1\,068\,357\,523\,617\,759\,375\Big)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}-395\,136\,991\,232\,000\,z^{9}+44\,341\,779\,234\,816\,000\,z^{8}-\right.
$$

$$
1\,884\,525\,617\,479\,680\,000\,z^{7}+29\,475\,158\,485\,893\,120\,000\,z^{6}-139\,270\,123\,845\,844\,992\,000\,z^{5}+
$$

$$
108\,804\,784\,254\,566\,400\,000\,z^{4}+3\,885\,885\,151\,948\,800\,000\,z^{3}-1\,366\,131\,498\,732\,000\,000\,z^{2}+
$$

$$
\left.1\,195\,365\,061\,390\,500\,000\,z-1\,068\,357\,523\,617\,759\,375\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}-395\,136\,991\,232\,000\,z^{9}+44\,341\,779\,234\,816\,000\,z^{8}-\right.
$$

$$
1\,884\,525\,617\,479\,680\,000\,z^{7}+29\,475\,158\,485\,893\,120\,000\,z^{6}-139\,270\,123\,845\,844\,992\,000\,z^{5}+
$$

$$
108\,804\,784\,254\,566\,400\,000\,z^{4}+3\,885\,885\,151\,948\,800\,000\,z^{3}-1\,366\,131\,498\,732\,000\,000\,z^{2}+
$$

$$
\left.\left.\left.1\,195\,365\,061\,390\,500\,000\,z-1\,068\,357\,523\,617\,759\,375\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)\Big/\left(523\,675\,398\,077\,153\,280\,000\,z^{17/4}\right)
$$

07.22.03.8327.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{21}{4};-z\right)=
$$

$$
\left(\sqrt{\pi}\left(1\,099\,511\,627\,776\,z^{10}+395\,136\,991\,232\,000\,z^{9}+44\,341\,779\,234\,816\,000\,z^{8}+1\,884\,525\,617\,479\,680\,000\,z^{7}+\right.\right.
$$

$$
29\,475\,158\,485\,893\,120\,000\,z^{6}+139\,270\,123\,845\,844\,992\,000\,z^{5}+
$$

$$
108\,804\,784\,254\,566\,400\,000\,z^{4}-3\,885\,885\,151\,948\,800\,000\,z^{3}-1\,366\,131\,498\,732\,000\,000\,z^{2}-
$$

$$
\left.1\,195\,365\,061\,390\,500\,000\,z-1\,068\,357\,523\,617\,759\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$

$$
2\sqrt[4]{z}\left(\left(68\,719\,476\,736\,z^{9}+24\,631\,637\,442\,560\,z^{8}+2\,748\,462\,315\,601\,920\,z^{7}+115\,273\,595\,973\,795\,840\,z^{6}+\right.\right.
$$

$$
1\,741\,227\,564\,780\,748\,800\,z^{5}+7\,332\,758\,772\,911\,308\,800\,z^{4}+2\,720\,119\,606\,364\,160\,000\,z^{3}+
$$

$$
\left.380\,492\,921\,128\,320\,000\,z^{2}+55\,783\,702\,864\,890\,000\,z+1\,068\,357\,523\,617\,759\,375\right)\cos\left(2\sqrt{z}\right)-
$$

$$
4\sqrt{z}\left(68\,719\,476\,736\,z^{9}+24\,683\,177\,050\,112\,z^{8}+2\,766\,758\,876\,282\,880\,z^{7}+\right.
$$

$$
117\,273\,175\,712\,071\,680\,z^{6}+1\,821\,189\,262\,698\,086\,400\,z^{5}+8\,400\,967\,762\,644\,172\,800\,z^{4}+
$$

$$
5\,696\,494\,959\,878\,553\,600\,z^{3}-299\,536\,980\,462\,720\,000\,z^{2}-235\,657\,683\,531\,270\,000\,z-
$$

$$
\left.\left.\left.356\,119\,174\,539\,253\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(130\,918\,849\,519\,288\,320\,000\,z^{17/4}\right)
$$

07.22.03.8328.01

$${}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{23}{4};z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10}-415\,065\,639\,485\,440\,z^9+49\,210\,081\,715\,159\,040\,z^8-2\,226\,823\,182\,994\,636\,800\,z^7+\right.\right.\right.$$
$$37\,526\,773\,681\,461\,657\,600\,z^6-195\,777\,286\,765\,962\,854\,400\,z^5+$$
$$187\,657\,453\,541\,376\,000\,000\,z^4-1\,554\,354\,060\,779\,520\,000\,z^3-394\,660\,210\,744\,800\,000\,z^2+$$
$$\left.1\,502\,744\,648\,605\,200\,000\,z+5\,341\,787\,618\,088\,796\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(1\,099\,511\,627\,776\,z^{10}-414\,378\,444\,718\,080\,z^9+48\,952\,512\,526\,417\,920\,z^8-2\,196\,751\,271\,539\,507\,200\,z^7+\right.$$
$$36\,213\,009\,797\,873\,664\,000\,z^6-175\,551\,962\,571\,236\,966\,400\,z^5+$$
$$108\,804\,784\,254\,566\,400\,000\,z^4+3\,885\,885\,151\,948\,800\,000\,z^3-11\,566\,580\,022\,597\,600\,000\,z^2+$$
$$\left.28\,927\,834\,485\,650\,100\,000\,z+16\,025\,362\,854\,266\,390\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10}-414\,790\,761\,578\,496\,z^9+49\,106\,744\,802\,017\,280\,z^8-2\,214\,680\,773\,577\,932\,800\,z^7+\right.$$
$$36\,988\,547\,009\,347\,584\,000\,z^6-187\,182\,234\,419\,488\,358\,400\,z^5+150\,063\,295\,868\,249\,702\,400\,z^4+$$
$$9\,326\,124\,364\,677\,120\,000\,z^3-4\,863\,428\,135\,485\,920\,000\,z^2+5\,259\,606\,270\,118\,200\,000\,z-$$
$$\left.\left.\left.16\,025\,362\,854\,266\,390\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(292\,703\,591\,737\,589\,760\,000\,\sqrt{2}\;z^{17/4}\right)$$

07.22.03.8329.01

$${}_1F_2\left(-\frac{23}{4};\frac{3}{2},\frac{23}{4};-z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10}+415\,065\,639\,485\,440\,z^9+49\,210\,081\,715\,159\,040\,z^8+2\,226\,823\,182\,994\,636\,800\,z^7+\right.\right.\right.$$
$$37\,526\,773\,681\,461\,657\,600\,z^6+195\,777\,286\,765\,962\,854\,400\,z^5+$$
$$187\,657\,453\,541\,376\,000\,000\,z^4+1\,554\,354\,060\,779\,520\,000\,z^3-394\,660\,210\,744\,800\,000\,z^2-$$
$$\left.1\,502\,744\,648\,605\,200\,000\,z+5\,341\,787\,618\,088\,796\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(1\,099\,511\,627\,776\,z^{10}+414\,378\,444\,718\,080\,z^9+48\,952\,512\,526\,417\,920\,z^8+2\,196\,751\,271\,539\,507\,200\,z^7+\right.$$
$$36\,213\,009\,797\,873\,664\,000\,z^6+175\,551\,962\,571\,236\,966\,400\,z^5+$$
$$108\,804\,784\,254\,566\,400\,000\,z^4-3\,885\,885\,151\,948\,800\,000\,z^3-11\,566\,580\,022\,597\,600\,000\,z^2-$$
$$\left.28\,927\,834\,485\,650\,100\,000\,z+16\,025\,362\,854\,266\,390\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10}+414\,790\,761\,578\,496\,z^9+49\,106\,744\,802\,017\,280\,z^8+2\,214\,680\,773\,577\,932\,800\,z^7+\right.$$
$$36\,988\,547\,009\,347\,584\,000\,z^6+187\,182\,234\,419\,488\,358\,400\,z^5+150\,063\,295\,868\,249\,702\,400\,z^4-$$
$$9\,326\,124\,364\,677\,120\,000\,z^3-4\,863\,428\,135\,485\,920\,000\,z^2-5\,259\,606\,270\,118\,200\,000\,z-$$
$$\left.\left.\left.16\,025\,362\,854\,266\,390\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(292\,703\,591\,737\,589\,760\,000\,\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{23}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.8330.01

$${}_1F_2\left(-\frac{23}{4};\frac{5}{2},-\frac{23}{4};z\right)=\frac{3\cosh\left(2\sqrt{z}\right)}{4z}-\frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.8331.01

$${}_1F_2\left(-\frac{23}{4};\frac{5}{2},-\frac{23}{4};-z\right)=\frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}}$$

07.22.03.8332.01

$${}_1F_2\left(-\frac{23}{4};\frac{5}{2},-\frac{21}{4};z\right)=$$

$$\left(\left(8z\left(16\,777\,216z^6+347\,078\,656z^5+7\,728\,332\,800z^4+126\,442\,352\,640z^3+1\,284\,392\,044\,800z^2+6\,444\,151\,585\,200z+\right.\right.\right.$$
$$\left.8\,709\,520\,117\,725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(16\,777\,216z^6+357\,564\,416z^5+7\,973\,437\,440z^4+\right.$$
$$\left.132\,050\,718\,720z^3+1\,383\,056\,236\,800z^2+7\,660\,926\,075\,600z+20\,635\,351\,038\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left(134\,217\,728z^7+2\,810\,183\,680z^6+62\,573\,248\,512z^5+1\,028\,327\,178\,240z^4+10\,559\,785\,420\,800z^3+\right.$$
$$\left.\left.54\,726\,931\,324\,800z^2+91\,712\,671\,281\,000z-61\,906\,053\,114\,675\right)$$
$$\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(42\,162\,359\,557\,500\sqrt{2}\,z^{3/4}\right)$$

07.22.03.8333.01

$${}_1F_2\left(-\frac{23}{4};\frac{5}{2},-\frac{21}{4};-z\right)=$$

$$\left(\left(8z\left(16\,777\,216z^6-347\,078\,656z^5+7\,728\,332\,800z^4-126\,442\,352\,640z^3+1\,284\,392\,044\,800z^2-6\,444\,151\,585\,200z+\right.\right.\right.$$
$$\left.8\,709\,520\,117\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(16\,777\,216z^6-357\,564\,416z^5+7\,973\,437\,440z^4-\right.$$
$$\left.132\,050\,718\,720z^3+1\,383\,056\,236\,800z^2-7\,660\,926\,075\,600z+20\,635\,351\,038\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(134\,217\,728z^7-2\,810\,183\,680z^6+62\,573\,248\,512z^5-1\,028\,327\,178\,240z^4+10\,559\,785\,420\,800z^3-\right.$$
$$\left.\left.54\,726\,931\,324\,800z^2+91\,712\,671\,281\,000z+61\,906\,053\,114\,675\right)$$
$$\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(42\,162\,359\,557\,500\sqrt{2}\,z^{3/4}\right)$$

07.22.03.8334.01

$${}_1F_2\left(-\frac{23}{4};\frac{5}{2},-\frac{19}{4};z\right)=\frac{1}{53\,164\,000\,890\,000z^{3/2}}$$
$$\left(e^{-2\sqrt{z}}\left(-134\,217\,728e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{29/4}-134\,217\,728e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{29/4}+\right.\right.$$
$$134\,217\,728e^{4\sqrt{z}}\,z^7-134\,217\,728z^7+33\,554\,432e^{4\sqrt{z}}\,z^{13/2}+33\,554\,432z^{13/2}+$$
$$25\,165\,824e^{4\sqrt{z}}\,z^6-25\,165\,824z^6+31\,457\,280e^{4\sqrt{z}}\,z^{11/2}+31\,457\,280z^{11/2}+55\,050\,240e^{4\sqrt{z}}\,z^5-$$
$$55\,050\,240z^5+123\,863\,040e^{4\sqrt{z}}\,z^{9/2}+123\,863\,040z^{9/2}+340\,623\,360e^{4\sqrt{z}}\,z^4-340\,623\,360z^4+$$
$$1\,107\,025\,920e^{4\sqrt{z}}\,z^{7/2}+1\,107\,025\,920z^{7/2}+4\,151\,347\,200e^{4\sqrt{z}}\,z^3-4\,151\,347\,200z^3+$$
$$17\,643\,225\,600e^{4\sqrt{z}}\,z^{5/2}+17\,643\,225\,600z^{5/2}+83\,805\,321\,600e^{4\sqrt{z}}\,z^2-83\,805\,321\,600z^2+$$
$$439\,977\,938\,400e^{4\sqrt{z}}\,z^{3/2}+439\,977\,938\,400z^{3/2}+2\,529\,873\,145\,800e^{4\sqrt{z}}\,z-2\,529\,873\,145\,800z+$$
$$\left.\left.15\,811\,707\,161\,250e^{4\sqrt{z}}\,\sqrt{z}+15\,811\,707\,161\,250\sqrt{z}-7\,905\,853\,580\,625e^{4\sqrt{z}}+7\,905\,853\,580\,625\right)\right)$$

07.22.03.8335.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{5}{2},-\frac{19}{4};-z\right)= $$

$$ \frac{1}{26\,582\,000\,445\,000\,z^{3/2}}\left(-268\,435\,456\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{29/4}-2\left(16\,777\,216\,z^6-15\,728\,640\,z^5+61\,931\,520\,z^4-\right.\right. $$

$$ 553\,512\,960\,z^3+8\,821\,612\,800\,z^2-219\,988\,969\,200\,z+7\,905\,853\,580\,625\big)\cos\big(2\sqrt{z}\big)\sqrt{z}\;+ $$

$$ \big(134\,217\,728\,z^7-25\,165\,824\,z^6+55\,050\,240\,z^5-340\,623\,360\,z^4+4\,151\,347\,200\,z^3- $$

$$ \left.\left.83\,805\,321\,600\,z^2+2\,529\,873\,145\,800\,z+7\,905\,853\,580\,625\big)\sin\big(2\sqrt{z}\big)\right)\right) $$

07.22.03.8336.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{5}{2},-\frac{17}{4};z\right)= $$

$$ -\left(\left(16\,z\left(4\,194\,304\,z^6-88\,080\,384\,z^5-636\,026\,880\,z^4-6\,272\,450\,560\,z^3-45\,488\,390\,400\,z^2-176\,464\,008\,000\,z-\right.\right.\right. $$

$$ 189\,172\,568\,025\big)I_{-\frac{1}{4}}\big(\sqrt{z}\big)^2+4\sqrt{z}\;\big(-8\,388\,608\,z^6+170\,917\,888\,z^5+1\,368\,064\,000\,z^4+13\,538\,242\,560\,z^3+ $$

$$ 101\,693\,894\,400\,z^2+444\,375\,313\,200\,z+764\,272\,260\,675\big)I_{\frac{3}{4}}\big(\sqrt{z}\big)I_{-\frac{1}{4}}\big(\sqrt{z}\big)+\big(-67\,108\,864\,z^7+ $$

$$ 1\,392\,508\,928\,z^6+10\,502\,537\,216\,z^5+103\,330\,283\,520\,z^4+758\,222\,438\,400\,z^3+3\,067\,470\,201\,600\,z^2+ $$

$$ \left.\left.4\,253\,341\,276\,800\,z-2\,292\,816\,782\,025\big)I_{\frac{3}{4}}\big(\sqrt{z}\big)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(2\,007\,731\,407\,500\sqrt{2}\;z^{3/4}\right) $$

07.22.03.8337.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{5}{2},-\frac{17}{4};-z\right)= $$

$$ \left(\left(-16\,z\left(4\,194\,304\,z^6+88\,080\,384\,z^5-636\,026\,880\,z^4+6\,272\,450\,560\,z^3-45\,488\,390\,400\,z^2+176\,464\,008\,000\,z-\right.\right.\right. $$

$$ 189\,172\,568\,025\big)J_{-\frac{1}{4}}\big(\sqrt{z}\big)^2+4\sqrt{z}\;\big(8\,388\,608\,z^6+170\,917\,888\,z^5-1\,368\,064\,000\,z^4+13\,538\,242\,560\,z^3- $$

$$ 101\,693\,894\,400\,z^2+444\,375\,313\,200\,z-764\,272\,260\,675\big)J_{\frac{3}{4}}\big(\sqrt{z}\big)J_{-\frac{1}{4}}\big(\sqrt{z}\big)+\big(-67\,108\,864\,z^7- $$

$$ 1\,392\,508\,928\,z^6+10\,502\,537\,216\,z^5-103\,330\,283\,520\,z^4+758\,222\,438\,400\,z^3-3\,067\,470\,201\,600\,z^2+ $$

$$ \left.\left.4\,253\,341\,276\,800\,z+2\,292\,816\,782\,025\big)J_{\frac{3}{4}}\big(\sqrt{z}\big)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(2\,007\,731\,407\,500\sqrt{2}\;z^{3/4}\right) $$

07.22.03.8338.01

$${}_1F_2\left(-\frac{23}{4};\frac{5}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{2\,798\,105\,310\,000\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(-33\,554\,432\,e^{4\sqrt{z}}\,z^7+33\,554\,432\,z^7-8\,388\,608\,e^{4\sqrt{z}}\,z^{13/2}-8\,388\,608\,z^{13/2}+\right.\right.$$
$$2\,097\,152\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-667)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{25/4}+2\,097\,152\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-667)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{25/4}+$$
$$1\,392\,508\,928\,e^{4\sqrt{z}}\,z^6-1\,392\,508\,928\,z^6+341\,835\,776\,e^{4\sqrt{z}}\,z^{11/2}+341\,835\,776\,z^{11/2}+$$
$$248\,512\,512\,e^{4\sqrt{z}}\,z^5-248\,512\,512\,z^5+296\,878\,080\,e^{4\sqrt{z}}\,z^{9/2}+296\,878\,080\,z^{9/2}+488\,570\,880\,e^{4\sqrt{z}}\,z^4-$$
$$488\,570\,880\,z^4+1\,014\,128\,640\,e^{4\sqrt{z}}\,z^{7/2}+1\,014\,128\,640\,z^{7/2}+2\,512\,097\,280\,e^{4\sqrt{z}}\,z^3-2\,512\,097\,280\,z^3+$$
$$7\,126\,479\,360\,e^{4\sqrt{z}}\,z^{5/2}+7\,126\,479\,360\,z^{5/2}+22\,313\,491\,200\,e^{4\sqrt{z}}\,z^2-22\,313\,491\,200\,z^2+$$
$$73\,881\,007\,200\,e^{4\sqrt{z}}\,z^{3/2}+73\,881\,007\,200\,z^{3/2}+240\,940\,299\,600\,e^{4\sqrt{z}}\,z-240\,940\,299\,600\,z+$$
$$\left.\left.632\,468\,286\,450\,e^{4\sqrt{z}}\,\sqrt{z}+632\,468\,286\,450\,\sqrt{z}-316\,234\,143\,225\,e^{4\sqrt{z}}+316\,234\,143\,225\right)\right)$$

07.22.03.8339.01

$${}_1F_2\left(-\frac{23}{4};\frac{5}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{1\,399\,052\,655\,000\,z^{3/2}}\left(4\,194\,304\sqrt{\pi}\,(16z+667)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{25/4}+2\left(4\,194\,304\,z^6+170\,917\,888\,z^5-148\,439\,040\,z^4+\right.\right.$$
$$\left.507\,064\,320\,z^3-3\,563\,239\,680\,z^2+36\,940\,503\,600\,z-316\,234\,143\,225\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left(-33\,554\,432\,z^7-1\,392\,508\,928\,z^6+248\,512\,512\,z^5-488\,570\,880\,z^4+2\,512\,097\,280\,z^3-\right.$$
$$\left.\left.22\,313\,491\,200\,z^2+240\,940\,299\,600\,z+316\,234\,143\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.8340.01

$${}_1F_2\left(-\frac{23}{4};\frac{5}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{354\,305\,542\,500\sqrt{2}\,z^{3/4}}\left(\left(8z\left(4\,194\,304\,z^6-262\,930\,432\,z^5+1\,986\,723\,840\,z^4+6\,130\,974\,720\,z^3+26\,816\,544\,000\,z^2+\right.\right.\right.$$
$$\left.73\,947\,535\,200\,z+60\,902\,807\,175\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4\,194\,304\,z^6-260\,308\,992\,z^5+1\,829\,437\,440\,z^4+\right.$$
$$\left.6\,979\,829\,760\,z^3+31\,581\,446\,400\,z^2+97\,466\,090\,400\,z+99\,687\,686\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left(33\,554\,432\,z^7-2\,095\,054\,848\,z^6+15\,381\,037\,056\,z^5+52\,261\,355\,520\,z^4+229\,756\,262\,400\,z^3+\right.$$
$$\left.\left.\left.665\,475\,955\,200\,z^2+713\,553\,964\,200\,z-299\,063\,058\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.8341.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{5}{2},-\frac{13}{4};-z\right)= \frac{1}{354\,305\,542\,500\sqrt{2}\,z^{3/4}}\left(\left(8z\left(4\,194\,304z^6+262\,930\,432z^5+1\,986\,723\,840z^4-6\,130\,974\,720z^3+26\,816\,544\,000z^2-73\,947\,535\,200z+60\,902\,807\,175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4\,194\,304z^6+260\,308\,992z^5+1\,829\,437\,440z^4-6\,979\,829\,760z^3+31\,581\,446\,400z^2-97\,466\,090\,400z+99\,687\,686\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(33\,554\,432z^7+2\,095\,054\,848z^6+15\,381\,037\,056z^5-52\,261\,355\,520z^4+229\,756\,262\,400z^3-665\,475\,955\,200z^2+713\,553\,964\,200z+299\,063\,058\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8342.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{5}{2},-\frac{11}{4};z\right)= \frac{1}{186\,540\,354\,000z^{3/2}}\left(e^{-2\sqrt{z}}\left(4\,194\,304e^{4\sqrt{z}}z^7-4\,194\,304z^7+1\,048\,576e^{4\sqrt{z}}z^{13/2}+1\,048\,576z^{13/2}-348\,913\,664e^{4\sqrt{z}}z^6+348\,913\,664z^6-86\,441\,984e^{4\sqrt{z}}z^{11/2}-86\,441\,984z^{11/2}-16\,384e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-21\,344z+316\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}-16\,384e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-21\,344z+316\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+5\,127\,012\,352e^{4\sqrt{z}}z^5-5\,127\,012\,352z^5+1\,219\,624\,960e^{4\sqrt{z}}z^{9/2}+1\,219\,624\,960z^{9/2}+840\,499\,200e^{4\sqrt{z}}z^4-840\,499\,200z^4+928\,481\,280e^{4\sqrt{z}}z^{7/2}+928\,481\,280z^{7/2}+1\,371\,310\,080e^{4\sqrt{z}}z^3-1\,371\,310\,080z^3+2\,457\,423\,360e^{4\sqrt{z}}z^{5/2}+2\,457\,423\,360z^{5/2}+4\,976\,294\,400e^{4\sqrt{z}}z^2-4\,976\,294\,400z^2+10\,594\,584\,000e^{4\sqrt{z}}z^{3/2}+10\,594\,584\,000z^{3/2}+21\,259\,438\,200e^{4\sqrt{z}}z-21\,259\,438\,200z+30\,117\,537\,450e^{4\sqrt{z}}\sqrt{z}+30\,117\,537\,450\sqrt{z}-15\,058\,768\,725e^{4\sqrt{z}}+15\,058\,768\,725\right)\right) $$

07.22.03.8343.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{5}{2},-\frac{11}{4};-z\right)= \frac{1}{93\,270\,177\,000z^{3/2}}\left(-32\,768\sqrt{\pi}\left(256z^2+21\,344z+316\,825\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4}-2\left(524\,288z^6+43\,220\,992z^5+609\,812\,480z^4-464\,240\,640z^3+1\,228\,711\,680z^2-5\,297\,292\,000z+15\,058\,768\,725\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(4\,194\,304z^7+348\,913\,664z^6+5\,127\,012\,352z^5-840\,499\,200z^4+1\,371\,310\,080z^3-4\,976\,294\,400z^2+21\,259\,438\,200z+15\,058\,768\,725\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8344.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{5}{2}, -\frac{9}{4}; z\right) = $$

$$ -\left(\left(16\,z\left(1\,048\,576\,z^6 - 109\,445\,120\,z^5 + 2\,450\,083\,840\,z^4 - 8\,343\,552\,000\,z^3 - 10\,805\,414\,400\,z^2 - 17\,911\,706\,400\,z - \right.\right.\right. $$

$$ \left.\left.\left. 10\,703\,093\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-2\,097\,152\,z^6 + 217\,579\,520\,z^5 - 4\,766\,883\,840\,z^4 + \right.\right.\right. $$

$$ \left.\left.\left. 13\,967\,769\,600\,z^3 + 26\,028\,576\,000\,z^2 + 47\,326\,960\,800\,z + 26\,233\,601\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$

$$ \left.\left(-16\,777\,216\,z^7 + 1\,746\,927\,616\,z^6 - 38\,770\,114\,560\,z^5 + 124\,349\,644\,800\,z^4 + 193\,858\,560\,000\,z^3 + \right.\right. $$

$$ \left.\left. 336\,908\,678\,400\,z^2 + 251\,842\,575\,600\,z - 78\,700\,804\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(136\,271\,362\,500\sqrt{2}\; z^{3/4}\right) $$

07.22.03.8345.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{5}{2}, -\frac{9}{4}; -z\right) = $$

$$ -\left(\left(16\,z\left(1\,048\,576\,z^6 + 109\,445\,120\,z^5 + 2\,450\,083\,840\,z^4 + 8\,343\,552\,000\,z^3 - 10\,805\,414\,400\,z^2 + 17\,911\,706\,400\,z - \right.\right.\right. $$

$$ \left.\left.\left. 10\,703\,093\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2\,097\,152\,z^6 + 217\,579\,520\,z^5 + 4\,766\,883\,840\,z^4 + \right.\right.\right. $$

$$ \left.\left.\left. 13\,967\,769\,600\,z^3 - 26\,028\,576\,000\,z^2 + 47\,326\,960\,800\,z - 26\,233\,601\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$

$$ \left.\left(16\,777\,216\,z^7 + 1\,746\,927\,616\,z^6 + 38\,770\,114\,560\,z^5 + 124\,349\,644\,800\,z^4 - 193\,858\,560\,000\,z^3 + \right.\right. $$

$$ \left.\left. 336\,908\,678\,400\,z^2 - 251\,842\,575\,600\,z - 78\,700\,804\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(136\,271\,362\,500\sqrt{2}\; z^{3/4}\right) $$

07.22.03.8346.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{5}{2}, -\frac{7}{4}; z\right) = \frac{1}{50\,874\,642\,000\,z^{3/2}} $$

$$ \left(e^{-2\sqrt{z}}\left(-1\,048\,576\,e^{4\sqrt{z}}\,z^7 + 1\,048\,576\,z^7 - 262\,144\,e^{4\sqrt{z}}\,z^{13/2} - 262\,144\,z^{13/2} + 130\,940\,928\,e^{4\sqrt{z}}\,z^6 - 130\,940\,928\,z^6 + \right.\right. $$

$$ 32\,538\,624\,e^{4\sqrt{z}}\,z^{11/2} + 32\,538\,624\,z^{11/2} - 3\,868\,987\,392\,e^{4\sqrt{z}}\,z^5 + 3\,868\,987\,392\,z^5 - 943\,518\,720\,e^{4\sqrt{z}}\,z^{9/2} - $$

$$ 943\,518\,720\,z^{9/2} + 256\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3 - 512\,256\,z^2 + 15\,207\,600\,z - 99\,799\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{17/4} + $$

$$ 256\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3 - 512\,256\,z^2 + 15\,207\,600\,z - 99\,799\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{17/4} + $$

$$ 24\,869\,928\,960\,e^{4\sqrt{z}}\,z^4 - 24\,869\,928\,960\,z^4 + 5\,587\,107\,840\,e^{4\sqrt{z}}\,z^{7/2} + 5\,587\,107\,840\,z^{7/2} + $$

$$ 3\,493\,969\,920\,e^{4\sqrt{z}}\,z^3 - 3\,493\,969\,920\,z^3 + 3\,338\,979\,840\,e^{4\sqrt{z}}\,z^{5/2} + 3\,338\,979\,840\,z^{5/2} + $$

$$ 4\,000\,147\,200\,e^{4\sqrt{z}}\,z^2 - 4\,000\,147\,200\,z^2 + 5\,268\,110\,400\,e^{4\sqrt{z}}\,z^{3/2} + 5\,268\,110\,400\,z^{3/2} + 6\,541\,365\,600\,e^{4\sqrt{z}}\,z - $$

$$ \left.\left. 6\,541\,365\,600\,z + 5\,314\,859\,550\,e^{4\sqrt{z}}\,\sqrt{z} + 5\,314\,859\,550\,\sqrt{z} - 2\,657\,429\,775\,e^{4\sqrt{z}} + 2\,657\,429\,775\right)\right) $$

07.22.03.8347.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{5}{2}, -\frac{7}{4}; -z\right) = \frac{1}{25\,437\,321\,000\, z^{3/2}}\left(512\sqrt{\pi}\left(4096 z^3 + 512\,256 z^2 + 15\,207\,600 z + 99\,799\,875\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{17/4} + 2\left(131\,072 z^6 + 16\,269\,312 z^5 + 471\,759\,360 z^4 + 2\,793\,553\,920 z^3 - 1\,669\,489\,920 z^2 + 2\,634\,055\,200 z - 2\,657\,429\,775\right) \cos\left(2\sqrt{z}\right)\sqrt{z} - \left(1\,048\,576 z^7 + 130\,940\,928 z^6 + 3\,868\,987\,392 z^5 + 24\,869\,928\,960 z^4 - 3\,493\,969\,920 z^3 + 4\,000\,147\,200 z^2 - 6\,541\,365\,600 z - 2\,657\,429\,775\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8348.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{5}{2}, -\frac{5}{4}; z\right) = \frac{1}{105\,988\,837\,500\sqrt{2}\, z^{3/4}}\left(\left(8 z\left(1\,048\,576 z^6 - 153\,157\,632 z^5 + 5\,701\,201\,920 z^4 - 56\,745\,767\,680 z^3 + 89\,391\,859\,200 z^2 + 40\,699\,184\,400 z + 15\,288\,995\,925\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1\,048\,576 z^6 - 152\,502\,272 z^5 + 5\,607\,239\,680 z^4 - 53\,427\,575\,040 z^3 + 61\,883\,942\,400 z^2 + 47\,267\,967\,600 z + 12\,242\,347\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(8\,388\,608 z^7 - 1\,223\,163\,904 z^6 + 45\,306\,576\,896 z^5 - 443\,026\,913\,280 z^4 + 617\,360\,486\,400 z^3 + 390\,929\,212\,800 z^2 + 169\,166\,982\,600 z - 36\,727\,042\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8349.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{5}{2}, -\frac{5}{4}; -z\right) = \frac{1}{105\,988\,837\,500\sqrt{2}\, z^{3/4}}\left(\left(8 z\left(1\,048\,576 z^6 + 153\,157\,632 z^5 + 5\,701\,201\,920 z^4 + 56\,745\,767\,680 z^3 + 89\,391\,859\,200 z^2 + 40\,699\,184\,400 z + 15\,288\,995\,925\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1\,048\,576 z^6 + 152\,502\,272 z^5 + 5\,607\,239\,680 z^4 + 53\,427\,575\,040 z^3 + 61\,883\,942\,400 z^2 - 47\,267\,967\,600 z + 12\,242\,347\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(8\,388\,608 z^7 + 1\,223\,163\,904 z^6 + 45\,306\,576\,896 z^5 + 443\,026\,913\,280 z^4 + 617\,360\,486\,400 z^3 - 390\,929\,212\,800 z^2 + 169\,166\,982\,600 z + 36\,727\,042\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.8350.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{5}{2}, -\frac{3}{4}; z\right) = \frac{1}{7\,267\,806\,000\, z^{3/2}} $$
$$ \left(e^{-2\sqrt{z}} \left(65\,536\, e^{4\sqrt{z}}\, z^7 - 65\,536\, z^7 + 16\,384\, e^{4\sqrt{z}}\, z^{13/2} + 16\,384\, z^{13/2} - 10\,915\,840\, e^{4\sqrt{z}}\, z^6 + 10\,915\,840\, z^6 - \right.\right. $$
$$ 2\,716\,672\, e^{4\sqrt{z}}\, z^{11/2} - 2\,716\,672\, z^{11/2} + 484\,621\,056\, e^{4\sqrt{z}}\, z^5 - 484\,621\,056\, z^5 + 119\,160\,000\, e^{4\sqrt{z}}\, z^{9/2} + $$
$$ 119\,160\,000\, z^{9/2} - 6\,300\,262\,320\, e^{4\sqrt{z}}\, z^4 + 6\,300\,262\,320\, z^4 - 1\,492\,285\,500\, e^{4\sqrt{z}}\, z^{7/2} - 1\,492\,285\,500\, z^{7/2} + $$
$$ e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(-65\,536\, z^4 + 10\,928\,128\, z^3 - 486\,643\,200\, z^2 + 6\,387\,192\,000\, z - 18\,662\,576\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{13/4} + $$
$$ e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(-65\,536\, z^4 + 10\,928\,128\, z^3 - 486\,643\,200\, z^2 + 6\,387\,192\,000\, z - 18\,662\,576\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{13/4} + $$
$$ 17\,638\,871\,040\, e^{4\sqrt{z}}\, z^3 - 17\,638\,871\,040\, z^3 + 3\,536\,225\,280\, e^{4\sqrt{z}}\, z^{5/2} + 3\,536\,225\,280\, z^{5/2} + $$
$$ 1\,817\,424\,000\, e^{4\sqrt{z}}\, z^2 - 1\,817\,424\,000\, z^2 + 1\,271\,743\,200\, e^{4\sqrt{z}}\, z^{3/2} + 1\,271\,743\,200\, z^{3/2} + 908\,523\,000\, e^{4\sqrt{z}}\, z - $$
$$ \left.\left. 908\,523\,000\, z + 408\,835\,350\, e^{4\sqrt{z}}\, \sqrt{z} + 408\,835\,350\, \sqrt{z} - 204\,417\,675\, e^{4\sqrt{z}} + 204\,417\,675\right)\right) $$

07.22.03.8351.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{5}{2}, -\frac{3}{4}; -z\right) = $$
$$ \frac{1}{3\,633\,903\,000\, z^{3/2}} \left(-2\sqrt{\pi}\, \left(65\,536\, z^4 + 10\,928\,128\, z^3 + 486\,643\,200\, z^2 + 6\,387\,192\,000\, z + 18\,662\,576\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{13/4} - \right. $$
$$ 2\left(8192\, z^6 + 1\,358\,336\, z^5 + 59\,580\,000\, z^4 + 746\,142\,750\, z^3 + 1\,768\,112\,640\, z^2 - 635\,871\,600\, z + 204\,417\,675\right) $$
$$ \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(65\,536\, z^7 + 10\,915\,840\, z^6 + 484\,621\,056\, z^5 + 6\,300\,262\,320\, z^4 + \right. $$
$$ \left.\left. 17\,638\,871\,040\, z^3 - 1\,817\,424\,000\, z^2 + 908\,523\,000\, z + 204\,417\,675\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8352.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{5}{2}, -\frac{1}{4}; z\right) = $$
$$ \frac{1}{190\,779\,907\,500\, \sqrt{2}\, z^{3/4}} \left(\left(-16\, z \left(262\,144\, z^6 - 49\,217\,536\, z^5 + 2\,562\,508\,800\, z^4 - 42\,305\,667\,840\, z^3 + 189\,797\,447\,700\, z^2 - \right.\right. $$
$$ 126\,868\,291\,200\, z - 12\,758\,449\,725\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\, \left(524\,288\, z^6 - 98\,107\,392\, z^5 + 5\,064\,376\,320\, z^4 - $$
$$ 81\,567\,440\,640\, z^3 + 334\,257\,953\,400\, z^2 - 112\,556\,077\,200\, z - 10\,016\,466\,075\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(4\,194\,304\, z^7 - 786\,432\,000\, z^6 + 40\,804\,909\,056\, z^5 - 666\,940\,538\,880\, z^4 + 2\,882\,180\,750\,400\, z^3 - \right. $$
$$ \left.\left. 1\,472\,937\,177\,600\, z^2 - 228\,947\,796\,000\, z + 30\,049\,398\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.8353.01

$${}_1F_2\left(-\frac{23}{4};\frac{5}{2},-\frac{1}{4};-z\right)=$$

$$-\left(\left(16\,z\left(262\,144\,z^6+49\,217\,536\,z^5+2\,562\,508\,800\,z^4+42\,305\,667\,840\,z^3+189\,797\,447\,700\,z^2+126\,868\,291\,200\,z-\right.\right.\right.$$
$$\left.12\,758\,449\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(524\,288\,z^6+98\,107\,392\,z^5+5\,064\,376\,320\,z^4+\right.$$
$$\left.81\,567\,440\,640\,z^3+334\,257\,953\,400\,z^2+112\,556\,077\,200\,z-10\,016\,466\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(4\,194\,304\,z^7+786\,432\,000\,z^6+40\,804\,909\,056\,z^5+666\,940\,538\,880\,z^4+2\,882\,180\,750\,400\,z^3+\right.$$
$$\left.\left.\left.1\,472\,937\,177\,600\,z^2-228\,947\,796\,000\,z-30\,049\,398\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(190\,779\,907\,500\,\sqrt{2}\;z^{3/4}\right)$$

07.22.03.8354.01

$${}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{775\,232\,640\,000\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\;\sqrt{2\,\pi}\;\left(1\,048\,576\,z^5-218\,562\,560\,z^4+12\,977\,152\,000\,z^3-255\,487\,680\,000\,z^2+\right.\right.\right.$$
$$\left.1\,493\,006\,130\,000\,z-1\,698\,294\,472\,875\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{9/4}+e^{2\sqrt{z}}\;\sqrt{2\,\pi}$$
$$\left(1\,048\,576\,z^5-218\,562\,560\,z^4+12\,977\,152\,000\,z^3-255\,487\,680\,000\,z^2+1\,493\,006\,130\,000\,z-1\,698\,294\,472\,875\right)$$
$$\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{9/4}-4\left(-262\,144\,z^7+65\,536\,z^{13/2}+54\,591\,488\,z^6-13\,598\,720\,z^{11/2}-3\,234\,150\,400\,z^5+\right.$$
$$798\,507\,520\,z^{9/2}+63\,285\,361\,920\,z^4-15\,255\,863\,040\,z^{7/2}-362\,475\,651\,300\,z^3+80\,920\,682\,325\,z^{5/2}+$$
$$374\,079\,283\,200\,z^2-57\,171\,340\,800\,z^{3/2}+17\,443\,641\,600\,z-3\,634\,092\,000\,\sqrt{z}\;+$$
$$e^{4\sqrt{z}}\left(262\,144\,z^7+65\,536\,z^{13/2}-54\,591\,488\,z^6-13\,598\,720\,z^{11/2}+3\,234\,150\,400\,z^5+798\,507\,520\,z^{9/2}-\right.$$
$$\left.\left.\left.63\,285\,361\,920\,z^4-15\,255\,863\,040\,z^{7/2}+362\,475\,651\,300\,z^3+80\,920\,682\,325\,z^{5/2}-374\,079\,283\,200\,z^2-\right.\right.\right.$$
$$\left.\left.57\,171\,340\,800\,z^{3/2}-17\,443\,641\,600\,z-3\,634\,092\,000\,\sqrt{z}\;+1\,817\,046\,000\right)-1\,817\,046\,000\right)\Big)\Big)$$

07.22.03.8355.01

$${}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{1}{4};-z\right)=\frac{1}{193\,808\,160\,000\,z^{3/2}}$$
$$\left(\sqrt{\pi}\;z^{9/4}\left(1\,048\,576\,z^5+218\,562\,560\,z^4+12\,977\,152\,000\,z^3+255\,487\,680\,000\,z^2+1\,493\,006\,130\,000\,z+1\,698\,294\,472\,875\right)\right.$$
$$C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\left(4\left(65\,536\,z^7+13\,647\,872\,z^6+808\,537\,600\,z^5+15\,821\,340\,480\,z^4+90\,618\,912\,825\,z^3+\right.\right.$$
$$\left.93\,519\,820\,800\,z^2-4\,360\,910\,400\,z-454\,261\,500\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\,\left(65\,536\,z^6+13\,598\,720\,z^5+\right.$$
$$\left.\left.\left.798\,507\,520\,z^4+15\,255\,863\,040\,z^3+80\,920\,682\,325\,z^2+57\,171\,340\,800\,z-3\,634\,092\,000\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.8356.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{3}{4};z\right)= $$

$$ \left(\left(2z\left(1\,048\,576z^6-240\,582\,656z^5+16\,096\,583\,680z^4-371\,323\,031\,040z^3+2\,749\,083\,440\,400z^2-4\,958\,319\,625\,875z+\right.\right.\right. $$

$$ \left.1\,059\,782\,931\,900\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-1\,048\,576z^6+239\,927\,296z^5-15\,947\,980\,800z^4+\right. $$

$$ \left.361\,654\,571\,520z^3-2\,541\,408\,685\,200z^2+3\,710\,549\,252\,025z-62\,960\,643\,900\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ \left(-2\,097\,152z^7+480\,641\,024z^6-32\,073\,695\,232z^5+734\,781\,864\,960z^4-5\,324\,234\,176\,800z^3+\right. $$

$$ \left.\left.8\,781\,210\,449\,550z^2-881\,449\,014\,600z+47\,220\,482\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(2\,098\,578\,982\,500\sqrt{2}\,z^{3/4}\right) $$

07.22.03.8357.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{3}{4};-z\right)= $$

$$ \left(\left(2z\left(1\,048\,576z^6+240\,582\,656z^5+16\,096\,583\,680z^4+371\,323\,031\,040z^3+2\,749\,083\,440\,400z^2+4\,958\,319\,625\,875z+\right.\right.\right. $$

$$ \left.1\,059\,782\,931\,900\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(1\,048\,576z^6+239\,927\,296z^5+15\,947\,980\,800z^4+\right. $$

$$ \left.361\,654\,571\,520z^3+2\,541\,408\,685\,200z^2+3\,710\,549\,252\,025z+62\,960\,643\,900\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ \left(2\,097\,152z^7+480\,641\,024z^6+32\,073\,695\,232z^5+734\,781\,864\,960z^4+5\,324\,234\,176\,800z^3+\right. $$

$$ \left.\left.8\,781\,210\,449\,550z^2+881\,449\,014\,600z+47\,220\,482\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(2\,098\,578\,982\,500\sqrt{2}\,z^{3/4}\right) $$

07.22.03.8358.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{5}{4};z\right)= $$

$$ \frac{1}{297\,689\,333\,760\,000\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-4\,196\,401\,152z^5+311\,451\,648\,000z^4-8\,175\,605\,760\,000z^3+\right.\right.\right. $$

$$ \left.71\,664\,294\,240\,000z^2-163\,036\,269\,396\,000z+45\,853\,950\,767\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+ $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-4\,196\,401\,152z^5+311\,451\,648\,000z^4-8\,175\,605\,760\,000z^3+\right. $$

$$ \left.71\,664\,294\,240\,000z^2-163\,036\,269\,396\,000z+45\,853\,950\,767\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}- $$

$$ 4\left(-4\,194\,304z^7+1\,048\,576z^{13/2}+1\,048\,313\,856z^6-261\,292\,032z^{11/2}-77\,667\,926\,016z^5+\right. $$

$$ 19\,223\,715\,840z^{9/2}+2\,029\,721\,794\,560z^4-493\,659\,809\,280z^{7/2}-17\,562\,245\,279\,040z^3+ $$

$$ 4\,063\,733\,286\,480z^{5/2}+38\,070\,348\,453\,900z^2-7\,358\,849\,846\,775z^{3/2}-7\,814\,751\,436\,800z+ $$

$$ 279\,098\,265\,600\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^7+1\,048\,576z^{13/2}-1\,048\,313\,856z^6-261\,292\,032z^{11/2}+\right. $$

$$ 77\,667\,926\,016z^5+19\,223\,715\,840z^{9/2}-2\,029\,721\,794\,560z^4-493\,659\,809\,280z^{7/2}+ $$

$$ 17\,562\,245\,279\,040z^3+4\,063\,733\,286\,480z^{5/2}-38\,070\,348\,453\,900z^2-7\,358\,849\,846\,775z^{3/2}+ $$

$$ \left.\left.\left.\left.7\,814\,751\,436\,800z+279\,098\,265\,600\sqrt{z}-139\,549\,132\,800\right)+139\,549\,132\,800\right)\right)\right) $$

07.22.03.8359.01

$${}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{5}{4};-z\right)=$$
$$\frac{1}{74\,422\,333\,440\,000\,z^{3/2}}\left(\sqrt{\pi}\,z^{5/4}\left(16\,777\,216\,z^6+4\,196\,401\,152\,z^5+311\,451\,648\,000\,z^4+8\,175\,605\,760\,000\,z^3+\right.\right.$$
$$71\,664\,294\,240\,000\,z^2+163\,036\,269\,396\,000\,z+45\,853\,950\,767\,625\Big)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\Big(4\left(1\,048\,576\,z^7+262\,078\,464\,z^6+19\,416\,981\,504\,z^5+507\,430\,448\,640\,z^4+4\,390\,561\,319\,760\,z^3+\right.$$
$$9\,517\,587\,113\,475\,z^2+1\,953\,687\,859\,200\,z+34\,887\,283\,200\Big)\sin\left(2\sqrt{z}\right)-$$
$$\sqrt{z}\left(1\,048\,576\,z^6+261\,292\,032\,z^5+19\,223\,715\,840\,z^4+493\,659\,809\,280\,z^3+\right.$$
$$\left.\left.\left.4\,063\,733\,286\,480\,z^2+7\,358\,849\,846\,775\,z+279\,098\,265\,600\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.8360.01

$${}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{7}{4};z\right)=$$
$$\left(\left(2\,z\left(16\,777\,216\,z^6-4\,548\,722\,688\,z^5+371\,853\,557\,760\,z^4-11\,017\,529\,835\,520\,z^3+113\,730\,705\,504\,000\,z^2-\right.\right.\right.$$
$$334\,401\,979\,111\,200\,z+169\,520\,802\,776\,325\Big)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\sqrt{z}\left(-16\,777\,216\,z^6+4\,538\,236\,928\,z^5-369\,038\,786\,560\,z^4+10\,792\,566\,620\,160\,z^3-107\,419\,049\,337\,600\,z^2+\right.$$
$$278\,152\,889\,414\,400\,z-67\,692\,708\,658\,575\Big)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\left(16\,777\,216\,z^7-4\,544\,528\,384\,z^6+\right.$$
$$370\,722\,930\,688\,z^5-10\,926\,312\,407\,040\,z^4+111\,113\,517\,715\,200\,z^3-309\,667\,776\,818\,400\,z^2+$$
$$\left.\left.\left.115\,648\,686\,378\,225\,z+3\,273\,953\,482\,800\Big)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(291\,002\,952\,240\,000\sqrt{2}\,z^{3/4}\right)$$

07.22.03.8361.01

$${}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{7}{4};-z\right)=$$
$$\left(\left(2\,z\left(16\,777\,216\,z^6+4\,548\,722\,688\,z^5+371\,853\,557\,760\,z^4+11\,017\,529\,835\,520\,z^3+113\,730\,705\,504\,000\,z^2+\right.\right.\right.$$
$$334\,401\,979\,111\,200\,z+169\,520\,802\,776\,325\Big)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\sqrt{z}\left(16\,777\,216\,z^6+4\,538\,236\,928\,z^5+369\,038\,786\,560\,z^4+10\,792\,566\,620\,160\,z^3+107\,419\,049\,337\,600\,z^2+\right.$$
$$278\,152\,889\,414\,400\,z+67\,692\,708\,658\,575\Big)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(16\,777\,216\,z^7+4\,544\,528\,384\,z^6+\right.$$
$$370\,722\,930\,688\,z^5+10\,926\,312\,407\,040\,z^4+111\,113\,517\,715\,200\,z^3+309\,667\,776\,818\,400\,z^2+$$
$$\left.\left.\left.115\,648\,686\,378\,225\,z-3\,273\,953\,482\,800\Big)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(291\,002\,952\,240\,000\sqrt{2}\,z^{3/4}\right)$$

07.22.03.8362.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{9}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(-4\left(-67\,108\,864\,z^7+16\,777\,216\,z^{13/2}+19\,570\,622\,464\,z^6-4\,880\,072\,704\,z^{11/2}-1\,740\,484\,902\,912\,z^5+\right.\right.\right.
$$

$$
431\,504\,424\,960\,z^{9/2}+56\,910\,077\,952\,000\,z^4-13\,916\,048\,670\,720\,z^{7/2}-658\,804\,005\,780\,480\,z^3+
$$

$$
155\,260\,455\,356\,160\,z^{5/2}+2\,176\,705\,668\,009\,600\,z^2-454\,644\,107\,820\,000\,z^{3/2}-1\,028\,024\,573\,429\,700\,z+
$$

$$
104\,233\,730\,849\,325\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864\,z^7+16\,777\,216\,z^{13/2}-19\,570\,622\,464\,z^6-4\,880\,072\,704\,z^{11/2}+\right.
$$

$$
1\,740\,484\,902\,912\,z^5+431\,504\,424\,960\,z^{9/2}-56\,910\,077\,952\,000\,z^4-13\,916\,048\,670\,720\,z^{7/2}+
$$

$$
658\,804\,005\,780\,480\,z^3+155\,260\,455\,356\,160\,z^{5/2}-2\,176\,705\,668\,009\,600\,z^2-454\,644\,107\,820\,000\,z^{3/2}+
$$

$$
\left.1\,028\,024\,573\,429\,700\,z+104\,233\,730\,849\,325\sqrt{z}+62\,518\,011\,494\,400\right)-62\,518\,011\,494\,400\Big)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(268\,435\,456\,z^7-78\,332\,821\,504\,z^6+6\,976\,516\,915\,200\,z^5-228\,916\,961\,280\,000\,z^4+\right.
$$

$$
2\,675\,466\,984\,960\,000\,z^3-9\,130\,031\,086\,176\,000\,z^2+5\,135\,642\,485\,974\,000\,z+229\,269\,753\,838\,125\Big)
$$

$$
\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(268\,435\,456\,z^7-78\,332\,821\,504\,z^6+6\,976\,516\,915\,200\,z^5-\right.
$$

$$
228\,916\,961\,280\,000\,z^4+2\,675\,466\,984\,960\,000\,z^3-9\,130\,031\,086\,176\,000\,z^2+
$$

$$
\left.\left.5\,135\,642\,485\,974\,000\,z+229\,269\,753\,838\,125\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)\Big/\left(26\,672\,964\,304\,896\,000\,z^{3/2}\right)
$$

07.22.03.8363.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{9}{4};-z\right)=
$$

$$
\left(\sqrt{\pi}\sqrt[4]{z}\left(268\,435\,456\,z^7+78\,332\,821\,504\,z^6+6\,976\,516\,915\,200\,z^5+228\,916\,961\,280\,000\,z^4+2\,675\,466\,984\,960\,000\,z^3+\right.\right.
$$

$$
\left.9\,130\,031\,086\,176\,000\,z^2+5\,135\,642\,485\,974\,000\,z-229\,269\,753\,838\,125\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$

$$
2\left(\sqrt{z}\left(16\,777\,216\,z^6+4\,880\,072\,704\,z^5+431\,504\,424\,960\,z^4+13\,916\,048\,670\,720\,z^3+155\,260\,455\,356\,160\,z^2+\right.\right.
$$

$$
454\,644\,107\,820\,000\,z+104\,233\,730\,849\,325\Big)\cos\left(2\sqrt{z}\right)-4\left(16\,777\,216\,z^7+4\,892\,655\,616\,z^6+\right.
$$

$$
435\,121\,225\,728\,z^5+14\,227\,519\,488\,000\,z^4+164\,701\,001\,445\,120\,z^3+544\,176\,417\,002\,400\,z^2+
$$

$$
\left.\left.\left.257\,006\,143\,357\,425\,z-15\,629\,502\,873\,600\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(6\,668\,241\,076\,224\,000\,z^{3/2}\right)
$$

07.22.03.8364.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{11}{4};z\right)= $$

$$ \left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-83\,969\,966\,080\,z^6+8\,110\,803\,517\,440\,z^5-293\,526\,832\,742\,400\,z^4+3\,887\,140\,931\,481\,600\,z^3-\right.\right.\right. $$

$$ \left.\left.\left.15\,849\,435\,126\,470\,400\,z^2+12\,597\,753\,294\,126\,000\,z+229\,269\,753\,838\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$

$$ \left(268\,435\,456\,z^7-83\,802\,193\,920\,z^6+8\,058\,773\,176\,320\,z^5-288\,595\,501\,056\,000\,z^4+3\,716\,375\,330\,304\,000\,z^3-\right. $$

$$ \left.13\,830\,836\,417\,798\,400\,z^2+6\,814\,287\,726\,246\,000\,z+687\,809\,261\,514\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- $$

$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7-83\,902\,857\,216\,z^6+8\,089\,915\,883\,520\,z^5-291\,531\,438\,489\,600\,z^4+\right. $$

$$ \left.\left.3\,816\,777\,936\,384\,000\,z^3-14\,978\,855\,161\,670\,400\,z^2+9\,739\,416\,347\,060\,400\,z+883\,688\,410\,229\,625\right) $$

$$ \left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(19\,954\,488\,153\,600\,000\,\sqrt{2}\;z^{5/4}\right) $$

07.22.03.8365.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{11}{4};-z\right)= $$

$$ \left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+83\,969\,966\,080\,z^6+8\,110\,803\,517\,440\,z^5+293\,526\,832\,742\,400\,z^4+3\,887\,140\,931\,481\,600\,z^3+\right.\right.\right. $$

$$ \left.\left.\left.15\,849\,435\,126\,470\,400\,z^2+12\,597\,753\,294\,126\,000\,z-229\,269\,753\,838\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$

$$ \left(268\,435\,456\,z^7+83\,802\,193\,920\,z^6+8\,058\,773\,176\,320\,z^5+288\,595\,501\,056\,000\,z^4+3\,716\,375\,330\,304\,000\,z^3+\right. $$

$$ \left.13\,830\,836\,417\,798\,400\,z^2+6\,814\,287\,726\,246\,000\,z-687\,809\,261\,514\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7+83\,902\,857\,216\,z^6+8\,089\,915\,883\,520\,z^5+291\,531\,438\,489\,600\,z^4+\right. $$

$$ \left.\left.3\,816\,777\,936\,384\,000\,z^3+14\,978\,855\,161\,670\,400\,z^2+9\,739\,416\,347\,060\,400\,z-883\,688\,410\,229\,625\right) $$

$$ \left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(19\,954\,488\,153\,600\,000\,\sqrt{2}\;z^{5/4}\right) $$

07.22.03.8366.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{13}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^7+357\,891\,571\,712\,z^{13/2}-89\,271\,566\,336\,z^6-37\,141\,388\,197\,888\right.\right.\right.
$$

$$
z^{11/2}+9\,219\,085\,434\,880\,z^5+1\,458\,236\,184\,330\,240\,z^{9/2}-357\,868\,102\,287\,360\,z^4-
$$

$$
21\,143\,421\,084\,549\,120\,z^{7/2}+5\,039\,083\,672\,842\,240\,z^3+93\,890\,681\,903\,692\,800\,z^{5/2}-
$$

$$
20\,418\,950\,270\,073\,600\,z^2-69\,918\,472\,082\,289\,600\,z^{3/2}+9\,229\,819\,254\,994\,800\,z-
$$

$$
9\,141\,275\,602\,790\,100\sqrt{z}+e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^7-357\,891\,571\,712\,z^{13/2}-\right.
$$

$$
89\,271\,566\,336\,z^6+37\,141\,388\,197\,888\,z^{11/2}+9\,219\,085\,434\,880\,z^5-1\,458\,236\,184\,330\,240\,z^{9/2}-
$$

$$
357\,868\,102\,287\,360\,z^4+21\,143\,421\,084\,549\,120\,z^{7/2}+5\,039\,083\,672\,842\,240\,z^3-
$$

$$
93\,890\,681\,903\,692\,800\,z^{5/2}-20\,418\,950\,270\,073\,600\,z^2+69\,918\,472\,082\,289\,600\,z^{3/2}+
$$

$$
\left.\left.\left.9\,229\,819\,254\,994\,800\,z+9\,141\,275\,602\,790\,100\sqrt{z}+1\,146\,348\,769\,190\,625\right)+1\,146\,348\,769\,190\,625\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-1\,432\,371\,593\,216\,z^7+148\,832\,360\,857\,600\,z^6-5\,860\,274\,208\,768\,000\,z^5+\right.
$$

$$
85\,614\,943\,518\,720\,000\,z^4-389\,547\,993\,010\,176\,000\,z^3+328\,681\,119\,102\,336\,000\,z^2+
$$

$$
\left.29\,346\,528\,491\,280\,000\,z+1\,146\,348\,769\,190\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-1\,432\,371\,593\,216\,z^7+148\,832\,360\,857\,600\,z^6-5\,860\,274\,208\,768\,000\,z^5+\right.
$$

$$
85\,614\,943\,518\,720\,000\,z^4-389\,547\,993\,010\,176\,000\,z^3+328\,681\,119\,102\,336\,000\,z^2+
$$

$$
\left.\left.29\,346\,528\,491\,280\,000\,z+1\,146\,348\,769\,190\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)\Big/\left(1\,517\,395\,302\,678\,528\,000\,z^{9/4}\right)
$$

07.22.03.8367.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{13}{4};-z\right)=
$$

$$
\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^8+1\,432\,371\,593\,216\,z^7+148\,832\,360\,857\,600\,z^6+5\,860\,274\,208\,768\,000\,z^5+85\,614\,943\,518\,720\,000\right.\right.
$$

$$
z^4+389\,547\,993\,010\,176\,000\,z^3+328\,681\,119\,102\,336\,000\,z^2-
$$

$$
\left.29\,346\,528\,491\,280\,000\,z+1\,146\,348\,769\,190\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$

$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^7+89\,472\,892\,928\,z^6+9\,285\,347\,049\,472\,z^5+364\,559\,046\,082\,560\,z^4+\right.\right.
$$

$$
5\,285\,855\,271\,137\,280\,z^3+23\,472\,670\,475\,923\,200\,z^2+17\,479\,618\,020\,572\,400\,z-2\,285\,318\,900\,697\,525\Big)
$$

$$
\sin\left(2\sqrt{z}\right)-\left(268\,435\,456\,z^7+89\,271\,566\,336\,z^6+9\,219\,085\,434\,880\,z^5+357\,868\,102\,287\,360\,z^4+\right.
$$

$$
5\,039\,083\,672\,842\,240\,z^3+20\,418\,950\,270\,073\,600\,z^2+9\,229\,819\,254\,994\,800\,z-
$$

$$
\left.\left.1\,146\,348\,769\,190\,625\right)\cos\left(2\sqrt{z}\right)\right)\Big)\Big/\left(379\,348\,825\,669\,632\,000\,z^{9/4}\right)
$$

07.22.03.8368.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{15}{4};z\right)=\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-1\,522\,565\,906\,432\,z^7+169\,666\,643\,230\,720\,z^6-\right.\right.\right.$$
$$7\,253\,411\,946\,823\,680\,z^5+117\,241\,068\,286\,771\,200\,z^4-611\,374\,975\,355\,289\,600\,z^3+$$
$$\left.660\,535\,561\,592\,524\,800\,z^2+29\,346\,528\,491\,280\,000\,z-1\,604\,888\,276\,866\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(-4\,294\,967\,296\,z^8+1\,519\,881\,551\,872\,z^7-168\,722\,253\,742\,080\,z^6+7\,149\,877\,765\,079\,040\,z^5-\right.$$
$$112\,975\,630\,722\,662\,400\,z^4+548\,531\,921\,529\,446\,400\,z^3-412\,713\,385\,513\,228\,800\,z^2-$$
$$\left.80\,702\,953\,351\,020\,000\,z+4\,814\,664\,830\,600\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-1\,521\,492\,164\,608\,z^7+169\,287\,679\,475\,712\,z^6-7\,211\,582\,132\,060\,160\,z^5+\right.$$
$$115\,491\,268\,627\,660\,800\,z^4-584\,612\,714\,339\,942\,400\,z^3+542\,836\,567\,476\,403\,200\,z^2+$$
$$\left.\left.\left.80\,004\,708\,362\,779\,200\,z+4\,814\,664\,830\,600\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(986\,840\,141\,414\,400\,000\,\sqrt{2}\;z^{9/4}\right)$$

07.22.03.8369.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{15}{4};-z\right)=\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,522\,565\,906\,432\,z^7+169\,666\,643\,230\,720\,z^6+\right.\right.\right.$$
$$7\,253\,411\,946\,823\,680\,z^5+117\,241\,068\,286\,771\,200\,z^4+611\,374\,975\,355\,289\,600\,z^3+$$
$$\left.660\,535\,561\,592\,524\,800\,z^2-29\,346\,528\,491\,280\,000\,z-1\,604\,888\,276\,866\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(4\,294\,967\,296\,z^8+1\,519\,881\,551\,872\,z^7+168\,722\,253\,742\,080\,z^6+7\,149\,877\,765\,079\,040\,z^5+\right.$$
$$112\,975\,630\,722\,662\,400\,z^4+548\,531\,921\,529\,446\,400\,z^3+412\,713\,385\,513\,228\,800\,z^2-$$
$$\left.80\,702\,953\,351\,020\,000\,z-4\,814\,664\,830\,600\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,521\,492\,164\,608\,z^7+169\,287\,679\,475\,712\,z^6+7\,211\,582\,132\,060\,160\,z^5+\right.$$
$$115\,491\,268\,627\,660\,800\,z^4+584\,612\,714\,339\,942\,400\,z^3+542\,836\,567\,476\,403\,200\,z^2-$$
$$\left.\left.\left.80\,004\,708\,362\,779\,200\,z+4\,814\,664\,830\,600\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(986\,840\,141\,414\,400\,000\,\sqrt{2}\;z^{9/4}\right)$$

07.22.03.8370.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{17}{4};z\right) = \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^8+6\,442\,450\,944\,000\,z^{15/2}-1\,607\,391\,510\,528\,z^7-764\,222\,053\,023\,744\,z^{13/2}+189\,861\,042\,585\,600\,z^6+35\,020\,728\,466\,145\,280\,z^{11/2}-8\,616\,821\,863\,219\,200\,z^5-610\,132\,901\,387\,304\,960\,z^{9/2}+146\,521\,354\,585\,374\,720\,z^4+3\,403\,019\,645\,190\,144\,000\,z^{7/2}-758\,934\,524\,668\,723\,200\,z^3-3\,470\,381\,795\,510\,784\,000\,z^{5/2}+524\,710\,042\,195\,046\,400\,z^2-676\,733\,890\,623\,436\,800\,z^{3/2}+132\,059\,378\,210\,760\,000\,z-41\,268\,555\,690\,862\,500\sqrt{z}+e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^8-6\,442\,450\,944\,000\,z^{15/2}-1\,607\,391\,510\,528\,z^7+764\,222\,053\,023\,744\,z^{13/2}+189\,861\,042\,585\,600\,z^6-35\,020\,728\,466\,145\,280\,z^{11/2}-8\,616\,821\,863\,219\,200\,z^5+610\,132\,901\,387\,304\,960\,z^{9/2}+146\,521\,354\,585\,374\,720\,z^4-3\,403\,019\,645\,190\,144\,000\,z^{7/2}-758\,934\,524\,668\,723\,200\,z^3+3\,470\,381\,795\,510\,784\,000\,z^{5/2}+524\,710\,042\,195\,046\,400\,z^2+676\,733\,890\,623\,436\,800\,z^{3/2}+132\,059\,378\,210\,760\,000\,z+41\,268\,555\,690\,862\,500\sqrt{z}-30\,951\,416\,768\,146\,875\right)-30\,951\,416\,768\,146\,875\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9-25\,782\,688\,677\,888\,z^8+3\,061\,694\,280\,499\,200\,z^7-140\,646\,581\,010\,432\,000\,z^6+2\,465\,710\,373\,339\,136\,000\,z^5-14\,023\,727\,748\,366\,336\,000\,z^4+15\,776\,693\,716\,912\,128\,000\,z^3+2\,112\,950\,051\,372\,160\,000\,z^2+165\,074\,222\,763\,450\,000\,z-30\,951\,416\,768\,146\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9-25\,782\,688\,677\,888\,z^8+3\,061\,694\,280\,499\,200\,z^7-140\,646\,581\,010\,432\,000\,z^6+2\,465\,710\,373\,339\,136\,000\,z^5-14\,023\,727\,748\,366\,336\,000\,z^4+15\,776\,693\,716\,912\,128\,000\,z^3+2\,112\,950\,051\,372\,160\,000\,z^2+165\,074\,222\,763\,450\,000\,z-30\,951\,416\,768\,146\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\Big)\Big)\Big/\left(67\,232\,284\,180\,217\,856\,000\,z^{13/4}\right) $$

07.22.03.8371.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{17}{4};-z\right) = \Bigg(\sqrt{\pi}\left(68\,719\,476\,736\,z^9+25\,782\,688\,677\,888\,z^8+3\,061\,694\,280\,499\,200\,z^7+140\,646\,581\,010\,432\,000\,z^6+2\,465\,710\,373\,339\,136\,000\,z^5+14\,023\,727\,748\,366\,336\,000\,z^4+15\,776\,693\,716\,912\,128\,000\,z^3-2\,112\,950\,051\,372\,160\,000\,z^2+165\,074\,222\,763\,450\,000\,z+30\,951\,416\,768\,146\,875\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^8+1\,610\,612\,736\,000\,z^7+191\,055\,513\,255\,936\,z^6+8\,755\,182\,116\,536\,320\,z^5+152\,533\,225\,346\,826\,240\,z^4+850\,754\,911\,297\,536\,000\,z^3+867\,595\,448\,877\,696\,000\,z^2-169\,183\,472\,655\,859\,200\,z+10\,317\,138\,922\,715\,625\right)\sin\left(2\sqrt{z}\right)-\left(4\,294\,967\,296\,z^8+1\,607\,391\,510\,528\,z^7+189\,861\,042\,585\,600\,z^6+8\,616\,821\,863\,219\,200\,z^5+146\,521\,354\,585\,374\,720\,z^4+758\,934\,524\,668\,723\,200\,z^3+524\,710\,042\,195\,046\,400\,z^2-132\,059\,378\,210\,760\,000\,z-30\,951\,416\,768\,146\,875\right)\cos\left(2\sqrt{z}\right)\Big)\Bigg)\Big/\left(16\,808\,071\,045\,054\,464\,000\,z^{13/4}\right) $$

07.22.03.8372.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{19}{4};z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-27\,225\,797\,689\,344\,z^8+3\,438\,013\,946\,265\,600\,z^7-169\,537\,332\,167\,311\,360\,z^6+\right.\right.\right.
$$

$$
3\,235\,548\,976\,172\,236\,800\,z^5-20\,552\,364\,181\,949\,644\,800\,z^4+28\,048\,124\,909\,939\,097\,600\,z^3+
$$

$$
\left.2\,112\,950\,051\,372\,160\,000\,z^2-143\,064\,326\,394\,990\,000\,z+88\,268\,855\,227\,678\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-
$$

$$
\left(68\,719\,476\,736\,z^9-27\,182\,848\,016\,384\,z^8+3\,421\,113\,249\,955\,840\,z^7-167\,433\,504\,848\,609\,280\,z^6+\right.
$$

$$
3\,135\,056\,933\,604\,556\,800\,z^5-18\,778\,934\,441\,027\,174\,400\,z^4+19\,116\,252\,200\,831\,385\,600\,z^3+
$$

$$
\left.5\,399\,761\,242\,395\,520\,000\,z^2-25\,678\,212\,429\,870\,000\,z+264\,806\,565\,683\,034\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-
$$

$$
2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-27\,208\,617\,820\,160\,z^8+3\,431\,234\,340\,388\,864\,z^7-168\,688\,337\,257\,758\,720\,z^6+\right.
$$

$$
3\,194\,458\,780\,572\,057\,600\,z^5-19\,803\,858\,581\,038\,694\,400\,z^4+23\,917\,567\,755\,755\,520\,000\,z^3+
$$

$$
\left.\left.4\,804\,789\,049\,130\,470\,400\,z^2+590\,598\,885\,887\,010\,000\,z-264\,806\,565\,683\,034\,375\right)
$$

$$
\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(39\,999\,920\,398\,663\,680\,000\,\sqrt{2}\;z^{13/4}\right)
$$

07.22.03.8373.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{19}{4};-z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+27\,225\,797\,689\,344\,z^8+3\,438\,013\,946\,265\,600\,z^7+169\,537\,332\,167\,311\,360\,z^6+\right.\right.\right.
$$

$$
3\,235\,548\,976\,172\,236\,800\,z^5+20\,552\,364\,181\,949\,644\,800\,z^4+28\,048\,124\,909\,939\,097\,600\,z^3-
$$

$$
\left.2\,112\,950\,051\,372\,160\,000\,z^2-143\,064\,326\,394\,990\,000\,z-88\,268\,855\,227\,678\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-
$$

$$
\left(68\,719\,476\,736\,z^9+27\,182\,848\,016\,384\,z^8+3\,421\,113\,249\,955\,840\,z^7+167\,433\,504\,848\,609\,280\,z^6+\right.
$$

$$
3\,135\,056\,933\,604\,556\,800\,z^5+18\,778\,934\,441\,027\,174\,400\,z^4+19\,116\,252\,200\,831\,385\,600\,z^3-
$$

$$
\left.5\,399\,761\,242\,395\,520\,000\,z^2-25\,678\,212\,429\,870\,000\,z-264\,806\,565\,683\,034\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+
$$

$$
2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+27\,208\,617\,820\,160\,z^8+3\,431\,234\,340\,388\,864\,z^7+168\,688\,337\,257\,758\,720\,z^6+\right.
$$

$$
3\,194\,458\,780\,572\,057\,600\,z^5+19\,803\,858\,581\,038\,694\,400\,z^4+23\,917\,567\,755\,755\,520\,000\,z^3-
$$

$$
\left.\left.4\,804\,789\,049\,130\,470\,400\,z^2+590\,598\,885\,887\,010\,000\,z+264\,806\,565\,683\,034\,375\right)
$$

$$
\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(39\,999\,920\,398\,663\,680\,000\,\sqrt{2}\;z^{13/4}\right)
$$

07.22.03.8374.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{21}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}+114\,538\,187\,849\,728\,z^{17/2}-28\,583\,007\,354\,880\,z^{8}-\right.\right.\right.
$$

$$
15\,287\,098\,571\,489\,280\,z^{15/2}+3\,800\,514\,554\,757\,120\,z^{7}+800\,870\,712\,339\,333\,120\,z^{13/2}-
$$

$$
197\,439\,246\,292\,746\,240\,z^{6}-16\,293\,372\,946\,808\,832\,000\,z^{11/2}+3\,934\,369\,777\,818\,009\,600\,z^{5}+
$$

$$
109\,401\,846\,586\,815\,283\,200\,z^{9/2}-24\,824\,371\,943\,050\,444\,800\,z^{4}-141\,840\,993\,980\,089\,958\,400\,z^{7/2}+
$$

$$
23\,357\,359\,856\,388\,096\,000\,z^{3}-36\,214\,854\,569\,574\,912\,000\,z^{5/2}+8\,686\,572\,433\,418\,880\,000\,z^{2}-
$$

$$
4\,886\,196\,993\,798\,120\,000\,z^{3/2}-1\,947\,875\,828\,608\,710\,000\,z+3\,755\,438\,567\,868\,487\,500\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\left(274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}-114\,538\,187\,849\,728\,z^{17/2}-\right.
$$

$$
28\,583\,007\,354\,880\,z^{8}+15\,287\,098\,571\,489\,280\,z^{15/2}+3\,800\,514\,554\,757\,120\,z^{7}-
$$

$$
800\,870\,712\,339\,333\,120\,z^{13/2}-197\,439\,246\,292\,746\,240\,z^{6}+16\,293\,372\,946\,808\,832\,000\,z^{11/2}+
$$

$$
3\,934\,369\,777\,818\,009\,600\,z^{5}-109\,401\,846\,586\,815\,283\,200\,z^{9/2}-24\,824\,371\,943\,050\,444\,800\,z^{4}+
$$

$$
141\,840\,993\,980\,089\,958\,400\,z^{7/2}+23\,357\,359\,856\,388\,096\,000\,z^{3}+36\,214\,854\,569\,574\,912\,000\,z^{5/2}+
$$

$$
\left.8\,686\,572\,433\,418\,880\,000\,z^{2}+4\,886\,196\,993\,798\,120\,000\,z^{3/2}-1\,947\,875\,828\,608\,710\,000\,z-
$$

$$
3\,755\,438\,567\,868\,487\,500\sqrt{z}\;+2\,816\,578\,925\,901\,365\,625\right)+2\,816\,578\,925\,901\,365\,625\Big)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}-458\,358\,909\,829\,120\,z^{9}+61\,233\,885\,609\,984\,000\,z^{8}-\right.
$$

$$
3\,214\,778\,994\,524\,160\,000\,z^{7}+65\,752\,276\,622\,376\,960\,000\,z^{6}-448\,759\,287\,947\,722\,752\,000\,z^{5}+
$$

$$
631\,067\,748\,676\,485\,120\,000\,z^{4}+112\,690\,669\,406\,515\,200\,000\,z^{3}+13\,205\,937\,821\,076\,000\,000\,z^{2}-
$$

$$
\left.4\,952\,226\,682\,903\,500\,000\,z+2\,816\,578\,925\,901\,365\,625\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}-458\,358\,909\,829\,120\,z^{9}+61\,233\,885\,609\,984\,000\,z^{8}-\right.
$$

$$
3\,214\,778\,994\,524\,160\,000\,z^{7}+65\,752\,276\,622\,376\,960\,000\,z^{6}-448\,759\,287\,947\,722\,752\,000\,z^{5}+
$$

$$
631\,067\,748\,676\,485\,120\,000\,z^{4}+112\,690\,669\,406\,515\,200\,000\,z^{3}+
$$

$$
\left.13\,205\,937\,821\,076\,000\,000\,z^{2}-4\,952\,226\,682\,903\,500\,000\,z+2\,816\,578\,925\,901\,365\,625\right)
$$

$$
\left.\left.\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)\Big/\left(2\,531\,097\,757\,372\,907\,520\,000\,z^{17/4}\right)
$$

07.22.03.8375.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{5}{2}, \frac{21}{4}; -z\right) = $$

$$\left(\sqrt{\pi}\,\left(1\,099\,511\,627\,776\,z^{10} + 458\,358\,909\,829\,120\,z^9 + 61\,233\,885\,609\,984\,000\,z^8 + 3\,214\,778\,994\,524\,160\,000\,z^7 + \right.\right.$$
$$65\,752\,276\,622\,376\,960\,000\,z^6 + 448\,759\,287\,947\,722\,752\,000\,z^5 +$$
$$631\,067\,748\,676\,485\,120\,000\,z^4 - 112\,690\,669\,406\,515\,200\,000\,z^3 + 13\,205\,937\,821\,076\,000\,000\,z^2 +$$
$$\left.4\,952\,226\,682\,903\,500\,000\,z + 2\,816\,578\,925\,901\,365\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) -$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 28\,634\,546\,962\,432\,z^8 + 3\,821\,774\,642\,872\,320\,z^7 + 200\,217\,678\,084\,833\,280\,z^6 + \right.\right.$$
$$4\,073\,343\,236\,702\,208\,000\,z^5 + 27\,350\,461\,646\,703\,820\,800\,z^4 + 35\,460\,248\,495\,022\,489\,600\,z^3 -$$
$$\left.9\,053\,713\,642\,393\,728\,000\,z^2 + 1\,221\,549\,248\,449\,530\,000\,z + 938\,859\,641\,967\,121\,875\right)\sin\left(2\sqrt{z}\right) -$$
$$\left(68\,719\,476\,736\,z^9 + 28\,583\,007\,354\,880\,z^8 + 3\,800\,514\,554\,757\,120\,z^7 + 197\,439\,246\,292\,746\,240\,z^6 + \right.$$
$$3\,934\,369\,777\,818\,009\,600\,z^5 + 24\,824\,371\,943\,050\,444\,800\,z^4 +$$
$$23\,357\,359\,856\,388\,096\,000\,z^3 - 8\,686\,572\,433\,418\,880\,000\,z^2 - 1\,947\,875\,828\,608\,710\,000\,z -$$
$$\left.\left.\left.2\,816\,578\,925\,901\,365\,625\right)\cos\left(2\sqrt{z}\right)\right)\right) \Big/ \left(632\,774\,439\,343\,226\,880\,000\,z^{17/4}\right)$$

07.22.03.8376.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{5}{2}, \frac{23}{4}; z\right) = $$

$$\left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} - 481\,448\,654\,012\,416\,z^9 + 67\,942\,538\,626\,990\,080\,z^8 - 3\,796\,247\,300\,737\,597\,440\,z^7 + \right.\right.\right.$$
$$83\,539\,421\,171\,181\,158\,400\,z^6 - 625\,665\,185\,696\,710\,656\,000\,z^5 +$$
$$1\,031\,251\,829\,752\,243\,814\,400\,z^4 + 112\,690\,669\,406\,515\,200\,000\,z^3 - 6\,514\,929\,325\,064\,160\,000\,z^2 +$$
$$\left.1\,210\,544\,300\,265\,300\,000\,z - 11\,916\,295\,455\,736\,546\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +$$
$$\left(-1\,099\,511\,627\,776\,z^{10} + 480\,761\,459\,245\,056\,z^9 - 67\,643\,480\,054\,169\,600\,z^8 + \right.$$
$$3\,754\,579\,106\,432\,286\,720\,z^7 - 81\,275\,459\,634\,148\,147\,200\,z^6 + 579\,110\,540\,754\,183\,782\,400\,z^5 -$$
$$745\,444\,825\,813\,558\,886\,400\,z^4 - 270\,457\,606\,575\,636\,480\,000\,z^3 - 24\,475\,004\,761\,727\,520\,000\,z^2 +$$
$$\left.50\,842\,860\,611\,142\,600\,000\,z + 35\,748\,886\,367\,209\,640\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} - 481\,173\,776\,105\,472\,z^9 + 67\,822\,605\,960\,216\,576\,z^8 - 3\,779\,447\,707\,957\,985\,280\,z^7 + \right.$$
$$82\,616\,033\,636\,410\,982\,400\,z^6 - 606\,146\,782\,176\,372\,326\,400\,z^5 + 901\,597\,688\,591\,420\,620\,800\,z^4 +$$
$$227\,566\,202\,649\,233\,817\,600\,z^3 + 41\,378\,605\,172\,704\,800\,000\,z^2 - 25\,421\,430\,305\,571\,300\,000\,z +$$
$$\left.\left.\left.35\,748\,886\,367\,209\,640\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(1\,414\,734\,026\,731\,683\,840\,000\,\sqrt{2}\;z^{17/4}\right)$$

07.22.03.8377.01

$${}_1F_2\left(-\frac{23}{4};\frac{5}{2},\frac{23}{4};-z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10}+481\,448\,654\,012\,416\,z^9+67\,942\,538\,626\,990\,080\,z^8+3\,796\,247\,300\,737\,597\,440\,z^7+\right.\right.\right.$$
$$83\,539\,421\,171\,181\,158\,400\,z^6+625\,665\,185\,696\,710\,656\,000\,z^5+$$
$$1\,031\,251\,829\,752\,243\,814\,400\,z^4-112\,690\,669\,406\,515\,200\,000\,z^3-6\,514\,929\,325\,064\,160\,000\,z^2-$$
$$\left.1\,210\,544\,300\,265\,300\,000\,z-11\,916\,295\,455\,736\,546\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(1\,099\,511\,627\,776\,z^{10}+480\,761\,459\,245\,056\,z^9+67\,643\,480\,054\,169\,600\,z^8+3\,754\,579\,106\,432\,286\,720\,z^7+\right.$$
$$81\,275\,459\,634\,148\,147\,200\,z^6+579\,110\,540\,754\,183\,782\,400\,z^5+$$
$$745\,444\,825\,813\,558\,886\,400\,z^4-270\,457\,606\,575\,636\,480\,000\,z^3+24\,475\,004\,761\,727\,520\,000\,z^2+$$
$$\left.50\,842\,860\,611\,142\,600\,000\,z-35\,748\,886\,367\,209\,640\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10}+481\,173\,776\,105\,472\,z^9+67\,822\,605\,960\,216\,576\,z^8+3\,779\,447\,707\,957\,985\,280\,z^7+\right.$$
$$82\,616\,033\,636\,410\,982\,400\,z^6+606\,146\,782\,176\,372\,326\,400\,z^5+901\,597\,688\,591\,420\,620\,800\,z^4-$$
$$227\,566\,202\,649\,233\,817\,600\,z^3+41\,378\,605\,172\,704\,800\,000\,z^2+25\,421\,430\,305\,571\,300\,000\,z+$$
$$\left.\left.\left.35\,748\,886\,367\,209\,640\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(1\,414\,734\,026\,731\,683\,840\,000\,\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1=-\frac{23}{4}$, $b_{1.}=\frac{7}{2}$

07.22.03.8378.01

$${}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{23}{4};z\right)=\frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.8379.01

$${}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{23}{4};-z\right)=-\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.8380.01

$${}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{21}{4};z\right)=$$
$$\left(\left(4z\left(268\,435\,456\,z^7+6\,325\,010\,432\,z^6+163\,398\,549\,504\,z^5+3\,184\,639\,672\,320\,z^4+40\,031\,725\,916\,160\,z^3+\right.\right.\right.$$
$$\left.264\,360\,787\,257\,600\,z^2+549\,479\,043\,867\,600\,z-639\,695\,882\,184\,975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\,\left(134\,217\,728\,z^7+3\,246\,391\,296\,z^6+83\,901\,284\,352\,z^5+1\,650\,255\,298\,560\,z^4+21\,206\,033\,418\,240\,z^3+\right.$$
$$\left.149\,269\,492\,310\,400\,z^2+448\,081\,908\,258\,600\,z-1\,919\,087\,646\,554\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left(1\,073\,741\,824\,z^8+25\,568\,477\,184\,z^7+660\,338\,638\,848\,z^6+12\,913\,816\,633\,344\,z^5+163\,633\,442\,734\,080\,z^4+\right.$$
$$\left.\left.\left.1\,104\,479\,494\,272\,000\,z^3+2\,578\,436\,244\,014\,400\,z^2-247\,624\,212\,458\,700\,z+5\,757\,262\,939\,664\,775\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(1\,113\,086\,292\,318\,000\,\sqrt{2}\;z^{7/4}\right)$$

07.22.03.8381.01

$${}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{21}{4};-z\right)=$$
$$\left(\left(4z\left(268\,435\,456z^7-6\,325\,010\,432z^6+163\,398\,549\,504z^5-3\,184\,639\,672\,320z^4+40\,031\,725\,916\,160z^3-\right.\right.\right.$$
$$\left.\left.\left.264\,360\,787\,257\,600z^2+549\,479\,043\,867\,600z+639\,695\,882\,184\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(134\,217\,728z^7-3\,246\,391\,296z^6+83\,901\,284\,352z^5-1\,650\,255\,298\,560z^4+21\,206\,033\,418\,240z^3-\right.$$
$$\left.149\,269\,492\,310\,400z^2+448\,081\,908\,258\,600z+1\,919\,087\,646\,554\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(1\,073\,741\,824z^8-25\,568\,477\,184z^7+660\,338\,638\,848z^6-12\,913\,816\,633\,344z^5+163\,633\,442\,734\,080z^4-\right.$$
$$\left.\left.1\,104\,479\,494\,272\,000z^3+2\,578\,436\,244\,014\,400z^2+247\,624\,212\,458\,700z+5\,757\,262\,939\,664\,775\right)$$
$$\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(1\,113\,086\,292\,318\,000\sqrt{2}\,z^{7/4}\right)$$

07.22.03.8382.01

$${}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{19}{4};z\right)=$$
$$\left(e^{-2\sqrt{z}}\left(-1\,073\,741\,824e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{33/4}-1\,073\,741\,824e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{33/4}+\right.\right.$$
$$1\,073\,741\,824e^{4\sqrt{z}}z^8-1\,073\,741\,824z^8+268\,435\,456e^{4\sqrt{z}}z^{15/2}+268\,435\,456z^{15/2}+201\,326\,592e^{4\sqrt{z}}z^7-$$
$$201\,326\,592z^7+251\,658\,240e^{4\sqrt{z}}z^{13/2}+251\,658\,240z^{13/2}+440\,401\,920e^{4\sqrt{z}}z^6-440\,401\,920z^6+$$
$$990\,904\,320e^{4\sqrt{z}}z^{11/2}+990\,904\,320z^{11/2}+2\,724\,986\,880e^{4\sqrt{z}}z^5-2\,724\,986\,880z^5+8\,856\,207\,360e^{4\sqrt{z}}z^{9/2}+$$
$$8\,856\,207\,360z^{9/2}+33\,210\,777\,600e^{4\sqrt{z}}z^4-33\,210\,777\,600z^4+141\,145\,804\,800e^{4\sqrt{z}}z^{7/2}+$$
$$141\,145\,804\,800z^{7/2}+670\,442\,572\,800e^{4\sqrt{z}}z^3-670\,442\,572\,800z^3+3\,519\,823\,507\,200e^{4\sqrt{z}}z^{5/2}+$$
$$3\,519\,823\,507\,200z^{5/2}+20\,238\,985\,166\,400e^{4\sqrt{z}}z^2-20\,238\,985\,166\,400z^2+126\,493\,657\,290\,000e^{4\sqrt{z}}z^{3/2}+$$
$$126\,493\,657\,290\,000z^{3/2}+853\,832\,186\,707\,500e^{4\sqrt{z}}z-853\,832\,186\,707\,500z-1\,375\,618\,523\,028\,750e^{4\sqrt{z}}\sqrt{z}-$$
$$\left.\left.1\,375\,618\,523\,028\,750\sqrt{z}+687\,809\,261\,514\,375e^{4\sqrt{z}}-687\,809\,261\,514\,375\right)\right)\Big/\left(1\,403\,529\,623\,496\,000z^{5/2}\right)$$

07.22.03.8383.01

$${}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{19}{4};-z\right)=\frac{1}{701\,764\,811\,748\,000z^{5/2}}$$
$$\left(-2\,147\,483\,648\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{33/4}-2\left(134\,217\,728z^7-125\,829\,120z^6+495\,452\,160z^5-4\,428\,103\,680z^4+\right.\right.$$
$$\left.70\,572\,902\,400z^3-1\,759\,911\,753\,600z^2+63\,246\,828\,645\,000z+687\,809\,261\,514\,375\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left(1\,073\,741\,824z^8-201\,326\,592z^7+440\,401\,920z^6-2\,724\,986\,880z^5+33\,210\,777\,600z^4-\right.$$
$$\left.\left.670\,442\,572\,800z^3+20\,238\,985\,166\,400z^2-853\,832\,186\,707\,500z+687\,809\,261\,514\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.8384.01

$${}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{17}{4};z\right)=$$

$$-\left(\left(4z\left(134\,217\,728z^7-3\,204\,448\,256z^6-26\,936\,868\,864z^5-316\,398\,305\,280z^4-2\,840\,886\,005\,760z^3-\right.\right.\right.$$
$$\left.14\,538\,928\,377\,600z^2-24\,169\,202\,442\,000z+20\,635\,351\,038\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$4\sqrt{z}\left(-67\,108\,864z^7+1\,560\,281\,088z^6+14\,357\,102\,592z^5+168\,527\,462\,400z^4+1\,550\,103\,920\,640z^3+\right.$$
$$\left.8\,599\,502\,419\,200z^2+20\,962\,896\,292\,800z-61\,906\,053\,114\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-536\,870\,912z^8+12\,683\,575\,296z^7+110\,742\,208\,512z^6+1\,296\,548\,757\,504z^5+\right.$$
$$11\,735\,618\,273\,280z^4+61\,751\,342\,822\,400z^3+119\,397\,365\,841\,600z^2-$$
$$\left.\left.\left.27\,513\,801\,384\,300z+185\,718\,159\,344\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(53\,004\,109\,158\,000\sqrt{2}\,z^{7/4}\right)$$

07.22.03.8385.01

$${}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{17}{4};-z\right)=$$

$$\left(\left(-4z\left(134\,217\,728z^7+3\,204\,448\,256z^6-26\,936\,868\,864z^5+316\,398\,305\,280z^4-2\,840\,886\,005\,760z^3+\right.\right.\right.$$
$$\left.14\,538\,928\,377\,600z^2-24\,169\,202\,442\,000z-20\,635\,351\,038\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$4\sqrt{z}\left(67\,108\,864z^7+1\,560\,281\,088z^6-14\,357\,102\,592z^5+168\,527\,462\,400z^4-1\,550\,103\,920\,640z^3+\right.$$
$$\left.8\,599\,502\,419\,200z^2-20\,962\,896\,292\,800z-61\,906\,053\,114\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-536\,870\,912z^8-12\,683\,575\,296z^7+110\,742\,208\,512z^6-1\,296\,548\,757\,504z^5+11\,735\,618\,273\,280z^4-\right.$$
$$61\,751\,342\,822\,400z^3+119\,397\,365\,841\,600z^2+27\,513\,801\,384\,300z+$$
$$\left.\left.\left.185\,718\,159\,344\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(53\,004\,109\,158\,000\sqrt{2}\,z^{7/4}\right)$$

07.22.03.8386.01

$${}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{15}{4};z\right)=$$

$$\frac{1}{73\,869\,980\,184\,000z^{5/2}}\left(e^{-2\sqrt{z}}\left(-268\,435\,456e^{4\sqrt{z}}z^8+268\,435\,456z^8-67\,108\,864e^{4\sqrt{z}}z^{15/2}-67\,108\,864z^{15/2}+\right.\right.$$
$$16\,777\,216e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-759)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{29/4}+16\,777\,216e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-759)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{29/4}+$$
$$12\,683\,575\,296e^{4\sqrt{z}}z^7-12\,683\,575\,296z^7+3\,120\,562\,176e^{4\sqrt{z}}z^{13/2}+3\,120\,562\,176z^{13/2}+$$
$$2\,277\,507\,072e^{4\sqrt{z}}z^6-2\,277\,507\,072z^6+2\,736\,783\,360e^{4\sqrt{z}}z^{11/2}+2\,736\,783\,360z^{11/2}+4\,541\,644\,800e^{4\sqrt{z}}z^5-$$
$$4\,541\,644\,800z^5+9\,537\,454\,080e^{4\sqrt{z}}z^{9/2}+9\,537\,454\,080z^{9/2}+24\,013\,946\,880e^{4\sqrt{z}}z^4-24\,013\,946\,880z^4+$$
$$69\,742\,632\,960e^{4\sqrt{z}}z^{7/2}+69\,742\,632\,960z^{7/2}+226\,248\,422\,400e^{4\sqrt{z}}z^3-226\,248\,422\,400z^3+$$
$$793\,945\,152\,000e^{4\sqrt{z}}z^{5/2}+793\,945\,152\,000z^{5/2}+2\,891\,283\,595\,200e^{4\sqrt{z}}z^2-2\,891\,283\,595\,200z^2+$$
$$10\,119\,492\,583\,200e^{4\sqrt{z}}z^{3/2}+10\,119\,492\,583\,200z^{3/2}+26\,563\,668\,030\,900e^{4\sqrt{z}}z-26\,563\,668\,030\,900z-$$
$$\left.\left.47\,435\,121\,483\,750e^{4\sqrt{z}}\sqrt{z}-47\,435\,121\,483\,750\sqrt{z}+23\,717\,560\,741\,875e^{4\sqrt{z}}-23\,717\,560\,741\,875\right)\right)$$

07.22.03.8387.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{15}{4};-z\right)=\frac{1}{36\,934\,990\,092\,000\,z^{5/2}}$$
$$\left(33\,554\,432\sqrt{\pi}\,(16z+759)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{29/4}+2\left(33\,554\,432z^7+1\,560\,281\,088z^6-1\,368\,391\,680z^5+4\,768\,727\,040z^4-\right.\right.$$
$$\left.34\,871\,316\,480z^3+396\,972\,576\,000z^2-5\,059\,746\,291\,600z-23\,717\,560\,741\,875\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,+$$
$$\left(-268\,435\,456z^8-12\,683\,575\,296z^7+2\,277\,507\,072z^6-4\,541\,644\,800z^5+24\,013\,946\,880z^4-\right.$$
$$\left.\left.226\,248\,422\,400z^3+2\,891\,283\,595\,200z^2-26\,563\,668\,030\,900z+23\,717\,560\,741\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.8388.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{13}{4};z\right)=$$
$$\left(\left(4z\left(67\,108\,864z^7-4\,785\,700\,864z^6+41\,844\,473\,856z^5+155\,049\,984\,000z^4+840\,066\,416\,640z^3+3\,061\,521\,619\,200z^2+\right.\right.\right.$$
$$\left.3\,876\,455\,167\,200z-2\,292\,816\,782\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\,\left(33\,554\,432z^7-2\,371\,878\,912z^6+19\,483\,066\,368z^5+86\,972\,497\,920z^4+481\,030\,133\,760z^3+\right.$$
$$\left.1\,908\,502\,041\,600z^2+3\,303\,934\,741\,800z-6\,878\,450\,346\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left(268\,435\,456z^8-19\,075\,694\,592z^7+162\,697\,052\,160z^6+655\,060\,893\,696z^5+3\,550\,463\,262\,720z^4+\right.$$
$$13\,368\,136\,320\,000z^3+20\,243\,346\,076\,800z^2-5\,981\,261\,170\,500z+$$
$$\left.\left.20\,635\,351\,038\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(9\,353\,666\,322\,000\sqrt{2}\;z^{7/4}\right)$$

07.22.03.8389.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{13}{4};-z\right)=$$
$$\left(\left(4z\left(67\,108\,864z^7+4\,785\,700\,864z^6+41\,844\,473\,856z^5-155\,049\,984\,000z^4+840\,066\,416\,640z^3-\right.\right.\right.$$
$$\left.3\,061\,521\,619\,200z^2+3\,876\,455\,167\,200z+2\,292\,816\,782\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\,\left(33\,554\,432z^7+2\,371\,878\,912z^6+19\,483\,066\,368z^5-86\,972\,497\,920z^4+481\,030\,133\,760z^3-\right.$$
$$\left.1\,908\,502\,041\,600z^2+3\,303\,934\,741\,800z+6\,878\,450\,346\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(268\,435\,456z^8+19\,075\,694\,592z^7+162\,697\,052\,160z^6-655\,060\,893\,696z^5+3\,550\,463\,262\,720z^4-\right.$$
$$13\,368\,136\,320\,000z^3+20\,243\,346\,076\,800z^2+5\,981\,261\,170\,500z+$$
$$\left.\left.20\,635\,351\,038\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(9\,353\,666\,322\,000\sqrt{2}\;z^{7/4}\right)$$

07.22.03.8390.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{11}{4};z\right)= \frac{1}{4\,924\,665\,345\,600\,z^{5/2}}\left(e^{-2\sqrt{z}}\left(33\,554\,432\,e^{4\sqrt{z}}\,z^8-33\,554\,432\,z^8+8\,388\,608\,e^{4\sqrt{z}}\,z^{15/2}+8\,388\,608\,z^{15/2}-\right.\right. $$
$$ 3\,177\,185\,280\,e^{4\sqrt{z}}\,z^7+3\,177\,185\,280\,z^7-788\,004\,864\,e^{4\sqrt{z}}\,z^{13/2}-788\,004\,864\,z^{13/2}- $$
$$ 131\,072\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-24\,288\,z+418\,209\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{25/4}- $$
$$ 131\,072\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-24\,288\,z+418\,209\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{25/4}+54\,232\,350\,720\,e^{4\sqrt{z}}\,z^6- $$
$$ 54\,232\,350\,720\,z^6+12\,988\,710\,912\,e^{4\sqrt{z}}\,z^{11/2}+12\,988\,710\,912\,z^{11/2}+9\,057\,337\,344\,e^{4\sqrt{z}}\,z^5- $$
$$ 9\,057\,337\,344\,z^5+10\,186\,260\,480\,e^{4\sqrt{z}}\,z^{9/2}+10\,186\,260\,480\,z^{9/2}+15\,441\,592\,320\,e^{4\sqrt{z}}\,z^4-15\,441\,592\,320\,z^4+ $$
$$ 28\,740\,096\,000\,e^{4\sqrt{z}}\,z^{7/2}+28\,740\,096\,000\,z^{7/2}+61\,599\,605\,760\,e^{4\sqrt{z}}\,z^3-61\,599\,605\,760\,z^3+ $$
$$ 143\,636\,613\,120\,e^{4\sqrt{z}}\,z^{5/2}+143\,636\,613\,120\,z^{5/2}+340\,151\,011\,200\,e^{4\sqrt{z}}\,z^2-340\,151\,011\,200\,z^2+ $$
$$ 722\,820\,898\,800\,e^{4\sqrt{z}}\,z^{3/2}+722\,820\,898\,800\,z^{3/2}+903\,526\,123\,500\,e^{4\sqrt{z}}\,z-903\,526\,123\,500\,z- $$
$$ \left.\left.1\,897\,404\,859\,350\,e^{4\sqrt{z}}\,\sqrt{z}-1\,897\,404\,859\,350\,\sqrt{z}+948\,702\,429\,675\,e^{4\sqrt{z}}-948\,702\,429\,675\right)\right) $$

07.22.03.8391.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{11}{4};-z\right)= \frac{1}{2\,462\,332\,672\,800\,z^{5/2}} $$
$$ \left(-262\,144\,\sqrt{\pi}\,\left(256\,z^2+24\,288\,z+418\,209\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{25/4}-2\left(4\,194\,304\,z^7+394\,002\,432\,z^6+6\,494\,355\,456\,z^5-\right.\right. $$
$$ \left.5\,093\,130\,240\,z^4+14\,370\,048\,000\,z^3-71\,818\,306\,560\,z^2+361\,410\,449\,400\,z+948\,702\,429\,675\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+ $$
$$ \left(33\,554\,432\,z^8+3\,177\,185\,280\,z^7+54\,232\,350\,720\,z^6-9\,057\,337\,344\,z^5+15\,441\,592\,320\,z^4-\right. $$
$$ \left.\left.61\,599\,605\,760\,z^3+340\,151\,011\,200\,z^2-903\,526\,123\,500\,z+948\,702\,429\,675\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8392.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{9}{4};z\right)= $$
$$ -\left(\left(4\,z\left(33\,554\,432\,z^7-3\,984\,588\,800\,z^6+103\,394\,181\,120\,z^5-416\,784\,384\,000\,z^4-678\,732\,595\,200\,z^3-\right.\right. $$
$$ \left.1\,487\,929\,132\,800\,z^2-1\,334\,119\,248\,000\,z+498\,438\,430\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ $$
$$ 4\sqrt{z}\left(-16\,777\,216\,z^7+1\,981\,808\,640\,z^6-50\,480\,087\,040\,z^5+179\,232\,768\,000\,z^4+403\,334\,553\,600\,z^3+\right. $$
$$ \left.958\,122\,950\,400\,z^2+1\,019\,362\,806\,000\,z-1\,495\,315\,292\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left(-134\,217\,728\,z^8+15\,904\,800\,768\,z^7-409\,644\,564\,480\,z^6+1\,569\,722\,204\,160\,z^5+\right. $$
$$ 2\,996\,998\,963\,200\,z^4+6\,773\,242\,291\,200\,z^3+7\,291\,442\,188\,800\,z^2- $$
$$ \left.\left.\left.2\,203\,622\,536\,500\,z+4\,485\,945\,877\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(3\,597\,563\,970\,000\,\sqrt{2}\,z^{7/4}\right) $$

07.22.03.8393.01

$${}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{9}{4};-z\right)=$$
$$\left(\left(-4z\left(33\,554\,432z^7+3\,984\,588\,800z^6+103\,394\,181\,120z^5+416\,784\,384\,000z^4-678\,732\,595\,200z^3+\right.\right.\right.$$
$$\left.\left.\left.1\,487\,929\,132\,800z^2-1\,334\,119\,248\,000z-498\,438\,430\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(16\,777\,216z^7+1\,981\,808\,640z^6+50\,480\,087\,040z^5+179\,232\,768\,000z^4-403\,334\,553\,600z^3+\right.$$
$$\left.958\,122\,950\,400z^2-1\,019\,362\,806\,000z-1\,495\,315\,292\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-134\,217\,728z^8-15\,904\,800\,768z^7-409\,644\,564\,480z^6-1\,569\,722\,204\,160z^5+\right.$$
$$2\,996\,998\,963\,200z^4-6\,773\,242\,291\,200z^3+7\,291\,442\,188\,800z^2+2\,203\,622\,536\,500z+$$
$$\left.\left.4\,485\,945\,877\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(3\,597\,563\,970\,000\sqrt{2}\,z^{7/4}\right)$$

07.22.03.8394.01

$${}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{1\,343\,090\,548\,800z^{5/2}}\left(e^{-2\sqrt{z}}\left(-8\,388\,608e^{4\sqrt{z}}z^8+8\,388\,608z^8-2\,097\,152e^{4\sqrt{z}}z^{15/2}-2\,097\,152z^{15/2}+\right.\right.$$
$$1\,192\,230\,912e^{4\sqrt{z}}z^7-1\,192\,230\,912z^7+296\,484\,864e^{4\sqrt{z}}z^{13/2}+296\,484\,864z^{13/2}-$$
$$40\,891\,219\,968e^{4\sqrt{z}}z^6+40\,891\,219\,968z^6-10\,005\,848\,064e^{4\sqrt{z}}z^{11/2}-10\,005\,848\,064z^{11/2}+$$
$$2048e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-582\,912z^2+20\,074\,032z-156\,828\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+2048e^{2\sqrt{z}}$$
$$\sqrt{2\pi}\left(4096z^3-582\,912z^2+20\,074\,032z-156\,828\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+313\,944\,440\,832e^{4\sqrt{z}}z^5-$$
$$313\,944\,440\,832z^5+71\,693\,107\,200e^{4\sqrt{z}}z^{9/2}+71\,693\,107\,200z^{9/2}+46\,130\,135\,040e^{4\sqrt{z}}z^4-$$
$$46\,130\,135\,040z^4+46\,081\,474\,560e^{4\sqrt{z}}z^{7/2}+46\,081\,474\,560z^{7/2}+59\,087\,508\,480e^{4\sqrt{z}}z^3-59\,087\,508\,480z^3+$$
$$86\,747\,189\,760e^{4\sqrt{z}}z^{5/2}+86\,747\,189\,760z^{5/2}+130\,827\,312\,000e^{4\sqrt{z}}z^2-130\,827\,312\,000z^2+$$
$$170\,075\,505\,600e^{4\sqrt{z}}z^{3/2}+170\,075\,505\,600z^{3/2}+95\,667\,471\,900e^{4\sqrt{z}}z-95\,667\,471\,900z-$$
$$\left.271\,057\,837\,050e^{4\sqrt{z}}\sqrt{z}-271\,057\,837\,050\sqrt{z}+135\,528\,918\,525e^{4\sqrt{z}}-135\,528\,918\,525\right)\Big)$$

07.22.03.8395.01

$${}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{7}{4};-z\right)=\frac{1}{671\,545\,274\,400z^{5/2}}$$
$$\left(4096\sqrt{\pi}\left(4096z^3+582\,912z^2+20\,074\,032z+156\,828\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4}+2\left(1\,048\,576z^7+148\,242\,432z^6+\right.\right.$$
$$\left.5\,002\,924\,032z^5+35\,846\,553\,600z^4-23\,040\,737\,280z^3+43\,373\,594\,880z^2-85\,037\,752\,800z-135\,528\,918\,525\right)$$
$$\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(8\,388\,608z^8+1\,192\,230\,912z^7+40\,891\,219\,968z^6+313\,944\,440\,832z^5-\right.$$
$$\left.\left.46\,130\,135\,040z^4+59\,087\,508\,480z^3-130\,827\,312\,000z^2+95\,667\,471\,900z-135\,528\,918\,525\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.8396.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{7}{2}, -\frac{5}{4}; z\right) = $$
$$ \left(\left(4\,z\left(16\,777\,216\,z^7 - 2\,788\,163\,584\,z^6 + 120\,340\,807\,680\,z^5 - 1\,423\,382\,876\,160\,z^4 + 2\,734\,212\,096\,000\,z^3 + \right.\right.\right. $$
$$ \left.\left.\left. 1\,679\,193\,331\,200\,z^2 + 916\,390\,767\,600\,z - 183\,635\,211\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 4\sqrt{z}\,\left(8\,388\,608\,z^7 - 1\,388\,838\,912\,z^6 + 59\,313\,192\,960\,z^5 - 676\,328\,970\,240\,z^4 + 1\,008\,458\,035\,200\,z^3 + \right. $$
$$ \left. 1\,009\,768\,636\,800\,z^2 + 545\,658\,913\,800\,z - 550\,905\,634\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left(67\,108\,864\,z^8 - 11\,135\,877\,120\,z^7 + 478\,601\,281\,536\,z^6 - 5\,577\,423\,667\,200\,z^5 + 9\,682\,219\,008\,000\,z^4 + \right. $$
$$ 7\,927\,263\,590\,400\,z^3 + 5\,036\,851\,512\,000\,z^2 - 1\,322\,173\,521\,900\,z + $$
$$ \left.\left. 1\,652\,716\,902\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(2\,798\,105\,310\,000\,\sqrt{2}\;z^{7/4}\right) $$

07.22.03.8397.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{7}{2}, -\frac{5}{4}; -z\right) = $$
$$ \left(\left(4\,z\left(16\,777\,216\,z^7 + 2\,788\,163\,584\,z^6 + 120\,340\,807\,680\,z^5 + 1\,423\,382\,876\,160\,z^4 + 2\,734\,212\,096\,000\,z^3 - \right.\right.\right. $$
$$ \left.\left.\left. 1\,679\,193\,331\,200\,z^2 + 916\,390\,767\,600\,z + 183\,635\,211\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 4\sqrt{z}\,\left(8\,388\,608\,z^7 + 1\,388\,838\,912\,z^6 + 59\,313\,192\,960\,z^5 + 676\,328\,970\,240\,z^4 + 1\,008\,458\,035\,200\,z^3 - \right. $$
$$ \left. 1\,009\,768\,636\,800\,z^2 + 545\,658\,913\,800\,z + 550\,905\,634\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(67\,108\,864\,z^8 + 11\,135\,877\,120\,z^7 + 478\,601\,281\,536\,z^6 + 5\,577\,423\,667\,200\,z^5 + 9\,682\,219\,008\,000\,z^4 - \right. $$
$$ 7\,927\,263\,590\,400\,z^3 + 5\,036\,851\,512\,000\,z^2 + 1\,322\,173\,521\,900\,z + $$
$$ \left.\left. 1\,652\,716\,902\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(2\,798\,105\,310\,000\,\sqrt{2}\;z^{7/4}\right) $$

07.22.03.8398.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{7}{2}, -\frac{3}{4}; z\right) = \frac{1}{191\,870\,078\,400\,z^{5/2}} $$
$$ \left(e^{-2\sqrt{z}}\left(524\,288\,e^{4\sqrt{z}}\,z^8 - 524\,288\,z^8 + 131\,072\,e^{4\sqrt{z}}\,z^{15/2} + 131\,072\,z^{15/2} - 99\,385\,344\,e^{4\sqrt{z}}\,z^7 + 99\,385\,344\,z^7 - \right. \right. $$
$$ 24\,748\,032\,e^{4\sqrt{z}}\,z^{13/2} - 24\,748\,032\,z^{13/2} + 5\,120\,514\,048\,e^{4\sqrt{z}}\,z^6 - 5\,120\,514\,048\,z^6 + 1\,261\,905\,408\,e^{4\sqrt{z}}\,z^{11/2} + $$
$$ 1\,261\,905\,408\,z^{11/2} - 79\,372\,047\,744\,e^{4\sqrt{z}}\,z^5 + 79\,372\,047\,744\,z^5 - 18\,957\,074\,400\,e^{4\sqrt{z}}\,z^{9/2} - 18\,957\,074\,400\,z^{9/2} - $$
$$ 8\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536\,z^4 - 12\,435\,456\,z^3 + 642\,369\,024\,z^2 - 10\,037\,016\,000\,z + 36\,227\,354\,625\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{17/4} - $$
$$ 8\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536\,z^4 - 12\,435\,456\,z^3 + 642\,369\,024\,z^2 - 10\,037\,016\,000\,z + 36\,227\,354\,625\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{17/4} + $$
$$ 276\,634\,828\,800\,e^{4\sqrt{z}}\,z^4 - 276\,634\,828\,800\,z^4 + 57\,626\,173\,440\,e^{4\sqrt{z}}\,z^{7/2} + 57\,626\,173\,440\,z^{7/2} + $$
$$ 31\,699\,261\,440\,e^{4\sqrt{z}}\,z^3 - 31\,699\,261\,440\,z^3 + 24\,852\,199\,680\,e^{4\sqrt{z}}\,z^{5/2} + 24\,852\,199\,680\,z^{5/2} + 21\,804\,552\,000\,e^{4\sqrt{z}}\,z^2 - 21\,804\,552\,000\,z^2 + 16\,353\,414\,000\,e^{4\sqrt{z}}\,z^{3/2} + 16\,353\,414\,000\,z^{3/2} + 2\,453\,012\,100\,e^{4\sqrt{z}}\,z - $$
$$ \left.\left. 2\,453\,012\,100\,z - 15\,944\,578\,650\,e^{4\sqrt{z}}\,\sqrt{z} - 15\,944\,578\,650\,\sqrt{z} + 7\,972\,289\,325\,e^{4\sqrt{z}} - 7\,972\,289\,325\right)\right) $$

07.22.03.8399.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{3}{4};-z\right)=\frac{1}{95\,935\,039\,200\,z^{5/2}}$$
$$\left(-16\sqrt{\pi}\left(65\,536\,z^4+12\,435\,456\,z^3+642\,369\,024\,z^2+10\,037\,016\,000\,z+36\,227\,354\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}-\right.$$
$$2\left(65\,536\,z^7+12\,374\,016\,z^6+630\,952\,704\,z^5+9\,478\,537\,200\,z^4+28\,813\,086\,720\,z^3-\right.$$
$$\left.12\,426\,099\,840\,z^2+8\,176\,707\,000\,z+7\,972\,289\,325\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,+$$
$$\left(524\,288\,z^8+99\,385\,344\,z^7+5\,120\,514\,048\,z^6+79\,372\,047\,744\,z^5+276\,634\,828\,800\,z^4-\right.$$
$$\left.\left.31\,699\,261\,440\,z^3+21\,804\,552\,000\,z^2-2\,453\,012\,100\,z+7\,972\,289\,325\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.8400.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{1}{4};z\right)=$$
$$\left(\left(-4\,z\left(8\,388\,608\,z^7-1\,792\,016\,384\,z^6+108\,196\,134\,912\,z^5-2\,124\,289\,290\,240\,z^4+11\,721\,213\,060\,480\,z^3-\right.\right.\right.$$
$$\left.9\,939\,043\,699\,200\,z^2-1\,448\,029\,321\,200\,z+110\,181\,126\,825\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$4\sqrt{z}\left(4\,194\,304\,z^7-893\,386\,752\,z^6+53\,545\,107\,456\,z^5-1\,029\,789\,573\,120\,z^4+5\,277\,865\,158\,720\,z^3-\right.$$
$$\left.2\,586\,848\,140\,800\,z^2-503\,685\,151\,200\,z+330\,543\,380\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(33\,554\,432\,z^8-7\,159\,676\,928\,z^7+431\,005\,630\,464\,z^6-8\,391\,699\,283\,968\,z^5+44\,917\,049\,802\,240\,z^4-\right.$$
$$30\,680\,052\,480\,000\,z^3-7\,051\,592\,116\,800\,z^2+1\,322\,173\,521\,900\,z-$$
$$\left.\left.991\,630\,141\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(5\,036\,589\,558\,000\sqrt{2}\;z^{7/4}\right)$$

07.22.03.8401.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{7}{2},-\frac{1}{4};-z\right)=$$
$$-\left(\left(4\,z\left(8\,388\,608\,z^7+1\,792\,016\,384\,z^6+108\,196\,134\,912\,z^5+2\,124\,289\,290\,240\,z^4+11\,721\,213\,060\,480\,z^3+\right.\right.\right.$$
$$\left.9\,939\,043\,699\,200\,z^2-1\,448\,029\,321\,200\,z-110\,181\,126\,825\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\left(4\,194\,304\,z^7+893\,386\,752\,z^6+53\,545\,107\,456\,z^5+1\,029\,789\,573\,120\,z^4+5\,277\,865\,158\,720\,z^3+\right.$$
$$\left.2\,586\,848\,140\,800\,z^2-503\,685\,151\,200\,z-330\,543\,380\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(33\,554\,432\,z^8+7\,159\,676\,928\,z^7+431\,005\,630\,464\,z^6+8\,391\,699\,283\,968\,z^5+44\,917\,049\,802\,240\,z^4+\right.$$
$$30\,680\,052\,480\,000\,z^3-7\,051\,592\,116\,800\,z^2-1\,322\,173\,521\,900\,z-$$
$$\left.\left.991\,630\,141\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(5\,036\,589\,558\,000\sqrt{2}\;z^{7/4}\right)$$

07.22.03.8402.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{7}{2},\frac{1}{4};z\right)= \frac{1}{2\,558\,267\,712\,000\,z^{5/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-248\,709\,120\,z^4+17\,129\,840\,640\,z^3-401\,480\,640\,000\,z^2+2\,898\,188\,370\,000\,z-4\,311\,055\,200\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-248\,709\,120\,z^4+17\,129\,840\,640\,z^3-401\,480\,640\,000\,z^2+2\,898\,188\,370\,000\,z-4\,311\,055\,200\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}-4\left(-262\,144\,z^8+65\,536\,z^{15/2}+62\,128\,128\,z^7-15\,482\,880\,z^{13/2}-4\,270\,909\,440\,z^6+1\,056\,284\,160\,z^{11/2}+99\,592\,035\,840\,z^5-24\,144\,056\,640\,z^{9/2}-707\,334\,477\,300\,z^4+161\,086\,214\,025\,z^{7/2}+973\,969\,920\,000\,z^3-164\,244\,326\,400\,z^{5/2}+61\,052\,745\,600\,z^2-21\,804\,552\,000\,z^{3/2}-2\,725\,569\,000\,z+12\,265\,060\,500\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^8+65\,536\,z^{15/2}-62\,128\,128\,z^7-15\,482\,880\,z^{13/2}+4\,270\,909\,440\,z^6+1\,056\,284\,160\,z^{11/2}-99\,592\,035\,840\,z^5-24\,144\,056\,640\,z^{9/2}+707\,334\,477\,300\,z^4+161\,086\,214\,025\,z^{7/2}-973\,969\,920\,000\,z^3-164\,244\,326\,400\,z^{5/2}-61\,052\,745\,600\,z^2-21\,804\,552\,000\,z^{3/2}+2\,725\,569\,000\,z+12\,265\,060\,500\sqrt{z}-6\,132\,530\,250\right)+6\,132\,530\,250\right)\right)\right) $$

07.22.03.8403.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{7}{2},\frac{1}{4};-z\right)=\frac{1}{639\,566\,928\,000\,z^{5/2}} \left(\sqrt{\pi}\,z^{13/4}\left(1\,048\,576\,z^5+248\,709\,120\,z^4+17\,129\,840\,640\,z^3+401\,480\,640\,000\,z^2+2\,898\,188\,370\,000\,z+4\,311\,055\,200\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\left(2\left(131\,072\,z^8+31\,064\,064\,z^7+2\,135\,454\,720\,z^6+49\,796\,017\,920\,z^5+353\,667\,238\,650\,z^4+486\,984\,960\,000\,z^3-30\,526\,372\,800\,z^2-1\,362\,784\,500\,z-3\,066\,265\,125\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(65\,536\,z^7+15\,482\,880\,z^6+1\,056\,284\,160\,z^5+24\,144\,056\,640\,z^4+161\,086\,214\,025\,z^3+164\,244\,326\,400\,z^2-21\,804\,552\,000\,z-12\,265\,060\,500\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8404.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{7}{2},\frac{3}{4};z\right)= \left(\left(4z\left(4\,194\,304\,z^7-1\,094\,975\,488\,z^6+84\,962\,869\,248\,z^5-2\,331\,587\,082\,240\,z^4+21\,267\,788\,224\,320\,z^3-49\,560\,791\,811\,300\,z^2+14\,165\,424\,504\,000\,z-110\,181\,126\,825\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2\,097\,152\,z^7-546\,177\,024\,z^6+42\,142\,777\,344\,z^5-1\,140\,137\,856\,000\,z^4+9\,970\,586\,952\,480\,z^3-19\,676\,447\,371\,350\,z^2+881\,449\,014\,600\,z-330\,543\,380\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-16\,777\,216\,z^8+4\,375\,707\,648\,z^7-338\,763\,055\,104\,z^6+9\,243\,065\,475\,072\,z^5-82\,864\,570\,440\,960\,z^4+180\,068\,998\,309\,200\,z^3-28\,206\,368\,467\,200\,z^2+2\,455\,465\,112\,100\,z-991\,630\,141\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(55\,402\,485\,138\,000\sqrt{2}\,z^{7/4}\right) $$

07.22.03.8405.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{7}{2},\frac{3}{4};-z\right)=
$$

$$
\left(\left(4z\left(4\,194\,304z^7+1\,094\,975\,488z^6+84\,962\,869\,248z^5+2\,331\,587\,082\,240z^4+21\,267\,788\,224\,320z^3+\right.\right.\right.
$$

$$
\left.\left.49\,560\,791\,811\,300z^2+14\,165\,424\,504\,000z+110\,181\,126\,825\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-
$$

$$
4\sqrt{z}\left(2\,097\,152z^7+546\,177\,024z^6+42\,142\,777\,344z^5+1\,140\,137\,856\,000z^4+9\,970\,586\,952\,480z^3+\right.
$$

$$
\left.19\,676\,447\,371\,350z^2+881\,449\,014\,600z+330\,543\,380\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+
$$

$$
\left(16\,777\,216z^8+4\,375\,707\,648z^7+338\,763\,055\,104z^6+9\,243\,065\,475\,072z^5+82\,864\,570\,440\,960z^4+\right.
$$

$$
\left.\left.\left.180\,068\,998\,309\,200z^3+28\,206\,368\,467\,200z^2+2\,455\,465\,112\,100z+991\,630\,141\,425\right)\right.
$$

$$
\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(55\,402\,485\,138\,000\sqrt{2}\,z^{7/4}\right)
$$

07.22.03.8406.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{7}{2},\frac{5}{4};z\right)=\frac{1}{982\,374\,801\,408\,000z^{5/2}}
$$

$$
\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-4\,775\,215\,104z^5+411\,116\,175\,360z^4-12\,847\,380\,480\,000z^3+\right.\right.\right.
$$

$$
\left.\left.139\,113\,041\,760\,000z^2-413\,861\,299\,236\,000z+168\,131\,152\,814\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}+\right.
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-4\,775\,215\,104z^5+411\,116\,175\,360z^4-12\,847\,380\,480\,000z^3+\right.
$$

$$
\left.139\,113\,041\,760\,000z^2-413\,861\,299\,236\,000z+168\,131\,152\,814\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}-
$$

$$
4\left(-4\,194\,304z^8+1\,048\,576z^{15/2}+1\,193\,017\,344z^7-297\,467\,904z^{13/2}-102\,556\,925\,952z^6+\right.
$$

$$
25\,418\,833\,920z^{11/2}+3\,193\,053\,050\,880z^5-779\,939\,550\,720z^{9/2}-34\,215\,294\,991\,680z^4+
$$

$$
8\,027\,343\,585\,360z^{7/2}+98\,035\,227\,744\,300z^3-19\,974\,691\,511\,775z^{5/2}-31\,259\,005\,747\,200z^2+
$$

$$
1\,953\,687\,859\,200z^{3/2}+627\,971\,097\,600z-523\,309\,248\,000\sqrt{z}+e^{4\sqrt{z}}
$$

$$
\left(4\,194\,304z^8+1\,048\,576z^{15/2}-1\,193\,017\,344z^7-297\,467\,904z^{13/2}+102\,556\,925\,952z^6+25\,418\,833\,920\right.
$$

$$
z^{11/2}-3\,193\,053\,050\,880z^5-779\,939\,550\,720z^{9/2}+34\,215\,294\,991\,680z^4+8\,027\,343\,585\,360z^{7/2}-
$$

$$
98\,035\,227\,744\,300z^3-19\,974\,691\,511\,775z^{5/2}+31\,259\,005\,747\,200z^2+1\,953\,687\,859\,200z^{3/2}-
$$

$$
\left.\left.\left.627\,971\,097\,600z-523\,309\,248\,000\sqrt{z}+261\,654\,624\,000\right)-261\,654\,624\,000\right)\right)\right)
$$

07.22.03.8407.01

$${}_1F_2\left(-\frac{23}{4};\frac{7}{2},\frac{5}{4};-z\right)=$$
$$\frac{1}{245\,593\,700\,352\,000\,z^{5/2}}\left(\sqrt{\pi}\,z^{9/4}\left(16\,777\,216\,z^6+4\,775\,215\,104\,z^5+411\,116\,175\,360\,z^4+12\,847\,380\,480\,000\,z^3+\right.\right.$$
$$\left.139\,113\,041\,760\,000\,z^2+413\,861\,299\,236\,000\,z+168\,131\,152\,814\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\left(4\left(1\,048\,576\,z^8+298\,254\,336\,z^7+25\,639\,231\,488\,z^6+798\,263\,262\,720\,z^5+8\,553\,823\,747\,920\,z^4+\right.\right.$$
$$\left.24\,508\,806\,936\,075\,z^3+7\,814\,751\,436\,800\,z^2+156\,992\,774\,400\,z+65\,413\,656\,000\right)\sin\left(2\sqrt{z}\right)-$$
$$\sqrt{z}\left(1\,048\,576\,z^7+297\,467\,904\,z^6+25\,418\,833\,920\,z^5+779\,939\,550\,720\,z^4+8\,027\,343\,585\,360\,z^3+\right.$$
$$\left.\left.\left.19\,974\,691\,511\,775\,z^2+1\,953\,687\,859\,200\,z+523\,309\,248\,000\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.8408.01

$${}_1F_2\left(-\frac{23}{4};\frac{7}{2},\frac{7}{4};z\right)=$$
$$\left(\left(2\,z\left(16\,777\,216\,z^7-5\,175\,771\,136\,z^6+490\,718\,429\,184\,z^5-17\,299\,061\,145\,600\,z^4+220\,180\,472\,328\,960\,z^3-\right.\right.\right.$$
$$\left.840\,134\,708\,899\,200\,z^2+588\,711\,763\,314\,675\,z+1\,636\,976\,741\,400\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\sqrt{z}\left(16\,777\,216\,z^7-5\,165\,285\,376\,z^6+487\,511\,752\,704\,z^5-17\,000\,860\,631\,040\,z^4+210\,135\,220\,289\,280\,z^3-\right.$$
$$\left.726\,620\,613\,919\,200\,z^2+292\,931\,141\,528\,025\,z+9\,821\,860\,448\,400\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\left(16\,777\,216\,z^8-5\,171\,576\,832\,z^7+489\,431\,040\,000\,z^6-17\,178\,372\,440\,064\,z^5+216\,038\,179\,019\,520\,z^4-\right.$$
$$\left.\left.791\,034\,668\,424\,000\,z^3+440\,434\,438\,619\,175\,z^2+24\,554\,651\,121\,000\,z-3\,683\,197\,668\,150\right)$$
$$\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)\Big/\left(960\,309\,742\,392\,000\sqrt{2}\,z^{7/4}\right)$$

07.22.03.8409.01

$${}_1F_2\left(-\frac{23}{4};\frac{7}{2},\frac{7}{4};-z\right)=$$
$$\left(\left(2\,z\left(16\,777\,216\,z^7+5\,175\,771\,136\,z^6+490\,718\,429\,184\,z^5+17\,299\,061\,145\,600\,z^4+220\,180\,472\,328\,960\,z^3+\right.\right.\right.$$
$$\left.840\,134\,708\,899\,200\,z^2+588\,711\,763\,314\,675\,z-1\,636\,976\,741\,400\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\sqrt{z}\left(16\,777\,216\,z^7+5\,165\,285\,376\,z^6+487\,511\,752\,704\,z^5+17\,000\,860\,631\,040\,z^4+210\,135\,220\,289\,280\,z^3+\right.$$
$$\left.726\,620\,613\,919\,200\,z^2+292\,931\,141\,528\,025\,z-9\,821\,860\,448\,400\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\left(16\,777\,216\,z^8+5\,171\,576\,832\,z^7+489\,431\,040\,000\,z^6+17\,178\,372\,440\,064\,z^5+216\,038\,179\,019\,520\,z^4+\right.$$
$$\left.\left.791\,034\,668\,424\,000\,z^3+440\,434\,438\,619\,175\,z^2-24\,554\,651\,121\,000\,z-3\,683\,197\,668\,150\right)$$
$$\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)\Big/\left(960\,309\,742\,392\,000\sqrt{2}\,z^{7/4}\right)$$

07.22.03.8410.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{7}{2},\frac{9}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-89\,137\,348\,608\,z^6+9\,209\,002\,328\,064\,z^5-359\,726\,653\,440\,000\,z^4+\right.\right.\right.
\left.\left.\left.5\,193\,553\,559\,040\,000\,z^3-23\,176\,232\,757\,216\,000\,z^2+18\,830\,689\,115\,238\,000\,z+1\,513\,180\,375\,331\,625\right)
\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-89\,137\,348\,608\,z^6+9\,209\,002\,328\,064\,z^5-\right.\right.
359\,726\,653\,440\,000\,z^4+5\,193\,553\,559\,040\,000\,z^3-23\,176\,232\,757\,216\,000\,z^2+
18\,830\,689\,115\,238\,000\,z+1\,513\,180\,375\,331\,625\big)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-
4\left(-67\,108\,864\,z^8+16\,777\,216\,z^{15/2}+22\,271\,754\,240\,z^7-5\,555\,355\,648\,z^{13/2}-2\,298\,099\,793\,920\,z^6+\right.
570\,401\,685\,504\,z^{11/2}+89\,508\,961\,124\,352\,z^5-21\,963\,337\,482\,240\,z^{9/2}-1\,282\,416\,006\,896\,640\,z^4+
305\,469\,020\,102\,400\,z^{7/2}+5\,582\,301\,002\,974\,080\,z^3-1\,210\,918\,752\,156\,960\,z^{5/2}-
3\,984\,155\,269\,686\,900\,z^2+512\,892\,191\,421\,225\,z^{3/2}-468\,885\,086\,208\,000\,z+46\,888\,508\,620\,800\sqrt{z}+
e^{4\sqrt{z}}\left(67\,108\,864\,z^8+16\,777\,216\,z^{15/2}-22\,271\,754\,240\,z^7-5\,555\,355\,648\,z^{13/2}+2\,298\,099\,793\,920\,z^6+\right.
570\,401\,685\,504\,z^{11/2}-89\,508\,961\,124\,352\,z^5-21\,963\,337\,482\,240\,z^{9/2}+1\,282\,416\,006\,896\,640\,z^4+
305\,469\,020\,102\,400\,z^{7/2}-5\,582\,301\,002\,974\,080\,z^3-1\,210\,918\,752\,156\,960\,z^{5/2}+
3\,984\,155\,269\,686\,900\,z^2+512\,892\,191\,421\,225\,z^{3/2}+468\,885\,086\,208\,000\,z+
\left.\left.\left.\left.46\,888\,508\,620\,800\sqrt{z}-23\,444\,254\,310\,400\right)+23\,444\,254\,310\,400\right)\right)\right)\Big/\left(88\,020\,782\,206\,156\,800\,z^{5/2}\right)
$$

07.22.03.8411.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{7}{2},\frac{9}{4};-z\right)=
\left(\sqrt{\pi}\,z^{5/4}\left(268\,435\,456\,z^7+89\,137\,348\,608\,z^6+9\,209\,002\,328\,064\,z^5+359\,726\,653\,440\,000\,z^4+5\,193\,553\,559\,040\,000\,z^3+\right.\right.
\left.\left.23\,176\,232\,757\,216\,000\,z^2+18\,830\,689\,115\,238\,000\,z-1\,513\,180\,375\,331\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
2\left(4\left(16\,777\,216\,z^8+5\,567\,938\,560\,z^7+574\,524\,948\,480\,z^6+22\,377\,240\,281\,088\,z^5+320\,604\,001\,724\,160\,z^4+\right.\right.
1\,395\,575\,250\,743\,520\,z^3+996\,038\,817\,421\,725\,z^2-117\,221\,271\,552\,000\,z-5\,861\,063\,577\,600\big)\sin\left(2\sqrt{z}\right)-
\sqrt{z}\left(16\,777\,216\,z^7+5\,555\,355\,648\,z^6+570\,401\,685\,504\,z^5+21\,963\,337\,482\,240\,z^4+\right.
305\,469\,020\,102\,400\,z^3+1\,210\,918\,752\,156\,960\,z^2+512\,892\,191\,421\,225\,z-
\left.\left.\left.46\,888\,508\,620\,800\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(22\,005\,195\,551\,539\,200\,z^{5/2}\right)
$$

07.22.03.8412.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{7}{2}, \frac{11}{4}; z\right) = $$

$$\left(\left(2z\left(268\,435\,456z^7 - 95\,546\,245\,120z^6 + 10\,703\,890\,022\,400z^5 - 460\,945\,376\,870\,400z^4 + 7\,529\,674\,673\,664\,000z^3 - 39\,922\,232\,967\,302\,400z^2 + 44\,381\,404\,105\,038\,000z + 2\,260\,051\,013\,595\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(268\,435\,456z^7 - 95\,378\,472\,960z^6 + 10\,644\,624\,506\,880z^5 - 454\,412\,810\,649\,600z^4 + 7\,258\,493\,387\,059\,200z^3 - 35\,879\,902\,368\,710\,400z^2 + 28\,088\,182\,344\,222\,000z + 5\,994\,404\,204\,914\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\left(268\,435\,456z^8 - 95\,479\,136\,256z^7 + 10\,680\,108\,318\,720z^6 - 458\,306\,232\,975\,360z^5 + 7\,418\,448\,657\,100\,800z^4 - 38\,201\,859\,830\,534\,400z^3 + 36\,664\,069\,638\,596\,400z^2 + 5\,791\,828\,333\,165\,875z + 589\,311\,626\,904\,000\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(65\,849\,810\,906\,880\,000\sqrt{2}\, z^{7/4}\right)$$

07.22.03.8413.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{7}{2}, \frac{11}{4}; -z\right) = $$

$$\left(\left(2z\left(268\,435\,456z^7 + 95\,546\,245\,120z^6 + 10\,703\,890\,022\,400z^5 + 460\,945\,376\,870\,400z^4 + 7\,529\,674\,673\,664\,000z^3 + 39\,922\,232\,967\,302\,400z^2 + 44\,381\,404\,105\,038\,000z - 2\,260\,051\,013\,595\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(268\,435\,456z^7 + 95\,378\,472\,960z^6 + 10\,644\,624\,506\,880z^5 + 454\,412\,810\,649\,600z^4 + 7\,258\,493\,387\,059\,200z^3 + 35\,879\,902\,368\,710\,400z^2 + 28\,088\,182\,344\,222\,000z - 5\,994\,404\,204\,914\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\left(268\,435\,456z^8 + 95\,479\,136\,256z^7 + 10\,680\,108\,318\,720z^6 + 458\,306\,232\,975\,360z^5 + 7\,418\,448\,657\,100\,800z^4 + 38\,201\,859\,830\,534\,400z^3 + 36\,664\,069\,638\,596\,400z^2 - 5\,791\,828\,333\,165\,875z + 589\,311\,626\,904\,000\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(65\,849\,810\,906\,880\,000\sqrt{2}\, z^{7/4}\right)$$

07.22.03.8414.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{7}{2}, \frac{13}{4}; z\right) = $$

$$ \left(e^{-2\sqrt{z}} \left(-4\left(-1\,073\,741\,824\,z^8 + 268\,435\,456\,z^{15/2} + 407\,283\,695\,616\,z^7 - 101\,619\,597\,312\,z^{13/2} - 49\,038\,716\,043\,264\,z^6 + 12\,184\,156\,372\,992\,z^{11/2} + 2\,293\,205\,987\,229\,696\,z^5 - 564\,418\,584\,576\,000\,z^{9/2} - 41\,135\,900\,259\,041\,280\,z^4 + 9\,889\,622\,911\,365\,120\,z^{7/2} - 240\,254\,389\,299\,133\,440\,z^3 - 53\,834\,957\,808\,065\,280\,z^{5/2} - 267\,422\,080\,635\,864\,000\,z^2 + 41\,983\,233\,407\,161\,200\,z^{3/2} - 61\,592\,930\,753\,577\,300\,z + 13\,822\,592\,969\,441\,025\sqrt{z} + e^{4\sqrt{z}} \left(1\,073\,741\,824\,z^8 + 268\,435\,456\,z^{15/2} - 407\,283\,695\,616\,z^7 - 101\,619\,597\,312\,z^{13/2} + 49\,038\,716\,043\,264\,z^6 + 12\,184\,156\,372\,992\,z^{11/2} - 2\,293\,205\,987\,229\,696\,z^5 - 564\,418\,584\,576\,000\,z^{9/2} + 41\,135\,900\,259\,041\,280\,z^4 + 9\,889\,622\,911\,365\,120\,z^{7/2} - 240\,254\,389\,299\,133\,440\,z^3 - 53\,834\,957\,808\,065\,280\,z^{5/2} + 267\,422\,080\,635\,864\,000\,z^2 + 41\,983\,233\,407\,161\,200\,z^{3/2} + 61\,592\,930\,753\,577\,300\,z + 13\,822\,592\,969\,441\,025\sqrt{z} + 12\,003\,458\,206\,924\,800\right) - 12\,003\,458\,206\,924\,800\right) + e^{2\sqrt{z}} \sqrt{2\pi}\, \sqrt[4]{z} \left(4\,294\,967\,296\,z^8 - 1\,629\,940\,088\,832\,z^7 + 196\,458\,716\,332\,032\,z^6 - 9\,209\,002\,328\,064\,000\,z^5 + 166\,193\,713\,889\,280\,000\,z^4 - 988\,852\,597\,641\,216\,000\,z^3 + 1\,205\,164\,103\,375\,232\,000\,z^2 + 193\,687\,088\,042\,448\,000\,z + 37\,829\,509\,383\,290\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + e^{2\sqrt{z}} \sqrt{2\pi}\, \sqrt[4]{z} \left(4\,294\,967\,296\,z^8 - 1\,629\,940\,088\,832\,z^7 + 196\,458\,716\,332\,032\,z^6 - 9\,209\,002\,328\,064\,000\,z^5 + 166\,193\,713\,889\,280\,000\,z^4 - 988\,852\,597\,641\,216\,000\,z^3 + 1\,205\,164\,103\,375\,232\,000\,z^2 + 193\,687\,088\,042\,448\,000\,z + 37\,829\,509\,383\,290\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\Big/\left(5\,007\,404\,498\,839\,142\,400\,z^{5/2}\right) $$

07.22.03.8415.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{7}{2}, \frac{13}{4}; -z\right) = $$

$$ \left(\sqrt{\pi}\, \sqrt[4]{z} \left(4\,294\,967\,296\,z^8 + 1\,629\,940\,088\,832\,z^7 + 196\,458\,716\,332\,032\,z^6 + 9\,209\,002\,328\,064\,000\,z^5 + 166\,193\,713\,889\,280\,000\,z^4 + 988\,852\,597\,641\,216\,000\,z^3 + 1\,205\,164\,103\,375\,232\,000\,z^2 - 193\,687\,088\,042\,448\,000\,z + 37\,829\,509\,383\,290\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\left(4\left(268\,435\,456\,z^8 + 101\,820\,923\,904\,z^7 + 12\,259\,679\,010\,816\,z^6 + 573\,301\,496\,807\,424\,z^5 + 10\,283\,975\,064\,760\,320\,z^4 + 60\,063\,597\,324\,783\,360\,z^3 + 66\,855\,520\,158\,966\,000\,z^2 - 15\,398\,232\,688\,394\,325\,z + 3\,000\,864\,551\,731\,200\right) \sin\left(2\sqrt{z}\right) - \sqrt{z} \left(268\,435\,456\,z^7 + 101\,619\,597\,312\,z^6 + 12\,184\,156\,372\,992\,z^5 + 564\,418\,584\,576\,000\,z^4 + 9\,889\,622\,911\,365\,120\,z^3 + 53\,834\,957\,808\,065\,280\,z^2 + 41\,983\,233\,407\,161\,200\,z - 13\,822\,592\,969\,441\,025\right) \cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(1\,251\,851\,124\,709\,785\,600\,z^{5/2}\right) $$

07.22.03.8416.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{7}{2},\frac{15}{4};z\right)=\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-1\,732\,482\,433\,024\,z^7+223\,916\,945\,571\,840\,z^6-\right.\right.\right.
$$

$$
11\,391\,690\,772\,316\,160\,z^5+227\,187\,769\,009\,766\,400\,z^4-1\,542\,320\,547\,487\,948\,800\,z^3+
$$

$$
\left.2\,345\,810\,300\,587\,353\,600\,z^2+261\,032\,311\,183\,644\,000\,z+52\,961\,313\,136\,606\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-
$$

$$
\left(4\,294\,967\,296\,z^8-1\,729\,798\,078\,464\,z^7+222\,841\,358\,254\,080\,z^6-11\,254\,602\,745\,774\,080\,z^5+\right.
$$

$$
220\,424\,588\,712\,345\,600\,z^4-1\,417\,113\,478\,106\,726\,400\,z^3+1\,660\,429\,473\,320\,217\,600\,z^2+
$$

$$
\left.597\,758\,426\,889\,624\,000\,z+158\,883\,939\,409\,820\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-
$$

$$
2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-1\,731\,408\,691\,200\,z^7+223\,485\,502\,685\,184\,z^6-11\,336\,380\,380\,610\,560\,z^5+\right.
$$

$$
224\,424\,204\,750\,028\,800\,z^4-1\,489\,592\,174\,592\,614\,400\,z^3+2\,031\,647\,156\,675\,136\,000\,z^2+
$$

$$
\left.\left.\left.510\,599\,237\,270\,522\,400\,z+161\,701\,585\,625\,955\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(3\,256\,572\,466\,667\,520\,000\,\sqrt{2}\;z^{9/4}\right)
$$

07.22.03.8417.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{7}{2},\frac{15}{4};-z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,732\,482\,433\,024\,z^7+223\,916\,945\,571\,840\,z^6+11\,391\,690\,772\,316\,160\,z^5+\right.\right.\right.
$$

$$
227\,187\,769\,009\,766\,400\,z^4+1\,542\,320\,547\,487\,948\,800\,z^3+2\,345\,810\,300\,587\,353\,600\,z^2-
$$

$$
\left.261\,032\,311\,183\,644\,000\,z+52\,961\,313\,136\,606\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-
$$

$$
\left(4\,294\,967\,296\,z^8+1\,729\,798\,078\,464\,z^7+222\,841\,358\,254\,080\,z^6+11\,254\,602\,745\,774\,080\,z^5+\right.
$$

$$
220\,424\,588\,712\,345\,600\,z^4+1\,417\,113\,478\,106\,726\,400\,z^3+1\,660\,429\,473\,320\,217\,600\,z^2-
$$

$$
\left.597\,758\,426\,889\,624\,000\,z+158\,883\,939\,409\,820\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+
$$

$$
2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,731\,408\,691\,200\,z^7+223\,485\,502\,685\,184\,z^6+11\,336\,380\,380\,610\,560\,z^5+\right.
$$

$$
224\,424\,204\,750\,028\,800\,z^4+1\,489\,592\,174\,592\,614\,400\,z^3+2\,031\,647\,156\,675\,136\,000\,z^2-
$$

$$
\left.\left.\left.510\,599\,237\,270\,522\,400\,z+161\,701\,585\,625\,955\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(3\,256\,572\,466\,667\,520\,000\,\sqrt{2}\;z^{9/4}\right)
$$

07.22.03.8418.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{7}{2},\frac{17}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}+7\,331\,509\,174\,272\,z^{15/2}-1\,829\,656\,068\,096\,z^{7}-\right.\right.\right.
1\,008\,990\,897\,045\,504\,z^{13/2}+250\,886\,555\,172\,864\,z^{6}+55\,067\,536\,420\,503\,552\,z^{11/2}-
13\,583\,327\,743\,180\,800\,z^{5}-1\,186\,630\,934\,475\,571\,200\,z^{9/2}+287\,072\,698\,542\,981\,120\,z^{4}+
8\,695\,626\,648\,342\,036\,480\,z^{7/2}-1\,988\,032\,127\,792\,578\,560\,z^{3}-13\,170\,839\,731\,467\,264\,000\,z^{5/2}+
2\,288\,970\,350\,029\,440\,000\,z^{2}-4\,381\,769\,907\,829\,036\,800\,z^{3/2}+1\,201\,284\,689\,814\,316\,800\,z-
1\,850\,709\,863\,130\,074\,100\sqrt{z}+e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}-7\,331\,509\,174\,272\,z^{15/2}-\right.
1\,829\,656\,068\,096\,z^{7}+1\,008\,990\,897\,045\,504\,z^{13/2}+250\,886\,555\,172\,864\,z^{6}-55\,067\,536\,420\,503\,552\,
z^{11/2}-13\,583\,327\,743\,180\,800\,z^{5}+1\,186\,630\,934\,475\,571\,200\,z^{9/2}+287\,072\,698\,542\,981\,120\,z^{4}-
8\,695\,626\,648\,342\,036\,480\,z^{7/2}-1\,988\,032\,127\,792\,578\,560\,z^{3}+13\,170\,839\,731\,467\,264\,000\,z^{5/2}+
2\,288\,970\,350\,029\,440\,000\,z^{2}+4\,381\,769\,907\,829\,036\,800\,z^{3/2}+1\,201\,284\,689\,814\,316\,800\,z+
\left.\left.1\,850\,709\,863\,130\,074\,100\sqrt{z}+340\,465\,584\,449\,615\,625\right)+340\,465\,584\,449\,615\,625\right)+
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-29\,338\,921\,598\,976\,z^{8}+4\,041\,436\,450\,258\,944\,z^{7}-221\,016\,055\,873\,536\,000\,z^{6}+\right.
4\,786\,378\,960\,011\,264\,000\,z^{5}-35\,598\,693\,515\,083\,776\,000\,z^{4}+57\,847\,876\,962\,011\,136\,000\,z^{3}+
\left.13\,945\,470\,339\,056\,256\,000\,z^{2}+5\,447\,449\,351\,193\,850\,000\,z+340\,465\,584\,449\,615\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-29\,338\,921\,598\,976\,z^{8}+4\,041\,436\,450\,258\,944\,z^{7}-\right.
221\,016\,055\,873\,536\,000\,z^{6}+4\,786\,378\,960\,011\,264\,000\,z^{5}-35\,598\,693\,515\,083\,776\,000\,z^{4}+
57\,847\,876\,962\,011\,136\,000\,z^{3}+13\,945\,470\,339\,056\,256\,000\,z^{2}+5\,447\,449\,351\,193\,850\,000\,z+
\left.\left.340\,465\,584\,449\,615\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big/\left(221\,866\,537\,794\,718\,924\,800\,z^{13/4}\right)
$$

07.22.03.8419.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{7}{2},\frac{17}{4};-z\right)=
\left(\sqrt{\pi}\left(68\,719\,476\,736\,z^{9}+29\,338\,921\,598\,976\,z^{8}+4\,041\,436\,450\,258\,944\,z^{7}+221\,016\,055\,873\,536\,000\,z^{6}+\right.\right.
4\,786\,378\,960\,011\,264\,000\,z^{5}+35\,598\,693\,515\,083\,776\,000\,z^{4}+57\,847\,876\,962\,011\,136\,000\,z^{3}-
\left.13\,945\,470\,339\,056\,256\,000\,z^{2}+5\,447\,449\,351\,193\,850\,000\,z-340\,465\,584\,449\,615\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
2\sqrt[4]{z}\left(\left(4\,294\,967\,296\,z^{8}+1\,829\,656\,068\,096\,z^{7}+250\,886\,555\,172\,864\,z^{6}+13\,583\,327\,743\,180\,800\,z^{5}+\right.
287\,072\,698\,542\,981\,120\,z^{4}+1\,988\,032\,127\,792\,578\,560\,z^{3}+2\,288\,970\,350\,029\,440\,000\,z^{2}-
\left.1\,201\,284\,689\,814\,316\,800\,z+340\,465\,584\,449\,615\,625\right)\cos\left(2\sqrt{z}\right)-
4\sqrt{z}\left(4\,294\,967\,296\,z^{8}+1\,832\,877\,293\,568\,z^{7}+252\,247\,724\,261\,376\,z^{6}+13\,766\,884\,105\,125\,888\,z^{5}+\right.
296\,657\,733\,618\,892\,800\,z^{4}+2\,173\,906\,662\,085\,509\,120\,z^{3}+3\,292\,709\,932\,866\,816\,000\,z^{2}-
\left.\left.\left.1\,095\,442\,476\,957\,259\,200\,z+462\,677\,465\,782\,518\,525\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(55\,466\,634\,448\,679\,731\,200\,z^{13/4}\right)
$$

07.22.03.8420.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{7}{2},\frac{19}{4};z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-30\,979\,599\,106\,048\,z^8+4\,537\,408\,536\,182\,784\,z^7-266\,283\,205\,609\,390\,080\,z^6+\right.\right.\right.
$$

$$
\left.\left.\left.6\,271\,409\,468\,850\,831\,360\,z^5-51\,900\,574\,973\,666\,918\,400\,z^4+100\,132\,908\,145\,824\,153\,600\,z^3+\right.\right.\right.
$$

$$
\left.\left.\left.17\,796\,058\,700\,874\,854\,400\,z^2+7\,384\,320\,231\,618\,330\,000\,z-582\,574\,444\,502\,675\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.
$$

$$
\left(68\,719\,476\,736\,z^9-30\,936\,649\,433\,088\,z^8+4\,518\,161\,713\,987\,584\,z^7-263\,498\,561\,885\,306\,880\,z^6+\right.
$$

$$
6\,112\,254\,225\,631\,150\,080\,z^5-48\,380\,031\,626\,998\,579\,200\,z^4+75\,740\,959\,430\,251\,315\,200\,z^3+
$$

$$
\left.37\,049\,000\,509\,967\,846\,400\,z^2+19\,489\,763\,234\,271\,330\,000\,z-1\,747\,723\,333\,508\,026\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-
$$

$$
2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-30\,962\,419\,236\,864\,z^8+4\,529\,690\,479\,951\,872\,z^7-265\,160\,828\,381\,036\,544\,z^6+\right.
$$

$$
6\,206\,555\,345\,827\,921\,920\,z^5-50\,428\,941\,795\,606\,528\,000\,z^4+89\,192\,347\,063\,710\,105\,600\,z^3+
$$

$$
\left.30\,377\,259\,527\,834\,419\,200\,z^2+15\,764\,960\,165\,261\,907\,600\,z+1\,747\,723\,333\,508\,026\,875\right)
$$

$$
\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(131\,999\,737\,315\,590\,144\,000\,\sqrt{2}\;z^{13/4}\right)
$$

07.22.03.8421.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{7}{2},\frac{19}{4};-z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+30\,979\,599\,106\,048\,z^8+4\,537\,408\,536\,182\,784\,z^7+266\,283\,205\,609\,390\,080\,z^6+\right.\right.\right.
$$

$$
\left.\left.\left.6\,271\,409\,468\,850\,831\,360\,z^5+51\,900\,574\,973\,666\,918\,400\,z^4+100\,132\,908\,145\,824\,153\,600\,z^3-\right.\right.\right.
$$

$$
\left.\left.\left.17\,796\,058\,700\,874\,854\,400\,z^2+7\,384\,320\,231\,618\,330\,000\,z+582\,574\,444\,502\,675\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.
$$

$$
\left(68\,719\,476\,736\,z^9+30\,936\,649\,433\,088\,z^8+4\,518\,161\,713\,987\,584\,z^7+263\,498\,561\,885\,306\,880\,z^6+\right.
$$

$$
6\,112\,254\,225\,631\,150\,080\,z^5+48\,380\,031\,626\,998\,579\,200\,z^4+75\,740\,959\,430\,251\,315\,200\,z^3-
$$

$$
\left.37\,049\,000\,509\,967\,846\,400\,z^2+19\,489\,763\,234\,271\,330\,000\,z+1\,747\,723\,333\,508\,026\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+
$$

$$
2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+30\,962\,419\,236\,864\,z^8+4\,529\,690\,479\,951\,872\,z^7+265\,160\,828\,381\,036\,544\,z^6+\right.
$$

$$
6\,206\,555\,345\,827\,921\,920\,z^5+50\,428\,941\,795\,606\,528\,000\,z^4+89\,192\,347\,063\,710\,105\,600\,z^3-
$$

$$
\left.30\,377\,259\,527\,834\,419\,200\,z^2+15\,764\,960\,165\,261\,907\,600\,z-1\,747\,723\,333\,508\,026\,875\right)
$$

$$
\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(131\,999\,737\,315\,590\,144\,000\,\sqrt{2}\;z^{13/4}\right)
$$

07.22.03.8422.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{7}{2},\frac{21}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}+130\,343\,667\,499\,008\,z^{17/2}-32\,534\,377\,267\,200\,z^{8}-\right.\right.\right.
$$

$$
20\,182\,845\,892\,853\,760\,z^{15/2}+5\,021\,487\,857\,664\,000\,z^{7}+1\,259\,212\,828\,846\,325\,760\,z^{13/2}-
$$

$$
311\,119\,232\,567\,869\,440\,z^{6}-31\,680\,355\,831\,382\,016\,000\,z^{11/2}+7\,698\,903\,485\,644\,800\,000\,z^{5}+
$$

$$
279\,277\,159\,653\,428\,428\,800\,z^{9/2}-64\,733\,755\,380\,940\,800\,000\,z^{4}-535\,512\,089\,542\,297\,190\,400\,z^{7/2}+
$$

$$
99\,164\,021\,251\,147\,776\,000\,z^{3}-229\,891\,791\,459\,230\,208\,000\,z^{5/2}+68\,880\,758\,739\,762\,816\,000\,z^{2}-
$$

$$
146\,172\,830\,229\,701\,352\,000\,z^{3/2}+40\,311\,125\,198\,834\,490\,000\,z-17\,704\,210\,391\,380\,012\,500\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\left(274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}-130\,343\,667\,499\,008\,z^{17/2}-\right.
$$

$$
32\,534\,377\,267\,200\,z^{8}+20\,182\,845\,892\,853\,760\,z^{15/2}+5\,021\,487\,857\,664\,000\,z^{7}-
$$

$$
1\,259\,212\,828\,846\,325\,760\,z^{13/2}-311\,119\,232\,567\,869\,440\,z^{6}+31\,680\,355\,831\,382\,016\,000\,z^{11/2}+
$$

$$
7\,698\,903\,485\,644\,800\,000\,z^{5}-279\,277\,159\,653\,428\,428\,800\,z^{9/2}-64\,733\,755\,380\,940\,800\,000\,z^{4}+
$$

$$
535\,512\,089\,542\,297\,190\,400\,z^{7/2}+99\,164\,021\,251\,147\,776\,000\,z^{3}+229\,891\,791\,459\,230\,208\,000\,z^{5/2}+
$$

$$
68\,880\,758\,739\,762\,816\,000\,z^{2}+146\,172\,830\,229\,701\,352\,000\,z^{3/2}+40\,311\,125\,198\,834\,490\,000\,z+
$$

$$
\left.\left.17\,704\,210\,391\,380\,012\,500\sqrt{z}\;-13\,278\,157\,793\,535\,009\,375\right)-13\,278\,157\,793\,535\,009\,375\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}-521\,580\,828\,426\,240\,z^{9}+80\,828\,729\,005\,178\,880\,z^{8}-\right.
$$

$$
5\,051\,795\,562\,823\,680\,000\,z^{7}+127\,636\,772\,266\,967\,040\,000\,z^{6}-1\,139\,158\,192\,482\,680\,832\,000\,z^{5}+
$$

$$
2\,313\,915\,078\,480\,445\,440\,000\,z^{4}+743\,758\,418\,083\,000\,320\,000\,z^{3}+435\,795\,948\,095\,508\,000\,000\,z^{2}+
$$

$$
\left.54\,474\,493\,511\,938\,500\,000\,z-13\,278\,157\,793\,535\,009\,375\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}-521\,580\,828\,426\,240\,z^{9}+80\,828\,729\,005\,178\,880\,z^{8}-\right.
$$

$$
5\,051\,795\,562\,823\,680\,000\,z^{7}+127\,636\,772\,266\,967\,040\,000\,z^{6}-1\,139\,158\,192\,482\,680\,832\,000\,z^{5}+
$$

$$
2\,313\,915\,078\,480\,445\,440\,000\,z^{4}+743\,758\,418\,083\,000\,320\,000\,z^{3}+
$$

$$
\left.435\,795\,948\,095\,508\,000\,000\,z^{2}+54\,474\,493\,511\,938\,500\,000\,z-13\,278\,157\,793\,535\,009\,375\right)
$$

$$
\left.\left.\left.\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)\right/\left(8\,352\,622\,599\,330\,594\,816\,000\,z^{17/4}\right)
$$

07.22.03.8423.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{7}{2}, \frac{21}{4}; -z\right) = $$

$$ \left(\sqrt{\pi}\,\left(1\,099\,511\,627\,776\,z^{10} + 521\,580\,828\,426\,240\,z^9 + 80\,828\,729\,005\,178\,880\,z^8 + 5\,051\,795\,562\,823\,680\,000\,z^7 + \right.\right. $$

$$ 127\,636\,772\,266\,967\,040\,000\,z^6 + 1\,139\,158\,192\,482\,680\,832\,000\,z^5 + $$

$$ 2\,313\,915\,078\,480\,445\,440\,000\,z^4 - 743\,758\,418\,083\,000\,320\,000\,z^3 + 435\,795\,948\,095\,508\,000\,000\,z^2 - $$

$$ \left.\left. 54\,474\,493\,511\,938\,500\,000\,z - 13\,278\,157\,793\,535\,009\,375\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$

$$ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 32\,585\,916\,874\,752\,z^8 + 5\,045\,711\,473\,213\,440\,z^7 + 314\,803\,207\,211\,581\,440\,z^6 + \right.\right. $$

$$ 7\,920\,088\,957\,845\,504\,000\,z^5 + 69\,819\,289\,913\,357\,107\,200\,z^4 + 133\,878\,022\,385\,574\,297\,600\,z^3 - $$

$$ \left. 57\,472\,947\,864\,807\,552\,000\,z^2 + 36\,543\,207\,557\,425\,338\,000\,z - 4\,426\,052\,597\,845\,003\,125\right) \sin\left(2\sqrt{z}\right) - $$

$$ \left(68\,719\,476\,736\,z^9 + 32\,534\,377\,267\,200\,z^8 + 5\,021\,487\,857\,664\,000\,z^7 + 311\,119\,232\,567\,869\,440\,z^6 + \right. $$

$$ 7\,698\,903\,485\,644\,800\,000\,z^5 + 64\,733\,755\,380\,940\,800\,000\,z^4 + 99\,164\,021\,251\,147\,776\,000\,z^3 - $$

$$ \left. \left. 68\,880\,758\,739\,762\,816\,000\,z^2 + 40\,311\,125\,198\,834\,490\,000\,z + 13\,278\,157\,793\,535\,009\,375\right) \right. $$

$$ \left.\left. \cos\left(2\sqrt{z}\right)\right)\right) \Big/ \left(2\,088\,155\,649\,832\,648\,704\,000\,z^{17/4}\right) $$

07.22.03.8424.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{7}{2}, \frac{23}{4}; z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} - 547\,831\,668\,539\,392\,z^9 + 89\,670\,529\,069\,350\,912\,z^8 - 5\,962\,905\,916\,129\,935\,360\,z^7 + \right.\right. $$

$$ 161\,954\,029\,379\,864\,494\,080\,z^6 - 1\,581\,137\,250\,479\,190\,835\,200\,z^5 + $$

$$ 3\,695\,333\,765\,796\,642\,816\,000\,z^4 + 915\,573\,261\,841\,433\,395\,200\,z^3 + 575\,250\,651\,486\,070\,560\,000\,z^2 - $$

$$ \left. 47\,937\,554\,290\,505\,880\,000\,z + 43\,693\,083\,337\,700\,671\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$

$$ \left(1\,099\,511\,627\,776\,z^{10} - 547\,144\,473\,772\,032\,z^9 + 89\,329\,981\,112\,451\,072\,z^8 - 5\,907\,769\,230\,517\,862\,400\,z^7 + \right. $$

$$ 158\,371\,630\,188\,582\,666\,240\,z^6 - 1\,488\,970\,378\,717\,220\,044\,800\,z^5 + 2\,922\,027\,276\,142\,382\,284\,800\,z^4 + $$

$$ 1\,774\,647\,480\,633\,598\,771\,200\,z^3 + 1\,365\,493\,970\,699\,258\,400\,000\,z^2 + $$

$$ \left. 55\,927\,146\,672\,256\,860\,000\,z + 131\,079\,250\,013\,102\,015\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$

$$ 2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} - 547\,556\,790\,632\,448\,z^9 + 89\,534\,000\,648\,945\,664\,z^8 - 5\,940\,700\,256\,604\,782\,592\,z^7 + \right. $$

$$ 160\,497\,342\,488\,311\,234\,560\,z^6 - 1\,542\,822\,786\,091\,922\,227\,200\,z^5 + 3\,353\,837\,055\,921\,812\,275\,200\,z^4 + $$

$$ 1\,433\,759\,301\,697\,779\,302\,400\,z^3 + 1\,025\,395\,473\,372\,971\,500\,800\,z^2 + 223\,708\,586\,689\,027\,440\,000\,z - $$

$$ \left.\left. 131\,079\,250\,013\,102\,015\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Big) \Big/ \left(4\,668\,622\,288\,214\,556\,672\,000\,\sqrt{2}\;z^{17/4}\right) $$

07.22.03.8425.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{7}{2}, \frac{23}{4}; -z\right) = $$

$$\left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} + 547\,831\,668\,539\,392\,z^9 + 89\,670\,529\,069\,350\,912\,z^8 + 5\,962\,905\,916\,129\,935\,360\,z^7 + 161\,954\,029\,379\,864\,494\,080\,z^6 + 1\,581\,137\,250\,479\,190\,835\,200\,z^5 + 3\,695\,333\,765\,796\,642\,816\,000\,z^4 - 915\,573\,261\,841\,433\,395\,200\,z^3 + 575\,250\,651\,486\,070\,560\,000\,z^2 + 47\,937\,554\,290\,505\,880\,000\,z + 43\,693\,083\,337\,700\,671\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(1\,099\,511\,627\,776\,z^{10} + 547\,144\,473\,772\,032\,z^9 + 89\,329\,981\,112\,451\,072\,z^8 + 5\,907\,769\,230\,517\,862\,400\,z^7 + 158\,371\,630\,188\,582\,666\,240\,z^6 + 1\,488\,970\,378\,717\,220\,044\,800\,z^5 + 2\,922\,027\,276\,142\,382\,284\,800\,z^4 - 1\,774\,647\,480\,633\,598\,771\,200\,z^3 + 1\,365\,493\,970\,699\,258\,400\,000\,z^2 - 55\,927\,146\,672\,256\,860\,000\,z + 131\,079\,250\,013\,102\,015\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} + 547\,556\,790\,632\,448\,z^9 + 89\,534\,000\,648\,945\,664\,z^8 + 5\,940\,700\,256\,604\,782\,592\,z^7 + 160\,497\,342\,488\,311\,234\,560\,z^6 + 1\,542\,822\,786\,091\,922\,227\,200\,z^5 + 3\,353\,837\,055\,921\,812\,275\,200\,z^4 - 1\,433\,759\,301\,697\,779\,302\,400\,z^3 + 1\,025\,395\,473\,372\,971\,500\,800\,z^2 - 223\,708\,586\,689\,027\,440\,000\,z - 131\,079\,250\,013\,102\,015\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(4\,668\,622\,288\,214\,556\,672\,000\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{23}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.8426.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{9}{2}, -\frac{23}{4}; z\right) = \frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right) - 3\,(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}} $$

07.22.03.8427.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{9}{2}, -\frac{23}{4}; -z\right) = \frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right) + 3\,(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}} $$

07.22.03.8428.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{9}{2}, -\frac{21}{4}; z\right) = $$

$$\left(\left(4z\left(2\,147\,483\,648\,z^8 + 56\,774\,098\,944\,z^7 + 1\,669\,140\,054\,016\,z^6 + 37\,752\,676\,024\,320\,z^5 + 565\,561\,219\,645\,440\,z^4 + 4\,629\,607\,604\,582\,400\,z^3 + 12\,894\,115\,638\,096\,000\,z^2 - 15\,352\,701\,172\,439\,400\,z + 111\,946\,779\,382\,370\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(1\,073\,741\,824\,z^8 + 29\,058\,138\,112\,z^7 + 854\,115\,483\,648\,z^6 + 19\,458\,116\,812\,800\,z^5 + 296\,477\,980\,508\,160\,z^4 + 2\,541\,071\,927\,116\,800\,z^3 + 8\,935\,910\,974\,267\,200\,z^2 + 17\,911\,484\,701\,179\,300\,z + 335\,840\,338\,147\,111\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(8\,589\,934\,592\,z^9 + 229\,243\,879\,424\,z^8 + 6\,736\,689\,758\,208\,z^7 + 152\,784\,366\,206\,976\,z^6 + 2\,303\,183\,760\,261\,120\,z^5 + 19\,162\,334\,680\,473\,600\,z^4 + 57\,644\,153\,369\,510\,400\,z^3 - 27\,073\,580\,562\,151\,200\,z^2 - 245\,643\,218\,759\,030\,400\,z - 1\,007\,521\,014\,441\,335\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(23\,533\,824\,466\,152\,000\sqrt{2}\;z^{11/4}\right)$$

07.22.03.8429.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{9}{2},-\frac{21}{4};-z\right)= $$
$$ \left(\left(4z\left(2\,147\,483\,648z^8-56\,774\,098\,944z^7+1\,669\,140\,054\,016z^6-37\,752\,676\,024\,320z^5+565\,561\,219\,645\,440z^4-\right.\right.\right. $$
$$ \left.\left.\left.4\,629\,607\,604\,582\,400z^3+12\,894\,115\,638\,096\,000z^2+15\,352\,701\,172\,439\,400z+111\,946\,779\,382\,370\,625\right)\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1\,073\,741\,824z^8-29\,058\,138\,112z^7+854\,115\,483\,648z^6-19\,458\,116\,812\,800z^5+\right. $$
$$ 296\,477\,980\,508\,160z^4-2\,541\,071\,927\,116\,800z^3+8\,935\,910\,974\,267\,200z^2- $$
$$ \left.17\,911\,484\,701\,179\,300z+335\,840\,338\,147\,111\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left(8\,589\,934\,592z^9-229\,243\,879\,424z^8+6\,736\,689\,758\,208z^7-152\,784\,366\,206\,976z^6+\right. $$
$$ 2\,303\,183\,760\,261\,120z^5-19\,162\,334\,680\,473\,600z^4+57\,644\,153\,369\,510\,400z^3+27\,073\,580\,562\,151\,200z^2- $$
$$ \left.\left.245\,643\,218\,759\,030\,400z+1\,007\,521\,014\,441\,335\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)\Big/\left(23\,533\,824\,466\,152\,000\sqrt{2}\,z^{11/4}\right) $$

07.22.03.8430.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{9}{2},-\frac{19}{4};z\right)= $$
$$ \left(e^{-2\sqrt{z}}\left(-8\,589\,934\,592\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{37/4}-8\,589\,934\,592\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{37/4}+\right.\right. $$
$$ 8\,589\,934\,592\,e^{4\sqrt{z}}z^9-8\,589\,934\,592z^9+2\,147\,483\,648\,e^{4\sqrt{z}}z^{17/2}+2\,147\,483\,648z^{17/2}+ $$
$$ 1\,610\,612\,736\,e^{4\sqrt{z}}z^8-1\,610\,612\,736z^8+2\,013\,265\,920\,e^{4\sqrt{z}}z^{15/2}+2\,013\,265\,920z^{15/2}+ $$
$$ 3\,523\,215\,360\,e^{4\sqrt{z}}z^7-3\,523\,215\,360z^7+7\,927\,234\,560\,e^{4\sqrt{z}}z^{13/2}+7\,927\,234\,560z^{13/2}+ $$
$$ 21\,799\,895\,040\,e^{4\sqrt{z}}z^6-21\,799\,895\,040z^6+70\,849\,658\,880\,e^{4\sqrt{z}}z^{11/2}+70\,849\,658\,880z^{11/2}+ $$
$$ 265\,686\,220\,800\,e^{4\sqrt{z}}z^5-265\,686\,220\,800z^5+1\,129\,166\,438\,400\,e^{4\sqrt{z}}z^{9/2}+1\,129\,166\,438\,400z^{9/2}+ $$
$$ 5\,363\,540\,582\,400\,e^{4\sqrt{z}}z^4-5\,363\,540\,582\,400z^4+28\,158\,588\,057\,600\,e^{4\sqrt{z}}z^{7/2}+28\,158\,588\,057\,600z^{7/2}+ $$
$$ 161\,911\,881\,331\,200\,e^{4\sqrt{z}}z^3-161\,911\,881\,331\,200z^3+1\,011\,949\,258\,320\,000\,e^{4\sqrt{z}}z^{5/2}+ $$
$$ 1\,011\,949\,258\,320\,000z^{5/2}+6\,830\,657\,493\,660\,000\,e^{4\sqrt{z}}z^2-6\,830\,657\,493\,660\,000z^2+ $$
$$ 49\,522\,266\,829\,035\,000\,e^{4\sqrt{z}}z^{3/2}+49\,522\,266\,829\,035\,000z^{3/2}-176\,079\,170\,947\,680\,000\,e^{4\sqrt{z}}z+ $$
$$ 176\,079\,170\,947\,680\,000z+226\,977\,056\,299\,743\,750\,e^{4\sqrt{z}}\sqrt{z}+226\,977\,056\,299\,743\,750\sqrt{z}- $$
$$ \left.\left.113\,488\,528\,149\,871\,875\,e^{4\sqrt{z}}+113\,488\,528\,149\,871\,875\right)\right)\Big/\left(29\,674\,626\,325\,344\,000z^{7/2}\right) $$

07.22.03.8431.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{9}{2},-\frac{19}{4};-z\right)=\left(-17\,179\,869\,184\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{37/4}-\right. $$
$$ 2\left(1\,073\,741\,824z^8-1\,006\,632\,960z^7+3\,963\,617\,280z^6-35\,424\,829\,440z^5+564\,583\,219\,200z^4-\right. $$
$$ \left.14\,079\,294\,028\,800z^3+505\,974\,629\,160\,000z^2-24\,761\,133\,414\,517\,500z+113\,488\,528\,149\,871\,875\right) $$
$$ \cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8\,589\,934\,592z^9-1\,610\,612\,736z^8+3\,523\,215\,360z^7-21\,799\,895\,040z^6+\right. $$
$$ 265\,686\,220\,800z^5-5\,363\,540\,582\,400z^4+161\,911\,881\,331\,200z^3-6\,830\,657\,493\,660\,000z^2- $$
$$ \left.\left.176\,079\,170\,947\,680\,000z+113\,488\,528\,149\,871\,875\right)\sin\left(2\sqrt{z}\right)\right)\Big/\left(14\,837\,313\,162\,672\,000z^{7/2}\right) $$

07.22.03.8432.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{9}{2}, -\frac{17}{4}; z\right) = $$

$$ -\left(\left(4\,z\left(1\,073\,741\,824\,z^8 - 28\,722\,593\,792\,z^7 - 275\,498\,663\,936\,z^6 - 3\,754\,473\,553\,920\,z^5 - 40\,184\,670\,781\,440\,z^4 - \right.\right.\right. $$

$$ \left.\left.\left. 255\,232\,297\,267\,200\,z^3 - 572\,805\,701\,740\,800\,z^2 + 613\,164\,716\,564\,400\,z - 3\,198\,479\,410\,924\,875\right)\right. $$

$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(-536\,870\,912\,z^8 + 14\,025\,752\,576\,z^7 + 145\,823\,367\,168\,z^6 + \right. $$

$$ 1\,981\,207\,019\,520\,z^5 + 21\,580\,249\,743\,360\,z^4 + 145\,329\,275\,520\,000\,z^3 + $$

$$ \left. 432\,597\,950\,769\,600\,z^2 - 11\,791\,629\,164\,700\,z + 9\,595\,438\,232\,774\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ \left(-4\,294\,967\,296\,z^9 + 113\,816\,633\,344\,z^8 + 1\,129\,039\,527\,936\,z^7 + 15\,330\,365\,669\,376\,z^6 + \right. $$

$$ 165\,055\,050\,547\,200\,z^5 + 1\,069\,735\,204\,454\,400\,z^4 + 2\,656\,736\,390\,246\,400\,z^3 - 1\,006\,219\,022\,054\,400\,z^2 - $$

$$ \left.\left. 5\,447\,732\,674\,091\,400\,z - 28\,786\,314\,698\,323\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(1\,120\,658\,307\,912\,000\,\sqrt{2}\;z^{11/4}\right) $$

07.22.03.8433.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{9}{2}, -\frac{17}{4}; -z\right) = $$

$$ \left(\left(-4\,z\left(1\,073\,741\,824\,z^8 + 28\,722\,593\,792\,z^7 - 275\,498\,663\,936\,z^6 + 3\,754\,473\,553\,920\,z^5 - 40\,184\,670\,781\,440\,z^4 + \right.\right. $$

$$ \left.\left. 255\,232\,297\,267\,200\,z^3 - 572\,805\,701\,740\,800\,z^2 - 613\,164\,716\,564\,400\,z - 3\,198\,479\,410\,924\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$

$$ 4\sqrt{z}\,\left(536\,870\,912\,z^8 + 14\,025\,752\,576\,z^7 - 145\,823\,367\,168\,z^6 + 1\,981\,207\,019\,520\,z^5 - 21\,580\,249\,743\,360\,z^4 + \right. $$

$$ \left. 145\,329\,275\,520\,000\,z^3 - 432\,597\,950\,769\,600\,z^2 - 11\,791\,629\,164\,700\,z - 9\,595\,438\,232\,774\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) $$

$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-4\,294\,967\,296\,z^9 - 113\,816\,633\,344\,z^8 + 1\,129\,039\,527\,936\,z^7 - 15\,330\,365\,669\,376\,z^6 + \right. $$

$$ 165\,055\,050\,547\,200\,z^5 - 1\,069\,735\,204\,454\,400\,z^4 + 2\,656\,736\,390\,246\,400\,z^3 + 1\,006\,219\,022\,054\,400\,z^2 - $$

$$ \left.\left. 5\,447\,732\,674\,091\,400\,z + 28\,786\,314\,698\,323\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(1\,120\,658\,307\,912\,000\,\sqrt{2}\;z^{11/4}\right) $$

07.22.03.8434.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{9}{2},-\frac{15}{4};z\right)= \left(e^{-2\sqrt{z}}\left(-2\,147\,483\,648\,e^{4\sqrt{z}}\,z^9+2\,147\,483\,648\,z^9-536\,870\,912\,e^{4\sqrt{z}}\,z^{17/2}-536\,870\,912\,z^{17/2}+134\,217\,728\,e^{2\sqrt{z}}\right.\right. $$
$$ \sqrt{2\pi}\,(16z-851)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{33/4}+134\,217\,728\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-851)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{33/4}+ $$
$$ 113\,816\,633\,344\,e^{4\sqrt{z}}\,z^8-113\,816\,633\,344\,z^8+28\,051\,505\,152\,e^{4\sqrt{z}}\,z^{15/2}+28\,051\,505\,152\,z^{15/2}+ $$
$$ 20\,535\,312\,384\,e^{4\sqrt{z}}\,z^7-20\,535\,312\,384\,z^7+24\,788\,336\,640\,e^{4\sqrt{z}}\,z^{13/2}+24\,788\,336\,640\,z^{13/2}+ $$
$$ 41\,397\,780\,480\,e^{4\sqrt{z}}\,z^6-41\,397\,780\,480\,z^6+87\,695\,032\,320\,e^{4\sqrt{z}}\,z^{11/2}+87\,695\,032\,320\,z^{11/2}+ $$
$$ 223\,448\,924\,160\,e^{4\sqrt{z}}\,z^5-223\,448\,924\,160\,z^5+659\,787\,448\,320\,e^{4\sqrt{z}}\,z^{9/2}+659\,787\,448\,320\,z^{9/2}+ $$
$$ 2\,191\,911\,321\,600\,e^{4\sqrt{z}}\,z^4-2\,191\,911\,321\,600\,z^4+7\,974\,737\,971\,200\,e^{4\sqrt{z}}\,z^{7/2}+7\,974\,737\,971\,200\,z^{7/2}+ $$
$$ 30\,840\,358\,348\,800\,e^{4\sqrt{z}}\,z^3-30\,840\,358\,348\,800\,z^3+121\,433\,910\,998\,400\,e^{4\sqrt{z}}\,z^{5/2}+ $$
$$ 121\,433\,910\,998\,400\,z^{5/2}+445\,257\,673\,660\,800\,e^{4\sqrt{z}}\,z^2-445\,257\,673\,660\,800\,z^2+ $$
$$ 1\,075\,196\,086\,965\,000\,e^{4\sqrt{z}}\,z^{3/2}+1\,075\,196\,086\,965\,000\,z^{3/2}-5\,122\,993\,120\,245\,000\,e^{4\sqrt{z}}\,z+ $$
$$ \left.\left.5\,122\,993\,120\,245\,000\,z+6\,878\,092\,615\,143\,750\,e^{4\sqrt{z}}\,\sqrt{z}+6\,878\,092\,615\,143\,750\,\sqrt{z}- 3\,439\,046\,307\,571\,875\,e^{4\sqrt{z}}+3\,439\,046\,307\,571\,875\right)\right)\Big/\left(1\,561\,822\,438\,176\,000\,z^{7/2}\right) $$

07.22.03.8435.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{9}{2},-\frac{15}{4};-z\right)=\frac{1}{780\,911\,219\,088\,000\,z^{7/2}}\left(268\,435\,456\,\sqrt{\pi}\,(16z+851)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{33/4}+\right. $$
$$ 2\left(268\,435\,456\,z^8+14\,025\,752\,576\,z^7-12\,394\,168\,320\,z^6+43\,847\,516\,160\,z^5-329\,893\,724\,160\,z^4+\right. $$
$$ \left.3\,987\,368\,985\,600\,z^3-60\,716\,955\,499\,200\,z^2+537\,598\,043\,482\,500\,z-3\,439\,046\,307\,571\,875\right)\cos\left(2\sqrt{z}\right)\sqrt{z}- $$
$$ \left(2\,147\,483\,648\,z^9+113\,816\,633\,344\,z^8-20\,535\,312\,384\,z^7+41\,397\,780\,480\,z^6-223\,448\,924\,160\,z^5+\right. $$
$$ 2\,191\,911\,321\,600\,z^4-30\,840\,358\,348\,800\,z^3+445\,257\,673\,660\,800\,z^2+ $$
$$ \left.\left.5\,122\,993\,120\,245\,000\,z-3\,439\,046\,307\,571\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8436.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{9}{2},-\frac{13}{4};z\right)= \left(\left(4z\left(536\,870\,912\,z^8-42\,916\,118\,528\,z^7+426\,208\,395\,264\,z^6+1\,843\,813\,416\,960\,z^5+11\,910\,118\,440\,960\,z^4+\right.\right. $$
$$ \left.53\,932\,493\,260\,800\,z^3+92\,446\,704\,345\,600\,z^2-81\,231\,223\,134\,600\,z+309\,530\,265\,573\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- $$
$$ 4\sqrt{z}\left(268\,435\,456\,z^8-21\,290\,287\,104\,z^7+200\,143\,798\,272\,z^6+1\,022\,176\,788\,480\,z^5+6\,681\,473\,187\,840\,z^4+\right. $$
$$ \left.32\,287\,239\,705\,600\,z^3+73\,411\,565\,673\,600\,z^2-66\,819\,231\,933\,300\,z+928\,590\,796\,720\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right) $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(2\,147\,483\,648\,z^9-171\,127\,603\,200\,z^8+1\,662\,756\,323\,328\,z^7+7\,738\,358\,759\,424\,z^6+\right. $$
$$ 49\,874\,267\,013\,120\,z^5+231\,166\,902\,067\,200\,z^4+450\,394\,826\,112\,000\,z^3-154\,487\,431\,375\,200\,z^2- $$
$$ \left.\left.330\,165\,616\,611\,600\,z-2\,785\,772\,390\,160\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)\Big/\left(197\,763\,230\,808\,000\,\sqrt{2}\,z^{11/4}\right) $$

07.22.03.8437.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{9}{2},-\frac{13}{4};-z\right)= $$
$$ \left(\left(4z\left(536\,870\,912z^8+42\,916\,118\,528z^7+426\,208\,395\,264z^6-1\,843\,813\,416\,960z^5+11\,910\,118\,440\,960z^4-\right.\right.\right. $$
$$ \left.\left.\left.53\,932\,493\,260\,800z^3+92\,446\,704\,345\,600z^2+81\,231\,223\,134\,600z+309\,530\,265\,573\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$
$$ 4\sqrt{z}\left(268\,435\,456z^8+21\,290\,287\,104z^7+200\,143\,798\,272z^6-1\,022\,176\,788\,480z^5+6\,681\,473\,187\,840z^4- \right. $$
$$ \left.32\,287\,239\,705\,600z^3+73\,411\,565\,673\,600z^2+66\,819\,231\,933\,300z+928\,590\,796\,720\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right) $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(2\,147\,483\,648z^9+171\,127\,603\,200z^8+1\,662\,756\,323\,328z^7-7\,738\,358\,759\,424z^6+ \right. $$
$$ 49\,874\,267\,013\,120z^5-231\,166\,902\,067\,200z^4+450\,394\,826\,112\,000z^3+154\,487\,431\,375\,200z^2- $$
$$ \left.\left.330\,165\,616\,611\,600z+2\,785\,772\,390\,160\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(197\,763\,230\,808\,000\sqrt{2}\,z^{11/4}\right) $$

07.22.03.8438.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{9}{2},-\frac{11}{4};z\right)= $$
$$ \frac{1}{104\,121\,495\,878\,400z^{7/2}}\left(e^{-2\sqrt{z}}\left(268\,435\,456e^{4\sqrt{z}}z^9-268\,435\,456z^9+67\,108\,864e^{4\sqrt{z}}z^{17/2}+67\,108\,864z^{17/2}- \right.\right. $$
$$ 28\,504\,489\,984e^{4\sqrt{z}}z^8+28\,504\,489\,984z^8-7\,075\,790\,848e^{4\sqrt{z}}z^{15/2}-7\,075\,790\,848z^{15/2}- $$
$$ 1\,048\,576e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-27\,232z+533\,577\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{29/4}-1\,048\,576e^{2\sqrt{z}}\sqrt{2\pi} $$
$$ \left(256z^2-27\,232z+533\,577\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{29/4}+554\,252\,107\,776e^{4\sqrt{z}}z^7-554\,252\,107\,776z^7+ $$
$$ 133\,429\,198\,848e^{4\sqrt{z}}z^{13/2}+133\,429\,198\,848z^{13/2}+93\,874\,814\,976e^{4\sqrt{z}}z^6-93\,874\,814\,976z^6+ $$
$$ 106\,994\,073\,600e^{4\sqrt{z}}z^{11/2}+106\,994\,073\,600z^{11/2}+165\,315\,870\,720e^{4\sqrt{z}}z^5-165\,315\,870\,720z^5+ $$
$$ 316\,098\,478\,080e^{4\sqrt{z}}z^{9/2}+316\,098\,478\,080z^{9/2}+704\,323\,952\,640e^{4\sqrt{z}}z^4-704\,323\,952\,640z^4+ $$
$$ 1\,741\,075\,015\,680e^{4\sqrt{z}}z^{7/2}+1\,741\,075\,015\,680z^{7/2}+4\,535\,346\,816\,000e^{4\sqrt{z}}z^3-4\,535\,346\,816\,000z^3+ $$
$$ 11\,565\,134\,380\,800e^{4\sqrt{z}}z^{5/2}+11\,565\,134\,380\,800z^{5/2}+24\,575\,910\,559\,200e^{4\sqrt{z}}z^2-24\,575\,910\,559\,200z^2+ $$
$$ 17\,709\,112\,020\,600e^{4\sqrt{z}}z^{3/2}+17\,709\,112\,020\,600z^{3/2}-166\,971\,627\,622\,800e^{4\sqrt{z}}z+166\,971\,627\,622\,800z+ $$
$$ \left.\left.237\,175\,607\,418\,750e^{4\sqrt{z}}\sqrt{z}+237\,175\,607\,418\,750\sqrt{z}-118\,587\,803\,709\,375e^{4\sqrt{z}}+118\,587\,803\,709\,375\right)\right) $$

07.22.03.8439.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{9}{2},-\frac{11}{4};-z\right)=\frac{1}{52\,060\,747\,939\,200z^{7/2}}\left(-2\,097\,152\sqrt{\pi}\left(256z^2+27\,232z+533\,577\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{29/4}- \right. $$
$$ 2\left(33\,554\,432z^8+3\,537\,895\,424z^7+66\,714\,599\,424z^6-53\,497\,036\,800z^5+158\,049\,239\,040z^4- \right. $$
$$ \left.870\,537\,507\,840z^3+5\,782\,567\,190\,400z^2-8\,854\,556\,010\,300z+118\,587\,803\,709\,375\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+ $$
$$ \left.\left(268\,435\,456z^9+28\,504\,489\,984z^8+554\,252\,107\,776z^7-93\,874\,814\,976z^6+165\,315\,870\,720z^5-704\,323\,952\,640z^4+ \right.\right. $$
$$ \left.\left.4\,535\,346\,816\,000z^3-24\,575\,910\,559\,200z^2-166\,971\,627\,622\,800z+118\,587\,803\,709\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8440.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{9}{2},-\frac{9}{4};z\right)=
$$

$$
-\left(\left(4z\left(268\,435\,456z^8-35\,735\,470\,080z^7+1\,054\,579\,097\,600z^6-4\,910\,638\,694\,400z^5-9\,646\,497\,792\,000z^4-\right.\right.\right.
$$

$$
\left.\left.\left.26\,299\,610\,726\,400z^3-31\,745\,659\,968\,000z^2+20\,507\,181\,156\,000z-57\,320\,419\,550\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.
$$

$$
4\sqrt{z}\left(-134\,217\,728z^8+17\,783\,848\,960z^7-516\,347\,658\,240z^6+2\,154\,214\,195\,200z^5+5\,659\,051\,622\,400z^4+\right.
$$

$$
\left.16\,482\,984\,883\,200z^3+24\,769\,971\,072\,000z^2-28\,767\,018\,010\,500z+171\,961\,258\,651\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)
$$

$$
I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1\,073\,741\,824z^9+142\,673\,444\,864z^8-4\,183\,000\,350\,720z^7+18\,641\,835\,786\,240z^6+\right.
$$

$$
42\,091\,964\,006\,400z^5+117\,063\,489\,945\,600z^4+163\,342\,259\,942\,400z^3-52\,767\,015\,840\,000z^2-
$$

$$
\left.\left.11\,962\,522\,341\,000z-515\,883\,775\,955\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(76\,062\,781\,080\,000\sqrt{2}\,z^{11/4}\right)
$$

07.22.03.8441.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{9}{2},-\frac{9}{4};-z\right)=
$$

$$
-\left(\left(4z\left(268\,435\,456z^8+35\,735\,470\,080z^7+1\,054\,579\,097\,600z^6+4\,910\,638\,694\,400z^5-9\,646\,497\,792\,000z^4+\right.\right.\right.
$$

$$
\left.\left.\left.26\,299\,610\,726\,400z^3-31\,745\,659\,968\,000z^2-20\,507\,181\,156\,000z-57\,320\,419\,550\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.
$$

$$
4\sqrt{z}\left(134\,217\,728z^8+17\,783\,848\,960z^7+516\,347\,658\,240z^6+2\,154\,214\,195\,200z^5-5\,659\,051\,622\,400z^4+\right.
$$

$$
\left.16\,482\,984\,883\,200z^3-24\,769\,971\,072\,000z^2-28\,767\,018\,010\,500z-171\,961\,258\,651\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)
$$

$$
J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,073\,741\,824z^9+142\,673\,444\,864z^8+4\,183\,000\,350\,720z^7+18\,641\,835\,786\,240z^6-\right.
$$

$$
42\,091\,964\,006\,400z^5+117\,063\,489\,945\,600z^4-163\,342\,259\,942\,400z^3-52\,767\,015\,840\,000z^2+
$$

$$
\left.\left.11\,962\,522\,341\,000z-515\,883\,775\,955\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(76\,062\,781\,080\,000\sqrt{2}\,z^{11/4}\right)
$$

07.22.03.8442.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{9}{2}, -\frac{7}{4}; z\right) = \frac{1}{28\,396\,771\,603\,200\,z^{7/2}} \left(e^{-2\sqrt{z}} \left(-67\,108\,864\,e^{4\sqrt{z}}\,z^9 + 67\,108\,864\,z^9 - 16\,777\,216\,e^{4\sqrt{z}}\,z^{17/2} - 16\,777\,216\,z^{17/2} + 10\,695\,475\,200\,e^{4\sqrt{z}}\,z^8 - 10\,695\,475\,200\,z^8 + 2\,661\,285\,888\,e^{4\sqrt{z}}\,z^{15/2} + 2\,661\,285\,888\,z^{15/2} - 417\,641\,791\,488\,e^{4\sqrt{z}}\,z^7 + 417\,641\,791\,488\,z^7 - 102\,457\,737\,216\,e^{4\sqrt{z}}\,z^{13/2} - 102\,457\,737\,216\,z^{13/2} + 16\,384\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3 - 653\,568\,z^2 + 25\,611\,696\,z - 232\,105\,995\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{25/4} + 16\,384\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3 - 653\,568\,z^2 + 25\,611\,696\,z - 232\,105\,995\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{25/4} + 3\,728\,367\,157\,248\,e^{4\sqrt{z}}\,z^6 - 3\,728\,367\,157\,248\,z^6 + 861\,685\,678\,080\,e^{4\sqrt{z}}\,z^{11/2} + 861\,685\,678\,080\,z^{11/2} + 566\,018\,703\,360\,e^{4\sqrt{z}}\,z^5 - 566\,018\,703\,360\,z^5 + 583\,536\,476\,160\,e^{4\sqrt{z}}\,z^{9/2} + 583\,536\,476\,160\,z^{9/2} + 784\,114\,974\,720\,e^{4\sqrt{z}}\,z^4 - 784\,114\,974\,720\,z^4 + 1\,236\,015\,728\,640\,e^{4\sqrt{z}}\,z^{7/2} + 1\,236\,015\,728\,640\,z^{7/2} + 2\,093\,236\,992\,000\,e^{4\sqrt{z}}\,z^3 - 2\,093\,236\,992\,000\,z^3 + 3\,401\,510\,112\,000\,e^{4\sqrt{z}}\,z^{5/2} + 3\,401\,510\,112\,000\,z^{5/2} + 4\,081\,812\,134\,400\,e^{4\sqrt{z}}\,z^2 - 4\,081\,812\,134\,400\,z^2 - 1\,084\,231\,348\,200\,e^{4\sqrt{z}}\,z^{3/2} - 1\,084\,231\,348\,200\,z^{3/2} - 18\,431\,932\,919\,400\,e^{4\sqrt{z}}\,z + 18\,431\,932\,919\,400\,z + 28\,461\,072\,890\,250\,e^{4\sqrt{z}}\,\sqrt{z} + 28\,461\,072\,890\,250\,\sqrt{z} - 14\,230\,536\,445\,125\,e^{4\sqrt{z}} + 14\,230\,536\,445\,125\right)\right) $$

07.22.03.8443.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{9}{2}, -\frac{7}{4}; -z\right) = \frac{1}{14\,198\,385\,801\,600\,z^{7/2}} \left(32\,768\,\sqrt{\pi}\,\left(4096\,z^3 + 653\,568\,z^2 + 25\,611\,696\,z + 232\,105\,995\right)C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{25/4} + 2\left(8\,388\,608\,z^8 + 1\,330\,642\,944\,z^7 + 51\,228\,868\,608\,z^6 + 430\,842\,839\,040\,z^5 - 291\,768\,238\,080\,z^4 + 618\,007\,864\,320\,z^3 - 1\,700\,755\,056\,000\,z^2 - 542\,115\,674\,100\,z - 14\,230\,536\,445\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z} - \left(67\,108\,864\,z^9 + 10\,695\,475\,200\,z^8 + 417\,641\,791\,488\,z^7 + 3\,728\,367\,157\,248\,z^6 - 566\,018\,703\,360\,z^5 + 784\,114\,974\,720\,z^4 - 2\,093\,236\,992\,000\,z^3 + 4\,081\,812\,134\,400\,z^2 + 18\,431\,932\,919\,400\,z - 14\,230\,536\,445\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8444.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{9}{2}, -\frac{5}{4}; z\right) = \left(\left(4\,z\left(134\,217\,728\,z^8 - 25\,006\,440\,448\,z^7 + 1\,227\,775\,016\,960\,z^6 - 16\,823\,776\,542\,720\,z^5 + 38\,124\,011\,520\,000\,z^4 + 29\,614\,717\,440\,000\,z^3 + 21\,455\,273\,347\,200\,z^2 - 8\,604\,621\,333\,000\,z + 17\,445\,345\,080\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(67\,108\,864\,z^8 - 12\,461\,277\,184\,z^7 + 606\,185\,717\,760\,z^6 - 8\,048\,429\,383\,680\,z^5 + 14\,700\,736\,512\,000\,z^4 + 18\,011\,843\,942\,400\,z^3 + 14\,561\,079\,825\,600\,z^2 - 15\,845\,095\,381\,500\,z + 52\,336\,035\,241\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(536\,870\,912\,z^9 - 99\,891\,544\,064\,z^8 + 4\,886\,303\,342\,592\,z^7 - 66\,105\,415\,434\,240\,z^6 + 137\,416\,546\,713\,600\,z^5 + 137\,648\,454\,451\,200\,z^4 + 114\,534\,950\,745\,600\,z^3 - 33\,075\,324\,928\,800\,z^2 + 17\,628\,980\,292\,000\,z - 157\,008\,105\,725\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(59\,159\,940\,840\,000\,\sqrt{2}\,z^{11/4}\right) $$

07.22.03.8445.01

$${}_1F_2\left(-\frac{23}{4};\frac{9}{2},-\frac{5}{4};-z\right)=$$

$$\left(\left(4z\left(134\,217\,728z^8+25\,006\,440\,448z^7+1\,227\,775\,016\,960z^6+16\,823\,776\,542\,720z^5+38\,124\,011\,520\,000z^4-\right.\right.\right.$$
$$\left.\left.29\,614\,717\,440\,000z^3+21\,455\,273\,347\,200z^2+8\,604\,621\,333\,000z+17\,445\,345\,080\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\left(67\,108\,864z^8+12\,461\,277\,184z^7+606\,185\,717\,760z^6+8\,048\,429\,383\,680z^5+14\,700\,736\,512\,000z^4-\right.$$
$$\left.18\,011\,843\,942\,400z^3+14\,561\,079\,825\,600z^2+15\,845\,095\,381\,500z+52\,336\,035\,241\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(536\,870\,912z^9+99\,891\,544\,064z^8+4\,886\,303\,342\,592z^7+66\,105\,415\,434\,240z^6+\right.$$
$$137\,416\,546\,713\,600z^5-137\,648\,454\,451\,200z^4+114\,534\,950\,745\,600z^3+33\,075\,324\,928\,800z^2+$$
$$\left.\left.17\,628\,980\,292\,000z+157\,008\,105\,725\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(59\,159\,940\,840\,000\sqrt{2}\,z^{11/4}\right)$$

07.22.03.8446.01

$${}_1F_2\left(-\frac{23}{4};\frac{9}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{4\,056\,681\,657\,600z^{7/2}}\left(e^{-2\sqrt{z}}\left(4\,194\,304e^{4\sqrt{z}}z^9-4\,194\,304z^9+1\,048\,576e^{4\sqrt{z}}z^{17/2}+1\,048\,576z^{17/2}-\right.\right.$$
$$891\,551\,744e^{4\sqrt{z}}z^8+891\,551\,744z^8-222\,101\,504e^{4\sqrt{z}}z^{15/2}-222\,101\,504z^{15/2}+$$
$$52\,287\,160\,320e^{4\sqrt{z}}z^7-52\,287\,160\,320z^7+12\,907\,917\,312e^{4\sqrt{z}}z^{13/2}+12\,907\,917\,312z^{13/2}-$$
$$941\,226\,617\,856e^{4\sqrt{z}}z^6+941\,226\,617\,856z^6-226\,171\,825\,920e^{4\sqrt{z}}z^{11/2}-226\,171\,825\,920z^{11/2}-$$
$$64e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-13\,942\,784z^3+819\,574\,272z^2-14\,854\,783\,680z+63\,829\,148\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}-$$
$$64e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-13\,942\,784z^3+819\,574\,272z^2-14\,854\,783\,680z+63\,829\,148\,625\right)$$
$$\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+3\,926\,187\,048\,960e^{4\sqrt{z}}z^5-3\,926\,187\,048\,960z^5+$$
$$840\,042\,086\,400e^{4\sqrt{z}}z^{9/2}+840\,042\,086\,400z^{9/2}+484\,147\,445\,760e^{4\sqrt{z}}z^4-484\,147\,445\,760z^4+$$
$$409\,155\,563\,520e^{4\sqrt{z}}z^{7/2}+409\,155\,563\,520z^{7/2}+407\,018\,304\,000e^{4\sqrt{z}}z^3-407\,018\,304\,000z^3+$$
$$392\,481\,936\,000e^{4\sqrt{z}}z^{5/2}+392\,481\,936\,000z^{5/2}+228\,947\,796\,000e^{4\sqrt{z}}z^2-228\,947\,796\,000z^2-$$
$$276\,372\,696\,600e^{4\sqrt{z}}z^{3/2}-276\,372\,696\,600z^{3/2}-765\,339\,775\,200e^{4\sqrt{z}}z+765\,339\,775\,200z+$$
$$\left.\left.1\,355\,289\,185\,250e^{4\sqrt{z}}\sqrt{z}+1\,355\,289\,185\,250\sqrt{z}-677\,644\,592\,625e^{4\sqrt{z}}+677\,644\,592\,625\right)\right)$$

07.22.03.8447.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{1}{2\,028\,340\,828\,800\, z^{7/2}} $$
$$ \left(-128\sqrt{\pi}\left(65\,536 z^4 + 13\,942\,784 z^3 + 819\,574\,272 z^2 + 14\,854\,783\,680 z + 63\,829\,148\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{21/4} - \right. $$
$$ 2\left(524\,288 z^8 + 111\,050\,752 z^7 + 6\,453\,958\,656 z^6 + 113\,085\,912\,960 z^5 + 420\,021\,043\,200 z^4 - \right. $$
$$ \left. 204\,577\,781\,760 z^3 + 196\,240\,968\,000 z^2 + 138\,186\,348\,300 z + 677\,644\,592\,625\right) \cos\left(2\sqrt{z}\right)\sqrt{z} + $$
$$ \left(4\,194\,304 z^9 + 891\,551\,744 z^8 + 52\,287\,160\,320 z^7 + 941\,226\,617\,856 z^6 + 3\,926\,187\,048\,960 z^5 - \right. $$
$$ \left. \left. 484\,147\,445\,760 z^4 + 407\,018\,304\,000 z^3 - 228\,947\,796\,000 z^2 - 765\,339\,775\,200 z + 677\,644\,592\,625\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8448.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{9}{2}, -\frac{1}{4}; z\right) = $$
$$ \left(\left(-4z\left(67\,108\,864 z^8 - 16\,072\,572\,928 z^7 + 1\,104\,004\,251\,648 z^6 - 25\,125\,033\,738\,240 z^5 + 164\,545\,419\,064\,320 z^4 - \right.\right. \right. $$
$$ \left. 168\,867\,862\,732\,800 z^3 - 32\,721\,796\,800\,000 z^2 + 5\,792\,379\,238\,800 z - 8\,263\,584\,511\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ 4\sqrt{z}\left(33\,554\,432 z^8 - 8\,015\,314\,944 z^7 + 547\,035\,807\,744 z^6 - 12\,230\,623\,641\,600 z^5 + 75\,260\,076\,756\,480 z^4 - \right. $$
$$ \left. 48\,832\,297\,113\,600 z^3 - 14\,744\,238\,062\,400 z^2 + 12\,655\,089\,423\,900 z - 24\,790\,753\,535\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(268\,435\,456 z^9 - 64\,223\,182\,848 z^8 + 4\,400\,049\,291\,264 z^7 - 99\,420\,749\,955\,072 z^6 + \right. $$
$$ 634\,668\,306\,370\,560 z^5 - 543\,164\,822\,323\,200 z^4 - 164\,109\,780\,172\,800 z^3 + 36\,265\,330\,886\,400 z^2 - $$
$$ \left.\left. 23\,799\,123\,394\,200 z + 74\,372\,260\,606\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(106\,487\,893\,512\,000\sqrt{2}\, z^{11/4}\right) $$

07.22.03.8449.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{9}{2}, -\frac{1}{4}; -z\right) = $$
$$ -\left(\left(4z\left(67\,108\,864 z^8 + 16\,072\,572\,928 z^7 + 1\,104\,004\,251\,648 z^6 + 25\,125\,033\,738\,240 z^5 + 164\,545\,419\,064\,320 z^4 + \right.\right. \right. $$
$$ \left. 168\,867\,862\,732\,800 z^3 - 32\,721\,796\,800\,000 z^2 - 5\,792\,379\,238\,800 z - 8\,263\,584\,511\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ 4\sqrt{z}\left(33\,554\,432 z^8 + 8\,015\,314\,944 z^7 + 547\,035\,807\,744 z^6 + 12\,230\,623\,641\,600 z^5 + 75\,260\,076\,756\,480 z^4 + \right. $$
$$ \left. 48\,832\,297\,113\,600 z^3 - 14\,744\,238\,062\,400 z^2 - 12\,655\,089\,423\,900 z - 24\,790\,753\,535\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(268\,435\,456 z^9 + 64\,223\,182\,848 z^8 + 4\,400\,049\,291\,264 z^7 + 99\,420\,749\,955\,072 z^6 + \right. $$
$$ 634\,668\,306\,370\,560 z^5 + 543\,164\,822\,323\,200 z^4 - 164\,109\,780\,172\,800 z^3 - 36\,265\,330\,886\,400 z^2 - $$
$$ \left.\left. 23\,799\,123\,394\,200 z - 74\,372\,260\,606\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(106\,487\,893\,512\,000\sqrt{2}\, z^{11/4}\right) $$

07.22.03.8450.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{9}{2}, \frac{1}{4}; z\right) = \frac{1}{6\,761\,136\,096\,000\, z^{7/2}} $$
$$ \left(e^{-2\sqrt{z}} \left(-1\,048\,576\, e^{4\sqrt{z}}\, z^9 + 1\,048\,576\, z^9 - 262\,144\, e^{4\sqrt{z}}\, z^{17/2} - 262\,144\, z^{17/2} + 278\,659\,072\, e^{4\sqrt{z}}\, z^8 - \right.\right. $$
$$ 278\,659\,072\, z^8 + 69\,468\,160\, e^{4\sqrt{z}}\, z^{15/2} + 69\,468\,160\, z^{15/2} - 21\,803\,458\,560\, e^{4\sqrt{z}}\, z^7 + $$
$$ 21\,803\,458\,560\, z^7 - 5\,399\,439\,360\, e^{4\sqrt{z}}\, z^{13/2} - 5\,399\,439\,360\, z^{13/2} + 590\,205\,189\,120\, e^{4\sqrt{z}}\, z^6 - $$
$$ 590\,205\,189\,120\, z^6 + 143\,674\,191\,360\, e^{4\sqrt{z}}\, z^{11/2} + 143\,674\,191\,360\, z^{11/2} - 5\,003\,209\,846\,800\, e^{4\sqrt{z}}\, z^5 + $$
$$ 5\,003\,209\,846\,800\, z^5 - 1\,155\,326\,426\,100\, e^{4\sqrt{z}}\, z^{9/2} - 1\,155\,326\,426\,100\, z^{9/2} + e^{2\sqrt{z}}\, \sqrt{2\pi} $$
$$ \left(1\,048\,576\, z^5 - 278\,855\,680\, z^4 + 21\,855\,313\,920\, z^3 - 594\,191\,347\,200\, z^2 + 5\,106\,331\,890\,000\, z - 9\,382\,884\,847\,875\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{17/4} + e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(1\,048\,576\, z^5 - 278\,855\,680\, z^4 + 21\,855\,313\,920\, z^3 - 594\,191\,347\,200\, z^2 + \right. $$
$$ \left. 5\,106\,331\,890\,000\, z - 9\,382\,884\,847\,875\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{17/4} + 8\,621\,663\,846\,400\, e^{4\sqrt{z}}\, z^4 - $$
$$ 8\,621\,663\,846\,400\, z^4 + 1\,550\,231\,654\,400\, e^{4\sqrt{z}}\, z^{7/2} + 1\,550\,231\,654\,400\, z^{7/2} + 651\,229\,286\,400\, e^{4\sqrt{z}}\, z^3 - $$
$$ 651\,229\,286\,400\, z^3 + 305\,263\,728\,000\, e^{4\sqrt{z}}\, z^{5/2} + 305\,263\,728\,000\, z^{5/2} + 43\,609\,104\,000\, e^{4\sqrt{z}}\, z^2 - $$
$$ 43\,609\,104\,000\, z^2 - 188\,064\,261\,000\, e^{4\sqrt{z}}\, z^{3/2} - 188\,064\,261\,000\, z^{3/2} - 171\,710\,847\,000\, e^{4\sqrt{z}}\, z + $$
$$ \left.\left. 171\,710\,847\,000\, z + 398\,614\,466\,250\, e^{4\sqrt{z}}\, \sqrt{z} + 398\,614\,466\,250\, \sqrt{z} - 199\,307\,233\,125\, e^{4\sqrt{z}} + 199\,307\,233\,125\right)\right) $$

07.22.03.8451.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{9}{2}, \frac{1}{4}; -z\right) = \frac{1}{3\,380\,568\,048\,000\, z^{7/2}} $$
$$ \left(2\sqrt{\pi}\, \left(1\,048\,576\, z^5 + 278\,855\,680\, z^4 + 21\,855\,313\,920\, z^3 + 594\,191\,347\,200\, z^2 + 5\,106\,331\,890\,000\, z + 9\,382\,884\,847\,875\right)\right. $$
$$ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{17/4} + 2\left(131\,072\, z^8 + 34\,734\,080\, z^7 + 2\,699\,719\,680\, z^6 + 71\,837\,095\,680\, z^5 + 577\,663\,213\,050\, z^4 + \right. $$
$$ \left. 775\,115\,827\,200\, z^3 - 152\,631\,864\,000\, z^2 - 94\,032\,130\,500\, z - 199\,307\,233\,125\right) \cos\left(2\sqrt{z}\right) \sqrt{z} - $$
$$ \left(1\,048\,576\, z^9 + 278\,659\,072\, z^8 + 21\,803\,458\,560\, z^7 + 590\,205\,189\,120\, z^6 + 5\,003\,209\,846\,800\, z^5 + \right. $$
$$ \left.\left. 8\,621\,663\,846\,400\, z^4 - 651\,229\,286\,400\, z^3 + 43\,609\,104\,000\, z^2 + 171\,710\,847\,000\, z - 199\,307\,233\,125\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8452.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{9}{2}, \frac{3}{4}; z\right) = $$

$$ \left(\left(4\,z\left(33\,554\,432\,z^8 - 9\,820\,962\,816\,z^7 + 866\,997\,501\,952\,z^6 - 27\,584\,960\,348\,160\,z^5 + 299\,017\,713\,646\,080\,z^4 - 854\,163\,192\,405\,600\,z^3 + 303\,527\,027\,865\,600\,z^2 - 6\,421\,985\,677\,800\,z + 6\,059\,961\,975\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,777\,216\,z^8 - 4\,899\,995\,648\,z^7 + 430\,457\,880\,576\,z^6 - 13\,529\,596\,354\,560\,z^5 + 141\,562\,192\,907\,520\,z^4 - 352\,471\,543\,578\,000\,z^3 + 28\,206\,368\,467\,200\,z^2 - 15\,803\,121\,618\,900\,z + 18\,179\,885\,926\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-134\,217\,728\,z^9 + 39\,250\,296\,832\,z^8 - 3\,458\,221\,473\,792\,z^7 + 109\,487\,942\,074\,368\,z^6 - 1\,169\,770\,765\,363\,200\,z^5 + 3\,155\,040\,696\,931\,200\,z^4 - 676\,952\,843\,212\,800\,z^3 + 75\,049\,087\,528\,800\,z^2 - 37\,020\,858\,613\,200\,z + 54\,539\,657\,778\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(1\,171\,366\,828\,632\,000\sqrt{2}\; z^{11/4}\right) $$

07.22.03.8453.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{9}{2}, \frac{3}{4}; -z\right) = $$

$$ \left(\left(4\,z\left(33\,554\,432\,z^8 + 9\,820\,962\,816\,z^7 + 866\,997\,501\,952\,z^6 + 27\,584\,960\,348\,160\,z^5 + 299\,017\,713\,646\,080\,z^4 + 854\,163\,192\,405\,600\,z^3 + 303\,527\,027\,865\,600\,z^2 + 6\,421\,985\,677\,800\,z + 6\,059\,961\,975\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,777\,216\,z^8 + 4\,899\,995\,648\,z^7 + 430\,457\,880\,576\,z^6 + 13\,529\,596\,354\,560\,z^5 + 141\,562\,192\,907\,520\,z^4 + 352\,471\,543\,578\,000\,z^3 + 28\,206\,368\,467\,200\,z^2 + 15\,803\,121\,618\,900\,z + 18\,179\,885\,926\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(134\,217\,728\,z^9 + 39\,250\,296\,832\,z^8 + 3\,458\,221\,473\,792\,z^7 + 109\,487\,942\,074\,368\,z^6 + 1\,169\,770\,765\,363\,200\,z^5 + 3\,155\,040\,696\,931\,200\,z^4 + 676\,952\,843\,212\,800\,z^3 + 75\,049\,087\,528\,800\,z^2 + 37\,020\,858\,613\,200\,z + 54\,539\,657\,778\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(1\,171\,366\,828\,632\,000\sqrt{2}\; z^{11/4}\right) $$

07.22.03.8454.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{9}{2},\frac{5}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-5\,354\,029\,056z^5+524\,527\,534\,080z^4-19\,014\,123\,110\,400z^3+245\,103\,930\,720\,000\right.\right.\right.
$$

$$
\left.z^2-900\,756\,945\,396\,000z+478\,527\,127\,241\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-5\,354\,029\,056z^5+524\,527\,534\,080z^4-19\,014\,123\,110\,400z^3+\right.
$$

$$
\left.245\,103\,930\,720\,000z^2-900\,756\,945\,396\,000z+478\,527\,127\,241\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-
$$

$$
4\left(-4\,194\,304z^9+1\,048\,576z^{17/2}+1\,337\,720\,832z^8-333\,643\,776z^{15/2}-130\,882\,633\,728z^7+32\,473\,128\,960z^{13/2}+\right.
$$

$$
4\,729\,481\,902\,080z^6-1\,158\,849\,308\,160z^{11/2}-60\,435\,213\,030\,720z^5+14\,315\,413\,519\,440z^{9/2}+
$$

$$
215\,355\,669\,021\,900z^4-45\,403\,180\,547\,175z^{7/2}-93\,777\,017\,241\,600z^3+7\,814\,751\,436\,800z^{5/2}+
$$

$$
1\,465\,265\,894\,400z^2-2\,878\,200\,864\,000z^{3/2}+523\,309\,248\,000z+2\,943\,614\,520\,000\sqrt{z}+
$$

$$
e^{4\sqrt{z}}\left(4\,194\,304z^9+1\,048\,576z^{17/2}-1\,337\,720\,832z^8-333\,643\,776z^{15/2}+130\,882\,633\,728z^7+\right.
$$

$$
32\,473\,128\,960z^{13/2}-4\,729\,481\,902\,080z^6-1\,158\,849\,308\,160z^{11/2}+60\,435\,213\,030\,720z^5+
$$

$$
14\,315\,413\,519\,440z^{9/2}-215\,355\,669\,021\,900z^4-45\,403\,180\,547\,175z^{7/2}+93\,777\,017\,241\,600z^3+
$$

$$
7\,814\,751\,436\,800z^{5/2}-1\,465\,265\,894\,400z^2-2\,878\,200\,864\,000z^{3/2}-523\,309\,248\,000z+
$$

$$
\left.\left.\left.\left.2\,943\,614\,520\,000\sqrt{z}-1\,471\,807\,260\,000\right)+1\,471\,807\,260\,000\right)\right)\right)\Big/\left(2\,596\,276\,260\,864\,000z^{7/2}\right)
$$

07.22.03.8455.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{9}{2},\frac{5}{4};-z\right)=
$$

$$
\frac{1}{649\,069\,065\,216\,000z^{7/2}}\left(\sqrt{\pi}\left(16\,777\,216z^6+5\,354\,029\,056z^5+524\,527\,534\,080z^4+19\,014\,123\,110\,400z^3+\right.\right.
$$

$$
\left.245\,103\,930\,720\,000z^2+900\,756\,945\,396\,000z+478\,527\,127\,241\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}+
$$

$$
2\left(\sqrt{z}\left(1\,048\,576z^8+333\,643\,776z^7+32\,473\,128\,960z^6+1\,158\,849\,308\,160z^5+14\,315\,413\,519\,440z^4+\right.\right.
$$

$$
\left.45\,403\,180\,547\,175z^3+7\,814\,751\,436\,800z^2+2\,878\,200\,864\,000z+2\,943\,614\,520\,000\right)\cos\left(2\sqrt{z}\right)-
$$

$$
4\left(1\,048\,576z^9+334\,430\,208z^8+32\,720\,658\,432z^7+1\,182\,370\,475\,520z^6+\right.
$$

$$
15\,108\,803\,257\,680z^5+53\,838\,917\,255\,475z^4+23\,444\,254\,310\,400z^3+
$$

$$
\left.\left.\left.366\,316\,473\,600z^2-130\,827\,312\,000z+367\,951\,815\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)
$$

07.22.03.8456.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{9}{2},\frac{7}{4};z\right)= $$

$$ \left(\left(4z\left(16\,777\,216z^8-5\,802\,819\,584z^7+625\,964\,941\,312z^6-25\,587\,343\,441\,920z^5+387\,222\,472\,615\,680z^4-\right.\right.\right. $$

$$ \left.\left.\left.1\,816\,442\,066\,181\,600z^3+1\,621\,498\,534\,580\,925z^2+13\,095\,813\,931\,200z-7\,161\,773\,243\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right. $$

$$ 2\sqrt{z}\left(16\,777\,216z^8-5\,792\,333\,824z^7+622\,366\,359\,552z^6-25\,205\,667\,102\,720z^5+372\,216\,921\,373\,440z^4-\right. $$

$$ \left.1\,610\,972\,961\,998\,400z^3+918\,644\,241\,489\,975z^2+70\,389\,999\,880\,200z-42\,970\,639\,461\,750\right)I_{\frac{3}{4}}\left(\sqrt{z}\right) $$

$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(67\,108\,864z^9-23\,194\,501\,120z^8+2\,498\,083\,160\,064z^7-101\,732\,352\,196\,608z^6+\right. $$

$$ 1\,524\,239\,140\,469\,760z^5-6\,914\,327\,442\,422\,400z^4+5\,125\,809\,995\,806\,500z^3+419\,066\,045\,798\,400z^2- $$

$$ \left.\left.93\,307\,674\,259\,800z+64\,455\,959\,192\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(5\,075\,922\,924\,072\,000\sqrt{2}\,z^{11/4}\right) $$

07.22.03.8457.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{9}{2},\frac{7}{4};-z\right)= $$

$$ \left(\left(4z\left(16\,777\,216z^8+5\,802\,819\,584z^7+625\,964\,941\,312z^6+25\,587\,343\,441\,920z^5+387\,222\,472\,615\,680z^4+\right.\right.\right. $$

$$ \left.\left.\left.1\,816\,442\,066\,181\,600z^3+1\,621\,498\,534\,580\,925z^2-13\,095\,813\,931\,200z-7\,161\,773\,243\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right. $$

$$ 2\sqrt{z}\left(16\,777\,216z^8+5\,792\,333\,824z^7+622\,366\,359\,552z^6+25\,205\,667\,102\,720z^5+372\,216\,921\,373\,440z^4+\right. $$

$$ \left.1\,610\,972\,961\,998\,400z^3+918\,644\,241\,489\,975z^2-70\,389\,999\,880\,200z-42\,970\,639\,461\,750\right)J_{\frac{3}{4}}\left(\sqrt{z}\right) $$

$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(67\,108\,864z^9+23\,194\,501\,120z^8+2\,498\,083\,160\,064z^7+101\,732\,352\,196\,608z^6+\right. $$

$$ 1\,524\,239\,140\,469\,760z^5+6\,914\,327\,442\,422\,400z^4+5\,125\,809\,995\,806\,500z^3-419\,066\,045\,798\,400z^2- $$

$$ \left.\left.93\,307\,674\,259\,800z-64\,455\,959\,192\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(5\,075\,922\,924\,072\,000\sqrt{2}\,z^{11/4}\right) $$

07.22.03.8458.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{9}{2},\frac{9}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-99\,941\,875\,712\,z^6+11\,749\,416\,763\,392\,z^5-532\,395\,447\,091\,200\,z^4+\right.\right.\right.
$$

$$
\left.\left.\left.9\,150\,546\,746\,880\,000\,z^3-50\,442\,388\,942\,176\,000\,z^2+53\,595\,038\,251\,062\,000\,z+6\,220\,852\,654\,141\,125\right)\right.
$$

$$
\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-99\,941\,875\,712\,z^6+11\,749\,416\,763\,392\,z^5-\right.\right.\right.
$$

$$
\left.\left.\left.532\,395\,447\,091\,200\,z^4+9\,150\,546\,746\,880\,000\,z^3-50\,442\,388\,942\,176\,000\,z^2+\right.\right.\right.
$$

$$
\left.\left.\left.53\,595\,038\,251\,062\,000\,z+6\,220\,852\,654\,141\,125\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}-\right.\right.
$$

$$
\left.\left.4\left(-67\,108\,864\,z^9+16\,777\,216\,z^{17/2}+24\,972\,886\,016\,z^8-6\,230\,638\,592\,z^{15/2}-2\,932\,696\,940\,544\,z^7+\right.\right.\right.
$$

$$
728\,544\,509\,952\,z^{13/2}+132\,558\,185\,496\,576\,z^6-32\,608\,777\,420\,800\,z^{11/2}-2\,263\,824\,090\,823\,680\,z^5+
$$

$$
543\,227\,609\,675\,520\,z^{9/2}+12\,229\,533\,043\,136\,640\,z^4-2\,718\,152\,104\,963\,680\,z^{7/2}-11\,711\,293\,472\,686\,500\,z^3+
$$

$$
1\,719\,555\,826\,544\,325\,z^{5/2}-2\,000\,576\,367\,820\,800\,z^2+336\,034\,311\,782\,400\,z^{3/2}+70\,332\,762\,931\,200\,z-
$$

$$
\left.\left.\left.146\,526\,589\,440\,000\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864\,z^9+16\,777\,216\,z^{17/2}-24\,972\,886\,016\,z^8-\right.\right.\right.\right.
$$

$$
6\,230\,638\,592\,z^{15/2}+2\,932\,696\,940\,544\,z^7+728\,544\,509\,952\,z^{13/2}-132\,558\,185\,496\,576\,z^6-
$$

$$
32\,608\,777\,420\,800\,z^{11/2}+2\,263\,824\,090\,823\,680\,z^5+543\,227\,609\,675\,520\,z^{9/2}-
$$

$$
12\,229\,533\,043\,136\,640\,z^4-2\,718\,152\,104\,963\,680\,z^{7/2}+11\,711\,293\,472\,686\,500\,z^3+
$$

$$
1\,719\,555\,826\,544\,325\,z^{5/2}+2\,000\,576\,367\,820\,800\,z^2+336\,034\,311\,782\,400\,z^{3/2}-70\,332\,762\,931\,200\,z-
$$

$$
\left.\left.\left.\left.146\,526\,589\,440\,000\sqrt{z}+73\,263\,294\,720\,000\right)-73\,263\,294\,720\,000\right)\right)\right)\Big/\left(232\,626\,352\,973\,414\,400\,z^{7/2}\right)
$$

07.22.03.8459.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{9}{2},\frac{9}{4};-z\right)=
$$

$$
\left(\sqrt{\pi}\,z^{9/4}\left(268\,435\,456\,z^7+99\,941\,875\,712\,z^6+11\,749\,416\,763\,392\,z^5+532\,395\,447\,091\,200\,z^4+9\,150\,546\,746\,880\,000\,z^3+\right.\right.
$$

$$
\left.\left.50\,442\,388\,942\,176\,000\,z^2+53\,595\,038\,251\,062\,000\,z-6\,220\,852\,654\,141\,125\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.
$$

$$
\left.2\left(4\left(16\,777\,216\,z^9+6\,243\,221\,504\,z^8+733\,174\,235\,136\,z^7+33\,139\,546\,374\,144\,z^6+565\,956\,022\,705\,920\,z^5+\right.\right.\right.
$$

$$
\left.\left.\left.3\,057\,383\,260\,784\,160\,z^4+2\,927\,823\,368\,171\,625\,z^3-500\,144\,091\,955\,200\,z^2-17\,583\,190\,732\,800\,z-\right.\right.\right.
$$

$$
\left.\left.\left.18\,315\,823\,680\,000\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(16\,777\,216\,z^8+6\,230\,638\,592\,z^7+728\,544\,509\,952\,z^6+\right.\right.\right.
$$

$$
\left.\left.\left.32\,608\,777\,420\,800\,z^5+543\,227\,609\,675\,520\,z^4+2\,718\,152\,104\,963\,680\,z^3+1\,719\,555\,826\,544\,325\,z^2-\right.\right.\right.
$$

$$
\left.\left.\left.336\,034\,311\,782\,400\,z-146\,526\,589\,440\,000\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(58\,156\,588\,243\,353\,600\,z^{7/2}\right)
$$

07.22.03.8460.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{9}{2}, \frac{11}{4}; z\right) = $$

$$\left(\left(2z\left(268\,435\,456z^8 - 107\,122\,524\,160z^7 + 13\,654\,394\,142\,720z^6 - 681\,864\,870\,297\,600z^5 + 13\,247\,310\,867\,148\,800z^4 - 86\,461\,489\,717\,574\,400z^3 + 123\,398\,950\,755\,366\,000z^2 + 11\,047\,985\,259\,436\,125z + 491\,093\,022\,420\,000\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(268\,435\,456z^8 - 106\,954\,752\,000z^7 + 13\,587\,893\,452\,800z^6 - 673\,507\,683\,532\,800z^5 + 12\,842\,876\,151\,705\,600z^4 - 79\,184\,195\,126\,150\,400z^3 + 85\,473\,358\,688\,718\,000z^2 + 26\,857\,965\,091\,332\,375z + 2\,946\,558\,134\,520\,000\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\left(268\,435\,456z^9 - 107\,055\,415\,296z^8 + 13\,627\,718\,369\,280z^7 - 678\,492\,622\,356\,480z^6 + 13\,081\,986\,208\,051\,200z^5 - 83\,392\,788\,662\,726\,400z^4 + 105\,924\,768\,161\,612\,400z^3 + 23\,429\,960\,404\,475\,625z^2 + 4\,714\,493\,015\,232\,000z - 1\,104\,959\,300\,445\,000\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(174\,031\,643\,111\,040\,000\sqrt{2}\, z^{11/4}\right)$$

07.22.03.8461.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{9}{2}, \frac{11}{4}; -z\right) = $$

$$\left(\left(2z\left(268\,435\,456z^8 + 107\,122\,524\,160z^7 + 13\,654\,394\,142\,720z^6 + 681\,864\,870\,297\,600z^5 + 13\,247\,310\,867\,148\,800z^4 + 86\,461\,489\,717\,574\,400z^3 + 123\,398\,950\,755\,366\,000z^2 - 11\,047\,985\,259\,436\,125z + 491\,093\,022\,420\,000\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(268\,435\,456z^8 + 106\,954\,752\,000z^7 + 13\,587\,893\,452\,800z^6 + 673\,507\,683\,532\,800z^5 + 12\,842\,876\,151\,705\,600z^4 + 79\,184\,195\,126\,150\,400z^3 + 85\,473\,358\,688\,718\,000z^2 - 26\,857\,965\,091\,332\,375z + 2\,946\,558\,134\,520\,000\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\left(268\,435\,456z^9 + 107\,055\,415\,296z^8 + 13\,627\,718\,369\,280z^7 + 678\,492\,622\,356\,480z^6 + 13\,081\,986\,208\,051\,200z^5 + 83\,392\,788\,662\,726\,400z^4 + 105\,924\,768\,161\,612\,400z^3 - 23\,429\,960\,404\,475\,625z^2 + 4\,714\,493\,015\,232\,000z + 1\,104\,959\,300\,445\,000\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(174\,031\,643\,111\,040\,000\sqrt{2}\, z^{11/4}\right)$$

07.22.03.8462.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{9}{2},\frac{13}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-1\,827\,508\,584\,448\,z^7+250\,654\,224\,285\,696\,z^6-13\,629\,323\,445\,534\,720\,z^5+\right.\right.\right.
$$

$$
292\,817\,495\,900\,160\,000\,z^4-2\,152\,208\,594\,866\,176\,000\,z^3+3\,430\,082\,448\,067\,968\,000\,z^2+
$$

$$
796\,269\,139\,730\,064\,000\,z+279\,938\,369\,436\,350\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-1\,827\,508\,584\,448\,z^7+250\,654\,224\,285\,696\,z^6-13\,629\,323\,445\,534\,720\,z^5+\right.
$$

$$
292\,817\,495\,900\,160\,000\,z^4-2\,152\,208\,594\,866\,176\,000\,z^3+3\,430\,082\,448\,067\,968\,000\,z^2+
$$

$$
796\,269\,139\,730\,064\,000\,z+279\,938\,369\,436\,350\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}-
$$

$$
4\left(-1\,073\,741\,824\,z^9+268\,435\,456\,z^{17/2}+456\,675\,819\,520\,z^8-113\,967\,628\,288\,z^{15/2}-62\,578\,332\,008\,448\,z^7+\right.
$$

$$
15\,559\,799\,341\,056\,z^{13/2}+3\,395\,766\,110\,650\,368\,z^6-837\,558\,717\,972\,480\,z^{11/2}-72\,590\,075\,016\,560\,640\,z^5+
$$

$$
17\,556\,702\,313\,328\,640\,z^{9/2}+525\,578\,297\,196\,395\,520\,z^4-120\,039\,912\,231\,402\,240\,z^{7/2}-
$$

$$
779\,686\,945\,102\,296\,000\,z^3+134\,593\,410\,574\,854\,000\,z^{5/2}-250\,928\,667\,511\,622\,100\,z^2+
$$

$$
67\,877\,274\,447\,345\,825\,z^{3/2}-96\,027\,665\,655\,398\,400\,z+15\,004\,322\,758\,656\,000\,\sqrt{z}+e^{4\sqrt{z}}
$$

$$
\left(1\,073\,741\,824\,z^9+268\,435\,456\,z^{17/2}-456\,675\,819\,520\,z^8-113\,967\,628\,288\,z^{15/2}+62\,578\,332\,008\,448\,z^7+\right.
$$

$$
15\,559\,799\,341\,056\,z^{13/2}-3\,395\,766\,110\,650\,368\,z^6-837\,558\,717\,972\,480\,z^{11/2}+72\,590\,075\,016\,560\,640
$$

$$
z^5+17\,556\,702\,313\,328\,640\,z^{9/2}-525\,578\,297\,196\,395\,520\,z^4-120\,039\,912\,231\,402\,240\,z^{7/2}+
$$

$$
779\,686\,945\,102\,296\,000\,z^3+134\,593\,410\,574\,854\,000\,z^{5/2}+250\,928\,667\,511\,622\,100\,z^2+
$$

$$
67\,877\,274\,447\,345\,825\,z^{3/2}+96\,027\,665\,655\,398\,400\,z+15\,004\,322\,758\,656\,000\,\sqrt{z}-
$$

$$
\left.\left.\left.\left.7\,502\,161\,379\,328\,000\right)+7\,502\,161\,379\,328\,000\right)\right)\right)\Big/\left(13\,233\,854\,746\,932\,019\,200\,z^{7/2}\right)
$$

07.22.03.8463.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{9}{2},\frac{13}{4};-z\right)=
$$

$$
\left(\sqrt{\pi}\,z^{5/4}\left(4\,294\,967\,296\,z^8+1\,827\,508\,584\,448\,z^7+250\,654\,224\,285\,696\,z^6+13\,629\,323\,445\,534\,720\,z^5+\right.\right.
$$

$$
292\,817\,495\,900\,160\,000\,z^4+2\,152\,208\,594\,866\,176\,000\,z^3+3\,430\,082\,448\,067\,968\,000\,z^2-
$$

$$
\left.796\,269\,139\,730\,064\,000\,z+279\,938\,369\,436\,350\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$

$$
2\left(4\left(268\,435\,456\,z^9+114\,168\,954\,880\,z^8+15\,644\,583\,002\,112\,z^7+848\,941\,527\,662\,592\,z^6+\right.\right.
$$

$$
18\,147\,518\,754\,140\,160\,z^5+131\,394\,574\,299\,098\,880\,z^4+194\,921\,736\,275\,574\,000\,z^3-
$$

$$
62\,732\,166\,877\,905\,525\,z^2+24\,006\,916\,413\,849\,600\,z+1\,875\,540\,344\,832\,000\right)\sin\left(2\sqrt{z}\right)-
$$

$$
\sqrt{z}\left(268\,435\,456\,z^8+113\,967\,628\,288\,z^7+15\,559\,799\,341\,056\,z^6+837\,558\,717\,972\,480\,z^5+\right.
$$

$$
17\,556\,702\,313\,328\,640\,z^4+120\,039\,912\,231\,402\,240\,z^3+134\,593\,410\,574\,854\,000\,z^2-
$$

$$
\left.\left.\left.67\,877\,274\,447\,345\,825\,z+15\,004\,322\,758\,656\,000\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(3\,308\,463\,686\,733\,004\,800\,z^{7/2}\right)
$$

07.22.03.8464.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{9}{2},\frac{15}{4};z\right)= $$

$$ \left(\left(2z\left(4\,294\,967\,296z^8-1\,942\,398\,959\,616z^7+285\,645\,524\,172\,800z^6-16\,852\,689\,711\,267\,840z^5+399\,803\,447\,210\,803\,200\right.\right.\right. $$

$$ z^4-3\,343\,603\,283\,564\,544\,000z^3+6\,555\,317\,303\,604\,326\,400z^2+ $$

$$ \left.1\,216\,030\,510\,887\,192\,000z+564\,137\,993\,952\,658\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- $$

$$ \sqrt{z}\left(4\,294\,967\,296z^8-1\,939\,714\,605\,056z^7+284\,438\,739\,025\,920z^6-16\,677\,373\,917\,265\,920z^5+\right. $$

$$ 389\,728\,385\,276\,313\,600z^4-3\,118\,998\,847\,107\,686\,400z^3+4\,979\,461\,128\,728\,486\,400z^2+ $$

$$ \left.2\,502\,109\,595\,077\,092\,000z+1\,425\,259\,377\,661\,494\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- $$

$$ 2\left(4\,294\,967\,296z^9-1\,941\,325\,217\,792z^8+285\,161\,602\,154\,496z^7-16\,782\,029\,173\,555\,200z^6+\right. $$

$$ 395\,698\,359\,523\,737\,600z^5-3\,249\,744\,475\,801\,190\,400z^4+5\,849\,290\,305\,687\,628\,800z^3+ $$

$$ \left.\left.\left.2\,048\,757\,772\,991\,529\,600z^2+1\,139\,424\,822\,624\,713\,625z+200\,365\,953\,147\,360\,000\right)\right. $$

$$ \left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(8\,606\,655\,804\,764\,160\,000\sqrt{2}\;z^{11/4}\right) $$

07.22.03.8465.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{9}{2},\frac{15}{4};-z\right)= $$

$$ \left(\left(2z\left(4\,294\,967\,296z^8+1\,942\,398\,959\,616z^7+285\,645\,524\,172\,800z^6+16\,852\,689\,711\,267\,840z^5+399\,803\,447\,210\,803\,200\right.\right.\right. $$

$$ z^4+3\,343\,603\,283\,564\,544\,000z^3+6\,555\,317\,303\,604\,326\,400z^2- $$

$$ \left.1\,216\,030\,510\,887\,192\,000z+564\,137\,993\,952\,658\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- $$

$$ \sqrt{z}\left(4\,294\,967\,296z^8+1\,939\,714\,605\,056z^7+284\,438\,739\,025\,920z^6+16\,677\,373\,917\,265\,920z^5+\right. $$

$$ 389\,728\,385\,276\,313\,600z^4+3\,118\,998\,847\,107\,686\,400z^3+4\,979\,461\,128\,728\,486\,400z^2- $$

$$ \left.2\,502\,109\,595\,077\,092\,000z+1\,425\,259\,377\,661\,494\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\left(4\,294\,967\,296z^9+1\,941\,325\,217\,792z^8+285\,161\,602\,154\,496z^7+16\,782\,029\,173\,555\,200z^6+\right. $$

$$ 395\,698\,359\,523\,737\,600z^5+3\,249\,744\,475\,801\,190\,400z^4+5\,849\,290\,305\,687\,628\,800z^3- $$

$$ \left.\left.\left.2\,048\,757\,772\,991\,529\,600z^2+1\,139\,424\,822\,624\,713\,625z-200\,365\,953\,147\,360\,000\right)\right. $$

$$ \left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(8\,606\,655\,804\,764\,160\,000\sqrt{2}\;z^{11/4}\right) $$

07.22.03.8466.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{9}{2},\frac{17}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(-4\left(-17\,179\,869\,184\,z^9+4\,294\,967\,296\,z^{17/2}+8\,220\,567\,404\,544\,z^8-2\,051\,920\,625\,664\,z^{15/2}-1\,287\,543\,953\,817\,600\right.\right.\right.
$$
$$
z^7+320\,358\,120\,947\,712\,z^{13/2}+81\,537\,567\,824\,019\,456\,z^6-20\,149\,304\,945\,541\,120\,z^{11/2}-
$$
$$
2\,093\,461\,366\,057\,205\,760\,z^5+509\,029\,313\,613\,004\,800\,z^{9/2}+19\,005\,086\,803\,531\,530\,240\,z^4-
$$
$$
4\,414\,199\,283\,037\,716\,480\,z^{7/2}-38\,221\,389\,685\,366\,272\,000\,z^3+7\,166\,098\,459\,973\,376\,000\,z^{5/2}-
$$
$$
17\,590\,574\,102\,980\,032\,000\,z^2+5\,350\,223\,441\,458\,526\,400\,z^{3/2}-13\,164\,329\,518\,303\,263\,300\,z+
$$
$$
3\,954\,736\,715\,649\,922\,125\sqrt{z}+e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^9+4\,294\,967\,296\,z^{17/2}-\right.
$$
$$
8\,220\,567\,404\,544\,z^8-2\,051\,920\,625\,664\,z^{15/2}+1\,287\,543\,953\,817\,600\,z^7+
$$
$$
320\,358\,120\,947\,712\,z^{13/2}-81\,537\,567\,824\,019\,456\,z^6-20\,149\,304\,945\,541\,120\,z^{11/2}+
$$
$$
2\,093\,461\,366\,057\,205\,760\,z^5+509\,029\,313\,613\,004\,800\,z^{9/2}-19\,005\,086\,803\,531\,530\,240\,z^4-
$$
$$
4\,414\,199\,283\,037\,716\,480\,z^{7/2}+38\,221\,389\,685\,366\,272\,000\,z^3+7\,166\,098\,459\,973\,376\,000\,z^{5/2}+
$$
$$
17\,590\,574\,102\,980\,032\,000\,z^2+5\,350\,223\,441\,458\,526\,400\,z^{3/2}+13\,164\,329\,518\,303\,263\,300\,z+
$$
$$
\left.\left.3\,954\,736\,715\,649\,922\,125\sqrt{z}+4\,321\,244\,954\,492\,928\,000\right)-4\,321\,244\,954\,492\,928\,000\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(68\,719\,476\,736\,z^9-32\,895\,154\,520\,064\,z^8+5\,156\,315\,471\,020\,032\,z^7-\right.
$$
$$
327\,103\,762\,692\,833\,280\,z^6+8\,433\,143\,881\,924\,608\,000\,z^5-77\,479\,509\,415\,182\,336\,000\,z^4+
$$
$$
164\,643\,957\,507\,262\,464\,000\,z^3+57\,331\,378\,060\,564\,608\,000\,z^2+
$$
$$
\left.40\,311\,125\,198\,834\,490\,000\,z+12\,597\,226\,624\,635\,778\,125\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(68\,719\,476\,736\,z^9-32\,895\,154\,520\,064\,z^8+5\,156\,315\,471\,020\,032\,z^7-\right.
$$
$$
327\,103\,762\,692\,833\,280\,z^6+8\,433\,143\,881\,924\,608\,000\,z^5-77\,479\,509\,415\,182\,336\,000\,z^4+
$$
$$
164\,643\,957\,507\,262\,464\,000\,z^3+57\,331\,378\,060\,564\,608\,000\,z^2+40\,311\,125\,198\,834\,490\,000\,z+
$$
$$
\left.\left.\left.12\,597\,226\,624\,635\,778\,125\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)\Big/\left(586\,361\,564\,171\,757\,158\,400\,z^{7/2}\right)
$$

07.22.03.8467.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{9}{2},\frac{17}{4};-z\right)=
\left(\sqrt{\pi}\sqrt[4]{z}\left(68\,719\,476\,736\,z^9+32\,895\,154\,520\,064\,z^8+5\,156\,315\,471\,020\,032\,z^7+327\,103\,762\,692\,833\,280\,z^6+\right.\right.
$$
$$
8\,433\,143\,881\,924\,608\,000\,z^5+77\,479\,509\,415\,182\,336\,000\,z^4+164\,643\,957\,507\,262\,464\,000\,z^3-
$$
$$
\left.57\,331\,378\,060\,564\,608\,000\,z^2+40\,311\,125\,198\,834\,490\,000\,z-12\,597\,226\,624\,635\,778\,125\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$
$$
2\left(4\left(4\,294\,967\,296\,z^9+2\,055\,141\,851\,136\,z^8+321\,885\,988\,454\,400\,z^7+20\,384\,391\,956\,004\,864\,z^6+\right.\right.
$$
$$
523\,365\,341\,514\,301\,440\,z^5+4\,751\,271\,700\,882\,882\,560\,z^4+9\,555\,347\,421\,341\,568\,000\,z^3-
$$
$$
4\,397\,643\,525\,745\,008\,000\,z^2+3\,291\,082\,379\,575\,815\,825\,z-1\,080\,311\,238\,623\,232\,000\right)\sin\left(2\sqrt{z}\right)-
$$
$$
\sqrt{z}\left(4\,294\,967\,296\,z^8+2\,051\,920\,625\,664\,z^7+320\,358\,120\,947\,712\,z^6+20\,149\,304\,945\,541\,120\,z^5+\right.
$$
$$
509\,029\,313\,613\,004\,800\,z^4+4\,414\,199\,283\,037\,716\,480\,z^3+7\,166\,098\,459\,973\,376\,000\,z^2-
$$
$$
\left.\left.\left.5\,350\,223\,441\,458\,526\,400\,z+3\,954\,736\,715\,649\,922\,125\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(146\,590\,391\,042\,939\,289\,600\,z^{7/2}\right)
$$

07.22.03.8468.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{9}{2},\frac{19}{4};z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-34\,733\,400\,522\,752\,z^8+5\,788\,362\,858\,299\,392\,z^7-393\,956\,736\,903\,413\,760\,z^6+\right.\right.\right.
$$

$$
11\,038\,345\,556\,687\,585\,280\,z^5-112\,589\,522\,381\,566\,771\,200\,z^4+280\,715\,319\,195\,936\,768\,000\,z^3+
$$

$$
\left.80\,892\,378\,687\,043\,123\,200\,z^2+69\,776\,051\,753\,337\,930\,000\,z+21\,555\,254\,446\,598\,998\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-
$$

$$
\left(68\,719\,476\,736\,z^9-34\,690\,450\,849\,792\,z^8+5\,766\,769\,910\,218\,752\,z^7-390\,396\,551\,941\,324\,800\,z^6+\right.
$$

$$
10\,801\,451\,899\,646\,115\,840\,z^5-106\,290\,128\,842\,525\,900\,800\,z^4+225\,096\,867\,347\,621\,068\,800\,z^3+
$$

$$
150\,469\,614\,938\,061\,619\,200\,z^2+145\,436\,461\,950\,149\,370\,000\,z+64\,665\,763\,339\,796\,994\,375\Big)
$$

$$
I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-34\,716\,220\,653\,568\,z^8+5\,779\,706\,351\,714\,304\,z^7-\right.
$$

$$
392\,523\,087\,423\,209\,472\,z^6+10\,942\,054\,794\,799\,349\,760\,z^5-109\,973\,794\,849\,682\,227\,200\,z^4+
$$

$$
256\,251\,664\,500\,804\,403\,200\,z^3+121\,686\,123\,448\,976\,486\,400\,z^2+109\,466\,766\,041\,135\,302\,800\,z+
$$

$$
\left.\left.\left.57\,156\,736\,173\,797\,885\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(348\,856\,448\,619\,773\,952\,000\,\sqrt{2}\;z^{13/4}\right)
$$

07.22.03.8469.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{9}{2},\frac{19}{4};-z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+34\,733\,400\,522\,752\,z^8+5\,788\,362\,858\,299\,392\,z^7+393\,956\,736\,903\,413\,760\,z^6+\right.\right.\right.
$$

$$
11\,038\,345\,556\,687\,585\,280\,z^5+112\,589\,522\,381\,566\,771\,200\,z^4+280\,715\,319\,195\,936\,768\,000\,z^3-
$$

$$
\left.80\,892\,378\,687\,043\,123\,200\,z^2+69\,776\,051\,753\,337\,930\,000\,z-21\,555\,254\,446\,598\,998\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-
$$

$$
\left(68\,719\,476\,736\,z^9+34\,690\,450\,849\,792\,z^8+5\,766\,769\,910\,218\,752\,z^7+390\,396\,551\,941\,324\,800\,z^6+\right.
$$

$$
10\,801\,451\,899\,646\,115\,840\,z^5+106\,290\,128\,842\,525\,900\,800\,z^4+225\,096\,867\,347\,621\,068\,800\,z^3-
$$

$$
150\,469\,614\,938\,061\,619\,200\,z^2+145\,436\,461\,950\,149\,370\,000\,z-64\,665\,763\,339\,796\,994\,375\Big)
$$

$$
J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+34\,716\,220\,653\,568\,z^8+5\,779\,706\,351\,714\,304\,z^7+\right.
$$

$$
392\,523\,087\,423\,209\,472\,z^6+10\,942\,054\,794\,799\,349\,760\,z^5+109\,973\,794\,849\,682\,227\,200\,z^4+
$$

$$
256\,251\,664\,500\,804\,403\,200\,z^3-121\,686\,123\,448\,976\,486\,400\,z^2+109\,466\,766\,041\,135\,302\,800\,z-
$$

$$
\left.\left.\left.57\,156\,736\,173\,797\,885\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(348\,856\,448\,619\,773\,952\,000\,\sqrt{2}\;z^{13/4}\right)
$$

07.22.03.8470.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{9}{2},\frac{21}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}-146\,149\,147\,148\,288\,z^{17/2}-36\,485\,747\,179\,520\,z^{8}-\right.\right.\right.
$$

$$
25\,754\,277\,469\,224\,960\,z^{15/2}+6\,411\,382\,224\,322\,560\,z^{7}-1\,864\,389\,580\,019\,466\,240\,z^{13/2}-
$$

$$
461\,381\,186\,711\,715\,840\,z^{6}-55\,880\,702\,838\,492\,364\,800\,z^{11/2}+13\,639\,777\,247\,821\,824\,000\,z^{5}+
$$

$$
610\,000\,215\,694\,442\,496\,000\,z^{9/2}-143\,312\,864\,016\,442\,982\,400\,z^{4}-1\,549\,247\,361\,856\,472\,678\,400\,z^{7/2}+
$$

$$
305\,744\,742\,696\,830\,976\,000\,z^{3}-917\,323\,713\,971\,900\,928\,000\,z^{5/2}+291\,851\,643\,054\,077\,568\,000\,z^{2}-
$$

$$
1\,005\,592\,057\,738\,379\,496\,000\,z^{3/2}+346\,506\,621\,886\,358\,010\,000\,z-703\,513\,662\,131\,471\,152\,500\sqrt{z}+
$$

$$
e^{4\sqrt{z}}\left(274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}-146\,149\,147\,148\,288\,z^{17/2}-36\,485\,747\,179\,520\,z^{8}+\right.
$$

$$
25\,754\,277\,469\,224\,960\,z^{15/2}+6\,411\,382\,224\,322\,560\,z^{7}-1\,864\,389\,580\,019\,466\,240\,z^{13/2}-
$$

$$
461\,381\,186\,711\,715\,840\,z^{6}+55\,880\,702\,838\,492\,364\,800\,z^{11/2}+13\,639\,777\,247\,821\,824\,000\,z^{5}-
$$

$$
610\,000\,215\,694\,442\,496\,000\,z^{9/2}-143\,312\,864\,016\,442\,982\,400\,z^{4}+1\,549\,247\,361\,856\,472\,678\,400\,z^{7/2}+
$$

$$
305\,744\,742\,696\,830\,976\,000\,z^{3}+917\,323\,713\,971\,900\,928\,000\,z^{5/2}+291\,851\,643\,054\,077\,568\,000\,z^{2}+
$$

$$
1\,005\,592\,057\,738\,379\,496\,000\,z^{3/2}+346\,506\,621\,886\,358\,010\,000\,z+
$$

$$
\left.\left.703\,513\,662\,131\,471\,152\,500\sqrt{z}+163\,763\,946\,120\,265\,115\,625\right)+163\,763\,946\,120\,265\,115\,625\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}-584\,802\,747\,023\,360\,z^{9}+103\,126\,309\,420\,400\,640\,z^{8}-\right.
$$

$$
7\,476\,657\,432\,979\,046\,400\,z^{7}+224\,883\,836\,851\,322\,880\,000\,z^{6}-2\,479\,344\,301\,285\,834\,752\,000\,z^{5}+
$$

$$
6\,585\,758\,300\,290\,498\,560\,000\,z^{4}+3\,057\,673\,496\,563\,445\,760\,000\,z^{3}+3\,224\,890\,015\,906\,759\,200\,000\,z^{2}+
$$

$$
\left.2\,015\,556\,259\,941\,724\,500\,000\,z+163\,763\,946\,120\,265\,115\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}-584\,802\,747\,023\,360\,z^{9}+103\,126\,309\,420\,400\,640\,z^{8}-\right.
$$

$$
7\,476\,657\,432\,979\,046\,400\,z^{7}+224\,883\,836\,851\,322\,880\,000\,z^{6}-2\,479\,344\,301\,285\,834\,752\,000\,z^{5}+
$$

$$
6\,585\,758\,300\,290\,498\,560\,000\,z^{4}+3\,057\,673\,496\,563\,445\,760\,000\,z^{3}+
$$

$$
\left.\left.\left.3\,224\,890\,015\,906\,759\,200\,000\,z^{2}+2\,015\,556\,259\,941\,724\,500\,000\,z+163\,763\,946\,120\,265\,115\,625\right)\right.\right.
$$

$$
\left.\left.\left.\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\right/\left(22\,074\,788\,298\,230\,857\,728\,000\,z^{17/4}\right)
$$

07.22.03.8471.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{9}{2},\frac{21}{4};-z\right) = $$

$$ \left(\sqrt{\pi}\,\left(1\,099\,511\,627\,776\,z^{10}+584\,802\,747\,023\,360\,z^9+103\,126\,309\,420\,400\,640\,z^8+7\,476\,657\,432\,979\,046\,400\,z^7+\right.\right. $$

$$ 224\,883\,836\,851\,322\,880\,000\,z^6+2\,479\,344\,301\,285\,834\,752\,000\,z^5+6\,585\,758\,300\,290\,498\,560\,000\,z^4- $$

$$ 3\,057\,673\,496\,563\,445\,760\,000\,z^3+3\,224\,890\,015\,906\,759\,200\,000\,z^2- $$

$$ \left.2\,015\,556\,259\,941\,724\,500\,000\,z+163\,763\,946\,120\,265\,115\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)- $$

$$ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(68\,719\,476\,736\,z^9+36\,537\,286\,787\,072\,z^8+6\,438\,569\,367\,306\,240\,z^7+466\,097\,395\,004\,866\,560\,z^6+\right.\right. $$

$$ 13\,970\,175\,709\,623\,091\,200\,z^5+152\,500\,053\,923\,610\,624\,000\,z^4+387\,311\,840\,464\,118\,169\,600\,z^3- $$

$$ 229\,330\,928\,492\,975\,232\,000\,z^2+251\,398\,014\,434\,594\,874\,000\,z-175\,878\,415\,532\,867\,788\,125\right)\sin\left(2\sqrt{z}\right)- $$

$$ \left(68\,719\,476\,736\,z^9+36\,485\,747\,179\,520\,z^8+6\,411\,382\,224\,322\,560\,z^7+461\,381\,186\,711\,715\,840\,z^6+\right. $$

$$ 13\,639\,777\,247\,821\,824\,000\,z^5+143\,312\,864\,016\,442\,982\,400\,z^4+305\,744\,742\,696\,830\,976\,000\,z^3- $$

$$ \left.\left.\left.291\,851\,643\,054\,077\,568\,000\,z^2+346\,506\,621\,886\,358\,010\,000\,z-163\,763\,946\,120\,265\,115\,625\right)\right. $$

$$ \left.\left.\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(5\,518\,697\,074\,557\,714\,432\,000\,z^{17/4}\right) $$

07.22.03.8472.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{9}{2},\frac{23}{4};z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10}-614\,214\,683\,066\,368\,z^9+114\,394\,053\,042\,241\,536\,z^8-8\,822\,281\,660\,457\,287\,680\,z^7+\right.\right. $$

$$ 285\,093\,825\,407\,814\,205\,440\,z^6-3\,431\,616\,154\,536\,561\,868\,800\,z^5+10\,382\,669\,033\,038\,744\,780\,800\,z^4+ $$

$$ 4\,096\,693\,557\,911\,988\,633\,600\,z^3+5\,121\,046\,534\,651\,695\,648\,000\,z^2+ $$

$$ \left.3\,251\,764\,099\,372\,648\,860\,000\,z-323\,328\,816\,698\,984\,971\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- $$

$$ \left(1\,099\,511\,627\,776\,z^{10}-613\,527\,488\,299\,008\,z^9+114\,012\,015\,701\,262\,336\,z^8-8\,751\,804\,275\,081\,871\,360\,z^7+\right. $$

$$ 279\,765\,071\,916\,926\,238\,720\,z^6-3\,267\,012\,513\,928\,052\,736\,000\,z^5+8\,630\,017\,128\,066\,642\,739\,200\,z^4+ $$

$$ 7\,090\,724\,890\,986\,850\,713\,600\,z^3+9\,442\,005\,102\,925\,563\,168\,000\,z^2+ $$

$$ \left.8\,277\,217\,707\,494\,015\,280\,000\,z-969\,986\,450\,096\,954\,915\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- $$

$$ 2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10}-613\,939\,805\,159\,424\,z^9+114\,240\,928\,868\,204\,544\,z^8-8\,793\,921\,050\,803\,961\,856\,z^7+\right. $$

$$ 282\,931\,830\,007\,529\,472\,000\,z^6-3\,363\,589\,410\,717\,066\,854\,400\,z^5+9\,621\,829\,495\,086\,700\,953\,600\,z^4+ $$

$$ 5\,744\,796\,158\,978\,872\,934\,400\,z^3+7\,124\,406\,852\,968\,595\,590\,400\,z^2+6\,026\,421\,800\,259\,632\,772\,000\,z+ $$

$$ \left.\left.\left.969\,986\,450\,096\,954\,915\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(12\,338\,501\,761\,709\,899\,776\,000\,\sqrt{2}\;z^{17/4}\right) $$

07.22.03.8473.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) = $$

$$\left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} + 614\,214\,683\,066\,368\,z^9 + 114\,394\,053\,042\,241\,536\,z^8 + 8\,822\,281\,660\,457\,287\,680\,z^7 + 285\,093\,825\,407\,814\,205\,440\,z^6 + 3\,431\,616\,154\,536\,561\,868\,800\,z^5 + 10\,382\,669\,033\,038\,744\,780\,800\,z^4 - 4\,096\,693\,557\,911\,988\,633\,600\,z^3 + 5\,121\,046\,534\,651\,695\,648\,000\,z^2 - 3\,251\,764\,099\,372\,648\,860\,000\,z - 323\,328\,816\,698\,984\,971\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(1\,099\,511\,627\,776\,z^{10} + 613\,527\,488\,299\,008\,z^9 + 114\,012\,015\,701\,262\,336\,z^8 + 8\,751\,804\,275\,081\,871\,360\,z^7 + 279\,765\,071\,916\,926\,238\,720\,z^6 + 3\,267\,012\,513\,928\,052\,736\,000\,z^5 + 8\,630\,017\,128\,066\,642\,739\,200\,z^4 - 7\,090\,724\,890\,986\,850\,713\,600\,z^3 + 9\,442\,005\,102\,925\,563\,168\,000\,z^2 - 8\,277\,217\,707\,494\,015\,280\,000\,z - 969\,986\,450\,096\,954\,915\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} + 613\,939\,805\,159\,424\,z^9 + 114\,240\,928\,868\,204\,544\,z^8 + 8\,793\,921\,050\,803\,961\,856\,z^7 + 282\,931\,830\,007\,529\,472\,000\,z^6 + 3\,363\,589\,410\,717\,066\,854\,400\,z^5 + 9\,621\,829\,495\,086\,700\,953\,600\,z^4 - 5\,744\,796\,158\,978\,872\,934\,400\,z^3 + 7\,124\,406\,852\,968\,595\,590\,400\,z^2 - 6\,026\,421\,800\,259\,632\,772\,000\,z + 969\,986\,450\,096\,954\,915\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(12\,338\,501\,761\,709\,899\,776\,000\,\sqrt{2}\,z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{23}{4}$, $b_1 = \frac{11}{2}$

07.22.03.8474.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{11}{2}, -\frac{23}{4}; z\right) = \frac{945\left(\left(16z^2 + 180z + 105\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\,(8z + 21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.8475.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{945\left(10\sqrt{z}\,(8z - 21)\cos\left(2\sqrt{z}\right) + \left(16z^2 - 180z + 105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.8476.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{11}{2}, -\frac{21}{4}; z\right) = $$

$$\left(\left(4\,z\left(17\,179\,869\,184\,z^9 + 503\,584\,915\,456\,z^8 + 16\,600\,652\,578\,816\,z^7 + 427\,389\,616\,128\,000\,z^6 + 7\,432\,304\,901\,488\,640\,z^5 + 72\,581\,192\,268\,595\,200\,z^4 + 252\,842\,696\,772\,019\,200\,z^3 - 338\,689\,892\,531\,390\,400\,z^2 + 447\,787\,117\,529\,482\,500\,z - 30\,561\,470\,771\,387\,180\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(8\,589\,934\,592\,z^9 + 257\,161\,166\,848\,z^8 + 8\,472\,124\,981\,248\,z^7 + 219\,405\,373\,931\,520\,z^6 + 3\,867\,923\,697\,500\,160\,z^5 + 39\,137\,467\,803\,033\,600\,z^4 + 160\,949\,306\,300\,428\,800\,z^3 + 147\,013\,744\,560\,328\,800\,z^2 - 16\,120\,336\,231\,061\,370\,000\,z - 91\,684\,412\,314\,161\,541\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(68\,719\,476\,736\,z^{10} + 2\,031\,519\,531\,008\,z^9 + 66\,933\,038\,776\,320\,z^8 + 1\,727\,072\,468\,729\,856\,z^7 + 30\,187\,536\,824\,401\,920\,z^6 + 298\,607\,301\,638\,553\,600\,z^5 + 1\,101\,230\,490\,924\,748\,800\,z^4 - 838\,020\,365\,072\,352\,000\,z^3 + 6\,048\,964\,261\,941\,123\,600\,z^2 + 100\,752\,101\,444\,133\,562\,500\,z + 275\,053\,236\,942\,484\,625\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(428\,838\,579\,160\,992\,000\,\sqrt{2}\;z^{15/4}\right)$$

07.22.03.8477.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{11}{2}, -\frac{21}{4}; -z\right) = $$

$$\left(\left(4\,z\left(17\,179\,869\,184\,z^9 - 503\,584\,915\,456\,z^8 + 16\,600\,652\,578\,816\,z^7 - 427\,389\,616\,128\,000\,z^6 + 7\,432\,304\,901\,488\,640\,z^5 - 72\,581\,192\,268\,595\,200\,z^4 + 252\,842\,696\,772\,019\,200\,z^3 + 338\,689\,892\,531\,390\,400\,z^2 + 447\,787\,117\,529\,482\,500\,z + 30\,561\,470\,771\,387\,180\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(8\,589\,934\,592\,z^9 - 257\,161\,166\,848\,z^8 + 8\,472\,124\,981\,248\,z^7 - 219\,405\,373\,931\,520\,z^6 + 3\,867\,923\,697\,500\,160\,z^5 - 39\,137\,467\,803\,033\,600\,z^4 + 160\,949\,306\,300\,428\,800\,z^3 - 147\,013\,744\,560\,328\,800\,z^2 - 16\,120\,336\,231\,061\,370\,000\,z + 91\,684\,412\,314\,161\,541\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(68\,719\,476\,736\,z^{10} - 2\,031\,519\,531\,008\,z^9 + 66\,933\,038\,776\,320\,z^8 - 1\,727\,072\,468\,729\,856\,z^7 + 30\,187\,536\,824\,401\,920\,z^6 - 298\,607\,301\,638\,553\,600\,z^5 + 1\,101\,230\,490\,924\,748\,800\,z^4 + 838\,020\,365\,072\,352\,000\,z^3 + 6\,048\,964\,261\,941\,123\,600\,z^2 - 100\,752\,101\,444\,133\,562\,500\,z + 275\,053\,236\,942\,484\,625\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(428\,838\,579\,160\,992\,000\,\sqrt{2}\;z^{15/4}\right)$$

07.22.03.8478.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{11}{2},-\frac{19}{4};z\right)= $$

$$ \left(e^{-2\sqrt{z}}\left(-68\,719\,476\,736\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{41/4}-68\,719\,476\,736\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{41/4}+\right.\right. $$

$$ 68\,719\,476\,736\,e^{4\sqrt{z}}\,z^{10}-68\,719\,476\,736\,z^{10}+17\,179\,869\,184\,e^{4\sqrt{z}}\,z^{19/2}+17\,179\,869\,184\,z^{19/2}+ $$

$$ 12\,884\,901\,888\,e^{4\sqrt{z}}\,z^{9}-12\,884\,901\,888\,z^{9}+16\,106\,127\,360\,e^{4\sqrt{z}}\,z^{17/2}+16\,106\,127\,360\,z^{17/2}+ $$

$$ 28\,185\,722\,880\,e^{4\sqrt{z}}\,z^{8}-28\,185\,722\,880\,z^{8}+63\,417\,876\,480\,e^{4\sqrt{z}}\,z^{15/2}+63\,417\,876\,480\,z^{15/2}+ $$

$$ 174\,399\,160\,320\,e^{4\sqrt{z}}\,z^{7}-174\,399\,160\,320\,z^{7}+566\,797\,271\,040\,e^{4\sqrt{z}}\,z^{13/2}+566\,797\,271\,040\,z^{13/2}+ $$

$$ 2\,125\,489\,766\,400\,e^{4\sqrt{z}}\,z^{6}-2\,125\,489\,766\,400\,z^{6}+9\,033\,331\,507\,200\,e^{4\sqrt{z}}\,z^{11/2}+9\,033\,331\,507\,200\,z^{11/2}+ $$

$$ 42\,908\,324\,659\,200\,e^{4\sqrt{z}}\,z^{5}-42\,908\,324\,659\,200\,z^{5}+225\,268\,704\,460\,800\,e^{4\sqrt{z}}\,z^{9/2}+ $$

$$ 225\,268\,704\,460\,800\,z^{9/2}+1\,295\,295\,050\,649\,600\,e^{4\sqrt{z}}\,z^{4}-1\,295\,295\,050\,649\,600\,z^{4}+ $$

$$ 8\,095\,594\,066\,560\,000\,e^{4\sqrt{z}}\,z^{7/2}+8\,095\,594\,066\,560\,000\,z^{7/2}+54\,645\,259\,949\,280\,000\,e^{4\sqrt{z}}\,z^{3}- $$

$$ 54\,645\,259\,949\,280\,000\,z^{3}+396\,178\,134\,632\,280\,000\,e^{4\sqrt{z}}\,z^{5/2}+396\,178\,134\,632\,280\,000\,z^{5/2}+ $$

$$ 3\,070\,380\,543\,400\,170\,000\,e^{4\sqrt{z}}\,z^{2}-3\,070\,380\,543\,400\,170\,000\,z^{2}-20\,579\,253\,104\,510\,100\,000\,e^{4\sqrt{z}}\,z^{3/2}- $$

$$ 20\,579\,253\,104\,510\,100\,000\,z^{3/2}+49\,480\,998\,273\,344\,137\,500\,e^{4\sqrt{z}}\,z-49\,480\,998\,273\,344\,137\,500\,z- $$

$$ 58\,787\,057\,581\,633\,631\,250\,e^{4\sqrt{z}}\,\sqrt{z}-58\,787\,057\,581\,633\,631\,250\,\sqrt{z}+ $$

$$ \left.\left.29\,393\,528\,790\,816\,815\,625\,e^{4\sqrt{z}}-29\,393\,528\,790\,816\,815\,625\right)\right)\Big/\left(540\,737\,635\,261\,824\,000\,z^{9/2}\right) $$

07.22.03.8479.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{11}{2},-\frac{19}{4};-z\right)= $$

$$ \left(-137\,438\,953\,472\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{41/4}-2\left(8\,589\,934\,592\,z^{9}-8\,053\,063\,680\,z^{8}+31\,708\,938\,240\,z^{7}-\right.\right. $$

$$ 283\,398\,635\,520\,z^{6}+4\,516\,665\,753\,600\,z^{5}-112\,634\,352\,230\,400\,z^{4}+4\,047\,797\,033\,280\,000\,z^{3}- $$

$$ \left.198\,089\,067\,316\,140\,000\,z^{2}-10\,289\,626\,552\,255\,050\,000\,z+29\,393\,528\,790\,816\,815\,625\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+ $$

$$ \left(68\,719\,476\,736\,z^{10}-12\,884\,901\,888\,z^{9}+28\,185\,722\,880\,z^{8}-174\,399\,160\,320\,z^{7}+2\,125\,489\,766\,400\,z^{6}- \right. $$

$$ 42\,908\,324\,659\,200\,z^{5}+1\,295\,295\,050\,649\,600\,z^{4}-54\,645\,259\,949\,280\,000\,z^{3}+3\,070\,380\,543\,400\,170\,000\,z^{2}- $$

$$ \left.\left.49\,480\,998\,273\,344\,137\,500\,z+29\,393\,528\,790\,816\,815\,625\right)\sin\left(2\sqrt{z}\right)\right)\Big/\left(270\,368\,817\,630\,912\,000\,z^{9/2}\right) $$

07.22.03.8480.01

$${}_1F_2\left(-\frac{23}{4};\frac{11}{2},-\frac{17}{4};z\right)=$$

$$-\left(\left(4z\left(8\,589\,934\,592\,z^9-254\,476\,812\,288\,z^8-2\,742\,672\,162\,816\,z^7-42\,534\,793\,379\,840\,z^6-528\,535\,305\,584\,640\,z^5-\right.\right.\right.$$
$$\left.\left.\left.4\,007\,625\,276\,211\,200\,z^4-11\,300\,588\,895\,974\,400\,z^3+13\,841\,228\,706\,782\,400\,z^2-\right.\right.\right.$$
$$\left.\left.\left.38\,381\,752\,931\,098\,500\,z+783\,627\,455\,676\,594\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(-4\,294\,967\,296\,z^9+124\,554\,051\,584\,z^8+1\,443\,645\,882\,368\,z^7+22\,288\,237\,854\,720\,z^6+\right.$$
$$280\,672\,964\,444\,160\,z^5+2\,225\,781\,286\,502\,400\,z^4+7\,765\,164\,978\,278\,400\,z^3+$$
$$\left.3\,670\,412\,569\,084\,800\,z^2-332\,641\,858\,736\,187\,000\,z-2\,350\,882\,367\,029\,783\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-34\,359\,738\,368\,z^{10}+1\,009\,317\,314\,560\,z^9+11\,211\,743\,690\,752\,z^8+173\,216\,215\,597\,056\,z^7+\right.$$
$$2\,162\,194\,702\,663\,680\,z^6+16\,653\,344\,838\,451\,200\,z^5+50\,580\,513\,510\,912\,000\,z^4-$$
$$29\,950\,261\,648\,876\,800\,z^3+109\,284\,819\,098\,439\,600\,z^2+2\,341\,286\,928\,797\,008\,500\,z+$$
$$\left.\left.7\,052\,647\,101\,089\,349\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(20\,420\,884\,721\,952\,000\sqrt{2}\;z^{15/4}\right)$$

07.22.03.8481.01

$${}_1F_2\left(-\frac{23}{4};\frac{11}{2},-\frac{17}{4};-z\right)=$$

$$\left(\left(-4z\left(8\,589\,934\,592\,z^9+254\,476\,812\,288\,z^8-2\,742\,672\,162\,816\,z^7+42\,534\,793\,379\,840\,z^6-528\,535\,305\,584\,640\,z^5+\right.\right.\right.$$
$$\left.\left.\left.4\,007\,625\,276\,211\,200\,z^4-11\,300\,588\,895\,974\,400\,z^3-13\,841\,228\,706\,782\,400\,z^2-\right.\right.\right.$$
$$\left.\left.\left.38\,381\,752\,931\,098\,500\,z-783\,627\,455\,676\,594\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(4\,294\,967\,296\,z^9+124\,554\,051\,584\,z^8-1\,443\,645\,882\,368\,z^7+22\,288\,237\,854\,720\,z^6-\right.$$
$$280\,672\,964\,444\,160\,z^5+2\,225\,781\,286\,502\,400\,z^4-7\,765\,164\,978\,278\,400\,z^3+3\,670\,412\,569\,084\,800\,z^2+$$
$$\left.332\,641\,858\,736\,187\,000\,z-2\,350\,882\,367\,029\,783\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-34\,359\,738\,368\,z^{10}-1\,009\,317\,314\,560\,z^9+11\,211\,743\,690\,752\,z^8-173\,216\,215\,597\,056\,z^7+\right.$$
$$2\,162\,194\,702\,663\,680\,z^6-16\,653\,344\,838\,451\,200\,z^5+50\,580\,513\,510\,912\,000\,z^4+29\,950\,261\,648\,876\,800\,z^3+$$
$$\left.109\,284\,819\,098\,439\,600\,z^2-2\,341\,286\,928\,797\,008\,500\,z+7\,052\,647\,101\,089\,349\,375\right)$$
$$\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(20\,420\,884\,721\,952\,000\sqrt{2}\;z^{15/4}\right)$$

07.22.03.8482.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{11}{2},-\frac{15}{4};z\right)= $$

$$ \left(e^{-2\sqrt{z}}\left(-17\,179\,869\,184\,e^{4\sqrt{z}}\,z^{10}+17\,179\,869\,184\,z^{10}-4\,294\,967\,296\,e^{4\sqrt{z}}\,z^{19/2}-4\,294\,967\,296\,z^{19/2}+\right.\right. $$

$$ 1\,073\,741\,824\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-943)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{37/4}+ $$

$$ 1\,073\,741\,824\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-943)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{37/4}+1\,009\,317\,314\,560\,e^{4\sqrt{z}}\,z^9- $$

$$ 1\,009\,317\,314\,560\,z^9+249\,108\,103\,168\,e^{4\sqrt{z}}\,z^{17/2}+249\,108\,103\,168\,z^{17/2}+182\,804\,545\,536\,e^{4\sqrt{z}}\,z^8- $$

$$ 182\,804\,545\,536\,z^8+221\,459\,251\,200\,e^{4\sqrt{z}}\,z^{15/2}+221\,459\,251\,200\,z^{15/2}+371\,699\,220\,480\,e^{4\sqrt{z}}\,z^7- $$

$$ 371\,699\,220\,480\,z^7+792\,723\,456\,000\,e^{4\sqrt{z}}\,z^{13/2}+792\,723\,456\,000\,z^{13/2}+2\,038\,290\,186\,240\,e^{4\sqrt{z}}\,z^6- $$

$$ 2\,038\,290\,186\,240\,z^6+6\,093\,070\,663\,680\,e^{4\sqrt{z}}\,z^{11/2}+6\,093\,070\,663\,680\,z^{11/2}+20\,590\,682\,112\,000\,e^{4\sqrt{z}}\,z^5- $$

$$ 20\,590\,682\,112\,000\,z^5+76\,783\,317\,811\,200\,e^{4\sqrt{z}}\,z^{9/2}+76\,783\,317\,811\,200\,z^{9/2}+308\,403\,583\,488\,000\,e^{4\sqrt{z}}\,z^4- $$

$$ 308\,403\,583\,488\,000\,z^4+1\,295\,295\,050\,649\,600\,e^{4\sqrt{z}}\,z^{7/2}+1\,295\,295\,050\,649\,600\,z^{7/2}+ $$

$$ 5\,424\,048\,024\,595\,200\,e^{4\sqrt{z}}\,z^3-5\,424\,048\,024\,595\,200\,z^3+20\,238\,985\,166\,400\,000\,e^{4\sqrt{z}}\,z^{5/2}+ $$

$$ 20\,238\,985\,166\,400\,000\,z^{5/2}+37\,568\,616\,215\,130\,000\,e^{4\sqrt{z}}\,z^2-37\,568\,616\,215\,130\,000\,z^2- $$

$$ 495\,222\,668\,290\,350\,000\,e^{4\sqrt{z}}\,z^{3/2}-495\,222\,668\,290\,350\,000\,z^{3/2}+1\,306\,837\,596\,877\,312\,500\,e^{4\sqrt{z}}\,z- $$

$$ 1\,306\,837\,596\,877\,312\,500\,z-1\,588\,839\,394\,098\,206\,250\,e^{4\sqrt{z}}\,\sqrt{z}-1\,588\,839\,394\,098\,206\,250\,\sqrt{z}+ $$

$$ \left.\left.794\,419\,697\,049\,103\,125\,e^{4\sqrt{z}}-794\,419\,697\,049\,103\,125\right)\right)\Big/\left(28\,459\,875\,540\,096\,000\,z^{9/2}\right) $$

07.22.03.8483.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{11}{2},-\frac{15}{4};-z\right)= $$

$$ \left(2\,147\,483\,648\,\sqrt{\pi}\,(16z+943)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{37/4}+2\left(2\,147\,483\,648\,z^9+124\,554\,051\,584\,z^8-110\,729\,625\,600\,z^7+\right.\right. $$

$$ 396\,361\,728\,000\,z^6-3\,046\,535\,331\,840\,z^5+38\,391\,658\,905\,600\,z^4-647\,647\,525\,324\,800\,z^3+ $$

$$ \left.10\,119\,492\,583\,200\,000\,z^2+247\,611\,334\,145\,175\,000\,z-794\,419\,697\,049\,103\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+ $$

$$ \left(-17\,179\,869\,184\,z^{10}-1\,009\,317\,314\,560\,z^9+182\,804\,545\,536\,z^8-371\,699\,220\,480\,z^7+2\,038\,290\,186\,240\,z^6-\right. $$

$$ 20\,590\,682\,112\,000\,z^5+308\,403\,583\,488\,000\,z^4-5\,424\,048\,024\,595\,200\,z^3+37\,568\,616\,215\,130\,000\,z^2- $$

$$ \left.\left.1\,306\,837\,596\,877\,312\,500\,z+794\,419\,697\,049\,103\,125\right)\sin\left(2\sqrt{z}\right)\right)\Big/\left(14\,229\,937\,770\,048\,000\,z^{9/2}\right) $$

07.22.03.8484.01

$${}_1F_2\left(-\frac{23}{4};\frac{11}{2},-\frac{13}{4};z\right)=$$

$$\left(\left(4z\left(4\,294\,967\,296z^9-380\,373\,041\,152z^8+4\,229\,267\,718\,144z^7+20\,925\,005\,168\,640z^6+156\,917\,850\,439\,680z^5+\right.\right.\right.$$
$$\left.\left.848\,935\,246\,233\,600z^4+1\,834\,979\,591\,808\,000z^3-1\,947\,643\,637\,385\,600z^2+\right.\right.$$
$$\left.\left.6\,190\,605\,311\,467\,500z-67\,168\,067\,629\,422\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\,\left(2\,147\,483\,648z^9-188\,844\,343\,296z^8+1\,999\,374\,385\,152z^7+11\,489\,677\,148\,160z^6+\right.$$
$$86\,672\,631\,398\,400z^5+493\,358\,813\,798\,400z^4+1\,353\,556\,813\,593\,600z^3-311\,584\,867\,624\,800z^2-$$
$$\left.19\,809\,936\,996\,696\,000z-201\,504\,202\,888\,267\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left(17\,179\,869\,184z^{10}-1\,517\,197\,197\,312z^9+16\,543\,408\,717\,824z^8+87\,366\,580\,568\,064z^7+652\,724\,105\,379\,840z^6+\right.$$
$$3\,593\,793\,668\,382\,720z^5+8\,556\,315\,528\,499\,200z^4-4\,014\,933\,212\,505\,600z^3+6\,273\,146\,715\,620\,400z^2+$$
$$\left.\left.174\,575\,069\,783\,383\,500z+604\,512\,608\,664\,801\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(3\,603\,685\,539\,168\,000\sqrt{2}\;z^{15/4}\right)$$

07.22.03.8485.01

$${}_1F_2\left(-\frac{23}{4};\frac{11}{2},-\frac{13}{4};-z\right)=$$

$$\left(\left(4z\left(4\,294\,967\,296z^9+380\,373\,041\,152z^8+4\,229\,267\,718\,144z^7-20\,925\,005\,168\,640z^6+156\,917\,850\,439\,680z^5-\right.\right.\right.$$
$$\left.\left.848\,935\,246\,233\,600z^4+1\,834\,979\,591\,808\,000z^3+1\,947\,643\,637\,385\,600z^2+\right.\right.$$
$$\left.\left.6\,190\,605\,311\,467\,500z+67\,168\,067\,629\,422\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\,\left(2\,147\,483\,648z^9+188\,844\,343\,296z^8+1\,999\,374\,385\,152z^7-11\,489\,677\,148\,160z^6+\right.$$
$$86\,672\,631\,398\,400z^5-493\,358\,813\,798\,400z^4+1\,353\,556\,813\,593\,600z^3+311\,584\,867\,624\,800z^2-$$
$$\left.19\,809\,936\,996\,696\,000z+201\,504\,202\,888\,267\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(17\,179\,869\,184z^{10}+1\,517\,197\,197\,312z^9+16\,543\,408\,717\,824z^8-87\,366\,580\,568\,064z^7+652\,724\,105\,379\,840z^6-\right.$$
$$3\,593\,793\,668\,382\,720z^5+8\,556\,315\,528\,499\,200z^4+4\,014\,933\,212\,505\,600z^3+6\,273\,146\,715\,620\,400z^2-$$
$$\left.\left.174\,575\,069\,783\,383\,500z+604\,512\,608\,664\,801\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(3\,603\,685\,539\,168\,000\sqrt{2}\;z^{15/4}\right)$$

07.22.03.8486.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{11}{2},-\frac{11}{4};z\right) = \left(e^{-2\sqrt{z}}\left(2\,147\,483\,648\,e^{4\sqrt{z}}\,z^{10}-2\,147\,483\,648\,z^{10}+536\,870\,912\,e^{4\sqrt{z}}\,z^{19/2}+536\,870\,912\,z^{19/2}-252\,731\,981\,824\,e^{4\sqrt{z}}\,z^{9}+252\,731\,981\,824\,z^{9}-62\,780\,342\,272\,e^{4\sqrt{z}}\,z^{17/2}-62\,780\,342\,272\,z^{17/2}-8\,388\,608\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-30\,176\,z+662\,929\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{33/4}-8\,388\,608\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-30\,176\,z+662\,929\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{33/4}+5\,514\,469\,572\,608\,e^{4\sqrt{z}}\,z^{8}-5\,514\,469\,572\,608\,z^{8}+1\,332\,916\,256\,768\,e^{4\sqrt{z}}\,z^{15/2}+1\,332\,916\,256\,768\,z^{15/2}+944\,322\,379\,776\,e^{4\sqrt{z}}\,z^{7}-944\,322\,379\,776\,z^{7}+1\,087\,478\,169\,600\,e^{4\sqrt{z}}\,z^{13/2}+1\,087\,478\,169\,600\,z^{13/2}+1\,704\,905\,932\,800\,e^{4\sqrt{z}}\,z^{6}-1\,704\,905\,932\,800\,z^{6}+3\,326\,465\,802\,240\,e^{4\sqrt{z}}\,z^{11/2}+3\,326\,465\,802\,240\,z^{11/2}+7\,624\,513\,290\,240\,e^{4\sqrt{z}}\,z^{5}-7\,624\,513\,290\,240\,z^{5}+19\,631\,997\,665\,280\,e^{4\sqrt{z}}\,z^{9/2}+19\,631\,997\,665\,280\,z^{9/2}+54\,424\,161\,792\,000\,e^{4\sqrt{z}}\,z^{4}-54\,424\,161\,792\,000\,z^{4}+154\,201\,791\,744\,000\,e^{4\sqrt{z}}\,z^{7/2}+154\,201\,791\,744\,000\,z^{7/2}+408\,634\,748\,121\,600\,e^{4\sqrt{z}}\,z^{3}-408\,634\,748\,121\,600\,z^{3}+789\,320\,421\,489\,600\,e^{4\sqrt{z}}\,z^{5/2}+789\,320\,421\,489\,600\,z^{5/2}-521\,153\,868\,034\,800\,e^{4\sqrt{z}}\,z^{2}+521\,153\,868\,034\,800\,z^{2}-12\,649\,365\,729\,000\,000\,e^{4\sqrt{z}}\,z^{3/2}-12\,649\,365\,729\,000\,000\,z^{3/2}+38\,422\,448\,401\,837\,500\,e^{4\sqrt{z}}\,z-38\,422\,448\,401\,837\,500\,z-48\,146\,648\,306\,006\,250\,e^{4\sqrt{z}}\,\sqrt{z}-48\,146\,648\,306\,006\,250\,\sqrt{z}+24\,073\,324\,153\,003\,125\,e^{4\sqrt{z}}-24\,073\,324\,153\,003\,125\right)\Big/\left(1\,897\,325\,036\,006\,400\,z^{9/2}\right) $$

07.22.03.8487.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{11}{2},-\frac{11}{4};-z\right) = \frac{1}{948\,662\,518\,003\,200\,z^{9/2}} \left(-16\,777\,216\,\sqrt{\pi}\,\left(256\,z^2+30\,176\,z+662\,929\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{33/4}-2\left(268\,435\,456\,z^9+31\,390\,171\,136\,z^8+666\,458\,128\,384\,z^7-543\,739\,084\,800\,z^6+1\,663\,232\,901\,120\,z^5-9\,815\,998\,832\,640\,z^4+77\,100\,895\,872\,000\,z^3-394\,660\,210\,744\,800\,z^2-6\,324\,682\,864\,500\,000\,z+24\,073\,324\,153\,003\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(2\,147\,483\,648\,z^{10}+252\,731\,981\,824\,z^9+5\,514\,469\,572\,608\,z^8-944\,322\,379\,776\,z^7+1\,704\,905\,932\,800\,z^6-7\,624\,513\,290\,240\,z^5+54\,424\,161\,792\,000\,z^4-408\,634\,748\,121\,600\,z^3-521\,153\,868\,034\,800\,z^2-38\,422\,448\,401\,837\,500\,z+24\,073\,324\,153\,003\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8488.01

$${}_1F_2\left(-\frac{23}{4};\frac{11}{2},-\frac{9}{4};z\right)=$$

$$-\left(\left(4z\left(2\,147\,483\,648z^9-316\,753\,838\,080z^8+10\,475\,987\,271\,680z^7-55\,332\,726\,374\,400z^6-127\,375\,500\,902\,400z^5-\right.\right.\right.$$
$$\left.415\,191\,888\,691\,200z^4-631\,854\,013\,824\,000z^3+531\,115\,277\,616\,000z^2-1\,604\,971\,747\,417\,500z+\right.$$
$$\left.10\,833\,559\,295\,068\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1\,073\,741\,824z^9-157\,705\,830\,400z^8+5\,140\,811\,612\,160z^7-\right.$$
$$24\,646\,149\,734\,400z^6-73\,855\,873\,843\,200z^5-253\,974\,616\,473\,600z^4-480\,397\,889\,664\,000z^3+$$
$$\left.354\,629\,233\,728\,000z^2+1\,375\,690\,069\,215\,000z+32\,500\,677\,885\,204\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-8\,589\,934\,592z^{10}+1\,264\,867\,868\,672z^9-41\,590\,550\,691\,840z^8+211\,334\,033\,571\,840z^7+\right.$$
$$550\,638\,216\,806\,400z^6+1\,818\,251\,388\,518\,400z^5+3\,108\,317\,383\,987\,200z^4-$$
$$\left.\left.1\,205\,878\,943\,808\,000z^3+885\,226\,653\,234\,000z^2+22\,698\,886\,142\,047\,500z+97\,502\,033\,655\,613\,125\right)$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(1\,386\,032\,899\,680\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.8489.01

$${}_1F_2\left(-\frac{23}{4};\frac{11}{2},-\frac{9}{4};-z\right)=$$

$$\left(\left(-4z\left(2\,147\,483\,648z^9+316\,753\,838\,080z^8+10\,475\,987\,271\,680z^7+55\,332\,726\,374\,400z^6-127\,375\,500\,902\,400z^5+\right.\right.\right.$$
$$\left.415\,191\,888\,691\,200z^4-631\,854\,013\,824\,000z^3-531\,115\,277\,616\,000z^2-1\,604\,971\,747\,417\,500z-\right.$$
$$\left.10\,833\,559\,295\,068\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1\,073\,741\,824z^9+157\,705\,830\,400z^8+5\,140\,811\,612\,160z^7+\right.$$
$$24\,646\,149\,734\,400z^6-73\,855\,873\,843\,200z^5+253\,974\,616\,473\,600z^4-480\,397\,889\,664\,000z^3-$$
$$\left.354\,629\,233\,728\,000z^2+1\,375\,690\,069\,215\,000z-32\,500\,677\,885\,204\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-8\,589\,934\,592z^{10}-1\,264\,867\,868\,672z^9-41\,590\,550\,691\,840z^8-211\,334\,033\,571\,840z^7+\right.$$
$$550\,638\,216\,806\,400z^6-1\,818\,251\,388\,518\,400z^5+3\,108\,317\,383\,987\,200z^4+$$
$$\left.\left.1\,205\,878\,943\,808\,000z^3+885\,226\,653\,234\,000z^2-22\,698\,886\,142\,047\,500z+97\,502\,033\,655\,613\,125\right)$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(1\,386\,032\,899\,680\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.8490.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{11}{2},-\frac{7}{4};z\right)= \frac{1}{517\,452\,282\,547\,200\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(-536\,870\,912\,e^{4\sqrt{z}}\,z^{10}+536\,870\,912\,z^{10}-134\,217\,728\,e^{4\sqrt{z}}\,z^{19/2}-134\,217\,728\,z^{19/2}+ 94\,824\,824\,832\,e^{4\sqrt{z}}\,z^{9}-94\,824\,824\,832\,z^{9}+23\,605\,542\,912\,e^{4\sqrt{z}}\,z^{17/2}+23\,605\,542\,912\,z^{17/2}- 4\,153\,210\,306\,560\,e^{4\sqrt{z}}\,z^{8}+4\,153\,210\,306\,560\,z^{8}-1\,020\,944\,449\,536\,e^{4\sqrt{z}}\,z^{15/2}-1\,020\,944\,449\,536\,z^{15/2}+ 131\,072\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3-724\,224\,z^2+31\,820\,592\,z-328\,149\,855\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{29/4}+ 131\,072\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3-724\,224\,z^2+31\,820\,592\,z-328\,149\,855\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{29/4}+ 42\,266\,806\,714\,368\,e^{4\sqrt{z}}\,z^{7}-42\,266\,806\,714\,368\,z^{7}+9\,858\,459\,893\,760\,e^{4\sqrt{z}}\,z^{13/2}+9\,858\,459\,893\,760\,z^{13/2}+ 6\,578\,236\,293\,120\,e^{4\sqrt{z}}\,z^{6}-6\,578\,236\,293\,120\,z^{6}+6\,944\,115\,916\,800\,e^{4\sqrt{z}}\,z^{11/2}+6\,944\,115\,916\,800\,z^{11/2}+ 9\,657\,353\,502\,720\,e^{4\sqrt{z}}\,z^{5}-9\,657\,353\,502\,720\,z^{5}+16\,010\,660\,413\,440\,e^{4\sqrt{z}}\,z^{9/2}+16\,010\,660\,413\,440\,z^{9/2}+ 29\,305\,317\,888\,000\,e^{4\sqrt{z}}\,z^{4}-29\,305\,317\,888\,000\,z^{4}+54\,424\,161\,792\,000\,e^{4\sqrt{z}}\,z^{7/2}+54\,424\,161\,792\,000\,z^{7/2}+ 88\,439\,262\,912\,000\,e^{4\sqrt{z}}\,z^{3}-88\,439\,262\,912\,000\,z^{3}+69\,390\,806\,284\,800\,e^{4\sqrt{z}}\,z^{5/2}+69\,390\,806\,284\,800\,z^{5/2}- 262\,383\,986\,264\,400\,e^{4\sqrt{z}}\,z^{2}+262\,383\,986\,264\,400\,z^{2}-986\,650\,526\,862\,000\,e^{4\sqrt{z}}\,z^{3/2}-986\,650\,526\,862\,000\,z^{3/2}+ 3\,813\,783\,767\,293\,500\,e^{4\sqrt{z}}\,z-3\,813\,783\,767\,293\,500\,z-4\,980\,687\,755\,793\,750\,e^{4\sqrt{z}}\,\sqrt{z}- 4\,980\,687\,755\,793\,750\,\sqrt{z}+2\,490\,343\,877\,896\,875\,e^{4\sqrt{z}}-2\,490\,343\,877\,896\,875\right)\right) $$

07.22.03.8491.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{11}{2},-\frac{7}{4};-z\right)= \frac{1}{258\,726\,141\,273\,600\,z^{9/2}}\left(262\,144\,\sqrt{\pi}\,\left(4096\,z^3+724\,224\,z^2+31\,820\,592\,z+328\,149\,855\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{29/4}+ 2\left(67\,108\,864\,z^9+11\,802\,771\,456\,z^8+510\,472\,224\,768\,z^7+4\,929\,229\,946\,880\,z^6- 3\,472\,057\,958\,400\,z^5+8\,005\,330\,206\,720\,z^4-27\,212\,080\,896\,000\,z^3+34\,695\,403\,142\,400\,z^2+ 493\,325\,263\,431\,000\,z-2\,490\,343\,877\,896\,875\right)\cos\left(2\sqrt{z}\right)\sqrt{z}- \left(536\,870\,912\,z^{10}+94\,824\,824\,832\,z^9+4\,153\,210\,306\,560\,z^8+42\,266\,806\,714\,368\,z^7-6\,578\,236\,293\,120\,z^6+ 9\,657\,353\,502\,720\,z^5-29\,305\,317\,888\,000\,z^4+88\,439\,262\,912\,000\,z^3+ 262\,383\,986\,264\,400\,z^2+3\,813\,783\,767\,293\,500\,z-2\,490\,343\,877\,896\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8492.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{11}{2}, -\frac{5}{4}; z\right) = $$

$$\left(\left(4\,z\left(1\,073\,741\,824\,z^9 - 221\,660\,577\,792\,z^8 + 12\,199\,196\,098\,560\,z^7 - 190\,032\,208\,199\,680\,z^6 + 496\,159\,417\,958\,400\,z^5 + 467\,406\,316\,339\,200\,z^4 + 424\,455\,842\,764\,800\,z^3 - 242\,226\,768\,168\,000\,z^2 + 628\,032\,422\,902\,500\,z - 2\,808\,700\,557\,980\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(536\,870\,912\,z^9 - 110\,494\,744\,576\,z^8 + 6\,031\,230\,894\,080\,z^7 - 91\,383\,769\,989\,120\,z^6 + 197\,734\,544\,179\,200\,z^5 + 284\,655\,819\,571\,200\,z^4 + 301\,437\,755\,942\,400\,z^3 - 284\,429\,478\,564\,000\,z^2 + 279\,125\,521\,290\,000\,z - 8\,426\,101\,673\,941\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(4\,294\,967\,296\,z^{10} - 885\,568\,569\,344\,z^9 + 48\,576\,801\,538\,048\,z^8 - 748\,268\,075\,089\,920\,z^7 + 1\,812\,114\,623\,692\,800\,z^6 + 2\,143\,572\,325\,171\,200\,z^5 + 2\,197\,247\,612\,313\,600\,z^4 - 714\,439\,229\,011\,200\,z^3 + 443\,662\,670\,682\,000\,z^2 + 3\,977\,538\,678\,382\,500\,z + 25\,278\,305\,021\,825\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(1\,078\,025\,588\,640\,000\sqrt{2}\; z^{15/4}\right)$$

07.22.03.8493.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{11}{2}, -\frac{5}{4}; -z\right) = $$

$$\left(\left(4\,z\left(1\,073\,741\,824\,z^9 + 221\,660\,577\,792\,z^8 + 12\,199\,196\,098\,560\,z^7 + 190\,032\,208\,199\,680\,z^6 + 496\,159\,417\,958\,400\,z^5 + 467\,406\,316\,339\,200\,z^4 + 424\,455\,842\,764\,800\,z^3 + 242\,226\,768\,168\,000\,z^2 + 628\,032\,422\,902\,500\,z + 2\,808\,700\,557\,980\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(536\,870\,912\,z^9 + 110\,494\,744\,576\,z^8 + 6\,031\,230\,894\,080\,z^7 + 91\,383\,769\,989\,120\,z^6 + 197\,734\,544\,179\,200\,z^5 - 284\,655\,819\,571\,200\,z^4 + 301\,437\,755\,942\,400\,z^3 + 284\,429\,478\,564\,000\,z^2 + 279\,125\,521\,290\,000\,z + 8\,426\,101\,673\,941\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(4\,294\,967\,296\,z^{10} + 885\,568\,569\,344\,z^9 + 48\,576\,801\,538\,048\,z^8 + 748\,268\,075\,089\,920\,z^7 + 1\,812\,114\,623\,692\,800\,z^6 - 2\,143\,572\,325\,171\,200\,z^5 + 2\,197\,247\,612\,313\,600\,z^4 + 714\,439\,229\,011\,200\,z^3 + 443\,662\,670\,682\,000\,z^2 - 3\,977\,538\,678\,382\,500\,z + 25\,278\,305\,021\,825\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(1\,078\,025\,588\,640\,000\sqrt{2}\; z^{15/4}\right)$$

07.22.03.8494.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{11}{2}, -\frac{3}{4}; z\right) = \frac{1}{73\,921\,754\,649\,600\, z^{9/2}} \left(e^{-2\sqrt{z}} \left(33\,554\,432\, e^{4\sqrt{z}}\, z^{10} - 33\,554\,432\, z^{10} + 8\,388\,608\, e^{4\sqrt{z}}\, z^{19/2} + 8\,388\,608\, z^{19/2} - 7\,904\,165\,888\, e^{4\sqrt{z}}\, z^9 + 7\,904\,165\,888\, z^9 - 1\,969\,750\,016\, e^{4\sqrt{z}}\, z^{17/2} - 1\,969\,750\,016\, z^{17/2} + 519\,879\,131\,136\, e^{4\sqrt{z}}\, z^8 - 519\,879\,131\,136\, z^8 + 128\,514\,097\,152\, e^{4\sqrt{z}}\, z^{15/2} + 128\,514\,097\,152\, z^{15/2} - 10\,658\,220\,957\,696\, e^{4\sqrt{z}}\, z^7 + 10\,658\,220\,957\,696\, z^7 - 2\,573\,035\,960\,320\, e^{4\sqrt{z}}\, z^{13/2} - 2\,573\,035\,960\,320\, z^{13/2} - 512\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(65\,536\, z^4 - 15\,450\,112\, z^3 + 1\,018\,258\,944\, z^2 - 21\,001\,590\,720\, z + 104\,679\,803\,745\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{25/4} - 512\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(65\,536\, z^4 - 15\,450\,112\, z^3 + 1\,018\,258\,944\, z^2 - 21\,001\,590\,720\, z + 104\,679\,803\,745\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{25/4} + 51\,774\,703\,534\,080\, e^{4\sqrt{z}}\, z^6 - 51\,774\,703\,534\,080\, z^6 + 11\,299\,116\,810\,240\, e^{4\sqrt{z}}\, z^{11/2} + 11\,299\,116\,810\,240\, z^{11/2} + 6\,738\,308\,628\,480\, e^{4\sqrt{z}}\, z^5 - 6\,738\,308\,628\,480\, z^5 + 6\,008\,547\,409\,920\, e^{4\sqrt{z}}\, z^{9/2} + 6\,008\,547\,409\,920\, z^{9/2} + 6\,512\,292\,864\,000\, e^{4\sqrt{z}}\, z^4 - 6\,512\,292\,864\,000\, z^4 + 7\,326\,329\,472\,000\, e^{4\sqrt{z}}\, z^{7/2} + 7\,326\,329\,472\,000\, z^{7/2} + 6\,541\,365\,600\,000\, e^{4\sqrt{z}}\, z^3 - 6\,541\,365\,600\,000\, z^3 - 850\,377\,528\,000\, e^{4\sqrt{z}}\, z^{5/2} - 850\,377\,528\,000\, z^{5/2} - 20\,536\,617\,301\,200\, e^{4\sqrt{z}}\, z^2 + 20\,536\,617\,301\,200\, z^2 - 21\,684\,626\,964\,000\, e^{4\sqrt{z}}\, z^{3/2} - 21\,684\,626\,964\,000\, z^{3/2} + 143\,660\,653\,636\,500\, e^{4\sqrt{z}}\, z - 143\,660\,653\,636\,500\, z - 199\,227\,510\,231\,750\, e^{4\sqrt{z}}\, \sqrt{z} - 199\,227\,510\,231\,750\, \sqrt{z} + 99\,613\,755\,115\,875\, e^{4\sqrt{z}} - 99\,613\,755\,115\,875\right)\right) $$

07.22.03.8495.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{11}{2}, -\frac{3}{4}; -z\right) = \frac{1}{36\,960\,877\,324\,800\, z^{9/2}} \left(-1024\, \sqrt{\pi}\, \left(65\,536\, z^4 + 15\,450\,112\, z^3 + 1\,018\,258\,944\, z^2 + 21\,001\,590\,720\, z + 104\,679\,803\,745\right) C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) z^{25/4} - 2\left(4\,194\,304\, z^9 + 984\,875\,008\, z^8 + 64\,257\,048\,576\, z^7 + 1\,286\,517\,980\,160\, z^6 + 5\,649\,558\,405\,120\, z^5 - 3\,004\,273\,704\,960\, z^4 + 3\,663\,164\,736\,000\, z^3 + 425\,188\,764\,000\, z^2 - 10\,842\,313\,482\,000\, z + 99\,613\,755\,115\,875\right) \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(33\,554\,432\, z^{10} + 7\,904\,165\,888\, z^9 + 519\,879\,131\,136\, z^8 + 10\,658\,220\,957\,696\, z^7 + 51\,774\,703\,534\,080\, z^6 - 6\,738\,308\,628\,480\, z^5 + 6\,512\,292\,864\,000\, z^4 - 6\,541\,365\,600\,000\, z^3 - 20\,536\,617\,301\,200\, z^2 - 143\,660\,653\,636\,500\, z + 99\,613\,755\,115\,875\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8496.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{11}{2},-\frac{1}{4};z\right)= $$

$$ -\left(\left(4z\left(536\,870\,912z^9-142\,472\,118\,272z^8+10\,970\,462\,158\,848z^7-283\,944\,399\,667\,200z^6+2\,152\,411\,421\,368\,320z^5-\right.\right.\right. $$

$$ \left.\left.\left.2\,591\,100\,687\,974\,400z^4-632\,732\,692\,838\,400z^3+177\,388\,752\,340\,800z^2-363\,597\,718\,522\,500z+\right.\right.\right. $$

$$ \left.\left.\left.1\,099\,056\,740\,079\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(268\,435\,456z^9-71\,068\,286\,976z^8+5\,441\,159\,430\,144z^7-\right.\right.\right. $$

$$ \left.\left.\left.138\,660\,461\,936\,640z^6+995\,899\,751\,239\,680z^5-807\,778\,079\,539\,200z^4-328\,219\,560\,345\,600z^3+\right.\right.\right. $$

$$ \left.\left.\left.291\,771\,071\,222\,400z^2-462\,760\,732\,665\,000z+3\,297\,170\,220\,238\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right. $$

$$ \left(-2\,147\,483\,648z^{10}+569\,351\,602\,176z^9-43\,740\,215\,377\,920z^8+1\,125\,025\,796\,063\,232z^7-\right. $$

$$ 8\,341\,833\,603\,317\,760z^6+8\,584\,791\,854\,284\,800z^5-3\,200\,140\,713\,369\,600z^4- $$

$$ \left.\left.796\,738\,330\,080\,000z^3+513\,003\,326\,497\,200z^2+495\,815\,070\,712\,500z+9\,891\,510\,660\,714\,375\right) $$

$$ \left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(1\,940\,446\,059\,552\,000\sqrt{2}\;z^{15/4}\right) $$

07.22.03.8497.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{11}{2},-\frac{1}{4};-z\right)= $$

$$ -\left(\left(4z\left(536\,870\,912z^9+142\,472\,118\,272z^8+10\,970\,462\,158\,848z^7+283\,944\,399\,667\,200z^6+2\,152\,411\,421\,368\,320z^5+\right.\right.\right. $$

$$ \left.\left.\left.2\,591\,100\,687\,974\,400z^4-632\,732\,692\,838\,400z^3-177\,388\,752\,340\,800z^2-363\,597\,718\,522\,500z-\right.\right.\right. $$

$$ \left.\left.\left.1\,099\,056\,740\,079\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(268\,435\,456z^9+71\,068\,286\,976z^8+5\,441\,159\,430\,144z^7+\right.\right.\right. $$

$$ \left.\left.\left.138\,660\,461\,936\,640z^6+995\,899\,751\,239\,680z^5+807\,778\,079\,539\,200z^4-328\,219\,560\,345\,600z^3-\right.\right.\right. $$

$$ \left.\left.\left.291\,771\,071\,222\,400z^2-462\,760\,732\,665\,000z-3\,297\,170\,220\,238\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right. $$

$$ \left(2\,147\,483\,648z^{10}+569\,351\,602\,176z^9+43\,740\,215\,377\,920z^8+1\,125\,025\,796\,063\,232z^7+\right. $$

$$ 8\,341\,833\,603\,317\,760z^6+8\,584\,791\,854\,284\,800z^5-3\,200\,140\,713\,369\,600z^4- $$

$$ \left.\left.796\,738\,330\,080\,000z^3-513\,003\,326\,497\,200z^2+495\,815\,070\,712\,500z-9\,891\,510\,660\,714\,375\right) $$

$$ \left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(1\,940\,446\,059\,552\,000\sqrt{2}\;z^{15/4}\right) $$

07.22.03.8498.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{11}{2},\frac{1}{4};z\right) = \frac{1}{123\,202\,924\,416\,000\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(-8\,388\,608\,e^{4\sqrt{z}}\,z^{10}+8\,388\,608\,z^{10}-2\,097\,152\,e^{4\sqrt{z}}\,z^{19/2}-2\,097\,152\,z^{19/2}+2\,470\,445\,056\,e^{4\sqrt{z}}\,z^{9}-2\,470\,445\,056\,z^{9}+616\,038\,400\,e^{4\sqrt{z}}\,z^{17/2}+616\,038\,400\,z^{17/2}-216\,768\,512\,000\,e^{4\sqrt{z}}\,z^{8}+216\,768\,512\,000\,z^{8}-53\,735\,505\,920\,e^{4\sqrt{z}}\,z^{15/2}-53\,735\,505\,920\,z^{15/2}+6\,680\,771\,297\,280\,e^{4\sqrt{z}}\,z^{7}-6\,680\,771\,297\,280\,z^{7}+1\,631\,426\,426\,880\,e^{4\sqrt{z}}\,z^{13/2}+1\,631\,426\,426\,880\,z^{13/2}-65\,818\,062\,480\,000\,e^{4\sqrt{z}}\,z^{6}+65\,818\,062\,480\,000\,z^{6}-15\,354\,832\,557\,600\,e^{4\sqrt{z}}\,z^{11/2}-15\,354\,832\,557\,600\,z^{11/2}+8\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(1\,048\,576\,z^{5}-309\,002\,240\,z^{4}+27\,153\,571\,840\,z^{3}-840\,063\,628\,800\,z^{2}+8\,374\,384\,299\,600\,z-18\,318\,965\,655\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{21/4}+8\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(1\,048\,576\,z^{5}-309\,002\,240\,z^{4}+27\,153\,571\,840\,z^{3}-840\,063\,628\,800\,z^{2}+8\,374\,384\,299\,600\,z-18\,318\,965\,655\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{21/4}+136\,266\,537\,369\,600\,e^{4\sqrt{z}}\,z^{5}-136\,266\,537\,369\,600\,z^{5}+25\,643\,748\,556\,800\,e^{4\sqrt{z}}\,z^{9/2}+25\,643\,748\,556\,800\,z^{9/2}+11\,722\,127\,155\,200\,e^{4\sqrt{z}}\,z^{4}-11\,722\,127\,155\,200\,z^{4}+6\,512\,292\,864\,000\,e^{4\sqrt{z}}\,z^{7/2}+6\,512\,292\,864\,000\,z^{7/2}+2\,238\,600\,672\,000\,e^{4\sqrt{z}}\,z^{3}-2\,238\,600\,672\,000\,z^{3}-3\,139\,855\,488\,000\,e^{4\sqrt{z}}\,z^{5/2}-3\,139\,855\,488\,000\,z^{5/2}-7\,571\,630\,682\,000\,e^{4\sqrt{z}}\,z^{2}+7\,571\,630\,682\,000\,z^{2}+1\,062\,971\,910\,000\,e^{4\sqrt{z}}\,z^{3/2}+1\,062\,971\,910\,000\,z^{3/2}+31\,091\,928\,367\,500\,e^{4\sqrt{z}}\,z-31\,091\,928\,367\,500\,z-47\,435\,121\,483\,750\,e^{4\sqrt{z}}\,\sqrt{z}-47\,435\,121\,483\,750\,\sqrt{z}+23\,717\,560\,741\,875\,e^{4\sqrt{z}}-23\,717\,560\,741\,875\right)\right) $$

07.22.03.8499.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{11}{2},\frac{1}{4};-z\right) = \frac{1}{61\,601\,462\,208\,000\,z^{9/2}}\left(16\sqrt{\pi}\,\left(1\,048\,576\,z^{5}+309\,002\,240\,z^{4}+27\,153\,571\,840\,z^{3}+840\,063\,628\,800\,z^{2}+8\,374\,384\,299\,600\,z+18\,318\,965\,655\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4}+2\left(1\,048\,576\,z^{9}+308\,019\,200\,z^{8}+26\,867\,752\,960\,z^{7}+815\,713\,213\,440\,z^{6}+7\,677\,416\,278\,800\,z^{5}+12\,821\,874\,278\,400\,z^{4}-3\,256\,146\,432\,000\,z^{3}-1\,569\,927\,744\,000\,z^{2}-531\,485\,955\,000\,z-23\,717\,560\,741\,875\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(8\,388\,608\,z^{10}+2\,470\,445\,056\,z^{9}+216\,768\,512\,000\,z^{8}+6\,680\,771\,297\,280\,z^{7}+65\,818\,062\,480\,000\,z^{6}+136\,266\,537\,369\,600\,z^{5}-11\,722\,127\,155\,200\,z^{4}+2\,238\,600\,672\,000\,z^{3}+7\,571\,630\,682\,000\,z^{2}+31\,091\,928\,367\,500\,z-23\,717\,560\,741\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8500.01

$${}_1F_2\left(-\frac{23}{4}; \frac{11}{2}, \frac{3}{4}; z\right) =$$

$$\left(\left(4\,z\left(268\,435\,456\,z^9 - 87\,056\,973\,824\,z^8 + 8\,615\,794\,573\,312\,z^7 - 311\,814\,663\,045\,120\,z^6 + 3\,915\,857\,075\,834\,880\,z^5 - 13\,245\,443\,133\,753\,600\,z^4 + 5\,606\,153\,934\,796\,800\,z^3 - 213\,562\,504\,108\,800\,z^2 + 315\,118\,022\,719\,500\,z - 636\,296\,007\,414\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(134\,217\,728\,z^9 - 43\,444\,600\,832\,z^8 + 4\,280\,917\,426\,176\,z^7 - 153\,286\,448\,578\,560\,z^6 + 1\,867\,236\,947\,896\,320\,z^5 - 5\,617\,110\,916\,771\,200\,z^4 + 676\,952\,843\,212\,800\,z^3 - 441\,731\,877\,602\,400\,z^2 + 581\,756\,349\,636\,000\,z - 1\,908\,888\,022\,243\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-1\,073\,741\,824\,z^{10} + 347\,959\,459\,840\,z^9 - 34\,376\,540\,749\,824\,z^8 + 1\,238\,776\,907\,563\,008\,z^7 - 15\,364\,454\,810\,664\,960\,z^6 + 49\,495\,823\,062\,963\,200\,z^5 - 13\,539\,056\,864\,256\,000\,z^4 + 1\,756\,853\,807\,385\,600\,z^3 - 936\,098\,853\,505\,200\,z^2 + 654\,475\,893\,340\,500\,z - 5\,726\,664\,066\,729\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(21\,344\,906\,655\,072\,000\,\sqrt{2}\,z^{15/4}\right)$$

07.22.03.8501.01

$${}_1F_2\left(-\frac{23}{4}; \frac{11}{2}, \frac{3}{4}; -z\right) =$$

$$\left(\left(4\,z\left(268\,435\,456\,z^9 + 87\,056\,973\,824\,z^8 + 8\,615\,794\,573\,312\,z^7 + 311\,814\,663\,045\,120\,z^6 + 3\,915\,857\,075\,834\,880\,z^5 + 13\,245\,443\,133\,753\,600\,z^4 + 5\,606\,153\,934\,796\,800\,z^3 + 213\,562\,504\,108\,800\,z^2 + 315\,118\,022\,719\,500\,z + 636\,296\,007\,414\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(134\,217\,728\,z^9 + 43\,444\,600\,832\,z^8 + 4\,280\,917\,426\,176\,z^7 + 153\,286\,448\,578\,560\,z^6 + 1\,867\,236\,947\,896\,320\,z^5 + 5\,617\,110\,916\,771\,200\,z^4 + 676\,952\,843\,212\,800\,z^3 + 441\,731\,877\,602\,400\,z^2 + 581\,756\,349\,636\,000\,z + 1\,908\,888\,022\,243\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(1\,073\,741\,824\,z^{10} + 347\,959\,459\,840\,z^9 + 34\,376\,540\,749\,824\,z^8 + 1\,238\,776\,907\,563\,008\,z^7 + 15\,364\,454\,810\,664\,960\,z^6 + 49\,495\,823\,062\,963\,200\,z^5 + 13\,539\,056\,864\,256\,000\,z^4 + 1\,756\,853\,807\,385\,600\,z^3 + 936\,098\,853\,505\,200\,z^2 + 654\,475\,893\,340\,500\,z + 5\,726\,664\,066\,729\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(21\,344\,906\,655\,072\,000\,\sqrt{2}\,z^{15/4}\right)$$

07.22.03.8502.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{11}{2}, \frac{5}{4}; z\right) = $$
$$ \left(e^{-2\sqrt{z}} \left(e^{2\sqrt{z}}\ \sqrt{2\pi}\ \left(16\,777\,216 z^6 - 5\,932\,843\,008 z^5 + 651\,685\,724\,160 z^4 - 26\,882\,036\,121\,600 z^3 + 401\,970\,446\,380\,800\right.\right.\right. $$
$$ \left. z^2 - 1\,758\,620\,702\,916\,000 z + 1\,154\,094\,836\,288\,625\right) \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) z^{17/4} + $$
$$ e^{2\sqrt{z}}\ \sqrt{2\pi}\ \left(16\,777\,216 z^6 - 5\,932\,843\,008 z^5 + 651\,685\,724\,160 z^4 - 26\,882\,036\,121\,600 z^3 + \right. $$
$$ \left. 401\,970\,446\,380\,800 z^2 - 1\,758\,620\,702\,916\,000 z + 1\,154\,094\,836\,288\,625\right) \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right) z^{17/4} - $$
$$ 4\left(-4\,194\,304 z^{10} + 1\,048\,576 z^{19/2} + 1\,482\,424\,320 z^9 - 369\,819\,648 z^{17/2} - 162\,645\,049\,344 z^8 + \right. $$
$$ 40\,386\,600\,960 z^{15/2} + 6\,690\,558\,965\,760 z^7 - 1\,643\,276\,736\,000 z^{13/2} - 99\,295\,704\,970\,560 z^6 + $$
$$ 23\,686\,703\,741\,520 z^{11/2} + 423\,199\,057\,733\,100 z^5 - 91\,400\,318\,808\,975 z^{9/2} - $$
$$ 234\,442\,543\,104\,000 z^4 + 23\,444\,254\,310\,400 z^{7/2} + 1\,953\,687\,859\,200 z^3 - 9\,157\,911\,840\,000 z^{5/2} + $$
$$ 6\,606\,779\,256\,000 z^2 + 7\,849\,638\,720\,000 z^{3/2} - 18\,397\,590\,750\,000 z - 33\,483\,615\,165\,000\ \sqrt{z}\ + $$
$$ e^{4\sqrt{z}} \left(4\,194\,304 z^{10} + 1\,048\,576 z^{19/2} - 1\,482\,424\,320 z^9 - 369\,819\,648 z^{17/2} + 162\,645\,049\,344 z^8 + \right. $$
$$ 40\,386\,600\,960 z^{15/2} - 6\,690\,558\,965\,760 z^7 - 1\,643\,276\,736\,000 z^{13/2} + 99\,295\,704\,970\,560 z^6 + $$
$$ 23\,686\,703\,741\,520 z^{11/2} - 423\,199\,057\,733\,100 z^5 - 91\,400\,318\,808\,975 z^{9/2} + $$
$$ 234\,442\,543\,104\,000 z^4 + 23\,444\,254\,310\,400 z^{7/2} - 1\,953\,687\,859\,200 z^3 - 9\,157\,911\,840\,000 z^{5/2} - $$
$$ 6\,606\,779\,256\,000 z^2 + 7\,849\,638\,720\,000 z^{3/2} + 18\,397\,590\,750\,000 z - 33\,483\,615\,165\,000\ \sqrt{z}\ + $$
$$ \left.\left.\left. 16\,741\,807\,582\,500\right) - 16\,741\,807\,582\,500\right)\right)\Big/ \left(5\,913\,740\,371\,968\,000 z^{9/2}\right) $$

07.22.03.8503.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{11}{2}, \frac{5}{4}; -z\right) = $$
$$ \left(\sqrt{\pi}\ \left(16\,777\,216 z^6 + 5\,932\,843\,008 z^5 + 651\,685\,724\,160 z^4 + 26\,882\,036\,121\,600 z^3 + 401\,970\,446\,380\,800 z^2 + \right.\right. $$
$$ \left. 1\,758\,620\,702\,916\,000 z + 1\,154\,094\,836\,288\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{17/4} + $$
$$ 2\left(\sqrt{z}\ \left(1\,048\,576 z^9 + 369\,819\,648 z^8 + 40\,386\,600\,960 z^7 + 1\,643\,276\,736\,000 z^6 + \right.\right. $$
$$ 23\,686\,703\,741\,520 z^5 + 91\,400\,318\,808\,975 z^4 + 23\,444\,254\,310\,400 z^3 + $$
$$ \left. 9\,157\,911\,840\,000 z^2 + 7\,849\,638\,720\,000 z + 33\,483\,615\,165\,000\right) \cos\left(2\sqrt{z}\right) - $$
$$ 4\left(1\,048\,576 z^{10} + 370\,606\,080 z^9 + 40\,661\,262\,336 z^8 + 1\,672\,639\,741\,440 z^7 + 24\,823\,926\,242\,640 z^6 + \right. $$
$$ 105\,799\,764\,433\,275 z^5 + 58\,610\,635\,776\,000 z^4 + 488\,421\,964\,800 z^3 - 1\,651\,694\,814\,000 z^2 - $$
$$ \left.\left.\left. 4\,599\,397\,687\,500 z + 4\,185\,451\,895\,625\right) \sin\left(2\sqrt{z}\right)\right)\right)\Big/ \left(1\,478\,435\,092\,992\,000 z^{9/2}\right) $$

07.22.03.8504.01

$${}_1F_2\left(-\frac{23}{4};\frac{11}{2},\frac{7}{4};z\right)=$$

$$\left(\left(4z\left(134\,217\,728z^9-51\,438\,944\,256z^8+6\,220\,744\,753\,152z^7-289\,270\,535\,290\,880z^6+5\,073\,521\,935\,472\,640z^5-\right.\right.\right.$$
$$28\,240\,149\,131\,251\,200z^4+30\,598\,101\,212\,679\,000z^3+471\,449\,301\,523\,200z^2-429\,706\,394\,617\,500z+$$
$$551\,456\,539\,759\,125\left)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(67\,108\,864z^9-25\,677\,529\,088z^8+3\,094\,410\,428\,416z^7-\right.\right.$$
$$142\,733\,704\,888\,320z^6+2\,451\,299\,652\,172\,800z^5-12\,745\,141\,589\,980\,800z^4+9\,457\,151\,242\,839\,300z^3+$$
$$1\,152\,431\,625\,945\,600z^2-974\,001\,161\,133\,000z+1\,654\,369\,619\,277\,375\left)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.$$
$$\left(-536\,870\,912z^{10}+205\,621\,559\,296z^9-24\,831\,749\,783\,552z^8+1\,150\,940\,781\,477\,888z^7-\right.$$
$$20\,014\,168\,369\,029\,120z^6+108\,296\,913\,419\,735\,040z^5-100\,350\,529\,292\,613\,600z^4-$$
$$\left.\left.10\,686\,184\,167\,859\,200z^3+2\,851\,613\,483\,518\,800z^2-1\,976\,649\,415\,240\,500z+4\,963\,108\,857\,832\,125\right)$$
$$\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(92\,494\,595\,505\,312\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.8505.01

$${}_1F_2\left(-\frac{23}{4};\frac{11}{2},\frac{7}{4};-z\right)=$$

$$\left(\left(4z\left(134\,217\,728z^9+51\,438\,944\,256z^8+6\,220\,744\,753\,152z^7+289\,270\,535\,290\,880z^6+5\,073\,521\,935\,472\,640z^5+\right.\right.\right.$$
$$28\,240\,149\,131\,251\,200z^4+30\,598\,101\,212\,679\,000z^3-471\,449\,301\,523\,200z^2-429\,706\,394\,617\,500z-$$
$$551\,456\,539\,759\,125\left)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(67\,108\,864z^9+25\,677\,529\,088z^8+3\,094\,410\,428\,416z^7+\right.\right.$$
$$142\,733\,704\,888\,320z^6+2\,451\,299\,652\,172\,800z^5+12\,745\,141\,589\,980\,800z^4+9\,457\,151\,242\,839\,300z^3-$$
$$1\,152\,431\,625\,945\,600z^2-974\,001\,161\,133\,000z-1\,654\,369\,619\,277\,375\left)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.$$
$$\left(536\,870\,912z^{10}+205\,621\,559\,296z^9+24\,831\,749\,783\,552z^8+1\,150\,940\,781\,477\,888z^7+\right.$$
$$20\,014\,168\,369\,029\,120z^6+108\,296\,913\,419\,735\,040z^5+100\,350\,529\,292\,613\,600z^4-$$
$$\left.\left.10\,686\,184\,167\,859\,200z^3-2\,851\,613\,483\,518\,800z^2-1\,976\,649\,415\,240\,500z-4\,963\,108\,857\,832\,125\right)$$
$$\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(92\,494\,595\,505\,312\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.8506.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{11}{2},\frac{9}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-110\,746\,402\,816\,z^6+14\,597\,760\,221\,184\,z^5-752\,697\,011\,404\,800\,z^4+\right.\right.\right.
$$
$$
\left.\left.\left.15\,006\,896\,664\,883\,200\,z^3-98\,482\,759\,363\,296\,000\,z^2+129\,258\,621\,664\,326\,000\,z+19\,619\,612\,216\,906\,625\right)\right.
$$
$$
\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-110\,746\,402\,816\,z^6+14\,597\,760\,221\,184\,z^5-\right.\right.\right.
$$
$$
\left.\left.\left.752\,697\,011\,404\,800\,z^4+15\,006\,896\,664\,883\,200\,z^3-98\,482\,759\,363\,296\,000\,z^2+\right.\right.\right.
$$
$$
\left.\left.\left.129\,258\,621\,664\,326\,000\,z+19\,619\,612\,216\,906\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}-\right.\right.
$$
$$
\left.\left.4\left(-67\,108\,864\,z^{10}+16\,777\,216\,z^{19/2}+27\,674\,017\,792\,z^9-6\,905\,921\,536\,z^{17/2}-3\,644\,276\,342\,784\,z^8+\right.\right.\right.
$$
$$
905\,932\,898\,304\,z^{15/2}+187\,501\,168\,361\,472\,z^7-46\,213\,222\,809\,600\,z^{13/2}-3\,717\,870\,145\,920\,000\,z^6+
$$
$$
896\,976\,055\,422\,720\,z^{11/2}+23\,985\,975\,146\,474\,880\,z^5-5\,422\,837\,959\,776\,160\,z^{9/2}-
$$
$$
28\,856\,367\,159\,196\,500\,z^4+4\,615\,289\,458\,250\,625\,z^{7/2}-6\,376\,837\,172\,428\,800\,z^3+1\,375\,396\,252\,876\,800\,z^{5/2}-
$$
$$
5\,861\,063\,577\,600\,z^2-732\,632\,947\,200\,000\,z^{3/2}+402\,948\,120\,960\,000\,z+1\,153\,896\,891\,840\,000\,\sqrt{z}+
$$
$$
\left.\left.\left.e^{4\sqrt{z}}\left(67\,108\,864\,z^{10}+16\,777\,216\,z^{19/2}-27\,674\,017\,792\,z^9-6\,905\,921\,536\,z^{17/2}+3\,644\,276\,342\,784\,z^8+\right.\right.\right.\right.
$$
$$
905\,932\,898\,304\,z^{15/2}-187\,501\,168\,361\,472\,z^7-46\,213\,222\,809\,600\,z^{13/2}+3\,717\,870\,145\,920\,000\,z^6+
$$
$$
896\,976\,055\,422\,720\,z^{11/2}-23\,985\,975\,146\,474\,880\,z^5-5\,422\,837\,959\,776\,160\,z^{9/2}+
$$
$$
28\,856\,367\,159\,196\,500\,z^4+4\,615\,289\,458\,250\,625\,z^{7/2}+6\,376\,837\,172\,428\,800\,z^3+
$$
$$
1\,375\,396\,252\,876\,800\,z^{5/2}+5\,861\,063\,577\,600\,z^2-732\,632\,947\,200\,000\,z^{3/2}-
$$
$$
\left.\left.\left.\left.402\,948\,120\,960\,000\,z+1\,153\,896\,891\,840\,000\,\sqrt{z}-576\,948\,445\,920\,000\right)+\right.\right.\right.\right.
$$
$$
\left.\left.\left.576\,948\,445\,920\,000\right)\right)\right)\Big/\left(529\,871\,137\,328\,332\,800\,z^{9/2}\right)
$$

07.22.03.8507.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{11}{2},\frac{9}{4};-z\right)=
\left(\sqrt{\pi}\,z^{13/4}\left(268\,435\,456\,z^7+110\,746\,402\,816\,z^6+14\,597\,760\,221\,184\,z^5+752\,697\,011\,404\,800\,z^4+15\,006\,896\,664\,883\,200\,z^3+\right.\right.
$$
$$
\left.\left.98\,482\,759\,363\,296\,000\,z^2+129\,258\,621\,664\,326\,000\,z-19\,619\,612\,216\,906\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.
$$
$$
\left.2\left(4\left(16\,777\,216\,z^{10}+6\,918\,504\,448\,z^9+911\,069\,085\,696\,z^8+46\,875\,292\,090\,368\,z^7+929\,467\,536\,480\,000\,z^6+\right.\right.\right.
$$
$$
\left.\left.\left.5\,996\,493\,786\,618\,720\,z^5+7\,214\,091\,789\,799\,125\,z^4-1\,594\,209\,293\,107\,200\,z^3+\right.\right.\right.
$$
$$
\left.\left.\left.1\,465\,265\,894\,400\,z^2+100\,737\,030\,240\,000\,z-144\,237\,111\,480\,000\right)\sin\left(2\sqrt{z}\right)-\right.\right.
$$
$$
\left.\left.\sqrt{z}\left(16\,777\,216\,z^9+6\,905\,921\,536\,z^8+905\,932\,898\,304\,z^7+46\,213\,222\,809\,600\,z^6+\right.\right.\right.
$$
$$
\left.\left.\left.896\,976\,055\,422\,720\,z^5+5\,422\,837\,959\,776\,160\,z^4+4\,615\,289\,458\,250\,625\,z^3-1\,375\,396\,252\,876\,800\,z^2-\right.\right.\right.
$$
$$
\left.\left.\left.732\,632\,947\,200\,000\,z-1\,153\,896\,891\,840\,000\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(132\,467\,784\,332\,083\,200\,z^{9/2}\right)
$$

07.22.03.8508.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{11}{2},\frac{11}{4};z\right)=
\left(\left(2z\left(268\,435\,456z^9-118\,698\,803\,200z^8+16\,962\,315\,878\,400z^7-963\,657\,051\,340\,800z^6+21\,702\,584\,493\,158\,400z^5-\right.\right.\right.
$$
$$
\left.\left.168\,228\,375\,504\,134\,400z^4+293\,042\,809\,837\,206\,000z^3+38\,607\,312\,504\,135\,375z^2+\right.\right.
$$
$$
\left.\left.4\,174\,290\,690\,570\,000z-3\,007\,944\,762\,322\,500\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-
$$
$$
\sqrt{z}\left(268\,435\,456z^9-118\,531\,031\,040z^8+16\,888\,580\,014\,080z^7-953\,251\,858\,022\,400z^6+\right.
$$
$$
21\,127\,451\,269\,017\,600z^5-156\,103\,182\,670\,406\,400z^4+215\,413\,596\,099\,702\,000z^3+
$$
$$
\left.87\,534\,979\,421\,014\,125z^2+21\,608\,092\,986\,480\,000z-18\,047\,668\,573\,935\,000\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-
$$
$$
2\left(268\,435\,456z^{10}-118\,631\,694\,336z^9+16\,932\,746\,035\,200z^8-959\,462\,344\,949\,760z^7+\right.
$$
$$
21\,468\,082\,635\,878\,400z^6-163\,150\,057\,625\,068\,800z^5+257\,968\,868\,657\,900\,400z^4+
$$
$$
\left.72\,757\,783\,096\,873\,875z^3+21\,460\,765\,079\,754\,000z^2-6\,813\,915\,686\,077\,500z+6\,767\,875\,715\,225\,625\right)
$$
$$
\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(396\,405\,409\,308\,480\,000\sqrt{2}\,z^{15/4}\right)
$$

07.22.03.8509.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{11}{2},\frac{11}{4};-z\right)=
\left(\left(2z\left(268\,435\,456z^9+118\,698\,803\,200z^8+16\,962\,315\,878\,400z^7+963\,657\,051\,340\,800z^6+21\,702\,584\,493\,158\,400z^5+\right.\right.\right.
$$
$$
\left.\left.168\,228\,375\,504\,134\,400z^4+293\,042\,809\,837\,206\,000z^3-38\,607\,312\,504\,135\,375z^2+\right.\right.
$$
$$
\left.\left.4\,174\,290\,690\,570\,000z+3\,007\,944\,762\,322\,500\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-
$$
$$
\sqrt{z}\left(268\,435\,456z^9+118\,531\,031\,040z^8+16\,888\,580\,014\,080z^7+953\,251\,858\,022\,400z^6+\right.
$$
$$
21\,127\,451\,269\,017\,600z^5+156\,103\,182\,670\,406\,400z^4+215\,413\,596\,099\,702\,000z^3-
$$
$$
\left.87\,534\,979\,421\,014\,125z^2+21\,608\,092\,986\,480\,000z+18\,047\,668\,573\,935\,000\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+
$$
$$
2\left(268\,435\,456z^{10}+118\,631\,694\,336z^9+16\,932\,746\,035\,200z^8+959\,462\,344\,949\,760z^7+\right.
$$
$$
21\,468\,082\,635\,878\,400z^6+163\,150\,057\,625\,068\,800z^5+257\,968\,868\,657\,900\,400z^4-
$$
$$
\left.72\,757\,783\,096\,873\,875z^3+21\,460\,765\,079\,754\,000z^2+6\,813\,915\,686\,077\,500z+6\,767\,875\,715\,225\,625\right)
$$
$$
\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(396\,405\,409\,308\,480\,000\sqrt{2}\,z^{15/4}\right)
$$

07.22.03.8510.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{11}{2},\frac{13}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-2\,025\,077\,080\,064\,z^7+311\,418\,884\,718\,592\,z^6-19\,269\,043\,491\,962\,880\,z^5+\right.\right.\right.
$$

$$
480\,220\,693\,276\,262\,400\,z^4-4\,201\,931\,066\,167\,296\,000\,z^3+8\,272\,551\,786\,516\,864\,000\,z^2+
$$

$$
2\,511\,310\,363\,764\,048\,000\,z+1\,275\,274\,794\,098\,930\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-2\,025\,077\,080\,064\,z^7+311\,418\,884\,718\,592\,z^6-19\,269\,043\,491\,962\,880\,z^5+\right.
$$

$$
480\,220\,693\,276\,262\,400\,z^4-4\,201\,931\,066\,167\,296\,000\,z^3+8\,272\,551\,786\,516\,864\,000\,z^2+
$$

$$
2\,511\,310\,363\,764\,048\,000\,z+1\,275\,274\,794\,098\,930\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}-
$$

$$
4\left(-1\,073\,741\,824\,z^{10}+268\,435\,456\,z^{19/2}+506\,067\,943\,424\,z^9-126\,315\,659\,264\,z^{17/2}-\right.
$$

$$
77\,760\,236\,093\,440\,z^8+19\,346\,014\,339\,072\,z^{15/2}+4\,802\,868\,037\,287\,936\,z^7-1\,186\,526\,373\,150\,720\,z^{13/2}-
$$

$$
119\,182\,617\,885\,327\,360\,z^6+28\,952\,561\,607\,782\,400\,z^{11/2}+1\,029\,765\,656\,673\,008\,640\,z^5-
$$

$$
238\,349\,262\,898\,010\,880\,z^{9/2}-1\,910\,300\,529\,298\,392\,000\,z^4+350\,589\,070\,104\,966\,000\,z^{7/2}-
$$

$$
780\,348\,303\,965\,884\,500\,z^3+230\,973\,930\,096\,473\,025\,z^{5/2}-437\,125\,936\,368\,844\,800\,z^2+
$$

$$
110\,031\,700\,230\,144\,000\,z^{3/2}+11\,253\,242\,068\,992\,000\,z-65\,643\,912\,069\,120\,000\,\sqrt{z}+
$$

$$
e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{10}+268\,435\,456\,z^{19/2}-506\,067\,943\,424\,z^9-126\,315\,659\,264\,z^{17/2}+77\,760\,236\,093\,440\right.
$$

$$
z^8+19\,346\,014\,339\,072\,z^{15/2}-4\,802\,868\,037\,287\,936\,z^7-1\,186\,526\,373\,150\,720\,z^{13/2}+
$$

$$
119\,182\,617\,885\,327\,360\,z^6+28\,952\,561\,607\,782\,400\,z^{11/2}-1\,029\,765\,656\,673\,008\,640\,z^5-
$$

$$
238\,349\,262\,898\,010\,880\,z^{9/2}+1\,910\,300\,529\,298\,392\,000\,z^4+350\,589\,070\,104\,966\,000\,z^{7/2}+
$$

$$
780\,348\,303\,965\,884\,500\,z^3+230\,973\,930\,096\,473\,025\,z^{5/2}+437\,125\,936\,368\,844\,800\,z^2+
$$

$$
110\,031\,700\,230\,144\,000\,z^{3/2}-11\,253\,242\,068\,992\,000\,z-65\,643\,912\,069\,120\,000\,\sqrt{z}+
$$

$$
\left.\left.\left.\left.32\,821\,956\,034\,560\,000\right)-32\,821\,956\,034\,560\,000\right)\right)\right)\Big/\left(30\,143\,780\,256\,900\,710\,400\,z^{9/2}\right)
$$

07.22.03.8511.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{11}{2},\frac{13}{4};-z\right)=
$$

$$
\left(\sqrt{\pi}\,z^{9/4}\left(4\,294\,967\,296\,z^8+2\,025\,077\,080\,064\,z^7+311\,418\,884\,718\,592\,z^6+19\,269\,043\,491\,962\,880\,z^5+\right.\right.
$$

$$
480\,220\,693\,276\,262\,400\,z^4+4\,201\,931\,066\,167\,296\,000\,z^3+8\,272\,551\,786\,516\,864\,000\,z^2-
$$

$$
\left.2\,511\,310\,363\,764\,048\,000\,z+1\,275\,274\,794\,098\,930\,625\right)C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$

$$
2\left(4\left(268\,435\,456\,z^{10}+126\,516\,985\,856\,z^9+19\,440\,059\,023\,360\,z^8+1\,200\,717\,009\,321\,984\,z^7+\right.\right.
$$

$$
29\,795\,654\,471\,331\,840\,z^6+257\,441\,414\,168\,252\,160\,z^5+477\,575\,132\,324\,598\,000\,z^4-
$$

$$
195\,087\,075\,991\,471\,125\,z^3+109\,281\,484\,092\,211\,200\,z^2+2\,813\,310\,517\,248\,000\,z+8\,205\,489\,008\,640\,000\Big)
$$

$$
\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(268\,435\,456\,z^9+126\,315\,659\,264\,z^8+19\,346\,014\,339\,072\,z^7+\right.
$$

$$
1\,186\,526\,373\,150\,720\,z^6+28\,952\,561\,607\,782\,400\,z^5+238\,349\,262\,898\,010\,880\,z^4+
$$

$$
350\,589\,070\,104\,966\,000\,z^3-230\,973\,930\,096\,473\,025\,z^2+110\,031\,700\,230\,144\,000\,z+
$$

$$
\left.\left.\left.65\,643\,912\,069\,120\,000\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(7\,535\,945\,064\,225\,177\,600\,z^{9/2}\right)
$$

07.22.03.8512.01

$${}_1F_2\left(-\frac{23}{4};\frac{11}{2},\frac{15}{4};z\right)=$$

$$\left(\left(2z\left(4\,294\,967\,296z^9-2\,152\,315\,486\,208z^8+354\,852\,379\,033\,600z^7-23\,818\,691\,747\,512\,320z^6+655\,105\,053\,052\,108\,800\right.\right.\right.$$
$$\left.z^5-6\,510\,214\,050\,271\,027\,200z^4+15\,621\,817\,270\,905\,331\,200z^3+$$
$$4\,122\,124\,706\,303\,604\,000z^2+2\,979\,834\,802\,341\,271\,875z+233\,760\,278\,671\,920\,000\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\sqrt{z}\left(4\,294\,967\,296z^9-2\,149\,631\,131\,648z^8+353\,514\,396\,057\,600z^7-23\,600\,474\,263\,388\,160z^6+\right.$$
$$640\,790\,043\,711\,897\,600z^5-6\,136\,974\,479\,816\,294\,400z^4+12\,424\,701\,428\,518\,579\,200z^3+$$
$$7\,852\,494\,941\,875\,584\,000z^2+6\,668\,690\,271\,353\,735\,625z+1\,402\,561\,672\,031\,520\,000\Big)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\left(4\,294\,967\,296z^{10}-2\,151\,241\,744\,384z^9+354\,315\,977\,883\,648z^8-23\,730\,811\,494\,727\,680z^7+\right.$$
$$649\,285\,112\,365\,056\,000z^6-6\,355\,127\,451\,401\,625\,600z^5+14\,212\,262\,569\,042\,137\,600z^4+$$
$$6\,345\,547\,812\,564\,760\,800z^3+5\,005\,965\,932\,032\,440\,375z^2+1\,703\,110\,601\,752\,560\,000z-$$
$$\left.\left.\left.525\,960\,627\,011\,820\,000\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(19\,604\,049\,333\,073\,920\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.8513.01

$${}_1F_2\left(-\frac{23}{4};\frac{11}{2},\frac{15}{4};-z\right)=$$

$$\left(\left(2z\left(4\,294\,967\,296z^9+2\,152\,315\,486\,208z^8+354\,852\,379\,033\,600z^7+23\,818\,691\,747\,512\,320z^6+655\,105\,053\,052\,108\,800\right.\right.\right.$$
$$\left.z^5+6\,510\,214\,050\,271\,027\,200z^4+15\,621\,817\,270\,905\,331\,200z^3-$$
$$4\,122\,124\,706\,303\,604\,000z^2+2\,979\,834\,802\,341\,271\,875z-233\,760\,278\,671\,920\,000\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\sqrt{z}\left(4\,294\,967\,296z^9+2\,149\,631\,131\,648z^8+353\,514\,396\,057\,600z^7+23\,600\,474\,263\,388\,160z^6+\right.$$
$$640\,790\,043\,711\,897\,600z^5+6\,136\,974\,479\,816\,294\,400z^4+12\,424\,701\,428\,518\,579\,200z^3-$$
$$7\,852\,494\,941\,875\,584\,000z^2+6\,668\,690\,271\,353\,735\,625z-1\,402\,561\,672\,031\,520\,000\Big)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\left(4\,294\,967\,296z^{10}+2\,151\,241\,744\,384z^9+354\,315\,977\,883\,648z^8+23\,730\,811\,494\,727\,680z^7+\right.$$
$$649\,285\,112\,365\,056\,000z^6+6\,355\,127\,451\,401\,625\,600z^5+14\,212\,262\,569\,042\,137\,600z^4-$$
$$6\,345\,547\,812\,564\,760\,800z^3+5\,005\,965\,932\,032\,440\,375z^2-1\,703\,110\,601\,752\,560\,000z-$$
$$\left.\left.\left.525\,960\,627\,011\,820\,000\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(19\,604\,049\,333\,073\,920\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.8514.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{11}{2},\frac{17}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9-36\,451\,387\,441\,152\,z^8+6\,406\,331\,342\,782\,464\,z^7-462\,457\,043\,807\,109\,120\,z^6+\right.\right.\right.
\left.\left.\left.13\,830\,355\,966\,356\,357\,120\,z^5-151\,269\,518\,382\,022\,656\,000\,z^4+397\,082\,485\,752\,809\,472\,000\,z^3+
180\,814\,346\,191\,011\,456\,000\,z^2+183\,639\,570\,350\,246\,010\,000\,z+103\,297\,258\,322\,013\,380\,625\right)
\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9-36\,451\,387\,441\,152\,z^8+6\,406\,331\,342\,782\,464\,z^7-\right.
462\,457\,043\,807\,109\,120\,z^6+13\,830\,355\,966\,356\,357\,120\,z^5-151\,269\,518\,382\,022\,656\,000\,z^4+
397\,082\,485\,752\,809\,472\,000\,z^3+180\,814\,346\,191\,011\,456\,000\,z^2+
183\,639\,570\,350\,246\,010\,000\,z+103\,297\,258\,322\,013\,380\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-
4\left(-17\,179\,869\,184\,z^{10}+4\,294\,967\,296\,z^{19/2}+9\,109\,625\,634\,816\,z^9-2\,274\,185\,183\,232\,z^{17/2}-\right.
1\,599\,881\,223\,340\,032\,z^8+398\,275\,739\,910\,144\,z^{15/2}+115\,317\,658\,261\,389\,312\,z^7-
28\,536\,462\,366\,474\,240\,z^{13/2}-3\,436\,545\,621\,279\,375\,360\,z^6+838\,705\,274\,410\,106\,880\,z^{11/2}+
37\,212\,708\,140\,227\,952\,640\,z^5-8\,738\,599\,035\,058\,421\,760\,z^{9/2}-93\,348\,774\,444\,828\,672\,000\,z^4+
18\,374\,146\,495\,689\,600\,000\,z^{7/2}-54\,346\,583\,027\,566\,368\,000\,z^3+17\,263\,635\,472\,846\,224\,000\,z^{5/2}-
57\,590\,594\,180\,395\,838\,100\,z^2+19\,753\,189\,201\,816\,772\,625\,z^{3/2}-36\,730\,582\,113\,189\,888\,000\,z+
7\,562\,178\,670\,362\,624\,000\sqrt{z}+e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{10}+4\,294\,967\,296\,z^{19/2}-9\,109\,625\,634\,816\,z^9-\right.
2\,274\,185\,183\,232\,z^{17/2}+1\,599\,881\,223\,340\,032\,z^8+398\,275\,739\,910\,144\,z^{15/2}-
115\,317\,658\,261\,389\,312\,z^7-28\,536\,462\,366\,474\,240\,z^{13/2}+3\,436\,545\,621\,279\,375\,360\,z^6+
838\,705\,274\,410\,106\,880\,z^{11/2}-37\,212\,708\,140\,227\,952\,640\,z^5-8\,738\,599\,035\,058\,421\,760\,z^{9/2}+
93\,348\,774\,444\,828\,672\,000\,z^4+18\,374\,146\,495\,689\,600\,000\,z^{7/2}+54\,346\,583\,027\,566\,368\,000\,z^3+
17\,263\,635\,472\,846\,224\,000\,z^{5/2}+57\,590\,594\,180\,395\,838\,100\,z^2+19\,753\,189\,201\,816\,772\,625\,z^{3/2}+
36\,730\,582\,113\,189\,888\,000\,z+7\,562\,178\,670\,362\,624\,000\sqrt{z}-3\,781\,089\,335\,181\,312\,000\right)+
\left.\left.3\,781\,089\,335\,181\,312\,000\right)\right)\right)\Big/\left(1\,335\,601\,340\,613\,446\,860\,800\,z^{9/2}\right)
$$

07.22.03.8515.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{11}{2},\frac{17}{4};-z\right)=
\left(\sqrt{\pi}\,z^{5/4}\left(68\,719\,476\,736\,z^9+36\,451\,387\,441\,152\,z^8+6\,406\,331\,342\,782\,464\,z^7+462\,457\,043\,807\,109\,120\,z^6+\right.\right.
\left.\left.13\,830\,355\,966\,356\,357\,120\,z^5+151\,269\,518\,382\,022\,656\,000\,z^4+397\,082\,485\,752\,809\,472\,000\,z^3-
180\,814\,346\,191\,011\,456\,000\,z^2+183\,639\,570\,350\,246\,010\,000\,z-103\,297\,258\,322\,013\,380\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
2\left(4\left(4\,294\,967\,296\,z^{10}+2\,277\,406\,408\,704\,z^9+399\,970\,305\,835\,008\,z^8+28\,829\,414\,565\,347\,328\,z^7+\right.\right.
859\,136\,405\,319\,843\,840\,z^6+9\,303\,177\,035\,056\,988\,160\,z^5+23\,337\,193\,611\,207\,168\,000\,z^4-
13\,586\,645\,756\,891\,592\,000\,z^3+14\,397\,648\,545\,098\,959\,525\,z^2-9\,182\,645\,528\,297\,472\,000\,z-
945\,272\,333\,795\,328\,000\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(4\,294\,967\,296\,z^9+2\,274\,185\,183\,232\,z^8+
398\,275\,739\,910\,144\,z^7+28\,536\,462\,366\,474\,240\,z^6+838\,705\,274\,410\,106\,880\,z^5+
8\,738\,599\,035\,058\,421\,760\,z^4+18\,374\,146\,495\,689\,600\,000\,z^3-17\,263\,635\,472\,846\,224\,000\,z^2+
\left.\left.19\,753\,189\,201\,816\,772\,625\,z-7\,562\,178\,670\,362\,624\,000\right)\cos\left(2\sqrt{z}\right)\right)\Big/\left(333\,900\,335\,153\,361\,715\,200\,z^{9/2}\right)
$$

07.22.03.8516.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{11}{2},\frac{19}{4};z\right) = $$
$$ \left(\left(2z\left(68\,719\,476\,736 z^9 - 38\,487\,201\,939\,456 z^8 + 7\,190\,876\,912\,615\,424 z^7 - 556\,820\,543\,517\,491\,200 z^6 + \right.\right.\right. $$
$$ 18\,089\,431\,856\,169\,615\,360 z^5 - 219\,320\,091\,693\,151\,027\,200 z^4 + 670\,421\,062\,107\,655\,372\,800 z^3 + $$
$$ \left.\left.\left. 270\,111\,901\,578\,725\,606\,400 z^2 + 349\,692\,854\,021\,120\,610\,000 z + 247\,213\,060\,959\,343\,854\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ \sqrt{z}\left(68\,719\,476\,736 z^9 - 38\,444\,252\,266\,496 z^8 + 7\,166\,937\,838\,649\,344 z^7 - 552\,390\,092\,484\,771\,840 z^6 + \right. $$
$$ 17\,753\,060\,436\,219\,002\,880 z^5 - 208\,871\,599\,605\,084\,979\,200 z^4 + 558\,251\,030\,904\,389\,222\,400 z^3 + $$
$$ \left. 464\,979\,095\,933\,390\,438\,400 z^2 + 636\,110\,418\,324\,350\,970\,000 z + 599\,512\,933\,445\,504\,203\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\left(68\,719\,476\,736 z^{10} - 38\,470\,022\,070\,272 z^9 + 7\,181\,281\,955\,676\,160 z^8 - 555\,037\,731\,852\,386\,304 z^7 + \right. $$
$$ 17\,952\,966\,089\,606\,430\,720 z^6 - 215\,002\,699\,461\,594\,316\,800 z^5 + 621\,754\,200\,851\,786\,956\,800 z^4 + $$
$$ 377\,012\,663\,789\,553\,792\,000 z^3 + 481\,503\,373\,670\,274\,555\,600 z^2 + 435\,978\,312\,420\,052\,276\,875 z + $$
$$ \left.\left. 106\,594\,687\,074\,395\,520\,000\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(794\,617\,466\,300\,596\,224\,000\sqrt{2}\, z^{15/4}\right) $$

07.22.03.8517.01

$$ {}_1F_2\left(-\frac{23}{4};\frac{11}{2},\frac{19}{4};-z\right) = $$
$$ \left(\left(2z\left(68\,719\,476\,736 z^9 + 38\,487\,201\,939\,456 z^8 + 7\,190\,876\,912\,615\,424 z^7 + 556\,820\,543\,517\,491\,200 z^6 + \right.\right.\right. $$
$$ 18\,089\,431\,856\,169\,615\,360 z^5 + 219\,320\,091\,693\,151\,027\,200 z^4 + 670\,421\,062\,107\,655\,372\,800 z^3 - $$
$$ \left.\left.\left. 270\,111\,901\,578\,725\,606\,400 z^2 + 349\,692\,854\,021\,120\,610\,000 z - 247\,213\,060\,959\,343\,854\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ \sqrt{z}\left(68\,719\,476\,736 z^9 + 38\,444\,252\,266\,496 z^8 + 7\,166\,937\,838\,649\,344 z^7 + 552\,390\,092\,484\,771\,840 z^6 + \right. $$
$$ 17\,753\,060\,436\,219\,002\,880 z^5 + 208\,871\,599\,605\,084\,979\,200 z^4 + 558\,251\,030\,904\,389\,222\,400 z^3 - $$
$$ \left. 464\,979\,095\,933\,390\,438\,400 z^2 + 636\,110\,418\,324\,350\,970\,000 z - 599\,512\,933\,445\,504\,203\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\left(68\,719\,476\,736 z^{10} + 38\,470\,022\,070\,272 z^9 + 7\,181\,281\,955\,676\,160 z^8 + 555\,037\,731\,852\,386\,304 z^7 + \right. $$
$$ 17\,952\,966\,089\,606\,430\,720 z^6 + 215\,002\,699\,461\,594\,316\,800 z^5 + 621\,754\,200\,851\,786\,956\,800 z^4 - $$
$$ 377\,012\,663\,789\,553\,792\,000 z^3 + 481\,503\,373\,670\,274\,555\,600 z^2 - 435\,978\,312\,420\,052\,276\,875 z + $$
$$ \left.\left. 106\,594\,687\,074\,395\,520\,000\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(794\,617\,466\,300\,596\,224\,000\sqrt{2}\, z^{15/4}\right) $$

07.22.03.8518.01

$$
{}_1F_2\left(-\frac{23}{4};\frac{11}{2},\frac{21}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(-4\left(-274\,877\,906\,944\,z^{10}+68\,719\,476\,736\,z^{19/2}+161\,954\,626\,797\,568\,z^{9}-40\,437\,117\,091\,840\,z^{17/2}-\right.\right.\right.
$$

$$
32\,001\,393\,300\,602\,880\,z^{8}+7\,970\,197\,654\,732\,800\,z^{15/2}+2\,636\,671\,493\,508\,956\,160\,z^{7}-
$$

$$
653\,292\,740\,636\,835\,840\,z^{13/2}-91\,719\,618\,759\,386\,726\,400\,z^{6}+22\,459\,491\,538\,226\,380\,800\,z^{11/2}+
$$

$$
1\,193\,875\,633\,726\,252\,646\,400\,z^{5}-283\,124\,042\,236\,772\,352\,000\,z^{9/2}-3\,775\,926\,191\,425\,029\,734\,400\,z^{4}+
$$

$$
776\,080\,693\,328\,726\,016\,000\,z^{7/2}-2\,828\,459\,135\,205\,462\,528\,000\,z^{3}+917\,190\,662\,595\,596\,928\,000\,z^{5/2}-
$$

$$
4\,371\,294\,091\,820\,222\,952\,000\,z^{2}+1\,564\,730\,408\,177\,943\,930\,000\,z^{3/2}-
$$

$$
5\,336\,487\,594\,948\,788\,932\,500\,z+1\,874\,527\,441\,898\,790\,380\,625\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\left(274\,877\,906\,944\,z^{10}+68\,719\,476\,736\,z^{19/2}-161\,954\,626\,797\,568\,z^{9}-40\,437\,117\,091\,840\,z^{17/2}+\right.
$$

$$
32\,001\,393\,300\,602\,880\,z^{8}+7\,970\,197\,654\,732\,800\,z^{15/2}-2\,636\,671\,493\,508\,956\,160\,z^{7}-
$$

$$
653\,292\,740\,636\,835\,840\,z^{13/2}+91\,719\,618\,759\,386\,726\,400\,z^{6}+22\,459\,491\,538\,226\,380\,800\,z^{11/2}-
$$

$$
1\,193\,875\,633\,726\,252\,646\,400\,z^{5}-283\,124\,042\,236\,772\,352\,000\,z^{9/2}+3\,775\,926\,191\,425\,029\,734\,400\,z^{4}+
$$

$$
776\,080\,693\,328\,726\,016\,000\,z^{7/2}+2\,828\,459\,135\,205\,462\,528\,000\,z^{3}+917\,190\,662\,595\,596\,928\,000\,z^{5/2}+
$$

$$
4\,371\,294\,091\,820\,222\,952\,000\,z^{2}+1\,564\,730\,408\,177\,943\,930\,000\,z^{3/2}+5\,336\,487\,594\,948\,788\,932\,500\,z+
$$

$$
\left.\left.1\,874\,527\,441\,898\,790\,380\,625\sqrt{z}\;+2\,419\,897\,174\,516\,039\,680\,000\right)-2\,419\,897\,174\,516\,039\,680\,000\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\;\sqrt[4]{z}\left(1\,099\,511\,627\,776\,z^{10}-648\,024\,665\,620\,480\,z^{9}+128\,126\,626\,855\,649\,280\,z^{8}-\right.
$$

$$
10\,570\,446\,715\,591\,065\,600\,z^{7}+368\,809\,492\,436\,169\,523\,200\,z^{6}-4\,840\,624\,588\,224\,724\,992\,000\,z^{5}+
$$

$$
15\,883\,299\,430\,112\,378\,880\,000\,z^{4}+9\,643\,431\,796\,853\,944\,320\,000\,z^{3}+14\,691\,165\,628\,019\,680\,800\,000\,z^{2}+
$$

$$
\left.16\,527\,561\,331\,522\,140\,900\,000\,z+6\,714\,321\,790\,930\,869\,740\,625\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\;\sqrt[4]{z}\left(1\,099\,511\,627\,776\,z^{10}-648\,024\,665\,620\,480\,z^{9}+128\,126\,626\,855\,649\,280\,z^{8}-\right.
$$

$$
10\,570\,446\,715\,591\,065\,600\,z^{7}+368\,809\,492\,436\,169\,523\,200\,z^{6}-4\,840\,624\,588\,224\,724\,992\,000\,z^{5}+
$$

$$
15\,883\,299\,430\,112\,378\,880\,000\,z^{4}+9\,643\,431\,796\,853\,944\,320\,000\,z^{3}+
$$

$$
\left.\left.\left.14\,691\,165\,628\,019\,680\,800\,000\,z^{2}+16\,527\,561\,331\,522\,140\,900\,000\,z+6\,714\,321\,790\,930\,869\,740\,625\right)\right.\right.
$$

$$
\left.\left.\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)\Big/\left(50\,281\,462\,234\,859\,175\,936\,000\,z^{9/2}\right)
$$

07.22.03.8519.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{11}{2}, \frac{21}{4}; -z\right) = $$

$$ \left(\sqrt{\pi}\ \sqrt[4]{z}\ \left(1\,099\,511\,627\,776\,z^{10} + 648\,024\,665\,620\,480\,z^9 + 128\,126\,626\,855\,649\,280\,z^8 + 10\,570\,446\,715\,591\,065\,600\,z^7 + \right.\right. $$

$$ 368\,809\,492\,436\,169\,523\,200\,z^6 + 4\,840\,624\,588\,224\,724\,992\,000\,z^5 + 15\,883\,299\,430\,112\,378\,880\,000\,z^4 - $$

$$ 9\,643\,431\,796\,853\,944\,320\,000\,z^3 + 14\,691\,165\,628\,019\,680\,800\,000\,z^2 - $$

$$ \left.\left. 16\,527\,561\,331\,522\,140\,900\,000\,z + 6\,714\,321\,790\,930\,869\,740\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$

$$ 2\left(4\left(68\,719\,476\,736\,z^{10} + 40\,488\,656\,699\,392\,z^9 + 8\,000\,348\,325\,150\,720\,z^8 + 659\,167\,873\,377\,239\,040\,z^7 + \right.\right. $$

$$ 22\,929\,904\,689\,846\,681\,600\,z^6 + 298\,468\,908\,431\,563\,161\,600\,z^5 + 943\,981\,547\,856\,257\,433\,600\,z^4 - $$

$$ 707\,114\,783\,801\,365\,632\,000\,z^3 + 1\,092\,823\,522\,955\,055\,738\,000\,z^2 - $$

$$ \left.\left. 1\,334\,121\,898\,737\,197\,233\,125\,z + 604\,974\,293\,629\,009\,920\,000\right) \sin\left(2\sqrt{z}\right) - \right. $$

$$ \sqrt{z}\ \left(68\,719\,476\,736\,z^9 + 40\,437\,117\,091\,840\,z^8 + 7\,970\,197\,654\,732\,800\,z^7 + 653\,292\,740\,636\,835\,840\,z^6 + \right. $$

$$ 22\,459\,491\,538\,226\,380\,800\,z^5 + 283\,124\,042\,236\,772\,352\,000\,z^4 + 776\,080\,693\,328\,726\,016\,000\,z^3 - $$

$$ \left. 917\,190\,662\,595\,596\,928\,000\,z^2 + 1\,564\,730\,408\,177\,943\,930\,000\,z - 1\,874\,527\,441\,898\,790\,380\,625\right) $$

$$ \left.\left. \cos\left(2\sqrt{z}\right)\right)\right) \Big/ \left(12\,570\,365\,558\,714\,793\,984\,000\,z^{9/2}\right) $$

07.22.03.8520.01

$$ {}_1F_2\left(-\frac{23}{4}; \frac{11}{2}, \frac{23}{4}; z\right) = $$

$$ \left(\left(2\sqrt{z}\ \left(1\,099\,511\,627\,776\,z^{10} - 680\,597\,697\,593\,344\,z^9 + 142\,113\,110\,545\,661\,952\,z^8 - 12\,469\,857\,165\,005\,291\,520\,z^7 + \right.\right. \right. $$

$$ 467\,251\,365\,625\,599\,098\,880\,z^6 - 6\,686\,839\,281\,798\,453\,657\,600\,z^5 + 24\,833\,523\,381\,755\,874\,508\,800\,z^4 + $$

$$ 13\,550\,761\,986\,512\,073\,523\,200\,z^3 + 25\,030\,689\,981\,473\,528\,352\,000\,z^2 + $$

$$ \left.\left. 32\,804\,848\,890\,400\,466\,880\,000\,z + 13\,256\,481\,484\,658\,383\,846\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$

$$ \left(1\,099\,511\,627\,776\,z^{10} - 679\,910\,502\,825\,984\,z^9 + 141\,689\,583\,820\,603\,392\,z^8 - 12\,382\,166\,871\,409\,950\,720\,z^7 + \right. $$

$$ 459\,688\,664\,545\,194\,147\,840\,z^6 - 6\,414\,201\,863\,566\,943\,846\,400\,z^5 + 21\,313\,990\,517\,017\,205\,145\,600\,z^4 + $$

$$ 21\,746\,231\,936\,777\,495\,347\,200\,z^3 + 40\,343\,991\,894\,015\,761\,952\,000\,z^2 + $$

$$ \left. 63\,506\,765\,268\,124\,198\,020\,000\,z + 39\,769\,444\,453\,975\,151\,540\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$

$$ 2\sqrt{z}\ \left(1\,099\,511\,627\,776\,z^{10} - 680\,322\,819\,686\,400\,z^9 + 141\,943\,390\,617\,993\,216\,z^8 - 12\,434\,592\,721\,841\,160\,192\,z^7 + \right. $$

$$ 464\,188\,181\,906\,813\,091\,840\,z^6 - 6\,574\,648\,198\,791\,639\,859\,200\,z^5 + 23\,323\,813\,673\,846\,095\,872\,000\,z^4 + $$

$$ 17\,815\,867\,548\,446\,357\,913\,600\,z^3 + 31\,469\,586\,134\,712\,082\,156\,800\,z^2 + 45\,894\,132\,135\,630\,186\,408\,000\,z + $$

$$ \left.\left. 31\,862\,185\,260\,018\,637\,899\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(28\,104\,365\,123\,894\,771\,712\,000\sqrt{2}\ z^{17/4}\right) $$

07.22.03.8521.01

$${}_1F_2\left(-\frac{23}{4}; \frac{11}{2}, \frac{23}{4}; -z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} + 680\,597\,697\,593\,344\,z^9 + 142\,113\,110\,545\,661\,952\,z^8 + 12\,469\,857\,165\,005\,291\,520\,z^7 + \right.\right.\right.$$
$$467\,251\,365\,625\,599\,098\,880\,z^6 + 6\,686\,839\,281\,798\,453\,657\,600\,z^5 + 24\,833\,523\,381\,755\,874\,508\,800\,z^4 -$$
$$13\,550\,761\,986\,512\,073\,523\,200\,z^3 + 25\,030\,689\,981\,473\,528\,352\,000\,z^2 -$$
$$\left.32\,804\,848\,890\,400\,466\,880\,000\,z + 13\,256\,481\,484\,658\,383\,846\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 -$$
$$\left(1\,099\,511\,627\,776\,z^{10} + 679\,910\,502\,825\,984\,z^9 + 141\,689\,583\,820\,603\,392\,z^8 + 12\,382\,166\,871\,409\,950\,720\,z^7 + \right.$$
$$459\,688\,664\,545\,194\,147\,840\,z^6 + 6\,414\,201\,863\,566\,943\,846\,400\,z^5 + 21\,313\,990\,517\,017\,205\,145\,600\,z^4 -$$
$$21\,746\,231\,936\,777\,495\,347\,200\,z^3 + 40\,343\,991\,894\,015\,761\,952\,000\,z^2 -$$
$$\left.63\,506\,765\,268\,124\,198\,020\,000\,z + 39\,769\,444\,453\,975\,151\,540\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$2\sqrt{z}\,\left(1\,099\,511\,627\,776\,z^{10} + 680\,322\,819\,686\,400\,z^9 + 141\,943\,390\,617\,993\,216\,z^8 + 12\,434\,592\,721\,841\,160\,192\,z^7 + \right.$$
$$464\,188\,181\,906\,813\,091\,840\,z^6 + 6\,574\,648\,198\,791\,639\,859\,200\,z^5 + 23\,323\,813\,673\,846\,095\,872\,000\,z^4 -$$
$$17\,815\,867\,548\,446\,357\,913\,600\,z^3 + 31\,469\,586\,134\,712\,082\,156\,800\,z^2 - 45\,894\,132\,135\,630\,186\,408\,000\,z +$$
$$\left.\left.\left.31\,862\,185\,260\,018\,637\,899\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(28\,104\,365\,123\,894\,771\,712\,000\,\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{21}{4}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = -\frac{21}{4}$, $b_{1.} = -\frac{11}{2}$

07.22.03.8522.01

$${}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{15\,740\,160\,975\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(\left(131\,072\,z^6 - 1\,376\,256\,z^5 + 69\,689\,088\,z^4 + 2\,713\,898\,880\,z^3 + 15\,979\,194\,000\,z^2 - 34\,093\,313\,100\,z + 15\,740\,160\,975\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,\left(16\,384\,z^5 - 157\,696\,z^4 + 104\,375\,040\,z^3 + 1\,831\,183\,200\,z^2 + 4\,368\,810\,600\,z - 5\,246\,720\,325\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(-32\,768\,z^5 + 319\,488\,z^4 + 9\,535\,680\,z^3 + 1\,016\,215\,200\,z^2 + 7\,880\,449\,500\,z + 15\,740\,160\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8523.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{15\,740\,160\,975\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(131\,072\,z^6 + 1\,376\,256\,z^5 + 69\,689\,088\,z^4 - 2\,713\,898\,880\,z^3 + 15\,979\,194\,000\,z^2 + 34\,093\,313\,100\,z + 15\,740\,160\,975\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(16\,384\,z^5 + 157\,696\,z^4 + 104\,375\,040\,z^3 - 1\,831\,183\,200\,z^2 + 4\,368\,810\,600\,z + 5\,246\,720\,325\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(32\,768\,z^5 + 319\,488\,z^4 - 9\,535\,680\,z^3 + 1\,016\,215\,200\,z^2 - 7\,880\,449\,500\,z + 15\,740\,160\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8524.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{21}{4}; z\right) = \left(\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} + \frac{20\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16\,z^2 + 240\,z + 495\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.8525.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{21}{4}; -z\right) = \left(-\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} - \frac{20\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(16\,z^2 - 240\,z + 495\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.8526.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{19}{4}; z\right) = \frac{1}{684\,354\,825\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(65\,536\,z^6 - 258\,048\,z^5 + 1\,661\,184\,z^4 + 88\,986\,240\,z^3 + 748\,606\,320\,z^2 - 1\,506\,235\,500\,z + 684\,354\,825\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 12\sqrt{z}\left(8192\,z^5 - 25\,088\,z^4 + 2\,419\,200\,z^3 + 72\,293\,760\,z^2 + 197\,920\,800\,z - 228\,118\,275\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(-16\,384\,z^5 + 52\,224\,z^4 - 383\,040\,z^3 + 34\,261\,920\,z^2 + 318\,710\,700\,z + 684\,354\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8527.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{19}{4}; -z\right) = \frac{1}{684\,354\,825\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(65\,536\,z^6 + 258\,048\,z^5 + 1\,661\,184\,z^4 - 88\,986\,240\,z^3 + 748\,606\,320\,z^2 + 1\,506\,235\,500\,z + 684\,354\,825\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 12\sqrt{z}\left(8192\,z^5 + 25\,088\,z^4 + 2\,419\,200\,z^3 - 72\,293\,760\,z^2 + 197\,920\,800\,z + 228\,118\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(16\,384\,z^5 + 52\,224\,z^4 + 383\,040\,z^3 + 34\,261\,920\,z^2 - 318\,710\,700\,z + 684\,354\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8528.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{17}{4}; z\right) = \frac{1}{206\,756\,550}\left(e^{-2\sqrt{z}}\left(-16\,384\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4} + 16\,384\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4} - 16\,384\,e^{4\sqrt{z}}z^5 - 16\,384\,z^5 - 4096\,e^{4\sqrt{z}}z^{9/2} + 4096\,z^{9/2} - 3072\,e^{4\sqrt{z}}z^4 - 3072\,z^4 - 3840\,e^{4\sqrt{z}}z^{7/2} + 3840\,z^{7/2} - 6720\,e^{4\sqrt{z}}z^3 - 6720\,z^3 - 3\,356\,640\,e^{4\sqrt{z}}z^{5/2} + 3\,356\,640\,z^{5/2} + 25\,855\,200\,e^{4\sqrt{z}}z^2 + 25\,855\,200\,z^2 - 91\,400\,400\,e^{4\sqrt{z}}z^{3/2} + 91\,400\,400\,z^{3/2} + 183\,537\,900\,e^{4\sqrt{z}}z + 183\,537\,900\,z - 206\,756\,550\,e^{4\sqrt{z}}\sqrt{z} + 206\,756\,550\sqrt{z} + 103\,378\,275\,e^{4\sqrt{z}} + 103\,378\,275\right)\right) $$

07.22.03.8529.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{17}{4}; -z\right) = \frac{1}{103\,378\,275}\left(32\,768\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4} + 2\left(2048\,z^4 - 1920\,z^3 + 1\,678\,320\,z^2 - 45\,700\,200\,z + 103\,378\,275\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(16\,384\,z^5 - 3072\,z^4 + 6720\,z^3 + 25\,855\,200\,z^2 - 183\,537\,900\,z + 103\,378\,275\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8530.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{15}{4}; z\right) = \frac{1}{36\,018\,675\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32\,768\,z^6 - 86\,016\,z^5 + 338\,688\,z^4 + 1\,895\,040\,z^3 + 43\,923\,600\,z^2 - 81\,205\,740\,z + 36\,018\,675\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(4096\,z^5 + 14\,336\,z^4 - 26\,880\,z^3 - 3\,155\,040\,z^2 - 11\,060\,280\,z + 12\,006\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8192\,z^5 + 27\,648\,z^4 - 60\,480\,z^3 + 1\,179\,360\,z^2 + 14\,844\,060\,z + 36\,018\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8531.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{15}{4}; -z\right) = \frac{1}{36\,018\,675\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32\,768\,z^6 + 86\,016\,z^5 + 338\,688\,z^4 - 1\,895\,040\,z^3 + 43\,923\,600\,z^2 + 81\,205\,740\,z + 36\,018\,675\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(4096\,z^5 - 14\,336\,z^4 - 26\,880\,z^3 + 3\,155\,040\,z^2 - 11\,060\,280\,z - 12\,006\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-8192\,z^5 + 27\,648\,z^4 + 60\,480\,z^3 + 1\,179\,360\,z^2 - 14\,844\,060\,z + 36\,018\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8532.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{13}{4}; z\right) = \frac{1}{12\,162\,150}\left(e^{-2\sqrt{z}}\left(4096\,e^{4\sqrt{z}}\,z^5 + 4096\,z^5 + 1024\,e^{4\sqrt{z}}\,z^{9/2} - 1024\,z^{9/2} + 256\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z+105)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4} - 256\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z+105)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4} + 27\,648\,e^{4\sqrt{z}}\,z^4 + 27\,648\,z^4 + 7680\,e^{4\sqrt{z}}\,z^{7/2} - 7680\,z^{7/2} + 6720\,e^{4\sqrt{z}}\,z^3 + 6720\,z^3 + 10\,080\,e^{4\sqrt{z}}\,z^{5/2} - 10\,080\,z^{5/2} + 856\,800\,e^{4\sqrt{z}}\,z^2 + 856\,800\,z^2 - 4\,536\,000\,e^{4\sqrt{z}}\,z^{3/2} + 4\,536\,000\,z^{3/2} + 10\,376\,100\,e^{4\sqrt{z}}\,z + 10\,376\,100\,z - 12\,162\,150\,e^{4\sqrt{z}}\,\sqrt{z} + 12\,162\,150\,\sqrt{z} + 6\,081\,075\,e^{4\sqrt{z}} + 6\,081\,075\right)\right) $$

07.22.03.8533.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{13}{4}; -z\right) = \frac{1}{6\,081\,075}\left(-512\,\sqrt{\pi}\,(16z-105)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4} - 2\left(512\,z^4 - 3840\,z^3 + 5040\,z^2 + 2\,268\,000\,z - 6\,081\,075\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-4096\,z^5 + 27\,648\,z^4 - 6720\,z^3 + 856\,800\,z^2 - 10\,376\,100\,z + 6\,081\,075\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8534.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{11}{4}; z\right) = \frac{1}{7\,203\,735\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384\,z^6 + 150\,528\,z^5 + 274\,176\,z^4 - 1\,008\,000\,z^3 + 10\,478\,160\,z^2 - 16\,907\,940\,z + 7\,203\,735\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(2048\,z^5 + 20\,608\,z^4 + 53\,760\,z^3 + 362\,880\,z^2 + 2\,434\,320\,z - 2\,401\,245\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-4096\,z^5 - 40\,704\,z^4 - 100\,800\,z^3 + 151\,200\,z^2 + 2\,302\,020\,z + 7\,203\,735\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8535.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) = \frac{1}{7\,203\,735\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384\,z^6 - 150\,528\,z^5 + 274\,176\,z^4 + 1\,008\,000\,z^3 + 10\,478\,160\,z^2 + 16\,907\,940\,z + 7\,203\,735\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(2048\,z^5 - 20\,608\,z^4 + 53\,760\,z^3 - 362\,880\,z^2 + 2\,434\,320\,z + 2\,401\,245\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4096\,z^5 - 40\,704\,z^4 + 100\,800\,z^3 + 151\,200\,z^2 - 2\,302\,020\,z + 7\,203\,735\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8536.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{9}{4}; z\right) = \frac{1}{935\,550}\left(e^{-2\sqrt{z}}\left(-512\,e^{4\sqrt{z}}\,z^5 - 512\,z^5 - 128\,e^{4\sqrt{z}}\,z^{9/2} + 128\,z^{9/2} - 6816\,e^{4\sqrt{z}}\,z^4 - 6816\,z^4 - 1800\,e^{4\sqrt{z}}\,z^{7/2} + 1800\,z^{7/2} - 2\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2 + 3360\,z + 16\,065\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4} + 2\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2 + 3360\,z + 16\,065\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4} - 33\,600\,e^{4\sqrt{z}}\,z^3 - 33\,600\,z^3 - 10\,080\,e^{4\sqrt{z}}\,z^{5/2} + 10\,080\,z^{5/2} - 10\,080\,e^{4\sqrt{z}}\,z^2 - 10\,080\,z^2 - 226\,800\,e^{4\sqrt{z}}\,z^{3/2} + 226\,800\,z^{3/2} + 737\,100\,e^{4\sqrt{z}}\,z + 737\,100\,z - 935\,550\,e^{4\sqrt{z}}\,\sqrt{z} + 935\,550\,\sqrt{z} + 467\,775\,e^{4\sqrt{z}} + 467\,775\right)\right) $$

07.22.03.8537.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{9}{4}; -z\right) = \frac{1}{467\,775}\left(4\sqrt{\pi}\,\left(256\,z^2 - 3360\,z + 16\,065\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4} + 2\left(64\,z^4 - 900\,z^3 + 5040\,z^2 - 113\,400\,z + 467\,775\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(512\,z^5 - 6816\,z^4 + 33\,600\,z^3 - 10\,080\,z^2 - 737\,100\,z + 467\,775\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8538.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{7}{4}; z\right) = \frac{1}{3\,274\,425\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(-\left(8192\,z^6 + 129\,024\,z^5 + 872\,928\,z^4 + 1\,008\,000\,z^3 - 6\,879\,600\,z^2 + 8\,334\,900\,z - 3\,274\,425\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,\left(1024\,z^5 + 17\,024\,z^4 + 124\,740\,z^3 + 252\,000\,z^2 - 1\,323\,000\,z + 1\,091\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2048\,z^5 + 33\,792\,z^4 + 244\,440\,z^3 + 453\,600\,z^2 + 396\,900\,z + 3\,274\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8539.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{7}{4}; -z\right) = \frac{1}{3\,274\,425\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-8192\,z^6 + 129\,024\,z^5 - 872\,928\,z^4 + 1\,008\,000\,z^3 + 6\,879\,600\,z^2 + 8\,334\,900\,z + 3\,274\,425\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,\left(1024\,z^5 - 17\,024\,z^4 + 124\,740\,z^3 - 252\,000\,z^2 - 1\,323\,000\,z - 1\,091\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(2048\,z^5 - 33\,792\,z^4 + 244\,440\,z^3 - 453\,600\,z^2 + 396\,900\,z - 3\,274\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8540.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{5}{4}; z\right) = \frac{1}{9\,979\,200}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+80\,640z^2+771\,120z+2\,714\,985\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4} - e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+80\,640z^2+771\,120z+2\,714\,985\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4} + 4\left(1024z^5-256z^{9/2}+20\,352z^4-5280z^{7/2}+196\,980z^3-53\,865z^{5/2}+725\,760z^2-241\,920z^{3/2}+1\,542\,240z+2\,494\,800\sqrt{z}+e^{4\sqrt{z}}\left(1024z^5+256z^{9/2}+20\,352z^4+5280z^{7/2}+196\,980z^3+53\,865z^{5/2}+725\,760z^2+241\,920z^{3/2}+1\,542\,240z-2\,494\,800\sqrt{z}+1\,247\,400\right)+1\,247\,400\right)\right)\right) $$

07.22.03.8541.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{5}{4}; -z\right) = \frac{1}{2\,494\,800}\left(\sqrt{\pi}\left(-4096z^3+80\,640z^2-771\,120z+2\,714\,985\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4} + 2\left(\sqrt{z}\left(-256z^4+5280z^3-53\,865z^2+241\,920z+2\,494\,800\right)\sin\left(2\sqrt{z}\right) - 4\left(256z^5-5088z^4+49\,245z^3-181\,440z^2+385\,560z-311\,850\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8542.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{3}{4}; z\right) = \frac{1}{3\,274\,425\sqrt{2}\sqrt[4]{z}}\left(\left(2\left(4096z^6+91\,392z^5+1\,061\,424z^4+5\,163\,795z^3+2\,646\,000z^2-10\,716\,300z+3\,274\,425\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(4096z^5+94\,976z^4+1\,147\,440z^3+6\,254\,325z^2+16\,934\,400z-8\,731\,800\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2z\left(4096z^5+94\,464z^4+1\,134\,000z^3+6\,062\,175z^2+7\,938\,000z-13\,097\,700\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8543.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{3}{4}; -z\right) = \frac{1}{3\,274\,425\sqrt{2}\sqrt[4]{z}}\left(\left(2\left(4096z^6-91\,392z^5+1\,061\,424z^4-5\,163\,795z^3+2\,646\,000z^2+10\,716\,300z+3\,274\,425\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(4096z^5-94\,976z^4+1\,147\,440z^3-6\,254\,325z^2+16\,934\,400z+8\,731\,800\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(4096z^5-94\,464z^4+1\,134\,000z^3-6\,062\,175z^2+7\,938\,000z+13\,097\,700\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8544.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{1}{4}; z\right) = \frac{1}{510\,935\,040}$$
$$\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4+1\,720\,320z^3+24\,675\,840z^2+173\,759\,040z+415\,392\,705\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+\right.\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4+1\,720\,320z^3+24\,675\,840z^2+173\,759\,040z+415\,392\,705\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-$$
$$4\left(16\,384z^5-4096z^{9/2}+433\,152z^4-111\,360z^{7/2}+6\,256\,320z^3-1\,658\,160z^{5/2}+\right.$$
$$44\,814\,420z^2-12\,837\,825z^{3/2}+116\,121\,600z-127\,733\,760\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(16\,384z^5+4096z^{9/2}+433\,152z^4+111\,360z^{7/2}+6\,256\,320z^3+1\,658\,160z^{5/2}+\right.$$
$$\left.\left.\left.\left.44\,814\,420z^2+12\,837\,825z^{3/2}+116\,121\,600z+127\,733\,760\sqrt{z}-63\,866\,880\right)-63\,866\,880\right)\right)\right)$$

07.22.03.8545.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{127\,733\,760}\left(\sqrt{\pi}\left(65\,536z^4-1\,720\,320z^3+24\,675\,840z^2-173\,759\,040z+415\,392\,705\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+\right.$$
$$2\left(4\left(4096z^5-108\,288z^4+1\,564\,080z^3-11\,203\,605z^2+29\,030\,400z+15\,966\,720\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\sqrt{z}\left(4096z^4-111\,360z^3+1\,658\,160z^2-12\,837\,825z+127\,733\,760\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.8546.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) = \frac{1}{314\,344\,800\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(-2\left(65\,536z^6+1\,892\,352z^5+31\,094\,784z^4+263\,077\,920z^3+820\,848\,735z^2-571\,536\,000z-314\,344\,800\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$3\sqrt{z}\left(65\,536z^5+1\,949\,696z^4+32\,847\,360z^3+293\,509\,440z^2+1\,114\,065\,225z+838\,252\,800\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2z\left(65\,536z^5+1\,941\,504z^4+32\,578\,560z^3+288\,459\,360z^2+1\,056\,051\,675z+1\,257\,379\,200\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8547.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) = \frac{1}{314\,344\,800\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(-2\left(65\,536z^6-1\,892\,352z^5+31\,094\,784z^4-263\,077\,920z^3+820\,848\,735z^2+571\,536\,000z-314\,344\,800\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$3\sqrt{z}\left(65\,536z^5-1\,949\,696z^4+32\,847\,360z^3-293\,509\,440z^2+1\,114\,065\,225z-838\,252\,800\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2z\left(-65\,536z^5+1\,941\,504z^4-32\,578\,560z^3+288\,459\,360z^2-1\,056\,051\,675z+1\,257\,379\,200\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8548.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) = \frac{1}{163\,499\,212\,800}\left(e^{-2\sqrt{z}}\left(4\left(262\,144 z^5 - 65\,536 z^{9/2} + 8\,650\,752 z^4 - 2\,211\,840 z^{7/2} + 166\,225\,920 z^3 - 43\,384\,320 z^{5/2} + 1\,772\,628\,480 z^2 - 483\,053\,760 z^{3/2} + 8\,731\,062\,900 z - 2\,741\,430\,825\sqrt{z} + e^{4\sqrt{z}}\left(262\,144 z^5 + 65\,536 z^{9/2} + 8\,650\,752 z^4 + 2\,211\,840 z^{7/2} + 166\,225\,920 z^3 + 43\,384\,320 z^{5/2} + 1\,772\,628\,480 z^2 + 483\,053\,760 z^{3/2} + 8\,731\,062\,900 z + 2\,741\,430\,825\sqrt{z} + 20\,437\,401\,600\right) + 20\,437\,401\,600\right) + e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(1\,048\,576 z^5 + 34\,406\,400 z^4 + 658\,022\,400 z^3 + 6\,950\,361\,600 z^2 + 33\,231\,416\,400 z + 43\,616\,234\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(1\,048\,576 z^5 + 34\,406\,400 z^4 + 658\,022\,400 z^3 + 6\,950\,361\,600 z^2 + 33\,231\,416\,400 z + 43\,616\,234\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8549.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{3}{4}; -z\right) = \frac{1}{40\,874\,803\,200}\left(\sqrt{\pi}\sqrt[4]{z}\left(-1\,048\,576 z^5 + 34\,406\,400 z^4 - 658\,022\,400 z^3 + 6\,950\,361\,600 z^2 - 33\,231\,416\,400 z + 43\,616\,234\,025\right)\left(S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\left(4\left(65\,536 z^5 - 2\,162\,688 z^4 + 41\,556\,480 z^3 - 443\,157\,120 z^2 + 2\,182\,765\,725 z - 5\,109\,350\,400\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\left(65\,536 z^4 - 2\,211\,840 z^3 + 43\,384\,320 z^2 - 483\,053\,760 z + 2\,741\,430\,825\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.8550.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{110\,649\,369\,600\sqrt{2}\sqrt[4]{z}}\left(\left(-2\left(1\,048\,576 z^6 + 37\,158\,912 z^5 + 789\,110\,784 z^4 + 9\,486\,005\,760 z^3 + 53\,048\,595\,600 z^2 + 73\,556\,028\,315 z - 110\,649\,369\,600\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(1\,048\,576 z^5 + 38\,076\,416 z^4 + 823\,173\,120 z^3 + 10\,238\,215\,680 z^2 + 62\,832\,868\,560 z + 189\,653\,604\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(1\,048\,576 z^5 + 37\,945\,344 z^4 + 818\,012\,160 z^3 + 10\,117\,578\,240 z^2 + 61\,077\,194\,640 z + 126\,363\,335\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8551.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) = \frac{1}{110\,649\,369\,600\sqrt{2}\,\sqrt[4]{z}}\left(\left(-2\left(1\,048\,576 z^6 - 37\,158\,912 z^5 + 789\,110\,784 z^4 - 9\,486\,005\,760 z^3 + 53\,048\,595\,600 z^2 - 73\,556\,028\,315 z - 110\,649\,369\,600\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(1\,048\,576 z^5 - 38\,076\,416 z^4 + 823\,173\,120 z^3 - 10\,238\,215\,680 z^2 + 62\,832\,868\,560 z - 189\,653\,604\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(-1\,048\,576 z^5 + 37\,945\,344 z^4 - 818\,012\,160 z^3 + 10\,117\,578\,240 z^2 - 61\,077\,194\,640 z + 126\,363\,335\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8552.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{7}{4}; z\right) = \frac{1}{20\,927\,899\,238\,400 z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304 z^{11/2} - 1\,048\,576 z^5 + 165\,937\,152 z^{9/2} - 42\,270\,720 z^4 + 3\,980\,820\,480 z^{7/2} - 1\,029\,611\,520 z^3 + 56\,421\,550\,080 z^{5/2} - 15\,013\,071\,360 z^2 + 411\,370\,747\,200 z^{3/2} - 118\,283\,230\,800 z + 1\,162\,112\,937\,300\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 165\,937\,152 z^{9/2} + 42\,270\,720 z^4 + 3\,980\,820\,480 z^{7/2} + 1\,029\,611\,520 z^3 + 56\,421\,550\,080 z^{5/2} + 15\,013\,071\,360 z^2 + 411\,370\,747\,200 z^{3/2} + 118\,283\,230\,800 z + 1\,162\,112\,937\,300\sqrt{z} + 1\,090\,405\,850\,625\right) - 1\,090\,405\,850\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 660\,602\,880 z^5 + 15\,792\,537\,600 z^4 + 222\,411\,571\,200 z^3 + 1\,595\,107\,987\,200 z^2 + 4\,187\,158\,466\,400 z + 1\,090\,405\,850\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 660\,602\,880 z^5 + 15\,792\,537\,600 z^4 + 222\,411\,571\,200 z^3 + 1\,595\,107\,987\,200 z^2 + 4\,187\,158\,466\,400 z + 1\,090\,405\,850\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right) $$

07.22.03.8553.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{7}{4}; -z\right) = \frac{1}{5\,231\,974\,809\,600 z^{3/4}}\left(\sqrt{\pi}\left(-16\,777\,216 z^6 + 660\,602\,880 z^5 - 15\,792\,537\,600 z^4 + 222\,411\,571\,200 z^3 - 1\,595\,107\,987\,200 z^2 + 4\,187\,158\,466\,400 z - 1\,090\,405\,850\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(-1\,048\,576 z^5 + 42\,270\,720 z^4 - 1\,029\,611\,520 z^3 + 15\,013\,071\,360 z^2 - 118\,283\,230\,800 z + 1\,090\,405\,850\,625\right)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\left(1\,048\,576 z^5 - 41\,484\,288 z^4 + 995\,205\,120 z^3 - 14\,105\,387\,520 z^2 + 102\,842\,686\,800 z - 290\,528\,234\,325\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8554.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{9}{4}; z\right) = $$

$$ \left(\left(-2\sqrt{z}\,\left(16\,777\,216\,z^6 + 704\,643\,072\,z^5 + 18\,344\,116\,224\,z^4 + 285\,555\,916\,800\,z^3 + 2\,291\,652\,760\,320\,z^2 + 6\,410\,873\,589\,120\,z - 7\,498\,363\,177\,305\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,777\,216\,z^6 + 719\,323\,136\,z^5 + 18\,985\,451\,520\,z^4 + 302\,757\,396\,480\,z^3 + 2\,574\,423\,371\,520\,z^2 + 9\,032\,851\,507\,680\,z + 2\,846\,107\,289\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216\,z^6 + 717\,225\,984\,z^5 + 18\,889\,113\,600\,z^4 + 300\,058\,214\,400\,z^3 + 2\,526\,406\,122\,240\,z^2 + 8\,489\,530\,969\,920\,z + 8\,538\,321\,867\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(9\,206\,027\,550\,720\,\sqrt{2}\;z^{3/4}\right) $$

07.22.03.8555.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{9}{4}; -z\right) = $$

$$ \left(\left(-2\sqrt{z}\,\left(16\,777\,216\,z^6 - 704\,643\,072\,z^5 + 18\,344\,116\,224\,z^4 - 285\,555\,916\,800\,z^3 + 2\,291\,652\,760\,320\,z^2 - 6\,410\,873\,589\,120\,z - 7\,498\,363\,177\,305\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,777\,216\,z^6 - 719\,323\,136\,z^5 + 18\,985\,451\,520\,z^4 - 302\,757\,396\,480\,z^3 + 2\,574\,423\,371\,520\,z^2 - 9\,032\,851\,507\,680\,z + 2\,846\,107\,289\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,777\,216\,z^6 - 717\,225\,984\,z^5 + 18\,889\,113\,600\,z^4 - 300\,058\,214\,400\,z^3 + 2\,526\,406\,122\,240\,z^2 - 8\,489\,530\,969\,920\,z + 8\,538\,321\,867\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(9\,206\,027\,550\,720\,\sqrt{2}\;z^{3/4}\right) $$

07.22.03.8556.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{11}{4}; z\right) = $$

$$ \left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(67\,108\,864\,z^{13/2} - 16\,777\,216\,z^6 + 3\,095\,396\,352\,z^{11/2} - 786\,432\,000\,z^5 + 89\,043\,763\,200\,z^{9/2} - 22\,894\,018\,560\,z^4 + 1\,574\,897\,909\,760\,z^{7/2} - 413\,346\,447\,360\,z^3 + 15\,225\,762\,585\,600\,z^{5/2} - 4\,202\,676\,576\,000\,z^2 + 62\,411\,918\,083\,200\,z^{3/2} - 20\,935\,792\,332\,000\,z + 126\,487\,078\,672\,500\,\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 + 3\,095\,396\,352\,z^{11/2} + 786\,432\,000\,z^5 + 89\,043\,763\,200\,z^{9/2} + 22\,894\,018\,560\,z^4 + 1\,574\,897\,909\,760\,z^{7/2} + 413\,346\,447\,360\,z^3 + 15\,225\,762\,585\,600\,z^{5/2} + 4\,202\,676\,576\,000\,z^2 + 62\,411\,918\,083\,200\,z^{3/2} + 20\,935\,792\,332\,000\,z + 126\,487\,078\,672\,500\,\sqrt{z} - 94\,865\,309\,004\,375\right) + 94\,865\,309\,004\,375\right) + e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7 + 12\,331\,253\,760\,z^6 + 353\,752\,842\,240\,z^5 + 6\,227\,523\,993\,600\,z^4 + 59\,550\,698\,188\,800\,z^3 + 234\,480\,874\,118\,400\,z^2 + 122\,125\,455\,270\,000\,z - 94\,865\,309\,004\,375\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right) - e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7 + 12\,331\,253\,760\,z^6 + 353\,752\,842\,240\,z^5 + 6\,227\,523\,993\,600\,z^4 + 59\,550\,698\,188\,800\,z^3 + 234\,480\,874\,118\,400\,z^2 + 122\,125\,455\,270\,000\,z - 94\,865\,309\,004\,375\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\Big) \Big/ \left(1\,339\,385\,551\,257\,600\,z^{7/4}\right) $$

07.22.03.8557.01

$${}_1F_2\left(-\frac{21}{4};-\frac{11}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{334\,846\,387\,814\,400\,z^{7/4}}\left(-\sqrt{\pi}\,\left(268\,435\,456\,z^7-12\,331\,253\,760\,z^6+353\,752\,842\,240\,z^5-6\,227\,523\,993\,600\,z^4+\right.\right.$$
$$\left.59\,550\,698\,188\,800\,z^3-234\,480\,874\,118\,400\,z^2+122\,125\,455\,270\,000\,z+94\,865\,309\,004\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6-773\,849\,088\,z^5+22\,260\,940\,800\,z^4-393\,724\,477\,440\,z^3+3\,806\,440\,646\,400\,z^2-\right.\right.$$
$$15\,602\,979\,520\,800\,z+31\,621\,769\,668\,125\big)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6-786\,432\,000\,z^5+22\,894\,018\,560\right.$$
$$\left.\left.\left.z^4-413\,346\,447\,360\,z^3+4\,202\,676\,576\,000\,z^2-20\,935\,792\,332\,000\,z-94\,865\,309\,004\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.8558.01

$${}_1F_2\left(-\frac{21}{4};-\frac{11}{2},\frac{13}{4};z\right)=$$
$$\left(\left(-2\sqrt{z}\,\left(268\,435\,456\,z^7+13\,035\,896\,832\,z^6+401\,844\,731\,904\,z^5+7\,676\,928\,000\,000\,z^4+80\,159\,959\,756\,800\,z^3+\right.\right.\right.$$
$$333\,352\,182\,240\,000\,z^2-50\,790\,208\,669\,200\,z-264\,687\,977\,879\,325\big)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$3\left(268\,435\,456\,z^7+13\,270\,777\,856\,z^6+413\,647\,503\,360\,z^5+8\,049\,549\,312\,000\,z^4+87\,575\,330\,304\,000\,z^3+\right.$$
$$418\,786\,348\,780\,800\,z^2+1\,047\,367\,482\,361\,200\,z-441\,146\,629\,798\,875\big)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+13\,237\,223\,424\,z^6+411\,885\,895\,680\,z^5+7\,991\,952\,998\,400\,z^4+\right.$$
$$86\,358\,995\,251\,200\,z^3+402\,659\,402\,745\,600\,z^2+318\,764\,016\,370\,800\,z-$$
$$\left.\left.\left.1\,323\,439\,889\,396\,625\big)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(490\,988\,136\,038\,400\sqrt{2}\;z^{7/4}\right)$$

07.22.03.8559.01

$${}_1F_2\left(-\frac{21}{4};-\frac{11}{2},\frac{13}{4};-z\right)=$$
$$\left(\left(-2\sqrt{z}\,\left(268\,435\,456\,z^7-13\,035\,896\,832\,z^6+401\,844\,731\,904\,z^5-7\,676\,928\,000\,000\,z^4+80\,159\,959\,756\,800\,z^3-\right.\right.\right.$$
$$333\,352\,182\,240\,000\,z^2-50\,790\,208\,669\,200\,z+264\,687\,977\,879\,325\big)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$3\left(268\,435\,456\,z^7-13\,270\,777\,856\,z^6+413\,647\,503\,360\,z^5-8\,049\,549\,312\,000\,z^4+87\,575\,330\,304\,000\,z^3-\right.$$
$$418\,786\,348\,780\,800\,z^2+1\,047\,367\,482\,361\,200\,z+441\,146\,629\,798\,875\big)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7-13\,237\,223\,424\,z^6+411\,885\,895\,680\,z^5-7\,991\,952\,998\,400\,z^4+\right.$$
$$86\,358\,995\,251\,200\,z^3-402\,659\,402\,745\,600\,z^2+318\,764\,016\,370\,800\,z+1\,323\,439\,889\,396\,625\big)$$
$$\left.\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(490\,988\,136\,038\,400\sqrt{2}\;z^{7/4}\right)$$

07.22.03.8560.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) =
$$

$$
\left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z} \left(1\,073\,741\,824\, z^{15/2} - 268\,435\,456\, z^7 + 56\,572\,772\,352\, z^{13/2} - 14\,344\,519\,680\, z^6 + 1\,897\,691\,873\,280\, z^{11/2} - \right.\right.\right.
$$

$$
485\,873\,418\,240\, z^5 + 40\,235\,752\,488\,960\, z^{9/2} - 10\,467\,108\,126\,720\, z^4 + 484\,828\,721\,233\,920\, z^{7/2} -
$$

$$
130\,789\,906\,329\,600\, z^3 + 2\,614\,004\,730\,086\,400\, z^{5/2} - 800\,212\,506\,912\,000\, z^2 +
$$

$$
2\,833\,310\,562\,264\,000\, z^{3/2} - 11\,232\,052\,586\,118\,000\, z - 29\,218\,515\,173\,347\,500\sqrt{z} +
$$

$$
e^{4\sqrt{z}} \left(1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 + 56\,572\,772\,352\, z^{13/2} + 14\,344\,519\,680\, z^6 + \right.
$$

$$
1\,897\,691\,873\,280\, z^{11/2} + 485\,873\,418\,240\, z^5 + 40\,235\,752\,488\,960\, z^{9/2} + 10\,467\,108\,126\,720\, z^4 +
$$

$$
484\,828\,721\,233\,920\, z^{7/2} + 130\,789\,906\,329\,600\, z^3 + 2\,614\,004\,730\,086\,400\, z^{5/2} +
$$

$$
800\,212\,506\,912\,000\, z^2 + 2\,833\,310\,562\,264\,000\, z^{3/2} + 11\,232\,052\,586\,118\,000\, z -
$$

$$
\left.\left.\left.29\,218\,515\,173\,347\,500\sqrt{z} + 21\,913\,886\,380\,010\,625\right) - 21\,913\,886\,380\,010\,625\right) +
$$

$$
e^{2\sqrt{z}} \sqrt{2\pi} \left(4\,294\,967\,296\, z^8 + 225\,485\,783\,040\, z^7 + 7\,546\,727\,301\,120\, z^6 + 159\,424\,614\,236\,160\, z^5 + \right.
$$

$$
1\,905\,622\,342\,041\,600\, z^4 + 10\,004\,517\,295\,718\,400\, z^3 + 7\,816\,029\,137\,280\,000\, z^2 -
$$

$$
\left.12\,142\,759\,552\,560\,000\, z + 21\,913\,886\,380\,010\,625\right) \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) -
$$

$$
e^{2\sqrt{z}} \sqrt{2\pi} \left(4\,294\,967\,296\, z^8 + 225\,485\,783\,040\, z^7 + 7\,546\,727\,301\,120\, z^6 + 159\,424\,614\,236\,160\, z^5 + \right.
$$

$$
1\,905\,622\,342\,041\,600\, z^4 + 10\,004\,517\,295\,718\,400\, z^3 + 7\,816\,029\,137\,280\,000\, z^2 -
$$

$$
\left.\left.\left.12\,142\,759\,552\,560\,000\, z + 21\,913\,886\,380\,010\,625\right) \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right) \Big/ \left(62\,342\,309\,294\,899\,200\, z^{11/4}\right)
$$

07.22.03.8561.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) =
$$

$$
\left(-\sqrt{\pi} \left(4\,294\,967\,296\, z^8 - 225\,485\,783\,040\, z^7 + 7\,546\,727\,301\,120\, z^6 - 159\,424\,614\,236\,160\, z^5 + 1\,905\,622\,342\,041\,600\, z^4 - \right.\right.
$$

$$
10\,004\,517\,295\,718\,400\, z^3 + 7\,816\,029\,137\,280\,000\, z^2 + 12\,142\,759\,552\,560\,000\, z + 21\,913\,886\,380\,010\,625\Big)
$$

$$
S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z} \left(4\sqrt{z} \left(268\,435\,456\, z^7 - 14\,143\,193\,088\, z^6 + 474\,422\,968\,320\, z^5 - 10\,058\,938\,122\,240\, z^4 + \right.\right.
$$

$$
121\,207\,180\,308\,480\, z^3 - 653\,501\,182\,521\,600\, z^2 + 708\,327\,640\,566\,000\, z + 7\,304\,628\,793\,336\,875\Big)
$$

$$
\cos\left(2\sqrt{z}\right) + \left(268\,435\,456\, z^7 - 14\,344\,519\,680\, z^6 + 485\,873\,418\,240\, z^5 - 10\,467\,108\,126\,720\, z^4 + \right.
$$

$$
130\,789\,906\,329\,600\, z^3 - 800\,212\,506\,912\,000\, z^2 + 11\,232\,052\,586\,118\,000\, z -
$$

$$
\left.\left.21\,913\,886\,380\,010\,625\right) \sin\left(2\sqrt{z}\right)\right)\Big) \Big/ \left(15\,585\,577\,323\,724\,800\, z^{11/4}\right)
$$

07.22.03.8562.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) = $$
$$ \left(\left(-2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 236\,760\,072\,192\,z^7 + 8\,432\,463\,642\,624\,z^6 + 190\,887\,147\,601\,920\,z^5 + 2\,452\,835\,008\,512\,000\,z^4 + \right.\right.\right. $$
$$ \left.\left.\left. 13\,490\,237\,021\,184\,000\,z^3 + 2\,582\,524\,432\,857\,600\,z^2 - 110\,110\,198\,797\,799\,200\,z + 83\,376\,713\,031\,987\,375\right) \right. $$
$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(4\,294\,967\,296\,z^8 + 240\,518\,168\,576\,z^7 + 8\,645\,970\,493\,440\,z^6 + 198\,643\,286\,016\,000\,z^5 + \right. $$
$$ 2\,634\,172\,357\,017\,600\,z^4 + 15\,996\,814\,073\,856\,000\,z^3 + 20\,400\,897\,047\,731\,200\,z^2 - $$
$$ \left. 282\,333\,843\,071\,280\,000\,z + 138\,961\,188\,386\,645\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 239\,981\,297\,664\,z^7 + 8\,614\,261\,555\,200\,z^6 + 197\,457\,503\,846\,400\,z^5 + \right. $$
$$ 2\,605\,118\,423\,040\,000\,z^4 + 15\,550\,570\,261\,094\,400\,z^3 + 16\,029\,276\,251\,788\,800\,z^2 + $$
$$ \left.\left. 42\,350\,076\,460\,692\,000\,z + 416\,883\,565\,159\,936\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(20\,545\,965\,077\,299\,200\,\sqrt{2}\;z^{11/4}\right) $$

07.22.03.8563.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) = $$
$$ \left(\left(-2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 236\,760\,072\,192\,z^7 + 8\,432\,463\,642\,624\,z^6 - 190\,887\,147\,601\,920\,z^5 + 2\,452\,835\,008\,512\,000\,z^4 - \right.\right.\right. $$
$$ \left.\left.\left. 13\,490\,237\,021\,184\,000\,z^3 + 2\,582\,524\,432\,857\,600\,z^2 + 110\,110\,198\,797\,799\,200\,z + 83\,376\,713\,031\,987\,375\right) \right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(4\,294\,967\,296\,z^8 - 240\,518\,168\,576\,z^7 + 8\,645\,970\,493\,440\,z^6 - 198\,643\,286\,016\,000\,z^5 + \right. $$
$$ 2\,634\,172\,357\,017\,600\,z^4 - 15\,996\,814\,073\,856\,000\,z^3 + 20\,400\,897\,047\,731\,200\,z^2 + $$
$$ \left. 282\,333\,843\,071\,280\,000\,z + 138\,961\,188\,386\,645\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 239\,981\,297\,664\,z^7 + 8\,614\,261\,555\,200\,z^6 - 197\,457\,503\,846\,400\,z^5 + \right. $$
$$ 2\,605\,118\,423\,040\,000\,z^4 - 15\,550\,570\,261\,094\,400\,z^3 + 16\,029\,276\,251\,788\,800\,z^2 - $$
$$ \left.\left. 42\,350\,076\,460\,692\,000\,z + 416\,883\,565\,159\,936\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(20\,545\,965\,077\,299\,200\,\sqrt{2}\;z^{11/4}\right) $$

07.22.03.8564.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) =
$$

$$
\left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z} \left(17\,179\,869\,184\,z^{17/2} - 4\,294\,967\,296\,z^8 + 1\,017\,907\,249\,152\,z^{15/2} - 257\,698\,037\,760\,z^7 + \right.\right.\right.
$$

$$
39\,009\,040\,465\,920\,z^{13/2} - 9\,956\,606\,607\,360\,z^6 + 964\,284\,666\,347\,520\,z^{11/2} - 249\,311\,526\,912\,000\,z^5 +
$$

$$
13\,918\,858\,916\,659\,200\,z^{9/2} - 3\,700\,756\,003\,553\,280\,z^4 + 93\,146\,189\,157\,826\,560\,z^{7/2} -
$$

$$
27\,118\,471\,790\,592\,000\,z^3 + 120\,887\,917\,323\,264\,000\,z^{5/2} - 75\,554\,948\,327\,040\,000\,z^2 +
$$

$$
1\,228\,847\,266\,719\,072\,000\,z^{3/2} + 6\,357\,948\,901\,720\,416\,000\,z + 11\,891\,935\,675\,552\,432\,500\,\sqrt{z} +
$$

$$
e^{4\sqrt{z}} \left(17\,179\,869\,184\,z^{17/2} + 4\,294\,967\,296\,z^8 + 1\,017\,907\,249\,152\,z^{15/2} + 257\,698\,037\,760\,z^7 + \right.
$$

$$
39\,009\,040\,465\,920\,z^{13/2} + 9\,956\,606\,607\,360\,z^6 + 964\,284\,666\,347\,520\,z^{11/2} +
$$

$$
249\,311\,526\,912\,000\,z^5 + 13\,918\,858\,916\,659\,200\,z^{9/2} + 3\,700\,756\,003\,553\,280\,z^4 +
$$

$$
93\,146\,189\,157\,826\,560\,z^{7/2} + 27\,118\,471\,790\,592\,000\,z^3 + 120\,887\,917\,323\,264\,000\,z^{5/2} +
$$

$$
75\,554\,948\,327\,040\,000\,z^2 + 1\,228\,847\,266\,719\,072\,000\,z^{3/2} - 6\,357\,948\,901\,720\,416\,000\,z +
$$

$$
\left.\left.\left.11\,891\,935\,675\,552\,432\,500\,\sqrt{z} - 8\,918\,951\,756\,664\,324\,375\right) + 8\,918\,951\,756\,664\,324\,375\right) +
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(68\,719\,476\,736\,z^9 + 4\,058\,744\,094\,720\,z^8 + 155\,246\,961\,623\,040\,z^7 + 3\,826\,190\,741\,667\,840\,z^6 + \right.
$$

$$
\left.54\,881\,923\,450\,798\,080\,z^5 + 360\,162\,622\,645\,862\,400\,z^4 + 375\,169\,398\,589\,440\,000\,z^3 -
$$

$$
874\,278\,687\,784\,320\,000\,z^2 + 3\,155\,599\,638\,721\,530\,000\,z - 8\,918\,951\,756\,664\,324\,375\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) -
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(68\,719\,476\,736\,z^9 + 4\,058\,744\,094\,720\,z^8 + 155\,246\,961\,623\,040\,z^7 + \right.
$$

$$
3\,826\,190\,741\,667\,840\,z^6 + 54\,881\,923\,450\,798\,080\,z^5 + 360\,162\,622\,645\,862\,400\,z^4 +
$$

$$
375\,169\,398\,589\,440\,000\,z^3 - 874\,278\,687\,784\,320\,000\,z^2 + 3\,155\,599\,638\,721\,530\,000\,z -
$$

$$
\left.\left.\left.8\,918\,951\,756\,664\,324\,375\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) \Big/ \left(2\,393\,944\,676\,924\,129\,280\,z^{15/4}\right)
$$

07.22.03.8565.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) =
$$

$$
\left(-\sqrt{\pi}\,\left(68\,719\,476\,736\,z^9 - 4\,058\,744\,094\,720\,z^8 + 155\,246\,961\,623\,040\,z^7 - 3\,826\,190\,741\,667\,840\,z^6 + \right.\right.
$$

$$
54\,881\,923\,450\,798\,080\,z^5 - 360\,162\,622\,645\,862\,400\,z^4 + 375\,169\,398\,589\,440\,000\,z^3 +
$$

$$
\left.874\,278\,687\,784\,320\,000\,z^2 + 3\,155\,599\,638\,721\,530\,000\,z + 8\,918\,951\,756\,664\,324\,375\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) -
$$

$$
2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 254\,476\,812\,288\,z^7 + 9\,752\,260\,116\,480\,z^6 - 241\,071\,166\,586\,880\,z^5 + \right.\right.
$$

$$
3\,479\,714\,729\,164\,800\,z^4 - 23\,286\,547\,289\,456\,640\,z^3 + 30\,221\,979\,330\,816\,000\,z^2 -
$$

$$
\left.307\,211\,816\,679\,768\,000\,z + 2\,972\,983\,918\,888\,108\,125\right) \cos\left(2\sqrt{z}\right) +
$$

$$
\left(4\,294\,967\,296\,z^8 - 257\,698\,037\,760\,z^7 + 9\,956\,606\,607\,360\,z^6 - 249\,311\,526\,912\,000\,z^5 + \right.
$$

$$
3\,700\,756\,003\,553\,280\,z^4 - 27\,118\,471\,790\,592\,000\,z^3 + 75\,554\,948\,327\,040\,000\,z^2 +
$$

$$
\left.\left.\left.6\,357\,948\,901\,720\,416\,000\,z - 8\,918\,951\,756\,664\,324\,375\right) \sin\left(2\sqrt{z}\right)\right)\right) \Big/ \left(598\,486\,169\,231\,032\,320\,z^{15/4}\right)
$$

07.22.03.8566.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) = $$

$$ \left(\left(-2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 4\,239\,132\,721\,152\,z^8 + 171\,279\,000\,797\,184\,z^7 + 4\,481\,889\,305\,886\,720\,z^6 + \right.\right.\right. $$

$$ 68\,361\,159\,243\,202\,560\,z^5 + 466\,996\,943\,418\,163\,200\,z^4 + 232\,255\,092\,245\,299\,200\,z^3 - $$

$$ \left.\left.\left. 2\,439\,364\,404\,135\,859\,200\,z^2 + 50\,248\,365\,720\,611\,058\,000\,z - 42\,271\,993\,507\,217\,599\,125\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$

$$ 3\left(68\,719\,476\,736\,z^9 + 4\,299\,262\,263\,296\,z^8 + 175\,089\,710\,530\,560\,z^7 + 4\,638\,468\,042\,915\,840\,z^6 + \right. $$

$$ 72\,568\,431\,968\,256\,000\,z^5 + 534\,957\,234\,300\,518\,400\,z^4 + 792\,720\,570\,997\,555\,200\,z^3 + $$

$$ \left. 11\,745\,087\,871\,765\,248\,000\,z^2 + 133\,847\,416\,654\,017\,066\,000\,z - 70\,453\,322\,512\,029\,331\,875\right) $$

$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 4\,290\,672\,328\,704\,z^8 + 174\,525\,996\,072\,960\,z^7 + \right. $$

$$ 4\,614\,728\,617\,820\,160\,z^6 + 71\,905\,616\,068\,608\,000\,z^5 + 523\,325\,001\,056\,256\,000\,z^4 + $$

$$ 669\,785\,295\,281\,356\,800\,z^3 - 1\,355\,202\,446\,742\,144\,000\,z^2 - 49\,359\,014\,114\,936\,526\,000\,z - $$

$$ \left.\left. 211\,359\,967\,536\,087\,995\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(734\,820\,398\,058\,700\,800\,\sqrt{2}\; z^{15/4}\right) $$

07.22.03.8567.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) = $$

$$ -\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 4\,239\,132\,721\,152\,z^8 + 171\,279\,000\,797\,184\,z^7 - 4\,481\,889\,305\,886\,720\,z^6 + \right.\right.\right. $$

$$ 68\,361\,159\,243\,202\,560\,z^5 - 466\,996\,943\,418\,163\,200\,z^4 + 232\,255\,092\,245\,299\,200\,z^3 + $$

$$ \left.\left.\left. 2\,439\,364\,404\,135\,859\,200\,z^2 + 50\,248\,365\,720\,611\,058\,000\,z + 42\,271\,993\,507\,217\,599\,125\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$

$$ 3\left(68\,719\,476\,736\,z^9 - 4\,299\,262\,263\,296\,z^8 + 175\,089\,710\,530\,560\,z^7 - 4\,638\,468\,042\,915\,840\,z^6 + \right. $$

$$ 72\,568\,431\,968\,256\,000\,z^5 - 534\,957\,234\,300\,518\,400\,z^4 + 792\,720\,570\,997\,555\,200\,z^3 - $$

$$ \left. 11\,745\,087\,871\,765\,248\,000\,z^2 + 133\,847\,416\,654\,017\,066\,000\,z + 70\,453\,322\,512\,029\,331\,875\right) $$

$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 4\,290\,672\,328\,704\,z^8 + 174\,525\,996\,072\,960\,z^7 - \right. $$

$$ 4\,614\,728\,617\,820\,160\,z^6 + 71\,905\,616\,068\,608\,000\,z^5 - 523\,325\,001\,056\,256\,000\,z^4 + $$

$$ 669\,785\,295\,281\,356\,800\,z^3 + 1\,355\,202\,446\,742\,144\,000\,z^2 - 49\,359\,014\,114\,936\,526\,000\,z + $$

$$ \left.\left. 211\,359\,967\,536\,087\,995\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(734\,820\,398\,058\,700\,800\,\sqrt{2}\; z^{15/4}\right) $$

07.22.03.8568.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) =
\left(19\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(274\,877\,906\,944\, z^{19/2} - 68\,719\,476\,736\, z^9 + 18\,090\,402\,250\,752\, z^{17/2} - 4\,574\,140\,170\,240\, z^8 + \right.\right.\right.
$$

$$
779\,729\,837\,752\,320\, z^{15/2} - 198\,540\,231\,966\,720\, z^7 + 22\,017\,587\,470\,663\,680\, z^{13/2} -
$$

$$
5\,666\,831\,188\,623\,360\, z^6 + 370\,351\,639\,049\,011\,200\, z^{11/2} - 97\,495\,502\,133\,657\,600\, z^5 +
$$

$$
2\,961\,570\,555\,533\,721\,600\, z^{9/2} - 835\,930\,126\,467\,072\,000\, z^4 + 4\,537\,946\,434\,904\,064\,000\, z^{7/2} -
$$

$$
2\,324\,767\,640\,832\,000\,000\, z^3 - 7\,123\,752\,270\,835\,200\,000\, z^{5/2} - 216\,205\,881\,419\,848\,320\,000\, z^2 -
$$

$$
1\,440\,623\,064\,695\,494\,680\,000\, z^{3/2} - 4\,423\,800\,071\,305\,504\,890\,000\, z - 7\,313\,540\,440\,464\,745\,987\,500\sqrt{z} +
$$

$$
e^{4\sqrt{z}}\left(274\,877\,906\,944\, z^{19/2} + 68\,719\,476\,736\, z^9 + 18\,090\,402\,250\,752\, z^{17/2} + 4\,574\,140\,170\,240\, z^8 + \right.
$$

$$
779\,729\,837\,752\,320\, z^{15/2} + 198\,540\,231\,966\,720\, z^7 + 22\,017\,587\,470\,663\,680\, z^{13/2} +
$$

$$
5\,666\,831\,188\,623\,360\, z^6 + 370\,351\,639\,049\,011\,200\, z^{11/2} + 97\,495\,502\,133\,657\,600\, z^5 +
$$

$$
2\,961\,570\,555\,533\,721\,600\, z^{9/2} + 835\,930\,126\,467\,072\,000\, z^4 + 4\,537\,946\,434\,904\,064\,000\, z^{7/2} +
$$

$$
2\,324\,767\,640\,832\,000\,000\, z^3 - 7\,123\,752\,270\,835\,200\,000\, z^{5/2} + 216\,205\,881\,419\,848\,320\,000\, z^2 -
$$

$$
1\,440\,623\,064\,695\,494\,680\,000\, z^{3/2} + 4\,423\,800\,071\,305\,504\,890\,000\, z -
$$

$$
\left.\left.\left.\left.7\,313\,540\,440\,464\,745\,987\,500\sqrt{z} + 5\,485\,155\,330\,348\,559\,490\,625\right) - 5\,485\,155\,330\,348\,559\,490\,625\right) +\right.\right.\right.
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\, z^{10} + 72\,155\,450\,572\,800\, z^9 + 3\,104\,939\,232\,460\,800\, z^8 + \right.
$$

$$
87\,455\,788\,380\,979\,200\, z^7 + 1\,463\,517\,958\,687\,948\,800\, z^6 + 11\,525\,203\,924\,667\,596\,800\, z^5 +
$$

$$
15\,006\,775\,943\,577\,600\,000\, z^4 - 46\,628\,196\,681\,830\,400\,000\, z^3 + 252\,447\,971\,097\,722\,400\,000\, z^2 -
$$

$$
\left.1\,427\,032\,281\,066\,291\,900\,000\, z + 5\,485\,155\,330\,348\,559\,490\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) -
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\, z^{10} + 72\,155\,450\,572\,800\, z^9 + 3\,104\,939\,232\,460\,800\, z^8 + 87\,455\,788\,380\,979\,200\, z^7 + \right.
$$

$$
1\,463\,517\,958\,687\,948\,800\, z^6 + 11\,525\,203\,924\,667\,596\,800\, z^5 + 15\,006\,775\,943\,577\,600\,000\, z^4 -
$$

$$
46\,628\,196\,681\,830\,400\,000\, z^3 + 252\,447\,971\,097\,722\,400\,000\, z^2 - 1\,427\,032\,281\,066\,291\,900\,000\, z +
$$

$$
\left.\left.\left.5\,485\,155\,330\,348\,559\,490\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(1\,532\,124\,593\,231\,442\,739\,200\, z^{19/4}\right)
$$

07.22.03.8569.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) =
$$

$$
-\left(19\left(\sqrt{\pi}\left(1\,099\,511\,627\,776\, z^{10} - 72\,155\,450\,572\,800\, z^9 + 3\,104\,939\,232\,460\,800\, z^8 - 87\,455\,788\,380\,979\,200\, z^7 + \right.\right.\right.
$$

$$
1\,463\,517\,958\,687\,948\,800\, z^6 - 11\,525\,203\,924\,667\,596\,800\, z^5 + 15\,006\,775\,943\,577\,600\,000\, z^4 +
$$

$$
46\,628\,196\,681\,830\,400\,000\, z^3 + 252\,447\,971\,097\,722\,400\,000\, z^2 +
$$

$$
\left.1\,427\,032\,281\,066\,291\,900\,000\, z + 5\,485\,155\,330\,348\,559\,490\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) +
$$

$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(68\,719\,476\,736\, z^9 - 4\,522\,600\,562\,688\, z^8 + 194\,932\,459\,438\,080\, z^7 - 5\,504\,396\,867\,665\,920\, z^6 + \right.\right.
$$

$$
92\,587\,909\,762\,252\,800\, z^5 - 740\,392\,638\,883\,430\,400\, z^4 + 1\,134\,486\,608\,726\,016\,000\, z^3 +
$$

$$
\left.1\,780\,938\,067\,708\,800\,000\, z^2 - 360\,155\,766\,173\,873\,670\,000\, z + 1\,828\,385\,110\,116\,186\,496\,875\right)
$$

$$
\cos\left(2\sqrt{z}\right) + \left(68\,719\,476\,736\, z^9 - 4\,574\,140\,170\,240\, z^8 + 198\,540\,231\,966\,720\, z^7 - \right.
$$

$$
5\,666\,831\,188\,623\,360\, z^6 + 97\,495\,502\,133\,657\,600\, z^5 - 835\,930\,126\,467\,072\,000\, z^4 +
$$

$$
2\,324\,767\,640\,832\,000\,000\, z^3 - 216\,205\,881\,419\,848\,320\,000\, z^2 + 4\,423\,800\,071\,305\,504\,890\,000\, z -
$$

$$
\left.\left.\left.\left.5\,485\,155\,330\,348\,559\,490\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)\Big/\left(383\,031\,148\,307\,860\,684\,800\, z^{19/4}\right)
$$

For fixed z and $a_1 = -\frac{21}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.8570.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,430\,923\,725\sqrt[4]{z}}\left(\sqrt{2}\left(\left(262\,144 z^6 - 688\,128 z^5 + 3\,677\,184 z^4 + 182\,198\,016 z^3 + 1\,571\,724\,000 z^2 - 3\,152\,179\,800 z + 1\,430\,923\,725\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(32\,768 z^5 - 57\,344 z^4 + 4\,888\,128 z^3 + 150\,242\,400 z^2 + 414\,760\,500 z - 476\,974\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-65\,536 z^5 + 122\,880 z^4 - 854\,784 z^3 + 70\,686\,000 z^2 + 663\,616\,800 z + 1\,430\,923\,725\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8571.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{23}{4}; -z\right) = \frac{1}{1\,430\,923\,725\sqrt[4]{z}}\left(\sqrt{2}\left(\left(262\,144 z^6 + 688\,128 z^5 + 3\,677\,184 z^4 - 182\,198\,016 z^3 + 1\,571\,724\,000 z^2 + 3\,152\,179\,800 z + 1\,430\,923\,725\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(32\,768 z^5 + 57\,344 z^4 + 4\,888\,128 z^3 - 150\,242\,400 z^2 + 414\,760\,500 z + 476\,974\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(65\,536 z^5 + 122\,880 z^4 + 854\,784 z^3 + 70\,686\,000 z^2 - 663\,616\,800 z + 1\,430\,923\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8572.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{21}{4}; z\right) = \left(\frac{16 z^2}{63} + \frac{16 z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(16 z^2 + 420 z + 945\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.8573.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) = \left(\frac{16 z^2}{63} - \frac{16 z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(16 z^2 - 420 z + 945\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.8574.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{19}{4}; z\right) = \frac{1}{62\,214\,075\sqrt[4]{z}}\left(\sqrt{2}\left(\left(131\,072 z^6 - 172\,032 z^5 + 354\,816 z^4 + 4\,225\,536 z^3 + 74\,511\,360 z^2 - 139\,708\,800 z + 62\,214\,075\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(16\,384 z^5 - 7168 z^4 + 49\,728 z^3 + 5\,654\,880 z^2 + 18\,918\,900 z - 20\,738\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-32\,768 z^5 + 18\,432 z^4 - 88\,704 z^3 + 2\,162\,160 z^2 + 26\,195\,400 z + 62\,214\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8575.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{62\,214\,075\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(131\,072\,z^6 + 172\,032\,z^5 + 354\,816\,z^4 - 4\,225\,536\,z^3 + 74\,511\,360\,z^2 + 139\,708\,800\,z + 62\,214\,075\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(16\,384\,z^5 + 7168\,z^4 + 49\,728\,z^3 - 5\,654\,880\,z^2 + 18\,918\,900\,z + 20\,738\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(32\,768\,z^5 + 18\,432\,z^4 + 88\,704\,z^3 + 2\,162\,160\,z^2 - 26\,195\,400\,z + 62\,214\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8576.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{17}{4}; z\right) = \frac{1}{18\,796\,050} \left(e^{-2\sqrt{z}}\left(-32\,768\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{21/4} + 32\,768\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{21/4} - 32\,768\,e^{4\sqrt{z}}\,z^5 - 32\,768\,z^5 - 8192\,e^{4\sqrt{z}}\,z^{9/2} + 8192\,z^{9/2} - 6144\,e^{4\sqrt{z}}\,z^4 - 6144\,z^4 - 7680\,e^{4\sqrt{z}}\,z^{7/2} + 7680\,z^{7/2} - 13\,440\,e^{4\sqrt{z}}\,z^3 - 13\,440\,z^3 - 30\,240\,e^{4\sqrt{z}}\,z^{5/2} + 30\,240\,z^{5/2} + 1\,587\,600\,e^{4\sqrt{z}}\,z^2 + 1\,587\,600\,z^2 - 7\,371\,000\,e^{4\sqrt{z}}\,z^{3/2} + 7\,371\,000\,z^{3/2} + 16\,216\,200\,e^{4\sqrt{z}}\,z + 16\,216\,200\,z - 18\,796\,050\,e^{4\sqrt{z}}\,\sqrt{z} + 18\,796\,050\,\sqrt{z} + 9\,398\,025\,e^{4\sqrt{z}} + 9\,398\,025\right)\right) $$

07.22.03.8577.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{17}{4}; -z\right) = \frac{1}{9\,398\,025}\left(65\,536\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{21/4} + 2\left(4096\,z^4 - 3840\,z^3 + 15\,120\,z^2 - 3\,685\,500\,z + 9\,398\,025\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(32\,768\,z^5 - 6144\,z^4 + 13\,440\,z^3 + 1\,587\,600\,z^2 - 16\,216\,200\,z + 9\,398\,025\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8578.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{15}{4}; z\right) = \frac{1}{3\,274\,425\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-65\,536\,z^6 + 107\,520\,z^4 - 145\,152\,z^3 + 4\,445\,280\,z^2 - 7\,567\,560\,z + 3\,274\,425\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(8192\,z^5 + 7168\,z^4 - 1344\,z^3 - 218\,400\,z^2 - 1\,067\,220\,z + 1\,091\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(16\,384\,z^5 + 12\,288\,z^4 - 10\,752\,z^3 + 65\,520\,z^2 + 1\,164\,240\,z + 3\,274\,425\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8579.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{3\,274\,425\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-65\,536 z^6 + 107\,520 z^4 + 145\,152 z^3 + 4\,445\,280 z^2 + 7\,567\,560 z + 3\,274\,425\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(8192 z^5 - 7168 z^4 - 1344 z^3 + 218\,400 z^2 - 1\,067\,220 z - 1\,091\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-16\,384 z^5 + 12\,288 z^4 + 10\,752 z^3 + 65\,520 z^2 - 1\,164\,240 z + 3\,274\,425\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8580.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{13}{4}; z\right) = \frac{1}{1\,105\,650}\left(e^{-2\sqrt{z}}\left(8192 e^{4\sqrt{z}} z^5 + 8192 z^5 + 2048 e^{4\sqrt{z}} z^{9/2} - 2048 z^{9/2} + 512 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+21)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} - 512 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+21)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} + 12\,288 e^{4\sqrt{z}} z^4 + 12\,288 z^4 + 4608 e^{4\sqrt{z}} z^{7/2} - 4608 z^{7/2} + 5376 e^{4\sqrt{z}} z^3 + 5376 z^3 + 10\,080 e^{4\sqrt{z}} z^{5/2} - 10\,080 z^{5/2} + 25\,200 e^{4\sqrt{z}} z^2 + 25\,200 z^2 - 340\,200 e^{4\sqrt{z}} z^{3/2} + 340\,200 z^{3/2} + 907\,200 e^{4\sqrt{z}} z + 907\,200 z - 1\,105\,650 e^{4\sqrt{z}}\sqrt{z} + 1\,105\,650\sqrt{z} + 552\,825 e^{4\sqrt{z}} + 552\,825\right)\right) $$

07.22.03.8581.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{13}{4}; -z\right) = \frac{1}{552\,825}\left(-1024\sqrt{\pi}\,(16z-21) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{17/4} - 2\left(1024 z^4 - 2304 z^3 + 5040 z^2 + 170\,100 z - 552\,825\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-8192 z^5 + 12\,288 z^4 - 5376 z^3 + 25\,200 z^2 - 907\,200 z + 552\,825\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8582.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{11}{4}; z\right) = \frac{1}{654\,885\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768 z^6 + 43\,008 z^5 + 32\,256 z^4 - 225\,792 z^3 + 1\,088\,640 z^2 - 1\,587\,600 z + 654\,885\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(4096 z^5 + 8960 z^4 + 14\,784 z^3 + 10\,080 z^2 + 238\,140 z - 218\,295\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-8192 z^5 - 16\,896 z^4 - 24\,192 z^3 + 15\,120 z^2 + 158\,760 z + 654\,885\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8583.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{11}{4}; -z\right) = \frac{1}{654\,885\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768 z^6 - 43\,008 z^5 + 32\,256 z^4 + 225\,792 z^3 + 1\,088\,640 z^2 + 1\,587\,600 z + 654\,885\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(4096 z^5 - 8960 z^4 + 14\,784 z^3 - 10\,080 z^2 + 238\,140 z + 218\,295\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8192 z^5 - 16\,896 z^4 + 24\,192 z^3 + 15\,120 z^2 - 158\,760 z + 654\,885\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8584.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{9}{4}; z\right) = \frac{1}{85\,050}\left(e^{-2\sqrt{z}}\left(-1024 e^{4\sqrt{z}} z^5 - 1024 z^5 - 256 e^{4\sqrt{z}} z^{9/2} + 256 z^{9/2} - 2880 e^{4\sqrt{z}} z^4 - 2880 z^4 - 912 e^{4\sqrt{z}} z^{7/2} + 912 z^{7/2} - 4 e^{2\sqrt{z}} \sqrt{2\pi}\left(256 z^2 + 672 z + 1785\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} + 4 e^{2\sqrt{z}} \sqrt{2\pi}\left(256 z^2 + 672 z + 1785\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} - 8064 e^{4\sqrt{z}} z^3 - 8064 z^3 - 3360 e^{4\sqrt{z}} z^{5/2} + 3360 z^{5/2} - 5040 e^{4\sqrt{z}} z^2 - 5040 z^2 - 12\,600 e^{4\sqrt{z}} z^{3/2} + 12\,600 z^{3/2} + 63\,000 e^{4\sqrt{z}} z + 63\,000 z - 85\,050 e^{4\sqrt{z}}\sqrt{z} + 85\,050\sqrt{z} + 42\,525 e^{4\sqrt{z}} + 42\,525\right)\right) $$

07.22.03.8585.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) = \frac{1}{42\,525}\left(8\sqrt{\pi}\left(256 z^2 - 672 z + 1785\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{13/4} + 2\left(128 z^4 - 456 z^3 + 1680 z^2 - 6300 z + 42\,525\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(1024 z^5 - 2880 z^4 + 8064 z^3 - 5040 z^2 - 63\,000 z + 42\,525\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8586.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) = \frac{1}{297\,675\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(16\,384 z^6 + 43\,008 z^5 + 173\,376 z^4 + 80\,640 z^3 - 756\,000 z^2 + 793\,800 z - 297\,675\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(2048 z^5 + 7168 z^4 + 29\,400 z^3 + 50\,400 z^2 - 132\,300 z + 99\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4096 z^5 + 13\,824 z^4 + 55\,440 z^3 + 75\,600 z^2 + 297\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8587.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) = \frac{1}{297\,675\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,384 z^6 + 43\,008 z^5 - 173\,376 z^4 + 80\,640 z^3 + 756\,000 z^2 + 793\,800 z + 297\,675\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(2048 z^5 - 7168 z^4 + 29\,400 z^3 - 50\,400 z^2 - 132\,300 z - 99\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-4096 z^5 + 13\,824 z^4 - 55\,440 z^3 + 75\,600 z^2 + 297\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8588.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{5}{4}; z\right) = \frac{1}{453\,600}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 + 16\,128 z^2 + 85\,680 z + 208\,845\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{9/4} - e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 + 16\,128 z^2 + 85\,680 z + 208\,845\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{9/4} + 4\left(1024 z^5 - 256 z^{9/2} + 4224 z^4 - 1248 z^{7/2} + 22\,596 z^3 - 7245 z^{5/2} + 60\,480 z^2 - 30\,240 z^{3/2} + 60\,480 z + 113\,400\sqrt{z} + e^{4\sqrt{z}}\left(1024 z^5 + 256 z^{9/2} + 4224 z^4 + 1248 z^{7/2} + 22\,596 z^3 + 7245 z^{5/2} + 60\,480 z^2 + 30\,240 z^{3/2} + 60\,480 z - 113\,400\sqrt{z} + 56\,700\right) + 56\,700\right)\right)\right) $$

07.22.03.8589.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{5}{4}; -z\right) = \frac{1}{113\,400}\left(\sqrt{\pi}\left(-4096 z^3 + 16\,128 z^2 - 85\,680 z + 208\,845\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{9/4} + 2\left(\sqrt{z}\left(-256 z^4 + 1248 z^3 - 7245 z^2 + 30\,240 z + 113\,400\right)\sin\left(2\sqrt{z}\right) - 4\left(256 z^5 - 1056 z^4 + 5649 z^3 - 15\,120 z^2 + 15\,120 z - 14\,175\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8590.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) = \frac{1}{297\,675\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192 z^6 + 32\,256 z^5 + 222\,432 z^4 + 726\,138 z^3 - 1\,058\,400 z + 297\,675\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(4096 z^5 + 19\,712 z^4 + 131\,376 z^3 + 511\,035 z^2 + 882\,000 z - 396\,900\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2z\left(4096 z^5 + 19\,200 z^4 + 127\,344 z^3 + 474\,705 z^2 + 529\,200 z - 595\,350\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8591.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{1}{297\,675\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192z^6 - 32\,256z^5 + 222\,432z^4 - 726\,138z^3 + 1\,058\,400z + 297\,675\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(4096z^5 - 19\,712z^4 + 131\,376z^3 - 511\,035z^2 + 882\,000z + 396\,900\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(4096z^5 - 19\,200z^4 + 127\,344z^3 - 474\,705z^2 + 529\,200z + 595\,350\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8592.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) = \frac{1}{23\,224\,320}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 344\,064z^3 + 2\,741\,760z^2 + 13\,366\,080z + 24\,434\,865\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4} + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 344\,064z^3 + 2\,741\,760z^2 + 13\,366\,080z + 24\,434\,865\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4} - 4\left(16\,384z^5 - 4096z^{9/2} + 89\,088z^4 - 25\,344z^{7/2} + 708\,288z^3 - 206\,640z^{5/2} + 3\,546\,900z^2 - 1\,210\,545z^{3/2} + 7\,741\,440z - 5\,806\,080\sqrt{z} + e^{4\sqrt{z}}\left(16\,384z^5 + 4096z^{9/2} + 89\,088z^4 + 25\,344z^{7/2} + 708\,288z^3 + 206\,640z^{5/2} + 3\,546\,900z^2 + 1\,210\,545z^{3/2} + 7\,741\,440z + 5\,806\,080\sqrt{z} - 2\,903\,040\right) - 2\,903\,040\right)\right)\right) $$

07.22.03.8593.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) = \frac{1}{5\,806\,080}\left(\sqrt{\pi}\left(65\,536z^4 - 344\,064z^3 + 2\,741\,760z^2 - 13\,366\,080z + 24\,434\,865\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4} + 2\left(4\left(4096z^5 - 22\,272z^4 + 177\,072z^3 - 886\,725z^2 + 1\,935\,360z + 725\,760\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\left(4096z^4 - 25\,344z^3 + 206\,640z^2 - 1\,210\,545z + 5\,806\,080\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8594.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) = \frac{1}{14\,288\,400\sqrt{2}\sqrt[4]{z}}\left(\left(-2\left(65\,536z^6 + 344\,064z^5 + 3\,322\,368z^4 + 19\,349\,568z^3 + 43\,202\,565z^2 - 38\,102\,400z - 14\,288\,400\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(65\,536z^5 + 401\,408z^4 + 3\,720\,192z^3 + 23\,194\,080z^2 + 72\,004\,275z + 38\,102\,400\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(65\,536z^5 + 393\,216z^4 + 3\,644\,928z^3 + 22\,377\,600z^2 + 63\,603\,225z + 57\,153\,600\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8595.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) = \frac{1}{14\,288\,400\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(-2\left(65\,536 z^6 - 344\,064 z^5 + 3\,322\,368 z^4 - 19\,349\,568 z^3 + 43\,202\,565 z^2 + 38\,102\,400 z - 14\,288\,400\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 3\sqrt{z}\left(65\,536 z^5 - 401\,408 z^4 + 3\,720\,192 z^3 - 23\,194\,080 z^2 + 72\,004\,275 z - 38\,102\,400\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 2z\left(-65\,536 z^5 + 393\,216 z^4 - 3\,644\,928 z^3 + 22\,377\,600 z^2 - 63\,603\,225 z + 57\,153\,600\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.8596.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) = $$
$$ \frac{1}{7\,431\,782\,400}\left(e^{-2\sqrt{z}}\left(4\left(262\,144 z^5 - 65\,536 z^{9/2} + 1\,769\,472 z^4 - 491\,520 z^{7/2} + 18\,708\,480 z^3 - 5\,214\,720 z^{5/2} + \right.\right.\right. $$
$$ 138\,458\,880 z^2 - 41\,448\,960 z^{3/2} + 533\,729\,700 z - 219\,017\,925\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(262\,144 z^5 + 65\,536 z^{9/2} + 1\,769\,472 z^4 + 491\,520 z^{7/2} + 18\,708\,480 z^3 + 5\,214\,720 z^{5/2} + \right. $$
$$ \left.\left. 138\,458\,880 z^2 + 41\,448\,960 z^{3/2} + 533\,729\,700 z + 219\,017\,925\sqrt{z} + 928\,972\,800\right) + 928\,972\,800\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(1\,048\,576 z^5 + 6\,881\,280 z^4 + 73\,113\,600 z^3 + 534\,643\,200 z^2 + 1\,954\,789\,200 z + 2\,076\,963\,525\right) $$
$$ \left.\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\right.\right. $$
$$ \left.\left.\left(1\,048\,576 z^5 + 6\,881\,280 z^4 + 73\,113\,600 z^3 + 534\,643\,200 z^2 + 1\,954\,789\,200 z + 2\,076\,963\,525\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8597.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) = \frac{1}{1\,857\,945\,600} $$
$$ \left(\sqrt{\pi}\,\sqrt[4]{z}\left(-1\,048\,576 z^5 + 6\,881\,280 z^4 - 73\,113\,600 z^3 + 534\,643\,200 z^2 - 1\,954\,789\,200 z + 2\,076\,963\,525\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$
$$ 2\left(4\left(65\,536 z^5 - 442\,368 z^4 + 4\,677\,120 z^3 - 34\,614\,720 z^2 + 133\,432\,425 z - 232\,243\,200\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. \sqrt{z}\left(65\,536 z^4 - 491\,520 z^3 + 5\,214\,720 z^2 - 41\,448\,960 z + 219\,017\,925\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8598.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) = \frac{1}{5\,029\,516\,800\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(-2\left(1\,048\,576 z^6 + 6\,881\,280 z^5 + 85\,155\,840 z^4 + 708\,567\,552 z^3 + 2\,967\,647\,760 z^2 + 2\,614\,955\,805 z - 5\,029\,516\,800\right)\right.\right. $$
$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(1\,048\,576 z^5 + 7\,798\,784 z^4 + 92\,725\,248 z^3 + 800\,110\,080 z^2 + 3\,833\,842\,320 z + 8\,828\,941\,275\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2z\left(1\,048\,576 z^5 + 7\,667\,712 z^4 + 91\,348\,992 z^3 + 782\,369\,280 z^2 + 3\,628\,936\,080 z + 6\,368\,756\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8599.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{5}{4}; -z\right) = \frac{1}{5\,029\,516\,800\,\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(-2\left(1\,048\,576\,z^6 - 6\,881\,280\,z^5 + 85\,155\,840\,z^4 - 708\,567\,552\,z^3 + 2\,967\,647\,760\,z^2 - 2\,614\,955\,805\,z - 5\,029\,516\,800\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(1\,048\,576\,z^5 - 7\,798\,784\,z^4 + 92\,725\,248\,z^3 - 800\,110\,080\,z^2 + 3\,833\,842\,320\,z - 8\,828\,941\,275\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 2\,z\left(1\,048\,576\,z^5 - 7\,667\,712\,z^4 + 91\,348\,992\,z^3 - 782\,369\,280\,z^2 + 3\,628\,936\,080\,z - 6\,368\,756\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8600.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{7}{4}; z\right) = $$
$$ \frac{1}{951\,268\,147\,200\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304\,z^{11/2} - 1\,048\,576\,z^5 + 33\,816\,576\,z^{9/2} - 9\,240\,576\,z^4 + 446\,595\,072\,z^{7/2} - \right.\right.\right. $$
$$ 121\,282\,560\,z^3 + 4\,383\,590\,400\,z^{5/2} - 1\,237\,178\,880\,z^2 + 24\,652\,918\,080\,z^{3/2} - 8\,095\,444\,560\,z + $$
$$ 60\,753\,539\,700\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2} + 1\,048\,576\,z^5 + 33\,816\,576\,z^{9/2} + 9\,240\,576\,z^4 + \right. $$
$$ \left. 446\,595\,072\,z^{7/2} + 121\,282\,560\,z^3 + 4\,383\,590\,400\,z^{5/2} + 1\,237\,178\,880\,z^2 + 24\,652\,918\,080\,z^{3/2} + \right. $$
$$ \left.\left. 8\,095\,444\,560\,z + 60\,753\,539\,700\sqrt{z} + 43\,616\,234\,025\right) - 43\,616\,234\,025\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6 + 132\,120\,576\,z^5 + 1\,754\,726\,400\,z^4 + 17\,108\,582\,400\,z^3 + \right. $$
$$ \left. 93\,829\,881\,600\,z^2 + 199\,388\,498\,400\,z + 43\,616\,234\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6 + 132\,120\,576\,z^5 + 1\,754\,726\,400\,z^4 + 17\,108\,582\,400\,z^3 + \right. $$
$$ \left.\left. 93\,829\,881\,600\,z^2 + 199\,388\,498\,400\,z + 43\,616\,234\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8601.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{7}{4}; -z\right) = $$
$$ \frac{1}{237\,817\,036\,800\,z^{3/4}}\left(\sqrt{\pi}\left(-16\,777\,216\,z^6 + 132\,120\,576\,z^5 - 1\,754\,726\,400\,z^4 + 17\,108\,582\,400\,z^3 - 93\,829\,881\,600\,z^2 + \right.\right. $$
$$ \left. 199\,388\,498\,400\,z - 43\,616\,234\,025\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\left(\left(-1\,048\,576\,z^5 + 9\,240\,576\,z^4 - 121\,282\,560\,z^3 + 1\,237\,178\,880\,z^2 - 8\,095\,444\,560\,z + 43\,616\,234\,025\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ 4\sqrt{z}\left(1\,048\,576\,z^5 - 8\,454\,144\,z^4 + 111\,648\,768\,z^3 - 1\,095\,897\,600\,z^2 + 6\,163\,229\,520\,z - 15\,188\,384\,925\right) $$
$$ \left.\left.\left. \cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.8602.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{9}{4}; z\right) = \frac{1}{418\,455\,797\,760\sqrt{2}\, z^{3/4}}\left(\left(-2\sqrt{z}\left(16\,777\,216 z^6 + 132\,120\,576 z^5 + 1\,991\,442\,432 z^4 + 21\,493\,334\,016 z^3 + 130\,599\,786\,240 z^2 + 277\,729\,452\,000 z - 355\,208\,969\,115\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,777\,216 z^6 + 146\,800\,640 z^5 + 2\,131\,820\,544 z^4 + 23\,540\,858\,880 z^3 + 154\,418\,584\,320 z^2 + 470\,581\,151\,040 z + 105\,411\,381\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216 z^6 + 144\,703\,488 z^5 + 2\,107\,047\,936 z^4 + 23\,167\,549\,440 z^3 + 149\,483\,093\,760 z^2 + 412\,553\,100\,960 z + 316\,234\,143\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8603.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = \frac{1}{418\,455\,797\,760\sqrt{2}\, z^{3/4}}\left(\left(2\sqrt{z}\left(-16\,777\,216 z^6 + 132\,120\,576 z^5 - 1\,991\,442\,432 z^4 + 21\,493\,334\,016 z^3 - 130\,599\,786\,240 z^2 + 277\,729\,452\,000 z + 355\,208\,969\,115\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,777\,216 z^6 - 146\,800\,640 z^5 + 2\,131\,820\,544 z^4 - 23\,540\,858\,880 z^3 + 154\,418\,584\,320 z^2 - 470\,581\,151\,040 z + 105\,411\,381\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(16\,777\,216 z^6 - 144\,703\,488 z^5 + 2\,107\,047\,936 z^4 - 23\,167\,549\,440 z^3 + 149\,483\,093\,760 z^2 - 412\,553\,100\,960 z + 316\,234\,143\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8604.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = \frac{1}{60\,881\,161\,420\,800 z^{7/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(67\,108\,864 z^{13/2} - 16\,777\,216 z^6 + 629\,145\,600 z^{11/2} - 169\,869\,312 z^5 + 9\,969\,598\,464 z^{9/2} - 2\,663\,055\,360 z^4 + 122\,025\,738\,240 z^{7/2} - 33\,365\,606\,400 z^3 + 905\,871\,375\,360 z^{5/2} - 269\,980\,542\,720 z^2 + 3\,090\,672\,547\,200 z^{3/2} - 1\,395\,719\,488\,800 z + 4\,361\,623\,402\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 + 629\,145\,600 z^{11/2} + 169\,869\,312 z^5 + 9\,969\,598\,464 z^{9/2} + 2\,663\,055\,360 z^4 + 122\,025\,738\,240 z^{7/2} + 33\,365\,606\,400 z^3 + 905\,871\,375\,360 z^{5/2} + 269\,980\,542\,720 z^2 + 3\,090\,672\,547\,200 z^{3/2} + 1\,395\,719\,488\,800 z + 4\,361\,623\,402\,500\sqrt{z} - 3\,271\,217\,551\,875\right) + 3\,271\,217\,551\,875\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 + 2\,466\,250\,752 z^6 + 39\,305\,871\,360 z^5 + 479\,040\,307\,200 z^4 + 3\,502\,982\,246\,400 z^3 + 11\,165\,755\,910\,400 z^2 + 4\,885\,018\,210\,800 z - 3\,271\,217\,551\,875\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 + 2\,466\,250\,752 z^6 + 39\,305\,871\,360 z^5 + 479\,040\,307\,200 z^4 + 3\,502\,982\,246\,400 z^3 + 11\,165\,755\,910\,400 z^2 + 4\,885\,018\,210\,800 z - 3\,271\,217\,551\,875\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8605.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = \frac{1}{15\,220\,290\,355\,200\, z^{7/4}}\left(-\sqrt{\pi}\,\left(268\,435\,456\, z^7 - 2\,466\,250\,752\, z^6 + 39\,305\,871\,360\, z^5 - 479\,040\,307\,200\, z^4 + 3\,502\,982\,246\,400\, z^3 - 11\,165\,755\,910\,400\, z^2 + 4\,885\,018\,210\,800\, z + 3\,271\,217\,551\,875\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\, z^6 - 157\,286\,400\, z^5 + 2\,492\,399\,616\, z^4 - 30\,506\,434\,560\, z^3 + 226\,467\,843\,840\, z^2 - 772\,668\,136\,800\, z + 1\,090\,405\,850\,625\right)\cos\left(2\sqrt{z}\right) + \left(16\,777\,216\, z^6 - 169\,869\,312\, z^5 + 2\,663\,055\,360\, z^4 - 33\,365\,606\,400\, z^3 + 269\,980\,542\,720\, z^2 - 1\,395\,719\,488\,800\, z - 3\,271\,217\,551\,875\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8606.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = \left(\left(-2\sqrt{z}\,\left(268\,435\,456\, z^7 + 2\,466\,250\,752\, z^6 + 43\,797\,970\,944\, z^5 + 580\,442\,849\,280\, z^4 + 4\,607\,995\,392\,000\, z^3 + 15\,053\,623\,200\,000\, z^2 - 7\,138\,403\,672\,400\, z - 8\,538\,321\,867\,075\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(268\,435\,456\, z^7 + 2\,701\,131\,776\, z^6 + 46\,352\,302\,080\, z^5 + 624\,166\,502\,400\, z^4 + 5\,216\,008\,089\,600\, z^3 + 20\,795\,654\,880\,000\, z^2 + 35\,418\,224\,041\,200\, z - 14\,230\,536\,445\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(268\,435\,456\, z^7 + 2\,667\,577\,344\, z^6 + 45\,911\,900\,160\, z^5 + 616\,528\,281\,600\, z^4 + 5\,100\,350\,976\,000\, z^3 + 19\,376\,931\,974\,400\, z^2 + 15\,179\,238\,874\,800\, z - 42\,691\,609\,335\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(22\,317\,642\,547\,200\sqrt{2}\, z^{7/4}\right) $$

07.22.03.8607.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = \left(\left(-2\sqrt{z}\,\left(268\,435\,456\, z^7 - 2\,466\,250\,752\, z^6 + 43\,797\,970\,944\, z^5 - 580\,442\,849\,280\, z^4 + 4\,607\,995\,392\,000\, z^3 - 15\,053\,623\,200\,000\, z^2 - 7\,138\,403\,672\,400\, z + 8\,538\,321\,867\,075\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(268\,435\,456\, z^7 - 2\,701\,131\,776\, z^6 + 46\,352\,302\,080\, z^5 - 624\,166\,502\,400\, z^4 + 5\,216\,008\,089\,600\, z^3 - 20\,795\,654\,880\,000\, z^2 + 35\,418\,224\,041\,200\, z + 14\,230\,536\,445\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(268\,435\,456\, z^7 - 2\,667\,577\,344\, z^6 + 45\,911\,900\,160\, z^5 - 616\,528\,281\,600\, z^4 + 5\,100\,350\,976\,000\, z^3 - 19\,376\,931\,974\,400\, z^2 + 15\,179\,238\,874\,800\, z + 42\,691\,609\,335\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(22\,317\,642\,547\,200\sqrt{2}\, z^{7/4}\right) $$

07.22.03.8608.01

$$
{}_1F_2\left(-\frac{21}{4};-\frac{9}{2},\frac{15}{4};z\right)=
$$

$$
\left(11\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2}-268\,435\,456\,z^{7}+11\,475\,615\,744\,z^{13/2}-3\,070\,230\,528\,z^{6}+212\,185\,645\,056\,z^{11/2}-\right.\right.\right.
$$

$$
56\,041\,144\,320\,z^{5}+3\,112\,513\,044\,480\,z^{9/2}-834\,857\,533\,440\,z^{4}+28\,746\,511\,073\,280\,z^{7/2}-
$$

$$
8\,152\,119\,521\,280\,z^{3}+127\,164\,517\,401\,600\,z^{5/2}-45\,903\,663\,187\,200\,z^{2}+
$$

$$
153\,529\,143\,768\,000\,z^{3/2}-289\,611\,793\,926\,000\,z-885\,409\,550\,707\,500\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}+11\,475\,615\,744\,z^{13/2}+3\,070\,230\,528\,z^{6}+212\,185\,645\,056\,z^{11/2}+\right.
$$

$$
56\,041\,144\,320\,z^{5}+3\,112\,513\,044\,480\,z^{9/2}+834\,857\,533\,440\,z^{4}+28\,746\,511\,073\,280\,z^{7/2}+
$$

$$
8\,152\,119\,521\,280\,z^{3}+127\,164\,517\,401\,600\,z^{5/2}+45\,903\,663\,187\,200\,z^{2}+153\,529\,143\,768\,000\,z^{3/2}+
$$

$$
\left.\left.289\,611\,793\,926\,000\,z-885\,409\,550\,707\,500\sqrt{z}\;+664\,057\,163\,030\,625\right)-664\,057\,163\,030\,625\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\,\pi}\left(4\,294\,967\,296\,z^{8}+45\,097\,156\,608\,z^{7}+838\,525\,255\,680\,z^{6}+12\,263\,431\,864\,320\,z^{5}+\right.
$$

$$
112\,095\,431\,884\,800\,z^{4}+476\,405\,585\,510\,400\,z^{3}+312\,641\,165\,491\,200\,z^{2}-
$$

$$
\left.418\,715\,846\,640\,000\,z+664\,057\,163\,030\,625\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-
$$

$$
e^{2\sqrt{z}}\sqrt{2\,\pi}\left(4\,294\,967\,296\,z^{8}+45\,097\,156\,608\,z^{7}+838\,525\,255\,680\,z^{6}+12\,263\,431\,864\,320\,z^{5}+\right.
$$

$$
112\,095\,431\,884\,800\,z^{4}+476\,405\,585\,510\,400\,z^{3}+312\,641\,165\,491\,200\,z^{2}-
$$

$$
\left.\left.\left.418\,715\,846\,640\,000\,z+664\,057\,163\,030\,625\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)\Big/\left(31\,171\,154\,647\,449\,600\,z^{11/4}\right)
$$

07.22.03.8609.01

$$
{}_1F_2\left(-\frac{21}{4};-\frac{9}{2},\frac{15}{4};-z\right)=
$$

$$
-\left(11\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^{8}-45\,097\,156\,608\,z^{7}+838\,525\,255\,680\,z^{6}-12\,263\,431\,864\,320\,z^{5}+112\,095\,431\,884\,800\,z^{4}-\right.\right.\right.
$$

$$
\left.476\,405\,585\,510\,400\,z^{3}+312\,641\,165\,491\,200\,z^{2}+418\,715\,846\,640\,000\,z+664\,057\,163\,030\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$

$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^{7}-2\,868\,903\,936\,z^{6}+53\,046\,411\,264\,z^{5}-778\,128\,261\,120\,z^{4}+7\,186\,627\,768\,320\,z^{3}-\right.\right.
$$

$$
31\,791\,129\,350\,400\,z^{2}+38\,382\,285\,942\,000\,z+221\,352\,387\,676\,875\right)\cos\left(2\sqrt{z}\right)+\left(268\,435\,456\,z^{7}-\right.
$$

$$
3\,070\,230\,528\,z^{6}+56\,041\,144\,320\,z^{5}-834\,857\,533\,440\,z^{4}+8\,152\,119\,521\,280\,z^{3}-45\,903\,663\,187\,200
$$

$$
\left.\left.\left.\left.z^{2}+289\,611\,793\,926\,000\,z-664\,057\,163\,030\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)\Big/\left(7\,792\,788\,661\,862\,400\,z^{11/4}\right)
$$

07.22.03.8610.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{17}{4}; z\right) = $$

$$ \left(\left(-2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 45\,097\,156\,608\,z^7 + 921\,673\,138\,176\,z^6 + 14\,475\,658\,788\,864\,z^5 + 141\,702\,414\,336\,000\,z^4 + 619\,411\,658\,342\,400\,z^3 - 37\,164\,776\,140\,800\,z^2 - 3\,278\,715\,596\,956\,800\,z + 2\,382\,191\,800\,913\,925\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(4\,294\,967\,296\,z^8 + 48\,855\,252\,992\,z^7 + 967\,474\,937\,856\,z^6 + 15\,376\,853\,237\,760\,z^5 + 156\,333\,735\,936\,000\,z^4 + 780\,275\,723\,673\,600\,z^3 + 1\,133\,383\,169\,318\,400\,z^2 - 8\,287\,864\,425\,640\,800\,z + 3\,970\,319\,668\,189\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 48\,318\,382\,080\,z^7 + 959\,723\,864\,064\,z^6 + 15\,224\,253\,972\,480\,z^5 + 153\,705\,981\,542\,400\,z^4 + 745\,474\,893\,004\,800\,z^3 + 693\,908\,062\,848\,000\,z^2 + 546\,452\,599\,492\,800\,z + 11\,910\,959\,004\,569\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(933\,907\,503\,513\,600\,\sqrt{2}\,z^{11/4}\right) $$

07.22.03.8611.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = $$

$$ \left(\left(-2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 45\,097\,156\,608\,z^7 + 921\,673\,138\,176\,z^6 - 14\,475\,658\,788\,864\,z^5 + 141\,702\,414\,336\,000\,z^4 - 619\,411\,658\,342\,400\,z^3 - 37\,164\,776\,140\,800\,z^2 + 3\,278\,715\,596\,956\,800\,z + 2\,382\,191\,800\,913\,925\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(4\,294\,967\,296\,z^8 - 48\,855\,252\,992\,z^7 + 967\,474\,937\,856\,z^6 - 15\,376\,853\,237\,760\,z^5 + 156\,333\,735\,936\,000\,z^4 - 780\,275\,723\,673\,600\,z^3 + 1\,133\,383\,169\,318\,400\,z^2 + 8\,287\,864\,425\,640\,800\,z + 3\,970\,319\,668\,189\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 48\,318\,382\,080\,z^7 + 959\,723\,864\,064\,z^6 - 15\,224\,253\,972\,480\,z^5 + 153\,705\,981\,542\,400\,z^4 - 745\,474\,893\,004\,800\,z^3 + 693\,908\,062\,848\,000\,z^2 - 546\,452\,599\,492\,800\,z + 11\,910\,959\,004\,569\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(933\,907\,503\,513\,600\,\sqrt{2}\,z^{11/4}\right) $$

07.22.03.8612.01

$$
{}_1F_2\left(-\frac{21}{4};-\frac{9}{2},\frac{19}{4};z\right)=
\left(11\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(17\,179\,869\,184\,z^{17/2}-4\,294\,967\,296\,z^8+206\,158\,430\,208\,z^{15/2}-54\,760\,833\,024\,z^7+4\,357\,512\,757\,248\right.\right.\right.
$$
$$
z^{13/2}-1\,141\,521\,776\,640\,z^6+74\,516\,004\,864\,000\,z^{11/2}-19\,734\,850\,437\,120\,z^5+
$$
$$
823\,698\,629\,591\,040\,z^{9/2}-226\,929\,103\,994\,880\,z^4+4\,497\,106\,788\,679\,680\,z^{7/2}-1\,447\,540\,048\,281\,600\,z^3+
$$
$$
5\,657\,316\,327\,936\,000\,z^{5/2}-6\,550\,576\,800\,768\,000\,z^2+19\,428\,415\,284\,096\,000\,z^{3/2}+
$$
$$
161\,498\,702\,049\,048\,000\,z+321\,403\,666\,906\,822\,500\sqrt{z}+e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^8+\right.
$$
$$
206\,158\,430\,208\,z^{15/2}+54\,760\,833\,024\,z^7+4\,357\,512\,757\,248\,z^{13/2}+1\,141\,521\,776\,640\,z^6+
$$
$$
74\,516\,004\,864\,000\,z^{11/2}+19\,734\,850\,437\,120\,z^5+823\,698\,629\,591\,040\,z^{9/2}+226\,929\,103\,994\,880\,z^4+
$$
$$
4\,497\,106\,788\,679\,680\,z^{7/2}+1\,447\,540\,048\,281\,600\,z^3+5\,657\,316\,327\,936\,000\,z^{5/2}+
$$
$$
6\,550\,576\,800\,768\,000\,z^2+19\,428\,415\,284\,096\,000\,z^{3/2}-161\,498\,702\,049\,048\,000\,z+
$$
$$
\left.\left.\left.321\,403\,666\,906\,822\,500\sqrt{z}-241\,052\,750\,180\,116\,875\right)+241\,052\,750\,180\,116\,875\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9+811\,748\,818\,944\,z^8+17\,249\,662\,402\,560\,z^7+294\,322\,364\,743\,680\,z^6+\right.
$$
$$
3\,228\,348\,438\,282\,240\,z^5+17\,150\,601\,078\,374\,400\,z^4+15\,006\,775\,943\,577\,600\,z^3-
$$
$$
\left.30\,147\,540\,958\,080\,000\,z^2+95\,624\,231\,476\,410\,000\,z-241\,052\,750\,180\,116\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9+811\,748\,818\,944\,z^8+17\,249\,662\,402\,560\,z^7+294\,322\,364\,743\,680\,z^6+\right.
$$
$$
3\,228\,348\,438\,282\,240\,z^5+17\,150\,601\,078\,374\,400\,z^4+15\,006\,775\,943\,577\,600\,z^3-30\,147\,540\,958\,080\,000\,z^2+
$$
$$
\left.\left.95\,624\,231\,476\,410\,000\,z-241\,052\,750\,180\,116\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big/\left(1\,196\,972\,338\,462\,064\,640\,z^{15/4}\right)
$$

07.22.03.8613.01

$$
{}_1F_2\left(-\frac{21}{4};-\frac{9}{2},\frac{19}{4};-z\right)=
$$
$$
-\left(11\left(\sqrt{\pi}\left(68\,719\,476\,736\,z^9-811\,748\,818\,944\,z^8+17\,249\,662\,402\,560\,z^7-294\,322\,364\,743\,680\,z^6+\right.\right.\right.
$$
$$
3\,228\,348\,438\,282\,240\,z^5-17\,150\,601\,078\,374\,400\,z^4+15\,006\,775\,943\,577\,600\,z^3+
$$
$$
\left.30\,147\,540\,958\,080\,000\,z^2+95\,624\,231\,476\,410\,000\,z+241\,052\,750\,180\,116\,875\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$
$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^8-51\,539\,607\,552\,z^7+1\,089\,378\,189\,312\,z^6-18\,629\,001\,216\,000\,z^5+\right.\right.
$$
$$
205\,924\,657\,397\,760\,z^4-1\,124\,276\,697\,169\,920\,z^3+1\,414\,329\,081\,984\,000\,z^2-
$$
$$
4\,857\,103\,821\,024\,000\,z+80\,350\,916\,726\,705\,625\right)\cos\left(2\sqrt{z}\right)+
$$
$$
\left(4\,294\,967\,296\,z^8-54\,760\,833\,024\,z^7+1\,141\,521\,776\,640\,z^6-19\,734\,850\,437\,120\,z^5+\right.
$$
$$
226\,929\,103\,994\,880\,z^4-1\,447\,540\,048\,281\,600\,z^3+6\,550\,576\,800\,768\,000\,z^2+
$$
$$
\left.\left.\left.\left.161\,498\,702\,049\,048\,000\,z-241\,052\,750\,180\,116\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)\Big/\left(299\,243\,084\,615\,516\,160\,z^{15/4}\right)
$$

07.22.03.8614.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) =
$$

$$
\left(\left(-2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 811\,748\,818\,944\,z^8 + 18\,760\,417\,148\,928\,z^7 + 340\,592\,047\,423\,488\,z^6 + 3\,961\,954\,542\,551\,040\right.\right.\right.
$$

$$
z^5 + 21\,630\,749\,530\,521\,600\,z^4 + 5\,375\,869\,444\,915\,200\,z^3 -
$$

$$
\left.\left.\left.113\,662\,140\,694\,502\,400\,z^2 + 1\,325\,557\,393\,219\,659\,600\,z - 1\,083\,897\,269\,415\,835\,875\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.\right.
$$

$$
3\left(68\,719\,476\,736\,z^9 + 871\,878\,361\,088\,z^8 + 19\,572\,165\,967\,872\,z^7 + 358\,656\,277\,217\,280\,z^6 +\right.
$$

$$
4\,297\,931\,882\,496\,000\,z^5 + 25\,881\,150\,622\,924\,800\,z^4 + 37\,995\,321\,485\,721\,600\,z^3 +
$$

$$
\left.171\,950\,417\,973\,734\,400\,z^2 + 3\,493\,881\,308\,007\,090\,000\,z - 1\,806\,495\,449\,026\,393\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +
$$

$$
2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 863\,288\,426\,496\,z^8 + 19\,436\,874\,498\,048\,z^7 + 355\,668\,590\,592\,000\,z^6 +\right.
$$

$$
4\,239\,970\,585\,804\,800\,z^5 + 25\,040\,352\,205\,209\,600\,z^4 + 27\,991\,830\,704\,947\,200\,z^3 -
$$

$$
\left.\left.\left.26\,229\,724\,775\,654\,400\,z^2 - 1\,079\,926\,949\,747\,646\,000\,z - 5\,419\,486\,347\,079\,179\,375\right)\right.\right.
$$

$$
\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(33\,400\,927\,184\,486\,400\,\sqrt{2}\;z^{15/4}\right)
$$

07.22.03.8615.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) =
$$

$$
-\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 811\,748\,818\,944\,z^8 + 18\,760\,417\,148\,928\,z^7 - 340\,592\,047\,423\,488\,z^6 + 3\,961\,954\,542\,551\,040\right.\right.\right.
$$

$$
z^5 - 21\,630\,749\,530\,521\,600\,z^4 + 5\,375\,869\,444\,915\,200\,z^3 + 113\,662\,140\,694\,502\,400\,z^2 +
$$

$$
\left.\left.\left.1\,325\,557\,393\,219\,659\,600\,z + 1\,083\,897\,269\,415\,835\,875\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 -\right.\right.
$$

$$
3\left(68\,719\,476\,736\,z^9 - 871\,878\,361\,088\,z^8 + 19\,572\,165\,967\,872\,z^7 - 358\,656\,277\,217\,280\,z^6 +\right.
$$

$$
4\,297\,931\,882\,496\,000\,z^5 - 25\,881\,150\,622\,924\,800\,z^4 + 37\,995\,321\,485\,721\,600\,z^3 -
$$

$$
\left.171\,950\,417\,973\,734\,400\,z^2 + 3\,493\,881\,308\,007\,090\,000\,z + 1\,806\,495\,449\,026\,393\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +
$$

$$
2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 863\,288\,426\,496\,z^8 + 19\,436\,874\,498\,048\,z^7 - 355\,668\,590\,592\,000\,z^6 +\right.
$$

$$
4\,239\,970\,585\,804\,800\,z^5 - 25\,040\,352\,205\,209\,600\,z^4 + 27\,991\,830\,704\,947\,200\,z^3 +
$$

$$
\left.\left.\left.26\,229\,724\,775\,654\,400\,z^2 - 1\,079\,926\,949\,747\,646\,000\,z + 5\,419\,486\,347\,079\,179\,375\right)\right.\right.
$$

$$
\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(33\,400\,927\,184\,486\,400\,\sqrt{2}\;z^{15/4}\right)
$$

07.22.03.8616.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) =
\left(209\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(274\,877\,906\,944\, z^{19/2} - 68\,719\,476\,736\, z^9 + 3\,659\,312\,136\,192\, z^{17/2} - 966\,367\,641\,600\, z^8 + \right.\right.\right.
$$

$$
87\,037\,512\,253\,440\, z^{15/2} - 22\,661\,321\,195\,520\, z^7 + 1\,700\,190\,989\,844\,480\, z^{13/2} -
$$

$$
446\,271\,596\,789\,760\, z^6 + 21\,890\,701\,511\,884\,800\, z^{11/2} - 5\,920\,247\,041\,228\,800\, z^5 +
$$

$$
142\,432\,168\,299\,724\,800\, z^{9/2} - 42\,984\,286\,765\,056\,000\, z^4 + 198\,990\,948\,409\,344\,000\, z^{7/2} -
$$

$$
158\,954\,555\,934\,720\,000\, z^3 + 129\,522\,768\,560\,640\,000\, z^{5/2} - 2\,752\,358\,831\,913\,600\,000\, z^2 -
$$

$$
30\,120\,115\,070\,125\,080\,000\, z^{3/2} - 104\,134\,788\,077\,810\,490\,000\, z - 178\,379\,035\,133\,286\,487\,500\sqrt{z} +
$$

$$
e^{4\sqrt{z}} \left(274\,877\,906\,944\, z^{19/2} + 68\,719\,476\,736\, z^9 + 3\,659\,312\,136\,192\, z^{17/2} + 966\,367\,641\,600\, z^8 + \right.
$$

$$
87\,037\,512\,253\,440\, z^{15/2} + 22\,661\,321\,195\,520\, z^7 + 1\,700\,190\,989\,844\,480\, z^{13/2} + 446\,271\,596\,789\,760\, z^6 +
$$

$$
21\,890\,701\,511\,884\,800\, z^{11/2} + 5\,920\,247\,041\,228\,800\, z^5 + 142\,432\,168\,299\,724\,800\, z^{9/2} +
$$

$$
42\,984\,286\,765\,056\,000\, z^4 + 198\,990\,948\,409\,344\,000\, z^{7/2} + 158\,954\,555\,934\,720\,000\, z^3 +
$$

$$
129\,522\,768\,560\,640\,000\, z^{5/2} + 2\,752\,358\,831\,913\,600\,000\, z^2 - 30\,120\,115\,070\,125\,080\,000\, z^{3/2} +
$$

$$
\left.\left.\left.

For fixed z and $a_1 = -\frac{21}{4}$, $b_1 = -\frac{7}{2}$

07.22.03.8618.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) = \frac{1}{476\,974\,575\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left(\left(-524\,288 z^6 - 2\,752\,512 z^5 + 6\,322\,176 z^4 + 19\,647\,936 z^3 + 589\,105\,440 z^2 - 1\,078\,377\,300 z + 476\,974\,575\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.$$
$$12\sqrt{z}\left(65\,536 z^5 + 401\,408 z^4 - 392\,448 z^3 - 40\,637\,520 z^2 - 147\,470\,400 z + 158\,991\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(131\,072 z^5 + 786\,432 z^4 - 935\,424 z^3 + 15\,024\,240 z^2 + 193\,554\,900 z + 476\,974\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8619.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{476\,974\,575\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left(\left(-524\,288 z^6 + 2\,752\,512 z^5 + 6\,322\,176 z^4 - 19\,647\,936 z^3 + 589\,105\,440 z^2 + 1\,078\,377\,300 z + 476\,974\,575\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.$$
$$12\sqrt{z}\left(65\,536 z^5 - 401\,408 z^4 - 392\,448 z^3 + 40\,637\,520 z^2 - 147\,470\,400 z - 158\,991\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(-131\,072 z^5 + 786\,432 z^4 + 935\,424 z^3 + 15\,024\,240 z^2 - 193\,554\,900 z + 476\,974\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8620.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) = \left(\frac{16 z^2}{105} + \frac{12 z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,(8 z + 21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.8621.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) = \left(\frac{16 z^2}{105} - \frac{12 z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}(21 - 8 z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.8622.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) = \frac{1}{20\,738\,025\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-262\,144 z^6 - 344\,064 z^5 + 838\,656 z^4 - 1\,141\,056 z^3 + 28\,407\,456 z^2 - 48\,024\,900 z + 20\,738\,025\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$12\sqrt{z}\left(32\,768 z^5 + 71\,680 z^4 - 18\,816 z^3 - 1\,341\,648 z^2 - 6\,791\,400 z + 6\,912\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(65\,536 z^5 + 135\,168 z^4 - 80\,640 z^3 + 410\,256 z^2 + 7\,276\,500 z + 20\,738\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8623.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) = \frac{1}{20\,738\,025\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\,\left(\left(-262\,144\,z^6 + 344\,064\,z^5 + 838\,656\,z^4 + 1\,141\,056\,z^3 + 28\,407\,456\,z^2 + 48\,024\,900\,z + 20\,738\,025\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 12\,\sqrt{z}\,\left(32\,768\,z^5 - 71\,680\,z^4 - 18\,816\,z^3 + 1\,341\,648\,z^2 - 6\,791\,400\,z - 6\,912\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(-65\,536\,z^5 + 135\,168\,z^4 + 80\,640\,z^3 + 410\,256\,z^2 - 7\,276\,500\,z + 20\,738\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8624.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) = \frac{1}{6\,265\,350} $$
$$ \left(e^{-2\sqrt{z}}\,\left(65\,536\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{21/4} - 65\,536\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{21/4} + 65\,536\,e^{4\sqrt{z}}\,z^5 + 65\,536\,z^5 + \right.\right. $$
$$ 16\,384\,e^{4\sqrt{z}}\,z^{9/2} - 16\,384\,z^{9/2} + 12\,288\,e^{4\sqrt{z}}\,z^4 + 12\,288\,z^4 + 15\,360\,e^{4\sqrt{z}}\,z^{7/2} - 15\,360\,z^{7/2} + 26\,880\,e^{4\sqrt{z}}\,z^3 + $$
$$ \left.\left. 26\,880\,z^3 + 60\,480\,e^{4\sqrt{z}}\,z^{5/2} - 60\,480\,z^{5/2} + 166\,320\,e^{4\sqrt{z}}\,z^2 + 166\,320\,z^2 - 1\,965\,600\,e^{4\sqrt{z}}\,z^{3/2} + 1\,965\,600\,z^{3/2} + \right.\right. $$
$$ \left.\left. 5\,159\,700\,e^{4\sqrt{z}}\,z + 5\,159\,700\,z - 6\,265\,350\,e^{4\sqrt{z}}\,\sqrt{z} + 6\,265\,350\,\sqrt{z} + 3\,132\,675\,e^{4\sqrt{z}} + 3\,132\,675\right)\right) $$

07.22.03.8625.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{17}{4}; -z\right) = $$
$$ \frac{1}{3\,132\,675}\left(-131\,072\,\sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{21/4} - 2\left(8192\,z^4 - 7680\,z^3 + 30\,240\,z^2 + 982\,800\,z - 3\,132\,675\right)\sin\left(2\,\sqrt{z}\right)\sqrt{z} + \right. $$
$$ \left.\left(-65\,536\,z^5 + 12\,288\,z^4 - 26\,880\,z^3 + 166\,320\,z^2 - 5\,159\,700\,z + 3\,132\,675\right)\cos\left(2\,\sqrt{z}\right)\right) $$

07.22.03.8626.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{15}{4}; z\right) = $$
$$ \frac{1}{1\,091\,475\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(131\,072\,z^6 - 344\,064\,z^5 + 193\,536\,z^4 - 270\,144\,z^3 + 1\,735\,776\,z^2 - 2\,619\,540\,z + 1\,091\,475\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 12\,\sqrt{z}\,\left(16\,384\,z^5 - 28\,672\,z^4 + 10\,752\,z^3 + 31\,248\,z^2 + 388\,080\,z - 363\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(-32\,768\,z^5 + 61\,440\,z^4 - 16\,128\,z^3 + 17\,136\,z^2 + 291\,060\,z + 1\,091\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8627.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{15}{4}; -z\right) = \frac{1}{1\,091\,475\sqrt[4]{z}}\left(\sqrt{2}\left(\left(131\,072 z^6 + 344\,064 z^5 + 193\,536 z^4 + 270\,144 z^3 + 1\,735\,776 z^2 + 2\,619\,540 z + 1\,091\,475\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(16\,384 z^5 + 28\,672 z^4 + 10\,752 z^3 - 31\,248 z^2 + 388\,080 z + 363\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(32\,768 z^5 + 61\,440 z^4 + 16\,128 z^3 + 17\,136 z^2 - 291\,060 z + 1\,091\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8628.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{13}{4}; z\right) = \frac{1}{368\,550}\left(e^{-2\sqrt{z}}\left(-16\,384 e^{4\sqrt{z}} z^5 - 16\,384 z^5 - 4096 e^{4\sqrt{z}} z^{9/2} + 4096 z^{9/2} - 1024 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-63)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} + 1024 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-63)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} + 61\,440 e^{4\sqrt{z}} z^4 + 61\,440 z^4 + 12\,288 e^{4\sqrt{z}} z^{7/2} - 12\,288 z^{7/2} + 5376 e^{4\sqrt{z}} z^3 + 5376 z^3 - 15\,120 e^{4\sqrt{z}} z^2 - 15\,120 z^2 - 75\,600 e^{4\sqrt{z}} z^{3/2} + 75\,600 z^{3/2} + 283\,500 e^{4\sqrt{z}} z + 283\,500 z - 368\,550 e^{4\sqrt{z}}\sqrt{z} + 368\,550\sqrt{z} + 184\,275 e^{4\sqrt{z}} + 184\,275\right)\right) $$

07.22.03.8629.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{13}{4}; -z\right) = \frac{1}{184\,275}\left(2048\sqrt{\pi}\,(16z+63) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{17/4} + 2\left(2048 z^4 + 6144 z^3 - 37\,800 z + 184\,275\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(16\,384 z^5 + 61\,440 z^4 - 5376 z^3 - 15\,120 z^2 - 283\,500 z + 184\,275\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8630.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{11}{4}; z\right) = \frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-65\,536 z^6 + 430\,080 z^5 - 129\,024 z^4 - 181\,440 z^3 + 441\,504 z^2 - 555\,660 z + 218\,295\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(8192 z^5 - 46\,592 z^4 - 18\,816 z^3 + 11\,088 z^2 - 88\,200 z + 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(16\,384 z^5 - 95\,232 z^4 - 32\,256 z^3 + 13\,104 z^2 + 26\,460 z + 218\,295\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8631.01

$${}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-65\,536 z^6 - 430\,080 z^5 - 129\,024 z^4 + 181\,440 z^3 + 441\,504 z^2 + 555\,660 z + 218\,295\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$12\sqrt{z}\left(8192 z^5 + 46\,592 z^4 - 18\,816 z^3 - 11\,088 z^2 - 88\,200 z - 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(-16\,384 z^5 - 95\,232 z^4 + 32\,256 z^3 + 13\,104 z^2 - 26\,460 z + 218\,295\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8632.01

$${}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{28\,350}\left(e^{-2\sqrt{z}}\left(2048 e^{4\sqrt{z}} z^5 + 2048 z^5 + 512 e^{4\sqrt{z}} z^{9/2} - 512 z^{9/2} - 15\,744 e^{4\sqrt{z}} z^4 - 15\,744 z^4 - 3552 e^{4\sqrt{z}} z^{7/2} + \right.\right.$$
$$3552 z^{7/2} + 8 e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2 - 2016 z - 1071\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} + 8 e^{2\sqrt{z}}\sqrt{2\pi}\left(-256 z^2 + 2016 z + 1071\right)$$
$$\left.\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} - 10\,752 e^{4\sqrt{z}} z^3 - 10\,752 z^3 - 4032 e^{4\sqrt{z}} z^{5/2} + 4032 z^{5/2} - 3024 e^{4\sqrt{z}} z^2 - \right.$$
$$\left.3024 z^2 + 18\,900 e^{4\sqrt{z}} z + 18\,900 z - 28\,350 e^{4\sqrt{z}}\sqrt{z} + 28\,350\sqrt{z} + 14\,175 e^{4\sqrt{z}} + 14\,175\right)\Big)$$

07.22.03.8633.01

$${}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{14\,175}\left(-16\sqrt{\pi}\left(256 z^2 + 2016 z - 1071\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{13/4} + 2\left(-256 z^4 - 1776 z^3 + 2016 z^2 + 14\,175\right)\sin\left(2\sqrt{z}\right)\sqrt{z} - \right.$$
$$\left.\left(2048 z^5 + 15\,744 z^4 - 10\,752 z^3 + 3024 z^2 + 18\,900 z - 14\,175\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.8634.01

$${}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{99\,225\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768 z^6 - 344\,064 z^5 - 56\,448 z^4 + 60\,480 z^3 + 332\,640 z^2 - 283\,500 z + 99\,225\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$12\sqrt{z}\left(4096 z^5 - 39\,424 z^4 - 38\,640 z^3 - 35\,280 z^2 + 50\,400 z - 33\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(-8192 z^5 + 79\,872 z^4 + 70\,560 z^3 + 55\,440 z^2 - 18\,900 z + 99\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8635.01

$${}_1F_2\left(-\frac{21}{4};-\frac{7}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{99\,225\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768z^6+344\,064z^5-56\,448z^4-60\,480z^3+332\,640z^2+283\,500z+99\,225\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(4096z^5+39\,424z^4-38\,640z^3+35\,280z^2+50\,400z+33\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(8192z^5+79\,872z^4-70\,560z^3+55\,440z^2+18\,900z+99\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8636.01

$${}_1F_2\left(-\frac{21}{4};-\frac{7}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{75\,600}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-4096z^3+48\,384z^2+51\,408z+69\,615\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left(4096z^3-48\,384z^2-51\,408z-69\,615\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+4\left(-1024z^5+256z^{9/2}+11\,904z^4-2784z^{7/2}+\right.$$
$$14\,700z^3-5103z^{5/2}+22\,176z^2-10\,080z^{3/2}+7560z+18\,900\sqrt{z}+e^{4\sqrt{z}}\left(-1024z^5-256z^{9/2}+11\,904z^4+\right.$$
$$\left.\left.\left.\left.2784z^{7/2}+14\,700z^3+5103z^{5/2}+22\,176z^2+10\,080z^{3/2}+7560z-18\,900\sqrt{z}+9450\right)+9450\right)\right)\right)$$

07.22.03.8637.01

$${}_1F_2\left(-\frac{21}{4};-\frac{7}{2},-\frac{5}{4};-z\right)=\frac{1}{18\,900}$$
$$\left(\sqrt{\pi}\left(4096z^3+48\,384z^2-51\,408z+69\,615\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+2\left(2\left(512z^5+5952z^4-7350z^3+11\,088z^2-3780z+4725\right)\right.\right.$$
$$\left.\left.\cos\left(2\sqrt{z}\right)+\sqrt{z}\left(256z^4+2784z^3-5103z^2+10\,080z+18\,900\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.8638.01

$${}_1F_2\left(-\frac{21}{4};-\frac{7}{2},-\frac{3}{4};z\right)=$$
$$-\frac{1}{99\,225\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384z^6-236\,544z^5-157\,248z^4-357\,588z^3+211\,680z^2+396\,900z-99\,225\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$6\sqrt{z}\left(4096z^5-55\,552z^4-85\,008z^3-184\,275z^2-176\,400z+66\,150\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(-4096z^5+56\,064z^4+79\,632z^3+164\,745z^2+132\,300z-99\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8639.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) = \frac{1}{99\,225\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,384 z^6 - 236\,544 z^5 + 157\,248 z^4 - 357\,588 z^3 - 211\,680 z^2 + 396\,900 z + 99\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 6\sqrt{z}\left(4096 z^5 + 55\,552 z^4 - 85\,008 z^3 + 184\,275 z^2 - 176\,400 z - 66\,150\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(4096 z^5 + 56\,064 z^4 - 79\,632 z^3 + 164\,745 z^2 - 132\,300 z - 99\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8640.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) = \frac{1}{3\,870\,720}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 1\,032\,192 z^3 - 1\,645\,056 z^2 - 4\,455\,360 z - 5\,638\,815\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} + e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536 z^4 + 1\,032\,192 z^3 + 1\,645\,056 z^2 + 4\,455\,360 z + 5\,638\,815\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} + 4\left(16\,384 z^5 - 4096 z^{9/2} - 254\,976 z^4 + 60\,672 z^{7/2} - 452\,928 z^3 + 148\,176 z^{5/2} - 1\,255\,212 z^2 + 477\,855 z^{3/2} - 1\,935\,360 z + 967\,680\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^5 + 4096 z^{9/2} - 254\,976 z^4 - 60\,672 z^{7/2} - 452\,928 z^3 - 148\,176 z^{5/2} - 1\,255\,212 z^2 - 477\,855 z^{3/2} - 1\,935\,360 z - 967\,680\sqrt{z} + 483\,840\right) + 483\,840\right)\right)\right) $$

07.22.03.8641.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) = \frac{1}{967\,680}\left(\sqrt{\pi}\, z^{5/4}\left(-65\,536 z^4 - 1\,032\,192 z^3 + 1\,645\,056 z^2 - 4\,455\,360 z + 5\,638\,815\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\left(4\left(4096 z^5 + 63\,744 z^4 - 113\,232 z^3 + 313\,803 z^2 - 483\,840 z - 120\,960\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\left(4096 z^4 + 60\,672 z^3 - 148\,176 z^2 + 477\,855 z - 967\,680\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8642.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) = \frac{1}{2\,381\,400\sqrt{2}\sqrt[4]{z}}\left(\left(2\left(65\,536 z^6 - 1\,204\,224 z^5 - 1\,419\,264 z^4 - 5\,586\,336 z^3 - 7\,624\,449 z^2 + 9\,525\,600 z + 2\,381\,400\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(-65\,536 z^5 + 1\,146\,880 z^4 + 2\,376\,192 z^3 + 8\,176\,896 z^2 + 17\,787\,735 z + 6\,350\,400\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(-65\,536 z^5 + 1\,155\,072 z^4 + 2\,257\,920 z^3 + 7\,638\,624 z^2 + 15\,260\,805 z + 9\,525\,600\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8643.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) = \frac{1}{2\,381\,400\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\left(65\,536 z^6 + 1\,204\,224 z^5 - 1\,419\,264 z^4 + 5\,586\,336 z^3 - 7\,624\,449 z^2 - 9\,525\,600 z + 2\,381\,400\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\sqrt{z}\left(65\,536 z^5 + 1\,146\,880 z^4 - 2\,376\,192 z^3 + 8\,176\,896 z^2 - 17\,787\,735 z + 6\,350\,400\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2z\left(65\,536 z^5 + 1\,155\,072 z^4 - 2\,257\,920 z^3 + 7\,638\,624 z^2 - 15\,260\,805 z + 9\,525\,600\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8644.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) = $$
$$ \frac{1}{1\,238\,630\,400}\left(e^{-2\sqrt{z}}\left(-4\left(262\,144 z^5 - 65\,536 z^{9/2} - 5\,111\,808 z^4 + 1\,228\,800 z^{7/2} - 11\,827\,200 z^3 + 3\,709\,440 z^{5/2} - \right.\right.\right. $$
$$ 48\,061\,440 z^2 + 16\,309\,440 z^{3/2} - 130\,617\,900 z + 56\,865\,375\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(262\,144 z^5 + 65\,536 z^{9/2} - 5\,111\,808 z^4 - 1\,228\,800 z^{7/2} - 11\,827\,200 z^3 - 3\,709\,440 z^{5/2} - \right. $$
$$ \left.\left. 48\,061\,440 z^2 - 16\,309\,440 z^{3/2} - 130\,617\,900 z - 56\,865\,375\sqrt{z} - 154\,828\,800\right) - 154\,828\,800\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(-1\,048\,576 z^5 + 20\,643\,840 z^4 + 43\,868\,160 z^3 + 178\,214\,400 z^2 + 451\,105\,200 z + 366\,522\,975\right) $$
$$ \left.\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\right.\right. $$
$$ \left.\left.\left(1\,048\,576 z^5 - 20\,643\,840 z^4 - 43\,868\,160 z^3 - 178\,214\,400 z^2 - 451\,105\,200 z - 366\,522\,975\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8645.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) = \frac{1}{309\,657\,600} $$
$$ \left(\sqrt{\pi}\,\sqrt[4]{z}\left(1\,048\,576 z^5 + 20\,643\,840 z^4 - 43\,868\,160 z^3 + 178\,214\,400 z^2 - 451\,105\,200 z + 366\,522\,975\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ 2\left(4\left(65\,536 z^5 + 1\,277\,952 z^4 - 2\,956\,800 z^3 + 12\,015\,360 z^2 - 32\,654\,475 z + 38\,707\,200\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\sqrt{z}\left(65\,536 z^4 + 1\,228\,800 z^3 - 3\,709\,440 z^2 + 16\,309\,440 z - 56\,865\,375\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8646.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) = \frac{1}{838\,252\,800\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\left(1\,048\,576 z^6 - 23\,396\,352 z^5 - 39\,739\,392 z^4 - 215\,373\,312 z^3 - 609\,828\,912 z^2 - 236\,413\,485 z + 838\,252\,800\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 3\sqrt{z}\left(-1\,048\,576 z^5 + 22\,478\,848 z^4 + 58\,662\,912 z^3 + 277\,820\,928 z^2 + 934\,884\,720 z + 1\,511\,692\,875\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z $$
$$ \left.\left.\left(-1\,048\,576 z^5 + 22\,609\,920 z^4 + 56\,254\,464 z^3 + 265\,047\,552 z^2 + 855\,716\,400 z + 1\,182\,067\,425\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8647.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = \frac{1}{838\,252\,800\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\left(1\,048\,576 z^6 + 23\,396\,352 z^5 - 39\,739\,392 z^4 + 215\,373\,312 z^3 - 609\,828\,912 z^2 + 236\,413\,485 z + 838\,252\,800\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(1\,048\,576 z^5 + 22\,478\,848 z^4 - 58\,662\,912 z^3 + 277\,820\,928 z^2 - 934\,884\,720 z + 1\,511\,692\,875\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2z\left(1\,048\,576 z^5 + 22\,609\,920 z^4 - 56\,254\,464 z^3 + 265\,047\,552 z^2 - 855\,716\,400 z + 1\,182\,067\,425\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8648.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) = $$
$$ \frac{1}{158\,544\,691\,200 z^{3/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(4\,194\,304 z^{11/2} - 1\,048\,576 z^5 - 98\,304\,000 z^{9/2} + 23\,789\,568 z^4 - 280\,068\,096 z^{7/2} + \right.\right.\right. $$
$$ 85\,155\,840 z^3 - 1\,505\,064\,960 z^{5/2} + 474\,969\,600 z^2 - 5\,910\,287\,040 z^{3/2} + 2\,196\,316\,080 z - $$
$$ 11\,510\,232\,300\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 98\,304\,000 z^{9/2} - 23\,789\,568 z^4 - \right. $$
$$ \left. 280\,068\,096 z^{7/2} - 85\,155\,840 z^3 - 1\,505\,064\,960 z^{5/2} - 474\,969\,600 z^2 - 5\,910\,287\,040 z^{3/2} - \right. $$
$$ \left. 2\,196\,316\,080 z - 11\,510\,232\,300\sqrt{z} - 6\,230\,890\,575\right) + 6\,230\,890\,575\Big) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 396\,361\,728 z^5 - 1\,052\,835\,840 z^4 - 5\,702\,860\,800 z^3 - \right. $$
$$ \left. 21\,653\,049\,600 z^2 - 35\,186\,205\,600 z - 6\,230\,890\,575\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 396\,361\,728 z^5 - 1\,052\,835\,840 z^4 - 5\,702\,860\,800 z^3 - \right. $$
$$ \left.\left. 21\,653\,049\,600 z^2 - 35\,186\,205\,600 z - 6\,230\,890\,575\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.8649.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) = $$
$$ \frac{1}{39\,636\,172\,800 z^{3/4}}\left(\sqrt{\pi}\left(16\,777\,216 z^6 + 396\,361\,728 z^5 - 1\,052\,835\,840 z^4 + 5\,702\,860\,800 z^3 - 21\,653\,049\,600 z^2 + \right.\right. $$
$$ \left. 35\,186\,205\,600 z - 6\,230\,890\,575\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z} $$
$$ \left(4\sqrt{z}\left(1\,048\,576 z^5 + 24\,576\,000 z^4 - 70\,017\,024 z^3 + 376\,266\,240 z^2 - 1\,477\,571\,760 z + 2\,877\,558\,075\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. \left(1\,048\,576 z^5 + 23\,789\,568 z^4 - 85\,155\,840 z^3 + 474\,969\,600 z^2 - 2\,196\,316\,080 z + 6\,230\,890\,575\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8650.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) = \frac{1}{69\,742\,632\,960\sqrt{2}\, z^{3/4}}\left(\left(2\sqrt{z}\left(16\,777\,216 z^6 - 440\,401\,920 z^5 - 978\,518\,016 z^4 - 6\,698\,926\,080 z^3 - 28\,064\,703\,744 z^2 - 40\,501\,581\,120 z + 61\,493\,046\,615\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-16\,777\,216 z^6 + 425\,721\,856 z^5 + 1\,339\,097\,088 z^4 + 8\,095\,481\,856 z^3 + 37\,050\,773\,760 z^2 + 88\,722\,073\,440 z + 13\,749\,310\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-16\,777\,216 z^6 + 427\,819\,008 z^5 + 1\,292\,304\,384 z^4 + 7\,815\,757\,824 z^3 + 34\,975\,100\,160 z^2 + 75\,191\,276\,160 z + 41\,247\,931\,725\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8651.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{9}{4}; -z\right) = \frac{1}{69\,742\,632\,960\sqrt{2}\, z^{3/4}}\left(\left(2\sqrt{z}\left(16\,777\,216 z^6 + 440\,401\,920 z^5 - 978\,518\,016 z^4 + 6\,698\,926\,080 z^3 - 28\,064\,703\,744 z^2 + 40\,501\,581\,120 z + 61\,493\,046\,615\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,777\,216 z^6 + 425\,721\,856 z^5 - 1\,339\,097\,088 z^4 + 8\,095\,481\,856 z^3 - 37\,050\,773\,760 z^2 + 88\,722\,073\,440 z - 13\,749\,310\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216 z^6 + 427\,819\,008 z^5 - 1\,292\,304\,384 z^4 + 7\,815\,757\,824 z^3 - 34\,975\,100\,160 z^2 + 75\,191\,276\,160 z - 41\,247\,931\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8652.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{11}{4}; z\right) = \frac{1}{10\,146\,860\,236\,800 z^{7/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(67\,108\,864 z^{13/2} - 16\,777\,216 z^6 - 1\,837\,105\,152 z^{11/2} + 446\,693\,376 z^5 - 6\,215\,172\,096 z^{9/2} + 1\,845\,559\,296 z^4 - 41\,613\,852\,672 z^{7/2} + 12\,515\,328\,000 z^3 - 214\,616\,908\,800 z^{5/2} + 71\,755\,649\,280 z^2 - 577\,144\,068\,480 z^{3/2} + 279\,143\,897\,760 z - 523\,394\,808\,300\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 - 1\,837\,105\,152 z^{11/2} - 446\,693\,376 z^5 - 6\,215\,172\,096 z^{9/2} - 1\,845\,559\,296 z^4 - 41\,613\,852\,672 z^{7/2} - 12\,515\,328\,000 z^3 - 214\,616\,908\,800 z^{5/2} - 71\,755\,649\,280 z^2 - 577\,144\,068\,480 z^{3/2} - 279\,143\,897\,760 z - 523\,394\,808\,300\sqrt{z} + 392\,546\,106\,225\right) - 392\,546\,106\,225\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 7\,398\,752\,256 z^6 - 23\,583\,522\,816 z^5 - 159\,680\,102\,400 z^4 - 808\,380\,518\,400 z^3 - 1\,970\,427\,513\,600 z^2 - 697\,859\,744\,400 z + 392\,546\,106\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 7\,398\,752\,256 z^6 - 23\,583\,522\,816 z^5 - 159\,680\,102\,400 z^4 - 808\,380\,518\,400 z^3 - 1\,970\,427\,513\,600 z^2 - 697\,859\,744\,400 z + 392\,546\,106\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8653.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{11}{4}; -z\right) = \frac{1}{2\,536\,715\,059\,200\,z^{7/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7 + 7\,398\,752\,256\,z^6 - 23\,583\,522\,816\,z^5 + 159\,680\,102\,400\,z^4 - 808\,380\,518\,400\,z^3 + 1\,970\,427\,513\,600\,z^2 - 697\,859\,744\,400\,z - 392\,546\,106\,225\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6 + 459\,276\,288\,z^5 - 1\,553\,793\,024\,z^4 + 10\,403\,463\,168\,z^3 - 53\,654\,227\,200\,z^2 + 144\,286\,017\,120\,z - 130\,848\,702\,075\right)\cos\left(2\sqrt{z}\right) + \left(16\,777\,216\,z^6 + 446\,693\,376\,z^5 - 1\,845\,559\,296\,z^4 + 12\,515\,328\,000\,z^3 - 71\,755\,649\,280\,z^2 + 279\,143\,897\,760\,z + 392\,546\,106\,225\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8654.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{13}{4}; z\right) = \left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 - 8\,103\,395\,328\,z^6 - 22\,262\,317\,056\,z^5 - 183\,585\,669\,120\,z^4 - 1\,010\,927\,554\,560\,z^3 - 2\,392\,652\,908\,800\,z^2 + 1\,886\,365\,681\,200\,z + 948\,702\,429\,675\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-268\,435\,456\,z^7 + 7\,868\,514\,304\,z^6 + 28\,956\,426\,240\,z^5 + 213\,271\,511\,040\,z^4 + 1\,238\,236\,876\,800\,z^3 + 3\,887\,909\,625\,600\,z^2 + 4\,179\,790\,414\,800\,z - 1\,581\,170\,716\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-268\,435\,456\,z^7 + 7\,902\,068\,736\,z^6 + 28\,075\,622\,400\,z^5 + 207\,449\,948\,160\,z^4 + 1\,188\,485\,222\,400\,z^3 + 3\,489\,726\,240\,000\,z^2 + 2\,419\,878\,661\,200\,z - 4\,743\,512\,148\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(3\,719\,607\,091\,200\sqrt{2}\;z^{7/4}\right) $$

07.22.03.8655.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) = \left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 + 8\,103\,395\,328\,z^6 - 22\,262\,317\,056\,z^5 + 183\,585\,669\,120\,z^4 - 1\,010\,927\,554\,560\,z^3 + 2\,392\,652\,908\,800\,z^2 + 1\,886\,365\,681\,200\,z - 948\,702\,429\,675\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(268\,435\,456\,z^7 + 7\,868\,514\,304\,z^6 - 28\,956\,426\,240\,z^5 + 213\,271\,511\,040\,z^4 - 1\,238\,236\,876\,800\,z^3 + 3\,887\,909\,625\,600\,z^2 - 4\,179\,790\,414\,800\,z - 1\,581\,170\,716\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(268\,435\,456\,z^7 + 7\,902\,068\,736\,z^6 - 28\,075\,622\,400\,z^5 + 207\,449\,948\,160\,z^4 - 1\,188\,485\,222\,400\,z^3 + 3\,489\,726\,240\,000\,z^2 - 2\,419\,878\,661\,200\,z - 4\,743\,512\,148\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(3\,719\,607\,091\,200\sqrt{2}\;z^{7/4}\right) $$

07.22.03.8656.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) =
$$

$$
-\Big(11\, e^{-2\sqrt{z}} \Big(4\sqrt[4]{z}\, \Big(1\,073\,741\,824\, z^{15/2} - 268\,435\,456\, z^7 - 33\,621\,540\,864\, z^{13/2} + 8\,204\,058\,624\, z^6 - 131\,680\,174\,080\, z^{11/2} +
$$

$$
38\,381\,027\,328\, z^5 - 1\,056\,683\,851\,776\, z^{9/2} + 307\,324\,846\,080\, z^4 - 6\,762\,875\,535\,360\, z^{7/2} +
$$

$$
2\,110\,181\,068\,800\, z^3 - 23\,344\,528\,112\,640\, z^{5/2} + 9\,676\,988\,455\,680\, z^2 -
$$

$$
25\,122\,950\,798\,400\, z^{3/2} + 23\,029\,371\,565\,200\, z + 91\,594\,091\,452\,500\sqrt{z} +
$$

$$
e^{4\sqrt{z}} \Big(1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 - 33\,621\,540\,864\, z^{13/2} - 8\,204\,058\,624\, z^6 - 131\,680\,174\,080\, z^{11/2} -
$$

$$
38\,381\,027\,328\, z^5 - 1\,056\,683\,851\,776\, z^{9/2} - 307\,324\,846\,080\, z^4 - 6\,762\,875\,535\,360\, z^{7/2} -
$$

$$
2\,110\,181\,068\,800\, z^3 - 23\,344\,528\,112\,640\, z^{5/2} - 9\,676\,988\,455\,680\, z^2 - 25\,122\,950\,798\,400\, z^{3/2} -
$$

$$
23\,029\,371\,565\,200\, z + 91\,594\,091\,452\,500\sqrt{z} - 68\,695\,568\,589\,375\Big) + 68\,695\,568\,589\,375\Big) +
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\, \Big(4\,294\,967\,296\, z^8 - 135\,291\,469\,824\, z^7 - 503\,115\,153\,408\, z^6 - 4\,087\,810\,621\,440\, z^5 -
$$

$$
25\,868\,176\,588\,800\, z^4 - 84\,071\,573\,913\,600\, z^3 - 44\,663\,023\,641\,600\, z^2 +
$$

$$
50\,245\,901\,596\,800\, z - 68\,695\,568\,589\,375\Big) \operatorname{erf}\Big(\sqrt{2}\,\sqrt[4]{z}\Big) -
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\, \Big(4\,294\,967\,296\, z^8 - 135\,291\,469\,824\, z^7 - 503\,115\,153\,408\, z^6 - 4\,087\,810\,621\,440\, z^5 -
$$

$$
25\,868\,176\,588\,800\, z^4 - 84\,071\,573\,913\,600\, z^3 - 44\,663\,023\,641\,600\, z^2 +
$$

$$
50\,245\,901\,596\,800\, z - 68\,695\,568\,589\,375\Big) \operatorname{erfi}\Big(\sqrt{2}\,\sqrt[4]{z}\Big)\Big)\Big) \Big/ \Big(5\,195\,192\,441\,241\,600\, z^{11/4}\Big)
$$

07.22.03.8657.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{15}{4}; -z\right) =
$$

$$
\Bigg(11\Bigg(\sqrt{\pi}\, \Big(4\,294\,967\,296\, z^8 + 135\,291\,469\,824\, z^7 - 503\,115\,153\,408\, z^6 + 4\,087\,810\,621\,440\, z^5 - 25\,868\,176\,588\,800\, z^4 +
$$

$$
84\,071\,573\,913\,600\, z^3 - 44\,663\,023\,641\,600\, z^2 - 50\,245\,901\,596\,800\, z - 68\,695\,568\,589\,375\Big) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) +
$$

$$
2\sqrt[4]{z}\, \Big(4\sqrt{z}\, \Big(268\,435\,456\, z^7 + 8\,405\,385\,216\, z^6 - 32\,920\,043\,520\, z^5 + 264\,170\,962\,944\, z^4 - 1\,690\,718\,883\,840\, z^3 +
$$

$$
5\,836\,132\,028\,160\, z^2 - 6\,280\,737\,699\,600\, z - 22\,898\,522\,863\,125\Big) \cos\Big(2\sqrt{z}\Big) + \Big(268\,435\,456\, z^7 +
$$

$$
8\,204\,058\,624\, z^6 - 38\,381\,027\,328\, z^5 + 307\,324\,846\,080\, z^4 - 2\,110\,181\,068\,800\, z^3 + 9\,676\,988\,455\,680\, z^2 -
$$

$$
23\,029\,371\,565\,200\, z + 68\,695\,568\,589\,375\Big) \sin\Big(2\sqrt{z}\Big)\Big)\Bigg)\Bigg) \Big/ \Big(1\,298\,798\,110\,310\,400\, z^{11/4}\Big)
$$

07.22.03.8658.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 146\,565\,758\,976\,z^7 - 479\,861\,932\,032\,z^6 - 4\,622\,502\,592\,512\,z^5 - 31\,453\,284\,925\,440\,z^4 - 101\,930\,263\,142\,400\,z^3 + 36\,699\,266\,419\,200\,z^2 + 333\,943\,255\,245\,600\,z - 230\,534\,690\,411\,025\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-4\,294\,967\,296\,z^8 + 142\,807\,662\,592\,z^7 + 601\,765\,183\,488\,z^6 + 5\,230\,653\,603\,840\,z^5 + 36\,858\,131\,251\,200\,z^4 + 143\,737\,097\,011\,200\,z^3 + 183\,030\,822\,374\,400\,z^2 - 829\,798\,391\,822\,400\,z + 384\,224\,484\,018\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-4\,294\,967\,296\,z^8 + 143\,344\,533\,504\,z^7 + 585\,558\,392\,832\,z^6 + 5\,113\,726\,894\,080\,z^5 + 35\,730\,771\,148\,800\,z^4 + 133\,381\,798\,502\,400\,z^3 + 109\,617\,360\,652\,800\,z^2 - 30\,358\,477\,749\,600\,z + 1\,152\,673\,452\,055\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(155\,651\,250\,585\,600\,\sqrt{2}\,z^{11/4}\right) $$

07.22.03.8659.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 146\,565\,758\,976\,z^7 - 479\,861\,932\,032\,z^6 + 4\,622\,502\,592\,512\,z^5 - 31\,453\,284\,925\,440\,z^4 + 101\,930\,263\,142\,400\,z^3 + 36\,699\,266\,419\,200\,z^2 - 333\,943\,255\,245\,600\,z - 230\,534\,690\,411\,025\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4\,294\,967\,296\,z^8 + 142\,807\,662\,592\,z^7 - 601\,765\,183\,488\,z^6 + 5\,230\,653\,603\,840\,z^5 - 36\,858\,131\,251\,200\,z^4 + 143\,737\,097\,011\,200\,z^3 - 183\,030\,822\,374\,400\,z^2 - 829\,798\,391\,822\,400\,z - 384\,224\,484\,018\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 143\,344\,533\,504\,z^7 - 585\,558\,392\,832\,z^6 + 5\,113\,726\,894\,080\,z^5 - 35\,730\,771\,148\,800\,z^4 + 133\,381\,798\,502\,400\,z^3 - 109\,617\,360\,652\,800\,z^2 - 30\,358\,477\,749\,600\,z - 1\,152\,673\,452\,055\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(155\,651\,250\,585\,600\,\sqrt{2}\,z^{11/4}\right) $$

07.22.03.8660.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) =
$$

$$
-\left(11\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(17\,179\,869\,184\, z^{17/2} - 4\,294\,967\,296\, z^8 - 605\,590\,388\,736\, z^{15/2} + 148\,176\,371\,712\, z^7 - 2\,694\,555\,107\,328\right.\right.\right.
$$

$$
z^{13/2} + 773\,698\,093\,056\, z^6 - 25\,218\,118\,582\,272\, z^{11/2} + 7\,158\,292\,807\,680\, z^5 - 192\,924\,612\,034\,560\, z^{9/2} +
$$

$$
57\,462\,169\,927\,680\, z^4 - 816\,296\,016\,936\,960\, z^{7/2} + 300\,501\,984\,706\,560\, z^3 - 952\,811\,171\,020\,800\, z^{5/2} +
$$

$$
997\,474\,194\,662\,400\, z^2 - 167\,486\,338\,656\,000\, z^{3/2} - 13\,482\,650\,261\,808\,000\, z - 29\,218\,515\,173\,347\,500\,\sqrt{z} +
$$

$$
e^{4\sqrt{z}} \left(17\,179\,869\,184\, z^{17/2} + 4\,294\,967\,296\, z^8 - 605\,590\,388\,736\, z^{15/2} - 148\,176\,371\,712\, z^7 -\right.
$$

$$
2\,694\,555\,107\,328\, z^{13/2} - 773\,698\,093\,056\, z^6 - 25\,218\,118\,582\,272\, z^{11/2} - 7\,158\,292\,807\,680\, z^5 -
$$

$$
192\,924\,612\,034\,560\, z^{9/2} - 57\,462\,169\,927\,680\, z^4 - 816\,296\,016\,936\,960\, z^{7/2} - 300\,501\,984\,706\,560\, z^3 -
$$

$$
\left.\left.952\,811\,171\,020\,800\, z^{5/2} - 997\,474\,194\,662\,400\, z^2 - 167\,486\,338\,656\,000\, z^{3/2} + 13\,482\,650\,261\,808\,000\right.\right.
$$

$$
\left.\left.\left.\left.z - 29\,218\,515\,173\,347\,500\,\sqrt{z} + 21\,913\,886\,380\,010\,625\right) - 21\,913\,886\,380\,010\,625\right) +\right.\right.
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\pi}\, \left(68\,719\,476\,736\, z^9 - 2\,435\,246\,456\,832\, z^8 - 10\,349\,797\,441\,536\, z^7 - 98\,107\,454\,914\,560\, z^6 -\right.
$$

$$
745\,003\,485\,757\,440\, z^5 - 3\,026\,576\,660\,889\,600\, z^4 - 2\,143\,825\,134\,796\,800\, z^3 +
$$

$$
\left.3\,617\,704\,914\,969\,600\, z^2 - 9\,892\,161\,876\,870\,000\, z + 21\,913\,886\,380\,010\,625\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) -
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\pi}\, \left(68\,719\,476\,736\, z^9 - 2\,435\,246\,456\,832\, z^8 - 10\,349\,797\,441\,536\, z^7 - 98\,107\,454\,914\,560\, z^6 -\right.
$$

$$
745\,003\,485\,757\,440\, z^5 - 3\,026\,576\,660\,889\,600\, z^4 - 2\,143\,825\,134\,796\,800\, z^3 + 3\,617\,704\,914\,969\,600\, z^2 -
$$

$$
\left.\left.\left.9\,892\,161\,876\,870\,000\, z + 21\,913\,886\,380\,010\,625\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) \Big/ \left(199\,495\,389\,743\,677\,440\, z^{15/4}\right)
$$

07.22.03.8661.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) =
$$

$$
\left(11\left(\sqrt{\pi}\, \left(68\,719\,476\,736\, z^9 + 2\,435\,246\,456\,832\, z^8 - 10\,349\,797\,441\,536\, z^7 + 98\,107\,454\,914\,560\, z^6 - 745\,003\,485\,757\,440\, z^5 +\right.\right.\right.
$$

$$
3\,026\,576\,660\,889\,600\, z^4 - 2\,143\,825\,134\,796\,800\, z^3 - 3\,617\,704\,914\,969\,600\, z^2 -
$$

$$
\left.9\,892\,161\,876\,870\,000\, z - 21\,913\,886\,380\,010\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}
$$

$$
\left(4\sqrt{z}\, \left(4\,294\,967\,296\, z^8 + 151\,397\,597\,184\, z^7 - 673\,638\,776\,832\, z^6 + 6\,304\,529\,645\,568\, z^5 - 48\,231\,153\,008\,640\, z^4 +\right.\right.
$$

$$
\left.204\,074\,004\,234\,240\, z^3 - 238\,202\,792\,755\,200\, z^2 + 41\,871\,584\,664\,000\, z - 7\,304\,628\,793\,336\,875\right)
$$

$$
\cos\left(2\sqrt{z}\right) + \left(4\,294\,967\,296\, z^8 + 148\,176\,371\,712\, z^7 - 773\,698\,093\,056\, z^6 + 7\,158\,292\,807\,680\, z^5 -\right.
$$

$$
57\,462\,169\,927\,680\, z^4 + 300\,501\,984\,706\,560\, z^3 - 997\,474\,194\,662\,400\, z^2 -
$$

$$
\left.\left.\left.13\,482\,650\,261\,808\,000\, z + 21\,913\,886\,380\,010\,625\right) \sin\left(2\sqrt{z}\right)\right)\right)\Big/ \left(49\,873\,847\,435\,919\,360\, z^{15/4}\right)
$$

07.22.03.8662.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) =
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 2\,615\,635\,083\,264\,z^8 - 9\,943\,923\,032\,064\,z^7 - 109\,493\,077\,671\,936\,z^6 - 885\,984\,596\,066\,304\,z^5 - \right.\right.\right.
$$

$$
3\,624\,738\,530\,918\,400\,z^4 + 176\,729\,875\,660\,800\,z^3 + 15\,543\,540\,607\,795\,200\,z^2 -
$$

$$
\left.\left.\left.117\,623\,922\,040\,825\,200\,z + 92\,905\,480\,235\,643\,075\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.\right.
$$

$$
3\left(-68\,719\,476\,736\,z^9 + 2\,555\,505\,541\,120\,z^8 + 12\,131\,135\,127\,552\,z^7 + 121\,605\,892\,079\,616\,z^6 + \right.
$$

$$
1\,008\,672\,555\,663\,360\,z^5 + 4\,715\,303\,052\,902\,400\,z^4 + 6\,436\,248\,698\,880\,000\,z^3 + 323\,823\,762\,662\,400\,z^2 +
$$

$$
\left.306\,150\,068\,865\,841\,200\,z - 154\,842\,467\,059\,405\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +
$$

$$
2\sqrt{z}\,\left(-68\,719\,476\,736\,z^9 + 2\,564\,095\,475\,712\,z^8 + 11\,838\,003\,609\,600\,z^7 + 119\,318\,620\,667\,904\,z^6 + \right.
$$

$$
984\,120\,589\,025\,280\,z^5 + 4\,463\,348\,288\,716\,800\,z^4 + 4\,303\,509\,925\,478\,400\,z^3 - 2\,775\,632\,251\,392\,000\,z^2 -
$$

$$
\left.\left.72\,541\,582\,582\,669\,200\,z - 464\,527\,401\,178\,215\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(5\,566\,821\,197\,414\,400\,\sqrt{2}\; z^{15/4}\right)
$$

07.22.03.8663.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) =
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 2\,615\,635\,083\,264\,z^8 - 9\,943\,923\,032\,064\,z^7 + 109\,493\,077\,671\,936\,z^6 - 885\,984\,596\,066\,304\,z^5 + \right.\right.\right.
$$

$$
3\,624\,738\,530\,918\,400\,z^4 + 176\,729\,875\,660\,800\,z^3 - 15\,543\,540\,607\,795\,200\,z^2 -
$$

$$
\left.\left.\left.117\,623\,922\,040\,825\,200\,z - 92\,905\,480\,235\,643\,075\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 -\right.\right.
$$

$$
3\left(68\,719\,476\,736\,z^9 + 2\,555\,505\,541\,120\,z^8 - 12\,131\,135\,127\,552\,z^7 + 121\,605\,892\,079\,616\,z^6 - \right.
$$

$$
1\,008\,672\,555\,663\,360\,z^5 + 4\,715\,303\,052\,902\,400\,z^4 - 6\,436\,248\,698\,880\,000\,z^3 + 323\,823\,762\,662\,400\,z^2 -
$$

$$
\left.306\,150\,068\,865\,841\,200\,z - 154\,842\,467\,059\,405\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +
$$

$$
2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 2\,564\,095\,475\,712\,z^8 - 11\,838\,003\,609\,600\,z^7 + 119\,318\,620\,667\,904\,z^6 - \right.
$$

$$
984\,120\,589\,025\,280\,z^5 + 4\,463\,348\,288\,716\,800\,z^4 - 4\,303\,509\,925\,478\,400\,z^3 - 2\,775\,632\,251\,392\,000\,z^2 +
$$

$$
\left.\left.72\,541\,582\,582\,669\,200\,z - 464\,527\,401\,178\,215\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(5\,566\,821\,197\,414\,400\,\sqrt{2}\; z^{15/4}\right)
$$

07.22.03.8664.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) =
$$

$$
-\Big(209\, e^{-2\sqrt{z}} \Big(4\sqrt[4]{z}\, \Big(274\,877\,906\,944\, z^{19/2} - 68\,719\,476\,736\, z^9 - 10\,771\,777\,978\,368\, z^{17/2} + 2\,641\,404\,887\,040\, z^8 -
$$

$$
53\,665\,616\,363\,520\, z^{15/2} + 15\,220\,290\,355\,200\, z^7 - 574\,058\,617\,896\,960\, z^{13/2} +
$$

$$
160\,003\,302\,359\,040\, z^6 - 5\,111\,996\,114\,534\,400\, z^{11/2} + 1\,473\,960\,266\,956\,800\, z^5 -
$$

$$
25\,668\,269\,074\,022\,400\, z^{9/2} + 8\,683\,084\,608\,307\,200\, z^4 - 32\,615\,459\,315\,712\,000\, z^{7/2} +
$$

$$
30\,141\,814\,929\,408\,000\, z^3 - 13\,398\,907\,092\,480\,000\, z^{5/2} - 10\,049\,180\,319\,360\,000\, z^2 +
$$

$$
1\,936\,770\,148\,633\,320\,000\, z^{3/2} + 8\,064\,310\,187\,843\,910\,000\, z + 14\,463\,165\,010\,807\,012\,500\sqrt{z} +
$$

$$
e^{4\sqrt{z}} \Big(274\,877\,906\,944\, z^{19/2} + 68\,719\,476\,736\, z^9 - 10\,771\,777\,978\,368\, z^{17/2} - 2\,641\,404\,887\,040\, z^8 -
$$

$$
53\,665\,616\,363\,520\, z^{15/2} - 15\,220\,290\,355\,200\, z^7 - 574\,058\,617\,896\,960\, z^{13/2} - 160\,003\,302\,359\,040\, z^6 -
$$

$$
5\,111\,996\,114\,534\,400\, z^{11/2} - 1\,473\,960\,266\,956\,800\, z^5 - 25\,668\,269\,074\,022\,400\, z^{9/2} -
$$

$$
8\,683\,084\,608\,307\,200\, z^4 - 32\,615\,459\,315\,712\,000\, z^{7/2} - 30\,141\,814\,929\,408\,000\, z^3 -
$$

$$
13\,398\,907\,092\,480\,000\, z^{5/2} + 10\,049\,180\,319\,360\,000\, z^2 + 1\,936\,770\,148\,633\,320\,000\, z^{3/2} -
$$

$$
8\,064\,310\,187\,843\,910\,000\, z + 14\,463\,165\,010\,807\,012\,500\sqrt{z} - 10\,847\,373\,758\,105\,259\,375\Big) +
$$

$$
10\,847\,373\,758\,105\,259\,375\Big) + e^{2\sqrt{z}}\sqrt{2\pi}\, \Big(1\,099\,511\,627\,776\, z^{10} - 43\,293\,270\,343\,680\, z^9 -
$$

$$
206\,995\,948\,830\,720\, z^8 - 2\,242\,456\,112\,332\,800\, z^7 - 19\,866\,759\,620\,198\,400\, z^6 -
$$

$$
96\,850\,453\,148\,467\,200\, z^5 - 85\,753\,005\,391\,872\,000\, z^4 + 192\,944\,262\,131\,712\,000\, z^3 -
$$

$$
791\,372\,950\,149\,600\,000\, z^2 + 3\,506\,221\,820\,801\,700\,000\, z - 10\,847\,373\,758\,105\,259\,375\Big) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) -
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\, \Big(1\,099\,511\,627\,776\, z^{10} - 43\,293\,270\,343\,680\, z^9 - 206\,995\,948\,830\,720\, z^8 - 2\,242\,456\,112\,332\,800\, z^7 -
$$

$$
19\,866\,759\,620\,198\,400\, z^6 - 96\,850\,453\,148\,467\,200\, z^5 - 85\,753\,005\,391\,872\,000\, z^4 +
$$

$$
192\,944\,262\,131\,712\,000\, z^3 - 791\,372\,950\,149\,600\,000\, z^2 + 3\,506\,221\,820\,801\,700\,000\, z -
$$

$$
10\,847\,373\,758\,105\,259\,375\Big) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\Big)\Big) \Big/ \left(127\,677\,049\,435\,953\,561\,600\, z^{19/4}\right)
$$

07.22.03.8665.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) =
$$

$$
\Bigg(209\Bigg(\sqrt{\pi}\, \Big(1\,099\,511\,627\,776\, z^{10} + 43\,293\,270\,343\,680\, z^9 - 206\,995\,948\,830\,720\, z^8 + 2\,242\,456\,112\,332\,800\, z^7 -
$$

$$
19\,866\,759\,620\,198\,400\, z^6 + 96\,850\,453\,148\,467\,200\, z^5 - 85\,753\,005\,391\,872\,000\, z^4 - 192\,944\,262\,131\,712\,000
$$

$$
z^3 - 791\,372\,950\,149\,600\,000\, z^2 - 3\,506\,221\,820\,801\,700\,000\, z - 10\,847\,373\,758\,105\,259\,375\Big) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) +
$$

$$
2\sqrt[4]{z}\, \Big(4\sqrt{z}\, \Big(68\,719\,476\,736\, z^9 + 2\,692\,944\,494\,592\, z^8 - 13\,416\,404\,090\,880\, z^7 + 143\,514\,654\,474\,240\, z^6 -
$$

$$
1\,277\,999\,028\,633\,600\, z^5 + 6\,417\,067\,268\,505\,600\, z^4 - 8\,153\,864\,828\,928\,000\, z^3 +
$$

$$
3\,349\,726\,773\,120\,000\, z^2 + 484\,192\,537\,158\,330\,000\, z - 3\,615\,791\,252\,701\,753\,125\Big) \cos\left(2\sqrt{z}\right) +
$$

$$
\Big(68\,719\,476\,736\, z^9 + 2\,641\,404\,887\,040\, z^8 - 15\,220\,290\,355\,200\, z^7 + 160\,003\,302\,359\,040\, z^6 -
$$

$$
1\,473\,960\,266\,956\,800\, z^5 + 8\,683\,084\,608\,307\,200\, z^4 - 30\,141\,814\,929\,408\,000\, z^3 -
$$

$$
10\,049\,180\,319\,360\,000\, z^2 - 8\,064\,310\,187\,843\,910\,000\, z +
$$

$$
10\,847\,373\,758\,105\,259\,375\Big) \sin\left(2\sqrt{z}\right)\Big)\Bigg) \Big/ \left(31\,919\,262\,358\,988\,390\,400\, z^{19/4}\right)
$$

For fixed z and $a_1 = -\frac{21}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.8666.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) =
$$

$$
\frac{1}{476\,974\,575\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(1\,048\,576\,z^6 + 13\,762\,560\,z^5 + 47\,738\,880\,z^4 - 98\,638\,848\,z^3 + 718\,336\,080\,z^2 - \right.\right.\right.
$$

$$
\left.\left.\left. 1\,128\,148\,560\,z + 476\,974\,575\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 -
$$

$$
12\sqrt{z}\,\left(131\,072\,z^5 + 1\,835\,008\,z^4 + 7\,666\,176\,z^3 + 19\,681\,200\,z^2 + 164\,060\,820\,z - 158\,991\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +
$$

$$
\left.\left.4\,z\left(-262\,144\,z^5 - 3\,637\,248\,z^4 - 14\,773\,248\,z^3 + 11\,531\,520\,z^2 + 143\,783\,640\,z + 476\,974\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)
$$

07.22.03.8667.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{23}{4}; -z\right) =
$$

$$
\frac{1}{476\,974\,575\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(1\,048\,576\,z^6 - 13\,762\,560\,z^5 + 47\,738\,880\,z^4 + 98\,638\,848\,z^3 + 718\,336\,080\,z^2 + \right.\right.\right.
$$

$$
\left.\left.\left. 1\,128\,148\,560\,z + 476\,974\,575\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 -
$$

$$
12\sqrt{z}\,\left(131\,072\,z^5 - 1\,835\,008\,z^4 + 7\,666\,176\,z^3 - 19\,681\,200\,z^2 + 164\,060\,820\,z + 158\,991\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +
$$

$$
\left.\left.4\,z\left(262\,144\,z^5 - 3\,637\,248\,z^4 + 14\,773\,248\,z^3 + 11\,531\,520\,z^2 - 143\,783\,640\,z + 476\,974\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)
$$

07.22.03.8668.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{21}{4}; z\right) = \left(\frac{8\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,(4\,z + 15)\sinh\left(2\sqrt{z}\right)
$$

07.22.03.8669.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{21}{4}; -z\right) = \left(1 - \frac{8\,z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\,(15 - 4\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)
$$

07.22.03.8670.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{19}{4}; z\right) = \frac{1}{20\,738\,025\,\sqrt[4]{z}}
$$

$$
\left(\sqrt{2}\,\left(\left(524\,288\,z^6 + 2\,064\,384\,z^5 + 3\,999\,744\,z^4 - 9\,184\,896\,z^3 + 35\,625\,744\,z^2 - 50\,644\,440\,z + 20\,738\,025\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 -\right.\right.
$$

$$
12\sqrt{z}\,\left(65\,536\,z^5 + 315\,392\,z^4 + 822\,528\,z^3 + 99\,792\,z^2 + 7\,664\,580\,z - 6\,912\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +
$$

$$
\left.\left.4\,z\left(-131\,072\,z^5 - 614\,400\,z^4 - 1\,516\,032\,z^3 + 643\,104\,z^2 + 4\,656\,960\,z + 20\,738\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)
$$

07.22.03.8671.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{19}{4}; -z\right) = \frac{1}{20\,738\,025\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\,\left(\left(524\,288\,z^6 - 2\,064\,384\,z^5 + 3\,999\,744\,z^4 + 9\,184\,896\,z^3 + 35\,625\,744\,z^2 + 50\,644\,440\,z + 20\,738\,025\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 12\,\sqrt{z}\,\left(65\,536\,z^5 - 315\,392\,z^4 + 822\,528\,z^3 - 99\,792\,z^2 + 7\,664\,580\,z + 6\,912\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(131\,072\,z^5 - 614\,400\,z^4 + 1\,516\,032\,z^3 + 643\,104\,z^2 - 4\,656\,960\,z + 20\,738\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8672.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{17}{4}; z\right) = $$
$$ \frac{1}{6\,265\,350}\left(e^{-2\sqrt{z}}\,\left(-131\,072\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{21/4} + 131\,072\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{21/4} - \right.\right. $$
$$ 131\,072\,e^{4\sqrt{z}}\,z^5 - 131\,072\,z^5 - 32\,768\,e^{4\sqrt{z}}\,z^{9/2} + 32\,768\,z^{9/2} - 24\,576\,e^{4\sqrt{z}}\,z^4 - 24\,576\,z^4 - $$
$$ 30\,720\,e^{4\sqrt{z}}\,z^{7/2} + 30\,720\,z^{7/2} - 53\,760\,e^{4\sqrt{z}}\,z^3 - 53\,760\,z^3 - 120\,960\,e^{4\sqrt{z}}\,z^{5/2} + 120\,960\,z^{5/2} - $$
$$ 332\,640\,e^{4\sqrt{z}}\,z^2 - 332\,640\,z^2 - 1\,081\,080\,e^{4\sqrt{z}}\,z^{3/2} + 1\,081\,080\,z^{3/2} + 4\,717\,440\,e^{4\sqrt{z}}\,z + $$
$$ \left.\left. 4\,717\,440\,z - 6\,265\,350\,e^{4\sqrt{z}}\,\sqrt{z} + 6\,265\,350\,\sqrt{z} + 3\,132\,675\,e^{4\sqrt{z}} + 3\,132\,675\right)\right) $$

07.22.03.8673.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{17}{4}; -z\right) = $$
$$ \frac{1}{3\,132\,675}\left(262\,144\,\sqrt{\pi}\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{21/4} + 2\left(16\,384\,z^4 - 15\,360\,z^3 + 60\,480\,z^2 - 540\,540\,z + 3\,132\,675\right)\sin\left(2\,\sqrt{z}\right)\sqrt{z} + \right. $$
$$ \left.\left(131\,072\,z^5 - 24\,576\,z^4 + 53\,760\,z^3 - 332\,640\,z^2 - 4\,717\,440\,z + 3\,132\,675\right)\cos\left(2\,\sqrt{z}\right)\right) $$

07.22.03.8674.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{15}{4}; z\right) = \frac{1}{1\,091\,475\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\,\left(\left(-262\,144\,z^6 + 1\,376\,256\,z^5 + 258\,048\,z^4 - 1\,080\,576\,z^3 + 2\,264\,976\,z^2 - 2\,794\,176\,z + 1\,091\,475\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 12\,\sqrt{z}\,\left(32\,768\,z^5 - 143\,360\,z^4 - 134\,400\,z^3 + 67\,536\,z^2 - 446\,292\,z + 363\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(65\,536\,z^5 - 294\,912\,z^4 - 258\,048\,z^3 + 80\,640\,z^2 + 116\,424\,z + 1\,091\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8675.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{15}{4}; -z\right) = \frac{1}{1\,091\,475\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\,\left(\left(-262\,144\,z^6 - 1\,376\,256\,z^5 + 258\,048\,z^4 + 1\,080\,576\,z^3 + 2\,264\,976\,z^2 + 2\,794\,176\,z + 1\,091\,475\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 12\,\sqrt{z}\,\left(32\,768\,z^5 + 143\,360\,z^4 - 134\,400\,z^3 - 67\,536\,z^2 - 446\,292\,z - 363\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 4\,z\left(65\,536\,z^5 + 294\,912\,z^4 - 258\,048\,z^3 - 80\,640\,z^2 + 116\,424\,z - 1\,091\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8676.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{13}{4}; z\right) = \frac{1}{368\,550} $$
$$ \left(e^{-2\sqrt{z}}\,\left(32\,768\,e^{4\sqrt{z}}\,z^5 + 32\,768\,z^5 + 8192\,e^{4\sqrt{z}}\,z^{9/2} - 8192\,z^{9/2} + 2048\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,(16\,z - 147)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{17/4} - \right.\right. $$
$$ 2048\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,(16\,z - 147)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{17/4} - 294\,912\,e^{4\sqrt{z}}\,z^4 - 294\,912\,z^4 - 67\,584\,e^{4\sqrt{z}}\,z^{7/2} + 67\,584\,z^{7/2} - $$
$$ \left.\left. 43\,008\,e^{4\sqrt{z}}\,z^3 - 43\,008\,z^3 - 40\,320\,e^{4\sqrt{z}}\,z^{5/2} + 40\,320\,z^{5/2} - 40\,320\,e^{4\sqrt{z}}\,z^2 - 40\,320\,z^2 - 7560\,e^{4\sqrt{z}}\,z^{3/2} + \right.\right. $$
$$ \left.\left. 7560\,z^{3/2} + 249\,480\,e^{4\sqrt{z}}\,z + 249\,480\,z - 368\,550\,e^{4\sqrt{z}}\,\sqrt{z} + 368\,550\,\sqrt{z} + 184\,275\,e^{4\sqrt{z}} + 184\,275\right)\right) $$

07.22.03.8677.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{13}{4}; -z\right) = $$
$$ \frac{1}{184\,275}\left(-4096\,\sqrt{\pi}\,(16\,z + 147)\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{17/4} - 2\left(4096\,z^4 + 33\,792\,z^3 - 20\,160\,z^2 + 3780\,z - 184\,275\right)\sin\left(2\,\sqrt{z}\right)\sqrt{z} - \right. $$
$$ \left.\left(32\,768\,z^5 + 294\,912\,z^4 - 43\,008\,z^3 + 40\,320\,z^2 + 249\,480\,z - 184\,275\right)\cos\left(2\,\sqrt{z}\right)\right) $$

07.22.03.8678.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{11}{4}; z\right) = $$
$$ \frac{1}{218\,295\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(131\,072\,z^6 - 1\,892\,352\,z^5 + 2\,580\,480\,z^4 - 701\,568\,z^3 + 613\,872\,z^2 - 603\,288\,z + 218\,295\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 12\,\sqrt{z}\,\left(16\,384\,z^5 - 222\,208\,z^4 + 139\,776\,z^3 - 47\,376\,z^2 + 104\,076\,z - 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 4\,z\left(32\,768\,z^5 - 448\,512\,z^4 + 322\,560\,z^3 - 58\,464\,z^2 + 21\,168\,z - 218\,295\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8679.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{11}{4}; -z\right) = \frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(131\,072 z^6 + 1\,892\,352 z^5 + 2\,580\,480 z^4 + 701\,568 z^3 + 613\,872 z^2 + 603\,288 z + 218\,295\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(16\,384 z^5 + 222\,208 z^4 + 139\,776 z^3 + 47\,376 z^2 + 104\,076 z + 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(32\,768 z^5 + 448\,512 z^4 + 322\,560 z^3 + 58\,464 z^2 + 21\,168 z + 218\,295\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8680.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) = \frac{1}{28\,350}\left(e^{-2\sqrt{z}}\left(-4096 e^{4\sqrt{z}} z^5 - 4096 z^5 - 1024 e^{4\sqrt{z}} z^{9/2} + 1024 z^{9/2} + 74\,496 e^{4\sqrt{z}} z^4 + 74\,496 z^4 + 17\,856 e^{4\sqrt{z}} z^{7/2} - 17\,856 z^{7/2} - 16 e^{2\sqrt{z}} \sqrt{2\pi}\left(256 z^2 - 4704 z + 7497\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} + 16 e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2 - 4704 z + 7497\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} - 107\,520 e^{4\sqrt{z}} z^3 - 107\,520 z^3 - 16\,128 e^{4\sqrt{z}} z^{5/2} + 16\,128 z^{5/2} - 2016 e^{4\sqrt{z}} z^2 - 2016 z^2 + 7560 e^{4\sqrt{z}} z^{3/2} - 7560 z^{3/2} + 15\,120 e^{4\sqrt{z}} z + 15\,120 z - 28\,350 e^{4\sqrt{z}}\sqrt{z} + 28\,350\sqrt{z} + 14\,175 e^{4\sqrt{z}} + 14\,175\right)\right) $$

07.22.03.8681.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) = \frac{1}{14\,175}\left(32\sqrt{\pi}\left(256 z^2 + 4704 z + 7497\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{13/4} + 2\left(512 z^4 + 8928 z^3 + 8064 z^2 + 3780 z + 14\,175\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(4096 z^5 + 74\,496 z^4 + 107\,520 z^3 - 2016 z^2 - 15\,120 z + 14\,175\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8682.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{7}{4}; z\right) = \frac{1}{99\,225\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-65\,536 z^6 + 1\,548\,288 z^5 - 4\,564\,224 z^4 + 1\,451\,520 z^3 + 529\,200 z^2 - 317\,520 z + 99\,225\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(8192 z^5 - 186\,368 z^4 + 413\,280 z^3 + 85\,680 z^2 - 61\,740 z + 33\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(16\,384 z^5 - 374\,784 z^4 + 866\,880 z^3 + 161\,280 z^2 - 52\,920 z + 99\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8683.01

$${}_1F_2\left(-\frac{21}{4};-\frac{5}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{99\,225\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-65\,536z^6-1\,548\,288z^5-4\,564\,224z^4-1\,451\,520z^3+529\,200z^2+317\,520z+99\,225\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(8192z^5+186\,368z^4+413\,280z^3-85\,680z^2-61\,740z-33\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4z\left(16\,384z^5+374\,784z^4+866\,880z^3-161\,280z^2-52\,920z-99\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8684.01

$${}_1F_2\left(-\frac{21}{4};-\frac{5}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{37\,800}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-112\,896z^2+359\,856z+97\,461\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left(4096z^3-112\,896z^2+359\,856z+97\,461\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+4\left(1024z^5-256z^{9/2}-28\,032z^4+6816z^{7/2}+\right.$$
$$85\,092z^3-16\,821z^{5/2}+32\,256z^2-9576z^{3/2}+1512z+9450\sqrt{z}+e^{4\sqrt{z}}\left(1024z^5+256z^{9/2}-28\,032z^4-\right.$$
$$\left.\left.\left.\left.6816z^{7/2}+85\,092z^3+16\,821z^{5/2}+32\,256z^2+9576z^{3/2}+1512z-9450\sqrt{z}+4725\right)+4725\right)\right)\right)$$

07.22.03.8685.01

$${}_1F_2\left(-\frac{21}{4};-\frac{5}{2},-\frac{5}{4};-z\right)=\frac{1}{9450}\left(-\sqrt{\pi}\left(4096z^3+112\,896z^2+359\,856z-97\,461\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}-\right.$$
$$2\left(\left(1024z^5+28\,032z^4+85\,092z^3-32\,256z^2+1512z-4725\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\sqrt{z}\left(256z^4+6816z^3+16\,821z^2-9576z-9450\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.8686.01

$${}_1F_2\left(-\frac{21}{4};-\frac{5}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{99\,225\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768z^6-1\,075\,200z^5+4\,878\,720z^4-736\,344z^3-952\,560z^2-476\,280z+99\,225\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(4096z^5-130\,816z^4+498\,288z^3+269\,955z^2+114\,660z-33\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4z\left(8192z^5-262\,656z^4+1\,026\,144z^3+490\,770z^2+211\,680z-99\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8687.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{3}{4}; -z\right) = \frac{1}{99\,225\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768 z^6 + 1\,075\,200 z^5 + 4\,878\,720 z^4 + 736\,344 z^3 - 952\,560 z^2 + 476\,280 z + 99\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(4096 z^5 + 130\,816 z^4 + 498\,288 z^3 - 269\,955 z^2 + 114\,660 z + 33\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8192 z^5 + 262\,656 z^4 + 1\,026\,144 z^3 - 490\,770 z^2 + 211\,680 z + 99\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8688.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{1}{4}; z\right) = \frac{1}{1\,935\,360}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 2\,408\,448 z^3 + 11\,515\,392 z^2 + 6\,237\,504 z + 4\,385\,745\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 2\,408\,448 z^3 + 11\,515\,392 z^2 + 6\,237\,504 z + 4\,385\,745\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} - 4\left(16\,384 z^5 - 4096 z^{9/2} - 599\,040 z^4 + 146\,688 z^{7/2} + 2\,772\,672 z^3 - 593\,712 z^{5/2} + 1\,893\,780 z^2 - 644\,049 z^{3/2} + 1\,548\,288 z - 483\,840\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^5 + 4096 z^{9/2} - 599\,040 z^4 - 146\,688 z^{7/2} + 2\,772\,672 z^3 + 593\,712 z^{5/2} + 1\,893\,780 z^2 + 644\,049 z^{3/2} + 1\,548\,288 z + 483\,840\sqrt{z} - 241\,920\right) - 241\,920\right)\right)\right) $$

07.22.03.8689.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, -\frac{1}{4}; -z\right) = \frac{1}{483\,840}\left(\sqrt{\pi}\left(65\,536 z^4 + 2\,408\,448 z^3 + 11\,515\,392 z^2 - 6\,237\,504 z + 4\,385\,745\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{5/4} + 2\left(4\left(4096 z^5 + 149\,760 z^4 + 693\,168 z^3 - 473\,445 z^2 + 387\,072 z + 60\,480\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\left(4096 z^4 + 146\,688 z^3 + 593\,712 z^2 - 644\,049 z + 483\,840\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8690.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, \frac{1}{4}; z\right) = \frac{1}{1\,190\,700\sqrt{2}\sqrt[4]{z}}\left(\left(-2\left(65\,536 z^6 - 2\,752\,512 z^5 + 16\,869\,888 z^4 + 1\,145\,088 z^3 + 1\,734\,453 z^2 - 7\,620\,480 z - 1\,190\,700\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(65\,536 z^5 - 2\,695\,168 z^4 + 14\,558\,208 z^3 + 12\,271\,392 z^2 + 14\,321\,475 z + 3\,175\,200\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(65\,536 z^5 - 2\,703\,360 z^4 + 14\,870\,016 z^3 + 11\,285\,568 z^2 + 12\,482\,505 z + 4\,762\,800\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8691.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) = -\frac{1}{1\,190\,700\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\left(65\,536 z^6 + 2\,752\,512 z^5 + 16\,869\,888 z^4 - 1\,145\,088 z^3 + 1\,734\,453 z^2 + 7\,620\,480 z - 1\,190\,700\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 3\sqrt{z}\left(65\,536 z^5 + 2\,695\,168 z^4 + 14\,558\,208 z^3 - 12\,271\,392 z^2 + 14\,321\,475 z - 3\,175\,200\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. \left. 2z\left(65\,536 z^5 + 2\,703\,360 z^4 + 14\,870\,016 z^3 - 11\,285\,568 z^2 + 12\,482\,505 z - 4\,762\,800\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8692.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, \frac{3}{4}; z\right) = $$
$$ \frac{1}{619\,315\,200}\left(e^{-2\sqrt{z}}\left(4\left(262\,144 z^5 - 65\,536 z^{9/2} - 11\,993\,088 z^4 + 2\,949\,120 z^{7/2} + 74\,618\,880 z^3 - 16\,611\,840 z^{5/2} + \right.\right.\right. $$
$$ 72\,495\,360 z^2 - 24\,635\,520 z^{3/2} + 108\,444\,420 z - 42\,529\,725\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(262\,144 z^5 + 65\,536 z^{9/2} - 11\,993\,088 z^4 - 2\,949\,120 z^{7/2} + 74\,618\,880 z^3 + 16\,611\,840 z^{5/2} + \right. $$
$$ \left.\left. 72\,495\,360 z^2 + 24\,635\,520 z^{3/2} + 108\,444\,420 z + 42\,529\,725\sqrt{z} + 77\,414\,400\right) + 77\,414\,400\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(1\,048\,576 z^5 - 48\,168\,960 z^4 + 307\,077\,120 z^3 + 249\,500\,160 z^2 + 350\,859\,600 z + 197\,358\,525\right) $$
$$ \left.\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\right.\right. $$
$$ \left.\left.\left(1\,048\,576 z^5 - 48\,168\,960 z^4 + 307\,077\,120 z^3 + 249\,500\,160 z^2 + 350\,859\,600 z + 197\,358\,525\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8693.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) = \frac{1}{154\,828\,800} $$
$$ \left(-\sqrt{\pi}\,\sqrt[4]{z}\left(1\,048\,576 z^5 + 48\,168\,960 z^4 + 307\,077\,120 z^3 - 249\,500\,160 z^2 + 350\,859\,600 z - 197\,358\,525\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$
$$ 2\left(4\left(65\,536 z^5 + 2\,998\,272 z^4 + 18\,654\,720 z^3 - 18\,123\,840 z^2 + 27\,111\,105 z - 19\,353\,600\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. \sqrt{z}\left(65\,536 z^4 + 2\,949\,120 z^3 + 16\,611\,840 z^2 - 24\,635\,520 z + 42\,529\,725\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8694.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, \frac{5}{4}; z\right) = \frac{1}{419\,126\,400\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(-2\left(1\,048\,576 z^6 - 53\,673\,984 z^5 + 414\,425\,088 z^4 + 127\,378\,944 z^3 + 325\,288\,656 z^2 - 68\,500\,971 z - 419\,126\,400\right)\right.\right. $$
$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(1\,048\,576 z^5 - 52\,756\,480 z^4 + 369\,008\,640 z^3 + 417\,618\,432 z^2 + 772\,356\,816 z + 779\,968\,035\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2z\left(1\,048\,576 z^5 - 52\,887\,552 z^4 + 375\,201\,792 z^3 + 388\,523\,520 z^2 + 692\,257\,104 z + 663\,398\,505\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8695.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, \frac{5}{4}; -z\right) = -\frac{1}{419\,126\,400\,\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\left(1\,048\,576\,z^6 + 53\,673\,984\,z^5 + 414\,425\,088\,z^4 - 127\,378\,944\,z^3 + 325\,288\,656\,z^2 + 68\,500\,971\,z - 419\,126\,400\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(1\,048\,576\,z^5 + 52\,756\,480\,z^4 + 369\,008\,640\,z^3 - 417\,618\,432\,z^2 + 772\,356\,816\,z - 779\,968\,035\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z $$
$$ \left.\left.\left(1\,048\,576\,z^5 + 52\,887\,552\,z^4 + 375\,201\,792\,z^3 - 388\,523\,520\,z^2 + 692\,257\,104\,z - 663\,398\,505\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8696.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) = $$
$$ \frac{1}{79\,272\,345\,600\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304\,z^{11/2} - 1\,048\,576\,z^5 - 230\,424\,576\,z^{9/2} + 56\,819\,712\,z^4 + 1\,800\,830\,976\,z^{7/2} - \right.\right.\right. $$
$$ 410\,296\,320\,z^3 + 2\,257\,274\,880\,z^{5/2} - 752\,048\,640\,z^2 + 4\,883\,215\,680\,z^{3/2} - 1\,865\,036\,880\,z + $$
$$ 6\,488\,162\,100\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2} + 1\,048\,576\,z^5 - 230\,424\,576\,z^{9/2} - 56\,819\,712\,z^4 + \right. $$
$$ 1\,800\,830\,976\,z^{7/2} + 410\,296\,320\,z^3 + 2\,257\,274\,880\,z^{5/2} + 752\,048\,640\,z^2 + $$
$$ \left.\left.\left.\left.4\,883\,215\,680\,z^{3/2} + 1\,865\,036\,880\,z + 6\,488\,162\,100\sqrt{z} + 2\,565\,660\,825\right) - 2\,565\,660\,825\right) + \right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6 - 924\,844\,032\,z^5 + 7\,369\,850\,880\,z^4 + 7\,984\,005\,120\,z^3 + \right. $$
$$ \left.16\,841\,260\,800\,z^2 + 18\,946\,418\,400\,z + 2\,565\,660\,825\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6 - 924\,844\,032\,z^5 + 7\,369\,850\,880\,z^4 + 7\,984\,005\,120\,z^3 + \right. $$
$$ \left.\left.16\,841\,260\,800\,z^2 + 18\,946\,418\,400\,z + 2\,565\,660\,825\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.8697.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, \frac{7}{4}; -z\right) = $$
$$ \frac{1}{19\,818\,086\,400\,z^{3/4}}\left(-\sqrt{\pi}\left(16\,777\,216\,z^6 + 924\,844\,032\,z^5 + 7\,369\,850\,880\,z^4 - 7\,984\,005\,120\,z^3 + 16\,841\,260\,800\,z^2 - \right.\right. $$
$$ \left.18\,946\,418\,400\,z + 2\,565\,660\,825\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z} $$
$$ \left(4\sqrt{z}\left(1\,048\,576\,z^5 + 57\,606\,144\,z^4 + 450\,207\,744\,z^3 - 564\,318\,720\,z^2 + 1\,220\,803\,920\,z - 1\,622\,040\,525\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left(1\,048\,576\,z^5 + 56\,819\,712\,z^4 + 410\,296\,320\,z^3 - 752\,048\,640\,z^2 + 1\,865\,036\,880\,z - 2\,565\,660\,825\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8698.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) = \frac{1}{34\,871\,316\,480\sqrt{2}\, z^{3/4}}\left(\left(-2\sqrt{z}\left(16\,777\,216 z^6 - 1\,012\,924\,416 z^5 + 9\,434\,234\,880 z^4 + 5\,256\,953\,856 z^3 + 17\,461\,737\,216 z^2 + 13\,421\,824\,416 z - 31\,831\,995\,195\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,777\,216 z^6 - 998\,244\,352 z^5 + 8\,572\,698\,624 z^4 + 12\,126\,191\,616 z^3 + 30\,560\,834\,304 z^2 + 49\,764\,274\,560 z + 5\,065\,535\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216 z^6 - 1\,000\,341\,504 z^5 + 8\,691\,056\,640 z^4 + 11\,386\,109\,952 z^3 + 28\,042\,350\,336 z^2 + 42\,226\,984\,800 z + 15\,196\,606\,425\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8699.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, \frac{9}{4}; -z\right) = \frac{1}{34\,871\,316\,480\sqrt{2}\, z^{3/4}}\left(\left(-2\sqrt{z}\left(16\,777\,216 z^6 + 1\,012\,924\,416 z^5 + 9\,434\,234\,880 z^4 - 5\,256\,953\,856 z^3 + 17\,461\,737\,216 z^2 - 13\,421\,824\,416 z - 31\,831\,995\,195\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,777\,216 z^6 + 998\,244\,352 z^5 + 8\,572\,698\,624 z^4 - 12\,126\,191\,616 z^3 + 30\,560\,834\,304 z^2 - 49\,764\,274\,560 z + 5\,065\,535\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(16\,777\,216 z^6 + 1\,000\,341\,504 z^5 + 8\,691\,056\,640 z^4 - 11\,386\,109\,952 z^3 + 28\,042\,350\,336 z^2 - 42\,226\,984\,800 z + 15\,196\,606\,425\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8700.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, \frac{11}{4}; z\right) = \frac{1}{5\,073\,430\,118\,400 z^{7/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(67\,108\,864 z^{13/2} - 16\,777\,216 z^6 - 4\,303\,355\,904 z^{11/2} + 1\,063\,256\,064 z^5 + 40\,489\,451\,520 z^{9/2} - 9\,368\,174\,592 z^4 + 62\,026\,481\,664 z^{7/2} - 20\,215\,480\,320 z^3 + 175\,714\,237\,440 z^{5/2} - 63\,706\,003\,200 z^2 + 330\,795\,480\,960 z^{3/2} - 147\,782\,063\,520 z + 174\,464\,936\,100\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 - 4\,303\,355\,904 z^{11/2} - 1\,063\,256\,064 z^5 + 40\,489\,451\,520 z^{9/2} + 9\,368\,174\,592 z^4 + 62\,026\,481\,664 z^{7/2} + 20\,215\,480\,320 z^3 + 175\,714\,237\,440 z^{5/2} + 63\,706\,003\,200 z^2 + 330\,795\,480\,960 z^{3/2} + 147\,782\,063\,520 z + 174\,464\,936\,100\sqrt{z} - 130\,848\,702\,075\right) + 130\,848\,702\,075\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 17\,263\,755\,264 z^6 + 165\,084\,659\,712 z^5 + 223\,552\,143\,360 z^4 + 628\,740\,403\,200 z^3 + 1\,060\,999\,430\,400 z^2 + 287\,354\,012\,400 z - 130\,848\,702\,075\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 17\,263\,755\,264 z^6 + 165\,084\,659\,712 z^5 + 223\,552\,143\,360 z^4 + 628\,740\,403\,200 z^3 + 1\,060\,999\,430\,400 z^2 + 287\,354\,012\,400 z - 130\,848\,702\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8701.01

$${}_1F_2\left(-\frac{21}{4};-\frac{5}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{1\,268\,357\,529\,600\,z^{7/4}}\left(-\sqrt{\pi}\,\left(268\,435\,456\,z^7+17\,263\,755\,264\,z^6+165\,084\,659\,712\,z^5-223\,552\,143\,360\,z^4+\right.\right.$$
$$\left.628\,740\,403\,200\,z^3-1\,060\,999\,430\,400\,z^2+287\,354\,012\,400\,z+130\,848\,702\,075\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+1\,075\,838\,976\,z^5+10\,122\,362\,880\,z^4-15\,506\,620\,416\,z^3+43\,928\,559\,360\,z^2-\right.\right.$$
$$82\,698\,870\,240\,z+43\,616\,234\,025\big)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6+1\,063\,256\,064\,z^5+9\,368\,174\,592\,z^4-\right.$$
$$\left.\left.\left.20\,215\,480\,320\,z^3+63\,706\,003\,200\,z^2-147\,782\,063\,520\,z-130\,848\,702\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.8702.01

$${}_1F_2\left(-\frac{21}{4};-\frac{5}{2},\frac{13}{4};z\right)=$$
$$\left(\left(-2\sqrt{z}\,\left(268\,435\,456\,z^7-18\,673\,041\,408\,z^6+203\,663\,867\,904\,z^5+165\,584\,240\,640\,z^4+672\,092\,467\,200\,z^3+\right.\right.\right.$$
$$\left.1\,008\,306\,351\,360\,z^2-1\,238\,431\,194\,000\,z-288\,735\,522\,075\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$3\left(268\,435\,456\,z^7-18\,438\,160\,384\,z^6+187\,721\,318\,400\,z^5+317\,977\,067\,520\,z^4+1\,014\,646\,026\,240\,z^3+\right.$$
$$2\,221\,835\,616\,000\,z^2+1\,377\,825\,649\,200\,z-481\,225\,870\,125\big)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(268\,435\,456\,z^7-\right.$$
$$18\,471\,714\,816\,z^6+189\,923\,328\,000\,z^5+300\,760\,104\,960\,z^4+946\,944\,552\,960\,z^3+1\,943\,349\,408\,000\,z^2+$$
$$\left.\left.\left.1\,053\,631\,378\,800\,z-1\,443\,677\,610\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(1\,859\,803\,545\,600\sqrt{2}\;z^{7/4}\right)$$

07.22.03.8703.01

$${}_1F_2\left(-\frac{21}{4};-\frac{5}{2},\frac{13}{4};-z\right)=$$
$$-\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+18\,673\,041\,408\,z^6+203\,663\,867\,904\,z^5-165\,584\,240\,640\,z^4+672\,092\,467\,200\,z^3-\right.\right.\right.$$
$$\left.1\,008\,306\,351\,360\,z^2-1\,238\,431\,194\,000\,z+288\,735\,522\,075\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\left(268\,435\,456\,z^7+18\,438\,160\,384\,z^6+187\,721\,318\,400\,z^5-317\,977\,067\,520\,z^4+1\,014\,646\,026\,240\,z^3-\right.$$
$$2\,221\,835\,616\,000\,z^2+1\,377\,825\,649\,200\,z+481\,225\,870\,125\big)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(268\,435\,456\,z^7+\right.$$
$$18\,471\,714\,816\,z^6+189\,923\,328\,000\,z^5-300\,760\,104\,960\,z^4+946\,944\,552\,960\,z^3-1\,943\,349\,408\,000\,z^2+$$
$$\left.\left.\left.1\,053\,631\,378\,800\,z+1\,443\,677\,610\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(1\,859\,803\,545\,600\sqrt{2}\;z^{7/4}\right)$$

07.22.03.8704.01

$$
{}_1F_2\left(-\frac{21}{4};-\frac{5}{2},\frac{15}{4};z\right)=
$$

$$
\left(11\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2}-268\,435\,456\,z^{7}-78\,718\,697\,472\,z^{13/2}+19\,478\,347\,776\,z^{6}+866\,094\,415\,872\,z^{11/2}-\right.\right.\right.
$$

$$
202\,606\,903\,296\,z^{5}+1\,566\,173\,822\,976\,z^{9/2}-500\,063\,993\,856\,z^{4}+5\,492\,232\,732\,672\,z^{7/2}-
$$

$$
1\,895\,549\,644\,800\,z^{3}+13\,311\,159\,321\,600\,z^{5/2}-5\,736\,133\,428\,480\,z^{2}+
$$

$$
10\,607\,468\,114\,880\,z^{3/2}-3\,768\,442\,619\,760\,z-25\,646\,345\,606\,700\,\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-78\,718\,697\,472\,z^{13/2}-19\,478\,347\,776\,z^{6}+866\,094\,415\,872\,z^{11/2}+\right.
$$

$$
202\,606\,903\,296\,z^{5}+1\,566\,173\,822\,976\,z^{9/2}+500\,063\,993\,856\,z^{4}+5\,492\,232\,732\,672\,z^{7/2}+
$$

$$
1\,895\,549\,644\,800\,z^{3}+13\,311\,159\,321\,600\,z^{5/2}+5\,736\,133\,428\,480\,z^{2}+10\,607\,468\,114\,880\,z^{3/2}+
$$

$$
\left.\left.3\,768\,442\,619\,760\,z-25\,646\,345\,606\,700\,\sqrt{z}\;+19\,234\,759\,205\,025\right)-19\,234\,759\,205\,025\right)+
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(4\,294\,967\,296\,z^{8}-315\,680\,096\,256\,z^{7}+3\,521\,806\,073\,856\,z^{6}+5\,722\,934\,870\,016\,z^{5}+\right.
$$

$$
20\,119\,692\,902\,400\,z^{4}+45\,269\,309\,030\,400\,z^{3}+18\,390\,656\,793\,600\,z^{2}-
$$

$$
\left.16\,748\,633\,865\,600\,z+19\,234\,759\,205\,025\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(4\,294\,967\,296\,z^{8}-315\,680\,096\,256\,z^{7}+3\,521\,806\,073\,856\,z^{6}+5\,722\,934\,870\,016\,z^{5}+\right.
$$

$$
20\,119\,692\,902\,400\,z^{4}+45\,269\,309\,030\,400\,z^{3}+18\,390\,656\,793\,600\,z^{2}-
$$

$$
\left.\left.\left.16\,748\,633\,865\,600\,z+19\,234\,759\,205\,025\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)\Big/\left(2\,597\,596\,220\,620\,800\,z^{11/4}\right)
$$

07.22.03.8705.01

$$
{}_1F_2\left(-\frac{21}{4};-\frac{5}{2},\frac{15}{4};-z\right)=
$$

$$
-\left(11\left(\sqrt{\pi}\,\left(4\,294\,967\,296\,z^{8}+315\,680\,096\,256\,z^{7}+3\,521\,806\,073\,856\,z^{6}-5\,722\,934\,870\,016\,z^{5}+20\,119\,692\,902\,400\,z^{4}-\right.\right.\right.
$$

$$
\left.45\,269\,309\,030\,400\,z^{3}+18\,390\,656\,793\,600\,z^{2}+16\,748\,633\,865\,600\,z+19\,234\,759\,205\,025\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$

$$
2\sqrt[4]{z}\left(4\sqrt{z}\,\left(268\,435\,456\,z^{7}+19\,679\,674\,368\,z^{6}+216\,523\,603\,968\,z^{5}-391\,543\,455\,744\,z^{4}+\right.\right.
$$

$$
\left.1\,373\,058\,183\,168\,z^{3}-3\,327\,789\,830\,400\,z^{2}+2\,651\,867\,028\,720\,z+6\,411\,586\,401\,675\right)\cos\left(2\sqrt{z}\right)+
$$

$$
\left(268\,435\,456\,z^{7}+19\,478\,347\,776\,z^{6}+202\,606\,903\,296\,z^{5}-500\,063\,993\,856\,z^{4}+\right.
$$

$$
1\,895\,549\,644\,800\,z^{3}-5\,736\,133\,428\,480\,z^{2}+3\,768\,442\,619\,760\,z-
$$

$$
\left.\left.\left.\left.19\,234\,759\,205\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)\Big/\left(649\,399\,055\,155\,200\,z^{11/4}\right)
$$

07.22.03.8706.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, \frac{17}{4}; z\right) = $$

$$ \left(\left(-2\sqrt{z}\left(4\,294\,967\,296\,z^8 - 338\,228\,674\,560\,z^7 + 4\,227\,858\,432\,000\,z^6 + 4\,534\,642\,409\,472\,z^5 + 21\,695\,973\,949\,440\,z^4 + 46\,741\,870\,264\,320\,z^3 - 34\,466\,719\,795\,200\,z^2 - 92\,395\,367\,064\,000\,z + 59\,768\,253\,069\,525\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(4\,294\,967\,296\,z^8 - 334\,470\,578\,176\,z^7 + 3\,938\,250\,129\,408\,z^6 + 7\,762\,744\,442\,880\,z^5 + 29\,999\,050\,260\,480\,z^4 + 82\,031\,046\,451\,200\,z^3 + 75\,213\,070\,732\,800\,z^2 - 224\,828\,726\,522\,400\,z + 99\,613\,755\,115\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4\,294\,967\,296\,z^8 - 335\,007\,449\,088\,z^7 + 3\,978\,414\,784\,512\,z^6 + 7\,385\,540\,198\,400\,z^5 + 28\,342\,712\,401\,920\,z^4 + 73\,735\,358\,054\,400\,z^3 + 49\,648\,036\,838\,400\,z^2 - 36\,958\,146\,825\,600\,z + 298\,841\,265\,347\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(77\,825\,625\,292\,800\sqrt{2}\; z^{11/4}\right) $$

07.22.03.8707.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, \frac{17}{4}; -z\right) = $$

$$ -\left(\left(2\sqrt{z}\left(4\,294\,967\,296\,z^8 + 338\,228\,674\,560\,z^7 + 4\,227\,858\,432\,000\,z^6 - 4\,534\,642\,409\,472\,z^5 + 21\,695\,973\,949\,440\,z^4 - 46\,741\,870\,264\,320\,z^3 - 34\,466\,719\,795\,200\,z^2 + 92\,395\,367\,064\,000\,z + 59\,768\,253\,069\,525\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4\,294\,967\,296\,z^8 + 334\,470\,578\,176\,z^7 + 3\,938\,250\,129\,408\,z^6 - 7\,762\,744\,442\,880\,z^5 + 29\,999\,050\,260\,480\,z^4 - 82\,031\,046\,451\,200\,z^3 + 75\,213\,070\,732\,800\,z^2 + 224\,828\,726\,522\,400\,z + 99\,613\,755\,115\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4\,294\,967\,296\,z^8 + 335\,007\,449\,088\,z^7 + 3\,978\,414\,784\,512\,z^6 - 7\,385\,540\,198\,400\,z^5 + 28\,342\,712\,401\,920\,z^4 - 73\,735\,358\,054\,400\,z^3 + 49\,648\,036\,838\,400\,z^2 + 36\,958\,146\,825\,600\,z + 298\,841\,265\,347\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(77\,825\,625\,292\,800\sqrt{2}\; z^{11/4}\right) $$

07.22.03.8708.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) = $$

$$ \left(11\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(17\,179\,869\,184\, z^{17/2} - 4\,294\,967\,296\, z^8 - 1\,417\,339\,207\,680\, z^{15/2} + 351\,113\,576\,448\, z^7 + \right.\right.\right. $$
$$ 17\,852\,836\,872\,192\, z^{13/2} - 4\,210\,946\,998\,272\, z^6 + 37\,194\,584\,555\,520\, z^{11/2} - 11\,660\,169\,314\,304\, z^5 + $$
$$ 155\,655\,115\,112\,448\, z^{9/2} - 51\,519\,716\,720\,640\, z^4 + 461\,424\,134\,062\,080\, z^{7/2} - 186\,466\,439\,577\,600\, z^3 + $$
$$ 440\,675\,166\,597\,120\, z^{5/2} - 315\,618\,700\,400\,640\, z^2 - 468\,961\,748\,236\,800\, z^{3/2} + 2\,872\,390\,707\,950\,400\, z + $$
$$ 7\,052\,745\,041\,842\,500\,\sqrt{z} + e^{4\sqrt{z}}\, \left(17\,179\,869\,184\, z^{17/2} + 4\,294\,967\,296\, z^8 - 1\,417\,339\,207\,680\, z^{15/2} - \right. $$
$$ 351\,113\,576\,448\, z^7 + 17\,852\,836\,872\,192\, z^{13/2} + 4\,210\,946\,998\,272\, z^6 + 37\,194\,584\,555\,520\, z^{11/2} + $$
$$ 11\,660\,169\,314\,304\, z^5 + 155\,655\,115\,112\,448\, z^{9/2} + 51\,519\,716\,720\,640\, z^4 + 461\,424\,134\,062\,080\, z^{7/2} + $$
$$ 186\,466\,439\,577\,600\, z^3 + 440\,675\,166\,597\,120\, z^{5/2} + 315\,618\,700\,400\,640\, z^2 - 468\,961\,748\,236\,800\, z^{3/2} - $$
$$ \left.\left.\left. 2\,872\,390\,707\,950\,400\, z + 7\,052\,745\,041\,842\,500\,\sqrt{z} - 5\,289\,558\,781\,381\,875\right) + 5\,289\,558\,781\,381\,875\right) + $$
$$ e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(68\,719\,476\,736\, z^9 - 5\,682\,241\,732\,608\, z^8 + 72\,448\,582\,090\,752\, z^7 + 137\,350\,436\,880\,384\, z^6 + \right. $$
$$ 579\,447\,155\,589\,120\, z^5 + 1\,629\,695\,125\,094\,400\, z^4 + 882\,751\,526\,092\,800\, z^3 - $$
$$ \left. 1\,205\,901\,638\,323\,200\, z^2 + 2\,769\,805\,325\,523\,600\, z - 5\,289\,558\,781\,381\,875\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(68\,719\,476\,736\, z^9 - 5\,682\,241\,732\,608\, z^8 + 72\,448\,582\,090\,752\, z^7 + 137\,350\,436\,880\,384\, z^6 + \right. $$
$$ 579\,447\,155\,589\,120\, z^5 + 1\,629\,695\,125\,094\,400\, z^4 + 882\,751\,526\,092\,800\, z^3 - 1\,205\,901\,638\,323\,200\, z^2 + $$
$$ \left. \left. 2\,769\,805\,325\,523\,600\, z - 5\,289\,558\,781\,381\,875\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\Big/ \left(99\,747\,694\,871\,838\,720\, z^{15/4}\right) $$

07.22.03.8709.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) = $$

$$ -\left(11\left(\sqrt{\pi}\, \left(68\,719\,476\,736\, z^9 + 5\,682\,241\,732\,608\, z^8 + 72\,448\,582\,090\,752\, z^7 - 137\,350\,436\,880\,384\, z^6 + \right.\right. \right. $$
$$ 579\,447\,155\,589\,120\, z^5 - 1\,629\,695\,125\,094\,400\, z^4 + 882\,751\,526\,092\,800\, z^3 + $$
$$ \left. 1\,205\,901\,638\,323\,200\, z^2 + 2\,769\,805\,325\,523\,600\, z + 5\,289\,558\,781\,381\,875\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\, \left(4\sqrt{z}\, \left(4\,294\,967\,296\, z^8 + 354\,334\,801\,920\, z^7 + 4\,463\,209\,218\,048\, z^6 - 9\,298\,646\,138\,880\, z^5 + \right. \right. $$
$$ 38\,913\,778\,778\,112\, z^4 - 115\,356\,033\,515\,520\, z^3 + 110\,168\,791\,649\,280\, z^2 + 117\,240\,437\,059\,200\, z + $$
$$ 1\,763\,186\,260\,460\,625\right) \cos\left(2\sqrt{z}\right) + \left(4\,294\,967\,296\, z^8 + 351\,113\,576\,448\, z^7 + 4\,210\,946\,998\,272\, z^6 - \right. $$
$$ 11\,660\,169\,314\,304\, z^5 + 51\,519\,716\,720\,640\, z^4 - 186\,466\,439\,577\,600\, z^3 + 315\,618\,700\,400\,640\, z^2 + $$
$$ \left. \left. \left. 2\,872\,390\,707\,950\,400\, z - 5\,289\,558\,781\,381\,875\right) \sin\left(2\sqrt{z}\right)\right)\right)\Big/ \left(24\,936\,923\,717\,959\,680\, z^{15/4}\right) $$

07.22.03.8710.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) = $$

$$ \left(\left(-2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 6\,043\,018\,985\,472\,z^8 + 85\,165\,980\,254\,208\,z^7 + 113\,661\,746\,085\,888\,z^6 + 625\,582\,075\,281\,408\right.\right.\right. $$

$$ z^5 + 1\,735\,233\,123\,778\,560\,z^4 - 715\,899\,185\,971\,200\,z^3 - $$

$$ \left.\left.\left. 5\,321\,973\,142\,886\,400\,z^2 + 27\,732\,469\,424\,259\,600\,z - 20\,978\,656\,827\,403\,275\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$

$$ 3\left(68\,719\,476\,736\,z^9 - 5\,982\,889\,443\,328\,z^8 + 79\,979\,807\,244\,288\,z^7 + 179\,709\,350\,510\,592\,z^6 + \right. $$

$$ 816\,133\,240\,258\,560\,z^5 + 2\,673\,612\,826\,214\,400\,z^4 + 2\,928\,493\,157\,990\,400\,z^3 - $$

$$ \left. 4\,336\,422\,560\,870\,400\,z^2 + 71\,084\,375\,650\,688\,400\,z - 34\,964\,428\,045\,672\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 5\,991\,479\,377\,920\,z^8 + 80\,701\,361\,750\,016\,z^7 + 171\,794\,799\,525\,888\,z^6 + \right. $$

$$ 778\,103\,653\,662\,720\,z^5 + 2\,454\,017\,281\,228\,800\,z^4 + 1\,945\,502\,447\,616\,000\,z^3 - 1\,351\,612\,226\,764\,800\,z^2 - $$

$$ \left.\left. 10\,519\,212\,540\,236\,400\,z - 104\,893\,284\,137\,016\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(2\,783\,410\,598\,707\,200\sqrt{2}\; z^{15/4}\right) $$

07.22.03.8711.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) = $$

$$ -\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 6\,043\,018\,985\,472\,z^8 + 85\,165\,980\,254\,208\,z^7 - 113\,661\,746\,085\,888\,z^6 + \right.\right.\right. $$

$$ 625\,582\,075\,281\,408\,z^5 - 1\,735\,233\,123\,778\,560\,z^4 - 715\,899\,185\,971\,200\,z^3 + $$

$$ \left.\left.\left. 5\,321\,973\,142\,886\,400\,z^2 + 27\,732\,469\,424\,259\,600\,z + 20\,978\,656\,827\,403\,275\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$

$$ 3\left(68\,719\,476\,736\,z^9 + 5\,982\,889\,443\,328\,z^8 + 79\,979\,807\,244\,288\,z^7 - 179\,709\,350\,510\,592\,z^6 + \right. $$

$$ 816\,133\,240\,258\,560\,z^5 - 2\,673\,612\,826\,214\,400\,z^4 + 2\,928\,493\,157\,990\,400\,z^3 + $$

$$ \left. 4\,336\,422\,560\,870\,400\,z^2 + 71\,084\,375\,650\,688\,400\,z + 34\,964\,428\,045\,672\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 5\,991\,479\,377\,920\,z^8 + 80\,701\,361\,750\,016\,z^7 - 171\,794\,799\,525\,888\,z^6 + \right. $$

$$ 778\,103\,653\,662\,720\,z^5 - 2\,454\,017\,281\,228\,800\,z^4 + 1\,945\,502\,447\,616\,000\,z^3 + 1\,351\,612\,226\,764\,800\,z^2 - $$

$$ \left.\left. 10\,519\,212\,540\,236\,400\,z + 104\,893\,284\,137\,016\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(2\,783\,410\,598\,707\,200\sqrt{2}\; z^{15/4}\right) $$

07.22.03.8712.01

$$
{}_1F_2\left(-\frac{21}{4};-\frac{5}{2},\frac{23}{4};z\right)=
$$

$$
\left(209\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(274\,877\,906\,944\,z^{19/2}-68\,719\,476\,736\,z^{9}-25\,202\,868\,092\,928\,z^{17/2}+6\,249\,177\,415\,680\,z^{8}+\right.\right.\right.
$$

$$
357\,620\,451\,901\,440\,z^{15/2}-84\,895\,397\,314\,560\,z^{7}+843\,119\,528\,509\,440\,z^{13/2}-
$$

$$
260\,076\,711\,444\,480\,z^{6}+4\,103\,128\,681\,021\,440\,z^{11/2}-1\,311\,828\,502\,118\,400\,z^{5}+
$$

$$
14\,393\,616\,039\,936\,000\,z^{9/2}-5\,458\,185\,260\,236\,800\,z^{4}+15\,464\,858\,237\,337\,600\,z^{7/2}-
$$

$$
12\,514\,808\,265\,523\,200\,z^{3}-6\,252\,823\,309\,824\,000\,z^{5/2}+57\,838\,615\,615\,872\,000\,z^{2}-
$$

$$
274\,049\,521\,625\,880\,000\,z^{3/2}-1\,608\,025\,869\,540\,090\,000\,z-3\,067\,944\,093\,201\,487\,500\,\sqrt{z}\,+
$$

$$
e^{4\sqrt{z}}\left(274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}-25\,202\,868\,092\,928\,z^{17/2}-6\,249\,177\,415\,680\,z^{8}+\right.
$$

$$
357\,620\,451\,901\,440\,z^{15/2}+84\,895\,397\,314\,560\,z^{7}+843\,119\,528\,509\,440\,z^{13/2}+260\,076\,711\,444\,480\,z^{6}+
$$

$$
4\,103\,128\,681\,021\,440\,z^{11/2}+1\,311\,828\,502\,118\,400\,z^{5}+14\,393\,616\,039\,936\,000\,z^{9/2}+
$$

$$
5\,458\,185\,260\,236\,800\,z^{4}+15\,464\,858\,237\,337\,600\,z^{7/2}+12\,514\,808\,265\,523\,200\,z^{3}-
$$

$$
6\,252\,823\,309\,824\,000\,z^{5/2}-57\,838\,615\,615\,872\,000\,z^{2}-274\,049\,521\,625\,880\,000\,z^{3/2}+
$$

$$
\left.1\,608\,025\,869\,540\,090\,000\,z-3\,067\,944\,093\,201\,487\,500\,\sqrt{z}\,+2\,300\,958\,069\,901\,115\,625\right)-
$$

$$
\left.2\,300\,958\,069\,901\,115\,625\right)+e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(1\,099\,511\,627\,776\,z^{10}-101\,017\,630\,801\,920\,z^{9}+\right.
$$

$$
1\,448\,971\,641\,815\,040\,z^{8}+3\,139\,438\,557\,265\,920\,z^{7}+15\,451\,924\,149\,043\,200\,z^{6}+
$$

$$
52\,150\,244\,003\,020\,800\,z^{5}+35\,310\,061\,043\,712\,000\,z^{4}-64\,314\,754\,043\,904\,000\,z^{3}+
$$

$$
\left.221\,584\,426\,041\,888\,000\,z^{2}-846\,329\,405\,021\,100\,000\,z+2\,300\,958\,069\,901\,115\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(1\,099\,511\,627\,776\,z^{10}-101\,017\,630\,801\,920\,z^{9}+1\,448\,971\,641\,815\,040\,z^{8}+\right.
$$

$$
3\,139\,438\,557\,265\,920\,z^{7}+15\,451\,924\,149\,043\,200\,z^{6}+52\,150\,244\,003\,020\,800\,z^{5}+
$$

$$
35\,310\,061\,043\,712\,000\,z^{4}-64\,314\,754\,043\,904\,000\,z^{3}+221\,584\,426\,041\,888\,000\,z^{2}-
$$

$$
\left.\left.\left.\left.846\,329\,405\,021\,100\,000\,z+2\,300\,958\,069\,901\,115\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(63\,838\,524\,717\,976\,780\,800\,z^{19/4}\right)
$$

07.22.03.8713.01

$$
{}_1F_2\left(-\frac{21}{4};-\frac{5}{2},\frac{23}{4};-z\right)=
$$

$$
-\left(209\left(\sqrt{\pi}\,\left(1\,099\,511\,627\,776\,z^{10}+101\,017\,630\,801\,920\,z^{9}+1\,448\,971\,641\,815\,040\,z^{8}-3\,139\,438\,557\,265\,920\,z^{7}+\right.\right.\right.
$$

$$
15\,451\,924\,149\,043\,200\,z^{6}-52\,150\,244\,003\,020\,800\,z^{5}+35\,310\,061\,043\,712\,000\,z^{4}+64\,314\,754\,043\,904\,000
$$

$$
\left.z^{3}+221\,584\,426\,041\,888\,000\,z^{2}+846\,329\,405\,021\,100\,000\,z+2\,300\,958\,069\,901\,115\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$

$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(68\,719\,476\,736\,z^{9}+6\,300\,717\,023\,232\,z^{8}+89\,405\,112\,975\,360\,z^{7}-210\,779\,882\,127\,360\,z^{6}+\right.\right.
$$

$$
1\,025\,782\,170\,255\,360\,z^{5}-3\,598\,404\,009\,984\,000\,z^{4}+3\,866\,214\,559\,334\,400\,z^{3}+
$$

$$
\left.1\,563\,205\,827\,456\,000\,z^{2}-68\,512\,380\,406\,470\,000\,z+766\,986\,023\,300\,371\,875\right)\cos\left(2\sqrt{z}\right)+
$$

$$
\left(68\,719\,476\,736\,z^{9}+6\,249\,177\,415\,680\,z^{8}+84\,895\,397\,314\,560\,z^{7}-260\,076\,711\,444\,480\,z^{6}+\right.
$$

$$
1\,311\,828\,502\,118\,400\,z^{5}-5\,458\,185\,260\,236\,800\,z^{4}+12\,514\,808\,265\,523\,200\,z^{3}+
$$

$$
57\,838\,615\,615\,872\,000\,z^{2}+1\,608\,025\,869\,540\,090\,000\,z-
$$

$$
\left.\left.\left.2\,300\,958\,069\,901\,115\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(15\,959\,631\,179\,494\,195\,200\,z^{19/4}\right)
$$

For fixed z and $a_1 = -\frac{21}{4}$, $b_{1.} = -\frac{3}{2}$

07.22.03.8714.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,049\,344\,065\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(-\left(2\,097\,152\,z^6 + 44\,040\,192\,z^5 + 391\,716\,864\,z^4 + 905\,490\,432\,z^3 - 2\,548\,521\,360\,z^2 + 2\,737\,419\,300\,z - 1\,049\,344\,065\right)\right.\right. $$
$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ 12\sqrt{z}\left(262\,144\,z^5 + 5\,734\,400\,z^4 + 54\,168\,576\,z^3 + 165\,876\,480\,z^2 - 446\,097\,960\,z + 349\,781\,355\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(524\,288\,z^5 + 11\,403\,264\,z^4 + 106\,702\,848\,z^3 + 312\,238\,080\,z^2 + 60\,831\,540\,z + 1\,049\,344\,065\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8715.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{23}{4}; -z\right) = $$
$$ \frac{1}{1\,049\,344\,065\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-2\,097\,152\,z^6 + 44\,040\,192\,z^5 - 391\,716\,864\,z^4 + 905\,490\,432\,z^3 + 2\,548\,521\,360\,z^2 + \right.\right.\right. $$
$$ \left. 2\,737\,419\,300\,z + 1\,049\,344\,065\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ 12\sqrt{z}\left(262\,144\,z^5 - 5\,734\,400\,z^4 + 54\,168\,576\,z^3 - 165\,876\,480\,z^2 - 446\,097\,960\,z - 349\,781\,355\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(-524\,288\,z^5 + 11\,403\,264\,z^4 - 106\,702\,848\,z^3 + 312\,238\,080\,z^2 - 60\,831\,540\,z + 1\,049\,344\,065\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8716.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{21}{4}; z\right) = \left(\frac{4z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right) $$

07.22.03.8717.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{21}{4}; -z\right) = \left(1 - \frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.8718.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{19}{4}; z\right) = \frac{1}{45\,623\,655\,\sqrt[4]{z}}\left(\sqrt{2}\right. $$
$$ \left(-\left(1\,048\,576\,z^6 + 6\,881\,280\,z^5 + 36\,900\,864\,z^4 + 54\,109\,440\,z^3 - 135\,750\,384\,z^2 + 124\,864\,740\,z - 45\,623\,655\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 12\sqrt{z}\left(131\,072\,z^5 + 974\,848\,z^4 + 5\,558\,784\,z^3 + 12\,928\,608\,z^2 - 21\,344\,400\,z + 15\,207\,885\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(262\,144\,z^5 + 1\,916\,928\,z^4 + 10\,773\,504\,z^3 + 22\,929\,984\,z^2 - 3\,201\,660\,z + 45\,623\,655\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8719.01

$$ {}_1F_2\left(-\frac{21}{4};-\frac{3}{2},-\frac{19}{4};-z\right)=\frac{1}{45\,623\,655\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left(\left(-1\,048\,576\,z^6+6\,881\,280\,z^5-36\,900\,864\,z^4+54\,109\,440\,z^3+135\,750\,384\,z^2+124\,864\,740\,z+45\,623\,655\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$12\sqrt{z}\left(131\,072\,z^5-974\,848\,z^4+5\,558\,784\,z^3-12\,928\,608\,z^2-21\,344\,400\,z-15\,207\,885\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(-262\,144\,z^5+1\,916\,928\,z^4-10\,773\,504\,z^3+22\,929\,984\,z^2+3\,201\,660\,z+45\,623\,655\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8720.01

$$ {}_1F_2\left(-\frac{21}{4};-\frac{3}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{13\,783\,770}\left(e^{-2\sqrt{z}}\left(262\,144\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}-262\,144\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+\right.\right.$$
$$262\,144\,e^{4\sqrt{z}}z^5+262\,144\,z^5+65\,536\,e^{4\sqrt{z}}z^{9/2}-65\,536\,z^{9/2}+49\,152\,e^{4\sqrt{z}}z^4+49\,152\,z^4+$$
$$61\,440\,e^{4\sqrt{z}}z^{7/2}-61\,440\,z^{7/2}+107\,520\,e^{4\sqrt{z}}z^3+107\,520\,z^3+241\,920\,e^{4\sqrt{z}}z^{5/2}-241\,920\,z^{5/2}+$$
$$665\,280\,e^{4\sqrt{z}}z^2+665\,280\,z^2+2\,162\,160\,e^{4\sqrt{z}}z^{3/2}-2\,162\,160\,z^{3/2}+8\,108\,100\,e^{4\sqrt{z}}z+$$
$$\left.\left.8\,108\,100\,z-13\,783\,770\,e^{4\sqrt{z}}\sqrt{z}+13\,783\,770\sqrt{z}+6\,891\,885\,e^{4\sqrt{z}}+6\,891\,885\right)\right)$$

07.22.03.8721.01

$$ {}_1F_2\left(-\frac{21}{4};-\frac{3}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{6\,891\,885}\left(-524\,288\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4}+2\left(-32\,768\,z^4+30\,720\,z^3-120\,960\,z^2+1\,081\,080\,z+6\,891\,885\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(-262\,144\,z^5+49\,152\,z^4-107\,520\,z^3+665\,280\,z^2-8\,108\,100\,z+6\,891\,885\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.8722.01

$$ {}_1F_2\left(-\frac{21}{4};-\frac{3}{2},-\frac{15}{4};z\right)=\frac{1}{2\,401\,245\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(524\,288\,z^6-4\,128\,768\,z^5-4\,730\,880\,z^4-3\,370\,752\,z^3+9\,546\,768\,z^2-7\,043\,652\,z+2\,401\,245\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(65\,536\,z^5-458\,752\,z^4-946\,176\,z^3-1\,271\,424\,z^2+1\,280\,664\,z-800\,415\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(-131\,072\,z^5+933\,888\,z^4+1\,827\,840\,z^3+2\,350\,656\,z^2-640\,332\,z+2\,401\,245\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8723.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{15}{4}; -z\right) = \frac{1}{2\,401\,245\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(524\,288 z^6 + 4\,128\,768 z^5 - 4\,730\,880 z^4 + 3\,370\,752 z^3 + 9\,546\,768 z^2 + 7\,043\,652 z + 2\,401\,245\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 12\sqrt{z}\left(65\,536 z^5 + 458\,752 z^4 - 946\,176 z^3 + 1\,271\,424 z^2 + 1\,280\,664 z + 800\,415\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. \left. 4 z\left(131\,072 z^5 + 933\,888 z^4 - 1\,827\,840 z^3 + 2\,350\,656 z^2 + 640\,332 z + 2\,401\,245\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8724.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{13}{4}; z\right) = \frac{1}{810\,810} $$
$$ \left(e^{-2\sqrt{z}}\left(-65\,536\, e^{4\sqrt{z}}\, z^5 - 65\,536 z^5 - 16\,384\, e^{4\sqrt{z}}\, z^{9/2} + 16\,384 z^{9/2} - 4096\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16 z - 231) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{17/4} + \right. \right. $$
$$ 4096\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16 z - 231) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{17/4} + 933\,888\, e^{4\sqrt{z}}\, z^4 + 933\,888 z^4 + $$
$$ 221\,184\, e^{4\sqrt{z}}\, z^{7/2} - 221\,184 z^{7/2} + 150\,528\, e^{4\sqrt{z}}\, z^3 + 150\,528 z^3 + 161\,280\, e^{4\sqrt{z}}\, z^{5/2} - $$
$$ 161\,280 z^{5/2} + 221\,760\, e^{4\sqrt{z}}\, z^2 + 221\,760 z^2 + 332\,640\, e^{4\sqrt{z}}\, z^{3/2} - 332\,640 z^{3/2} + $$
$$ \left. 374\,220\, e^{4\sqrt{z}}\, z + 374\,220 z - 810\,810\, e^{4\sqrt{z}}\, \sqrt{z} + 810\,810\sqrt{z} + 405\,405\, e^{4\sqrt{z}} + 405\,405\right)\Big) $$

07.22.03.8725.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{13}{4}; -z\right) = $$
$$ \frac{1}{405\,405}\left(8192\sqrt{\pi}\, (16 z + 231) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{17/4} + 2\left(8192 z^4 + 110\,592 z^3 - 80\,640 z^2 + 166\,320 z + 405\,405\right) \sin\left(2\sqrt{z}\right)\sqrt{z} + \right. $$
$$ \left. \left(65\,536 z^5 + 933\,888 z^4 - 150\,528 z^3 + 221\,760 z^2 - 374\,220 z + 405\,405\right) \cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8726.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{11}{4}; z\right) = \frac{1}{480\,249\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(-262\,144 z^6 + 5\,849\,088 z^5 - 14\,192\,640 z^4 + 1\,064\,448 z^3 + 3\,027\,024 z^2 - 1\,571\,724 z + 480\,249\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. \right. $$
$$ 12\sqrt{z}\left(32\,768 z^5 - 702\,464 z^4 + 1\,182\,720 z^3 + 554\,400 z^2 - 310\,464 z + 160\,083\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. \left. 4 z\left(65\,536 z^5 - 1\,413\,120 z^4 + 2\,515\,968 z^3 + 1\,153\,152 z^2 - 291\,060 z + 480\,249\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8727.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{11}{4}; -z\right) = \frac{1}{480\,249\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(-262\,144 z^6 - 5\,849\,088 z^5 - 14\,192\,640 z^4 - 1\,064\,448 z^3 + 3\,027\,024 z^2 + 1\,571\,724 z + 480\,249\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. \right. $$
$$ 12\sqrt{z}\left(32\,768 z^5 + 702\,464 z^4 + 1\,182\,720 z^3 - 554\,400 z^2 - 310\,464 z - 160\,083\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left. \left. 4z\left(65\,536 z^5 + 1\,413\,120 z^4 + 2\,515\,968 z^3 - 1\,153\,152 z^2 - 291\,060 z - 480\,249\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8728.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) = $$
$$ \frac{1}{62\,370}\left(e^{-2\sqrt{z}}\left(8192 e^{4\sqrt{z}} z^5 + 8192 z^5 + 2048 e^{4\sqrt{z}} z^{9/2} - 2048 z^{9/2} - 235\,008 e^{4\sqrt{z}} z^4 - 235\,008 z^4 - \right.\right. $$
$$ 57\,216 e^{4\sqrt{z}} z^{7/2} + 57\,216 z^{7/2} + 32 e^{2\sqrt{z}} \sqrt{2\pi}\left(256 z^2 - 7392 z + 27\,489\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} - $$
$$ 32 e^{2\sqrt{z}} \sqrt{2\pi}\left(256 z^2 - 7392 z + 27\,489\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} + 838\,656 e^{4\sqrt{z}} z^3 + 838\,656 z^3 + $$
$$ 172\,032 e^{4\sqrt{z}} z^{5/2} - 172\,032 z^{5/2} + 88\,704 e^{4\sqrt{z}} z^2 + 88\,704 z^2 + 55\,440 e^{4\sqrt{z}} z^{3/2} - 55\,440 z^{3/2} + $$
$$ \left.\left. 13\,860 e^{4\sqrt{z}} z + 13\,860 z - 62\,370 e^{4\sqrt{z}}\sqrt{z} + 62\,370\sqrt{z} + 31\,185 e^{4\sqrt{z}} + 31\,185\right)\right) $$

07.22.03.8729.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{9}{4}; -z\right) = $$
$$ \frac{1}{31\,185}\left(-64\sqrt{\pi}\left(256 z^2 + 7392 z + 27\,489\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{13/4} - 2\left(1024 z^4 + 28\,608 z^3 + 86\,016 z^2 - 27\,720 z - 31\,185\right)\right. $$
$$ \left. \sin\left(2\sqrt{z}\right)\sqrt{z} - \left(8192 z^5 + 235\,008 z^4 + 838\,656 z^3 - 88\,704 z^2 + 13\,860 z - 31\,185\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8730.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{7}{4}; z\right) = \frac{1}{218\,295\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(131\,072 z^6 - 4\,816\,896 z^5 + 29\,449\,728 z^4 - 26\,611\,200 z^3 + 3\,492\,720 z^2 - 873\,180 z + 218\,295\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 12\sqrt{z}\left(16\,384 z^5 - 587\,776 z^4 + 3\,178\,560 z^3 - 887\,040 z^2 + 194\,040 z - 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. \left. 4z\left(-32\,768 z^5 + 1\,179\,648 z^4 - 6\,491\,520 z^3 + 2\,217\,600 z^2 - 291\,060 z + 218\,295\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8731.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{7}{4}; -z\right) = \frac{1}{218\,295\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(131\,072 z^6 + 4\,816\,896 z^5 + 29\,449\,728 z^4 + 26\,611\,200 z^3 + 3\,492\,720 z^2 + 873\,180 z + 218\,295\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 12\sqrt{z}\left(16\,384 z^5 + 587\,776 z^4 + 3\,178\,560 z^3 + 887\,040 z^2 + 194\,040 z + 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. \left. 4z\left(32\,768 z^5 + 1\,179\,648 z^4 + 6\,491\,520 z^3 + 2\,217\,600 z^2 + 291\,060 z + 218\,295\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8732.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{5}{4}; z\right) = $$
$$ \frac{1}{41\,580}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-4096 z^3 + 177\,408 z^2 - 1\,319\,472 z + 1\,072\,071\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{9/4} + e^{2\sqrt{z}}\right.\right. $$
$$ \sqrt{2\pi}\left(4096 z^3 - 177\,408 z^2 + 1\,319\,472 z - 1\,072\,071\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{9/4} - $$
$$ 2\left(2048 z^5 - 512 z^{9/2} - 88\,320 z^4 + 21\,696 z^{7/2} + 643\,944 z^3 - 146\,034 z^{5/2} - 443\,520 z^2 + 44\,352 z^{3/2} + \right. $$
$$ 8316 z - 20\,790\sqrt{z} + e^{4\sqrt{z}}\left(2048 z^5 + 512 z^{9/2} - 88\,320 z^4 - 21\,696 z^{7/2} + 643\,944 z^3 + \right. $$
$$ \left.\left.\left. 146\,034 z^{5/2} - 443\,520 z^2 - 44\,352 z^{3/2} + 8316 z + 20\,790\sqrt{z} - 10\,395\right) - 10\,395\right)\right)\right) $$

07.22.03.8733.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{5}{4}; -z\right) = \frac{1}{10\,395} $$
$$ \left(\sqrt{\pi}\left(4096 z^3 + 177\,408 z^2 + 1\,319\,472 z + 1\,072\,071\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{9/4} + 2\left(256 z^4 + 10\,848 z^3 + 73\,017 z^2 + 22\,176 z + 10\,395\right)\right. $$
$$ \left.\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(2048 z^5 + 88\,320 z^4 + 643\,944 z^3 + 443\,520 z^2 + 8316 z + 10\,395\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8734.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{3}{4}; z\right) = \frac{1}{218\,295\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(-65\,536 z^6 + 3\,354\,624 z^5 - 32\,938\,752 z^4 + 56\,692\,944 z^3 - 15\,135\,120 z^2 - 1\,455\,300 z + 218\,295\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. \right. $$
$$ 12\sqrt{z}\left(8192 z^5 - 412\,160 z^4 + 3\,762\,528 z^3 - 4\,049\,430 z^2 - 388\,080 z + 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. \left. 4z\left(16\,384 z^5 - 826\,368 z^4 + 7\,621\,824 z^3 - 8\,773\,380 z^2 - 873\,180 z + 218\,295\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8735.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{3}{4}; -z\right) = -\frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536 z^6 + 3\,354\,624 z^5 + 32\,938\,752 z^4 + 56\,692\,944 z^3 + 15\,135\,120 z^2 - 1\,455\,300 z - 218\,295\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(8192 z^5 + 412\,160 z^4 + 3\,762\,528 z^3 + 4\,049\,430 z^2 - 388\,080 z - 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(16\,384 z^5 + 826\,368 z^4 + 7\,621\,824 z^3 + 8\,773\,380 z^2 - 873\,180 z - 218\,295\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8736.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{1}{4}; z\right) = \frac{1}{2\,128\,896}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 3\,784\,704 z^3 + 42\,223\,104 z^2 - 68\,612\,544 z - 9\,648\,639\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} + e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536 z^4 + 3\,784\,704 z^3 - 42\,223\,104 z^2 + 68\,612\,544 z + 9\,648\,639\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} + 4\left(16\,384 z^5 - 4096 z^{9/2} - 943\,104 z^4 + 232\,704 z^{7/2} + 10\,385\,088 z^3 - 2\,432\,304 z^{5/2} - 15\,520\,428 z^2 + 2\,552\,319 z^{3/2} - 3\,193\,344 z + 532\,224\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^5 + 4096 z^{9/2} - 943\,104 z^4 - 232\,704 z^{7/2} + 10\,385\,088 z^3 + 2\,432\,304 z^{5/2} - 15\,520\,428 z^2 - 2\,552\,319 z^{3/2} - 3\,193\,344 z - 532\,224\sqrt{z} + 266\,112\right) + 266\,112\right)\right)\right) $$

07.22.03.8737.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, -\frac{1}{4}; -z\right) = \frac{1}{532\,224}\left(-\sqrt{\pi}\left(65\,536 z^4 + 3\,784\,704 z^3 + 42\,223\,104 z^2 + 68\,612\,544 z - 9\,648\,639\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{5/4} - 2\left(4\left(4096 z^5 + 235\,776 z^4 + 2\,596\,272 z^3 + 3\,880\,107 z^2 - 798\,336 z - 66\,528\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\left(4096 z^4 + 232\,704 z^3 + 2\,432\,304 z^2 + 2\,552\,319 z - 532\,224\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8738.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{1}{4}; z\right) = \frac{1}{1\,309\,770\sqrt{2}\sqrt[4]{z}}\left(\left(2\left(65\,536 z^6 - 4\,300\,800 z^5 + 58\,189\,824 z^4 - 147\,581\,280 z^3 + 36\,193\,311 z^2 + 15\,717\,240 z + 1\,309\,770\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(65\,536 z^5 - 4\,243\,456 z^4 + 54\,523\,392 z^3 - 102\,586\,176 z^2 - 30\,488\,535 z - 3\,492\,720\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2 z\left(-65\,536 z^5 + 4\,251\,648 z^4 - 55\,028\,736 z^3 + 107\,974\,944 z^2 + 28\,596\,645 z + 5\,239\,080\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8739.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{1}{4}; -z\right) = \frac{1}{1\,309\,770\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\left(65\,536 z^6 + 4\,300\,800 z^5 + 58\,189\,824 z^4 + 147\,581\,280 z^3 + 36\,193\,311 z^2 - 15\,717\,240 z + 1\,309\,770\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\sqrt{z}\left(65\,536 z^5 + 4\,243\,456 z^4 + 54\,523\,392 z^3 + 102\,586\,176 z^2 - 30\,488\,535 z + 3\,492\,720\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2z\left(65\,536 z^5 + 4\,251\,648 z^4 + 55\,028\,736 z^3 + 107\,974\,944 z^2 - 28\,596\,645 z + 5\,239\,080\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8740.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{3}{4}; z\right) = $$
$$ \frac{1}{681\,246\,720}\left(e^{-2\sqrt{z}}\left(-4\left(262\,144 z^5 - 65\,536 z^{9/2} - 18\,874\,368 z^4 + 4\,669\,440 z^{7/2} + 278\,046\,720 z^3 - 66\,178\,560 z^{5/2} - \right.\right.\right. $$
$$ 640\,442\,880 z^2 + 120\,859\,200 z^{3/2} - 246\,084\,300 z + 70\,904\,295\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(262\,144 z^5 + 65\,536 z^{9/2} - 18\,874\,368 z^4 - 4\,669\,440 z^{7/2} + 278\,046\,720 z^3 + 66\,178\,560 z^{5/2} - \right. $$
$$ \left.\left. 640\,442\,880 z^2 - 120\,859\,200 z^{3/2} - 246\,084\,300 z - 70\,904\,295\sqrt{z} - 85\,155\,840\right) - 85\,155\,840\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(-1\,048\,576 z^5 + 75\,694\,080 z^4 - 1\,125\,949\,440 z^3 + 2\,744\,501\,760 z^2 - 771\,891\,120 z + 241\,215\,975\right) $$
$$ \left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\right.\right. $$
$$ \left.\left.\left(1\,048\,576 z^5 - 75\,694\,080 z^4 + 1\,125\,949\,440 z^3 - 2\,744\,501\,760 z^2 - 771\,891\,120 z - 241\,215\,975\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8741.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{3}{4}; -z\right) = \frac{1}{170\,311\,680} $$
$$ \left(\sqrt{\pi}\,\sqrt[4]{z}\left(1\,048\,576 z^5 + 75\,694\,080 z^4 + 1\,125\,949\,440 z^3 + 2\,744\,501\,760 z^2 - 771\,891\,120 z + 241\,215\,975\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ 2\left(4\left(65\,536 z^5 + 4\,718\,592 z^4 + 69\,511\,680 z^3 + 160\,110\,720 z^2 - 61\,521\,075 z + 21\,288\,960\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\sqrt{z}\left(65\,536 z^4 + 4\,669\,440 z^3 + 66\,178\,560 z^2 + 120\,859\,200 z - 70\,904\,295\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8742.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{5}{4}; z\right) = \frac{1}{461\,039\,040\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\left(1\,048\,576 z^6 - 83\,951\,616 z^5 + 1\,447\,649\,280 z^4 - 4\,849\,979\,904 z^3 + 832\,897\,296 z^2 + 571\,452\,651 z + 461\,039\,040\right)\right.\right. $$
$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(-1\,048\,576 z^5 + 83\,034\,112 z^4 - 1\,375\,739\,904 z^3 + 3\,700\,376\,064 z^2 + \right. $$
$$ \left. 1\,747\,989\,936 z + 891\,735\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(-1\,048\,576 z^5 + 83\,165\,184 z^4 - \right. $$
$$ \left.\left. 1\,385\,717\,760 z^3 + 3\,843\,721\,728 z^2 + 1\,607\,349\,744 z + 831\,049\,065\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.8743.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{5}{4}; -z\right) = \frac{1}{461\,039\,040\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\left(1\,048\,576 z^6 + 83\,951\,616 z^5 + 1\,447\,649\,280 z^4 + 4\,849\,979\,904 z^3 + 832\,897\,296 z^2 - 571\,452\,651 z + 461\,039\,040\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(1\,048\,576 z^5 + 83\,034\,112 z^4 + 1\,375\,739\,904 z^3 + 3\,700\,376\,064 z^2 - \right. $$
$$ \left. 1\,747\,989\,936 z + 891\,735\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(1\,048\,576 z^5 + 83\,165\,184 z^4 + \right. $$
$$ \left.\left. 1\,385\,717\,760 z^3 + 3\,843\,721\,728 z^2 - 1\,607\,349\,744 z + 831\,049\,065\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.8744.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{7}{4}; z\right) = $$
$$ \frac{1}{87\,199\,580\,160 z^{3/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(4\,194\,304 z^{11/2} - 1\,048\,576 z^5 - 362\,545\,152 z^{9/2} + 89\,849\,856 z^4 + 6\,689\,292\,288 z^{7/2} - \right.\right.\right. $$
$$ 1\,607\,639\,040 z^3 - 20\,827\,699\,200 z^{5/2} + 4\,206\,343\,680 z^2 - 11\,400\,903\,360 z^{3/2} + 3\,672\,511\,920 z - $$
$$ 8\,005\,355\,820\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 362\,545\,152 z^{9/2} - 89\,849\,856 z^4 + \right. $$
$$ 6\,689\,292\,288 z^{7/2} + 1\,607\,639\,040 z^3 - 20\,827\,699\,200 z^{5/2} - 4\,206\,343\,680 z^2 - $$
$$ \left.\left. 11\,400\,903\,360 z^{3/2} - 3\,672\,511\,920 z - 8\,005\,355\,820\sqrt{z} - 2\,170\,943\,775\right) + 2\,170\,943\,775\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 1\,453\,326\,336 z^5 + 27\,022\,786\,560 z^4 - 87\,824\,056\,320 z^3 - \right. $$
$$ \left. 37\,050\,773\,760 z^2 - 23\,156\,733\,600 z - 2\,170\,943\,775\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 1\,453\,326\,336 z^5 + 27\,022\,786\,560 z^4 - 87\,824\,056\,320 z^3 - \right. $$
$$ \left.\left. 37\,050\,773\,760 z^2 - 23\,156\,733\,600 z - 2\,170\,943\,775\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Bigg) $$

07.22.03.8745.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{7}{4}; -z\right) = $$
$$ \frac{1}{21\,799\,895\,040 z^{3/4}}\left(\sqrt{\pi}\left(16\,777\,216 z^6 + 1\,453\,326\,336 z^5 + 27\,022\,786\,560 z^4 + 87\,824\,056\,320 z^3 - 37\,050\,773\,760 z^2 + \right.\right. $$
$$ 23\,156\,733\,600 z - 2\,170\,943\,775\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576 z^5 + 90\,636\,288 z^4 + \right. $$
$$ 1\,672\,323\,072 z^3 + 5\,206\,924\,800 z^2 - 2\,850\,225\,840 z + 2\,001\,338\,955\right)\cos\left(2\sqrt{z}\right) + $$
$$ \left.\left.\left(1\,048\,576 z^5 + 89\,849\,856 z^4 + 1\,607\,639\,040 z^3 + 4\,206\,343\,680 z^2 - 3\,672\,511\,920 z + 2\,170\,943\,775\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8746.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{9}{4}; z\right) = \frac{1}{38\,358\,448\,128\sqrt{2}\, z^{3/4}} $$
$$ \left(\left(2\sqrt{z}\left(16\,777\,216 z^6 - 1\,585\,446\,912 z^5 + 33\,229\,701\,120 z^4 - 138\,361\,208\,832 z^3 + 10\,293\,744\,384 z^2 + \right.\right.\right. $$
$$ \left. 6\,005\,615\,616 z + 36\,129\,612\,519\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-16\,777\,216 z^6 + 1\,570\,766\,848 z^5 - 31\,867\,207\,680 z^4 + \right. $$
$$ \left. 111\,516\,303\,360 z^3 + 70\,888\,866\,048 z^2 + 61\,224\,587\,424 z + 3\,714\,726\,015\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\left(-16\,777\,216 z^6 + 1\,572\,864\,000 z^5 - 32\,057\,131\,008 z^4 + 114\,949\,029\,888 z^3 + \right. $$
$$ \left.\left. 65\,141\,556\,480 z^2 + 54\,014\,216\,256 z + 11\,144\,178\,045\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.8747.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) = $$
$$ \frac{1}{38\,358\,448\,128\sqrt{2}\, z^{3/4}}\left(\left(2\sqrt{z}\left(16\,777\,216 z^6 + 1\,585\,446\,912 z^5 + 33\,229\,701\,120 z^4 + 138\,361\,208\,832 z^3 + \right.\right.\right. $$
$$ \left. 10\,293\,744\,384 z^2 - 6\,005\,615\,616 z + 36\,129\,612\,519\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ 3\left(16\,777\,216 z^6 + 1\,570\,766\,848 z^5 + 31\,867\,207\,680 z^4 + 111\,516\,303\,360 z^3 - 70\,888\,866\,048 z^2 + 61\,224\,587\,424 z - \right. $$
$$ \left. 3\,714\,726\,015\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216 z^6 + 1\,572\,864\,000 z^5 + 32\,057\,131\,008 z^4 + \right. $$
$$ \left.\left. 114\,949\,029\,888 z^3 - 65\,141\,556\,480 z^2 + 54\,014\,216\,256 z - 11\,144\,178\,045\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.8748.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) = \frac{1}{5\,580\,773\,130\,240 z^{7/4}} $$
$$ \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(67\,108\,864 z^{13/2} - 16\,777\,216 z^6 - 6\,769\,606\,656 z^{11/2} + 1\,679\,818\,752 z^5 + 150\,083\,469\,312 z^{9/2} - \right.\right.\right. $$
$$ 36\,304\,257\,024 z^4 - 589\,005\,914\,112 z^{7/2} + 123\,930\,132\,480 z^3 - 414\,144\,783\,360 z^{5/2} + 138\,003\,022\,080 z^2 - $$
$$ 425\,008\,805\,760 z^{3/2} + 152\,834\,441\,760 z - 112\,889\,076\,300\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + \right. $$
$$ 16\,777\,216 z^6 - 6\,769\,606\,656 z^{11/2} - 1\,679\,818\,752 z^5 + 150\,083\,469\,312 z^{9/2} + 36\,304\,257\,024 z^4 - $$
$$ 589\,005\,914\,112 z^{7/2} - 123\,930\,132\,480 z^3 - 414\,144\,783\,360 z^{5/2} - 138\,003\,022\,080 z^2 - $$
$$ \left. 425\,008\,805\,760 z^{3/2} - 152\,834\,441\,760 z - 112\,889\,076\,300\sqrt{z} + 84\,666\,807\,225\right) - 84\,666\,807\,225\Big) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 27\,128\,758\,272 z^6 + 605\,310\,418\,944 z^5 - 2\,459\,073\,576\,960 z^4 - \right. $$
$$ \left. 1\,383\,228\,887\,040 z^3 - 1\,296\,777\,081\,600 z^2 - 243\,145\,702\,800 z + 84\,666\,807\,225\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 27\,128\,758\,272 z^6 + 605\,310\,418\,944 z^5 - 2\,459\,073\,576\,960 z^4 - \right. $$
$$ \left.\left.\left. 1\,383\,228\,887\,040 z^3 - 1\,296\,777\,081\,600 z^2 - 243\,145\,702\,800 z + 84\,666\,807\,225\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.8749.01

$${}_1F_2\left(-\frac{21}{4};-\frac{3}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{1\,395\,193\,282\,560\,z^{7/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+27\,128\,758\,272\,z^6+605\,310\,418\,944\,z^5+2\,459\,073\,576\,960\,z^4-\right.\right.$$
$$\left.1\,383\,228\,887\,040\,z^3+1\,296\,777\,081\,600\,z^2-243\,145\,702\,800\,z-84\,666\,807\,225\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+1\,692\,401\,664\,z^5+37\,520\,867\,328\,z^4+147\,251\,478\,528\,z^3-103\,536\,195\,840\,z^2+\right.\right.$$
$$106\,252\,201\,440\,z-28\,222\,269\,075\big)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6+1\,679\,818\,752\,z^5+36\,304\,257\,024\,z^4+\right.$$
$$\left.\left.\left.123\,930\,132\,480\,z^3-138\,003\,022\,080\,z^2+152\,834\,441\,760\,z+84\,666\,807\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.8750.01

$${}_1F_2\left(-\frac{21}{4};-\frac{3}{2},\frac{13}{4};z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-29\,242\,687\,488\,z^6+721\,576\,525\,824\,z^5-3\,591\,305\,625\,600\,z^4-129\,053\,675\,520\,z^3-\right.\right.\right.$$
$$\left.432\,035\,493\,120\,z^2+1\,629\,734\,586\,480\,z+167\,162\,670\,675\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$3\left(-268\,435\,456\,z^7+29\,007\,806\,464\,z^6-696\,385\,536\,000\,z^5+3\,001\,345\,966\,080\,z^4+2\,378\,303\,262\,720\,z^3+\right.$$
$$2\,833\,052\,302\,080\,z^2+891\,534\,243\,600\,z-278\,604\,451\,125\big)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-268\,435\,456\,z^7+29\,041\,360\,896\,z^6-699\,908\,751\,360\,z^5+3\,078\,099\,763\,200\,z^4+2\,193\,912\,483\,840\,z^3+\right.$$
$$\left.\left.\left.2\,489\,666\,699\,520\,z^2+891\,534\,243\,600\,z-835\,813\,353\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(2\,045\,783\,900\,160\sqrt{2}\,z^{7/4}\right)$$

07.22.03.8751.01

$${}_1F_2\left(-\frac{21}{4};-\frac{3}{2},\frac{13}{4};-z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+29\,242\,687\,488\,z^6+721\,576\,525\,824\,z^5+3\,591\,305\,625\,600\,z^4-129\,053\,675\,520\,z^3+\right.\right.\right.$$
$$\left.432\,035\,493\,120\,z^2+1\,629\,734\,586\,480\,z-167\,162\,670\,675\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\left(268\,435\,456\,z^7+29\,007\,806\,464\,z^6+696\,385\,536\,000\,z^5+3\,001\,345\,966\,080\,z^4-2\,378\,303\,262\,720\,z^3+\right.$$
$$2\,833\,052\,302\,080\,z^2-891\,534\,243\,600\,z-278\,604\,451\,125\big)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+29\,041\,360\,896\,z^6+699\,908\,751\,360\,z^5+3\,078\,099\,763\,200\,z^4-2\,193\,912\,483\,840\,z^3+\right.$$
$$\left.\left.\left.2\,489\,666\,699\,520\,z^2-891\,534\,243\,600\,z-835\,813\,353\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(2\,045\,783\,900\,160\sqrt{2}\,z^{7/4}\right)$$

07.22.03.8752.01

$$ {}_1F_2\left(-\frac{21}{4};-\frac{3}{2},\frac{15}{4};z\right)= \frac{1}{259\,759\,622\,062\,080\,z^{11/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2}-268\,435\,456\,z^7-123\,815\,854\,080\,z^{13/2}+30\,752\,636\,928\,z^6+3\,205\,509\,414\,912\,z^{11/2}-779\,004\,936\,192\,z^5-15\,180\,901\,908\,480\,z^{9/2}+3\,283\,472\,941\,056\,z^4-12\,974\,128\,054\,272\,z^{7/2}+4\,357\,552\,066\,560\,z^3-17\,334\,631\,480\,320\,z^{5/2}+6\,730\,890\,566\,400\,z^2-8\,308\,636\,015\,680\,z^{3/2}-90\,311\,261\,040\,z+13\,433\,800\,079\,700\sqrt{z}+e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^7-123\,815\,854\,080\,z^{13/2}-30\,752\,636\,928\,z^6+3\,205\,509\,414\,912\,z^{11/2}+779\,004\,936\,192\,z^5-15\,180\,901\,908\,480\,z^{9/2}-3\,283\,472\,941\,056\,z^4-12\,974\,128\,054\,272\,z^{7/2}-4\,357\,552\,066\,560\,z^3-17\,334\,631\,480\,320\,z^{5/2}-6\,730\,890\,566\,400\,z^2-8\,308\,636\,015\,680\,z^{3/2}+90\,311\,261\,040\,z+13\,433\,800\,079\,700\sqrt{z}-10\,075\,350\,059\,775\right)+10\,075\,350\,059\,775\right)- e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-496\,068\,722\,688\,z^7+12\,913\,288\,937\,472\,z^6-62\,952\,283\,570\,176\,z^5-44\,263\,324\,385\,280\,z^4-55\,329\,155\,481\,600\,z^3-15\,561\,324\,979\,200\,z^2+10\,837\,351\,324\,800\,z-10\,075\,350\,059\,775\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-496\,068\,722\,688\,z^7+12\,913\,288\,937\,472\,z^6-62\,952\,283\,570\,176\,z^5-44\,263\,324\,385\,280\,z^4-55\,329\,155\,481\,600\,z^3-15\,561\,324\,979\,200\,z^2+10\,837\,351\,324\,800\,z-10\,075\,350\,059\,775\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8753.01

$$ {}_1F_2\left(-\frac{21}{4};-\frac{3}{2},\frac{15}{4};-z\right)= \frac{1}{64\,939\,905\,515\,520\,z^{11/4}}\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^8+496\,068\,722\,688\,z^7+12\,913\,288\,937\,472\,z^6+62\,952\,283\,570\,176\,z^5-44\,263\,324\,385\,280\,z^4+55\,329\,155\,481\,600\,z^3-15\,561\,324\,979\,200\,z^2-10\,837\,351\,324\,800\,z-10\,075\,350\,059\,775\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^7+30\,953\,963\,520\,z^6+801\,377\,353\,728\,z^5+3\,795\,225\,477\,120\,z^4-3\,243\,532\,013\,568\,z^3+4\,333\,657\,870\,080\,z^2-2\,077\,159\,003\,920\,z-3\,358\,450\,019\,925\right)\cos\left(2\sqrt{z}\right)+\left(268\,435\,456\,z^7+30\,752\,636\,928\,z^6+779\,004\,936\,192\,z^5+3\,283\,472\,941\,056\,z^4-4\,357\,552\,066\,560\,z^3+6\,730\,890\,566\,400\,z^2+90\,311\,261\,040\,z+10\,075\,350\,059\,775\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8754.01

$${}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 529\,891\,590\,144\,z^7 + 15\,044\,834\,230\,272\,z^6 - 87\,110\,927\,253\,504\,z^5 - 13\,428\,735\,344\,640\,z^4 - 32\,573\,386\,137\,600\,z^3 + 55\,030\,849\,251\,840\,z^2 + 48\,142\,849\,154\,400\,z - 28\,584\,816\,685\,425\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4\,294\,967\,296\,z^8 - 526\,133\,493\,760\,z^7 + 14\,587\,520\,876\,544\,z^6 - 74\,700\,973\,670\,400\,z^5 - 70\,599\,414\,251\,520\,z^4 - 106\,240\,085\,360\,640\,z^3 - 57\,058\,191\,590\,400\,z^2 + 114\,116\,383\,180\,800\,z - 47\,641\,361\,142\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-4\,294\,967\,296\,z^8 + 526\,670\,364\,672\,z^7 - 14\,651\,643\,396\,096\,z^6 + 76\,335\,965\,798\,400\,z^5 + 65\,446\,009\,896\,960\,z^4 + 94\,150\,766\,223\,360\,z^3 - 44\,831\,436\,249\,600\,z^2 - 37\,444\,438\,231\,200\,z + 142\,924\,083\,427\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(85\,608\,187\,822\,080\,\sqrt{2}\,z^{11/4}\right)$$

07.22.03.8755.01

$${}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 529\,891\,590\,144\,z^7 + 15\,044\,834\,230\,272\,z^6 + 87\,110\,927\,253\,504\,z^5 - 13\,428\,735\,344\,640\,z^4 + 32\,573\,386\,137\,600\,z^3 + 55\,030\,849\,251\,840\,z^2 - 48\,142\,849\,154\,400\,z - 28\,584\,816\,685\,425\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4\,294\,967\,296\,z^8 + 526\,133\,493\,760\,z^7 + 14\,587\,520\,876\,544\,z^6 + 74\,700\,973\,670\,400\,z^5 - 70\,599\,414\,251\,520\,z^4 + 106\,240\,085\,360\,640\,z^3 - 57\,058\,191\,590\,400\,z^2 - 114\,116\,383\,180\,800\,z - 47\,641\,361\,142\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 526\,670\,364\,672\,z^7 + 14\,651\,643\,396\,096\,z^6 + 76\,335\,965\,798\,400\,z^5 - 65\,446\,009\,896\,960\,z^4 + 94\,150\,766\,223\,360\,z^3 - 44\,831\,436\,249\,600\,z^2 - 37\,444\,438\,231\,200\,z - 142\,924\,083\,427\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(85\,608\,187\,822\,080\,\sqrt{2}\,z^{11/4}\right)$$

07.22.03.8756.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) = $$

$$ \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(17\,179\,869\,184\,z^{17/2} - 4\,294\,967\,296\,z^8 - 2\,229\,088\,026\,624\,z^{15/2} + 554\,050\,781\,184\,z^7 + \right.\right.\right. $$
$$ 65\,999\,688\,695\,808\,z^{13/2} - 16\,095\,457\,050\,624\,z^6 - 366\,133\,597\,175\,808\,z^{11/2} + 80\,781\,691\,060\,224\,z^5 - $$
$$ 367\,412\,161\,019\,904\,z^{9/2} + 123\,066\,674\,970\,624\,z^4 - 602\,416\,528\,293\,888\,z^{7/2} + 237\,124\,952\,064\,000\,z^3 - $$
$$ 385\,328\,047\,104\,000\,z^{5/2} + 136\,791\,456\,721\,920\,z^2 + 515\,857\,923\,060\,480\,z^{3/2} - 1\,031\,715\,846\,120\,960\,z - $$
$$ 3\,103\,207\,818\,410\,700\sqrt{z} + e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2} + 4\,294\,967\,296\,z^8 - 2\,229\,088\,026\,624\,z^{15/2} - \right. $$
$$ 554\,050\,781\,184\,z^7 + 65\,999\,688\,695\,808\,z^{13/2} + 16\,095\,457\,050\,624\,z^6 - 366\,133\,597\,175\,808\,z^{11/2} - $$
$$ 80\,781\,691\,060\,224\,z^5 - 367\,412\,161\,019\,904\,z^{9/2} - 123\,066\,674\,970\,624\,z^4 - 602\,416\,528\,293\,888\,z^{7/2} - $$
$$ 237\,124\,952\,064\,000\,z^3 - 385\,328\,047\,104\,000\,z^{5/2} - 136\,791\,456\,721\,920\,z^2 + 515\,857\,923\,060\,480\,z^{3/2} + $$
$$ \left.\left.\left.\left.1\,031\,715\,846\,120\,960\,z - 3\,103\,207\,818\,410\,700\sqrt{z} + 2\,327\,405\,863\,808\,025\right) - 2\,327\,405\,863\,808\,025\right) - \right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9 - 8\,929\,237\,008\,384\,z^8 + 265\,644\,800\,999\,424\,z^7 - 1\,510\,854\,805\,684\,224\,z^6 - \right. $$
$$ 1\,274\,783\,742\,296\,064\,z^5 - 1\,991\,849\,597\,337\,600\,z^4 - 746\,943\,599\,001\,600\,z^3 + $$
$$ \left.780\,289\,295\,385\,600\,z^2 - 1\,450\,850\,408\,607\,600\,z + 2\,327\,405\,863\,808\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9 - 8\,929\,237\,008\,384\,z^8 + 265\,644\,800\,999\,424\,z^7 - 1\,510\,854\,805\,684\,224\,z^6 - \right. $$
$$ 1\,274\,783\,742\,296\,064\,z^5 - 1\,991\,849\,597\,337\,600\,z^4 - 746\,943\,599\,001\,600\,z^3 + 780\,289\,295\,385\,600\,z^2 - $$
$$ \left.\left.\left.1\,450\,850\,408\,607\,600\,z + 2\,327\,405\,863\,808\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) \Big/ \left(9\,974\,769\,487\,183\,872\,z^{15/4}\right) $$

07.22.03.8757.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{19}{4}; -z\right) = $$

$$ \left(\sqrt{\pi}\left(68\,719\,476\,736\,z^9 + 8\,929\,237\,008\,384\,z^8 + 265\,644\,800\,999\,424\,z^7 + 1\,510\,854\,805\,684\,224\,z^6 - 1\,274\,783\,742\,296\,064\right.\right. $$
$$ z^5 + 1\,991\,849\,597\,337\,600\,z^4 - 746\,943\,599\,001\,600\,z^3 - $$
$$ \left.780\,289\,295\,385\,600\,z^2 - 1\,450\,850\,408\,607\,600\,z - 2\,327\,405\,863\,808\,025\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^8 + 557\,272\,006\,656\,z^7 + 16\,499\,922\,173\,952\,z^6 + 91\,533\,399\,293\,952\,z^5 - \right.\right. $$
$$ 91\,853\,040\,254\,976\,z^4 + 150\,604\,132\,073\,472\,z^3 - 96\,332\,011\,776\,000\,z^2 - 128\,964\,480\,765\,120\,z - $$
$$ 775\,801\,954\,602\,675\right)\cos\left(2\sqrt{z}\right) + \left(4\,294\,967\,296\,z^8 + 554\,050\,781\,184\,z^7 + 16\,095\,457\,050\,624\,z^6 + \right. $$
$$ 80\,781\,691\,060\,224\,z^5 - 123\,066\,674\,970\,624\,z^4 + 237\,124\,952\,064\,000\,z^3 - 136\,791\,456\,721\,920\,z^2 - $$
$$ \left.\left.\left.1\,031\,715\,846\,120\,960\,z + 2\,327\,405\,863\,808\,025\right)\sin\left(2\sqrt{z}\right)\right)\right) \Big/ \left(2\,493\,692\,371\,795\,968\,z^{15/4}\right) $$

07.22.03.8758.01

$${}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 9\,470\,402\,887\,680\,z^8 + 304\,090\,127\,007\,744\,z^7 - 2\,007\,915\,665\,817\,600\,z^6 - \right.\right.\right.$$
$$557\,261\,996\,949\,504\,z^5 - 1\,440\,451\,227\,156\,480\,z^4 + 1\,530\,875\,829\,288\,960\,z^3 +$$
$$3\,252\,316\,920\,652\,800\,z^2 - 11\,942\,101\,193\,022\,000\,z + 8\,546\,860\,188\,942\,075\big)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 -$$
$$3\left(68\,719\,476\,736\,z^9 - 9\,410\,273\,345\,536\,z^8 + 295\,904\,993\,083\,392\,z^7 - 1\,755\,370\,179\,526\,656\,z^6 - \right.$$
$$1\,922\,292\,944\,732\,160\,z^5 - 3\,481\,618\,999\,541\,760\,z^4 - 2\,477\,955\,749\,068\,800\,z^3 +$$
$$4\,336\,422\,560\,870\,400\,z^2 - 30\,033\,114\,064\,153\,200\,z + 14\,244\,766\,981\,570\,125\big)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$2\sqrt{z}\,\left(-68\,719\,476\,736\,z^9 + 9\,418\,863\,280\,128\,z^8 - 297\,054\,970\,576\,896\,z^7 + 1\,788\,963\,333\,341\,184\,z^6 + \right.$$
$$1\,790\,752\,378\,060\,800\,z^5 + 3\,119\,920\,591\,011\,840\,z^4 + 1\,802\,149\,635\,686\,400\,z^3 - 1\,393\,850\,108\,851\,200\,z^2 -$$
$$\left.\left.\left.1\,067\,166\,489\,589\,200\,z - 42\,734\,300\,944\,710\,375\big)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(3\,061\,751\,658\,577\,920\,\sqrt{2}\;z^{15/4}\right)$$

07.22.03.8759.01

$${}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 9\,470\,402\,887\,680\,z^8 + 304\,090\,127\,007\,744\,z^7 + 2\,007\,915\,665\,817\,600\,z^6 - \right.\right.\right.$$
$$557\,261\,996\,949\,504\,z^5 + 1\,440\,451\,227\,156\,480\,z^4 + 1\,530\,875\,829\,288\,960\,z^3 -$$
$$3\,252\,316\,920\,652\,800\,z^2 - 11\,942\,101\,193\,022\,000\,z - 8\,546\,860\,188\,942\,075\big)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 -$$
$$3\left(68\,719\,476\,736\,z^9 + 9\,410\,273\,345\,536\,z^8 + 295\,904\,993\,083\,392\,z^7 + 1\,755\,370\,179\,526\,656\,z^6 - \right.$$
$$1\,922\,292\,944\,732\,160\,z^5 + 3\,481\,618\,999\,541\,760\,z^4 - 2\,477\,955\,749\,068\,800\,z^3 -$$
$$4\,336\,422\,560\,870\,400\,z^2 - 30\,033\,114\,064\,153\,200\,z - 14\,244\,766\,981\,570\,125\big)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 9\,418\,863\,280\,128\,z^8 + 297\,054\,970\,576\,896\,z^7 + 1\,788\,963\,333\,341\,184\,z^6 - \right.$$
$$1\,790\,752\,378\,060\,800\,z^5 + 3\,119\,920\,591\,011\,840\,z^4 - 1\,802\,149\,635\,686\,400\,z^3 - 1\,393\,850\,108\,851\,200\,z^2 +$$
$$\left.\left.\left.1\,067\,166\,489\,589\,200\,z - 42\,734\,300\,944\,710\,375\big)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(3\,061\,751\,658\,577\,920\,\sqrt{2}\;z^{15/4}\right)$$

07.22.03.8760.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) =
$$

$$
-\Big(19\, e^{-2\sqrt{z}} \Big(4\sqrt[4]{z}\, \Big(274\,877\,906\,944\, z^{19/2} - 68\,719\,476\,736\, z^9 - 39\,633\,958\,207\,488\, z^{17/2} + 9\,856\,949\,944\,320\, z^8 +
$$

$$
1\,320\,895\,717\,048\,320\, z^{15/2} - 323\,008\,384\,204\,800\, z^7 - 8\,399\,993\,689\,866\,240\, z^{13/2} +
$$

$$
1\,881\,418\,141\,532\,160\, z^6 - 9\,664\,765\,467\,033\,600\, z^{11/2} + 3\,213\,544\,327\,741\,440\, z^5 -
$$

$$
18\,754\,357\,053\,358\,080\, z^{9/2} + 7\,303\,448\,523\,571\,200\, z^4 - 14\,369\,772\,095\,078\,400\, z^{7/2} +
$$

$$
7\,765\,842\,180\,096\,000\, z^3 + 13\,756\,211\,281\,612\,800\, z^{5/2} - 44\,707\,686\,665\,241\,600\, z^2 +
$$

$$
35\,465\,232\,210\,408\,000\, z^{3/2} + 558\,577\,407\,313\,926\,000\, z + 1\,163\,702\,931\,904\,012\,500\sqrt{z} +
$$

$$
e^{4\sqrt{z}} \Big(274\,877\,906\,944\, z^{19/2} + 68\,719\,476\,736\, z^9 - 39\,633\,958\,207\,488\, z^{17/2} -
$$

$$
9\,856\,949\,944\,320\, z^8 + 1\,320\,895\,717\,048\,320\, z^{15/2} + 323\,008\,384\,204\,800\, z^7 -
$$

$$
8\,399\,993\,689\,866\,240\, z^{13/2} - 1\,881\,418\,141\,532\,160\, z^6 - 9\,664\,765\,467\,033\,600\, z^{11/2} -
$$

$$
3\,213\,544\,327\,741\,440\, z^5 - 18\,754\,357\,053\,358\,080\, z^{9/2} - 7\,303\,448\,523\,571\,200\, z^4 -
$$

$$
14\,369\,772\,095\,078\,400\, z^{7/2} - 7\,765\,842\,180\,096\,000\, z^3 + 13\,756\,211\,281\,612\,800\, z^{5/2} +
$$

$$
44\,707\,686\,665\,241\,600\, z^2 + 35\,465\,232\,210\,408\,000\, z^{3/2} - 558\,577\,407\,313\,926\,000\, z +
$$

$$
1\,163\,702\,931\,904\,012\,500\sqrt{z} - 872\,777\,198\,928\,009\,375\Big) + 872\,777\,198\,928\,009\,375\Big) +
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\, \Big(1\,099\,511\,627\,776\, z^{10} - 158\,741\,991\,260\,160\, z^9 + 5\,312\,896\,019\,988\,480\, z^8 -
$$

$$
34\,533\,824\,129\,925\,120\, z^7 - 33\,994\,233\,127\,895\,040\, z^6 - 63\,739\,187\,114\,803\,200\, z^5 -
$$

$$
29\,877\,743\,960\,064\,000\, z^4 + 41\,615\,429\,087\,232\,000\, z^3 - 116\,068\,032\,688\,608\,000\, z^2 +
$$

$$
372\,384\,938\,209\,284\,000\, z - 872\,777\,198\,928\,009\,375\Big) \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) -
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\, \Big(1\,099\,511\,627\,776\, z^{10} - 158\,741\,991\,260\,160\, z^9 + 5\,312\,896\,019\,988\,480\, z^8 -
$$

$$
34\,533\,824\,129\,925\,120\, z^7 - 33\,994\,233\,127\,895\,040\, z^6 - 63\,739\,187\,114\,803\,200\, z^5 -
$$

$$
29\,877\,743\,960\,064\,000\, z^4 + 41\,615\,429\,087\,232\,000\, z^3 - 116\,068\,032\,688\,608\,000\, z^2 +
$$

$$
372\,384\,938\,209\,284\,000\, z - 872\,777\,198\,928\,009\,375\Big) \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\Big)\Big) \Big/ \left(6\,383\,852\,471\,797\,678\,080\, z^{19/4}\right)
$$

07.22.03.8761.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) =
$$

$$
\Bigg(19\Bigg(\sqrt{\pi}\, \Big(1\,099\,511\,627\,776\, z^{10} + 158\,741\,991\,260\,160\, z^9 + 5\,312\,896\,019\,988\,480\, z^8 + 34\,533\,824\,129\,925\,120\, z^7 -
$$

$$
33\,994\,233\,127\,895\,040\, z^6 + 63\,739\,187\,114\,803\,200\, z^5 - 29\,877\,743\,960\,064\,000\, z^4 - 41\,615\,429\,087\,232\,000
$$

$$
z^3 - 116\,068\,032\,688\,608\,000\, z^2 - 372\,384\,938\,209\,284\,000\, z - 872\,777\,198\,928\,009\,375\Big) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) +
$$

$$
2\sqrt[4]{z}\, \Big(4\sqrt{z}\, \Big(68\,719\,476\,736\, z^9 + 9\,908\,489\,551\,872\, z^8 + 330\,223\,929\,262\,080\, z^7 + 2\,099\,998\,422\,466\,560\, z^6 -
$$

$$
2\,416\,191\,366\,758\,400\, z^5 + 4\,688\,589\,263\,339\,520\, z^4 - 3\,592\,443\,023\,769\,600\, z^3 -
$$

$$
3\,439\,052\,820\,403\,200\, z^2 + 8\,866\,308\,052\,602\,000\, z - 290\,925\,732\,976\,003\,125\Big) \cos\left(2\sqrt{z}\right) +
$$

$$
\Big(68\,719\,476\,736\, z^9 + 9\,856\,949\,944\,320\, z^8 + 323\,008\,384\,204\,800\, z^7 + 1\,881\,418\,141\,532\,160\, z^6 -
$$

$$
3\,213\,544\,327\,741\,440\, z^5 + 7\,303\,448\,523\,571\,200\, z^4 - 7\,765\,842\,180\,096\,000\, z^3 -
$$

$$
44\,707\,686\,665\,241\,600\, z^2 - 558\,577\,407\,313\,926\,000\, z +
$$

$$
872\,777\,198\,928\,009\,375\Big) \sin\left(2\sqrt{z}\right)\Big)\Bigg)\Bigg) \Big/ \left(1\,595\,963\,117\,949\,419\,520\, z^{19/4}\right)
$$

For fixed z and $a_1 = -\frac{21}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.8762.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) =
\frac{1}{5\,246\,720\,325\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4\,194\,304\,z^6 + 121\,110\,528\,z^5 + 1\,726\,857\,216\,z^4 + 10\,772\,213\,760\,z^3 + 14\,087\,304\,000\,z^2 - 20\,074\,408\,200\,z + 5\,246\,720\,325\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(524\,288\,z^5 + 15\,597\,568\,z^4 + 229\,877\,760\,z^3 + 1\,561\,190\,400\,z^2 + 4\,359\,593\,700\,z - 1\,748\,906\,775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(1\,048\,576\,z^5 + 31\,064\,064\,z^4 + 455\,454\,720\,z^3 + 3\,049\,804\,800\,z^2 + 6\,083\,154\,000\,z - 5\,246\,720\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)
$$

07.22.03.8763.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) =
\frac{1}{5\,246\,720\,325\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4\,194\,304\,z^6 - 121\,110\,528\,z^5 + 1\,726\,857\,216\,z^4 - 10\,772\,213\,760\,z^3 + 14\,087\,304\,000\,z^2 + 20\,074\,408\,200\,z + 5\,246\,720\,325\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(524\,288\,z^5 - 15\,597\,568\,z^4 + 229\,877\,760\,z^3 - 1\,561\,190\,400\,z^2 + 4\,359\,593\,700\,z + 1\,748\,906\,775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(1\,048\,576\,z^5 - 31\,064\,064\,z^4 + 455\,454\,720\,z^3 - 3\,049\,804\,800\,z^2 + 6\,083\,154\,000\,z + 5\,246\,720\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)
$$

07.22.03.8764.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)
$$

07.22.03.8765.01

$$
{}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{21}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)
$$

07.22.03.8766.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{19}{4}; z\right) = \frac{1}{228\,118\,275\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2\,097\,152 z^6 + 19\,267\,584 z^5 + 166\,699\,008 z^4 + 729\,146\,880 z^3 + 589\,105\,440 z^2 - 960\,498\,000 z + 228\,118\,275\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(262\,144 z^5 + 2\,637\,824 z^4 + 23\,331\,840 z^3 + 114\,649\,920 z^2 + 218\,780\,100 z - 76\,039\,425\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(524\,288 z^5 + 5\,210\,112 z^4 + 45\,803\,520 z^3 + 219\,864\,960 z^2 + 352\,182\,600 z - 228\,118\,275\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8767.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{19}{4}; -z\right) = \frac{1}{228\,118\,275\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2\,097\,152 z^6 - 19\,267\,584 z^5 + 166\,699\,008 z^4 - 729\,146\,880 z^3 + 589\,105\,440 z^2 + 960\,498\,000 z + 228\,118\,275\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(262\,144 z^5 - 2\,637\,824 z^4 + 23\,331\,840 z^3 - 114\,649\,920 z^2 + 218\,780\,100 z + 76\,039\,425\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(524\,288 z^5 - 5\,210\,112 z^4 + 45\,803\,520 z^3 - 219\,864\,960 z^2 + 352\,182\,600 z + 228\,118\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8768.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{17}{4}; z\right) = \frac{1}{68\,918\,850}\left(e^{-2\sqrt{z}}\left(-524\,288 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{21/4} + 524\,288 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{21/4} - 524\,288 e^{4\sqrt{z}} z^5 - 524\,288 z^5 - 131\,072 e^{4\sqrt{z}} z^{9/2} + 131\,072 z^{9/2} - 98\,304 e^{4\sqrt{z}} z^4 - 98\,304 z^4 - 122\,880 e^{4\sqrt{z}} z^{7/2} + 122\,880 z^{7/2} - 215\,040 e^{4\sqrt{z}} z^3 - 215\,040 z^3 - 483\,840 e^{4\sqrt{z}} z^{5/2} + 483\,840 z^{5/2} - 1\,330\,560 e^{4\sqrt{z}} z^2 - 1\,330\,560 z^2 - 4\,324\,320 e^{4\sqrt{z}} z^{3/2} + 4\,324\,320 z^{3/2} - 16\,216\,200 e^{4\sqrt{z}} z - 16\,216\,200 z - 68\,918\,850 e^{4\sqrt{z}}\sqrt{z} + 68\,918\,850\sqrt{z} + 34\,459\,425 e^{4\sqrt{z}} + 34\,459\,425\right)\right) $$

07.22.03.8769.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) = \frac{1}{34\,459\,425}\left(1\,048\,576\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{21/4} + 2\left(65\,536 z^4 - 61\,440 z^3 + 241\,920 z^2 - 2\,162\,160 z + 34\,459\,425\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(524\,288 z^5 - 98\,304 z^4 + 215\,040 z^3 - 1\,330\,560 z^2 + 16\,216\,200 z + 34\,459\,425\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8770.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) = \frac{1}{12\,006\,225\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\,\left(\left(-1\,048\,576\,z^6 + 11\,010\,048\,z^5 + 23\,740\,416\,z^4 + 63\,866\,880\,z^3 + 23\,284\,800\,z^2 - 57\,629\,880\,z + 12\,006\,225\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 12\,\sqrt{z}\,\left(131\,072\,z^5 - 1\,261\,568\,z^4 - 3\,978\,240\,z^3 - 11\,753\,280\,z^2 - 13\,873\,860\,z + 4\,002\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(262\,144\,z^5 - 2\,555\,904\,z^4 - 7\,741\,440\,z^3 - 22\,337\,280\,z^2 - 25\,613\,280\,z + 12\,006\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8771.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) = \frac{1}{12\,006\,225\,\sqrt[4]{z}} \left(\sqrt{2}\right. $$
$$ \left(\left(-1\,048\,576\,z^6 - 11\,010\,048\,z^5 + 23\,740\,416\,z^4 - 63\,866\,880\,z^3 + 23\,284\,800\,z^2 + 57\,629\,880\,z + 12\,006\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 12\,\sqrt{z}\,\left(131\,072\,z^5 + 1\,261\,568\,z^4 - 3\,978\,240\,z^3 + 11\,753\,280\,z^2 - 13\,873\,860\,z - 4\,002\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 4\,z\left(262\,144\,z^5 + 2\,555\,904\,z^4 - 7\,741\,440\,z^3 + 22\,337\,280\,z^2 - 25\,613\,280\,z - 12\,006\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8772.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) = $$
$$ \frac{1}{4\,054\,050}\left(e^{-2\sqrt{z}}\left(131\,072\,e^{4\sqrt{z}}\,z^5 + 131\,072\,z^5 + 32\,768\,e^{4\sqrt{z}}\,z^{9/2} - 32\,768\,z^{9/2} + 8192\,e^{2\sqrt{z}}\,\sqrt{2\pi}\right.\right. $$
$$ (16\,z - 315)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{17/4} - 8192\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z - 315)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{17/4} - $$
$$ 2\,555\,904\,e^{4\sqrt{z}}\,z^4 - 2\,555\,904\,z^4 - 614\,400\,e^{4\sqrt{z}}\,z^{7/2} + 614\,400\,z^{7/2} - 430\,080\,e^{4\sqrt{z}}\,z^3 - 430\,080\,z^3 - $$
$$ 483\,840\,e^{4\sqrt{z}}\,z^{5/2} + 483\,840\,z^{5/2} - 725\,760\,e^{4\sqrt{z}}\,z^2 - 725\,760\,z^2 - 1\,300\,320\,e^{4\sqrt{z}}\,z^{3/2} + 1\,300\,320\,z^{3/2} - $$
$$ \left.\left. 2\,494\,800\,e^{4\sqrt{z}}\,z - 2\,494\,800\,z - 4\,054\,050\,e^{4\sqrt{z}}\,\sqrt{z} + 4\,054\,050\,\sqrt{z} + 2\,027\,025\,e^{4\sqrt{z}} + 2\,027\,025\right)\right) $$

07.22.03.8773.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) = \frac{1}{2\,027\,025} $$
$$ \left(-16\,384\,\sqrt{\pi}\,(16\,z + 315)\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{17/4} - 2\left(16\,384\,z^4 + 307\,200\,z^3 - 241\,920\,z^2 + 650\,160\,z - 2\,027\,025\right)\sin\left(2\,\sqrt{z}\right)\sqrt{z} + \right. $$
$$ \left.\left(-131\,072\,z^5 - 2\,555\,904\,z^4 + 430\,080\,z^3 - 725\,760\,z^2 + 2\,494\,800\,z + 2\,027\,025\right)\cos\left(2\,\sqrt{z}\right)\right) $$

07.22.03.8774.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) = \frac{1}{2\,401\,245\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\,\left(\left(524\,288\,z^6 - 15\,826\,944\,z^5 + 55\,222\,272\,z^4 + 17\,740\,800\,z^3 - 2\,328\,480\,z^2 - 13\,970\,880\,z + 2\,401\,245\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 12\,\sqrt{z}\,\left(65\,536\,z^5 - 1\,921\,024\,z^4 + 5\,268\,480\,z^3 + 5\,765\,760\,z^2 + 3\,589\,740\,z - 800\,415\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 4\,z\left(131\,072\,z^5 - 3\,858\,432\,z^4 + 10\,967\,040\,z^3 + 11\,289\,600\,z^2 + 7\,567\,560\,z - 2\,401\,245\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8775.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{11}{4}; -z\right) = \frac{1}{2\,401\,245\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\,\left(\left(524\,288\,z^6 + 15\,826\,944\,z^5 + 55\,222\,272\,z^4 - 17\,740\,800\,z^3 - 2\,328\,480\,z^2 + 13\,970\,880\,z + 2\,401\,245\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 12\,\sqrt{z}\,\left(65\,536\,z^5 + 1\,921\,024\,z^4 + 5\,268\,480\,z^3 - 5\,765\,760\,z^2 + 3\,589\,740\,z + 800\,415\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(131\,072\,z^5 + 3\,858\,432\,z^4 + 10\,967\,040\,z^3 - 11\,289\,600\,z^2 + 7\,567\,560\,z + 2\,401\,245\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8776.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{9}{4}; z\right) = $$
$$ \frac{1}{311\,850}\left(e^{-2\sqrt{z}}\left(-16\,384\,e^{4\sqrt{z}}\,z^5 - 16\,384\,z^5 - 4096\,e^{4\sqrt{z}}\,z^{9/2} + 4096\,z^{9/2} + 642\,048\,e^{4\sqrt{z}}\,z^4 + 642\,048\,z^4 + \right.\right. $$
$$ 157\,440\,e^{4\sqrt{z}}\,z^{7/2} - 157\,440\,z^{7/2} - 64\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(256\,z^2 - 10\,080\,z + 58\,905\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{13/4} + $$
$$ 64\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(256\,z^2 - 10\,080\,z + 58\,905\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{13/4} - 3\,655\,680\,e^{4\sqrt{z}}\,z^3 - 3\,655\,680\,z^3 - $$
$$ 806\,400\,e^{4\sqrt{z}}\,z^{5/2} + 806\,400\,z^{5/2} - 483\,840\,e^{4\sqrt{z}}\,z^2 - 483\,840\,z^2 - 423\,360\,e^{4\sqrt{z}}\,z^{3/2} + 423\,360\,z^{3/2} - $$
$$ \left.\left. 415\,800\,e^{4\sqrt{z}}\,z - 415\,800\,z - 311\,850\,e^{4\sqrt{z}}\,\sqrt{z} + 311\,850\,\sqrt{z} + 155\,925\,e^{4\sqrt{z}} + 155\,925\right)\right) $$

07.22.03.8777.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{9}{4}; -z\right) = $$
$$ \frac{1}{155\,925}\left(128\,\sqrt{\pi}\,\left(256\,z^2 + 10\,080\,z + 58\,905\right) S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{13/4} + 2\left(2048\,z^4 + 78\,720\,z^3 + 403\,200\,z^2 - 211\,680\,z + 155\,925\right)\right. $$
$$ \left.\sin\left(2\,\sqrt{z}\right)\sqrt{z} + \left(16\,384\,z^5 + 642\,048\,z^4 + 3\,655\,680\,z^3 - 483\,840\,z^2 + 415\,800\,z + 155\,925\right)\cos\left(2\,\sqrt{z}\right)\right) $$

07.22.03.8778.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{7}{4}; z\right) = \frac{1}{1\,091\,475\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(-262\,144 z^6 + 13\,074\,432 z^5 - 121\,476\,096 z^4 + 177\,408\,000 z^3 - 23\,284\,800 z^2 - 8\,731\,800 z + 1\,091\,475\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 12\sqrt{z}\left(32\,768 z^5 - 1\,605\,632 z^4 + 13\,802\,880 z^3 - 11\,088\,000 z^2 - 2\,425\,500 z + 363\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(65\,536 z^5 - 3\,219\,456 z^4 + 27\,982\,080 z^3 - 24\,595\,200 z^2 - 5\,821\,200 z + 1\,091\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8779.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) = -\frac{1}{1\,091\,475\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(262\,144 z^6 + 13\,074\,432 z^5 + 121\,476\,096 z^4 + 177\,408\,000 z^3 + 23\,284\,800 z^2 - 8\,731\,800 z - 1\,091\,475\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 12\sqrt{z}\left(32\,768 z^5 + 1\,605\,632 z^4 + 13\,802\,880 z^3 + 11\,088\,000 z^2 - 2\,425\,500 z - 363\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(65\,536 z^5 + 3\,219\,456 z^4 + 27\,982\,080 z^3 + 24\,595\,200 z^2 - 5\,821\,200 z - 1\,091\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8780.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) = $$
$$ \frac{1}{103\,950}\left(e^{-2\sqrt{z}}\left(4096 e^{4\sqrt{z}} z^5 + 4096 z^5 + 1024 e^{4\sqrt{z}} z^{9/2} - 1024 z^{9/2} - 241\,152 e^{4\sqrt{z}} z^4 - 241\,152 z^4 - \right.\right. $$
$$ 59\,520 e^{4\sqrt{z}} z^{7/2} + 59\,520 z^{7/2} + 2\,783\,760 e^{4\sqrt{z}} z^3 + 2\,783\,760 z^3 + 653\,940 e^{4\sqrt{z}} z^{5/2} - $$
$$ 653\,940 z^{5/2} + e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 - 241\,920 z^2 + 2\,827\,440 z - 5\,360\,355\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{9/4} + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(-4096 z^3 + 241\,920 z^2 - 2\,827\,440 z + 5\,360\,355\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{9/4} - $$
$$ 4\,919\,040 e^{4\sqrt{z}} z^2 - 4\,919\,040 z^2 - 866\,880 e^{4\sqrt{z}} z^{3/2} + 866\,880 z^{3/2} - 332\,640 e^{4\sqrt{z}} z - $$
$$ \left.\left. 332\,640 z - 103\,950 e^{4\sqrt{z}}\sqrt{z} + 103\,950\sqrt{z} + 51\,975 e^{4\sqrt{z}} + 51\,975\right)\right) $$

07.22.03.8781.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{5}{4}; -z\right) = \frac{1}{51\,975}\left(-2\sqrt{\pi}\left(4096 z^3 + 241\,920 z^2 + 2\,827\,440 z + 5\,360\,355\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{9/4} - \right. $$
$$ 2\left(512 z^4 + 29\,760 z^3 + 326\,970 z^2 + 433\,440 z - 51\,975\right)\sin\left(2\sqrt{z}\right)\sqrt{z} - $$
$$ \left.\left(4096 z^5 + 241\,152 z^4 + 2\,783\,760 z^3 + 4\,919\,040 z^2 - 332\,640 z - 51\,975\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8782.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{3}{4}; z\right) = \frac{1}{1\,091\,475\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(131\,072 z^6 - 9\,117\,696 z^5 + 137\,829\,888 z^4 - 458\,932\,320 z^3 + 291\,060\,000 z^2 - 17\,463\,600 z + 1\,091\,475\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 12\sqrt{z}\left(16\,384 z^5 - 1\,125\,376 z^4 + 16\,255\,680 z^3 - 43\,866\,900 z^2 + 5\,336\,100 z - 363\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. \left. 4z\left(-32\,768 z^5 + 2\,254\,848 z^4 - 32\,780\,160 z^3 + 91\,035\,000 z^2 - 14\,553\,000 z + 1\,091\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8783.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{3}{4}; -z\right) = \frac{1}{1\,091\,475\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(131\,072 z^6 + 9\,117\,696 z^5 + 137\,829\,888 z^4 + 458\,932\,320 z^3 + 291\,060\,000 z^2 + 17\,463\,600 z + 1\,091\,475\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 12\sqrt{z}\left(16\,384 z^5 + 1\,125\,376 z^4 + 16\,255\,680 z^3 + 43\,866\,900 z^2 + 5\,336\,100 z + 363\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. \left. 4z\left(32\,768 z^5 + 2\,254\,848 z^4 + 32\,780\,160 z^3 + 91\,035\,000 z^2 + 14\,553\,000 z + 1\,091\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8784.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) = $$
$$ \frac{1}{5\,322\,240}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536 z^4 + 5\,160\,960 z^3 - 90\,478\,080 z^2 + 343\,062\,720 z - 144\,729\,585\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} + \right. \right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 5\,160\,960 z^3 + 90\,478\,080 z^2 - 343\,062\,720 z + 144\,729\,585\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} - $$
$$ 4\left(16\,384 z^5 - 4096 z^{9/2} - 1\,287\,168 z^4 + 318\,720 z^{7/2} + 22\,384\,320 z^3 - \right. $$
$$ 5\,367\,600 z^{5/2} - 82\,012\,140 z^2 + 17\,195\,535 z^{3/2} + 26\,611\,200 z - 1\,330\,560\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(16\,384 z^5 + 4096 z^{9/2} - 1\,287\,168 z^4 - 318\,720 z^{7/2} + 22\,384\,320 z^3 + 5\,367\,600 z^{5/2} - \right. $$
$$ \left. \left. \left. \left. 82\,012\,140 z^2 - 17\,195\,535 z^{3/2} + 26\,611\,200 z + 1\,330\,560\sqrt{z} - 665\,280\right) - 665\,280\right)\right)\right) $$

07.22.03.8785.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) = $$
$$ \frac{1}{1\,330\,560}\left(\sqrt{\pi}\left(65\,536 z^4 + 5\,160\,960 z^3 + 90\,478\,080 z^2 + 343\,062\,720 z + 144\,729\,585\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{5/4} + \right. $$
$$ 2\left(4\left(4096 z^5 + 321\,792 z^4 + 5\,596\,080 z^3 + 20\,503\,035 z^2 + 6\,652\,800 z + 166\,320\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. \left. \sqrt{z}\left(4096 z^4 + 318\,720 z^3 + 5\,367\,600 z^2 + 17\,195\,535 z + 1\,330\,560\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8786.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) = \frac{1}{3\,274\,425\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(-2\left(65\,536 z^6 - 5\,849\,088 z^5 + 122\,540\,544 z^4 - 638\,890\,560 z^3 + 692\,213\,445 z^2 - 130\,977\,000 z - 3\,274\,425\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 3\sqrt{z}\left(65\,536 z^5 - 5\,791\,744 z^4 + 117\,519\,360 z^3 - 539\,874\,720 z^2 + 280\,509\,075 z + 8\,731\,800\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 2z\left(65\,536 z^5 - 5\,799\,936 z^4 + 118\,218\,240 z^3 - 552\,545\,280 z^2 + 317\,619\,225 z + 13\,097\,700\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8787.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, \frac{1}{4}; -z\right) = -\frac{1}{3\,274\,425\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\left(65\,536 z^6 + 5\,849\,088 z^5 + 122\,540\,544 z^4 + 638\,890\,560 z^3 + 692\,213\,445 z^2 + 130\,977\,000 z - 3\,274\,425\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 3\sqrt{z}\left(65\,536 z^5 + 5\,791\,744 z^4 + 117\,519\,360 z^3 + 539\,874\,720 z^2 + 280\,509\,075 z - 8\,731\,800\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 2z\left(65\,536 z^5 + 5\,799\,936 z^4 + 118\,218\,240 z^3 + 552\,545\,280 z^2 + 317\,619\,225 z - 13\,097\,700\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8788.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, \frac{3}{4}; z\right) = $$
$$ \frac{1}{1\,703\,116\,800}\left(e^{-2\sqrt{z}}\left(4\left(262\,144 z^5 - 65\,536 z^{9/2} - 25\,755\,648 z^4 + 6\,389\,760 z^{7/2} + 598\,456\,320 z^3 - 144\,990\,720 z^{5/2} - \right.\right.\right. $$
$$ 3\,327\,448\,320 z^2 + 737\,936\,640 z^{3/2} + 2\,441\,369\,700 z - 297\,868\,725\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(262\,144 z^5 + 65\,536 z^{9/2} - 25\,755\,648 z^4 - 6\,389\,760 z^{7/2} + 598\,456\,320 z^3 + 144\,990\,720 z^{5/2} - \right. $$
$$ \left.\left. 3\,327\,448\,320 z^2 - 737\,936\,640 z^{3/2} + 2\,441\,369\,700 z + 297\,868\,725\sqrt{z} + 212\,889\,600\right) + 212\,889\,600\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(1\,048\,576 z^5 - 103\,219\,200 z^4 + 2\,412\,748\,800 z^3 - 13\,722\,508\,800 z^2 + \right. $$
$$ 11\,578\,366\,800 z + 723\,647\,925\left)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(1\,048\,576 z^5 - 103\,219\,200 z^4 + \right. \right. $$
$$ \left.\left. 2\,412\,748\,800 z^3 - 13\,722\,508\,800 z^2 + 11\,578\,366\,800 z + 723\,647\,925\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8789.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, \frac{3}{4}; -z\right) = \frac{1}{425\,779\,200} $$
$$ \left(-\sqrt{\pi}\,\sqrt[4]{z}\left(1\,048\,576 z^5 + 103\,219\,200 z^4 + 2\,412\,748\,800 z^3 + 13\,722\,508\,800 z^2 + 11\,578\,366\,800 z - 723\,647\,925\right)\right. $$
$$ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\left(4\left(65\,536 z^5 + 6\,438\,912 z^4 + 149\,614\,080 z^3 + 831\,862\,080 z^2 + 610\,342\,425 z - 53\,222\,400\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. \sqrt{z}\left(65\,536 z^4 + 6\,389\,760 z^3 + 144\,990\,720 z^2 + 737\,936\,640 z + 297\,868\,725\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8790.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, \frac{5}{4}; z\right) = \frac{1}{1\,152\,597\,600\,\sqrt{2}\,\sqrt[4]{z}}\left(\left(\left(-2\,097\,152\,z^6 + 228\,458\,496\,z^5 - 6\,119\,866\,368\,z^4 + 43\,468\,508\,160\,z^3 - 66\,047\,335\,200\,z^2 + 15\,621\,626\,790\,z + 2\,305\,195\,200\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(1\,048\,576\,z^5 - 113\,311\,744\,z^4 + 2\,961\,530\,880\,z^3 - 19\,218\,608\,640\,z^2 + 17\,851\,291\,920\,z + 2\,349\,945\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\,z\left(1\,048\,576\,z^5 - 113\,442\,816\,z^4 + 2\,975\,293\,440\,z^3 - 19\,548\,587\,520\,z^2 + 19\,416\,030\,480\,z + 2\,439\,446\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8791.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, \frac{5}{4}; -z\right) = -\frac{1}{1\,152\,597\,600\,\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(1\,048\,576\,z^6 + 114\,229\,248\,z^5 + 3\,059\,933\,184\,z^4 + 21\,734\,254\,080\,z^3 + 33\,023\,667\,600\,z^2 + 7\,810\,813\,395\,z - 1\,152\,597\,600\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(1\,048\,576\,z^5 + 113\,311\,744\,z^4 + 2\,961\,530\,880\,z^3 + 19\,218\,608\,640\,z^2 + 17\,851\,291\,920\,z - 2\,349\,945\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\,z\left(1\,048\,576\,z^5 + 113\,442\,816\,z^4 + 2\,975\,293\,440\,z^3 + 19\,548\,587\,520\,z^2 + 19\,416\,030\,480\,z - 2\,439\,446\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8792.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, \frac{7}{4}; z\right) = \frac{1}{217\,998\,950\,400\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304\,z^{11/2} - 1\,048\,576\,z^5 - 494\,665\,728\,z^{9/2} + 122\,880\,000\,z^4 + 14\,385\,315\,840\,z^{7/2} - 3\,506\,872\,320\,z^3 - 107\,258\,296\,320\,z^{5/2} + 24\,474\,723\,840\,z^2 + 123\,166\,612\,800\,z^{3/2} - 18\,829\,918\,800\,z + 22\,425\,549\,300\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2} + 1\,048\,576\,z^5 - 494\,665\,728\,z^{9/2} - 122\,880\,000\,z^4 + 14\,385\,315\,840\,z^{7/2} + 3\,506\,872\,320\,z^3 - 107\,258\,296\,320\,z^{5/2} - 24\,474\,723\,840\,z^2 + 123\,166\,612\,800\,z^{3/2} + 18\,829\,918\,800\,z + 22\,425\,549\,300\sqrt{z} + 3\,618\,239\,625\right) - 3\,618\,239\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6 - 1\,981\,808\,640\,z^5 + 57\,905\,971\,200\,z^4 - 439\,120\,281\,600\,z^3 + 555\,761\,606\,400\,z^2 + 69\,470\,200\,800\,z + 3\,618\,239\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6 - 1\,981\,808\,640\,z^5 + 57\,905\,971\,200\,z^4 - 439\,120\,281\,600\,z^3 + 555\,761\,606\,400\,z^2 + 69\,470\,200\,800\,z + 3\,618\,239\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8793.01

$${}_1F_2\left(-\frac{21}{4};-\frac{1}{2},\frac{7}{4};-z\right)=$$
$$\frac{1}{54\,499\,737\,600\,z^{3/4}}\left(-\sqrt{\pi}\,\left(16\,777\,216\,z^6+1\,981\,808\,640\,z^5+57\,905\,971\,200\,z^4+439\,120\,281\,600\,z^3+\right.\right.$$
$$\left.555\,761\,606\,400\,z^2-69\,470\,200\,800\,z+3\,618\,239\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\,\left(1\,048\,576\,z^5+123\,666\,432\,z^4+3\,596\,328\,960\,z^3+26\,814\,574\,080\,z^2+30\,791\,653\,200\,z-5\,606\,387\,325\right)\right.$$
$$\cos\left(2\sqrt{z}\right)+\left(1\,048\,576\,z^5+122\,880\,000\,z^4+3\,506\,872\,320\,z^3+\right.$$
$$\left.\left.\left.24\,474\,723\,840\,z^2+18\,829\,918\,800\,z-3\,618\,239\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.8794.01

$${}_1F_2\left(-\frac{21}{4};-\frac{1}{2},\frac{9}{4};z\right)=\frac{1}{95\,896\,120\,320\sqrt{2}\,z^{3/4}}$$
$$\left(\left(-2\sqrt{z}\,\left(16\,777\,216\,z^6-2\,157\,969\,408\,z^5+70\,407\,880\,704\,z^4-633\,275\,596\,800\,z^3+1\,234\,858\,141\,440\,z^2-\right.\right.\right.$$
$$\left.303\,580\,236\,960\,z-92\,856\,799\,035\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(16\,777\,216\,z^6-2\,143\,289\,344\,z^5+68\,544\,430\,080\,z^4-\right.$$
$$\left.574\,745\,149\,440\,z^3+771\,770\,039\,040\,z^2+172\,358\,746\,560\,z+5\,065\,535\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(16\,777\,216\,z^6-2\,145\,386\,496\,z^5+68\,805\,918\,720\,z^4-582\,543\,360\,000\,z^3+\right.$$
$$\left.\left.\left.823\,108\,366\,080\,z^2+165\,911\,185\,440\,z+15\,196\,606\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8795.01

$${}_1F_2\left(-\frac{21}{4};-\frac{1}{2},\frac{9}{4};-z\right)=$$
$$-\frac{1}{95\,896\,120\,320\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+2\,157\,969\,408\,z^5+70\,407\,880\,704\,z^4+633\,275\,596\,800\,z^3+\right.\right.\right.$$
$$\left.1\,234\,858\,141\,440\,z^2+303\,580\,236\,960\,z-92\,856\,799\,035\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216\,z^6+2\,143\,289\,344\,z^5+\right.$$
$$\left.68\,544\,430\,080\,z^4+574\,745\,149\,440\,z^3+771\,770\,039\,040\,z^2-172\,358\,746\,560\,z+5\,065\,535\,475\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(16\,777\,216\,z^6+2\,145\,386\,496\,z^5+68\,805\,918\,720\,z^4+582\,543\,360\,000\,z^3+\right.$$
$$\left.\left.\left.823\,108\,366\,080\,z^2-165\,911\,185\,440\,z+15\,196\,606\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8796.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) = \frac{1}{13\,951\,932\,825\,600\, z^{7/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(67\,108\,864\, z^{13/2} - 16\,777\,216\, z^6 - 9\,235\,857\,408\, z^{11/2} + 2\,296\,381\,440\, z^5 + 322\,566\,881\,280\, z^{9/2} - \right.\right.\right. $$
$$ 78\,962\,688\,000\, z^4 - 3\,016\,663\,695\,360\, z^{7/2} + 700\,440\,330\,240\, z^3 + 4\,722\,370\,329\,600\, z^{5/2} - 808\,142\,227\,200\, z^2 + $$
$$ 1\,263\,213\,705\,600\, z^{3/2} - 301\,037\,536\,800\, z + 130\,256\,626\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864\, z^{13/2} + \right. $$
$$ 16\,777\,216\, z^6 - 9\,235\,857\,408\, z^{11/2} - 2\,296\,381\,440\, z^5 + 322\,566\,881\,280\, z^{9/2} + 78\,962\,688\,000\, z^4 - $$
$$ 3\,016\,663\,695\,360\, z^{7/2} - 700\,440\,330\,240\, z^3 + 4\,722\,370\,329\,600\, z^{5/2} + 808\,142\,227\,200\, z^2 + $$
$$ \left.\left. 1\,263\,213\,705\,600\, z^{3/2} + 301\,037\,536\,800\, z + 130\,256\,626\,500\sqrt{z} - 97\,692\,469\,875\right) + 97\,692\,469\,875\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\, z^7 - 36\,993\,761\,280\, z^6 + 1\,297\,093\,754\,880\, z^5 - 12\,295\,367\,884\,800\, z^4 + \right. $$
$$ \left. 20\,748\,433\,305\,600\, z^3 + 3\,890\,331\,244\,800\, z^2 + 405\,242\,838\,000\, z - 97\,692\,469\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\, z^7 - 36\,993\,761\,280\, z^6 + 1\,297\,093\,754\,880\, z^5 - 12\,295\,367\,884\,800\, z^4 + \right. $$
$$ \left.\left. 20\,748\,433\,305\,600\, z^3 + 3\,890\,331\,244\,800\, z^2 + 405\,242\,838\,000\, z - 97\,692\,469\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8797.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = $$
$$ \frac{1}{3\,487\,983\,206\,400\, z^{7/4}}\left(-\sqrt{\pi}\left(268\,435\,456\, z^7 + 36\,993\,761\,280\, z^6 + 1\,297\,093\,754\,880\, z^5 + 12\,295\,367\,884\,800\, z^4 + \right.\right. $$
$$ \left. 20\,748\,433\,305\,600\, z^3 - 3\,890\,331\,244\,800\, z^2 + 405\,242\,838\,000\, z + 97\,692\,469\,875\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216\, z^6 + 2\,308\,964\,352\, z^5 + 80\,641\,720\,320\, z^4 + 754\,165\,923\,840\, z^3 + 1\,180\,592\,582\,400\, z^2 - \right.\right. $$
$$ \left. 315\,803\,426\,400\, z + 32\,564\,156\,625\right)\cos\left(2\sqrt{z}\right) + \left(16\,777\,216\, z^6 + 2\,296\,381\,440\, z^5 + 78\,962\,688\,000\, z^4 + \right. $$
$$ \left.\left.\left. 700\,440\,330\,240\, z^3 + 808\,142\,227\,200\, z^2 - 301\,037\,536\,800\, z - 97\,692\,469\,875\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8798.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) = $$
$$ \left(\left(2\sqrt{z}\left(-268\,435\,456\, z^7 + 39\,812\,333\,568\, z^6 - 1\,531\,475\,656\,704\, z^5 + 16\,673\,513\,472\,000\, z^4 - 39\,644\,514\,201\,600\, z^3 + \right.\right.\right. $$
$$ \left. 9\,282\,532\,089\,600\, z^2 + 4\,601\,152\,155\,600\, z + 167\,162\,670\,675\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ 3\left(268\,435\,456\, z^7 - 39\,577\,452\,544\, z^6 + 1\,497\,036\,226\,560\, z^5 - 15\,390\,498\,816\,000\, z^4 + 27\,074\,944\,512\,000\, z^3 + \right. $$
$$ \left. 8\,348\,532\,192\,000\, z^2 + 1\,053\,631\,378\,800\, z - 278\,604\,451\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\left(268\,435\,456\, z^7 - 39\,611\,006\,976\, z^6 + 1\,501\,880\,647\,680\, z^5 - 15\,563\,287\,756\,800\, z^4 + 28\,533\,380\,198\,400\, z^3 + \right. $$
$$ \left.\left. 7\,798\,824\,633\,600\, z^2 + 1\,377\,825\,649\,200\, z - 835\,813\,353\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(5\,114\,459\,750\,400\sqrt{2}\, z^{7/4}\right) $$

07.22.03.8799.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) = $$

$$ -\left(\left(2\sqrt{z}\left(268\,435\,456\,z^7 + 39\,812\,333\,568\,z^6 + 1\,531\,475\,656\,704\,z^5 + 16\,673\,513\,472\,000\,z^4 + 39\,644\,514\,201\,600\,z^3 + 9\,282\,532\,089\,600\,z^2 - 4\,601\,152\,155\,600\,z + 167\,162\,670\,675\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(268\,435\,456\,z^7 + 39\,577\,452\,544\,z^6 + 1\,497\,036\,226\,560\,z^5 + 15\,390\,498\,816\,000\,z^4 + 27\,074\,944\,512\,000\,z^3 - 8\,348\,532\,192\,000\,z^2 + 1\,053\,631\,378\,800\,z + 278\,604\,451\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(268\,435\,456\,z^7 + 39\,611\,006\,976\,z^6 + 1\,501\,880\,647\,680\,z^5 + 15\,563\,287\,756\,800\,z^4 + 28\,533\,380\,198\,400\,z^3 - 7\,798\,824\,633\,600\,z^2 + 1\,377\,825\,649\,200\,z + 835\,813\,353\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(5\,114\,459\,750\,400\sqrt{2}\,z^{7/4}\right) $$

07.22.03.8800.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) = $$

$$ \frac{1}{649\,399\,055\,155\,200\,z^{11/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2} - 268\,435\,456\,z^7 - 168\,913\,010\,688\,z^{13/2} + 42\,026\,926\,080\,z^6 + 6\,886\,564\,823\,040\,z^{11/2} - 1\,690\,813\,071\,360\,z^5 - 77\,459\,899\,023\,360\,z^{9/2} + 18\,198\,432\,645\,120\,z^4 + 153\,674\,442\,915\,840\,z^{7/2} - 28\,184\,241\,254\,400\,z^3 + 53\,340\,287\,616\,000\,z^{5/2} - 15\,005\,563\,372\,800\,z^2 + 11\,254\,172\,529\,600\,z^{3/2} + 3\,021\,953\,734\,800\,z - 11\,853\,353\,011\,500\sqrt{z} + e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 - 168\,913\,010\,688\,z^{13/2} - 42\,026\,926\,080\,z^6 + 6\,886\,564\,823\,040\,z^{11/2} + 1\,690\,813\,071\,360\,z^5 - 77\,459\,899\,023\,360\,z^{9/2} - 18\,198\,432\,645\,120\,z^4 + 153\,674\,442\,915\,840\,z^{7/2} + 28\,184\,241\,254\,400\,z^3 + 53\,340\,287\,616\,000\,z^{5/2} + 15\,005\,563\,372\,800\,z^2 + 11\,254\,172\,529\,600\,z^{3/2} - 3\,021\,953\,734\,800\,z - 11\,853\,353\,011\,500\sqrt{z} + 8\,890\,014\,758\,625\right) - 8\,890\,014\,758\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8 - 676\,457\,349\,120\,z^7 + 27\,671\,333\,437\,440\,z^6 - 314\,761\,417\,850\,880\,z^5 + 663\,949\,865\,779\,200\,z^4 + 165\,987\,466\,444\,800\,z^3 + 25\,935\,541\,632\,000\,z^2 - 12\,504\,636\,144\,000\,z + 8\,890\,014\,758\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8 - 676\,457\,349\,120\,z^7 + 27\,671\,333\,437\,440\,z^6 - 314\,761\,417\,850\,880\,z^5 + 663\,949\,865\,779\,200\,z^4 + 165\,987\,466\,444\,800\,z^3 + 25\,935\,541\,632\,000\,z^2 - 12\,504\,636\,144\,000\,z + 8\,890\,014\,758\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8801.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) = \frac{1}{162\,349\,763\,788\,800\, z^{11/4}} $$
$$ \left(-\sqrt{\pi}\,\left(4\,294\,967\,296\, z^8 + 676\,457\,349\,120\, z^7 + 27\,671\,333\,437\,440\, z^6 + 314\,761\,417\,850\,880\, z^5 + 663\,949\,865\,779\,200\, z^4 - \right.\right. $$
$$ \left. 165\,987\,466\,444\,800\, z^3 + 25\,935\,541\,632\,000\, z^2 + 12\,504\,636\,144\,000\, z + 8\,890\,014\,758\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - $$
$$ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(268\,435\,456\, z^7 + 42\,228\,252\,672\, z^6 + 1\,721\,641\,205\,760\, z^5 + 19\,364\,974\,755\,840\, z^4 + \right.\right. $$
$$ 38\,418\,610\,728\,960\, z^3 - 13\,335\,071\,904\,000\, z^2 + 2\,813\,543\,132\,400\, z + 2\,963\,338\,252\,875\big)\cos\big(2\sqrt{z}\big) + $$
$$ \left(268\,435\,456\, z^7 + 42\,026\,926\,080\, z^6 + 1\,690\,813\,071\,360\, z^5 + 18\,198\,432\,645\,120\, z^4 + \right. $$
$$ \left.\left. 28\,184\,241\,254\,400\, z^3 - 15\,005\,563\,372\,800\, z^2 - 3\,021\,953\,734\,800\, z - 8\,890\,014\,758\,625\right)\sin\big(2\sqrt{z}\big)\right)\Bigg) $$

07.22.03.8802.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) = $$
$$ \left(\left(2\sqrt{z}\,\left(-4\,294\,967\,296\, z^8 + 721\,554\,505\,728\, z^7 - 31\,971\,065\,462\,784\, z^6 + 408\,617\,232\,629\,760\, z^5 - 1\,145\,686\,671\,360\,000\, z^4 + \right.\right.\right. $$
$$ 240\,057\,719\,193\,600\, z^3 + 175\,183\,658\,496\,000\, z^2 + 42\,793\,643\,692\,800\, z - 22\,566\,960\,541\,125\big) I_{\frac{1}{4}}\big(\sqrt{z}\big)^2 + $$
$$ 3\left(4\,294\,967\,296\, z^8 - 717\,796\,409\,344\, z^7 + 31\,346\,047\,057\,920\, z^6 - 381\,679\,828\,992\,000\, z^5 + 830\,934\,790\,963\,200\, z^4 + \right. $$
$$ 322\,905\,410\,150\,400\, z^3 + 75\,213\,070\,732\,800\, z^2 - 98\,068\,766\,796\,000\, z + 37\,611\,600\,901\,875\big) I_{\frac{5}{4}}\big(\sqrt{z}\big) I_{\frac{1}{4}}\big(\sqrt{z}\big) + $$
$$ 2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 - 718\,333\,280\,256\, z^7 + 31\,434\,127\,441\,920\, z^6 - 385\,336\,265\,932\,800\, z^5 + \right. $$
$$ 868\,623\,630\,336\,000\, z^4 + 297\,622\,215\,475\,200\, z^3 + 74\,842\,562\,995\,200\, z^2 - $$
$$ \left.\left.\left. 53\,492\,054\,616\,000\, z + 112\,834\,802\,705\,625\big) I_{\frac{5}{4}}\big(\sqrt{z}\big)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(214\,020\,469\,555\,200\sqrt{2}\, z^{11/4}\right) $$

07.22.03.8803.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) = $$
$$ -\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 + 721\,554\,505\,728\, z^7 + 31\,971\,065\,462\,784\, z^6 + 408\,617\,232\,629\,760\, z^5 + 1\,145\,686\,671\,360\,000\, z^4 + \right.\right.\right. $$
$$ 240\,057\,719\,193\,600\, z^3 - 175\,183\,658\,496\,000\, z^2 + 42\,793\,643\,692\,800\, z + 22\,566\,960\,541\,125\big) J_{\frac{1}{4}}\big(\sqrt{z}\big)^2 - $$
$$ 3\left(4\,294\,967\,296\, z^8 + 717\,796\,409\,344\, z^7 + 31\,346\,047\,057\,920\, z^6 + 381\,679\,828\,992\,000\, z^5 + 830\,934\,790\,963\,200\right. $$
$$ \left. z^4 - 322\,905\,410\,150\,400\, z^3 + 75\,213\,070\,732\,800\, z^2 + 98\,068\,766\,796\,000\, z + 37\,611\,600\,901\,875\right) $$
$$ J_{\frac{5}{4}}\big(\sqrt{z}\big) J_{\frac{1}{4}}\big(\sqrt{z}\big) + 2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 + 718\,333\,280\,256\, z^7 + 31\,434\,127\,441\,920\, z^6 + \right. $$
$$ 385\,336\,265\,932\,800\, z^5 + 868\,623\,630\,336\,000\, z^4 - 297\,622\,215\,475\,200\, z^3 + 74\,842\,562\,995\,200\, z^2 + $$
$$ \left.\left.\left. 53\,492\,054\,616\,000\, z + 112\,834\,802\,705\,625\big) J_{\frac{5}{4}}\big(\sqrt{z}\big)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(214\,020\,469\,555\,200\sqrt{2}\, z^{11/4}\right) $$

07.22.03.8804.01

$$
{}_1F_2\left(-\frac{21}{4};-\frac{1}{2},\frac{19}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(17\,179\,869\,184\,z^{17/2}-4\,294\,967\,296\,z^{8}-3\,040\,836\,845\,568\,z^{15/2}+756\,987\,985\,920\,z^{7}+141\,746\,000\,363\,520\right.\right.\right.
$$
$$
z^{13/2}-34\,879\,832\,064\,000\,z^{6}-1\,863\,090\,375\,229\,440\,z^{11/2}+441\,455\,801\,794\,560\,z^{5}+
$$
$$
4\,477\,507\,692\,134\,400\,z^{9/2}-860\,958\,242\,242\,560\,z^{4}+1\,893\,345\,409\,105\,920\,z^{7/2}-
$$
$$
580\,956\,132\,556\,800\,z^{3}+583\,920\,194\,457\,600\,z^{5/2}-14\,820\,309\,504\,000\,z^{2}-
$$
$$
693\,590\,484\,787\,200\,z^{3/2}+493\,099\,485\,278\,400\,z+2\,216\,577\,013\,150\,500\sqrt{z}+
$$
$$
e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}-3\,040\,836\,845\,568\,z^{15/2}-756\,987\,985\,920\,z^{7}+\right.
$$
$$
141\,746\,000\,363\,520\,z^{13/2}+34\,879\,832\,064\,000\,z^{6}-1\,863\,090\,375\,229\,440\,z^{11/2}-441\,455\,801\,794\,560
$$
$$
z^{5}+4\,477\,507\,692\,134\,400\,z^{9/2}+860\,958\,242\,242\,560\,z^{4}+1\,893\,345\,409\,105\,920\,z^{7/2}+
$$
$$
\left.\left.\left.580\,956\,132\,556\,800\,z^{3}+583\,920\,194\,457\,600\,z^{5/2}+14\,820\,309\,504\,000\,z^{2}-693\,590\,484\,787\,200\,z^{3/2}-\right.\right.\right.
$$
$$
\left.\left.493\,099\,485\,278\,400\,z+2\,216\,577\,013\,150\,500\sqrt{z}-1\,662\,432\,759\,862\,875\right)+1\,662\,432\,759\,862\,875\Big)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-12\,176\,232\,284\,160\,z^{8}+569\,238\,859\,284\,480\,z^{7}-7\,554\,274\,028\,421\,120\,z^{6}+\right.
$$
$$
19\,121\,756\,134\,440\,960\,z^{5}+5\,975\,548\,792\,012\,800\,z^{4}+1\,244\,905\,998\,336\,000\,z^{3}-
$$
$$
\left.900\,333\,802\,368\,000\,z^{2}+1\,280\,162\,125\,242\,000\,z-1\,662\,432\,759\,862\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-12\,176\,232\,284\,160\,z^{8}+569\,238\,859\,284\,480\,z^{7}-7\,554\,274\,028\,421\,120\,z^{6}+\right.
$$
$$
19\,121\,756\,134\,440\,960\,z^{5}+5\,975\,548\,792\,012\,800\,z^{4}+1\,244\,905\,998\,336\,000\,z^{3}-900\,333\,802\,368\,000\,z^{2}+
$$
$$
\left.\left.1\,280\,162\,125\,242\,000\,z-1\,662\,432\,759\,862\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)\Big/\left(24\,936\,923\,717\,959\,680\,z^{15/4}\right)
$$

07.22.03.8805.01

$$
{}_1F_2\left(-\frac{21}{4};-\frac{1}{2},\frac{19}{4};-z\right)=
\left(-\sqrt{\pi}\left(68\,719\,476\,736\,z^{9}+12\,176\,232\,284\,160\,z^{8}+569\,238\,859\,284\,480\,z^{7}+7\,554\,274\,028\,421\,120\,z^{6}+\right.\right.
$$
$$
19\,121\,756\,134\,440\,960\,z^{5}-5\,975\,548\,792\,012\,800\,z^{4}+1\,244\,905\,998\,336\,000\,z^{3}+
$$
$$
\left.900\,333\,802\,368\,000\,z^{2}+1\,280\,162\,125\,242\,000\,z+1\,662\,432\,759\,862\,875\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$
$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^{8}+760\,209\,211\,392\,z^{7}+35\,436\,500\,090\,880\,z^{6}+465\,772\,593\,807\,360\,z^{5}+\right.\right.
$$
$$
1\,119\,376\,923\,033\,600\,z^{4}-473\,336\,352\,276\,480\,z^{3}+145\,980\,048\,614\,400\,z^{2}+173\,397\,621\,196\,800\,z+
$$
$$
554\,144\,253\,287\,625\Big)\cos\left(2\sqrt{z}\right)+\left(4\,294\,967\,296\,z^{8}+756\,987\,985\,920\,z^{7}+34\,879\,832\,064\,000\,z^{6}+\right.
$$
$$
441\,455\,801\,794\,560\,z^{5}+860\,958\,242\,242\,560\,z^{4}-580\,956\,132\,556\,800\,z^{3}+14\,820\,309\,504\,000\,z^{2}+
$$
$$
\left.\left.493\,099\,485\,278\,400\,z-1\,662\,432\,759\,862\,875\right)\sin\left(2\sqrt{z}\right)\right)\Big)\Big/\left(6\,234\,230\,929\,489\,920\,z^{15/4}\right)
$$

07.22.03.8806.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) = $$

$$ \left(\left(-2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 12\,897\,786\,789\,888\,z^8 + 646\,828\,517\,228\,544\,z^7 - 9\,492\,197\,497\,896\,960\,z^6 + \right.\right.\right. $$

$$ 30\,649\,409\,832\,222\,720\,z^5 - 5\,406\,448\,907\,059\,200\,z^4 - 5\,629\,339\,208\,908\,800\,z^3 - $$

$$ \left.\left.\left. 3\,252\,316\,920\,652\,800\,z^2 + 8\,384\,879\,561\,058\,000\,z - 5\,574\,039\,253\,657\,875\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$

$$ 3\left(68\,719\,476\,736\,z^9 - 12\,837\,657\,247\,744\,z^8 + 635\,644\,422\,389\,760\,z^7 - 8\,944\,816\,666\,705\,920\,z^6 + \right. $$

$$ 23\,219\,249\,872\,896\,000\,z^5 + 10\,806\,555\,407\,155\,200\,z^4 + 3\,604\,299\,271\,372\,800\,z^3 - $$

$$ \left. 5\,420\,528\,201\,088\,000\,z^2 + 20\,581\,068\,013\,506\,000\,z - 9\,290\,065\,422\,763\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 12\,846\,247\,182\,336\,z^8 + 637\,222\,822\,871\,040\,z^7 - 9\,019\,565\,203\,783\,680\,z^6 + \right. $$

$$ 24\,129\,758\,822\,400\,000\,z^5 + 9\,902\,309\,385\,830\,400\,z^4 + 3\,153\,761\,862\,451\,200\,z^3 - 2\,323\,083\,514\,752\,000\,z^2 + $$

$$ \left.\left. 2\,286\,785\,334\,834\,000\,z - 27\,870\,196\,268\,289\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(7\,654\,379\,146\,444\,800\,\sqrt{2}\; z^{15/4}\right) $$

07.22.03.8807.01

$$ {}_1F_2\left(-\frac{21}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) = $$

$$ -\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 12\,897\,786\,789\,888\,z^8 + 646\,828\,517\,228\,544\,z^7 + 9\,492\,197\,497\,896\,960\,z^6 + \right.\right.\right. $$

$$ 30\,649\,409\,832\,222\,720\,z^5 + 5\,406\,448\,907\,059\,200\,z^4 - 5\,629\,339\,208\,908\,800\,z^3 + $$

$$ \left.\left.\left. 3\,252\,316\,920\,652\,800\,z^2 + 8\,384\,879\,561\,058\,000\,z + 5\,574\,039\,253\,657\,875\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$

$$ 3\left(68\,719\,476\,736\,z^9 + 12\,837\,657\,247\,744\,z^8 + 635\,644\,422\,389\,760\,z^7 + 8\,944\,816\,666\,705\,920\,z^6 + \right. $$

$$ 23\,219\,249\,872\,896\,000\,z^5 - 10\,806\,555\,407\,155\,200\,z^4 + 3\,604\,299\,271\,372\,800\,z^3 + $$

$$ \left. 5\,420\,528\,201\,088\,000\,z^2 + 20\,581\,068\,013\,506\,000\,z + 9\,290\,065\,422\,763\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 12\,846\,247\,182\,336\,z^8 + 637\,222\,822\,871\,040\,z^7 + 9\,019\,565\,203\,783\,680\,z^6 + \right. $$

$$ 24\,129\,758\,822\,400\,000\,z^5 - 9\,902\,309\,385\,830\,400\,z^4 + 3\,153\,761\,862\,451\,200\,z^3 + 2\,323\,083\,514\,752\,000\,z^2 + $$

$$ \left.\left. 2\,286\,785\,334\,834\,000\,z + 27\,870\,196\,268\,289\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(7\,654\,379\,146\,444\,800\,\sqrt{2}\; z^{15/4}\right) $$

07.22.03.8808.01

$$
{}_1F_2\left(-\frac{21}{4};-\frac{1}{2},\frac{23}{4};z\right)=
\left(19\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(274\,877\,906\,944\,z^{19/2}-68\,719\,476\,736\,z^{9}-54\,065\,048\,322\,048\,z^{17/2}+13\,464\,722\,472\,960\,z^{8}+\right.\right.\right.
$$
$$
2\,836\,160\,179\,077\,120\,z^{15/2}-699\,118\,670\,315\,520\,z^{7}-42\,655\,117\,391\,953\,920\,z^{13/2}+
$$
$$
10\,172\,417\,641\,021\,440\,z^{6}+120\,423\,056\,198\,860\,800\,z^{11/2}-23\,968\,657\,598\,054\,400\,z^{5}+
$$
$$
59\,722\,256\,705\,126\,400\,z^{9/2}-19\,254\,546\,107\,596\,800\,z^{4}+23\,570\,220\,235\,161\,600\,z^{7/2}-
$$
$$
5\,038\,905\,231\,360\,000\,z^{3}-26\,009\,643\,179\,520\,000\,z^{5/2}+39\,447\,958\,822\,272\,000\,z^{2}+
$$
$$
35\,465\,232\,210\,408\,000\,z^{3/2}-292\,588\,165\,735\,866\,000\,z-698\,221\,759\,142\,407\,500\,\sqrt{z}\,+
$$
$$
e^{4\sqrt{z}}\left(274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}-54\,065\,048\,322\,048\,z^{17/2}-13\,464\,722\,472\,960\,z^{8}+\right.
$$
$$
2\,836\,160\,179\,077\,120\,z^{15/2}+699\,118\,670\,315\,520\,z^{7}-42\,655\,117\,391\,953\,920\,z^{13/2}-
$$
$$
10\,172\,417\,641\,021\,440\,z^{6}+120\,423\,056\,198\,860\,800\,z^{11/2}+
$$
$$
23\,968\,657\,598\,054\,400\,z^{5}+59\,722\,256\,705\,126\,400\,z^{9/2}+19\,254\,546\,107\,596\,800\,z^{4}+
$$
$$
23\,570\,220\,235\,161\,600\,z^{7/2}+5\,038\,905\,231\,360\,000\,z^{3}-26\,009\,643\,179\,520\,000\,z^{5/2}-
$$
$$
39\,447\,958\,822\,272\,000\,z^{2}+35\,465\,232\,210\,408\,000\,z^{3/2}+292\,588\,165\,735\,866\,000\,z-
$$
$$
\left.\left.698\,221\,759\,142\,407\,500\,\sqrt{z}\,+523\,666\,319\,356\,805\,625\right)-523\,666\,319\,356\,805\,625\right)+
$$
$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(1\,099\,511\,627\,776\,z^{10}-216\,466\,351\,718\,400\,z^{9}+11\,384\,777\,185\,689\,600\,z^{8}-\right.
$$
$$
172\,669\,120\,649\,625\,600\,z^{7}+509\,913\,496\,918\,425\,600\,z^{6}+191\,217\,561\,344\,409\,600\,z^{5}+
$$
$$
49\,796\,239\,933\,440\,000\,z^{4}-48\,017\,802\,792\,960\,000\,z^{3}+102\,412\,970\,019\,360\,000\,z^{2}-
$$
$$
\left.265\,989\,241\,578\,060\,000\,z+523\,666\,319\,356\,805\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-
$$
$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(1\,099\,511\,627\,776\,z^{10}-216\,466\,351\,718\,400\,z^{9}+11\,384\,777\,185\,689\,600\,z^{8}-\right.
$$
$$
172\,669\,120\,649\,625\,600\,z^{7}+509\,913\,496\,918\,425\,600\,z^{6}+191\,217\,561\,344\,409\,600\,z^{5}+
$$
$$
49\,796\,239\,933\,440\,000\,z^{4}-48\,017\,802\,792\,960\,000\,z^{3}+102\,412\,970\,019\,360\,000\,z^{2}-
$$
$$
\left.\left.\left.265\,989\,241\,578\,060\,000\,z+523\,666\,319\,356\,805\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(15\,959\,631\,179\,494\,195\,200\,z^{19/4}\right)
$$

07.22.03.8809.01

$$
{}_1F_2\left(-\frac{21}{4};-\frac{1}{2},\frac{23}{4};-z\right)=
$$
$$
-\left(19\left(\sqrt{\pi}\,\left(1\,099\,511\,627\,776\,z^{10}+216\,466\,351\,718\,400\,z^{9}+11\,384\,777\,185\,689\,600\,z^{8}+172\,669\,120\,649\,625\,600\,z^{7}+\right.\right.\right.
$$
$$
509\,913\,496\,918\,425\,600\,z^{6}-191\,217\,561\,344\,409\,600\,z^{5}+
$$
$$
49\,796\,239\,933\,440\,000\,z^{4}+48\,017\,802\,792\,960\,000\,z^{3}+102\,412\,970\,019\,360\,000\,z^{2}+
$$
$$
\left.265\,989\,241\,578\,060\,000\,z+523\,666\,319\,356\,805\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$
$$
2\sqrt[4]{z}\left(4\sqrt{z}\,\left(68\,719\,476\,736\,z^{9}+13\,516\,262\,080\,512\,z^{8}+709\,040\,044\,769\,280\,z^{7}+10\,663\,779\,347\,988\,480\,z^{6}+\right.\right.
$$
$$
30\,105\,764\,049\,715\,200\,z^{5}-14\,930\,564\,176\,281\,600\,z^{4}+5\,892\,555\,058\,790\,400\,z^{3}+
$$
$$
\left.6\,502\,410\,794\,880\,000\,z^{2}+8\,866\,308\,052\,602\,000\,z+174\,555\,439\,785\,601\,875\right)\cos\left(2\sqrt{z}\right)+
$$
$$
\left(68\,719\,476\,736\,z^{9}+13\,464\,722\,472\,960\,z^{8}+699\,118\,670\,315\,520\,z^{7}+10\,172\,417\,641\,021\,440\,z^{6}+\right.
$$
$$
23\,968\,657\,598\,054\,400\,z^{5}-19\,254\,546\,107\,596\,800\,z^{4}+5\,038\,905\,231\,360\,000\,z^{3}+
$$
$$
39\,447\,958\,822\,272\,000\,z^{2}+292\,588\,165\,735\,866\,000\,z-
$$
$$
\left.\left.\left.\left.523\,666\,319\,356\,805\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)\Big/\left(3\,989\,907\,794\,873\,548\,800\,z^{19/4}\right)
$$

For fixed z and $a_1 = -\frac{21}{4}$, $b_1 = \frac{1}{2}$

07.22.03.8810.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) = \frac{1}{99\,687\,686\,175\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(8\,388\,608 z^6 + 308\,281\,344 z^5 + 6\,042\,451\,968 z^4 + 60\,962\,291\,712 z^3 + 243\,326\,160\,000 z^2 + 17\,336\,988\,900 z - 99\,687\,686\,175\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(1\,048\,576 z^5 + 39\,452\,672 z^4 + 790\,573\,056 z^3 + 8\,344\,949\,760 z^2 + 38\,526\,642\,000 z + 33\,229\,228\,725\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(2\,097\,152 z^5 + 78\,643\,200 z^4 + 1\,570\,480\,128 z^3 + 16\,455\,720\,960 z^2 + 74\,031\,904\,800 z + 99\,687\,686\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8811.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{1}{2}, -\frac{23}{4}; -z\right) = \frac{1}{99\,687\,686\,175\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-8\,388\,608 z^6 + 308\,281\,344 z^5 - 6\,042\,451\,968 z^4 + 60\,962\,291\,712 z^3 - 243\,326\,160\,000 z^2 + 17\,336\,988\,900 z + 99\,687\,686\,175\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(1\,048\,576 z^5 - 39\,452\,672 z^4 + 790\,573\,056 z^3 - 8\,344\,949\,760 z^2 + 38\,526\,642\,000 z - 33\,229\,228\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-2\,097\,152 z^5 + 78\,643\,200 z^4 - 1\,570\,480\,128 z^3 + 16\,455\,720\,960 z^2 - 74\,031\,904\,800 z + 99\,687\,686\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8812.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{1}{2}, -\frac{21}{4}; z\right) = \cosh\left(2\sqrt{z}\right) $$

07.22.03.8813.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{1}{2}, -\frac{21}{4}; -z\right) = \cos\left(2\sqrt{z}\right) $$

07.22.03.8814.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{19}{4};z\right)=\frac{1}{4\,334\,247\,225\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left(-\left(4\,194\,304\,z^6+49\,545\,216\,z^5+589\,381\,632\,z^4+4\,222\,374\,912\,z^3+12\,652\,960\,320\,z^2-912\,473\,100\,z-4\,334\,247\,225\right)\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(524\,288\,z^5+6\,651\,904\,z^4+79\,865\,856\,z^3+604\,840\,320\,z^2+2\,230\,489\,800\,z+1\,444\,749\,075\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(1\,048\,576\,z^5+13\,172\,736\,z^4+157\,667\,328\,z^3+\right.$$
$$\left.\left.\left.1\,181\,456\,640\,z^2+4\,162\,611\,600\,z+4\,334\,247\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8815.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{19}{4};-z\right)=\frac{1}{4\,334\,247\,225\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left(\left(-4\,194\,304\,z^6+49\,545\,216\,z^5-589\,381\,632\,z^4+4\,222\,374\,912\,z^3-12\,652\,960\,320\,z^2-912\,473\,100\,z+4\,334\,247\,225\right)\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(524\,288\,z^5-6\,651\,904\,z^4+79\,865\,856\,z^3-604\,840\,320\,z^2+2\,230\,489\,800\,z-1\,444\,749\,075\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-1\,048\,576\,z^5+13\,172\,736\,z^4-157\,667\,328\,z^3+\right.$$
$$\left.\left.\left.1\,181\,456\,640\,z^2-4\,162\,611\,600\,z+4\,334\,247\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8816.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{1\,309\,458\,150}\left(e^{-2\sqrt{z}}\left(1\,048\,576\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}-1\,048\,576\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+\right.\right.$$
$$1\,048\,576\,e^{4\sqrt{z}}z^5+1\,048\,576\,z^5+262\,144\,e^{4\sqrt{z}}z^{9/2}-262\,144\,z^{9/2}+196\,608\,e^{4\sqrt{z}}z^4+196\,608\,z^4+$$
$$245\,760\,e^{4\sqrt{z}}z^{7/2}-245\,760\,z^{7/2}+430\,080\,e^{4\sqrt{z}}z^3+430\,080\,z^3+967\,680\,e^{4\sqrt{z}}z^{5/2}-967\,680\,z^{5/2}+$$
$$2\,661\,120\,e^{4\sqrt{z}}z^2+2\,661\,120\,z^2+8\,648\,640\,e^{4\sqrt{z}}z^{3/2}-8\,648\,640\,z^{3/2}+32\,432\,400\,e^{4\sqrt{z}}z+$$
$$\left.\left.32\,432\,400\,z+137\,837\,700\,e^{4\sqrt{z}}\sqrt{z}-137\,837\,700\sqrt{z}+654\,729\,075\,e^{4\sqrt{z}}+654\,729\,075\right)\right)$$

07.22.03.8817.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{17}{4};-z\right)=\frac{1}{654\,729\,075}$$
$$\left(-2\,097\,152\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4}-4\left(65\,536\,z^4-61\,440\,z^3+241\,920\,z^2-2\,162\,160\,z+34\,459\,425\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(-1\,048\,576\,z^5+196\,608\,z^4-430\,080\,z^3+2\,661\,120\,z^2-32\,432\,400\,z+654\,729\,075\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.8818.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{15}{4};z\right)= \frac{1}{228\,118\,275\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2\,097\,152\,z^6-27\,525\,120\,z^5-87\,736\,320\,z^4-391\,136\,256\,z^3-796\,340\,160\,z^2+182\,494\,620\,z+228\,118\,275\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(-262\,144\,z^5+3\,211\,264\,z^4+13\,590\,528\,z^3+61\,850\,880\,z^2+162\,217\,440\,z+76\,039\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-524\,288\,z^5+6\,488\,064\,z^4+26\,578\,944\,z^3+119\,427\,840\,z^2+302\,112\,720\,z+228\,118\,275\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8819.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{15}{4};-z\right)= \frac{1}{228\,118\,275\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2\,097\,152\,z^6+27\,525\,120\,z^5-87\,736\,320\,z^4+391\,136\,256\,z^3-796\,340\,160\,z^2-182\,494\,620\,z+228\,118\,275\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(262\,144\,z^5+3\,211\,264\,z^4-13\,590\,528\,z^3+61\,850\,880\,z^2-162\,217\,440\,z+76\,039\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(524\,288\,z^5+6\,488\,064\,z^4-26\,578\,944\,z^3+119\,427\,840\,z^2-302\,112\,720\,z+228\,118\,275\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8820.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{13}{4};z\right)= \frac{1}{77\,026\,950}\left(e^{-2\sqrt{z}}\left(-262\,144\,e^{4\sqrt{z}}\,z^5-262\,144\,z^5-65\,536\,e^{4\sqrt{z}}\,z^{9/2}+65\,536\,z^{9/2}-16\,384\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-399)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}+16\,384\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-399)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}+6\,488\,064\,e^{4\sqrt{z}}\,z^4+6\,488\,064\,z^4+1\,572\,864\,e^{4\sqrt{z}}\,z^{7/2}-1\,572\,864\,z^{7/2}+1\,118\,208\,e^{4\sqrt{z}}\,z^3+1\,118\,208\,z^3+1\,290\,240\,e^{4\sqrt{z}}\,z^{5/2}-1\,290\,240\,z^{5/2}+2\,016\,000\,e^{4\sqrt{z}}\,z^2+2\,016\,000\,z^2+3\,870\,720\,e^{4\sqrt{z}}\,z^{3/2}-3\,870\,720\,z^{3/2}+8\,482\,320\,e^{4\sqrt{z}}\,z+8\,482\,320\,z+19\,459\,440\,e^{4\sqrt{z}}\,\sqrt{z}-19\,459\,440\,\sqrt{z}+38\,513\,475\,e^{4\sqrt{z}}+38\,513\,475\right)\right) $$

07.22.03.8821.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{13}{4};-z\right)= \frac{1}{38\,513\,475}\left(32\,768\sqrt{\pi}\,(16z+399)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}+16\left(4096\,z^4+98\,304\,z^3-80\,640\,z^2+241\,920\,z-1\,216\,215\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(262\,144\,z^5+6\,488\,064\,z^4-1\,118\,208\,z^3+2\,016\,000\,z^2-8\,482\,320\,z+38\,513\,475\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8822.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{11}{4};z\right)=\frac{1}{45\,623\,655\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1\,048\,576z^6+39\,911\,424z^5-181\,665\,792z^4-142\,119\,936z^3-176\,964\,480z^2+82\,952\,100z+45\,623\,655\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(131\,072z^5-4\,874\,240z^4+18\,536\,448z^3+31\,127\,040z^2+47\,927\,880z+15\,207\,885\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(262\,144z^5-9\,781\,248z^4+38\,191\,104z^3+60\,560\,640z^2+91\,838\,880z+45\,623\,655\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8823.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{11}{4};-z\right)=-\frac{1}{45\,623\,655\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,048\,576z^6+39\,911\,424z^5+181\,665\,792z^4-142\,119\,936z^3+176\,964\,480z^2+82\,952\,100z-45\,623\,655\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(131\,072z^5+4\,874\,240z^4+18\,536\,448z^3-31\,127\,040z^2+47\,927\,880z-15\,207\,885\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(262\,144z^5+9\,781\,248z^4+38\,191\,104z^3-60\,560\,640z^2+91\,838\,880z-45\,623\,655\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8824.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{9}{4};z\right)=\frac{1}{5\,925\,150}\left(e^{-2\sqrt{z}}\left(32\,768e^{4\sqrt{z}}z^5+32\,768z^5+8192e^{4\sqrt{z}}z^{9/2}-8192z^{9/2}-1\,628\,160e^{4\sqrt{z}}z^4-1\,628\,160z^4-400\,896e^{4\sqrt{z}}z^{7/2}+400\,896z^{7/2}+128e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-12\,768z+101\,745\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-128e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-12\,768z+101\,745\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+12\,730\,368e^{4\sqrt{z}}z^3+12\,730\,368z^3+2\,903\,040e^{4\sqrt{z}}z^{5/2}-2\,903\,040z^{5/2}+1\,854\,720e^{4\sqrt{z}}z^2+1\,854\,720z^2+1\,814\,400e^{4\sqrt{z}}z^{3/2}-1\,814\,400z^{3/2}+2\,207\,520e^{4\sqrt{z}}z+2\,207\,520z+2\,846\,340e^{4\sqrt{z}}\sqrt{z}-2\,846\,340\sqrt{z}+2\,962\,575e^{4\sqrt{z}}+2\,962\,575\right)\right) $$

07.22.03.8825.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{9}{4};-z\right)=\frac{1}{2\,962\,575}\left(-256\sqrt{\pi}\left(256z^2+12\,768z+101\,745\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}-4\left(2048z^4+100\,224z^3+725\,760z^2-453\,600z+711\,585\right)\sin\left(2\sqrt{z}\right)\sqrt{z}-\left(32\,768z^5+1\,628\,160z^4+12\,730\,368z^3-1\,854\,720z^2+2\,207\,520z-2\,962\,575\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8826.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{7}{4};z\right)= \frac{1}{20\,738\,025\sqrt[4]{z}}\left(\sqrt{2}\left(\left(524\,288z^6-33\,030\,144z^5+411\,973\,632z^4-828\,011\,520z^3+82\,952\,100z+20\,738\,025\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 12\sqrt{z}\left(65\,536z^5-4\,071\,424z^4+47\,980\,800z^3-64\,108\,800z^2-36\,867\,600z-6\,912\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ 4z\left(-131\,072z^5+8\,159\,232z^4-96\,929\,280z^3+137\,491\,200z^2+75\,600\,000z+20\,738\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8827.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{7}{4};-z\right)= \frac{1}{20\,738\,025\sqrt[4]{z}}\left(\sqrt{2}\left(\left(524\,288z^6+33\,030\,144z^5+411\,973\,632z^4+828\,011\,520z^3-82\,952\,100z+20\,738\,025\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 12\sqrt{z}\left(65\,536z^5+4\,071\,424z^4+47\,980\,800z^3+64\,108\,800z^2-36\,867\,600z+6\,912\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ 4z\left(131\,072z^5+8\,159\,232z^4+96\,929\,280z^3+137\,491\,200z^2-75\,600\,000z+20\,738\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8828.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{5}{4};z\right)= \frac{1}{1\,975\,050}\left(e^{-2\sqrt{z}}\left(-8192e^{4\sqrt{z}}z^5-8192z^5-2048e^{4\sqrt{z}}z^{9/2}+2048z^{9/2}+611\,328e^{4\sqrt{z}}z^4+611\,328z^4+ 151\,296e^{4\sqrt{z}}z^{7/2}-151\,296z^{7/2}-9\,655\,968e^{4\sqrt{z}}z^3-9\,655\,968z^3-2\,305\,800e^{4\sqrt{z}}z^{5/2}+ 2\,305\,800z^{5/2}+2e^{2\sqrt{z}}\sqrt{2\pi}\left(-4096z^3+306\,432z^2-4\,883\,760z+14\,549\,535\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+ 2e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-306\,432z^2+4\,883\,760z-14\,549\,535\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+ 27\,498\,240e^{4\sqrt{z}}z^2+27\,498\,240z^2+5\,483\,520e^{4\sqrt{z}}z^{3/2}-5\,483\,520z^{3/2}+2\,751\,840e^{4\sqrt{z}}z+ 2\,751\,840z+1\,784\,160e^{4\sqrt{z}}\sqrt{z}-1\,784\,160\sqrt{z}+987\,525e^{4\sqrt{z}}+987\,525\right)\right) $$

07.22.03.8829.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{5}{4};-z\right)= \frac{1}{987\,525}\left(4\sqrt{\pi}\left(4096z^3+306\,432z^2+4\,883\,760z+14\,549\,535\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+ 8\left(256z^4+18\,912z^3+288\,225z^2+685\,440z-223\,020\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+ \left(8192z^5+611\,328z^4+9\,655\,968z^3+27\,498\,240z^2-2\,751\,840z+987\,525\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.8830.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{3}{4};z\right)= \frac{1}{20\,738\,025\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-262\,144\,z^6+23\,052\,288\,z^5-470\,744\,064\,z^4+2\,328\,669\,504\,z^3-2\,212\,056\,000\,z^2+248\,856\,300\,z+20\,738\,025\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(32\,768\,z^5-2\,852\,864\,z^4+56\,370\,048\,z^3-243\,636\,120\,z^2+92\,169\,000\,z+6\,912\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(65\,536\,z^5-5\,713\,920\,z^4+113\,428\,224\,z^3-499\,378\,320\,z^2+216\,442\,800\,z+20\,738\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8831.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{3}{4};-z\right)= -\frac{1}{20\,738\,025\sqrt[4]{z}}\left(\sqrt{2}\left(\left(262\,144\,z^6+23\,052\,288\,z^5+470\,744\,064\,z^4+2\,328\,669\,504\,z^3+2\,212\,056\,000\,z^2+248\,856\,300\,z-20\,738\,025\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(32\,768\,z^5+2\,852\,864\,z^4+56\,370\,048\,z^3+243\,636\,120\,z^2+92\,169\,000\,z-6\,912\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(65\,536\,z^5+5\,713\,920\,z^4+113\,428\,224\,z^3+499\,378\,320\,z^2+216\,442\,800\,z-20\,738\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8832.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{1}{4};z\right)= \frac{1}{50\,561\,280}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-6\,537\,216\,z^3+156\,280\,320\,z^2-931\,170\,240\,z+916\,620\,705\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536\,z^4+6\,537\,216\,z^3-156\,280\,320\,z^2+931\,170\,240\,z-916\,620\,705\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+4\left(16\,384\,z^5-4096\,z^{9/2}-1\,631\,232\,z^4+404\,736\,z^{7/2}+38\,770\,368\,z^3-9\,399\,600\,z^{5/2}-226\,095\,660\,z^2+50\,414\,175\,z^{3/2}+197\,890\,560\,z-27\,457\,920\sqrt{z}+e^{4\sqrt{z}}\left(16\,384\,z^5+4096\,z^{9/2}-1\,631\,232\,z^4-404\,736\,z^{7/2}+38\,770\,368\,z^3+9\,399\,600\,z^{5/2}-226\,095\,660\,z^2-50\,414\,175\,z^{3/2}+197\,890\,560\,z+27\,457\,920\sqrt{z}+6\,320\,160\right)+6\,320\,160\right)\right)\right) $$

07.22.03.8833.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},-\frac{1}{4};-z\right)= \frac{1}{12\,640\,320}\left(-\sqrt{\pi}\left(65\,536\,z^4+6\,537\,216\,z^3+156\,280\,320\,z^2+931\,170\,240\,z+916\,620\,705\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}-2\left(4\left(4096\,z^5+407\,808\,z^4+9\,692\,592\,z^3+56\,523\,915\,z^2+49\,472\,640\,z-1\,580\,040\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\left(4096\,z^4+404\,736\,z^3+9\,399\,600\,z^2+50\,414\,175\,z+27\,457\,920\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8834.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{1}{4};z\right)= \frac{1}{62\,214\,075\sqrt[4]{z}}\left(\sqrt{2}\left(\left(131\,072\,z^6-14\,794\,752\,z^5+419\,844\,096\,z^4-3\,319\,815\,744\,z^3+6\,395\,606\,910\,z^2-2\,737\,419\,300\,z+62\,214\,075\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 3\sqrt{z}\left(65\,536\,z^5-7\,340\,032\,z^4+203\,546\,112\,z^3-1\,486\,719\,360\,z^2+2\,011\,588\,425\,z-82\,952\,100\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ 2z\left(-65\,536\,z^5+7\,348\,224\,z^4-204\,438\,528\,z^3+1\,509\,550\,560\,z^2-2\,138\,794\,875\,z+124\,428\,150\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8835.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{1}{4};-z\right)= \frac{1}{62\,214\,075\sqrt[4]{z}}\left(\sqrt{2}\left(\left(131\,072\,z^6+14\,794\,752\,z^5+419\,844\,096\,z^4+3\,319\,815\,744\,z^3+6\,395\,606\,910\,z^2+2\,737\,419\,300\,z+62\,214\,075\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(65\,536\,z^5+7\,340\,032\,z^4+203\,546\,112\,z^3+1\,486\,719\,360\,z^2+2\,011\,588\,425\,z+82\,952\,100\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ 2z\left(65\,536\,z^5+7\,348\,224\,z^4+204\,438\,528\,z^3+1\,509\,550\,560\,z^2+2\,138\,794\,875\,z+124\,428\,150\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8836.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{3}{4};z\right)= \frac{1}{16\,179\,609\,600}\left(e^{-2\sqrt{z}}\left(-4\left(262\,144\,z^5-65\,536\,z^{9/2}-32\,636\,928\,z^4+8\,110\,080\,z^{7/2}+1\,035\,847\,680\,z^3-253\,048\,320\,z^{5/2}-9\,129\,093\,120\,z^2+2\,111\,739\,840\,z^{3/2}+16\,938\,954\,900\,z-3\,127\,028\,625\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^5+65\,536\,z^{9/2}-32\,636\,928\,z^4-8\,110\,080\,z^{7/2}+1\,035\,847\,680\,z^3+253\,048\,320\,z^{5/2}-9\,129\,093\,120\,z^2-2\,111\,739\,840\,z^{3/2}+16\,938\,954\,900\,z+3\,127\,028\,625\sqrt{z}-2\,022\,451\,200\right)-2\,022\,451\,200\right)+e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(-1\,048\,576\,z^5+130\,744\,320\,z^4-4\,167\,475\,200\,z^3+37\,246\,809\,600\,z^2-73\,329\,656\,400\,z+13\,749\,310\,575\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+ e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(1\,048\,576\,z^5-130\,744\,320\,z^4+4\,167\,475\,200\,z^3-37\,246\,809\,600\,z^2+73\,329\,656\,400\,z-13\,749\,310\,575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8837.01

$${}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{3}{4};-z\right)=\frac{1}{4\,044\,902\,400}$$
$$\left(\sqrt{\pi}\,\sqrt[4]{z}\,\left(1\,048\,576\,z^5+130\,744\,320\,z^4+4\,167\,475\,200\,z^3+37\,246\,809\,600\,z^2+73\,329\,656\,400\,z+13\,749\,310\,575\right)\right.$$
$$S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\left(4\left(65\,536\,z^5+8\,159\,232\,z^4+258\,961\,920\,z^3+2\,282\,273\,280\,z^2+4\,234\,738\,725\,z+505\,612\,800\right)\right.$$
$$\left.\left.\cos\left(2\sqrt{z}\right)+\sqrt{z}\,\left(65\,536\,z^4+8\,110\,080\,z^3+253\,048\,320\,z^2+2\,111\,739\,840\,z+3\,127\,028\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.8838.01

$${}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{10\,949\,677\,200\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(1\,048\,576\,z^6-144\,506\,880\,z^5+5\,251\,276\,800\,z^4-57\,112\,247\,808\,z^3+166\,059\,043\,920\,z^2-\right.\right.\right.$$
$$\left.111\,126\,780\,765\,z+10\,949\,677\,200\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\sqrt{z}\,\left(1\,048\,576\,z^5-143\,589\,376\,z^4+5\,126\,381\,568\,z^3-52\,723\,883\,520\,z^2+122\,968\,193\,040\,z-24\,616\,035\,675\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\,z\left(-1\,048\,576\,z^5+143\,720\,448\,z^4-5\,143\,928\,832\,z^3+\right.$$
$$\left.\left.\left.53\,312\,878\,080\,z^2-127\,983\,738\,960\,z+30\,049\,398\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8839.01

$${}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{5}{4};-z\right)=$$
$$\frac{1}{10\,949\,677\,200\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(1\,048\,576\,z^6+144\,506\,880\,z^5+5\,251\,276\,800\,z^4+57\,112\,247\,808\,z^3+166\,059\,043\,920\,z^2+\right.\right.\right.$$
$$\left.111\,126\,780\,765\,z+10\,949\,677\,200\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\sqrt{z}\,\left(1\,048\,576\,z^5+143\,589\,376\,z^4+5\,126\,381\,568\,z^3+52\,723\,883\,520\,z^2+122\,968\,193\,040\,z+24\,616\,035\,675\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\,z\left(1\,048\,576\,z^5+143\,720\,448\,z^4+5\,143\,928\,832\,z^3+\right.$$
$$\left.\left.\left.53\,312\,878\,080\,z^2+127\,983\,738\,960\,z+30\,049\,398\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8840.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{7}{4};z\right)= \frac{1}{2\,070\,990\,028\,800\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(4\,194\,304\,z^{11/2}-1\,048\,576\,z^5-626\,786\,304\,z^{9/2}+155\,910\,144\,z^4+24\,888\,901\,632\,z^{7/2}-6\,107\,996\,160\,z^3-293\,532\,825\,600\,z^{5/2}+69\,177\,669\,120\,z^2+832\,878\,607\,680\,z^{3/2}-168\,602\,106\,960\,z-240\,541\,339\,500\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-626\,786\,304\,z^{9/2}-155\,910\,144\,z^4+24\,888\,901\,632\,z^{7/2}+6\,107\,996\,160\,z^3-293\,532\,825\,600\,z^{5/2}-69\,177\,669\,120\,z^2+832\,878\,607\,680\,z^{3/2}+168\,602\,106\,960\,z-240\,541\,339\,500\sqrt{z}-13\,749\,310\,575\right)+13\,749\,310\,575\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-2\,510\,290\,944\,z^5+100\,019\,404\,800\,z^4-1\,191\,897\,907\,200\,z^3+3\,519\,823\,507\,200\,z^2-1\,319\,933\,815\,200\,z-13\,749\,310\,575\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-2\,510\,290\,944\,z^5+100\,019\,404\,800\,z^4-1\,191\,897\,907\,200\,z^3+3\,519\,823\,507\,200\,z^2-1\,319\,933\,815\,200\,z-13\,749\,310\,575\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8841.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{7}{4};-z\right)= \frac{1}{517\,747\,507\,200\,z^{3/4}}\left(\sqrt{\pi}\left(16\,777\,216\,z^6+2\,510\,290\,944\,z^5+100\,019\,404\,800\,z^4+1\,191\,897\,907\,200\,z^3+3\,519\,823\,507\,200\,z^2+1\,319\,933\,815\,200\,z-13\,749\,310\,575\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576\,z^5+156\,696\,576\,z^4+6\,222\,225\,408\,z^3+73\,383\,206\,400\,z^2+208\,219\,651\,920\,z+60\,135\,334\,875\right)\cos\left(2\sqrt{z}\right)+\left(1\,048\,576\,z^5+155\,910\,144\,z^4+6\,107\,996\,160\,z^3+69\,177\,669\,120\,z^2+168\,602\,106\,960\,z+13\,749\,310\,575\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8842.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{9}{4};z\right)= \frac{1}{911\,013\,143\,040\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(16\,777\,216\,z^6-2\,730\,491\,904\,z^5+120\,968\,773\,632\,z^4-1\,675\,208\,392\,704\,z^3+6\,516\,893\,940\,480\,z^2-5\,780\,102\,328\,000\,z+902\,763\,556\,695\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-16\,777\,216\,z^6+2\,715\,811\,840\,z^5-118\,604\,365\,824\,z^4+1\,573\,282\,529\,280\,z^3-5\,213\,019\,651\,840\,z^2+1\,930\,726\,717\,920\,z+13\,749\,310\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-16\,777\,216\,z^6+2\,717\,908\,992\,z^5-118\,937\,419\,776\,z^4+1\,587\,119\,063\,040\,z^3-5\,371\,739\,493\,120\,z^2+2\,236\,123\,169\,280\,z+41\,247\,931\,725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8843.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{9}{4};-z\right)=\frac{1}{911\,013\,143\,040\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+2\,730\,491\,904\,z^5+120\,968\,773\,632\,z^4+1\,675\,208\,392\,704\,z^3+6\,516\,893\,940\,480\,z^2+5\,780\,102\,328\,000\,z+902\,763\,556\,695\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216\,z^6+2\,715\,811\,840\,z^5+118\,604\,365\,824\,z^4+1\,573\,282\,529\,280\,z^3+5\,213\,019\,651\,840\,z^2+1\,930\,726\,717\,920\,z-13\,749\,310\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(16\,777\,216\,z^6+2\,717\,908\,992\,z^5+118\,937\,419\,776\,z^4+1\,587\,119\,063\,040\,z^3+5\,371\,739\,493\,120\,z^2+2\,236\,123\,169\,280\,z-41\,247\,931\,725\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8844.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{11}{4};z\right)=\frac{1}{132\,543\,361\,843\,200\,z^{7/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(67\,108\,864\,z^{13/2}-16\,777\,216\,z^6-11\,702\,108\,160\,z^{11/2}+2\,912\,944\,128\,z^5+557\,939\,687\,424\,z^{9/2}-137\,343\,467\,520\,z^4-8\,242\,899\,517\,440\,z^{7/2}+1\,964\,803\,276\,800\,z^3+31\,489\,397\,775\,360\,z^{5/2}-6\,686\,560\,177\,920\,z^2-14\,640\,397\,833\,600\,z^{3/2}+1\,319\,933\,815\,200\,z-274\,986\,211\,500\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^6-11\,702\,108\,160\,z^{11/2}-2\,912\,944\,128\,z^5+557\,939\,687\,424\,z^{9/2}+137\,343\,467\,520\,z^4-8\,242\,899\,517\,440\,z^{7/2}-1\,964\,803\,276\,800\,z^3+31\,489\,397\,775\,360\,z^{5/2}+6\,686\,560\,177\,920\,z^2-14\,640\,397\,833\,600\,z^{3/2}-1\,319\,933\,815\,200\,z-274\,986\,211\,500\sqrt{z}+206\,239\,658\,625\right)-206\,239\,658\,625\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456\,z^7-46\,858\,764\,288\,z^6+2\,240\,434\,667\,520\,z^5-33\,373\,141\,401\,600\,z^4+131\,406\,744\,268\,800\,z^3-73\,916\,293\,651\,200\,z^2-1\,539\,922\,784\,400\,z+206\,239\,658\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456\,z^7-46\,858\,764\,288\,z^6+2\,240\,434\,667\,520\,z^5-33\,373\,141\,401\,600\,z^4+131\,406\,744\,268\,800\,z^3-73\,916\,293\,651\,200\,z^2-1\,539\,922\,784\,400\,z+206\,239\,658\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.8845.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{11}{4};-z\right)=\frac{1}{33\,135\,840\,460\,800\,z^{7/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+46\,858\,764\,288\,z^6+2\,240\,434\,667\,520\,z^5+33\,373\,141\,401\,600\,z^4+131\,406\,744\,268\,800\,z^3+73\,916\,293\,651\,200\,z^2-1\,539\,922\,784\,400\,z-206\,239\,658\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+2\,925\,527\,040\,z^5+139\,484\,921\,856\,z^4+2\,060\,724\,879\,360\,z^3+7\,872\,349\,443\,840\,z^2+3\,660\,099\,458\,400\,z-68\,746\,552\,875\right)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6+2\,912\,944\,128\,z^5+137\,343\,467\,520\,z^4+1\,964\,803\,276\,800\,z^3+6\,686\,560\,177\,920\,z^2+1\,319\,933\,815\,200\,z+206\,239\,658\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.8846.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{1}{2}, \frac{13}{4}; z\right) = $$

$$ \left(\left(2\sqrt{z}\left(268\,435\,456\,z^7 - 50\,381\,979\,648\,z^6 + 2\,633\,361\,260\,544\,z^5 - 44\,300\,297\,502\,720\,z^4 + 215\,896\,665\,600\,000\,z^3 - 236\,189\,182\,521\,600\,z^2 + 47\,340\,763\,470\,000\,z + 288\,735\,522\,075\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(268\,435\,456\,z^7 - 50\,147\,098\,624\,z^6 + 2\,589\,673\,390\,080\,z^5 - 42\,068\,739\,686\,400\,z^4 + 180\,711\,407\,923\,200\,z^3 - 98\,670\,085\,113\,600\,z^2 - 2\,419\,878\,661\,200\,z + 481\,225\,870\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-268\,435\,456\,z^7 + 50\,180\,653\,056\,z^6 - 2\,595\,839\,016\,960\,z^5 + 42\,374\,062\,080\,000\,z^4 - 185\,118\,248\,448\,000\,z^3 + 111\,046\,980\,844\,800\,z^2 + 4\,179\,790\,414\,800\,z - 1\,443\,677\,610\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(48\,587\,367\,628\,800\sqrt{2}\; z^{7/4}\right) $$

07.22.03.8847.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{1}{2}, \frac{13}{4}; -z\right) = $$

$$ \left(\left(2\sqrt{z}\left(268\,435\,456\,z^7 + 50\,381\,979\,648\,z^6 + 2\,633\,361\,260\,544\,z^5 + 44\,300\,297\,502\,720\,z^4 + 215\,896\,665\,600\,000\,z^3 + 236\,189\,182\,521\,600\,z^2 + 47\,340\,763\,470\,000\,z - 288\,735\,522\,075\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(268\,435\,456\,z^7 + 50\,147\,098\,624\,z^6 + 2\,589\,673\,390\,080\,z^5 + 42\,068\,739\,686\,400\,z^4 + 180\,711\,407\,923\,200\,z^3 + 98\,670\,085\,113\,600\,z^2 - 2\,419\,878\,661\,200\,z - 481\,225\,870\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(268\,435\,456\,z^7 + 50\,180\,653\,056\,z^6 + 2\,595\,839\,016\,960\,z^5 + 42\,374\,062\,080\,000\,z^4 + 185\,118\,248\,448\,000\,z^3 + 111\,046\,980\,844\,800\,z^2 - 4\,179\,790\,414\,800\,z - 1\,443\,677\,610\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(48\,587\,367\,628\,800\sqrt{2}\; z^{7/4}\right) $$

07.22.03.8848.01

$${}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{15}{4};z\right)=$$
$$\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2}-268\,435\,456\,z^7-214\,010\,167\,296\,z^{13/2}+53\,301\,215\,232\,z^6+11\,909\,260\,640\,256\,z^{11/2}-\right.\right.\right.$$
$$2\,938\,031\,308\,800\,z^5-211\,432\,805\,498\,880\,z^{9/2}+50\,785\,312\,112\,640\,z^4+1\,015\,596\,711\,198\,720\,z^{7/2}-$$
$$222\,155\,248\,250\,880\,z^3-654\,565\,319\,654\,400\,z^{5/2}+73\,916\,293\,651\,200\,z^2-$$
$$27\,278\,632\,180\,800\,z^{3/2}-12\,539\,371\,244\,400\,z+17\,324\,131\,324\,500\sqrt{z}+e^{4\sqrt{z}}$$
$$\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^7-214\,010\,167\,296\,z^{13/2}-53\,301\,215\,232\,z^6+11\,909\,260\,640\,256\,z^{11/2}+\right.$$
$$2\,938\,031\,308\,800\,z^5-211\,432\,805\,498\,880\,z^{9/2}-50\,785\,312\,112\,640\,z^4+1\,015\,596\,711\,198\,720\,z^{7/2}+$$
$$222\,155\,248\,250\,880\,z^3-654\,565\,319\,654\,400\,z^{5/2}-73\,916\,293\,651\,200\,z^2-27\,278\,632\,180\,800\,z^{3/2}+$$
$$\left.\left.\left.12\,539\,371\,244\,400\,z+17\,324\,131\,324\,500\sqrt{z}-12\,993\,098\,493\,375\right)+12\,993\,098\,493\,375\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-856\,845\,975\,552\,z^7+47\,795\,939\,573\,760\,z^6-854\,352\,419\,880\,960\,z^5+\right.$$
$$4\,205\,015\,816\,601\,600\,z^4-3\,153\,761\,862\,451\,200\,z^3-98\,555\,058\,201\,600\,z^2+$$
$$\left.26\,398\,676\,304\,000\,z-12\,993\,098\,493\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-856\,845\,975\,552\,z^7+47\,795\,939\,573\,760\,z^6-854\,352\,419\,880\,960\,z^5+\right.$$
$$4\,205\,015\,816\,601\,600\,z^4-3\,153\,761\,862\,451\,200\,z^3-98\,555\,058\,201\,600\,z^2+$$
$$\left.\left.\left.26\,398\,676\,304\,000\,z-12\,993\,098\,493\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)\Big/\left(6\,169\,291\,023\,974\,400\,z^{11/4}\right)$$

07.22.03.8849.01

$${}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{15}{4};-z\right)=$$
$$\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^8+856\,845\,975\,552\,z^7+47\,795\,939\,573\,760\,z^6+854\,352\,419\,880\,960\,z^5+4\,205\,015\,816\,601\,600\,z^4+\right.\right.$$
$$\left.3\,153\,761\,862\,451\,200\,z^3-98\,555\,058\,201\,600\,z^2-26\,398\,676\,304\,000\,z-12\,993\,098\,493\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^7+53\,502\,541\,824\,z^6+2\,977\,315\,160\,064\,z^5+52\,858\,201\,374\,720\,z^4+\right.\right.$$
$$\left.253\,899\,177\,799\,680\,z^3+163\,641\,329\,913\,600\,z^2-6\,819\,658\,045\,200\,z-4\,331\,032\,831\,125\right)\cos\left(2\sqrt{z}\right)+$$
$$\left(268\,435\,456\,z^7+53\,301\,215\,232\,z^6+2\,938\,031\,308\,800\,z^5+50\,785\,312\,112\,640\,z^4+\right.$$
$$222\,155\,248\,250\,880\,z^3+73\,916\,293\,651\,200\,z^2+12\,539\,371\,244\,400\,z+$$
$$\left.\left.\left.12\,993\,098\,493\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(1\,542\,322\,755\,993\,600\,z^{11/4}\right)$$

07.22.03.8850.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{17}{4};z\right) = $$
$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-913\,217\,421\,312\,z^7+55\,006\,552\,129\,536\,z^6-1\,089\,042\,294\,767\,616\,z^5+6\,378\,649\,288\,704\,000\,z^4-\right.\right.\right. $$
$$ \left.\left.\left.8\,261\,721\,241\,804\,800\,z^3+1\,938\,790\,989\,273\,600\,z^2+64\,676\,756\,944\,800\,z-28\,584\,816\,685\,425\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$
$$ 3\left(4\,294\,967\,296\,z^8-909\,459\,324\,928\,z^7+54\,213\,828\,673\,536\,z^6-1\,042\,231\,842\,570\,240\,z^5+5\,501\,282\,992\,128\,000\right. $$
$$ \left.z^4-3\,987\,448\,606\,310\,400\,z^3-183\,030\,822\,374\,400\,z^2+141\,672\,896\,164\,800\,z-47\,641\,361\,142\,375\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-4\,294\,967\,296\,z^8+909\,996\,195\,840\,z^7-54\,325\,866\,921\,984\,z^6+ $$
$$ 1\,048\,673\,381\,253\,120\,z^5-5\,613\,365\,211\,955\,200\,z^4+4\,404\,291\,978\,240\,000\,z^3+246\,387\,645\,504\,000\,z^2- $$
$$ \left.\left.120\,113\,977\,183\,200\,z+142\,924\,083\,427\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(2\,033\,194\,460\,774\,400\,\sqrt{2}\;z^{11/4}\right) $$

07.22.03.8851.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{17}{4};-z\right) = $$
$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+913\,217\,421\,312\,z^7+55\,006\,552\,129\,536\,z^6+1\,089\,042\,294\,767\,616\,z^5+6\,378\,649\,288\,704\,000\,z^4+\right.\right.\right. $$
$$ \left.\left.\left.8\,261\,721\,241\,804\,800\,z^3+1\,938\,790\,989\,273\,600\,z^2-64\,676\,756\,944\,800\,z-28\,584\,816\,685\,425\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$
$$ 3\left(4\,294\,967\,296\,z^8+909\,459\,324\,928\,z^7+54\,213\,828\,673\,536\,z^6+1\,042\,231\,842\,570\,240\,z^5+5\,501\,282\,992\,128\,000\right. $$
$$ \left.z^4+3\,987\,448\,606\,310\,400\,z^3-183\,030\,822\,374\,400\,z^2-141\,672\,896\,164\,800\,z-47\,641\,361\,142\,375\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+909\,996\,195\,840\,z^7+54\,325\,866\,921\,984\,z^6+ $$
$$ 1\,048\,673\,381\,253\,120\,z^5+5\,613\,365\,211\,955\,200\,z^4+4\,404\,291\,978\,240\,000\,z^3-246\,387\,645\,504\,000\,z^2- $$
$$ \left.\left.120\,113\,977\,183\,200\,z-142\,924\,083\,427\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(2\,033\,194\,460\,774\,400\,\sqrt{2}\;z^{11/4}\right) $$

07.22.03.8852.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{19}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(17\,179\,869\,184\,z^{17/2}-4\,294\,967\,296\,z^{8}-3\,852\,585\,664\,512\,z^{15/2}+959\,925\,190\,656\,z^{7}+245\,091\,771\,875\,328\right.\right.\right.
$$
$$
z^{13/2}-60\,564\,072\,038\,400\,z^{6}-5\,081\,563\,461\,058\,560\,z^{11/2}+1\,227\,334\,090\,752\,000\,z^{5}+
$$
$$
29\,406\,532\,911\,759\,360\,z^{9/2}-6\,564\,895\,081\,758\,720\,z^{4}-24\,294\,305\,111\,408\,640\,z^{7/2}+
$$
$$
3\,153\,761\,862\,451\,200\,z^{3}-1\,576\,880\,931\,225\,600\,z^{5/2}-408\,299\,526\,835\,200\,z^{2}+1\,362\,171\,697\,286\,400\,z^{3/2}-
$$
$$
110\,874\,440\,476\,800\,z-2\,477\,350\,779\,403\,500\sqrt{z}+e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}-\right.
$$
$$
3\,852\,585\,664\,512\,z^{15/2}-959\,925\,190\,656\,z^{7}+245\,091\,771\,875\,328\,z^{13/2}+60\,564\,072\,038\,400\,z^{6}-
$$
$$
5\,081\,563\,461\,058\,560\,z^{11/2}-1\,227\,334\,090\,752\,000\,z^{5}+29\,406\,532\,911\,759\,360\,z^{9/2}+
$$
$$
6\,564\,895\,081\,758\,720\,z^{4}-24\,294\,305\,111\,408\,640\,z^{7/2}-3\,153\,761\,862\,451\,200\,z^{3}-
$$
$$
1\,576\,880\,931\,225\,600\,z^{5/2}+408\,299\,526\,835\,200\,z^{2}+1\,362\,171\,697\,286\,400\,z^{3/2}+
$$
$$
\left.\left.\left.110\,874\,440\,476\,800\,z-2\,477\,350\,779\,403\,500\sqrt{z}+1\,858\,013\,084\,552\,625\right)-1\,858\,013\,084\,552\,625\right)-
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-15\,423\,227\,559\,936\,z^{8}+983\,230\,756\,945\,920\,z^{7}-20\,504\,458\,077\,143\,040\,z^{6}+\right.
$$
$$
121\,104\,455\,518\,126\,080\,z^{5}-113\,535\,427\,048\,243\,200\,z^{4}-4\,730\,642\,793\,676\,800\,z^{3}+
$$
$$
\left.1\,900\,704\,693\,888\,000\,z^{2}-1\,871\,006\,183\,046\,000\,z+1\,858\,013\,084\,552\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-15\,423\,227\,559\,936\,z^{8}+983\,230\,756\,945\,920\,z^{7}-\right.
$$
$$
20\,504\,458\,077\,143\,040\,z^{6}+121\,104\,455\,518\,126\,080\,z^{5}-113\,535\,427\,048\,243\,200\,z^{4}-
$$
$$
4\,730\,642\,793\,676\,800\,z^{3}+1\,900\,704\,693\,888\,000\,z^{2}-1\,871\,006\,183\,046\,000\,z+
$$
$$
\left.\left.\left.1\,858\,013\,084\,552\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(236\,900\,775\,320\,616\,960\,z^{15/4}\right)
$$

07.22.03.8853.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{19}{4};-z\right)=
\left(\sqrt{\pi}\left(68\,719\,476\,736\,z^{9}+15\,423\,227\,559\,936\,z^{8}+983\,230\,756\,945\,920\,z^{7}+20\,504\,458\,077\,143\,040\,z^{6}+\right.\right.
$$
$$
121\,104\,455\,518\,126\,080\,z^{5}+113\,535\,427\,048\,243\,200\,z^{4}-4\,730\,642\,793\,676\,800\,z^{3}-
$$
$$
\left.1\,900\,704\,693\,888\,000\,z^{2}-1\,871\,006\,183\,046\,000\,z-1\,858\,013\,084\,552\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$
$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^{8}+963\,146\,416\,128\,z^{7}+61\,272\,942\,968\,832\,z^{6}+1\,270\,390\,865\,264\,640\,z^{5}+\right.\right.
$$
$$
7\,351\,633\,227\,939\,840\,z^{4}+6\,073\,576\,277\,852\,160\,z^{3}-394\,220\,232\,806\,400\,z^{2}-340\,542\,924\,321\,600\,z-
$$
$$
\left.619\,337\,694\,850\,875\right)\cos\left(2\sqrt{z}\right)+\left(4\,294\,967\,296\,z^{8}+959\,925\,190\,656\,z^{7}+60\,564\,072\,038\,400\,z^{6}+\right.
$$
$$
1\,227\,334\,090\,752\,000\,z^{5}+6\,564\,895\,081\,758\,720\,z^{4}+3\,153\,761\,862\,451\,200\,z^{3}+408\,299\,526\,835\,200\,z^{2}-
$$
$$
\left.\left.\left.110\,874\,440\,476\,800\,z+1\,858\,013\,084\,552\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(59\,225\,193\,830\,154\,240\,z^{15/4}\right)
$$

07.22.03.8854.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{21}{4};z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-16\,325\,170\,692\,096\,z^8+1\,113\,381\,150\,916\,608\,z^7-25\,357\,155\,934\,666\,752\,z^6+\right.\right.\right.
$$

$$
\left.\left.\left.173\,467\,367\,406\,305\,280\,z^5-258\,968\,630\,830\,694\,400\,z^4+67\,670\,650\,865\,664\,000\,z^3+\right.\right.\right.
$$

$$
\left.\left.\left.5\,321\,973\,142\,886\,400\,z^2-9\,299\,593\,694\,991\,600\,z+5\,574\,039\,253\,657\,875\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.
$$

$$
3\left(68\,719\,476\,736\,z^9-16\,265\,041\,149\,952\,z^8+1\,099\,198\,095\,163\,392\,z^7-24\,406\,602\,295\,541\,760\,z^6+\right.
$$

$$
152\,821\,805\,875\,200\,000\,z^5-138\,404\,910\,809\,088\,000\,z^4-9\,461\,285\,587\,353\,600\,z^3+
$$

$$
\left.9\,954\,060\,878\,361\,600\,z^2-22\,105\,591\,570\,062\,000\,z+9\,290\,065\,422\,763\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+
$$

$$
2\sqrt{z}\,\left(-68\,719\,476\,736\,z^9+16\,273\,631\,084\,544\,z^8-1\,101\,204\,918\,632\,448\,z^7+24\,537\,982\,996\,316\,160\,z^6-\right.
$$

$$
155\,497\,927\,960\,166\,400\,z^5+150\,839\,652\,689\,510\,400\,z^4+11\,038\,166\,518\,579\,200\,z^3-
$$

$$
\left.6\,166\,730\,784\,614\,400\,z^2+6\,860\,356\,004\,502\,000\,z-27\,870\,196\,268\,289\,375\right)
$$

$$
\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(72\,716\,601\,891\,225\,600\,\sqrt{2}\;z^{15/4}\right)
$$

07.22.03.8855.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{21}{4};-z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+16\,325\,170\,692\,096\,z^8+1\,113\,381\,150\,916\,608\,z^7+25\,357\,155\,934\,666\,752\,z^6+\right.\right.\right.
$$

$$
\left.\left.\left.173\,467\,367\,406\,305\,280\,z^5+258\,968\,630\,830\,694\,400\,z^4+67\,670\,650\,865\,664\,000\,z^3-\right.\right.\right.
$$

$$
\left.\left.\left.5\,321\,973\,142\,886\,400\,z^2-9\,299\,593\,694\,991\,600\,z-5\,574\,039\,253\,657\,875\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.
$$

$$
3\left(68\,719\,476\,736\,z^9+16\,265\,041\,149\,952\,z^8+1\,099\,198\,095\,163\,392\,z^7+24\,406\,602\,295\,541\,760\,z^6+\right.
$$

$$
152\,821\,805\,875\,200\,000\,z^5+138\,404\,910\,809\,088\,000\,z^4-9\,461\,285\,587\,353\,600\,z^3-
$$

$$
\left.9\,954\,060\,878\,361\,600\,z^2-22\,105\,591\,570\,062\,000\,z-9\,290\,065\,422\,763\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+
$$

$$
2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+16\,273\,631\,084\,544\,z^8+1\,101\,204\,918\,632\,448\,z^7+24\,537\,982\,996\,316\,160\,z^6+\right.
$$

$$
155\,497\,927\,960\,166\,400\,z^5+150\,839\,652\,689\,510\,400\,z^4-11\,038\,166\,518\,579\,200\,z^3-
$$

$$
\left.6\,166\,730\,784\,614\,400\,z^2-6\,860\,356\,004\,502\,000\,z-27\,870\,196\,268\,289\,375\right)
$$

$$
\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(72\,716\,601\,891\,225\,600\,\sqrt{2}\;z^{15/4}\right)
$$

07.22.03.8856.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{23}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(274\,877\,906\,944\,z^{19/2}-68\,719\,476\,736\,z^{9}-68\,496\,138\,436\,608\,z^{17/2}+17\,072\,495\,001\,600\,z^{8}+\right.\right.\right.
$$

$$
4\,903\,413\,837\,987\,840\,z^{15/2}-1\,213\,226\,255\,646\,720\,z^{7}-116\,273\,970\,696\,683\,520\,z^{13/2}+
$$

$$
28\,200\,851\,566\,755\,840\,z^{6}+787\,244\,904\,559\,411\,200\,z^{11/2}-178\,387\,064\,664\,883\,200\,z^{5}-
$$

$$
794\,432\,292\,795\,187\,200\,z^{9/2}+113\,535\,427\,048\,243\,200\,z^{4}-69\,382\,760\,973\,926\,400\,z^{7/2}-
$$

$$
7\,884\,404\,656\,128\,000\,z^{3}+65\,046\,338\,413\,056\,000\,z^{5/2}-39\,070\,040\,929\,920\,000\,z^{2}-
$$

$$
107\,587\,805\,276\,952\,000\,z^{3/2}+208\,097\,465\,469\,894\,000\,z+631\,724\,448\,747\,892\,500\sqrt{z}\,+
$$

$$
e^{4\sqrt{z}}\left(274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}-68\,496\,138\,436\,608\,z^{17/2}-\right.
$$

$$
17\,072\,495\,001\,600\,z^{8}+4\,903\,413\,837\,987\,840\,z^{15/2}+1\,213\,226\,255\,646\,720\,z^{7}-
$$

$$
116\,273\,970\,696\,683\,520\,z^{13/2}-28\,200\,851\,566\,755\,840\,z^{6}+787\,244\,904\,559\,411\,200\,z^{11/2}+
$$

$$
178\,387\,064\,664\,883\,200\,z^{5}-794\,432\,292\,795\,187\,200\,z^{9/2}-113\,535\,427\,048\,243\,200\,z^{4}-
$$

$$
69\,382\,760\,973\,926\,400\,z^{7/2}+7\,884\,404\,656\,128\,000\,z^{3}+65\,046\,338\,413\,056\,000\,z^{5/2}+
$$

$$
39\,070\,040\,929\,920\,000\,z^{2}-107\,587\,805\,276\,952\,000\,z^{3/2}-208\,097\,465\,469\,894\,000\,z+
$$

$$
\left.631\,724\,448\,747\,892\,500\sqrt{z}\,-473\,793\,336\,560\,919\,375\right)+473\,793\,336\,560\,919\,375\Big)-
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}-274\,190\,712\,176\,640\,z^{9}+19\,664\,615\,138\,918\,400\,z^{8}-\right.
$$

$$
468\,673\,327\,477\,555\,200\,z^{7}+3\,229\,452\,147\,150\,028\,800\,z^{6}-3\,633\,133\,665\,543\,782\,400\,z^{5}-
$$

$$
189\,225\,711\,747\,072\,000\,z^{4}+101\,370\,917\,007\,360\,000\,z^{3}-149\,680\,494\,643\,680\,000\,z^{2}+
$$

$$
\left.297\,282\,093\,528\,420\,000\,z-473\,793\,336\,560\,919\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}-274\,190\,712\,176\,640\,z^{9}+19\,664\,615\,138\,918\,400\,z^{8}-\right.
$$

$$
468\,673\,327\,477\,555\,200\,z^{7}+3\,229\,452\,147\,150\,028\,800\,z^{6}-3\,633\,133\,665\,543\,782\,400\,z^{5}-
$$

$$
189\,225\,711\,747\,072\,000\,z^{4}+101\,370\,917\,007\,360\,000\,z^{3}-149\,680\,494\,643\,680\,000\,z^{2}+
$$

$$
\left.\left.\left.297\,282\,093\,528\,420\,000\,z-473\,793\,336\,560\,919\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(7\,979\,815\,589\,747\,097\,600\,z^{19/4}\right)
$$

07.22.03.8857.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{1}{2},\frac{23}{4};-z\right)=
$$

$$
\left(\sqrt{\pi}\left(1\,099\,511\,627\,776\,z^{10}+274\,190\,712\,176\,640\,z^{9}+19\,664\,615\,138\,918\,400\,z^{8}+468\,673\,327\,477\,555\,200\,z^{7}+\right.\right.
$$

$$
3\,229\,452\,147\,150\,028\,800\,z^{6}+3\,633\,133\,665\,543\,782\,400\,z^{5}-
$$

$$
189\,225\,711\,747\,072\,000\,z^{4}-101\,370\,917\,007\,360\,000\,z^{3}-149\,680\,494\,643\,680\,000\,z^{2}-
$$

$$
\left.297\,282\,093\,528\,420\,000\,z-473\,793\,336\,560\,919\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$

$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(68\,719\,476\,736\,z^{9}+17\,124\,034\,609\,152\,z^{8}+1\,225\,853\,459\,496\,960\,z^{7}+29\,068\,492\,674\,170\,880\,z^{6}+\right.\right.
$$

$$
196\,811\,226\,139\,852\,800\,z^{5}+198\,608\,073\,198\,796\,800\,z^{4}-17\,345\,690\,243\,481\,600\,z^{3}-
$$

$$
16\,261\,584\,603\,264\,000\,z^{2}-26\,896\,951\,319\,238\,000\,z-157\,931\,112\,186\,973\,125\Big)\cos\left(2\sqrt{z}\right)+
$$

$$
\left(68\,719\,476\,736\,z^{9}+17\,072\,495\,001\,600\,z^{8}+1\,213\,226\,255\,646\,720\,z^{7}+28\,200\,851\,566\,755\,840\,z^{6}+\right.
$$

$$
178\,387\,064\,664\,883\,200\,z^{5}+113\,535\,427\,048\,243\,200\,z^{4}+7\,884\,404\,656\,128\,000\,z^{3}-39\,070\,040\,929\,920\,000
$$

$$
\left.\left.\left.z^{2}-208\,097\,465\,469\,894\,000\,z+473\,793\,336\,560\,919\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(1\,994\,953\,897\,436\,774\,400\,z^{19/4}\right)
$$

For fixed z and $a_1 = -\frac{21}{4}$, $b_1 = \frac{3}{2}$

07.22.03.8858.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{3}{2}, -\frac{23}{4}; z\right) = \frac{1}{2\,292\,816\,782\,025\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(16\,777\,216 z^6 + 748\,683\,264 z^5 + 18\,666\,160\,128 z^4 + 259\,719\,118\,848 z^3 + 1\,710\,826\,548\,480 z^2 + 3\,190\,005\,957\,600 z - 2\,292\,816\,782\,025\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(2\,097\,152 z^5 + 95\,420\,416 z^4 + 2\,418\,253\,824 z^3 + 34\,658\,426\,880 z^2 + 246\,469\,255\,200 z + 764\,272\,260\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 32 z\left(524\,288 z^5 + 23\,789\,568 z^4 + 601\,380\,864 z^3 + 8\,578\,321\,920 z^2 + 60\,207\,877\,800 z + 150\,301\,366\,425\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8859.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{3}{2}, -\frac{23}{4}; -z\right) = \frac{1}{2\,292\,816\,782\,025\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,777\,216 z^6 + 748\,683\,264 z^5 - 18\,666\,160\,128 z^4 + 259\,719\,118\,848 z^3 - 1\,710\,826\,548\,480 z^2 + 3\,190\,005\,957\,600 z + 2\,292\,816\,782\,025\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(2\,097\,152 z^5 - 95\,420\,416 z^4 + 2\,418\,253\,824 z^3 - 34\,658\,426\,880 z^2 + 246\,469\,255\,200 z - 764\,272\,260\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 32 z\left(524\,288 z^5 - 23\,789\,568 z^4 + 601\,380\,864 z^3 - 8\,578\,321\,920 z^2 + 60\,207\,877\,800 z - 150\,301\,366\,425\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8860.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{3}{2}, -\frac{21}{4}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}} $$

07.22.03.8861.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{3}{2}, -\frac{21}{4}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}} $$

07.22.03.8862.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},-\frac{19}{4};z\right)= \frac{1}{99\,687\,686\,175\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(8\,388\,608z^6+121\,110\,528z^5+1\,831\,108\,608z^4+18\,157\,934\,592z^3+91\,714\,508\,928z^2+125\,921\,287\,800z-99\,687\,686\,175\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(1\,048\,576z^5+16\,056\,320z^4+243\,683\,328z^3+2\,499\,243\,264z^2+13\,962\,871\,440z+33\,229\,228\,725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(1\,048\,576z^5+15\,925\,248z^4+241\,274\,880z^3+2\,459\,471\,616z^2+13\,462\,863\,120z+28\,035\,726\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8863.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},-\frac{19}{4};-z\right)= \frac{1}{99\,687\,686\,175\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-8\,388\,608z^6+121\,110\,528z^5-1\,831\,108\,608z^4+18\,157\,934\,592z^3-91\,714\,508\,928z^2+125\,921\,287\,800z+99\,687\,686\,175\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(1\,048\,576z^5-16\,056\,320z^4+243\,683\,328z^3-2\,499\,243\,264z^2+13\,962\,871\,440z-33\,229\,228\,725\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-8z\left(1\,048\,576z^5-15\,925\,248z^4+241\,274\,880z^3-2\,459\,471\,616z^2+13\,462\,863\,120z-28\,035\,726\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8864.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},-\frac{17}{4};z\right)= \frac{1}{60\,235\,074\,900\sqrt{z}}\left(e^{-2\sqrt{z}}\left(4\,194\,304e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{23/4}-4\,194\,304e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{23/4}+4\,194\,304e^{4\sqrt{z}}z^{11/2}+4\,194\,304z^{11/2}+1\,048\,576e^{4\sqrt{z}}z^5-1\,048\,576z^5+786\,432e^{4\sqrt{z}}z^{9/2}+786\,432z^{9/2}+983\,040e^{4\sqrt{z}}z^4-983\,040z^4+1\,720\,320e^{4\sqrt{z}}z^{7/2}+1\,720\,320z^{7/2}+3\,870\,720e^{4\sqrt{z}}z^3-3\,870\,720z^3+10\,644\,480e^{4\sqrt{z}}z^{5/2}+10\,644\,480z^{5/2}+34\,594\,560e^{4\sqrt{z}}z^2-34\,594\,560z^2+129\,729\,600e^{4\sqrt{z}}z^{3/2}+129\,729\,600z^{3/2}+551\,350\,800e^{4\sqrt{z}}z-551\,350\,800z+2\,618\,916\,300e^{4\sqrt{z}}\sqrt{z}+2\,618\,916\,300\sqrt{z}+13\,749\,310\,575e^{4\sqrt{z}}-13\,749\,310\,575\right)\right) $$

07.22.03.8865.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},-\frac{17}{4};-z\right)= \frac{1}{30\,117\,537\,450\sqrt{z}}\left(-8\,388\,608\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{23/4}-4\left(1\,048\,576z^5-196\,608z^4+430\,080z^3-2\,661\,120z^2+32\,432\,400z-654\,729\,075\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-1\,048\,576z^5+983\,040z^4-3\,870\,720z^3+34\,594\,560z^2-551\,350\,800z+13\,749\,310\,575\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8866.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},-\frac{15}{4};z\right)=\frac{1}{5\,246\,720\,325\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(4\,194\,304\,z^6-66\,060\,288\,z^5-279\,379\,968\,z^4-1\,721\,438\,208\,z^3-6\,111\,721\,728\,z^2-5\,596\,501\,680\,z+5\,246\,720\,325\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}$$
$$\left(-524\,288\,z^5+7\,798\,784\,z^4+41\,373\,696\,z^3+254\,494\,464\,z^2+1\,020\,232\,080\,z+1\,748\,906\,775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.512\,z\left(8192\,z^5-122\,880\,z^4-634\,368\,z^3-3\,873\,744\,z^2-15\,187\,095\,z-24\,763\,725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8867.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},-\frac{15}{4};-z\right)=\frac{1}{5\,246\,720\,325\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(4\,194\,304\,z^6+66\,060\,288\,z^5-279\,379\,968\,z^4+1\,721\,438\,208\,z^3-6\,111\,721\,728\,z^2+5\,596\,501\,680\,z+5\,246\,720\,325\right)\right.\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}$$
$$\left(524\,288\,z^5+7\,798\,784\,z^4-41\,373\,696\,z^3+254\,494\,464\,z^2-1\,020\,232\,080\,z+1\,748\,906\,775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.512\,z\left(8192\,z^5+122\,880\,z^4-634\,368\,z^3+3\,873\,744\,z^2-15\,187\,095\,z+24\,763\,725\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8868.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{3\,543\,239\,700\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-1\,048\,576\,e^{4\sqrt{z}}\,z^{11/2}-1\,048\,576\,z^{11/2}-262\,144\,e^{4\sqrt{z}}\,z^5-262\,144\,z^5-65\,536\right.\right.$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-483)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+65\,536\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-483)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+$$
$$31\,457\,280\,e^{4\sqrt{z}}\,z^{9/2}+31\,457\,280\,z^{9/2}+7\,667\,712\,e^{4\sqrt{z}}\,z^4-7\,667\,712\,z^4+5\,505\,024\,e^{4\sqrt{z}}\,z^{7/2}+$$
$$5\,505\,024\,z^{7/2}+6\,451\,200\,e^{4\sqrt{z}}\,z^3-6\,451\,200\,z^3+10\,321\,920\,e^{4\sqrt{z}}\,z^{5/2}+10\,321\,920\,z^{5/2}+$$
$$20\,563\,200\,e^{4\sqrt{z}}\,z^2-20\,563\,200\,z^2+47\,900\,160\,e^{4\sqrt{z}}\,z^{3/2}+47\,900\,160\,z^{3/2}+123\,243\,120\,e^{4\sqrt{z}}\,z-$$
$$\left.\left.123\,243\,120\,z+324\,324\,000\,e^{4\sqrt{z}}\,\sqrt{z}+324\,324\,000\,\sqrt{z}+723\,647\,925\,e^{4\sqrt{z}}-723\,647\,925\right)\right)$$

07.22.03.8869.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},-\frac{13}{4};-z\right)=\frac{1}{1\,771\,619\,850\sqrt{z}}$$
$$\left(131\,072\sqrt{\pi}\,(16z+483)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}+32\left(32\,768\,z^5+983\,040\,z^4-172\,032\,z^3+322\,560\,z^2-1\,496\,880\,z+10\,135\,125\right)\right.$$
$$\left.\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(262\,144\,z^5+7\,667\,712\,z^4-6\,451\,200\,z^3+20\,563\,200\,z^2-123\,243\,120\,z+723\,647\,925\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.8870.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},-\frac{11}{4};z\right)=\frac{1}{1\,049\,344\,065\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(-\left(2\,097\,152\,z^6-96\,337\,920\,z^5+540\,868\,608\,z^4+688\,343\,040\,z^3+1\,557\,384\,192\,z^2+763\,159\,320\,z-1\,049\,344\,065\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}$$
$$\left(262\,144\,z^5-11\,812\,864\,z^4+57\,458\,688\,z^3+129\,136\,896\,z^2+309\,728\,160\,z+349\,781\,355\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.8\,z\left(262\,144\,z^5-11\,845\,632\,z^4+58\,834\,944\,z^3+125\,685\,504\,z^2+295\,777\,440\,z+341\,410\,545\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8871.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},-\frac{11}{4};-z\right)=\frac{1}{1\,049\,344\,065\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-2\,097\,152\,z^6-96\,337\,920\,z^5-540\,868\,608\,z^4+688\,343\,040\,z^3-1\,557\,384\,192\,z^2+763\,159\,320\,z+1\,049\,344\,065\right)\right.\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}$$
$$\left(262\,144\,z^5+11\,812\,864\,z^4+57\,458\,688\,z^3-129\,136\,896\,z^2+309\,728\,160\,z-349\,781\,355\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.8\,z\left(262\,144\,z^5+11\,845\,632\,z^4+58\,834\,944\,z^3-125\,685\,504\,z^2+295\,777\,440\,z-341\,410\,545\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8872.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},-\frac{9}{4};z\right)=\frac{1}{272\,556\,900\sqrt{z}}$$
$$\left(e^{-2\sqrt{z}}\left(131\,072\,e^{4\sqrt{z}}\,z^{11/2}+131\,072\,z^{11/2}+32\,768\,e^{4\sqrt{z}}\,z^5-32\,768\,z^5-7\,888\,896\,e^{4\sqrt{z}}\,z^{9/2}-7\,888\,896\,z^{9/2}-\right.\right.$$
$$1\,947\,648\,e^{4\sqrt{z}}\,z^4+1\,947\,648\,z^4+512\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-15\,456\,z+156\,009\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}-$$
$$512\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-15\,456\,z+156\,009\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+78\,446\,592\,e^{4\sqrt{z}}\,z^{7/2}+$$
$$78\,446\,592\,z^{7/2}+18\,235\,392\,e^{4\sqrt{z}}\,z^3-18\,235\,392\,z^3+12\,063\,744\,e^{4\sqrt{z}}\,z^{5/2}+12\,063\,744\,z^{5/2}+$$
$$12\,499\,200\,e^{4\sqrt{z}}\,z^2-12\,499\,200\,z^2+16\,732\,800\,e^{4\sqrt{z}}\,z^{3/2}+16\,732\,800\,z^{3/2}+25\,673\,760\,e^{4\sqrt{z}}\,z-$$
$$\left.\left.25\,673\,760\,z+39\,792\,060\,e^{4\sqrt{z}}\,\sqrt{z}+39\,792\,060\,\sqrt{z}+48\,243\,195\,e^{4\sqrt{z}}-48\,243\,195\right)\right)$$

07.22.03.8873.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},-\frac{9}{4};-z\right)=\frac{1}{136\,278\,450\sqrt{z}}\left(-1024\sqrt{\pi}\,\left(256\,z^2+15\,456\,z+156\,009\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}-\right.$$
$$4\left(32\,768\,z^5+1\,972\,224\,z^4+19\,611\,648\,z^3-3\,015\,936\,z^2+4\,183\,200\,z-9\,948\,015\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-$$
$$\left.\left(32\,768\,z^5+1\,947\,648\,z^4+18\,235\,392\,z^3-12\,499\,200\,z^2+25\,673\,760\,z-48\,243\,195\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.8874.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},-\frac{7}{4};z\right)=\frac{1}{476\,974\,575\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,048\,576z^6-79\,822\,848z^5+1\,249\,726\,464z^4-3\,194\,634\,240z^3-598\,993\,920z^2+476\,974\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(131\,072z^5-9\,863\,168z^4+147\,678\,720z^3-276\,514\,560z^2-249\,580\,800z-158\,991\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-32z\left(32\,768z^5-2\,469\,888z^4+37\,215\,360z^3-72\,898\,560z^2-61\,878\,600z-42\,000\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8875.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},-\frac{7}{4};-z\right)=\frac{1}{476\,974\,575\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,048\,576z^6+79\,822\,848z^5+1\,249\,726\,464z^4+3\,194\,634\,240z^3-598\,993\,920z^2+476\,974\,575\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(131\,072z^5+9\,863\,168z^4+147\,678\,720z^3+276\,514\,560z^2-249\,580\,800z+158\,991\,525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+32z\left(32\,768z^5+2\,469\,888z^4+37\,215\,360z^3+72\,898\,560z^2-61\,878\,600z+42\,000\,525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8876.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},-\frac{5}{4};z\right)=\frac{1}{90\,852\,300\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-32\,768e^{4\sqrt{z}}z^{11/2}-32\,768z^{11/2}-8192e^{4\sqrt{z}}z^5+8192z^5+2\,961\,408e^{4\sqrt{z}}z^{9/2}+2\,961\,408z^{9/2}+734\,208e^{4\sqrt{z}}z^4-734\,208z^4-59\,364\,480e^{4\sqrt{z}}z^{7/2}-59\,364\,480z^{7/2}-14\,311\,584e^{4\sqrt{z}}z^3+14\,311\,584z^3-8e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-370\,944z^2+7\,488\,432z-30\,421\,755\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+8e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-370\,944z^2+7\,488\,432z-30\,421\,755\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+233\,275\,392e^{4\sqrt{z}}z^{5/2}+233\,275\,392z^{5/2}+49\,271\,040e^{4\sqrt{z}}z^2-49\,271\,040z^2+27\,578\,880e^{4\sqrt{z}}z^{3/2}+27\,578\,880z^{3/2}+21\,924\,000e^{4\sqrt{z}}z-21\,924\,000z+19\,111\,680e^{4\sqrt{z}}\sqrt{z}+19\,111\,680\sqrt{z}+13\,157\,235e^{4\sqrt{z}}-13\,157\,235\right)\right) $$

07.22.03.8877.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},-\frac{5}{4};-z\right)=\frac{1}{45\,426\,150\sqrt{z}}\left(16\sqrt{\pi}\left(4096z^3+370\,944z^2+7\,488\,432z+30\,421\,755\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+128\left(256z^5+23\,136z^4+463\,785z^3+1\,822\,464z^2-215\,460z+149\,310\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8192z^5+734\,208z^4+14\,311\,584z^3+49\,271\,040z^2-21\,924\,000z+13\,157\,235\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8878.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{3}{2}, -\frac{3}{4}; z\right) = \frac{1}{476\,974\,575\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-524\,288 z^6 + 55\,738\,368 z^5 - 1\,434\,015\,744 z^4 + 9\,417\,373\,056 z^3 - 11\,771\,948\,160 z^2 + 1\,271\,932\,200 z + 476\,974\,575\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(65\,536 z^5 - 6\,909\,952 z^4 + 173\,252\,352 z^3 - 1\,030\,184\,400 z^2 + 665\,204\,400 z + 158\,991\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 8 z\left(65\,536 z^5 - 6\,918\,144 z^4 + 174\,091\,008 z^3 - 1\,049\,393\,520 z^2 + 745\,642\,800 z - 183\,665\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8879.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{3}{2}, -\frac{3}{4}; -z\right) = -\frac{1}{476\,974\,575\sqrt[4]{z}}\left(\sqrt{2}\left(\left(524\,288 z^6 + 55\,738\,368 z^5 + 1\,434\,015\,744 z^4 + 9\,417\,373\,056 z^3 + 11\,771\,948\,160 z^2 + 1\,271\,932\,200 z - 476\,974\,575\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(65\,536 z^5 + 6\,909\,952 z^4 + 173\,252\,352 z^3 + 1\,030\,184\,400 z^2 + 665\,204\,400 z - 158\,991\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 8 z\left(65\,536 z^5 + 6\,918\,144 z^4 + 174\,091\,008 z^3 + 1\,049\,393\,520 z^2 + 745\,642\,800 z - 183\,665\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8880.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{3}{2}, -\frac{1}{4}; z\right) = \frac{1}{581\,454\,720\sqrt{z}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 7\,913\,472 z^3 + 239\,629\,824 z^2 - 1\,946\,992\,320 z + 3\,011\,753\,745\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} + e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536 z^4 + 7\,913\,472 z^3 - 239\,629\,824 z^2 + 1\,946\,992\,320 z - 3\,011\,753\,745\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} + 4\left(16\,384 z^{11/2} - 4096 z^5 - 1\,975\,296 z^{9/2} + 490\,752 z^4 + 59\,543\,232 z^{7/2} - 14\,528\,304 z^3 - 476\,285\,292 z^{5/2} + 109\,336\,815 z^2 + 681\,730\,560 z^{3/2} - 115\,274\,880 z + 42\,608\,160\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^{11/2} + 4096 z^5 - 1\,975\,296 z^{9/2} - 490\,752 z^4 + 59\,543\,232 z^{7/2} + 14\,528\,304 z^3 - 476\,285\,292 z^{5/2} - 109\,336\,815 z^2 + 681\,730\,560 z^{3/2} + 115\,274\,880 z + 42\,608\,160\sqrt{z} + 15\,036\,840\right) - 15\,036\,840\right)\right)\right) $$

07.22.03.8881.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{3}{2}, -\frac{1}{4}; -z\right) = \frac{1}{145\,363\,680\sqrt{z}}\left(-\sqrt{\pi}\left(65\,536 z^4 + 7\,913\,472 z^3 + 239\,629\,824 z^2 + 1\,946\,992\,320 z + 3\,011\,753\,745\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} - 2\left(4\sqrt{z}\left(4096 z^5 + 493\,824 z^4 + 14\,885\,808 z^3 + 119\,071\,323 z^2 + 170\,432\,640 z - 10\,652\,040\right)\cos\left(2\sqrt{z}\right) + \left(4096 z^5 + 490\,752 z^4 + 14\,528\,304 z^3 + 109\,336\,815 z^2 + 115\,274\,880 z - 15\,036\,840\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8882.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{1}{4};z\right)= \frac{1}{1\,430\,923\,725\sqrt[4]{z}}\left(\sqrt{2}\left(\left(262\,144\,z^6-35\,782\,656\,z^5+1\,281\,337\,344\,z^4-13\,591\,033\,344\,z^3+37\,650\,076\,884\,z^2-22\,894\,779\,600\,z+1\,430\,923\,725\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-6\sqrt{z}\left(65\,536\,z^5-8\,888\,320\,z^4+312\,603\,648\,z^3-3\,130\,245\,216\,z^2+6\,858\,570\,915\,z-953\,949\,150\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-4\,z\left(65\,536\,z^5-8\,896\,512\,z^4+313\,689\,600\,z^3-3\,166\,115\,904\,z^2+7\,154\,142\,345\,z-1\,233\,565\,200\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8883.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{1}{4};-z\right)= \frac{1}{1\,430\,923\,725\sqrt[4]{z}}\left(\sqrt{2}\left(\left(262\,144\,z^6+35\,782\,656\,z^5+1\,281\,337\,344\,z^4+13\,591\,033\,344\,z^3+37\,650\,076\,884\,z^2+22\,894\,779\,600\,z+1\,430\,923\,725\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-6\sqrt{z}\left(65\,536\,z^5+8\,888\,320\,z^4+312\,603\,648\,z^3+3\,130\,245\,216\,z^2+6\,858\,570\,915\,z+953\,949\,150\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(65\,536\,z^5+8\,896\,512\,z^4+313\,689\,600\,z^3+3\,166\,115\,904\,z^2+7\,154\,142\,345\,z+1\,233\,565\,200\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8884.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{3}{4};z\right)= \frac{1}{186\,065\,510\,400\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-4\left(262\,144\,z^{11/2}-65\,536\,z^5-39\,518\,208\,z^{9/2}+9\,830\,400\,z^4+1\,590\,220\,800\,z^{7/2}-390\,351\,360\,z^3-19\,185\,949\,440\,z^{5/2}+4\,527\,411\,840\,z^2+57\,147\,394\,500\,z^{3/2}-11\,677\,898\,925\,z-20\,050\,329\,600\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^{11/2}+65\,536\,z^5-39\,518\,208\,z^{9/2}-9\,830\,400\,z^4+1\,590\,220\,800\,z^{7/2}+390\,351\,360\,z^3-19\,185\,949\,440\,z^{5/2}-4\,527\,411\,840\,z^2+57\,147\,394\,500\,z^{3/2}+11\,677\,898\,925\,z-20\,050\,329\,600\sqrt{z}-1\,603\,929\,600\right)+1\,603\,929\,600\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(-1\,048\,576\,z^5+158\,269\,440\,z^4-6\,390\,128\,640\,z^3+77\,879\,692\,800\,z^2-240\,940\,299\,600\,z+105\,411\,381\,075\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(1\,048\,576\,z^5-158\,269\,440\,z^4+6\,390\,128\,640\,z^3-77\,879\,692\,800\,z^2+240\,940\,299\,600\,z-105\,411\,381\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8885.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{3}{4};-z\right)=\frac{1}{46\,516\,377\,600\sqrt{z}}\left(\sqrt{\pi}\,z^{3/4}\left(1\,048\,576\,z^5+158\,269\,440\,z^4+6\,390\,128\,640\,z^3+77\,879\,692\,800\,z^2+240\,940\,299\,600\,z+105\,411\,381\,075\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\left(4\sqrt{z}\left(65\,536\,z^5+9\,879\,552\,z^4+397\,555\,200\,z^3+4\,796\,487\,360\,z^2+14\,286\,848\,625\,z+5\,012\,582\,400\right)\cos\left(2\sqrt{z}\right)+\left(65\,536\,z^5+9\,830\,400\,z^4+390\,351\,360\,z^3+4\,527\,411\,840\,z^2+11\,677\,898\,925\,z+1\,603\,929\,600\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8886.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{5}{4};z\right)=\frac{1}{125\,921\,287\,800\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(1\,048\,576\,z^6-174\,784\,512\,z^5+8\,021\,680\,128\,z^4-117\,570\,765\,312\,z^3+506\,151\,244\,368\,z^2-541\,175\,352\,795\,z+125\,921\,287\,800\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(1\,048\,576\,z^5-173\,867\,008\,z^4+7\,870\,291\,968\,z^3-110\,803\,004\,928\,z^2+414\,051\,477\,840\,z-230\,378\,719\,725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(-1\,048\,576\,z^5+173\,998\,080\,z^4-7\,891\,623\,936\,z^3+111\,723\,397\,632\,z^2-425\,367\,890\,640\,z+256\,921\,208\,775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8887.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{5}{4};-z\right)=\frac{1}{125\,921\,287\,800\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(1\,048\,576\,z^6+174\,784\,512\,z^5+8\,021\,680\,128\,z^4+117\,570\,765\,312\,z^3+506\,151\,244\,368\,z^2+541\,175\,352\,795\,z+125\,921\,287\,800\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(1\,048\,576\,z^5+173\,867\,008\,z^4+7\,870\,291\,968\,z^3+110\,803\,004\,928\,z^2+414\,051\,477\,840\,z+230\,378\,719\,725\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(1\,048\,576\,z^5+173\,998\,080\,z^4+7\,891\,623\,936\,z^3+111\,723\,397\,632\,z^2+425\,367\,890\,640\,z+256\,921\,208\,775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8888.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{7}{4};z\right)=\frac{1}{23\,816\,385\,331\,200\,z^{3/4}}
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(4\,194\,304\,z^{11/2}-1\,048\,576\,z^5-758\,906\,880\,z^{9/2}+188\,940\,288\,z^4+38\,200\,049\,664\,z^{7/2}-9\,411\,010\,560\,z^3-\right.\right.\right.
\left.\left.\left.616\,149\,596\,160\,z^{5/2}+147\,439\,756\,800\,z^2+2\,788\,391\,511\,360\,z^{3/2}-606\,464\,727\,120\,z-\right.\right.\right.
\left.\left.\left.2\,166\,875\,757\,900\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-758\,906\,880\,z^{9/2}-188\,940\,288\,z^4+\right.\right.\right.\right.
\left.\left.\left.\left.38\,200\,049\,664\,z^{7/2}+9\,411\,010\,560\,z^3-616\,149\,596\,160\,z^{5/2}-147\,439\,756\,800\,z^2+2\,788\,391\,511\,360\right.\right.\right.\right.
\left.\left.\left.\left.z^{3/2}+606\,464\,727\,120\,z-2\,166\,875\,757\,900\sqrt{z}-299\,674\,823\,175\right)+299\,674\,823\,175\right)-
e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-3\,038\,773\,248\,z^5+153\,363\,087\,360\,z^4-2\,492\,150\,169\,600\,z^3+\right.
\left.11\,565\,134\,380\,800\,z^2-10\,119\,492\,583\,200\,z+316\,234\,143\,225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-3\,038\,773\,248\,z^5+153\,363\,087\,360\,z^4-2\,492\,150\,169\,600\,z^3+\right.
\left.\left.11\,565\,134\,380\,800\,z^2-10\,119\,492\,583\,200\,z+316\,234\,143\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)
$$

07.22.03.8889.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{7}{4};-z\right)=
\frac{1}{5\,954\,096\,332\,800\,z^{3/4}}\left(\sqrt{\pi}\left(16\,777\,216\,z^6+3\,038\,773\,248\,z^5+153\,363\,087\,360\,z^4+2\,492\,150\,169\,600\,z^3+\right.\right.
\left.\left.11\,565\,134\,380\,800\,z^2+10\,119\,492\,583\,200\,z+316\,234\,143\,225\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}
\left(4\sqrt{z}\left(1\,048\,576\,z^5+189\,726\,720\,z^4+9\,550\,012\,416\,z^3+154\,037\,399\,040\,z^2+697\,097\,877\,840\,z+541\,718\,939\,475\right)
\cos\left(2\sqrt{z}\right)+\left(1\,048\,576\,z^5+188\,940\,288\,z^4+9\,411\,010\,560\,z^3+\right.\right.
\left.\left.\left.147\,439\,756\,800\,z^2+606\,464\,727\,120\,z+299\,674\,823\,175\right)\sin\left(2\sqrt{z}\right)\right)\right)
$$

07.22.03.8890.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{9}{4};z\right)=
\left(\left(2\sqrt{z}\left(16\,777\,216\,z^6-3\,303\,014\,400\,z^5+184\,912\,379\,904\,z^4-3\,459\,881\,779\,200\,z^3+20\,223\,452\,342\,016\,z^2-\right.\right.\right.
\left.\left.\left.30\,728\,864\,406\,240\,z+10\,539\,897\,973\,605\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-
3\left(16\,777\,216\,z^6-3\,288\,334\,336\,z^5+182\,047\,014\,912\,z^4-3\,302\,850\,625\,536\,z^3+\right.\right.
\left.\left.17\,448\,654\,263\,040\,z^2-17\,143\,610\,964\,480\,z+105\,411\,381\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-
2\sqrt{z}\left(16\,777\,216\,z^6-3\,290\,431\,488\,z^5+182\,451\,634\,176\,z^4-3\,324\,398\,321\,664\,z^3+17\,801\,011\,388\,160\,z^2-\right.
\left.\left.18\,482\,796\,652\,320\,z+316\,234\,143\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(10\,476\,651\,144\,960\sqrt{2}\,z^{3/4}\right)
$$

07.22.03.8891.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{9}{4};-z\right)= $$

$$ \left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+3\,303\,014\,400\,z^5+184\,912\,379\,904\,z^4+3\,459\,881\,779\,200\,z^3+20\,223\,452\,342\,016\,z^2+\right.\right.\right. $$

$$ \left.\left.\left.30\,728\,864\,406\,240\,z+10\,539\,897\,973\,605\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$

$$ 3\left(16\,777\,216\,z^6+3\,288\,334\,336\,z^5+182\,047\,014\,912\,z^4+3\,302\,850\,625\,536\,z^3+\right. $$

$$ \left.17\,448\,654\,263\,040\,z^2+17\,143\,610\,964\,480\,z+105\,411\,381\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\,\left(16\,777\,216\,z^6+3\,290\,431\,488\,z^5+182\,451\,634\,176\,z^4+3\,324\,398\,321\,664\,z^3+17\,801\,011\,388\,160\,z^2+\right. $$

$$ \left.\left.18\,482\,796\,652\,320\,z+316\,234\,143\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(10\,476\,651\,144\,960\,\sqrt{2}\;z^{3/4}\right) $$

07.22.03.8892.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{11}{4};z\right)= $$

$$ \left(e^{-2\sqrt{z}}\,\left(-4\sqrt[4]{z}\,\left(67\,108\,864\,z^{13/2}-16\,777\,216\,z^6-14\,168\,358\,912\,z^{11/2}+3\,529\,506\,816\,z^5+856\,201\,887\,744\,z^{9/2}-\right.\right.\right. $$

$$ 211\,446\,595\,584\,z^4-17\,289\,666\,035\,712\,z^{7/2}+4\,172\,507\,136\,000\,z^3+104\,988\,649\,651\,200\,z^{5/2}- $$

$$ 23\,581\,062\,731\,520\,z^2-126\,806\,237\,873\,280\,z^{3/2}+20\,779\,168\,606\,560\,z+1\,264\,936\,572\,900\,\sqrt{z}\;+ $$

$$ e^{4\sqrt{z}}\,\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^6-14\,168\,358\,912\,z^{11/2}-3\,529\,506\,816\,z^5+\right. $$

$$ 856\,201\,887\,744\,z^{9/2}+211\,446\,595\,584\,z^4-17\,289\,666\,035\,712\,z^{7/2}-4\,172\,507\,136\,000\,z^3+ $$

$$ 104\,988\,649\,651\,200\,z^{5/2}+23\,581\,062\,731\,520\,z^2-126\,806\,237\,873\,280\,z^{3/2}- $$

$$ \left.\left.\left.20\,779\,168\,606\,560\,z+1\,264\,936\,572\,900\,\sqrt{z}\;-948\,702\,429\,675\right)+948\,702\,429\,675\right)- $$

$$ e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(268\,435\,456\,z^7-56\,723\,767\,296\,z^6+3\,435\,333\,156\,864\,z^5-69\,780\,204\,748\,800\,z^4+\right. $$

$$ \left.431\,765\,016\,883\,200\,z^3-566\,691\,584\,659\,200\,z^2+35\,418\,224\,041\,200\,z-948\,702\,429\,675\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+ $$

$$ e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(268\,435\,456\,z^7-56\,723\,767\,296\,z^6+3\,435\,333\,156\,864\,z^5-69\,780\,204\,748\,800\,z^4+\right. $$

$$ 431\,765\,016\,883\,200\,z^3-566\,691\,584\,659\,200\,z^2+35\,418\,224\,041\,200\,z- $$

$$ \left.\left.\left.948\,702\,429\,675\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)\Big/\left(1\,524\,248\,661\,196\,800\,z^{7/4}\right) $$

07.22.03.8893.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{11}{4};-z\right)= $$

$$ \frac{1}{381\,062\,165\,299\,200\,z^{7/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+56\,723\,767\,296\,z^6+3\,435\,333\,156\,864\,z^5+69\,780\,204\,748\,800\,z^4+\right.\right. $$

$$ \left.431\,765\,016\,883\,200\,z^3+566\,691\,584\,659\,200\,z^2+35\,418\,224\,041\,200\,z+948\,702\,429\,675\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ $$

$$ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+3\,542\,089\,728\,z^5+214\,050\,471\,936\,z^4+4\,322\,416\,508\,928\,z^3+26\,247\,162\,412\,800\,z^2+\right.\right. $$

$$ 31\,701\,559\,468\,320\,z+316\,234\,143\,225\right)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6+3\,529\,506\,816\,z^5+211\,446\,595\,584\right. $$

$$ \left.\left.\left.z^4+4\,172\,507\,136\,000\,z^3+23\,581\,062\,731\,520\,z^2+20\,779\,168\,606\,560\,z-948\,702\,429\,675\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8894.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{13}{4};z\right)= $$

$$ \left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-60\,951\,625\,728\,z^6+4\,027\,233\,337\,344\,z^5-91\,690\,915\,921\,920\,z^4+677\,376\,259\,338\,240\,z^3-\right.\right.\right. $$

$$ \left.1\,331\,071\,959\,571\,200\,z^2+567\,187\,638\,217\,200\,z-948\,702\,429\,675\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2- $$

$$ 3\left(268\,435\,456\,z^7-60\,716\,744\,704\,z^6+3\,974\,297\,026\,560\,z^5-88\,255\,326\,781\,440\,z^4+602\,713\,094\,860\,800\,z^3-\right. $$

$$ \left.851\,360\,186\,476\,800\,z^2+15\,179\,238\,874\,800\,z-1\,581\,170\,716\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)- $$

$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7-60\,750\,299\,136\,z^6+3\,981\,783\,859\,200\,z^5-88\,729\,680\,936\,960\,z^4+\right. $$

$$ \left.\left.\left.612\,395\,107\,430\,400\,z^3-902\,523\,119\,097\,600\,z^2+35\,418\,224\,041\,200\,z-4\,743\,512\,148\,375\right)\right. $$

$$ \left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(558\,754\,727\,731\,200\,\sqrt{2}\;z^{7/4}\right) $$

07.22.03.8895.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{13}{4};-z\right)= $$

$$ \left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+60\,951\,625\,728\,z^6+4\,027\,233\,337\,344\,z^5+91\,690\,915\,921\,920\,z^4+677\,376\,259\,338\,240\,z^3+\right.\right.\right. $$

$$ \left.1\,331\,071\,959\,571\,200\,z^2+567\,187\,638\,217\,200\,z+948\,702\,429\,675\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- $$

$$ 3\left(268\,435\,456\,z^7+60\,716\,744\,704\,z^6+3\,974\,297\,026\,560\,z^5+88\,255\,326\,781\,440\,z^4+602\,713\,094\,860\,800\,z^3+\right. $$

$$ \left.851\,360\,186\,476\,800\,z^2+15\,179\,238\,874\,800\,z+1\,581\,170\,716\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7+60\,750\,299\,136\,z^6+3\,981\,783\,859\,200\,z^5+88\,729\,680\,936\,960\,z^4+\right. $$

$$ \left.\left.\left.612\,395\,107\,430\,400\,z^3+902\,523\,119\,097\,600\,z^2+35\,418\,224\,041\,200\,z+4\,743\,512\,148\,375\right)\right. $$

$$ \left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(558\,754\,727\,731\,200\,\sqrt{2}\;z^{7/4}\right) $$

07.22.03.8896.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{15}{4};z\right) = $$
$$ \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2}-268\,435\,456\,z^{7}-259\,107\,323\,904\,z^{13/2}+64\,575\,504\,384\,z^{6}+18\,273\,596\,866\,560\,z^{11/2}-\right.\right.\right. $$
$$ 4\,520\,659\,648\,512\,z^{5}-443\,261\,609\,312\,256\,z^{9/2}+107\,584\,608\,337\,920\,z^{4}+3\,377\,273\,807\,093\,760\,z^{7/2}- $$
$$ 773\,770\,378\,752\,000\,z^{3}-5\,541\,087\,937\,674\,240\,z^{5/2}+993\,206\,619\,175\,680\,z^{2}+ $$
$$ 141\,672\,896\,164\,800\,z^{3/2}+86\,015\,686\,957\,200\,z-44\,272\,780\,051\,500\sqrt{z}+e^{4\sqrt{z}} $$
$$ \left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-259\,107\,323\,904\,z^{13/2}-64\,575\,504\,384\,z^{6}+18\,273\,596\,866\,560\,z^{11/2}+\right. $$
$$ 4\,520\,659\,648\,512\,z^{5}-443\,261\,609\,312\,256\,z^{9/2}-107\,584\,608\,337\,920\,z^{4}+3\,377\,273\,807\,093\,760\,z^{7/2}+ $$
$$ 773\,770\,378\,752\,000\,z^{3}-5\,541\,087\,937\,674\,240\,z^{5/2}-993\,206\,619\,175\,680\,z^{2}+141\,672\,896\,164\,800\,z^{3/2}- $$
$$ \left.\left.\left.86\,015\,686\,957\,200\,z-44\,272\,780\,051\,500\sqrt{z}+33\,204\,585\,038\,625\right)-33\,204\,585\,038\,625\right)- $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-1\,037\,234\,601\,984\,z^{7}+73\,287\,107\,346\,432\,z^{6}-1\,786\,373\,241\,569\,280\,z^{5}+\right. $$
$$ 13\,816\,480\,540\,262\,400\,z^{4}-24\,178\,840\,945\,459\,200\,z^{3}+2\,266\,766\,338\,636\,800\,z^{2}- $$
$$ \left.121\,433\,910\,998\,400\,z+33\,204\,585\,038\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+ $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-1\,037\,234\,601\,984\,z^{7}+73\,287\,107\,346\,432\,z^{6}-1\,786\,373\,241\,569\,280\,z^{5}+\right. $$
$$ 13\,816\,480\,540\,262\,400\,z^{4}-24\,178\,840\,945\,459\,200\,z^{3}+2\,266\,766\,338\,636\,800\,z^{2}- $$
$$ \left.\left.121\,433\,910\,998\,400\,z+33\,204\,585\,038\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big/\left(70\,946\,846\,775\,705\,600\,z^{11/4}\right) $$

07.22.03.8897.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{15}{4};-z\right) = $$
$$ \left(\sqrt{\pi}\left(4\,294\,967\,296\,z^{8}+1\,037\,234\,601\,984\,z^{7}+73\,287\,107\,346\,432\,z^{6}+1\,786\,373\,241\,569\,280\,z^{5}+13\,816\,480\,540\,262\,400\,z^{4}+\right.\right. $$
$$ \left.24\,178\,840\,945\,459\,200\,z^{3}+2\,266\,766\,338\,636\,800\,z^{2}+121\,433\,910\,998\,400\,z+33\,204\,585\,038\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^{7}+64\,776\,830\,976\,z^{6}+4\,568\,399\,216\,640\,z^{5}+110\,815\,402\,328\,064\,z^{4}+\right.\right. $$
$$ \left.844\,318\,451\,773\,440\,z^{3}+1\,385\,271\,984\,418\,560\,z^{2}+35\,418\,224\,041\,200\,z+11\,068\,195\,012\,875\right)\cos\left(2\sqrt{z}\right)+ $$
$$ \left(268\,435\,456\,z^{7}+64\,575\,504\,384\,z^{6}+4\,520\,659\,648\,512\,z^{5}+107\,584\,608\,337\,920\,z^{4}+\right. $$
$$ 773\,770\,378\,752\,000\,z^{3}+993\,206\,619\,175\,680\,z^{2}-86\,015\,686\,957\,200\,z- $$
$$ \left.\left.\left.33\,204\,585\,038\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(17\,736\,711\,693\,926\,400\,z^{11/4}\right) $$

07.22.03.8898.01

$${}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{17}{4};z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-1\,104\,880\,336\,896\,z^7+84\,151\,294\,230\,528\,z^6-2\,257\,444\,134\,715\,392\,z^5+20\,162\,159\,221\,800\,960\right.\right.\right.$$
$$\left.z^4-48\,553\,050\,676\,838\,400\,z^3+23\,996\,171\,130\,624\,000\,z^2-182\,150\,866\,497\,600\,z+59\,768\,253\,069\,525\right)$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4\,294\,967\,296\,z^8-1\,101\,122\,240\,512\,z^7+83\,190\,865\,723\,392\,z^6-\right.$$
$$2\,185\,415\,035\,453\,440\,z^5+18\,304\,219\,525\,939\,200\,z^4-33\,766\,238\,499\,840\,000\,z^3+$$
$$\left.1\,133\,383\,169\,318\,400\,z^2-374\,421\,225\,578\,400\,z+99\,613\,755\,115\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-1\,101\,659\,111\,424\,z^7+83\,326\,861\,836\,288\,z^6-2\,195\,405\,332\,807\,680\,z^5+\right.$$
$$18\,548\,685\,324\,288\,000\,z^4-35\,424\,896\,480\,870\,400\,z^3+2\,266\,766\,338\,636\,800\,z^2-$$
$$\left.\left.\left.485\,735\,643\,993\,600\,z+298\,841\,265\,347\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(23\,381\,736\,298\,905\,600\,\sqrt{2}\;z^{11/4}\right)$$

07.22.03.8899.01

$${}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{17}{4};-z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,104\,880\,336\,896\,z^7+84\,151\,294\,230\,528\,z^6+2\,257\,444\,134\,715\,392\,z^5+20\,162\,159\,221\,800\,960\right.\right.\right.$$
$$\left.z^4+48\,553\,050\,676\,838\,400\,z^3+23\,996\,171\,130\,624\,000\,z^2+182\,150\,866\,497\,600\,z+59\,768\,253\,069\,525\right)$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4\,294\,967\,296\,z^8+1\,101\,122\,240\,512\,z^7+83\,190\,865\,723\,392\,z^6+\right.$$
$$2\,185\,415\,035\,453\,440\,z^5+18\,304\,219\,525\,939\,200\,z^4+33\,766\,238\,499\,840\,000\,z^3+$$
$$\left.1\,133\,383\,169\,318\,400\,z^2+374\,421\,225\,578\,400\,z+99\,613\,755\,115\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,101\,659\,111\,424\,z^7+83\,326\,861\,836\,288\,z^6+2\,195\,405\,332\,807\,680\,z^5+\right.$$
$$18\,548\,685\,324\,288\,000\,z^4+35\,424\,896\,480\,870\,400\,z^3+2\,266\,766\,338\,636\,800\,z^2+$$
$$\left.\left.\left.485\,735\,643\,993\,600\,z+298\,841\,265\,347\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(23\,381\,736\,298\,905\,600\,\sqrt{2}\;z^{11/4}\right)$$

07.22.03.8900.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{19}{4};z\right) = \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(17\,179\,869\,184\,z^{17/2}-4\,294\,967\,296\,z^8-4\,664\,334\,483\,456\,z^{15/2}+1\,162\,862\,395\,392\,z^7+376\,037\,003\,231\,232\,z^{13/2}-93\,148\,176\,973\,824\,z^6-10\,649\,440\,566\,116\,352\,z^{11/2}+2\,595\,388\,485\,795\,840\,z^5+97\,612\,265\,839\,656\,960\,z^{9/2}-22\,669\,165\,483\,130\,880\,z^4-202\,530\,587\,272\,151\,040\,z^{7/2}+38\,426\,960\,754\,524\,160\,z^3+9\,067\,065\,354\,547\,200\,z^{5/2}+4\,533\,532\,677\,273\,600\,z^2-4\,371\,620\,795\,942\,400\,z^{3/2}-1\,275\,056\,065\,483\,200\,z+4\,383\,005\,225\,098\,500\sqrt{z}+e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^8-4\,664\,334\,483\,456\,z^{15/2}-1\,162\,862\,395\,392\,z^7+376\,037\,003\,231\,232\,z^{13/2}+93\,148\,176\,973\,824\,z^6-10\,649\,440\,566\,116\,352\,z^{11/2}-2\,595\,388\,485\,795\,840\,z^5+97\,612\,265\,839\,656\,960\,z^{9/2}+22\,669\,165\,483\,130\,880\,z^4-202\,530\,587\,272\,151\,040\,z^{7/2}-38\,426\,960\,754\,524\,160\,z^3+9\,067\,065\,354\,547\,200\,z^{5/2}-4\,533\,532\,677\,273\,600\,z^2-4\,371\,620\,795\,942\,400\,z^{3/2}+1\,275\,056\,065\,483\,200\,z+4\,383\,005\,225\,098\,500\sqrt{z}-3\,287\,253\,918\,823\,875\right)+3\,287\,253\,918\,823\,875\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9-18\,670\,222\,835\,712\,z^8+1\,507\,620\,493\,983\,744\,z^7-42\,872\,957\,797\,662\,720\,z^6+397\,914\,639\,559\,557\,120\,z^5-870\,438\,274\,036\,531\,200\,z^4+108\,804\,784\,254\,566\,400\,z^3-8\,743\,241\,591\,884\,800\,z^2+4\,781\,460\,245\,562\,000\,z-3\,287\,253\,918\,823\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9-18\,670\,222\,835\,712\,z^8+1\,507\,620\,493\,983\,744\,z^7-42\,872\,957\,797\,662\,720\,z^6+397\,914\,639\,559\,557\,120\,z^5-870\,438\,274\,036\,531\,200\,z^4+108\,804\,784\,254\,566\,400\,z^3-8\,743\,241\,591\,884\,800\,z^2+4\,781\,460\,245\,562\,000\,z-3\,287\,253\,918\,823\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\Big)\Big)\Big/\left(2\,724\,358\,916\,187\,095\,040\,z^{15/4}\right) $$

07.22.03.8901.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{19}{4};-z\right) = \left(\sqrt{\pi}\left(68\,719\,476\,736\,z^9+18\,670\,222\,835\,712\,z^8+1\,507\,620\,493\,983\,744\,z^7+42\,872\,957\,797\,662\,720\,z^6+397\,914\,639\,559\,557\,120\,z^5+870\,438\,274\,036\,531\,200\,z^4+108\,804\,784\,254\,566\,400\,z^3+8\,743\,241\,591\,884\,800\,z^2+4\,781\,460\,245\,562\,000\,z+3\,287\,253\,918\,823\,875\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^8+1\,166\,083\,620\,864\,z^7+94\,009\,250\,807\,808\,z^6+2\,662\,360\,141\,529\,088\,z^5+24\,403\,066\,459\,914\,240\,z^4+50\,632\,646\,818\,037\,760\,z^3+2\,266\,766\,338\,636\,800\,z^2+1\,092\,905\,198\,985\,600\,z+1\,095\,751\,306\,274\,625\right)\cos\left(2\sqrt{z}\right)+\left(4\,294\,967\,296\,z^8+1\,162\,862\,395\,392\,z^7+93\,148\,176\,973\,824\,z^6+2\,595\,388\,485\,795\,840\,z^5+22\,669\,165\,483\,130\,880\,z^4+38\,426\,960\,754\,524\,160\,z^3-4\,533\,532\,677\,273\,600\,z^2-1\,275\,056\,065\,483\,200\,z-3\,287\,253\,918\,823\,875\right)\sin\left(2\sqrt{z}\right)\Big)\Big)\Big/\left(681\,089\,729\,046\,773\,760\,z^{15/4}\right) $$

07.22.03.8902.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{21}{4};z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-19\,752\,554\,594\,304\,z^8+1\,703\,748\,028\,071\,936\,z^7-52\,620\,763\,160\,641\,536\,z^6+\right.\right.\right.
$$

$$
551\,256\,223\,767\,330\,816\,z^5-1\,570\,931\,753\,494\,118\,400\,z^4+868\,883\,138\,500\,608\,000\,z^3-
$$

$$
\left.\left.15\,543\,540\,607\,795\,200\,z^2+16\,681\,983\,523\,405\,200\,z-8\,546\,860\,188\,942\,075\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-
$$

$$
3\left(68\,719\,476\,736\,z^9-19\,692\,425\,052\,160\,z^8+1\,686\,566\,011\,404\,288\,z^7-51\,158\,699\,250\,548\,736\,z^6+\right.
$$

$$
507\,604\,262\,442\,762\,240\,z^5-1\,156\,437\,337\,286\,246\,400\,z^4+60\,447\,102\,363\,648\,000\,z^3-
$$

$$
\left.30\,439\,433\,690\,265\,600\,z^2+37\,932\,917\,948\,125\,200\,z-14\,244\,766\,981\,570\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+
$$

$$
2\sqrt{z}\,\left(-68\,719\,476\,736\,z^9+19\,701\,014\,986\,752\,z^8-1\,689\,001\,257\,861\,120\,z^7+51\,362\,188\,895\,453\,184\,z^6-\right.
$$

$$
513\,409\,888\,938\,885\,120\,z^5+1\,204\,601\,669\,900\,697\,600\,z^4-108\,804\,784\,254\,566\,400\,z^3+
$$

$$
\left.29\,144\,138\,639\,616\,000\,z^2-22\,632\,245\,162\,326\,800\,z+42\,734\,300\,944\,710\,375\right)
$$

$$
\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(836\,240\,921\,749\,094\,400\,\sqrt{2}\;z^{15/4}\right)
$$

07.22.03.8903.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{21}{4};-z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+19\,752\,554\,594\,304\,z^8+1\,703\,748\,028\,071\,936\,z^7+52\,620\,763\,160\,641\,536\,z^6+\right.\right.\right.
$$

$$
551\,256\,223\,767\,330\,816\,z^5+1\,570\,931\,753\,494\,118\,400\,z^4+868\,883\,138\,500\,608\,000\,z^3+
$$

$$
\left.\left.15\,543\,540\,607\,795\,200\,z^2+16\,681\,983\,523\,405\,200\,z+8\,546\,860\,188\,942\,075\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-
$$

$$
3\left(68\,719\,476\,736\,z^9+19\,692\,425\,052\,160\,z^8+1\,686\,566\,011\,404\,288\,z^7+51\,158\,699\,250\,548\,736\,z^6+\right.
$$

$$
507\,604\,262\,442\,762\,240\,z^5+1\,156\,437\,337\,286\,246\,400\,z^4+60\,447\,102\,363\,648\,000\,z^3+
$$

$$
\left.30\,439\,433\,690\,265\,600\,z^2+37\,932\,917\,948\,125\,200\,z+14\,244\,766\,981\,570\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+
$$

$$
2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+19\,701\,014\,986\,752\,z^8+1\,689\,001\,257\,861\,120\,z^7+51\,362\,188\,895\,453\,184\,z^6+\right.
$$

$$
513\,409\,888\,938\,885\,120\,z^5+1\,204\,601\,669\,900\,697\,600\,z^4+108\,804\,784\,254\,566\,400\,z^3+
$$

$$
\left.29\,144\,138\,639\,616\,000\,z^2+22\,632\,245\,162\,326\,800\,z+42\,734\,300\,944\,710\,375\right)
$$

$$
\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(836\,240\,921\,749\,094\,400\,\sqrt{2}\;z^{15/4}\right)
$$

07.22.03.8904.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{23}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(274\,877\,906\,944\,z^{19/2}-68\,719\,476\,736\,z^{9}-82\,927\,228\,551\,168\,z^{17/2}+20\,680\,267\,530\,240\,z^{8}+\right.\right.\right.
$$
$$
7\,522\,656\,693\,780\,480\,z^{15/2}-1\,865\,331\,140\,198\,400\,z^{7}-243\,608\,272\,722\,984\,960\,z^{13/2}+
$$
$$
59\,554\,649\,698\,467\,840\,z^{6}+2\,609\,718\,666\,618\,470\,400\,z^{11/2}-612\,080\,201\,288\,908\,800\,z^{5}-
$$
$$
6\,549\,860\,771\,758\,080\,000\,z^{9/2}+1\,293\,055\,297\,693\,286\,400\,z^{4}+435\,219\,137\,018\,265\,600\,z^{7/2}+
$$
$$
181\,341\,307\,090\,944\,000\,z^{3}-252\,582\,534\,876\,672\,000\,z^{5/2}+4\,857\,356\,439\,936\,000\,z^{2}+
$$
$$
310\,567\,227\,378\,408\,000\,z^{3/2}-157\,788\,188\,103\,546\,000\,z-854\,686\,018\,894\,207\,500\sqrt{z}\,+
$$
$$
e^{4\sqrt{z}}\left(274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}-82\,927\,228\,551\,168\,z^{17/2}-\right.
$$
$$
20\,680\,267\,530\,240\,z^{8}+7\,522\,656\,693\,780\,480\,z^{15/2}+1\,865\,331\,140\,198\,400\,z^{7}-
$$
$$
243\,608\,272\,722\,984\,960\,z^{13/2}-59\,554\,649\,698\,467\,840\,z^{6}+2\,609\,718\,666\,618\,470\,400\,z^{11/2}+
$$
$$
612\,080\,201\,288\,908\,800\,z^{5}-6\,549\,860\,771\,758\,080\,000\,z^{9/2}-1\,293\,055\,297\,693\,286\,400\,z^{4}+
$$
$$
435\,219\,137\,018\,265\,600\,z^{7/2}-181\,341\,307\,090\,944\,000\,z^{3}-252\,582\,534\,876\,672\,000\,z^{5/2}-
$$
$$
4\,857\,356\,439\,936\,000\,z^{2}+310\,567\,227\,378\,408\,000\,z^{3/2}+157\,788\,188\,103\,546\,000\,z-
$$
$$
\left.854\,686\,018\,894\,207\,500\sqrt{z}\,+641\,014\,514\,170\,655\,625\right)-641\,014\,514\,170\,655\,625\Big)-
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}-331\,915\,072\,634\,880\,z^{9}+30\,152\,409\,879\,674\,880\,z^{8}-\right.
$$
$$
979\,953\,321\,089\,433\,600\,z^{7}+10\,611\,057\,054\,921\,523\,200\,z^{6}-27\,854\,024\,769\,168\,998\,400\,z^{5}+
$$
$$
4\,352\,191\,370\,182\,656\,000\,z^{4}-466\,306\,218\,233\,856\,000\,z^{3}+382\,516\,819\,644\,960\,000\,z^{2}-
$$
$$
\left.525\,960\,627\,011\,820\,000\,z+641\,014\,514\,170\,655\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}-331\,915\,072\,634\,880\,z^{9}+30\,152\,409\,879\,674\,880\,z^{8}-\right.
$$
$$
979\,953\,321\,089\,433\,600\,z^{7}+10\,611\,057\,054\,921\,523\,200\,z^{6}-27\,854\,024\,769\,168\,998\,400\,z^{5}+
$$
$$
4\,352\,191\,370\,182\,656\,000\,z^{4}-466\,306\,218\,233\,856\,000\,z^{3}+382\,516\,819\,644\,960\,000\,z^{2}-
$$
$$
\left.\left.\left.\left.525\,960\,627\,011\,820\,000\,z+641\,014\,514\,170\,655\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(91\,767\,879\,282\,091\,622\,400\,z^{19/4}\right)
$$

07.22.03.8905.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{3}{2},\frac{23}{4};-z\right)=
\left(\sqrt{\pi}\left(1\,099\,511\,627\,776\,z^{10}+331\,915\,072\,634\,880\,z^{9}+30\,152\,409\,879\,674\,880\,z^{8}+979\,953\,321\,089\,433\,600\,z^{7}+\right.\right.
$$
$$
10\,611\,057\,054\,921\,523\,200\,z^{6}+27\,854\,024\,769\,168\,998\,400\,z^{5}+
$$
$$
4\,352\,191\,370\,182\,656\,000\,z^{4}+466\,306\,218\,233\,856\,000\,z^{3}+382\,516\,819\,644\,960\,000\,z^{2}+
$$
$$
\left.525\,960\,627\,011\,820\,000\,z+641\,014\,514\,170\,655\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$
$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(68\,719\,476\,736\,z^{9}+20\,731\,807\,137\,792\,z^{8}+1\,880\,664\,173\,445\,120\,z^{7}+60\,902\,068\,180\,746\,240\,z^{6}+\right.\right.
$$
$$
652\,429\,666\,654\,617\,600\,z^{5}+1\,637\,465\,192\,939\,520\,000\,z^{4}+108\,804\,784\,254\,566\,400\,z^{3}+
$$
$$
\left.63\,145\,633\,719\,168\,000\,z^{2}+77\,641\,806\,844\,602\,000\,z+213\,671\,504\,723\,551\,875\right)\cos\left(2\sqrt{z}\right)+
$$
$$
\left(68\,719\,476\,736\,z^{9}+20\,680\,267\,530\,240\,z^{8}+1\,865\,331\,140\,198\,400\,z^{7}+59\,554\,649\,698\,467\,840\,z^{6}+\right.
$$
$$
612\,080\,201\,288\,908\,800\,z^{5}+1\,293\,055\,297\,693\,286\,400\,z^{4}-
$$
$$
181\,341\,307\,090\,944\,000\,z^{3}+4\,857\,356\,439\,936\,000\,z^{2}+157\,788\,188\,103\,546\,000\,z-
$$
$$
\left.\left.\left.641\,014\,514\,170\,655\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(22\,941\,969\,820\,522\,905\,600\,z^{19/4}\right)
$$

For fixed z and $a_1 = -\frac{21}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.8906.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{5}{2}, -\frac{23}{4}; z\right) = \frac{1}{20\,635\,351\,038\,225\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(-\left(33\,554\,432\,z^6 + 1\,761\,607\,680\,z^5 + 53\,302\,394\,880\,z^4 + 944\,880\,943\,104\,z^3 + 8\,649\,356\,567\,040\,z^2 + 28\,674\,829\,854\,720\,z - 20\,635\,351\,038\,225\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 96\sqrt{z}\,\left(524\,288\,z^5 + 27\,983\,872\,z^4 + 857\,708\,544\,z^3 + 15\,536\,586\,240\,z^2 + 149\,512\,282\,920\,z + 596\,291\,546\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(33\,554\,432\,z^6 + 1\,786\,773\,504\,z^5 + 54\,656\,630\,784\,z^4 + 986\,692\,976\,640\,z^3 + 9\,416\,606\,814\,720\,z^2 + 36\,308\,196\,086\,400\,z + 31\,621\,769\,668\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8907.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{5}{2}, -\frac{23}{4}; -z\right) = \frac{1}{20\,635\,351\,038\,225\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-33\,554\,432\,z^6 + 1\,761\,607\,680\,z^5 - 53\,302\,394\,880\,z^4 + 944\,880\,943\,104\,z^3 - 8\,649\,356\,567\,040\,z^2 + 28\,674\,829\,854\,720\,z + 20\,635\,351\,038\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 96\sqrt{z}\,\left(524\,288\,z^5 - 27\,983\,872\,z^4 + 857\,708\,544\,z^3 - 15\,536\,586\,240\,z^2 + 149\,512\,282\,920\,z - 596\,291\,546\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-33\,554\,432\,z^6 + 1\,786\,773\,504\,z^5 - 54\,656\,630\,784\,z^4 + 986\,692\,976\,640\,z^3 - 9\,416\,606\,814\,720\,z^2 + 36\,308\,196\,086\,400\,z - 31\,621\,769\,668\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8908.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{5}{2}, -\frac{21}{4}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}} $$

07.22.03.8909.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{5}{2}, -\frac{21}{4}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}} $$

07.22.03.8910.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},-\frac{19}{4};z\right)= \frac{1}{897\,189\,175\,575\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(16\,777\,216\,z^6+286\,261\,248\,z^5+5\,247\,664\,128\,z^4+66\,393\,427\,968\,z^3+469\,032\,415\,488\,z^2+1\,223\,261\,358\,480\,z-897\,189\,175\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+24\sqrt{z}\left(1\,048\,576\,z^5+18\,808\,832\,z^4+345\,182\,208\,z^3+4\,469\,859\,072\,z^2+33\,622\,298\,640\,z+113\,184\,667\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,777\,216\,z^6+298\,844\,160\,z^5+5\,478\,875\,136\,z^4+70\,661\,541\,888\,z^3+525\,260\,816\,640\,z^2+1\,669\,642\,405\,200\,z+1\,090\,405\,850\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8911.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},-\frac{19}{4};-z\right)= \frac{1}{897\,189\,175\,575\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,777\,216\,z^6+286\,261\,248\,z^5-5\,247\,664\,128\,z^4+66\,393\,427\,968\,z^3-469\,032\,415\,488\,z^2+1\,223\,261\,358\,480\,z+897\,189\,175\,575\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+24\sqrt{z}\left(1\,048\,576\,z^5-18\,808\,832\,z^4+345\,182\,208\,z^3-4\,469\,859\,072\,z^2+33\,622\,298\,640\,z-113\,184\,667\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-16\,777\,216\,z^6+298\,844\,160\,z^5-5\,478\,875\,136\,z^4+70\,661\,541\,888\,z^3-525\,260\,816\,640\,z^2+1\,669\,642\,405\,200\,z-1\,090\,405\,850\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8912.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},-\frac{17}{4};z\right)= \frac{1}{2\,168\,462\,696\,400\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(33\,554\,432\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{27/4}-33\,554\,432\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{27/4}+33\,554\,432\,e^{4\sqrt{z}}z^{13/2}+33\,554\,432\,z^{13/2}+8\,388\,608\,e^{4\sqrt{z}}z^6-8\,388\,608\,z^6+6\,291\,456\,e^{4\sqrt{z}}z^{11/2}+6\,291\,456\,z^{11/2}+7\,864\,320\,e^{4\sqrt{z}}z^5-7\,864\,320\,z^5+13\,762\,560\,e^{4\sqrt{z}}z^{9/2}+13\,762\,560\,z^{9/2}+30\,965\,760\,e^{4\sqrt{z}}z^4-30\,965\,760\,z^4+85\,155\,840\,e^{4\sqrt{z}}z^{7/2}+85\,155\,840\,z^{7/2}+276\,756\,480\,e^{4\sqrt{z}}z^3-276\,756\,480\,z^3+1\,037\,836\,800\,e^{4\sqrt{z}}z^{5/2}+1\,037\,836\,800\,z^{5/2}+4\,410\,806\,400\,e^{4\sqrt{z}}z^2-4\,410\,806\,400\,z^2+20\,951\,330\,400\,e^{4\sqrt{z}}z^{3/2}+20\,951\,330\,400\,z^{3/2}+109\,994\,484\,600\,e^{4\sqrt{z}}z-109\,994\,484\,600\,z+632\,468\,286\,450\,e^{4\sqrt{z}}\sqrt{z}+632\,468\,286\,450\sqrt{z}-316\,234\,143\,225\,e^{4\sqrt{z}}+316\,234\,143\,225\right)\right) $$

07.22.03.8913.01

$${}_1F_2\left(-\frac{21}{4};\frac{5}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{1\,084\,231\,348\,200\,z^{3/2}}\left(-67\,108\,864\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{27/4}-2\left(16\,777\,216\,z^6-3\,145\,728\,z^5+6\,881\,280\,z^4-42\,577\,920\,z^3+\right.\right.$$
$$\left.518\,918\,400\,z^2-10\,475\,665\,200\,z+316\,234\,143\,225\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-8\,388\,608\,z^6+7\,864\,320\,z^5-\right.$$
$$\left.\left.30\,965\,760\,z^4+276\,756\,480\,z^3-4\,410\,806\,400\,z^2+109\,994\,484\,600\,z+316\,234\,143\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.8914.01

$${}_1F_2\left(-\frac{21}{4};\frac{5}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{47\,220\,482\,925\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8\,388\,608\,z^6-154\,140\,672\,z^5-813\,367\,296\,z^4-6\,374\,043\,648\,z^3-31\,962\,615\,552\,z^2-\right.\right.\right.$$
$$\left.61\,018\,897\,968\,z+47\,220\,482\,925\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$96\sqrt{z}\left(131\,072\,z^5-2\,293\,760\,z^4-14\,622\,720\,z^3-113\,412\,096\,z^2-611\,685\,648\,z-1\,604\,051\,505\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-8\,388\,608\,z^6+147\,849\,216\,z^5+920\,715\,264\,z^4+7\,110\,512\,640\,z^3+\right.$$
$$\left.\left.\left.37\,806\,144\,768\,z^2+94\,172\,394\,960\,z+43\,616\,234\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8915.01

$${}_1F_2\left(-\frac{21}{4};\frac{5}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{47\,220\,482\,925\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8\,388\,608\,z^6+154\,140\,672\,z^5-813\,367\,296\,z^4+6\,374\,043\,648\,z^3-31\,962\,615\,552\,z^2+\right.\right.\right.$$
$$\left.61\,018\,897\,968\,z+47\,220\,482\,925\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$96\sqrt{z}\left(131\,072\,z^5+2\,293\,760\,z^4-14\,622\,720\,z^3+113\,412\,096\,z^2-611\,685\,648\,z+1\,604\,051\,505\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(8\,388\,608\,z^6+147\,849\,216\,z^5-920\,715\,264\,z^4+7\,110\,512\,640\,z^3-\right.$$
$$\left.\left.\left.37\,806\,144\,768\,z^2+94\,172\,394\,960\,z-43\,616\,234\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8916.01

$${}_1F_2\left(-\frac{21}{4};\frac{5}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{127\,556\,629\,200\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(-8\,388\,608\,e^{4\sqrt{z}}\,z^{13/2}-8\,388\,608\,z^{13/2}-2\,097\,152\,e^{4\sqrt{z}}\,z^6+2\,097\,152\,z^6-\right.\right.$$
$$524\,288\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-567)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4}+524\,288\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-567)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4}+$$
$$295\,698\,432\,e^{4\sqrt{z}}\,z^{11/2}+295\,698\,432\,z^{11/2}+72\,351\,744\,e^{4\sqrt{z}}\,z^5-72\,351\,744\,z^5+52\,297\,728\,e^{4\sqrt{z}}\,z^{9/2}+$$
$$52\,297\,728\,z^{9/2}+61\,931\,520\,e^{4\sqrt{z}}\,z^4-61\,931\,520\,z^4+100\,638\,720\,e^{4\sqrt{z}}\,z^{7/2}+100\,638\,720\,z^{7/2}+$$
$$205\,148\,160\,e^{4\sqrt{z}}\,z^3-205\,148\,160\,z^3+494\,968\,320\,e^{4\sqrt{z}}\,z^{5/2}+494\,968\,320\,z^{5/2}+1\,349\,187\,840\,e^{4\sqrt{z}}\,z^2-$$
$$1\,349\,187\,840\,z^2+3\,956\,752\,800\,e^{4\sqrt{z}}\,z^{3/2}+3\,956\,752\,800\,z^{3/2}+11\,578\,366\,800\,e^{4\sqrt{z}}\,z-11\,578\,366\,800\,z+$$
$$\left.\left.27\,498\,621\,150\,e^{4\sqrt{z}}\,\sqrt{z}+27\,498\,621\,150\,\sqrt{z}-13\,749\,310\,575\,e^{4\sqrt{z}}+13\,749\,310\,575\right)\right)$$

07.22.03.8917.01

$${}_1F_2\left(-\frac{21}{4};\frac{5}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{63\,778\,314\,600\,z^{3/2}}\left(1\,048\,576\,\sqrt{\pi}\,(16z+567)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{23/4}+2\left(4\,194\,304\,z^6+147\,849\,216\,z^5-26\,148\,864\,z^4+\right.\right.$$
$$\left.50\,319\,360\,z^3-247\,484\,160\,z^2+1\,978\,376\,400\,z-13\,749\,310\,575\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(2\,097\,152\,z^6+$$
$$\left.\left.72\,351\,744\,z^5-61\,931\,520\,z^4+205\,148\,160\,z^3-1\,349\,187\,840\,z^2+11\,578\,366\,800\,z+13\,749\,310\,575\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.8918.01

$${}_1F_2\left(-\frac{21}{4};\frac{5}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{9\,444\,096\,585\,\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(4\,194\,304\,z^6-225\,705\,984\,z^5+1\,507\,000\,320\,z^4+2\,680\,602\,624\,z^3+8\,570\,790\,144\,z^2+\right.\right.\right.$$
$$\left.10\,679\,395\,104\,z-9\,444\,096\,585\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$24\sqrt{z}\left(262\,144\,z^5-13\,877\,248\,z^4+82\,231\,296\,z^3+230\,840\,064\,z^2+747\,756\,576\,z+1\,366\,319\,745\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(4\,194\,304\,z^6-222\,560\,256\,z^5+1\,341\,849\,600\,z^4+3\,601\,317\,888\,z^3+\right.$$
$$\left.\left.\left.11\,485\,442\,304\,z^2+20\,476\,501\,920\,z+6\,230\,890\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8919.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},-\frac{11}{4};-z\right)= $$

$$ -\frac{1}{9\,444\,096\,585\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4\,194\,304\,z^6+225\,705\,984\,z^5+1\,507\,000\,320\,z^4-2\,680\,602\,624\,z^3+8\,570\,790\,144\,z^2-\right.\right.\right. $$

$$ \left.\left.\left.10\,679\,395\,104\,z-9\,444\,096\,585\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- \right.\right. $$

$$ \left.\left.24\sqrt{z}\left(262\,144\,z^5+13\,877\,248\,z^4+82\,231\,296\,z^3-230\,840\,064\,z^2+747\,756\,576\,z-1\,366\,319\,745\right)\right.\right. $$

$$ \left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(4\,194\,304\,z^6+222\,560\,256\,z^5+1\,341\,849\,600\,z^4-3\,601\,317\,888\,z^3+\right.\right.\right. $$

$$ \left.\left.\left.11\,485\,442\,304\,z^2-20\,476\,501\,920\,z+6\,230\,890\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8920.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},-\frac{9}{4};z\right)=\frac{1}{9\,812\,048\,400\,z^{3/2}} $$

$$ \left(e^{-2\sqrt{z}}\left(1\,048\,576\,e^{4\sqrt{z}}\,z^{13/2}+1\,048\,576\,z^{13/2}+262\,144\,e^{4\sqrt{z}}\,z^6-262\,144\,z^6-74\,121\,216\,e^{4\sqrt{z}}\,z^{11/2}-74\,121\,216\,z^{11/2}-\right.\right. $$

$$ \left.\left.18\,333\,696\,e^{4\sqrt{z}}\,z^5+18\,333\,696\,z^5+4096\,e^{2\sqrt{z}}\,\sqrt{2\pi}\left(256\,z^2-18\,144\,z+221\,697\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}- \right.\right. $$

$$ \left.\left.4096\,e^{2\sqrt{z}}\,\sqrt{2\pi}\left(256\,z^2-18\,144\,z+221\,697\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+894\,566\,400\,e^{4\sqrt{z}}\,z^{9/2}+ \right.\right. $$

$$ \left.\left.894\,566\,400\,z^{9/2}+210\,567\,168\,e^{4\sqrt{z}}\,z^4-210\,567\,168\,z^4+142\,442\,496\,e^{4\sqrt{z}}\,z^{7/2}+142\,442\,496\,z^{7/2}+ \right.\right. $$

$$ \left.\left.152\,893\,440\,e^{4\sqrt{z}}\,z^3-152\,893\,440\,z^3+216\,276\,480\,e^{4\sqrt{z}}\,z^{5/2}+216\,276\,480\,z^{5/2}+362\,880\,000\,e^{4\sqrt{z}}\,z^2- \right.\right. $$

$$ \left.\left.362\,880\,000\,z^2+660\,623\,040\,e^{4\sqrt{z}}\,z^{3/2}+660\,623\,040\,z^{3/2}+1\,157\,836\,680\,e^{4\sqrt{z}}\,z- \right.\right. $$

$$ \left.\left.1\,157\,836\,680\,z+1\,447\,295\,850\,e^{4\sqrt{z}}\,\sqrt{z}+1\,447\,295\,850\,\sqrt{z}-723\,647\,925\,e^{4\sqrt{z}}+723\,647\,925\right)\right) $$

07.22.03.8921.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},-\frac{9}{4};-z\right)= $$

$$ \frac{1}{4\,906\,024\,200\,z^{3/2}}\left(-8192\,\sqrt{\pi}\left(256\,z^2+18\,144\,z+221\,697\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}-2\left(524\,288\,z^6+37\,060\,608\,z^5+447\,283\,200\,z^4- \right.\right. $$

$$ \left.\left.71\,221\,248\,z^3+108\,138\,240\,z^2-330\,311\,520\,z+723\,647\,925\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-262\,144\,z^6- \right.\right. $$

$$ \left.\left.18\,333\,696\,z^5-210\,567\,168\,z^4+152\,893\,440\,z^3-362\,880\,000\,z^2+1\,157\,836\,680\,z+723\,647\,925\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8922.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},-\frac{7}{4};z\right)= $$

$$ \frac{1}{4\,292\,771\,175\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2\,097\,152\,z^6-187\,170\,816\,z^5+3\,526\,483\,968\,z^4-10\,936\,074\,240\,z^3-4\,423\,507\,200\,z^2-\right.\right.\right. $$

$$ \left.\left.\left.3\,140\,998\,560\,z+4\,292\,771\,175\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2- \right.\right. $$

$$ 96\sqrt{z}\left(32\,768\,z^5-2\,895\,872\,z^4+52\,590\,720\,z^3-126\,766\,080\,z^2-154\,080\,360\,z-163\,593\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ \left(-2\,097\,152\,z^6+185\,597\,952\,z^5-3\,388\,170\,240\,z^4+8\,469\,135\,360\,z^3+\right. $$

$$ \left.\left.9\,667\,848\,960\,z^2+10\,291\,730\,400\,z+1\,832\,614\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.8923.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},-\frac{7}{4};-z\right)= $$

$$ \frac{1}{4\,292\,771\,175\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2\,097\,152\,z^6+187\,170\,816\,z^5+3\,526\,483\,968\,z^4+10\,936\,074\,240\,z^3-4\,423\,507\,200\,z^2+\right.\right.\right. $$

$$ \left.\left.\left.3\,140\,998\,560\,z+4\,292\,771\,175\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- \right.\right. $$

$$ 96\sqrt{z}\left(32\,768\,z^5+2\,895\,872\,z^4+52\,590\,720\,z^3+126\,766\,080\,z^2-154\,080\,360\,z+163\,593\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ \left(2\,097\,152\,z^6+185\,597\,952\,z^5+3\,388\,170\,240\,z^4+8\,469\,135\,360\,z^3-\right. $$

$$ \left.\left.9\,667\,848\,960\,z^2+10\,291\,730\,400\,z-1\,832\,614\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.8924.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},-\frac{5}{4};z\right)=\frac{1}{3\,270\,682\,800\,z^{3/2}} $$

$$ \left(e^{-2\sqrt{z}}\left(-262\,144\,e^{4\sqrt{z}}\,z^{13/2}-262\,144\,z^{13/2}-65\,536\,e^{4\sqrt{z}}\,z^6+65\,536\,z^6+27\,820\,032\,e^{4\sqrt{z}}\,z^{11/2}+27\,820\,032\,z^{11/2}+\right.\right. $$

$$ 6\,905\,856\,e^{4\sqrt{z}}\,z^5-6\,905\,856\,z^5-675\,935\,232\,e^{4\sqrt{z}}\,z^{9/2}-675\,935\,232\,z^{9/2}-163\,973\,376\,e^{4\sqrt{z}}\,z^4+ $$

$$ 163\,973\,376\,z^4-64\,e^{2\sqrt{z}}\,\sqrt{2\pi}\left(4096\,z^3-435\,456\,z^2+10\,641\,456\,z-54\,759\,159\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+ $$

$$ 64\,e^{2\sqrt{z}}\,\sqrt{2\pi}\left(4096\,z^3-435\,456\,z^2+10\,641\,456\,z-54\,759\,159\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+3\,387\,654\,144\,e^{4\sqrt{z}}\,z^{7/2}+ $$

$$ 3\,387\,654\,144\,z^{7/2}+740\,081\,664\,e^{4\sqrt{z}}\,z^3-740\,081\,664\,z^3+440\,391\,168\,e^{4\sqrt{z}}\,z^{5/2}+440\,391\,168\,z^{5/2}+ $$

$$ 388\,281\,600\,e^{4\sqrt{z}}\,z^2-388\,281\,600\,z^2+407\,332\,800\,e^{4\sqrt{z}}\,z^{3/2}+407\,332\,800\,z^{3/2}+421\,031\,520\,e^{4\sqrt{z}}\,z- $$

$$ \left.\left.421\,031\,520\,z+289\,459\,170\,e^{4\sqrt{z}}\,\sqrt{z}+289\,459\,170\,\sqrt{z}-144\,729\,585\,e^{4\sqrt{z}}+144\,729\,585\right)\right) $$

07.22.03.8925.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},-\frac{5}{4};-z\right)=\frac{1}{1\,635\,341\,400\,z^{3/2}}\left(128\sqrt{\pi}\left(4096z^3+435\,456z^2+10\,641\,456z+54\,759\,159\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+2\left(131\,072z^6+13\,910\,016z^5+337\,967\,616z^4+1\,693\,827\,072z^3-220\,195\,584z^2+203\,666\,400z-144\,729\,585\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(65\,536z^6+6\,905\,856z^5+163\,973\,376z^4+740\,081\,664z^3-388\,281\,600z^2+421\,031\,520z+144\,729\,585\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8926.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},-\frac{3}{4};z\right)=\frac{1}{4\,292\,771\,175\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1\,048\,576z^6+130\,744\,320z^5-4\,057\,804\,800z^4+33\,229\,663\,488z^3-51\,280\,750\,080z^2+3\,592\,103\,760z+4\,292\,771\,175\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+24\sqrt{z}\left(65\,536z^5-8\,114\,176z^4+246\,559\,488z^3-1\,866\,579\,120z^2+1\,713\,443\,760z+682\,568\,775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,048\,576z^6-129\,957\,888z^5+3\,960\,778\,752z^4-30\,311\,850\,240z^3+29\,984\,048\,640z^2+11\,645\,046\,000z+986\,792\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8927.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},-\frac{3}{4};-z\right)=-\frac{1}{4\,292\,771\,175\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,048\,576z^6+130\,744\,320z^5+4\,057\,804\,800z^4+33\,229\,663\,488z^3+51\,280\,750\,080z^2+3\,592\,103\,760z-4\,292\,771\,175\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-24\sqrt{z}\left(65\,536z^5+8\,114\,176z^4+246\,559\,488z^3+1\,866\,579\,120z^2+1\,713\,443\,760z-682\,568\,775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,048\,576z^6+129\,957\,888z^5+3\,960\,778\,752z^4+30\,311\,850\,240z^3+29\,984\,048\,640z^2-11\,645\,046\,000z+986\,792\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8928.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{5}{2}, -\frac{1}{4}; z\right) = \frac{1}{2\,616\,546\,240\, z^{3/2}} $$
$$ \left(e^{-2\sqrt{z}} \left(e^{2\sqrt{z}}\ \sqrt{2\pi}\ \left(65\,536\, z^4 - 9\,289\,728\, z^3 + 340\,526\,592\, z^2 - 3\,504\,586\,176\, z + 7\,392\,486\,465\right) \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) z^{11/4} + \right.\right. $$
$$ e^{2\sqrt{z}}\ \sqrt{2\pi}\ \left(-65\,536\, z^4 + 9\,289\,728\, z^3 - 340\,526\,592\, z^2 + 3\,504\,586\,176\, z - 7\,392\,486\,465\right) \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right) z^{11/4} + $$
$$ 4\left(16\,384\, z^{13/2} - 4096\, z^6 - 2\,319\,360\, z^{11/2} + 576\,768\, z^5 + 84\,702\,912\, z^{9/2} - 20\,753\,712\, z^4 - \right. $$
$$ 861\,095\,340\, z^{7/2} + 201\,092\,031\, z^3 + 1\,713\,374\,208\, z^{5/2} - 318\,245\,760\, z^2 + 141\,613\,920\, z^{3/2} - $$
$$ 75\,184\,200\, z + 26\,314\,470\ \sqrt{z}\ + e^{4\sqrt{z}} \left(16\,384\, z^{13/2} + 4096\, z^6 - 2\,319\,360\, z^{11/2} - 576\,768\, z^5 + \right. $$
$$ 84\,702\,912\, z^{9/2} + 20\,753\,712\, z^4 - 861\,095\,340\, z^{7/2} - 201\,092\,031\, z^3 + 1\,713\,374\,208\, z^{5/2} + $$
$$ \left.\left.\left.\left. 318\,245\,760\, z^2 + 141\,613\,920\, z^{3/2} + 75\,184\,200\, z + 26\,314\,470\ \sqrt{z}\ - 13\,157\,235\right) + 13\,157\,235\right)\right)\right) $$

07.22.03.8929.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{5}{2}, -\frac{1}{4}; -z\right) = $$
$$ \frac{1}{654\,136\,560\, z^{3/2}} \left(-\sqrt{\pi}\ \left(65\,536\, z^4 + 9\,289\,728\, z^3 + 340\,526\,592\, z^2 + 3\,504\,586\,176\, z + 7\,392\,486\,465\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{11/4} - \right. $$
$$ 2\left(2\sqrt{z}\ \left(8192\, z^6 + 1\,159\,680\, z^5 + 42\,351\,456\, z^4 + 430\,547\,670\, z^3 + 856\,687\,104\, z^2 - 70\,806\,960\, z + 13\,157\,235\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + $$
$$ \left.\left.\left(4096\, z^6 + 576\,768\, z^5 + 20\,753\,712\, z^4 + 201\,092\,031\, z^3 + 318\,245\,760\, z^2 - 75\,184\,200\, z - 13\,157\,235\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8930.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{5}{2}, \frac{1}{4}; z\right) = $$
$$ \frac{1}{12\,878\,313\,525\ \sqrt[4]{z}} \left(\sqrt{2}\ \left(\left(524\,288\, z^6 - 83\,951\,616\, z^5 + 3\,630\,219\,264\, z^4 - 48\,316\,536\,576\, z^3 + 174\,619\,711\,224\, z^2 - \right.\right.\right. $$
$$ \left.\left. 133\,776\,573\,840\, z + 12\,878\,313\,525\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 12\sqrt{z}\ \left(65\,536\, z^5 - 10\,436\,608\, z^4 + 444\,691\,968\, z^3 - 5\,657\,577\,408\, z^2 + 17\,148\,825\,225\, z - 4\,226\,985\,000\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-524\,288\, z^6 + 83\,558\,400\, z^5 - 3\,567\,771\,648\, z^4 + 45\,674\,931\,456\, z^3 - \right. $$
$$ \left.\left. 141\,715\,367\,640\, z^2 + 41\,250\,610\,800\, z + 986\,792\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.8931.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{1}{4};-z\right)= \frac{1}{12\,878\,313\,525\sqrt[4]{z}}\left(\sqrt{2}\left(\left(524\,288z^6+83\,951\,616z^5+3\,630\,219\,264z^4+48\,316\,536\,576z^3+174\,619\,711\,224z^2+133\,776\,573\,840z+12\,878\,313\,525\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 12\sqrt{z}\left(65\,536z^5+10\,436\,608z^4+444\,691\,968z^3+5\,657\,577\,408z^2+17\,148\,825\,225z+4\,226\,985\,000\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(524\,288z^6+83\,558\,400z^5+3\,567\,771\,648z^4+45\,674\,931\,456z^3+141\,715\,367\,640z^2+41\,250\,610\,800z-986\,792\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8932.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{3}{4};z\right)= \frac{1}{837\,294\,796\,800z^{3/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-1\,048\,576z^5+185\,794\,560z^4-9\,080\,709\,120z^3+140\,183\,447\,040z^2-591\,398\,917\,200z+406\,586\,755\,575\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-185\,794\,560z^4+9\,080\,709\,120z^3-140\,183\,447\,040z^2+591\,398\,917\,200z-406\,586\,755\,575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-4\left(262\,144z^{13/2}-65\,536z^6-46\,399\,488z^{11/2}+11\,550\,720z^5+2\,261\,575\,680z^{9/2}-556\,899\,840z^4-34\,638\,589\,440z^{7/2}+8\,270\,095\,680z^3+142\,099\,986\,420z^{5/2}-30\,494\,946\,825z^2-83\,810\,764\,800z^{3/2}+9\,623\,577\,600z-1\,202\,947\,200\sqrt{z}+e^{4\sqrt{z}}\left(262\,144z^{13/2}+65\,536z^6-46\,399\,488z^{11/2}-11\,550\,720z^5+2\,261\,575\,680z^{9/2}+556\,899\,840z^4-34\,638\,589\,440z^{7/2}-8\,270\,095\,680z^3+142\,099\,986\,420z^{5/2}+30\,494\,946\,825z^2-83\,810\,764\,800z^{3/2}-9\,623\,577\,600z-1\,202\,947\,200\sqrt{z}+601\,473\,600\right)-601\,473\,600\right)\right)\right) $$

07.22.03.8933.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{3}{4};-z\right)= \frac{1}{209\,323\,699\,200z^{3/2}}\left(\sqrt{\pi}\left(1\,048\,576z^5+185\,794\,560z^4+9\,080\,709\,120z^3+140\,183\,447\,040z^2+591\,398\,917\,200z+406\,586\,755\,575\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+2\left(4\sqrt{z}\left(65\,536z^6+11\,599\,872z^5+565\,393\,920z^4+8\,659\,647\,360z^3+35\,524\,996\,605z^2+20\,952\,691\,200z-300\,736\,800\right)\cos\left(2\sqrt{z}\right)+\left(65\,536z^6+11\,550\,720z^5+556\,899\,840z^4+8\,270\,095\,680z^3+30\,494\,946\,825z^2+9\,623\,577\,600z+601\,473\,600\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8934.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{5}{4};z\right)= \frac{1}{566\,645\,795\,100\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(1\,048\,576\,z^6-205\,062\,144\,z^5+11\,371\,143\,168\,z^4-209\,696\,610\,816\,z^3+1\,196\,563\,260\,816\,z^2-1\,745\,113\,055\,301\,z+566\,645\,795\,100\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\left(-1\,048\,576\,z^5+204\,144\,640\,z^4-11\,193\,262\,080\,z^3+200\,042\,777\,088\,z^2-1\,028\,600\,684\,496\,z+946\,465\,342\,515\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\left(1\,048\,576\,z^6-204\,275\,712\,z^5+11\,218\,378\,752\,z^4-201\,366\,950\,400\,z^3+1\,049\,891\,374\,224\,z^2-1\,024\,369\,152\,345\,z+8\,683\,775\,100\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8935.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{5}{4};-z\right)= \frac{1}{566\,645\,795\,100\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(1\,048\,576\,z^6+205\,062\,144\,z^5+11\,371\,143\,168\,z^4+209\,696\,610\,816\,z^3+1\,196\,563\,260\,816\,z^2+1\,745\,113\,055\,301\,z+566\,645\,795\,100\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(1\,048\,576\,z^5+204\,144\,640\,z^4+11\,193\,262\,080\,z^3+200\,042\,777\,088\,z^2+1\,028\,600\,684\,496\,z+946\,465\,342\,515\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(1\,048\,576\,z^6+204\,275\,712\,z^5+11\,218\,378\,752\,z^4+201\,366\,950\,400\,z^3+1\,049\,891\,374\,224\,z^2+1\,024\,369\,152\,345\,z+8\,683\,775\,100\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8936.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{7}{4};z\right)= \frac{1}{107\,173\,733\,990\,400\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(-4\left(4\,194\,304\,z^{13/2}-1\,048\,576\,z^6-891\,027\,456\,z^{11/2}+221\,970\,432\,z^5+54\,318\,759\,936\,z^{9/2}-13\,415\,915\,520\,z^4-1\,111\,606\,917\,120\,z^{7/2}+268\,385\,564\,160\,z^3+6\,906\,725\,340\,480\,z^{5/2}-1\,554\,829\,350\,480\,z^2-8\,774\,103\,926\,700\,z^{3/2}+1\,465\,255\,475\,775\,z+153\,977\,241\,600\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{13/2}+1\,048\,576\,z^6-891\,027\,456\,z^{11/2}-221\,970\,432\,z^5+54\,318\,759\,936\,z^{9/2}+13\,415\,915\,520\,z^4-1\,111\,606\,917\,120\,z^{7/2}-268\,385\,564\,160\,z^3+6\,906\,725\,340\,480\,z^{5/2}+1\,554\,829\,350\,480\,z^2-8\,774\,103\,926\,700\,z^{3/2}-1\,465\,255\,475\,775\,z+153\,977\,241\,600\sqrt{z}-76\,988\,620\,800\right)+76\,988\,620\,800\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(-16\,777\,216\,z^6+3\,567\,255\,552\,z^5-217\,937\,018\,880\,z^4+4\,485\,870\,305\,280\,z^3-28\,387\,148\,025\,600\,z^2+39\,032\,328\,535\,200\,z-2\,846\,107\,289\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(16\,777\,216\,z^6-3\,567\,255\,552\,z^5+217\,937\,018\,880\,z^4-4\,485\,870\,305\,280\,z^3+28\,387\,148\,025\,600\,z^2-39\,032\,328\,535\,200\,z+2\,846\,107\,289\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.8937.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{7}{4};-z\right)= $$

$$ \frac{1}{26\,793\,433\,497\,600\,z^{3/2}}\left(\sqrt{\pi}\,z^{3/4}\left(16\,777\,216\,z^6+3\,567\,255\,552\,z^5+217\,937\,018\,880\,z^4+4\,485\,870\,305\,280\,z^3+\right.\right. $$

$$ \left.28\,387\,148\,025\,600\,z^2+39\,032\,328\,535\,200\,z+2\,846\,107\,289\,025\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ $$

$$ 2\left(4\sqrt{z}\,\left(1\,048\,576\,z^6+222\,756\,864\,z^5+13\,579\,689\,984\,z^4+277\,901\,729\,280\,z^3+1\,726\,681\,335\,120\,z^2+\right.\right. $$

$$ 2\,193\,525\,981\,675\,z+38\,494\,310\,400\big)\cos\left(2\sqrt{z}\right)+\left(1\,048\,576\,z^6+221\,970\,432\,z^5+13\,415\,915\,520\,z^4+\right. $$

$$ \left.\left.\left.268\,385\,564\,160\,z^3+1\,554\,829\,350\,480\,z^2+1\,465\,255\,475\,775\,z-76\,988\,620\,800\big)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8938.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{9}{4};z\right)= $$

$$ \left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-3\,875\,536\,896\,z^5+262\,238\,699\,520\,z^4-6\,183\,017\,938\,944\,z^3+48\,262\,896\,734\,976\,z^2-\right.\right.\right. $$

$$ \left.103\,712\,307\,963\,264\,z+48\,852\,594\,525\,735\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2- $$

$$ 3\left(16\,777\,216\,z^6-3\,860\,856\,832\,z^5+258\,872\,377\,344\,z^4-5\,959\,171\,620\,864\,z^3+\right. $$

$$ \left.43\,215\,780\,351\,744\,z^2-69\,147\,913\,554\,720\,z+2\,846\,107\,289\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)- $$

$$ 2\sqrt{z}\,\left(16\,777\,216\,z^6-3\,862\,953\,984\,z^5+259\,348\,561\,920\,z^4-5\,990\,103\,318\,528\,z^3+43\,872\,495\,803\,136\,z^2-\right. $$

$$ \left.\left.\left.72\,897\,942\,237\,120\,z+4\,925\,871\,425\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(47\,144\,930\,152\,320\sqrt{2}\,z^{3/4}\right) $$

07.22.03.8939.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{9}{4};-z\right)= $$

$$ \left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+3\,875\,536\,896\,z^5+262\,238\,699\,520\,z^4+6\,183\,017\,938\,944\,z^3+48\,262\,896\,734\,976\,z^2+\right.\right.\right. $$

$$ \left.103\,712\,307\,963\,264\,z+48\,852\,594\,525\,735\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- $$

$$ 3\left(16\,777\,216\,z^6+3\,860\,856\,832\,z^5+258\,872\,377\,344\,z^4+5\,959\,171\,620\,864\,z^3+\right. $$

$$ \left.43\,215\,780\,351\,744\,z^2+69\,147\,913\,554\,720\,z+2\,846\,107\,289\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\,\left(16\,777\,216\,z^6+3\,862\,953\,984\,z^5+259\,348\,561\,920\,z^4+5\,990\,103\,318\,528\,z^3+43\,872\,495\,803\,136\,z^2+\right. $$

$$ \left.\left.\left.72\,897\,942\,237\,120\,z+4\,925\,871\,425\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(47\,144\,930\,152\,320\sqrt{2}\,z^{3/4}\right) $$

07.22.03.8940.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{11}{4};z\right) = \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(67\,108\,864\,z^{13/2}-16\,777\,216\,z^{6}-16\,634\,609\,664\,z^{11/2}+4\,146\,069\,504\,z^{5}+1\,217\,353\,482\,240\,z^{9/2}-301\,272\,072\,192\,z^{4}-31\,178\,915\,905\,536\,z^{7/2}+7\,579\,040\,071\,680\,z^{3}+259\,519\,411\,952\,640\,z^{5/2}-59\,874\,855\,264\,000\,z^{2}-507\,030\,136\,583\,040\,z^{3/2}+95\,396\,900\,770\,080\,z+34\,828\,516\,768\,500\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^{6}-16\,634\,609\,664\,z^{11/2}-4\,146\,069\,504\,z^{5}+1\,217\,353\,482\,240\,z^{9/2}+301\,272\,072\,192\,z^{4}-31\,178\,915\,905\,536\,z^{7/2}-7\,579\,040\,071\,680\,z^{3}+259\,519\,411\,952\,640\,z^{5/2}+59\,874\,855\,264\,000\,z^{2}-507\,030\,136\,583\,040\,z^{3/2}-95\,396\,900\,770\,080\,z+34\,828\,516\,768\,500\sqrt{z}-8\,875\,936\,517\,175\right)+8\,875\,936\,517\,175\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^{7}-66\,588\,770\,304\,z^{6}+4\,881\,789\,222\,912\,z^{5}-125\,604\,368\,547\,840\,z^{4}+1\,059\,786\,859\,622\,400\,z^{3}-2\,185\,810\,397\,971\,200\,z^{2}+318\,764\,016\,370\,800\,z+25\,614\,965\,601\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^{7}-66\,588\,770\,304\,z^{6}+4\,881\,789\,222\,912\,z^{5}-125\,604\,368\,547\,840\,z^{4}+1\,059\,786\,859\,622\,400\,z^{3}-2\,185\,810\,397\,971\,200\,z^{2}+318\,764\,016\,370\,800\,z+25\,614\,965\,601\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big/\left(6\,859\,118\,975\,385\,600\,z^{7/4}\right) $$

07.22.03.8941.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{11}{4};-z\right) = \left(\sqrt{\pi}\left(268\,435\,456\,z^{7}+66\,588\,770\,304\,z^{6}+4\,881\,789\,222\,912\,z^{5}+125\,604\,368\,547\,840\,z^{4}+1\,059\,786\,859\,622\,400\,z^{3}+2\,185\,810\,397\,971\,200\,z^{2}+318\,764\,016\,370\,800\,z-25\,614\,965\,601\,225\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216\,z^{6}+4\,158\,652\,416\,z^{5}+304\,338\,370\,560\,z^{4}+7\,794\,728\,976\,384\,z^{3}+64\,879\,852\,988\,160\,z^{2}+126\,757\,534\,145\,760\,z+8\,707\,129\,192\,125\right)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^{6}+4\,146\,069\,504\,z^{5}+301\,272\,072\,192\,z^{4}+7\,579\,040\,071\,680\,z^{3}+59\,874\,855\,264\,000\,z^{2}+95\,396\,900\,770\,080\,z-8\,875\,936\,517\,175\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(1\,714\,779\,743\,846\,400\,z^{7/4}\right) $$

07.22.03.8942.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{13}{4};z\right) = $$

$$ \left(\left(2\sqrt{z}\left(268\,435\,456\,z^7-71\,521\,271\,808\,z^6+5\,713\,091\,887\,104\,z^5-164\,064\,626\,933\,760\,z^4+1\,625\,677\,143\,552\,000\,z^3-\right.\right.\right. $$

$$ \left.\left.\left.4\,614\,321\,637\,981\,440\,z^2+2\,711\,726\,380\,162\,800\,z+8\,538\,321\,867\,075\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$

$$ 3\left(268\,435\,456\,z^7-71\,286\,390\,784\,z^6+5\,650\,907\,136\,000\,z^5-159\,169\,518\,305\,280\,z^4+1\,490\,107\,002\,531\,840\,z^3- \right. $$

$$ \left.3\,401\,424\,490\,464\,000\,z^2+318\,764\,016\,370\,800\,z+14\,230\,536\,445\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)- $$

$$ 2\sqrt{z}\left(268\,435\,456\,z^7-71\,319\,945\,216\,z^6+5\,659\,715\,174\,400\,z^5-159\,849\,402\,531\,840\,z^4+ \right. $$

$$ \left.1\,508\,043\,361\,628\,160\,z^3-3\,540\,962\,686\,060\,800\,z^2+469\,375\,411\,705\,200\,z+42\,691\,609\,335\,375\right) $$

$$ \left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(2\,514\,396\,274\,790\,400\sqrt{2}\,z^{7/4}\right) $$

07.22.03.8943.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{13}{4};-z\right) = $$

$$ \left(\left(2\sqrt{z}\left(268\,435\,456\,z^7+71\,521\,271\,808\,z^6+5\,713\,091\,887\,104\,z^5+164\,064\,626\,933\,760\,z^4+1\,625\,677\,143\,552\,000\,z^3+\right.\right.\right. $$

$$ \left.\left.\left.4\,614\,321\,637\,981\,440\,z^2+2\,711\,726\,380\,162\,800\,z-8\,538\,321\,867\,075\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$

$$ 3\left(268\,435\,456\,z^7+71\,286\,390\,784\,z^6+5\,650\,907\,136\,000\,z^5+159\,169\,518\,305\,280\,z^4+1\,490\,107\,002\,531\,840\,z^3+ \right. $$

$$ \left.3\,401\,424\,490\,464\,000\,z^2+318\,764\,016\,370\,800\,z-14\,230\,536\,445\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\left(268\,435\,456\,z^7+71\,319\,945\,216\,z^6+5\,659\,715\,174\,400\,z^5+159\,849\,402\,531\,840\,z^4+ \right. $$

$$ \left.1\,508\,043\,361\,628\,160\,z^3+3\,540\,962\,686\,060\,800\,z^2+469\,375\,411\,705\,200\,z-42\,691\,609\,335\,375\right) $$

$$ \left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(2\,514\,396\,274\,790\,400\sqrt{2}\,z^{7/4}\right) $$

07.22.03.8944.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{15}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2}-268\,435\,456\,z^{7}-304\,204\,480\,512\,z^{13/2}+75\,849\,793\,536\,z^{6}+25\,979\,573\,501\,952\,z^{11/2}-\right.\right.\right.
$$

$$
6\,438\,698\,090\,496\,z^{5}-799\,108\,298\,440\,704\,z^{9/2}+195\,136\,818\,315\,264\,z^{4}+8\,337\,509\,225\,644\,032\,z^{7/2}-
$$

$$
1\,952\,825\,133\,772\,800\,z^{3}-21\,998\,011\,122\,662\,400\,z^{5/2}+4\,405\,326\,895\,307\,520\,z^{2}+
$$

$$
2\,801\,406\,477\,804\,480\,z^{3/2}+444\,411\,189\,789\,840\,z+239\,073\,012\,278\,100\,\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-304\,204\,480\,512\,z^{13/2}-75\,849\,793\,536\,z^{6}+\right.
$$

$$
25\,979\,573\,501\,952\,z^{11/2}+6\,438\,698\,090\,496\,z^{5}-799\,108\,298\,440\,704\,z^{9/2}-
$$

$$
195\,136\,818\,315\,264\,z^{4}+8\,337\,509\,225\,644\,032\,z^{7/2}+1\,952\,825\,133\,772\,800\,z^{3}-
$$

$$
\left.\left.\left.\left.21\,998\,011\,122\,662\,400\,z^{5/2}-4\,405\,326\,895\,307\,520\,z^{2}+2\,801\,406\,477\,804\,480\,z^{3/2}-\right.\right.\right.\right.
$$

$$
\left.\left.444\,411\,189\,789\,840\,z+239\,073\,012\,278\,100\,\sqrt{z}\;-179\,304\,759\,208\,575\right)+179\,304\,759\,208\,575\right)-
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(4\,294\,967\,296\,z^{8}-1\,217\,623\,228\,416\,z^{7}+104\,144\,836\,755\,456\,z^{6}-3\,215\,471\,834\,824\,704\,z^{5}+\right.
$$

$$
33\,913\,179\,507\,916\,800\,z^{4}-93\,261\,243\,646\,771\,200\,z^{3}+20\,400\,897\,047\,731\,200\,z^{2}+
$$

$$
\left.3\,278\,715\,596\,956\,800\,z-179\,304\,759\,208\,575\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(4\,294\,967\,296\,z^{8}-1\,217\,623\,228\,416\,z^{7}+104\,144\,836\,755\,456\,z^{6}-3\,215\,471\,834\,824\,704\,z^{5}+\right.
$$

$$
33\,913\,179\,507\,916\,800\,z^{4}-93\,261\,243\,646\,771\,200\,z^{3}+20\,400\,897\,047\,731\,200\,z^{2}+
$$

$$
\left.\left.3\,278\,715\,596\,956\,800\,z-179\,304\,759\,208\,575\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\Big/\left(319\,260\,810\,490\,675\,200\,z^{11/4}\right)
$$

07.22.03.8945.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{15}{4};-z\right)=
$$

$$
\left(\sqrt{\pi}\,\left(4\,294\,967\,296\,z^{8}+1\,217\,623\,228\,416\,z^{7}+104\,144\,836\,755\,456\,z^{6}+3\,215\,471\,834\,824\,704\,z^{5}+33\,913\,179\,507\,916\,800\right.\right.
$$

$$
z^{4}+93\,261\,243\,646\,771\,200\,z^{3}+20\,400\,897\,047\,731\,200\,z^{2}-3\,278\,715\,596\,956\,800\,z-179\,304\,759\,208\,575\Big)
$$

$$
S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(268\,435\,456\,z^{7}+76\,051\,120\,128\,z^{6}+6\,494\,893\,375\,488\,z^{5}+199\,777\,074\,610\,176\,z^{4}+\right.\right.
$$

$$
2\,084\,377\,306\,411\,008\,z^{3}+5\,499\,502\,780\,665\,600\,z^{2}+700\,351\,619\,451\,120\,z-59\,768\,253\,069\,525\Big)
$$

$$
\cos\left(2\sqrt{z}\right)+\left(268\,435\,456\,z^{7}+75\,849\,793\,536\,z^{6}+6\,438\,698\,090\,496\,z^{5}+195\,136\,818\,315\,264\,z^{4}+\right.
$$

$$
1\,952\,825\,133\,772\,800\,z^{3}+4\,405\,326\,895\,307\,520\,z^{2}-444\,411\,189\,789\,840\,z+
$$

$$
\left.\left.179\,304\,759\,208\,575\right)\sin\left(2\sqrt{z}\right)\right)\Big/\left(79\,815\,202\,622\,668\,800\,z^{11/4}\right)
$$

07.22.03.8946.01

$${}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{17}{4};z\right)=$$

$$\left(\left(2\sqrt{z}\left(4\,294\,967\,296\,z^8-1\,296\,543\,252\,480\,z^7+119\,405\,291\,765\,760\,z^6-4\,042\,880\,773\,521\,408\,z^5+48\,570\,009\,586\,237\,440\right.\right.\right.$$
$$z^4-171\,322\,657\,541\,038\,080\,z^3+118\,183\,218\,611\,673\,600\,z^2+1\,366\,131\,498\,732\,000\,z-$$
$$\left.230\,534\,690\,411\,025\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4\,294\,967\,296\,z^8-1\,292\,785\,156\,096\,z^7+118\,277\,158\,207\,488\,z^6-\right.$$
$$3\,940\,287\,428\,689\,920\,z^5+45\,200\,611\,739\,566\,080\,z^4-134\,098\,069\,045\,248\,000\,z^3+$$
$$\left.20\,400\,897\,047\,731\,200\,z^2+2\,550\,112\,130\,966\,400\,z-384\,224\,484\,018\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\left(4\,294\,967\,296\,z^8-1\,293\,322\,027\,008\,z^7+118\,437\,112\,184\,832\,z^6-3\,954\,590\,141\,644\,800\,z^5+\right.$$
$$45\,651\,583\,567\,134\,720\,z^4-138\,544\,499\,461\,939\,200\,z^3+27\,733\,933\,260\,633\,600\,z^2+$$
$$\left.\left.5\,191\,299\,695\,181\,600\,z-1\,152\,673\,452\,055\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(105\,217\,813\,345\,075\,200\sqrt{2}\;z^{11/4}\right)$$

07.22.03.8947.01

$${}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{17}{4};-z\right)=$$

$$\left(\left(2\sqrt{z}\left(4\,294\,967\,296\,z^8+1\,296\,543\,252\,480\,z^7+119\,405\,291\,765\,760\,z^6+4\,042\,880\,773\,521\,408\,z^5+48\,570\,009\,586\,237\,440\right.\right.\right.$$
$$z^4+171\,322\,657\,541\,038\,080\,z^3+118\,183\,218\,611\,673\,600\,z^2-1\,366\,131\,498\,732\,000\,z-$$
$$\left.230\,534\,690\,411\,025\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4\,294\,967\,296\,z^8+1\,292\,785\,156\,096\,z^7+118\,277\,158\,207\,488\,z^6+\right.$$
$$3\,940\,287\,428\,689\,920\,z^5+45\,200\,611\,739\,566\,080\,z^4+134\,098\,069\,045\,248\,000\,z^3+$$
$$\left.20\,400\,897\,047\,731\,200\,z^2-2\,550\,112\,130\,966\,400\,z-384\,224\,484\,018\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(4\,294\,967\,296\,z^8+1\,293\,322\,027\,008\,z^7+118\,437\,112\,184\,832\,z^6+3\,954\,590\,141\,644\,800\,z^5+\right.$$
$$45\,651\,583\,567\,134\,720\,z^4+138\,544\,499\,461\,939\,200\,z^3+27\,733\,933\,260\,633\,600\,z^2-$$
$$\left.\left.5\,191\,299\,695\,181\,600\,z-1\,152\,673\,452\,055\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(105\,217\,813\,345\,075\,200\sqrt{2}\;z^{11/4}\right)$$

07.22.03.8948.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{19}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(17\,179\,869\,184\,z^{17/2}-4\,294\,967\,296\,z^{8}-5\,476\,083\,302\,400\,z^{15/2}+1\,365\,799\,600\,128\,z^{7}+\right.\right.\right.
$$

$$
534\,581\,694\,431\,232\,z^{13/2}-132\,632\,146\,870\,272\,z^{6}-19\,194\,609\,401\,856\,000\,z^{11/2}+4\,702\,590\,914\,789\,376\,z^{5}+
$$

$$
240\,763\,792\,922\,247\,168\,z^{9/2}-56\,973\,312\,112\,066\,560\,z^{4}-800\,280\,950\,033\,940\,480\,z^{7/2}+
$$

$$
166\,660\,039\,036\,108\,800\,z^{3}+152\,088\,818\,515\,845\,120\,z^{5/2}+14\,841\,718\,114\,728\,960\,z^{2}+
$$

$$
28\,415\,535\,173\,625\,600\,z^{3/2}+15\,300\,672\,785\,798\,400\,z-13\,149\,015\,675\,295\,500\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}-5\,476\,083\,302\,400\,z^{15/2}-1\,365\,799\,600\,128\,z^{7}+\right.
$$

$$
534\,581\,694\,431\,232\,z^{13/2}+132\,632\,146\,870\,272\,z^{6}-19\,194\,609\,401\,856\,000\,z^{11/2}-
$$

$$
4\,702\,590\,914\,789\,376\,z^{5}+240\,763\,792\,922\,247\,168\,z^{9/2}+56\,973\,312\,112\,066\,560\,z^{4}-
$$

$$
800\,280\,950\,033\,940\,480\,z^{7/2}-166\,660\,039\,036\,108\,800\,z^{3}+152\,088\,818\,515\,845\,120\,z^{5/2}-
$$

$$
14\,841\,718\,114\,728\,960\,z^{2}+28\,415\,535\,173\,625\,600\,z^{3/2}-15\,300\,672\,785\,798\,400\,z-
$$

$$
\left.\left.\left.13\,149\,015\,675\,295\,500\sqrt{z}\;+9\,861\,761\,756\,471\,625\right)-9\,861\,761\,756\,471\,625\right)-
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-21\,917\,218\,111\,488\,z^{8}+2\,142\,408\,070\,397\,952\,z^{7}-77\,171\,324\,035\,792\,896\,z^{6}+\right.
$$

$$
976\,699\,569\,828\,003\,840\,z^{5}-3\,357\,404\,771\,283\,763\,200\,z^{4}+979\,243\,058\,291\,097\,600\,z^{3}+
$$

$$
\left.236\,067\,522\,980\,889\,600\,z^{2}-25\,819\,885\,326\,034\,800\,z+9\,861\,761\,756\,471\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-21\,917\,218\,111\,488\,z^{8}+2\,142\,408\,070\,397\,952\,z^{7}-\right.
$$

$$
77\,171\,324\,035\,792\,896\,z^{6}+976\,699\,569\,828\,003\,840\,z^{5}-3\,357\,404\,771\,283\,763\,200\,z^{4}+
$$

$$
979\,243\,058\,291\,097\,600\,z^{3}+236\,067\,522\,980\,889\,600\,z^{2}-25\,819\,885\,326\,034\,800\,z+
$$

$$
\left.\left.\left.9\,861\,761\,756\,471\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(12\,259\,615\,122\,841\,927\,680\,z^{15/4}\right)
$$

07.22.03.8949.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{19}{4};-z\right)=
$$

$$
\left(\sqrt{\pi}\left(68\,719\,476\,736\,z^{9}+21\,917\,218\,111\,488\,z^{8}+2\,142\,408\,070\,397\,952\,z^{7}+77\,171\,324\,035\,792\,896\,z^{6}+\right.\right.
$$

$$
976\,699\,569\,828\,003\,840\,z^{5}+3\,357\,404\,771\,283\,763\,200\,z^{4}+979\,243\,058\,291\,097\,600\,z^{3}-
$$

$$
\left.236\,067\,522\,980\,889\,600\,z^{2}-25\,819\,885\,326\,034\,800\,z-9\,861\,761\,756\,471\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$

$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^{8}+1\,369\,020\,825\,600\,z^{7}+133\,645\,423\,607\,808\,z^{6}+4\,798\,652\,350\,464\,000\,z^{5}+\right.\right.
$$

$$
60\,190\,948\,230\,561\,792\,z^{4}+200\,070\,237\,508\,485\,120\,z^{3}+38\,022\,204\,628\,961\,280\,z^{2}-
$$

$$
\left.7\,103\,883\,793\,406\,400\,z-3\,287\,253\,918\,823\,875\right)\cos\left(2\sqrt{z}\right)+
$$

$$
\left(4\,294\,967\,296\,z^{8}+1\,365\,799\,600\,128\,z^{7}+132\,632\,146\,870\,272\,z^{6}+4\,702\,590\,914\,789\,376\,z^{5}+\right.
$$

$$
56\,973\,312\,112\,066\,560\,z^{4}+166\,660\,039\,036\,108\,800\,z^{3}-14\,841\,718\,114\,728\,960\,z^{2}+
$$

$$
\left.\left.\left.15\,300\,672\,785\,798\,400\,z+9\,861\,761\,756\,471\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(3\,064\,903\,780\,710\,481\,920\,z^{15/4}\right)
$$

07.22.03.8950.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{21}{4};z\right) = $$
$$ \left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-23\,179\,938\,496\,512\,z^8+2\,417\,929\,148\,694\,528\,z^7-94\,300\,991\,360\,335\,872\,z^6+\right.\right.\right. $$
$$ 1\,331\,513\,435\,155\,857\,408\,z^5-5\,613\,547\,130\,964\,541\,440\,z^4+4\,399\,595\,652\,398\,284\,800\,z^3+ $$
$$ 113\,662\,140\,694\,502\,400\,z^2-53\,688\,967\,900\,167\,600\,z+20\,978\,656\,827\,403\,275\big)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2- $$
$$ 3\left(68\,719\,476\,736\,z^9-23\,119\,808\,954\,368\,z^8+2\,397\,748\,171\,112\,448\,z^7-92\,219\,079\,716\,241\,408\,z^6+\right. $$
$$ 1\,252\,423\,350\,154\,690\,560\,z^5-4\,573\,437\,988\,434\,739\,200\,z^4+979\,243\,058\,291\,097\,600\,z^3+ $$
$$ 215\,666\,625\,933\,158\,400\,z^2-114\,345\,206\,443\,868\,400\,z+34\,964\,428\,045\,672\,125\big)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)- $$
$$ 2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-23\,128\,398\,888\,960\,z^8+2\,400\,611\,840\,557\,056\,z^7-92\,510\,155\,085\,709\,312\,z^6+\right. $$
$$ 1\,263\,099\,618\,860\,728\,320\,z^5-4\,700\,982\,780\,503\,654\,400\,z^4+1\,265\,863\,840\,690\,176\,000\,z^3+ $$
$$ \left.\left.\left.358\,472\,905\,267\,276\,800\,z^2-119\,263\,279\,839\,303\,600\,z+104\,893\,284\,137\,016\,375\right)\right. $$
$$ \left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(3\,763\,084\,147\,870\,924\,800\,\sqrt{2}\;z^{15/4}\right) $$

07.22.03.8951.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{21}{4};-z\right) = $$
$$ \left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+23\,179\,938\,496\,512\,z^8+2\,417\,929\,148\,694\,528\,z^7+94\,300\,991\,360\,335\,872\,z^6+\right.\right.\right. $$
$$ 1\,331\,513\,435\,155\,857\,408\,z^5+5\,613\,547\,130\,964\,541\,440\,z^4+4\,399\,595\,652\,398\,284\,800\,z^3- $$
$$ 113\,662\,140\,694\,502\,400\,z^2-53\,688\,967\,900\,167\,600\,z-20\,978\,656\,827\,403\,275\big)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- $$
$$ 3\left(68\,719\,476\,736\,z^9+23\,119\,808\,954\,368\,z^8+2\,397\,748\,171\,112\,448\,z^7+92\,219\,079\,716\,241\,408\,z^6+\right. $$
$$ 1\,252\,423\,350\,154\,690\,560\,z^5+4\,573\,437\,988\,434\,739\,200\,z^4+979\,243\,058\,291\,097\,600\,z^3- $$
$$ 215\,666\,625\,933\,158\,400\,z^2-114\,345\,206\,443\,868\,400\,z-34\,964\,428\,045\,672\,125\big)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ 2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+23\,128\,398\,888\,960\,z^8+2\,400\,611\,840\,557\,056\,z^7+92\,510\,155\,085\,709\,312\,z^6+\right. $$
$$ 1\,263\,099\,618\,860\,728\,320\,z^5+4\,700\,982\,780\,503\,654\,400\,z^4+1\,265\,863\,840\,690\,176\,000\,z^3- $$
$$ \left.\left.\left.358\,472\,905\,267\,276\,800\,z^2-119\,263\,279\,839\,303\,600\,z-104\,893\,284\,137\,016\,375\right)\right. $$
$$ \left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(3\,763\,084\,147\,870\,924\,800\,\sqrt{2}\;z^{15/4}\right) $$

07.22.03.8952.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{23}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(274\,877\,906\,944\,z^{19/2}-68\,719\,476\,736\,z^{9}-97\,358\,318\,665\,728\,z^{17/2}+24\,288\,040\,058\,880\,z^{8}+\right.\right.\right.
$$

$$
10\,693\,888\,746\,455\,040\,z^{15/2}-2\,655\,433\,323\,970\,560\,z^{7}-439\,009\,742\,589\,788\,160\,z^{13/2}+
$$

$$
107\,821\,741\,815\,889\,920\,z^{6}+6\,432\,801\,805\,503\,037\,440\,z^{11/2}-1\,533\,596\,485\,917\,081\,600\,z^{5}-
$$

$$
25\,794\,889\,783\,404\,134\,400\,z^{9/2}+5\,519\,225\,534\,260\,838\,400\,z^{4}+6\,583\,532\,857\,742\,131\,200\,z^{7/2}+
$$

$$
354\,037\,253\,997\,772\,800\,z^{3}+1\,923\,513\,150\,214\,656\,000\,z^{5/2}+743\,175\,535\,310\,208\,000\,z^{2}-
$$

$$
1\,292\,360\,397\,800\,472\,000\,z^{3/2}-157\,788\,188\,103\,546\,000\,z+1\,775\,117\,116\,164\,892\,500\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\left(274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}-97\,358\,318\,665\,728\,z^{17/2}-\right.
$$

$$
24\,288\,040\,058\,880\,z^{8}+10\,693\,888\,746\,455\,040\,z^{15/2}+2\,655\,433\,323\,970\,560\,z^{7}-
$$

$$
439\,009\,742\,589\,788\,160\,z^{13/2}-107\,821\,741\,815\,889\,920\,z^{6}+6\,432\,801\,805\,503\,037\,440\,z^{11/2}+
$$

$$
1\,533\,596\,485\,917\,081\,600\,z^{5}-25\,794\,889\,783\,404\,134\,400\,z^{9/2}-5\,519\,225\,534\,260\,838\,400\,z^{4}+
$$

$$
6\,583\,532\,857\,742\,131\,200\,z^{7/2}-354\,037\,253\,997\,772\,800\,z^{3}+1\,923\,513\,150\,214\,656\,000\,z^{5/2}-
$$

$$
743\,175\,535\,310\,208\,000\,z^{2}-1\,292\,360\,397\,800\,472\,000\,z^{3/2}+157\,788\,188\,103\,546\,000\,z+
$$

$$
\left.\left.1\,775\,117\,116\,164\,892\,500\sqrt{z}\;-1\,331\,337\,837\,123\,669\,375\right)+1\,331\,337\,837\,123\,669\,375\right)-
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}-389\,639\,433\,093\,120\,z^{9}+42\,848\,161\,407\,959\,040\,z^{8}-\right.
$$

$$
1\,763\,915\,977\,960\,980\,480\,z^{7}+26\,045\,321\,862\,080\,102\,400\,z^{6}-107\,436\,952\,681\,080\,422\,400\,z^{5}+
$$

$$
39\,169\,722\,331\,643\,904\,000\,z^{4}+12\,590\,267\,892\,314\,112\,000\,z^{3}-2\,065\,590\,826\,082\,784\,000\,z^{2}+
$$

$$
\left.1\,577\,881\,881\,035\,460\,000\,z-1\,331\,337\,837\,123\,669\,375\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}-389\,639\,433\,093\,120\,z^{9}+42\,848\,161\,407\,959\,040\,z^{8}-\right.
$$

$$
1\,763\,915\,977\,960\,980\,480\,z^{7}+26\,045\,321\,862\,080\,102\,400\,z^{6}-107\,436\,952\,681\,080\,422\,400\,z^{5}+
$$

$$
39\,169\,722\,331\,643\,904\,000\,z^{4}+12\,590\,267\,892\,314\,112\,000\,z^{3}-2\,065\,590\,826\,082\,784\,000\,z^{2}+
$$

$$
\left.\left.\left.1\,577\,881\,881\,035\,460\,000\,z-1\,331\,337\,837\,123\,669\,375\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)\Big/\left(412\,955\,456\,769\,412\,300\,800\,z^{19/4}\right)
$$

07.22.03.8953.01

$${}_1F_2\left(-\frac{21}{4};\frac{5}{2},\frac{23}{4};-z\right)=$$

$$\left(\sqrt{\pi}\left(1\,099\,511\,627\,776\,z^{10}+389\,639\,433\,093\,120\,z^9+42\,848\,161\,407\,959\,040\,z^8+1\,763\,915\,977\,960\,980\,480\,z^7+\right.\right.$$
$$26\,045\,321\,862\,080\,102\,400\,z^6+107\,436\,952\,681\,080\,422\,400\,z^5+$$
$$39\,169\,722\,331\,643\,904\,000\,z^4-12\,590\,267\,892\,314\,112\,000\,z^3-2\,065\,590\,826\,082\,784\,000\,z^2-$$
$$\left.1\,577\,881\,881\,035\,460\,000\,z-1\,331\,337\,837\,123\,669\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(68\,719\,476\,736\,z^9+24\,339\,579\,666\,432\,z^8+2\,673\,472\,186\,613\,760\,z^7+109\,752\,435\,647\,447\,040\,z^6+\right.\right.$$
$$1\,608\,200\,451\,375\,759\,360\,z^5+6\,448\,722\,445\,851\,033\,600\,z^4+1\,645\,883\,214\,435\,532\,800\,z^3-$$
$$\left.480\,878\,287\,553\,664\,000\,z^2-323\,090\,099\,450\,118\,000\,z-443\,779\,279\,041\,223\,125\right)\cos\left(2\sqrt{z}\right)+$$
$$\left(68\,719\,476\,736\,z^9+24\,288\,040\,058\,880\,z^8+2\,655\,433\,323\,970\,560\,z^7+107\,821\,741\,815\,889\,920\,z^6+\right.$$
$$1\,533\,596\,485\,917\,081\,600\,z^5+5\,519\,225\,534\,260\,838\,400\,z^4-$$
$$354\,037\,253\,997\,772\,800\,z^3+743\,175\,535\,310\,208\,000\,z^2+157\,788\,188\,103\,546\,000\,z+$$
$$\left.\left.\left.1\,331\,337\,837\,123\,669\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(103\,238\,864\,192\,353\,075\,200\,z^{19/4}\right)$$

For fixed z and $a_1=-\frac{21}{4}$, $b_{1.}=\frac{7}{2}$

07.22.03.8954.01

$${}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{23}{4};z\right)=$$

$$\left(\left(-16\,z\left(16\,777\,216\,z^6+1\,012\,924\,416\,z^5+36\,040\,015\,872\,z^4+776\,056\,651\,776\,z^3+9\,085\,690\,010\,880\,z^2+\right.\right.\right.$$
$$\left.42\,977\,021\,018\,400\,z-679\,242\,137\,805\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$12\sqrt{z}\left(33\,554\,432\,z^6+2\,055\,208\,960\,z^5+73\,902\,194\,688\,z^4+1\,618\,394\,480\,640\,z^3+19\,651\,595\,604\,480\,z^2+\right.$$
$$104\,812\,287\,672\,960\,z+208\,703\,679\,809\,625\left)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(268\,435\,456\,z^7+16\,408\,117\,248\,z^6+\right.\right.$$
$$589\,059\,588\,096\,z^5+12\,866\,149\,416\,960\,z^4+155\,306\,682\,961\,920\,z^3+811\,117\,215\,659\,520\,z^2+$$
$$\left.\left.\left.708\,327\,640\,566\,000\,z-3\,130\,555\,197\,144\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(255\,878\,352\,873\,990\sqrt{2}\,z^{5/4}\right)$$

07.22.03.8955.01

$${}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{23}{4};-z\right)=$$
$$-\left(\left(16\,z\left(16\,777\,216\,z^6-1\,012\,924\,416\,z^5+36\,040\,015\,872\,z^4-776\,056\,651\,776\,z^3+9\,085\,690\,010\,880\,z^2-\right.\right.$$
$$\left.42\,977\,021\,018\,400\,z-679\,242\,137\,805\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$12\sqrt{z}\,\left(33\,554\,432\,z^6-2\,055\,208\,960\,z^5+73\,902\,194\,688\,z^4-1\,618\,394\,480\,640\,z^3+19\,651\,595\,604\,480\,z^2-\right.$$
$$104\,812\,287\,672\,960\,z+208\,703\,679\,809\,625\Big)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(268\,435\,456\,z^7-16\,408\,117\,248\,z^6+\right.$$
$$589\,059\,588\,096\,z^5-12\,866\,149\,416\,960\,z^4+155\,306\,682\,961\,920\,z^3-811\,117\,215\,659\,520\,z^2+$$
$$\left.\left.\left.708\,327\,640\,566\,000\,z+3\,130\,555\,197\,144\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(255\,878\,352\,873\,990\,\sqrt{2}\;z^{5/4}\right)$$

07.22.03.8956.01

$${}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{21}{4};z\right)=\frac{15\left((4\,z+3)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.8957.01

$${}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{21}{4};-z\right)=-\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4\,z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.8958.01

$${}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{19}{4};z\right)=$$
$$\left(\left(-8\,z\left(16\,777\,216\,z^6+330\,301\,440\,z^5+7\,113\,867\,264\,z^4+109\,403\,320\,320\,z^3+991\,254\,087\,936\,z^2+3\,753\,792\,246\,960\,z-\right.\right.\right.$$
$$883\,980\,264\,195\Big)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,\left(16\,777\,216\,z^6+344\,981\,504\,z^5+7\,427\,653\,632\,z^4+116\,225\,593\,344\,z^3+\right.$$
$$1\,100\,856\,234\,240\,z^2+4\,877\,329\,781\,520\,z+6\,324\,353\,933\,625\Big)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(134\,217\,728\,z^7+\right.$$
$$2\,743\,074\,816\,z^6+59\,024\,867\,328\,z^5+920\,915\,509\,248\,z^4+8\,653\,677\,742\,080\,z^3+37\,126\,925\,216\,640\,z^2+$$
$$\left.\left.\left.29\,659\,039\,137\,000\,z-94\,865\,309\,004\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(11\,125\,145\,777\,130\,\sqrt{2}\;z^{5/4}\right)$$

07.22.03.8959.01

$${}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{19}{4};-z\right)=$$
$$-\left(\left(8z\left(16\,777\,216z^6-330\,301\,440z^5+7\,113\,867\,264z^4-109\,403\,320\,320z^3+991\,254\,087\,936z^2-3\,753\,792\,246\,960z-\right.\right.\right.$$
$$\left.\left.883\,980\,264\,195\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(16\,777\,216z^6-344\,981\,504z^5+7\,427\,653\,632z^4-\right.\right.$$
$$\left.\left.116\,225\,593\,344z^3+1\,100\,856\,234\,240z^2-4\,877\,329\,781\,520z+6\,324\,353\,933\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(134\,217\,728z^7-2\,743\,074\,816z^6+59\,024\,867\,328z^5-920\,915\,509\,248z^4+8\,653\,677\,742\,080z^3-\right.$$
$$\left.\left.37\,126\,925\,216\,640z^2+29\,659\,039\,137\,000z+94\,865\,309\,004\,375\right)$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(11\,125\,145\,777\,130\sqrt{2}\,z^{5/4}\right)$$

07.22.03.8960.01

$${}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{53\,777\,874\,870\,720z^{5/2}}\left(e^{-2\sqrt{z}}\left(268\,435\,456e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{31/4}-268\,435\,456e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{31/4}+\right.\right.$$
$$268\,435\,456e^{4\sqrt{z}}z^{15/2}+268\,435\,456z^{15/2}+67\,108\,864e^{4\sqrt{z}}z^7-67\,108\,864z^7+50\,331\,648e^{4\sqrt{z}}z^{13/2}+$$
$$50\,331\,648z^{13/2}+62\,914\,560e^{4\sqrt{z}}z^6-62\,914\,560z^6+110\,100\,480e^{4\sqrt{z}}z^{11/2}+110\,100\,480z^{11/2}+$$
$$247\,726\,080e^{4\sqrt{z}}z^5-247\,726\,080z^5+681\,246\,720e^{4\sqrt{z}}z^{9/2}+681\,246\,720z^{9/2}+2\,214\,051\,840e^{4\sqrt{z}}z^4-$$
$$2\,214\,051\,840z^4+8\,302\,694\,400e^{4\sqrt{z}}z^{7/2}+8\,302\,694\,400z^{7/2}+35\,286\,451\,200e^{4\sqrt{z}}z^3-35\,286\,451\,200z^3+$$
$$167\,610\,643\,200e^{4\sqrt{z}}z^{5/2}+167\,610\,643\,200z^{5/2}+879\,955\,876\,800e^{4\sqrt{z}}z^2-879\,955\,876\,800z^2+$$
$$5\,059\,746\,291\,600e^{4\sqrt{z}}z^{3/2}+5\,059\,746\,291\,600z^{3/2}+31\,623\,414\,322\,500e^{4\sqrt{z}}z-31\,623\,414\,322\,500z-$$
$$\left.\left.51\,229\,931\,202\,450e^{4\sqrt{z}}\sqrt{z}-51\,229\,931\,202\,450\sqrt{z}+25\,614\,965\,601\,225e^{4\sqrt{z}}-25\,614\,965\,601\,225\right)\right)$$

07.22.03.8961.01

$${}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{26\,888\,937\,435\,360z^{5/2}}\left(-536\,870\,912\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{31/4}-2\left(134\,217\,728z^7-25\,165\,824z^6+55\,050\,240z^5-\right.\right.$$
$$\left.340\,623\,360z^4+4\,151\,347\,200z^3-83\,805\,321\,600z^2+2\,529\,873\,145\,800z+25\,614\,965\,601\,225\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left(-67\,108\,864z^7+62\,914\,560z^6-247\,726\,080z^5+2\,214\,051\,840z^4-35\,286\,451\,200z^3+\right.$$
$$\left.\left.879\,955\,876\,800z^2-31\,623\,414\,322\,500z+25\,614\,965\,601\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.8962.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{15}{4};z\right)= \frac{1}{585\,533\,988\,270\sqrt{2}\,z^{5/4}}\left(\left(16z\left(4\,194\,304z^6-88\,080\,384z^5-557\,383\,680z^4-5\,293\,080\,576z^3-34\,174\,054\,656z^2-97\,334\,104\,896z+40\,479\,573\,015\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(8\,388\,608z^6-168\,820\,736z^5-1\,256\,521\,728z^4-11\,766\,730\,752z^3-79\,808\,295\,168z^2-277\,923\,033\,360z-218\,081\,170\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-67\,108\,864z^7+1\,358\,954\,496z^6+9\,909\,043\,200z^5+92\,562\,849\,792z^4+621\,710\,401\,536z^3+2\,085\,575\,143\,680z^2+1\,395\,719\,488\,800z-3\,271\,217\,551\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8963.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{15}{4};-z\right)= \frac{1}{585\,533\,988\,270\sqrt{2}\,z^{5/4}}\left(\left(16z\left(4\,194\,304z^6+88\,080\,384z^5-557\,383\,680z^4+5\,293\,080\,576z^3-34\,174\,054\,656z^2+97\,334\,104\,896z+40\,479\,573\,015\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(8\,388\,608z^6+168\,820\,736z^5-1\,256\,521\,728z^4+11\,766\,730\,752z^3-79\,808\,295\,168z^2+277\,923\,033\,360z-218\,081\,170\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(67\,108\,864z^7+1\,358\,954\,496z^6-9\,909\,043\,200z^5+92\,562\,849\,792z^4-621\,710\,401\,536z^3+2\,085\,575\,143\,680z^2-1\,395\,719\,488\,800z-3\,271\,217\,551\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8964.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{13}{4};z\right)= \frac{1}{3\,163\,404\,404\,160\,z^{5/2}}\left(e^{-2\sqrt{z}}\left(-67\,108\,864e^{4\sqrt{z}}z^{15/2}-67\,108\,864z^{15/2}-16\,777\,216e^{4\sqrt{z}}z^7+16\,777\,216z^7-4\,194\,304e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-651)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{27/4}+4\,194\,304e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-651)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{27/4}+2\,717\,908\,992e^{4\sqrt{z}}z^{13/2}+2\,717\,908\,992z^{13/2}+666\,894\,336e^{4\sqrt{z}}z^6-666\,894\,336z^6+484\,442\,112e^{4\sqrt{z}}z^{11/2}+484\,442\,112z^{11/2}+578\,027\,520e^{4\sqrt{z}}z^5-578\,027\,520z^5+949\,616\,640e^{4\sqrt{z}}z^{9/2}+949\,616\,640z^{9/2}+1\,966\,325\,760e^{4\sqrt{z}}z^4-1\,966\,325\,760z^4+4\,853\,882\,880e^{4\sqrt{z}}z^{7/2}+4\,853\,882\,880z^{7/2}+13\,699\,445\,760e^{4\sqrt{z}}z^3-13\,699\,445\,760z^3+42\,551\,308\,800e^{4\sqrt{z}}z^{5/2}+42\,551\,308\,800z^{5/2}+138\,940\,401\,600e^{4\sqrt{z}}z^2-138\,940\,401\,600z^2+439\,977\,938\,400e^{4\sqrt{z}}z^{3/2}+439\,977\,938\,400z^{3/2}+1\,044\,947\,603\,700e^{4\sqrt{z}}z-1\,044\,947\,603\,700z-1\,897\,404\,859\,350e^{4\sqrt{z}}\sqrt{z}-1\,897\,404\,859\,350\sqrt{z}+948\,702\,429\,675e^{4\sqrt{z}}-948\,702\,429\,675\right)\right) $$

07.22.03.8965.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{13}{4};-z\right)= \frac{1}{1\,581\,702\,202\,080\,z^{5/2}}\left(8\,388\,608\sqrt{\pi}\,(16z+651)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{27/4}+2\left(33\,554\,432z^7+1\,358\,954\,496z^6-242\,221\,056z^5+474\,808\,320z^4-2\,426\,941\,440z^3+21\,275\,654\,400z^2-219\,988\,969\,200z-948\,702\,429\,675\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(16\,777\,216z^7+666\,894\,336z^6-578\,027\,520z^5+1\,966\,325\,760z^4-13\,699\,445\,760z^3+138\,940\,401\,600z^2-1\,044\,947\,603\,700z+948\,702\,429\,675\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.8966.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{11}{4};z\right)= \frac{1}{117\,106\,797\,654\sqrt{2}\,z^{5/4}}\left(\left(-8z\left(4\,194\,304z^6-258\,736\,128z^5+2\,002\,452\,480z^4+4\,594\,286\,592z^3+18\,829\,552\,896z^2+36\,602\,635\,104z-21\,425\,777\,289\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(4\,194\,304z^6-255\,066\,112z^5+1\,782\,251\,520z^4+5\,991\,874\,560z^3+24\,412\,485\,888z^2+60\,458\,547\,744z+26\,169\,740\,415\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(33\,554\,432z^7-2\,044\,723\,200z^6+14\,500\,233\,216z^5+46\,832\,615\,424z^4+188\,540\,835\,840z^3+453\,395\,916\,288z^2+229\,296\,773\,160z-392\,546\,106\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8967.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{11}{4};-z\right)= -\left(\left(8z\left(4\,194\,304z^6+258\,736\,128z^5+2\,002\,452\,480z^4-4\,594\,286\,592z^3+18\,829\,552\,896z^2-36\,602\,635\,104z-21\,425\,777\,289\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(4\,194\,304z^6+255\,066\,112z^5+1\,782\,251\,520z^4-5\,991\,874\,560z^3+24\,412\,485\,888z^2-60\,458\,547\,744z+26\,169\,740\,415\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(33\,554\,432z^7+2\,044\,723\,200z^6+14\,500\,233\,216z^5-46\,832\,615\,424z^4+188\,540\,835\,840z^3-453\,395\,916\,288z^2+229\,296\,773\,160z+392\,546\,106\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(117\,106\,797\,654\sqrt{2}\,z^{5/4}\right) $$

07.22.03.8968.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{9}{4};z\right)=\frac{1}{243\,338\,800\,320\,z^{5/2}}\left(e^{-2\sqrt{z}}\right.$$
$$\left(8\,388\,608\,e^{4\sqrt{z}}\,z^{15/2}+8\,388\,608\,z^{15/2}+2\,097\,152\,e^{4\sqrt{z}}\,z^{7}-2\,097\,152\,z^{7}-681\,050\,112\,e^{4\sqrt{z}}\,z^{13/2}-681\,050\,112\,z^{13/2}-\right.$$
$$168\,689\,664\,e^{4\sqrt{z}}\,z^{6}+168\,689\,664\,z^{6}+32\,768\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-20\,832\,z+298\,809\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4}-$$
$$32\,768\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-20\,832\,z+298\,809\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4}+9\,666\,822\,144\,e^{4\sqrt{z}}\,z^{11/2}+$$
$$9\,666\,822\,144\,z^{11/2}+2\,295\,595\,008\,e^{4\sqrt{z}}\,z^{5}-2\,295\,595\,008\,z^{5}+1\,577\,189\,376\,e^{4\sqrt{z}}\,z^{9/2}+1\,577\,189\,376\,z^{9/2}+$$
$$1\,734\,082\,560\,e^{4\sqrt{z}}\,z^{4}-1\,734\,082\,560\,z^{4}+2\,543\,063\,040\,e^{4\sqrt{z}}\,z^{7/2}+2\,543\,063\,040\,z^{7/2}+4\,508\,421\,120\,e^{4\sqrt{z}}\,z^{3}-$$
$$4\,508\,421\,120\,z^{3}+8\,973\,296\,640\,e^{4\sqrt{z}}\,z^{5/2}+8\,973\,296\,640\,z^{5/2}+18\,525\,386\,880\,e^{4\sqrt{z}}\,z^{2}-$$
$$18\,525\,386\,880\,z^{2}+34\,735\,100\,400\,e^{4\sqrt{z}}\,z^{3/2}+34\,735\,100\,400\,z^{3/2}+37\,629\,692\,100\,e^{4\sqrt{z}}\,z-$$
$$\left.\left.37\,629\,692\,100\,z-82\,495\,863\,450\,e^{4\sqrt{z}}\,\sqrt{z}-82\,495\,863\,450\,\sqrt{z}+41\,247\,931\,725\,e^{4\sqrt{z}}-41\,247\,931\,725\right)\right)$$

07.22.03.8969.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{9}{4};-z\right)=\frac{1}{121\,669\,400\,160\,z^{5/2}}$$
$$\left(-65\,536\,\sqrt{\pi}\,\left(256\,z^2+20\,832\,z+298\,809\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{23/4}-2\left(4\,194\,304\,z^{7}+340\,525\,056\,z^{6}+4\,833\,411\,072\,z^{5}-\right.\right.$$
$$\left.788\,594\,688\,z^4+1\,271\,531\,520\,z^3-4\,486\,648\,320\,z^2+17\,367\,550\,200\,z+41\,247\,931\,725\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-$$
$$\left(2\,097\,152\,z^{7}+168\,689\,664\,z^{6}+2\,295\,595\,008\,z^{5}-1\,734\,082\,560\,z^{4}+4\,508\,421\,120\,z^{3}-\right.$$
$$\left.\left.18\,525\,386\,880\,z^2+37\,629\,692\,100\,z-41\,247\,931\,725\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.8970.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{53\,230\,362\,570\,\sqrt{2}\,z^{5/4}}\left(\left(16\,z\left(1\,048\,576\,z^6-107\,347\,968\,z^5+2\,364\,493\,824\,z^4-8\,618\,803\,200\,z^3-5\,506\,583\,040\,z^2-\right.\right.\right.$$
$$\left.6\,675\,812\,640\,z+5\,719\,161\,735\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(2\,097\,152\,z^6-212\,860\,928\,z^5+4\,544\,225\,280\,z^4-\right.$$
$$\left.13\,403\,013\,120\,z^3-20\,369\,422\,080\,z^2-29\,850\,599\,520\,z-6\,230\,890\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-16\,777\,216\,z^7+1\,704\,984\,576\,z^6-36\,560\,240\,640\,z^5+111\,167\,078\,400\,z^4+159\,063\,367\,680\,z^3+\right.$$
$$\left.\left.\left.229\,491\,843\,840\,z^2+76\,236\,778\,800\,z-93\,463\,358\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8971.01

$${}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{53\,230\,362\,570\sqrt{2}\,z^{5/4}}\left(\left(16z\left(1\,048\,576z^6+107\,347\,968z^5+2\,364\,493\,824z^4+8\,618\,803\,200z^3-5\,506\,583\,040z^2+\right.\right.\right.$$
$$\left.6\,675\,812\,640z+5\,719\,161\,735\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(2\,097\,152z^6+212\,860\,928z^5+4\,544\,225\,280z^4+\right.$$
$$\left.13\,403\,013\,120z^3-20\,369\,422\,080z^2+29\,850\,599\,520z-6\,230\,890\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(16\,777\,216z^7+1\,704\,984\,576z^6+36\,560\,240\,640z^5+111\,167\,078\,400z^4-159\,063\,367\,680z^3+\right.$$
$$\left.\left.\left.229\,491\,843\,840z^2-76\,236\,778\,800z-93\,463\,358\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.8972.01

$${}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{5}{4};z\right)=\frac{1}{81\,112\,933\,440\,z^{5/2}}\left(e^{-2\sqrt{z}}\right.$$
$$\left(-2\,097\,152\,e^{4\sqrt{z}}\,z^{15/2}-2\,097\,152\,z^{15/2}-524\,288\,e^{4\sqrt{z}}\,z^7+524\,288\,z^7+255\,590\,400\,e^{4\sqrt{z}}\,z^{13/2}+255\,590\,400\,z^{13/2}+\right.$$
$$63\,504\,384\,e^{4\sqrt{z}}\,z^6-63\,504\,384\,z^6-7\,296\,393\,216\,e^{4\sqrt{z}}\,z^{11/2}-7\,296\,393\,216\,z^{11/2}-1\,777\,821\,696\,e^{4\sqrt{z}}\,z^5+$$
$$1\,777\,821\,696\,z^5-512\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096z^3-499\,968z^2+14\,342\,832z-89\,343\,891\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+$$
$$512\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096z^3-499\,968z^2+14\,342\,832z-89\,343\,891\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+44\,466\,831\,360\,e^{4\sqrt{z}}\,z^{9/2}+$$
$$44\,466\,831\,360\,z^{9/2}+9\,933\,815\,808\,e^{4\sqrt{z}}\,z^4-9\,933\,815\,808\,z^4+6\,149\,799\,936\,e^{4\sqrt{z}}\,z^{7/2}+$$
$$6\,149\,799\,936\,z^{7/2}+5\,779\,952\,640\,e^{4\sqrt{z}}\,z^3-5\,779\,952\,640\,z^3+6\,733\,601\,280\,e^{4\sqrt{z}}\,z^{5/2}+6\,733\,601\,280\,z^{5/2}+$$
$$8\,420\,630\,400\,e^{4\sqrt{z}}\,z^2-8\,420\,630\,400\,z^2+9\,262\,693\,440\,e^{4\sqrt{z}}\,z^{3/2}+9\,262\,693\,440\,z^{3/2}+4\,052\,428\,380\,e^{4\sqrt{z}}\,z-$$
$$\left.\left.4\,052\,428\,380z-13\,025\,662\,650\,e^{4\sqrt{z}}\,\sqrt{z}-13\,025\,662\,650\sqrt{z}+6\,512\,831\,325\,e^{4\sqrt{z}}-6\,512\,831\,325\right)\right)$$

07.22.03.8973.01

$${}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{5}{4};-z\right)=\frac{1}{40\,556\,466\,720\,z^{5/2}}$$
$$\left(1024\sqrt{\pi}\,\left(4096z^3+499\,968z^2+14\,342\,832z+89\,343\,891\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}+2\left(1\,048\,576z^7+127\,795\,200z^6+\right.\right.$$
$$\left.3\,648\,196\,608z^5+22\,233\,415\,680z^4-3\,074\,899\,968z^3+3\,366\,800\,640z^2-4\,631\,346\,720z-6\,512\,831\,325\right)$$
$$\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(524\,288z^7+63\,504\,384z^6+1\,777\,821\,696z^5+9\,933\,815\,808z^4-\right.$$
$$\left.\left.5\,779\,952\,640z^3+8\,420\,630\,400z^2-4\,052\,428\,380z+6\,512\,831\,325\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.8974.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{7}{2}, -\frac{3}{4}; z\right) = \frac{1}{53\,230\,362\,570\sqrt{2}\, z^{5/4}}\left(\left(-8z\left(1\,048\,576 z^6 - 150\,011\,904 z^5 + 5\,452\,296\,192 z^4 - 53\,497\,430\,784 z^3 + 98\,046\,789\,120 z^2 - 1\,052\,578\,800 z - 12\,537\,892\,395\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(1\,048\,576 z^6 - 149\,094\,400 z^5 + 5\,322\,584\,064 z^4 - 48\,941\,303\,040 z^3 + 58\,379\,650\,560 z^2 + 32\,206\,371\,120 z + 2\,565\,660\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(8\,388\,608 z^7 - 1\,193\,803\,776 z^6 + 42\,726\,555\,648 z^5 - 396\,421\,724\,160 z^4 + 502\,911\,037\,440 z^3 + 264\,377\,312\,640 z^2 + 45\,787\,177\,800 z - 38\,484\,912\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8975.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{7}{2}, -\frac{3}{4}; -z\right) = -\frac{1}{53\,230\,362\,570\sqrt{2}\, z^{5/4}}\left(\left(8z\left(1\,048\,576 z^6 + 150\,011\,904 z^5 + 5\,452\,296\,192 z^4 + 53\,497\,430\,784 z^3 + 98\,046\,789\,120 z^2 + 1\,052\,578\,800 z - 12\,537\,892\,395\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1\,048\,576 z^6 + 149\,094\,400 z^5 + 5\,322\,584\,064 z^4 + 48\,941\,303\,040 z^3 + 58\,379\,650\,560 z^2 - 32\,206\,371\,120 z + 2\,565\,660\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(8\,388\,608 z^7 + 1\,193\,803\,776 z^6 + 42\,726\,555\,648 z^5 + 396\,421\,724\,160 z^4 + 502\,911\,037\,440 z^3 - 264\,377\,312\,640 z^2 + 45\,787\,177\,800 z + 38\,484\,912\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.8976.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{7}{2}, -\frac{1}{4}; z\right) = \frac{1}{16\,222\,586\,688 z^{5/2}}\left(e^{-2\sqrt{z}}\left(131\,072 e^{4\sqrt{z}} z^{15/2} + 131\,072 z^{15/2} + 32\,768 e^{4\sqrt{z}} z^7 - 32\,768 z^7 - 21\,307\,392 e^{4\sqrt{z}} z^{13/2} - 21\,307\,392 z^{13/2} - 5\,302\,272 e^{4\sqrt{z}} z^6 + 5\,302\,272 z^6 + 913\,995\,264 e^{4\sqrt{z}} z^{11/2} + 913\,995\,264 z^{11/2} + 224\,606\,592 e^{4\sqrt{z}} z^5 - 224\,606\,592 z^5 - 11\,272\,320\,864 e^{4\sqrt{z}} z^{9/2} - 11\,272\,320\,864 z^{9/2} - 2\,662\,467\,192 e^{4\sqrt{z}} z^4 + 2\,662\,467\,192 z^4 + 2 e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 10\,665\,984 z^3 + 458\,970\,624 z^2 - 5\,718\,009\,024 z + 15\,277\,805\,361\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{15/4} - 2 e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 10\,665\,984 z^3 + 458\,970\,624 z^2 - 5\,718\,009\,024 z + 15\,277\,805\,361\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{15/4} + 28\,737\,773\,568 e^{4\sqrt{z}} z^{7/2} + 28\,737\,773\,568 z^{7/2} + 5\,646\,993\,408 e^{4\sqrt{z}} z^3 - 5\,646\,993\,408 z^3 + 2\,790\,256\,896 e^{4\sqrt{z}} z^{5/2} + 2\,790\,256\,896 z^{5/2} + 1\,804\,420\,800 e^{4\sqrt{z}} z^2 - 1\,804\,420\,800 z^2 + 1\,052\,578\,800 e^{4\sqrt{z}} z^{3/2} + 1\,052\,578\,800 z^{3/2} + 52\,628\,940 e^{4\sqrt{z}} z - 52\,628\,940 z - 868\,377\,510 e^{4\sqrt{z}}\sqrt{z} - 868\,377\,510\sqrt{z} + 434\,188\,755 e^{4\sqrt{z}} - 434\,188\,755\right)\right) $$

07.22.03.8977.01

$${}_1F_2\left(-\frac{21}{4};\frac{7}{2},-\frac{1}{4};-z\right)=$$
$$\frac{1}{8\,111\,293\,344\,z^{5/2}}\left(-4\sqrt{\pi}\left(65\,536\,z^4+10\,665\,984\,z^3+458\,970\,624\,z^2+5\,718\,009\,024\,z+15\,277\,805\,361\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}-\right.$$
$$2\left(65\,536\,z^7+10\,653\,696\,z^6+456\,997\,632\,z^5+5\,636\,160\,432\,z^4+14\,368\,886\,784\,z^3-1\,395\,128\,448\,z^2+\right.$$
$$526\,289\,400\,z+434\,188\,755\left)\cos\left(2\sqrt{z}\right)\sqrt{z}\right.-\left(32\,768\,z^7+5\,302\,272\,z^6+224\,606\,592\,z^5+\right.$$
$$\left.\left.2\,662\,467\,192\,z^4+5\,646\,993\,408\,z^3-1\,804\,420\,800\,z^2+52\,628\,940\,z-434\,188\,755\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.8978.01

$${}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{159\,691\,087\,710\sqrt{2}\;z^{5/4}}\left(\left(16\,z\left(262\,144\,z^6-48\,168\,960\,z^5+2\,441\,005\,056\,z^4-39\,089\,836\,800\,z^3+174\,261\,151\,764\,z^2-\right.\right.\right.$$
$$\left.159\,138\,483\,840\,z+19\,694\,951\,955\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(524\,288\,z^6-95\,879\,168\,z^5+4\,798\,488\,576\,z^4-\right.$$
$$\left.74\,046\,728\,448\,z^3+286\,730\,138\,520\,z^2-102\,934\,586\,160\,z-1\,776\,226\,725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-4\,194\,304\,z^7+767\,557\,632\,z^6-38\,482\,182\,144\,z^5+596\,891\,344\,896\,z^4-2\,355\,323\,987\,520\,z^3+\right.$$
$$\left.\left.969\,965\,176\,320\,z^2+50\,523\,782\,400\,z-26\,643\,400\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.8979.01

$${}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{159\,691\,087\,710\sqrt{2}\;z^{5/4}}\left(\left(16\,z\left(262\,144\,z^6+48\,168\,960\,z^5+2\,441\,005\,056\,z^4+39\,089\,836\,800\,z^3+174\,261\,151\,764\,z^2+\right.\right.\right.$$
$$\left.159\,138\,483\,840\,z+19\,694\,951\,955\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(524\,288\,z^6+95\,879\,168\,z^5+4\,798\,488\,576\,z^4+\right.$$
$$\left.74\,046\,728\,448\,z^3+286\,730\,138\,520\,z^2+102\,934\,586\,160\,z-1\,776\,226\,725\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(4\,194\,304\,z^7+767\,557\,632\,z^6+38\,482\,182\,144\,z^5+596\,891\,344\,896\,z^4+2\,355\,323\,987\,520\,z^3+\right.$$
$$\left.\left.969\,965\,176\,320\,z^2-50\,523\,782\,400\,z-26\,643\,400\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.8980.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{3}{4};z\right)= \frac{1}{2\,595\,613\,870\,080\,z^{5/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-1\,048\,576\,z^5+213\,319\,680\,z^4-12\,239\,216\,640\,z^3+228\,720\,360\,960\,z^2-1\,222\,224\,428\,880\,z+1\,145\,835\,402\,075\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-213\,319\,680\,z^4+12\,239\,216\,640\,z^3-228\,720\,360\,960\,z^2+1\,222\,224\,428\,880\,z-1\,145\,835\,402\,075\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}-4\left(262\,144\,z^{15/2}-65\,536\,z^7-53\,280\,768\,z^{13/2}+13\,271\,040\,z^6+3\,049\,912\,320\,z^{11/2}-752\,693\,760\,z^5-56\,627\,585\,280\,z^{9/2}+13\,624\,934\,400\,z^4+295\,962\,603\,300\,z^{7/2}-65\,405\,783\,205\,z^3-246\,340\,362\,240\,z^{5/2}+33\,682\,521\,600\,z^2-7\,217\,683\,200\,z^{3/2}-1\,503\,684\,000\,z+3\,157\,736\,400\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^{15/2}+65\,536\,z^7-53\,280\,768\,z^{13/2}-13\,271\,040\,z^6+3\,049\,912\,320\,z^{11/2}+752\,693\,760\,z^5-56\,627\,585\,280\,z^{9/2}-13\,624\,934\,400\,z^4+295\,962\,603\,300\,z^{7/2}+65\,405\,783\,205\,z^3-246\,340\,362\,240\,z^{5/2}-33\,682\,521\,600\,z^2-7\,217\,683\,200\,z^{3/2}+1\,503\,684\,000\,z+3\,157\,736\,400\sqrt{z}-1\,578\,868\,200\right)+1\,578\,868\,200\right)\right)\right) $$

07.22.03.8981.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{3}{4};-z\right)= \frac{1}{648\,903\,467\,520\,z^{5/2}}\left(\sqrt{\pi}\left(1\,048\,576\,z^5+213\,319\,680\,z^4+12\,239\,216\,640\,z^3+228\,720\,360\,960\,z^2+1\,222\,224\,428\,880\,z+1\,145\,835\,402\,075\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2\left(4\sqrt{z}\left(65\,536\,z^7+13\,320\,192\,z^6+762\,478\,080\,z^5+14\,156\,896\,320\,z^4+73\,990\,650\,825\,z^3+61\,585\,090\,560\,z^2-1\,804\,420\,800\,z-789\,434\,100\right)\cos\left(2\sqrt{z}\right)+\left(65\,536\,z^7+13\,271\,040\,z^6+752\,693\,760\,z^5+13\,624\,934\,400\,z^4+65\,405\,783\,205\,z^3+33\,682\,521\,600\,z^2+1\,503\,684\,000\,z+1\,578\,868\,200\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8982.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{5}{4};z\right)= \left(\left(2z\left(1\,048\,576\,z^6-235\,339\,776\,z^5+15\,299\,665\,920\,z^4-340\,076\,588\,544\,z^3+2\,417\,608\,858\,896\,z^2-4\,454\,924\,237\,379\,z+1\,759\,207\,097\,340\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(1\,048\,576\,z^6-234\,422\,272\,z^5+15\,095\,291\,904\,z^4-327\,030\,004\,224\,z^3+2\,141\,166\,124\,944\,z^2-2\,756\,811\,536\,325\,z+8\,683\,775\,100\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-2\,097\,152\,z^7+469\,106\,688\,z^6-30\,248\,386\,560\,z^5+657\,660\,681\,216\,z^4-4\,353\,855\,704\,352\,z^3+5\,871\,252\,278\,430\,z^2-121\,572\,851\,400\,z+32\,564\,156\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(1\,756\,601\,964\,810\sqrt{2}\,z^{5/4}\right) $$

07.22.03.8983.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{5}{4};-z\right)= $$

$$ \left(\left(2z\left(1\,048\,576z^6+235\,339\,776z^5+15\,299\,665\,920z^4+340\,076\,588\,544z^3+2\,417\,608\,858\,896z^2+4\,454\,924\,237\,379z+\right.\right.\right. $$

$$ 1\,759\,207\,097\,340\Big)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(1\,048\,576z^6+234\,422\,272z^5+15\,095\,291\,904z^4+\right. $$

$$ 327\,030\,004\,224z^3+2\,141\,166\,124\,944z^2+2\,756\,811\,536\,325z+8\,683\,775\,100\Big)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ \left(2\,097\,152z^7+469\,106\,688z^6+30\,248\,386\,560z^5+657\,660\,681\,216z^4+4\,353\,855\,704\,352z^3+\right. $$

$$ \left.\left.\left.5\,871\,252\,278\,430z^2+121\,572\,851\,400z+32\,564\,156\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(1\,756\,601\,964\,810\sqrt{2}\,z^{5/4}\right) $$

07.22.03.8984.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{7}{4};z\right)=\frac{1}{332\,238\,575\,370\,240z^{5/2}} $$

$$ \left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-16\,777\,216z^6+4\,095\,737\,856z^5-293\,741\,199\,360z^4+7\,319\,051\,550\,720z^3-\right.\right.\right. $$

$$ 58\,666\,772\,586\,240z^2+110\,000\,198\,599\,200z-12\,604\,189\,422\,825\Big)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+ $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-4\,095\,737\,856z^5+293\,741\,199\,360z^4-7\,319\,051\,550\,720z^3+\right. $$

$$ 58\,666\,772\,586\,240z^2-110\,000\,198\,599\,200z+12\,604\,189\,422\,825\Big)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}- $$

$$ 4\left(4\,194\,304z^{15/2}-1\,048\,576z^7-1\,023\,148\,032z^{13/2}+255\,000\,576z^6+73\,245\,032\,448z^{11/2}-\right. $$

$$ 18\,122\,711\,040z^5-1\,816\,403\,097\,600z^{9/2}+441\,139\,668\,480z^4+14\,351\,263\,698\,240z^{7/2}- $$

$$ 3\,297\,698\,444\,880z^3-25\,343\,217\,518\,220z^{5/2}+4\,641\,261\,636\,375z^2+1\,077\,840\,691\,200z^{3/2}+ $$

$$ 423\,437\,414\,400z-173\,224\,396\,800\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^{15/2}+1\,048\,576z^7-1\,023\,148\,032z^{13/2}-\right. $$

$$ 255\,000\,576z^6+73\,245\,032\,448z^{11/2}+18\,122\,711\,040z^5-1\,816\,403\,097\,600z^{9/2}-441\,139\,668\,480z^4+ $$

$$ 14\,351\,263\,698\,240z^{7/2}+3\,297\,698\,444\,880z^3-25\,343\,217\,518\,220z^{5/2}-4\,641\,261\,636\,375z^2+ $$

$$ \left.\left.\left.\left.1\,077\,840\,691\,200z^{3/2}-423\,437\,414\,400z-173\,224\,396\,800\sqrt{z}+86\,612\,198\,400\right)-86\,612\,198\,400\right)\right)\right) $$

07.22.03.8985.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{7}{4};-z\right)= $$

$$ \frac{1}{83\,059\,643\,842\,560z^{5/2}}\left(\sqrt{\pi}\left(16\,777\,216z^6+4\,095\,737\,856z^5+293\,741\,199\,360z^4+7\,319\,051\,550\,720z^3+\right.\right. $$

$$ \left.58\,666\,772\,586\,240z^2+110\,000\,198\,599\,200z+12\,604\,189\,422\,825\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+ $$

$$ 2\left(4\sqrt{z}\left(1\,048\,576z^7+255\,787\,008z^6+18\,311\,258\,112z^5+454\,100\,774\,400z^4+3\,587\,815\,924\,560z^3+\right.\right. $$

$$ 6\,335\,804\,379\,555z^2+269\,460\,172\,800z+43\,306\,099\,200\Big)\cos\left(2\sqrt{z}\right)+ $$

$$ \left(1\,048\,576z^7+255\,000\,576z^6+18\,122\,711\,040z^5+441\,139\,668\,480z^4+3\,297\,698\,444\,880z^3+\right. $$

$$ \left.\left.\left.4\,641\,261\,636\,375z^2-423\,437\,414\,400z-86\,612\,198\,400\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.8986.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{9}{4};z\right)= \left(\left(2z\left(16\,777\,216z^6-4\,448\,059\,392z^5+352\,947\,732\,480z^4-10\,040\,339\,054\,592z^3+98\,084\,902\,696\,704z^2-272\,366\,612\,822\,304z+156\,520\,055\,560\,869\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(16\,777\,216z^6-4\,433\,379\,328z^5+349\,080\,453\,120z^4-9\,737\,967\,697\,920z^3+89\,792\,816\,585\,472z^2-199\,350\,344\,217\,024z+16\,923\,375\,103\,635\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\left(16\,777\,216z^7-4\,435\,476\,480z^6+349\,628\,203\,008z^5-9\,779\,956\,236\,288z^4+90\,889\,076\,678\,400z^3-207\,723\,147\,087\,456z^2+25\,482\,972\,219\,705z+1\,354\,668\,915\,600\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(146\,149\,283\,472\,192\sqrt{2}\,z^{5/4}\right) $$

07.22.03.8987.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{9}{4};-z\right)= \left(\left(2z\left(16\,777\,216z^6+4\,448\,059\,392z^5+352\,947\,732\,480z^4+10\,040\,339\,054\,592z^3+98\,084\,902\,696\,704z^2+272\,366\,612\,822\,304z+156\,520\,055\,560\,869\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(16\,777\,216z^6+4\,433\,379\,328z^5+349\,080\,453\,120z^4+9\,737\,967\,697\,920z^3+89\,792\,816\,585\,472z^2+199\,350\,344\,217\,024z+16\,923\,375\,103\,635\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(16\,777\,216z^7+4\,435\,476\,480z^6+349\,628\,203\,008z^5+9\,779\,956\,236\,288z^4+90\,889\,076\,678\,400z^3+207\,723\,147\,087\,456z^2+25\,482\,972\,219\,705z-1\,354\,668\,915\,600\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(146\,149\,283\,472\,192\sqrt{2}\,z^{5/4}\right) $$

07.22.03.8988.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{11}{4};z\right)= \left(e^{-2\sqrt{z}}\left(-4\left(67\,108\,864z^{15/2}-16\,777\,216z^7-19\,100\,860\,416z^{13/2}+4\,762\,632\,192z^6+1\,641\,394\,470\,912z^{11/2}-406\,819\,897\,344z^5-50\,932\,601\,782\,272z^{9/2}+12\,439\,890\,247\,680z^4+538\,578\,544\,573\,440z^{7/2}-126\,250\,536\,625\,920z^3-1\,454\,724\,261\,970\,560z^{5/2}+292\,672\,903\,592\,160z^2+198\,937\,130\,055\,300z^{3/2}+28\,484\,690\,127\,075z+25\,868\,176\,588\,800\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864z^{15/2}+16\,777\,216z^7-19\,100\,860\,416z^{13/2}-4\,762\,632\,192z^6+1\,641\,394\,470\,912z^{11/2}+406\,819\,897\,344z^5-50\,932\,601\,782\,272z^{9/2}-12\,439\,890\,247\,680z^4+538\,578\,544\,573\,440z^{7/2}+126\,250\,536\,625\,920z^3-1\,454\,724\,261\,970\,560z^{5/2}-292\,672\,903\,592\,160z^2+198\,937\,130\,055\,300z^{3/2}-28\,484\,690\,127\,075z+25\,868\,176\,588\,800\sqrt{z}-12\,934\,088\,294\,400\right)+12\,934\,088\,294\,400\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(268\,435\,456z^7-76\,453\,773\,312z^6+6\,579\,802\,865\,664z^5-204\,933\,443\,420\,160z^4+2\,190\,226\,176\,552\,960z^3-6\,160\,011\,121\,555\,200z^2+1\,411\,669\,215\,356\,400z+264\,687\,977\,879\,325\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(268\,435\,456z^7-76\,453\,773\,312z^6+6\,579\,802\,865\,664z^5-204\,933\,443\,420\,160z^4+2\,190\,226\,176\,552\,960z^3-6\,160\,011\,121\,555\,200z^2+1\,411\,669\,215\,356\,400z+264\,687\,977\,879\,325\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big/\left(21\,263\,268\,823\,695\,360z^{5/2}\right) $$

07.22.03.8989.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{11}{4};-z\right)= $$

$$ \left(\sqrt{\pi}\, z^{3/4}\left(268\,435\,456\, z^7+76\,453\,773\,312\, z^6+6\,579\,802\,865\,664\, z^5+204\,933\,443\,420\,160\, z^4+2\,190\,226\,176\,552\,960\, z^3+\right.\right. $$

$$ \left.6\,160\,011\,121\,555\,200\, z^2+1\,411\,669\,215\,356\,400\, z-264\,687\,977\,879\,325\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ $$

$$ 2\left(4\sqrt{z}\left(16\,777\,216\, z^7+4\,775\,215\,104\, z^6+410\,348\,617\,728\, z^5+12\,733\,150\,445\,568\, z^4+134\,644\,636\,143\,360\, z^3+\right.\right. $$

$$ 363\,681\,065\,492\,640\, z^2+49\,734\,282\,513\,825\, z-6\,467\,044\,147\,200\Big)\cos\left(2\sqrt{z}\right)+ $$

$$ \left(16\,777\,216\, z^7+4\,762\,632\,192\, z^6+406\,819\,897\,344\, z^5+12\,439\,890\,247\,680\, z^4+\right. $$

$$ 126\,250\,536\,625\,920\, z^3+292\,672\,903\,592\,160\, z^2-28\,484\,690\,127\,075\, z+ $$

$$ \left.\left.\left.12\,934\,088\,294\,400\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(5\,315\,817\,205\,923\,840\, z^{5/2}\right) $$

07.22.03.8990.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{13}{4};z\right)= $$

$$ \left(\left(2\sqrt{z}\left(268\,435\,456\, z^7-82\,090\,917\,888\, z^6+7\,690\,936\,909\,824\, z^5-266\,640\,688\,742\,400\, z^4+3\,315\,238\,155\,694\,080\, z^3-\right.\right.\right. $$

$$ 12\,307\,996\,622\,718\,720\, z^2+8\,933\,891\,115\,829\,680\, z+264\,687\,977\,879\,325\Big) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2- $$

$$ 3\left(268\,435\,456\, z^7-81\,856\,036\,864\, z^6+7\,619\,503\,718\,400\, z^5-260\,030\,572\,462\,080\, z^4+3\,092\,765\,117\,460\,480\, z^3-\right. $$

$$ 9\,755\,993\,980\,212\,480\, z^2+1\,758\,464\,457\,750\,000\, z+441\,146\,629\,798\,875\Big) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)- $$

$$ 2\sqrt{z}\left(268\,435\,456\, z^7-81\,889\,591\,296\, z^6+7\,629\,632\,962\,560\, z^5-260\,952\,485\,068\,800\, z^4+\right. $$

$$ \left.\left.\left.3\,122\,587\,404\,840\,960\, z^3-10\,062\,732\,665\,905\,920\, z^2+2\,318\,811\,097\,402\,800\, z+673\,198\,809\,908\,625\right)\right. $$

$$ \left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(7\,794\,628\,451\,850\,240\sqrt{2}\, z^{7/4}\right) $$

07.22.03.8991.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{13}{4};-z\right)= $$

$$ \left(\left(2\sqrt{z}\left(268\,435\,456\,z^7+82\,090\,917\,888\,z^6+7\,690\,936\,909\,824\,z^5+266\,640\,688\,742\,400\,z^4+3\,315\,238\,155\,694\,080\,z^3+\right.\right.\right. $$

$$ \left.\left.\left.12\,307\,996\,622\,718\,720\,z^2+8\,933\,891\,115\,829\,680\,z-264\,687\,977\,879\,325\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$

$$ 3\left(268\,435\,456\,z^7+81\,856\,036\,864\,z^6+7\,619\,503\,718\,400\,z^5+260\,030\,572\,462\,080\,z^4+3\,092\,765\,117\,460\,480\,z^3+\right. $$

$$ \left.9\,755\,993\,980\,212\,480\,z^2+1\,758\,464\,457\,750\,000\,z-441\,146\,629\,798\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\left(268\,435\,456\,z^7+81\,889\,591\,296\,z^6+7\,629\,632\,962\,560\,z^5+260\,952\,485\,068\,800\,z^4+\right. $$

$$ \left.\left.3\,122\,587\,404\,840\,960\,z^3+10\,062\,732\,665\,905\,920\,z^2+2\,318\,811\,097\,402\,800\,z-673\,198\,809\,908\,625\right) $$

$$ \left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(7\,794\,628\,451\,850\,240\sqrt{2}\,z^{7/4}\right) $$

07.22.03.8992.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{15}{4};z\right)= $$

$$ \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2}-268\,435\,456\,z^7-349\,301\,637\,120\,z^{13/2}+87\,124\,082\,688\,z^6+35\,027\,190\,546\,432\,z^{11/2}-\right.\right.\right. $$

$$ 8\,692\,146\,634\,752\,z^5-1\,305\,134\,860\,861\,440\,z^{9/2}+319\,982\,439\,038\,976\,z^4+17\,289\,428\,826\,636\,288\,z^{7/2}- $$

$$ 4\,102\,695\,605\,514\,240\,z^3-62\,880\,477\,326\,392\,320\,z^{5/2}+13\,283\,392\,884\,652\,800\,z^2+ $$

$$ 15\,012\,209\,776\,374\,720\,z^{3/2}+807\,414\,461\,577\,360\,z+5\,833\,243\,032\,844\,500\sqrt{z}\,+ $$

$$ e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^7-349\,301\,637\,120\,z^{13/2}-87\,124\,082\,688\,z^6+\right. $$

$$ 35\,027\,190\,546\,432\,z^{11/2}+8\,692\,146\,634\,752\,z^5-1\,305\,134\,860\,861\,440\,z^{9/2}-319\,982\,439\,038\,976\,z^4+ $$

$$ 17\,289\,428\,826\,636\,288\,z^{7/2}+4\,102\,695\,605\,514\,240\,z^3-62\,880\,477\,326\,392\,320\,z^{5/2}- $$

$$ 13\,283\,392\,884\,652\,800\,z^2+15\,012\,209\,776\,374\,720\,z^{3/2}-807\,414\,461\,577\,360\,z+ $$

$$ \left.5\,833\,243\,032\,844\,500\sqrt{z}\,-1\,063\,805\,671\,266\,975\right)+1\,063\,805\,671\,266\,975\Big)- $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-1\,398\,011\,854\,848\,z^7+140\,369\,127\,800\,832\,z^6-5\,246\,296\,151\,556\,096\,z^5+\right. $$

$$ 70\,087\,237\,649\,694\,720\,z^4-262\,827\,141\,186\,355\,200\,z^3+90\,346\,829\,782\,809\,600\,z^2+ $$

$$ \left.33\,880\,061\,168\,553\,600\,z+5\,558\,447\,535\,465\,825\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+ $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-1\,398\,011\,854\,848\,z^7+140\,369\,127\,800\,832\,z^6-5\,246\,296\,151\,556\,096\,z^5+\right. $$

$$ 70\,087\,237\,649\,694\,720\,z^4-262\,827\,141\,186\,355\,200\,z^3+90\,346\,829\,782\,809\,600\,z^2+ $$

$$ \left.\left.\left.33\,880\,061\,168\,553\,600\,z+5\,558\,447\,535\,465\,825\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(989\,708\,512\,521\,093\,120\,z^{11/4}\right) $$

07.22.03.8993.01

$${}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{15}{4};-z\right)=$$

$$\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^8+1\,398\,011\,854\,848\,z^7+140\,369\,127\,800\,832\,z^6+5\,246\,296\,151\,556\,096\,z^5+70\,087\,237\,649\,694\,720\right.\right.$$
$$\left.z^4+262\,827\,141\,186\,355\,200\,z^3+90\,346\,829\,782\,809\,600\,z^2-33\,880\,061\,168\,553\,600\,z+5\,558\,447\,535\,465\,825\right)$$
$$S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^7+87\,325\,409\,280\,z^6+8\,756\,797\,636\,608\,z^5+326\,283\,715\,215\,360\,z^4+\right.\right.$$
$$4\,322\,357\,206\,659\,072\,z^3+15\,720\,119\,331\,598\,080\,z^2+3\,753\,052\,444\,093\,680\,z-1\,458\,310\,758\,211\,125\Big)$$
$$\cos\left(2\sqrt{z}\right)+\left(268\,435\,456\,z^7+87\,124\,082\,688\,z^6+8\,692\,146\,634\,752\,z^5+319\,982\,439\,038\,976\,z^4+\right.$$
$$4\,102\,695\,605\,514\,240\,z^3+13\,283\,392\,884\,652\,800\,z^2-807\,414\,461\,577\,360\,z+$$
$$\left.\left.\left.1\,063\,805\,671\,266\,975\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(247\,427\,128\,130\,273\,280\,z^{11/4}\right)$$

07.22.03.8994.01

$${}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{17}{4};z\right)=$$

$$\left(\left(2\sqrt{z}\left(4\,294\,967\,296\,z^8-1\,488\,206\,168\,064\,z^7+160\,768\,544\,735\,232\,z^6-6\,574\,410\,232\,233\,984\,z^5+99\,273\,086\,508\,072\,960\right.\right.\right.$$
$$z^4-461\,515\,926\,328\,934\,400\,z^3+398\,785\,663\,349\,821\,440\,z^2+33\,880\,061\,168\,553\,600\,z+$$
$$2\,382\,191\,800\,913\,925\Big)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4\,294\,967\,296\,z^8-1\,484\,448\,071\,680\,z^7+159\,472\,706\,125\,824\,z^6-\right.$$
$$6\,435\,907\,043\,328\,000\,z^5+93\,748\,419\,990\,650\,880\,z^4-383\,406\,861\,610\,967\,040\,z^3+$$
$$\left.108\,058\,952\,178\,777\,600\,z^2+53\,643\,430\,183\,543\,200\,z+3\,970\,319\,668\,189\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\left(4\,294\,967\,296\,z^8-1\,484\,984\,942\,592\,z^7+159\,656\,617\,967\,616\,z^6-6\,455\,285\,828\,812\,800\,z^5+\right.$$
$$94\,496\,152\,550\,768\,640\,z^4-393\,082\,362\,310\,901\,760\,z^3+133\,893\,768\,635\,827\,200\,z^2+$$
$$\left.\left.\left.68\,429\,954\,013\,220\,800\,z+11\,910\,959\,004\,569\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(326\,175\,221\,369\,733\,120\sqrt{2}\,z^{11/4}\right)$$

07.22.03.8995.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{17}{4};-z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,488\,206\,168\,064\,z^7+160\,768\,544\,735\,232\,z^6+6\,574\,410\,232\,233\,984\,z^5+99\,273\,086\,508\,072\,960\right.\right.\right.
$$

$$
z^4+461\,515\,926\,328\,934\,400\,z^3+398\,785\,663\,349\,821\,440\,z^2-33\,880\,061\,168\,553\,600\,z+
$$

$$
2\,382\,191\,800\,913\,925\Big)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4\,294\,967\,296\,z^8+1\,484\,448\,071\,680\,z^7+159\,472\,706\,125\,824\,z^6+\right.
$$

$$
6\,435\,907\,043\,328\,000\,z^5+93\,748\,419\,990\,650\,880\,z^4+383\,406\,861\,610\,967\,040\,z^3+
$$

$$
\left.108\,058\,952\,178\,777\,600\,z^2-53\,643\,430\,183\,543\,200\,z+3\,970\,319\,668\,189\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+
$$

$$
2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,484\,984\,942\,592\,z^7+159\,656\,617\,967\,616\,z^6+6\,455\,285\,828\,812\,800\,z^5+\right.
$$

$$
94\,496\,152\,550\,768\,640\,z^4+393\,082\,362\,310\,901\,760\,z^3+133\,893\,768\,635\,827\,200\,z^2-
$$

$$
\left.\left.\left.68\,429\,954\,013\,220\,800\,z+11\,910\,959\,004\,569\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(326\,175\,221\,369\,733\,120\,\sqrt{2}\;z^{11/4}\right)
$$

07.22.03.8996.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{19}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\,\left(-4\sqrt[4]{z}\,\left(17\,179\,869\,184\,z^{17/2}-4\,294\,967\,296\,z^8-6\,287\,832\,121\,344\,z^{15/2}+1\,568\,736\,804\,864\,z^7+\right.\right.\right.
$$

$$
720\,725\,845\,475\,328\,z^{13/2}-179\,015\,981\,727\,744\,z^6-31\,344\,957\,679\,730\,688\,z^{11/2}+7\,705\,913\,305\,595\,904\,z^5+
$$

$$
499\,006\,684\,710\,567\,936\,z^{9/2}-119\,395\,998\,660\,427\,776\,z^4-2\,282\,089\,097\,789\,964\,288\,z^{7/2}+
$$

$$
496\,954\,618\,288\,128\,000\,z^3+786\,455\,891\,440\,128\,000\,z^{5/2}+995\,493\,662\,392\,320\,z^2+
$$

$$
495\,813\,279\,307\,207\,680\,z^{3/2}+27\,686\,242\,058\,005\,440\,z+81\,523\,897\,186\,832\,100\,\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\,\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^8-6\,287\,832\,121\,344\,z^{15/2}-1\,568\,736\,804\,864\,z^7+\right.
$$

$$
720\,725\,845\,475\,328\,z^{13/2}+179\,015\,981\,727\,744\,z^6-31\,344\,957\,679\,730\,688\,z^{11/2}-
$$

$$
7\,705\,913\,305\,595\,904\,z^5+499\,006\,684\,710\,567\,936\,z^{9/2}+119\,395\,998\,660\,427\,776\,z^4-
$$

$$
2\,282\,089\,097\,789\,964\,288\,z^{7/2}-496\,954\,618\,288\,128\,000\,z^3+786\,455\,891\,440\,128\,000\,z^{5/2}-
$$

$$
995\,493\,662\,392\,320\,z^2+495\,813\,279\,307\,207\,680\,z^{3/2}-27\,686\,242\,058\,005\,440\,z+
$$

$$
\left.\left.\left.81\,523\,897\,186\,832\,100\,\sqrt{z}\;-61\,142\,922\,890\,124\,075\right)+61\,142\,922\,890\,124\,075\right)-
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(68\,719\,476\,736\,z^9-25\,164\,213\,387\,264\,z^8+2\,887\,593\,486\,188\,544\,z^7-125\,911\,107\,637\,346\,304\,z^6+\right.
$$

$$
2\,018\,512\,444\,311\,207\,936\,z^5-9\,461\,777\,082\,708\,787\,200\,z^4+4\,336\,647\,829\,574\,860\,800\,z^3+
$$

$$
\left.2\,439\,364\,404\,135\,859\,200\,z^2+800\,416\,445\,107\,078\,800\,z-61\,142\,922\,890\,124\,075\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(68\,719\,476\,736\,z^9-25\,164\,213\,387\,264\,z^8+2\,887\,593\,486\,188\,544\,z^7-\right.
$$

$$
125\,911\,107\,637\,346\,304\,z^6+2\,018\,512\,444\,311\,207\,936\,z^5-9\,461\,777\,082\,708\,787\,200\,z^4+
$$

$$
4\,336\,647\,829\,574\,860\,800\,z^3+2\,439\,364\,404\,135\,859\,200\,z^2+800\,416\,445\,107\,078\,800\,z-
$$

$$
\left.\left.61\,142\,922\,890\,124\,075\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\Big)\Big/\left(38\,004\,806\,880\,809\,975\,808\,z^{15/4}\right)
$$

07.22.03.8997.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{19}{4};-z\right) = $$

$$\left(\sqrt{\pi}\,\left(68\,719\,476\,736\,z^9+25\,164\,213\,387\,264\,z^8+2\,887\,593\,486\,188\,544\,z^7+125\,911\,107\,637\,346\,304\,z^6+\right.\right.$$
$$2\,018\,512\,444\,311\,207\,936\,z^5+9\,461\,777\,082\,708\,787\,200\,z^4+4\,336\,647\,829\,574\,860\,800\,z^3-$$
$$\left.2\,439\,364\,404\,135\,859\,200\,z^2+800\,416\,445\,107\,078\,800\,z+61\,142\,922\,890\,124\,075\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,571\,958\,030\,336\,z^7+180\,181\,461\,368\,832\,z^6+7\,836\,239\,419\,932\,672\,z^5+\right.\right.$$
$$124\,751\,671\,177\,641\,984\,z^4+570\,522\,274\,447\,491\,072\,z^3+196\,613\,972\,860\,032\,000\,z^2-$$
$$123\,953\,319\,826\,801\,920\,z+20\,380\,974\,296\,708\,025\big)\cos\left(2\sqrt{z}\right)+$$
$$\left(4\,294\,967\,296\,z^8+1\,568\,736\,804\,864\,z^7+179\,015\,981\,727\,744\,z^6+7\,705\,913\,305\,595\,904\,z^5+\right.$$
$$119\,395\,998\,660\,427\,776\,z^4+496\,954\,618\,288\,128\,000\,z^3-995\,493\,662\,392\,320\,z^2+$$
$$\left.\left.\left.27\,686\,242\,058\,005\,440\,z-61\,142\,922\,890\,124\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(9\,501\,201\,720\,202\,493\,952\,z^{15/4}\right)$$

07.22.03.8998.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{21}{4};z\right) = $$

$$\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-26\,607\,322\,398\,720\,z^8+3\,255\,924\,512\,784\,384\,z^7-153\,415\,812\,718\,264\,320\,z^6+\right.\right.\right.$$
$$2\,725\,874\,301\,010\,968\,576\,z^5-15\,225\,960\,306\,870\,190\,080\,z^4+15\,153\,459\,727\,477\,800\,960\,z^3+$$
$$\left.2\,439\,364\,404\,135\,859\,200\,z^2+444\,675\,802\,837\,266\,000\,z-92\,905\,480\,235\,643\,075\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\left(68\,719\,476\,736\,z^9-26\,547\,192\,856\,576\,z^8+3\,232\,744\,574\,287\,872\,z^7-150\,605\,715\,877\,134\,336\,z^6+\right.$$
$$2\,596\,273\,642\,788\,618\,240\,z^5-13\,047\,827\,745\,427\,292\,160\,z^4+5\,049\,044\,016\,810\,393\,600\,z^3+$$
$$\left.3\,704\,220\,021\,095\,193\,600\,z^2+851\,236\,536\,859\,909\,200\,z-154\,842\,467\,059\,405\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-26\,555\,782\,791\,168\,z^8+3\,236\,036\,666\,720\,256\,z^7-150\,999\,853\,751\,599\,104\,z^6+\right.$$
$$2\,613\,938\,938\,026\,393\,600\,z^5-13\,323\,372\,869\,916\,426\,240\,z^4+6\,023\,661\,752\,741\,068\,800\,z^3+$$
$$\left.\left.4\,356\,107\,425\,250\,380\,800\,z^2+1\,562\,717\,821\,399\,534\,800\,z-464\,527\,401\,178\,215\,375\right)$$
$$\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(11\,665\,560\,858\,399\,866\,880\sqrt{2}\;z^{15/4}\right)$$

07.22.03.8999.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{21}{4};-z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+26\,607\,322\,398\,720\,z^8+3\,255\,924\,512\,784\,384\,z^7+153\,415\,812\,718\,264\,320\,z^6+\right.\right.\right.
$$

$$
\left.\left.\left.2\,725\,874\,301\,010\,968\,576\,z^5+15\,225\,960\,306\,870\,190\,080\,z^4+15\,153\,459\,727\,477\,800\,960\,z^3-\right.\right.\right.
$$

$$
\left.\left.\left.2\,439\,364\,404\,135\,859\,200\,z^2+444\,675\,802\,837\,266\,000\,z+92\,905\,480\,235\,643\,075\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.
$$

$$
3\left(68\,719\,476\,736\,z^9+26\,547\,192\,856\,576\,z^8+3\,232\,744\,574\,287\,872\,z^7+150\,605\,715\,877\,134\,336\,z^6+\right.
$$

$$
2\,596\,273\,642\,788\,618\,240\,z^5+13\,047\,827\,745\,427\,292\,160\,z^4+5\,049\,044\,016\,810\,393\,600\,z^3-
$$

$$
\left.3\,704\,220\,021\,095\,193\,600\,z^2+851\,236\,536\,859\,909\,200\,z+154\,842\,467\,059\,405\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+
$$

$$
2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+26\,555\,782\,791\,168\,z^8+3\,236\,036\,666\,720\,256\,z^7+150\,999\,853\,751\,599\,104\,z^6+\right.
$$

$$
2\,613\,938\,938\,026\,393\,600\,z^5+13\,323\,372\,869\,916\,426\,240\,z^4+6\,023\,661\,752\,741\,068\,800\,z^3-
$$

$$
\left.\left.4\,356\,107\,425\,250\,380\,800\,z^2+1\,562\,717\,821\,399\,534\,800\,z+464\,527\,401\,178\,215\,375\right)\right.
$$

$$
\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(11\,665\,560\,858\,399\,866\,880\,\sqrt{2}\;z^{15/4}\right)
$$

07.22.03.9000.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{23}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\,\left(-4\sqrt[4]{z}\,\left(274\,877\,906\,944\,z^{19/2}-68\,719\,476\,736\,z^9-111\,789\,408\,780\,288\,z^{17/2}+27\,895\,812\,587\,520\,z^8+\right.\right.\right.
$$

$$
14\,417\,109\,996\,011\,520\,z^{15/2}-3\,583\,532\,806\,963\,200\,z^7-716\,830\,099\,416\,023\,040\,z^{13/2}+
$$

$$
176\,590\,057\,698\,754\,560\,z^6+13\,327\,491\,360\,463\,257\,600\,z^{11/2}-3\,207\,994\,231\,027\,138\,560\,z^5-
$$

$$
73\,432\,826\,588\,894\,330\,880\,z^{9/2}+16\,328\,329\,349\,146\,214\,400\,z^4+33\,249\,139\,103\,519\,539\,200\,z^{7/2}-
$$

$$
1\,148\,670\,992\,222\,208\,000\,z^3+28\,632\,399\,011\,106\,508\,800\,z^{5/2}-591\,027\,408\,610\,329\,600\,z^2+
$$

$$
10\,248\,718\,503\,487\,464\,000\,z^{3/2}+4\,891\,433\,831\,209\,926\,000\,z-6\,114\,292\,289\,012\,407\,500\,\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\,\left(274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^9-111\,789\,408\,780\,288\,z^{17/2}-\right.
$$

$$
27\,895\,812\,587\,520\,z^8+14\,417\,109\,996\,011\,520\,z^{15/2}+3\,583\,532\,806\,963\,200\,z^7-
$$

$$
716\,830\,099\,416\,023\,040\,z^{13/2}-176\,590\,057\,698\,754\,560\,z^6+13\,327\,491\,360\,463\,257\,600\,z^{11/2}+
$$

$$
3\,207\,994\,231\,027\,138\,560\,z^5-73\,432\,826\,588\,894\,330\,880\,z^{9/2}-16\,328\,329\,349\,146\,214\,400\,z^4+
$$

$$
33\,249\,139\,103\,519\,539\,200\,z^{7/2}+1\,148\,670\,992\,222\,208\,000\,z^3+28\,632\,399\,011\,106\,508\,800\,z^{5/2}+
$$

$$
591\,027\,408\,610\,329\,600\,z^2+10\,248\,718\,503\,487\,464\,000\,z^{3/2}-4\,891\,433\,831\,209\,926\,000\,z-
$$

$$
\left.\left.6\,114\,292\,289\,012\,407\,500\,\sqrt{z}\;+4\,585\,719\,216\,759\,305\,625\right)-4\,585\,719\,216\,759\,305\,625\right)-
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(1\,099\,511\,627\,776\,z^{10}-447\,363\,793\,551\,360\,z^9+57\,751\,869\,723\,770\,880\,z^8-\right.
$$

$$
2\,877\,968\,174\,567\,915\,520\,z^7+53\,826\,998\,514\,965\,544\,960\,z^6-302\,776\,866\,646\,681\,190\,400\,z^5+
$$

$$
173\,465\,913\,182\,994\,432\,000\,z^4+130\,099\,434\,887\,245\,824\,000\,z^3+64\,033\,315\,608\,566\,304\,000\,z^2-
$$

$$
\left.9\,782\,867\,662\,419\,852\,000\,z+4\,585\,719\,216\,759\,305\,625\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(1\,099\,511\,627\,776\,z^{10}-447\,363\,793\,551\,360\,z^9+57\,751\,869\,723\,770\,880\,z^8-\right.
$$

$$
2\,877\,968\,174\,567\,915\,520\,z^7+53\,826\,998\,514\,965\,544\,960\,z^6-302\,776\,866\,646\,681\,190\,400\,z^5+
$$

$$
173\,465\,913\,182\,994\,432\,000\,z^4+130\,099\,434\,887\,245\,824\,000\,z^3+
$$

$$
\left.\left.\left.64\,033\,315\,608\,566\,304\,000\,z^2-9\,782\,867\,662\,419\,852\,000\,z+4\,585\,719\,216\,759\,305\,625\right)\right.\right.
$$

$$
\left.\left.\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)\Big/\left(1\,280\,161\,915\,985\,178\,132\,480\,z^{19/4}\right)
$$

07.22.03.9001.01

$${}_1F_2\left(-\frac{21}{4};\frac{7}{2},\frac{23}{4};-z\right)=$$

$$\left(\sqrt{\pi}\,\left(1\,099\,511\,627\,776\,z^{10}+447\,363\,793\,551\,360\,z^9+57\,751\,869\,723\,770\,880\,z^8+2\,877\,968\,174\,567\,915\,520\,z^7+\right.\right.$$
$$53\,826\,998\,514\,965\,544\,960\,z^6+302\,776\,866\,646\,681\,190\,400\,z^5+$$
$$173\,465\,913\,182\,994\,432\,000\,z^4-130\,099\,434\,887\,245\,824\,000\,z^3+64\,033\,315\,608\,566\,304\,000\,z^2+$$
$$\left.9\,782\,867\,662\,419\,852\,000\,z+4\,585\,719\,216\,759\,305\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(68\,719\,476\,736\,z^9+27\,947\,352\,195\,072\,z^8+3\,604\,277\,499\,002\,880\,z^7+179\,207\,524\,854\,005\,760\,z^6+\right.\right.$$
$$3\,331\,872\,840\,115\,814\,400\,z^5+18\,358\,206\,647\,223\,582\,720\,z^4+8\,312\,284\,775\,879\,884\,800\,z^3-$$
$$\left.7\,158\,099\,752\,776\,627\,200\,z^2+2\,562\,179\,625\,871\,866\,000\,z+1\,528\,573\,072\,253\,101\,875\right)\cos\left(2\sqrt{z}\right)+$$
$$\left(68\,719\,476\,736\,z^9+27\,895\,812\,587\,520\,z^8+3\,583\,532\,806\,963\,200\,z^7+176\,590\,057\,698\,754\,560\,z^6+\right.$$
$$3\,207\,994\,231\,027\,138\,560\,z^5+16\,328\,329\,349\,146\,214\,400\,z^4+$$
$$1\,148\,670\,992\,222\,208\,000\,z^3-591\,027\,408\,610\,329\,600\,z^2-4\,891\,433\,831\,209\,926\,000\,z-$$
$$\left.\left.\left.4\,585\,719\,216\,759\,305\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(320\,040\,478\,996\,294\,533\,120\,z^{19/4}\right)$$

For fixed z and $a_1=-\frac{21}{4}$, $b_{1.}=\frac{9}{2}$

07.22.03.9002.01

$${}_1F_2\left(-\frac{21}{4};\frac{9}{2},-\frac{23}{4};z\right)=$$

$$\left(\left(-4z\left(536\,870\,912\,z^7+36\,641\,439\,744\,z^6+1\,498\,643\,693\,568\,z^5+37\,969\,141\,432\,320\,z^4+541\,216\,650\,240\,000\,z^3+\right.\right.\right.$$
$$\left.3\,317\,522\,726\,246\,400\,z^2+1\,058\,746\,921\,293\,600\,z-23\,166\,108\,458\,868\,375\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$12\sqrt{z}\,\left(268\,435\,456\,z^7+18\,555\,600\,896\,z^6+765\,748\,838\,400\,z^5+19\,669\,037\,875\,200\,z^4+288\,465\,582\,182\,400\,z^3+\right.$$
$$\left.1\,930\,190\,921\,971\,200\,z^2+2\,597\,201\,348\,742\,000\,z-38\,610\,180\,764\,780\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(2\,147\,483\,648\,z^8+148\,176\,371\,712\,z^7+6\,106\,613\,022\,720\,z^6+156\,523\,246\,387\,200\,z^5+\right.$$
$$2\,285\,168\,578\,560\,000\,z^4+15\,065\,686\,521\,446\,400\,z^3+16\,999\,863\,373\,584\,000\,z^2+$$
$$\left.\left.12\,522\,220\,788\,577\,500\,z+579\,152\,711\,471\,709\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(5\,117\,567\,057\,479\,800\sqrt{2}\,z^{9/4}\right)$$

07.22.03.9003.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, -\frac{23}{4}; -z\right) = $$
$$ \left(\left(-4z\left(536\,870\,912z^7 - 36\,641\,439\,744z^6 + 1\,498\,643\,693\,568z^5 - 37\,969\,141\,432\,320z^4 + 541\,216\,650\,240\,000z^3 - \right.\right.\right. $$
$$ \left.\left.\left. 3\,317\,522\,726\,246\,400z^2 + 1\,058\,746\,921\,293\,600z + 23\,166\,108\,458\,868\,375\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 12\sqrt{z}\left(268\,435\,456z^7 - 18\,555\,600\,896z^6 + 765\,748\,838\,400z^5 - 19\,669\,037\,875\,200z^4 + 288\,465\,582\,182\,400z^3 - \right. $$
$$ \left. 1\,930\,190\,921\,971\,200z^2 + 2\,597\,201\,348\,742\,000z + 38\,610\,180\,764\,780\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(-2\,147\,483\,648z^8 + 148\,176\,371\,712z^7 - 6\,106\,613\,022\,720z^6 + 156\,523\,246\,387\,200z^5 - \right. $$
$$ 2\,285\,168\,578\,560\,000z^4 + 15\,065\,686\,521\,446\,400z^3 - 16\,999\,863\,373\,584\,000z^2 + $$
$$ \left.\left. 12\,522\,220\,788\,577\,500z - 579\,152\,711\,471\,709\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(5\,117\,567\,057\,479\,800\sqrt{2}\, z^{9/4}\right) $$

07.22.03.9004.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, -\frac{21}{4}; z\right) = \frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right) - 3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}} $$

07.22.03.9005.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right) + 3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}} $$

07.22.03.9006.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, -\frac{19}{4}; z\right) = $$
$$ \left(\left(-4z\left(268\,435\,456z^7 + 5\,989\,466\,112z^6 + 148\,173\,225\,984z^5 + 2\,682\,027\,048\,960z^4 + 29\,630\,241\,607\,680z^3 + \right.\right.\right. $$
$$ \left.\left.\left. 146\,476\,929\,312\,000z^2 + 15\,235\,620\,901\,200z - 626\,111\,039\,428\,875\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 12\sqrt{z}\left(134\,217\,728z^7 + 3\,112\,173\,568z^6 + 76\,905\,185\,280z^5 + 1\,411\,140\,648\,960z^4 + 16\,127\,171\,020\,800z^3 + \right. $$
$$ \left. 89\,076\,844\,886\,400z^2 + 118\,054\,606\,761\,000z - 1\,043\,518\,399\,048\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(1\,073\,741\,824z^8 + 24\,763\,170\,816z^7 + 611\,718\,266\,880z^6 + 11\,199\,448\,350\,720z^5 + \right. $$
$$ 127\,248\,603\,955\,200z^4 + 688\,141\,231\,948\,800z^3 + 683\,902\,549\,512\,000z^2 - 379\,461\,236\,017\,500z + $$
$$ \left.\left. 15\,652\,775\,985\,721\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(222\,502\,915\,542\,600\sqrt{2}\, z^{9/4}\right) $$

07.22.03.9007.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{9}{2},-\frac{19}{4};-z\right)= $$

$$ -\left(\left(4z\left(268\,435\,456z^7-5\,989\,466\,112z^6+148\,173\,225\,984z^5-2\,682\,027\,048\,960z^4+29\,630\,241\,607\,680z^3-\right.\right.\right. $$

$$ \left.\left.\left.146\,476\,929\,312\,000z^2+15\,235\,620\,901\,200z+626\,111\,039\,428\,875\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$

$$ 12\sqrt{z}\left(134\,217\,728z^7-3\,112\,173\,568z^6+76\,905\,185\,280z^5-1\,411\,140\,648\,960z^4+16\,127\,171\,020\,800z^3-\right. $$

$$ \left.89\,076\,844\,886\,400z^2+118\,054\,606\,761\,000z+1\,043\,518\,399\,048\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ \left(1\,073\,741\,824z^8-24\,763\,170\,816z^7+611\,718\,266\,880z^6-11\,199\,448\,350\,720z^5+\right. $$

$$ 127\,248\,603\,955\,200z^4-688\,141\,231\,948\,800z^3+683\,902\,549\,512\,000z^2+379\,461\,236\,017\,500z+ $$

$$ \left.\left.15\,652\,775\,985\,721\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(222\,502\,915\,542\,600\sqrt{2}\;z^{9/4}\right) $$

07.22.03.9008.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{9}{2},-\frac{17}{4};z\right)= $$

$$ \left(e^{-2\sqrt{z}}\left(2\,147\,483\,648e^{2\sqrt{z}}\;\sqrt{2\pi}\;\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{35/4}-2\,147\,483\,648e^{2\sqrt{z}}\;\sqrt{2\pi}\;\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{35/4}+\right.\right. $$

$$ 2\,147\,483\,648e^{4\sqrt{z}}\;z^{17/2}+2\,147\,483\,648z^{17/2}+536\,870\,912e^{4\sqrt{z}}\;z^8-536\,870\,912z^8+ $$

$$ 402\,653\,184e^{4\sqrt{z}}\;z^{15/2}+402\,653\,184z^{15/2}+503\,316\,480e^{4\sqrt{z}}\;z^7-503\,316\,480z^7+880\,803\,840e^{4\sqrt{z}}\;z^{13/2}+ $$

$$ 880\,803\,840z^{13/2}+1\,981\,808\,640e^{4\sqrt{z}}\;z^6-1\,981\,808\,640z^6+5\,449\,973\,760e^{4\sqrt{z}}\;z^{11/2}+ $$

$$ 5\,449\,973\,760z^{11/2}+17\,712\,414\,720e^{4\sqrt{z}}\;z^5-17\,712\,414\,720z^5+66\,421\,555\,200e^{4\sqrt{z}}\;z^{9/2}+ $$

$$ 66\,421\,555\,200z^{9/2}+282\,291\,609\,600e^{4\sqrt{z}}\;z^4-282\,291\,609\,600z^4+1\,340\,885\,145\,600e^{4\sqrt{z}}\;z^{7/2}+ $$

$$ 1\,340\,885\,145\,600z^{7/2}+7\,039\,647\,014\,400e^{4\sqrt{z}}\;z^3-7\,039\,647\,014\,400z^3+40\,477\,970\,332\,800e^{4\sqrt{z}}\;z^{5/2}+ $$

$$ 40\,477\,970\,332\,800z^{5/2}+252\,987\,314\,580\,000e^{4\sqrt{z}}\;z^2-252\,987\,314\,580\,000z^2+ $$

$$ 1\,707\,664\,373\,415\,000e^{4\sqrt{z}}\;z^{3/2}+1\,707\,664\,373\,415\,000z^{3/2}-6\,147\,591\,744\,294\,000e^{4\sqrt{z}}\;z+ $$

$$ 6\,147\,591\,744\,294\,000z+7\,940\,639\,336\,379\,750e^{4\sqrt{z}}\;\sqrt{z}\;+7\,940\,639\,336\,379\,750\sqrt{z}\;- $$

$$ \left.\left.3\,970\,319\,668\,189\,875e^{4\sqrt{z}}\;+3\,970\,319\,668\,189\,875\right)\right)\Big/\left(1\,075\,557\,497\,414\,400z^{7/2}\right) $$

07.22.03.9009.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{9}{2},-\frac{17}{4};-z\right)=\frac{1}{537\,778\,748\,707\,200z^{7/2}} $$

$$ \left(-4\,294\,967\,296\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{35/4}-2\left(1\,073\,741\,824z^8-201\,326\,592z^7+440\,401\,920z^6-2\,724\,986\,880z^5+\right.\right. $$

$$ \left.33\,210\,777\,600z^4-670\,442\,572\,800z^3+20\,238\,985\,166\,400z^2-853\,832\,186\,707\,500z+3\,970\,319\,668\,189\,875\right) $$

$$ \cos\left(2\sqrt{z}\right)\sqrt{z}\;+\left(-536\,870\,912z^8+503\,316\,480z^7-1\,981\,808\,640z^6+17\,712\,414\,720z^5-282\,291\,609\,600z^4+\right. $$

$$ \left.\left.7\,039\,647\,014\,400z^3-252\,987\,314\,580\,000z^2-6\,147\,591\,744\,294\,000z+3\,970\,319\,668\,189\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.9010.01

$${}_1F_2\left(-\frac{21}{4};\frac{9}{2},-\frac{15}{4};z\right)=$$

$$\left(\left(4z\left(134\,217\,728z^7-3\,170\,893\,824z^6-23\,407\,362\,048z^5-260\,917\,493\,760z^4-2\,057\,732\,812\,800z^3-\right.\right.\right.$$
$$\left.7\,742\,155\,357\,440z^2+912\,166\,693\,200z+18\,973\,061\,800\,875\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$12\sqrt{z}\left(67\,108\,864z^7-1\,526\,726\,656z^6-12\,991\,856\,640z^5-142\,600\,765\,440z^4-1\,165\,863\,444\,480z^3-\right.$$
$$\left.5\,057\,433\,158\,400z^2-5\,427\,798\,012\,000z+31\,621\,769\,668\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-536\,870\,912z^8+12\,280\,922\,112z^7+102\,613\,647\,360z^6+1\,124\,758\,978\,560z^5+9\,131\,136\,860\,160z^4+\right.$$
$$38\,548\,553\,702\,400z^3+32\,566\,788\,072\,000z^2-39\,254\,610\,622\,500z+$$
$$\left.\left.\left.474\,326\,545\,021\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(11\,710\,679\,765\,400\sqrt{2}\,z^{9/4}\right)$$

07.22.03.9011.01

$${}_1F_2\left(-\frac{21}{4};\frac{9}{2},-\frac{15}{4};-z\right)=$$

$$\left(\left(4z\left(134\,217\,728z^7+3\,170\,893\,824z^6-23\,407\,362\,048z^5+260\,917\,493\,760z^4-2\,057\,732\,812\,800z^3+\right.\right.\right.$$
$$\left.7\,742\,155\,357\,440z^2+912\,166\,693\,200z-18\,973\,061\,800\,875\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$12\sqrt{z}\left(67\,108\,864z^7+1\,526\,726\,656z^6-12\,991\,856\,640z^5+142\,600\,765\,440z^4-1\,165\,863\,444\,480z^3+\right.$$
$$\left.5\,057\,433\,158\,400z^2-5\,427\,798\,012\,000z-31\,621\,769\,668\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(536\,870\,912z^8+12\,280\,922\,112z^7-102\,613\,647\,360z^6+1\,124\,758\,978\,560z^5-9\,131\,136\,860\,160z^4+\right.$$
$$38\,548\,553\,702\,400z^3-32\,566\,788\,072\,000z^2-39\,254\,610\,622\,500z-$$
$$\left.\left.\left.474\,326\,545\,021\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(11\,710\,679\,765\,400\sqrt{2}\,z^{9/4}\right)$$

07.22.03.9012.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, -\frac{13}{4}; z\right) = $$
$$ \frac{1}{63\,268\,088\,083\,200\, z^{7/2}} \left(e^{-2\sqrt{z}} \left(-536\,870\,912\, e^{4\sqrt{z}}\, z^{17/2} - 536\,870\,912\, z^{17/2} - 134\,217\,728\, e^{4\sqrt{z}}\, z^8 + 134\,217\,728\, z^8 - \right.\right. $$
$$ 33\,554\,432\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16z - 735) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{31/4} + 33\,554\,432\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16z - 735) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{31/4} + $$
$$ 24\,561\,844\,224\, e^{4\sqrt{z}}\, z^{15/2} + 24\,561\,844\,224\, z^{15/2} + 6\,039\,797\,760\, e^{4\sqrt{z}}\, z^7 - 6\,039\,797\,760\, z^7 + $$
$$ 4\,404\,019\,200\, e^{4\sqrt{z}}\, z^{13/2} + 4\,404\,019\,200\, z^{13/2} + 5\,284\,823\,040\, e^{4\sqrt{z}}\, z^6 - 5\,284\,823\,040\, z^6 + $$
$$ 8\,752\,988\,160\, e^{4\sqrt{z}}\, z^{11/2} + 8\,752\,988\,160\, z^{11/2} + 18\,331\,729\,920\, e^{4\sqrt{z}}\, z^5 - 18\,331\,729\,920\, z^5 + $$
$$ 45\,984\,153\,600\, e^{4\sqrt{z}}\, z^{9/2} + 45\,984\,153\,600\, z^{9/2} + 132\,843\,110\,400\, e^{4\sqrt{z}}\, z^4 - 132\,843\,110\,400\, z^4 + $$
$$ 427\,588\,761\,600\, e^{4\sqrt{z}}\, z^{7/2} + 427\,588\,761\,600\, z^{7/2} + 1\,482\,030\,950\,400\, e^{4\sqrt{z}}\, z^3 - 1\,482\,030\,950\,400\, z^3 + $$
$$ 5\,279\,735\,260\,800\, e^{4\sqrt{z}}\, z^{5/2} + 5\,279\,735\,260\,800\, z^{5/2} + 17\,599\,117\,536\,000\, e^{4\sqrt{z}}\, z^2 - 17\,599\,117\,536\,000\, z^2 + $$
$$ 37\,948\,097\,187\,000\, e^{4\sqrt{z}}\, z^{3/2} + 37\,948\,097\,187\,000\, z^{3/2} - 189\,740\,485\,935\,000\, e^{4\sqrt{z}}\, z + 189\,740\,485\,935\,000\, z + $$
$$ \left.\left. 256\,149\,656\,012\,250\, e^{4\sqrt{z}}\, \sqrt{z} + 256\,149\,656\,012\,250\, \sqrt{z} - 128\,074\,828\,006\,125\, e^{4\sqrt{z}} + 128\,074\,828\,006\,125\right)\right) $$

07.22.03.9013.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, -\frac{13}{4}; -z\right) = \frac{1}{31\,634\,044\,041\,600\, z^{7/2}} $$
$$ \left(67\,108\,864\, \sqrt{\pi}\, (16z + 735)\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{31/4} + 2\left(268\,435\,456\, z^8 + 12\,280\,922\,112\, z^7 - 2\,202\,009\,600\, z^6 + 4\,376\,494\,080\, z^5 - \right.\right. $$
$$ 22\,992\,076\,800\, z^4 + 213\,794\,380\,800\, z^3 - 2\,639\,867\,630\,400\, z^2 + 18\,974\,048\,593\,500\, z - 128\,074\,828\,006\,125\Big) $$
$$ \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(134\,217\,728\, z^8 + 6\,039\,797\,760\, z^7 - 5\,284\,823\,040\, z^6 + 18\,331\,729\,920\, z^5 - 132\,843\,110\,400\, z^4 + \right. $$
$$ \left.\left. 1\,482\,030\,950\,400\, z^3 - 17\,599\,117\,536\,000\, z^2 - 189\,740\,485\,935\,000\, z + 128\,074\,828\,006\,125\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.9014.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, -\frac{11}{4}; z\right) = $$
$$ \left(\left(-4z\left(67\,108\,864\, z^7 - 4\,668\,260\,352\, z^6 + 41\,089\,499\,136\, z^5 + 115\,708\,723\,200\, z^4 + 576\,474\,071\,040\, z^3 + \right.\right.\right. $$
$$ \left.\left. 1\,507\,722\,128\,640\, z^2 - 508\,101\,219\,360\, z - 1\,962\,730\,531\,125\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ 12\sqrt{z}\left(33\,554\,432\, z^7 - 2\,304\,770\,048\, z^6 + 18\,551\,930\,880\, z^5 + 72\,604\,385\,280\, z^4 + 356\,313\,323\,520\, z^3 + \right. $$
$$ 1\,106\,920\,442\,880\, z^2 + 814\,169\,701\,800\, z - 3\,271\,217\,551\,875\Big) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(268\,435\,456\, z^8 - 18\,471\,714\,816\, z^7 + 150\,617\,456\,640\, z^6 + 568\,531\,353\,600\, z^5 + 2\,764\,994\,641\,920\, z^4 + \right. $$
$$ 8\,365\,397\,160\,960\, z^3 + 5\,582\,877\,955\,200\, z^2 - 7\,850\,922\,124\,500\, z + $$
$$ \left.\left.\left. 49\,068\,263\,278\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(2\,342\,135\,953\,080\, \sqrt{2}\, z^{9/4}\right) $$

07.22.03.9015.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{9}{2},-\frac{11}{4};-z\right)= $$

$$ -\left(\left(4z\left(67\,108\,864z^7+4\,668\,260\,352z^6+41\,089\,499\,136z^5-115\,708\,723\,200z^4+576\,474\,071\,040z^3-\right.\right.\right. $$

$$ \left.\left.\left.1\,507\,722\,128\,640z^2-508\,101\,219\,360z+1\,962\,730\,531\,125\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$

$$ 12\sqrt{z}\left(33\,554\,432z^7+2\,304\,770\,048z^6+18\,551\,930\,880z^5-72\,604\,385\,280z^4+356\,313\,323\,520z^3- \right. $$

$$ \left.1\,106\,920\,442\,880z^2+814\,169\,701\,800z+3\,271\,217\,551\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ \left(268\,435\,456z^8+18\,471\,714\,816z^7+150\,617\,456\,640z^6-568\,531\,353\,600z^5+2\,764\,994\,641\,920z^4- \right. $$

$$ 8\,365\,397\,160\,960z^3+5\,582\,877\,955\,200z^2+7\,850\,922\,124\,500z+ $$

$$ \left.\left.49\,068\,263\,278\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(2\,342\,135\,953\,080\sqrt{2}\,z^{9/4}\right) $$

07.22.03.9016.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{9}{2},-\frac{9}{4};z\right)= $$

$$ \frac{1}{4\,866\,776\,006\,400z^{7/2}}\left(e^{-2\sqrt{z}}\left(67\,108\,864e^{4\sqrt{z}}z^{17/2}+67\,108\,864z^{17/2}+16\,777\,216e^{4\sqrt{z}}z^8-16\,777\,216z^8- \right. \right. $$

$$ 6\,153\,043\,968e^{4\sqrt{z}}z^{15/2}-6\,153\,043\,968z^{15/2}-1\,525\,678\,080e^{4\sqrt{z}}z^7+ $$

$$ 1\,525\,678\,080z^7+262\,144e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-23\,520z+387\,345\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{27/4}- $$

$$ 262\,144e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-23\,520z+387\,345\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{27/4}+100\,411\,637\,760e^{4\sqrt{z}}z^{13/2}+ $$

$$ 100\,411\,637\,760z^{13/2}+24\,001\,904\,640e^{4\sqrt{z}}z^6-24\,001\,904\,640z^6+16\,680\,222\,720e^{4\sqrt{z}}z^{11/2}+ $$

$$ 16\,680\,222\,720z^{11/2}+18\,662\,031\,360e^{4\sqrt{z}}z^5-18\,662\,031\,360z^5+28\,075\,622\,400e^{4\sqrt{z}}z^{9/2}+ $$

$$ 28\,075\,622\,400z^{9/2}+51\,674\,112\,000e^{4\sqrt{z}}z^4-51\,674\,112\,000z^4+108\,893\,030\,400e^{4\sqrt{z}}z^{7/2}+ $$

$$ 108\,893\,030\,400z^{7/2}+247\,005\,158\,400e^{4\sqrt{z}}z^3-247\,005\,158\,400z^3+555\,761\,606\,400e^{4\sqrt{z}}z^{5/2}+ $$

$$ 555\,761\,606\,400z^{5/2}+1\,042\,053\,012\,000e^{4\sqrt{z}}z^2-1\,042\,053\,012\,000z^2+ $$

$$ 549\,972\,423\,000e^{4\sqrt{z}}z^{3/2}+549\,972\,423\,000z^{3/2}-6\,599\,669\,076\,000e^{4\sqrt{z}}z+6\,599\,669\,076\,000z+ $$

$$ \left.\left.9\,487\,024\,296\,750e^{4\sqrt{z}}\sqrt{z}+9\,487\,024\,296\,750\sqrt{z}-4\,743\,512\,148\,375e^{4\sqrt{z}}+4\,743\,512\,148\,375\right)\right) $$

07.22.03.9017.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{9}{2},-\frac{9}{4};-z\right)=\frac{1}{2\,433\,388\,003\,200z^{7/2}}\left(-524\,288\sqrt{\pi}\left(256z^2+23\,520z+387\,345\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{27/4}- \right. $$

$$ 2\left(33\,554\,432z^8+3\,076\,521\,984z^7+50\,205\,818\,880z^6-8\,340\,111\,360z^5+14\,037\,811\,200z^4- \right. $$

$$ \left.54\,446\,515\,200z^3+277\,880\,803\,200z^2-274\,986\,211\,500z+4\,743\,512\,148\,375\right)\cos\left(2\sqrt{z}\right)\sqrt{z}- $$

$$ \left(16\,777\,216z^8+1\,525\,678\,080z^7+24\,001\,904\,640z^6-18\,662\,031\,360z^5+51\,674\,112\,000z^4- \right. $$

$$ \left.\left.\left.247\,005\,158\,400z^3+1\,042\,053\,012\,000z^2+6\,599\,669\,076\,000z-4\,743\,512\,148\,375\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9018.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, -\frac{7}{4}; z\right) = $$

$$ \left(\left(4z\left(33\,554\,432 z^7 - 3\,875\,536\,896 z^6 + 97\,711\,423\,488 z^5 - 409\,264\,128\,000 z^4 - 361\,989\,734\,400 z^3 - 600\,620\,832\,000 z^2 + 357\,838\,689\,600 z + 392\,546\,106\,225\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(16\,777\,216 z^7 - 1\,923\,088\,384 z^6 + 47\,184\,936\,960 z^5 - 164\,634\,624\,000 z^4 - 299\,400\,192\,000 z^3 - 555\,710\,803\,200 z^2 - 232\,619\,914\,800 z + 654\,243\,510\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-134\,217\,728 z^8 + 15\,401\,484\,288 z^7 - 379\,351\,203\,840 z^6 + 1\,358\,777\,548\,800 z^5 + 2\,334\,508\,646\,400 z^4 + 4\,243\,388\,083\,200 z^3 + 1\,970\,427\,513\,600 z^2 - 2\,616\,974\,041\,500 z + 9\,813\,652\,655\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(1\,064\,607\,251\,400\sqrt{2}\, z^{9/4}\right) $$

07.22.03.9019.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, -\frac{7}{4}; -z\right) = $$

$$ \left(\left(4z\left(33\,554\,432 z^7 + 3\,875\,536\,896 z^6 + 97\,711\,423\,488 z^5 + 409\,264\,128\,000 z^4 - 361\,989\,734\,400 z^3 + 600\,620\,832\,000 z^2 + 357\,838\,689\,600 z - 392\,546\,106\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(16\,777\,216 z^7 + 1\,923\,088\,384 z^6 + 47\,184\,936\,960 z^5 + 164\,634\,624\,000 z^4 - 299\,400\,192\,000 z^3 + 555\,710\,803\,200 z^2 - 232\,619\,914\,800 z - 654\,243\,510\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(134\,217\,728 z^8 + 15\,401\,484\,288 z^7 + 379\,351\,203\,840 z^6 + 1\,358\,777\,548\,800 z^5 - 2\,334\,508\,646\,400 z^4 + 4\,243\,388\,083\,200 z^3 - 1\,970\,427\,513\,600 z^2 - 2\,616\,974\,041\,500 z - 9\,813\,652\,655\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(1\,064\,607\,251\,400\sqrt{2}\, z^{9/4}\right) $$

07.22.03.9020.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, -\frac{5}{4}; z\right) = \frac{1}{1\,622\,258\,668\,800\, z^{7/2}} \left(e^{-2\sqrt{z}} \left(-16\,777\,216\, e^{4\sqrt{z}}\, z^{17/2} - 16\,777\,216\, z^{17/2} - 4\,194\,304\, e^{4\sqrt{z}}\, z^8 + 4\,194\,304\, z^8 + 2\,308\,964\,352\, e^{4\sqrt{z}}\, z^{15/2} + 2\,308\,964\,352\, z^{15/2} + 574\,095\,360\, e^{4\sqrt{z}}\, z^7 - 574\,095\,360\, z^7 - 75\,728\,486\,400\, e^{4\sqrt{z}}\, z^{13/2} - 75\,728\,486\,400\, z^{13/2} - 18\,512\,363\,520\, e^{4\sqrt{z}}\, z^6 + 18\,512\,363\,520\, z^6 - 4096\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(4096 z^3 - 564\,480 z^2 + 18\,592\,560 z - 135\,958\,095\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{23/4} + 4096\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(4096 z^3 - 564\,480 z^2 + 18\,592\,560 z - 135\,958\,095\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{23/4} + 543\,511\,019\,520\, e^{4\sqrt{z}}\, z^{11/2} + 543\,511\,019\,520\, z^{11/2} + 123\,367\,587\,840\, e^{4\sqrt{z}}\, z^5 - 123\,367\,587\,840\, z^5 + 78\,529\,167\,360\, e^{4\sqrt{z}}\, z^{9/2} + 78\,529\,167\,360\, z^{9/2} + 77\,104\,742\,400\, e^{4\sqrt{z}}\, z^4 - 77\,104\,742\,400\, z^4 + 96\,177\,715\,200\, e^{4\sqrt{z}}\, z^{7/2} + 96\,177\,715\,200\, z^{7/2} + 134\,730\,086\,400\, e^{4\sqrt{z}}\, z^3 - 134\,730\,086\,400\, z^3 + 185\,253\,868\,800\, e^{4\sqrt{z}}\, z^{5/2} + 185\,253\,868\,800\, z^{5/2} + 185\,253\,868\,800\, e^{4\sqrt{z}}\, z^2 - 185\,253\,868\,800\, z^2 - 86\,837\,751\,000\, e^{4\sqrt{z}}\, z^{3/2} - 86\,837\,751\,000\, z^{3/2} - 781\,539\,759\,000\, e^{4\sqrt{z}}\, z + 781\,539\,759\,000\, z + 1\,237\,437\,951\,750\, e^{4\sqrt{z}}\, \sqrt{z} + 1\,237\,437\,951\,750\, \sqrt{z} - 618\,718\,975\,875\, e^{4\sqrt{z}} + 618\,718\,975\,875\right)\right) $$

07.22.03.9021.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, -\frac{5}{4}; -z\right) = \frac{1}{811\,129\,334\,400\, z^{7/2}} \left(8192\, \sqrt{\pi}\, \left(4096 z^3 + 564\,480 z^2 + 18\,592\,560 z + 135\,958\,095\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{23/4} + 2\left(8\,388\,608 z^8 + 1\,154\,482\,176 z^7 + 37\,864\,243\,200 z^6 + 271\,755\,509\,760 z^5 - 39\,264\,583\,680 z^4 + 48\,088\,857\,600 z^3 - 92\,626\,934\,400 z^2 - 43\,418\,875\,500 z - 618\,718\,975\,875\right) \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(4\,194\,304 z^8 + 574\,095\,360 z^7 + 18\,512\,363\,520 z^6 + 123\,367\,587\,840 z^5 - 77\,104\,742\,400 z^4 + 134\,730\,086\,400 z^3 - 185\,253\,868\,800 z^2 - 781\,539\,759\,000 z + 618\,718\,975\,875\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.9022.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, -\frac{3}{4}; z\right) = \left(\left(-4z\left(16\,777\,216 z^7 - 2\,708\,471\,808 z^6 + 112\,824\,090\,624 z^5 - 1\,290\,176\,778\,240 z^4 + 2\,735\,244\,288\,000 z^3 + 172\,138\,176\,000 z^2 - 453\,623\,360\,400 z - 130\,848\,702\,075\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(8\,388\,608 z^7 - 1\,346\,895\,872 z^6 + 55\,239\,475\,200 z^5 - 597\,672\,499\,200 z^4 + 878\,195\,404\,800 z^3 + 614\,655\,216\,000 z^2 + 111\,748\,782\,600 z - 218\,081\,170\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(67\,108\,864 z^8 - 10\,783\,555\,584 z^7 + 443\,237\,007\,360 z^6 - 4\,832\,697\,139\,200 z^5 + 7\,483\,650\,048\,000 z^4 + 4\,939\,493\,529\,600 z^3 + 1\,267\,304\,875\,200 z^2 - 1\,385\,456\,845\,500 z + 3\,271\,217\,551\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(1\,064\,607\,251\,400\sqrt{2}\, z^{9/4}\right) $$

07.22.03.9023.01

$${}_1F_2\left(-\frac{21}{4};\frac{9}{2},-\frac{3}{4};-z\right)=$$

$$-\left(\left(4z\left(16\,777\,216z^7+2\,708\,471\,808z^6+112\,824\,090\,624z^5+1\,290\,176\,778\,240z^4+2\,735\,244\,288\,000z^3-\right.\right.\right.$$

$$\left.172\,138\,176\,000z^2-453\,623\,360\,400z+130\,848\,702\,075\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$

$$12\sqrt{z}\left(8\,388\,608z^7+1\,346\,895\,872z^6+55\,239\,475\,200z^5+597\,672\,499\,200z^4+878\,195\,404\,800z^3-\right.$$

$$\left.614\,655\,216\,000z^2+111\,748\,782\,600z+218\,081\,170\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$\left(67\,108\,864z^8+10\,783\,555\,584z^7+443\,237\,007\,360z^6+4\,832\,697\,139\,200z^5+7\,483\,650\,048\,000z^4-\right.$$

$$4\,939\,493\,529\,600z^3+1\,267\,304\,875\,200z^2+1\,385\,456\,845\,500z+$$

$$\left.\left.\left.3\,271\,217\,551\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(1\,064\,607\,251\,400\sqrt{2}\,z^{9/4}\right)$$

07.22.03.9024.01

$${}_1F_2\left(-\frac{21}{4};\frac{9}{2},-\frac{1}{4};z\right)=\frac{1}{324\,451\,733\,760\,z^{7/2}}$$

$$\left(e^{-2\sqrt{z}}\left(1\,048\,576\,e^{4\sqrt{z}}\,z^{17/2}+1\,048\,576z^{17/2}+262\,144\,e^{4\sqrt{z}}\,z^8-262\,144z^8-192\,479\,232\,e^{4\sqrt{z}}\,z^{15/2}-\right.\right.$$

$$192\,479\,232z^{15/2}-47\,923\,200\,e^{4\sqrt{z}}\,z^7+47\,923\,200z^7+9\,483\,694\,080\,e^{4\sqrt{z}}\,z^{13/2}+$$

$$9\,483\,694\,080z^{13/2}+2\,335\,656\,960\,e^{4\sqrt{z}}\,z^6-2\,335\,656\,960z^6-137\,512\,569\,600\,e^{4\sqrt{z}}\,z^{11/2}-$$

$$137\,512\,569\,600z^{11/2}-32\,743\,327\,680\,e^{4\sqrt{z}}\,z^5+32\,743\,327\,680z^5+$$

$$16\,e^{2\sqrt{z}}\,\sqrt{2\pi}\left(65\,536z^4-12\,042\,240z^3+594\,961\,920z^2-8\,701\,318\,080z+28\,143\,325\,665\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}-$$

$$16\,e^{2\sqrt{z}}\,\sqrt{2\pi}\left(65\,536z^4-12\,042\,240z^3+594\,961\,920z^2-8\,701\,318\,080z+28\,143\,325\,665\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+$$

$$427\,637\,145\,600\,e^{4\sqrt{z}}\,z^{9/2}+427\,637\,145\,600z^{9/2}+87\,276\,994\,560\,e^{4\sqrt{z}}\,z^4-87\,276\,994\,560z^4+$$

$$46\,181\,560\,320\,e^{4\sqrt{z}}\,z^{7/2}+46\,181\,560\,320z^{7/2}+33\,682\,521\,600\,e^{4\sqrt{z}}\,z^3-33\,682\,521\,600z^3+$$

$$25\,261\,891\,200\,e^{4\sqrt{z}}\,z^{5/2}+25\,261\,891\,200z^{5/2}+10\,525\,788\,000\,e^{4\sqrt{z}}\,z^2-10\,525\,788\,000z^2-$$

$$17\,367\,550\,200\,e^{4\sqrt{z}}\,z^{3/2}-17\,367\,550\,200z^{3/2}-34\,735\,100\,400\,e^{4\sqrt{z}}\,z+34\,735\,100\,400z+$$

$$\left.\left.65\,128\,313\,250\,e^{4\sqrt{z}}\,\sqrt{z}+65\,128\,313\,250\sqrt{z}-32\,564\,156\,625\,e^{4\sqrt{z}}+32\,564\,156\,625\right)\right)$$

07.22.03.9025.01

$${}_1F_2\left(-\frac{21}{4};\frac{9}{2},-\frac{1}{4};-z\right)=\frac{1}{162\,225\,866\,880\,z^{7/2}}$$

$$\left(-32\sqrt{\pi}\left(65\,536z^4+12\,042\,240z^3+594\,961\,920z^2+8\,701\,318\,080z+28\,143\,325\,665\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}-\right.$$

$$2\left(524\,288z^8+96\,239\,616z^7+4\,741\,847\,040z^6+68\,756\,284\,800z^5+213\,818\,572\,800z^4-\right.$$

$$\left.23\,090\,780\,160z^3+12\,630\,945\,600z^2+8\,683\,775\,100z+32\,564\,156\,625\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-$$

$$\left(262\,144z^8+47\,923\,200z^7+2\,335\,656\,960z^6+32\,743\,327\,680z^5+87\,276\,994\,560z^4-\right.$$

$$\left.\left.33\,682\,521\,600z^3+10\,525\,788\,000z^2+34\,735\,100\,400z-32\,564\,156\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.9026.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, \frac{1}{4}; z\right) = $$

$$ \left(\left(4z\left(8\,388\,608z^7 - 1\,739\,587\,584z^6 + 101\,088\,755\,712z^5 - 1\,892\,295\,659\,520z^4 + 10\,032\,664\,199\,040z^3 - 10\,575\,549\,734\,400z^2 + 1\,537\,703\,319\,600z + 69\,272\,842\,275\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(4\,194\,304z^7 - 866\,123\,776z^6 + 49\,789\,501\,440z^5 - 903\,178\,321\,920z^4 + 4\,257\,687\,067\,200z^3 - 2\,020\,798\,886\,400z^2 - 88\,416\,619\,200z + 115\,454\,737\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-33\,554\,432z^8 + 6\,933\,184\,512z^7 - 399\,169\,290\,240z^6 + 7\,272\,664\,842\,240z^5 - 34\,831\,639\,180\,800z^4 + 18\,590\,923\,008\,000z^3 + 1\,503\,082\,526\,400z^2 - 1\,172\,309\,638\,500z + 1\,731\,821\,056\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(3\,193\,821\,754\,200\sqrt{2}\, z^{9/4}\right) $$

07.22.03.9027.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, \frac{1}{4}; -z\right) = $$

$$ \left(\left(4z\left(8\,388\,608z^7 + 1\,739\,587\,584z^6 + 101\,088\,755\,712z^5 + 1\,892\,295\,659\,520z^4 + 10\,032\,664\,199\,040z^3 + 10\,575\,549\,734\,400z^2 + 1\,537\,703\,319\,600z - 69\,272\,842\,275\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(4\,194\,304z^7 + 866\,123\,776z^6 + 49\,789\,501\,440z^5 + 903\,178\,321\,920z^4 + 4\,257\,687\,067\,200z^3 + 2\,020\,798\,886\,400z^2 - 88\,416\,619\,200z - 115\,454\,737\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(33\,554\,432z^8 + 6\,933\,184\,512z^7 + 399\,169\,290\,240z^6 + 7\,272\,664\,842\,240z^5 + 34\,831\,639\,180\,800z^4 + 18\,590\,923\,008\,000z^3 - 1\,503\,082\,526\,400z^2 - 1\,172\,309\,638\,500z - 1\,731\,821\,056\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(3\,193\,821\,754\,200\sqrt{2}\, z^{9/4}\right) $$

07.22.03.9028.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, \frac{3}{4}; z\right) = $$

$$ \frac{1}{6\,489\,034\,675\,200z^{7/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-1\,048\,576z^5 + 240\,844\,800z^4 - 15\,865\,651\,200z^3 + 348\,052\,723\,200z^2 - 2\,251\,466\,053\,200z + 2\,673\,615\,938\,175\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{15/4} + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5 - 240\,844\,800z^4 + 15\,865\,651\,200z^3 - 348\,052\,723\,200z^2 + 2\,251\,466\,053\,200z - 2\,673\,615\,938\,175\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{15/4} - 4\left(262\,144z^{17/2} - 65\,536z^8 - 60\,162\,048z^{15/2} + 14\,991\,360z^7 + 3\,955\,230\,720z^{13/2} - 977\,733\,120z^6 - 86\,293\,509\,120z^{11/2} + 20\,877\,071\,040z^5 + 548\,033\,692\,500z^{9/2} - 123\,521\,162\,625z^4 - 590\,188\,032\,000z^{7/2} + 89\,820\,057\,600z^3 - 25\,261\,891\,200z^{5/2} + 13\,157\,235\,000z^{3/2} - 7\,894\,341\,000z - 21\,709\,437\,750\sqrt{z} + e^{4\sqrt{z}}\left(262\,144z^{17/2} + 65\,536z^8 - 60\,162\,048z^{15/2} - 14\,991\,360z^7 + 3\,955\,230\,720z^{13/2} + 977\,733\,120z^6 - 86\,293\,509\,120z^{11/2} - 20\,877\,071\,040z^5 + 548\,033\,692\,500z^{9/2} + 123\,521\,162\,625z^4 - 590\,188\,032\,000z^{7/2} - 89\,820\,057\,600z^3 - 25\,261\,891\,200z^{5/2} + 13\,157\,235\,000z^{3/2} + 7\,894\,341\,000z - 21\,709\,437\,750\sqrt{z} + 10\,854\,718\,875\right) - 10\,854\,718\,875\right)\right)\right) $$

07.22.03.9029.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, \frac{3}{4}; -z\right) = \frac{1}{1\,622\,258\,668\,800\, z^{7/2}} $$
$$ \left(\sqrt{\pi}\,\left(1\,048\,576\, z^5 + 240\,844\,800\, z^4 + 15\,865\,651\,200\, z^3 + 348\,052\,723\,200\, z^2 + 2\,251\,466\,053\,200\, z + 2\,673\,615\,938\,175\right)\right. $$
$$ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{15/4} + 2\left(2\sqrt{z}\,\left(131\,072\, z^8 + 30\,081\,024\, z^7 + 1\,977\,615\,360\, z^6 + 43\,146\,754\,560\, z^5 + 274\,016\,846\,250\, z^4 + \right.\right. $$
$$ \left.\left. 295\,094\,016\,000\, z^3 - 12\,630\,945\,600\, z^2 - 6\,578\,617\,500\, z - 10\,854\,718\,875\right)\cos\left(2\sqrt{z}\right) + $$
$$ \left(65\,536\, z^8 + 14\,991\,360\, z^7 + 977\,733\,120\, z^6 + 20\,877\,071\,040\, z^5 + 123\,521\,162\,625\, z^4 + \right. $$
$$ \left.\left. 89\,820\,057\,600\, z^3 - 7\,894\,341\,000\, z + 10\,854\,718\,875\right)\sin\left(2\sqrt{z}\right)\right)\Bigg) $$

07.22.03.9030.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, \frac{5}{4}; z\right) = $$
$$ \left(\left(4\, z\left(4\,194\,304\, z^7 - 1\,062\,469\,632\, z^6 + 79\,228\,993\,536\, z^5 - 2\,061\,190\,010\,880\, z^4 + 17\,546\,610\,312\,000\, z^3 - 39\,027\,565\,088\,820\right.\right. $$
$$ \left. z^2 + 17\,644\,173\,624\,000\, z - 58\,615\,481\,925\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ 12\sqrt{z}\,\left(2\,097\,152\, z^7 - 529\,399\,808\, z^6 + 39\,152\,762\,880\, z^5 - 996\,702\,981\,120\, z^4 + 7\,926\,697\,769\,760\, z^3 - \right. $$
$$ \left. 13\,134\,463\,060\,950\, z^2 + 121\,572\,851\,400\, z - 97\,692\,469\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(-16\,777\,216\, z^8 + 4\,237\,295\,616\, z^7 - 313\,745\,080\,320\, z^6 + 8\,011\,205\,959\,680\, z^5 - 64\,302\,428\,171\,520\, z^4 + \right. $$
$$ \left. 110\,726\,960\,374\,800\, z^3 - 3\,890\,331\,244\,800\, z^2 + 1\,693\,336\,144\,500\, z - 1\,465\,387\,048\,125\right) $$
$$ \left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(35\,132\,039\,296\,200\sqrt{2}\, z^{9/4}\right) $$

07.22.03.9031.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, \frac{5}{4}; -z\right) = $$
$$ \left(\left(4\, z\left(4\,194\,304\, z^7 + 1\,062\,469\,632\, z^6 + 79\,228\,993\,536\, z^5 + 2\,061\,190\,010\,880\, z^4 + 17\,546\,610\,312\,000\, z^3 + \right.\right. $$
$$ \left. 39\,027\,565\,088\,820\, z^2 + 17\,644\,173\,624\,000\, z + 58\,615\,481\,925\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ 12\sqrt{z}\,\left(2\,097\,152\, z^7 + 529\,399\,808\, z^6 + 39\,152\,762\,880\, z^5 + 996\,702\,981\,120\, z^4 + 7\,926\,697\,769\,760\, z^3 + \right. $$
$$ \left. 13\,134\,463\,060\,950\, z^2 + 121\,572\,851\,400\, z + 97\,692\,469\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(16\,777\,216\, z^8 + 4\,237\,295\,616\, z^7 + 313\,745\,080\,320\, z^6 + 8\,011\,205\,959\,680\, z^5 + 64\,302\,428\,171\,520\, z^4 + \right. $$
$$ \left. 110\,726\,960\,374\,800\, z^3 + 3\,890\,331\,244\,800\, z^2 + 1\,693\,336\,144\,500\, z + 1\,465\,387\,048\,125\right) $$
$$ \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(35\,132\,039\,296\,200\sqrt{2}\, z^{9/4}\right) $$

07.22.03.9032.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{9}{2},\frac{7}{4};z\right)=\frac{1}{830\,596\,438\,425\,600\,z^{7/2}}
\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-16\,777\,216\,z^6+4\,624\,220\,160\,z^5-380\,775\,628\,800\,z^4+11\,137\,687\,142\,400\,z^3-\right.\right.\right.
\left.\left.\left.108\,070\,370\,553\,600\,z^2+256\,667\,130\,064\,800\,z-40\,104\,239\,072\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+
e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-4\,624\,220\,160\,z^5+380\,775\,628\,800\,z^4-11\,137\,687\,142\,400\,z^3+\right.\right.
\left.\left.108\,070\,370\,553\,600\,z^2-256\,667\,130\,064\,800\,z+40\,104\,239\,072\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}-
4\left(4\,194\,304\,z^{17/2}-1\,048\,576\,z^8-1\,155\,268\,608\,z^{15/2}+288\,030\,720\,z^7+94\,978\,867\,200\,z^{13/2}-\right.\right.
23\,531\,397\,120\,z^6-2\,767\,036\,446\,720\,z^{11/2}+674\,826\,647\,040\,z^5+26\,531\,753\,774\,400\,z^{9/2}-
6\,180\,665\,374\,800\,z^4-60\,034\,582\,622\,700\,z^{7/2}+11\,632\,114\,104\,975\,z^3+4\,311\,362\,764\,800\,z^{5/2}+
1\,347\,300\,864\,000\,z^2-1\,010\,475\,648\,000\,z^{3/2}+757\,856\,736\,000\,\sqrt{z}+e^{4\sqrt{z}}
\left(4\,194\,304\,z^{17/2}+1\,048\,576\,z^8-1\,155\,268\,608\,z^{15/2}-288\,030\,720\,z^7+94\,978\,867\,200\,z^{13/2}+23\,531\,397\,120\right.
z^6-2\,767\,036\,446\,720\,z^{11/2}-674\,826\,647\,040\,z^5+26\,531\,753\,774\,400\,z^{9/2}+6\,180\,665\,374\,800\,z^4-
60\,034\,582\,622\,700\,z^{7/2}-11\,632\,114\,104\,975\,z^3+4\,311\,362\,764\,800\,z^{5/2}-1\,347\,300\,864\,000\,z^2-
\left.\left.\left.\left.\left.1\,010\,475\,648\,000\,z^{3/2}+757\,856\,736\,000\,\sqrt{z}-378\,928\,368\,000\right)+378\,928\,368\,000\right)\right)\right)
$$

07.22.03.9033.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{9}{2},\frac{7}{4};-z\right)=
\frac{1}{207\,649\,109\,606\,400\,z^{7/2}}\left(\sqrt{\pi}\left(16\,777\,216\,z^6+4\,624\,220\,160\,z^5+380\,775\,628\,800\,z^4+11\,137\,687\,142\,400\,z^3+\right.\right.
\left.\left.108\,070\,370\,553\,600\,z^2+256\,667\,130\,064\,800\,z+40\,104\,239\,072\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+
2\left(4\sqrt{z}\left(1\,048\,576\,z^8+288\,817\,152\,z^7+23\,744\,716\,800\,z^6+691\,759\,111\,680\,z^5+6\,632\,938\,443\,600\,z^4+\right.\right.
\left.\left.15\,008\,645\,655\,675\,z^3+1\,077\,840\,691\,200\,z^2+252\,618\,912\,000\,z+189\,464\,184\,000\right)\cos\left(2\sqrt{z}\right)+
\left(1\,048\,576\,z^8+288\,030\,720\,z^7+23\,531\,397\,120\,z^6+674\,826\,647\,040\,z^5+6\,180\,665\,374\,800\,z^4+\right.\right.
\left.\left.\left.11\,632\,114\,104\,975\,z^3-1\,347\,300\,864\,000\,z^2-378\,928\,368\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)
$$

07.22.03.9034.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{9}{2},\frac{9}{4};z\right)= $$

$$ \left(\left(2z\left(16\,777\,216z^7-5\,020\,581\,888z^6+457\,039\,478\,784z^5-15\,227\,567\,308\,800z^4+178\,680\,457\,992\,960z^3-\right.\right.\right. $$

$$ \left.\left.608\,218\,297\,727\,040z^2+404\,800\,876\,414\,935z+677\,334\,457\,800\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2- $$

$$ 3\sqrt{z}\left(16\,777\,216z^7-5\,005\,901\,824z^6+452\,671\,242\,240z^5-14\,834\,961\,039\,360z^4+165\,999\,493\,820\,160z^3-\right. $$

$$ \left.471\,699\,303\,435\,360z^2+63\,003\,441\,726\,225z+2\,257\,781\,526\,000\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)- $$

$$ 2\left(16\,777\,216z^8-5\,007\,998\,976z^7+453\,290\,557\,440z^6-14\,889\,679\,257\,600z^5+167\,694\,950\,142\,720z^4-\right. $$

$$ \left.\left.\left.487\,934\,353\,146\,240z^3+87\,861\,712\,813\,875z^2+10\,160\,016\,867\,000z-4\,233\,340\,361\,250\right)\right. $$

$$ \left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(365\,373\,208\,680\,480\sqrt{2}\,z^{9/4}\right) $$

07.22.03.9035.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{9}{2},\frac{9}{4};-z\right)= $$

$$ \left(\left(2z\left(16\,777\,216z^7+5\,020\,581\,888z^6+457\,039\,478\,784z^5+15\,227\,567\,308\,800z^4+178\,680\,457\,992\,960z^3+\right.\right.\right. $$

$$ \left.\left.608\,218\,297\,727\,040z^2+404\,800\,876\,414\,935z-677\,334\,457\,800\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- $$

$$ 3\sqrt{z}\left(16\,777\,216z^7+5\,005\,901\,824z^6+452\,671\,242\,240z^5+14\,834\,961\,039\,360z^4+165\,999\,493\,820\,160z^3+\right. $$

$$ \left.471\,699\,303\,435\,360z^2+63\,003\,441\,726\,225z-2\,257\,781\,526\,000\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\left(16\,777\,216z^8+5\,007\,998\,976z^7+453\,290\,557\,440z^6+14\,889\,679\,257\,600z^5+167\,694\,950\,142\,720z^4+\right. $$

$$ \left.\left.\left.487\,934\,353\,146\,240z^3+87\,861\,712\,813\,875z^2-10\,160\,016\,867\,000z-4\,233\,340\,361\,250\right)\right. $$

$$ \left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(365\,373\,208\,680\,480\sqrt{2}\,z^{9/4}\right) $$

07.22.03.9036.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{9}{2},\frac{11}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-86\,318\,776\,320\,z^6+8\,529\,374\,085\,120\,z^5-311\,855\,239\,987\,200\,z^4+\right.\right.\right.
$$

$$
\left.4\,034\,627\,167\,334\,400\,z^3-14\,373\,359\,283\,628\,800\,z^2+4\,491\,674\,776\,134\,000\,z+1\,323\,439\,889\,396\,625\right)
$$

$$
\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-86\,318\,776\,320\,z^6+8\,529\,374\,085\,120\,z^5-\right.
$$

$$
311\,855\,239\,987\,200\,z^4+4\,034\,627\,167\,334\,400\,z^3-14\,373\,359\,283\,628\,800\,z^2+
$$

$$
\left.4\,491\,674\,776\,134\,000\,z+1\,323\,439\,889\,396\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}-
$$

$$
4\left(67\,108\,864\,z^{17/2}-16\,777\,216\,z^8-21\,567\,111\,168\,z^{15/2}+5\,379\,194\,880\,z^7+2\,128\,324\,853\,760\,z^{13/2}-\right.
$$

$$
528\,090\,071\,040\,z^6-77\,572\,676\,321\,280\,z^{11/2}+19\,010\,545\,827\,840\,z^5+994\,860\,481\,305\,600\,z^{9/2}-
$$

$$
235\,690\,099\,142\,400\,z^4-3\,431\,408\,022\,000\,000\,z^{7/2}+718\,909\,215\,242\,400\,z^3+718\,758\,433\,329\,300\,z^{5/2}+
$$

$$
56\,196\,195\,339\,375\,z^2+194\,011\,324\,416\,000\,z^{3/2}+64\,670\,441\,472\,000\,z-48\,502\,831\,104\,000\sqrt{z}+
$$

$$
e^{4\sqrt{z}}\left(67\,108\,864\,z^{17/2}+16\,777\,216\,z^8-21\,567\,111\,168\,z^{15/2}-5\,379\,194\,880\,z^7+2\,128\,324\,853\,760\,z^{13/2}+\right.
$$

$$
528\,090\,071\,040\,z^6-77\,572\,676\,321\,280\,z^{11/2}-19\,010\,545\,827\,840\,z^5+994\,860\,481\,305\,600\,z^{9/2}+
$$

$$
235\,690\,099\,142\,400\,z^4-3\,431\,408\,022\,000\,000\,z^{7/2}-718\,909\,215\,242\,400\,z^3+
$$

$$
\left.\left.\left.\left.\left.718\,758\,433\,329\,300\,z^{5/2}-56\,196\,195\,339\,375\,z^2+194\,011\,324\,416\,000\,z^{3/2}-64\,670\,441\,472\,000\,z-\right.\right.\right.\right.\right.
$$

$$
\left.\left.\left.\left.48\,502\,831\,104\,000\sqrt{z}+24\,251\,415\,552\,000\right)-24\,251\,415\,552\,000\right)\right)\right)\Big/\left(53\,158\,172\,059\,238\,400\,z^{7/2}\right)
$$

07.22.03.9037.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{9}{2},\frac{11}{4};-z\right)=
$$

$$
\left(\sqrt{\pi}\left(268\,435\,456\,z^7+86\,318\,776\,320\,z^6+8\,529\,374\,085\,120\,z^5+311\,855\,239\,987\,200\,z^4+4\,034\,627\,167\,334\,400\,z^3+\right.\right.
$$

$$
\left.14\,373\,359\,283\,628\,800\,z^2+4\,491\,674\,776\,134\,000\,z-1\,323\,439\,889\,396\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+
$$

$$
2\left(4\sqrt{z}\left(16\,777\,216\,z^8+5\,391\,777\,792\,z^7+532\,081\,213\,440\,z^6+19\,393\,169\,080\,320\,z^5+248\,715\,120\,326\,400\,z^4+\right.\right.
$$

$$
857\,852\,005\,500\,000\,z^3+179\,689\,608\,332\,325\,z^2-48\,502\,831\,104\,000\,z-12\,125\,707\,776\,000\right)\cos\left(2\sqrt{z}\right)+
$$

$$
\left(16\,777\,216\,z^8+5\,379\,194\,880\,z^7+528\,090\,071\,040\,z^6+19\,010\,545\,827\,840\,z^5+\right.
$$

$$
235\,690\,099\,142\,400\,z^4+718\,909\,215\,242\,400\,z^3-56\,196\,195\,339\,375\,z^2+
$$

$$
\left.\left.\left.64\,670\,441\,472\,000\,z+24\,251\,415\,552\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(13\,289\,543\,014\,809\,600\,z^{7/2}\right)
$$

07.22.03.9038.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, \frac{13}{4}; z\right) = $$

$$ \left(\left(2z\left(268\,435\,456\,z^7 - 92\,660\,563\,968\,z^6 + 9\,960\,768\,405\,504\,z^5 - 404\,638\,359\,552\,000\,z^4 + 6\,053\,343\,122\,534\,400\,z^3 - \right.\right.\right. $$

$$ \left. 27\,767\,019\,777\,235\,200\,z^2 + 23\,676\,353\,674\,974\,000\,z + 1\,787\,791\,737\,206\,475\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$

$$ 3\sqrt{z}\,\left(268\,435\,456\,z^7 - 92\,425\,682\,944\,z^6 + 9\,880\,086\,773\,760\,z^5 - 396\,057\,747\,456\,000\,z^4 + \right. $$

$$ \left. 5\,713\,404\,415\,488\,000\,z^3 - 23\,008\,824\,731\,692\,800\,z^2 + 6\,260\,920\,798\,532\,400\,z + 2\,871\,279\,382\,096\,125\right) $$

$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\left(268\,435\,456\,z^8 - 92\,459\,237\,376\,z^7 + 9\,891\,537\,223\,680\,z^6 - 397\,258\,186\,752\,000\,z^5 + \right. $$

$$ 5\,759\,396\,620\,185\,600\,z^4 - 23\,597\,430\,759\,302\,400\,z^3 + 7\,796\,953\,251\,687\,600\,z^2 + $$

$$ \left.\left.\left. 3\,737\,030\,050\,128\,375\,z + 406\,400\,674\,680\,000\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(19\,486\,571\,129\,625\,600\,\sqrt{2}\; z^{9/4}\right) $$

07.22.03.9039.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, \frac{13}{4}; -z\right) = $$

$$ \left(\left(2z\left(268\,435\,456\,z^7 + 92\,660\,563\,968\,z^6 + 9\,960\,768\,405\,504\,z^5 + 404\,638\,359\,552\,000\,z^4 + 6\,053\,343\,122\,534\,400\,z^3 + \right.\right.\right. $$

$$ \left. 27\,767\,019\,777\,235\,200\,z^2 + 23\,676\,353\,674\,974\,000\,z - 1\,787\,791\,737\,206\,475\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$

$$ 3\sqrt{z}\,\left(268\,435\,456\,z^7 + 92\,425\,682\,944\,z^6 + 9\,880\,086\,773\,760\,z^5 + 396\,057\,747\,456\,000\,z^4 + \right. $$

$$ \left. 5\,713\,404\,415\,488\,000\,z^3 + 23\,008\,824\,731\,692\,800\,z^2 + 6\,260\,920\,798\,532\,400\,z - 2\,871\,279\,382\,096\,125\right) $$

$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\left(268\,435\,456\,z^8 + 92\,459\,237\,376\,z^7 + 9\,891\,537\,223\,680\,z^6 + 397\,258\,186\,752\,000\,z^5 + \right. $$

$$ 5\,759\,396\,620\,185\,600\,z^4 + 23\,597\,430\,759\,302\,400\,z^3 + 7\,796\,953\,251\,687\,600\,z^2 - $$

$$ \left.\left.\left. 3\,737\,030\,050\,128\,375\,z + 406\,400\,674\,680\,000\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(19\,486\,571\,129\,625\,600\,\sqrt{2}\; z^{9/4}\right) $$

07.22.03.9040.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, \frac{15}{4}; z\right) = $$

$$ \left(e^{-2\sqrt{z}} \left(-4\left(1\,073\,741\,824\,z^{17/2} - 268\,435\,456\,z^8 - 394\,398\,793\,728\,z^{15/2} + 98\,398\,371\,840\,z^7 + 45\,416\,448\,000\,000\,z^{13/2} - \right.\right.\right. $$
$$ 11\,281\,005\,281\,280\,z^6 - 1\,987\,503\,284\,551\,680\,z^{11/2} + 488\,661\,967\,503\,360\,z^5 + $$
$$ 31\,920\,480\,834\,600\,960\,z^{9/2} - 7\,640\,338\,477\,363\,200\,z^4 - 147\,978\,599\,719\,910\,400\,z^{7/2} + $$
$$ 32\,279\,077\,586\,246\,400\,z^3 + 52\,474\,341\,436\,171\,200\,z^{5/2} - 170\,981\,952\,850\,800\,z^2 + $$
$$ 34\,943\,236\,016\,188\,500\,z^{3/2} + 1\,373\,977\,486\,893\,375\,z + 8\,277\,816\,508\,416\,000\,\sqrt{z} + e^{4\sqrt{z}} $$
$$ \left(1\,073\,741\,824\,z^{17/2} + 268\,435\,456\,z^8 - 394\,398\,793\,728\,z^{15/2} - 98\,398\,371\,840\,z^7 + 45\,416\,448\,000\,000\,z^{13/2} + \right. $$
$$ 11\,281\,005\,281\,280\,z^6 - 1\,987\,503\,284\,551\,680\,z^{11/2} - 488\,661\,967\,503\,360\,z^5 + 31\,920\,480\,834\,600\,960 $$
$$ z^{9/2} + 7\,640\,338\,477\,363\,200\,z^4 - 147\,978\,599\,719\,910\,400\,z^{7/2} - 32\,279\,077\,586\,246\,400\,z^3 + $$
$$ 52\,474\,341\,436\,171\,200\,z^{5/2} + 170\,981\,952\,850\,800\,z^2 + 34\,943\,236\,016\,188\,500\,z^{3/2} - $$
$$ \left.\left.\left.\left.1\,373\,977\,486\,893\,375\,z + 8\,277\,816\,508\,416\,000\,\sqrt{z} - 4\,138\,908\,254\,208\,000\right) + 4\,138\,908\,254\,208\,000\right) - \right. $$
$$ e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(4\,294\,967\,296\,z^8 - 1\,578\,400\,481\,280\,z^7 + 181\,959\,980\,482\,560\,z^6 - \right. $$
$$ 7\,983\,494\,143\,672\,320\,z^5 + 129\,108\,069\,354\,700\,800\,z^4 - 613\,263\,329\,434\,828\,800\,z^3 + $$
$$ \left.287\,467\,185\,672\,576\,000\,z^2 + 169\,400\,305\,842\,768\,000\,z + 64\,848\,554\,580\,434\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(4\,294\,967\,296\,z^8 - 1\,578\,400\,481\,280\,z^7 + 181\,959\,980\,482\,560\,z^6 - 7\,983\,494\,143\,672\,320\,z^5 + \right. $$
$$ 129\,108\,069\,354\,700\,800\,z^4 - 613\,263\,329\,434\,828\,800\,z^3 + 287\,467\,185\,672\,576\,000\,z^2 + $$
$$ \left.\left.\left.169\,400\,305\,842\,768\,000\,z + 64\,848\,554\,580\,434\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) \Big/ \left(2\,474\,271\,281\,302\,732\,800\,z^{7/2}\right) $$

07.22.03.9041.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, \frac{15}{4}; -z\right) = $$

$$ \left(\sqrt{\pi}\,z^{3/4}\left(4\,294\,967\,296\,z^8 + 1\,578\,400\,481\,280\,z^7 + 181\,959\,980\,482\,560\,z^6 + 7\,983\,494\,143\,672\,320\,z^5 + \right.\right. $$
$$ 129\,108\,069\,354\,700\,800\,z^4 + 613\,263\,329\,434\,828\,800\,z^3 + 287\,467\,185\,672\,576\,000\,z^2 - $$
$$ \left.169\,400\,305\,842\,768\,000\,z + 64\,848\,554\,580\,434\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\left(4\sqrt{z}\left(268\,435\,456\,z^8 + 98\,599\,698\,432\,z^7 + 11\,354\,112\,000\,000\,z^6 + 496\,875\,821\,137\,920\,z^5 + \right.\right. $$
$$ 7\,980\,120\,208\,650\,240\,z^4 + 36\,994\,649\,929\,977\,600\,z^3 + 13\,118\,585\,359\,042\,800\,z^2 - 8\,735\,809\,004\,047\,125\,z + $$
$$ 2\,069\,454\,127\,104\,000\right)\cos\left(2\sqrt{z}\right) + \left(268\,435\,456\,z^8 + 98\,398\,371\,840\,z^7 + 11\,281\,005\,281\,280\,z^6 + \right. $$
$$ 488\,661\,967\,503\,360\,z^5 + 7\,640\,338\,477\,363\,200\,z^4 + 32\,279\,077\,586\,246\,400\,z^3 + 170\,981\,952\,850\,800\,z^2 + $$
$$ \left.\left.\left.1\,373\,977\,486\,893\,375\,z - 4\,138\,908\,254\,208\,000\right)\sin\left(2\sqrt{z}\right)\right)\right) \Big/ \left(618\,567\,820\,325\,683\,200\,z^{7/2}\right) $$

07.22.03.9042.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{9}{2},\frac{17}{4};z\right)=\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-1\,679\,869\,083\,648\,z^7+208\,241\,053\,138\,944\,z^6-\right.\right.\right.
$$
$$
9\,981\,090\,531\,901\,440\,z^5+181\,539\,369\,123\,840\,000\,z^4-1\,047\,798\,662\,696\,755\,200\,z^3+
$$
$$
\left.1\,077\,561\,818\,057\,894\,400\,z^2+213\,243\,435\,859\,053\,600\,z+83\,376\,713\,031\,987\,375\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-
$$
$$
3\left(4\,294\,967\,296\,z^8-1\,676\,110\,987\,264\,z^7+206\,777\,509\,478\,400\,z^6-9\,801\,331\,900\,416\,000\,z^5+\right.
$$
$$
173\,102\,697\,647\,308\,800\,z^4-902\,439\,502\,342\,963\,200\,z^3+376\,122\,411\,855\,590\,400\,z^2+
$$
$$
315\,544\,072\,563\,720\,000\,z+138\,961\,188\,386\,645\,625\left.\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-
$$
$$
2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-1\,676\,647\,858\,176\,z^7+206\,985\,379\,184\,640\,z^6-9\,826\,550\,415\,360\,000\,z^5+\right.
$$
$$
174\,253\,577\,895\,936\,000\,z^4-920\,880\,347\,821\,056\,000\,z^3+444\,739\,333\,335\,897\,600\,z^2+
$$
$$
\left.\left.\left.362\,104\,043\,192\,892\,000\,z+195\,801\,598\,134\,016\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(815\,438\,053\,424\,332\,800\sqrt{2}\;z^{11/4}\right)
$$

07.22.03.9043.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{9}{2},\frac{17}{4};-z\right)=\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,679\,869\,083\,648\,z^7+208\,241\,053\,138\,944\,z^6+\right.\right.\right.
$$
$$
9\,981\,090\,531\,901\,440\,z^5+181\,539\,369\,123\,840\,000\,z^4+1\,047\,798\,662\,696\,755\,200\,z^3+
$$
$$
\left.1\,077\,561\,818\,057\,894\,400\,z^2-213\,243\,435\,859\,053\,600\,z+83\,376\,713\,031\,987\,375\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-
$$
$$
3\left(4\,294\,967\,296\,z^8+1\,676\,110\,987\,264\,z^7+206\,777\,509\,478\,400\,z^6+9\,801\,331\,900\,416\,000\,z^5+\right.
$$
$$
173\,102\,697\,647\,308\,800\,z^4+902\,439\,502\,342\,963\,200\,z^3+376\,122\,411\,855\,590\,400\,z^2-
$$
$$
315\,544\,072\,563\,720\,000\,z+138\,961\,188\,386\,645\,625\left.\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+
$$
$$
2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,676\,647\,858\,176\,z^7+206\,985\,379\,184\,640\,z^6+9\,826\,550\,415\,360\,000\,z^5+\right.
$$
$$
174\,253\,577\,895\,936\,000\,z^4+920\,880\,347\,821\,056\,000\,z^3+444\,739\,333\,335\,897\,600\,z^2-
$$
$$
\left.\left.\left.362\,104\,043\,192\,892\,000\,z+195\,801\,598\,134\,016\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(815\,438\,053\,424\,332\,800\sqrt{2}\;z^{11/4}\right)
$$

07.22.03.9044.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{9}{2},\frac{19}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(17\,179\,869\,184\,z^{17/2}-4\,294\,967\,296\,z^{8}-7\,099\,580\,940\,288\,z^{15/2}+1\,771\,674\,009\,600\,z^{7}+\right.\right.\right.
$$
$$
934\,469\,456\,363\,520\,z^{13/2}-232\,299\,681\,546\,240\,z^{6}-47\,728\,373\,111\,193\,600\,z^{11/2}+11\,762\,327\,586\,078\,720\,z^{5}+
$$
$$
920\,962\,995\,860\,275\,200\,z^{9/2}-221\,975\,009\,846\,231\,040\,z^{4}-5\,362\,555\,016\,019\,640\,320\,z^{7/2}+
$$
$$
1\,199\,337\,049\,593\,446\,400\,z^{3}+2\,699\,264\,466\,830\,131\,200\,z^{5/2}-133\,327\,883\,025\,792\,000\,z^{2}+
$$
$$
2\,773\,839\,169\,572\,307\,200\,z^{3/2}-177\,607\,439\,579\,606\,400\,z+1\,914\,685\,907\,308\,492\,500\sqrt{z}\;+
$$
$$
e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}-7\,099\,580\,940\,288\,z^{15/2}-1\,771\,674\,009\,600\,z^{7}+\right.
$$
$$
934\,469\,456\,363\,520\,z^{13/2}+232\,299\,681\,546\,240\,z^{6}-47\,728\,373\,111\,193\,600\,z^{11/2}-
$$
$$
11\,762\,327\,586\,078\,720\,z^{5}+920\,962\,995\,860\,275\,200\,z^{9/2}+221\,975\,009\,846\,231\,040\,z^{4}-
$$
$$
5\,362\,555\,016\,019\,640\,320\,z^{7/2}-1\,199\,337\,049\,593\,446\,400\,z^{3}+2\,699\,264\,466\,830\,131\,200\,z^{5/2}+
$$
$$
133\,327\,883\,025\,792\,000\,z^{2}+2\,773\,839\,169\,572\,307\,200\,z^{3/2}+177\,607\,439\,579\,606\,400\,z+
$$
$$
\left.\left.1\,914\,685\,907\,308\,492\,500\sqrt{z}\;-244\,008\,853\,269\,465\,375\right)+244\,008\,853\,269\,465\,375\right)-
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-28\,411\,208\,663\,040\,z^{8}+3\,743\,176\,741\,355\,520\,z^{7}-191\,603\,859\,448\,135\,680\,z^{6}+\right.
$$
$$
3\,718\,312\,397\,415\,383\,040\,z^{5}-22\,077\,479\,859\,653\,836\,800\,z^{4}+13\,798\,424\,912\,283\,648\,000\,z^{3}+
$$
$$
\left.12\,196\,822\,020\,679\,296\,000\,z^{2}+9\,338\,191\,859\,582\,586\,000\,z+2\,140\,002\,301\,154\,342\,625\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-28\,411\,208\,663\,040\,z^{8}+3\,743\,176\,741\,355\,520\,z^{7}-\right.
$$
$$
191\,603\,859\,448\,135\,680\,z^{6}+3\,718\,312\,397\,415\,383\,040\,z^{5}-22\,077\,479\,859\,653\,836\,800\,z^{4}+
$$
$$
13\,798\,424\,912\,283\,648\,000\,z^{3}+12\,196\,822\,020\,679\,296\,000\,z^{2}+9\,338\,191\,859\,582\,586\,000\,z+
$$
$$
\left.\left.\left.2\,140\,002\,301\,154\,342\,625\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)\Big/\left(95\,012\,017\,202\,024\,939\,520\,z^{15/4}\right)
$$

07.22.03.9045.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{9}{2},\frac{19}{4};-z\right)=
$$
$$
\left(\sqrt{\pi}\left(68\,719\,476\,736\,z^{9}+28\,411\,208\,663\,040\,z^{8}+3\,743\,176\,741\,355\,520\,z^{7}+191\,603\,859\,448\,135\,680\,z^{6}+\right.\right.
$$
$$
3\,718\,312\,397\,415\,383\,040\,z^{5}+22\,077\,479\,859\,653\,836\,800\,z^{4}+13\,798\,424\,912\,283\,648\,000\,z^{3}-
$$
$$
\left.12\,196\,822\,020\,679\,296\,000\,z^{2}+9\,338\,191\,859\,582\,586\,000\,z-2\,140\,002\,301\,154\,342\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$
$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^{8}+1\,774\,895\,235\,072\,z^{7}+233\,617\,364\,090\,880\,z^{6}+11\,932\,093\,277\,798\,400\,z^{5}+\right.\right.
$$
$$
230\,240\,748\,965\,068\,800\,z^{4}+1\,340\,638\,754\,004\,910\,080\,z^{3}+674\,816\,116\,707\,532\,800\,z^{2}-
$$
$$
\left.693\,459\,792\,393\,076\,800\,z+478\,671\,476\,827\,123\,125\right)\cos\left(2\sqrt{z}\right)+
$$
$$
\left(4\,294\,967\,296\,z^{8}+1\,771\,674\,009\,600\,z^{7}+232\,299\,681\,546\,240\,z^{6}+11\,762\,327\,586\,078\,720\,z^{5}+\right.
$$
$$
221\,975\,009\,846\,231\,040\,z^{4}+1\,199\,337\,049\,593\,446\,400\,z^{3}+133\,327\,883\,025\,792\,000\,z^{2}-
$$
$$
\left.\left.\left.177\,607\,439\,579\,606\,400\,z-244\,008\,853\,269\,465\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(23\,753\,004\,300\,506\,234\,880\,z^{15/4}\right)
$$

07.22.03.9046.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{9}{2},\frac{21}{4};z\right) = $$

$$\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-30\,034\,706\,300\,928\,z^8+4\,217\,734\,120\,341\,504\,z^7-232\,983\,199\,418\,941\,440\,z^6+\right.\right.\right.$$
$$4\,990\,111\,963\,970\,273\,280\,z^5-34\,717\,658\,726\,390\,169\,600\,z^4+41\,595\,498\,305\,825\,587\,200\,z^3+$$
$$\left.\left.14\,758\,084\,952\,516\,505\,600\,z^2+11\,709\,796\,141\,381\,338\,000\,z+1\,083\,897\,269\,415\,835\,875\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\left(68\,719\,476\,736\,z^9-29\,974\,576\,758\,784\,z^8+4\,191\,555\,220\,930\,560\,z^7-229\,336\,579\,917\,742\,080\,z^6+\right.$$
$$4\,792\,287\,557\,320\,704\,000\,z^5-30\,669\,748\,778\,188\,800\,000\,z^4+17\,321\,961\,939\,945\,062\,400\,z^3+$$
$$\left.20\,734\,365\,126\,803\,328\,000\,z^2+18\,231\,707\,916\,327\,906\,000\,z+1\,806\,495\,449\,026\,393\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-29\,983\,166\,693\,376\,z^8+4\,195\,275\,736\,350\,720\,z^7-229\,849\,257\,077\,637\,120\,z^6+\right.$$
$$4\,819\,437\,509\,935\,104\,000\,z^5-31\,192\,400\,342\,709\,043\,200\,z^4+19\,857\,784\,440\,762\,777\,600\,z^3+$$
$$\left.22\,565\,166\,125\,838\,336\,000\,z^2+21\,450\,749\,305\,499\,514\,000\,z+5\,419\,486\,347\,079\,179\,375\right)$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(29\,163\,902\,145\,999\,667\,200\,\sqrt{2}\;z^{15/4}\right)$$

07.22.03.9047.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{9}{2},\frac{21}{4};-z\right) = $$

$$\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+30\,034\,706\,300\,928\,z^8+4\,217\,734\,120\,341\,504\,z^7+232\,983\,199\,418\,941\,440\,z^6+\right.\right.\right.$$
$$4\,990\,111\,963\,970\,273\,280\,z^5+34\,717\,658\,726\,390\,169\,600\,z^4+41\,595\,498\,305\,825\,587\,200\,z^3-$$
$$\left.\left.14\,758\,084\,952\,516\,505\,600\,z^2+11\,709\,796\,141\,381\,338\,000\,z-1\,083\,897\,269\,415\,835\,875\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\left(68\,719\,476\,736\,z^9+29\,974\,576\,758\,784\,z^8+4\,191\,555\,220\,930\,560\,z^7+229\,336\,579\,917\,742\,080\,z^6+\right.$$
$$4\,792\,287\,557\,320\,704\,000\,z^5+30\,669\,748\,778\,188\,800\,000\,z^4+17\,321\,961\,939\,945\,062\,400\,z^3-$$
$$\left.20\,734\,365\,126\,803\,328\,000\,z^2+18\,231\,707\,916\,327\,906\,000\,z-1\,806\,495\,449\,026\,393\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+29\,983\,166\,693\,376\,z^8+4\,195\,275\,736\,350\,720\,z^7+229\,849\,257\,077\,637\,120\,z^6+\right.$$
$$4\,819\,437\,509\,935\,104\,000\,z^5+31\,192\,400\,342\,709\,043\,200\,z^4+19\,857\,784\,440\,762\,777\,600\,z^3-$$
$$\left.22\,565\,166\,125\,838\,336\,000\,z^2+21\,450\,749\,305\,499\,514\,000\,z-5\,419\,486\,347\,079\,179\,375\right)$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(29\,163\,902\,145\,999\,667\,200\,\sqrt{2}\;z^{15/4}\right)$$

07.22.03.9048.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{9}{2},\frac{23}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(274\,877\,906\,944\,z^{19/2}-68\,719\,476\,736\,z^{9}-126\,220\,498\,894\,848\,z^{17/2}+31\,503\,585\,116\,160\,z^{8}+\right.\right.\right.
$$

$$
18\,692\,320\,442\,449\,920\,z^{15/2}-4\,649\,629\,589\,176\,320\,z^{7}-1\,091\,421\,062\,320\,619\,520\,z^{13/2}+
$$

$$
269\,447\,527\,126\,794\,240\,z^{6}+24\,590\,823\,946\,872\,422\,400\,z^{11/2}-5\,956\,841\,643\,127\,603\,200\,z^{5}-
$$

$$
172\,377\,255\,928\,253\,644\,800\,z^{9/2}+39\,216\,836\,903\,937\,638\,400\,z^{4}+112\,761\,878\,029\,620\,019\,200\,z^{7/2}-
$$

$$
9\,025\,272\,081\,745\,920\,000\,z^{3}+154\,624\,620\,627\,509\,760\,000\,z^{5/2}-18\,596\,560\,405\,917\,312\,000\,z^{2}+
$$

$$
173\,338\,766\,611\,074\,792\,000\,z^{3/2}-3\,006\,903\,599\,977\,914\,000\,z+42\,800\,046\,023\,086\,852\,500\,\sqrt{z}\,+
$$

$$
e^{4\sqrt{z}}\left(274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}-126\,220\,498\,894\,848\,z^{17/2}-\right.
$$

$$
31\,503\,585\,116\,160\,z^{8}+18\,692\,320\,442\,449\,920\,z^{15/2}+4\,649\,629\,589\,176\,320\,z^{7}-
$$

$$
1\,091\,421\,062\,320\,619\,520\,z^{13/2}-269\,447\,527\,126\,794\,240\,z^{6}+24\,590\,823\,946\,872\,422\,400\,z^{11/2}+
$$

$$
5\,956\,841\,643\,127\,603\,200\,z^{5}-172\,377\,255\,928\,253\,644\,800\,z^{9/2}-39\,216\,836\,903\,937\,638\,400\,z^{4}+
$$

$$
112\,761\,878\,029\,620\,019\,200\,z^{7/2}+9\,025\,272\,081\,745\,920\,000\,z^{3}+154\,624\,620\,627\,509\,760\,000\,z^{5/2}+
$$

$$
18\,596\,560\,405\,917\,312\,000\,z^{2}+173\,338\,766\,611\,074\,792\,000\,z^{3/2}+3\,006\,903\,599\,977\,914\,000\,z+
$$

$$
\left.\left.\left.\left.42\,800\,046\,023\,086\,852\,500\,\sqrt{z}\,-32\,100\,034\,517\,315\,139\,375\right)+32\,100\,034\,517\,315\,139\,375\right)-\right.\right.
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(1\,099\,511\,627\,776\,z^{10}-505\,088\,154\,009\,600\,z^{9}+74\,863\,534\,827\,110\,400\,z^{8}-\right.
$$

$$
4\,379\,516\,787\,385\,958\,400\,z^{7}+99\,154\,997\,264\,410\,214\,400\,z^{6}-706\,479\,355\,508\,922\,777\,600\,z^{5}+
$$

$$
551\,936\,996\,491\,345\,920\,000\,z^{4}+650\,497\,174\,436\,229\,120\,000\,z^{3}+747\,055\,348\,766\,606\,880\,000\,z^{2}+
$$

$$
\left.342\,400\,368\,184\,694\,820\,000\,z-32\,100\,034\,517\,315\,139\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(1\,099\,511\,627\,776\,z^{10}-505\,088\,154\,009\,600\,z^{9}+74\,863\,534\,827\,110\,400\,z^{8}-\right.
$$

$$
4\,379\,516\,787\,385\,958\,400\,z^{7}+99\,154\,997\,264\,410\,214\,400\,z^{6}-706\,479\,355\,508\,922\,777\,600\,z^{5}+
$$

$$
551\,936\,996\,491\,345\,920\,000\,z^{4}+650\,497\,174\,436\,229\,120\,000\,z^{3}+
$$

$$
\left.\left.\left.747\,055\,348\,766\,606\,880\,000\,z^{2}+342\,400\,368\,184\,694\,820\,000\,z-32\,100\,034\,517\,315\,139\,375\right)\right.\right.
$$

$$
\left.\left.\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(3\,200\,404\,789\,962\,945\,331\,200\,z^{19/4}\right)
$$

07.22.03.9049.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) = $$

$$\left(\sqrt{\pi}\,\left(1\,099\,511\,627\,776\,z^{10} + 505\,088\,154\,009\,600\,z^9 + 74\,863\,534\,827\,110\,400\,z^8 + 4\,379\,516\,787\,385\,958\,400\,z^7 + \right.\right.$$
$$99\,154\,997\,264\,410\,214\,400\,z^6 + 706\,479\,355\,508\,922\,777\,600\,z^5 + 551\,936\,996\,491\,345\,920\,000\,z^4 -$$
$$650\,497\,174\,436\,229\,120\,000\,z^3 + 747\,055\,348\,766\,606\,880\,000\,z^2 -$$
$$\left.342\,400\,368\,184\,694\,820\,000\,z - 32\,100\,034\,517\,315\,139\,375\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) +$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 31\,555\,124\,723\,712\,z^8 + 4\,673\,080\,110\,612\,480\,z^7 + 272\,855\,265\,580\,154\,880\,z^6 + \right.\right.$$
$$6\,147\,705\,986\,718\,105\,600\,z^5 + 43\,094\,313\,982\,063\,411\,200\,z^4 + 28\,190\,469\,507\,405\,004\,800\,z^3 -$$
$$38\,656\,155\,156\,877\,440\,000\,z^2 + 43\,334\,691\,652\,768\,698\,000\,z - 10\,700\,011\,505\,771\,713\,125\right)\cos\left(2\sqrt{z}\right) +$$
$$\left(68\,719\,476\,736\,z^9 + 31\,503\,585\,116\,160\,z^8 + 4\,649\,629\,589\,176\,320\,z^7 + 269\,447\,527\,126\,794\,240\,z^6 + \right.$$
$$5\,956\,841\,643\,127\,603\,200\,z^5 + 39\,216\,836\,903\,937\,638\,400\,z^4 +$$
$$9\,025\,272\,081\,745\,920\,000\,z^3 - 18\,596\,560\,405\,917\,312\,000\,z^2 + 3\,006\,903\,599\,977\,914\,000\,z +$$
$$\left.\left.\left.32\,100\,034\,517\,315\,139\,375\right)\sin\left(2\sqrt{z}\right)\right)\right) \Big/ \left(800\,101\,197\,490\,736\,332\,800\,z^{19/4}\right)$$

For fixed z and $a_1 = -\frac{21}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.9050.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{11}{2}, -\frac{23}{4}; z\right) = $$

$$\left(\left(-4z\left(4\,294\,967\,296\,z^8 + 326\,954\,385\,408\,z^7 + 15\,111\,423\,000\,576\,z^6 + 440\,280\,457\,150\,464\,z^5 + 7\,395\,200\,999\,424\,000\,z^4 + \right.\right.\right.$$
$$55\,621\,894\,899\,916\,800\,z^3 + 34\,867\,150\,084\,166\,400\,z^2 - 329\,473\,542\,526\,128\,000\,z +$$
$$6\,648\,673\,127\,695\,223\,625\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,\left(2\,147\,483\,648\,z^8 + 165\,356\,240\,896\,z^7 + \right.$$
$$7\,701\,924\,937\,728\,z^6 + 227\,006\,931\,271\,680\,z^5 + 3\,902\,605\,185\,024\,000\,z^4 + 31\,435\,766\,201\,548\,800\,z^3 +$$
$$\left.49\,546\,610\,345\,232\,000\,z^2 + 435\,866\,040\,633\,523\,500\,z + 11\,081\,121\,879\,492\,039\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left(17\,179\,869\,184\,z^9 + 1\,320\,702\,443\,520\,z^8 + 61\,443\,466\,592\,256\,z^7 + 1\,807\,795\,271\,761\,920\,z^6 + \right.$$
$$30\,965\,503\,603\,507\,200\,z^5 + 246\,627\,237\,865\,881\,600\,z^4 + 342\,903\,227\,022\,720\,000\,z^3 -$$
$$\left.819\,231\,511\,146\,048\,000\,z^2 - 21\,312\,819\,782\,158\,905\,000\,z - 166\,216\,828\,192\,380\,590\,625\right)$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(88\,704\,495\,662\,983\,200\sqrt{2}\,z^{13/4}\right)$$

07.22.03.9051.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{11}{2}, -\frac{23}{4}; -z\right) = $$

$$ -\left(\left(4\,z\left(4\,294\,967\,296\,z^8 - 326\,954\,385\,408\,z^7 + 15\,111\,423\,000\,576\,z^6 - 440\,280\,457\,150\,464\,z^5 + 7\,395\,200\,999\,424\,000\,z^4 - 55\,621\,894\,899\,916\,800\,z^3 + 34\,867\,150\,084\,166\,400\,z^2 + 329\,473\,542\,526\,128\,000\,z + 6\,648\,673\,127\,695\,223\,625\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,\left(2\,147\,483\,648\,z^8 - 165\,356\,240\,896\,z^7 + 7\,701\,924\,937\,728\,z^6 - 227\,006\,931\,271\,680\,z^5 + 3\,902\,605\,185\,024\,000\,z^4 - 31\,435\,766\,201\,548\,800\,z^3 + 49\,546\,610\,345\,232\,000\,z^2 - 435\,866\,040\,633\,523\,500\,z + 11\,081\,121\,879\,492\,039\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(17\,179\,869\,184\,z^9 - 1\,320\,702\,443\,520\,z^8 + 61\,443\,466\,592\,256\,z^7 - 1\,807\,795\,271\,761\,920\,z^6 + 30\,965\,503\,603\,507\,200\,z^5 - 246\,627\,237\,865\,881\,600\,z^4 + 342\,903\,227\,022\,720\,000\,z^3 + 819\,231\,511\,146\,048\,000\,z^2 - 21\,312\,819\,782\,158\,905\,000\,z + 166\,216\,828\,192\,380\,590\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(88\,704\,495\,662\,983\,200\,\sqrt{2}\,z^{13/4}\right) $$

07.22.03.9052.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{11}{2}, -\frac{21}{4}; z\right) = \frac{945\left(\left(16\,z^2 + 180\,z + 105\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\,\left(8\,z + 21\right)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.9053.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{11}{2}, -\frac{21}{4}; -z\right) = \frac{945\left(10\sqrt{z}\,\left(8\,z - 21\right)\cos\left(2\sqrt{z}\right) + \left(16\,z^2 - 180\,z + 105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.9054.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{11}{2}, -\frac{19}{4}; z\right) = $$

$$ \left(\left(-4\,z\left(2\,147\,483\,648\,z^8 + 53\,552\,873\,472\,z^7 + 1\,496\,133\,402\,624\,z^6 + 31\,148\,119\,425\,024\,z^5 + 405\,849\,667\,829\,760\,z^4 + 2\,471\,285\,288\,908\,800\,z^3 + 966\,357\,653\,788\,800\,z^2 - 12\,800\,492\,361\,657\,000\,z + 162\,162\,759\,212\,078\,625\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,\left(1\,073\,741\,824\,z^8 + 27\,715\,960\,832\,z^7 + 773\,081\,530\,368\,z^6 + 16\,275\,190\,579\,200\,z^5 + 217\,909\,330\,329\,600\,z^4 + 1\,444\,579\,068\,441\,600\,z^3 + 2\,106\,820\,674\,504\,000\,z^2 + 2\,689\,958\,539\,768\,500\,z + 270\,271\,265\,353\,464\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(8\,589\,934\,592\,z^9 + 220\,653\,944\,832\,z^8 + 6\,153\,647\,947\,776\,z^7 + 129\,317\,637\,980\,160\,z^6 + 1\,723\,587\,025\,305\,600\,z^5 + 11\,251\,885\,420\,339\,200\,z^4 + 13\,567\,824\,938\,304\,000\,z^3 - 22\,868\,863\,823\,988\,000\,z^2 - 400\,711\,065\,234\,480\,000\,z - 4\,054\,068\,980\,301\,965\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(3\,856\,717\,202\,738\,400\,\sqrt{2}\,z^{13/4}\right) $$

07.22.03.9055.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{11}{2},-\frac{19}{4};-z\right)= $$

$$ -\left(\left(4z\left(2\,147\,483\,648z^8-53\,552\,873\,472z^7+1\,496\,133\,402\,624z^6-31\,148\,119\,425\,024z^5+405\,849\,667\,829\,760z^4-\right.\right.\right. $$

$$ \left.2\,471\,285\,288\,908\,800z^3+966\,357\,653\,788\,800z^2+12\,800\,492\,361\,657\,000z+162\,162\,759\,212\,078\,625\right) $$

$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(1\,073\,741\,824z^8-27\,715\,960\,832z^7+773\,081\,530\,368z^6-16\,275\,190\,579\,200z^5+\right. $$

$$ 217\,909\,330\,329\,600z^4-1\,444\,579\,068\,441\,600z^3+2\,106\,820\,674\,504\,000z^2- $$

$$ \left.2\,689\,958\,539\,768\,500z+270\,271\,265\,353\,464\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ \left(8\,589\,934\,592z^9-220\,653\,944\,832z^8+6\,153\,647\,947\,776z^7-129\,317\,637\,980\,160z^6+1\,723\,587\,025\,305\,600z^5-\right. $$

$$ 11\,251\,885\,420\,339\,200z^4+13\,567\,824\,938\,304\,000z^3+22\,868\,863\,823\,988\,000z^2- $$

$$ \left.\left.\left.\left.400\,711\,065\,234\,480\,000z+4\,054\,068\,980\,301\,965\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(3\,856\,717\,202\,738\,400\sqrt{2}\,z^{13/4}\right) $$

07.22.03.9056.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{11}{2},-\frac{17}{4};z\right)= $$

$$ \left(e^{-2\sqrt{z}}\left(17\,179\,869\,184e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{39/4}-17\,179\,869\,184e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{39/4}+\right.\right. $$

$$ 17\,179\,869\,184e^{4\sqrt{z}}z^{19/2}+17\,179\,869\,184z^{19/2}+4\,294\,967\,296e^{4\sqrt{z}}z^9-4\,294\,967\,296z^9+ $$

$$ 3\,221\,225\,472e^{4\sqrt{z}}z^{17/2}+3\,221\,225\,472z^{17/2}+4\,026\,531\,840e^{4\sqrt{z}}z^8-4\,026\,531\,840z^8+ $$

$$ 7\,046\,430\,720e^{4\sqrt{z}}z^{15/2}+7\,046\,430\,720z^{15/2}+15\,854\,469\,120e^{4\sqrt{z}}z^7-15\,854\,469\,120z^7+ $$

$$ 43\,599\,790\,080e^{4\sqrt{z}}z^{13/2}+43\,599\,790\,080z^{13/2}+141\,699\,317\,760e^{4\sqrt{z}}z^6-141\,699\,317\,760z^6+ $$

$$ 531\,372\,441\,600e^{4\sqrt{z}}z^{11/2}+531\,372\,441\,600z^{11/2}+2\,258\,332\,876\,800e^{4\sqrt{z}}z^5-2\,258\,332\,876\,800z^5+ $$

$$ 10\,727\,081\,164\,800e^{4\sqrt{z}}z^{9/2}+10\,727\,081\,164\,800z^{9/2}+56\,317\,176\,115\,200e^{4\sqrt{z}}z^4- $$

$$ 56\,317\,176\,115\,200z^4+323\,823\,762\,662\,400e^{4\sqrt{z}}z^{7/2}+323\,823\,762\,662\,400z^{7/2}+ $$

$$ 2\,023\,898\,516\,640\,000e^{4\sqrt{z}}z^3-2\,023\,898\,516\,640\,000z^3+13\,661\,314\,987\,320\,000e^{4\sqrt{z}}z^{5/2}+ $$

$$ 13\,661\,314\,987\,320\,000z^{5/2}+99\,044\,533\,658\,070\,000e^{4\sqrt{z}}z^2-99\,044\,533\,658\,070\,000z^2- $$

$$ 677\,601\,223\,371\,072\,000e^{4\sqrt{z}}z^{3/2}-677\,601\,223\,371\,072\,000z^{3/2}+1\,635\,771\,703\,294\,228\,500e^{4\sqrt{z}}z- $$

$$ 1\,635\,771\,703\,294\,228\,500z-1\,945\,456\,637\,413\,038\,750e^{4\sqrt{z}}\sqrt{z}-1\,945\,456\,637\,413\,038\,750\sqrt{z}+ $$

$$ \left.\left.972\,728\,318\,706\,519\,375e^{4\sqrt{z}}-972\,728\,318\,706\,519\,375\right)\right)\Big/\left(18\,642\,996\,621\,849\,600z^{9/2}\right) $$

07.22.03.9057.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{11}{2},-\frac{17}{4};-z\right)= $$
$$ \left(-34\,359\,738\,368\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{39/4}-2\left(8\,589\,934\,592\,z^9-1\,610\,612\,736\,z^8+3\,523\,215\,360\,z^7-21\,799\,895\,040\,z^6+\right.\right. $$
$$ 265\,686\,220\,800\,z^5-5\,363\,540\,582\,400\,z^4+161\,911\,881\,331\,200\,z^3-6\,830\,657\,493\,660\,000\,z^2- $$
$$ \left.338\,800\,611\,685\,536\,000\,z+972\,728\,318\,706\,519\,375\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+ $$
$$ \left(-4\,294\,967\,296\,z^9+4\,026\,531\,840\,z^8-15\,854\,469\,120\,z^7+141\,699\,317\,760\,z^6-2\,258\,332\,876\,800\,z^5+\right. $$
$$ 56\,317\,176\,115\,200\,z^4-2\,023\,898\,516\,640\,000\,z^3+99\,044\,533\,658\,070\,000\,z^2- $$
$$ \left.\left.1\,635\,771\,703\,294\,228\,500\,z+972\,728\,318\,706\,519\,375\right)\sin\left(2\sqrt{z}\right)\right)\Big/\left(9\,321\,498\,310\,924\,800\,z^{9/2}\right) $$

07.22.03.9058.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{11}{2},-\frac{15}{4};z\right)= $$
$$ \left(\left(4\,z\left(1\,073\,741\,824\,z^8-28\,185\,722\,880\,z^7-237\,817\,036\,800\,z^6-3\,042\,010\,202\,112\,z^5-28\,320\,602\,849\,280\,z^4-\right.\right.\right. $$
$$ \left.132\,076\,696\,227\,840\,z^3-18\,425\,990\,419\,200\,z^2+505\,948\,314\,690\,000\,z-4\,382\,777\,276\,002\,125\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2- $$
$$ 12\sqrt{z}\left(536\,870\,912\,z^8-13\,623\,099\,392\,z^7-130\,447\,048\,704\,z^6-1\,642\,341\,335\,040\,z^5-15\,720\,506\,081\,280\,z^4-\right. $$
$$ \left.81\,689\,140\,915\,200\,z^3-102\,710\,639\,304\,000\,z^2+193\,946\,853\,964\,500\,z-7\,304\,628\,793\,336\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right) $$
$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-4\,294\,967\,296\,z^9+109\,521\,666\,048\,z^8+1\,031\,597\,457\,408\,z^7+12\,979\,525\,386\,240\,z^6+\right. $$
$$ 123\,581\,127\,720\,960\,z^5+629\,163\,085\,824\,000\,z^4+641\,315\,211\,264\,000\,z^3-949\,089\,252\,384\,000\,z^2- $$
$$ \left.\left.\left.6\,830\,302\,248\,315\,000\,z-109\,569\,431\,900\,053\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(202\,985\,115\,933\,600\sqrt{2}\;z^{13/4}\right) $$

07.22.03.9059.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{11}{2},-\frac{15}{4};-z\right)= $$
$$ \left(\left(4\,z\left(1\,073\,741\,824\,z^8+28\,185\,722\,880\,z^7-237\,817\,036\,800\,z^6+3\,042\,010\,202\,112\,z^5-28\,320\,602\,849\,280\,z^4+\right.\right.\right. $$
$$ \left.132\,076\,696\,227\,840\,z^3-18\,425\,990\,419\,200\,z^2-505\,948\,314\,690\,000\,z-4\,382\,777\,276\,002\,125\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- $$
$$ 12\sqrt{z}\left(536\,870\,912\,z^8+13\,623\,099\,392\,z^7-130\,447\,048\,704\,z^6+1\,642\,341\,335\,040\,z^5-15\,720\,506\,081\,280\,z^4+\right. $$
$$ \left.81\,689\,140\,915\,200\,z^3-102\,710\,639\,304\,000\,z^2-193\,946\,853\,964\,500\,z-7\,304\,628\,793\,336\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right) $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(4\,294\,967\,296\,z^9+109\,521\,666\,048\,z^8-1\,031\,597\,457\,408\,z^7+12\,979\,525\,386\,240\,z^6-\right. $$
$$ 123\,581\,127\,720\,960\,z^5+629\,163\,085\,824\,000\,z^4-641\,315\,211\,264\,000\,z^3-949\,089\,252\,384\,000\,z^2+ $$
$$ \left.\left.\left.6\,830\,302\,248\,315\,000\,z-109\,569\,431\,900\,053\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(202\,985\,115\,933\,600\sqrt{2}\;z^{13/4}\right) $$

07.22.03.9060.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{11}{2},-\frac{13}{4};z\right)= \left(e^{-2\sqrt{z}}\left(-4\,294\,967\,296\,e^{4\sqrt{z}}\,z^{19/2}-4\,294\,967\,296\,z^{19/2}-1\,073\,741\,824\,e^{4\sqrt{z}}\,z^9+1\,073\,741\,824\,z^9-268\,435\,456\,e^{2\sqrt{z}}\right.\right. \sqrt{2\pi}\,(16z-819)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{35/4}+268\,435\,456\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-819)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{35/4}+ 219\,043\,332\,096\,e^{4\sqrt{z}}\,z^{17/2}+219\,043\,332\,096\,z^{17/2}+53\,955\,526\,656\,e^{4\sqrt{z}}\,z^8-53\,955\,526\,656\,z^8+ 39\,460\,012\,032\,e^{4\sqrt{z}}\,z^{15/2}+39\,460\,012\,032\,z^{15/2}+47\,563\,407\,360\,e^{4\sqrt{z}}\,z^7-47\,563\,407\,360\,z^7+ 79\,272\,345\,600\,e^{4\sqrt{z}}\,z^{13/2}+79\,272\,345\,600\,z^{13/2}+167\,462\,830\,080\,e^{4\sqrt{z}}\,z^6-167\,462\,830\,080\,z^6+ 425\,097\,953\,280\,e^{4\sqrt{z}}\,z^{11/2}+425\,097\,953\,280\,z^{11/2}+1\,248\,725\,237\,760\,e^{4\sqrt{z}}\,z^5-1\,248\,725\,237\,760\,z^5+ 4\,118\,136\,422\,400\,e^{4\sqrt{z}}\,z^{9/2}+4\,118\,136\,422\,400\,z^{9/2}+14\,820\,309\,504\,000\,e^{4\sqrt{z}}\,z^4-14\,820\,309\,504\,000\,z^4+ 56\,317\,176\,115\,200\,e^{4\sqrt{z}}\,z^{7/2}+56\,317\,176\,115\,200\,z^{7/2}+214\,709\,233\,939\,200\,e^{4\sqrt{z}}\,z^3-214\,709\,233\,939\,200\,z^3+ 728\,603\,465\,990\,400\,e^{4\sqrt{z}}\,z^{5/2}+728\,603\,465\,990\,400\,z^{5/2}+1\,138\,442\,915\,610\,000\,e^{4\sqrt{z}}\,z^2- 1\,138\,442\,915\,610\,000\,z^2-17\,076\,643\,734\,150\,000\,e^{4\sqrt{z}}\,z^{3/2}-17\,076\,643\,734\,150\,000\,z^{3/2}+ 45\,594\,638\,770\,180\,500\,e^{4\sqrt{z}}\,z-45\,594\,638\,770\,180\,500\,z-55\,584\,475\,354\,658\,250\,e^{4\sqrt{z}}\,\sqrt{z}- \left.\left.55\,584\,475\,354\,658\,250\,\sqrt{z}+27\,792\,237\,677\,329\,125\,e^{4\sqrt{z}}-27\,792\,237\,677\,329\,125\right)\right)\Big/\left(1\,096\,646\,860\,108\,800\,z^{9/2}\right) $$

07.22.03.9061.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{11}{2},-\frac{13}{4};-z\right)= \frac{1}{548\,323\,430\,054\,400\,z^{9/2}}\left(536\,870\,912\,\sqrt{\pi}\,(16z+819)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{35/4}+2\left(2\,147\,483\,648\,z^9+109\,521\,666\,048\,z^8- 19\,730\,006\,016\,z^7+39\,636\,172\,800\,z^6-212\,548\,976\,640\,z^5+2\,059\,068\,211\,200\,z^4-28\,158\,588\,057\,600\,z^3+ 364\,301\,732\,995\,200\,z^2+8\,538\,321\,867\,075\,000\,z-27\,792\,237\,677\,329\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+ \left(1\,073\,741\,824\,z^9+53\,955\,526\,656\,z^8-47\,563\,407\,360\,z^7+167\,462\,830\,080\,z^6-1\,248\,725\,237\,760\,z^5+ 14\,820\,309\,504\,000\,z^4-214\,709\,233\,939\,200\,z^3+1\,138\,442\,915\,610\,000\,z^2- 45\,594\,638\,770\,180\,500\,z+27\,792\,237\,677\,329\,125\right)\sin\left(2\sqrt{z}\right)\Bigg) $$

07.22.03.9062.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{11}{2},-\frac{11}{4};z\right)= \left(\left(-4z\left(536\,870\,912\,z^8-41\,573\,941\,248\,z^7+410\,102\,267\,904\,z^6+1\,370\,519\,764\,992\,z^5+8\,024\,900\,567\,040\,z^4+ 26\,261\,799\,782\,400\,z^3-3\,128\,776\,035\,840\,z^2-64\,552\,026\,357\,000\,z+398\,434\,297\,818\,375\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+ 12\sqrt{z}\left(268\,435\,456\,z^8-20\,552\,089\,600\,z^7+187\,258\,896\,384\,z^6+835\,745\,218\,560\,z^5+4\,797\,917\,429\,760\,z^4+ 17\,891\,715\,179\,520\,z^3+17\,034\,935\,299\,200\,z^2-48\,559\,407\,214\,500\,z+664\,057\,163\,030\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ \left(2\,147\,483\,648\,z^9-164\,685\,152\,256\,z^8+1\,517\,801\,177\,088\,z^7+6\,555\,162\,378\,240\,z^6+ 37\,376\,415\,498\,240\,z^5+136\,287\,671\,869\,440\,z^4+111\,084\,956\,236\,800\,z^3-160\,507\,741\,212\,000\,z^2- 157\,018\,442\,490\,000\,z-9\,960\,857\,445\,459\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(40\,597\,023\,186\,720\,\sqrt{2}\,z^{13/4}\right) $$

07.22.03.9063.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{11}{2}, -\frac{11}{4}; -z\right) = $$

$$ -\left(\left(4\,z\left(536\,870\,912\,z^8 + 41\,573\,941\,248\,z^7 + 410\,102\,267\,904\,z^6 - 1\,370\,519\,764\,992\,z^5 + 8\,024\,900\,567\,040\,z^4 - \right.\right.\right. $$

$$ \left. 26\,261\,799\,782\,400\,z^3 - 3\,128\,776\,035\,840\,z^2 + 64\,552\,026\,357\,000\,z + 398\,434\,297\,818\,375\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$

$$ 12\sqrt{z}\,\left(268\,435\,456\,z^8 + 20\,552\,089\,600\,z^7 + 187\,258\,896\,384\,z^6 - 835\,745\,218\,560\,z^5 + 4\,797\,917\,429\,760\,z^4 - \right. $$

$$ \left. 17\,891\,715\,179\,520\,z^3 + 17\,034\,935\,299\,200\,z^2 + 48\,559\,407\,214\,500\,z + 664\,057\,163\,030\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) $$

$$ J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(2\,147\,483\,648\,z^9 + 164\,685\,152\,256\,z^8 + 1\,517\,801\,177\,088\,z^7 - 6\,555\,162\,378\,240\,z^6 + \right. $$

$$ 37\,376\,415\,498\,240\,z^5 - 136\,287\,671\,869\,440\,z^4 + 111\,084\,956\,236\,800\,z^3 + 160\,507\,741\,212\,000\,z^2 - $$

$$ \left.\left.\left. 157\,018\,442\,490\,000\,z + 9\,960\,857\,445\,459\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(40\,597\,023\,186\,720\sqrt{2}\;z^{13/4}\right) $$

07.22.03.9064.01

$$ {}_1F_2\left(-\frac{21}{4}; \frac{11}{2}, -\frac{9}{4}; z\right) = $$

$$ \frac{1}{84\,357\,450\,777\,600\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(536\,870\,912\,e^{4\sqrt{z}}\,z^{19/2} + 536\,870\,912\,z^{19/2} + 134\,217\,728\,e^{4\sqrt{z}}\,z^9 - 134\,217\,728\,z^9 - \right.\right. $$

$$ 54\,861\,496\,320\,e^{4\sqrt{z}}\,z^{17/2} - 54\,861\,496\,320\,z^{17/2} - 13\,614\,710\,784\,e^{4\sqrt{z}}\,z^8 + $$

$$ 13\,614\,710\,784\,z^8 + 2\,097\,152\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2 - 26\,208\,z + 487\,305\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{31/4} - $$

$$ 2\,097\,152\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2 - 26\,208\,z + 487\,305\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{31/4} + 1\,011\,867\,451\,392\,e^{4\sqrt{z}}\,z^{15/2} + $$

$$ 1\,011\,867\,451\,392\,z^{15/2} + 243\,101\,859\,840\,e^{4\sqrt{z}}\,z^7 - 243\,101\,859\,840\,z^7 + 170\,435\,543\,040\,e^{4\sqrt{z}}\,z^{13/2} + $$

$$ 170\,435\,543\,040\,z^{13/2} + 193\,226\,342\,400\,e^{4\sqrt{z}}\,z^6 - 193\,226\,342\,400\,z^6 + 296\,280\,391\,680\,e^{4\sqrt{z}}\,z^{11/2} + $$

$$ 296\,280\,391\,680\,z^{11/2} + 560\,356\,392\,960\,e^{4\sqrt{z}}\,z^5 - 560\,356\,392\,960\,z^5 + 1\,228\,798\,771\,200\,e^{4\sqrt{z}}\,z^{9/2} + $$

$$ 1\,228\,798\,771\,200\,z^{9/2} + 2\,964\,061\,900\,800\,e^{4\sqrt{z}}\,z^4 - 2\,964\,061\,900\,800\,z^4 + 7\,410\,154\,752\,000\,e^{4\sqrt{z}}\,z^{7/2} + $$

$$ 7\,410\,154\,752\,000\,z^{7/2} + 17\,413\,863\,667\,200\,e^{4\sqrt{z}}\,z^3 - 17\,413\,863\,667\,200\,z^3 + 29\,038\,543\,934\,400\,e^{4\sqrt{z}}\,z^{5/2} + $$

$$ 29\,038\,543\,934\,400\,z^{5/2} - 29\,698\,510\,842\,000\,e^{4\sqrt{z}}\,z^2 + 29\,698\,510\,842\,000\,z^2 - 455\,377\,166\,244\,000\,e^{4\sqrt{z}}\,z^{3/2} - $$

$$ 455\,377\,166\,244\,000\,z^{3/2} + 1\,423\,053\,644\,512\,500\,e^{4\sqrt{z}}\,z - 1\,423\,053\,644\,512\,500\,z - $$

$$ \left.\left. 1\,793\,047\,592\,085\,750\,e^{4\sqrt{z}}\,\sqrt{z} - 1\,793\,047\,592\,085\,750\,\sqrt{z} + 896\,523\,796\,042\,875\,e^{4\sqrt{z}} - 896\,523\,796\,042\,875\right)\right) $$

07.22.03.9065.01

$${}_1F_2\left(-\frac{21}{4};\frac{11}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{42\,178\,725\,388\,800\,z^{9/2}}\left(-4\,194\,304\sqrt{\pi}\,\left(256z^2+26\,208z+487\,305\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{31/4}-2\left(268\,435\,456z^9+\right.\right.$$
$$27\,430\,748\,160z^8+505\,933\,725\,696z^7-85\,217\,771\,520z^6+148\,140\,195\,840z^5-614\,399\,385\,600z^4+$$
$$3\,705\,077\,376\,000z^3-14\,519\,271\,967\,200z^2-227\,688\,583\,122\,000z+896\,523\,796\,042\,875\left.\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-$$
$$\left(134\,217\,728z^9+13\,614\,710\,784z^8+243\,101\,859\,840z^7-193\,226\,342\,400z^6+560\,356\,392\,960z^5-2\,964\,061\,900\,800\right.$$
$$\left.\left.z^4+17\,413\,863\,667\,200z^3+29\,698\,510\,842\,000z^2+1\,423\,053\,644\,512\,500z-896\,523\,796\,042\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.9066.01

$${}_1F_2\left(-\frac{21}{4};\frac{11}{2},-\frac{7}{4};z\right)=$$
$$\left(\left(4z\left(268\,435\,456z^8-34\,527\,510\,528z^7+980\,532\,854\,784z^6-4\,639\,414\,026\,240z^5-5\,278\,113\,792\,000z^4-\right.\right.\right.$$
$$\left.10\,989\,748\,224\,000z^3+4\,389\,294\,873\,600z^2+15\,352\,914\,376\,800z-68\,695\,568\,589\,375\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$12\sqrt{z}\,\left(134\,217\,728z^8-17\,146\,314\,752z^7+475\,358\,822\,400z^6-1\,915\,335\,475\,200z^5-4\,048\,360\,243\,200z^4-\right.$$
$$\left.9\,063\,460\,224\,000z^3-5\,439\,727\,238\,400z^2+15\,411\,069\,355\,500z-114\,492\,614\,315\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-1\,073\,741\,824z^9+137\,304\,735\,744z^8-3\,819\,605\,852\,160z^7+15\,748\,772\,659\,200z^6+\right.$$
$$31\,560\,302\,592\,000z^5+69\,150\,877\,286\,400z^4+40\,351\,660\,876\,800z^3-55\,828\,779\,552\,000z^2+$$
$$\left.\left.\left.78\,509\,221\,245\,000z-1\,717\,389\,214\,734\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(18\,453\,192\,357\,600\sqrt{2}\,z^{13/4}\right)$$

07.22.03.9067.01

$${}_1F_2\left(-\frac{21}{4};\frac{11}{2},-\frac{7}{4};-z\right)=$$
$$\left(\left(4z\left(268\,435\,456z^8+34\,527\,510\,528z^7+980\,532\,854\,784z^6+4\,639\,414\,026\,240z^5-5\,278\,113\,792\,000z^4+\right.\right.\right.$$
$$\left.10\,989\,748\,224\,000z^3+4\,389\,294\,873\,600z^2-15\,352\,914\,376\,800z-68\,695\,568\,589\,375\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$12\sqrt{z}\,\left(134\,217\,728z^8+17\,146\,314\,752z^7+475\,358\,822\,400z^6+1\,915\,335\,475\,200z^5-4\,048\,360\,243\,200z^4+\right.$$
$$\left.9\,063\,460\,224\,000z^3-5\,439\,727\,238\,400z^2-15\,411\,069\,355\,500z-114\,492\,614\,315\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(1\,073\,741\,824z^9+137\,304\,735\,744z^8+3\,819\,605\,852\,160z^7+15\,748\,772\,659\,200z^6-\right.$$
$$31\,560\,302\,592\,000z^5+69\,150\,877\,286\,400z^4-40\,351\,660\,876\,800z^3-55\,828\,779\,552\,000z^2-$$
$$\left.\left.\left.78\,509\,221\,245\,000z-1\,717\,389\,214\,734\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(18\,453\,192\,357\,600\sqrt{2}\,z^{13/4}\right)$$

07.22.03.9068.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{11}{2},-\frac{5}{4};z\right)=
$$

$$
\frac{1}{28\,119\,150\,259\,200\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(-134\,217\,728\,e^{4\sqrt{z}}\,z^{19/2}-134\,217\,728\,z^{19/2}-33\,554\,432\,e^{4\sqrt{z}}\,z^{9}+33\,554\,432\,z^{9}+\right.\right.
$$

$$
20\,585\,644\,032\,e^{4\sqrt{z}}\,z^{17/2}+20\,585\,644\,032\,z^{17/2}+5\,121\,245\,184\,e^{4\sqrt{z}}\,z^{8}-5\,121\,245\,184\,z^{8}-
$$

$$
762\,655\,014\,912\,e^{4\sqrt{z}}\,z^{15/2}-762\,655\,014\,912\,z^{15/2}-186\,909\,327\,360\,e^{4\sqrt{z}}\,z^{7}+186\,909\,327\,360\,z^{7}-
$$

$$
32\,768\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3-628\,992\,z^2+23\,390\,640\,z-196\,383\,915\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{27/4}+
$$

$$
32\,768\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3-628\,992\,z^2+23\,390\,640\,z-196\,383\,915\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{27/4}+
$$

$$
6\,299\,509\,063\,680\,e^{4\sqrt{z}}\,z^{13/2}+6\,299\,509\,063\,680\,z^{13/2}+1\,447\,050\,608\,640\,e^{4\sqrt{z}}\,z^{6}-1\,447\,050\,608\,640\,z^{6}+
$$

$$
940\,368\,199\,680\,e^{4\sqrt{z}}\,z^{11/2}+940\,368\,199\,680\,z^{11/2}+953\,249\,955\,840\,e^{4\sqrt{z}}\,z^{5}-953\,249\,955\,840\,z^{5}+
$$

$$
1\,247\,920\,128\,000\,e^{4\sqrt{z}}\,z^{9/2}+1\,247\,920\,128\,000\,z^{9/2}+1\,886\,221\,209\,600\,e^{4\sqrt{z}}\,z^{4}-1\,886\,221\,209\,600\,z^{4}+
$$

$$
2\,964\,061\,900\,800\,e^{4\sqrt{z}}\,z^{7/2}+2\,964\,061\,900\,800\,z^{7/2}+4\,075\,585\,113\,600\,e^{4\sqrt{z}}\,z^{3}-4\,075\,585\,113\,600\,z^{3}+
$$

$$
2\,223\,046\,425\,600\,e^{4\sqrt{z}}\,z^{5/2}+2\,223\,046\,425\,600\,z^{5/2}-12\,330\,960\,642\,000\,e^{4\sqrt{z}}\,z^{2}+12\,330\,960\,642\,000\,z^{2}-
$$

$$
36\,298\,179\,918\,000\,e^{4\sqrt{z}}\,z^{3/2}-36\,298\,179\,918\,000\,z^{3/2}+150\,967\,430\,113\,500\,e^{4\sqrt{z}}\,z-150\,967\,430\,113\,500\,z-
$$

$$
\left.\left.199\,227\,510\,231\,750\,e^{4\sqrt{z}}\,\sqrt{z}-199\,227\,510\,231\,750\,\sqrt{z}+99\,613\,755\,115\,875\,e^{4\sqrt{z}}-99\,613\,755\,115\,875\right)\right)
$$

07.22.03.9069.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{11}{2},-\frac{5}{4};-z\right)=
$$

$$
\frac{1}{14\,059\,575\,129\,600\,z^{9/2}}\left(65\,536\,\sqrt{\pi}\,\left(4096\,z^3+628\,992\,z^2+23\,390\,640\,z+196\,383\,915\right)S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{27/4}+\right.
$$

$$
2\left(67\,108\,864\,z^9+10\,292\,822\,016\,z^8+381\,327\,507\,456\,z^7+3\,149\,754\,531\,840\,z^6-470\,184\,099\,840\,z^5+623\,960\,064\,000\right.
$$

$$
\left.z^4-1\,482\,030\,950\,400\,z^3+1\,111\,523\,212\,800\,z^2+18\,149\,089\,959\,000\,z-99\,613\,755\,115\,875\right)\cos\left(2\,\sqrt{z}\right)\sqrt{z}+
$$

$$
\left(33\,554\,432\,z^9+5\,121\,245\,184\,z^8+186\,909\,327\,360\,z^7+1\,447\,050\,608\,640\,z^6-953\,249\,955\,840\,z^5+1\,886\,221\,209\,600\right.
$$

$$
\left.\left.z^4-4\,075\,585\,113\,600\,z^3-12\,330\,960\,642\,000\,z^2-150\,967\,430\,113\,500\,z+99\,613\,755\,115\,875\right)\sin\left(2\,\sqrt{z}\right)\right)
$$

07.22.03.9070.01

$${}_1F_2\left(-\frac{21}{4};\frac{11}{2},-\frac{3}{4};z\right)=$$
$$\left(\left(-4z\left(134\,217\,728z^8-24\,134\,025\,216z^7+1\,133\,495\,451\,648z^6-14\,802\,370\,265\,088z^5+35\,613\,720\,576\,000z^4+\right.\right.\right.$$
$$\left.5\,225\,413\,939\,200z^3-6\,890\,222\,102\,400z^2-5\,931\,807\,827\,400z+19\,234\,759\,205\,025\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$12\sqrt{z}\left(67\,108\,864z^8-12\,008\,292\,352z^7+556\,288\,180\,224z^6-6\,922\,658\,856\,960z^5+12\,093\,419\,520\,000z^4+\right.$$
$$\left.10\,208\,665\,958\,400z^3+2\,917\,748\,433\,600z^2-7\,036\,752\,422\,700z+32\,057\,932\,008\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(536\,870\,912z^9-96\,133\,447\,680z^8+4\,462\,108\,213\,248z^7-55\,902\,403\,952\,640z^6+\right.$$
$$102\,232\,837\,324\,800z^5+81\,007\,124\,889\,600z^4+27\,114\,429\,888\,000z^3-32\,922\,559\,706\,400z^2+$$
$$\left.\left.\left.62\,807\,376\,996\,000z-480\,868\,980\,125\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(18\,453\,192\,357\,600\sqrt{2}\,z^{13/4}\right)$$

07.22.03.9071.01

$${}_1F_2\left(-\frac{21}{4};\frac{11}{2},-\frac{3}{4};-z\right)=$$
$$-\left(\left(4z\left(134\,217\,728z^8+24\,134\,025\,216z^7+1\,133\,495\,451\,648z^6+14\,802\,370\,265\,088z^5+35\,613\,720\,576\,000z^4-\right.\right.\right.$$
$$\left.5\,225\,413\,939\,200z^3-6\,890\,222\,102\,400z^2+5\,931\,807\,827\,400z+19\,234\,759\,205\,025\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$12\sqrt{z}\left(67\,108\,864z^8+12\,008\,292\,352z^7+556\,288\,180\,224z^6+6\,922\,658\,856\,960z^5+12\,093\,419\,520\,000z^4-\right.$$
$$\left.10\,208\,665\,958\,400z^3+2\,917\,748\,433\,600z^2+7\,036\,752\,422\,700z+32\,057\,932\,008\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(536\,870\,912z^9+96\,133\,447\,680z^8+4\,462\,108\,213\,248z^7+55\,902\,403\,952\,640z^6+\right.$$
$$102\,232\,837\,324\,800z^5-81\,007\,124\,889\,600z^4+27\,114\,429\,888\,000z^3+32\,922\,559\,706\,400z^2+$$
$$\left.\left.\left.62\,807\,376\,996\,000z+480\,868\,980\,125\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(18\,453\,192\,357\,600\sqrt{2}\,z^{13/4}\right)$$

07.22.03.9072.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{11}{2},-\frac{1}{4};z\right)= \frac{1}{5\,623\,830\,051\,840\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(8\,388\,608\,e^{4\sqrt{z}}\,z^{19/2}+8\,388\,608\,z^{19/2}+2\,097\,152\,e^{4\sqrt{z}}\,z^{9}-2\,097\,152\,z^{9}-\right.\right. $$
$$ 1\,715\,994\,624\,e^{4\sqrt{z}}\,z^{17/2}-1\,715\,994\,624\,z^{17/2}-427\,425\,792\,e^{4\sqrt{z}}\,z^{8}+427\,425\,792\,z^{8}+95\,489\,458\,176\,e^{4\sqrt{z}}\,z^{15/2}+ $$
$$ 95\,489\,458\,176\,z^{15/2}+23\,557\,201\,920\,e^{4\sqrt{z}}\,z^{7}-23\,557\,201\,920\,z^{7}-1\,591\,496\,202\,240\,e^{4\sqrt{z}}\,z^{13/2}- $$
$$ 1\,591\,496\,202\,240\,z^{13/2}-381\,255\,114\,240\,e^{4\sqrt{z}}\,z^{6}+381\,255\,114\,240\,z^{6}+128\,e^{2\sqrt{z}}\,\sqrt{2\pi} $$
$$ \left(65\,536\,z^4-13\,418\,496\,z^3+748\,500\,480\,z^2-12\,568\,570\,560\,z+47\,721\,291\,345\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4}-128\,e^{2\sqrt{z}} $$
$$ \sqrt{2\pi}\,\left(65\,536\,z^4-13\,418\,496\,z^3+748\,500\,480\,z^2-12\,568\,570\,560\,z+47\,721\,291\,345\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4}+ $$
$$ 5\,841\,876\,418\,560\,e^{4\sqrt{z}}\,z^{11/2}+5\,841\,876\,418\,560\,z^{11/2}+1\,225\,377\,054\,720\,e^{4\sqrt{z}}\,z^{5}-1\,225\,377\,054\,720\,z^{5}+ $$
$$ 680\,720\,302\,080\,e^{4\sqrt{z}}\,z^{9/2}+680\,720\,302\,080\,z^{9/2}+538\,920\,345\,600\,e^{4\sqrt{z}}\,z^{4}-538\,920\,345\,600\,z^{4}+ $$
$$ 471\,555\,302\,400\,e^{4\sqrt{z}}\,z^{7/2}+471\,555\,302\,400\,z^{7/2}+319\,983\,955\,200\,e^{4\sqrt{z}}\,z^{3}-319\,983\,955\,200\,z^{3}- $$
$$ 138\,940\,401\,600\,e^{4\sqrt{z}}\,z^{5/2}-138\,940\,401\,600\,z^{5/2}-1\,007\,317\,911\,600\,e^{4\sqrt{z}}\,z^{2}+1\,007\,317\,911\,600\,z^{2}- $$
$$ 694\,702\,008\,000\,e^{4\sqrt{z}}\,z^{3/2}-694\,702\,008\,000\,z^{3/2}+6\,122\,061\,445\,500\,e^{4\sqrt{z}}\,z-6\,122\,061\,445\,500\,z- $$
$$ \left.\left.8\,662\,065\,662\,250\,e^{4\sqrt{z}}\,\sqrt{z}-8\,662\,065\,662\,250\,\sqrt{z}+4\,331\,032\,831\,125\,e^{4\sqrt{z}}-4\,331\,032\,831\,125\right)\right) $$

07.22.03.9073.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{11}{2},-\frac{1}{4};-z\right)= \frac{1}{2\,811\,915\,025\,920\,z^{9/2}} $$
$$ \left(-256\,\sqrt{\pi}\,\left(65\,536\,z^4+13\,418\,496\,z^3+748\,500\,480\,z^2+12\,568\,570\,560\,z+47\,721\,291\,345\right)S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{23/4}- \right. $$
$$ 2\left(4\,194\,304\,z^9+857\,997\,312\,z^8+47\,744\,729\,088\,z^7+795\,748\,101\,120\,z^6+2\,920\,938\,209\,280\,z^5-340\,360\,151\,040\,z^4+ $$
$$ 235\,777\,651\,200\,z^3+69\,470\,200\,800\,z^2-347\,351\,004\,000\,z+4\,331\,032\,831\,125\right)\cos\left(2\,\sqrt{z}\right)\sqrt{z}- $$
$$ \left.\left(2\,097\,152\,z^9+427\,425\,792\,z^8+23\,557\,201\,920\,z^7+381\,255\,114\,240\,z^6+1\,225\,377\,054\,720\,z^5-538\,920\,345\,600\,z^4+ \right.\right. $$
$$ \left.\left.319\,983\,955\,200\,z^3+1\,007\,317\,911\,600\,z^2+6\,122\,061\,445\,500\,z-4\,331\,032\,831\,125\right)\sin\left(2\,\sqrt{z}\right)\right) $$

07.22.03.9074.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{1}{4};z\right)= $$
$$ \left(\left(4\,z\left(67\,108\,864\,z^8-15\,502\,147\,584\,z^7+1\,016\,106\,319\,872\,z^6-21\,770\,233\,970\,688\,z^5+133\,793\,702\,138\,880\,z^4- \right.\right. $$
$$ \left.159\,361\,916\,313\,600\,z^3+25\,798\,830\,220\,800\,z^2+3\,571\,399\,868\,400\,z-8\,243\,468\,230\,725\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2- $$
$$ 12\,\sqrt{z}\,\left(33\,554\,432\,z^8-7\,721\,713\,664\,z^7+501\,320\,515\,584\,z^6-10\,451\,795\,558\,400\,z^5+58\,074\,170\,918\,400\,z^4- \right. $$
$$ \left.34\,398\,440\,294\,400\,z^3-2\,564\,081\,956\,800\,z^2+4\,731\,078\,561\,300\,z-13\,739\,113\,717\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left(-268\,435\,456\,z^9+61\,807\,263\,744\,z^8-4\,018\,183\,077\,888\,z^7+84\,092\,847\,390\,720\,z^6- \right. $$
$$ 473\,684\,566\,118\,400\,z^5+310\,925\,338\,214\,400\,z^4+33\,951\,981\,772\,800\,z^3-31\,526\,840\,217\,600\,z^2+ $$
$$ \left.\left.\left.52\,647\,360\,129\,000\,z-206\,086\,705\,768\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(55\,359\,577\,072\,800\,\sqrt{2}\,z^{13/4}\right) $$

07.22.03.9075.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{1}{4};-z\right)= $$

$$ \left(\left(4z\left(67\,108\,864z^8+15\,502\,147\,584z^7+1\,016\,106\,319\,872z^6+21\,770\,233\,970\,688z^5+133\,793\,702\,138\,880z^4+\right.\right.\right. $$

$$ \left.\left.\left.159\,361\,916\,313\,600z^3+25\,798\,830\,220\,800z^2-3\,571\,399\,868\,400z-8\,243\,468\,230\,725\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$

$$ 12\sqrt{z}\left(33\,554\,432z^8+7\,721\,713\,664z^7+501\,320\,515\,584z^6+10\,451\,795\,558\,400z^5+58\,074\,170\,918\,400z^4+\right. $$

$$ \left.34\,398\,440\,294\,400z^3-2\,564\,081\,956\,800z^2-4\,731\,078\,561\,300z-13\,739\,113\,717\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ \left(268\,435\,456z^9+61\,807\,263\,744z^8+4\,018\,183\,077\,888z^7+84\,092\,847\,390\,720z^6+\right. $$

$$ \left.\left.473\,684\,566\,118\,400z^5+310\,925\,338\,214\,400z^4-33\,951\,981\,772\,800z^3-31\,526\,840\,217\,600z^2- \right.\right. $$

$$ \left.\left.52\,647\,360\,129\,000z-206\,086\,705\,768\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(55\,359\,577\,072\,800\sqrt{2}\,z^{13/4}\right) $$

07.22.03.9076.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{3}{4};z\right)= $$

$$ \frac{1}{28\,119\,150\,259\,200z^{9/2}}\left(e^{-2\sqrt{z}}\left(-2\,097\,152e^{4\sqrt{z}}z^{19/2}-2\,097\,152z^{19/2}-524\,288e^{4\sqrt{z}}z^9+524\,288z^9+\right.\right. $$

$$ 536\,346\,624e^{4\sqrt{z}}z^{17/2}+536\,346\,624z^{17/2}+133\,693\,440e^{4\sqrt{z}}z^8-133\,693\,440z^8-39\,820\,247\,040e^{4\sqrt{z}}z^{15/2}- $$

$$ 39\,820\,247\,040z^{15/2}-9\,856\,143\,360e^{4\sqrt{z}}z^7+9\,856\,143\,360z^7+998\,215\,464\,960e^{4\sqrt{z}}z^{13/2}+ $$

$$ 998\,215\,464\,960z^{13/2}+242\,493\,189\,120e^{4\sqrt{z}}z^6-242\,493\,189\,120z^6-7\,461\,954\,208\,800e^{4\sqrt{z}}z^{11/2}- $$

$$ 7\,461\,954\,208\,800z^{11/2}-1\,705\,879\,866\,600e^{4\sqrt{z}}z^5+1\,705\,879\,866\,600z^5-2e^{2\sqrt{z}}\sqrt{2\pi} $$

$$ \left(1\,048\,576z^5-268\,369\,920z^4+19\,960\,012\,800z^3-502\,742\,822\,400z^2+3\,817\,703\,307\,600z-5\,487\,948\,504\,675\right) $$

$$ \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+2e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-268\,369\,920z^4+19\,960\,012\,800z^3- \right. $$

$$ \left.502\,742\,822\,400z^2+3\,817\,703\,307\,600z-5\,487\,948\,504\,675\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+ $$

$$ 9\,870\,645\,657\,600e^{4\sqrt{z}}z^{9/2}+9\,870\,645\,657\,600z^{9/2}+1\,616\,761\,036\,800e^{4\sqrt{z}}z^4-1\,616\,761\,036\,800z^4+ $$

$$ 538\,920\,345\,600e^{4\sqrt{z}}z^{7/2}+538\,920\,345\,600z^{7/2}+84\,206\,304\,000e^{4\sqrt{z}}z^3-84\,206\,304\,000z^3- $$

$$ 252\,618\,912\,000e^{4\sqrt{z}}z^{5/2}-252\,618\,912\,000z^{5/2}-394\,717\,050\,000e^{4\sqrt{z}}z^2+394\,717\,050\,000z^2+ $$

$$ 173\,675\,502\,000e^{4\sqrt{z}}z^{3/2}+173\,675\,502\,000z^{3/2}+1\,432\,822\,891\,500e^{4\sqrt{z}}z-1\,432\,822\,891\,500z- $$

$$ \left.2\,279\,490\,963\,750e^{4\sqrt{z}}\sqrt{z}-2\,279\,490\,963\,750\sqrt{z}+1\,139\,745\,481\,875e^{4\sqrt{z}}-1\,139\,745\,481\,875\right)\Big) $$

07.22.03.9077.01

$${}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{3}{4};-z\right)=\frac{1}{14\,059\,575\,129\,600\,z^{9/2}}$$

$$\left(4\sqrt{\pi}\left(1\,048\,576\,z^5+268\,369\,920\,z^4+19\,960\,012\,800\,z^3+502\,742\,822\,400\,z^2+3\,817\,703\,307\,600\,z+5\,487\,948\,504\,675\right)\right.$$

$$S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}+$$

$$2\left(1\,048\,576\,z^9+268\,173\,312\,z^8+19\,910\,123\,520\,z^7+499\,107\,732\,480\,z^6+3\,730\,977\,104\,400\,z^5+4\,935\,322\,828\,800\,z^4-\right.$$

$$\left.269\,460\,172\,800\,z^3-126\,309\,456\,000\,z^2-86\,837\,751\,000\,z-1\,139\,745\,481\,875\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+$$

$$\left(524\,288\,z^9+133\,693\,440\,z^8+9\,856\,143\,360\,z^7+242\,493\,189\,120\,z^6+1\,705\,879\,866\,600\,z^5+1\,616\,761\,036\,800\,z^4-\right.$$

$$\left.\left.84\,206\,304\,000\,z^3-394\,717\,050\,000\,z^2-1\,432\,822\,891\,500\,z+1\,139\,745\,481\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.9078.01

$${}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{5}{4};z\right)=$$

$$\left(\left(4z\left(33\,554\,432\,z^8-9\,468\,641\,280\,z^7+796\,604\,497\,920\,z^6-23\,742\,277\,042\,176\,z^5+235\,459\,511\,400\,960\,z^4-\right.\right.\right.$$

$$\left.\left.613\,154\,072\,250\,720\,z^3+307\,129\,119\,897\,600\,z^2-3\,386\,672\,289\,000\,z+5\,334\,008\,855\,175\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$

$$12\sqrt{z}\left(16\,777\,216\,z^8-4\,719\,640\,576\,z^7+394\,184\,491\,008\,z^6-11\,529\,504\,645\,120\,z^5+107\,900\,813\,180\,160\,z^4-\right.$$

$$\left.218\,798\,213\,634\,000\,z^3+3\,890\,331\,244\,800\,z^2-4\,854\,230\,280\,900\,z+8\,890\,014\,758\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$\left(-134\,217\,728\,z^9+37\,773\,901\,824\,z^8-3\,158\,144\,188\,416\,z^7+92\,616\,172\,830\,720\,z^6-\right.$$

$$873\,636\,903\,659\,520\,z^5+1\,830\,978\,406\,857\,600\,z^4-93\,367\,949\,875\,200\,z^3+51\,477\,418\,792\,800\,z^2-$$

$$\left.\left.\left.60\,960\,101\,202\,000\,z+133\,350\,221\,379\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(608\,955\,347\,800\,800\sqrt{2}\,z^{13/4}\right)$$

07.22.03.9079.01

$${}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{5}{4};-z\right)=$$

$$\left(\left(4z\left(33\,554\,432\,z^8+9\,468\,641\,280\,z^7+796\,604\,497\,920\,z^6+23\,742\,277\,042\,176\,z^5+235\,459\,511\,400\,960\,z^4+\right.\right.\right.$$

$$\left.\left.613\,154\,072\,250\,720\,z^3+307\,129\,119\,897\,600\,z^2+3\,386\,672\,289\,000\,z+5\,334\,008\,855\,175\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$

$$12\sqrt{z}\left(16\,777\,216\,z^8+4\,719\,640\,576\,z^7+394\,184\,491\,008\,z^6+11\,529\,504\,645\,120\,z^5+107\,900\,813\,180\,160\,z^4+\right.$$

$$\left.218\,798\,213\,634\,000\,z^3+3\,890\,331\,244\,800\,z^2+4\,854\,230\,280\,900\,z+8\,890\,014\,758\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$\left(134\,217\,728\,z^9+37\,773\,901\,824\,z^8+3\,158\,144\,188\,416\,z^7+92\,616\,172\,830\,720\,z^6+\right.$$

$$873\,636\,903\,659\,520\,z^5+1\,830\,978\,406\,857\,600\,z^4+93\,367\,949\,875\,200\,z^3+51\,477\,418\,792\,800\,z^2+$$

$$\left.\left.\left.60\,960\,101\,202\,000\,z+133\,350\,221\,379\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(608\,955\,347\,800\,800\sqrt{2}\,z^{13/4}\right)$$

07.22.03.9080.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{7}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-16\,777\,216z^6+5\,152\,702\,464z^5-479\,040\,307\,200z^4+16\,087\,770\,316\,800z^3-183\,249\,758\,764\,800\right.\right.\right.
$$

$$
\left.z^2+526\,843\,056\,448\,800z-104\,271\,021\,588\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-5\,152\,702\,464z^5+479\,040\,307\,200z^4-16\,087\,770\,316\,800z^3+\right.
$$

$$
183\,249\,758\,764\,800z^2-526\,843\,056\,448\,800z+104\,271\,021\,588\,825\Big)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}-
$$

$$
4\left(4\,194\,304z^{19/2}-1\,048\,576z^9-1\,287\,389\,184z^{17/2}+321\,060\,864z^8+119\,520\,264\,192z^{15/2}-\right.
$$

$$
29\,641\,973\,760z^7-4\,000\,005\,273\,600z^{13/2}+978\,571\,077\,120z^6+45\,104\,306\,345\,280z^{11/2}-
$$

$$
10\,610\,914\,401\,360z^5-124\,503\,848\,714\,700z^{9/2}+25\,069\,861\,355\,175z^4+
$$

$$
12\,934\,088\,294\,400z^{7/2}+3\,233\,522\,073\,600z^3-3\,435\,617\,203\,200z^{5/2}+1\,263\,094\,560\,000z^2+
$$

$$
2\,526\,189\,120\,000z^{3/2}-3\,599\,819\,496\,000z-7\,294\,371\,084\,000\sqrt{z}+e^{4\sqrt{z}}
$$

$$
\left(4\,194\,304z^{19/2}+1\,048\,576z^9-1\,287\,389\,184z^{17/2}-321\,060\,864z^8+119\,520\,264\,192z^{15/2}+29\,641\,973\,760\right.
$$

$$
z^7-4\,000\,005\,273\,600z^{13/2}-978\,571\,077\,120z^6+45\,104\,306\,345\,280z^{11/2}+10\,610\,914\,401\,360z^5-
$$

$$
124\,503\,848\,714\,700z^{9/2}-25\,069\,861\,355\,175z^4+12\,934\,088\,294\,400z^{7/2}-3\,233\,522\,073\,600z^3-
$$

$$
\left.\left.\left.\left.3\,435\,617\,203\,200z^{5/2}-1\,263\,094\,560\,000z^2+2\,526\,189\,120\,000z^{3/2}+3\,599\,819\,496\,000z-\right.\right.\right.\right.
$$

$$
\left.\left.\left.\left.7\,294\,371\,084\,000\sqrt{z}+3\,647\,185\,542\,000\right)-3\,647\,185\,542\,000\right)\right)\right)\Big/\left(1\,799\,625\,616\,588\,800z^{9/2}\right)
$$

07.22.03.9081.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{7}{4};-z\right)=
$$

$$
\frac{1}{449\,906\,404\,147\,200z^{9/2}}\left(\sqrt{\pi}\left(16\,777\,216z^6+5\,152\,702\,464z^5+479\,040\,307\,200z^4+16\,087\,770\,316\,800z^3+\right.\right.
$$

$$
\left.183\,249\,758\,764\,800z^2+526\,843\,056\,448\,800z+104\,271\,021\,588\,825\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+
$$

$$
2\left(4\sqrt{z}\left(1\,048\,576z^9+321\,847\,296z^8+29\,880\,066\,048z^7+1\,000\,001\,318\,400z^6+11\,276\,076\,586\,320z^5+\right.\right.
$$

$$
31\,125\,962\,178\,675z^4+3\,233\,522\,073\,600z^3+858\,904\,300\,800z^2+631\,547\,280\,000z+1\,823\,592\,771\,000\Big)
$$

$$
\cos\left(2\sqrt{z}\right)+\left(1\,048\,576z^9+321\,060\,864z^8+29\,641\,973\,760z^7+978\,571\,077\,120z^6+\right.
$$

$$
10\,610\,914\,401\,360z^5+25\,069\,861\,355\,175z^4-3\,233\,522\,073\,600z^3+
$$

$$
\left.\left.\left.1\,263\,094\,560\,000z^2+3\,599\,819\,496\,000z-3\,647\,185\,542\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)
$$

07.22.03.9082.01

$${}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{9}{4};z\right)=$$

$$\left(\left(4z\left(16\,777\,216z^8-5\,593\,104\,384z^7+574\,513\,938\,432z^6-21\,940\,424\,884\,224z^5+300\,581\,862\,577\,920z^4-\right.\right.\right.$$
$$\left.\left.\left.1\,211\,500\,820\,930\,400z^3+907\,273\,509\,347\,205z^2+5\,418\,675\,662\,400z-5\,334\,008\,855\,175\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$6\sqrt{z}\left(16\,777\,216z^8-5\,578\,424\,320z^7+569\,644\,744\,704z^6-21\,445\,873\,827\,840z^5+282\,196\,855\,100\,160z^4-\right.$$
$$\left.977\,501\,483\,038\,080z^3+181\,229\,662\,689\,075z^2+16\,481\,805\,139\,800z-17\,780\,029\,517\,250\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\left(67\,108\,864z^9-22\,322\,085\,888z^8+2\,281\,342\,500\,864z^7-86\,059\,978\,260\,480z^6+\right.$$
$$1\,138\,702\,498\,053\,120z^5-4\,024\,233\,830\,897\,280z^4+960\,972\,603\,891\,300z^3+173\,397\,621\,196\,800z^2-$$
$$\left.\left.111\,760\,185\,537\,000z+133\,350\,221\,379\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(1\,583\,283\,904\,282\,080\sqrt{2}\,z^{13/4}\right)$$

07.22.03.9083.01

$${}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{9}{4};-z\right)=$$

$$\left(\left(4z\left(16\,777\,216z^8+5\,593\,104\,384z^7+574\,513\,938\,432z^6+21\,940\,424\,884\,224z^5+300\,581\,862\,577\,920z^4+\right.\right.\right.$$
$$\left.\left.\left.1\,211\,500\,820\,930\,400z^3+907\,273\,509\,347\,205z^2-5\,418\,675\,662\,400z-5\,334\,008\,855\,175\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$6\sqrt{z}\left(16\,777\,216z^8+5\,578\,424\,320z^7+569\,644\,744\,704z^6+21\,445\,873\,827\,840z^5+282\,196\,855\,100\,160z^4+\right.$$
$$\left.977\,501\,483\,038\,080z^3+181\,229\,662\,689\,075z^2-16\,481\,805\,139\,800z-17\,780\,029\,517\,250\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(67\,108\,864z^9+22\,322\,085\,888z^8+2\,281\,342\,500\,864z^7+86\,059\,978\,260\,480z^6+\right.$$
$$1\,138\,702\,498\,053\,120z^5+4\,024\,233\,830\,897\,280z^4+960\,972\,603\,891\,300z^3-173\,397\,621\,196\,800z^2-$$
$$\left.\left.111\,760\,185\,537\,000z-133\,350\,221\,379\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(1\,583\,283\,904\,282\,080\sqrt{2}\,z^{13/4}\right)$$

07.22.03.9084.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{11}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-96\,183\,779\,328\,z^6+10\,730\,502\,881\,280\,z^5-450\,457\,568\,870\,400\,z^4+\right.\right.\right.
\left.\left.\left.6\,841\,324\,327\,219\,200\,z^3-29\,503\,211\,161\,132\,800\,z^2+11\,678\,354\,417\,948\,400\,z+4\,692\,195\,971\,497\,125\right)\right.
\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-96\,183\,779\,328\,z^6+10\,730\,502\,881\,280\,z^5-\right.
450\,457\,568\,870\,400\,z^4+6\,841\,324\,327\,219\,200\,z^3-29\,503\,211\,161\,132\,800\,z^2+
11\,678\,354\,417\,948\,400\,z+4\,692\,195\,971\,497\,125\left.\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-
4\left(67\,108\,864\,z^{19/2}-16\,777\,216\,z^9-24\,033\,361\,920\,z^{17/2}+5\,995\,757\,568\,z^8+2\,678\,144\,630\,784\,z^{15/2}-\right.
665\,082\,593\,280\,z^7-112\,121\,092\,177\,920\,z^{13/2}+27\,546\,494\,976\,000\,z^6+1\,690\,257\,229\,839\,360\,z^{11/2}-
403\,474\,928\,613\,120\,z^5-7\,095\,198\,966\,710\,400\,z^{9/2}+1\,527\,832\,864\,303\,200\,z^4+
2\,021\,555\,213\,086\,500\,z^{7/2}+67\,548\,520\,842\,075\,z^3+827\,781\,650\,841\,600\,z^{5/2}+
177\,843\,714\,048\,000\,z^2-274\,849\,376\,256\,000\,z^{3/2}+60\,628\,538\,880\,000\,z+297\,079\,840\,512\,000\sqrt{z}+
e^{4\sqrt{z}}\left(67\,108\,864\,z^{19/2}+16\,777\,216\,z^9-24\,033\,361\,920\,z^{17/2}-5\,995\,757\,568\,z^8+2\,678\,144\,630\,784\,z^{15/2}+\right.
665\,082\,593\,280\,z^7-112\,121\,092\,177\,920\,z^{13/2}-27\,546\,494\,976\,000\,z^6+1\,690\,257\,229\,839\,360\,z^{11/2}+
403\,474\,928\,613\,120\,z^5-7\,095\,198\,966\,710\,400\,z^{9/2}-1\,527\,832\,864\,303\,200\,z^4+
2\,021\,555\,213\,086\,500\,z^{7/2}-67\,548\,520\,842\,075\,z^3+827\,781\,650\,841\,600\,z^{5/2}-177\,843\,714\,048\,000\,z^2-
\left.\left.\left.\left.274\,849\,376\,256\,000\,z^{3/2}-60\,628\,538\,880\,000\,z+297\,079\,840\,512\,000\sqrt{z}-148\,539\,920\,256\,000\right)+
148\,539\,920\,256\,000\right)\right)\right)\Big/\left(115\,176\,039\,461\,683\,200\,z^{9/2}\right)
$$

07.22.03.9085.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{11}{4};-z\right)=
\left(\sqrt{\pi}\left(268\,435\,456\,z^7+96\,183\,779\,328\,z^6+10\,730\,502\,881\,280\,z^5+450\,457\,568\,870\,400\,z^4+6\,841\,324\,327\,219\,200\,z^3+\right.\right.
\left.\left.29\,503\,211\,161\,132\,800\,z^2+11\,678\,354\,417\,948\,400\,z-4\,692\,195\,971\,497\,125\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+
2\left(4\sqrt{z}\left(16\,777\,216\,z^9+6\,008\,340\,480\,z^8+669\,536\,157\,696\,z^7+28\,030\,273\,044\,480\,z^6+\right.\right.
422\,564\,307\,459\,840\,z^5+1\,773\,799\,741\,677\,600\,z^4+505\,388\,803\,271\,625\,z^3-
206\,945\,412\,710\,400\,z^2-68\,712\,344\,064\,000\,z-74\,269\,960\,128\,000\left.\right)\cos\left(2\sqrt{z}\right)+
\left(16\,777\,216\,z^9+5\,995\,757\,568\,z^8+665\,082\,593\,280\,z^7+27\,546\,494\,976\,000\,z^6+403\,474\,928\,613\,120\,z^5+\right.
1\,527\,832\,864\,303\,200\,z^4-67\,548\,520\,842\,075\,z^3+177\,843\,714\,048\,000\,z^2-
\left.\left.\left.60\,628\,538\,880\,000\,z+148\,539\,920\,256\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(28\,794\,009\,865\,420\,800\,z^{9/2}\right)
$$

07.22.03.9086.01

$${}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{13}{4};z\right)=$$

$$\left(\left(2z\left(268\,435\,456z^8-103\,230\,210\,048z^7+12\,522\,586\,374\,144z^6-583\,276\,897\,566\,720z^5+10\,200\,120\,860\,160\,000z^4-\right.\right.\right.$$
$$\left.55\,710\,375\,251\,731\,200z^3+54\,209\,612\,093\,036\,400z^2+7\,458\,101\,492\,566\,725z+284\,480\,472\,276\,000\right)$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(268\,435\,456z^8-102\,995\,329\,024z^7+12\,432\,656\,302\,080z^6-\right.$$
$$572\,470\,301\,491\,200z^5+9\,707\,586\,861\,772\,800z^4-47\,571\,494\,741\,971\,200z^3+$$
$$\left.17\,465\,074\,783\,556\,400z^2+11\,563\,181\,048\,293\,875z+948\,268\,240\,920\,000\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\left(268\,435\,456z^9-103\,028\,883\,456z^8+12\,445\,427\,957\,760z^7-573\,985\,765\,785\,600z^6+\right.$$
$$9\,774\,685\,380\,096\,000z^5-48\,599\,082\,211\,680\,000z^4+20\,973\,829\,372\,095\,600z^3+13\,881\,828\,601\,265\,625z^2+$$
$$\left.\left.\left.3\,251\,205\,397\,440\,000z-1\,778\,002\,951\,725\,000\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(42\,220\,904\,114\,188\,800\sqrt{2}\,z^{13/4}\right)$$

07.22.03.9087.01

$${}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{13}{4};-z\right)=$$

$$\left(\left(2z\left(268\,435\,456z^8+103\,230\,210\,048z^7+12\,522\,586\,374\,144z^6+583\,276\,897\,566\,720z^5+10\,200\,120\,860\,160\,000z^4+\right.\right.\right.$$
$$\left.55\,710\,375\,251\,731\,200z^3+54\,209\,612\,093\,036\,400z^2-7\,458\,101\,492\,566\,725z+284\,480\,472\,276\,000\right)$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(268\,435\,456z^8+102\,995\,329\,024z^7+12\,432\,656\,302\,080z^6+\right.$$
$$572\,470\,301\,491\,200z^5+9\,707\,586\,861\,772\,800z^4+47\,571\,494\,741\,971\,200z^3+$$
$$\left.17\,465\,074\,783\,556\,400z^2-11\,563\,181\,048\,293\,875z+948\,268\,240\,920\,000\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\left(268\,435\,456z^9+103\,028\,883\,456z^8+12\,445\,427\,957\,760z^7+573\,985\,765\,785\,600z^6+\right.$$
$$9\,774\,685\,380\,096\,000z^5+48\,599\,082\,211\,680\,000z^4+20\,973\,829\,372\,095\,600z^3-13\,881\,828\,601\,265\,625z^2+$$
$$\left.\left.\left.3\,251\,205\,397\,440\,000z+1\,778\,002\,951\,725\,000\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(42\,220\,904\,114\,188\,800\sqrt{2}\,z^{13/4}\right)$$

07.22.03.9088.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{15}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-1\,758\,789\,107\,712\,z^7+228\,917\,394\,800\,640\,z^6-11\,531\,713\,763\,082\,240\,z^5+\right.\right.\right.
$$

$$
218\,922\,378\,471\,014\,400\,z^4-1\,258\,803\,676\,208\,332\,800\,z^3+747\,414\,682\,748\,697\,600\,z^2+
$$

$$
\left.600\,601\,084\,351\,632\,000\,z+361\,299\,089\,805\,278\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-1\,758\,789\,107\,712\,z^7+228\,917\,394\,800\,640\,z^6-11\,531\,713\,763\,082\,240\,z^5+\right.
$$

$$
218\,922\,378\,471\,014\,400\,z^4-1\,258\,803\,676\,208\,332\,800\,z^3+747\,414\,682\,748\,697\,600\,z^2+
$$

$$
\left.600\,601\,084\,351\,632\,000\,z+361\,299\,089\,805\,278\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}-
$$

$$
4\left(1\,073\,741\,824\,z^{19/2}-268\,435\,456\,z^9-439\,495\,950\,336\,z^{17/2}+109\,672\,660\,992\,z^8+57\,147\,345\,862\,656\,z^{15/2}-\right.
$$

$$
14\,205\,274\,030\,080\,z^7-2\,872\,375\,557\,488\,640\,z^{13/2}+707\,715\,900\,702\,720\,z^6+54\,212\,435\,838\,812\,160\,z^{11/2}-
$$

$$
13\,056\,291\,023\,892\,480\,z^5-305\,489\,074\,017\,254\,400\,z^{9/2}+68\,090\,514\,191\,481\,600\,z^4+
$$

$$
144\,494\,720\,987\,198\,400\,z^{7/2}-5\,893\,305\,547\,474\,800\,z^3+134\,137\,428\,485\,778\,900\,z^{5/2}-
$$

$$
5\,352\,979\,943\,390\,625\,z^2+66\,222\,532\,067\,328\,000\,z^{3/2}+18\,625\,087\,143\,936\,000\,z-
$$

$$
21\,729\,268\,334\,592\,000\sqrt{z}+e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{19/2}+268\,435\,456\,z^9-439\,495\,950\,336\,z^{17/2}-\right.
$$

$$
109\,672\,660\,992\,z^8+57\,147\,345\,862\,656\,z^{15/2}+14\,205\,274\,030\,080\,z^7-2\,872\,375\,557\,488\,640\,z^{13/2}-
$$

$$
707\,715\,900\,702\,720\,z^6+54\,212\,435\,838\,812\,160\,z^{11/2}+13\,056\,291\,023\,892\,480\,z^5-
$$

$$
305\,489\,074\,017\,254\,400\,z^{9/2}-68\,090\,514\,191\,481\,600\,z^4+144\,494\,720\,987\,198\,400\,z^{7/2}+
$$

$$
5\,893\,305\,547\,474\,800\,z^3+134\,137\,428\,485\,778\,900\,z^{5/2}+5\,352\,979\,943\,390\,625\,z^2+
$$

$$
66\,222\,532\,067\,328\,000\,z^{3/2}-18\,625\,087\,143\,936\,000\,z-21\,729\,268\,334\,592\,000\sqrt{z}+
$$

$$
\left.\left.\left.\left.10\,864\,634\,167\,296\,000\right)-10\,864\,634\,167\,296\,000\right)\right)\right)\Big/\left(5\,360\,921\,109\,489\,254\,400\,z^{9/2}\right)
$$

07.22.03.9089.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{15}{4};-z\right)=
$$

$$
\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^8+1\,758\,789\,107\,712\,z^7+228\,917\,394\,800\,640\,z^6+11\,531\,713\,763\,082\,240\,z^5+218\,922\,378\,471\,014\,400\right.\right.
$$

$$
z^4+1\,258\,803\,676\,208\,332\,800\,z^3+747\,414\,682\,748\,697\,600\,z^2-
$$

$$
\left.600\,601\,084\,351\,632\,000\,z+361\,299\,089\,805\,278\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+
$$

$$
2\left(4\sqrt{z}\left(268\,435\,456\,z^9+109\,873\,987\,584\,z^8+14\,286\,836\,465\,664\,z^7+718\,093\,889\,372\,160\,z^6+\right.\right.
$$

$$
13\,553\,108\,959\,703\,040\,z^5+76\,372\,268\,504\,313\,600\,z^4+36\,123\,680\,246\,799\,600\,z^3-
$$

$$
\left.33\,534\,357\,121\,444\,725\,z^2+16\,555\,633\,016\,832\,000\,z+5\,432\,317\,083\,648\,000\right)\cos\left(2\sqrt{z}\right)+
$$

$$
\left(268\,435\,456\,z^9+109\,672\,660\,992\,z^8+14\,205\,274\,030\,080\,z^7+707\,715\,900\,702\,720\,z^6+\right.
$$

$$
13\,056\,291\,023\,892\,480\,z^5+68\,090\,514\,191\,481\,600\,z^4+5\,893\,305\,547\,474\,800\,z^3-5\,352\,979\,943\,390\,625
$$

$$
\left.\left.\left.z^2-18\,625\,087\,143\,936\,000\,z-10\,864\,634\,167\,296\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(1\,340\,230\,277\,372\,313\,600\,z^{9/2}\right)
$$

07.22.03.9090.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{17}{4};z\right) = $$

$$\left(\left(2z\left(4\,294\,967\,296z^8-1\,871\,531\,999\,232z^7+261\,822\,816\,976\,896z^6-14\,391\,979\,693\,572\,096z^5+306\,233\,929\,580\,544\,000\right.\right.\right.$$
$$\left.z^4-2\,111\,540\,741\,646\,336\,000z^3+2\,506\,976\,385\,129\,216\,000z^2+\right.$$
$$\left.851\,857\,357\,309\,358\,400z+619\,386\,886\,265\,872\,725\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\sqrt{z}\left(4\,294\,967\,296z^8-1\,867\,773\,902\,848z^7+260\,191\,568\,265\,216z^6-14\,165\,620\,021\,002\,240z^5+\right.$$
$$294\,015\,591\,088\,128\,000z^4-1\,863\,249\,490\,348\,646\,400z^3+1\,033\,554\,676\,022\,668\,800z^2+$$
$$\left.1\,203\,169\,667\,942\,642\,400z+980\,725\,684\,803\,739\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\left(4\,294\,967\,296z^9-1\,868\,310\,773\,760z^8+260\,423\,395\,835\,904z^7-14\,197\,441\,922\,334\,720z^6+\right.$$
$$295\,692\,138\,233\,856\,000z^5-1\,895\,286\,568\,373\,452\,800z^4+1\,187\,014\,164\,336\,000\,000z^3+$$
$$\left.1\,314\,068\,585\,086\,857\,600z^2+1\,173\,521\,318\,203\,859\,625z+193\,446\,721\,147\,680\,000\right)$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(1\,766\,782\,449\,086\,054\,400\sqrt{2}\,z^{13/4}\right)$$

07.22.03.9091.01

$$ {}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{17}{4};-z\right) = $$

$$\left(\left(2z\left(4\,294\,967\,296z^8+1\,871\,531\,999\,232z^7+261\,822\,816\,976\,896z^6+14\,391\,979\,693\,572\,096z^5+306\,233\,929\,580\,544\,000\right.\right.\right.$$
$$\left.z^4+2\,111\,540\,741\,646\,336\,000z^3+2\,506\,976\,385\,129\,216\,000z^2-\right.$$
$$\left.851\,857\,357\,309\,358\,400z+619\,386\,886\,265\,872\,725\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\sqrt{z}\left(4\,294\,967\,296z^8+1\,867\,773\,902\,848z^7+260\,191\,568\,265\,216z^6+14\,165\,620\,021\,002\,240z^5+\right.$$
$$294\,015\,591\,088\,128\,000z^4+1\,863\,249\,490\,348\,646\,400z^3+1\,033\,554\,676\,022\,668\,800z^2-$$
$$\left.1\,203\,169\,667\,942\,642\,400z+980\,725\,684\,803\,739\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\left(4\,294\,967\,296z^9+1\,868\,310\,773\,760z^8+260\,423\,395\,835\,904z^7+14\,197\,441\,922\,334\,720z^6+\right.$$
$$295\,692\,138\,233\,856\,000z^5+1\,895\,286\,568\,373\,452\,800z^4+1\,187\,014\,164\,336\,000\,000z^3-$$
$$\left.1\,314\,068\,585\,086\,857\,600z^2+1\,173\,521\,318\,203\,859\,625z-193\,446\,721\,147\,680\,000\right)$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(1\,766\,782\,449\,086\,054\,400\sqrt{2}\,z^{13/4}\right)$$

07.22.03.9092.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{19}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(-4\left(17\,179\,869\,184\,z^{19/2}-4\,294\,967\,296\,z^{9}-7\,911\,329\,759\,232\,z^{17/2}+1\,974\,611\,214\,336\,z^{8}+1\,175\,812\,527\,095\,808\right.\right.\right.
$$
$$
z^{15/2}-292\,483\,246\,325\,760\,z^{7}-68\,972\,743\,407\,697\,920\,z^{13/2}+17\,028\,805\,684\,101\,120\,z^{6}+
$$
$$
1\,563\,731\,265\,131\,642\,880\,z^{11/2}-378\,867\,251\,413\,647\,360\,z^{5}-11\,059\,312\,996\,942\,479\,360\,z^{9/2}+
$$
$$
2\,518\,002\,919\,950\,336\,000\,z^{4}+7\,347\,451\,639\,249\,612\,800\,z^{7/2}-601\,747\,814\,220\,134\,400\,z^{3}+
$$
$$
10\,305\,522\,935\,170\,444\,800\,z^{5/2}-1\,281\,124\,565\,403\,883\,200\,z^{2}+12\,176\,190\,638\,083\,426\,500\,z^{3/2}-
$$
$$
403\,901\,639\,132\,662\,125\,z+4\,172\,019\,520\,241\,664\,000\sqrt{z}+e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{19/2}+4\,294\,967\,296\,z^{9}-\right.
$$
$$
7\,911\,329\,759\,232\,z^{17/2}-1\,974\,611\,214\,336\,z^{8}+1\,175\,812\,527\,095\,808\,z^{15/2}+292\,483\,246\,325\,760\,z^{7}-
$$
$$
68\,972\,743\,407\,697\,920\,z^{13/2}-17\,028\,805\,684\,101\,120\,z^{6}+1\,563\,731\,265\,131\,642\,880\,z^{11/2}+
$$
$$
378\,867\,251\,413\,647\,360\,z^{5}-11\,059\,312\,996\,942\,479\,360\,z^{9/2}-2\,518\,002\,919\,950\,336\,000\,z^{4}+
$$
$$
7\,347\,451\,639\,249\,612\,800\,z^{7/2}+601\,747\,814\,220\,134\,400\,z^{3}+10\,305\,522\,935\,170\,444\,800\,z^{5/2}+
$$
$$
1\,281\,124\,565\,403\,883\,200\,z^{2}+12\,176\,190\,638\,083\,426\,500\,z^{3/2}+403\,901\,639\,132\,662\,125\,z+
$$
$$
\left.\left.4\,172\,019\,520\,241\,664\,000\sqrt{z}-2\,086\,009\,760\,120\,832\,000\right)+2\,086\,009\,760\,120\,832\,000\right)-
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(68\,719\,476\,736\,z^{9}-31\,658\,203\,938\,816\,z^{8}+4\,709\,157\,835\,898\,880\,z^{7}-\right.
$$
$$
276\,761\,130\,313\,973\,760\,z^{6}+6\,304\,964\,499\,965\,214\,720\,z^{5}-45\,316\,932\,343\,499\,980\,800\,z^{4}+
$$
$$
35\,875\,904\,771\,937\,484\,800\,z^{3}+43\,243\,278\,073\,317\,504\,000\,z^{2}+
$$
$$
\left.52\,027\,068\,931\,960\,122\,000\,z+27\,820\,029\,915\,006\,454\,125\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(68\,719\,476\,736\,z^{9}-31\,658\,203\,938\,816\,z^{8}+4\,709\,157\,835\,898\,880\,z^{7}-\right.
$$
$$
276\,761\,130\,313\,973\,760\,z^{6}+6\,304\,964\,499\,965\,214\,720\,z^{5}-45\,316\,932\,343\,499\,980\,800\,z^{4}+
$$
$$
35\,875\,904\,771\,937\,484\,800\,z^{3}+43\,243\,278\,073\,317\,504\,000\,z^{2}+52\,027\,068\,931\,960\,122\,000\,z+
$$
$$
\left.\left.\left.27\,820\,029\,915\,006\,454\,125\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(205\,859\,370\,604\,387\,368\,960\,z^{9/2}\right)
$$

07.22.03.9093.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{19}{4};-z\right)=
\left(\sqrt{\pi}\,z^{3/4}\left(68\,719\,476\,736\,z^{9}+31\,658\,203\,938\,816\,z^{8}+4\,709\,157\,835\,898\,880\,z^{7}+276\,761\,130\,313\,973\,760\,z^{6}+\right.\right.
$$
$$
6\,304\,964\,499\,965\,214\,720\,z^{5}+45\,316\,932\,343\,499\,980\,800\,z^{4}+35\,875\,904\,771\,937\,484\,800\,z^{3}-
$$
$$
\left.43\,243\,278\,073\,317\,504\,000\,z^{2}+52\,027\,068\,931\,960\,122\,000\,z-27\,820\,029\,915\,006\,454\,125\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$
$$
2\left(4\sqrt{z}\left(4\,294\,967\,296\,z^{9}+1\,977\,832\,439\,808\,z^{8}+293\,953\,131\,773\,952\,z^{7}+17\,243\,185\,851\,924\,480\,z^{6}+\right.\right.
$$
$$
390\,932\,816\,282\,910\,720\,z^{5}+2\,764\,828\,249\,235\,619\,840\,z^{4}+1\,836\,862\,909\,812\,403\,200\,z^{3}-
$$
$$
\left.2\,576\,380\,733\,792\,611\,200\,z^{2}+3\,044\,047\,659\,520\,856\,625\,z-1\,043\,004\,880\,060\,416\,000\right)\cos\left(2\sqrt{z}\right)+
$$
$$
\left(4\,294\,967\,296\,z^{9}+1\,974\,611\,214\,336\,z^{8}+292\,483\,246\,325\,760\,z^{7}+17\,028\,805\,684\,101\,120\,z^{6}+\right.
$$
$$
378\,867\,251\,413\,647\,360\,z^{5}+2\,518\,002\,919\,950\,336\,000\,z^{4}+
$$
$$
601\,747\,814\,220\,134\,400\,z^{3}-1\,281\,124\,565\,403\,883\,200\,z^{2}+403\,901\,639\,132\,662\,125\,z+
$$
$$
\left.\left.\left.2\,086\,009\,760\,120\,832\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(51\,464\,842\,651\,096\,842\,240\,z^{9/2}\right)
$$

07.22.03.9094.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{21}{4};z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-33\,462\,090\,203\,136\,z^8+5\,303\,357\,971\,365\,888\,z^7-336\,021\,123\,646\,881\,792\,z^6+\right.\right.\right.
$$

$$
\left.\left.\left.8\,424\,137\,409\,869\,905\,920\,z^5-70\,171\,919\,408\,244\,326\,400\,z^4+97\,982\,791\,768\,634\,572\,800\,z^3+\right.\right.\right.
$$

$$
\left.\left.\left.57\,636\,039\,904\,053\,811\,200\,z^2+80\,094\,822\,664\,221\,565\,200\,z+42\,271\,993\,507\,217\,599\,125\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.
$$

$$
3\left(68\,719\,476\,736\,z^9-33\,401\,960\,660\,992\,z^8+5\,274\,180\,111\,040\,512\,z^7-331\,429\,644\,022\,579\,200\,z^6+\right.
$$

$$
8\,137\,735\,353\,925\,632\,000\,z^5-63\,264\,512\,217\,386\,188\,800\,z^4+47\,155\,272\,636\,074\,803\,200\,z^3+
$$

$$
77\,113\,081\,836\,203\,212\,800\,z^2+114\,755\,392\,376\,114\,490\,000\,z+70\,453\,322\,512\,029\,331\,875\Big)
$$

$$
I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-33\,410\,550\,595\,584\,z^8+5\,278\,329\,049\,448\,448\,z^7-\right.
$$

$$
332\,076\,337\,248\,337\,920\,z^6+8\,177\,242\,841\,284\,608\,000\,z^5-64\,169\,379\,794\,593\,382\,400\,z^4+
$$

$$
52\,748\,981\,273\,460\,326\,400\,z^3+81\,087\,779\,174\,885\,683\,200\,z^2+123\,078\,261\,446\,534\,394\,000\,z+
$$

$$
\left.\left.93\,744\,361\,078\,298\,555\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(63\,188\,454\,649\,665\,945\,600\,\sqrt{2}\;z^{15/4}\right)
$$

07.22.03.9095.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{21}{4};-z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+33\,462\,090\,203\,136\,z^8+5\,303\,357\,971\,365\,888\,z^7+336\,021\,123\,646\,881\,792\,z^6+\right.\right.\right.
$$

$$
\left.\left.\left.8\,424\,137\,409\,869\,905\,920\,z^5+70\,171\,919\,408\,244\,326\,400\,z^4+97\,982\,791\,768\,634\,572\,800\,z^3-\right.\right.\right.
$$

$$
\left.\left.\left.57\,636\,039\,904\,053\,811\,200\,z^2+80\,094\,822\,664\,221\,565\,200\,z-42\,271\,993\,507\,217\,599\,125\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.
$$

$$
3\left(68\,719\,476\,736\,z^9+33\,401\,960\,660\,992\,z^8+5\,274\,180\,111\,040\,512\,z^7+331\,429\,644\,022\,579\,200\,z^6+\right.
$$

$$
8\,137\,735\,353\,925\,632\,000\,z^5+63\,264\,512\,217\,386\,188\,800\,z^4+47\,155\,272\,636\,074\,803\,200\,z^3-
$$

$$
77\,113\,081\,836\,203\,212\,800\,z^2+114\,755\,392\,376\,114\,490\,000\,z-70\,453\,322\,512\,029\,331\,875\Big)
$$

$$
J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+33\,410\,550\,595\,584\,z^8+5\,278\,329\,049\,448\,448\,z^7+\right.
$$

$$
332\,076\,337\,248\,337\,920\,z^6+8\,177\,242\,841\,284\,608\,000\,z^5+64\,169\,379\,794\,593\,382\,400\,z^4+
$$

$$
52\,748\,981\,273\,460\,326\,400\,z^3-81\,087\,779\,174\,885\,683\,200\,z^2+123\,078\,261\,446\,534\,394\,000\,z-
$$

$$
\left.\left.93\,744\,361\,078\,298\,555\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(63\,188\,454\,649\,665\,945\,600\,\sqrt{2}\;z^{15/4}\right)
$$

07.22.03.9096.01

$$
{}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{23}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(274\,877\,906\,944\,z^{19/2}-68\,719\,476\,736\,z^{9}-140\,651\,589\,009\,408\,z^{17/2}+35\,111\,357\,644\,800\,z^{8}+\right.\right.\right.
$$

$$
23\,519\,520\,085\,770\,240\,z^{15/2}-5\,853\,723\,670\,609\,920\,z^{7}-1\,577\,134\,350\,422\,507\,520\,z^{13/2}+
$$

$$
389\,982\,079\,879\,741\,440\,z^{6}+41\,745\,875\,756\,226\,969\,600\,z^{11/2}-10\,158\,216\,822\,757\,785\,600\,z^{5}-
$$

$$
355\,247\,336\,841\,294\,643\,200\,z^{9/2}+82\,065\,229\,514\,647\,142\,400\,z^{4}+304\,655\,805\,964\,571\,443\,200\,z^{7/2}-
$$

$$
33\,132\,989\,912\,795\,136\,000\,z^{3}+565\,174\,474\,036\,204\,032\,000\,z^{5/2}-94\,653\,866\,027\,710\,080\,000\,z^{2}+
$$

$$
1\,032\,550\,110\,541\,476\,072\,000\,z^{3/2}-141\,227\,808\,645\,765\,114\,000\,z+1\,000\,890\,698\,054\,277\,712\,500\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\left(274\,877\,906\,944\,z^{19/2}+68\,719\,476\,736\,z^{9}-140\,651\,589\,009\,408\,z^{17/2}-35\,111\,357\,644\,800\,z^{8}+\right.
$$

$$
23\,519\,520\,085\,770\,240\,z^{15/2}+5\,853\,723\,670\,609\,920\,z^{7}-1\,577\,134\,350\,422\,507\,520\,z^{13/2}-
$$

$$
389\,982\,079\,879\,741\,440\,z^{6}+41\,745\,875\,756\,226\,969\,600\,z^{11/2}+10\,158\,216\,822\,757\,785\,600\,z^{5}-
$$

$$
355\,247\,336\,841\,294\,643\,200\,z^{9/2}-82\,065\,229\,514\,647\,142\,400\,z^{4}+304\,655\,805\,964\,571\,443\,200\,z^{7/2}+
$$

$$
33\,132\,989\,912\,795\,136\,000\,z^{3}+565\,174\,474\,036\,204\,032\,000\,z^{5/2}+94\,653\,866\,027\,710\,080\,000\,z^{2}+
$$

$$
1\,032\,550\,110\,541\,476\,072\,000\,z^{3/2}+141\,227\,808\,645\,765\,114\,000\,z+
$$

$$
\left.\left.\left.1\,000\,890\,698\,054\,277\,712\,500\sqrt{z}\;-83\,144\,900\,302\,042\,044\,375\right)+83\,144\,900\,302\,042\,044\,375\right)-
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}-562\,812\,514\,467\,840\,z^{9}+94\,183\,156\,717\,977\,600\,z^{8}-\right.
$$

$$
6\,325\,968\,692\,890\,828\,800\,z^{7}+168\,132\,386\,665\,739\,059\,200\,z^{6}-1\,450\,141\,834\,991\,999\,385\,600\,z^{5}+
$$

$$
1\,435\,036\,190\,877\,499\,392\,000\,z^{4}+2\,306\,308\,163\,910\,266\,880\,000\,z^{3}+4\,162\,165\,514\,556\,809\,760\,000\,z^{2}+
$$

$$
\left.4\,451\,204\,786\,401\,032\,660\,000\,z+1\,251\,901\,346\,175\,290\,435\,625\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,099\,511\,627\,776\,z^{10}-562\,812\,514\,467\,840\,z^{9}+94\,183\,156\,717\,977\,600\,z^{8}-\right.
$$

$$
6\,325\,968\,692\,890\,828\,800\,z^{7}+168\,132\,386\,665\,739\,059\,200\,z^{6}-1\,450\,141\,834\,991\,999\,385\,600\,z^{5}+
$$

$$
1\,435\,036\,190\,877\,499\,392\,000\,z^{4}+2\,306\,308\,163\,910\,266\,880\,000\,z^{3}+
$$

$$
\left.\left.\left.4\,162\,165\,514\,556\,809\,760\,000\,z^{2}+4\,451\,204\,786\,401\,032\,660\,000\,z+1\,251\,901\,346\,175\,290\,435\,625\right)\right.\right.
$$

$$
\left.\left.\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)\Big/\left(6\,934\,210\,378\,253\,048\,217\,600\,z^{19/4}\right)
$$

07.22.03.9097.01

$${}_1F_2\left(-\frac{21}{4};\frac{11}{2},\frac{23}{4};-z\right)=$$

$$\left(\sqrt{\pi}\left(1\,099\,511\,627\,776\,z^{10}+562\,812\,514\,467\,840\,z^9+94\,183\,156\,717\,977\,600\,z^8+6\,325\,968\,692\,890\,828\,800\,z^7+\right.\right.$$
$$168\,132\,386\,665\,739\,059\,200\,z^6+1\,450\,141\,834\,991\,999\,385\,600\,z^5+1\,435\,036\,190\,877\,499\,392\,000\,z^4-$$
$$2\,306\,308\,163\,910\,266\,880\,000\,z^3+4\,162\,165\,514\,556\,809\,760\,000\,z^2-$$
$$\left.4\,451\,204\,786\,401\,032\,660\,000\,z+1\,251\,901\,346\,175\,290\,435\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(68\,719\,476\,736\,z^9+35\,162\,897\,252\,352\,z^8+5\,879\,880\,021\,442\,560\,z^7+394\,283\,587\,605\,626\,880\,z^6+\right.\right.$$
$$10\,436\,468\,939\,056\,742\,400\,z^5+88\,811\,834\,210\,323\,660\,800\,z^4+76\,163\,951\,491\,142\,860\,800\,z^3-$$
$$141\,293\,618\,509\,051\,008\,000\,z^2+258\,137\,527\,635\,369\,018\,000\,z-250\,222\,674\,513\,569\,428\,125\left.\right)\cos\left(2\sqrt{z}\right)+$$
$$\left(68\,719\,476\,736\,z^9+35\,111\,357\,644\,800\,z^8+5\,853\,723\,670\,609\,920\,z^7+389\,982\,079\,879\,741\,440\,z^6+\right.$$
$$10\,158\,216\,822\,757\,785\,600\,z^5+82\,065\,229\,514\,647\,142\,400\,z^4+33\,132\,989\,912\,795\,136\,000\,z^3-$$
$$\left.\left.\left.94\,653\,866\,027\,710\,080\,000\,z^2+141\,227\,808\,645\,765\,114\,000\,z+83\,144\,900\,302\,042\,044\,375\right)\right.$$
$$\left.\sin\left(2\sqrt{z}\right)\right)\Big/\left(1\,733\,552\,594\,563\,262\,054\,400\,z^{19/4}\right)$$

For fixed z and $a_1=-\frac{19}{4}$, $b_{1.}\geq-\frac{11}{2}$

For fixed z and $a_1=-\frac{19}{4}$, $b_{1.}=-\frac{11}{2}$

07.22.03.9098.01

$${}_1F_2\left(-\frac{19}{4};-\frac{11}{2},-\frac{23}{4};z\right)=$$
$$\left(\frac{3392\,z^3}{239\,085}+\frac{96\,z^2}{253}+\frac{468\,z}{253}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(128\,z^3+11\,088\,z^2+123\,480\,z+239\,085\right)\sinh\left(2\sqrt{z}\right)}{239\,085}$$

07.22.03.9099.01

$${}_1F_2\left(-\frac{19}{4};-\frac{11}{2},-\frac{23}{4};-z\right)=$$
$$\left(-\frac{3392\,z^3}{239\,085}+\frac{96\,z^2}{253}-\frac{468\,z}{253}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-128\,z^3+11\,088\,z^2-123\,480\,z+239\,085\right)\sin\left(2\sqrt{z}\right)}{239\,085}$$

07.22.03.9100.01

$${}_1F_2\left(-\frac{19}{4};-\frac{11}{2},-\frac{21}{4};z\right)=$$
$$-\frac{1}{723\,647\,925\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^5-206\,848\,z^4-29\,640\,960\,z^3-641\,964\,960\,z^2-1\,328\,254\,200\,z-723\,647\,925\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-2048\,z^4+1\,429\,056\,z^3+93\,955\,680\,z^2+749\,335\,860\,z+723\,647\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4\,z\left(4096\,z^4-50\,688\,z^3+9\,081\,072\,z^2+170\,417\,520\,z+723\,647\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9101.01

$${}_1F_2\left(-\frac{19}{4};-\frac{11}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{723\,647\,925\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^5+206\,848\,z^4-29\,640\,960\,z^3+641\,964\,960\,z^2-1\,328\,254\,200\,z+723\,647\,925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(2048\,z^4+1\,429\,056\,z^3-93\,955\,680\,z^2+749\,335\,860\,z-723\,647\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(4096\,z^4+50\,688\,z^3+9\,081\,072\,z^2-170\,417\,520\,z+723\,647\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9102.01

$${}_1F_2\left(-\frac{19}{4};-\frac{11}{2},-\frac{19}{4};z\right)=\left(\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}+\frac{20\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{495}\sqrt{z}\left(16\,z^2+240\,z+495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.9103.01

$${}_1F_2\left(-\frac{19}{4};-\frac{11}{2},-\frac{19}{4};-z\right)=\left(-\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}-\frac{20\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.9104.01

$${}_1F_2\left(-\frac{19}{4};-\frac{11}{2},-\frac{17}{4};z\right)=$$
$$-\frac{1}{34\,459\,425\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192\,z^5-35\,328\,z^4-435\,200\,z^3-28\,244\,160\,z^2-61\,916\,400\,z-34\,459\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(-1024\,z^4+3776\,z^3+3\,215\,520\,z^2+34\,348\,860\,z+34\,459\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4\,z\left(2048\,z^4-8320\,z^3+240\,912\,z^2+6\,781\,320\,z+34\,459\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9105.01

$${}_1F_2\left(-\frac{19}{4};-\frac{11}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{34\,459\,425\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192\,z^5+35\,328\,z^4-435\,200\,z^3+28\,244\,160\,z^2-61\,916\,400\,z+34\,459\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(1024\,z^4+3776\,z^3-3\,215\,520\,z^2+34\,348\,860\,z-34\,459\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(2048\,z^4+8320\,z^3+240\,912\,z^2-6\,781\,320\,z+34\,459\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9106.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, -\frac{15}{4}; z\right) = $$
$$ \frac{1}{24\,012\,450}\left(e^{-2\sqrt{z}}\left(4096\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4} + 4096\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4} - 4096\,e^{4\sqrt{z}}\,z^{9/2} + \right.\right. $$
$$ 4096\,z^{9/2} - 1024\,e^{4\sqrt{z}}\,z^4 - 1024\,z^4 - 768\,e^{4\sqrt{z}}\,z^{7/2} + 768\,z^{7/2} - 960\,e^{4\sqrt{z}}\,z^3 - 960\,z^3 - 352\,800\,e^{4\sqrt{z}}\,z^{5/2} + $$
$$ 352\,800\,z^{5/2} + 2\,892\,960\,e^{4\sqrt{z}}\,z^2 + 2\,892\,960\,z^2 - 10\,478\,160\,e^{4\sqrt{z}}\,z^{3/2} + 10\,478\,160\,z^{3/2} + $$
$$ \left.\left. 21\,247\,380\,e^{4\sqrt{z}}\,z + 21\,247\,380\,z - 24\,012\,450\,e^{4\sqrt{z}}\,\sqrt{z} + 24\,012\,450\,\sqrt{z} + 12\,006\,225\,e^{4\sqrt{z}} + 12\,006\,225\right)\right) $$

07.22.03.9107.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, -\frac{15}{4}; -z\right) = $$
$$ \frac{1}{12\,006\,225}\left(-8192\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4} + 2\left(2048\,z^4 - 384\,z^3 + 176\,400\,z^2 - 5\,239\,080\,z + 12\,006\,225\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \right. $$
$$ \left.\left(-1024\,z^4 + 960\,z^3 + 2\,892\,960\,z^2 - 21\,247\,380\,z + 12\,006\,225\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9108.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, -\frac{13}{4}; z\right) = $$
$$ \frac{1}{2\,027\,025\,\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096\,z^5 + 16\,384\,z^4 - 47\,360\,z^3 + 1\,454\,880\,z^2 + 3\,515\,400\,z + 2\,027\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z}\left(512\,z^4 + 2368\,z^3 + 84\,000\,z^2 + 1\,893\,780\,z + 2\,027\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(-1024\,z^4 - 4352\,z^3 + 10\,416\,z^2 + 272\,160\,z + 2\,027\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9109.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, -\frac{13}{4}; -z\right) = $$
$$ -\frac{1}{2\,027\,025\,\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096\,z^5 - 16\,384\,z^4 - 47\,360\,z^3 - 1\,454\,880\,z^2 + 3\,515\,400\,z - 2\,027\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z}\left(512\,z^4 - 2368\,z^3 + 84\,000\,z^2 - 1\,893\,780\,z + 2\,027\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(1024\,z^4 - 4352\,z^3 - 10\,416\,z^2 + 272\,160\,z - 2\,027\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9110.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{1\,600\,830}\left(e^{-2\sqrt{z}}\left(1024\,e^{4\sqrt{z}}\,z^{9/2} - 1024\,z^{9/2} + 256\,e^{4\sqrt{z}}\,z^4 + 256\,z^4 - 64\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z+133)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4} - \right.\right.$$
$$64\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z+133)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4} + 8704\,e^{4\sqrt{z}}\,z^{7/2} - 8704\,z^{7/2} + 2368\,e^{4\sqrt{z}}\,z^3 +$$
$$2368\,z^3 + 2016\,e^{4\sqrt{z}}\,z^{5/2} - 2016\,z^{5/2} + 90\,720\,e^{4\sqrt{z}}\,z^2 + 90\,720\,z^2 - 564\,480\,e^{4\sqrt{z}}\,z^{3/2} + 564\,480\,z^{3/2} +$$
$$\left.\left.1\,349\,460\,e^{4\sqrt{z}}\,z + 1\,349\,460\,z - 1\,600\,830\,e^{4\sqrt{z}}\,\sqrt{z} + 1\,600\,830\,\sqrt{z} + 800\,415\,e^{4\sqrt{z}} + 800\,415\right)\right)$$

07.22.03.9111.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{800\,415}\left(128\sqrt{\pi}\,(16z-133)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4} - 2\left(512\,z^4 - 4352\,z^3 + 1008\,z^2 + 282\,240\,z - 800\,415\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \right.$$
$$\left.\left(256\,z^4 - 2368\,z^3 + 90\,720\,z^2 - 1\,349\,460\,z + 800\,415\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9112.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{467\,775\sqrt{2}}\left(\sqrt[4]{z}\left(-\left(2048\,z^5 + 25\,216\,z^4 + 61\,440\,z^3 - 262\,080\,z^2 - 756\,000\,z - 467\,775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(256\,z^4 + 3312\,z^3 + 10\,080\,z^2 - 381\,780\,z - 467\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4z\left(512\,z^4 + 6432\,z^3 + 17\,136\,z^2 + 7560\,z + 467\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9113.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{467\,775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048\,z^5 - 25\,216\,z^4 + 61\,440\,z^3 + 262\,080\,z^2 - 756\,000\,z + 467\,775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(256\,z^4 - 3312\,z^3 + 10\,080\,z^2 + 381\,780\,z - 467\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4z\left(512\,z^4 - 6432\,z^3 + 17\,136\,z^2 - 7560\,z + 467\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9114.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, -\frac{7}{4}; z\right) = \frac{1}{291\,060}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+4256z+21\,945\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+4256z+21\,945\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-2\left(-128z^{9/2}+32z^4-2152z^{7/2}+562z^3-11\,424z^{5/2}+3360z^2-25\,200z^{3/2}-109\,620z-145\,530\sqrt{z}+e^{4\sqrt{z}}\left(128z^{9/2}+32z^4+2152z^{7/2}+562z^3+11\,424z^{5/2}+3360z^2+25\,200z^{3/2}-109\,620z+145\,530\sqrt{z}-72\,765\right)-72\,765\right)\right)\right) $$

07.22.03.9115.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, -\frac{7}{4}; -z\right) = \frac{1}{72\,765}\left(\sqrt{\pi}\left(-256z^2+4256z-21\,945\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2\left(64z^4-1076z^3+5712z^2-12\,600z+72\,765\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-32z^4+562z^3-3360z^2-109\,620z+72\,765\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9116.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, -\frac{5}{4}; z\right) = \frac{1}{259\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^5+21\,120z^4+161\,060z^3+252\,000z^2+340\,200z+259\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-2\sqrt{z}\left(256z^4+5440z^3+43\,995z^2+264\,600z+519\,750\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(256z^4+5344z^3+41\,685z^2+75\,600z-259\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9117.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, -\frac{5}{4}; -z\right) = -\frac{1}{259\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^5-21\,120z^4+161\,060z^3-252\,000z^2+340\,200z-259\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-2\sqrt{z}\left(256z^4-5440z^3+43\,995z^2-264\,600z+519\,750\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(256z^4-5344z^3+41\,685z^2-75\,600z-259\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9118.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, -\frac{3}{4}; z\right) = \frac{1}{7\,983\,360}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+102\,144z^2+1\,053\,360z+3\,620\,925\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-\right.\right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+102\,144z^2+1\,053\,360z+3\,620\,925\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+ $$
$$ 4\left(-1024z^{9/2}+256z^4-25\,728z^{7/2}+6624z^3-268\,548z^{5/2}+72\,765z^2-967\,680z^{3/2}+\right. $$
$$ \left.\left.\left.846\,720z+1\,995\,840\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{9/2}+256z^4+25\,728z^{7/2}+6624z^3+268\,548z^{5/2}+\right.\right.\right. $$
$$ \left.\left.\left.72\,765z^2+967\,680z^{3/2}+846\,720z-1\,995\,840\sqrt{z}+997\,920\right)+997\,920\right)\right)\right) $$

07.22.03.9119.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, -\frac{3}{4}; -z\right) = \frac{1}{1\,995\,840}\left(\sqrt{\pi}\left(4096z^3-102\,144z^2+1\,053\,360z-3\,620\,925\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+\right. $$
$$ 2\left(\left(256z^4-6624z^3+72\,765z^2-846\,720z+997\,920\right)\cos\left(2\sqrt{z}\right)+\right. $$
$$ \left.\left.4\sqrt{z}\left(-256z^4+6432z^3-67\,137z^2+241\,920z+498\,960\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9120.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, -\frac{1}{4}; z\right) = \frac{1}{5\,821\,200\sqrt{2}}\left(\sqrt[4]{z}\left(-2\left(4096z^5+118\,528z^4+1\,516\,720z^3+7\,653\,345z^2+4\,233\,600z-2\,910\,600\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ \sqrt{z}\left(4096z^4+121\,088z^3+1\,597\,680z^2+8\,848\,035z-23\,284\,800\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.2z\left(4096z^4+119\,552z^3+1\,547\,952z^2+8\,086\,365z+11\,642\,400\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9121.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) = \frac{1}{5\,821\,200\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(4096z^5-118\,528z^4+1\,516\,720z^3-7\,653\,345z^2+4\,233\,600z+2\,910\,600\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ \sqrt{z}\left(-4096z^4+121\,088z^3-1\,597\,680z^2+8\,848\,035z+23\,284\,800\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.2z\left(4096z^4-119\,552z^3+1\,547\,952z^2-8\,086\,365z+11\,642\,400\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9122.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{11}{2},\frac{1}{4};z\right)= \frac{1}{681\,246\,720}\left(e^{-2\sqrt{z}}\left(-4\left(-16\,384\,z^{9/2}+4096\,z^4-547\,840\,z^{7/2}+140\,032\,z^3-8\,535\,744\,z^{5/2}+2\,249\,520\,z^2-59\,779\,860\,z^{3/2}+17\,096\,625\,z-170\,311\,680\sqrt{z}\right)+e^{4\sqrt{z}}\left(16\,384\,z^{9/2}+4096\,z^4+547\,840\,z^{7/2}+140\,032\,z^3+8\,535\,744\,z^{5/2}+2\,249\,520\,z^2+59\,779\,860\,z^{3/2}+17\,096\,625\,z+170\,311\,680\sqrt{z}-85\,155\,840\right)-85\,155\,840\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(65\,536\,z^4+2\,179\,072\,z^3+33\,707\,520\,z^2+231\,739\,200\,z+481\,583\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(65\,536\,z^4+2\,179\,072\,z^3+33\,707\,520\,z^2+231\,739\,200\,z+481\,583\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9123.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{11}{2},\frac{1}{4};-z\right)= \frac{1}{170\,311\,680}\left(\sqrt{\pi}\,z^{3/4}\left(-65\,536\,z^4+2\,179\,072\,z^3-33\,707\,520\,z^2+231\,739\,200\,z-481\,583\,025\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\left(\left(-4096\,z^4+140\,032\,z^3-2\,249\,520\,z^2+17\,096\,625\,z+85\,155\,840\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(4096\,z^4-136\,960\,z^3+2\,133\,936\,z^2-14\,944\,965\,z+42\,577\,920\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9124.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{11}{2},\frac{3}{4};z\right)= \frac{1}{1\,676\,505\,600\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(65\,536\,z^5+2\,441\,216\,z^4+43\,845\,120\,z^3+372\,738\,240\,z^2+1\,114\,065\,225\,z+838\,252\,800\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(65\,536\,z^4+2\,482\,176\,z^3+45\,480\,960\,z^2+405\,004\,320\,z+2\,122\,918\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2z\left(65\,536\,z^4+2\,457\,600\,z^3+44\,481\,024\,z^2+384\,773\,760\,z+1\,230\,092\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9125.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{11}{2},\frac{3}{4};-z\right)= \frac{1}{1\,676\,505\,600\sqrt{2}}\left(\sqrt[4]{z}\left(-2\left(65\,536\,z^5-2\,441\,216\,z^4+43\,845\,120\,z^3-372\,738\,240\,z^2+1\,114\,065\,225\,z-838\,252\,800\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(65\,536\,z^4-2\,482\,176\,z^3+45\,480\,960\,z^2-405\,004\,320\,z+2\,122\,918\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-2z\left(65\,536\,z^4-2\,457\,600\,z^3+44\,481\,024\,z^2-384\,773\,760\,z+1\,230\,092\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9126.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{217\,998\,950\,400\sqrt[4]{z}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z} \left(-262\,144 z^{9/2} + 65\,536 z^4 - 10\,944\,512 z^{7/2} + 2\,785\,280 z^3 - 226\,867\,200 z^{5/2} + 58\,974\,720 z^2 - 2\,364\,660\,480 z^{3/2} + 644\,232\,960 z - 10\,194\,099\,300\sqrt{z} + e^{4\sqrt{z}} \left(262\,144 z^{9/2} + 65\,536 z^4 + 10\,944\,512 z^{7/2} + 2\,785\,280 z^3 + 226\,867\,200 z^{5/2} + 58\,974\,720 z^2 + 2\,364\,660\,480 z^{3/2} + 644\,232\,960 z + 10\,194\,099\,300\sqrt{z} + 5\,979\,359\,925\right) + 5\,979\,359\,925\right) + e^{2\sqrt{z}} \sqrt{2\pi} \left(1\,048\,576 z^5 + 43\,581\,440 z^4 + 898\,867\,200 z^3 + 9\,269\,568\,000 z^2 + 38\,526\,642\,000 z + 33\,229\,228\,725\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}} \sqrt{2\pi} \left(1\,048\,576 z^5 + 43\,581\,440 z^4 + 898\,867\,200 z^3 + 9\,269\,568\,000 z^2 + 38\,526\,642\,000 z + 33\,229\,228\,725\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9127.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) = \frac{1}{54\,499\,737\,600\sqrt[4]{z}} \left(\sqrt{\pi} \left(-1\,048\,576 z^5 + 43\,581\,440 z^4 - 898\,867\,200 z^3 + 9\,269\,568\,000 z^2 - 38\,526\,642\,000 z + 33\,229\,228\,725\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z} \left(\left(-65\,536 z^4 + 2\,785\,280 z^3 - 58\,974\,720 z^2 + 644\,232\,960 z - 5\,979\,359\,925\right) \cos\left(2\sqrt{z}\right) + 4\sqrt{z} \left(65\,536 z^4 - 2\,736\,128 z^3 + 56\,716\,800 z^2 - 591\,165\,120 z + 2\,548\,524\,825\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9128.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, \frac{7}{4}; z\right) = \frac{1}{196\,709\,990\,400\sqrt{2}\sqrt[4]{z}} \left(\left(2\sqrt{z} \left(1\,048\,576 z^5 + 47\,775\,744 z^4 + 1\,104\,650\,240 z^3 + 13\,198\,671\,360 z^2 + 67\,162\,510\,800 z + 60\,162\,465\,825\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(1\,048\,576 z^5 + 48\,431\,104 z^4 + 1\,136\,271\,360 z^3 + 13\,981\,524\,480 z^2 + 77\,986\,616\,400 z - 114\,577\,588\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z} \left(1\,048\,576 z^5 + 48\,037\,888 z^4 + 1\,117\,003\,776 z^3 + 13\,495\,426\,560 z^2 + 71\,001\,176\,400 z + 114\,577\,588\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9129.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, \frac{7}{4}; -z\right) = \frac{1}{196\,709\,990\,400\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(-2\sqrt{z}\left(1\,048\,576 z^5 - 47\,775\,744 z^4 + 1\,104\,650\,240 z^3 - 13\,198\,671\,360 z^2 + 67\,162\,510\,800 z - 60\,162\,465\,825\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1\,048\,576 z^5 - 48\,431\,104 z^4 + 1\,136\,271\,360 z^3 - 13\,981\,524\,480 z^2 + \right. $$
$$ \left. 77\,986\,616\,400 z + 114\,577\,588\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-1\,048\,576 z^5 + 48\,037\,888 z^4 - \right. $$
$$ \left.\left. 1\,117\,003\,776 z^3 + 13\,495\,426\,560 z^2 - 71\,001\,176\,400 z + 114\,577\,588\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.9130.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, \frac{9}{4}; z\right) = \frac{1}{16\,742\,319\,390\,720 z^{5/4}} $$
$$ \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 209\,977\,344 z^{9/2} + 53\,280\,768 z^4 - 5\,434\,146\,816 z^{7/2} + \right.\right.\right. $$
$$ 1\,401\,200\,640 z^3 - 75\,264\,215\,040 z^{5/2} + 20\,030\,814\,720 z^2 - 479\,096\,735\,040 z^{3/2} + 140\,214\,246\,480 z - $$
$$ 1\,196\,252\,234\,100\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 209\,977\,344 z^{9/2} + 53\,280\,768 z^4 + \right. $$
$$ \left. 5\,434\,146\,816 z^{7/2} + 1\,401\,200\,640 z^3 + 75\,264\,215\,040 z^{5/2} + 20\,030\,814\,720 z^2 + 479\,096\,735\,040 z^{3/2} + \right. $$
$$ \left. 140\,214\,246\,480 z + 1\,196\,252\,234\,100\sqrt{z} - 897\,189\,175\,575\right) - 897\,189\,175\,575\Big) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 836\,763\,648 z^5 + 21\,572\,812\,800 z^4 + 296\,626\,176\,000 z^3 + \right. $$
$$ \left. 1\,849\,278\,816\,000 z^2 + 3\,190\,005\,957\,600 z - 897\,189\,175\,575\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 836\,763\,648 z^5 + 21\,572\,812\,800 z^4 + 296\,626\,176\,000 z^3 + \right. $$
$$ \left.\left. 1\,849\,278\,816\,000 z^2 + 3\,190\,005\,957\,600 z - 897\,189\,175\,575\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.9131.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, \frac{9}{4}; -z\right) = $$
$$ \frac{1}{4\,185\,579\,847\,680 z^{5/4}}\left(\sqrt{\pi}\left(-16\,777\,216 z^6 + 836\,763\,648 z^5 - 21\,572\,812\,800 z^4 + 296\,626\,176\,000 z^3 - \right.\right. $$
$$ \left. 1\,849\,278\,816\,000 z^2 + 3\,190\,005\,957\,600 z + 897\,189\,175\,575\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576 z^5 - 52\,494\,336 z^4 + 1\,358\,536\,704 z^3 - 18\,816\,053\,760 z^2 + 119\,774\,183\,760 z - 299\,063\,058\,525\right)\right. $$
$$ \sin\left(2\sqrt{z}\right) - \left(1\,048\,576 z^5 - 53\,280\,768 z^4 + 1\,401\,200\,640 z^3 - \right. $$
$$ \left.\left. 20\,030\,814\,720 z^2 + 140\,214\,246\,480 z + 897\,189\,175\,575\right)\cos\left(2\sqrt{z}\right)\right)\Bigg) $$

07.22.03.9132.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, \frac{11}{4}; z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6 + 903\,872\,512\,z^5 + 25\,562\,644\,480\,z^4 + 393\,452\,666\,880\,z^3 + 2\,824\,158\,355\,200\,z^2 + 5\,670\,502\,437\,600\,z + 3\,322\,750\,055\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(16\,777\,216\,z^6 + 914\,358\,272\,z^5 + 26\,155\,745\,280\,z^4 + 411\,142\,717\,440\,z^3 + 3\,126\,137\,414\,400\,z^2 + 14\,665\,931\,280\,000\,z + 9\,968\,250\,166\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,777\,216\,z^6 + 908\,066\,816\,z^5 + 25\,795\,166\,208\,z^4 + 400\,227\,287\,040\,z^3 + 2\,934\,483\,552\,000\,z^2 + 6\,599\,669\,076\,000\,z - 9\,968\,250\,166\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(11\,690\,193\,715\,200\,\sqrt{2}\;z^{5/4}\right) $$

07.22.03.9133.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, \frac{11}{4}; -z\right) = $$

$$ \left(\left(-2\sqrt{z}\,\left(16\,777\,216\,z^6 - 903\,872\,512\,z^5 + 25\,562\,644\,480\,z^4 - 393\,452\,666\,880\,z^3 + 2\,824\,158\,355\,200\,z^2 - 5\,670\,502\,437\,600\,z + 3\,322\,750\,055\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216\,z^6 - 914\,358\,272\,z^5 + 26\,155\,745\,280\,z^4 - 411\,142\,717\,440\,z^3 + 3\,126\,137\,414\,400\,z^2 - 14\,665\,931\,280\,000\,z + 9\,968\,250\,166\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-16\,777\,216\,z^6 + 908\,066\,816\,z^5 - 25\,795\,166\,208\,z^4 + 400\,227\,287\,040\,z^3 - 2\,934\,483\,552\,000\,z^2 + 6\,599\,669\,076\,000\,z + 9\,968\,250\,166\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(11\,690\,193\,715\,200\,\sqrt{2}\;z^{5/4}\right) $$

07.22.03.9134.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) = $$

$$ \frac{1}{833\,395\,454\,115\,840\,z^{9/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 - 3\,917\,479\,936\,z^{11/2} + 991\,952\,896\,z^5 - 121\,567\,444\,992\,z^{9/2} + 31\,179\,079\,680\,z^4 - 2\,100\,806\,615\,040\,z^{7/2} + 551\,567\,278\,080\,z^3 - 17\,710\,793\,210\,880\,z^{5/2} + 4\,954\,152\,994\,560\,z^2 - 49\,217\,234\,774\,400\,z^{3/2} + 47\,850\,089\,364\,000\,z + 185\,419\,096\,285\,500\,\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 + 3\,917\,479\,936\,z^{11/2} + 991\,952\,896\,z^5 + 121\,567\,444\,992\,z^{9/2} + 31\,179\,079\,680\,z^4 + 2\,100\,806\,615\,040\,z^{7/2} + 551\,567\,278\,080\,z^3 + 17\,710\,793\,210\,880\,z^{5/2} + 4\,954\,152\,994\,560\,z^2 + 49\,217\,234\,774\,400\,z^{3/2} + 47\,850\,089\,364\,000\,z - 185\,419\,096\,285\,500\,\sqrt{z} + 139\,064\,322\,214\,125\right) + 139\,064\,322\,214\,125\right) + e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7 + 15\,619\,588\,096\,z^6 + 483\,231\,006\,720\,z^5 + 8\,305\,532\,928\,000\,z^4 + 69\,039\,742\,464\,000\,z^3 + 178\,640\,333\,625\,600\,z^2 - 100\,485\,187\,664\,400\,z + 139\,064\,322\,214\,125\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right) + e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7 + 15\,619\,588\,096\,z^6 + 483\,231\,006\,720\,z^5 + 8\,305\,532\,928\,000\,z^4 + 69\,039\,742\,464\,000\,z^3 + 178\,640\,333\,625\,600\,z^2 - 100\,485\,187\,664\,400\,z + 139\,064\,322\,214\,125\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right) $$

07.22.03.9135.01

$${}_1F_2\left(-\frac{19}{4};-\frac{11}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{208\,348\,863\,528\,960\,z^{9/4}}\left(\sqrt{\pi}\,\left(-268\,435\,456\,z^7+15\,619\,588\,096\,z^6-483\,231\,006\,720\,z^5+8\,305\,532\,928\,000\,z^4-\right.\right.$$
$$\left.69\,039\,742\,464\,000\,z^3+178\,640\,333\,625\,600\,z^2+100\,485\,187\,664\,400\,z+139\,064\,322\,214\,125\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\,\left(\left(-16\,777\,216\,z^6+991\,952\,896\,z^5-31\,179\,079\,680\,z^4+551\,567\,278\,080\,z^3-\right.\right.$$
$$\left.4\,954\,152\,994\,560\,z^2+47\,850\,089\,364\,000\,z-139\,064\,322\,214\,125\right)\cos\left(2\sqrt{z}\right)+$$
$$4\sqrt{z}\,\left(16\,777\,216\,z^6-979\,369\,984\,z^5+30\,391\,861\,248\,z^4-525\,201\,653\,760\,z^3+\right.$$
$$\left.\left.\left.4\,427\,698\,302\,720\,z^2-12\,304\,308\,693\,600\,z-46\,354\,774\,071\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.9136.01

$${}_1F_2\left(-\frac{19}{4};-\frac{11}{2},\frac{15}{4};z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+16\,693\,329\,920\,z^6+558\,225\,162\,240\,z^5+10\,513\,185\,177\,600\,z^4+97\,381\,463\,961\,600\,z^3+\right.\right.\right.$$
$$\left.281\,038\,421\,664\,000\,z^2-478\,476\,008\,010\,000\,z-767\,555\,262\,849\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(268\,435\,456\,z^7+16\,861\,102\,080\,z^6+569\,109\,381\,120\,z^5+10\,893\,238\,272\,000\,z^4+105\,125\,948\,928\,000\,z^3+\right.$$
$$\left.369\,581\,468\,256\,000\,z^2-4\,944\,252\,082\,770\,000\,z-2\,302\,665\,788\,548\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+16\,760\,438\,784\,z^6+562\,503\,352\,320\,z^5+10\,659\,756\,441\,600\,z^4+\right.$$
$$100\,263\,550\,464\,000\,z^3+310\,917\,743\,136\,000\,z^2+31\,898\,400\,534\,000\,z+$$
$$\left.\left.\left.2\,302\,665\,788\,548\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(510\,117\,543\,936\,000\sqrt{2}\,z^{9/4}\right)$$

07.22.03.9137.01

$${}_1F_2\left(-\frac{19}{4};-\frac{11}{2},\frac{15}{4};-z\right)=$$
$$\left(\left(-2\sqrt{z}\,\left(268\,435\,456\,z^7-16\,693\,329\,920\,z^6+558\,225\,162\,240\,z^5-10\,513\,185\,177\,600\,z^4+97\,381\,463\,961\,600\,z^3-\right.\right.\right.$$
$$\left.281\,038\,421\,664\,000\,z^2-478\,476\,008\,010\,000\,z+767\,555\,262\,849\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(268\,435\,456\,z^7-16\,861\,102\,080\,z^6+569\,109\,381\,120\,z^5-10\,893\,238\,272\,000\,z^4+105\,125\,948\,928\,000\,z^3-\right.$$
$$\left.369\,581\,468\,256\,000\,z^2-4\,944\,252\,082\,770\,000\,z+2\,302\,665\,788\,548\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-268\,435\,456\,z^7+16\,760\,438\,784\,z^6-562\,503\,352\,320\,z^5+10\,659\,756\,441\,600\,z^4-\right.$$
$$100\,263\,550\,464\,000\,z^3+310\,917\,743\,136\,000\,z^2-31\,898\,400\,534\,000\,z+2\,302\,665\,788\,548\,125\right)$$
$$\left.\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(510\,117\,543\,936\,000\sqrt{2}\,z^{9/4}\right)$$

07.22.03.9138.01

$$
{}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) =
$$

$$
\left(13\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 - 71\,605\,157\,888\, z^{13/2} + 18\,102\,616\,064\, z^6 - \right.\right.\right.
$$

$$
2\,591\,060\,656\,128\, z^{11/2} + 662\,034\,186\,240\, z^5 - 53\,670\,653\,460\,480\, z^{9/2} + 13\,967\,642\,787\,840\, z^4 -
$$

$$
563\,556\,069\,457\,920\, z^{7/2} + 153\,646\,270\,525\,440\, z^3 - 2\,040\,278\,096\,102\,400\, z^{5/2} + 689\,041\,286\,841\,600\, z^2 -
$$

$$
2\,966\,705\,540\,568\,000\, z^{3/2} - 28\,925\,379\,020\,538\,000\, z - 58\,407\,015\,329\,932\,500\sqrt{z} +
$$

$$
e^{4\sqrt{z}}\left(1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 + 71\,605\,157\,888\, z^{13/2} + 18\,102\,616\,064\, z^6 + \right.
$$

$$
2\,591\,060\,656\,128\, z^{11/2} + 662\,034\,186\,240\, z^5 + 53\,670\,653\,460\,480\, z^{9/2} + 13\,967\,642\,787\,840\, z^4 +
$$

$$
563\,556\,069\,457\,920\, z^{7/2} + 153\,646\,270\,525\,440\, z^3 + 2\,040\,278\,096\,102\,400\, z^{5/2} +
$$

$$
689\,041\,286\,841\,600\, z^2 + 2\,966\,705\,540\,568\,000\, z^{3/2} - 28\,925\,379\,020\,538\,000\, z +
$$

$$
\left.\left.58\,407\,015\,329\,932\,500\sqrt{z} - 43\,805\,261\,497\,449\,375\right) - 43\,805\,261\,497\,449\,375\right) +
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\, z^8 + 285\,615\,325\,184\, z^7 + 10\,308\,928\,143\,360\, z^6 + 212\,621\,642\,956\,800\, z^5 + \right.
$$

$$
2\,209\,271\,758\,848\,000\, z^4 + 7\,621\,987\,568\,025\,600\, z^3 - 6\,431\,052\,010\,521\,600\, z^2 +
$$

$$
\left.17\,800\,233\,243\,408\,000\, z - 43\,805\,261\,497\,449\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) +
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\, z^8 + 285\,615\,325\,184\, z^7 + 10\,308\,928\,143\,360\, z^6 + 212\,621\,642\,956\,800\, z^5 + \right.
$$

$$
2\,209\,271\,758\,848\,000\, z^4 + 7\,621\,987\,568\,025\,600\, z^3 - 6\,431\,052\,010\,521\,600\, z^2 +
$$

$$
\left.\left.\left.17\,800\,233\,243\,408\,000\, z - 43\,805\,261\,497\,449\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) \Big/ \left(426\,698\,472\,507\,310\,080\, z^{13/4}\right)
$$

07.22.03.9139.01

$$
{}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) =
$$

$$
\left(13\left(\sqrt{\pi}\left(-4\,294\,967\,296\, z^8 + 285\,615\,325\,184\, z^7 - 10\,308\,928\,143\,360\, z^6 + 212\,621\,642\,956\,800\, z^5 - \right.\right.\right.
$$

$$
2\,209\,271\,758\,848\,000\, z^4 + 7\,621\,987\,568\,025\,600\, z^3 + 6\,431\,052\,010\,521\,600\, z^2 +
$$

$$
\left.17\,800\,233\,243\,408\,000\, z + 43\,805\,261\,497\,449\,375\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) +
$$

$$
2\sqrt[4]{z}\left(\left(-268\,435\,456\, z^7 + 18\,102\,616\,064\, z^6 - 662\,034\,186\,240\, z^5 + 13\,967\,642\,787\,840\, z^4 - 153\,646\,270\,525\,440\, z^3 + \right.\right.
$$

$$
\left.689\,041\,286\,841\,600\, z^2 + 28\,925\,379\,020\,538\,000\, z - 43\,805\,261\,497\,449\,375\right)\cos\left(2\sqrt{z}\right) +
$$

$$
4\sqrt{z}\left(268\,435\,456\, z^7 - 17\,901\,289\,472\, z^6 + 647\,765\,164\,032\, z^5 - 13\,417\,663\,365\,120\, z^4 + \right.
$$

$$
140\,889\,017\,364\,480\, z^3 - 510\,069\,524\,025\,600\, z^2 + 741\,676\,385\,142\,000\, z -
$$

$$
\left.\left.\left.14\,601\,753\,832\,483\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(106\,674\,618\,126\,827\,520\, z^{13/4}\right)
$$

07.22.03.9140.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 302\,795\,194\,368\,z^7 + 11\,687\,344\,209\,920\,z^6 + 260\,319\,813\,304\,320\,z^5 + 2\,953\,446\,683\,443\,200\,z^4 + 11\,097\,573\,219\,532\,800\,z^3 - 14\,290\,483\,439\,232\,000\,z^2 + 252\,635\,332\,229\,280\,000\,z + 312\,394\,991\,979\,695\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4\,294\,967\,296\,z^8 + 305\,479\,548\,928\,z^7 + 11\,883\,805\,409\,280\,z^6 + 268\,182\,969\,384\,960\,z^5 + 3\,139\,970\,590\,310\,400\,z^4 + 13\,578\,696\,907\,776\,000\,z^3 + 103\,095\,630\,525\,888\,000\,z^2 + 2\,185\,997\,388\,595\,020\,000\,z + 937\,184\,975\,939\,086\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 303\,868\,936\,192\,z^7 + 11\,764\,720\,730\,112\,z^6 + 263\,367\,834\,992\,640\,z^5 + 3\,023\,729\,462\,476\,800\,z^4 + 11\,966\,196\,566\,016\,000\,z^3 - 9\,526\,988\,959\,488\,000\,z^2 - 186\,669\,439\,924\,968\,000\,z - 937\,184\,975\,939\,086\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(18\,500\,262\,926\,745\,600\,\sqrt{2}\;z^{13/4}\right)$$

07.22.03.9141.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(-4\,294\,967\,296\,z^8 + 302\,795\,194\,368\,z^7 - 11\,687\,344\,209\,920\,z^6 + 260\,319\,813\,304\,320\,z^5 - 2\,953\,446\,683\,443\,200\,z^4 + 11\,097\,573\,219\,532\,800\,z^3 + 14\,290\,483\,439\,232\,000\,z^2 + 252\,635\,332\,229\,280\,000\,z - 312\,394\,991\,979\,695\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4\,294\,967\,296\,z^8 - 305\,479\,548\,928\,z^7 + 11\,883\,805\,409\,280\,z^6 - 268\,182\,969\,384\,960\,z^5 + 3\,139\,970\,590\,310\,400\,z^4 - 13\,578\,696\,907\,776\,000\,z^3 + 103\,095\,630\,525\,888\,000\,z^2 - 2\,185\,997\,388\,595\,020\,000\,z + 937\,184\,975\,939\,086\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-4\,294\,967\,296\,z^8 + 303\,868\,936\,192\,z^7 - 11\,764\,720\,730\,112\,z^6 + 263\,367\,834\,992\,640\,z^5 - 3\,023\,729\,462\,476\,800\,z^4 + 11\,966\,196\,566\,016\,000\,z^3 + 9\,526\,988\,959\,488\,000\,z^2 - 186\,669\,439\,924\,968\,000\,z + 937\,184\,975\,939\,086\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(18\,500\,262\,926\,745\,600\,\sqrt{2}\;z^{13/4}\right)$$

07.22.03.9142.01

$$
{}_1F_2\left(-\frac{19}{4};-\frac{11}{2},\frac{21}{4};z\right)=
\left(221\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}-1\,288\,490\,188\,800\,z^{15/2}+325\,343\,772\,672\,z^{7}-\right.\right.\right.
$$
$$
53\,265\,379\,098\,624\,z^{13/2}+13\,571\,425\,566\,720\,z^{6}-1\,286\,241\,370\,767\,360\,z^{11/2}+332\,686\,216\,396\,800\,z^{5}-
$$
$$
16\,171\,494\,589\,071\,360\,z^{9/2}+4\,337\,474\,703\,851\,520\,z^{4}-72\,288\,683\,576\,524\,800\,z^{7/2}+
$$
$$
22\,717\,482\,426\,777\,600\,z^{3}+51\,782\,496\,708\,096\,000\,z^{5/2}+569\,607\,463\,789\,056\,000\,z^{2}+
$$
$$
5\,126\,467\,174\,101\,504\,000\,z^{3/2}+17\,381\,927\,762\,187\,912\,000\,z+29\,612\,356\,772\,275\,777\,500\sqrt{z}\;+
$$
$$
e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}+1\,288\,490\,188\,800\,z^{15/2}+325\,343\,772\,672\,z^{7}+\right.
$$
$$
53\,265\,379\,098\,624\,z^{13/2}+13\,571\,425\,566\,720\,z^{6}+1\,286\,241\,370\,767\,360\,z^{11/2}+
$$
$$
332\,686\,216\,396\,800\,z^{5}+16\,171\,494\,589\,071\,360\,z^{9/2}+4\,337\,474\,703\,851\,520\,z^{4}+
$$
$$
72\,288\,683\,576\,524\,800\,z^{7/2}+22\,717\,482\,426\,777\,600\,z^{3}-51\,782\,496\,708\,096\,000\,z^{5/2}+
$$
$$
569\,607\,463\,789\,056\,000\,z^{2}-5\,126\,467\,174\,101\,504\,000\,z^{3/2}+17\,381\,927\,762\,187\,912\,000\,z-
$$
$$
\left.\left.29\,612\,356\,772\,275\,777\,500\sqrt{z}\;+22\,209\,267\,579\,206\,833\,125\right)+22\,209\,267\,579\,206\,833\,125\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}+5\,141\,075\,853\,312\,z^{8}+212\,069\,378\,949\,120\,z^{7}+5\,102\,919\,430\,963\,200\,z^{6}+\right.
$$
$$
63\,627\,026\,654\,822\,400\,z^{5}+274\,391\,552\,448\,921\,600\,z^{4}-308\,690\,496\,505\,036\,800\,z^{3}+
$$
$$
\left.1\,281\,616\,793\,525\,376\,000\,z^{2}-6\,307\,957\,655\,632\,710\,000\,z+22\,209\,267\,579\,206\,833\,125\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}+5\,141\,075\,853\,312\,z^{8}+212\,069\,378\,949\,120\,z^{7}+5\,102\,919\,430\,963\,200\,z^{6}+\right.
$$
$$
63\,627\,026\,654\,822\,400\,z^{5}+274\,391\,552\,448\,921\,600\,z^{4}-308\,690\,496\,505\,036\,800\,z^{3}+
$$
$$
\left.1\,281\,616\,793\,525\,376\,000\,z^{2}-6\,307\,957\,655\,632\,710\,000\,z+22\,209\,267\,579\,206\,833\,125\right)
$$
$$
\left.\left.\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(245\,778\,320\,164\,210\,606\,080\,z^{17/4}\right)
$$

07.22.03.9143.01

$$
{}_1F_2\left(-\frac{19}{4};-\frac{11}{2},\frac{21}{4};-z\right)=
\left(221\left(\sqrt{\pi}\left(-68\,719\,476\,736\,z^{9}+5\,141\,075\,853\,312\,z^{8}-212\,069\,378\,949\,120\,z^{7}+5\,102\,919\,430\,963\,200\,z^{6}-\right.\right.\right.
$$
$$
63\,627\,026\,654\,822\,400\,z^{5}+274\,391\,552\,448\,921\,600\,z^{4}+308\,690\,496\,505\,036\,800\,z^{3}+
$$
$$
\left.1\,281\,616\,793\,525\,376\,000\,z^{2}+6\,307\,957\,655\,632\,710\,000\,z+22\,209\,267\,579\,206\,833\,125\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$
$$
2\sqrt[4]{z}\left(\left(-4\,294\,967\,296\,z^{8}+325\,343\,772\,672\,z^{7}-13\,571\,425\,566\,720\,z^{6}+332\,686\,216\,396\,800\,z^{5}-\right.\right.
$$
$$
4\,337\,474\,703\,851\,520\,z^{4}+22\,717\,482\,426\,777\,600\,z^{3}-569\,607\,463\,789\,056\,000\,z^{2}+
$$
$$
17\,381\,927\,762\,187\,912\,000\,z-22\,209\,267\,579\,206\,833\,125\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(4\,294\,967\,296\,z^{8}-
$$
$$
322\,122\,547\,200\,z^{7}+13\,316\,344\,774\,656\,z^{6}-321\,560\,342\,691\,840\,z^{5}+4\,042\,873\,647\,267\,840\,z^{4}-
$$
$$
18\,072\,170\,894\,131\,200\,z^{3}-12\,945\,624\,177\,024\,000\,z^{2}+1\,281\,616\,793\,525\,376\,000\,z-
$$
$$
\left.\left.\left.7\,403\,089\,193\,068\,944\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(61\,444\,580\,041\,052\,651\,520\,z^{17/4}\right)
$$

07.22.03.9144.01

$${}_1F_2\left(-\frac{19}{4};-\frac{11}{2},\frac{23}{4};z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+5\,415\,953\,760\,256\,z^8+236\,980\,189\,265\,920\,z^7+6\,093\,555\,986\,595\,840\,z^6+\right.\right.\right.$$
$$81\,817\,083\,681\,177\,600\,z^5+378\,474\,084\,030\,873\,600\,z^4-584\,321\,989\,515\,264\,000\,z^3-$$
$$\left.\left.1\,571\,953\,178\,315\,520\,000\,z^2-172\,085\,012\,724\,815\,190\,000\,z-192\,122\,920\,067\,512\,809\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(68\,719\,476\,736\,z^9+5\,458\,903\,433\,216\,z^8+240\,480\,587\,612\,160\,z^7+6\,251\,565\,149\,061\,120\,z^6+\right.$$
$$86\,097\,341\,133\,619\,200\,z^5+443\,683\,079\,110\,656\,000\,z^4-76\,215\,911\,675\,904\,000\,z^3-$$
$$\left.170\,893\,766\,956\,872\,960\,000\,z^2-1\,394\,531\,244\,197\,361\,270\,000\,z-576\,368\,760\,202\,538\,428\,125\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+5\,433\,133\,629\,440\,z^8+238\,361\,021\,251\,584\,z^7+\right.$$
$$6\,155\,043\,141\,058\,560\,z^6+83\,444\,293\,907\,251\,200\,z^5+401\,868\,496\,060\,416\,000\,z^4-$$
$$439\,707\,182\,745\,600\,000\,z^3+6\,377\,638\,609\,165\,824\,000\,z^2+164\,944\,555\,765\,279\,290\,000\,z+$$
$$\left.\left.\left.576\,368\,760\,202\,538\,428\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(592\,008\,413\,655\,859\,200\,\sqrt{2}\;z^{17/4}\right)$$

07.22.03.9145.01

$${}_1F_2\left(-\frac{19}{4};-\frac{11}{2},\frac{23}{4};-z\right)=$$

$$-\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-5\,415\,953\,760\,256\,z^8+236\,980\,189\,265\,920\,z^7-6\,093\,555\,986\,595\,840\,z^6+\right.\right.\right.$$
$$81\,817\,083\,681\,177\,600\,z^5-378\,474\,084\,030\,873\,600\,z^4-584\,321\,989\,515\,264\,000\,z^3+$$
$$\left.\left.1\,571\,953\,178\,315\,520\,000\,z^2-172\,085\,012\,724\,815\,190\,000\,z+192\,122\,920\,067\,512\,809\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(-68\,719\,476\,736\,z^9+5\,458\,903\,433\,216\,z^8-240\,480\,587\,612\,160\,z^7+6\,251\,565\,149\,061\,120\,z^6-\right.$$
$$86\,097\,341\,133\,619\,200\,z^5+443\,683\,079\,110\,656\,000\,z^4+76\,215\,911\,675\,904\,000\,z^3-$$
$$\left.170\,893\,766\,956\,872\,960\,000\,z^2+1\,394\,531\,244\,197\,361\,270\,000\,z-576\,368\,760\,202\,538\,428\,125\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-5\,433\,133\,629\,440\,z^8+238\,361\,021\,251\,584\,z^7-\right.$$
$$6\,155\,043\,141\,058\,560\,z^6+83\,444\,293\,907\,251\,200\,z^5-401\,868\,496\,060\,416\,000\,z^4-$$
$$439\,707\,182\,745\,600\,000\,z^3-6\,377\,638\,609\,165\,824\,000\,z^2+164\,944\,555\,765\,279\,290\,000\,z-$$
$$\left.\left.\left.576\,368\,760\,202\,538\,428\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(592\,008\,413\,655\,859\,200\,\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{19}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.9146.01

$${}_1F_2\left(-\frac{19}{4};-\frac{9}{2},-\frac{23}{4};z\right)=$$

$$\frac{1}{21\,735}\left(\left(128\,z^3+6960\,z^2+39\,480\,z+21\,735\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(688\,z^2+10\,500\,z+21\,735\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.9147.01

$${}_1F_2\left(-\frac{19}{4};-\frac{9}{2},-\frac{23}{4};-z\right)=\frac{\left(-128\,z^3+6960\,z^2-39\,480\,z+21\,735\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(688\,z^2-10\,500\,z+21\,735\right)\sin\left(2\sqrt{z}\right)}{21\,735}$$

07.22.03.9148.01

$${}_1F_2\left(-\frac{19}{4};-\frac{9}{2},-\frac{21}{4};z\right)=$$
$$-\frac{1}{197\,358\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768\,z^5-180\,224\,z^4-2\,756\,160\,z^3-162\,470\,880\,z^2-355\,036\,500\,z-197\,358\,525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\,\left(-4096\,z^4+19\,968\,z^3+18\,785\,520\,z^2+197\,149\,680\,z+197\,358\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4\,z\left(8192\,z^4-43\,008\,z^3+1\,409\,616\,z^2+39\,262\,860\,z+197\,358\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9149.01

$${}_1F_2\left(-\frac{19}{4};-\frac{9}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{197\,358\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768\,z^5+180\,224\,z^4-2\,756\,160\,z^3+162\,470\,880\,z^2-355\,036\,500\,z+197\,358\,525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\,\left(4096\,z^4+19\,968\,z^3-18\,785\,520\,z^2+197\,149\,680\,z-197\,358\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(8192\,z^4+43\,008\,z^3+1\,409\,616\,z^2-39\,262\,860\,z+197\,358\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9150.01

$${}_1F_2\left(-\frac{19}{4};-\frac{9}{2},-\frac{19}{4};z\right)=\left(\frac{16\,z^2}{63}+\frac{16\,z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{945}\sqrt{z}\,\left(16\,z^2+420\,z+945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.9151.01

$${}_1F_2\left(-\frac{19}{4};-\frac{9}{2},-\frac{19}{4};-z\right)=\left(\frac{16\,z^2}{63}-\frac{16\,z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\,\left(16\,z^2-420\,z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.9152.01

$${}_1F_2\left(-\frac{19}{4};-\frac{9}{2},-\frac{17}{4};z\right)=$$
$$-\frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^5-31\,744\,z^4+144\,960\,z^3-6\,994\,080\,z^2-16\,461\,900\,z-9\,398\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\,\left(-2048\,z^4+2688\,z^3+507\,600\,z^2+8\,943\,480\,z+9\,398\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4\,z\left(4096\,z^4-6912\,z^3+35\,856\,z^2+1\,425\,060\,z+9\,398\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9153.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, -\frac{17}{4}; -z\right) = \frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384 z^5 + 31\,744 z^4 + 144\,960 z^3 + 6\,994\,080 z^2 - 16\,461\,900 z + 9\,398\,025\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048 z^4 + 2688 z^3 - 507\,600 z^2 + 8\,943\,480 z - 9\,398\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^4 + 6912 z^3 + 35\,856 z^2 - 1\,425\,060 z + 9\,398\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9154.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, -\frac{15}{4}; z\right) = \frac{1}{6\,548\,850}\left(e^{-2\sqrt{z}}\left(8192 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{19/4} + 8192 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{19/4} - 8192 e^{4\sqrt{z}} z^{9/2} + 8192 z^{9/2} - 2048 e^{4\sqrt{z}} z^4 - 2048 z^4 - 1536 e^{4\sqrt{z}} z^{7/2} + 1536 z^{7/2} - 1920 e^{4\sqrt{z}} z^3 - 1920 z^3 - 3360 e^{4\sqrt{z}} z^{5/2} + 3360 z^{5/2} + 519\,120 e^{4\sqrt{z}} z^2 + 519\,120 z^2 - 2\,522\,520 e^{4\sqrt{z}} z^{3/2} + 2\,522\,520 z^{3/2} + 5\,627\,160 e^{4\sqrt{z}} z + 5\,627\,160 z - 6\,548\,850 e^{4\sqrt{z}}\sqrt{z} + 6\,548\,850\sqrt{z} + 3\,274\,425 e^{4\sqrt{z}} + 3\,274\,425\right)\right) $$

07.22.03.9155.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{3\,274\,425}\left(-16\,384\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{19/4} + 2\left(4096 z^4 - 768 z^3 + 1680 z^2 - 1\,261\,260 z + 3\,274\,425\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-2048 z^4 + 1920 z^3 + 519\,120 z^2 - 5\,627\,160 z + 3\,274\,425\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9156.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, -\frac{13}{4}; z\right) = \frac{1}{552\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192 z^5 + 13\,312 z^4 - 27\,840 z^3 + 347\,040 z^2 + 926\,100 z + 552\,825\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024 z^4 + 2304 z^3 - 720 z^2 + 483\,840 z + 552\,825\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-2048 z^4 - 3840 z^3 + 5328 z^2 + 41\,580 z + 552\,825\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9157.01

$${}_1F_2\left(-\frac{19}{4};-\frac{9}{2},-\frac{13}{4};-z\right)=$$
$$-\frac{1}{552\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192z^5-13\,312z^4-27\,840z^3-347\,040z^2+926\,100z-552\,825\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(1024z^4-2304z^3-720z^2-483\,840z+552\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(2048z^4-3840z^3-5328z^2+41\,580z-552\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9158.01

$${}_1F_2\left(-\frac{19}{4};-\frac{9}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{436\,590}\left(e^{-2\sqrt{z}}\left(2048e^{4\sqrt{z}}z^{9/2}-2048z^{9/2}+512e^{4\sqrt{z}}z^4+512z^4-128e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+57)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}-\right.\right.$$
$$128e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+57)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+7680e^{4\sqrt{z}}z^{7/2}-7680z^{7/2}+2304e^{4\sqrt{z}}z^3+$$
$$2304z^3+2208e^{4\sqrt{z}}z^{5/2}-2208z^{5/2}+3600e^{4\sqrt{z}}z^2+3600z^2-123\,480e^{4\sqrt{z}}z^{3/2}+123\,480z^{3/2}+$$
$$\left.\left.352\,800e^{4\sqrt{z}}z+352\,800z-436\,590e^{4\sqrt{z}}\sqrt{z}+436\,590\sqrt{z}+218\,295e^{4\sqrt{z}}+218\,295\right)\right)$$

07.22.03.9159.01

$${}_1F_2\left(-\frac{19}{4};-\frac{9}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{218\,295}\left(256\sqrt{\pi}\,(16z-57)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}-2\left(1024z^4-3840z^3+1104z^2+61\,740z-218\,295\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(512z^4-2304z^3+3600z^2-352\,800z+218\,295\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9160.01

$${}_1F_2\left(-\frac{19}{4};-\frac{9}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{127\,575\sqrt{2}}\left(\sqrt[4]{z}\left(-\left(4096z^5+21\,248z^4+31\,680z^3-59\,040z^2-195\,300z-127\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\right.\right.$$
$$\sqrt{z}\left(512z^4+2976z^3+6480z^2-93\,240z-127\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(1024z^4+5568z^3+9648z^2-8820z+127\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9161.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{127\,575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096z^5 - 21\,248z^4 + 31\,680z^3 + 59\,040z^2 - 195\,300z + 127\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\right.\right.$$
$$\sqrt{z}\left(512z^4 - 2976z^3 + 6480z^2 + 93\,240z - 127\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4z\left(1024z^4 - 5568z^3 + 9648z^2 + 8820z + 127\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9162.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{39\,690}\left(e^{-2\sqrt{z}}\left(-256e^{4\sqrt{z}}z^{9/2} + 256z^{9/2} - 64e^{4\sqrt{z}}z^4 - 64z^4 - 1872e^{4\sqrt{z}}z^{7/2} + 1872z^{7/2} - 516e^{4\sqrt{z}}z^3 - \right.\right.$$
$$516z^3 + e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 + 1824z + 5985\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4} +$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 + 1824z + 5985\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4} - 6432e^{4\sqrt{z}}z^{5/2} + 6432z^{5/2} - 2160e^{4\sqrt{z}}z^2 - 2160z^2 -$$
$$\left.\left.2520e^{4\sqrt{z}}z^{3/2} + 2520z^{3/2} + 27\,720e^{4\sqrt{z}}z + 27\,720z - 39\,690e^{4\sqrt{z}}\sqrt{z} + 39\,690\sqrt{z} + 19\,845e^{4\sqrt{z}} + 19\,845\right)\right)$$

07.22.03.9163.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{19\,845}\left(-2\sqrt{\pi}\left(256z^2 - 1824z + 5985\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4} + 2\left(128z^4 - 936z^3 + 3216z^2 - 1260z + 19\,845\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \right.$$
$$\left.\left(-64z^4 + 516z^3 - 2160z^2 - 27\,720z + 19\,845\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9164.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{70\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^5 + 17\,920z^4 + 86\,520z^3 + 93\,600z^2 + 81\,900z + 70\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\right.\right.$$
$$\left(256z^4 + 2400z^3 + 12\,645z^2 + 25\,200z + 70\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4z\left(512z^4 + 4608z^3 + 22\,950z^2 + 31\,500z - 70\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9165.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, -\frac{5}{4}; -z\right) = $$
$$ -\frac{1}{70\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^5 - 17\,920z^4 + 86\,520z^3 - 93\,600z^2 + 81\,900z - 70\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\right.\right. $$
$$ \left(256z^4 - 2400z^3 + 12\,645z^2 - 25\,200z + 70\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4z\left(512z^4 - 4608z^3 + 22\,950z^2 - 31\,500z - 70\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9166.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) = $$
$$ \frac{1}{1\,088\,640}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3 + 43\,776z^2 + 287\,280z + 724\,185\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} - e^{2\sqrt{z}}\sqrt{2\pi}\right.\right. $$
$$ \left(4096z^3 + 43\,776z^2 + 287\,280z + 724\,185\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} + 4\left(-1024z^{9/2} + 256z^4 - 11\,136z^{7/2} + 2976z^3 - \right. $$
$$ 74\,292z^{5/2} + 21\,465z^2 - 201\,600z^{3/2} + 80\,640z + 272\,160\sqrt{z} + e^{4\sqrt{z}}\left(1024z^{9/2} + 256z^4 + 11\,136z^{7/2} + \right. $$
$$ \left.\left.\left.\left. 2976z^3 + 74\,292z^{5/2} + 21\,465z^2 + 201\,600z^{3/2} + 80\,640z - 272\,160\sqrt{z} + 136\,080\right) + 136\,080\right)\right)\right) $$

07.22.03.9167.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{1}{272\,160} $$
$$ \left(\sqrt{\pi}\left(4096z^3 - 43\,776z^2 + 287\,280z - 724\,185\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} + 2\left(\left(256z^4 - 2976z^3 + 21\,465z^2 - 80\,640z + 136\,080\right)\right.\right. $$
$$ \left.\left.\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(-256z^4 + 2784z^3 - 18\,573z^2 + 50\,400z + 68\,040\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9168.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) = $$
$$ \frac{1}{793\,800\sqrt{2}}\left(\sqrt[4]{z}\left(-2\left(4096z^5 + 50\,432z^4 + 410\,160z^3 + 1\,504\,755z^2 + 882\,000z - 396\,900\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \sqrt{z}\left(4096z^4 + 52\,992z^3 + 448\,560z^2 + 1\,893\,465z - 3\,175\,200\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2z\left(4096z^4 + 51\,456z^3 + 424\,368z^2 + 1\,634\,535z + 1\,587\,600\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9169.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) = \frac{1}{793\,800\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(4096z^5 - 50\,432z^4 + 410\,160z^3 - 1\,504\,755z^2 + 882\,000z + 396\,900\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-4096z^4 + 52\,992z^3 - 448\,560z^2 + 1\,893\,465z + 3\,175\,200\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(4096z^4 - 51\,456z^3 + 424\,368z^2 - 1\,634\,535z + 1\,587\,600\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9170.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) = \frac{1}{92\,897\,280}\left(e^{-2\sqrt{z}}\left(-4\left(-16\,384z^{9/2} + 4096z^4 - 236\,544z^{7/2} + 62\,208z^3 - 2\,348\,736z^{5/2} + 644\,400z^2 - 12\,155\,220z^{3/2} + 3\,785\,985z - 23\,224\,320\sqrt{z} + e^{4\sqrt{z}}\left(16\,384z^{9/2} + 4096z^4 + 236\,544z^{7/2} + 62\,208z^3 + 2\,348\,736z^{5/2} + 644\,400z^2 + 12\,155\,220z^{3/2} + 3\,785\,985z + 23\,224\,320\sqrt{z} - 11\,612\,160\right) - 11\,612\,160\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(65\,536z^4 + 933\,888z^3 + 9\,192\,960z^2 + 46\,347\,840z + 76\,039\,425\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(65\,536z^4 + 933\,888z^3 + 9\,192\,960z^2 + 46\,347\,840z + 76\,039\,425\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9171.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) = \frac{1}{23\,224\,320}\left(\sqrt{\pi}\,z^{3/4}\left(-65\,536z^4 + 933\,888z^3 - 9\,192\,960z^2 + 46\,347\,840z - 76\,039\,425\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\left(\left(-4096z^4 + 62\,208z^3 - 644\,400z^2 + 3\,785\,985z + 11\,612\,160\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(4096z^4 - 59\,136z^3 + 587\,184z^2 - 3\,038\,805z + 5\,806\,080\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9172.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) = \frac{1}{228\,614\,400\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(65\,536z^5 + 1\,040\,384z^4 + 11\,888\,640z^3 + 73\,884\,960z^2 + 171\,248\,175z + 114\,307\,200\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(65\,536z^4 + 1\,081\,344z^3 + 12\,648\,960z^2 + 83\,825\,280z + 259\,728\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2z\left(65\,536z^4 + 1\,056\,768z^3 + 12\,174\,336z^2 + 77\,384\,160z + 197\,500\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9173.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) = \frac{1}{228\,614\,400\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(-2\left(65\,536 z^5 - 1\,040\,384 z^4 + 11\,888\,640 z^3 - 73\,884\,960 z^2 + 171\,248\,175 z - 114\,307\,200\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \sqrt{z}\left(65\,536 z^4 - 1\,081\,344 z^3 + 12\,648\,960 z^2 - 83\,825\,280 z + 259\,728\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 2 z\left(65\,536 z^4 - 1\,056\,768 z^3 + 12\,174\,336 z^2 - 77\,384\,160 z + 197\,500\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9174.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) = $$
$$ \frac{1}{29\,727\,129\,600\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-262\,144 z^{9/2} + 65\,536 z^4 - 4\,718\,592 z^{7/2} + 1\,228\,800 z^3 - 62\,269\,440 z^{5/2} + \right.\right.\right. $$
$$ 16\,657\,920 z^2 - 477\,550\,080 z^{3/2} + 136\,704\,960 z - 1\,652\,786\,100\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(262\,144 z^{9/2} + 65\,536 z^4 + 4\,718\,592 z^{7/2} + 1\,228\,800 z^3 + 62\,269\,440 z^{5/2} + 16\,657\,920 z^2 + \right. $$
$$ \left.\left. 477\,550\,080 z^{3/2} + 136\,704\,960 z + 1\,652\,786\,100\sqrt{z} + 618\,356\,025\right) + 618\,356\,025\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576 z^5 + 18\,677\,760 z^4 + 245\,145\,600 z^3 + 1\,853\,913\,600 z^2 + 6\,083\,154\,000 z + 4\,334\,247\,225\right) $$
$$ \left.\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.\right. $$
$$ \left.\left.\left.\left(1\,048\,576 z^5 + 18\,677\,760 z^4 + 245\,145\,600 z^3 + 1\,853\,913\,600 z^2 + 6\,083\,154\,000 z + 4\,334\,247\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9175.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, \frac{5}{4}; -z\right) = \frac{1}{7\,431\,782\,400\sqrt[4]{z}} $$
$$ \left(\sqrt{\pi}\left(-1\,048\,576 z^5 + 18\,677\,760 z^4 - 245\,145\,600 z^3 + 1\,853\,913\,600 z^2 - 6\,083\,154\,000 z + 4\,334\,247\,225\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ 2\sqrt[4]{z}\left(\left(-65\,536 z^4 + 1\,228\,800 z^3 - 16\,657\,920 z^2 + 136\,704\,960 z - 618\,356\,025\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. \left. 4\sqrt{z}\left(65\,536 z^4 - 1\,179\,648 z^3 + 15\,567\,360 z^2 - 119\,387\,520 z + 413\,196\,525\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9176.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, \frac{7}{4}; z\right) = \frac{1}{26\,824\,089\,600\sqrt{2}\sqrt[4]{z}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576 z^5 + 20\,381\,696 z^4 + 299\,950\,080 z^3 + 2\,624\,140\,800 z^2 + 10\,470\,675\,600 z + 8\,828\,941\,275\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ \left(1\,048\,576 z^5 + 21\,037\,056 z^4 + 314\,449\,920 z^3 + 2\,858\,042\,880 z^2 + 13\,015\,371\,600 z - 13\,749\,310\,575\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(1\,048\,576 z^5 + 20\,643\,840 z^4 + 305\,455\,104 z^3 + \right. $$
$$ \left.\left. 2\,709\,020\,160 z^2 + 11\,300\,945\,040 z + 13\,749\,310\,575\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.9177.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, \frac{7}{4}; -z\right) = \frac{1}{26\,824\,089\,600\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\sqrt{z}\left(-1\,048\,576 z^5 + 20\,381\,696 z^4 - 299\,950\,080 z^3 + 2\,624\,140\,800 z^2 - 10\,470\,675\,600 z + 8\,828\,941\,275\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(1\,048\,576 z^5 - 21\,037\,056 z^4 + 314\,449\,920 z^3 - 2\,858\,042\,880 z^2 + 13\,015\,371\,600 z + 13\,749\,310\,575\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-1\,048\,576 z^5 + 20\,643\,840 z^4 - 305\,455\,104 z^3 + \right. $$
$$ \left.\left. 2\,709\,020\,160 z^2 - 11\,300\,945\,040 z + 13\,749\,310\,575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.9178.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, \frac{9}{4}; z\right) = $$
$$ \frac{1}{2\,283\,043\,553\,280 z^{5/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 90\,439\,680 z^{9/2} + 23\,396\,352 z^4 - \right.\right.\right. $$
$$ 1\,489\,403\,904 z^{7/2} + 392\,601\,600 z^3 - 15\,154\,513\,920 z^{5/2} + 4\,169\,894\,400 z^2 - 76\,739\,261\,760 z^{3/2} + $$
$$ 24\,373\,757\,520 z - 132\,916\,914\,900\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 90\,439\,680 z^{9/2} + \right. $$
$$ \left. 23\,396\,352 z^4 + 1\,489\,403\,904 z^{7/2} + 392\,601\,600 z^3 + 15\,154\,513\,920 z^{5/2} + 4\,169\,894\,400 z^2 + \right. $$
$$ \left.\left. 76\,739\,261\,760 z^{3/2} + 24\,373\,757\,520 z + 132\,916\,914\,900\sqrt{z} - 99\,687\,686\,175\right) - 99\,687\,686\,175\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 358\,612\,992 z^5 + 5\,883\,494\,400 z^4 + 59\,325\,235\,200 z^3 + \right. $$
$$ \left. 291\,991\,392\,000 z^2 + 416\,087\,733\,600 z - 99\,687\,686\,175\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 358\,612\,992 z^5 + 5\,883\,494\,400 z^4 + 59\,325\,235\,200 z^3 + \right. $$
$$ \left.\left. 291\,991\,392\,000 z^2 + 416\,087\,733\,600 z - 99\,687\,686\,175\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Bigg) $$

07.22.03.9179.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = $$
$$ \frac{1}{570\,760\,888\,320 z^{5/4}}\left(\sqrt{\pi}\left(-16\,777\,216 z^6 + 358\,612\,992 z^5 - 5\,883\,494\,400 z^4 + 59\,325\,235\,200 z^3 - 291\,991\,392\,000 z^2 + \right.\right. $$
$$ 416\,087\,733\,600 z + 99\,687\,686\,175\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576 z^5 - 22\,609\,920 z^4 + \right. $$
$$ 372\,350\,976 z^3 - 3\,788\,628\,480 z^2 + 19\,184\,815\,440 z - 33\,229\,228\,725\right)\sin\left(2\sqrt{z}\right) - $$
$$ \left.\left.\left(1\,048\,576 z^5 - 23\,396\,352 z^4 + 392\,601\,600 z^3 - 4\,169\,894\,400 z^2 + 24\,373\,757\,520 z + 99\,687\,686\,175\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9180.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6 + 385\,875\,968\,z^5 + 6\,947\,143\,680\,z^4 + 78\,344\,847\,360\,z^3 + 442\,354\,348\,800\,z^2 + 713\,253\,340\,800\,z + 343\,732\,764\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(16\,777\,216\,z^6 + 396\,361\,728\,z^5 + 7\,216\,496\,640\,z^4 + 83\,530\,137\,600\,z^3 + 510\,096\,787\,200\,z^2 + 1\,319\,933\,815\,200\,z + 1\,031\,198\,293\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,777\,216\,z^6 + 390\,070\,272\,z^5 + 7\,050\,166\,272\,z^4 + 80\,263\,249\,920\,z^3 + 465\,677\,372\,160\,z^2 + 879\,955\,876\,800\,z - 1\,031\,198\,293\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(1\,594\,117\,324\,800\,\sqrt{2}\,z^{5/4}\right) $$

07.22.03.9181.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = $$

$$ \left(\left(-2\sqrt{z}\,\left(16\,777\,216\,z^6 - 385\,875\,968\,z^5 + 6\,947\,143\,680\,z^4 - 78\,344\,847\,360\,z^3 + 442\,354\,348\,800\,z^2 - 713\,253\,340\,800\,z + 343\,732\,764\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216\,z^6 - 396\,361\,728\,z^5 + 7\,216\,496\,640\,z^4 - 83\,530\,137\,600\,z^3 + 510\,096\,787\,200\,z^2 - 1\,319\,933\,815\,200\,z + 1\,031\,198\,293\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-16\,777\,216\,z^6 + 390\,070\,272\,z^5 - 7\,050\,166\,272\,z^4 + 80\,263\,249\,920\,z^3 - 465\,677\,372\,160\,z^2 + 879\,955\,876\,800\,z + 1\,031\,198\,293\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(1\,594\,117\,324\,800\,\sqrt{2}\,z^{5/4}\right) $$

07.22.03.9182.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = $$

$$ \frac{1}{113\,644\,834\,652\,160\,z^{9/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 - 1\,686\,110\,208\,z^{11/2} + 434\,110\,464\,z^5 - 33\,288\,880\,128\,z^{9/2} + 8\,691\,056\,640\,z^4 - 422\,311\,034\,880\,z^{7/2} + 113\,639\,178\,240\,z^3 - 2\,822\,953\,835\,520\,z^{5/2} + 831\,674\,269\,440\,z^2 - 6\,683\,822\,006\,400\,z^{3/2} + 3\,190\,005\,957\,600\,z + 17\,943\,783\,511\,500\,\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 + 1\,686\,110\,208\,z^{11/2} + 434\,110\,464\,z^5 + 33\,288\,880\,128\,z^{9/2} + 8\,691\,056\,640\,z^4 + 422\,311\,034\,880\,z^{7/2} + 113\,639\,178\,240\,z^3 + 2\,822\,953\,835\,520\,z^{5/2} + 831\,674\,269\,440\,z^2 + 6\,683\,822\,006\,400\,z^{3/2} + 3\,190\,005\,957\,600\,z - 17\,943\,783\,511\,500\,\sqrt{z} + 13\,457\,837\,633\,625\right) + 13\,457\,837\,633\,625\right) + e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7 + 6\,694\,109\,184\,z^6 + 131\,790\,274\,560\,z^5 + 1\,661\,106\,585\,600\,z^4 + 10\,901\,011\,968\,000\,z^3 + 23\,300\,913\,081\,600\,z^2 - 11\,165\,020\,851\,600\,z + 13\,457\,837\,633\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7 + 6\,694\,109\,184\,z^6 + 131\,790\,274\,560\,z^5 + 1\,661\,106\,585\,600\,z^4 + 10\,901\,011\,968\,000\,z^3 + 23\,300\,913\,081\,600\,z^2 - 11\,165\,020\,851\,600\,z + 13\,457\,837\,633\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right) $$

07.22.03.9183.01

$${}_1F_2\left(-\frac{19}{4};-\frac{9}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{28\,411\,208\,663\,040\,z^{9/4}}\left(\sqrt{\pi}\,\left(-268\,435\,456\,z^7+6\,694\,109\,184\,z^6-131\,790\,274\,560\,z^5+1\,661\,106\,585\,600\,z^4-\right.\right.$$
$$\left.10\,901\,011\,968\,000\,z^3+23\,300\,913\,081\,600\,z^2+11\,165\,020\,851\,600\,z+13\,457\,837\,633\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\,\left(\left(-16\,777\,216\,z^6+434\,110\,464\,z^5-8\,691\,056\,640\,z^4+113\,639\,178\,240\,z^3-831\,674\,269\,440\,z^2+\right.\right.$$
$$3\,190\,005\,957\,600\,z-13\,457\,837\,633\,625\Big)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(16\,777\,216\,z^6-421\,527\,552\,z^5+8\,322\,220\,032\right.$$
$$\left.\left.\left.z^4-105\,577\,758\,720\,z^3+705\,738\,458\,880\,z^2-1\,670\,955\,501\,600\,z-4\,485\,945\,877\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.9184.01

$${}_1F_2\left(-\frac{19}{4};-\frac{9}{2},\frac{15}{4};z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+7\,130\,316\,800\,z^6+151\,797\,104\,640\,z^5+2\,095\,305\,523\,200\,z^4+15\,287\,105\,433\,600\,z^3+\right.\right.\right.$$
$$\left.35\,923\,541\,472\,000\,z^2-38\,498\,069\,610\,000\,z-69\,777\,751\,168\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(268\,435\,456\,z^7+7\,298\,088\,960\,z^6+156\,704\,440\,320\,z^5+2\,205\,278\,208\,000\,z^4+16\,976\,494\,080\,000\,z^3+\right.$$
$$\left.52\,797\,352\,608\,000\,z^2-434\,478\,214\,170\,000\,z-209\,333\,253\,504\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+7\,197\,425\,664\,z^6+153\,684\,541\,440\,z^5+2\,136\,534\,220\,800\,z^4+\right.$$
$$15\,888\,357\,273\,600\,z^3+41\,064\,607\,584\,000\,z^2-12\,099\,393\,306\,000\,z+$$
$$\left.\left.209\,333\,253\,504\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(69\,561\,483\,264\,000\,\sqrt{2}\;z^{9/4}\right)$$

07.22.03.9185.01

$${}_1F_2\left(-\frac{19}{4};-\frac{9}{2},\frac{15}{4};-z\right)=$$
$$\left(\left(-2\sqrt{z}\,\left(268\,435\,456\,z^7-7\,130\,316\,800\,z^6+151\,797\,104\,640\,z^5-2\,095\,305\,523\,200\,z^4+15\,287\,105\,433\,600\,z^3-\right.\right.\right.$$
$$\left.35\,923\,541\,472\,000\,z^2-38\,498\,069\,610\,000\,z+69\,777\,751\,168\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(268\,435\,456\,z^7-7\,298\,088\,960\,z^6+156\,704\,440\,320\,z^5-2\,205\,278\,208\,000\,z^4+16\,976\,494\,080\,000\,z^3-\right.$$
$$\left.52\,797\,352\,608\,000\,z^2-434\,478\,214\,170\,000\,z+209\,333\,253\,504\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-268\,435\,456\,z^7+7\,197\,425\,664\,z^6-153\,684\,541\,440\,z^5+2\,136\,534\,220\,800\,z^4-\right.$$
$$15\,888\,357\,273\,600\,z^3+41\,064\,607\,584\,000\,z^2+12\,099\,393\,306\,000\,z+$$
$$\left.\left.209\,333\,253\,504\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(69\,561\,483\,264\,000\,\sqrt{2}\;z^{9/4}\right)$$

07.22.03.9186.01

$$
{}_1F_2\left(-\frac{19}{4};-\frac{9}{2},\frac{17}{4};z\right)=
$$

$$
\left(13\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-30\,802\,968\,576\,z^{13/2}+7\,902\,068\,736\,z^{6}-709\,059\,674\,112\,z^{11/2}+\right.\right.\right.
$$

$$
183\,883\,530\,240\,z^{5}-10\,778\,148\,864\,000\,z^{9/2}+2\,859\,605\,360\,640\,z^{4}-89\,600\,587\,776\,000\,z^{7/2}+
$$

$$
25\,335\,886\,786\,560\,z^{3}-272\,655\,747\,302\,400\,z^{5/2}+105\,725\,911\,737\,600\,z^{2}+
$$

$$
8\,202\,872\,462\,400\,z^{3/2}-2\,282\,449\,262\,662\,800\,z-5\,006\,315\,599\,708\,500\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}+30\,802\,968\,576\,z^{13/2}+7\,902\,068\,736\,z^{6}+709\,059\,674\,112\,z^{11/2}+\right.
$$

$$
183\,883\,530\,240\,z^{5}+10\,778\,148\,864\,000\,z^{9/2}+2\,859\,605\,360\,640\,z^{4}+89\,600\,587\,776\,000\,z^{7/2}+
$$

$$
25\,335\,886\,786\,560\,z^{3}+272\,655\,747\,302\,400\,z^{5/2}+105\,725\,911\,737\,600\,z^{2}-8\,202\,872\,462\,400\,z^{3/2}-
$$

$$
\left.2\,282\,449\,262\,662\,800\,z+5\,006\,315\,599\,708\,500\sqrt{z}\;-3\,754\,736\,699\,781\,375\right)-3\,754\,736\,699\,781\,375\Big)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\,\pi}\left(4\,294\,967\,296\,z^{8}+122\,406\,567\,936\,z^{7}+2\,811\,525\,857\,280\,z^{6}+42\,524\,328\,591\,360\,z^{5}+\right.
$$

$$
348\,832\,382\,976\,000\,z^{4}+994\,172\,291\,481\,600\,z^{3}-714\,561\,334\,502\,400\,z^{2}+
$$

$$
\left.1\,722\,603\,217\,104\,000\,z-3\,754\,736\,699\,781\,375\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\,\pi}\left(4\,294\,967\,296\,z^{8}+122\,406\,567\,936\,z^{7}+2\,811\,525\,857\,280\,z^{6}+42\,524\,328\,591\,360\,z^{5}+\right.
$$

$$
348\,832\,382\,976\,000\,z^{4}+994\,172\,291\,481\,600\,z^{3}-714\,561\,334\,502\,400\,z^{2}+
$$

$$
\left.\left.1\,722\,603\,217\,104\,000\,z-3\,754\,736\,699\,781\,375\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\Big/\left(58\,186\,155\,341\,905\,920\,z^{13/4}\right)
$$

07.22.03.9187.01

$$
{}_1F_2\left(-\frac{19}{4};-\frac{9}{2},\frac{17}{4};-z\right)=
$$

$$
\left(13\left(\sqrt{\pi}\left(-4\,294\,967\,296\,z^{8}+122\,406\,567\,936\,z^{7}-2\,811\,525\,857\,280\,z^{6}+42\,524\,328\,591\,360\,z^{5}-348\,832\,382\,976\,000\,z^{4}+\right.\right.\right.
$$

$$
\left.994\,172\,291\,481\,600\,z^{3}+714\,561\,334\,502\,400\,z^{2}+1\,722\,603\,217\,104\,000\,z+3\,754\,736\,699\,781\,375\right)
$$

$$
C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(-268\,435\,456\,z^{7}+7\,902\,068\,736\,z^{6}-183\,883\,530\,240\,z^{5}+2\,859\,605\,360\,640\,z^{4}-\right.\right.
$$

$$
\left.25\,335\,886\,786\,560\,z^{3}+105\,725\,911\,737\,600\,z^{2}+2\,282\,449\,262\,662\,800\,z-3\,754\,736\,699\,781\,375\right)
$$

$$
\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(268\,435\,456\,z^{7}-7\,700\,742\,144\,z^{6}+177\,264\,918\,528\,z^{5}-\right.
$$

$$
2\,694\,537\,216\,000\,z^{4}+22\,400\,146\,944\,000\,z^{3}-68\,163\,936\,825\,600\,z^{2}-
$$

$$
\left.\left.\left.2\,050\,718\,115\,600\,z-1\,251\,578\,899\,927\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(14\,546\,538\,835\,476\,480\,z^{13/4}\right)
$$

07.22.03.9188.01

$${}_1F_2\left(-\frac{19}{4};-\frac{9}{2},\frac{19}{4};z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+129\,385\,889\,792\,z^7+3\,179\,450\,204\,160\,z^6+51\,913\,666\,068\,480\,z^5+464\,230\,416\,384\,000\,z^4+\right.\right.\right.$$
$$\left.1\,427\,976\,384\,307\,200\,z^3-1\,724\,713\,518\,528\,000\,z^2+19\,458\,024\,325\,740\,000\,z+25\,329\,323\,674\,029\,375\right)$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4\,294\,967\,296\,z^8+132\,070\,244\,352\,z^7+3\,267\,530\,588\,160\,z^6+54\,168\,114\,954\,240\,z^5+\right.$$
$$504\,192\,555\,417\,600\,z^4+1\,877\,239\,203\,840\,000\,z^3+1\,971\,101\,164\,032\,000\,z^2+$$
$$\left.174\,165\,266\,915\,640\,000\,z+75\,987\,971\,022\,088\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+130\,459\,631\,616\,z^7+3\,213\,474\,398\,208\,z^6+52\,766\,976\,245\,760\,z^5+\right.$$
$$478\,769\,047\,142\,400\,z^4+1\,573\,992\,870\,912\,000\,z^3-950\,352\,346\,944\,000\,z^2-12\,057\,595\,401\,852\,000\,z-$$
$$\left.\left.\left.75\,987\,971\,022\,088\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(2\,522\,763\,126\,374\,400\,\sqrt{2}\;z^{13/4}\right)$$

07.22.03.9189.01

$${}_1F_2\left(-\frac{19}{4};-\frac{9}{2},\frac{19}{4};-z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(-4\,294\,967\,296\,z^8+129\,385\,889\,792\,z^7-3\,179\,450\,204\,160\,z^6+51\,913\,666\,068\,480\,z^5-464\,230\,416\,384\,000\,z^4+\right.\right.\right.$$
$$\left.1\,427\,976\,384\,307\,200\,z^3+1\,724\,713\,518\,528\,000\,z^2+19\,458\,024\,325\,740\,000\,z-25\,329\,323\,674\,029\,375\right)$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4\,294\,967\,296\,z^8-132\,070\,244\,352\,z^7+3\,267\,530\,588\,160\,z^6-54\,168\,114\,954\,240\,z^5+\right.$$
$$504\,192\,555\,417\,600\,z^4-1\,877\,239\,203\,840\,000\,z^3+1\,971\,101\,164\,032\,000\,z^2-$$
$$\left.174\,165\,266\,915\,640\,000\,z+75\,987\,971\,022\,088\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-4\,294\,967\,296\,z^8+130\,459\,631\,616\,z^7-3\,213\,474\,398\,208\,z^6+52\,766\,976\,245\,760\,z^5-\right.$$
$$478\,769\,047\,142\,400\,z^4+1\,573\,992\,870\,912\,000\,z^3+950\,352\,346\,944\,000\,z^2-12\,057\,595\,401\,852\,000\,z+$$
$$\left.\left.\left.75\,987\,971\,022\,088\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(2\,522\,763\,126\,374\,400\,\sqrt{2}\;z^{13/4}\right)$$

07.22.03.9190.01

$$
{}_1F_2\left(-\frac{19}{4};-\frac{9}{2},\frac{21}{4};z\right)=
\left(221\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}-554\,050\,781\,184\,z^{15/2}+141\,733\,920\,768\,z^{7}-\right.\right.\right.
$$
$$
14\,569\,602\,809\,856\,z^{13/2}+3\,759\,774\,105\,600\,z^{6}-258\,126\,611\,742\,720\,z^{11/2}+67\,825\,418\,895\,360\,z^{5}-
$$
$$
2\,567\,292\,880\,158\,720\,z^{9/2}+707\,843\,458\,990\,080\,z^{4}-9\,587\,583\,619\,891\,200\,z^{7/2}+3\,308\,989\,036\,953\,600\,z^{3}+
$$
$$
4\,104\,419\,093\,913\,600\,z^{5/2}+10\,105\,938\,873\,676\,800\,z^{2}+320\,404\,198\,381\,344\,000\,z^{3/2}+
$$
$$
1\,281\,616\,793\,525\,376\,000\,z+2\,277\,873\,597\,867\,367\,500\sqrt{z}+e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}+\right.
$$
$$
554\,050\,781\,184\,z^{15/2}+141\,733\,920\,768\,z^{7}+14\,569\,602\,809\,856\,z^{13/2}+3\,759\,774\,105\,600\,z^{6}+
$$
$$
258\,126\,611\,742\,720\,z^{11/2}+67\,825\,418\,895\,360\,z^{5}+2\,567\,292\,880\,158\,720\,z^{9/2}+707\,843\,458\,990\,080\,z^{4}+
$$
$$
9\,587\,583\,619\,891\,200\,z^{7/2}+3\,308\,989\,036\,953\,600\,z^{3}-4\,104\,419\,093\,913\,600\,z^{5/2}+
$$
$$
10\,105\,938\,873\,676\,800\,z^{2}-320\,404\,198\,381\,344\,000\,z^{3/2}+1\,281\,616\,793\,525\,376\,000\,z-
$$
$$
\left.\left.2\,277\,873\,597\,867\,367\,500\sqrt{z}+1\,708\,405\,198\,400\,525\,625\right)+1\,708\,405\,198\,400\,525\,625\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}+2\,203\,318\,222\,848\,z^{8}+57\,837\,103\,349\,760\,z^{7}+1\,020\,583\,886\,192\,640\,z^{6}+\right.
$$
$$
10\,046\,372\,629\,708\,800\,z^{5}+35\,790\,202\,493\,337\,600\,z^{4}-34\,298\,944\,056\,115\,200\,z^{3}+
$$
$$
\left.124\,027\,431\,631\,488\,000\,z^{2}-540\,682\,084\,768\,518\,000\,z+1\,708\,405\,198\,400\,525\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}+2\,203\,318\,222\,848\,z^{8}+57\,837\,103\,349\,760\,z^{7}+1\,020\,583\,886\,192\,640\,z^{6}+\right.
$$
$$
10\,046\,372\,629\,708\,800\,z^{5}+35\,790\,202\,493\,337\,600\,z^{4}-34\,298\,944\,056\,115\,200\,z^{3}+
$$
$$
\left.\left.\left.124\,027\,431\,631\,488\,000\,z^{2}-540\,682\,084\,768\,518\,000\,z+1\,708\,405\,198\,400\,525\,625\right)\right.\right.
$$
$$
\left.\left.\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(33\,515\,225\,476\,937\,809\,920\,z^{17/4}\right)
$$

07.22.03.9191.01

$$
{}_1F_2\left(-\frac{19}{4};-\frac{9}{2},\frac{21}{4};-z\right)=
\left(221\left(\sqrt{\pi}\left(-68\,719\,476\,736\,z^{9}+2\,203\,318\,222\,848\,z^{8}-57\,837\,103\,349\,760\,z^{7}+1\,020\,583\,886\,192\,640\,z^{6}-\right.\right.\right.
$$
$$
10\,046\,372\,629\,708\,800\,z^{5}+35\,790\,202\,493\,337\,600\,z^{4}+34\,298\,944\,056\,115\,200\,z^{3}+
$$
$$
\left.124\,027\,431\,631\,488\,000\,z^{2}+540\,682\,084\,768\,518\,000\,z+1\,708\,405\,198\,400\,525\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$
$$
2\sqrt[4]{z}\left(\left(-4\,294\,967\,296\,z^{8}+141\,733\,920\,768\,z^{7}-3\,759\,774\,105\,600\,z^{6}+67\,825\,418\,895\,360\,z^{5}-\right.\right.
$$
$$
707\,843\,458\,990\,080\,z^{4}+3\,308\,989\,036\,953\,600\,z^{3}-10\,105\,938\,873\,676\,800\,z^{2}+
$$
$$
\left.1\,281\,616\,793\,525\,376\,000\,z-1\,708\,405\,198\,400\,525\,625\right)\cos\left(2\sqrt{z}\right)+
$$
$$
4\sqrt{z}\left(4\,294\,967\,296\,z^{8}-138\,512\,695\,296\,z^{7}+3\,642\,400\,702\,464\,z^{6}-64\,531\,652\,935\,680\,z^{5}+\right.
$$
$$
641\,823\,220\,039\,680\,z^{4}-2\,396\,895\,904\,972\,800\,z^{3}-1\,026\,104\,773\,478\,400\,z^{2}+
$$
$$
\left.\left.\left.80\,101\,049\,595\,336\,000\,z-569\,468\,399\,466\,841\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(8\,378\,806\,369\,234\,452\,480\,z^{17/4}\right)
$$

07.22.03.9192.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) = \left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 2\,314\,987\,372\,544\,z^8 + 64\,488\,933\,949\,440\,z^7 + 1\,215\,711\,632\,424\,960\,z^6 + 12\,870\,813\,273\,292\,800\right.\right.\right.$$
$$\left.\left.\left. z^5 + 48\,869\,070\,579\,302\,400\,z^4 - 68\,331\,507\,019\,776\,000\,z^3 + 173\,527\,298\,904\,960\,000\,z^2 - \right.\right.\right.$$
$$\left.\left.\left. 12\,215\,970\,960\,503\,310\,000\,z - 14\,057\,774\,639\,086\,303\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.$$
$$\left.\left. \left(68\,719\,476\,736\,z^9 + 2\,357\,937\,045\,504\,z^8 + 66\,051\,228\,303\,360\,z^7 + 1\,260\,705\,105\,838\,080\,z^6 + \right.\right.\right.$$
$$\left.\left.\left. 13\,776\,612\,124\,262\,400\,z^5 + 60\,302\,699\,347\,968\,000\,z^4 + 23\,653\,213\,968\,384\,000\,z^3 - 9\,921\,678\,502\,095\,360\,000\right.\right.\right.$$
$$\left.\left.\left. z^2 - 100\,912\,025\,517\,333\,030\,000\,z - 42\,173\,323\,917\,258\,909\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.$$
$$\left.\left. 2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 2\,332\,167\,241\,728\,z^8 + 65\,094\,524\,338\,176\,z^7 + 1\,232\,864\,658\,063\,360\,z^6 + \right.\right.\right.$$
$$\left.\left.\left. 13\,205\,474\,692\,300\,800\,z^5 + 52\,746\,174\,480\,384\,000\,z^4 - 46\,266\,726\,223\,872\,000\,z^3 + \right.\right.\right.$$
$$\left.\left.\left. 287\,851\,166\,418\,816\,000\,z^2 + 10\,942\,267\,827\,180\,690\,000\,z + 42\,173\,323\,917\,258\,909\,375\right)\right.$$
$$\left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(80\,728\,420\,043\,980\,800\,\sqrt{2}\;z^{17/4}\right) $$

07.22.03.9193.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) = \left(\left(2\sqrt{z}\,\left(-68\,719\,476\,736\,z^9 + 2\,314\,987\,372\,544\,z^8 - 64\,488\,933\,949\,440\,z^7 + 1\,215\,711\,632\,424\,960\,z^6 - \right.\right.\right.$$
$$\left.\left.\left. 12\,870\,813\,273\,292\,800\,z^5 + 48\,869\,070\,579\,302\,400\,z^4 + 68\,331\,507\,019\,776\,000\,z^3 + \right.\right.\right.$$
$$\left.\left.\left. 173\,527\,298\,904\,960\,000\,z^2 + 12\,215\,970\,960\,503\,310\,000\,z - 14\,057\,774\,639\,086\,303\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.$$
$$\left.\left. \left(68\,719\,476\,736\,z^9 - 2\,357\,937\,045\,504\,z^8 + 66\,051\,228\,303\,360\,z^7 - 1\,260\,705\,105\,838\,080\,z^6 + \right.\right.\right.$$
$$\left.\left.\left. 13\,776\,612\,124\,262\,400\,z^5 - 60\,302\,699\,347\,968\,000\,z^4 + 23\,653\,213\,968\,384\,000\,z^3 + 9\,921\,678\,502\,095\,360\,000\right.\right.\right.$$
$$\left.\left.\left. z^2 - 100\,912\,025\,517\,333\,030\,000\,z + 42\,173\,323\,917\,258\,909\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.$$
$$\left.\left. 2\sqrt{z}\,\left(-68\,719\,476\,736\,z^9 + 2\,332\,167\,241\,728\,z^8 - 65\,094\,524\,338\,176\,z^7 + 1\,232\,864\,658\,063\,360\,z^6 - \right.\right.\right.$$
$$\left.\left.\left. 13\,205\,474\,692\,300\,800\,z^5 + 52\,746\,174\,480\,384\,000\,z^4 - 46\,266\,726\,223\,872\,000\,z^3 + \right.\right.\right.$$
$$\left.\left.\left. 287\,851\,166\,418\,816\,000\,z^2 - 10\,942\,267\,827\,180\,690\,000\,z + 42\,173\,323\,917\,258\,909\,375\right)\right.$$
$$\left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(80\,728\,420\,043\,980\,800\,\sqrt{2}\;z^{17/4}\right) $$

For fixed z and $a_1 = -\frac{19}{4}$, $b_1 = -\frac{7}{2}$

07.22.03.9194.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) = \left(\frac{16\,z^2}{69} + \frac{284\,z}{161} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(32\,z^2 + 1040\,z + 2415\right)\sinh\left(2\sqrt{z}\right)}{2415} $$

07.22.03.9195.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) = \left(\frac{16\,z^2}{69} - \frac{284\,z}{161} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(32\,z^2 - 1040\,z + 2415\right)\sin\left(2\sqrt{z}\right)}{2415} $$

07.22.03.9196.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{21\,928\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536 z^5 + 106\,496 z^4 - 441\,600 z^3 + 15\,977\,520 z^2 + 38\,188\,800 z + 21\,928\,725\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(8192 z^4 + 18\,432 z^3 + 1\,020\,240 z^2 + 20\,645\,820 z + 21\,928\,725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(-16\,384 z^4 - 30\,720 z^3 + 97\,344 z^2 + 3\,102\,840 z + 21\,928\,725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9197.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) =$$
$$-\frac{1}{21\,928\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536 z^5 - 106\,496 z^4 - 441\,600 z^3 - 15\,977\,520 z^2 + 38\,188\,800 z - 21\,928\,725\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(8192 z^4 - 18\,432 z^3 + 1\,020\,240 z^2 - 20\,645\,820 z + 21\,928\,725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(16\,384 z^4 - 30\,720 z^3 - 97\,344 z^2 + 3\,102\,840 z - 21\,928\,725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9198.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) = \left(\frac{16 z^2}{105} + \frac{12 z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,(8 z + 21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.9199.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) = \left(\frac{16 z^2}{105} - \frac{12 z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}(21 - 8 z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.9200.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) =$$
$$\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768 z^5 + 14\,336 z^4 - 50\,560 z^3 + 663\,120 z^2 + 1\,755\,000 z + 1\,044\,225\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(4096 z^4 + 4352 z^3 + 1680 z^2 + 919\,620 z + 1\,044\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(-8192 z^4 - 5632 z^3 + 8544 z^2 + 84\,240 z + 1\,044\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9201.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, -\frac{17}{4}; -z\right) =$$
$$-\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768 z^5 - 14\,336 z^4 - 50\,560 z^3 - 663\,120 z^2 + 1\,755\,000 z - 1\,044\,225\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(4096 z^4 - 4352 z^3 + 1680 z^2 - 919\,620 z + 1\,044\,225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(8192 z^4 - 5632 z^3 - 8544 z^2 + 84\,240 z - 1\,044\,225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9202.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, -\frac{15}{4}; z\right) = \frac{1}{727\,650}\left(e^{-2\sqrt{z}}\left(-16\,384\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4} - 16\,384\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4} + 16\,384\,e^{4\sqrt{z}}z^{9/2} - 16\,384\,z^{9/2} + 4096\,e^{4\sqrt{z}}z^4 + 4096\,z^4 + 3072\,e^{4\sqrt{z}}z^{7/2} - 3072\,z^{7/2} + 3840\,e^{4\sqrt{z}}z^3 + 3840\,z^3 + 6720\,e^{4\sqrt{z}}z^{5/2} - 6720\,z^{5/2} + 15\,120\,e^{4\sqrt{z}}z^2 + 15\,120\,z^2 - 221\,760\,e^{4\sqrt{z}}z^{3/2} + 221\,760\,z^{3/2} + 595\,980\,e^{4\sqrt{z}}z + 595\,980\,z - 727\,650\,e^{4\sqrt{z}}\sqrt{z} + 727\,650\sqrt{z} + 363\,825\,e^{4\sqrt{z}} + 363\,825\right)\right) $$

07.22.03.9203.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, -\frac{15}{4}; -z\right) = \frac{1}{363\,825}\left(32\,768\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4} - 2\left(8192z^4 - 1536z^3 + 3360z^2 + 110\,880z - 363\,825\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(4096z^4 - 3840z^3 + 15\,120z^2 - 595\,980z + 363\,825\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9204.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, -\frac{13}{4}; z\right) = \frac{1}{61\,425\sqrt{2}}\left(\sqrt[4]{z}\left(-\left(16\,384z^5 - 12\,288z^4 + 5120z^3 - 30\,960z^2 - 97\,200z - 61\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048z^4 - 256z^3 + 3120z^2 - 48\,060z - 61\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4096z^4 - 2048z^3 + 2112z^2 - 1080z + 61\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9205.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, -\frac{13}{4}; -z\right) = \frac{1}{61\,425\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384z^5 + 12\,288z^4 + 5120z^3 + 30\,960z^2 - 97\,200z + 61\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048z^4 + 256z^3 + 3120z^2 + 48\,060z - 61\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4096z^4 + 2048z^3 + 2112z^2 + 1080z + 61\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9206.01

$${}_1F_2\left(-\frac{19}{4};-\frac{7}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{48\,510}\left(e^{-2\sqrt{z}}\left(-4096\,e^{4\sqrt{z}}\,z^{9/2}+4096\,z^{9/2}-1024\,e^{4\sqrt{z}}\,z^4-1024\,z^4+256\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-19)\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+\right.\right.$$
$$256\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-19)\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+4096\,e^{4\sqrt{z}}\,z^{7/2}-4096\,z^{7/2}+256\,e^{4\sqrt{z}}\,z^3+$$
$$256\,z^3-768\,e^{4\sqrt{z}}\,z^{5/2}+768\,z^{5/2}-2640\,e^{4\sqrt{z}}\,z^2-2640\,z^2-8400\,e^{4\sqrt{z}}\,z^{3/2}+8400\,z^{3/2}+$$
$$\left.\left.36\,540\,e^{4\sqrt{z}}\,z+36\,540\,z-48\,510\,e^{4\sqrt{z}}\,\sqrt{z}+48\,510\,\sqrt{z}+24\,255\,e^{4\sqrt{z}}+24\,255\right)\right)$$

07.22.03.9207.01

$${}_1F_2\left(-\frac{19}{4};-\frac{7}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{24\,255}\left(-512\,\sqrt{\pi}\,(16z+19)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+2\left(2048\,z^4+2048\,z^3+384\,z^2-4200\,z+24\,255\right)\sin\left(2\sqrt{z}\right)\sqrt{z}-\right.$$
$$\left.\left(1024\,z^4+256\,z^3+2640\,z^2+36\,540\,z-24\,255\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9208.01

$${}_1F_2\left(-\frac{19}{4};-\frac{7}{2},-\frac{9}{4};z\right)=\frac{1}{14\,175\,\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(8192\,z^5-15\,872\,z^4-9600\,z^3+5040\,z^2+19\,800\,z+14\,175\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(1024\,z^4-1344\,z^3-720\,z^2+\right.\right.\right.$$
$$\left.\left.\left.8460\,z+14\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-2048\,z^4+3456\,z^3+2592\,z^2-2880\,z+14\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9209.01

$${}_1F_2\left(-\frac{19}{4};-\frac{7}{2},-\frac{9}{4};-z\right)=$$
$$-\frac{1}{14\,175\,\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192\,z^5+15\,872\,z^4-9600\,z^3-5040\,z^2+19\,800\,z-14\,175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(1024\,z^4+1344\,z^3-720\,z^2-8460\,z+14\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(2048\,z^4+3456\,z^3-2592\,z^2-2880\,z-14\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9210.01

$${}_1F_2\left(-\frac{19}{4};-\frac{7}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{4410}\left(e^{-2\sqrt{z}}\left(512\,e^{4\sqrt{z}}\,z^{9/2}-512\,z^{9/2}+128\,e^{4\sqrt{z}}\,z^4+128\,z^4-1120\,e^{4\sqrt{z}}\,z^{7/2}+1120\,z^{7/2}-184\,e^{4\sqrt{z}}\,z^3-\right.\right.$$
$$184\,z^3-2\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-608\,z-855\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}-$$
$$2\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-608\,z-855\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}-1728\,e^{4\sqrt{z}}\,z^{5/2}+1728\,z^{5/2}-240\,e^{4\sqrt{z}}\,z^2-$$
$$\left.\left.240\,z^2+480\,e^{4\sqrt{z}}\,z^{3/2}-480\,z^{3/2}+2700\,e^{4\sqrt{z}}\,z+2700\,z-4410\,e^{4\sqrt{z}}\,\sqrt{z}+4410\,\sqrt{z}+2205\,e^{4\sqrt{z}}+2205\right)\right)$$

07.22.03.9211.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{7}{2},-\frac{7}{4};-z\right)=\frac{1}{2205}\left(4\sqrt{\pi}\left(256z^2+608z-855\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+\right.$$

$$\left.2\left(-256z^4-560z^3+864z^2+240z+2205\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(128z^4+184z^3-240z^2-2700z+2205\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9212.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{7}{2},-\frac{5}{4};z\right)=-\frac{1}{7875\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(4096z^5-12800z^4-24560z^3-18000z^2-7200z-7875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-512z^4+1280z^3+3210z^2+\right.\right.\right.$$

$$\left.\left.\left.900z+7875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-1024z^4+2944z^3+6540z^2+5400z-7875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9213.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{7}{2},-\frac{5}{4};-z\right)=\frac{1}{7875\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(4096z^5+12800z^4-24560z^3+18000z^2-7200z+7875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^4+1280z^3-3210z^2+900z-\right.\right.\right.$$

$$\left.\left.\left.7875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1024z^4+2944z^3-6540z^2+5400z+7875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9214.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{7}{2},-\frac{3}{4};z\right)=$$

$$\frac{1}{60480}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-14592z^2-41040z-65835\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$

$$\left(4096z^3-14592z^2-41040z-65835\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+4\left(1024z^{9/2}-256z^4-3456z^{7/2}+\right.$$

$$672z^3-10524z^{5/2}+2475z^2-17280z^{3/2}+1440z+15120\sqrt{z}+e^{4\sqrt{z}}\left(-1024z^{9/2}-256z^4+\right.$$

$$\left.\left.\left.\left.3456z^{7/2}+672z^3+10524z^{5/2}+2475z^2+17280z^{3/2}+1440z-15120\sqrt{z}+7560\right)+7560\right)\right)\right)$$

07.22.03.9215.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{7}{2},-\frac{3}{4};-z\right)=$$

$$\frac{1}{15120}\left(2\left(\left(-256z^4-672z^3+2475z^2-1440z+7560\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(256z^4+864z^3-2631z^2+4320z+3780\right)\right.\right.$$

$$\left.\left.\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,z^{7/4}\left(4096z^3+14592z^2-41040z+65835\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.9216.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) = \frac{1}{44\,100\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(4096z^5 - 17\,664z^4 - 58\,000z^3 - 135\,135z^2 - 75\,600z + 22\,050\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-4096z^4 + 15\,104z^3 + 62\,160z^2 + 153\,405z - 176\,400\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(-4096z^4 + 16\,640z^3 + 60\,816z^2 + 148\,995z + 88\,200\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9217.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) = \frac{1}{44\,100\sqrt{2}}\left(\sqrt[4]{z}\left(-2\left(4096z^5 + 17\,664z^4 - 58\,000z^3 + 135\,135z^2 - 75\,600z - 22\,050\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(4096z^4 + 15\,104z^3 - 62\,160z^2 + 153\,405z + 176\,400\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2z\left(4096z^4 + 16\,640z^3 - 60\,816z^2 + 148\,995z - 88\,200\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9218.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) = \frac{1}{5\,160\,960}\left(e^{-2\sqrt{z}}\left(4\left(-16\,384z^{9/2} + 4096z^4 + 74\,752z^{7/2} - 15\,616z^3 + 336\,192z^{5/2} - 85\,200z^2 + 1\,105\,260z^{3/2} - 276\,975z + 1\,290\,240\sqrt{z} + e^{4\sqrt{z}}\left(16\,384z^{9/2} + 4096z^4 - 74\,752z^{7/2} - 15\,616z^3 - 336\,192z^{5/2} - 85\,200z^2 - 1\,105\,260z^{3/2} - 276\,975z - 1\,290\,240\sqrt{z} + 645\,120\right) + 645\,120\right) - e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(65\,536z^4 - 311\,296z^3 - 1\,313\,280z^2 - 4\,213\,440z - 5\,069\,295\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(65\,536z^4 - 311\,296z^3 - 1\,313\,280z^2 - 4\,213\,440z - 5\,069\,295\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9219.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) = \frac{1}{1\,290\,240}\left(\sqrt{\pi}\, z^{3/4}\left(65\,536z^4 + 311\,296z^3 - 1\,313\,280z^2 + 4\,213\,440z - 5\,069\,295\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\left(\left(4096z^4 + 15\,616z^3 - 85\,200z^2 + 276\,975z + 645\,120\right)\cos\left(2\sqrt{z}\right) - 4\sqrt{z}\left(4096z^4 + 18\,688z^3 - 84\,048z^2 + 276\,315z - 322\,560\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9220.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) = $$
$$ -\frac{1}{12\,700\,800\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(65\,536 z^5 - 360\,448 z^4 - 1\,681\,920 z^3 - 6\,635\,520 z^2 - 11\,354\,175 z - 6\,350\,400\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \sqrt{z}\left(-65\,536 z^4 + 319\,488 z^3 + 1\,797\,120 z^2 + 7\,529\,760 z + 12\,289\,725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2 z\left(-65\,536 z^4 + 344\,064 z^3 + 1\,746\,432 z^2 + 7\,076\,160 z + 13\,111\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9221.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) = $$
$$ \frac{1}{12\,700\,800\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(65\,536 z^5 + 360\,448 z^4 - 1\,681\,920 z^3 + 6\,635\,520 z^2 - 11\,354\,175 z + 6\,350\,400\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \sqrt{z}\left(-65\,536 z^4 - 319\,488 z^3 + 1\,797\,120 z^2 - 7\,529\,760 z + 12\,289\,725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2 z\left(65\,536 z^4 + 344\,064 z^3 - 1\,746\,432 z^2 + 7\,076\,160 z - 13\,111\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9222.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) = \frac{1}{1\,651\,507\,200\sqrt[4]{z}} $$
$$ \left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-262\,144 z^{9/2} + 65\,536 z^4 + 1\,507\,328 z^{7/2} - 327\,680 z^3 + 8\,939\,520 z^{5/2} - 2\,311\,680 z^2 + 43\,749\,120 z^{3/2} - \right.\right.\right. $$
$$ \left.\left. 11\,859\,840 z + 108\,719\,100\sqrt{z}\right) + e^{4\sqrt{z}}\left(262\,144 z^{9/2} + 65\,536 z^4 - 1\,507\,328 z^{7/2} - 327\,680 z^3 - 8\,939\,520 \right.\right. $$
$$ \left.\left. z^{5/2} - 2\,311\,680 z^2 - 43\,749\,120 z^{3/2} - 11\,859\,840 z - 108\,719\,100\sqrt{z} - 21\,679\,875\right) - 21\,679\,875\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576 z^5 - 6\,225\,920 z^4 - 35\,020\,800 z^3 - 168\,537\,600 z^2 - 405\,543\,600 z - 228\,118\,275\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi} $$
$$ \left.\left.\left(1\,048\,576 z^5 - 6\,225\,920 z^4 - 35\,020\,800 z^3 - 168\,537\,600 z^2 - 405\,543\,600 z - 228\,118\,275\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9223.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = \frac{1}{412\,876\,800\sqrt[4]{z}} $$
$$ \left(\sqrt{\pi}\left(1\,048\,576 z^5 + 6\,225\,920 z^4 - 35\,020\,800 z^3 + 168\,537\,600 z^2 - 405\,543\,600 z + 228\,118\,275\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ 2\sqrt[4]{z}\left(\left(65\,536 z^4 + 327\,680 z^3 - 2\,311\,680 z^2 + 11\,859\,840 z - 21\,679\,875\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left. 4\sqrt{z}\left(65\,536 z^4 + 376\,832 z^3 - 2\,234\,880 z^2 + 10\,937\,280 z - 27\,179\,775\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9224.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) = -\frac{1}{1\,490\,227\,200\,\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\sqrt{z}\,\left(1\,048\,576 z^5 - 7\,012\,352 z^4 - 42\,475\,520 z^3 - 236\,183\,040 z^2 - 688\,921\,200 z - 526\,870\,575\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(-1\,048\,576 z^5 + 6\,356\,992 z^4 + 45\,096\,960 z^3 + 262\,310\,400 z^2 + 825\,778\,800 z - 654\,729\,075\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\,\left(-1\,048\,576 z^5 + 6\,750\,208 z^4 + 43\,819\,008 z^3 + 247\,610\,880 z^2 + 757\,920\,240 z + 654\,729\,075\right) $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9225.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) = \frac{1}{1\,490\,227\,200\,\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\sqrt{z}\,\left(1\,048\,576 z^5 + 7\,012\,352 z^4 - 42\,475\,520 z^3 + 236\,183\,040 z^2 - 688\,921\,200 z + 526\,870\,575\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(-1\,048\,576 z^5 - 6\,356\,992 z^4 + 45\,096\,960 z^3 - 262\,310\,400 z^2 + 825\,778\,800 z + 654\,729\,075\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\,\left(1\,048\,576 z^5 + 6\,750\,208 z^4 - 43\,819\,008 z^3 + 247\,610\,880 z^2 - 757\,920\,240 z + 654\,729\,075\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9226.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) = $$
$$ \frac{1}{126\,835\,752\,960\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 29\,097\,984 z^{9/2} - 6\,488\,064 z^4 + 214\,007\,808 z^{7/2} - \right.\right.\right. $$
$$ 55\,664\,640 z^3 + 1\,389\,312\,000 z^{5/2} - 379\,307\,520 z^2 + 5\,151\,625\,920 z^{3/2} - 1\,421\,688\,240 z + $$
$$ 5\,778\,996\,300\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 29\,097\,984 z^{9/2} - 6\,488\,064 z^4 - \right. $$
$$ 214\,007\,808 z^{7/2} - 55\,664\,640 z^3 - 1\,389\,312\,000 z^{5/2} - 379\,307\,520 z^2 - 5\,151\,625\,920 z^{3/2} - $$
$$ \left.\left.\left. 1\,421\,688\,240 z - 5\,778\,996\,300\sqrt{z} + 4\,334\,247\,225\right) + 4\,334\,247\,225\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\,\left(16\,777\,216 z^6 - 119\,537\,664 z^5 - 840\,499\,200 z^4 - 5\,393\,203\,200 z^3 - 19\,466\,092\,800 z^2 - \right. $$
$$ \left. 21\,899\,354\,400 z + 4\,334\,247\,225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\,\left(16\,777\,216 z^6 - 119\,537\,664 z^5 - 840\,499\,200 z^4 - 5\,393\,203\,200 z^3 - \right. $$
$$ \left.\left. 19\,466\,092\,800 z^2 - 21\,899\,354\,400 z + 4\,334\,247\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9227.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{9}{4}; -z\right) = \frac{1}{31\,708\,938\,240\, z^{5/4}}\left(\sqrt{\pi}\,\left(16\,777\,216\, z^6 + 119\,537\,664\, z^5 - 840\,499\,200\, z^4 + 5\,393\,203\,200\, z^3 - 19\,466\,092\,800\, z^2 + 21\,899\,354\,400\, z + 4\,334\,247\,225\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\,\left(\left(-1\,048\,576\, z^5 - 6\,488\,064\, z^4 + 55\,664\,640\, z^3 - 379\,307\,520\, z^2 + 1\,421\,688\,240\, z + 4\,334\,247\,225\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(1\,048\,576\, z^5 + 7\,274\,496\, z^4 - 53\,501\,952\, z^3 + 347\,328\,000\, z^2 - 1\,287\,906\,480\, z + 1\,444\,749\,075\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9228.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{11}{4}; z\right) = -\frac{1}{88\,562\,073\,600\sqrt{2}\, z^{5/4}}\left(\left(2\sqrt{z}\,\left(16\,777\,216\, z^6 - 132\,120\,576\, z^5 - 984\,678\,400\, z^4 - 7\,063\,879\,680\, z^3 - 29\,157\,822\,720\, z^2 - 37\,297\,260\,000\, z - 13\,749\,310\,575\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,777\,216\, z^6 + 121\,634\,816\, z^5 + 1\,039\,073\,280\, z^4 + 7\,706\,050\,560\, z^3 + 34\,144\,830\,720\, z^2 + 41\,902\,660\,800\, z + 41\,247\,931\,725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-16\,777\,216\, z^6 + 127\,926\,272\, z^5 + 1\,011\,154\,944\, z^4 + 7\,330\,775\,040\, z^3 + 31\,238\,887\,680\, z^2 + 46\,092\,926\,880\, z - 41\,247\,931\,725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9229.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{11}{4}; -z\right) = \frac{1}{88\,562\,073\,600\sqrt{2}\, z^{5/4}}\left(\left(2\sqrt{z}\,\left(16\,777\,216\, z^6 + 132\,120\,576\, z^5 - 984\,678\,400\, z^4 + 7\,063\,879\,680\, z^3 - 29\,157\,822\,720\, z^2 + 37\,297\,260\,000\, z - 13\,749\,310\,575\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,777\,216\, z^6 - 121\,634\,816\, z^5 + 1\,039\,073\,280\, z^4 - 7\,706\,050\,560\, z^3 + 34\,144\,830\,720\, z^2 - 41\,902\,660\,800\, z + 41\,247\,931\,725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216\, z^6 + 127\,926\,272\, z^5 - 1\,011\,154\,944\, z^4 + 7\,330\,775\,040\, z^3 - 31\,238\,887\,680\, z^2 + 46\,092\,926\,880\, z + 41\,247\,931\,725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9230.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{13}{4}; z\right) = \frac{1}{6\,313\,601\,925\,120\,z^{9/4}} \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(-67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 + 545\,259\,520\,z^{11/2} - 123\,731\,968\,z^5 + 4\,783\,865\,856\,z^{9/2} - 1\,245\,511\,680\,z^4 + 38\,693\,437\,440\,z^{7/2} - 10\,502\,553\,600\,z^3 + 190\,032\,675\,840\,z^{5/2} - 54\,392\,244\,480\,z^2 + 343\,437\,494\,400\,z^{3/2} - 46\,231\,970\,400\,z - 664\,584\,574\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 - 545\,259\,520\,z^{11/2} - 123\,731\,968\,z^5 - 4\,783\,865\,856\,z^{9/2} - 1\,245\,511\,680\,z^4 - 38\,693\,437\,440\,z^{7/2} - 10\,502\,553\,600\,z^3 - 190\,032\,675\,840\,z^{5/2} - 54\,392\,244\,480\,z^2 - 343\,437\,494\,400\,z^{3/2} - 46\,231\,970\,400\,z + 664\,584\,574\,500\sqrt{z} - 498\,438\,430\,875\right) - 498\,438\,430\,875\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7 - 2\,231\,369\,728\,z^6 - 18\,827\,182\,080\,z^5 - 151\,009\,689\,600\,z^4 - 726\,734\,131\,200\,z^3 - 1\,226\,363\,846\,400\,z^2 + 485\,435\,689\,200\,z - 498\,438\,430\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7 - 2\,231\,369\,728\,z^6 - 18\,827\,182\,080\,z^5 - 151\,009\,689\,600\,z^4 - 726\,734\,131\,200\,z^3 - 1\,226\,363\,846\,400\,z^2 + 485\,435\,689\,200\,z - 498\,438\,430\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right) $$

07.22.03.9231.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) = \frac{1}{1\,578\,400\,481\,280\,z^{9/4}} \left(\sqrt{\pi}\left(268\,435\,456\,z^7 + 2\,231\,369\,728\,z^6 - 18\,827\,182\,080\,z^5 + 151\,009\,689\,600\,z^4 - 726\,734\,131\,200\,z^3 + 1\,226\,363\,846\,400\,z^2 + 485\,435\,689\,200\,z + 498\,438\,430\,875\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(-16\,777\,216\,z^6 - 123\,731\,968\,z^5 + 1\,245\,511\,680\,z^4 - 10\,502\,553\,600\,z^3 + 54\,392\,244\,480\,z^2 - 46\,231\,970\,400\,z + 498\,438\,430\,875\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(16\,777\,216\,z^6 + 136\,314\,880\,z^5 - 1\,195\,966\,464\,z^4 + 9\,673\,359\,360\,z^3 - 47\,508\,168\,960\,z^2 + 85\,859\,373\,600\,z + 166\,146\,143\,625\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9232.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) = -\left(\left(2\sqrt{z}\left(268\,435\,456\,z^7 - 2\,432\,696\,320\,z^6 - 21\,532\,508\,160\,z^5 - 189\,171\,302\,400\,z^4 - 1\,009\,753\,804\,800\,z^3 - 1\,856\,076\,768\,000\,z^2 + 1\,099\,944\,846\,000\,z + 2\,406\,129\,350\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-268\,435\,456\,z^7 + 2\,264\,924\,160\,z^6 + 22\,602\,055\,680\,z^5 + 203\,592\,499\,200\,z^4 + 1\,150\,552\,166\,400\,z^3 + 2\,514\,159\,648\,000\,z^2 - 14\,299\,282\,998\,000\,z - 7\,218\,388\,051\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-268\,435\,456\,z^7 + 2\,365\,587\,456\,z^6 + 22\,035\,824\,640\,z^5 + 195\,010\,560\,000\,z^4 + 1\,064\,931\,840\,000\,z^3 + 2\,178\,938\,361\,600\,z^2 - 1\,099\,944\,846\,000\,z + 7\,218\,388\,051\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(3\,864\,526\,848\,000\sqrt{2}\,z^{9/4}\right) $$

07.22.03.9233.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{15}{4}; -z\right) = $$

$$ \left(\left(2\sqrt{z}\left(268\,435\,456 z^7 + 2\,432\,696\,320 z^6 - 21\,532\,508\,160 z^5 + 189\,171\,302\,400 z^4 - 1\,009\,753\,804\,800 z^3 + 1\,856\,076\,768\,000 z^2 + 1\,099\,944\,846\,000 z - 2\,406\,129\,350\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(268\,435\,456 z^7 + 2\,264\,924\,160 z^6 - 22\,602\,055\,680 z^5 + 203\,592\,499\,200 z^4 - 1\,150\,552\,166\,400 z^3 + 2\,514\,159\,648\,000 z^2 + 14\,299\,282\,998\,000 z - 7\,218\,388\,051\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(268\,435\,456 z^7 + 2\,365\,587\,456 z^6 - 22\,035\,824\,640 z^5 + 195\,010\,560\,000 z^4 - 1\,064\,931\,840\,000 z^3 + 2\,178\,938\,361\,600 z^2 + 1\,099\,944\,846\,000 z + 7\,218\,388\,051\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(3\,864\,526\,848\,000\sqrt{2}\, z^{9/4}\right) $$

07.22.03.9234.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) = $$

$$ -\Big(13 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,073\,741\,824 z^{15/2} + 268\,435\,456 z^7 + 9\,999\,220\,736 z^{13/2} - 2\,298\,478\,592 z^6 + 101\,883\,838\,464 z^{11/2} - 26\,502\,758\,400 z^5 + 986\,748\,026\,880 z^{9/2} - 265\,706\,864\,640 z^4 + 6\,028\,945\,735\,680 z^{7/2} - 1\,715\,635\,998\,720 z^3 + 14\,467\,604\,659\,200 z^{5/2} - 4\,174\,086\,470\,400 z^2 - 11\,240\,973\,374\,400 z^{3/2} + 65\,395\,122\,130\,800 z - 161\,494\,051\,603\,500\sqrt{z} + e^{4\sqrt{z}}\left(1\,073\,741\,824 z^{15/2} + 268\,435\,456 z^7 - 9\,999\,220\,736 z^{13/2} - 2\,298\,478\,592 z^6 - 101\,883\,838\,464 z^{11/2} - 26\,502\,758\,400 z^5 - 986\,748\,026\,880 z^{9/2} - 265\,706\,864\,640 z^4 - 6\,028\,945\,735\,680 z^{7/2} - 1\,715\,635\,998\,720 z^3 - 14\,467\,604\,659\,200 z^{5/2} - 4\,174\,086\,470\,400 z^2 + 11\,240\,973\,374\,400 z^{3/2} + 65\,395\,122\,130\,800 z - 161\,494\,051\,603\,500\sqrt{z} + 121\,120\,538\,702\,625\right) + 121\,120\,538\,702\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296 z^8 - 40\,802\,189\,312 z^7 - 401\,646\,551\,040 z^6 - 3\,865\,848\,053\,760 z^5 - 23\,255\,492\,198\,400 z^4 - 52\,324\,857\,446\,400 z^3 + 31\,067\,884\,108\,800 z^2 - 63\,800\,119\,152\,000 z + 121\,120\,538\,702\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296 z^8 - 40\,802\,189\,312 z^7 - 401\,646\,551\,040 z^6 - 3\,865\,848\,053\,760 z^5 - 23\,255\,492\,198\,400 z^4 - 52\,324\,857\,446\,400 z^3 + 31\,067\,884\,108\,800 z^2 - 63\,800\,119\,152\,000 z + 121\,120\,538\,702\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\Big)\Big) \Big/ \left(3\,232\,564\,185\,661\,440 z^{13/4}\right) $$

07.22.03.9235.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) = \frac{1}{808\,141\,046\,415\,360\, z^{13/4}} $$
$$ \left(13\left(\sqrt{\pi}\,\left(4\,294\,967\,296\, z^8 + 40\,802\,189\,312\, z^7 - 401\,646\,551\,040\, z^6 + 3\,865\,848\,053\,760\, z^5 - 23\,255\,492\,198\,400\, z^4 + \right.\right.\right. $$
$$ \left.\left.\left. 52\,324\,857\,446\,400\, z^3 + 31\,067\,884\,108\,800\, z^2 + 63\,800\,119\,152\,000\, z + 121\,120\,538\,702\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$
$$ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(268\,435\,456\, z^7 + 2\,499\,805\,184\, z^6 - 25\,470\,959\,616\, z^5 + 246\,687\,006\,720\, z^4 - \right.\right. $$
$$ \left.\left. 1\,507\,236\,433\,920\, z^3 + 3\,616\,901\,164\,800\, z^2 + 2\,810\,243\,343\,600\, z + 40\,373\,512\,900\,875\right) \sin\left(2\sqrt{z}\right) - $$
$$ \left.\left. \left(268\,435\,456\, z^7 + 2\,298\,478\,592\, z^6 - 26\,502\,758\,400\, z^5 + 265\,706\,864\,640\, z^4 - 1\,715\,635\,998\,720\, z^3 + \right.\right.\right. $$
$$ \left.\left.\left. 4\,174\,086\,470\,400\, z^2 + 65\,395\,122\,130\,800\, z - 121\,120\,538\,702\,625\right) \cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9236.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) = $$
$$ \left(\left(2\sqrt{z}\,\left(-4\,294\,967\,296\, z^8 + 44\,023\,414\,784\, z^7 + 451\,307\,110\,400\, z^6 + 4\,691\,601\,653\,760\, z^5 + 30\,713\,226\,854\,400\, z^4 + \right.\right.\right. $$
$$ \left.\left.\left. 73\,869\,155\,942\,400\, z^3 - 70\,396\,470\,144\,000\, z^2 + 549\,972\,423\,000\,000\, z + 767\,555\,262\,849\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(4\,294\,967\,296\, z^8 - 41\,339\,060\,224\, z^7 - 471\,607\,541\,760\, z^6 - 4\,997\,649\,530\,880\, z^5 - 34\,245\,240\,422\,400\, z^4 - \right. $$
$$ \left. 98\,331\,577\,344\,000\, z^3 + 175\,991\,175\,360\,000\, z^2 - 5\,158\,741\,327\,740\,000\, z - 2\,302\,665\,788\,548\,125\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 - 42\,949\,672\,960\, z^7 - 460\,635\,242\,496\, z^6 - \right. $$
$$ 4\,813\,718\,814\,720\, z^5 - 32\,063\,392\,972\,800\, z^4 - 83\,616\,222\,412\,800\, z^3 + 46\,930\,980\,096\,000\, z^2 + $$
$$ \left.\left. 246\,387\,645\,504\,000\, z + 2\,302\,665\,788\,548\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(140\,153\,507\,020\,800\sqrt{2}\, z^{13/4}\right) $$

07.22.03.9237.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = $$
$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 + 44\,023\,414\,784\, z^7 - 451\,307\,110\,400\, z^6 + 4\,691\,601\,653\,760\, z^5 - 30\,713\,226\,854\,400\, z^4 + \right.\right.\right. $$
$$ \left.\left.\left. 73\,869\,155\,942\,400\, z^3 + 70\,396\,470\,144\,000\, z^2 + 549\,972\,423\,000\,000\, z - 767\,555\,262\,849\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ \left(4\,294\,967\,296\, z^8 + 41\,339\,060\,224\, z^7 - 471\,607\,541\,760\, z^6 + 4\,997\,649\,530\,880\, z^5 - 34\,245\,240\,422\,400\, z^4 + \right. $$
$$ \left. 98\,331\,577\,344\,000\, z^3 + 175\,991\,175\,360\,000\, z^2 + 5\,158\,741\,327\,740\,000\, z - 2\,302\,665\,788\,548\,125\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 + 42\,949\,672\,960\, z^7 - 460\,635\,242\,496\, z^6 + \right. $$
$$ 4\,813\,718\,814\,720\, z^5 - 32\,063\,392\,972\,800\, z^4 + 83\,616\,222\,412\,800\, z^3 + 46\,930\,980\,096\,000\, z^2 - $$
$$ \left.\left. 246\,387\,645\,504\,000\, z + 2\,302\,665\,788\,548\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(140\,153\,507\,020\,800\sqrt{2}\, z^{13/4}\right) $$

07.22.03.9238.01

$$
{}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) =
$$

$$
-\left(221\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-17\,179\,869\,184\, z^{17/2} + 4\,294\,967\,296\, z^8 + 180\,388\,626\,432\, z^{15/2} - 41\,875\,931\,136\, z^7 + \right.\right.\right.
$$

$$
2\,092\,991\,250\,432\, z^{13/2} - 543\,581\,798\,400\, z^6 + 23\,614\,099\,292\,160\, z^{11/2} - 6\,310\,644\,940\,800\, z^5 +
$$

$$
172\,570\,446\,397\,440\, z^{9/2} - 48\,458\,565\,550\,080\, z^4 + 512\,026\,397\,245\,440\, z^{7/2} - 163\,236\,081\,254\,400\, z^3 -
$$

$$
302\,263\,421\,644\,800\, z^{5/2} + 787\,475\,756\,390\,400\, z^2 - 6\,496\,674\,990\,220\,800\, z^{3/2} -
$$

$$
34\,624\,324\,663\,790\,400\, z - 65\,082\,102\,796\,210\,500\sqrt{z} + e^{4\sqrt{z}}\left(17\,179\,869\,184\, z^{17/2} + 4\,294\,967\,296\, z^8 - \right.
$$

$$
180\,388\,626\,432\, z^{15/2} - 41\,875\,931\,136\, z^7 - 2\,092\,991\,250\,432\, z^{13/2} - 543\,581\,798\,400\, z^6 -
$$

$$
23\,614\,099\,292\,160\, z^{11/2} - 6\,310\,644\,940\,800\, z^5 - 172\,570\,446\,397\,440\, z^{9/2} - 48\,458\,565\,550\,080\, z^4 -
$$

$$
512\,026\,397\,245\,440\, z^{7/2} - 163\,236\,081\,254\,400\, z^3 + 302\,263\,421\,644\,800\, z^{5/2} +
$$

$$
787\,475\,756\,390\,400\, z^2 + 6\,496\,674\,990\,220\,800\, z^{3/2} - 34\,624\,324\,663\,790\,400\, z +
$$

$$
\left.\left.\left.65\,082\,102\,796\,210\,500\sqrt{z} - 48\,811\,577\,097\,157\,875\right) - 48\,811\,577\,097\,157\,875\right) +
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\, z^9 - 734\,439\,407\,616\, z^8 - 8\,262\,443\,335\,680\, z^7 - 92\,780\,353\,290\,240\, z^6 - \right.
$$

$$
669\,758\,175\,313\,920\, z^5 - 1\,883\,694\,868\,070\,400\, z^4 + 1\,491\,258\,437\,222\,400\, z^3 -
$$

$$
\left.4\,593\,608\,578\,944\,000\, z^2 + 17\,441\,357\,573\,178\,000\, z - 48\,811\,577\,097\,157\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) +
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\, z^9 - 734\,439\,407\,616\, z^8 - 8\,262\,443\,335\,680\, z^7 - 92\,780\,353\,290\,240\, z^6 - \right.
$$

$$
669\,758\,175\,313\,920\, z^5 - 1\,883\,694\,868\,070\,400\, z^4 + 1\,491\,258\,437\,222\,400\, z^3 - 4\,593\,608\,578\,944\,000\, z^2 +
$$

$$
\left.\left.\left.17\,441\,357\,573\,178\,000\, z - 48\,811\,577\,097\,157\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) \Big/ \left(1\,861\,956\,970\,940\,989\,440\, z^{17/4}\right)
$$

07.22.03.9239.01

$$
{}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) =
$$

$$
\left(221\left(\sqrt{\pi}\left(68\,719\,476\,736\, z^9 + 734\,439\,407\,616\, z^8 - 8\,262\,443\,335\,680\, z^7 + 92\,780\,353\,290\,240\, z^6 - 669\,758\,175\,313\,920\, z^5 + \right.\right.\right.
$$

$$
1\,883\,694\,868\,070\,400\, z^4 + 1\,491\,258\,437\,222\,400\, z^3 + 4\,593\,608\,578\,944\,000\, z^2 +
$$

$$
17\,441\,357\,573\,178\,000\, z + 48\,811\,577\,097\,157\,875\Big) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}
$$

$$
\left(4\sqrt{z}\left(4\,294\,967\,296\, z^8 + 45\,097\,156\,608\, z^7 - 523\,247\,812\,608\, z^6 + 5\,903\,524\,823\,040\, z^5 - 43\,142\,611\,599\,360\, z^4 + \right.\right.
$$

$$
\left.128\,006\,599\,311\,360\, z^3 + 75\,565\,855\,411\,200\, z^2 - 1\,624\,168\,747\,555\,200\, z + 16\,270\,525\,699\,052\,625\right)
$$

$$
\sin\left(2\sqrt{z}\right) - \left(4\,294\,967\,296\, z^8 + 41\,875\,931\,136\, z^7 - 543\,581\,798\,400\, z^6 + 6\,310\,644\,940\,800\, z^5 - \right.
$$

$$
48\,458\,565\,550\,080\, z^4 + 163\,236\,081\,254\,400\, z^3 + 787\,475\,756\,390\,400\, z^2 +
$$

$$
\left.\left.\left.34\,624\,324\,663\,790\,400\, z - 48\,811\,577\,097\,157\,875\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(465\,489\,242\,735\,247\,360\, z^{17/4}\right)
$$

07.22.03.9240.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) =$$

$$-\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 785\,979\,015\,168\,z^8 - 9\,159\,017\,758\,720\,z^7 - 109\,951\,498\,321\,920\,z^6 - 852\,552\,843\,264\,000\,z^5 - 2\,534\,635\,605\,196\,800\,z^4 + 3\,003\,582\,726\,144\,000\,z^3 - 13\,727\,311\,678\,080\,000\,z^2 + 317\,548\,577\,315\,970\,000\,z + 379\,939\,855\,110\,440\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-68\,719\,476\,736\,z^9 + 743\,029\,342\,208\,z^8 + 9\,534\,827\,397\,120\,z^7 + 116\,196\,649\,205\,760\,z^6 + 935\,073\,467\,596\,800\,z^5 + 3\,245\,629\,685\,760\,000\,z^4 - 2\,252\,687\,044\,608\,000\,z^3 - 183\,382\,804\,725\,120\,000\,z^2 - 2\,689\,513\,641\,024\,210\,000\,z - 1\,139\,819\,565\,331\,321\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-68\,719\,476\,736\,z^9 + 768\,799\,145\,984\,z^8 + 9\,328\,668\,966\,912\,z^7 + 112\,421\,775\,605\,760\,z^6 + 883\,784\,259\,993\,600\,z^5 + 2\,799\,590\,208\,307\,200\,z^4 - 2\,021\,642\,219\,520\,000\,z^3 + 3\,731\,012\,917\,632\,000\,z^2 + 257\,898\,568\,317\,390\,000\,z + 1\,139\,819\,565\,331\,321\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(4\,484\,912\,224\,665\,600\,\sqrt{2}\,z^{17/4}\right)$$

07.22.03.9241.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 785\,979\,015\,168\,z^8 - 9\,159\,017\,758\,720\,z^7 + 109\,951\,498\,321\,920\,z^6 - 852\,552\,843\,264\,000\,z^5 + 2\,534\,635\,605\,196\,800\,z^4 + 3\,003\,582\,726\,144\,000\,z^3 + 13\,727\,311\,678\,080\,000\,z^2 + 317\,548\,577\,315\,970\,000\,z - 379\,939\,855\,110\,440\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(68\,719\,476\,736\,z^9 + 743\,029\,342\,208\,z^8 - 9\,534\,827\,397\,120\,z^7 + 116\,196\,649\,205\,760\,z^6 - 935\,073\,467\,596\,800\,z^5 + 3\,245\,629\,685\,760\,000\,z^4 + 2\,252\,687\,044\,608\,000\,z^3 - 183\,382\,804\,725\,120\,000\,z^2 + 2\,689\,513\,641\,024\,210\,000\,z - 1\,139\,819\,565\,331\,321\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 768\,799\,145\,984\,z^8 - 9\,328\,668\,966\,912\,z^7 + 112\,421\,775\,605\,760\,z^6 - 883\,784\,259\,993\,600\,z^5 + 2\,799\,590\,208\,307\,200\,z^4 + 2\,021\,642\,219\,520\,000\,z^3 + 3\,731\,012\,917\,632\,000\,z^2 - 257\,898\,568\,317\,390\,000\,z + 1\,139\,819\,565\,331\,321\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(4\,484\,912\,224\,665\,600\,\sqrt{2}\,z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{19}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.9242.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) = \frac{1}{345}\left(\left(32z^2 + 576z + 345\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(116z + 345\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.9243.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, -\frac{23}{4}; -z\right) = \frac{1}{345}\left(\left(32z^2 - 576z + 345\right)\cos\left(2\sqrt{z}\right) + 2\left(345 - 116z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.9244.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{5}{2},-\frac{21}{4};z\right)= \frac{1}{15\,663\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-131\,072\,z^5-1\,146\,880\,z^4-1\,159\,680\,z^3+9\,126\,000\,z^2+25\,658\,100\,z+15\,663\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ 4\sqrt{z}\left(16\,384\,z^4+153\,600\,z^3+262\,080\,z^2-13\,127\,400\,z-15\,663\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ 4z\left(32\,768\,z^4+294\,912\,z^3+374\,400\,z^2+596\,700\,z+15\,663\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9245.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{5}{2},-\frac{21}{4};-z\right)= \frac{1}{15\,663\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072\,z^5-1\,146\,880\,z^4+1\,159\,680\,z^3+9\,126\,000\,z^2-25\,658\,100\,z+15\,663\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- 4\sqrt{z}\left(16\,384\,z^4-153\,600\,z^3+262\,080\,z^2+13\,127\,400\,z-15\,663\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ 4z\left(32\,768\,z^4-294\,912\,z^3+374\,400\,z^2-596\,700\,z+15\,663\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9246.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{5}{2},-\frac{19}{4};z\right)=\left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\,(4z+15)\sinh\left(2\sqrt{z}\right) $$

07.22.03.9247.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{5}{2},-\frac{19}{4};-z\right)=\left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}(15-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.9248.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{5}{2},-\frac{17}{4};z\right)= \frac{1}{745\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-65\,536\,z^5-184\,320\,z^4-93\,440\,z^3+356\,400\,z^2+1\,158\,300\,z+745\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ 4\sqrt{z}\left(8192\,z^4+28\,160\,z^3+39\,840\,z^2-561\,600\,z-745\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ 4z\left(16\,384\,z^4+50\,176\,z^3+41\,280\,z^2-35\,100\,z+745\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9249.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{5}{2},-\frac{17}{4};-z\right)= \frac{1}{745\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536\,z^5-184\,320\,z^4+93\,440\,z^3+356\,400\,z^2-1\,158\,300\,z+745\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- 4\sqrt{z}\left(8192\,z^4-28\,160\,z^3+39\,840\,z^2+561\,600\,z-745\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ 4z\left(16\,384\,z^4-50\,176\,z^3+41\,280\,z^2+35\,100\,z+745\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9250.01

$${}_1F_2\left(-\frac{19}{4};-\frac{5}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{519\,750}\left(e^{-2\sqrt{z}}\left(32\,768\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}+32\,768\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}-32\,768\,e^{4\sqrt{z}}z^{9/2}+\right.\right.$$
$$32\,768\,z^{9/2}-8192\,e^{4\sqrt{z}}z^4-8192\,z^4-6144\,e^{4\sqrt{z}}z^{7/2}+6144\,z^{7/2}-7680\,e^{4\sqrt{z}}z^3-7680\,z^3-$$
$$13\,440\,e^{4\sqrt{z}}z^{5/2}+13\,440\,z^{5/2}-30\,240\,e^{4\sqrt{z}}z^2-30\,240\,z^2-83\,160\,e^{4\sqrt{z}}z^{3/2}+83\,160\,z^{3/2}+$$
$$\left.\left.388\,080\,e^{4\sqrt{z}}z+388\,080\,z-519\,750\,e^{4\sqrt{z}}\sqrt{z}+519\,750\sqrt{z}+259\,875\,e^{4\sqrt{z}}+259\,875\right)\right)$$

07.22.03.9251.01

$${}_1F_2\left(-\frac{19}{4};-\frac{5}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{259\,875}\left(-65\,536\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}+2\left(16\,384\,z^4-3072\,z^3+6720\,z^2-41\,580\,z+259\,875\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(-8192\,z^4+7680\,z^3-30\,240\,z^2-388\,080\,z+259\,875\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9252.01

$${}_1F_2\left(-\frac{19}{4};-\frac{5}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{43\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768\,z^5-102\,400\,z^4-14\,080\,z^3+15\,600\,z^2+62\,100\,z+43\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(4096\,z^4-10\,240\,z^3-2880\,z^2+27\,000\,z+43\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(-8192\,z^4+23\,552\,z^3+6720\,z^2-8100\,z+43\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9253.01

$${}_1F_2\left(-\frac{19}{4};-\frac{5}{2},-\frac{13}{4};-z\right)=$$
$$-\frac{1}{43\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768\,z^5+102\,400\,z^4-14\,080\,z^3-15\,600\,z^2+62\,100\,z-43\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(4096\,z^4+10\,240\,z^3-2880\,z^2-27\,000\,z+43\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(8192\,z^4+23\,552\,z^3-6720\,z^2-8100\,z-43\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9254.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, -\frac{11}{4}; z\right) = \frac{1}{34\,650}\left(e^{-2\sqrt{z}}\left(8192\,e^{4\sqrt{z}}\,z^{9/2} - 8192\,z^{9/2} + 2048\,e^{4\sqrt{z}}\,z^4 + 2048\,z^4 - 512\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-95)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4} - 512\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-95)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4} - 47\,104\,e^{4\sqrt{z}}\,z^{7/2} + 47\,104\,z^{7/2} - 10\,240\,e^{4\sqrt{z}}\,z^3 - 10\,240\,z^3 - 5760\,e^{4\sqrt{z}}\,z^{5/2} + 5760\,z^{5/2} - 3840\,e^{4\sqrt{z}}\,z^2 - 3840\,z^2 + 840\,e^{4\sqrt{z}}\,z^{3/2} - 840\,z^{3/2} + 22\,680\,e^{4\sqrt{z}}\,z + 22\,680\,z - 34\,650\,e^{4\sqrt{z}}\,\sqrt{z} + 34\,650\,\sqrt{z} + 17\,325\,e^{4\sqrt{z}} + 17\,325\right)\right)$$

07.22.03.9255.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, -\frac{11}{4}; -z\right) = \frac{1}{17\,325}\left(1024\sqrt{\pi}\,(16z+95)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4} + 2\left(-4096\,z^4 - 23\,552\,z^3 + 2880\,z^2 + 420\,z + 17\,325\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(2048\,z^4 + 10\,240\,z^3 - 3840\,z^2 - 22\,680\,z + 17\,325\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9256.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) = -\frac{1}{10\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^5 - 148\,480\,z^4 + 53\,760\,z^3 - 3600\,z^2 - 11\,700\,z - 10\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-2048\,z^4 + 17\,280\,z^3 + 1440\,z^2 + 3600\,z + 10\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(4096\,z^4 - 36\,096\,z^3 + 5760\,z^2 - 4500\,z + 10\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9257.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) = \frac{1}{10\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^5 + 148\,480\,z^4 + 53\,760\,z^3 + 3600\,z^2 - 11\,700\,z + 10\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048\,z^4 + 17\,280\,z^3 - 1440\,z^2 + 3600\,z - 10\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(4096\,z^4 + 36\,096\,z^3 + 5760\,z^2 + 4500\,z + 10\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9258.01

$${}_1F_2\left(-\frac{19}{4};-\frac{5}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{3150}\left(e^{-2\sqrt{z}}\left(-1024\,e^{4\sqrt{z}}\,z^{9/2}+1024\,z^{9/2}-256\,e^{4\sqrt{z}}\,z^4-256\,z^4+11\,968\,e^{4\sqrt{z}}\,z^{7/2}-11\,968\,z^{7/2}+2800\,e^{4\sqrt{z}}\,z^3+\right.\right.$$
$$2800\,z^3+4\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-3040\,z+1425\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+$$
$$4\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-3040\,z+1425\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}-3840\,e^{4\sqrt{z}}\,z^{5/2}+3840\,z^{5/2}+480\,e^{4\sqrt{z}}\,z^2+$$
$$\left.\left.480\,z^2+1320\,e^{4\sqrt{z}}\,z^{3/2}-1320\,z^{3/2}+1440\,e^{4\sqrt{z}}\,z+1440\,z-3150\,e^{4\sqrt{z}}\,\sqrt{z}+3150\sqrt{z}+1575\,e^{4\sqrt{z}}+1575\right)\right)$$

07.22.03.9259.01

$${}_1F_2\left(-\frac{19}{4};-\frac{5}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{1575}\left(-8\sqrt{\pi}\,\left(256\,z^2+3040\,z+1425\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2\left(512\,z^4+5984\,z^3+1920\,z^2+660\,z+1575\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(-256\,z^4-2800\,z^3+480\,z^2-1440\,z+1575\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9260.01

$${}_1F_2\left(-\frac{19}{4};-\frac{5}{2},-\frac{5}{4};z\right)=\frac{1}{5625\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(\left(8192\,z^5-122\,880\,z^4+102\,880\,z^3+32\,400\,z^2+2700\,z+5625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(1024\,z^4-14\,720\,z^3+4980\,z^2-\right.\right.\right.$$
$$\left.\left.\left.1800\,z+5625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-4\,z\left(2048\,z^4-30\,208\,z^3+18\,840\,z^2+6300\,z-5625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9261.01

$${}_1F_2\left(-\frac{19}{4};-\frac{5}{2},-\frac{5}{4};-z\right)=$$
$$-\frac{1}{5625\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(8192\,z^5+122\,880\,z^4+102\,880\,z^3-32\,400\,z^2+2700\,z-5625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(1024\,z^4+14\,720\,z^3+4980\,z^2+1800\,z+5625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(2048\,z^4+30\,208\,z^3+18\,840\,z^2-6300\,z-5625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9262.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{21\,600}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-72\,960z^2+68\,400z+47\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left(4096z^3-72\,960z^2+68\,400z+47\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+4\left(-1024z^{9/2}+256z^4+18\,048z^{7/2}-\right.$$
$$4320z^3-14\,100z^{5/2}+945z^2-10\,080z^{3/2}-1440z+5400\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{9/2}+256z^4-\right.$$
$$\left.\left.\left.18\,048z^{7/2}-4320z^3+14\,100z^{5/2}+945z^2+10\,080z^{3/2}-1440z-5400\sqrt{z}+2700\right)+2700\right)\right)\right)$$

07.22.03.9263.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, -\frac{3}{4}; -z\right) = \frac{1}{5400}$$
$$\left(\sqrt{\pi}\left(4096z^3+72\,960z^2+68\,400z-47\,025\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+2\left(\left(256z^4+4320z^3+945z^2+1440z+2700\right)\cos\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4\sqrt{z}\left(256z^4+4512z^3+3525z^2-2520z-1350\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.9264.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, -\frac{1}{4}; z\right) =$$
$$\frac{1}{15\,750\sqrt{2}}\left(\sqrt[4]{z}\left(-2\left(4096z^5-85\,760z^4+112\,240z^3+100\,275z^2+44\,100z-7875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\right.\right.$$
$$\left(4096z^4-83\,200z^3+65\,520z^2+74\,025z-63\,000\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2z\left(4096z^4-84\,736z^3+92\,400z^2+102\,375z+31\,500\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9265.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{15\,750\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(4096z^5+85\,760z^4+112\,240z^3-100\,275z^2+44\,100z+7875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\right.\right.$$
$$\left(-4096z^4-83\,200z^3-65\,520z^2+74\,025z+63\,000\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2z\left(4096z^4+84\,736z^3+92\,400z^2-102\,375z+31\,500\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9266.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, \frac{1}{4}; z\right) = \frac{1}{1\,843\,200}\left(e^{-2\sqrt{z}}\left(-4\left(-16\,384\,z^{9/2} + 4096\,z^4 + 386\,048\,z^{7/2} - 93\,440\,z^3 - 480\,960\,z^{5/2} + 60\,720\,z^2 - 736\,980\,z^{3/2} + 92\,385\,z - 460\,800\sqrt{z}\right) + e^{4\sqrt{z}}\left(16\,384\,z^{9/2} + 4096\,z^4 - 386\,048\,z^{7/2} - 93\,440\,z^3 + 480\,960\,z^{5/2} + 60\,720\,z^2 + 736\,980\,z^{3/2} + 92\,385\,z + 460\,800\sqrt{z} - 230\,400\right) - 230\,400\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(65\,536\,z^4 - 1\,556\,480\,z^3 + 2\,188\,800\,z^2 + 3\,009\,600\,z + 2\,304\,225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(65\,536\,z^4 - 1\,556\,480\,z^3 + 2\,188\,800\,z^2 + 3\,009\,600\,z + 2\,304\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9267.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) = \frac{1}{460\,800}\left(2\left(\left(-4096\,z^4 - 93\,440\,z^3 - 60\,720\,z^2 + 92\,385\,z + 230\,400\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(4096\,z^4 + 96\,512\,z^3 + 120\,240\,z^2 - 184\,245\,z + 115\,200\right)\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\,z^{3/4}\left(65\,536\,z^4 + 1\,556\,480\,z^3 + 2\,188\,800\,z^2 - 3\,009\,600\,z + 2\,304\,225\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.9268.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, \frac{3}{4}; z\right) = \frac{1}{4\,536\,000\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(65\,536\,z^5 - 1\,761\,280\,z^4 + 3\,133\,440\,z^3 + 4\,773\,600\,z^2 + 5\,343\,975\,z + 2\,268\,000\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(65\,536\,z^4 - 1\,720\,320\,z^3 + 2\,142\,720\,z^2 + 4\,536\,000\,z + 3\,331\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\,z\left(65\,536\,z^4 - 1\,744\,896\,z^3 + 2\,718\,720\,z^2 + 4\,989\,600\,z + 5\,740\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9269.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) = \frac{1}{4\,536\,000\sqrt{2}}\left(\sqrt[4]{z}\left(-2\left(65\,536\,z^5 + 1\,761\,280\,z^4 + 3\,133\,440\,z^3 - 4\,773\,600\,z^2 + 5\,343\,975\,z - 2\,268\,000\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(65\,536\,z^4 + 1\,720\,320\,z^3 + 2\,142\,720\,z^2 - 4\,536\,000\,z + 3\,331\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\,z\left(65\,536\,z^4 + 1\,744\,896\,z^3 + 2\,718\,720\,z^2 - 4\,989\,600\,z + 5\,740\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9270.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{5}{2},\frac{5}{4};z\right)=\frac{1}{589\,824\,000\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-262\,144\,z^{9/2}+65\,536\,z^4+7\,733\,248\,z^{7/2}-1\,884\,160\,z^3-13\,240\,320\,z^{5/2}+2\,065\,920\,z^2-30\,305\,280\,z^{3/2}+5\,924\,160\,z-46\,070\,100\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-7\,733\,248\,z^{7/2}-1\,884\,160\,z^3+13\,240\,320\,z^{5/2}+2\,065\,920\,z^2+30\,305\,280\,z^{3/2}+5\,924\,160\,z+46\,070\,100\sqrt{z}+2\,311\,425\right)+2\,311\,425\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-31\,129\,600\,z^4+58\,368\,000\,z^3+120\,384\,000\,z^2+184\,338\,000\,z+76\,039\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-31\,129\,600\,z^4+58\,368\,000\,z^3+120\,384\,000\,z^2+184\,338\,000\,z+76\,039\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.9271.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{5}{2},\frac{5}{4};-z\right)=\frac{1}{147\,456\,000\sqrt[4]{z}}\left(2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536\,z^4+1\,933\,312\,z^3+3\,310\,080\,z^2-7\,576\,320\,z+11\,517\,525\right)\sin\left(2\sqrt{z}\right)-\left(65\,536\,z^4+1\,884\,160\,z^3+2\,065\,920\,z^2-5\,924\,160\,z+2\,311\,425\right)\cos\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\left(1\,048\,576\,z^5+31\,129\,600\,z^4+58\,368\,000\,z^3-120\,384\,000\,z^2+184\,338\,000\,z-76\,039\,425\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.9272.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{5}{2},\frac{7}{4};z\right)=\frac{1}{532\,224\,000\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(1\,048\,576\,z^5-34\,406\,400\,z^4+77\,373\,440\,z^3+168\,307\,200\,z^2+313\,275\,600\,z+201\,922\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(1\,048\,576\,z^5-33\,751\,040\,z^4+57\,630\,720\,z^3+171\,072\,000\,z^2+311\,850\,000\,z-192\,567\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(1\,048\,576\,z^5-34\,144\,256\,z^4+69\,181\,440\,z^3+176\,140\,800\,z^2+341\,787\,600\,z+192\,567\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9273.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{5}{2},\frac{7}{4};-z\right)=\frac{1}{532\,224\,000\sqrt{2}\sqrt[4]{z}}\left(\left(-2\sqrt{z}\left(1\,048\,576\,z^5+34\,406\,400\,z^4+77\,373\,440\,z^3-168\,307\,200\,z^2+313\,275\,600\,z-201\,922\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1\,048\,576\,z^5+33\,751\,040\,z^4+57\,630\,720\,z^3-171\,072\,000\,z^2+311\,850\,000\,z+192\,567\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(1\,048\,576\,z^5+34\,144\,256\,z^4+69\,181\,440\,z^3-176\,140\,800\,z^2+341\,787\,600\,z-192\,567\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9274.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) = $$
$$ \frac{1}{45\,298\,483\,200\,z^{5/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z} \left(-4\,194\,304\,z^{11/2} + 1\,048\,576\,z^5 + 148\,635\,648\,z^{9/2} - 36\,372\,480\,z^4 - \right.\right.\right. $$
$$ 323\,911\,680\,z^{7/2} + 56\,401\,920\,z^3 - 978\,094\,080\,z^{5/2} + 219\,548\,160\,z^2 - 2\,286\,792\,000\,z^{3/2} + $$
$$ 420\,843\,600\,z - 1\,520\,788\,500\sqrt{z} + e^{4\sqrt{z}} \left(4\,194\,304\,z^{11/2} + 1\,048\,576\,z^5 - 148\,635\,648\,z^{9/2} - \right. $$
$$ \left. 36\,372\,480\,z^4 + 323\,911\,680\,z^{7/2} + 56\,401\,920\,z^3 + 978\,094\,080\,z^{5/2} + 219\,548\,160\,z^2 + \right. $$
$$ \left. 2\,286\,792\,000\,z^{3/2} + 420\,843\,600\,z + 1\,520\,788\,500\sqrt{z} - 1\,140\,591\,375\right) - 1\,140\,591\,375\Big) + $$
$$ e^{2\sqrt{z}} \sqrt{2\pi} \left(16\,777\,216\,z^6 - 597\,688\,320\,z^5 + 1\,400\,832\,000\,z^4 + 3\,852\,288\,000\,z^3 + \right. $$
$$ \left. 8\,848\,224\,000\,z^2 + 7\,299\,784\,800\,z - 1\,140\,591\,375\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}} \sqrt{2\pi} \left(16\,777\,216\,z^6 - 597\,688\,320\,z^5 + 1\,400\,832\,000\,z^4 + 3\,852\,288\,000\,z^3 + \right. $$
$$ \left. \left. 8\,848\,224\,000\,z^2 + 7\,299\,784\,800\,z - 1\,140\,591\,375\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.9275.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, \frac{9}{4}; -z\right) = $$
$$ \frac{1}{11\,324\,620\,800\,z^{5/4}} \left(\sqrt{\pi} \left(-16\,777\,216\,z^6 - 597\,688\,320\,z^5 - 1\,400\,832\,000\,z^4 + 3\,852\,288\,000\,z^3 - 8\,848\,224\,000\,z^2 + \right.\right. $$
$$ \left. 7\,299\,784\,800\,z + 1\,140\,591\,375\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z} \left(4\sqrt{z} \left(1\,048\,576\,z^5 + 37\,158\,912\,z^4 + 80\,977\,920\,z^3 - 244\,523\,520\,z^2 + 571\,698\,000\,z - 380\,197\,125\right) \sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left. \left(1\,048\,576\,z^5 + 36\,372\,480\,z^4 + 56\,401\,920\,z^3 - 219\,548\,160\,z^2 + 420\,843\,600\,z + 1\,140\,591\,375\right) \cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9276.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, \frac{11}{4}; z\right) = $$
$$ \frac{1}{31\,629\,312\,000\sqrt{2}\,z^{5/4}} \left(\left(2\sqrt{z} \left(16\,777\,216\,z^6 - 650\,117\,120\,z^5 + 1\,767\,178\,240\,z^4 + 5\,015\,961\,600\,z^3 + \right.\right.\right. $$
$$ \left. 13\,148\,179\,200\,z^2 + 12\,880\,296\,000\,z + 3\,273\,645\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ \left(16\,777\,216\,z^6 - 639\,631\,360\,z^5 + 1\,389\,035\,520\,z^4 + 5\,223\,628\,800\,z^3 + 14\,307\,321\,600\,z^2 + 6\,162\,156\,000\,z + \right. $$
$$ \left. 9\,820\,936\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z} \left(16\,777\,216\,z^6 - 645\,922\,816\,z^5 + 1\,611\,202\,560\,z^4 + \right. $$
$$ \left.\left. 5\,234\,688\,000\,z^3 + 14\,208\,480\,000\,z^2 + 14\,789\,174\,400\,z - 9\,820\,936\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Big) $$

07.22.03.9277.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, \frac{11}{4}; -z\right) = \frac{1}{31\,629\,312\,000\sqrt{2}\, z^{5/4}}\left(\left(-2\sqrt{z}\left(16\,777\,216 z^6 + 650\,117\,120 z^5 + 1\,767\,178\,240 z^4 - 5\,015\,961\,600 z^3 + 13\,148\,179\,200 z^2 - 12\,880\,296\,000 z + 3\,273\,645\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216 z^6 + 639\,631\,360 z^5 + 1\,389\,035\,520 z^4 - 5\,223\,628\,800 z^3 + 14\,307\,321\,600 z^2 - 6\,162\,156\,000 z + 9\,820\,936\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(16\,777\,216 z^6 + 645\,922\,816 z^5 + 1\,611\,202\,560 z^4 - 5\,234\,688\,000 z^3 + 14\,208\,480\,000 z^2 - 14\,789\,174\,400 z - 9\,820\,936\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9278.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, \frac{13}{4}; z\right) = \frac{1}{2\,254\,857\,830\,400 z^{9/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-67\,108\,864 z^{13/2} + 16\,777\,216 z^6 + 2\,776\,629\,248 z^{11/2} - 681\,574\,400 z^5 - 7\,349\,207\,040 z^{9/2} + 1\,369\,374\,720 z^4 - 27\,463\,188\,480 z^{7/2} + 6\,559\,580\,160 z^3 - 85\,854\,182\,400 z^{5/2} + 20\,021\,702\,400 z^2 - 104\,282\,640\,000 z^{3/2} - 12\,166\,308\,000 z + 144\,474\,907\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 - 2\,776\,629\,248 z^{11/2} - 681\,574\,400 z^5 + 7\,349\,207\,040 z^{9/2} + 1\,369\,374\,720 z^4 + 27\,463\,188\,480 z^{7/2} + 6\,559\,580\,160 z^3 + 85\,854\,182\,400 z^{5/2} + 20\,021\,702\,400 z^2 + 104\,282\,640\,000 z^{3/2} - 12\,166\,308\,000 z - 144\,474\,907\,500\sqrt{z} + 108\,356\,180\,625\right) + 108\,356\,180\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 11\,156\,848\,640 z^6 + 31\,378\,636\,800 z^5 + 107\,864\,064\,000 z^4 + 330\,333\,696\,000 z^3 + 408\,787\,948\,800 z^2 - 127\,746\,234\,000 z + 108\,356\,180\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 11\,156\,848\,640 z^6 + 31\,378\,636\,800 z^5 + 107\,864\,064\,000 z^4 + 330\,333\,696\,000 z^3 + 408\,787\,948\,800 z^2 - 127\,746\,234\,000 z + 108\,356\,180\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9279.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, \frac{13}{4}; -z\right) = \frac{1}{563\,714\,457\,600 z^{9/4}}\left(\sqrt{\pi}\left(-268\,435\,456 z^7 - 11\,156\,848\,640 z^6 - 31\,378\,636\,800 z^5 + 107\,864\,064\,000 z^4 - 330\,333\,696\,000 z^3 + 408\,787\,948\,800 z^2 + 127\,746\,234\,000 z + 108\,356\,180\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216 z^6 + 694\,157\,312 z^5 + 1\,837\,301\,760 z^4 - 6\,865\,797\,120 z^3 + 21\,463\,545\,600 z^2 - 26\,070\,660\,000 z - 36\,118\,726\,875\right)\sin\left(2\sqrt{z}\right) - \left(16\,777\,216 z^6 + 681\,574\,400 z^5 + 1\,369\,374\,720 z^4 - 6\,559\,580\,160 z^3 + 20\,021\,702\,400 z^2 + 12\,166\,308\,000 z + 108\,356\,180\,625\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9280.01

$${}_1F_2\left(-\frac{19}{4};-\frac{5}{2},\frac{15}{4};z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-11\,995\,709\,440\,z^6+38\,236\,323\,840\,z^5+134\,140\,723\,200\,z^4+454\,395\,801\,600\,z^3+\right.\right.\right.$$
$$\left.\left.\left.618\,517\,036\,800\,z^2-157\,134\,978\,000\,z-481\,225\,870\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(268\,435\,456\,z^7-11\,827\,937\,280\,z^6+31\,189\,893\,120\,z^5+141\,012\,172\,800\,z^4+504\,811\,008\,000\,z^3+\right.$$
$$\left.621\,145\,324\,800\,z^2-2\,671\,294\,626\,000\,z-1\,443\,677\,610\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7-11\,928\,600\,576\,z^6+35\,342\,254\,080\,z^5+139\,508\,121\,600\,z^4+485\,789\,184\,000\,z^3+\right.$$
$$\left.\left.719\,739\,820\,800\,z^2-408\,550\,942\,800\,z+1\,443\,677\,610\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(1\,380\,188\,160\,000\sqrt{2}\;z^{9/4}\right)$$

07.22.03.9281.01

$${}_1F_2\left(-\frac{19}{4};-\frac{5}{2},\frac{15}{4};-z\right)=$$

$$\left(\left(-2\sqrt{z}\,\left(268\,435\,456\,z^7+11\,995\,709\,440\,z^6+38\,236\,323\,840\,z^5-134\,140\,723\,200\,z^4+454\,395\,801\,600\,z^3-\right.\right.\right.$$
$$\left.\left.\left.618\,517\,036\,800\,z^2-157\,134\,978\,000\,z+481\,225\,870\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(268\,435\,456\,z^7+11\,827\,937\,280\,z^6+31\,189\,893\,120\,z^5-141\,012\,172\,800\,z^4+504\,811\,008\,000\,z^3-\right.$$
$$\left.621\,145\,324\,800\,z^2-2\,671\,294\,626\,000\,z+1\,443\,677\,610\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-268\,435\,456\,z^7-11\,928\,600\,576\,z^6-35\,342\,254\,080\,z^5+139\,508\,121\,600\,z^4-485\,789\,184\,000\,z^3+\right.$$
$$\left.\left.719\,739\,820\,800\,z^2+408\,550\,942\,800\,z+1\,443\,677\,610\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(1\,380\,188\,160\,000\sqrt{2}\;z^{9/4}\right)$$

07.22.03.9282.01

$$
{}_1F_2\left(-\frac{19}{4};-\frac{5}{2},\frac{17}{4};z\right)=
$$

$$
\left(13\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}+50\,801\,410\,048\,z^{13/2}-12\,499\,025\,920\,z^{6}-158\,230\,118\,400\,z^{11/2}+\right.\right.\right.
$$

$$
30\,875\,320\,320\,z^{5}-703\,514\,542\,080\,z^{9/2}+173\,594\,050\,560\,z^{4}-2\,744\,521\,113\,600\,z^{7/2}+
$$

$$
697\,381\,171\,200\,z^{3}-4\,656\,693\,888\,000\,z^{5/2}+542\,269\,728\,000\,z^{2}+
$$

$$
4\,821\,334\,056\,000\,z^{3/2}-10\,055\,453\,562\,000\,z-29\,906\,305\,852\,500\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-50\,801\,410\,048\,z^{13/2}-12\,499\,025\,920\,z^{6}+158\,230\,118\,400\,z^{11/2}+\right.
$$

$$
30\,875\,320\,320\,z^{5}+703\,514\,542\,080\,z^{9/2}+173\,594\,050\,560\,z^{4}+2\,744\,521\,113\,600\,z^{7/2}+
$$

$$
697\,381\,171\,200\,z^{3}+4\,656\,693\,888\,000\,z^{5/2}+542\,269\,728\,000\,z^{2}-4\,821\,334\,056\,000\,z^{3/2}-
$$

$$
\left.\left.10\,055\,453\,562\,000\,z+29\,906\,305\,852\,500\sqrt{z}\;-22\,429\,729\,389\,375\right)-22\,429\,729\,389\,375\right)+
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(4\,294\,967\,296\,z^{8}-204\,010\,946\,560\,z^{7}+669\,410\,918\,400\,z^{6}+2\,761\,320\,038\,400\,z^{5}+\right.
$$

$$
10\,570\,678\,272\,000\,z^{4}+17\,441\,619\,148\,800\,z^{3}-8\,175\,758\,976\,000\,z^{2}+
$$

$$
\left.13\,869\,591\,120\,000\,z-22\,429\,729\,389\,375\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(4\,294\,967\,296\,z^{8}-204\,010\,946\,560\,z^{7}+669\,410\,918\,400\,z^{6}+2\,761\,320\,038\,400\,z^{5}+\right.
$$

$$
10\,570\,678\,272\,000\,z^{4}+17\,441\,619\,148\,800\,z^{3}-8\,175\,758\,976\,000\,z^{2}+
$$

$$
\left.\left.13\,869\,591\,120\,000\,z-22\,429\,729\,389\,375\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\Big/\left(1\,154\,487\,209\,164\,800\,z^{13/4}\right)
$$

07.22.03.9283.01

$$
{}_1F_2\left(-\frac{19}{4};-\frac{5}{2},\frac{17}{4};-z\right)=\frac{1}{288\,621\,802\,291\,200\,z^{13/4}}
$$

$$
\left(13\left(\sqrt{\pi}\,\left(-4\,294\,967\,296\,z^{8}-204\,010\,946\,560\,z^{7}-669\,410\,918\,400\,z^{6}+2\,761\,320\,038\,400\,z^{5}-10\,570\,678\,272\,000\,z^{4}+\right.\right.\right.
$$

$$
\left.17\,441\,619\,148\,800\,z^{3}+8\,175\,758\,976\,000\,z^{2}+13\,869\,591\,120\,000\,z+22\,429\,729\,389\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$

$$
2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(268\,435\,456\,z^{7}+12\,700\,352\,512\,z^{6}+39\,557\,529\,600\,z^{5}-175\,878\,635\,520\,z^{4}+\right.\right.
$$

$$
\left.686\,130\,278\,400\,z^{3}-1\,164\,173\,472\,000\,z^{2}-1\,205\,333\,514\,000\,z-7\,476\,576\,463\,125\right)\sin\left(2\sqrt{z}\right)-
$$

$$
\left(268\,435\,456\,z^{7}+12\,499\,025\,920\,z^{6}+30\,875\,320\,320\,z^{5}-173\,594\,050\,560\,z^{4}+697\,381\,171\,200\,z^{3}-\right.
$$

$$
\left.\left.\left.542\,269\,728\,000\,z^{2}-10\,055\,453\,562\,000\,z+22\,429\,729\,389\,375\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)
$$

07.22.03.9284.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 217\,432\,719\,360\,z^7 + 795\,072\,266\,240\,z^6 + 3\,325\,191\,782\,400\,z^5 + 13\,819\,222\,425\,600\,z^4 + \right.\right.\right. $$

$$ \left.\left.\left. 24\,338\,587\,852\,800\,z^3 - 15\,084\,957\,888\,000\,z^2 + 85\,795\,697\,988\,000\,z + 132\,337\,114\,284\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$

$$ \left(4\,294\,967\,296\,z^8 - 214\,748\,364\,800\,z^7 + 666\,391\,019\,520\,z^6 + 3\,506\,857\,574\,400\,z^5 + 15\,373\,910\,016\,000\,z^4 + \right. $$

$$ \left. 28\,605\,549\,772\,800\,z^3 - 80\,453\,108\,736\,000\,z^2 + 862\,356\,759\,264\,000\,z + 397\,011\,342\,853\,125\right) $$

$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 216\,358\,977\,536\,z^7 + 742\,391\,808\,000\,z^6 + \right. $$

$$ 3\,446\,931\,456\,000\,z^5 + 14\,640\,906\,240\,000\,z^4 + 27\,917\,916\,364\,800\,z^3 - 15\,755\,400\,460\,800\,z^2 - $$

$$ \left.\left. 15\,399\,227\,844\,000\,z - 397\,011\,342\,853\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(50\,054\,823\,936\,000\,\sqrt{2}\,z^{13/4}\right) $$

07.22.03.9285.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) = $$

$$ \left(\left(-2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 217\,432\,719\,360\,z^7 + 795\,072\,266\,240\,z^6 - 3\,325\,191\,782\,400\,z^5 + 13\,819\,222\,425\,600\,z^4 - \right.\right.\right. $$

$$ \left.\left.\left. 24\,338\,587\,852\,800\,z^3 - 15\,084\,957\,888\,000\,z^2 - 85\,795\,697\,988\,000\,z + 132\,337\,114\,284\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$

$$ \left(4\,294\,967\,296\,z^8 + 214\,748\,364\,800\,z^7 + 666\,391\,019\,520\,z^6 - 3\,506\,857\,574\,400\,z^5 + 15\,373\,910\,016\,000\,z^4 - \right. $$

$$ \left. 28\,605\,549\,772\,800\,z^3 - 80\,453\,108\,736\,000\,z^2 - 862\,356\,759\,264\,000\,z + 397\,011\,342\,853\,125\right) $$

$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 216\,358\,977\,536\,z^7 + 742\,391\,808\,000\,z^6 - \right. $$

$$ 3\,446\,931\,456\,000\,z^5 + 14\,640\,906\,240\,000\,z^4 - 27\,917\,916\,364\,800\,z^3 - 15\,755\,400\,460\,800\,z^2 + $$

$$ \left.\left. 15\,399\,227\,844\,000\,z - 397\,011\,342\,853\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(50\,054\,823\,936\,000\,\sqrt{2}\,z^{13/4}\right) $$

07.22.03.9286.01

$$
{}_1F_2\left(-\frac{19}{4};-\frac{5}{2},\frac{21}{4};z\right)=
$$

$$
\left(221\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}+914\,828\,034\,048\,z^{15/2}-225\,485\,783\,040\,z^{7}-\right.\right.\right.
$$

$$
3\,277\,596\,917\,760\,z^{13/2}+661\,357\,854\,720\,z^{6}-16\,880\,479\,764\,480\,z^{11/2}+4\,243\,335\,413\,760\,z^{5}-
$$

$$
78\,828\,915\,916\,800\,z^{9/2}+20\,773\,689\,753\,600\,z^{4}-169\,109\,279\,539\,200\,z^{7/2}+
$$

$$
36\,404\,121\,600\,000\,z^{3}+138\,335\,662\,080\,000\,z^{5/2}-313\,849\,033\,344\,000\,z^{2}+
$$

$$
492\,172\,347\,744\,000\,z^{3/2}+5\,167\,809\,651\,312\,000\,z+10\,497\,113\,354\,227\,500\sqrt{z}\,+
$$

$$
e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}-914\,828\,034\,048\,z^{15/2}-225\,485\,783\,040\,z^{7}+\right.
$$

$$
3\,277\,596\,917\,760\,z^{13/2}+661\,357\,854\,720\,z^{6}+16\,880\,479\,764\,480\,z^{11/2}+4\,243\,335\,413\,760\,z^{5}+
$$

$$
78\,828\,915\,916\,800\,z^{9/2}+20\,773\,689\,753\,600\,z^{4}+169\,109\,279\,539\,200\,z^{7/2}+36\,404\,121\,600\,000\,z^{3}-
$$

$$
138\,335\,662\,080\,000\,z^{5/2}-313\,849\,033\,344\,000\,z^{2}-492\,172\,347\,744\,000\,z^{3/2}+5\,167\,809\,651\,312\,000\,z-
$$

$$
\left.\left.10\,497\,113\,354\,227\,500\sqrt{z}\,+7\,872\,835\,015\,670\,625\right)+7\,872\,835\,015\,670\,625\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-3\,672\,197\,038\,080\,z^{8}+13\,770\,738\,892\,800\,z^{7}+66\,271\,680\,921\,600\,z^{6}+\right.
$$

$$
304\,435\,534\,233\,600\,z^{5}+627\,898\,289\,356\,800\,z^{4}-392\,436\,430\,848\,000\,z^{3}+
$$

$$
\left.998\,610\,560\,640\,000\,z^{2}-3\,229\,881\,032\,070\,000\,z+7\,872\,835\,015\,670\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-3\,672\,197\,038\,080\,z^{8}+13\,770\,738\,892\,800\,z^{7}+66\,271\,680\,921\,600\,z^{6}+\right.
$$

$$
304\,435\,534\,233\,600\,z^{5}+627\,898\,289\,356\,800\,z^{4}-392\,436\,430\,848\,000\,z^{3}+998\,610\,560\,640\,000\,z^{2}-
$$

$$
\left.\left.3\,229\,881\,032\,070\,000\,z+7\,872\,835\,015\,670\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big/\left(664\,984\,632\,478\,924\,800\,z^{17/4}\right)
$$

07.22.03.9287.01

$$
{}_1F_2\left(-\frac{19}{4};-\frac{5}{2},\frac{21}{4};-z\right)=
$$

$$
\left(221\left(\sqrt{\pi}\left(-68\,719\,476\,736\,z^{9}-3\,672\,197\,038\,080\,z^{8}-13\,770\,738\,892\,800\,z^{7}+66\,271\,680\,921\,600\,z^{6}-\right.\right.\right.
$$

$$
304\,435\,534\,233\,600\,z^{5}+627\,898\,289\,356\,800\,z^{4}+392\,436\,430\,848\,000\,z^{3}+
$$

$$
\left.998\,610\,560\,640\,000\,z^{2}+3\,229\,881\,032\,070\,000\,z+7\,872\,835\,015\,670\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$

$$
2\sqrt[4]{z}\left(\left(-4\,294\,967\,296\,z^{8}-225\,485\,783\,040\,z^{7}-661\,357\,854\,720\,z^{6}+4\,243\,335\,413\,760\,z^{5}-20\,773\,689\,753\,600\,z^{4}+\right.\right.
$$

$$
36\,404\,121\,600\,000\,z^{3}+313\,849\,033\,344\,000\,z^{2}+5\,167\,809\,651\,312\,000\,z-7\,872\,835\,015\,670\,625\Big)
$$

$$
\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(4\,294\,967\,296\,z^{8}+228\,707\,008\,512\,z^{7}+819\,399\,229\,440\,z^{6}-\right.
$$

$$
4\,220\,119\,941\,120\,z^{5}+19\,707\,228\,979\,200\,z^{4}-42\,277\,319\,884\,800\,z^{3}-34\,583\,915\,520\,000\,z^{2}+
$$

$$
\left.\left.\left.123\,043\,086\,936\,000\,z-2\,624\,278\,338\,556\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(166\,246\,158\,119\,731\,200\,z^{17/4}\right)
$$

07.22.03.9288.01

$${}_1F_2\left(-\frac{19}{4};-\frac{5}{2},\frac{23}{4};z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-3\,886\,945\,402\,880\,z^8+16\,036\,334\,141\,440\,z^7+77\,923\,457\,433\,600\,z^6+383\,783\,377\,305\,600\,z^5+\right.\right.\right.$$
$$\left.\left.\left.832\,455\,740\,620\,800\,z^4-733\,017\,212\,928\,000\,z^3+3\,660\,616\,447\,488\,000\,z^2-\right.\right.\right.$$
$$\left.\left.\left.45\,675\,209\,730\,150\,000\,z-57\,566\,644\,713\,703\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-68\,719\,476\,736\,z^9+3\,843\,995\,729\,920\,z^8-13\,722\,420\,510\,720\,z^7-82\,216\,747\,008\,000\,z^6-\right.$$
$$424\,930\,443\,264\,000\,z^5-1\,018\,797\,657\,292\,800\,z^4+1\,823\,603\,798\,016\,000\,z^3+11\,897\,003\,454\,336\,000\,z^2+$$
$$\left.400\,187\,433\,595\,950\,000\,z+172\,699\,934\,141\,109\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-3\,869\,765\,533\,696\,z^8+15\,091\,441\,336\,320\,z^7+80\,540\,703\,129\,600\,z^6+\right.$$
$$403\,654\,311\,936\,000\,z^5+938\,546\,793\,676\,800\,z^4-596\,590\,744\,780\,800\,z^3+281\,585\,880\,576\,000\,z^2+$$
$$\left.\left.31\,760\,907\,428\,250\,000\,z+172\,699\,934\,141\,109\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(1\,601\,754\,365\,952\,000\sqrt{2}\;z^{17/4}\right)$$

07.22.03.9289.01

$${}_1F_2\left(-\frac{19}{4};-\frac{5}{2},\frac{23}{4};-z\right)=$$
$$\left(\left(-2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+3\,886\,945\,402\,880\,z^8+16\,036\,334\,141\,440\,z^7-77\,923\,457\,433\,600\,z^6+383\,783\,377\,305\,600\,z^5-\right.\right.\right.$$
$$\left.\left.\left.832\,455\,740\,620\,800\,z^4-733\,017\,212\,928\,000\,z^3-3\,660\,616\,447\,488\,000\,z^2-45\,675\,209\,730\,150\,000\,z+\right.\right.\right.$$
$$\left.\left.\left.57\,566\,644\,713\,703\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(68\,719\,476\,736\,z^9+3\,843\,995\,729\,920\,z^8+13\,722\,420\,510\,720\,z^7-\right.\right.\right.$$
$$82\,216\,747\,008\,000\,z^6+424\,930\,443\,264\,000\,z^5-1\,018\,797\,657\,292\,800\,z^4-1\,823\,603\,798\,016\,000\,z^3+$$
$$\left.\left.\left.11\,897\,003\,454\,336\,000\,z^2-400\,187\,433\,595\,950\,000\,z+172\,699\,934\,141\,109\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.$$
$$2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+3\,869\,765\,533\,696\,z^8+15\,091\,441\,336\,320\,z^7-80\,540\,703\,129\,600\,z^6+\right.$$
$$403\,654\,311\,936\,000\,z^5-938\,546\,793\,676\,800\,z^4-596\,590\,744\,780\,800\,z^3-281\,585\,880\,576\,000\,z^2+$$
$$\left.\left.31\,760\,907\,428\,250\,000\,z-172\,699\,934\,141\,109\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(1\,601\,754\,365\,952\,000\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{19}{4}$, $b_{1.} = -\frac{3}{2}$

07.22.03.9290.01

$${}_1F_2\left(-\frac{19}{4};-\frac{3}{2},-\frac{23}{4};z\right)=\left(\frac{100\,z}{69}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{69}\sqrt{z}\;(8\,z+69)\sinh\left(2\sqrt{z}\right)$$

07.22.03.9291.01

$${}_1F_2\left(-\frac{19}{4};-\frac{3}{2},-\frac{23}{4};-z\right)=\left(1-\frac{100\,z}{69}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{69}\,(69-8\,z)\sqrt{z}\;\sin\left(2\sqrt{z}\right)$$

07.22.03.9292.01

$${}_1F_2\left(-\frac{19}{4};-\frac{3}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{28\,194\,075\sqrt{2}}\left(\sqrt[4]{z}\left(\left(262\,144\,z^5+4\,161\,536\,z^4+23\,915\,520\,z^3+14\,826\,240\,z^2+39\,382\,200\,z+28\,194\,075\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(32\,768\,z^4+540\,672\,z^3+3\,369\,600\,z^2+16\,826\,940\,z+28\,194\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4\,z\left(65\,536\,z^4+1\,056\,768\,z^3+6\,264\,576\,z^2+5\,728\,320\,z-28\,194\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9293.01

$${}_1F_2\left(-\frac{19}{4};-\frac{3}{2},-\frac{21}{4};-z\right)=$$
$$-\frac{1}{28\,194\,075\sqrt{2}}\left(\sqrt[4]{z}\left(\left(262\,144\,z^5-4\,161\,536\,z^4+23\,915\,520\,z^3-14\,826\,240\,z^2+39\,382\,200\,z-28\,194\,075\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(32\,768\,z^4-540\,672\,z^3+3\,369\,600\,z^2-16\,826\,940\,z+28\,194\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(65\,536\,z^4-1\,056\,768\,z^3+6\,264\,576\,z^2-5\,728\,320\,z-28\,194\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9294.01

$${}_1F_2\left(-\frac{19}{4};-\frac{3}{2},-\frac{19}{4};z\right)=\left(\frac{4\,z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.9295.01

$${}_1F_2\left(-\frac{19}{4};-\frac{3}{2},-\frac{19}{4};-z\right)=\left(1-\frac{4\,z}{3}\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.9296.01

$${}_1F_2\left(-\frac{19}{4};-\frac{3}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{1\,342\,575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072\,z^5+679\,936\,z^4+2\,327\,040\,z^3+764\,640\,z^2+1\,684\,800\,z+1\,342\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(16\,384\,z^4+95\,232\,z^3+371\,520\,z^2+610\,740\,z+1\,342\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4\,z\left(32\,768\,z^4+178\,176\,z^3+637\,056\,z^2+463\,320\,z-1\,342\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9297.01

$${}_1F_2\left(-\frac{19}{4};-\frac{3}{2},-\frac{17}{4};-z\right)=$$
$$-\frac{1}{1\,342\,575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072\,z^5-679\,936\,z^4+2\,327\,040\,z^3-764\,640\,z^2+1\,684\,800\,z-1\,342\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(16\,384\,z^4-95\,232\,z^3+371\,520\,z^2-610\,740\,z+1\,342\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(32\,768\,z^4-178\,176\,z^3+637\,056\,z^2-463\,320\,z-1\,342\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9298.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, -\frac{15}{4}; z\right) = \frac{1}{935\,550}\left(e^{-2\sqrt{z}}\left(-65\,536\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4} - 65\,536\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4} + 65\,536\,e^{4\sqrt{z}}z^{9/2} - 65\,536\,z^{9/2} + 16\,384\,e^{4\sqrt{z}}z^4 + 16\,384\,z^4 + 12\,288\,e^{4\sqrt{z}}z^{7/2} - 12\,288\,z^{7/2} + 15\,360\,e^{4\sqrt{z}}z^3 + 15\,360\,z^3 + 26\,880\,e^{4\sqrt{z}}z^{5/2} - 26\,880\,z^{5/2} + 60\,480\,e^{4\sqrt{z}}z^2 + 60\,480\,z^2 + 166\,320\,e^{4\sqrt{z}}z^{3/2} - 166\,320\,z^{3/2} + 540\,540\,e^{4\sqrt{z}}z + 540\,540\,z - 935\,550\,e^{4\sqrt{z}}\sqrt{z} + 935\,550\sqrt{z} + 467\,775\,e^{4\sqrt{z}} + 467\,775\right)\right) $$

07.22.03.9299.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, -\frac{15}{4}; -z\right) = \frac{1}{467\,775}\left(131\,072\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4} + 2\left(-32\,768\,z^4 + 6144\,z^3 - 13\,440\,z^2 + 83\,160\,z + 467\,775\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(16\,384\,z^4 - 15\,360\,z^3 + 60\,480\,z^2 - 540\,540\,z + 467\,775\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9300.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, -\frac{13}{4}; z\right) = -\frac{1}{78\,975\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536\,z^5 - 360\,448\,z^4 - 368\,640\,z^3 - 69\,120\,z^2 - 81\,000\,z - 78\,975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-8192\,z^4 + 39\,936\,z^3 + 60\,480\,z^2 + 17\,820\,z + 78\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-16\,384\,z^4 + 86\,016\,z^3 + 108\,288\,z^2 + 45\,360\,z - 78\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9301.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, -\frac{13}{4}; -z\right) = \frac{1}{78\,975\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536\,z^5 + 360\,448\,z^4 - 368\,640\,z^3 + 69\,120\,z^2 - 81\,000\,z + 78\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(8192\,z^4 + 39\,936\,z^3 - 60\,480\,z^2 + 17\,820\,z - 78\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(16\,384\,z^4 + 86\,016\,z^3 - 108\,288\,z^2 + 45\,360\,z + 78\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9302.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, -\frac{11}{4}; z\right) = \frac{1}{62\,370}\left(e^{-2\sqrt{z}}\left(-16\,384\,e^{4\sqrt{z}}z^{9/2} + 16\,384\,z^{9/2} - 4096\,e^{4\sqrt{z}}z^4 - 4096\,z^4 + 1024\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 171)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4} + 1024\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 171)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4} + 172\,032\,e^{4\sqrt{z}}z^{7/2} - 172\,032\,z^{7/2} + 39\,936\,e^{4\sqrt{z}}z^3 + 39\,936\,z^3 + 26\,112\,e^{4\sqrt{z}}z^{5/2} - 26\,112\,z^{5/2} + 25\,920\,e^{4\sqrt{z}}z^2 + 25\,920\,z^2 + 30\,240\,e^{4\sqrt{z}}z^{3/2} - 30\,240\,z^{3/2} + 26\,460\,e^{4\sqrt{z}}z + 26\,460\,z - 62\,370\,e^{4\sqrt{z}}\sqrt{z} + 62\,370\sqrt{z} + 31\,185\,e^{4\sqrt{z}} + 31\,185\right)\right) $$

07.22.03.9303.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, -\frac{11}{4}; -z\right) = $$
$$ \frac{1}{31\,185}\left(-2048\sqrt{\pi}\,(16z+171)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4} + 2\left(8192z^4+86\,016z^3-13\,056z^2+15\,120z+31\,185\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\,+ \right. $$
$$ \left.\left(-4096z^4-39\,936z^3+25\,920z^2-26\,460z+31\,185\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9304.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) = $$
$$ \frac{1}{18\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768z^5-530\,432z^4+691\,200z^3+47\,520z^2+10\,800z+18\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\right.\right. $$
$$ \left(4096z^4-63\,744z^3+51\,840z^2-3780z+18\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left.4z\left(8192z^4-130\,560z^3+142\,848z^2+18\,360z-18\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9305.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, -\frac{9}{4}; -z\right) = $$
$$ -\frac{1}{18\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768z^5+530\,432z^4+691\,200z^3-47\,520z^2+10\,800z-18\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z}\left(4096z^4+63\,744z^3+51\,840z^2+3780z+18\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left.4z\left(8192z^4+130\,560z^3+142\,848z^2-18\,360z-18\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9306.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, -\frac{7}{4}; z\right) = $$
$$ \frac{1}{5670}\left(e^{-2\sqrt{z}}\left(2048e^{4\sqrt{z}}z^{9/2}-2048z^{9/2}+512e^{4\sqrt{z}}z^4+512z^4-43\,392e^{4\sqrt{z}}z^{7/2}+43\,392z^{7/2}-10\,464e^{4\sqrt{z}}z^3 - \right.\right. $$
$$ 10\,464z^3-8e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-5472z+12\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4} - $$
$$ 8e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-5472z+12\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+95\,232e^{4\sqrt{z}}z^{5/2}-95\,232z^{5/2}+17\,280e^{4\sqrt{z}}z^2+ $$
$$ \left.\left.17\,280z^2+6480e^{4\sqrt{z}}z^{3/2}-6480z^{3/2}+540e^{4\sqrt{z}}z+540z-5670e^{4\sqrt{z}}\sqrt{z}+5670\sqrt{z}+2835e^{4\sqrt{z}}+2835\right)\right) $$

07.22.03.9307.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, -\frac{7}{4}; -z\right) = \frac{1}{2835} \left(16\sqrt{\pi}\left(256z^2+5472z+12825\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4} - 2\left(1024z^4+21696z^3+47616z^2-3240z-2835\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(512z^4+10464z^3+17280z^2-540z+2835\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9308.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, -\frac{5}{4}; z\right) = \frac{1}{10125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-16384z^5+440320z^4-1604160z^3+345600z^2-5400z+10125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048z^4-53760z^3+169560z^2+13500z-10125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4096z^4-109056z^3+375120z^2-21600z+10125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9309.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, -\frac{5}{4}; -z\right) = \frac{1}{10125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16384z^5+440320z^4+1604160z^3+345600z^2+5400z+10125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048z^4+53760z^3+169560z^2-13500z-10125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4096z^4+109056z^3+375120z^2+21600z+10125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9310.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, -\frac{3}{4}; z\right) = \frac{1}{19440}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-131328z^2+615600z-141075\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4} + e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-131328z^2+615600z-141075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4} - 4\left(-1024z^{9/2}+256z^4+32640z^{7/2} - 7968z^3-148164z^{5/2}+31725z^2+17280z^{3/2}+5400z-4860\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{9/2}+256z^4 - 32640z^{7/2}-7968z^3+148164z^{5/2}+31725z^2-17280z^{3/2}+5400z+4860\sqrt{z}-2430\right)-2430\right)\right)\right) $$

07.22.03.9311.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{4860}\left(2\left(\left(-256\,z^4 - 7968\,z^3 - 31\,725\,z^2 + 5400\,z + 2430\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(256\,z^4 + 8160\,z^3 + 37\,041\,z^2 + 4320\,z + 1215\right)\right.\right.$$
$$\left.\left.\sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\,z^{7/4}\left(4096\,z^3 + 131\,328\,z^2 + 615\,600\,z + 141\,075\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.9312.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, -\frac{1}{4}; z\right) =$$
$$\frac{1}{14\,175\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(8192\,z^5 - 307\,712\,z^4 + 1\,841\,760\,z^3 - 844\,830\,z^2 - 151\,200\,z + 14\,175\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\right.\right.$$
$$\left(-4096\,z^4 + 151\,296\,z^3 - 831\,600\,z^2 + 57\,645\,z - 56\,700\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.2\,z\left(-4096\,z^4 + 152\,832\,z^3 - 884\,016\,z^2 + 244\,755\,z + 28\,350\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9313.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{14\,175\sqrt{2}}\left(\sqrt[4]{z}\,\left(-\left(8192\,z^5 + 307\,712\,z^4 + 1\,841\,760\,z^3 + 844\,830\,z^2 - 151\,200\,z - 14\,175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\sqrt{z}\,\left(4096\,z^4 + 151\,296\,z^3 + 831\,600\,z^2 + 57\,645\,z + 56\,700\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.2\,z\left(4096\,z^4 + 152\,832\,z^3 + 884\,016\,z^2 + 244\,755\,z - 28\,350\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9314.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{1\,658\,880}\left(e^{-2\sqrt{z}}\,\left(4\left(-16\,384\,z^{9/2} + 4096\,z^4 + 697\,344\,z^{7/2} - 171\,264\,z^3 - 4\,800\,192\,z^{5/2} + 1\,082\,160\,z^2 + 1\,579\,500\,z^{3/2} + \right.\right.\right.$$
$$\left.\left.\left.78\,705\,z + 414\,720\sqrt{z}\right) + e^{4\sqrt{z}}\,\left(16\,384\,z^{9/2} + 4096\,z^4 - 697\,344\,z^{7/2} - 171\,264\,z^3 + 4\,800\,192\,z^{5/2} + \right.\right.\right.$$
$$\left.\left.\left.1\,082\,160\,z^2 - 1\,579\,500\,z^{3/2} + 78\,705\,z - 414\,720\sqrt{z} + 207\,360\right) + 207\,360\right) -$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(65\,536\,z^4 - 2\,801\,664\,z^3 + 19\,699\,200\,z^2 - 9\,028\,800\,z - 2\,962\,575\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) -$$
$$\left.e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(65\,536\,z^4 - 2\,801\,664\,z^3 + 19\,699\,200\,z^2 - 9\,028\,800\,z - 2\,962\,575\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)$$

07.22.03.9315.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{3}{2},\frac{1}{4};-z\right)=\frac{1}{414\,720}\left(\sqrt{\pi}\,z^{3/4}\left(65\,536z^4+2\,801\,664z^3+19\,699\,200z^2+9\,028\,800z-2\,962\,575\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$2\left(\left(4096z^4+171\,264z^3+1\,082\,160z^2-78\,705z+207\,360\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.4\sqrt{z}\left(4096z^4+174\,336z^3+1\,200\,048z^2+394\,875z-103\,680\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.9316.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{3}{2},\frac{3}{4};z\right)=$$
$$-\frac{1}{4\,082\,400\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(65\,536z^5-3\,162\,112z^4+26\,334\,720z^3-18\,290\,880z^2-7\,763\,175z-2\,041\,200\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\sqrt{z}\left(-65\,536z^4+3\,121\,152z^3-24\,468\,480z^2+6\,380\,640z+1\,516\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2z\left(-65\,536z^4+3\,145\,728z^3-25\,569\,792z^2+12\,821\,760z+6\,648\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9317.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{3}{2},\frac{3}{4};-z\right)=$$
$$\frac{1}{4\,082\,400\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(65\,536z^5+3\,162\,112z^4+26\,334\,720z^3+18\,290\,880z^2-7\,763\,175z+2\,041\,200\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$\sqrt{z}\left(65\,536z^4+3\,121\,152z^3+24\,468\,480z^2+6\,380\,640z-1\,516\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2z\left(65\,536z^4+3\,145\,728z^3+25\,569\,792z^2+12\,821\,760z-6\,648\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9318.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{3}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{530\,841\,600\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-262\,144z^{9/2}+65\,536z^4+13\,959\,168z^{7/2}-3\,440\,640z^3-128\,808\,960z^{5/2}+\right.\right.\right.$$
$$29\,790\,720z^2+70\,744\,320z^{3/2}-2\,557\,440z+49\,758\,300\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4-13\,959\,168z^{7/2}-3\,440\,640z^3+128\,808\,960z^{5/2}+\right.$$
$$\left.\left.29\,790\,720z^2-70\,744\,320z^{3/2}-2\,557\,440z-49\,758\,300\sqrt{z}+4\,141\,125\right)+4\,141\,125\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-56\,033\,280z^4+525\,312\,000z^3-361\,152\,000z^2-237\,006\,000z-62\,214\,075\right)$$
$$\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left.\left.\left(1\,048\,576z^5-56\,033\,280z^4+525\,312\,000z^3-361\,152\,000z^2-237\,006\,000z-62\,214\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.9319.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, \frac{5}{4}; -z\right) = \frac{1}{132\,710\,400\,\sqrt[4]{z}} $$
$$ \left(\sqrt{\pi}\,\left(1\,048\,576\,z^5 + 56\,033\,280\,z^4 + 525\,312\,000\,z^3 + 361\,152\,000\,z^2 - 237\,006\,000\,z + 62\,214\,075\right) C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ 2\,\sqrt[4]{z}\,\left(\left(65\,536\,z^4 + 3\,440\,640\,z^3 + 29\,790\,720\,z^2 + 2\,557\,440\,z + 4\,141\,125\right)\cos\left(2\,\sqrt{z}\right) - \right. $$
$$ \left.\left. 4\,\sqrt{z}\,\left(65\,536\,z^4 + 3\,489\,792\,z^3 + 32\,202\,240\,z^2 + 17\,686\,080\,z - 12\,439\,575\right)\sin\left(2\,\sqrt{z}\right)\right)\right) $$

07.22.03.9320.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, \frac{7}{4}; z\right) = \frac{1}{479\,001\,600\,\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\,\sqrt{z}\,\left(-1\,048\,576\,z^5 + 61\,800\,448\,z^4 - 659\,496\,960\,z^3 + 611\,781\,120\,z^2 + 427\,086\,000\,z + 195\,062\,175\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(1\,048\,576\,z^5 - 61\,145\,088\,z^4 + 622\,632\,960\,z^3 - 291\,202\,560\,z^2 - 256\,964\,400\,z + 133\,315\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\,\sqrt{z}\,\left(1\,048\,576\,z^5 - 61\,538\,304\,z^4 + 644\,456\,448\,z^3 - 469\,117\,440\,z^2 - 416\,631\,600\,z - 133\,315\,875\right) $$
$$ \left. I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.9321.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, \frac{7}{4}; -z\right) = \frac{1}{479\,001\,600\,\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\,\sqrt{z}\,\left(1\,048\,576\,z^5 + 61\,800\,448\,z^4 + 659\,496\,960\,z^3 + 611\,781\,120\,z^2 - 427\,086\,000\,z + 195\,062\,175\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ \left(1\,048\,576\,z^5 + 61\,145\,088\,z^4 + 622\,632\,960\,z^3 + 291\,202\,560\,z^2 - 256\,964\,400\,z - 133\,315\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\,\sqrt{z}\,\left(1\,048\,576\,z^5 + 61\,538\,304\,z^4 + 644\,456\,448\,z^3 + 469\,117\,440\,z^2 - 416\,631\,600\,z + 133\,315\,875\right) $$
$$ \left. J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.9322.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, \frac{9}{4}; z\right) = \frac{1}{40\,768\,634\,880\, z^{5/4}} \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(-4\,194\,304\, z^{11/2} + 1\,048\,576\, z^5 + 268\,173\,312\, z^{9/2} - 66\,256\,896\, z^4 - 3\,103\,162\,368\, z^{7/2} + 728\,801\,280\, z^3 + 2\,397\,911\,040\, z^{5/2} - 197\,199\,360\, z^2 + 2\,645\,887\,680\, z^{3/2} - 146\,493\,360\, z + 912\,473\,100\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304\, z^{11/2} + 1\,048\,576\, z^5 - 268\,173\,312\, z^{9/2} - 66\,256\,896\, z^4 + 3\,103\,162\,368\, z^{7/2} + 728\,801\,280\, z^3 - 2\,397\,911\,040\, z^{5/2} - 197\,199\,360\, z^2 - 2\,645\,887\,680\, z^{3/2} - 146\,493\,360\, z - 912\,473\,100\sqrt{z} + 684\,354\,825\right) + 684\,354\,825\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\, z^6 - 1\,075\,838\,976\, z^5 + 12\,607\,488\,000\, z^4 - 11\,556\,864\,000\, z^3 - 11\,376\,288\,000\, z^2 - 5\,972\,551\,200\, z + 684\,354\,825\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\, z^6 - 1\,075\,838\,976\, z^5 + 12\,607\,488\,000\, z^4 - 11\,556\,864\,000\, z^3 - 11\,376\,288\,000\, z^2 - 5\,972\,551\,200\, z + 684\,354\,825\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9323.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) = \frac{1}{10\,192\,158\,720\, z^{5/4}} \left(\sqrt{\pi}\left(16\,777\,216\, z^6 + 1\,075\,838\,976\, z^5 + 12\,607\,488\,000\, z^4 + 11\,556\,864\,000\, z^3 - 11\,376\,288\,000\, z^2 + 5\,972\,551\,200\, z + 684\,354\,825\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576\, z^5 + 67\,043\,328\, z^4 + 775\,790\,592\, z^3 + 599\,477\,760\, z^2 - 661\,471\,920\, z + 228\,118\,275\right)\sin\left(2\sqrt{z}\right) - \left(1\,048\,576\, z^5 + 66\,256\,896\, z^4 + 728\,801\,280\, z^3 + 197\,199\,360\, z^2 - 146\,493\,360\, z - 684\,354\,825\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9324.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) = \frac{1}{28\,466\,380\,800\sqrt{2}\, z^{5/4}} \left(\left(2\sqrt{z}\left(-16\,777\,216\, z^6 + 1\,168\,113\,664\, z^5 - 15\,202\,713\,600\, z^4 + 17\,626\,152\,960\, z^3 + 17\,411\,846\,400\, z^2 + 11\,592\,266\,400\, z + 1\,733\,106\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216\, z^6 - 1\,157\,627\,904\, z^5 + 14\,500\,823\,040\, z^4 - 9\,891\,348\,480\, z^3 - 13\,862\,534\,400\, z^2 - 5\,199\,319\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216\, z^6 - 1\,163\,919\,360\, z^5 + 14\,917\,238\,784\, z^4 - 14\,250\,885\,120\, z^3 - 17\,717\,356\,800\, z^2 - 11\,091\,880\,800\, z + 5\,199\,319\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9325.01

$${}_1F_2\left(-\frac{19}{4};-\frac{3}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{28\,466\,380\,800\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(16\,777\,216z^6+1\,168\,113\,664z^5+15\,202\,713\,600z^4+17\,626\,152\,960z^3-\right.\right.\right.$$
$$\left.17\,411\,846\,400z^2+11\,592\,266\,400z-1\,733\,106\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(16\,777\,216z^6+1\,157\,627\,904z^5+14\,500\,823\,040z^4+9\,891\,348\,480z^3-13\,862\,534\,400z^2-5\,199\,319\,125\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(16\,777\,216z^6+1\,163\,919\,360z^5+14\,917\,238\,784z^4+\right.$$
$$\left.\left.14\,250\,885\,120z^3-17\,717\,356\,800z^2+11\,091\,880\,800z+5\,199\,319\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.9326.01

$${}_1F_2\left(-\frac{19}{4};-\frac{3}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{2\,029\,372\,047\,360z^{9/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-67\,108\,864z^{13/2}+16\,777\,216z^6+5\,007\,998\,976z^{11/2}-1\,239\,416\,832z^5-\right.\right.\right.$$
$$69\,688\,098\,816z^{9/2}+16\,535\,715\,840z^4+69\,549\,096\,960z^{7/2}-7\,756\,922\,880z^3+103\,055\,016\,960z^{5/2}-$$
$$12\,938\,123\,520z^2+70\,912\,195\,200z^{3/2}+21\,899\,354\,400z-68\,435\,482\,500\sqrt{z}\,+$$
$$e^{4\sqrt{z}}\left(67\,108\,864z^{13/2}+16\,777\,216z^6-5\,007\,998\,976z^{11/2}-1\,239\,416\,832z^5+69\,688\,098\,816z^{9/2}+\right.$$
$$\left.16\,535\,715\,840z^4-69\,549\,096\,960z^{7/2}-7\,756\,922\,880z^3-103\,055\,016\,960z^{5/2}-12\,938\,123\,520z^2-\right.$$
$$\left.70\,912\,195\,200z^{3/2}+21\,899\,354\,400z+68\,435\,482\,500\sqrt{z}\,-51\,326\,611\,875\right)-51\,326\,611\,875\Big)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7-20\,082\,327\,552z^6+282\,407\,731\,200z^5-323\,592\,192\,000z^4-\right.$$
$$\left.424\,714\,752\,000z^3-334\,462\,867\,200z^2+76\,647\,740\,400z-51\,326\,611\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7-20\,082\,327\,552z^6+282\,407\,731\,200z^5-323\,592\,192\,000z^4-\right.$$
$$\left.\left.424\,714\,752\,000z^3-334\,462\,867\,200z^2+76\,647\,740\,400z-51\,326\,611\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.9327.01

$${}_1F_2\left(-\frac{19}{4};-\frac{3}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{507\,343\,011\,840z^{9/4}}\left(\sqrt{\pi}\left(268\,435\,456z^7+20\,082\,327\,552z^6+282\,407\,731\,200z^5+323\,592\,192\,000z^4-\right.\right.$$
$$\left.424\,714\,752\,000z^3+334\,462\,867\,200z^2+76\,647\,740\,400z+51\,326\,611\,875\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\sqrt[4]{z}\left(\left(-16\,777\,216z^6-1\,239\,416\,832z^5-16\,535\,715\,840z^4-7\,756\,922\,880z^3+12\,938\,123\,520z^2+\right.\right.$$
$$\left.21\,899\,354\,400z+51\,326\,611\,875\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(16\,777\,216z^6+1\,251\,999\,744z^5+\right.$$
$$\left.\left.17\,422\,024\,704z^4+17\,387\,274\,240z^3-25\,763\,754\,240z^2+17\,728\,048\,800z+17\,108\,870\,625\right)\sin\left(2\sqrt{z}\right)\right)\Bigg)$$

07.22.03.9328.01

$${}_1F_2\left(-\frac{19}{4};-\frac{3}{2},\frac{15}{4};z\right)=$$

$$-\left(\left(2\sqrt{z}\left(268\,435\,456\,z^7-21\,558\,722\,560\,z^6+331\,103\,600\,640\,z^5-460\,372\,377\,600\,z^4-592\,726\,118\,400\,z^3-\right.\right.\right.$$

$$\left.\left.530\,044\,819\,200\,z^2+27\,729\,702\,000\,z+206\,239\,658\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$

$$\left(-268\,435\,456\,z^7+21\,390\,950\,400\,z^6-318\,080\,286\,720\,z^5+286\,521\,753\,600\,z^4+533\,205\,504\,000\,z^3+\right.$$

$$\left.266\,205\,139\,200\,z^2-1\,025\,998\,974\,000\,z-618\,718\,975\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$2\sqrt{z}\left(-268\,435\,456\,z^7+21\,491\,613\,696\,z^6-325\,818\,777\,600\,z^5+385\,523\,712\,000\,z^4+613\,163\,520\,000\,z^3+\right.$$

$$\left.\left.561\,988\,627\,200\,z^2-293\,934\,841\,200\,z+618\,718\,975\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(1\,242\,169\,344\,000\sqrt{2}\,z^{9/4}\right)$$

07.22.03.9329.01

$${}_1F_2\left(-\frac{19}{4};-\frac{3}{2},\frac{15}{4};-z\right)=$$

$$\left(\left(2\sqrt{z}\left(268\,435\,456\,z^7+21\,558\,722\,560\,z^6+331\,103\,600\,640\,z^5+460\,372\,377\,600\,z^4-592\,726\,118\,400\,z^3+\right.\right.\right.$$

$$\left.\left.530\,044\,819\,200\,z^2+27\,729\,702\,000\,z-206\,239\,658\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$

$$\left(268\,435\,456\,z^7+21\,390\,950\,400\,z^6+318\,080\,286\,720\,z^5+286\,521\,753\,600\,z^4-533\,205\,504\,000\,z^3+\right.$$

$$\left.266\,205\,139\,200\,z^2+1\,025\,998\,974\,000\,z-618\,718\,975\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$2\sqrt{z}\left(268\,435\,456\,z^7+21\,491\,613\,696\,z^6+325\,818\,777\,600\,z^5+385\,523\,712\,000\,z^4-613\,163\,520\,000\,z^3+\right.$$

$$\left.\left.561\,988\,627\,200\,z^2+293\,934\,841\,200\,z+618\,718\,975\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(1\,242\,169\,344\,000\sqrt{2}\,z^{9/4}\right)$$

07.22.03.9330.01

$$
{}_1F_2\left(-\frac{19}{4};-\frac{3}{2},\frac{17}{4};z\right)=
$$

$$
-\left(13\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}+91\,603\,599\,360\,z^{13/2}-22\,699\,573\,248\,z^{6}-\right.\right.\right.
$$

$$
1\,489\,401\,544\,704\,z^{11/2}+356\,017\,766\,400\,z^{5}+1\,823\,511\,674\,880\,z^{9/2}-240\,603\,955\,200\,z^{4}+
$$

$$
3\,368\,037\,335\,040\,z^{7/2}-560\,902\,164\,480\,z^{3}+3\,400\,751\,692\,800\,z^{5/2}+275\,306\,169\,600\,z^{2}-
$$

$$
3\,410\,042\,328\,000\,z^{3/2}+2\,792\,167\,686\,000\,z+11\,702\,467\,507\,500\sqrt{z}+e^{4\sqrt{z}}
$$

$$
\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-91\,603\,599\,360\,z^{13/2}-22\,699\,573\,248\,z^{6}+1\,489\,401\,544\,704\,z^{11/2}+\right.
$$

$$
356\,017\,766\,400\,z^{5}-1\,823\,511\,674\,880\,z^{9/2}-240\,603\,955\,200\,z^{4}-3\,368\,037\,335\,040\,z^{7/2}-
$$

$$
560\,902\,164\,480\,z^{3}-3\,400\,751\,692\,800\,z^{5/2}+275\,306\,169\,600\,z^{2}+3\,410\,042\,328\,000\,z^{3/2}+
$$

$$
\left.\left.2\,792\,167\,686\,000\,z-11\,702\,467\,507\,500\sqrt{z}+8\,776\,850\,630\,625\right)+8\,776\,850\,630\,625\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-367\,219\,703\,808\,z^{7}+6\,024\,698\,265\,600\,z^{6}-8\,283\,960\,115\,200\,z^{5}-\right.
$$

$$
13\,590\,872\,064\,000\,z^{4}-14\,270\,415\,667\,200\,z^{3}+4\,905\,455\,385\,600\,z^{2}-
$$

$$
\left.6\,569\,806\,320\,000\,z+8\,776\,850\,630\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-367\,219\,703\,808\,z^{7}+6\,024\,698\,265\,600\,z^{6}-8\,283\,960\,115\,200\,z^{5}-\right.
$$

$$
13\,590\,872\,064\,000\,z^{4}-14\,270\,415\,667\,200\,z^{3}+4\,905\,455\,385\,600\,z^{2}-
$$

$$
\left.\left.\left.6\,569\,806\,320\,000\,z+8\,776\,850\,630\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(1\,039\,038\,488\,248\,320\,z^{13/4}\right)
$$

07.22.03.9331.01

$$
{}_1F_2\left(-\frac{19}{4};-\frac{3}{2},\frac{17}{4};-z\right)=\frac{1}{259\,759\,622\,062\,080\,z^{13/4}}
$$

$$
\left(13\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^{8}+367\,219\,703\,808\,z^{7}+6\,024\,698\,265\,600\,z^{6}+8\,283\,960\,115\,200\,z^{5}-13\,590\,872\,064\,000\,z^{4}+\right.\right.\right.
$$

$$
\left.14\,270\,415\,667\,200\,z^{3}+4\,905\,455\,385\,600\,z^{2}+6\,569\,806\,320\,000\,z+8\,776\,850\,630\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$

$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^{7}+22\,900\,899\,840\,z^{6}+372\,350\,386\,176\,z^{5}+455\,877\,918\,720\,z^{4}-\right.\right.
$$

$$
842\,009\,333\,760\,z^{3}+850\,187\,923\,200\,z^{2}+852\,510\,582\,000\,z+2\,925\,616\,876\,875\Big)\sin\left(2\sqrt{z}\right)-
$$

$$
\left(268\,435\,456\,z^{7}+22\,699\,573\,248\,z^{6}+356\,017\,766\,400\,z^{5}+240\,603\,955\,200\,z^{4}-560\,902\,164\,480\,z^{3}-\right.
$$

$$
\left.\left.\left.275\,306\,169\,600\,z^{2}+2\,792\,167\,686\,000\,z-8\,776\,850\,630\,625\right)\cos\left(2\sqrt{z}\right)\right)\right)\Bigg)
$$

07.22.03.9332.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(-4\,294\,967\,296\,z^8 + 390\,842\,023\,936\,z^7 - 6\,918\,588\,334\,080\,z^6 + 11\,214\,771\,978\,240\,z^5 + 17\,872\,640\,409\,600\,z^4 + 20\,295\,666\,892\,800\,z^3 - 6\,033\,983\,155\,200\,z^2 + 26\,398\,676\,304\,000\,z + 47\,641\,361\,142\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4\,294\,967\,296\,z^8 - 388\,157\,669\,376\,z^7 + 6\,681\,526\,272\,000\,z^6 - 7\,497\,182\,085\,120\,z^5 - 17\,137\,159\,372\,800\,z^4 - 16\,090\,621\,747\,200\,z^3 + 51\,288\,856\,819\,200\,z^2 - 296\,985\,108\,420\,000\,z - 142\,924\,083\,427\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 389\,768\,282\,112\,z^7 + 6\,822\,555\,549\,696\,z^6 - 9\,629\,891\,297\,280\,z^5 - 18\,613\,164\,441\,600\,z^4 - 22\,279\,322\,419\,200\,z^3 + 12\,067\,966\,310\,400\,z^2 - 7\,919\,602\,891\,200\,z + 142\,924\,083\,427\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(45\,049\,341\,542\,400\,\sqrt{2}\,z^{13/4}\right)$$

07.22.03.9333.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, \frac{19}{4}; -z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 390\,842\,023\,936\,z^7 + 6\,918\,588\,334\,080\,z^6 + 11\,214\,771\,978\,240\,z^5 - 17\,872\,640\,409\,600\,z^4 + 20\,295\,666\,892\,800\,z^3 + 6\,033\,983\,155\,200\,z^2 + 26\,398\,676\,304\,000\,z - 47\,641\,361\,142\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4\,294\,967\,296\,z^8 + 388\,157\,669\,376\,z^7 + 6\,681\,526\,272\,000\,z^6 + 7\,497\,182\,085\,120\,z^5 - 17\,137\,159\,372\,800\,z^4 + 16\,090\,621\,747\,200\,z^3 + 51\,288\,856\,819\,200\,z^2 + 296\,985\,108\,420\,000\,z - 142\,924\,083\,427\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 389\,768\,282\,112\,z^7 + 6\,822\,555\,549\,696\,z^6 + 9\,629\,891\,297\,280\,z^5 - 18\,613\,164\,441\,600\,z^4 + 22\,279\,322\,419\,200\,z^3 + 12\,067\,966\,310\,400\,z^2 + 7\,919\,602\,891\,200\,z + 142\,924\,083\,427\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(45\,049\,341\,542\,400\,\sqrt{2}\,z^{13/4}\right)$$

07.22.03.9334.01

$$
{}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) =
$$

$$
-\Big(221\, e^{-2\sqrt{z}} \Big(-4\sqrt[4]{z}\, \Big(-17\,179\,869\,184\, z^{17/2} + 4\,294\,967\,296\, z^8 + 1\,649\,267\,441\,664\, z^{15/2} - 409\,095\,634\,944\, z^7 -
$$

$$
30\,681\,367\,314\,432\, z^{13/2} + 7\,374\,593\,064\,960\, z^6 + 44\,528\,408\,985\,600\, z^{11/2} - 6\,547\,329\,515\,520\, z^5 +
$$

$$
98\,127\,768\,453\,120\, z^{9/2} - 18\,890\,476\,093\,440\, z^4 + 128\,919\,129\,292\,800\, z^{7/2} -
$$

$$
6\,261\,508\,915\,200\, z^3 - 118\,859\,457\,024\,000\, z^{5/2} + 164\,182\,588\,416\,000\, z^2 +
$$

$$
85\,595\,190\,912\,000\, z^{3/2} - 1\,535\,363\,736\,984\,000\, z - 3\,499\,037\,784\,742\,500\sqrt{z} +
$$

$$
e^{4\sqrt{z}} \Big(17\,179\,869\,184\, z^{17/2} + 4\,294\,967\,296\, z^8 - 1\,649\,267\,441\,664\, z^{15/2} - 409\,095\,634\,944\, z^7 +
$$

$$
30\,681\,367\,314\,432\, z^{13/2} + 7\,374\,593\,064\,960\, z^6 - 44\,528\,408\,985\,600\, z^{11/2} - 6\,547\,329\,515\,520\, z^5 -
$$

$$
98\,127\,768\,453\,120\, z^{9/2} - 18\,890\,476\,093\,440\, z^4 - 128\,919\,129\,292\,800\, z^{7/2} - 6\,261\,508\,915\,200\, z^3 +
$$

$$
118\,859\,457\,024\,000\, z^{5/2} + 164\,182\,588\,416\,000\, z^2 - 85\,595\,190\,912\,000\, z^{3/2} - 1\,535\,363\,736\,984\,000\, z +
$$

$$
3\,499\,037\,784\,742\,500\sqrt{z} - 2\,624\,278\,338\,556\,875\Big) - 2\,624\,278\,338\,556\,875\Big) +
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\, \Big(68\,719\,476\,736\, z^9 - 6\,609\,954\,668\,544\, z^8 + 123\,936\,650\,035\,200\, z^7 - 198\,815\,042\,764\,800\, z^6 -
$$

$$
391\,417\,115\,443\,200\, z^5 - 513\,734\,964\,019\,200\, z^4 + 235\,461\,858\,508\,800\, z^3 -
$$

$$
473\,026\,055\,040\,000\, z^2 + 1\,263\,866\,490\,810\,000\, z - 2\,624\,278\,338\,556\,875\Big) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) +
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\, \Big(68\,719\,476\,736\, z^9 - 6\,609\,954\,668\,544\, z^8 + 123\,936\,650\,035\,200\, z^7 - 198\,815\,042\,764\,800\, z^6 -
$$

$$
391\,417\,115\,443\,200\, z^5 - 513\,734\,964\,019\,200\, z^4 + 235\,461\,858\,508\,800\, z^3 - 473\,026\,055\,040\,000\, z^2 +
$$

$$
1\,263\,866\,490\,810\,000\, z - 2\,624\,278\,338\,556\,875\Big) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\Big)\Big) \Big/ \left(598\,486\,169\,231\,032\,320\, z^{17/4}\right)
$$

07.22.03.9335.01

$$
{}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) =
$$

$$
\Bigg(221 \Bigg(\sqrt{\pi}\, \Big(68\,719\,476\,736\, z^9 + 6\,609\,954\,668\,544\, z^8 + 123\,936\,650\,035\,200\, z^7 + 198\,815\,042\,764\,800\, z^6 -
$$

$$
391\,417\,115\,443\,200\, z^5 + 513\,734\,964\,019\,200\, z^4 + 235\,461\,858\,508\,800\, z^3 +
$$

$$
473\,026\,055\,040\,000\, z^2 + 1\,263\,866\,490\,810\,000\, z + 2\,624\,278\,338\,556\,875\Big) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) -
$$

$$
2\sqrt[4]{z}\, \Big(4\sqrt{z}\, \Big(4\,294\,967\,296\, z^8 + 412\,316\,860\,416\, z^7 + 7\,670\,341\,828\,608\, z^6 + 11\,132\,102\,246\,400\, z^5 -
$$

$$
24\,531\,942\,113\,280\, z^4 + 32\,229\,782\,323\,200\, z^3 + 29\,714\,864\,256\,000\, z^2 + 21\,398\,797\,728\,000\, z +
$$

$$
874\,759\,446\,185\,625\Big) \sin\left(2\sqrt{z}\right) - \Big(4\,294\,967\,296\, z^8 + 409\,095\,634\,944\, z^7 + 7\,374\,593\,064\,960\, z^6 +
$$

$$
6\,547\,329\,515\,520\, z^5 - 18\,890\,476\,093\,440\, z^4 + 6\,261\,508\,915\,200\, z^3 + 164\,182\,588\,416\,000\, z^2 +
$$

$$
1\,535\,363\,736\,984\,000\, z - 2\,624\,278\,338\,556\,875\Big) \cos\left(2\sqrt{z}\right)\Big)\Bigg)\Bigg) \Big/ \left(149\,621\,542\,307\,758\,080\, z^{17/4}\right)
$$

07.22.03.9336.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) =$$

$$-\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 6\,987\,911\,790\,592\,z^8 + 140\,074\,989\,649\,920\,z^7 - 259\,306\,637\,230\,080\,z^6 - 493\,814\,336\,716\,800\,z^5 - 683\,857\,487\,462\,400\,z^4 + 353\,993\,678\,438\,400\,z^3 - 1\,689\,515\,283\,456\,000\,z^2 + 13\,176\,239\,310\,234\,000\,z + 17\,865\,510\,428\,390\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-68\,719\,476\,736\,z^9 + 6\,944\,962\,117\,632\,z^8 - 135\,822\,972\,026\,880\,z^7 + 182\,697\,842\,442\,240\,z^6 + 491\,164\,375\,449\,600\,z^5 + 653\,526\,790\,963\,200\,z^4 - 1\,641\,243\,418\,214\,400\,z^3 + 2\,534\,272\,925\,184\,000\,z^2 - 121\,199\,622\,746\,202\,000\,z - 53\,596\,531\,285\,171\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-68\,719\,476\,736\,z^9 + 6\,970\,731\,921\,408\,z^8 - 138\,354\,855\,247\,872\,z^7 + 226\,891\,042\,652\,160\,z^6 + 515\,506\,647\,859\,200\,z^5 + 758\,370\,661\,171\,200\,z^4 - 438\,160\,007\,577\,600\,z^3 + 253\,427\,292\,518\,400\,z^2 + 6\,860\,356\,004\,502\,000\,z + 53\,596\,531\,285\,171\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(1\,441\,578\,929\,356\,800\,\sqrt{2}\,z^{17/4}\right)$$

07.22.03.9337.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 6\,987\,911\,790\,592\,z^8 + 140\,074\,989\,649\,920\,z^7 + 259\,306\,637\,230\,080\,z^6 - 493\,814\,336\,716\,800\,z^5 + 683\,857\,487\,462\,400\,z^4 + 353\,993\,678\,438\,400\,z^3 + 1\,689\,515\,283\,456\,000\,z^2 + 13\,176\,239\,310\,234\,000\,z - 17\,865\,510\,428\,390\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(68\,719\,476\,736\,z^9 + 6\,944\,962\,117\,632\,z^8 + 135\,822\,972\,026\,880\,z^7 + 182\,697\,842\,442\,240\,z^6 - 491\,164\,375\,449\,600\,z^5 + 653\,526\,790\,963\,200\,z^4 + 1\,641\,243\,418\,214\,400\,z^3 + 2\,534\,272\,925\,184\,000\,z^2 + 121\,199\,622\,746\,202\,000\,z - 53\,596\,531\,285\,171\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 6\,970\,731\,921\,408\,z^8 + 138\,354\,855\,247\,872\,z^7 + 226\,891\,042\,652\,160\,z^6 - 515\,506\,647\,859\,200\,z^5 + 758\,370\,661\,171\,200\,z^4 + 438\,160\,007\,577\,600\,z^3 + 253\,427\,292\,518\,400\,z^2 - 6\,860\,356\,004\,502\,000\,z + 53\,596\,531\,285\,171\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(1\,441\,578\,929\,356\,800\,\sqrt{2}\,z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{19}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.9338.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) = \left(\frac{8z}{23} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.9339.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) = \left(1 - \frac{8z}{23}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.9340.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) = \frac{1}{122\,174\,325\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(-\left(524\,288 z^5 + 12\,058\,624 z^4 + 126\,044\,160 z^3 + 490\,613\,760 z^2 - 23\,271\,300 z - 122\,174\,325\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(65\,536 z^4 + 1\,548\,288 z^3 + 16\,807\,680 z^2 + 74\,468\,160 z - 122\,174\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(131\,072 z^4 + 3\,047\,424 z^3 + 32\,315\,904 z^2 + 131\,950\,080 z + 122\,174\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9341.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{21}{4}; -z\right) = \frac{1}{122\,174\,325\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(524\,288 z^5 - 12\,058\,624 z^4 + 126\,044\,160 z^3 - 490\,613\,760 z^2 - 23\,271\,300 z + 122\,174\,325\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(-65\,536 z^4 + 1\,548\,288 z^3 - 16\,807\,680 z^2 + 74\,468\,160 z + 122\,174\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(131\,072 z^4 - 3\,047\,424 z^3 + 32\,315\,904 z^2 - 131\,950\,080 z + 122\,174\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9342.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{19}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right) $$

07.22.03.9343.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{19}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.9344.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{17}{4}; z\right) = $$
$$ \frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(-\left(262\,144 z^5 + 1\,982\,464 z^4 + 12\,436\,480 z^3 + 34\,032\,960 z^2 + 1\,368\,900 z - 5\,817\,825\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(32\,768 z^4 + 268\,288 z^3 + 1\,764\,480 z^2 + 6\,023\,160 z - 5\,817\,825\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(65\,536 z^4 + 512\,000 z^3 + 3\,258\,624 z^2 + 9\,599\,760 z + 5\,817\,825\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9345.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) = $$
$$ \frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(262\,144 z^5 - 1\,982\,464 z^4 + 12\,436\,480 z^3 - 34\,032\,960 z^2 + 1\,368\,900 z + 5\,817\,825\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z}\left(32\,768 z^4 - 268\,288 z^3 + 1\,764\,480 z^2 - 6\,023\,160 z - 5\,817\,825\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(65\,536 z^4 - 512\,000 z^3 + 3\,258\,624 z^2 - 9\,599\,760 z + 5\,817\,825\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9346.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) = -\frac{1}{4\,054\,050}\left(e^{-2\sqrt{z}}\left(-131\,072\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4} - 131\,072\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4} + 131\,072\,e^{4\sqrt{z}}z^{9/2} - 131\,072\,z^{9/2} + 32\,768\,e^{4\sqrt{z}}z^4 + 32\,768\,z^4 + 24\,576\,e^{4\sqrt{z}}z^{7/2} - 24\,576\,z^{7/2} + 30\,720\,e^{4\sqrt{z}}z^3 + 30\,720\,z^3 + 53\,760\,e^{4\sqrt{z}}z^{5/2} - 53\,760\,z^{5/2} + 120\,960\,e^{4\sqrt{z}}z^2 + 120\,960\,z^2 + 332\,640\,e^{4\sqrt{z}}z^{3/2} - 332\,640\,z^{3/2} + 1\,081\,080\,e^{4\sqrt{z}}z + 1\,081\,080\,z + 4\,054\,050\,e^{4\sqrt{z}}\sqrt{z} - 4\,054\,050\sqrt{z} - 2\,027\,025\,e^{4\sqrt{z}} - 2\,027\,025\right)\right) $$

07.22.03.9347.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) = \frac{1}{2\,027\,025}\left(-262\,144\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4} + 2\left(65\,536z^4 - 12\,288z^3 + 26\,880z^2 - 166\,320z + 2\,027\,025\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-32\,768z^4 + 30\,720z^3 - 120\,960z^2 + 1\,081\,080z + 2\,027\,025\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9348.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) = \frac{1}{342\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072z^5 - 1\,032\,192z^4 - 2\,001\,920z^3 - 3\,257\,280z^2 - 315\,900z + 342\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384z^4 - 118\,784z^3 - 303\,360z^2 - 589\,680z + 342\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-32\,768z^4 + 249\,856z^3 + 552\,192z^2 + 979\,920z + 342\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9349.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) = -\frac{1}{342\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072z^5 + 1\,032\,192z^4 - 2\,001\,920z^3 + 3\,257\,280z^2 - 315\,900z - 342\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384z^4 + 118\,784z^3 - 303\,360z^2 + 589\,680z + 342\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(32\,768z^4 + 249\,856z^3 - 552\,192z^2 + 979\,920z - 342\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9350.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) = \frac{1}{270\,270}\left(e^{-2\sqrt{z}}\left(32\,768\,e^{4\sqrt{z}}z^{9/2} - 32\,768\,z^{9/2} + 8192\,e^{4\sqrt{z}}z^4 + 8192\,z^4 - 2048\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 247)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4} - 2048\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 247)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4} - 499\,712\,e^{4\sqrt{z}}z^{7/2} + 499\,712\,z^{7/2} - 118\,784\,e^{4\sqrt{z}}z^3 - 118\,784\,z^3 - 81\,408\,e^{4\sqrt{z}}z^{5/2} + 81\,408\,z^{5/2} - 88\,320\,e^{4\sqrt{z}}z^2 - 88\,320\,z^2 - 124\,320\,e^{4\sqrt{z}}z^{3/2} + 124\,320\,z^{3/2} - 196\,560\,e^{4\sqrt{z}}z - 196\,560z - 270\,270\,e^{4\sqrt{z}}\sqrt{z} + 270\,270\sqrt{z} + 135\,135\,e^{4\sqrt{z}} + 135\,135\right)\right) $$

07.22.03.9351.01

$${}_1F_2\left(-\frac{19}{4};-\frac{1}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{135\,135}\left(4096\sqrt{\pi}\,(16z+247)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}-2\left(16\,384z^4+249\,856z^3-40\,704z^2+62\,160z-135\,135\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(8192z^4+118\,784z^3-88\,320z^2+196\,560z+135\,135\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9352.01

$${}_1F_2\left(-\frac{19}{4};-\frac{1}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{78\,975\sqrt{2}}\left(\sqrt[4]{z}\left(-\left(65\,536z^5-1\,527\,808z^4+3\,425\,280z^3+1\,572\,480z^2+175\,500z-78\,975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(8192z^4-185\,856z^3+322\,560z^2+238\,680z-78\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(16\,384z^4-377\,856z^3+767\,232z^2+488\,160z+78\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9353.01

$${}_1F_2\left(-\frac{19}{4};-\frac{1}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{78\,975\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536z^5+1\,527\,808z^4+3\,425\,280z^3-1\,572\,480z^2+175\,500z+78\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(8192z^4+185\,856z^3+322\,560z^2-238\,680z-78\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(16\,384z^4+377\,856z^3+767\,232z^2-488\,160z+78\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9354.01

$${}_1F_2\left(-\frac{19}{4};-\frac{1}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{24\,570}\left(e^{-2\sqrt{z}}\left(-4096e^{4\sqrt{z}}z^{9/2}+4096z^{9/2}-1024e^{4\sqrt{z}}z^4-1024z^4+125\,696e^{4\sqrt{z}}z^{7/2}-125\,696z^{7/2}+\right.\right.$$
$$30\,656e^{4\sqrt{z}}z^3+30\,656z^3+16e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-7904z+33\,345\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+$$
$$16e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-7904z+33\,345\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-511\,488e^{4\sqrt{z}}z^{5/2}+$$
$$511\,488z^{5/2}-107\,520e^{4\sqrt{z}}z^2-107\,520z^2-58\,560e^{4\sqrt{z}}z^{3/2}+58\,560z^{3/2}-$$
$$\left.\left.42\,120e^{4\sqrt{z}}z-42\,120z-24\,570e^{4\sqrt{z}}\sqrt{z}+24\,570\sqrt{z}+12\,285e^{4\sqrt{z}}+12\,285\right)\right)$$

07.22.03.9355.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) = \frac{1}{12\,285}\left(-32\sqrt{\pi}\left(256z^2+7904z+33\,345\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2\left(2048z^4+62\,848z^3+255\,744z^2-29\,280z+12\,285\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-1024z^4-30\,656z^3-107\,520z^2+42\,120z+12\,285\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9356.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) = \frac{1}{43\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768z^5-1\,269\,760z^4+8\,193\,920z^3-5\,616\,000z^2-245\,700z+43\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4096z^4-156\,160z^3+931\,920z^2-280\,800z+43\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-8192z^4+315\,392z^3-1\,972\,320z^2+1\,000\,800z+43\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9357.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{5}{4}; -z\right) = -\frac{1}{43\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768z^5+1\,269\,760z^4+8\,193\,920z^3+5\,616\,000z^2-245\,700z-43\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4096z^4+156\,160z^3+931\,920z^2+280\,800z+43\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(8192z^4+315\,392z^3+1\,972\,320z^2+1\,000\,800z-43\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9358.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{3}{4}; z\right) = \frac{1}{42\,120}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-189\,696z^2+1\,600\,560z-1\,833\,975\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-189\,696z^2+1\,600\,560z-1\,833\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+4\left(-1024z^{9/2}+256z^4+47\,232z^{7/2}-11\,616z^3-391\,668z^{5/2}+89\,865z^2+400\,320z^{3/2}-56\,160z+10\,530\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{9/2}+256z^4-47\,232z^{7/2}-11\,616z^3+391\,668z^{5/2}+89\,865z^2-400\,320z^{3/2}-56\,160z-10\,530\sqrt{z}+5265\right)+5265\right)\right)\right) $$

07.22.03.9359.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{3}{4}; -z\right) = \frac{1}{10\,530} \left(\sqrt{\pi}\,\left(4096 z^3 + 189\,696 z^2 + 1\,600\,560 z + 1\,833\,975\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} + 2\left(\left(256 z^4 + 11\,616 z^3 + 89\,865 z^2 + 56\,160 z + 5265\right) \cos\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(512 z^4 + 23\,616 z^3 + 195\,834 z^2 + 200\,160 z - 5265\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9360.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) = -\frac{1}{61\,425\sqrt{2}} \left(\sqrt[4]{z}\,\left(\left(16\,384 z^5 - 887\,808 z^4 + 9\,471\,680 z^3 - 17\,346\,420 z^2 + 2\,211\,300 z - 61\,425\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\sqrt{z}\,\left(-4096 z^4 + 219\,392 z^3 - 2\,236\,080 z^2 + 3\,181\,815 z + 122\,850\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(4096 z^4 - 220\,928 z^3 + 2\,314\,032 z^2 - 3\,823\,785 z + 61\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9361.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) = \frac{1}{61\,425\sqrt{2}} \left(\sqrt[4]{z}\,\left(\left(16\,384 z^5 + 887\,808 z^4 + 9\,471\,680 z^3 + 17\,346\,420 z^2 + 2\,211\,300 z + 61\,425\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 2\sqrt{z}\,\left(4096 z^4 + 219\,392 z^3 + 2\,236\,080 z^2 + 3\,181\,815 z - 122\,850\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^4 + 220\,928 z^3 + 2\,314\,032 z^2 + 3\,823\,785 z + 61\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9362.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) = \frac{1}{3\,594\,240} \left(e^{-2\sqrt{z}}\,\left(-4\left(-16\,384 z^{9/2} + 4096 z^4 + 1\,008\,640 z^{7/2} - 249\,088 z^3 - 12\,621\,504 z^{5/2} + 2\,979\,120 z^2 + 27\,316\,140 z^{3/2} - 5\,133\,375 z - 898\,560\sqrt{z} + e^{4\sqrt{z}}\,\left(16\,384 z^{9/2} + 4096 z^4 - 1\,008\,640 z^{7/2} - 249\,088 z^3 + 12\,621\,504 z^{5/2} + 2\,979\,120 z^2 - 27\,316\,140 z^{3/2} - 5\,133\,375 z + 898\,560\sqrt{z} - 449\,280\right) - 449\,280\right) + e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(65\,536 z^4 - 4\,046\,848 z^3 + 51\,217\,920 z^2 - 117\,374\,400 z + 12\,837\,825\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(65\,536 z^4 - 4\,046\,848 z^3 + 51\,217\,920 z^2 - 117\,374\,400 z + 12\,837\,825\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9363.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{1}{2},\frac{1}{4};-z\right)=\frac{1}{898\,560}\left(2\left(4\sqrt{z}\,\left(4096z^4+252\,160z^3+3\,155\,376z^2+6\,829\,035z+224\,640\right)\sin\left(2\sqrt{z}\right)-\left(4096z^4+249\,088z^3+2\,979\,120z^2+5\,133\,375z-449\,280\right)\cos\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,z^{3/4}\left(65\,536z^4+4\,046\,848z^3+51\,217\,920z^2+117\,374\,400z+12\,837\,825\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.9364.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{1}{2},\frac{3}{4};z\right)= \frac{1}{8\,845\,200\sqrt{2}}\left(\sqrt[4]{z}\,\left(2\left(65\,536z^5-4\,562\,944z^4+67\,921\,920z^3-202\,232\,160z^2+52\,026\,975z+4\,422\,600\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,\left(-65\,536z^4+4\,521\,984z^3-65\,180\,160z^2+166\,682\,880z+3\,132\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2z\left(65\,536z^4-4\,546\,560z^3+66\,806\,784z^2-186\,913\,440z+20\,823\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9365.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{1}{2},\frac{3}{4};-z\right)= \frac{1}{8\,845\,200\sqrt{2}}\left(\sqrt[4]{z}\,\left(-2\left(65\,536z^5+4\,562\,944z^4+67\,921\,920z^3+202\,232\,160z^2+52\,026\,975z-4\,422\,600\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,\left(65\,536z^4+4\,521\,984z^3+65\,180\,160z^2+166\,682\,880z-3\,132\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-2z\left(65\,536z^4+4\,546\,560z^3+66\,806\,784z^2+186\,913\,440z+20\,823\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9366.01

$$ {}_1F_2\left(-\frac{19}{4};-\frac{1}{2},\frac{5}{4};z\right)= \frac{1}{1\,150\,156\,800\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-262\,144z^{9/2}+65\,536z^4+20\,185\,088z^{7/2}-4\,997\,120z^3-337\,766\,400z^{5/2}+80\,862\,720z^2+1\,117\,355\,520z^{3/2}-229\,919\,040z-133\,485\,300\sqrt{z}+e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4-20\,185\,088z^{7/2}-4\,997\,120z^3+337\,766\,400z^{5/2}+80\,862\,720z^2-1\,117\,355\,520z^{3/2}-229\,919\,040z+133\,485\,300\sqrt{z}-28\,229\,175\right)-28\,229\,175\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,\left(1\,048\,576z^5-80\,936\,960z^4+1\,365\,811\,200z^3-4\,694\,976\,000z^2+1\,027\,026\,000z+115\,540\,425\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,\left(1\,048\,576z^5-80\,936\,960z^4+1\,365\,811\,200z^3-4\,694\,976\,000z^2+1\,027\,026\,000z+115\,540\,425\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9367.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, \frac{5}{4}; -z\right) = \frac{1}{287\,539\,200\sqrt[4]{z}}\left(2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536 z^4 + 5\,046\,272 z^3 + 84\,441\,600 z^2 + 279\,338\,880 z + 33\,371\,325\right)\sin\left(2\sqrt{z}\right) - \left(65\,536 z^4 + 4\,997\,120 z^3 + 80\,862\,720 z^2 + 229\,919\,040 z - 28\,229\,175\right)\cos\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\left(1\,048\,576 z^5 + 80\,936\,960 z^4 + 1\,365\,811\,200 z^3 + 4\,694\,976\,000 z^2 + 1\,027\,026\,000 z - 115\,540\,425\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.9368.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, \frac{7}{4}; z\right) = \frac{1}{1\,037\,836\,800\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(1\,048\,576 z^5 - 89\,194\,496 z^4 + 1\,703\,895\,040 z^3 - 7\,025\,840\,640 z^2 + 2\,651\,734\,800 z + 454\,729\,275\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-1\,048\,576 z^5 + 88\,539\,136 z^4 - 1\,649\,909\,760 z^3 + 6\,098\,526\,720 z^2 - 248\,648\,400 z + 192\,567\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(1\,048\,576 z^5 - 88\,932\,352 z^4 + 1\,682\,006\,016 z^3 - 6\,632\,778\,240 z^2 + 1\,416\,214\,800 z + 192\,567\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9369.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, \frac{7}{4}; -z\right) = -\frac{1}{1\,037\,836\,800\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(1\,048\,576 z^5 + 89\,194\,496 z^4 + 1\,703\,895\,040 z^3 + 7\,025\,840\,640 z^2 + 2\,651\,734\,800 z - 454\,729\,275\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(1\,048\,576 z^5 + 88\,539\,136 z^4 + 1\,649\,909\,760 z^3 + 6\,098\,526\,720 z^2 + 248\,648\,400 z + 192\,567\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 + 88\,932\,352 z^4 + 1\,682\,006\,016 z^3 + 6\,632\,778\,240 z^2 + 1\,416\,214\,800 z - 192\,567\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9370.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, \frac{9}{4}; z\right) = \frac{1}{88\,332\,042\,240\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304\,z^{11/2}+1\,048\,576\,z^5+387\,710\,976\,z^{9/2}-96\,141\,312\,z^4-8\,123\,744\,256\,z^{7/2}+1\,961\,533\,440\,z^3+36\,171\,970\,560\,z^{5/2}-7\,793\,210\,880\,z^2-7\,786\,808\,640\,z^{3/2}-812\,326\,320\,z-1\,078\,377\,300\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-387\,710\,976\,z^{9/2}-96\,141\,312\,z^4+8\,123\,744\,256\,z^{7/2}+1\,961\,533\,440\,z^3-36\,171\,970\,560\,z^{5/2}-7\,793\,210\,880\,z^2+7\,786\,808\,640\,z^{3/2}-812\,326\,320\,z+1\,078\,377\,300\sqrt{z}-808\,782\,975\right)-808\,782\,975\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-1\,553\,989\,632\,z^5+32\,779\,468\,800\,z^4-150\,239\,232\,000\,z^3+49\,297\,248\,000\,z^2+11\,091\,880\,800\,z-808\,782\,975\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-1\,553\,989\,632\,z^5+32\,779\,468\,800\,z^4-150\,239\,232\,000\,z^3+49\,297\,248\,000\,z^2+11\,091\,880\,800\,z-808\,782\,975\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9371.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, \frac{9}{4}; -z\right) = \frac{1}{22\,083\,010\,560\,z^{5/4}}\left(2\sqrt[4]{z}\left(\left(4\sqrt{z}\left(1\,048\,576\,z^5+96\,927\,744\,z^4+2\,030\,936\,064\,z^3+9\,042\,992\,640\,z^2+1\,946\,702\,160\,z-269\,594\,325\right)\sin\left(2\sqrt{z}\right)-\left(1\,048\,576\,z^5+96\,141\,312\,z^4+1\,961\,533\,440\,z^3+7\,793\,210\,880\,z^2-812\,326\,320\,z+808\,782\,975\right)\cos\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\left(16\,777\,216\,z^6+1\,553\,989\,632\,z^5+32\,779\,468\,800\,z^4+150\,239\,232\,000\,z^3+49\,297\,248\,000\,z^2-11\,091\,880\,800\,z-808\,782\,975\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.9372.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) = \frac{1}{61\,677\,158\,400\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(16\,777\,216\,z^6-1\,686\,110\,208\,z^5+39\,321\,927\,680\,z^4-207\,200\,747\,520\,z^3+102\,267\,360\,000\,z^2+26\,143\,603\,200\,z+1\,733\,106\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-16\,777\,216\,z^6+1\,675\,624\,448\,z^5-38\,296\,289\,280\,z^4+185\,261\,506\,560\,z^3-21\,819\,283\,200\,z^2+6\,162\,156\,000\,z-5\,199\,319\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(16\,777\,216\,z^6-1\,681\,915\,904\,z^5+38\,906\,953\,728\,z^4-197\,998\,018\,560\,z^3+63\,036\,230\,400\,z^2+17\,254\,036\,800\,z-5\,199\,319\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9373.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = \frac{1}{61\,677\,158\,400\sqrt{2}\, z^{5/4}}\left(\left(-2\sqrt{z}\left(16\,777\,216 z^6 + 1\,686\,110\,208 z^5 + 39\,321\,927\,680 z^4 + 207\,200\,747\,520 z^3 + 102\,267\,360\,000 z^2 - 26\,143\,603\,200 z + 1\,733\,106\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216 z^6 + 1\,675\,624\,448 z^5 + 38\,296\,289\,280 z^4 + 185\,261\,506\,560 z^3 + 21\,819\,283\,200 z^2 + 6\,162\,156\,000 z + 5\,199\,319\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(16\,777\,216 z^6 + 1\,681\,915\,904 z^5 + 38\,906\,953\,728 z^4 + 197\,998\,018\,560 z^3 + 63\,036\,230\,400 z^2 - 17\,254\,036\,800 z - 5\,199\,319\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9374.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) = \frac{1}{4\,396\,972\,769\,280 z^{9/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-67\,108\,864 z^{13/2} + 16\,777\,216 z^6 + 7\,239\,368\,704 z^{11/2} - 1\,797\,259\,264 z^5 - 182\,232\,809\,472 z^{9/2} + 44\,253\,511\,680 z^4 + 1\,020\,060\,303\,360 z^{7/2} - 226\,034\,565\,120 z^3 - 321\,880\,366\,080 z^{5/2} - 13\,048\,439\,040 z^2 - 93\,664\,771\,200 z^{3/2} - 43\,135\,092\,000 z + 59\,310\,751\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 - 7\,239\,368\,704 z^{11/2} - 1\,797\,259\,264 z^5 + 182\,232\,809\,472 z^{9/2} + 44\,253\,511\,680 z^4 - 1\,020\,060\,303\,360 z^{7/2} - 226\,034\,565\,120 z^3 + 321\,880\,366\,080 z^{5/2} - 13\,048\,439\,040 z^2 + 93\,664\,771\,200 z^{3/2} - 43\,135\,092\,000 z - 59\,310\,751\,500\sqrt{z} + 44\,483\,063\,625\right) + 44\,483\,063\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 29\,007\,806\,464 z^6 + 734\,260\,101\,120 z^5 - 4\,206\,698\,496\,000 z^4 + 1\,840\,430\,592\,000 z^3 + 621\,145\,324\,800 z^2 - 90\,583\,693\,200 z + 44\,483\,063\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 29\,007\,806\,464 z^6 + 734\,260\,101\,120 z^5 - 4\,206\,698\,496\,000 z^4 + 1\,840\,430\,592\,000 z^3 + 621\,145\,324\,800 z^2 - 90\,583\,693\,200 z + 44\,483\,063\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9375.01

$$ {}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) = \frac{1}{1\,099\,243\,192\,320 z^{9/4}}\left(2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216 z^6 + 1\,809\,842\,176 z^5 + 45\,558\,202\,368 z^4 + 255\,015\,075\,840 z^3 + 80\,470\,091\,520 z^2 - 23\,416\,192\,800 z - 14\,827\,687\,875\right)\sin\left(2\sqrt{z}\right) - \left(16\,777\,216 z^6 + 1\,797\,259\,264 z^5 + 44\,253\,511\,680 z^4 + 226\,034\,565\,120 z^3 - 13\,048\,439\,040 z^2 + 43\,135\,092\,000 z + 44\,483\,063\,625\right)\cos\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\left(268\,435\,456 z^7 + 29\,007\,806\,464 z^6 + 734\,260\,101\,120 z^5 + 4\,206\,698\,496\,000 z^4 + 1\,840\,430\,592\,000 z^3 - 621\,145\,324\,800 z^2 - 90\,583\,693\,200 z - 44\,483\,063\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.9376.01

$${}_1F_2\left(-\frac{19}{4};-\frac{1}{2},\frac{15}{4};z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-31\,121\,735\,680\,z^6+857\,069\,322\,240\,z^5-5\,498\,324\,582\,400\,z^4+3\,340\,810\,137\,600\,z^3+\right.\right.\right.$$
$$\left.\left.1\,143\,500\,716\,800\,z^2+27\,729\,702\,000\,z-157\,712\,680\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(-268\,435\,456\,z^7+30\,953\,963\,520\,z^6-838\,069\,125\,120\,z^5+5\,011\,808\,256\,000\,z^4-1\,023\,819\,264\,000\,z^3-\right.$$
$$\left.29\,578\,348\,800\,z^2+637\,783\,146\,000\,z+473\,138\,040\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7-31\,054\,626\,816\,z^6+849\,393\,745\,920\,z^5-5\,295\,720\,038\,400\,z^4+2\,248\,736\,256\,000\,z^3+\right.$$
$$\left.\left.916\,928\,812\,800\,z^2-371\,578\,006\,800\,z+473\,138\,040\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(2\,691\,366\,912\,000\,\sqrt{2}\;z^{9/4}\right)$$

07.22.03.9377.01

$${}_1F_2\left(-\frac{19}{4};-\frac{1}{2},\frac{15}{4};-z\right)=$$

$$-\Bigg(\Big(2\sqrt{z}\,\left(268\,435\,456\,z^7+31\,121\,735\,680\,z^6+857\,069\,322\,240\,z^5+5\,498\,324\,582\,400\,z^4+3\,340\,810\,137\,600\,z^3-\right.$$
$$\left.1\,143\,500\,716\,800\,z^2+27\,729\,702\,000\,z+157\,712\,680\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(268\,435\,456\,z^7+30\,953\,963\,520\,z^6+838\,069\,125\,120\,z^5+5\,011\,808\,256\,000\,z^4+1\,023\,819\,264\,000\,z^3-\right.$$
$$\left.29\,578\,348\,800\,z^2-637\,783\,146\,000\,z+473\,138\,040\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+31\,054\,626\,816\,z^6+849\,393\,745\,920\,z^5+5\,295\,720\,038\,400\,z^4+2\,248\,736\,256\,000\,z^3-\right.$$
$$\left.\left.916\,928\,812\,800\,z^2-371\,578\,006\,800\,z-473\,138\,040\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(2\,691\,366\,912\,000\,\sqrt{2}\;z^{9/4}\right)$$

07.22.03.9378.01

$$
{}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) =
$$

$$
\frac{1}{173\,173\,081\,374\,720\, z^{13/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\, \left(-1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 + 132\,405\,788\,672\, z^{13/2} - \right.\right.\right.
$$

$$
32\,900\,120\,576\, z^6 - 3\,891\,630\,440\,448\, z^{11/2} + 948\,924\,579\,840\, z^5 + 26\,240\,274\,923\,520\, z^{9/2} -
$$

$$
5\,926\,412\,943\,360\, z^4 - 10\,978\,275\,409\,920\, z^{7/2} + 32\,154\,071\,040\, z^3 - 4\,850\,849\,203\,200\, z^{5/2} -
$$

$$
1\,350\,744\,595\,200\, z^2 + 3\,931\,455\,528\,000\, z^{3/2} - 711\,729\,018\,000\, z - 8\,006\,951\,452\,500\sqrt{z} +
$$

$$
e^{4\sqrt{z}} \left(1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 - 132\,405\,788\,672\, z^{13/2} - 32\,900\,120\,576\, z^6 + 3\,891\,630\,440\,448\right.
$$

$$
z^{11/2} + 948\,924\,579\,840\, z^5 - 26\,240\,274\,923\,520\, z^{9/2} - 5\,926\,412\,943\,360\, z^4 + 10\,978\,275\,409\,920\, z^{7/2} +
$$

$$
32\,154\,071\,040\, z^3 + 4\,850\,849\,203\,200\, z^{5/2} - 1\,350\,744\,595\,200\, z^2 - 3\,931\,455\,528\,000\, z^{3/2} -
$$

$$
\left.\left.\left.711\,729\,018\,000\, z + 8\,006\,951\,452\,500\sqrt{z} - 6\,005\,213\,589\,375\right) - 6\,005\,213\,589\,375\right) +
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\, \left(4\,294\,967\,296\, z^8 - 530\,428\,461\,056\, z^7 + 15\,664\,215\,490\,560\, z^6 - 107\,691\,481\,497\,600\, z^5 +\right.
$$

$$
58\,893\,778\,944\,000\, z^4 + 26\,502\,200\,524\,800\, z^3 - 5\,797\,356\,364\,800\, z^2 +
$$

$$
\left.5\,693\,832\,144\,000\, z - 6\,005\,213\,589\,375\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}
$$

$$
\left(4\,294\,967\,296\, z^8 - 530\,428\,461\,056\, z^7 + 15\,664\,215\,490\,560\, z^6 - 107\,691\,481\,497\,600\, z^5 + 58\,893\,778\,944\,000\, z^4 +\right.
$$

$$
\left.\left.26\,502\,200\,524\,800\, z^3 - 5\,797\,356\,364\,800\, z^2 + 5\,693\,832\,144\,000\, z - 6\,005\,213\,589\,375\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)
$$

07.22.03.9379.01

$$
{}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) = \frac{1}{43\,293\,270\,343\,680\, z^{13/4}}
$$

$$
\left(\sqrt{\pi}\, \left(-4\,294\,967\,296\, z^8 - 530\,428\,461\,056\, z^7 - 15\,664\,215\,490\,560\, z^6 - 107\,691\,481\,497\,600\, z^5 - 58\,893\,778\,944\,000\, z^4 +\right.\right.
$$

$$
\left.26\,502\,200\,524\,800\, z^3 + 5\,797\,356\,364\,800\, z^2 + 5\,693\,832\,144\,000\, z + 6\,005\,213\,589\,375\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) +
$$

$$
2\sqrt[4]{z}\, \left(4\sqrt{z}\, \left(268\,435\,456\, z^7 + 33\,101\,447\,168\, z^6 + 972\,907\,610\,112\, z^5 + 6\,560\,068\,730\,880\, z^4 +\right.\right.
$$

$$
\left.2\,744\,568\,852\,480\, z^3 - 1\,212\,712\,300\,800\, z^2 - 982\,863\,882\,000\, z - 2\,001\,737\,863\,125\right) \sin\left(2\sqrt{z}\right) -
$$

$$
\left(268\,435\,456\, z^7 + 32\,900\,120\,576\, z^6 + 948\,924\,579\,840\, z^5 + 5\,926\,412\,943\,360\, z^4 + 32\,154\,071\,040\, z^3 +\right.
$$

$$
\left.\left.\left.1\,350\,744\,595\,200\, z^2 - 711\,729\,018\,000\, z + 6\,005\,213\,589\,375\right) \cos\left(2\sqrt{z}\right)\right)\right)
$$

07.22.03.9380.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 564\,251\,328\,512\,z^7 + 17\,919\,241\,093\,120\,z^6 - 135\,490\,311\,290\,880\,z^5 + 97\,606\,906\,675\,200\,z^4 + 42\,186\,098\,073\,600\,z^3 - 3\,016\,991\,577\,600\,z^2 + 12\,256\,528\,284\,000\,z + 29\,492\,271\,183\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4\,294\,967\,296\,z^8 - 561\,566\,973\,952\,z^7 + 17\,573\,798\,215\,680\,z^6 - 125\,188\,586\,864\,640\,z^5 + 37\,130\,511\,974\,400\,z^4 + 10\,727\,081\,164\,800\,z^3 - 48\,271\,865\,241\,600\,z^2 + 171\,591\,395\,976\,000\,z + 88\,476\,813\,550\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 563\,177\,586\,688\,z^7 + 17\,779\,855\,982\,592\,z^6 - 131\,223\,005\,429\,760\,z^5 + 69\,775\,412\,428\,800\,z^4 + 37\,544\,784\,076\,800\,z^3 - 17\,096\,285\,606\,400\,z^2 + 17\,159\,139\,597\,600\,z - 88\,476\,813\,550\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(97\,606\,906\,675\,200\sqrt{2}\,z^{13/4}\right)$$

07.22.03.9381.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) =$$

$$\left(\left(-2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 564\,251\,328\,512\,z^7 + 17\,919\,241\,093\,120\,z^6 + 135\,490\,311\,290\,880\,z^5 + 97\,606\,906\,675\,200\,z^4 - 42\,186\,098\,073\,600\,z^3 - 3\,016\,991\,577\,600\,z^2 - 12\,256\,528\,284\,000\,z + 29\,492\,271\,183\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4\,294\,967\,296\,z^8 + 561\,566\,973\,952\,z^7 + 17\,573\,798\,215\,680\,z^6 + 125\,188\,586\,864\,640\,z^5 + 37\,130\,511\,974\,400\,z^4 - 10\,727\,081\,164\,800\,z^3 - 48\,271\,865\,241\,600\,z^2 - 171\,591\,395\,976\,000\,z + 88\,476\,813\,550\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 563\,177\,586\,688\,z^7 + 17\,779\,855\,982\,592\,z^6 + 131\,223\,005\,429\,760\,z^5 + 69\,775\,412\,428\,800\,z^4 - 37\,544\,784\,076\,800\,z^3 - 17\,096\,285\,606\,400\,z^2 - 17\,159\,139\,597\,600\,z - 88\,476\,813\,550\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(97\,606\,906\,675\,200\sqrt{2}\,z^{13/4}\right)$$

07.22.03.9382.01

$$
{}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) =
\left(17\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-17\,179\,869\,184\, z^{17/2} + 4\,294\,967\,296\, z^8 + 2\,383\,706\,849\,280\, z^{15/2} - 592\,705\,486\,848\, z^7 - \right.\right.\right.
$$
$$
80\,118\,319\,939\,584\, z^{13/2} + 19\,596\,123\,832\,320\, z^6 + 631\,979\,523\,440\,640\, z^{11/2} - 144\,717\,329\,203\,200\, z^5 -
$$
$$
330\,397\,722\,869\,760\, z^{9/2} + 11\,482\,475\,397\,120\, z^4 - 194\,349\,470\,515\,200\, z^{7/2} - 30\,288\,229\,171\,200\, z^3 +
$$
$$
165\,638\,753\,280\,000\, z^{5/2} - 110\,623\,024\,512\,000\, z^2 - 248\,901\,805\,152\,000\, z^{3/2} + 717\,422\,850\,144\,000\, z +
$$
$$
1\,977\,717\,008\,767\,500\sqrt{z} + e^{4\sqrt{z}}\left(17\,179\,869\,184\, z^{17/2} + 4\,294\,967\,296\, z^8 - 2\,383\,706\,849\,280\, z^{15/2} - \right.
$$
$$
592\,705\,486\,848\, z^7 + 80\,118\,319\,939\,584\, z^{13/2} + 19\,596\,123\,832\,320\, z^6 - 631\,979\,523\,440\,640\, z^{11/2} -
$$
$$
144\,717\,329\,203\,200\, z^5 + 330\,397\,722\,869\,760\, z^{9/2} + 11\,482\,475\,397\,120\, z^4 + 194\,349\,470\,515\,200\, z^{7/2} -
$$
$$
30\,288\,229\,171\,200\, z^3 - 165\,638\,753\,280\,000\, z^{5/2} - 110\,623\,024\,512\,000\, z^2 + 248\,901\,805\,152\,000\, z^{3/2} +
$$
$$
\left.\left.\left.\left.717\,422\,850\,144\,000\, z - 1\,977\,717\,008\,767\,500\sqrt{z} + 1\,483\,287\,756\,575\,625\right) + 1\,483\,287\,756\,575\,625\right) +
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\, z^9 - 9\,547\,712\,299\,008\, z^8 + 322\,235\,290\,091\,520\, z^7 - 2\,584\,595\,555\,942\,400\, z^6 + \right.
$$
$$
1\,696\,140\,833\,587\,200\, z^5 + 954\,079\,218\,892\,800\, z^4 - 278\,273\,105\,510\,400\, z^3 +
$$
$$
\left.409\,955\,914\,368\,000\, z^2 - 864\,750\,756\,870\,000\, z + 1\,483\,287\,756\,575\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) +
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\, z^9 - 9\,547\,712\,299\,008\, z^8 + 322\,235\,290\,091\,520\, z^7 - 2\,584\,595\,555\,942\,400\, z^6 + \right.
$$
$$
1\,696\,140\,833\,587\,200\, z^5 + 954\,079\,218\,892\,800\, z^4 - 278\,273\,105\,510\,400\, z^3 + 409\,955\,914\,368\,000\, z^2 -
$$
$$
\left.\left.\left.864\,750\,756\,870\,000\, z + 1\,483\,287\,756\,575\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) \Big/ \left(99\,747\,694\,871\,838\,720\, z^{17/4}\right)
$$

07.22.03.9383.01

$$
{}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) =
-\left(17\left(\sqrt{\pi}\left(68\,719\,476\,736\, z^9 + 9\,547\,712\,299\,008\, z^8 + 322\,235\,290\,091\,520\, z^7 + 2\,584\,595\,555\,942\,400\, z^6 + \right.\right.\right.
$$
$$
1\,696\,140\,833\,587\,200\, z^5 - 954\,079\,218\,892\,800\, z^4 - 278\,273\,105\,510\,400\, z^3 -
$$
$$
\left.409\,955\,914\,368\,000\, z^2 - 864\,750\,756\,870\,000\, z - 1\,483\,287\,756\,575\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}
$$
$$
\left(\left(4\,294\,967\,296\, z^8 + 592\,705\,486\,848\, z^7 + 19\,596\,123\,832\,320\, z^6 + 144\,717\,329\,203\,200\, z^5 + 11\,482\,475\,397\,120\right.\right.
$$
$$
\left.z^4 + 30\,288\,229\,171\,200\, z^3 - 110\,623\,024\,512\,000\, z^2 - 717\,422\,850\,144\,000\, z + 1\,483\,287\,756\,575\,625\right)
$$
$$
\cos\left(2\sqrt{z}\right) - 4\sqrt{z}\left(4\,294\,967\,296\, z^8 + 595\,926\,712\,320\, z^7 + 20\,029\,579\,984\,896\, z^6 + \right.
$$
$$
157\,994\,880\,860\,160\, z^5 + 82\,599\,430\,717\,440\, z^4 - 48\,587\,367\,628\,800\, z^3 - 41\,409\,688\,320\,000\, z^2 -
$$
$$
\left.\left.\left.\left.62\,225\,451\,288\,000\, z - 494\,429\,252\,191\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) \Big/ \left(24\,936\,923\,717\,959\,680\, z^{17/4}\right)
$$

07.22.03.9384.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) =$$
$$\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 10\,088\,878\,178\,304\,z^8 + 362\,956\,948\,766\,720\,z^7 - 3\,160\,284\,919\,234\,560\,z^6 + 2\,630\,583\,425\,433\,600\,z^5 + 1\,381\,571\,798\,630\,400\,z^4 - 257\,449\,947\,955\,200\,z^3 + 1\,176\,626\,715\,264\,000\,z^2 - 6\,134\,392\,406\,142\,000\,z - 9\,290\,065\,422\,763\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-68\,719\,476\,736\,z^9 + 10\,045\,928\,505\,344\,z^8 - 356\,766\,827\,151\,360\,z^7 + 2\,949\,583\,554\,478\,080\,z^6 - 1\,158\,419\,526\,451\,200\,z^5 - 600\,716\,545\,228\,800\,z^4 + 2\,027\,418\,340\,147\,200\,z^3 - 5\,490\,924\,671\,232\,000\,z^2 + 60\,872\,047\,722\,486\,000\,z + 27\,870\,196\,268\,289\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 10\,071\,698\,309\,120\,z^8 + 360\,461\,572\,767\,744\,z^7 - 3\,073\,360\,149\,872\,640\,z^6 + 1\,965\,001\,487\,155\,200\,z^5 + 1\,307\,441\,892\,556\,800\,z^4 - 643\,624\,869\,888\,000\,z^3 + 549\,092\,467\,123\,200\,z^2 + 1\,415\,629\,016\,802\,000\,z + 27\,870\,196\,268\,289\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(3\,123\,421\,013\,606\,400\sqrt{2}\,z^{17/4}\right)$$

07.22.03.9385.01

$${}_1F_2\left(-\frac{19}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) =$$
$$-\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 10\,088\,878\,178\,304\,z^8 + 362\,956\,948\,766\,720\,z^7 + 3\,160\,284\,919\,234\,560\,z^6 + 2\,630\,583\,425\,433\,600\,z^5 - 1\,381\,571\,798\,630\,400\,z^4 - 257\,449\,947\,955\,200\,z^3 - 1\,176\,626\,715\,264\,000\,z^2 - 6\,134\,392\,406\,142\,000\,z + 9\,290\,065\,422\,763\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(68\,719\,476\,736\,z^9 + 10\,045\,928\,505\,344\,z^8 + 356\,766\,827\,151\,360\,z^7 + 2\,949\,583\,554\,478\,080\,z^6 + 1\,158\,419\,526\,451\,200\,z^5 - 600\,716\,545\,228\,800\,z^4 - 2\,027\,418\,340\,147\,200\,z^3 - 5\,490\,924\,671\,232\,000\,z^2 - 60\,872\,047\,722\,486\,000\,z + 27\,870\,196\,268\,289\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 10\,071\,698\,309\,120\,z^8 + 360\,461\,572\,767\,744\,z^7 + 3\,073\,360\,149\,872\,640\,z^6 + 1\,965\,001\,487\,155\,200\,z^5 - 1\,307\,441\,892\,556\,800\,z^4 - 643\,624\,869\,888\,000\,z^3 - 549\,092\,467\,123\,200\,z^2 + 1\,415\,629\,016\,802\,000\,z - 27\,870\,196\,268\,289\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(3\,123\,421\,013\,606\,400\sqrt{2}\,z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{19}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.9386.01

$${}_1F_2\left(-\frac{19}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - \frac{4}{23}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.9387.01

$${}_1F_2\left(-\frac{19}{4}; \frac{1}{2}, -\frac{23}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + \frac{4}{23}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.9388.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{1}{2}, -\frac{21}{4}; z\right) = \frac{1}{2\,076\,963\,525\sqrt{2}} \left(\sqrt[4]{z}\left(\left(1\,048\,576 z^5 + 31\,588\,352 z^4 + 478\,556\,160 z^3 + 3\,409\,044\,480 z^2 + 7\,912\,242\,000 z + 2\,076\,963\,525\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(131\,072 z^4 + 4\,030\,464 z^3 + 62\,507\,520 z^2 + 471\,674\,880 z + 2\,076\,963\,525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 16 z\left(65\,536 z^4 + 1\,990\,656 z^3 + 30\,428\,928 z^2 + 221\,434\,560 z + 564\,320\,925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9389.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{1}{2}, -\frac{21}{4}; -z\right) = -\frac{1}{2\,076\,963\,525\sqrt{2}} \left(\sqrt[4]{z}\left(\left(1\,048\,576 z^5 - 31\,588\,352 z^4 + 478\,556\,160 z^3 - 3\,409\,044\,480 z^2 + 7\,912\,242\,000 z - 2\,076\,963\,525\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(131\,072 z^4 - 4\,030\,464 z^3 + 62\,507\,520 z^2 - 471\,674\,880 z + 2\,076\,963\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 16 z\left(65\,536 z^4 - 1\,990\,656 z^3 + 30\,428\,928 z^2 - 221\,434\,560 z + 564\,320\,925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9390.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{1}{2}, -\frac{19}{4}; z\right) = \cosh\left(2\sqrt{z}\right) $$

07.22.03.9391.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{1}{2}, -\frac{19}{4}; -z\right) = \cos\left(2\sqrt{z}\right) $$

07.22.03.9392.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{1}{2}, -\frac{17}{4}; z\right) = \frac{1}{98\,903\,025\sqrt{2}} \left(\sqrt[4]{z}\left(\left(524\,288 z^5 + 5\,210\,112 z^4 + 47\,441\,920 z^3 + 240\,324\,480 z^2 + 418\,883\,400 z + 98\,903\,025\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(65\,536 z^4 + 692\,224 z^3 + 6\,447\,360 z^2 + 35\,603\,280 z + 98\,903\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 8 z\left(65\,536 z^4 + 667\,648 z^3 + 6\,118\,656 z^2 + 31\,898\,160 z + 64\,607\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9393.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{1}{2}, -\frac{17}{4}; -z\right) = -\frac{1}{98\,903\,025\sqrt{2}} \left(\sqrt[4]{z}\left(\left(524\,288 z^5 - 5\,210\,112 z^4 + 47\,441\,920 z^3 - 240\,324\,480 z^2 + 418\,883\,400 z - 98\,903\,025\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(65\,536 z^4 - 692\,224 z^3 + 6\,447\,360 z^2 - 35\,603\,280 z + 98\,903\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 8 z\left(65\,536 z^4 - 667\,648 z^3 + 6\,118\,656 z^2 - 31\,898\,160 z + 64\,607\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9394.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},-\frac{15}{4};z\right)= \frac{1}{68\,918\,850}\left(e^{-2\sqrt{z}}\left(-262\,144\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}-262\,144\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}+ 262\,144\,e^{4\sqrt{z}}z^{9/2}-262\,144\,z^{9/2}+65\,536\,e^{4\sqrt{z}}z^4+65\,536\,z^4+49\,152\,e^{4\sqrt{z}}z^{7/2}-49\,152\,z^{7/2}+61\,440\,e^{4\sqrt{z}}z^3+ 61\,440\,z^3+107\,520\,e^{4\sqrt{z}}z^{5/2}-107\,520\,z^{5/2}+241\,920\,e^{4\sqrt{z}}z^2+241\,920\,z^2+665\,280\,e^{4\sqrt{z}}z^{3/2}-665\,280\,z^{3/2}+ 2\,162\,160\,e^{4\sqrt{z}}z+2\,162\,160\,z+8\,108\,100\,e^{4\sqrt{z}}\sqrt{z}-8\,108\,100\sqrt{z}+34\,459\,425\,e^{4\sqrt{z}}+34\,459\,425\right)\right) $$

07.22.03.9395.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},-\frac{15}{4};-z\right)= \frac{1}{34\,459\,425}\left(524\,288\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}-4\left(65\,536z^4-12\,288z^3+26\,880z^2-166\,320z+2\,027\,025\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+ \left(65\,536z^4-61\,440z^3+241\,920z^2-2\,162\,160z+34\,459\,425\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9396.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},-\frac{13}{4};z\right)= -\frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(262\,144z^5-2\,686\,976z^4-7\,700\,480z^3-23\,404\,800z^2-28\,641\,600z-5\,817\,825\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ 4\sqrt{z}\left(-32\,768z^4+315\,392z^3+1\,117\,440z^2+3\,710\,160z+5\,817\,825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ 16z\left(-16\,384z^4+163\,840z^3+516\,864z^2+1\,618\,560z+2\,347\,515\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9397.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},-\frac{13}{4};-z\right)= \frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(262\,144z^5+2\,686\,976z^4-7\,700\,480z^3+23\,404\,800z^2-28\,641\,600z+5\,817\,825\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- 4\sqrt{z}\left(32\,768z^4+315\,392z^3-1\,117\,440z^2+3\,710\,160z-5\,817\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ 16z\left(16\,384z^4+163\,840z^3-516\,864z^2+1\,618\,560z-2\,347\,515\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9398.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},-\frac{11}{4};z\right)=\frac{1}{4\,594\,590} \left(e^{-2\sqrt{z}}\left(-65\,536\,e^{4\sqrt{z}}z^{9/2}+65\,536\,z^{9/2}-16\,384\,e^{4\sqrt{z}}z^4-16\,384\,z^4+4096\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-323)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+ 4096\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-323)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+1\,310\,720\,e^{4\sqrt{z}}z^{7/2}-1\,310\,720\,z^{7/2}+315\,392\,e^{4\sqrt{z}}z^3+ 315\,392\,z^3+221\,184\,e^{4\sqrt{z}}z^{5/2}-221\,184\,z^{5/2}+249\,600\,e^{4\sqrt{z}}z^2+249\,600\,z^2+376\,320\,e^{4\sqrt{z}}z^{3/2}- 376\,320\,z^{3/2}+680\,400\,e^{4\sqrt{z}}z+680\,400z+1\,330\,560\,e^{4\sqrt{z}}\sqrt{z}-1\,330\,560\sqrt{z}+2\,297\,295\,e^{4\sqrt{z}}+2\,297\,295\right)\right) $$

07.22.03.9399.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{1}{2}, -\frac{11}{4}; -z\right) = \frac{1}{2\,297\,295}\left(-8192\sqrt{\pi}\,(16z+323)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4} + 128\left(512z^4+10\,240z^3-1728z^2+2940z-10\,395\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-16\,384z^4-315\,392z^3+249\,600z^2-680\,400z+2\,297\,295\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9400.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{1}{2}, -\frac{9}{4}; z\right) = \frac{1}{1\,342\,575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072z^5-3\,989\,504z^4+12\,687\,360z^3+11\,243\,520z^2+8\,353\,800z+1\,342\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384z^4-488\,448z^3+1\,301\,760z^2+1\,749\,600z+1\,342\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 8z\left(16\,384z^4-494\,592z^3+1\,467\,648z^2+1\,637\,280z+1\,402\,515\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9401.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{1}{2}, -\frac{9}{4}; -z\right) = -\frac{1}{1\,342\,575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072z^5+3\,989\,504z^4+12\,687\,360z^3-11\,243\,520z^2+8\,353\,800z-1\,342\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384z^4+488\,448z^3+1\,301\,760z^2-1\,749\,600z+1\,342\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 8z\left(16\,384z^4+494\,592z^3+1\,467\,648z^2-1\,637\,280z+1\,402\,515\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9402.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{1}{2}, -\frac{7}{4}; z\right) = \frac{1}{417\,690}\left(e^{-2\sqrt{z}}\left(8192\,e^{4\sqrt{z}}\,z^{9/2}-8192z^{9/2}+2048\,e^{4\sqrt{z}}\,z^4+2048z^4-329\,216\,e^{4\sqrt{z}}\,z^{7/2}+329\,216z^{7/2} - 80\,768\,e^{4\sqrt{z}}\,z^3-80\,768z^3-32\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2-10\,336z+62\,985\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4} - 32\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2-10\,336z+62\,985\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+1\,956\,864\,e^{4\sqrt{z}}\,z^{5/2} - 1\,956\,864z^{5/2}+433\,920\,e^{4\sqrt{z}}\,z^2+433\,920z^2+263\,040\,e^{4\sqrt{z}}\,z^{3/2}-263\,040z^{3/2}+ 234\,720\,e^{4\sqrt{z}}\,z+234\,720z+240\,660\,e^{4\sqrt{z}}\,\sqrt{z}-240\,660\sqrt{z}+208\,845\,e^{4\sqrt{z}}+208\,845\right)\right) $$

07.22.03.9403.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},-\frac{7}{4};-z\right)= \frac{1}{208\,845}\left(64\sqrt{\pi}\left(256z^2+10\,336z+62\,985\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}-4\left(2048z^4+82\,304z^3+489\,216z^2-65\,760z+60\,165\right)\right. $$
$$ \left.\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(2048z^4+80\,768z^3+433\,920z^2-234\,720z+208\,845\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9404.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},-\frac{5}{4};z\right)= -\frac{1}{745\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536z^5-3\,317\,760z^4+30\,736\,640z^3-35\,308\,800z^2-7\,160\,400z-745\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 4\sqrt{z}\left(8192z^4-409\,600z^3+3\,596\,640z^2-2\,613\,600z-745\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.16z\left(-4096z^4+206\,336z^3-1\,870\,800z^2+1\,800\,000z+554\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9405.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},-\frac{5}{4};-z\right)= \frac{1}{745\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536z^5+3\,317\,760z^4+30\,736\,640z^3+35\,308\,800z^2-7\,160\,400z+745\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 4\sqrt{z}\left(8192z^4+409\,600z^3+3\,596\,640z^2+2\,613\,600z-745\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.16z\left(4096z^4+206\,336z^3+1\,870\,800z^2+1\,800\,000z-554\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9406.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},-\frac{3}{4};z\right)= \frac{1}{358\,020}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-248\,064z^2+3\,023\,280z-6\,235\,515\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\right.\right. $$
$$ \sqrt{2\pi}\left(4096z^3-248\,064z^2+3\,023\,280z-6\,235\,515\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}- $$
$$ 2\left(-2048z^{9/2}+512z^4+123\,648z^{7/2}-30\,528z^3-1\,489\,224z^{5/2}+350\,730z^2+2\,880\,000z^{3/2}-\right. $$
$$ 522\,720z+216\,000\sqrt{z}+e^{4\sqrt{z}}\left(2048z^{9/2}+512z^4-123\,648z^{7/2}-30\,528z^3+1\,489\,224z^{5/2}+\right. $$
$$ \left.\left.\left.\left.350\,730z^2-2\,880\,000z^{3/2}-522\,720z-216\,000\sqrt{z}-89\,505\right)-89\,505\right)\right)\right) $$

07.22.03.9407.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},-\frac{3}{4};-z\right)=\frac{1}{89\,505}\left(-\sqrt{\pi}\,\left(4096\,z^3+248\,064\,z^2+3\,023\,280\,z+6\,235\,515\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+\right.$$
$$8\left(256\,z^4+15\,456\,z^3+186\,153\,z^2+360\,000\,z-27\,000\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\;-$$
$$\left.\left(512\,z^4+30\,528\,z^3+350\,730\,z^2+522\,720\,z-89\,505\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9408.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(32\,768\,z^5-2\,320\,384\,z^4+35\,626\,880\,z^3-114\,205\,560\,z^2+41\,769\,000\,z+1\,044\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\,\left(4096\,z^4-287\,488\,z^3+4\,278\,960\,z^2-11\,931\,885\,z+1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.8\,z\left(4096\,z^4-289\,024\,z^3+4\,382\,448\,z^2-13\,268\,115\,z+2\,934\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9409.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},-\frac{1}{4};-z\right)=$$
$$-\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(32\,768\,z^5+2\,320\,384\,z^4+35\,626\,880\,z^3+114\,205\,560\,z^2+41\,769\,000\,z-1\,044\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\,\left(4096\,z^4+287\,488\,z^3+4\,278\,960\,z^2+11\,931\,885\,z+1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.8\,z\left(4096\,z^4+289\,024\,z^3+4\,382\,448\,z^2+13\,268\,115\,z+2\,934\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9410.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{30\,551\,040}\left(e^{-2\sqrt{z}}\,\left(4\left(-16\,384\,z^{9/2}+4096\,z^4+1\,319\,936\,z^{7/2}-326\,912\,z^3-23\,944\,896\,z^{5/2}+5\,751\,600\,z^2+95\,734\,380\,z^{3/2}-\right.\right.\right.$$
$$\left.20\,359\,215\,z-42\,923\,520\sqrt{z}\right)+e^{4\sqrt{z}}\,\left(16\,384\,z^{9/2}+4096\,z^4-1\,319\,936\,z^{7/2}-326\,912\,z^3+23\,944\,896\,z^{5/2}+\right.$$
$$\left.\left.5\,751\,600\,z^2-95\,734\,380\,z^{3/2}-20\,359\,215\,z+42\,923\,520\sqrt{z}+3\,818\,880\right)+3\,818\,880\right)-$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(65\,536\,z^4-5\,292\,032\,z^3+96\,744\,960\,z^2-399\,072\,960\,z+218\,243\,025\right)\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(65\,536\,z^4-5\,292\,032\,z^3+96\,744\,960\,z^2-399\,072\,960\,z+218\,243\,025\right)\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.9411.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{1}{4};-z\right)= \frac{1}{7\,637\,760}\left(\sqrt{\pi}\,z^{3/4}\left(65\,536\,z^4+5\,292\,032\,z^3+96\,744\,960\,z^2+399\,072\,960\,z+218\,243\,025\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ 2\left(\left(4096\,z^4+326\,912\,z^3+5\,751\,600\,z^2+20\,359\,215\,z+3\,818\,880\right)\cos\left(2\sqrt{z}\right)- 4\sqrt{z}\left(4096\,z^4+329\,984\,z^3+5\,986\,224\,z^2+23\,933\,595\,z+10\,730\,880\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9412.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{3}{4};z\right)= \frac{1}{75\,184\,200\sqrt{2}}\left(\sqrt[4]{z}\left(-2\left(65\,536\,z^5-5\,963\,776\,z^4+127\,895\,040\,z^3-673\,453\,440\,z^2+619\,225\,425\,z-37\,592\,100\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ \sqrt{z}\left(65\,536\,z^4-5\,922\,816\,z^3+124\,277\,760\,z^2-602\,773\,920\,z+353\,992\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ 2z\left(65\,536\,z^4-5\,947\,392\,z^3+126\,429\,696\,z^2-643\,688\,640\,z+491\,064\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9413.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{3}{4};-z\right)= \frac{1}{75\,184\,200\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(65\,536\,z^5+5\,963\,776\,z^4+127\,895\,040\,z^3+673\,453\,440\,z^2+619\,225\,425\,z+37\,592\,100\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- \sqrt{z}\left(65\,536\,z^4+5\,922\,816\,z^3+124\,277\,760\,z^2+602\,773\,920\,z+353\,992\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ 2z\left(65\,536\,z^4+5\,947\,392\,z^3+126\,429\,696\,z^2+643\,688\,640\,z+491\,064\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9414.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{5}{4};z\right)= \frac{1}{9\,776\,332\,800\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-262\,144\,z^{9/2}+65\,536\,z^4+26\,411\,008\,z^{7/2}-6\,553\,600\,z^3-640\,112\,640\,z^{5/2}+ 155\,281\,920\,z^2+3\,879\,985\,920\,z^{3/2}-868\,775\,040\,z-3\,822\,092\,100\sqrt{z}+ e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-26\,411\,008\,z^{7/2}-6\,553\,600\,z^3+640\,112\,640\,z^{5/2}+155\,281\,920\,z^2- 3\,879\,985\,920\,z^{3/2}-868\,775\,040\,z+3\,822\,092\,100\sqrt{z}+567\,312\,525\right)+567\,312\,525\right)- e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-105\,840\,640\,z^4+2\,579\,865\,600\,z^3-15\,962\,918\,400\,z^2+17\,459\,442\,000\,z-654\,729\,075\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-105\,840\,640\,z^4+2\,579\,865\,600\,z^3- 15\,962\,918\,400\,z^2+17\,459\,442\,000\,z-654\,729\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9415.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{5}{4};-z\right)=\frac{1}{2\,444\,083\,200\sqrt[4]{z}}$$
$$\left(\sqrt{\pi}\left(1\,048\,576\,z^5+105\,840\,640\,z^4+2\,579\,865\,600\,z^3+15\,962\,918\,400\,z^2+17\,459\,442\,000\,z+654\,729\,075\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536\,z^4+6\,602\,752\,z^3+160\,028\,160\,z^2+969\,996\,480\,z+955\,523\,025\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left(65\,536\,z^4+6\,553\,600\,z^3+155\,281\,920\,z^2+868\,775\,040\,z+567\,312\,525\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.9416.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{7}{4};z\right)=\frac{1}{8\,821\,612\,800\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(-1\,048\,576\,z^5+116\,588\,544\,z^4-3\,210\,567\,680\,z^3+23\,523\,264\,000\,z^2-34\,577\,571\,600\,z+4\,192\,563\,375\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1\,048\,576\,z^5-115\,933\,184\,z^4+3\,139\,461\,120\,z^3-21\,700\,293\,120\,z^2+\right.$$
$$24\,075\,651\,600\,z+654\,729\,075\Big)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576\,z^5-116\,326\,400\,z^4+\right.$$
$$\left.\left.\left.3\,181\,830\,144\,z^3-22\,764\,234\,240\,z^2+29\,755\,812\,240\,z-654\,729\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9417.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{7}{4};-z\right)=\frac{1}{8\,821\,612\,800\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576\,z^5+116\,588\,544\,z^4+3\,210\,567\,680\,z^3+23\,523\,264\,000\,z^2+34\,577\,571\,600\,z+4\,192\,563\,375\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(1\,048\,576\,z^5+115\,933\,184\,z^4+3\,139\,461\,120\,z^3+21\,700\,293\,120\,z^2+\right.$$
$$24\,075\,651\,600\,z-654\,729\,075\Big)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576\,z^5+116\,326\,400\,z^4+\right.$$
$$\left.\left.\left.3\,181\,830\,144\,z^3+22\,764\,234\,240\,z^2+29\,755\,812\,240\,z+654\,729\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9418.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{9}{4};z\right)=\frac{1}{750\,822\,359\,040\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-4\,194\,304\,z^{11/2}+1\,048\,576\,z^5+507\,248\,640\,z^{9/2}-126\,025\,728\,z^4-15\,385\,657\,344\,z^{7/2}+3\,754\,598\,400\,z^3+124\,998\,727\,680\,z^{5/2}-28\,732\,147\,200\,z^2-190\,758\,231\,360\,z^{3/2}+33\,093\,936\,720\,z+2\,618\,916\,300\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-507\,248\,640\,z^{9/2}-126\,025\,728\,z^4+15\,385\,657\,344\,z^{7/2}+3\,754\,598\,400\,z^3-124\,998\,727\,680\,z^{5/2}-28\,732\,147\,200\,z^2+190\,758\,231\,360\,z^{3/2}+33\,093\,936\,720\,z-2\,618\,916\,300\sqrt{z}+1\,964\,187\,225\right)+1\,964\,187\,225\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-2\,032\,140\,288\,z^5+61\,916\,774\,400\,z^4-510\,813\,388\,800\,z^3+838\,053\,216\,000\,z^2-62\,853\,991\,200\,z+1\,964\,187\,225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-2\,032\,140\,288\,z^5+61\,916\,774\,400\,z^4-510\,813\,388\,800\,z^3+838\,053\,216\,000\,z^2-62\,853\,991\,200\,z+1\,964\,187\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9419.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{9}{4};-z\right)=\frac{1}{187\,705\,589\,760\,z^{5/4}}\left(\sqrt{\pi}\left(16\,777\,216\,z^6+2\,032\,140\,288\,z^5+61\,916\,774\,400\,z^4+510\,813\,388\,800\,z^3+838\,053\,216\,000\,z^2+62\,853\,991\,200\,z+1\,964\,187\,225\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576\,z^5+126\,812\,160\,z^4+3\,846\,414\,336\,z^3+31\,249\,681\,920\,z^2+47\,689\,557\,840\,z+654\,729\,075\right)\sin\left(2\sqrt{z}\right)-\left(1\,048\,576\,z^5+126\,025\,728\,z^4+3\,754\,598\,400\,z^3+28\,732\,147\,200\,z^2+33\,093\,936\,720\,z-1\,964\,187\,225\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9420.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{11}{4};z\right)=\frac{1}{524\,255\,846\,400\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(-16\,777\,216\,z^6+2\,204\,106\,752\,z^5-74\,124\,820\,480\,z^4+695\,918\,346\,240\,z^3-1\,405\,080\,518\,400\,z^2+243\,171\,957\,600\,z+3\,273\,645\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(16\,777\,216\,z^6-2\,193\,620\,992\,z^5+72\,775\,434\,240\,z^4-653\,097\,369\,600\,z^3+1\,071\,615\,916\,800\,z^2+41\,902\,660\,800\,z-9\,820\,936\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(16\,777\,216\,z^6-2\,199\,912\,448\,z^5+73\,580\,347\,392\,z^4-678\,217\,236\,480\,z^3+1\,256\,311\,330\,560\,z^2-62\,853\,991\,200\,z+9\,820\,936\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9421.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{11}{4};-z\right)=\frac{1}{524\,255\,846\,400\sqrt{2}\,z^{5/4}}$$
$$\left(\left(2\sqrt{z}\left(16\,777\,216z^6+2\,204\,106\,752z^5+74\,124\,820\,480z^4+695\,918\,346\,240z^3+1\,405\,080\,518\,400z^2+\right.\right.\right.$$
$$\left.\left.243\,171\,957\,600z-3\,273\,645\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,777\,216z^6+2\,193\,620\,992z^5+72\,775\,434\,240z^4+\right.\right.$$
$$\left.\left.653\,097\,369\,600z^3+1\,071\,615\,916\,800z^2-41\,902\,660\,800z-9\,820\,936\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(16\,777\,216z^6+2\,199\,912\,448z^5+73\,580\,347\,392z^4+678\,217\,236\,480z^3+\right.$$
$$\left.\left.\left.1\,256\,311\,330\,560z^2+62\,853\,991\,200z+9\,820\,936\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9422.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{37\,374\,268\,538\,880z^{9/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-67\,108\,864z^{13/2}+16\,777\,216z^6+9\,470\,738\,432z^{11/2}-2\,355\,101\,696z^5-\right.\right.\right.$$
$$344\,983\,339\,008z^{9/2}+84\,522\,762\,240z^4+3\,514\,400\,440\,320z^{7/2}-820\,855\,848\,960z^3-$$
$$7\,271\,611\,038\,720z^{5/2}+1\,367\,991\,555\,840z^2+251\,415\,964\,800z^{3/2}+146\,659\,312\,800z-$$
$$91\,662\,070\,500\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864z^{13/2}+16\,777\,216z^6-9\,470\,738\,432z^{11/2}-\right.$$
$$2\,355\,101\,696z^5+344\,983\,339\,008z^{9/2}+84\,522\,762\,240z^4-3\,514\,400\,440\,320z^{7/2}-$$
$$820\,855\,848\,960z^3+7\,271\,611\,038\,720z^{5/2}+1\,367\,991\,555\,840z^2-251\,415\,964\,800z^{3/2}+$$
$$\left.146\,659\,312\,800z+91\,662\,070\,500\sqrt{z}-68\,746\,552\,875\right)-68\,746\,552\,875\Big)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7-37\,933\,285\,376z^6+1\,386\,935\,746\,560z^5-14\,302\,774\,886\,400z^4+\right.$$
$$\left.31\,287\,320\,064\,000z^3-3\,519\,823\,507\,200z^2+219\,988\,969\,200z-68\,746\,552\,875\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7-37\,933\,285\,376z^6+1\,386\,935\,746\,560z^5-14\,302\,774\,886\,400z^4+\right.$$
$$\left.\left.31\,287\,320\,064\,000z^3-3\,519\,823\,507\,200z^2+219\,988\,969\,200z-68\,746\,552\,875\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.9423.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{9\,343\,567\,134\,720z^{9/4}}\left(\sqrt{\pi}\left(268\,435\,456z^7+37\,933\,285\,376z^6+1\,386\,935\,746\,560z^5+14\,302\,774\,886\,400z^4+\right.\right.$$
$$\left.31\,287\,320\,064\,000z^3+3\,519\,823\,507\,200z^2+219\,988\,969\,200z+68\,746\,552\,875\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216z^6+2\,367\,684\,608z^5+86\,245\,834\,752z^4+878\,600\,110\,080z^3+1\,817\,902\,759\,680z^2+\right.\right.$$
$$\left.62\,853\,991\,200z+22\,915\,517\,625\right)\sin\left(2\sqrt{z}\right)-\left(16\,777\,216z^6+2\,355\,101\,696z^5+84\,522\,762\,240z^4+\right.$$
$$\left.\left.\left.820\,855\,848\,960z^3+1\,367\,991\,555\,840z^2-146\,659\,312\,800z-68\,746\,552\,875\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.9424.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{15}{4};z\right)= $$

$$ \left(\left(2\sqrt{z}\left(-268\,435\,456\,z^7+40\,684\,748\,800\,z^6-1\,616\,133\,488\,640\,z^5+18\,505\,329\,868\,800\,z^4-47\,511\,144\,345\,600\,z^3+\right.\right.\right. $$

$$ \left.\left.\left.10\,474\,003\,987\,200\,z^2+157\,134\,978\,000\,z-206\,239\,658\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right. $$

$$ \left(268\,435\,456\,z^7-40\,516\,976\,640\,z^6+1\,591\,156\,408\,320\,z^5-17\,560\,461\,312\,000\,z^4+38\,228\,516\,352\,000\,z^3+\right. $$

$$ \left.1\,508\,495\,788\,800\,z^2+471\,404\,934\,000\,z+618\,718\,975\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\left(268\,435\,456\,z^7-40\,617\,639\,936\,z^6+1\,606\,067\,159\,040\,z^5-18\,116\,694\,835\,200\,z^4+43\,446\,224\,793\,600\,z^3-\right. $$

$$ \left.\left.3\,519\,823\,507\,200\,z^2+848\,528\,881\,200\,z-618\,718\,975\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(22\,876\,618\,752\,000\sqrt{2}\,z^{9/4}\right) $$

07.22.03.9425.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{15}{4};-z\right)= $$

$$ \left(\left(2\sqrt{z}\left(268\,435\,456\,z^7+40\,684\,748\,800\,z^6+1\,616\,133\,488\,640\,z^5+18\,505\,329\,868\,800\,z^4+47\,511\,144\,345\,600\,z^3+\right.\right.\right. $$

$$ \left.\left.\left.10\,474\,003\,987\,200\,z^2-157\,134\,978\,000\,z-206\,239\,658\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right. $$

$$ \left(268\,435\,456\,z^7+40\,516\,976\,640\,z^6+1\,591\,156\,408\,320\,z^5+17\,560\,461\,312\,000\,z^4+38\,228\,516\,352\,000\,z^3-\right. $$

$$ \left.1\,508\,495\,788\,800\,z^2+471\,404\,934\,000\,z-618\,718\,975\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\left(268\,435\,456\,z^7+40\,617\,639\,936\,z^6+1\,606\,067\,159\,040\,z^5+18\,116\,694\,835\,200\,z^4+43\,446\,224\,793\,600\,z^3+\right. $$

$$ \left.\left.3\,519\,823\,507\,200\,z^2+848\,528\,881\,200\,z+618\,718\,975\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(22\,876\,618\,752\,000\sqrt{2}\,z^{9/4}\right) $$

07.22.03.9426.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{17}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}+173\,207\,977\,984\,z^{13/2}-43\,100\,667\,904\,z^{6}-7\,364\,916\,805\,632\,z^{11/2}+\right.\right.\right.
$$
$$
1\,809\,595\,760\,640\,z^{5}+90\,219\,223\,449\,600\,z^{9/2}-21\,301\,944\,975\,360\,z^{4}-
$$
$$
235\,762\,277\,990\,400\,z^{7/2}+46\,657\,670\,492\,160\,z^{3}+14\,079\,294\,028\,800\,z^{5/2}+6\,536\,815\,084\,800\,z^{2}-
$$
$$
7\,584\,381\,604\,800\,z^{3/2}-1\,539\,922\,784\,400\,z+9\,074\,544\,979\,500\sqrt{z}+e^{4\sqrt{z}}
$$
$$
\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-173\,207\,977\,984\,z^{13/2}-43\,100\,667\,904\,z^{6}+7\,364\,916\,805\,632\,z^{11/2}+\right.
$$
$$
1\,809\,595\,760\,640\,z^{5}-90\,219\,223\,449\,600\,z^{9/2}-21\,301\,944\,975\,360\,z^{4}+235\,762\,277\,990\,400\,z^{7/2}+
$$
$$
46\,657\,670\,492\,160\,z^{3}-14\,079\,294\,028\,800\,z^{5/2}+6\,536\,815\,084\,800\,z^{2}+7\,584\,381\,604\,800\,z^{3/2}-
$$
$$
\left.1\,539\,922\,784\,400\,z-9\,074\,544\,979\,500\sqrt{z}+6\,805\,908\,734\,625\right)+6\,805\,908\,734\,625\Big)-
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-693\,637\,218\,304\,z^{7}+29\,587\,962\,593\,280\,z^{6}-366\,151\,037\,091\,840\,z^{5}+\right.
$$
$$
1\,001\,194\,242\,048\,000\,z^{4}-150\,179\,136\,307\,200\,z^{3}+14\,079\,294\,028\,800\,z^{2}-
$$
$$
\left.8\,799\,558\,768\,000\,z+6\,805\,908\,734\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-693\,637\,218\,304\,z^{7}+29\,587\,962\,593\,280\,z^{6}-366\,151\,037\,091\,840\,z^{5}+\right.
$$
$$
1\,001\,194\,242\,048\,000\,z^{4}-150\,179\,136\,307\,200\,z^{3}+14\,079\,294\,028\,800\,z^{2}-
$$
$$
\left.\left.\left.8\,799\,558\,768\,000\,z+6\,805\,908\,734\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(1\,471\,971\,191\,685\,120\,z^{13/4}\right)
$$

07.22.03.9427.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{17}{4};-z\right)=\frac{1}{367\,992\,797\,921\,280\,z^{13/4}}
$$
$$
\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^{8}+693\,637\,218\,304\,z^{7}+29\,587\,962\,593\,280\,z^{6}+366\,151\,037\,091\,840\,z^{5}+1\,001\,194\,242\,048\,000\,z^{4}+\right.\right.
$$
$$
\left.150\,179\,136\,307\,200\,z^{3}+14\,079\,294\,028\,800\,z^{2}+8\,799\,558\,768\,000\,z+6\,805\,908\,734\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$
$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^{7}+43\,301\,994\,496\,z^{6}+1\,841\,229\,201\,408\,z^{5}+22\,554\,805\,862\,400\,z^{4}+\right.\right.
$$
$$
\left.58\,940\,569\,497\,600\,z^{3}+3\,519\,823\,507\,200\,z^{2}+1\,896\,095\,401\,200\,z+2\,268\,636\,244\,875\right)\sin\left(2\sqrt{z}\right)-
$$
$$
\left(268\,435\,456\,z^{7}+43\,100\,667\,904\,z^{6}+1\,809\,595\,760\,640\,z^{5}+21\,301\,944\,975\,360\,z^{4}+\right.
$$
$$
\left.\left.\left.46\,657\,670\,492\,160\,z^{3}-6\,536\,815\,084\,800\,z^{2}-1\,539\,922\,784\,400\,z-6\,805\,908\,734\,625\right)\cos\left(2\sqrt{z}\right)\right)\right)
$$

07.22.03.9428.01

$${}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{19}{4};z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(-4\,294\,967\,296\,z^8+737\,660\,633\,088\,z^7-33\,797\,030\,543\,360\,z^6+456\,680\,244\,510\,720\,z^5-1\,422\,749\,712\,384\,000\,z^4+\right.\right.\right.$$
$$\left.\left.\left.377\,354\,225\,664\,000\,z^3+2\,011\,327\,718\,400\,z^2+5\,656\,859\,208\,000\,z+29\,492\,271\,183\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(4\,294\,967\,296\,z^8-734\,976\,278\,528\,z^7+33\,343\,206\,850\,560\,z^6-436\,746\,175\,119\,360\,z^5+1\,186\,182\,011\,289\,600\,z^4+\right.$$
$$\left.37\,544\,784\,076\,800\,z^3+63\,356\,823\,129\,600\,z^2-151\,792\,388\,748\,000\,z-88\,476\,813\,550\,125\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-736\,586\,891\,264\,z^7+33\,614\,293\,106\,688\,z^6-\right.$$
$$448\,511\,229\,296\,640\,z^5+1\,320\,503\,780\,966\,400\,z^4-150\,179\,136\,307\,200\,z^3+44\,249\,209\,804\,800\,z^2-$$
$$\left.\left.36\,958\,146\,825\,600\,z+88\,476\,813\,550\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(829\,658\,706\,739\,200\,\sqrt{2}\;z^{13/4}\right)$$

07.22.03.9429.01

$${}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{19}{4};-z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+737\,660\,633\,088\,z^7+33\,797\,030\,543\,360\,z^6+456\,680\,244\,510\,720\,z^5+1\,422\,749\,712\,384\,000\,z^4+\right.\right.\right.$$
$$\left.\left.\left.377\,354\,225\,664\,000\,z^3-2\,011\,327\,718\,400\,z^2+5\,656\,859\,208\,000\,z-29\,492\,271\,183\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$\left(4\,294\,967\,296\,z^8+734\,976\,278\,528\,z^7+33\,343\,206\,850\,560\,z^6+436\,746\,175\,119\,360\,z^5+1\,186\,182\,011\,289\,600\,z^4-\right.$$
$$\left.37\,544\,784\,076\,800\,z^3+63\,356\,823\,129\,600\,z^2+151\,792\,388\,748\,000\,z-88\,476\,813\,550\,125\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+736\,586\,891\,264\,z^7+33\,614\,293\,106\,688\,z^6+\right.$$
$$448\,511\,229\,296\,640\,z^5+1\,320\,503\,780\,966\,400\,z^4+150\,179\,136\,307\,200\,z^3+44\,249\,209\,804\,800\,z^2+$$
$$\left.\left.36\,958\,146\,825\,600\,z+88\,476\,813\,550\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(829\,658\,706\,739\,200\,\sqrt{2}\;z^{13/4}\right)$$

07.22.03.9430.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{21}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^8+3\,118\,146\,256\,896\,z^{15/2}-776\,315\,338\,752\,z^7-151\,588\,454\,793\,216\right.\right.\right.
$$

$$
z^{13/2}+37\,325\,950\,156\,800\,z^6+2\,169\,611\,621\,498\,880\,z^{11/2}-516\,301\,353\,123\,840\,z^5-
$$

$$
6\,851\,700\,570\,193\,920\,z^{9/2}+1\,404\,190\,322\,196\,480\,z^4+600\,716\,545\,228\,800\,z^{7/2}+
$$

$$
225\,268\,704\,460\,800\,z^3-378\,129\,611\,059\,200\,z^{5/2}+52\,294\,520\,678\,400\,z^2+
$$

$$
497\,803\,610\,304\,000\,z^{3/2}-435\,578\,159\,016\,000\,z-1\,769\,536\,271\,002\,500\sqrt{z}\,+
$$

$$
e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^8-3\,118\,146\,256\,896\,z^{15/2}-776\,315\,338\,752\,z^7+\right.
$$

$$
151\,588\,454\,793\,216\,z^{13/2}+37\,325\,950\,156\,800\,z^6-2\,169\,611\,621\,498\,880\,z^{11/2}-516\,301\,353\,123\,840
$$

$$
z^5+6\,851\,700\,570\,193\,920\,z^{9/2}+1\,404\,190\,322\,196\,480\,z^4-600\,716\,545\,228\,800\,z^{7/2}+
$$

$$
225\,268\,704\,460\,800\,z^3+378\,129\,611\,059\,200\,z^{5/2}+52\,294\,520\,678\,400\,z^2-497\,803\,610\,304\,000\,z^{3/2}-
$$

$$
\left.435\,578\,159\,016\,000\,z+1\,769\,536\,271\,002\,500\sqrt{z}\,-1\,327\,152\,203\,251\,875\right)-1\,327\,152\,203\,251\,875\Big)-
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9-12\,485\,469\,929\,472\,z^8+608\,666\,659\,061\,760\,z^7-8\,787\,624\,890\,204\,160\,z^6+\right.
$$

$$
28\,834\,394\,170\,982\,400\,z^5-5\,406\,448\,907\,059\,200\,z^4+675\,806\,113\,382\,400\,z^3-
$$

$$
\left.633\,568\,231\,296\,000\,z^2+980\,050\,857\,786\,000\,z-1\,327\,152\,203\,251\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9-12\,485\,469\,929\,472\,z^8+608\,666\,659\,061\,760\,z^7-8\,787\,624\,890\,204\,160\,z^6+\right.
$$

$$
28\,834\,394\,170\,982\,400\,z^5-5\,406\,448\,907\,059\,200\,z^4+675\,806\,113\,382\,400\,z^3-633\,568\,231\,296\,000\,z^2+
$$

$$
\left.\left.980\,050\,857\,786\,000\,z-1\,327\,152\,203\,251\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)\Big/\left(49\,873\,847\,435\,919\,360\,z^{17/4}\right)
$$

07.22.03.9431.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{1}{2},\frac{21}{4};-z\right)=
$$

$$
\left(\sqrt{\pi}\left(68\,719\,476\,736\,z^9+12\,485\,469\,929\,472\,z^8+608\,666\,659\,061\,760\,z^7+8\,787\,624\,890\,204\,160\,z^6+28\,834\,394\,170\,982\,400\right.\right.
$$

$$
z^5+5\,406\,448\,907\,059\,200\,z^4+675\,806\,113\,382\,400\,z^3+
$$

$$
\left.633\,568\,231\,296\,000\,z^2+980\,050\,857\,786\,000\,z+1\,327\,152\,203\,251\,875\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$

$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^8+779\,536\,564\,224\,z^7+37\,897\,113\,698\,304\,z^6+542\,402\,905\,374\,720\,z^5+\right.\right.
$$

$$
1\,712\,925\,142\,548\,480\,z^4+150\,179\,136\,307\,200\,z^3+94\,532\,402\,764\,800\,z^2+124\,450\,902\,576\,000\,z+
$$

$$
442\,384\,067\,750\,625\Big)\sin\left(2\sqrt{z}\right)-\left(4\,294\,967\,296\,z^8+776\,315\,338\,752\,z^7+37\,325\,950\,156\,800\,z^6+\right.
$$

$$
\left.\left.\left.516\,301\,353\,123\,840\,z^5+1\,404\,190\,322\,196\,480\,z^4-225\,268\,704\,460\,800\,z^3+52\,294\,520\,678\,400\,z^2+\right.\right.\right.
$$

$$
\left.\left.\left.435\,578\,159\,016\,000\,z-1\,327\,152\,203\,251\,875\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(12\,468\,461\,858\,979\,840\,z^{17/4}\right)
$$

07.22.03.9432.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{1}{2}, \frac{23}{4}; z\right) = $$
$$ \left(\left(-2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 13\,189\,844\,566\,016\,z^8 + 684\,682\,211\,491\,840\,z^7 - 10\,663\,654\,525\,501\,440\,z^6 + \right.\right.\right. $$
$$ 39\,062\,471\,757\,004\,800\,z^5 - 12\,043\,718\,560\,972\,800\,z^4 + 150\,179\,136\,307\,200\,z^3 - $$
$$ \left.\left.\left. 1\,116\,286\,883\,712\,000\,z^2 + 4\,112\,065\,239\,282\,000\,z + 7\,520\,529\,151\,760\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(68\,719\,476\,736\,z^9 - 13\,146\,894\,893\,056\,z^8 + 676\,553\,985\,884\,160\,z^7 - 10\,257\,083\,526\,021\,120\,z^6 + \right. $$
$$ 33\,405\,025\,281\,638\,400\,z^5 + 600\,716\,545\,228\,800\,z^4 + 3\,475\,574\,297\,395\,200\,z^3 - $$
$$ \left. 8\,839\,785\,322\,368\,000\,z^2 + 46\,715\,757\,554\,466\,000\,z + 22\,561\,587\,455\,281\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 13\,172\,664\,696\,832\,z^8 + 681\,411\,593\,895\,936\,z^7 - 10\,497\,509\,755\,453\,440\,z^6 + \right. $$
$$ 36\,641\,013\,025\,996\,800\,z^5 - 5\,406\,448\,907\,059\,200\,z^4 + 1\,802\,149\,635\,686\,400\,z^3 - 1\,514\,529\,771\,955\,200\,z^2 + $$
$$ \left.\left. 1\,415\,629\,016\,802\,000\,z - 22\,561\,587\,455\,281\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(26\,549\,078\,615\,654\,400\,\sqrt{2}\; z^{17/4}\right) $$

07.22.03.9433.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{1}{2}, \frac{23}{4}; -z\right) = $$
$$ \left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 13\,189\,844\,566\,016\,z^8 + 684\,682\,211\,491\,840\,z^7 + 10\,663\,654\,525\,501\,440\,z^6 + \right.\right.\right. $$
$$ 39\,062\,471\,757\,004\,800\,z^5 + 12\,043\,718\,560\,972\,800\,z^4 + 150\,179\,136\,307\,200\,z^3 + $$
$$ \left.\left.\left. 1\,116\,286\,883\,712\,000\,z^2 + 4\,112\,065\,239\,282\,000\,z - 7\,520\,529\,151\,760\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ \left(68\,719\,476\,736\,z^9 + 13\,146\,894\,893\,056\,z^8 + 676\,553\,985\,884\,160\,z^7 + 10\,257\,083\,526\,021\,120\,z^6 + \right. $$
$$ 33\,405\,025\,281\,638\,400\,z^5 - 600\,716\,545\,228\,800\,z^4 + 3\,475\,574\,297\,395\,200\,z^3 + $$
$$ \left. 8\,839\,785\,322\,368\,000\,z^2 + 46\,715\,757\,554\,466\,000\,z - 22\,561\,587\,455\,281\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 13\,172\,664\,696\,832\,z^8 + 681\,411\,593\,895\,936\,z^7 + 10\,497\,509\,755\,453\,440\,z^6 + \right. $$
$$ 36\,641\,013\,025\,996\,800\,z^5 + 5\,406\,448\,907\,059\,200\,z^4 + 1\,802\,149\,635\,686\,400\,z^3 + 1\,514\,529\,771\,955\,200\,z^2 + $$
$$ \left.\left. 1\,415\,629\,016\,802\,000\,z + 22\,561\,587\,455\,281\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(26\,549\,078\,615\,654\,400\,\sqrt{2}\; z^{17/4}\right) $$

For fixed z and $a_1 = -\frac{19}{4}$, $b_{1.} = \frac{3}{2}$

07.22.03.9434.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{3}{2}, -\frac{23}{4}; z\right) = \frac{1}{46}\left(\frac{25\sinh\left(2\sqrt{z}\right)}{\sqrt{z}} - 4\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.9435.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{3}{2}, -\frac{23}{4}; -z\right) = \frac{1}{46}\left(\frac{25\sin\left(2\sqrt{z}\right)}{\sqrt{z}} - 4\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9436.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{21}{4};z\right)=\frac{1}{43\,616\,234\,025\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(2\,097\,152\,z^5+78\,118\,912\,z^4+1\,550\,131\,200\,z^3+16\,033\,812\,480\,z^2+69\,235\,034\,400\,z+43\,616\,234\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$16\sqrt{z}\left(65\,536\,z^4+2\,482\,176\,z^3+50\,077\,440\,z^2+536\,195\,520\,z+2\,596\,751\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(2\,097\,152\,z^5+\right.$$
$$\left.\left.\left.78\,643\,200\,z^4+1\,570\,480\,128\,z^3+16\,455\,720\,960\,z^2+74\,031\,904\,800\,z+99\,687\,686\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9437.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{21}{4};-z\right)=-\frac{1}{43\,616\,234\,025\sqrt{2}}\left(\sqrt[4]{z}\right.$$
$$\left(\left(2\,097\,152\,z^5-78\,118\,912\,z^4+1\,550\,131\,200\,z^3-16\,033\,812\,480\,z^2+69\,235\,034\,400\,z-43\,616\,234\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$16\sqrt{z}\left(65\,536\,z^4-2\,482\,176\,z^3+50\,077\,440\,z^2-536\,195\,520\,z+2\,596\,751\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(2\,097\,152\,z^5-78\,643\,200\,z^4+1\,570\,480\,128\,z^3-16\,455\,720\,960\,z^2+74\,031\,904\,800\,z-99\,687\,686\,175\right)$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9438.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{19}{4};z\right)=\frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.9439.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{19}{4};-z\right)=\frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.9440.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{17}{4};z\right)=\frac{1}{2\,076\,963\,525\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(1\,048\,576\,z^5+12\,910\,592\,z^4+154\,030\,080\,z^3+1\,135\,975\,680\,z^2+3\,775\,136\,400\,z+2\,076\,963\,525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$8\sqrt{z}\left(65\,536\,z^4+847\,872\,z^3+10\,241\,280\,z^2+79\,133\,040\,z+316\,107\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(1\,048\,576\,z^5+13\,172\,736\,z^4+157\,667\,328\,z^3+1\,181\,456\,640\,z^2+4\,162\,611\,600\,z+4\,334\,247\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9441.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{17}{4};-z\right)=-\frac{1}{2\,076\,963\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,048\,576\,z^5-12\,910\,592\,z^4+154\,030\,080\,z^3-1\,135\,975\,680\,z^2+3\,775\,136\,400\,z-2\,076\,963\,525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\left(65\,536\,z^4-847\,872\,z^3+10\,241\,280\,z^2-79\,133\,040\,z+316\,107\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,048\,576\,z^5-13\,172\,736\,z^4+157\,667\,328\,z^3-1\,181\,456\,640\,z^2+4\,162\,611\,600\,z-4\,334\,247\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9442.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{15}{4};z\right)=\frac{1}{2\,894\,591\,700\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-1\,048\,576\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}-1\,048\,576\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+1\,048\,576\,e^{4\sqrt{z}}z^5-1\,048\,576\,z^5+262\,144\,e^{4\sqrt{z}}z^{9/2}+262\,144\,z^{9/2}+196\,608\,e^{4\sqrt{z}}z^4-196\,608\,z^4+245\,760\,e^{4\sqrt{z}}z^{7/2}+245\,760\,z^{7/2}+430\,080\,e^{4\sqrt{z}}z^3-430\,080\,z^3+967\,680\,e^{4\sqrt{z}}z^{5/2}+967\,680\,z^{5/2}+2\,661\,120\,e^{4\sqrt{z}}z^2-2\,661\,120\,z^2+8\,648\,640\,e^{4\sqrt{z}}z^{3/2}+8\,648\,640\,z^{3/2}+32\,432\,400\,e^{4\sqrt{z}}z-32\,432\,400\,z+137\,837\,700\,e^{4\sqrt{z}}\sqrt{z}+137\,837\,700\sqrt{z}+654\,729\,075\,e^{4\sqrt{z}}-654\,729\,075\right)\right) $$

07.22.03.9443.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{15}{4};-z\right)=\frac{1}{1\,447\,295\,850\sqrt{z}}\left(2\,097\,152\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4}+4\left(65\,536\,z^4-61\,440\,z^3+241\,920\,z^2-2\,162\,160\,z+34\,459\,425\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-1\,048\,576\,z^5+196\,608\,z^4-430\,080\,z^3+2\,661\,120\,z^2-32\,432\,400\,z+654\,729\,075\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.9444.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{13}{4};z\right)=-\frac{1}{122\,174\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(524\,288\,z^5-6\,619\,136\,z^4-25\,128\,960\,z^3-111\,525\,120\,z^2-262\,004\,400\,z-122\,174\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-16\sqrt{z}\left(16\,384\,z^4-196\,608\,z^3-887\,040\,z^2-4\,132\,800\,z-11\,533\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-524\,288\,z^5+6\,488\,064\,z^4+26\,578\,944\,z^3+119\,427\,840\,z^2+302\,112\,720\,z+228\,118\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9445.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{13}{4};-z\right)=\frac{1}{122\,174\,325\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(524\,288z^5+6\,619\,136z^4-25\,128\,960z^3+111\,525\,120z^2-262\,004\,400z+122\,174\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$16\sqrt{z}\left(16\,384z^4+196\,608z^3-887\,040z^2+4\,132\,800z-11\,533\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(524\,288z^5+6\,488\,064z^4-26\,578\,944z^3+119\,427\,840z^2-302\,112\,720z+228\,118\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9446.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{192\,972\,780\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-262\,144e^{4\sqrt{z}}z^5+262\,144z^5-65\,536e^{4\sqrt{z}}z^{9/2}-65\,536z^{9/2}+16\,384e^{2\sqrt{z}}\right.\right.$$
$$\sqrt{2\pi}\,(16z-399)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+16\,384e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-399)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+$$
$$6\,488\,064e^{4\sqrt{z}}z^4-6\,488\,064z^4+1\,572\,864e^{4\sqrt{z}}z^{7/2}+1\,572\,864z^{7/2}+1\,118\,208e^{4\sqrt{z}}z^3-1\,118\,208z^3+$$
$$1\,290\,240e^{4\sqrt{z}}z^{5/2}+1\,290\,240z^{5/2}+2\,016\,000e^{4\sqrt{z}}z^2-2\,016\,000z^2+3\,870\,720e^{4\sqrt{z}}z^{3/2}+3\,870\,720z^{3/2}+$$
$$\left.\left.8\,482\,320e^{4\sqrt{z}}z-8\,482\,320z+19\,459\,440e^{4\sqrt{z}}\sqrt{z}+19\,459\,440\sqrt{z}+38\,513\,475e^{4\sqrt{z}}-38\,513\,475\right)\right)$$

07.22.03.9447.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{11}{4};-z\right)=\frac{1}{96\,486\,390\sqrt{z}}$$
$$\left(-32\,768\sqrt{\pi}\,(16z+399)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}-16\left(4096z^4+98\,304z^3-80\,640z^2+241\,920z-1\,216\,215\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(262\,144z^5+6\,488\,064z^4-1\,118\,208z^3+2\,016\,000z^2-8\,482\,320z+38\,513\,475\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.9448.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{28\,194\,075\sqrt{2}}\left(\sqrt[4]{z}\left(\left(262\,144z^5-9\,846\,784z^4+40\,550\,400z^3+53\,786\,880z^2+75\,791\,520z+28\,194\,075\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$8\sqrt{z}\left(16\,384z^4-605\,184z^3+2\,177\,280z^2+4\,102\,560z+6\,493\,095\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(262\,144z^5-9\,781\,248z^4+38\,191\,104z^3+60\,560\,640z^2+91\,838\,880z+45\,623\,655\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9449.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{9}{4};-z\right)= $$
$$ -\frac{1}{28\,194\,075\sqrt{2}}\left(\sqrt[4]{z}\left(\left(262\,144z^5+9\,846\,784z^4+40\,550\,400z^3-53\,786\,880z^2+75\,791\,520z-28\,194\,075\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 8\sqrt{z}\left(16\,384z^4+605\,184z^3+2\,177\,280z^2-4\,102\,560z+6\,493\,095\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.\left(262\,144z^5+9\,781\,248z^4+38\,191\,104z^3-60\,560\,640z^2+91\,838\,880z-45\,623\,655\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9450.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{7}{4};z\right)= $$
$$ \frac{1}{17\,542\,980\sqrt{z}}\left(e^{-2\sqrt{z}}\left(32\,768e^{4\sqrt{z}}z^5-32\,768z^5+8192e^{4\sqrt{z}}z^{9/2}+8192z^{9/2}-1\,628\,160e^{4\sqrt{z}}z^4+1\,628\,160z^4-\right.\right. $$
$$ 400\,896e^{4\sqrt{z}}z^{7/2}-400\,896z^{7/2}-128e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-12\,768z+101\,745\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}- $$
$$ 128e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-12\,768z+101\,745\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+12\,730\,368e^{4\sqrt{z}}z^3-12\,730\,368z^3+ $$
$$ 2\,903\,040e^{4\sqrt{z}}z^{5/2}+2\,903\,040z^{5/2}+1\,854\,720e^{4\sqrt{z}}z^2-1\,854\,720z^2+1\,814\,400e^{4\sqrt{z}}z^{3/2}+1\,814\,400z^{3/2}+ $$
$$ \left.\left.2\,207\,520e^{4\sqrt{z}}z-2\,207\,520z+2\,846\,340e^{4\sqrt{z}}\sqrt{z}+2\,846\,340\sqrt{z}+2\,962\,575e^{4\sqrt{z}}-2\,962\,575\right)\right) $$

07.22.03.9451.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{7}{4};-z\right)=\frac{1}{8\,771\,490\sqrt{z}} $$
$$ \left(256\sqrt{\pi}\left(256z^2+12\,768z+101\,745\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}+4\left(2048z^4+100\,224z^3+725\,760z^2-453\,600z+711\,585\right)\right. $$
$$ \left.\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(32\,768z^5+1\,628\,160z^4+12\,730\,368z^3-1\,854\,720z^2+2\,207\,520z-2\,962\,575\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.9452.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{5}{4};z\right)= $$
$$ -\frac{1}{15\,663\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072z^5-8\,192\,000z^4+98\,926\,080z^3-159\,264\,000z^2-61\,790\,400z-15\,663\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 16\sqrt{z}\left(4096z^4-253\,440z^3+2\,938\,320z^2-3\,427\,200z-2\,187\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.\left(-131\,072z^5+8\,159\,232z^4-96\,929\,280z^3+137\,491\,200z^2+75\,600\,000z+20\,738\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9453.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{5}{4};-z\right)= \frac{1}{15\,663\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072z^5+8\,192\,000z^4+98\,926\,080z^3+159\,264\,000z^2-61\,790\,400z+15\,663\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- 16\sqrt{z}\left(4096z^4+253\,440z^3+2\,938\,320z^2+3\,427\,200z-2\,187\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ \left(131\,072z^5+8\,159\,232z^4+96\,929\,280z^3+137\,491\,200z^2-75\,600\,000z+20\,738\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9454.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{3}{4};z\right)= \frac{1}{7\,518\,420\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-8192e^{4\sqrt{z}}z^5+8192z^5-2048e^{4\sqrt{z}}z^{9/2}-2048z^{9/2}+611\,328e^{4\sqrt{z}}z^4-611\,328z^4+ 151\,296e^{4\sqrt{z}}z^{7/2}+151\,296z^{7/2}-9\,655\,968e^{4\sqrt{z}}z^3+9\,655\,968z^3-2\,305\,800e^{4\sqrt{z}}z^{5/2}- 2\,305\,800z^{5/2}+2e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-306\,432z^2+4\,883\,760z-14\,549\,535\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+ 2e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-306\,432z^2+4\,883\,760z-14\,549\,535\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+ 27\,498\,240e^{4\sqrt{z}}z^2-27\,498\,240z^2+5\,483\,520e^{4\sqrt{z}}z^{3/2}+5\,483\,520z^{3/2}+2\,751\,840e^{4\sqrt{z}}z- 2\,751\,840z+1\,784\,160e^{4\sqrt{z}}\sqrt{z}+1\,784\,160\sqrt{z}+987\,525e^{4\sqrt{z}}-987\,525\right)\right) $$

07.22.03.9455.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{3}{4};-z\right)= \frac{1}{3\,759\,210\sqrt{z}}\left(-4\sqrt{\pi}\left(4096z^3+306\,432z^2+4\,883\,760z+14\,549\,535\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}- 8\left(256z^4+18\,912z^3+288\,225z^2+685\,440z-223\,020\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+ \left(8192z^5+611\,328z^4+9\,655\,968z^3+27\,498\,240z^2-2\,751\,840z+987\,525\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.9456.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{1}{4};z\right)= \frac{1}{21\,928\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536z^5-5\,730\,304z^4+114\,835\,200z^3-525\,969\,360z^2+312\,404\,400z+21\,928\,725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- 8\sqrt{z}\left(4096z^4-355\,584z^3+6\,960\,240z^2-28\,941\,255z+7\,508\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- \left(65\,536z^5-5\,713\,920z^4+113\,428\,224z^3-499\,378\,320z^2+216\,442\,800z+20\,738\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9457.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},-\frac{1}{4};-z\right)= $$
$$ -\frac{1}{21\,928\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536z^5+5\,730\,304z^4+114\,835\,200z^3+525\,969\,360z^2+312\,404\,400z-21\,928\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 8\sqrt{z}\left(4096z^4+355\,584z^3+6\,960\,240z^2+28\,941\,255z+7\,508\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.\left(65\,536z^5+5\,713\,920z^4+113\,428\,224z^3+499\,378\,320z^2+216\,442\,800z-20\,738\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9458.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{1}{4};z\right)=\frac{1}{320\,785\,920\sqrt{z}} $$
$$ \left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536z^4+6\,537\,216z^3-156\,280\,320z^2+931\,170\,240z-916\,620\,705\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+\right.\right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536z^4+6\,537\,216z^3-156\,280\,320z^2+931\,170\,240z-916\,620\,705\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+ $$
$$ 4\left(-16\,384z^5+4096z^{9/2}+1\,631\,232z^4-404\,736z^{7/2}-38\,770\,368z^3+\right. $$
$$ 9\,399\,600z^{5/2}+226\,095\,660z^2-50\,414\,175z^{3/2}-197\,890\,560z+27\,457\,920\sqrt{z}+ $$
$$ \left.\left.e^{4\sqrt{z}}\left(16\,384z^5+4096z^{9/2}-1\,631\,232z^4-404\,736z^{7/2}+38\,770\,368z^3+9\,399\,600z^{5/2}-\right.\right.\right. $$
$$ \left.\left.\left.\left.226\,095\,660z^2-50\,414\,175z^{3/2}+197\,890\,560z+27\,457\,920\sqrt{z}+6\,320\,160\right)-6\,320\,160\right)\right)\right) $$

07.22.03.9459.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{1}{4};-z\right)= $$
$$ \frac{1}{80\,196\,480\sqrt{z}}\left(\sqrt{\pi}\left(65\,536z^4+6\,537\,216z^3+156\,280\,320z^2+931\,170\,240z+916\,620\,705\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+\right. $$
$$ 2\left(\sqrt{z}\left(4096z^4+404\,736z^3+9\,399\,600z^2+50\,414\,175z+27\,457\,920\right)\cos\left(2\sqrt{z}\right)-\right. $$
$$ \left.\left.4\left(4096z^5+407\,808z^4+9\,692\,592z^3+56\,523\,915z^2+49\,472\,640z-1\,580\,040\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9460.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{3}{4};z\right)=-\frac{1}{789\,434\,100\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(2\left(65\,536z^5-7\,364\,608z^4+206\,254\,080z^3-1\,558\,357\,920z^2+2\,460\,151\,575z-394\,717\,050\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ \sqrt{z}\left(-65\,536z^4+7\,323\,648z^3-201\,761\,280z^2+1\,441\,056\,960z-1\,757\,175\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.2\left(-65\,536z^5+7\,348\,224z^4-204\,438\,528z^3+1\,509\,550\,560z^2-2\,138\,794\,875z+124\,428\,150\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9461.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{3}{4};-z\right)=\frac{1}{789\,434\,100\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(2\left(65\,536\,z^5+7\,364\,608\,z^4+206\,254\,080\,z^3+1\,558\,357\,920\,z^2+2\,460\,151\,575\,z+394\,717\,050\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\sqrt{z}\left(65\,536\,z^4+7\,323\,648\,z^3+201\,761\,280\,z^2+1\,441\,056\,960\,z+1\,757\,175\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\left(65\,536\,z^5+7\,348\,224\,z^4+204\,438\,528\,z^3+1\,509\,550\,560\,z^2+2\,138\,794\,875\,z+124\,428\,150\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9462.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{102\,651\,494\,400\sqrt{z}}\left(e^{-2\sqrt{z}}\left(4\left(-262\,144\,z^5+65\,536\,z^{9/2}+32\,636\,928\,z^4-8\,110\,080\,z^{7/2}-1\,035\,847\,680\,z^3+\right.\right.\right.$$
$$253\,048\,320\,z^{5/2}+9\,129\,093\,120\,z^2-2\,111\,739\,840\,z^{3/2}-16\,938\,954\,900\,z+3\,127\,028\,625\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(262\,144\,z^5+65\,536\,z^{9/2}-32\,636\,928\,z^4-8\,110\,080\,z^{7/2}+1\,035\,847\,680\,z^3+253\,048\,320\,z^{5/2}-\right.$$
$$\left.9\,129\,093\,120\,z^2-2\,111\,739\,840\,z^{3/2}+16\,938\,954\,900\,z+3\,127\,028\,625\sqrt{z}-2\,022\,451\,200\right)+$$
$$\left.2\,022\,451\,200\right)+e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(-1\,048\,576\,z^5+130\,744\,320\,z^4-4\,167\,475\,200\,z^3+\right.$$
$$37\,246\,809\,600\,z^2-73\,329\,656\,400\,z+13\,749\,310\,575\left.\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(-1\,048\,576\,z^5+130\,744\,320\,z^4-4\,167\,475\,200\,z^3+37\,246\,809\,600\,z^2-\right.$$
$$\left.\left.\left.73\,329\,656\,400\,z+13\,749\,310\,575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.9463.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{5}{4};-z\right)=\frac{1}{25\,662\,873\,600\sqrt{z}}$$
$$\left(\sqrt{\pi}\sqrt[4]{z}\left(1\,048\,576\,z^5+130\,744\,320\,z^4+4\,167\,475\,200\,z^3+37\,246\,809\,600\,z^2+73\,329\,656\,400\,z+13\,749\,310\,575\right)\right.$$
$$C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\left(4\left(65\,536\,z^5+8\,159\,232\,z^4+258\,961\,920\,z^3+2\,282\,273\,280\,z^2+4\,234\,738\,725\,z+505\,612\,800\right)\right.$$
$$\left.\left.\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(65\,536\,z^4+8\,110\,080\,z^3+253\,048\,320\,z^2+2\,111\,739\,840\,z+3\,127\,028\,625\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.9464.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{7}{4};z\right)=\frac{1}{92\,626\,934\,400\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(-2\sqrt{z}\left(1\,048\,576z^5-143\,982\,592z^4+5\,179\,514\,880z^3-54\,553\,443\,840z^2+139\,844\,350\,800z-50\,896\,570\,725\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1\,048\,576z^5-143\,327\,232z^4+5\,091\,287\,040z^3-51\,545\,894\,400z^2+\right.$$
$$\left.112\,937\,101\,200z-13\,749\,310\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576z^5-143\,720\,448z^4+\right.$$
$$\left.\left.\left.5\,143\,928\,832z^3-53\,312\,878\,080z^2+127\,983\,738\,960z-30\,049\,398\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9465.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{7}{4};-z\right)=\frac{1}{92\,626\,934\,400\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576z^5+143\,982\,592z^4+5\,179\,514\,880z^3+54\,553\,443\,840z^2+139\,844\,350\,800z+50\,896\,570\,725\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(1\,048\,576z^5+143\,327\,232z^4+5\,091\,287\,040z^3+51\,545\,894\,400z^2+\right.$$
$$\left.112\,937\,101\,200z+13\,749\,310\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576z^5+143\,720\,448z^4+\right.$$
$$\left.\left.\left.5\,143\,928\,832z^3+53\,312\,878\,080z^2+127\,983\,738\,960z+30\,049\,398\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9466.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{7\,883\,634\,769\,920z^{5/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-4\,194\,304z^{11/2}+1\,048\,576z^5+626\,786\,304z^{9/2}-155\,910\,144z^4-\right.\right.\right.$$
$$24\,888\,901\,632z^{7/2}+6\,107\,996\,160z^3+293\,532\,825\,600z^{5/2}-69\,177\,669\,120z^2-832\,878\,607\,680z^{3/2}+$$
$$168\,602\,106\,960z+240\,541\,339\,500\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^{11/2}+1\,048\,576z^5-626\,786\,304z^{9/2}-\right.$$
$$\left.155\,910\,144z^4+24\,888\,901\,632z^{7/2}+6\,107\,996\,160z^3-293\,532\,825\,600z^{5/2}-69\,177\,669\,120z^2+\right.$$
$$\left.832\,878\,607\,680z^{3/2}+168\,602\,106\,960z-240\,541\,339\,500\sqrt{z}-13\,749\,310\,575\right)-13\,749\,310\,575\Big)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-2\,510\,290\,944z^5+100\,019\,404\,800z^4-1\,191\,897\,907\,200z^3+\right.$$
$$\left.3\,519\,823\,507\,200z^2-1\,319\,933\,815\,200z-13\,749\,310\,575\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-2\,510\,290\,944z^5+100\,019\,404\,800z^4-1\,191\,897\,907\,200z^3+\right.$$
$$\left.\left.3\,519\,823\,507\,200z^2-1\,319\,933\,815\,200z-13\,749\,310\,575\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.9467.01

$${}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{1\,970\,908\,692\,480\,z^{5/4}}\left(\sqrt{\pi}\,\left(16\,777\,216\,z^6+2\,510\,290\,944\,z^5+100\,019\,404\,800\,z^4+1\,191\,897\,907\,200\,z^3+\right.\right.$$
$$\left.3\,519\,823\,507\,200\,z^2+1\,319\,933\,815\,200\,z-13\,749\,310\,575\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(1\,048\,576\,z^5+156\,696\,576\,z^4+6\,222\,225\,408\,z^3+73\,383\,206\,400\,z^2+208\,219\,651\,920\,z+60\,135\,334\,875\right)\right.$$
$$\sin\left(2\sqrt{z}\right)-\left(1\,048\,576\,z^5+155\,910\,144\,z^4+6\,107\,996\,160\,z^3+\right.$$
$$\left.\left.\left.69\,177\,669\,120\,z^2+168\,602\,106\,960\,z+13\,749\,310\,575\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.9468.01

$${}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{11}{4};z\right)=$$
$$\left(\left(-2\sqrt{z}\,\left(16\,777\,216\,z^6-2\,722\,103\,296\,z^5+119\,611\,392\,000\,z^4-1\,615\,989\,473\,280\,z^3+5\,733\,711\,809\,280\,z^2-\right.\right.\right.$$
$$\left.3\,213\,272\,462\,400\,z+13\,749\,310\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(16\,777\,216\,z^6-2\,711\,617\,536\,z^5+117\,938\,257\,920\,z^4-\right.$$
$$\left.1\,545\,609\,461\,760\,z^3+4\,895\,579\,969\,280\,z^2-1\,319\,933\,815\,200\,z+41\,247\,931\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(16\,777\,216\,z^6-2\,717\,908\,992\,z^5+118\,937\,419\,776\,z^4-1\,587\,119\,063\,040\,z^3+5\,371\,739\,493\,120\,z^2-\right.$$
$$\left.\left.2\,236\,123\,169\,280\,z-41\,247\,931\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)\Big/\left(5\,504\,686\,387\,200\sqrt{2}\;z^{5/4}\right)$$

07.22.03.9469.01

$${}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{11}{4};-z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+2\,722\,103\,296\,z^5+119\,611\,392\,000\,z^4+1\,615\,989\,473\,280\,z^3+5\,733\,711\,809\,280\,z^2+\right.\right.\right.$$
$$\left.3\,213\,272\,462\,400\,z+13\,749\,310\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,777\,216\,z^6+2\,711\,617\,536\,z^5+117\,938\,257\,920\,z^4+\right.$$
$$\left.1\,545\,609\,461\,760\,z^3+4\,895\,579\,969\,280\,z^2+1\,319\,933\,815\,200\,z+41\,247\,931\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(16\,777\,216\,z^6+2\,717\,908\,992\,z^5+118\,937\,419\,776\,z^4+1\,587\,119\,063\,040\,z^3+5\,371\,739\,493\,120\,z^2+\right.$$
$$\left.\left.2\,236\,123\,169\,280\,z-41\,247\,931\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)\Big/\left(5\,504\,686\,387\,200\sqrt{2}\;z^{5/4}\right)$$

07.22.03.9470.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{13}{4};z\right)=
$$

$$
\frac{1}{392\,429\,819\,658\,240\,z^{9/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-67\,108\,864\,z^{13/2}+16\,777\,216\,z^{6}+11\,702\,108\,160\,z^{11/2}-2\,912\,944\,128\,z^{5}-\right.\right.\right.
$$

$$
557\,939\,687\,424\,z^{9/2}+137\,343\,467\,520\,z^{4}+8\,242\,899\,517\,440\,z^{7/2}-1\,964\,803\,276\,800\,z^{3}-
$$

$$
31\,489\,397\,775\,360\,z^{5/2}+6\,686\,560\,177\,920\,z^{2}+14\,640\,397\,833\,600\,z^{3/2}-1\,319\,933\,815\,200\,z+
$$

$$
274\,986\,211\,500\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^{6}-11\,702\,108\,160\,z^{11/2}-\right.
$$

$$
2\,912\,944\,128\,z^{5}+557\,939\,687\,424\,z^{9/2}+137\,343\,467\,520\,z^{4}-8\,242\,899\,517\,440\,z^{7/2}-
$$

$$
1\,964\,803\,276\,800\,z^{3}+31\,489\,397\,775\,360\,z^{5/2}+6\,686\,560\,177\,920\,z^{2}-14\,640\,397\,833\,600\,z^{3/2}-
$$

$$
\left.1\,319\,933\,815\,200\,z-274\,986\,211\,500\sqrt{z}+206\,239\,658\,625\right)+206\,239\,658\,625\Big)-
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^{7}-46\,858\,764\,288\,z^{6}+2\,240\,434\,667\,520\,z^{5}-33\,373\,141\,401\,600\,z^{4}+\right.
$$

$$
\left.131\,406\,744\,268\,800\,z^{3}-73\,916\,293\,651\,200\,z^{2}-1\,539\,922\,784\,400\,z+206\,239\,658\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^{7}-46\,858\,764\,288\,z^{6}+2\,240\,434\,667\,520\,z^{5}-33\,373\,141\,401\,600\,z^{4}+\right.
$$

$$
\left.\left.\left.131\,406\,744\,268\,800\,z^{3}-73\,916\,293\,651\,200\,z^{2}-1\,539\,922\,784\,400\,z+206\,239\,658\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)
$$

07.22.03.9471.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{13}{4};-z\right)=
$$

$$
\frac{1}{98\,107\,454\,914\,560\,z^{9/4}}\left(\sqrt{\pi}\left(268\,435\,456\,z^{7}+46\,858\,764\,288\,z^{6}+2\,240\,434\,667\,520\,z^{5}+33\,373\,141\,401\,600\,z^{4}+\right.\right.
$$

$$
\left.131\,406\,744\,268\,800\,z^{3}+73\,916\,293\,651\,200\,z^{2}-1\,539\,922\,784\,400\,z-206\,239\,658\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$

$$
2\sqrt[4]{z}\left(\left(16\,777\,216\,z^{6}+2\,912\,944\,128\,z^{5}+137\,343\,467\,520\,z^{4}+1\,964\,803\,276\,800\,z^{3}+\right.\right.
$$

$$
\left.6\,686\,560\,177\,920\,z^{2}+1\,319\,933\,815\,200\,z+206\,239\,658\,625\right)\cos\left(2\sqrt{z}\right)-
$$

$$
4\sqrt{z}\left(16\,777\,216\,z^{6}+2\,925\,527\,040\,z^{5}+139\,484\,921\,856\,z^{4}+2\,060\,724\,879\,360\,z^{3}+\right.
$$

$$
\left.\left.\left.7\,872\,349\,443\,840\,z^{2}+3\,660\,099\,458\,400\,z-68\,746\,552\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\Bigg)
$$

07.22.03.9472.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{15}{4};z\right)= $$

$$ \left(\left(2\sqrt{z}\,\left(-268\,435\,456\,z^7+50\,247\,761\,920\,z^6-2\,608\,296\,099\,840\,z^5+43\,007\,002\,214\,400\,z^4-194\,938\,626\,355\,200\,z^3+\right.\right.\right. $$

$$ 146\,935\,188\,691\,200\,z^2-1\,099\,944\,846\,000\,z+481\,225\,870\,125\big)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ $$

$$ \left(268\,435\,456\,z^7-50\,079\,989\,760\,z^6+2\,577\,342\,136\,320\,z^5-41\,458\,094\,899\,200\,z^4+171\,897\,726\,873\,600\,z^3-\right. $$

$$ 73\,916\,293\,651\,200\,z^2+1\,099\,944\,846\,000\,z-1\,443\,677\,610\,375\big)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7-50\,180\,653\,056\,z^6+2\,595\,839\,016\,960\,z^5-42\,374\,062\,080\,000\,z^4+\right. $$

$$ \left.\left.\left.185\,118\,248\,448\,000\,z^3-111\,046\,980\,844\,800\,z^2-4\,179\,790\,414\,800\,z+1\,443\,677\,610\,375\right)\right. $$

$$ \left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(240\,204\,496\,896\,000\,\sqrt{2}\;z^{9/4}\right) $$

07.22.03.9473.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{15}{4};-z\right)= $$

$$ \left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+50\,247\,761\,920\,z^6+2\,608\,296\,099\,840\,z^5+43\,007\,002\,214\,400\,z^4+194\,938\,626\,355\,200\,z^3+\right.\right.\right. $$

$$ 146\,935\,188\,691\,200\,z^2+1\,099\,944\,846\,000\,z+481\,225\,870\,125\big)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- $$

$$ \left(268\,435\,456\,z^7+50\,079\,989\,760\,z^6+2\,577\,342\,136\,320\,z^5+41\,458\,094\,899\,200\,z^4+171\,897\,726\,873\,600\,z^3+\right. $$

$$ 73\,916\,293\,651\,200\,z^2+1\,099\,944\,846\,000\,z+1\,443\,677\,610\,375\big)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7+50\,180\,653\,056\,z^6+2\,595\,839\,016\,960\,z^5+42\,374\,062\,080\,000\,z^4+\right. $$

$$ \left.\left.\left.185\,118\,248\,448\,000\,z^3+111\,046\,980\,844\,800\,z^2-4\,179\,790\,414\,800\,z-1\,443\,677\,610\,375\right)\right. $$

$$ \left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(240\,204\,496\,896\,000\,\sqrt{2}\;z^{9/4}\right) $$

07.22.03.9474.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{17}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}+214\,010\,167\,296\,z^{13/2}-53\,301\,215\,232\,z^{6}-11\,909\,260\,640\,256\,z^{11/2}+\right.\right.\right.
$$
$$
2\,938\,031\,308\,800\,z^{5}+211\,432\,805\,498\,880\,z^{9/2}-50\,785\,312\,112\,640\,z^{4}-1\,015\,596\,711\,198\,720\,z^{7/2}+
$$
$$
222\,155\,248\,250\,880\,z^{3}+654\,565\,319\,654\,400\,z^{5/2}-73\,916\,293\,651\,200\,z^{2}+
$$
$$
27\,278\,632\,180\,800\,z^{3/2}+12\,539\,371\,244\,400\,z-17\,324\,131\,324\,500\sqrt{z}+e^{4\sqrt{z}}
$$
$$
\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-214\,010\,167\,296\,z^{13/2}-53\,301\,215\,232\,z^{6}+11\,909\,260\,640\,256\,z^{11/2}+\right.
$$
$$
2\,938\,031\,308\,800\,z^{5}-211\,432\,805\,498\,880\,z^{9/2}-50\,785\,312\,112\,640\,z^{4}+1\,015\,596\,711\,198\,720\,z^{7/2}+
$$
$$
222\,155\,248\,250\,880\,z^{3}-654\,565\,319\,654\,400\,z^{5/2}-73\,916\,293\,651\,200\,z^{2}-27\,278\,632\,180\,800\,z^{3/2}+
$$
$$
\left.12\,539\,371\,244\,400\,z+17\,324\,131\,324\,500\sqrt{z}-12\,993\,098\,493\,375\right)-12\,993\,098\,493\,375\Big)-
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-856\,845\,975\,552\,z^{7}+47\,795\,939\,573\,760\,z^{6}-854\,352\,419\,880\,960\,z^{5}+\right.
$$
$$
4\,205\,015\,816\,601\,600\,z^{4}-3\,153\,761\,862\,451\,200\,z^{3}-98\,555\,058\,201\,600\,z^{2}+
$$
$$
\left.26\,398\,676\,304\,000\,z-12\,993\,098\,493\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-856\,845\,975\,552\,z^{7}+47\,795\,939\,573\,760\,z^{6}-854\,352\,419\,880\,960\,z^{5}+\right.
$$
$$
4\,205\,015\,816\,601\,600\,z^{4}-3\,153\,761\,862\,451\,200\,z^{3}-98\,555\,058\,201\,600\,z^{2}+
$$
$$
\left.\left.\left.26\,398\,676\,304\,000\,z-12\,993\,098\,493\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(15\,455\,697\,512\,693\,760\,z^{13/4}\right)
$$

07.22.03.9475.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{17}{4};-z\right)=
\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^{8}+856\,845\,975\,552\,z^{7}+47\,795\,939\,573\,760\,z^{6}+854\,352\,419\,880\,960\,z^{5}+4\,205\,015\,816\,601\,600\,z^{4}+\right.\right.
$$
$$
\left.3\,153\,761\,862\,451\,200\,z^{3}-98\,555\,058\,201\,600\,z^{2}-26\,398\,676\,304\,000\,z-12\,993\,098\,493\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$
$$
2\sqrt[4]{z}\left(\left(268\,435\,456\,z^{7}+53\,301\,215\,232\,z^{6}+2\,938\,031\,308\,800\,z^{5}+50\,785\,312\,112\,640\,z^{4}+222\,155\,248\,250\,880\,z^{3}+\right.\right.
$$
$$
73\,916\,293\,651\,200\,z^{2}+12\,539\,371\,244\,400\,z+12\,993\,098\,493\,375\Big)\cos\left(2\sqrt{z}\right)-4\sqrt{z}
$$
$$
\left(268\,435\,456\,z^{7}+53\,502\,541\,824\,z^{6}+2\,977\,315\,160\,064\,z^{5}+52\,858\,201\,374\,720\,z^{4}+253\,899\,177\,799\,680\,z^{3}+\right.
$$
$$
\left.\left.\left.163\,641\,329\,913\,600\,z^{2}-6\,819\,658\,045\,200\,z-4\,331\,032\,831\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(3\,863\,924\,378\,173\,440\,z^{13/4}\right)
$$

07.22.03.9476.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{19}{4};z\right)= \left(\left(-2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-911\,069\,937\,664\,z^7+54\,551\,956\,684\,800\,z^6-1\,061\,963\,389\,992\,960\,z^5+5\,859\,143\,752\,089\,600\right.\right.\right. $$
$$ \left.\left.\left. z^4-5\,539\,100\,300\,697\,600\,z^3+49\,277\,529\,100\,800\,z^2-10\,999\,448\,460\,000\,z+47\,641\,361\,142\,375\right)\right. $$
$$ \left. I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4\,294\,967\,296\,z^8-908\,385\,583\,104\,z^7+53\,989\,752\,176\,640\,z^6-1\,029\,348\,765\,204\,480\,z^5+\right.\right. $$
$$ \left.\left. 5\,277\,118\,552\,473\,600\,z^4-3\,153\,761\,862\,451\,200\,z^3-56\,317\,176\,115\,200\,z^2+\right.\right. $$
$$ \left.\left. 184\,790\,734\,128\,000\,z+142\,924\,083\,427\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ \right. $$
$$ \left. 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-909\,996\,195\,840\,z^7+54\,325\,866\,921\,984\,z^6-1\,048\,673\,381\,253\,120\,z^5+\right.\right. $$
$$ \left.\left. 5\,613\,365\,211\,955\,200\,z^4-4\,404\,291\,978\,240\,000\,z^3-246\,387\,645\,504\,000\,z^2+\right.\right. $$
$$ \left.\left. 120\,113\,977\,183\,200\,z-142\,924\,083\,427\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(8\,711\,416\,420\,761\,600\sqrt{2}\;z^{13/4}\right) $$

07.22.03.9477.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{19}{4};-z\right)= \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+911\,069\,937\,664\,z^7+54\,551\,956\,684\,800\,z^6+1\,061\,963\,389\,992\,960\,z^5+5\,859\,143\,752\,089\,600\,z^4+\right.\right.\right. $$
$$ \left.\left.\left. 5\,539\,100\,300\,697\,600\,z^3+49\,277\,529\,100\,800\,z^2+10\,999\,448\,460\,000\,z+47\,641\,361\,142\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$
$$ \left.\left(4\,294\,967\,296\,z^8+908\,385\,583\,104\,z^7+53\,989\,752\,176\,640\,z^6+1\,029\,348\,765\,204\,480\,z^5+5\,277\,118\,552\,473\,600\right.\right. $$
$$ \left.\left. z^4+3\,153\,761\,862\,451\,200\,z^3-56\,317\,176\,115\,200\,z^2-184\,790\,734\,128\,000\,z+142\,924\,083\,427\,125\right)\right. $$
$$ \left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+909\,996\,195\,840\,z^7+54\,325\,866\,921\,984\,z^6+\right.\right. $$
$$ \left.\left. 1\,048\,673\,381\,253\,120\,z^5+5\,613\,365\,211\,955\,200\,z^4+4\,404\,291\,978\,240\,000\,z^3-246\,387\,645\,504\,000\,z^2-\right.\right. $$
$$ \left.\left. 120\,113\,977\,183\,200\,z-142\,924\,083\,427\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(8\,711\,416\,420\,761\,600\sqrt{2}\;z^{13/4}\right) $$

07.22.03.9478.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{21}{4};z\right) = \left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}+3\,852\,585\,664\,512\,z^{15/2}-959\,925\,190\,656\,z^{7}-245\,091\,771\,875\,328\,z^{13/2}+60\,564\,072\,038\,400\,z^{6}+5\,081\,563\,461\,058\,560\,z^{11/2}-1\,227\,334\,090\,752\,000\,z^{5}-29\,406\,532\,911\,759\,360\,z^{9/2}+6\,564\,895\,081\,758\,720\,z^{4}+24\,294\,305\,111\,408\,640\,z^{7/2}-3\,153\,761\,862\,451\,200\,z^{3}+1\,576\,880\,931\,225\,600\,z^{5/2}+408\,299\,526\,835\,200\,z^{2}-1\,362\,171\,697\,286\,400\,z^{3/2}+110\,874\,440\,476\,800\,z+2\,477\,350\,779\,403\,500\sqrt{z}+e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}-3\,852\,585\,664\,512\,z^{15/2}-959\,925\,190\,656\,z^{7}+245\,091\,771\,875\,328\,z^{13/2}+60\,564\,072\,038\,400\,z^{6}-5\,081\,563\,461\,058\,560\,z^{11/2}-1\,227\,334\,090\,752\,000\,z^{5}+29\,406\,532\,911\,759\,360\,z^{9/2}+6\,564\,895\,081\,758\,720\,z^{4}-24\,294\,305\,111\,408\,640\,z^{7/2}-3\,153\,761\,862\,451\,200\,z^{3}-1\,576\,880\,931\,225\,600\,z^{5/2}+408\,299\,526\,835\,200\,z^{2}+1\,362\,171\,697\,286\,400\,z^{3/2}+110\,874\,440\,476\,800\,z-2\,477\,350\,779\,403\,500\sqrt{z}+1\,858\,013\,084\,552\,625\right)+1\,858\,013\,084\,552\,625\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-15\,423\,227\,559\,936\,z^{8}+983\,230\,756\,945\,920\,z^{7}-20\,504\,458\,077\,143\,040\,z^{6}+121\,104\,455\,518\,126\,080\,z^{5}-113\,535\,427\,048\,243\,200\,z^{4}-4\,730\,642\,793\,676\,800\,z^{3}+1\,900\,704\,693\,888\,000\,z^{2}-1\,871\,006\,183\,046\,000\,z+1\,858\,013\,084\,552\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-15\,423\,227\,559\,936\,z^{8}+983\,230\,756\,945\,920\,z^{7}-20\,504\,458\,077\,143\,040\,z^{6}+121\,104\,455\,518\,126\,080\,z^{5}-113\,535\,427\,048\,243\,200\,z^{4}-4\,730\,642\,793\,676\,800\,z^{3}+1\,900\,704\,693\,888\,000\,z^{2}-1\,871\,006\,183\,046\,000\,z+1\,858\,013\,084\,552\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big/\left(523\,675\,398\,077\,153\,280\,z^{17/4}\right) $$

07.22.03.9479.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{21}{4};-z\right) = \left(\sqrt{\pi}\left(68\,719\,476\,736\,z^{9}+15\,423\,227\,559\,936\,z^{8}+983\,230\,756\,945\,920\,z^{7}+20\,504\,458\,077\,143\,040\,z^{6}+121\,104\,455\,518\,126\,080\,z^{5}+113\,535\,427\,048\,243\,200\,z^{4}-4\,730\,642\,793\,676\,800\,z^{3}-1\,900\,704\,693\,888\,000\,z^{2}-1\,871\,006\,183\,046\,000\,z-1\,858\,013\,084\,552\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(4\,294\,967\,296\,z^{8}+959\,925\,190\,656\,z^{7}+60\,564\,072\,038\,400\,z^{6}+1\,227\,334\,090\,752\,000\,z^{5}+6\,564\,895\,081\,758\,720\,z^{4}+3\,153\,761\,862\,451\,200\,z^{3}+408\,299\,526\,835\,200\,z^{2}+110\,874\,440\,476\,800\,z+1\,858\,013\,084\,552\,625\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(4\,294\,967\,296\,z^{8}+963\,146\,416\,128\,z^{7}+61\,272\,942\,968\,832\,z^{6}+1\,270\,390\,865\,264\,640\,z^{5}+7\,351\,633\,227\,939\,840\,z^{4}+6\,073\,576\,277\,852\,160\,z^{3}-394\,220\,232\,806\,400\,z^{2}-340\,542\,924\,321\,600\,z-619\,337\,694\,850\,875\right)\sin\left(2\sqrt{z}\right)\right)\Big/\left(130\,918\,849\,519\,288\,320\,z^{17/4}\right) $$

07.22.03.9480.01

$${}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{23}{4};z\right)=$$
$$-\left(\left(2\sqrt{z}\left(68\,719\,476\,736\,z^9-16\,290\,810\,953\,728\,z^8+1\,105\,250\,777\,825\,280\,z^7-24\,808\,058\,592\,952\,320\,z^6+\right.\right.\right.$$
$$161\,296\,911\,433\,728\,000\,z^5-183\,226\,758\,414\,336\,000\,z^4+1\,576\,880\,931\,225\,600\,z^3+$$
$$\left.985\,550\,582\,016\,000\,z^2-3\,375\,730\,732\,374\,000\,z-9\,290\,065\,422\,763\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(-68\,719\,476\,736\,z^9+16\,247\,861\,280\,768\,z^8-1\,095\,184\,448\,225\,280\,z^7+24\,143\,840\,893\,992\,960\,z^6-\right.$$
$$147\,469\,561\,705\,267\,200\,z^5+113\,535\,427\,048\,243\,200\,z^4+6\,307\,523\,724\,902\,400\,z^3-$$
$$\left.17\,528\,721\,065\,856\,000\,z^2+52\,596\,062\,701\,182\,000\,z+27\,870\,196\,268\,289\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(-68\,719\,476\,736\,z^9+16\,273\,631\,084\,544\,z^8-1\,101\,204\,918\,632\,448\,z^7+24\,537\,982\,996\,316\,160\,z^6-\right.$$
$$155\,497\,927\,960\,166\,400\,z^5+150\,839\,652\,689\,510\,400\,z^4+11\,038\,166\,518\,579\,200\,z^3-$$
$$\left.6\,166\,730\,784\,614\,400\,z^2+6\,860\,356\,004\,502\,000\,z-27\,870\,196\,268\,289\,375\right)$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(278\,765\,325\,464\,371\,200\sqrt{2}\,z^{17/4}\right)$$

07.22.03.9481.01

$${}_1F_2\left(-\frac{19}{4};\frac{3}{2},\frac{23}{4};-z\right)=$$
$$\left(\left(2\sqrt{z}\left(68\,719\,476\,736\,z^9+16\,290\,810\,953\,728\,z^8+1\,105\,250\,777\,825\,280\,z^7+24\,808\,058\,592\,952\,320\,z^6+\right.\right.\right.$$
$$161\,296\,911\,433\,728\,000\,z^5+183\,226\,758\,414\,336\,000\,z^4+1\,576\,880\,931\,225\,600\,z^3-$$
$$\left.985\,550\,582\,016\,000\,z^2-3\,375\,730\,732\,374\,000\,z+9\,290\,065\,422\,763\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(68\,719\,476\,736\,z^9+16\,247\,861\,280\,768\,z^8+1\,095\,184\,448\,225\,280\,z^7+24\,143\,840\,893\,992\,960\,z^6+\right.$$
$$147\,469\,561\,705\,267\,200\,z^5+113\,535\,427\,048\,243\,200\,z^4-6\,307\,523\,724\,902\,400\,z^3-$$
$$\left.17\,528\,721\,065\,856\,000\,z^2-52\,596\,062\,701\,182\,000\,z+27\,870\,196\,268\,289\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(68\,719\,476\,736\,z^9+16\,273\,631\,084\,544\,z^8+1\,101\,204\,918\,632\,448\,z^7+24\,537\,982\,996\,316\,160\,z^6+\right.$$
$$155\,497\,927\,960\,166\,400\,z^5+150\,839\,652\,689\,510\,400\,z^4-11\,038\,166\,518\,579\,200\,z^3-$$
$$\left.6\,166\,730\,784\,614\,400\,z^2-6\,860\,356\,004\,502\,000\,z-27\,870\,196\,268\,289\,375\right)$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(278\,765\,325\,464\,371\,200\sqrt{2}\,z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{19}{4}$, $b_1 = \frac{5}{2}$

07.22.03.9482.01

$${}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{23}{4};z\right)=-\frac{3\left((8z+29)\sinh\left(2\sqrt{z}\right)-58\sqrt{z}\cosh\left(2\sqrt{z}\right)\right)}{184\,z^{3/2}}$$

07.22.03.9483.01

$${}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{23}{4};-z\right)=-\frac{3\left(58\sqrt{z}\cos\left(2\sqrt{z}\right)+(8z-29)\sin\left(2\sqrt{z}\right)\right)}{184\,z^{3/2}}$$

07.22.03.9484.01

$${}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{21}{4};z\right)=$$
$$\left(\left(32z\left(524\,288z^5+23\,265\,280z^4+570\,808\,320z^3+7\,739\,481\,600z^2+48\,763\,045\,800z+82\,816\,459\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(2\,097\,152z^5+94\,371\,840z^4+2\,344\,919\,040z^3+32\,565\,657\,600z^2+219\,645\,972\,000z+897\,189\,175\,575\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(16\,777\,216z^6+748\,683\,264z^5+18\,458\,542\,080z^4+252\,551\,577\,600z^3+1\,631\,151\,648\,000\right.$$
$$\left.\left.z^2+3\,190\,005\,957\,600z-2\,691\,567\,526\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(1\,453\,874\,467\,500\sqrt{2}\,z^{3/4}\right)$$

07.22.03.9485.01

$${}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{21}{4};-z\right)=$$
$$\left(\left(-32z\left(524\,288z^5-23\,265\,280z^4+570\,808\,320z^3-7\,739\,481\,600z^2+48\,763\,045\,800z-82\,816\,459\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(2\,097\,152z^5-94\,371\,840z^4+2\,344\,919\,040z^3-32\,565\,657\,600z^2+219\,645\,972\,000z-897\,189\,175\,575\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-16\,777\,216z^6+748\,683\,264z^5-18\,458\,542\,080z^4+252\,551\,577\,600z^3-1\,631\,151\,648\,000\right.$$
$$\left.\left.z^2+3\,190\,005\,957\,600z+2\,691\,567\,526\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(1\,453\,874\,467\,500\sqrt{2}\,z^{3/4}\right)$$

07.22.03.9486.01

$${}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{19}{4};z\right)=\frac{3\cosh\left(2\sqrt{z}\right)}{4z}-\frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.9487.01

$${}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{19}{4};-z\right)=\frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}}$$

07.22.03.9488.01

$${}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{17}{4};z\right)=\frac{1}{69\,232\,117\,500\sqrt{2}\,z^{3/4}}$$
$$\left(\left(8z\left(1\,048\,576z^5+15\,400\,960z^4+227\,184\,640z^3+2\,198\,419\,200z^2+10\,719\,651\,600z+14\,192\,219\,475\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(1\,048\,576z^5+16\,056\,320z^4+238\,571\,520z^3+2\,378\,476\,800z^2+12\,818\,106\,000z+33\,229\,228\,725\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(8\,388\,608z^6+125\,304\,832z^5+1\,851\,555\,840z^4+18\,105\,292\,800z^3+\right.$$
$$\left.\left.91\,247\,184\,000z^2+150\,253\,903\,800z-99\,687\,686\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.9489.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{17}{4};-z\right)=\frac{1}{69\,232\,117\,500\sqrt{2}\,z^{3/4}}\left(\left(-8z\left(1\,048\,576z^5-15\,400\,960z^4+227\,184\,640z^3-2\,198\,419\,200z^2+10\,719\,651\,600z-14\,192\,219\,475\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1\,048\,576z^5-16\,056\,320z^4+238\,571\,520z^3-2\,378\,476\,800z^2+12\,818\,106\,000z-33\,229\,228\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-8\,388\,608z^6+125\,304\,832z^5-1\,851\,555\,840z^4+18\,105\,292\,800z^3-91\,247\,184\,000z^2+150\,253\,903\,800z+99\,687\,686\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9490.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{15}{4};z\right)=\frac{1}{96\,486\,390\,000\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(-8\,388\,608\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{25/4}-8\,388\,608\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{25/4}+8\,388\,608\,e^{4\sqrt{z}}z^6-8\,388\,608z^6+2\,097\,152\,e^{4\sqrt{z}}z^{11/2}+2\,097\,152z^{11/2}+1\,572\,864\,e^{4\sqrt{z}}z^5-1\,572\,864z^5+1\,966\,080\,e^{4\sqrt{z}}z^{9/2}+1\,966\,080z^{9/2}+3\,440\,640\,e^{4\sqrt{z}}z^4-3\,440\,640z^4+7\,741\,440\,e^{4\sqrt{z}}z^{7/2}+7\,741\,440z^{7/2}+21\,288\,960\,e^{4\sqrt{z}}z^3-21\,288\,960z^3+69\,189\,120\,e^{4\sqrt{z}}z^{5/2}+69\,189\,120z^{5/2}+259\,459\,200\,e^{4\sqrt{z}}z^2-259\,459\,200z^2+1\,102\,701\,600\,e^{4\sqrt{z}}z^{3/2}+1\,102\,701\,600z^{3/2}+5\,237\,832\,600\,e^{4\sqrt{z}}z-5\,237\,832\,600z+27\,498\,621\,150\,e^{4\sqrt{z}}\sqrt{z}+27\,498\,621\,150\sqrt{z}-13\,749\,310\,575\,e^{4\sqrt{z}}+13\,749\,310\,575\right)\right) $$

07.22.03.9491.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{15}{4};-z\right)=\frac{1}{48\,243\,195\,000\,z^{3/2}}\left(16\,777\,216\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{25/4}+2\left(1\,048\,576z^5-983\,040z^4+3\,870\,720z^3-34\,594\,560z^2+551\,350\,800z-13\,749\,310\,575\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-8\,388\,608z^6+1\,572\,864z^5-3\,440\,640z^4+21\,288\,960z^3-259\,459\,200z^2+5\,237\,832\,600z+13\,749\,310\,575\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.9492.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{13}{4};z\right)=-\frac{1}{4\,072\,477\,500\sqrt{2}\,z^{3/4}}\left(\left(512z\left(8192z^5-122\,880z^4-581\,120z^3-3\,387\,600z^2-11\,732\,175z-11\,716\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-524\,288z^5+7\,536\,640z^4+41\,226\,240z^3+247\,161\,600z^2+958\,482\,000z+1\,444\,749\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-4\,194\,304z^6+61\,865\,984z^5+311\,623\,680z^4+1\,825\,689\,600z^3+6\,594\,336\,000z^2+8\,516\,415\,600z-4\,334\,247\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9493.01

$${}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{4\,072\,477\,500\sqrt{2}\,z^{3/4}}\left(\left(512\,z\left(8192\,z^5+122\,880\,z^4-581\,120\,z^3+3\,387\,600\,z^2-11\,732\,175\,z+11\,716\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\,\left(524\,288\,z^5+7\,536\,640\,z^4-41\,226\,240\,z^3+247\,161\,600\,z^2-958\,482\,000\,z+1\,444\,749\,075\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(4\,194\,304\,z^6+61\,865\,984\,z^5-311\,623\,680\,z^4+1\,825\,689\,600\,z^3-\right.$$
$$\left.\left.6\,594\,336\,000\,z^2+8\,516\,415\,600\,z+4\,334\,247\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.9494.01

$${}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{11}{4};z\right)=\frac{1}{6\,432\,426\,000\,z^{3/2}}$$
$$\left(e^{-2\sqrt{z}}\left(-2\,097\,152\,e^{4\sqrt{z}}\,z^6+2\,097\,152\,z^6-524\,288\,e^{4\sqrt{z}}\,z^{11/2}-524\,288\,z^{11/2}+131\,072\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z-475)\right.\right.$$
$$\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{21/4}+131\,072\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z-475)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{21/4}+61\,865\,984\,e^{4\sqrt{z}}\,z^5-61\,865\,984\,z^5+$$
$$15\,073\,280\,e^{4\sqrt{z}}\,z^{9/2}+15\,073\,280\,z^{9/2}+10\,813\,440\,e^{4\sqrt{z}}\,z^4-10\,813\,440\,z^4+12\,656\,640\,e^{4\sqrt{z}}\,z^{7/2}+$$
$$12\,656\,640\,z^{7/2}+20\,213\,760\,e^{4\sqrt{z}}\,z^3-20\,213\,760\,z^3+40\,158\,720\,e^{4\sqrt{z}}\,z^{5/2}+40\,158\,720\,z^{5/2}+$$
$$93\,139\,200\,e^{4\sqrt{z}}\,z^2-93\,139\,200\,z^2+237\,837\,600\,e^{4\sqrt{z}}\,z^{3/2}+237\,837\,600\,z^{3/2}+616\,215\,600\,e^{4\sqrt{z}}\,z-$$
$$\left.616\,215\,600\,z+1\,309\,458\,150\,e^{4\sqrt{z}}\,\sqrt{z}+1\,309\,458\,150\,\sqrt{z}-654\,729\,075\,e^{4\sqrt{z}}+654\,729\,075\right)\Bigg)$$

07.22.03.9495.01

$${}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{11}{4};-z\right)=\frac{1}{3\,216\,213\,000\,z^{3/2}}\left(-262\,144\,\sqrt{\pi}\,(16\,z+475)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4}-\right.$$
$$2\left(262\,144\,z^5+7\,536\,640\,z^4-6\,328\,320\,z^3+20\,079\,360\,z^2-118\,918\,800\,z+654\,729\,075\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left.\left(2\,097\,152\,z^6+61\,865\,984\,z^5-10\,813\,440\,z^4+20\,213\,760\,z^3-93\,139\,200\,z^2+616\,215\,600\,z+654\,729\,075\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.9496.01

$${}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{9}{4};z\right)=\frac{1}{939\,802\,500\sqrt{2}\,z^{3/4}}$$
$$\left(\left(8\,z\left(262\,144\,z^5-11\,714\,560\,z^4+59\,228\,160\,z^3+105\,004\,800\,z^2+218\,282\,400\,z+155\,495\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\,\left(262\,144\,z^5-11\,550\,720\,z^4+52\,346\,880\,z^3+125\,395\,200\,z^2+288\,036\,000\,z+228\,118\,275\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(2\,097\,152\,z^6-93\,192\,192\,z^5+451\,215\,360\,z^4+925\,747\,200\,z^3+\right.$$
$$\left.\left.2\,007\,936\,000\,z^2+1\,824\,946\,200\,z-684\,354\,825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.9497.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{9}{4};-z\right)=\frac{1}{939\,802\,500\sqrt{2}\,z^{3/4}}$$
$$\left(\left(-8z\left(262\,144z^5+11\,714\,560z^4+59\,228\,160z^3-105\,004\,800z^2+218\,282\,400z-155\,495\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(262\,144z^5+11\,550\,720z^4+52\,346\,880z^3-125\,395\,200z^2+288\,036\,000z-228\,118\,275\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-2\,097\,152z^6-93\,192\,192z^5-451\,215\,360z^4+\right.$$
$$\left.\left.\left.925\,747\,200z^3-2\,007\,936\,000z^2+1\,824\,946\,200z+684\,354\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9498.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{7}{4};z\right)=\frac{1}{584\,766\,000z^{3/2}}$$
$$\left(e^{-2\sqrt{z}}\left(262\,144e^{4\sqrt{z}}z^6-262\,144z^6+65\,536e^{4\sqrt{z}}z^{11/2}+65\,536z^{11/2}-15\,515\,648e^{4\sqrt{z}}z^5+15\,515\,648z^5-\right.\right.$$
$$3\,829\,760e^{4\sqrt{z}}z^{9/2}-3\,829\,760z^{9/2}-1024e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-15\,200z+149\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}-$$
$$1024e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-15\,200z+149\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+150\,405\,120e^{4\sqrt{z}}z^4-150\,405\,120z^4+$$
$$34\,897\,920e^{4\sqrt{z}}z^{7/2}+34\,897\,920z^{7/2}+23\,009\,280e^{4\sqrt{z}}z^3-23\,009\,280z^3+23\,708\,160e^{4\sqrt{z}}z^{5/2}+$$
$$23\,708\,160z^{5/2}+31\,449\,600e^{4\sqrt{z}}z^2-31\,449\,600z^2+47\,476\,800e^{4\sqrt{z}}z^{3/2}+47\,476\,800z^{3/2}+$$
$$\left.71\,101\,800e^{4\sqrt{z}}z-71\,101\,800z+77\,026\,950e^{4\sqrt{z}}\sqrt{z}+77\,026\,950\sqrt{z}-38\,513\,475e^{4\sqrt{z}}+38\,513\,475\right)\Big)$$

07.22.03.9499.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{7}{4};-z\right)=\frac{1}{292\,383\,000z^{3/2}}\left(2048\sqrt{\pi}\left(256z^2+15\,200z+149\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}+\right.$$
$$2\left(32\,768z^5+1\,914\,880z^4+17\,448\,960z^3-11\,854\,080z^2+23\,738\,400z-38\,513\,475\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left.\left(-262\,144z^6-15\,515\,648z^5-150\,405\,120z^4+23\,009\,280z^3-31\,449\,600z^2+71\,101\,800z+38\,513\,475\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.9500.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{5}{4};z\right)=-\frac{1}{522\,112\,500\sqrt{2}\,z^{3/4}}$$
$$\left(\left(32z\left(32\,768z^5-2\,437\,120z^4+36\,283\,520z^3-75\,110\,400z^2-43\,936\,200z-19\,484\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(-131\,072z^5+9\,666\,560z^4-139\,261\,440z^3+224\,582\,400z^2+212\,688\,000z+76\,039\,425\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1\,048\,576z^6+77\,725\,696z^5-1\,141\,985\,280z^4+\right.$$
$$\left.\left.\left.2\,141\,798\,400z^3+1\,677\,312\,000z^2+884\,822\,400z-228\,118\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9501.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{5}{4};-z\right)= \frac{1}{522\,112\,500\sqrt{2}\,z^{3/4}}\left(\left(32z\left(32\,768z^5+2\,437\,120z^4+36\,283\,520z^3+75\,110\,400z^2-43\,936\,200z+19\,484\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- 4\sqrt{z}\left(131\,072z^5+9\,666\,560z^4+139\,261\,440z^3+224\,582\,400z^2-212\,688\,000z+76\,039\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ \left(1\,048\,576z^6+77\,725\,696z^5+1\,141\,985\,280z^4+2\,141\,798\,400z^3-1\,677\,312\,000z^2+884\,822\,400z+228\,118\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9502.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{3}{4};z\right)= \frac{1}{250\,614\,000z^{3/2}}\left(e^{-2\sqrt{z}}\left(-65\,536e^{4\sqrt{z}}z^6+65\,536z^6-16\,384e^{4\sqrt{z}}z^{11/2}-16\,384z^{11/2}+5\,824\,512e^{4\sqrt{z}}z^5-5\,824\,512z^5+ 1\,443\,840e^{4\sqrt{z}}z^{9/2}+1\,443\,840z^{9/2}-113\,844\,480e^{4\sqrt{z}}z^4+113\,844\,480z^4-27\,420\,480e^{4\sqrt{z}}z^{7/2}- 27\,420\,480z^{7/2}+16e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-364\,800z^2+7\,182\,000z-27\,979\,875\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+ 16e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-364\,800z^2+7\,182\,000z-27\,979\,875\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+ 428\,359\,680e^{4\sqrt{z}}z^3-428\,359\,680z^3+89\,832\,960e^{4\sqrt{z}}z^{5/2}+89\,832\,960z^{5/2}+ 49\,593\,600e^{4\sqrt{z}}z^2-49\,593\,600z^2+38\,404\,800e^{4\sqrt{z}}z^{3/2}+38\,404\,800z^{3/2}+31\,600\,800e^{4\sqrt{z}}z- 31\,600\,800z+17\,775\,450e^{4\sqrt{z}}\sqrt{z}+17\,775\,450\sqrt{z}-8\,887\,725e^{4\sqrt{z}}+8\,887\,725\right)\right) $$

07.22.03.9503.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{3}{4};-z\right)= \frac{1}{125\,307\,000z^{3/2}}\left(-32\sqrt{\pi}\left(4096z^3+364\,800z^2+7\,182\,000z+27\,979\,875\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}- 2\left(8192z^5+721\,920z^4+13\,710\,240z^3+44\,916\,480z^2-19\,202\,400z+8\,887\,725\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+ \left(65\,536z^6+5\,824\,512z^5+113\,844\,480z^4+428\,359\,680z^3-49\,593\,600z^2+31\,600\,800z+8\,887\,725\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.9504.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{1}{4};z\right)= \frac{1}{730\,957\,500\sqrt{2}\,z^{3/4}}\left(\left(8z\left(65\,536z^5-6\,819\,840z^4+168\,631\,040z^3-1\,004\,194\,800z^2+821\,847\,600z+99\,434\,475\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- 4\sqrt{z}\left(65\,536z^5-6\,778\,880z^4+164\,478\,720z^3-909\,493\,200z^2+408\,366\,000z+48\,388\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ \left(-524\,288z^6+54\,427\,648z^5-1\,335\,613\,440z^4+7\,716\,643\,200z^3-5\,002\,704\,000z^2-940\,123\,800z+145\,166\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9505.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},-\frac{1}{4};-z\right)= $$
$$ -\frac{1}{730\,957\,500\sqrt{2}\,z^{3/4}}\left(\left(8z\left(65\,536z^5+6\,819\,840z^4+168\,631\,040z^3+1\,004\,194\,800z^2+821\,847\,600z-99\,434\,475\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(65\,536z^5+6\,778\,880z^4+164\,478\,720z^3+909\,493\,200z^2+408\,366\,000z-48\,388\,725\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(524\,288z^6+54\,427\,648z^5+1\,335\,613\,440z^4+\right. $$
$$ \left.\left.7\,716\,643\,200z^3+5\,002\,704\,000z^2-940\,123\,800z-145\,166\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.9506.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{1}{4};z\right)=\frac{1}{1\,336\,608\,000z^{3/2}} $$
$$ \left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536z^4+7\,782\,400z^3-229\,824\,000z^2+1\,790\,712\,000z-2\,546\,168\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+\right.\right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536z^4+7\,782\,400z^3-229\,824\,000z^2+1\,790\,712\,000z-2\,546\,168\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+ $$
$$ 4\left(-16\,384z^6+4096z^{11/2}+1\,942\,528z^5-482\,560z^{9/2}-57\,097\,920z^4+13\,923\,120z^{7/2}+437\,661\,420z^3-\right. $$
$$ 100\,113\,615z^{5/2}-571\,737\,600z^2+93\,340\,800z^{3/2}-31\,600\,800z+7\,900\,200\sqrt{z}+e^{4\sqrt{z}}\left(16\,384z^6+\right. $$
$$ \left.\left.\left.4096z^{11/2}-1\,942\,528z^5-482\,560z^{9/2}+57\,097\,920z^4+13\,923\,120z^{7/2}-437\,661\,420z^3-100\,113\,615\right.\right.\right. $$
$$ \left.\left.\left.z^{5/2}+571\,737\,600z^2+93\,340\,800z^{3/2}+31\,600\,800z+7\,900\,200\sqrt{z}-3\,950\,100\right)+3\,950\,100\right)\Big)\Big) $$

07.22.03.9507.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{1}{4};-z\right)= $$
$$ \frac{1}{334\,152\,000z^{3/2}}\left(\sqrt{\pi}\left(65\,536z^4+7\,782\,400z^3+229\,824\,000z^2+1\,790\,712\,000z+2\,546\,168\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+\right. $$
$$ 2\left(\sqrt{z}\left(4096z^5+482\,560z^4+13\,923\,120z^3+100\,113\,615z^2+93\,340\,800z-7\,900\,200\right)\cos\left(2\sqrt{z}\right)-\right. $$
$$ \left.\left.4\left(4096z^6+485\,632z^5+14\,274\,480z^4+109\,415\,355z^3+142\,934\,400z^2-7\,900\,200z-987\,525\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9508.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{3}{4};z\right)=\frac{1}{6\,578\,617\,500\sqrt{2}\,z^{3/4}} $$
$$ \left(\left(-4z\left(65\,536z^5-8\,765\,440z^4+302\,999\,040z^3-2\,983\,348\,800z^2+6\,672\,933\,225z-1\,665\,392\,400\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ 2\sqrt{z}\left(65\,536z^5-8\,724\,480z^4+297\,630\,720z^3-2\,807\,935\,200z^2+5\,225\,542\,875z-124\,428\,150\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(262\,144z^6-34\,996\,224z^5+1\,203\,333\,120z^4-11\,643\,609\,600z^3+\right. $$
$$ \left.\left.24\,122\,164\,500z^2-2\,986\,275\,600z+186\,642\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.9509.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{3}{4};-z\right)=\frac{1}{6\,578\,617\,500\sqrt{2}\,z^{3/4}}$$
$$\left(\left(4z\left(65\,536z^5+8\,765\,440z^4+302\,999\,040z^3+2\,983\,348\,800z^2+6\,672\,933\,225z+1\,665\,392\,400\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$2\sqrt{z}\left(65\,536z^5+8\,724\,480z^4+297\,630\,720z^3+2\,807\,935\,200z^2+5\,225\,542\,875z+124\,428\,150\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(262\,144z^6+34\,996\,224z^5+1\,203\,333\,120z^4+11\,643\,609\,600z^3+\right.$$
$$\left.\left.\left.24\,122\,164\,500z^2+2\,986\,275\,600z+186\,642\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9510.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{427\,714\,560\,000z^{3/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-1\,048\,576z^5+155\,648\,000z^4-6\,128\,640\,000z^3+71\,628\,480\,000z^2-\right.\right.\right.$$
$$\left.203\,693\,490\,000z+68\,746\,552\,875\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left(-1\,048\,576z^5+155\,648\,000z^4-6\,128\,640\,000z^3+71\,628\,480\,000z^2-203\,693\,490\,000z+68\,746\,552\,875\right)$$
$$\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+4\left(-262\,144z^6+65\,536z^{11/2}+38\,862\,848z^5-9\,666\,560z^{9/2}-1\,524\,971\,520z^4+\right.$$
$$374\,161\,920z^{7/2}+17\,635\,134\,720z^3-4\,151\,427\,840z^{5/2}-48\,103\,568\,100z^2+9\,661\,331\,925z^{3/2}+$$
$$12\,134\,707\,200z-505\,612\,800\sqrt{z}+e^{4\sqrt{z}}\left(262\,144z^6+65\,536z^{11/2}-38\,862\,848z^5-9\,666\,560z^{9/2}+\right.$$
$$\left.\left.\left.\left.1\,524\,971\,520z^4+374\,161\,920z^{7/2}-17\,635\,134\,720z^3-4\,151\,427\,840z^{5/2}+48\,103\,568\,100z^2+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.9\,661\,331\,925z^{3/2}-12\,134\,707\,200z-505\,612\,800\sqrt{z}+252\,806\,400\right)-252\,806\,400\right)\right)\right)$$

07.22.03.9511.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{5}{4};-z\right)=\frac{1}{106\,928\,640\,000z^{3/2}}$$
$$\left(\sqrt{\pi}\,z^{5/4}\left(1\,048\,576z^5+155\,648\,000z^4+6\,128\,640\,000z^3+71\,628\,480\,000z^2+203\,693\,490\,000z+68\,746\,552\,875\right)\right.$$
$$C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\left(4\left(65\,536z^6+9\,715\,712z^5+381\,242\,880z^4+4\,408\,783\,680z^3+\right.\right.$$
$$\left.12\,025\,892\,025z^2+3\,033\,676\,800z+63\,201\,600\right)\sin\left(2\sqrt{z}\right)-$$
$$\left.\left.\sqrt{z}\left(65\,536z^5+9\,666\,560z^4+374\,161\,920z^3+4\,151\,427\,840z^2+9\,661\,331\,925z+505\,612\,800\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.9512.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{7}{4};z\right)=\frac{1}{385\,945\,560\,000\sqrt{2}\,z^{3/4}}$$
$$\left(\left(2z\left(-1\,048\,576z^5+171\,376\,640z^4-7\,610\,736\,640z^3+104\,565\,772\,800z^2-382\,412\,091\,600z+228\,732\,047\,775\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(1\,048\,576z^5-170\,721\,280z^4+7\,505\,387\,520z^3-100\,084\,723\,200z^2+328\,012\,146\,000z-\right.$$
$$\left.99\,978\,018\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(1\,048\,576z^6-171\,114\,496z^5+7\,568\,302\,080z^4-\right.$$
$$\left.\left.\left.102\,728\,102\,400z^3+358\,947\,666\,000z^2-162\,814\,234\,275z-5\,474\,838\,600\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9513.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{7}{4};-z\right)=\frac{1}{385\,945\,560\,000\sqrt{2}\,z^{3/4}}$$
$$\left(\left(2z\left(1\,048\,576z^5+171\,376\,640z^4+7\,610\,736\,640z^3+104\,565\,772\,800z^2+382\,412\,091\,600z+228\,732\,047\,775\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(1\,048\,576z^5+170\,721\,280z^4+7\,505\,387\,520z^3+100\,084\,723\,200z^2+328\,012\,146\,000z+\right.$$
$$\left.99\,978\,018\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(1\,048\,576z^6+171\,114\,496z^5+7\,568\,302\,080z^4+\right.$$
$$\left.\left.\left.102\,728\,102\,400z^3+358\,947\,666\,000z^2+162\,814\,234\,275z-5\,474\,838\,600\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9514.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{32\,848\,478\,208\,000z^{3/2}}\left(e^{-2\sqrt{z}}\left(4\left(-4\,194\,304z^6+1\,048\,576z^{11/2}+746\,323\,968z^5-185\,794\,560z^{9/2}-36\,633\,477\,120z^4+\right.\right.\right.$$
$$9\,021\,726\,720z^{7/2}+566\,428\,907\,520z^3-135\,293\,437\,440z^{5/2}-2\,350\,195\,041\,600z^2+$$
$$505\,101\,214\,800z^{3/2}+1\,353\,805\,922\,700z-149\,577\,449\,175\sqrt{z}\,+$$
$$e^{4\sqrt{z}}\left(4\,194\,304z^6+1\,048\,576z^{11/2}-746\,323\,968z^5-185\,794\,560z^{9/2}+36\,633\,477\,120z^4+\right.$$
$$9\,021\,726\,720z^{7/2}-566\,428\,907\,520z^3-135\,293\,437\,440z^{5/2}+2\,350\,195\,041\,600z^2+$$
$$\left.505\,101\,214\,800z^{3/2}-1\,353\,805\,922\,700z-149\,577\,449\,175\sqrt{z}\,-97\,077\,657\,600\right)+97\,077\,657\,600\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(-16\,777\,216z^6+2\,988\,441\,600z^5-147\,087\,360\,000z^4+2\,292\,111\,360\,000z^3-\right.$$
$$\left.9\,777\,287\,520\,000z^2+6\,599\,669\,076\,000z+343\,732\,764\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(-16\,777\,216z^6+2\,988\,441\,600z^5-147\,087\,360\,000z^4+2\,292\,111\,360\,000z^3-\right.$$
$$\left.\left.9\,777\,287\,520\,000z^2+6\,599\,669\,076\,000z+343\,732\,764\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.9515.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{9}{4};-z\right)= $$

$$ \frac{1}{8\,212\,119\,552\,000\,z^{3/2}}\left(\sqrt{\pi}\,\sqrt[4]{z}\,\left(16\,777\,216\,z^6+2\,988\,441\,600\,z^5+147\,087\,360\,000\,z^4+2\,292\,111\,360\,000\,z^3+\right.\right. $$

$$ \left.9\,777\,287\,520\,000\,z^2+6\,599\,669\,076\,000\,z-343\,732\,764\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)- $$

$$ 2\left(4\left(1\,048\,576\,z^6+186\,580\,992\,z^5+9\,158\,369\,280\,z^4+141\,607\,226\,880\,z^3+587\,548\,760\,400\,z^2+\right.\right. $$

$$ 338\,451\,480\,675\,z-24\,269\,414\,400\big)\sin\big(2\sqrt{z}\big)-\sqrt{z}\,\left(1\,048\,576\,z^5+185\,794\,560\,z^4+ $$

$$ \left.\left.\left.9\,021\,726\,720\,z^3+135\,293\,437\,440\,z^2+505\,101\,214\,800\,z+149\,577\,449\,175\right)\cos\big(2\sqrt{z}\big)\right)\right) $$

07.22.03.9516.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{11}{4};z\right)= $$

$$ \left(\left(2\sqrt{z}\,\left(-16\,777\,216\,z^6+3\,240\,099\,840\,z^5-175\,781\,642\,240\,z^4+3\,099\,624\,652\,800\,z^3-15\,740\,634\,873\,600\,z^2+\right.\right. $$

$$ 14\,820\,720\,314\,400\,z+343\,732\,764\,375\big)I_{-\frac{1}{4}}\big(\sqrt{z}\big)^2+\left(16\,777\,216\,z^6-3\,229\,614\,080\,z^5+173\,784\,760\,320\,z^4-\right. $$

$$ \left.2\,995\,008\,307\,200\,z^3+14\,063\,553\,504\,000\,z^2-8\,592\,510\,326\,400\,z-1\,031\,198\,293\,125\right)I_{\frac{3}{4}}\big(\sqrt{z}\big)I_{-\frac{1}{4}}\big(\sqrt{z}\big)+ $$

$$ 2\sqrt{z}\,\left(16\,777\,216\,z^6-3\,235\,905\,536\,z^5+174\,978\,170\,880\,z^4-3\,056\,914\,022\,400\,z^3+15\,028\,741\,728\,000\,z^2-\right. $$

$$ \left.\left.11\,827\,642\,226\,400\,z-1\,246\,334\,564\,475\right)I_{\frac{3}{4}}\big(\sqrt{z}\big)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)\Big/\left(22\,936\,193\,280\,000\sqrt{2}\,z^{5/4}\right) $$

07.22.03.9517.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{11}{4};-z\right)= $$

$$ \left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+3\,240\,099\,840\,z^5+175\,781\,642\,240\,z^4+3\,099\,624\,652\,800\,z^3+15\,740\,634\,873\,600\,z^2+\right.\right. $$

$$ 14\,820\,720\,314\,400\,z-343\,732\,764\,375\big)J_{-\frac{1}{4}}\big(\sqrt{z}\big)^2-\left(16\,777\,216\,z^6+3\,229\,614\,080\,z^5+173\,784\,760\,320\,z^4+\right. $$

$$ \left.2\,995\,008\,307\,200\,z^3+14\,063\,553\,504\,000\,z^2+8\,592\,510\,326\,400\,z-1\,031\,198\,293\,125\right)J_{\frac{3}{4}}\big(\sqrt{z}\big)J_{-\frac{1}{4}}\big(\sqrt{z}\big)+ $$

$$ 2\sqrt{z}\,\left(16\,777\,216\,z^6+3\,235\,905\,536\,z^5+174\,978\,170\,880\,z^4+3\,056\,914\,022\,400\,z^3+15\,028\,741\,728\,000\,z^2+\right. $$

$$ \left.\left.11\,827\,642\,226\,400\,z-1\,246\,334\,564\,475\right)J_{\frac{3}{4}}\big(\sqrt{z}\big)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)\Big/\left(22\,936\,193\,280\,000\sqrt{2}\,z^{5/4}\right) $$

07.22.03.9518.01

$${}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{13}{4};z\right)=$$
$$\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-67\,108\,864\,z^{13/2}+16\,777\,216\,z^{6}+13\,933\,477\,888\,z^{11/2}-3\,470\,786\,560\,z^{5}-821\,101\,854\,720\,z^{9/2}+\right.\right.\right.$$
$$202\,715\,627\,520\,z^{4}+15\,895\,887\,544\,320\,z^{7/2}-3\,830\,459\,351\,040\,z^{3}-88\,550\,811\,417\,600\,z^{5/2}+$$
$$19\,707\,113\,260\,800\,z^{2}+80\,165\,035\,843\,200\,z^{3/2}-11\,337\,450\,616\,800\,z+12\,205\,378\,439\,100\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^{6}-13\,933\,477\,888\,z^{11/2}-3\,470\,786\,560\,z^{5}+\right.$$
$$821\,101\,854\,720\,z^{9/2}+202\,715\,627\,520\,z^{4}-15\,895\,887\,544\,320\,z^{7/2}-3\,830\,459\,351\,040\,z^{3}+$$
$$88\,550\,811\,417\,600\,z^{5/2}+19\,707\,113\,260\,800\,z^{2}-80\,165\,035\,843\,200\,z^{3/2}-$$
$$\left.11\,337\,450\,616\,800\,z-12\,205\,378\,439\,100\sqrt{z}-1\,718\,663\,821\,875\right)-1\,718\,663\,821\,875\Big)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^{7}-55\,784\,243\,200\,z^{6}+3\,294\,756\,864\,000\,z^{5}-64\,179\,118\,080\,000\,z^{4}+\right.$$
$$\left.365\,018\,734\,080\,000\,z^{3}-369\,581\,468\,256\,000\,z^{2}-38\,498\,069\,610\,000\,z-1\,718\,663\,821\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^{7}-55\,784\,243\,200\,z^{6}+3\,294\,756\,864\,000\,z^{5}-64\,179\,118\,080\,000\,z^{4}+\right.$$
$$365\,018\,734\,080\,000\,z^{3}-369\,581\,468\,256\,000\,z^{2}-38\,498\,069\,610\,000\,z-$$
$$\left.\left.\left.1\,718\,663\,821\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(1\,635\,124\,248\,576\,000\,z^{9/4}\right)$$

07.22.03.9519.01

$${}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{408\,781\,062\,144\,000\,z^{9/4}}\left(\sqrt{\pi}\left(268\,435\,456\,z^{7}+55\,784\,243\,200\,z^{6}+3\,294\,756\,864\,000\,z^{5}+64\,179\,118\,080\,000\,z^{4}+\right.\right.$$
$$\left.365\,018\,734\,080\,000\,z^{3}+369\,581\,468\,256\,000\,z^{2}-38\,498\,069\,610\,000\,z+1\,718\,663\,821\,875\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216\,z^{6}+3\,483\,369\,472\,z^{5}+205\,275\,463\,680\,z^{4}+3\,973\,971\,886\,080\,z^{3}+22\,137\,702\,854\,400\,z^{2}+\right.\right.$$
$$20\,041\,258\,960\,800\,z-3\,051\,344\,609\,775\Big)\sin\left(2\sqrt{z}\right)-\left(16\,777\,216\,z^{6}+3\,470\,786\,560\,z^{5}+202\,715\,627\,520\right.$$
$$\left.\left.\left.z^{4}+3\,830\,459\,351\,040\,z^{3}+19\,707\,113\,260\,800\,z^{2}+11\,337\,450\,616\,800\,z-1\,718\,663\,821\,875\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.9520.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{15}{4};z\right)= $$

$$ -\left(\left(2\sqrt{z}\left(268\,435\,456\,z^7-59\,810\,775\,040\,z^6+3\,833\,557\,155\,840\,z^5-82\,528\,955\,596\,800\,z^4+536\,407\,816\,089\,600\,z^3-\right.\right.\right. $$

$$ \left.688\,113\,206\,726\,400\,z^2-38\,498\,069\,610\,000\,z+2\,406\,129\,350\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ $$

$$ \left(-268\,435\,456\,z^7+59\,643\,002\,880\,z^6-3\,796\,626\,309\,120\,z^5+80\,230\,322\,995\,200\,z^4-490\,612\,502\,016\,000\,z^3+\right. $$

$$ \left.455\,299\,523\,078\,400\,z^2+104\,494\,760\,370\,000\,z-7\,218\,388\,051\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- $$

$$ 2\sqrt{z}\left(268\,435\,456\,z^7-59\,743\,666\,176\,z^6+3\,818\,709\,319\,680\,z^5-81\,593\,435\,750\,400\,z^4+\right. $$

$$ \left.\left.\left.517\,167\,963\,648\,000\,z^3-580\,218\,749\,510\,400\,z^2-98\,749\,166\,115\,600\,z-7\,218\,388\,051\,875\right)\right. $$

$$ \left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(1\,000\,852\,070\,400\,000\sqrt{2}\,z^{9/4}\right) $$

07.22.03.9521.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{15}{4};-z\right)= $$

$$ \left(\left(2\sqrt{z}\left(268\,435\,456\,z^7+59\,810\,775\,040\,z^6+3\,833\,557\,155\,840\,z^5+82\,528\,955\,596\,800\,z^4+536\,407\,816\,089\,600\,z^3+\right.\right. $$

$$ \left.688\,113\,206\,726\,400\,z^2-38\,498\,069\,610\,000\,z-2\,406\,129\,350\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- $$

$$ \left(268\,435\,456\,z^7+59\,643\,002\,880\,z^6+3\,796\,626\,309\,120\,z^5+80\,230\,322\,995\,200\,z^4+490\,612\,502\,016\,000\,z^3+\right. $$

$$ \left.455\,299\,523\,078\,400\,z^2-104\,494\,760\,370\,000\,z-7\,218\,388\,051\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\left(268\,435\,456\,z^7+59\,743\,666\,176\,z^6+3\,818\,709\,319\,680\,z^5+81\,593\,435\,750\,400\,z^4+\right. $$

$$ \left.\left.\left.517\,167\,963\,648\,000\,z^3+580\,218\,749\,510\,400\,z^2-98\,749\,166\,115\,600\,z+7\,218\,388\,051\,875\right)\right. $$

$$ \left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(1\,000\,852\,070\,400\,000\sqrt{2}\,z^{9/4}\right) $$

07.22.03.9522.01

$${}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{17}{4};z\right)=$$

$$\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}+254\,812\,356\,608\,z^{13/2}-63\,501\,762\,560\,z^{6}-17\,524\,661\,944\,320\,z^{11/2}+\right.\right.\right.$$
$$4\,334\,231\,224\,320\,z^{5}+407\,553\,469\,317\,120\,z^{9/2}-98\,794\,626\,416\,640\,z^{4}-2\,849\,728\,237\,977\,600\,z^{7/2}+$$
$$648\,022\,969\,036\,800\,z^{3}+3\,525\,766\,480\,051\,200\,z^{5/2}-565\,266\,767\,788\,800\,z^{2}+$$
$$795\,312\,565\,185\,600\,z^{3/2}-170\,491\,451\,130\,000\,z+61\,871\,897\,587\,500\sqrt{z}+e^{4\sqrt{z}}$$
$$\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-254\,812\,356\,608\,z^{13/2}-63\,501\,762\,560\,z^{6}+17\,524\,661\,944\,320\,z^{11/2}+\right.$$
$$4\,334\,231\,224\,320\,z^{5}-407\,553\,469\,317\,120\,z^{9/2}-98\,794\,626\,416\,640\,z^{4}+2\,849\,728\,237\,977\,600\,z^{7/2}+$$
$$\left.\left.\left.\left.648\,022\,969\,036\,800\,z^{3}-3\,525\,766\,480\,051\,200\,z^{5/2}-565\,266\,767\,788\,800\,z^{2}-795\,312\,565\,185\,600\,z^{3/2}-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.170\,491\,451\,130\,000\,z-61\,871\,897\,587\,500\sqrt{z}+46\,403\,923\,190\,625\right)+46\,403\,923\,190\,625\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-1\,020\,054\,732\,800\,z^{7}+70\,288\,146\,432\,000\,z^{6}-1\,642\,985\,422\,848\,000\,z^{5}+\right.$$
$$11\,680\,599\,490\,560\,000\,z^{4}-15\,768\,809\,312\,256\,000\,z^{3}-2\,463\,876\,455\,040\,000\,z^{2}-$$
$$\left.219\,988\,969\,200\,000\,z+46\,403\,923\,190\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-1\,020\,054\,732\,800\,z^{7}+70\,288\,146\,432\,000\,z^{6}-1\,642\,985\,422\,848\,000\,z^{5}+\right.$$
$$11\,680\,599\,490\,560\,000\,z^{4}-15\,768\,809\,312\,256\,000\,z^{3}-2\,463\,876\,455\,040\,000\,z^{2}-$$
$$\left.\left.\left.219\,988\,969\,200\,000\,z+46\,403\,923\,190\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(64\,398\,739\,636\,224\,000\,z^{13/4}\right)$$

07.22.03.9523.01

$${}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{17}{4};-z\right)=$$

$$\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^{8}+1\,020\,054\,732\,800\,z^{7}+70\,288\,146\,432\,000\,z^{6}+1\,642\,985\,422\,848\,000\,z^{5}+11\,680\,599\,490\,560\,000\,z^{4}+\right.\right.$$
$$\left.15\,768\,809\,312\,256\,000\,z^{3}-2\,463\,876\,455\,040\,000\,z^{2}+219\,988\,969\,200\,000\,z+46\,403\,923\,190\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^{7}+63\,703\,089\,152\,z^{6}+4\,381\,165\,486\,080\,z^{5}+101\,888\,367\,329\,280\,z^{4}+\right.\right.$$
$$\left.712\,432\,059\,494\,400\,z^{3}+881\,441\,620\,012\,800\,z^{2}-198\,828\,141\,296\,400\,z+15\,467\,974\,396\,875\right)\sin\left(2\sqrt{z}\right)-$$
$$\left(268\,435\,456\,z^{7}+63\,501\,762\,560\,z^{6}+4\,334\,231\,224\,320\,z^{5}+98\,794\,626\,416\,640\,z^{4}+\right.$$
$$648\,022\,969\,036\,800\,z^{3}+565\,266\,767\,788\,800\,z^{2}-170\,491\,451\,130\,000\,z-$$
$$\left.\left.\left.46\,403\,923\,190\,625\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(16\,099\,684\,909\,056\,000\,z^{13/4}\right)$$

07.22.03.9524.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{19}{4};z\right) = $$

$$ -\left(\left(2\sqrt{z}\left(4\,294\,967\,296\,z^8-1\,084\,479\,242\,240\,z^7+80\,184\,019\,517\,440\,z^6-2\,038\,518\,566\,092\,800\,z^5+16\,147\,473\,127\,833\,600\right.\right.\right. $$

$$ \left.z^4-26\,206\,230\,771\,302\,400\,z^3-2\,463\,876\,455\,040\,000\,z^2+175\,991\,175\,360\,000\,z-132\,337\,114\,284\,375\right) $$

$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4\,294\,967\,296\,z^8+1\,081\,794\,887\,680\,z^7-79\,513\,434\,193\,920\,z^6+\right. $$

$$ 1\,990\,175\,175\,475\,200\,z^5-14\,996\,137\,476\,096\,000\,z^4+18\,759\,877\,110\,374\,400\,z^3+ $$

$$ \left.6\,159\,691\,137\,600\,000\,z^2+76\,996\,139\,220\,000\,z+397\,011\,342\,853\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\left(-4\,294\,967\,296\,z^8+1\,083\,405\,500\,416\,z^7-79\,914\,577\,428\,480\,z^6+2\,018\,888\,279\,654\,400\,z^5-\right. $$

$$ 15\,667\,249\,102\,848\,000\,z^4+22\,836\,855\,586\,406\,400\,z^3+5\,284\,428\,358\,809\,600\,z^2+ $$

$$ \left.\left.\left.769\,961\,392\,200\,000\,z-397\,011\,342\,853\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(36\,297\,568\,419\,840\,000\sqrt{2}\,z^{13/4}\right) $$

07.22.03.9525.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{19}{4};-z\right) = $$

$$ \left(\left(2\sqrt{z}\left(4\,294\,967\,296\,z^8+1\,084\,479\,242\,240\,z^7+80\,184\,019\,517\,440\,z^6+2\,038\,518\,566\,092\,800\,z^5+16\,147\,473\,127\,833\,600\right.\right. $$

$$ \left.z^4+26\,206\,230\,771\,302\,400\,z^3-2\,463\,876\,455\,040\,000\,z^2-175\,991\,175\,360\,000\,z-132\,337\,114\,284\,375\right) $$

$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4\,294\,967\,296\,z^8+1\,081\,794\,887\,680\,z^7+79\,513\,434\,193\,920\,z^6+\right. $$

$$ 1\,990\,175\,175\,475\,200\,z^5+14\,996\,137\,476\,096\,000\,z^4+18\,759\,877\,110\,374\,400\,z^3- $$

$$ \left.6\,159\,691\,137\,600\,000\,z^2+76\,996\,139\,220\,000\,z-397\,011\,342\,853\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\left(4\,294\,967\,296\,z^8+1\,083\,405\,500\,416\,z^7+79\,914\,577\,428\,480\,z^6+2\,018\,888\,279\,654\,400\,z^5+\right. $$

$$ 15\,667\,249\,102\,848\,000\,z^4+22\,836\,855\,586\,406\,400\,z^3-5\,284\,428\,358\,809\,600\,z^2+ $$

$$ \left.\left.\left.769\,961\,392\,200\,000\,z+397\,011\,342\,853\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(36\,297\,568\,419\,840\,000\sqrt{2}\,z^{13/4}\right) $$

07.22.03.9526.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{21}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}+4\,587\,025\,072\,128\,z^{15/2}-1\,143\,535\,042\,560\,z^{7}-\right.\right.\right.
$$
$$
360\,628\,271\,185\,920\,z^{13/2}+89\,310\,489\,477\,120\,z^{6}+9\,791\,973\,800\,017\,920\,z^{11/2}-2\,383\,850\,231\,562\,240\,z^{5}-
$$
$$
82\,389\,103\,843\,737\,600\,z^{9/2}+19\,012\,623\,011\,020\,800\,z^{4}+129\,407\,624\,065\,843\,200\,z^{7/2}-
$$
$$
22\,431\,782\,880\,460\,800\,z^{3}+38\,061\,637\,660\,569\,600\,z^{5/2}-9\,855\,505\,820\,160\,000\,z^{2}+
$$
$$
6\,335\,682\,312\,960\,000\,z^{3/2}+2\,177\,890\,795\,080\,000\,z-5\,630\,342\,680\,462\,500\,\sqrt{z}\,+
$$
$$
e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}-4\,587\,025\,072\,128\,z^{15/2}-1\,143\,535\,042\,560\,z^{7}+\right.
$$
$$
360\,628\,271\,185\,920\,z^{13/2}+89\,310\,489\,477\,120\,z^{6}-9\,791\,973\,800\,017\,920\,z^{11/2}-
$$
$$
2\,383\,850\,231\,562\,240\,z^{5}+82\,389\,103\,843\,737\,600\,z^{9/2}+19\,012\,623\,011\,020\,800\,z^{4}-
$$
$$
129\,407\,624\,065\,843\,200\,z^{7/2}-22\,431\,782\,880\,460\,800\,z^{3}-38\,061\,637\,660\,569\,600\,z^{5/2}-
$$
$$
9\,855\,505\,820\,160\,000\,z^{2}-6\,335\,682\,312\,960\,000\,z^{3/2}+2\,177\,890\,795\,080\,000\,z+
$$
$$
\left.\left.\left.5\,630\,342\,680\,462\,500\,\sqrt{z}\,-4\,222\,757\,010\,346\,875\right)-4\,222\,757\,010\,346\,875\right)-
$$
$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(68\,719\,476\,736\,z^{9}-18\,360\,985\,190\,400\,z^{8}+1\,445\,927\,583\,744\,000\,z^{7}-39\,431\,650\,148\,352\,000\,z^{6}+\right.
$$
$$
336\,401\,265\,328\,128\,000\,z^{5}-567\,677\,135\,241\,216\,000\,z^{4}-118\,266\,069\,841\,920\,000\,z^{3}-
$$
$$
\left.15\,839\,205\,782\,400\,000\,z^{2}+6\,682\,164\,939\,450\,000\,z-4\,222\,757\,010\,346\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-
$$
$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(68\,719\,476\,736\,z^{9}-18\,360\,985\,190\,400\,z^{8}+1\,445\,927\,583\,744\,000\,z^{7}-\right.
$$
$$
39\,431\,650\,148\,352\,000\,z^{6}+336\,401\,265\,328\,128\,000\,z^{5}-567\,677\,135\,241\,216\,000\,z^{4}-
$$
$$
118\,266\,069\,841\,920\,000\,z^{3}-15\,839\,205\,782\,400\,000\,z^{2}+6\,682\,164\,939\,450\,000\,z-
$$
$$
\left.\left.\left.4\,222\,757\,010\,346\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(2\,181\,980\,825\,321\,472\,000\,z^{17/4}\right)
$$

07.22.03.9527.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{21}{4};-z\right)=
$$
$$
\left(\sqrt{\pi}\,\left(68\,719\,476\,736\,z^{9}+18\,360\,985\,190\,400\,z^{8}+1\,445\,927\,583\,744\,000\,z^{7}+39\,431\,650\,148\,352\,000\,z^{6}+\right.\right.
$$
$$
336\,401\,265\,328\,128\,000\,z^{5}+567\,677\,135\,241\,216\,000\,z^{4}-118\,266\,069\,841\,920\,000\,z^{3}+
$$
$$
\left.15\,839\,205\,782\,400\,000\,z^{2}+6\,682\,164\,939\,450\,000\,z+4\,222\,757\,010\,346\,875\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$
$$
2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(4\,294\,967\,296\,z^{8}+1\,146\,756\,268\,032\,z^{7}+90\,157\,067\,796\,480\,z^{6}+2\,447\,993\,450\,004\,480\,z^{5}+\right.\right.
$$
$$
20\,597\,275\,960\,934\,400\,z^{4}+32\,351\,906\,016\,460\,800\,z^{3}-9\,515\,409\,415\,142\,400\,z^{2}+
$$
$$
1\,583\,920\,578\,240\,000\,z+1\,407\,585\,670\,115\,625\right)\sin\left(2\sqrt{z}\right)-
$$
$$
\left(4\,294\,967\,296\,z^{8}+1\,143\,535\,042\,560\,z^{7}+89\,310\,489\,477\,120\,z^{6}+2\,383\,850\,231\,562\,240\,z^{5}+\right.
$$
$$
19\,012\,623\,011\,020\,800\,z^{4}+22\,431\,782\,880\,460\,800\,z^{3}-9\,855\,505\,820\,160\,000\,z^{2}-
$$
$$
\left.\left.\left.2\,177\,890\,795\,080\,000\,z-4\,222\,757\,010\,346\,875\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(545\,495\,206\,330\,368\,000\,z^{17/4}\right)
$$

07.22.03.9528.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{23}{4};z\right) = -\Bigg(\Big(2\sqrt{z}\,\big(68\,719\,476\,736\,z^9-19\,391\,777\,341\,440\,z^8+1\,624\,662\,647\,767\,040\,z^7-47\,632\,140\,258\,508\,800\,z^6+445\,018\,528\,913\,817\,600\,z^5-873\,286\,103\,737\,958\,400\,z^4-118\,266\,069\,841\,920\,000\,z^3+6\,335\,682\,312\,960\,000\,z^2+302\,484\,832\,650\,000\,z+17\,865\,510\,428\,390\,625\big)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\big(-68\,719\,476\,736\,z^9+19\,348\,827\,668\,480\,z^8-1\,612\,658\,214\,174\,720\,z^7+46\,648\,498\,795\,315\,200\,z^6-417\,762\,503\,294\,976\,000\,z^5+659\,047\,662\,069\,350\,400\,z^4+275\,954\,162\,964\,480\,000\,z^3+37\,310\,129\,176\,320\,000\,z^2-82\,578\,359\,313\,450\,000\,z-53\,596\,531\,285\,171\,875\big)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\big(-68\,719\,476\,736\,z^9+19\,374\,597\,472\,256\,z^8-1\,619\,841\,546\,977\,280\,z^7+47\,233\,423\,009\,382\,400\,z^6-433\,710\,711\,963\,648\,000\,z^5+777\,985\,913\,792\,102\,400\,z^4+225\,921\,406\,091\,673\,600\,z^3+47\,869\,599\,697\,920\,000\,z^2-31\,760\,907\,428\,250\,000\,z+53\,596\,531\,285\,171\,875\big)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\Big)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(1\,161\,522\,189\,434\,880\,000\sqrt{2}\,z^{17/4}\right) $$

07.22.03.9529.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{5}{2},\frac{23}{4};-z\right) = \Bigg(\Big(2\sqrt{z}\,\big(68\,719\,476\,736\,z^9+19\,391\,777\,341\,440\,z^8+1\,624\,662\,647\,767\,040\,z^7+47\,632\,140\,258\,508\,800\,z^6+445\,018\,528\,913\,817\,600\,z^5+873\,286\,103\,737\,958\,400\,z^4-118\,266\,069\,841\,920\,000\,z^3-6\,335\,682\,312\,960\,000\,z^2+302\,484\,832\,650\,000\,z-17\,865\,510\,428\,390\,625\big)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\big(68\,719\,476\,736\,z^9+19\,348\,827\,668\,480\,z^8+1\,612\,658\,214\,174\,720\,z^7+46\,648\,498\,795\,315\,200\,z^6+417\,762\,503\,294\,976\,000\,z^5+659\,047\,662\,069\,350\,400\,z^4-275\,954\,162\,964\,480\,000\,z^3+37\,310\,129\,176\,320\,000\,z^2+82\,578\,359\,313\,450\,000\,z-53\,596\,531\,285\,171\,875\big)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\big(68\,719\,476\,736\,z^9+19\,374\,597\,472\,256\,z^8+1\,619\,841\,546\,977\,280\,z^7+47\,233\,423\,009\,382\,400\,z^6+433\,710\,711\,963\,648\,000\,z^5+777\,985\,913\,792\,102\,400\,z^4-225\,921\,406\,091\,673\,600\,z^3+47\,869\,599\,697\,920\,000\,z^2+31\,760\,907\,428\,250\,000\,z+53\,596\,531\,285\,171\,875\big)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\Big)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(1\,161\,522\,189\,434\,880\,000\sqrt{2}\,z^{17/4}\right) $$

For fixed z and $a_1 = -\frac{19}{4}$, $b_{1.} = \frac{7}{2}$

07.22.03.9530.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{23}{4};z\right) = -\frac{15\left(2\sqrt{z}\,(8z+99)\cosh\left(2\sqrt{z}\right)-(140z+99)\sinh\left(2\sqrt{z}\right)\right)}{736\,z^{5/2}} $$

07.22.03.9531.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{23}{4};-z\right) = \frac{15\left(2\sqrt{z}\,(8z-99)\cos\left(2\sqrt{z}\right)+(99-140z)\sin\left(2\sqrt{z}\right)\right)}{736\,z^{5/2}} $$

07.22.03.9532.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{7}{2}, -\frac{21}{4}; z\right) = \left(\left(4z\left(33\,554\,432z^6 + 1\,728\,053\,248z^5 + 50\,502\,696\,960z^4 + 847\,019\,704\,320z^3 + 7\,011\,059\,212\,800z^2 + 17\,831\,596\,608\,000z - 27\,812\,864\,442\,825\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,777\,216z^6 + 874\,512\,384z^5 + 25\,819\,545\,600z^4 + 440\,938\,414\,080z^3 + 3\,825\,307\,987\,200z^2 + 12\,304\,308\,693\,600z - 83\,438\,593\,328\,475\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(134\,217\,728z^7 + 6\,945\,767\,424z^6 + 203\,791\,269\,888z^5 + 3\,441\,528\,668\,160z^4 + 28\,985\,393\,203\,200z^3 + 80\,205\,864\,076\,800z^2 + 10\,766\,270\,106\,900z + 250\,315\,779\,985\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(33\,729\,887\,646\,000\sqrt{2}\, z^{7/4}\right) $$

07.22.03.9533.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{7}{2}, -\frac{21}{4}; -z\right) = \left(\left(-4z\left(33\,554\,432z^6 - 1\,728\,053\,248z^5 + 50\,502\,696\,960z^4 - 847\,019\,704\,320z^3 + 7\,011\,059\,212\,800z^2 - 17\,831\,596\,608\,000z - 27\,812\,864\,442\,825\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,777\,216z^6 - 874\,512\,384z^5 + 25\,819\,545\,600z^4 - 440\,938\,414\,080z^3 + 3\,825\,307\,987\,200z^2 - 12\,304\,308\,693\,600z - 83\,438\,593\,328\,475\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-134\,217\,728z^7 + 6\,945\,767\,424z^6 - 203\,791\,269\,888z^5 + 3\,441\,528\,668\,160z^4 - 28\,985\,393\,203\,200z^3 + 80\,205\,864\,076\,800z^2 - 10\,766\,270\,106\,900z + 250\,315\,779\,985\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(33\,729\,887\,646\,000\sqrt{2}\, z^{7/4}\right) $$

07.22.03.9534.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{7}{2}, -\frac{19}{4}; z\right) = \frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\cosh\left(2\sqrt{z}\right)\right)}{32z^{5/2}} $$

07.22.03.9535.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{7}{2}, -\frac{19}{4}; -z\right) = -\frac{15\left(6\sqrt{z}\cos\left(2\sqrt{z}\right) + (4z-3)\sin\left(2\sqrt{z}\right)\right)}{32z^{5/2}} $$

07.22.03.9536.01

$${}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{17}{4};z\right)=$$
$$\left(\left(4z\left(16\,777\,216z^6+286\,261\,248z^5+5\,029\,560\,320z^4+60\,228\,587\,520z^3+386\,612\,179\,200z^2+787\,638\,272\,400z-\right.\right.\right.$$
$$\left.\left.897\,189\,175\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(8\,388\,608z^6+148\,373\,504z^5+2\,618\,327\,040z^4+\right.\right.$$
$$\left.\left.32\,024\,033\,280z^3+219\,326\,083\,200z^2+645\,596\,443\,800z-2\,691\,567\,526\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.$$
$$\left(67\,108\,864z^7+1\,161\,822\,208z^6+20\,430\,716\,928z^5+246\,514\,728\,960z^4+1\,617\,894\,835\,200z^3+\right.$$
$$\left.\left.3\,711\,766\,766\,400z^2-398\,750\,744\,700z+8\,074\,702\,580\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(1\,606\,185\,126\,000\sqrt{2}\,z^{7/4}\right)$$

07.22.03.9537.01

$${}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{17}{4};-z\right)=$$
$$\left(\left(-4z\left(16\,777\,216z^6-286\,261\,248z^5+5\,029\,560\,320z^4-60\,228\,587\,520z^3+386\,612\,179\,200z^2-787\,638\,272\,400z-\right.\right.\right.$$
$$\left.\left.897\,189\,175\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(8\,388\,608z^6-148\,373\,504z^5+2\,618\,327\,040z^4-\right.\right.$$
$$\left.\left.32\,024\,033\,280z^3+219\,326\,083\,200z^2-645\,596\,443\,800z-2\,691\,567\,526\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.$$
$$\left(-67\,108\,864z^7+1\,161\,822\,208z^6-20\,430\,716\,928z^5+246\,514\,728\,960z^4-1\,617\,894\,835\,200z^3+\right.$$
$$\left.\left.3\,711\,766\,766\,400z^2+398\,750\,744\,700z+8\,074\,702\,580\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(1\,606\,185\,126\,000\sqrt{2}\,z^{7/4}\right)$$

07.22.03.9538.01

$${}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{2\,238\,484\,248\,000\,z^{5/2}}\left(e^{-2\sqrt{z}}\left(-67\,108\,864\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{29/4}-67\,108\,864\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{29/4}+\right.\right.$$
$$67\,108\,864\,e^{4\sqrt{z}}\,z^7-67\,108\,864z^7+16\,777\,216\,e^{4\sqrt{z}}\,z^{13/2}+16\,777\,216z^{13/2}+12\,582\,912\,e^{4\sqrt{z}}\,z^6-$$
$$12\,582\,912z^6+15\,728\,640\,e^{4\sqrt{z}}\,z^{11/2}+15\,728\,640z^{11/2}+27\,525\,120\,e^{4\sqrt{z}}\,z^5-27\,525\,120z^5+$$
$$61\,931\,520\,e^{4\sqrt{z}}\,z^{9/2}+61\,931\,520z^{9/2}+170\,311\,680\,e^{4\sqrt{z}}\,z^4-170\,311\,680z^4+$$
$$553\,512\,960\,e^{4\sqrt{z}}\,z^{7/2}+553\,512\,960z^{7/2}+2\,075\,673\,600\,e^{4\sqrt{z}}\,z^3-2\,075\,673\,600z^3+$$
$$8\,821\,612\,800\,e^{4\sqrt{z}}\,z^{5/2}+8\,821\,612\,800z^{5/2}+41\,902\,660\,800\,e^{4\sqrt{z}}\,z^2-41\,902\,660\,800z^2+$$
$$219\,988\,969\,200\,e^{4\sqrt{z}}\,z^{3/2}+219\,988\,969\,200z^{3/2}+1\,264\,936\,572\,900\,e^{4\sqrt{z}}\,z-1\,264\,936\,572\,900z-$$
$$\left.2\,062\,396\,586\,250\,e^{4\sqrt{z}}\,\sqrt{z}-2\,062\,396\,586\,250\sqrt{z}+1\,031\,198\,293\,125\,e^{4\sqrt{z}}-1\,031\,198\,293\,125\right)\Bigg)$$

07.22.03.9539.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{15}{4};-z\right)= $$

$$ \frac{1}{1\,119\,242\,124\,000\,z^{5/2}}\left(134\,217\,728\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{29/4}+2\left(8\,388\,608\,z^6-7\,864\,320\,z^5+30\,965\,760\,z^4-\right.\right. $$

$$ 276\,756\,480\,z^3+4\,410\,806\,400\,z^2-109\,994\,484\,600\,z-1\,031\,198\,293\,125\big)\cos\big(2\sqrt{z}\,\big)\sqrt{z}\;+ $$

$$ \big(-67\,108\,864\,z^7+12\,582\,912\,z^6-27\,525\,120\,z^5+170\,311\,680\,z^4-2\,075\,673\,600\,z^3+ $$

$$ \left.\left.41\,902\,660\,800\,z^2-1\,264\,936\,572\,900\,z+1\,031\,198\,293\,125\big)\sin\big(2\sqrt{z}\,\big)\right)\right) $$

07.22.03.9540.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{13}{4};z\right)= $$

$$ -\frac{1}{94\,481\,478\,000\sqrt{2}\;z^{7/4}}\left(\left(4\,z\left(8\,388\,608\,z^6-145\,752\,064\,z^5-825\,425\,920\,z^4-5\,956\,546\,560\,z^3-27\,222\,624\,000\,z^2-\right.\right.\right. $$

$$ 42\,058\,119\,600\,z+33\,229\,228\,725\big)I_{-\frac{1}{4}}\big(\sqrt{z}\,\big)^2-4\sqrt{z}\;\left(4\,194\,304\,z^6-70\,254\,592\,z^5-451\,215\,360\,z^4-\right. $$

$$ 3\,309\,834\,240\,z^3-16\,359\,033\,600\,z^2-36\,325\,119\,600\,z+99\,687\,686\,175\big)I_{\frac{3}{4}}\big(\sqrt{z}\,\big)I_{-\frac{1}{4}}\big(\sqrt{z}\,\big)+ $$

$$ \big(-33\,554\,432\,z^7+574\,619\,648\,z^6+3\,434\,348\,544\,z^5+24\,817\,582\,080\,z^4+116\,584\,473\,600\,z^3+ $$

$$ \left.\left.\left.210\,650\,932\,800\,z^2-52\,010\,966\,700\,z+299\,063\,058\,525\big)I_{\frac{3}{4}}\big(\sqrt{z}\,\big)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9541.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{13}{4};-z\right)= $$

$$ \frac{1}{94\,481\,478\,000\sqrt{2}\;z^{7/4}}\left(\left(4\,z\left(8\,388\,608\,z^6+145\,752\,064\,z^5-825\,425\,920\,z^4+5\,956\,546\,560\,z^3-27\,222\,624\,000\,z^2+\right.\right.\right. $$

$$ 42\,058\,119\,600\,z+33\,229\,228\,725\big)J_{-\frac{1}{4}}\big(\sqrt{z}\,\big)^2-4\sqrt{z}\;\left(4\,194\,304\,z^6+70\,254\,592\,z^5-451\,215\,360\,z^4+\right. $$

$$ 3\,309\,834\,240\,z^3-16\,359\,033\,600\,z^2+36\,325\,119\,600\,z+99\,687\,686\,175\big)J_{\frac{3}{4}}\big(\sqrt{z}\,\big)J_{-\frac{1}{4}}\big(\sqrt{z}\,\big)+ $$

$$ \big(33\,554\,432\,z^7+574\,619\,648\,z^6-3\,434\,348\,544\,z^5+24\,817\,582\,080\,z^4-116\,584\,473\,600\,z^3+ $$

$$ \left.\left.\left.210\,650\,932\,800\,z^2+52\,010\,966\,700\,z+299\,063\,058\,525\big)J_{\frac{3}{4}}\big(\sqrt{z}\,\big)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9542.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{11}{4};z\right)= \frac{1}{149\,232\,283\,200\,z^{5/2}}\left(e^{-2\sqrt{z}}\left(-16\,777\,216\,e^{4\sqrt{z}}\,z^7+16\,777\,216\,z^7-4\,194\,304\,e^{4\sqrt{z}}\,z^{13/2}-4\,194\,304\,z^{13/2}+ 1\,048\,576\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-551)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{25/4}+1\,048\,576\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-551)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{25/4}+ 574\,619\,648\,e^{4\sqrt{z}}\,z^6-574\,619\,648\,z^6+140\,509\,184\,e^{4\sqrt{z}}\,z^{11/2}+140\,509\,184\,z^{11/2}+ 101\,449\,728\,e^{4\sqrt{z}}\,z^5-101\,449\,728\,z^5+119\,930\,880\,e^{4\sqrt{z}}\,z^{9/2}+119\,930\,880\,z^{9/2}+194\,396\,160\,e^{4\sqrt{z}}\,z^4- 194\,396\,160\,z^4+394\,813\,440\,e^{4\sqrt{z}}\,z^{7/2}+394\,813\,440\,z^{7/2}+947\,358\,720\,e^{4\sqrt{z}}\,z^3-947\,358\,720\,z^3+ 2\,559\,997\,440\,e^{4\sqrt{z}}\,z^{5/2}+2\,559\,997\,440\,z^{5/2}+7\,394\,587\,200\,e^{4\sqrt{z}}\,z^2-7\,394\,587\,200\,z^2+ 20\,951\,330\,400\,e^{4\sqrt{z}}\,z^{3/2}+20\,951\,330\,400\,z^{3/2}+44\,521\,577\,100\,e^{4\sqrt{z}}\,z-44\,521\,577\,100\,z- 82\,495\,863\,450\,e^{4\sqrt{z}}\,\sqrt{z}-82\,495\,863\,450\,\sqrt{z}+41\,247\,931\,725\,e^{4\sqrt{z}}-41\,247\,931\,725\right)\right) $$

07.22.03.9543.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{11}{4};-z\right)= \frac{1}{74\,616\,141\,600\,z^{5/2}}\left(-2\,097\,152\,\sqrt{\pi}\,(16z+551)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{25/4}- 2\left(2\,097\,152\,z^6+70\,254\,592\,z^5-59\,965\,440\,z^4+197\,406\,720\,z^3-1\,279\,998\,720\,z^2+10\,475\,665\,200\,z+41\,247\,931\,725\right) \cos\left(2\sqrt{z}\right)\sqrt{z}+\left(16\,777\,216\,z^7+574\,619\,648\,z^6-101\,449\,728\,z^5+194\,396\,160\,z^4- 947\,358\,720\,z^3+7\,394\,587\,200\,z^2-44\,521\,577\,100\,z+41\,247\,931\,725\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.9544.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{9}{4};z\right)= \frac{1}{21\,803\,418\,000\,\sqrt{2}\,z^{7/4}}\left(\left(4z\left(4\,194\,304\,z^6-217\,317\,376\,z^5+1\,302\,528\,000\,z^4+2\,895\,298\,560\,z^3+7\,954\,387\,200\,z^2+ 8\,622\,784\,800\,z-4\,334\,247\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(2\,097\,152\,z^6-107\,347\,968\,z^5+586\,874\,880\,z^4+ 1\,696\,573\,440\,z^3+5\,039\,193\,600\,z^2+7\,039\,078\,200\,z-13\,002\,741\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- \left(16\,777\,216\,z^7-865\,075\,200\,z^6+4\,999\,348\,224\,z^5+12\,575\,047\,680\,z^4+35\,460\,633\,600\,z^3+ 45\,884\,361\,600\,z^2-13\,687\,096\,500\,z+39\,008\,225\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9545.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{9}{4};-z\right)= \frac{1}{21\,803\,418\,000\sqrt{2}\,z^{7/4}}\left(\left(-4z\left(4\,194\,304z^6+217\,317\,376z^5+1\,302\,528\,000z^4-2\,895\,298\,560z^3+7\,954\,387\,200z^2-8\,622\,784\,800z-4\,334\,247\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2\,097\,152z^6+107\,347\,968z^5+586\,874\,880z^4-1\,696\,573\,440z^3+5\,039\,193\,600z^2-7\,039\,078\,200z-13\,002\,741\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-16\,777\,216z^7-865\,075\,200z^6-4\,999\,348\,224z^5+12\,575\,047\,680z^4-35\,460\,633\,600z^3+45\,884\,361\,600z^2+13\,687\,096\,500z+39\,008\,225\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9546.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{7}{4};z\right)= \frac{1}{13\,566\,571\,200z^{5/2}}\left(e^{-2\sqrt{z}}\left(2\,097\,152e^{4\sqrt{z}}z^7-2\,097\,152z^7+524\,288e^{4\sqrt{z}}z^{13/2}+524\,288z^{13/2}-144\,048\,128e^{4\sqrt{z}}z^6+144\,048\,128z^6-35\,618\,816e^{4\sqrt{z}}z^{11/2}-35\,618\,816z^{11/2}-8192e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-17\,632z+206\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}-8192e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-17\,632z+206\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+1\,666\,449\,408e^{4\sqrt{z}}z^5-1\,666\,449\,408z^5+391\,249\,920e^{4\sqrt{z}}z^{9/2}+391\,249\,920z^{9/2}+263\,454\,720e^{4\sqrt{z}}z^4-263\,454\,720z^4+280\,719\,360e^{4\sqrt{z}}z^{7/2}+280\,719\,360z^{7/2}+392\,555\,520e^{4\sqrt{z}}z^3-392\,555\,520z^3+646\,410\,240e^{4\sqrt{z}}z^{5/2}+646\,410\,240z^{5/2}+1\,137\,628\,800e^{4\sqrt{z}}z^2-1\,137\,628\,800z^2+1\,848\,646\,800e^{4\sqrt{z}}z^{3/2}+1\,848\,646\,800z^{3/2}+1\,694\,592\,900e^{4\sqrt{z}}z-1\,694\,592\,900z-3\,928\,374\,450e^{4\sqrt{z}}\sqrt{z}-3\,928\,374\,450\sqrt{z}+1\,964\,187\,225e^{4\sqrt{z}}-1\,964\,187\,225\right)\right) $$

07.22.03.9547.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{7}{4};-z\right)= \frac{1}{6\,783\,285\,600z^{5/2}}\left(16\,384\sqrt{\pi}\left(256z^2+17\,632z+206\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4}+2\left(262\,144z^6+17\,809\,408z^5+195\,624\,960z^4-140\,359\,680z^3+323\,205\,120z^2-924\,323\,400z-1\,964\,187\,225\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(2\,097\,152z^7+144\,048\,128z^6+1\,666\,449\,408z^5-263\,454\,720z^4+392\,555\,520z^3-1\,137\,628\,800z^2+1\,694\,592\,900z-1\,964\,187\,225\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.9548.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{5}{4};z\right)= $$

$$ -\frac{1}{12\,113\,010\,000\sqrt{2}\,z^{7/4}}\left(\left(4z\left(2\,097\,152z^6-180\,879\,360z^5+3\,201\,556\,480z^4-8\,099\,020\,800z^3-6\,385\,132\,800z^2-\right.\right.\right. $$

$$ \left.4\,172\,464\,800z+1\,140\,591\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1\,048\,576z^6-89\,784\,320z^5+1\,546\,014\,720z^4-\right. $$

$$ \left.3\,188\,736\,000z^3-3\,923\,136\,000z^2-2\,780\,870\,400z+3\,421\,774\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ \left(-8\,388\,608z^7+721\,420\,288z^6-12\,628\,623\,360z^5+29\,461\,708\,800z^4+29\,812\,608\,000z^3+\right. $$

$$ \left.\left.\left.22\,878\,979\,200z^2-6\,387\,311\,700z+10\,265\,322\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9549.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{5}{4};-z\right)= $$

$$ \frac{1}{12\,113\,010\,000\sqrt{2}\,z^{7/4}}\left(\left(4z\left(2\,097\,152z^6+180\,879\,360z^5+3\,201\,556\,480z^4+8\,099\,020\,800z^3-6\,385\,132\,800z^2+\right.\right.\right. $$

$$ \left.4\,172\,464\,800z+1\,140\,591\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1\,048\,576z^6+89\,784\,320z^5+1\,546\,014\,720z^4+\right. $$

$$ \left.3\,188\,736\,000z^3-3\,923\,136\,000z^2+2\,780\,870\,400z+3\,421\,774\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ \left(8\,388\,608z^7+721\,420\,288z^6+12\,628\,623\,360z^5+29\,461\,708\,800z^4-29\,812\,608\,000z^3+\right. $$

$$ \left.\left.\left.22\,878\,979\,200z^2+6\,387\,311\,700z+10\,265\,322\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.9550.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{3}{4};z\right)=\frac{1}{5\,814\,244\,800z^{5/2}} $$

$$ \left(e^{-2\sqrt{z}}\left(-524\,288e^{4\sqrt{z}}z^7+524\,288z^7-131\,072e^{4\sqrt{z}}z^{13/2}-131\,072z^{13/2}+54\,067\,200e^{4\sqrt{z}}z^6-54\,067\,200z^6+\right.\right. $$

$$ 13\,418\,496e^{4\sqrt{z}}z^{11/2}+13\,418\,496z^{11/2}-1\,259\,563\,008e^{4\sqrt{z}}z^5+1\,259\,563\,008z^5-305\,164\,800e^{4\sqrt{z}}z^{9/2}- $$

$$ 305\,164\,800z^{9/2}+128e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-423\,168z^2+9\,918\,000z-47\,730\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+ $$

$$ 128e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-423\,168z^2+9\,918\,000z-47\,730\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+ $$

$$ 5\,892\,341\,760e^{4\sqrt{z}}z^4-5\,892\,341\,760z^4+1\,275\,494\,400e^{4\sqrt{z}}z^{7/2}+1\,275\,494\,400z^{7/2}+ $$

$$ 746\,081\,280e^{4\sqrt{z}}z^3-746\,081\,280z^3+638\,184\,960e^{4\sqrt{z}}z^{5/2}+638\,184\,960z^{5/2}+ $$

$$ 632\,016\,000e^{4\sqrt{z}}z^2-632\,016\,000z^2+568\,814\,400e^{4\sqrt{z}}z^{3/2}+568\,814\,400z^{3/2}+177\,754\,500e^{4\sqrt{z}}z- $$

$$ \left.\left.177\,754\,500z-693\,242\,550e^{4\sqrt{z}}\sqrt{z}-693\,242\,550\sqrt{z}+346\,621\,275e^{4\sqrt{z}}-346\,621\,275\right)\right) $$

07.22.03.9551.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{3}{4};-z\right)=\frac{1}{2\,907\,122\,400\,z^{5/2}}\left(-256\sqrt{\pi}\left(4096\,z^3+423\,168\,z^2+9\,918\,000\,z+47\,730\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}-\right.$$
$$2\left(65\,536\,z^6+6\,709\,248\,z^5+152\,582\,400\,z^4+637\,747\,200\,z^3-319\,092\,480\,z^2+284\,407\,200\,z+346\,621\,275\right)$$
$$\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(524\,288\,z^7+54\,067\,200\,z^6+1\,259\,563\,008\,z^5+5\,892\,341\,760\,z^4-\right.$$
$$\left.\left.746\,081\,280\,z^3+632\,016\,000\,z^2-177\,754\,500\,z+346\,621\,275\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.9552.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{16\,958\,214\,000\sqrt{2}\,z^{7/4}}\left(\left(4z\left(1\,048\,576\,z^6-126\,550\,016\,z^5+3\,722\,260\,480\,z^4-27\,283\,549\,440\,z^3+28\,402\,214\,400\,z^2+\right.\right.\right.$$
$$5\,022\,990\,000\,z-532\,275\,975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(524\,288\,z^6-62\,947\,328\,z^5+1\,822\,464\,000\,z^4-\right.$$
$$\left.12\,578\,751\,360\,z^3+8\,146\,857\,600\,z^2+2\,046\,151\,800\,z-1\,596\,827\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left(4\,194\,304\,z^7-505\,151\,488\,z^6+14\,764\,130\,304\,z^5-105\,601\,950\,720\,z^4+91\,287\,705\,600\,z^3+\right.$$
$$\left.\left.\left.25\,217\,438\,400\,z^2-5\,225\,982\,300\,z+4\,790\,483\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9553.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},-\frac{1}{4};-z\right)=$$
$$-\frac{1}{16\,958\,214\,000\sqrt{2}\,z^{7/4}}\left(\left(4z\left(1\,048\,576\,z^6+126\,550\,016\,z^5+3\,722\,260\,480\,z^4+27\,283\,549\,440\,z^3+28\,402\,214\,400\,z^2-\right.\right.\right.$$
$$5\,022\,990\,000\,z-532\,275\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(524\,288\,z^6+62\,947\,328\,z^5+1\,822\,464\,000\,z^4+\right.$$
$$\left.12\,578\,751\,360\,z^3+8\,146\,857\,600\,z^2-2\,046\,151\,800\,z-1\,596\,827\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(4\,194\,304\,z^7+505\,151\,488\,z^6+14\,764\,130\,304\,z^5+105\,601\,950\,720\,z^4+91\,287\,705\,600\,z^3-\right.$$
$$\left.\left.\left.25\,217\,438\,400\,z^2-5\,225\,982\,300\,z-4\,790\,483\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9554.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{1}{4};z\right)=\frac{1}{3\,876\,163\,200\,z^{5/2}}$$
$$\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536\,z^4+9\,027\,584\,z^3-317\,376\,000\,z^2+3\,054\,744\,000\,z-5\,679\,914\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+\right.\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536\,z^4+9\,027\,584\,z^3-317\,376\,000\,z^2+3\,054\,744\,000\,z-5\,679\,914\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+$$
$$2\left(-32\,768\,z^7+8192\,z^{13/2}+4\,507\,648\,z^6-1\,120\,768\,z^{11/2}-157\,855\,104\,z^5+38\,644\,320\,z^{9/2}+1\,499\,386\,200\,z^4-\right.$$
$$348\,545\,790\,z^{7/2}-2\,608\,220\,160\,z^3+465\,534\,720\,z^{5/2}-189\,604\,800\,z^2+79\,002\,000\,z^{3/2}+3\,950\,100\,z-$$
$$53\,326\,350\sqrt{z}+e^{4\sqrt{z}}\left(32\,768\,z^7+8192\,z^{13/2}-4\,507\,648\,z^6-1\,120\,768\,z^{11/2}+157\,855\,104\,z^5+\right.$$
$$\left.\left.\left.38\,644\,320\,z^{9/2}-1\,499\,386\,200\,z^4-348\,545\,790\,z^{7/2}+2\,608\,220\,160\,z^3+465\,534\,720\,z^{5/2}+\right.\right.\right.$$
$$\left.\left.\left.189\,604\,800\,z^2+79\,002\,000\,z^{3/2}-3\,950\,100\,z-53\,326\,350\sqrt{z}+26\,663\,175\right)-26\,663\,175\right)\Big)\Big)$$

07.22.03.9555.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{969\,040\,800\,z^{5/2}}\left(\sqrt{\pi}\left(65\,536\,z^4+9\,027\,584\,z^3+317\,376\,000\,z^2+3\,054\,744\,000\,z+5\,679\,914\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}+\right.$$
$$2\left(4096\,z^6+560\,384\,z^5+19\,322\,160\,z^4+174\,272\,895\,z^3+232\,767\,360\,z^2-39\,501\,000\,z-26\,663\,175\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-$$
$$\left(32\,768\,z^7+4\,507\,648\,z^6+157\,855\,104\,z^5+1\,499\,386\,200\,z^4+\right.$$
$$\left.\left.2\,608\,220\,160\,z^3-189\,604\,800\,z^2-3\,950\,100\,z-26\,663\,175\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.9556.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{152\,623\,926\,000\sqrt{2}\,z^{7/4}}\left(\left(-4\,z\left(524\,288\,z^6-81\,330\,176\,z^5+3\,345\,039\,360\,z^4-40\,598\,634\,240\,z^3+117\,500\,052\,600\,z^2-\right.\right.\right.$$
$$\left.\left.39\,234\,358\,800\,z+435\,498\,525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(262\,144\,z^6-40\,501\,248\,z^5+1\,647\,544\,320\,z^4-\right.\right.$$
$$\left.\left.19\,319\,247\,360\,z^3+48\,440\,114\,100\,z^2-2\,986\,275\,600\,z+1\,306\,495\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(2\,097\,152\,z^7-324\,796\,416\,z^6+13\,299\,646\,464\,z^5-159\,172\,715\,520\,z^4+434\,068\,437\,600\,z^3-\right.$$
$$\left.\left.\left.83\,615\,716\,800\,z^2+8\,212\,257\,900\,z-3\,919\,486\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9557.01

$${}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{3}{4};-z\right)=$$
$$\frac{1}{152\,623\,926\,000\sqrt{2}\,z^{7/4}}\left(\left(4z\left(524\,288z^6+81\,330\,176z^5+3\,345\,039\,360z^4+40\,598\,634\,240z^3+117\,500\,052\,600z^2+\right.\right.\right.$$
$$\left.39\,234\,358\,800z+435\,498\,525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(262\,144z^6+40\,501\,248z^5+1\,647\,544\,320z^4+\right.$$
$$\left.19\,319\,247\,360z^3+48\,440\,114\,100z^2+2\,986\,275\,600z+1\,306\,495\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(2\,097\,152z^7+324\,796\,416z^6+13\,299\,646\,464z^5+159\,172\,715\,520z^4+434\,068\,437\,600z^3+\right.$$
$$\left.\left.\left.83\,615\,716\,800z^2+8\,212\,257\,900z+3\,919\,486\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.9558.01

$${}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{1\,240\,372\,224\,000z^{5/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-1\,048\,576z^5+180\,551\,680z^4-8\,463\,360\,000z^3+122\,189\,760\,000z^2-\right.\right.\right.$$
$$\left.454\,393\,170\,000z+221\,516\,670\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left(-1\,048\,576z^5+180\,551\,680z^4-8\,463\,360\,000z^3+122\,189\,760\,000z^2-454\,393\,170\,000z+221\,516\,670\,375\right)$$
$$\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+4\left(-262\,144z^7+65\,536z^{13/2}+45\,088\,768z^6-11\,223\,040z^{11/2}-\right.$$
$$2\,107\,484\,160z^5+518\,622\,720z^{9/2}+30\,168\,568\,320z^4-7\,180\,453\,440z^{7/2}-108\,632\,027\,700z^3+$$
$$22\,854\,785\,625z^{5/2}+42\,471\,475\,200z^2-3\,033\,676\,800z^{3/2}-884\,822\,400z+948\,024\,000\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(262\,144z^7+65\,536z^{13/2}-45\,088\,768z^6-11\,223\,040z^{11/2}+2\,107\,484\,160z^5+518\,622\,720z^{9/2}-\right.$$
$$\left.\left.\left.30\,168\,568\,320z^4-7\,180\,453\,440z^{7/2}+108\,632\,027\,700z^3+22\,854\,785\,625z^{5/2}-42\,471\,475\,200z^2-\right.\right.\right.$$
$$\left.\left.\left.3\,033\,676\,800z^{3/2}+884\,822\,400z+948\,024\,000\sqrt{z}-474\,012\,000\right)+474\,012\,000\right)\right)\right)$$

07.22.03.9559.01

$${}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{5}{4};-z\right)=\frac{1}{310\,093\,056\,000z^{5/2}}$$
$$\left(\sqrt{\pi}\,z^{9/4}\left(1\,048\,576z^5+180\,551\,680z^4+8\,463\,360\,000z^3+122\,189\,760\,000z^2+454\,393\,170\,000z+221\,516\,670\,375\right)\right.$$
$$C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\left(4\left(65\,536z^7+11\,272\,192z^6+526\,871\,040z^5+7\,542\,142\,080z^4+27\,158\,006\,925z^3+\right.\right.$$
$$\left.10\,617\,868\,800z^2+221\,205\,600z+118\,503\,000\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(65\,536z^6+11\,223\,040z^5+\right.$$
$$\left.\left.\left.518\,622\,720z^4+7\,180\,453\,440z^3+22\,854\,785\,625z^2+3\,033\,676\,800z+948\,024\,000\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.9560.01

$${}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{7}{4};z\right)=$$
$$\left(\left(2z\left(-1\,048\,576z^6+198\,770\,688z^5-10\,504\,232\,960z^4+178\,009\,643\,520z^3-845\,706\,906\,000z^2+700\,988\,228\,325z+\right.\right.\right.$$
$$2\,737\,419\,300\Big)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(1\,048\,576z^6-198\,115\,328z^5+10\,381\,762\,560z^4-\right.$$
$$\left.171\,766\,172\,160z^3+749\,946\,027\,600z^2-376\,652\,897\,775z-16\,424\,515\,800\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\left(1\,048\,576z^7-198\,508\,544z^6+10\,454\,949\,888z^5-175\,459\,299\,840z^4+804\,961\,357\,200z^3-\right.$$
$$\left.\left.\left.543\,119\,987\,025z^2-35\,586\,450\,900z+6\,159\,193\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(1\,119\,242\,124\,000\sqrt{2}\,z^{7/4}\right)$$

07.22.03.9561.01

$${}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{7}{4};-z\right)=$$
$$\left(\left(2z\left(1\,048\,576z^6+198\,770\,688z^5+10\,504\,232\,960z^4+178\,009\,643\,520z^3+845\,706\,906\,000z^2+700\,988\,228\,325z-\right.\right.\right.$$
$$2\,737\,419\,300\Big)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(1\,048\,576z^6+198\,115\,328z^5+10\,381\,762\,560z^4+\right.$$
$$\left.171\,766\,172\,160z^3+749\,946\,027\,600z^2+376\,652\,897\,775z-16\,424\,515\,800\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\left(1\,048\,576z^7+198\,508\,544z^6+10\,454\,949\,888z^5+175\,459\,299\,840z^4+804\,961\,357\,200z^3+\right.$$
$$\left.\left.\left.543\,119\,987\,025z^2-35\,586\,450\,900z-6\,159\,193\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(1\,119\,242\,124\,000\sqrt{2}\,z^{7/4}\right)$$

07.22.03.9562.01

$${}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{95\,260\,586\,803\,200z^{5/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-16\,777\,216z^6+3\,466\,592\,256z^5-203\,120\,640\,000z^4+3\,910\,072\,320\,000z^3-\right.\right.\right.$$
$$\left.21\,810\,872\,160\,000z^2+21\,265\,600\,356\,000z+1\,993\,650\,033\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(-16\,777\,216z^6+3\,466\,592\,256z^5-203\,120\,640\,000z^4+3\,910\,072\,320\,000z^3-\right.$$
$$\left.21\,810\,872\,160\,000z^2+21\,265\,600\,356\,000z+1\,993\,650\,033\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+$$
$$4\left(-4\,194\,304z^7+1\,048\,576z^{13/2}+865\,861\,632z^6-215\,678\,976z^{11/2}-50\,619\,383\,808z^5+\right.$$
$$12\,495\,790\,080z^{9/2}+968\,341\,616\,640z^4-233\,243\,112\,960z^{7/2}-5\,288\,191\,513\,920z^3+$$
$$1\,174\,339\,509\,840z^{5/2}+4\,590\,265\,056\,300z^2-634\,562\,826\,975z^{3/2}+631\,004\,774\,400z-$$
$$72\,808\,243\,200\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^7+1\,048\,576z^{13/2}-865\,861\,632z^6-215\,678\,976z^{11/2}+\right.$$
$$50\,619\,383\,808z^5+12\,495\,790\,080z^{9/2}-968\,341\,616\,640z^4-233\,243\,112\,960z^{7/2}+$$
$$5\,288\,191\,513\,920z^3+1\,174\,339\,509\,840z^{5/2}-4\,590\,265\,056\,300z^2-634\,562\,826\,975z^{3/2}-$$
$$\left.\left.\left.631\,004\,774\,400z-72\,808\,243\,200\sqrt{z}+36\,404\,121\,600\right)-36\,404\,121\,600\right)\right)\right)$$

07.22.03.9563.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{9}{4};-z\right)= \frac{1}{23\,815\,146\,700\,800\,z^{5/2}}\left(\sqrt{\pi}\,z^{5/4}\left(16\,777\,216\,z^6+3\,466\,592\,256\,z^5+203\,120\,640\,000\,z^4+3\,910\,072\,320\,000\,z^3+21\,810\,872\,160\,000\,z^2+21\,265\,600\,356\,000\,z-1\,993\,650\,033\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\left(4\left(1\,048\,576\,z^7+216\,465\,408\,z^6+12\,654\,845\,952\,z^5+242\,085\,404\,160\,z^4+1\,322\,047\,878\,480\,z^3+1\,147\,566\,264\,075\,z^2-157\,751\,193\,600\,z-9\,101\,030\,400\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(1\,048\,576\,z^6+215\,678\,976\,z^5+12\,495\,790\,080\,z^4+233\,243\,112\,960\,z^3+1\,174\,339\,509\,840\,z^2+634\,562\,826\,975\,z-72\,808\,243\,200\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9564.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{11}{4};z\right)= -\left(\left(2\,z\left(16\,777\,216\,z^6-3\,758\,096\,384\,z^5+242\,635\,571\,200\,z^4-5\,279\,034\,408\,960\,z^3+34\,888\,112\,812\,800\,z^2-46\,063\,262\,044\,800\,z-2\,943\,161\,246\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-16\,777\,216\,z^6+3\,747\,610\,624\,z^5-240\,314\,941\,440\,z^4+5\,133\,504\,430\,080\,z^3-31\,955\,168\,044\,800\,z^2+30\,831\,731\,330\,400\,z+7\,690\,717\,309\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(-16\,777\,216\,z^7+3\,753\,902\,080\,z^6-241\,702\,600\,704\,z^5+5\,219\,812\,638\,720\,z^4-33\,656\,528\,505\,600\,z^3+39\,021\,236\,654\,400\,z^2+7\,113\,246\,265\,125\,z+854\,074\,821\,600\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(66\,514\,960\,512\,000\sqrt{2}\,z^{7/4}\right) $$

07.22.03.9565.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{11}{4};-z\right)= \left(\left(2\,z\left(16\,777\,216\,z^6+3\,758\,096\,384\,z^5+242\,635\,571\,200\,z^4+5\,279\,034\,408\,960\,z^3+34\,888\,112\,812\,800\,z^2+46\,063\,262\,044\,800\,z-2\,943\,161\,246\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(16\,777\,216\,z^6+3\,747\,610\,624\,z^5+240\,314\,941\,440\,z^4+5\,133\,504\,430\,080\,z^3+31\,955\,168\,044\,800\,z^2+30\,831\,731\,330\,400\,z-7\,690\,717\,309\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(16\,777\,216\,z^7+3\,753\,902\,080\,z^6+241\,702\,600\,704\,z^5+5\,219\,812\,638\,720\,z^4+33\,656\,528\,505\,600\,z^3+39\,021\,236\,654\,400\,z^2-7\,113\,246\,265\,125\,z+854\,074\,821\,600\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(66\,514\,960\,512\,000\sqrt{2}\,z^{7/4}\right) $$

07.22.03.9566.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{13}{4};z\right) = \left(e^{-2\sqrt{z}}\left(4\left(-67\,108\,864\,z^7+16\,777\,216\,z^{13/2}+16\,164\,847\,616\,z^6-4\,028\,628\,992\,z^{11/2}-1\,134\,469\,840\,896\,z^5+280\,639\,242\,240\,z^{9/2}+27\,163\,694\,530\,560\,z^4-6\,590\,406\,574\,080\,z^{7/2}-198\,863\,732\,874\,240\,z^3+45\,402\,184\,154\,880\,z^{5/2}+268\,347\,294\,230\,400\,z^2-44\,501\,921\,402\,400\,z^{3/2}+71\,265\,835\,802\,700\,z-17\,223\,157\,880\,775\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864\,z^7+16\,777\,216\,z^{13/2}-16\,164\,847\,616\,z^6-4\,028\,628\,992\,z^{11/2}+1\,134\,469\,840\,896\,z^5+280\,639\,242\,240\,z^{9/2}-27\,163\,694\,530\,560\,z^4-6\,590\,406\,574\,080\,z^{7/2}+198\,863\,732\,874\,240\,z^3+45\,402\,184\,154\,880\,z^{5/2}-268\,347\,294\,230\,400\,z^2-44\,501\,921\,402\,400\,z^{3/2}-71\,265\,835\,802\,700\,z-17\,223\,157\,880\,775\sqrt{z}-16\,309\,046\,476\,800\right)+16\,309\,046\,476\,800\right)+e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(-268\,435\,456\,z^7+64\,709\,722\,112\,z^6-4\,549\,902\,336\,000\,z^5+109\,482\,024\,960\,000\,z^4-814\,272\,560\,640\,000\,z^3+1\,190\,873\,619\,936\,000\,z^2+223\,288\,803\,738\,000\,z+49\,841\,250\,834\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(-268\,435\,456\,z^7+64\,709\,722\,112\,z^6-4\,549\,902\,336\,000\,z^5+109\,482\,024\,960\,000\,z^4-814\,272\,560\,640\,000\,z^3+1\,190\,873\,619\,936\,000\,z^2+223\,288\,803\,738\,000\,z+49\,841\,250\,834\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big/\left(4\,741\,860\,320\,870\,400\,z^{5/2}\right) $$

07.22.03.9567.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{13}{4};-z\right) = \left(\sqrt{\pi}\sqrt[4]{z}\left(268\,435\,456\,z^7+64\,709\,722\,112\,z^6+4\,549\,902\,336\,000\,z^5+109\,482\,024\,960\,000\,z^4+814\,272\,560\,640\,000\,z^3+1\,190\,873\,619\,936\,000\,z^2-223\,288\,803\,738\,000\,z+49\,841\,250\,834\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\left(4\left(16\,777\,216\,z^7+4\,041\,211\,904\,z^6+283\,617\,460\,224\,z^5+6\,790\,923\,632\,640\,z^4+49\,715\,933\,218\,560\,z^3+67\,086\,823\,557\,600\,z^2-17\,816\,458\,950\,675\,z+4\,077\,261\,619\,200\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(16\,777\,216\,z^6+4\,028\,628\,992\,z^5+280\,639\,242\,240\,z^4+6\,590\,406\,574\,080\,z^3+45\,402\,184\,154\,880\,z^2+44\,501\,921\,402\,400\,z-17\,223\,157\,880\,775\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(1\,185\,465\,080\,217\,600\,z^{5/2}\right) $$

07.22.03.9568.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{7}{2}, \frac{15}{4}; z\right) = $$

$$ -\left(\left(2\sqrt{z}\left(268\,435\,456\,z^7 - 69\,373\,788\,160\,z^6 + 5\,291\,916\,656\,640\,z^5 - 140\,596\,803\,993\,600\,z^4 + 1\,190\,467\,483\,545\,600\,z^3 - 2\,155\,082\,786\,438\,400\,z^2 - 296\,273\,379\,402\,000\,z - 69\,777\,751\,168\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-268\,435\,456\,z^7 + 69\,206\,016\,000\,z^6 - 5\,249\,008\,926\,720\,z^5 + 137\,402\,759\,577\,600\,z^4 - 1\,110\,718\,103\,040\,000\,z^3 + 1\,595\,544\,869\,318\,400\,z^2 + 661\,196\,257\,722\,000\,z + 209\,333\,253\,504\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-268\,435\,456\,z^7 + 69\,306\,679\,296\,z^6 - 5\,274\,678\,067\,200\,z^5 + 139\,300\,429\,824\,000\,z^4 - 1\,157\,262\,736\,896\,000\,z^3 + 1\,903\,849\,858\,310\,400\,z^2 + 550\,632\,389\,907\,600\,z + 200\,622\,660\,863\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(2\,902\,471\,004\,160\,000\sqrt{2}\, z^{9/4}\right) $$

07.22.03.9569.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{7}{2}, \frac{15}{4}; -z\right) = $$

$$ \left(\left(2\sqrt{z}\left(268\,435\,456\,z^7 + 69\,373\,788\,160\,z^6 + 5\,291\,916\,656\,640\,z^5 + 140\,596\,803\,993\,600\,z^4 + 1\,190\,467\,483\,545\,600\,z^3 + 2\,155\,082\,786\,438\,400\,z^2 - 296\,273\,379\,402\,000\,z + 69\,777\,751\,168\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(268\,435\,456\,z^7 + 69\,206\,016\,000\,z^6 + 5\,249\,008\,926\,720\,z^5 + 137\,402\,759\,577\,600\,z^4 + 1\,110\,718\,103\,040\,000\,z^3 + 1\,595\,544\,869\,318\,400\,z^2 - 661\,196\,257\,722\,000\,z + 209\,333\,253\,504\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(268\,435\,456\,z^7 + 69\,306\,679\,296\,z^6 + 5\,274\,678\,067\,200\,z^5 + 139\,300\,429\,824\,000\,z^4 + 1\,157\,262\,736\,896\,000\,z^3 + 1\,903\,849\,858\,310\,400\,z^2 - 550\,632\,389\,907\,600\,z + 200\,622\,660\,863\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(2\,902\,471\,004\,160\,000\sqrt{2}\, z^{9/4}\right) $$

07.22.03.9570.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{17}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}+295\,614\,545\,920\,z^{13/2}-73\,702\,309\,888\,z^{6}-24\,211\,120\,717\,824\,z^{11/2}+\right.\right.\right.
$$
$$
5\,998\,195\,507\,200\,z^{5}+696\,253\,663\,150\,080\,z^{9/2}-169\,747\,999\,948\,800\,z^{4}-6\,392\,037\,443\,420\,160\,z^{7/2}+
$$
$$
1\,484\,417\,395\,077\,120\,z^{3}+11\,715\,528\,908\,160\,000\,z^{5/2}-2\,130\,749\,164\,051\,200\,z^{2}+
$$
$$
4\,474\,681\,180\,200\,000\,z^{3/2}-1\,291\,334\,917\,395\,600\,z+2\,185\,315\,588\,694\,700\sqrt{z}\;+
$$
$$
e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-295\,614\,545\,920\,z^{13/2}-73\,702\,309\,888\,z^{6}+\right.
$$
$$
24\,211\,120\,717\,824\,z^{11/2}+5\,998\,195\,507\,200\,z^{5}-696\,253\,663\,150\,080\,z^{9/2}-169\,747\,999\,948\,800\,z^{4}+
$$
$$
6\,392\,037\,443\,420\,160\,z^{7/2}+1\,484\,417\,395\,077\,120\,z^{3}-11\,715\,528\,908\,160\,000\,z^{5/2}-
$$
$$
\left.2\,130\,749\,164\,051\,200\,z^{2}-4\,474\,681\,180\,200\,000\,z^{3/2}-1\,291\,334\,917\,395\,600\,z-
$$
$$
\left.2\,185\,315\,588\,694\,700\sqrt{z}\;-448\,571\,257\,509\,375\right)-448\,571\,257\,509\,375\Big)-
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-1\,183\,263\,490\,048\,z^{7}+97\,064\,583\,168\,000\,z^{6}-2\,802\,739\,838\,976\,000\,z^{5}+\right.
$$
$$
26\,056\,721\,940\,480\,000\,z^{4}-50\,810\,607\,783\,936\,000\,z^{3}-14\,290\,483\,439\,232\,000\,z^{2}-
$$
$$
\left.6\,379\,680\,106\,800\,000\,z-448\,571\,257\,509\,375\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-1\,183\,263\,490\,048\,z^{7}+97\,064\,583\,168\,000\,z^{6}-2\,802\,739\,838\,976\,000\,z^{5}+\right.
$$
$$
26\,056\,721\,940\,480\,000\,z^{4}-50\,810\,607\,783\,936\,000\,z^{3}-14\,290\,483\,439\,232\,000\,z^{2}-
$$
$$
\left.\left.\left.6\,379\,680\,106\,800\,000\,z-448\,571\,257\,509\,375\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)\Big/\left(186\,756\,344\,945\,049\,600\,z^{13/4}\right)
$$

07.22.03.9571.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{17}{4};-z\right)=
\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^{8}+1\,183\,263\,490\,048\,z^{7}+97\,064\,583\,168\,000\,z^{6}+2\,802\,739\,838\,976\,000\,z^{5}+26\,056\,721\,940\,480\,000\,z^{4}+\right.\right.
$$
$$
\left.50\,810\,607\,783\,936\,000\,z^{3}-14\,290\,483\,439\,232\,000\,z^{2}+6\,379\,680\,106\,800\,000\,z-448\,571\,257\,509\,375\right)
$$
$$
C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^{7}+73\,903\,636\,480\,z^{6}+6\,052\,780\,179\,456\,z^{5}+174\,063\,415\,787\,520\,z^{4}+\right.\right.
$$
$$
1\,598\,009\,360\,855\,040\,z^{3}+2\,928\,882\,227\,040\,000\,z^{2}-1\,118\,670\,295\,050\,000\,z+546\,328\,897\,173\,675\Big)
$$
$$
\sin\left(2\sqrt{z}\right)-\left(268\,435\,456\,z^{7}+73\,702\,309\,888\,z^{6}+5\,998\,195\,507\,200\,z^{5}+169\,747\,999\,948\,800\,z^{4}+\right.
$$
$$
1\,484\,417\,395\,077\,120\,z^{3}+2\,130\,749\,164\,051\,200\,z^{2}-1\,291\,334\,917\,395\,600\,z+
$$
$$
\left.\left.448\,571\,257\,509\,375\right)\cos\left(2\sqrt{z}\right)\right)\Big)\Big/\left(46\,689\,086\,236\,262\,400\,z^{13/4}\right)
$$

07.22.03.9572.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{19}{4};z\right) = -\left(\left(2\sqrt{z}\left(4\,294\,967\,296\,z^8 - 1\,257\,888\,546\,816\,z^7 + 110\,693\,219\,041\,280\,z^6 - 3\,473\,524\,591\,165\,440\,z^5 + 35\,867\,518\,068\,326\,400\,z^4 - 82\,476\,868\,690\,944\,000\,z^3 - 17\,944\,060\,239\,705\,600\,z^2 - 8\,612\,568\,144\,180\,000\,z + 767\,555\,262\,849\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4\,294\,967\,296\,z^8 + 1\,255\,204\,192\,256\,z^7 - 109\,914\,252\,902\,400\,z^6 + 3\,406\,404\,224\,286\,720\,z^5 - 33\,868\,532\,249\,395\,200\,z^4 + 64\,787\,994\,541\,670\,400\,z^3 + 36\,211\,944\,242\,073\,600\,z^2 + 22\,328\,880\,373\,800\,000\,z - 2\,302\,665\,788\,548\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-4\,294\,967\,296\,z^8 + 1\,256\,814\,804\,992\,z^7 - 110\,380\,424\,626\,176\,z^6 + 3\,446\,334\,742\,855\,680\,z^5 - 35\,040\,140\,977\,766\,400\,z^4 + 74\,685\,102\,183\,014\,400\,z^3 + 29\,259\,119\,540\,851\,200\,z^2 + 17\,361\,969\,427\,202\,400\,z + 2\,302\,665\,788\,548\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(105\,262\,948\,417\,536\,000\sqrt{2}\,z^{13/4}\right) $$

07.22.03.9573.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{19}{4};-z\right) = \left(\left(2\sqrt{z}\left(4\,294\,967\,296\,z^8 + 1\,257\,888\,546\,816\,z^7 + 110\,693\,219\,041\,280\,z^6 + 3\,473\,524\,591\,165\,440\,z^5 + 35\,867\,518\,068\,326\,400\,z^4 + 82\,476\,868\,690\,944\,000\,z^3 - 17\,944\,060\,239\,705\,600\,z^2 + 8\,612\,568\,144\,180\,000\,z + 767\,555\,262\,849\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4\,294\,967\,296\,z^8 + 1\,255\,204\,192\,256\,z^7 + 109\,914\,252\,902\,400\,z^6 + 3\,406\,404\,224\,286\,720\,z^5 + 33\,868\,532\,249\,395\,200\,z^4 + 64\,787\,994\,541\,670\,400\,z^3 - 36\,211\,944\,242\,073\,600\,z^2 + 22\,328\,880\,373\,800\,000\,z + 2\,302\,665\,788\,548\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4\,294\,967\,296\,z^8 + 1\,256\,814\,804\,992\,z^7 + 110\,380\,424\,626\,176\,z^6 + 3\,446\,334\,742\,855\,680\,z^5 + 35\,040\,140\,977\,766\,400\,z^4 + 74\,685\,102\,183\,014\,400\,z^3 - 29\,259\,119\,540\,851\,200\,z^2 + 17\,361\,969\,427\,202\,400\,z - 2\,302\,665\,788\,548\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(105\,262\,948\,417\,536\,000\sqrt{2}\,z^{13/4}\right) $$

07.22.03.9574.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{21}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}+5\,321\,464\,479\,744\,z^{15/2}-1\,327\,144\,894\,464\,z^{7}-\right.\right.\right.
$$
$$
498\,197\,952\,724\,992\,z^{13/2}+123\,565\,202\,472\,960\,z^{6}+16\,724\,981\,396\,275\,200\,z^{11/2}-4\,091\,884\,465\,029\,120\,z^{5}-
$$
$$
184\,647\,079\,420\,231\,680\,z^{9/2}+43\,379\,764\,606\,402\,560\,z^{4}+427\,903\,364\,741\,529\,600\,z^{7/2}-
$$
$$
82\,398\,544\,994\,304\,000\,z^{3}+210\,518\,409\,662\,668\,800\,z^{5/2}-65\,428\,463\,376\,460\,800\,z^{2}+
$$
$$
153\,572\,427\,430\,329\,600\,z^{3/2}-45\,933\,696\,768\,960\,000\,z+23\,325\,705\,390\,487\,500\sqrt{z}+
$$
$$
e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}-5\,321\,464\,479\,744\,z^{15/2}-1\,327\,144\,894\,464\,z^{7}+\right.
$$
$$
498\,197\,952\,724\,992\,z^{13/2}+123\,565\,202\,472\,960\,z^{6}-16\,724\,981\,396\,275\,200\,z^{11/2}-
$$
$$
4\,091\,884\,465\,029\,120\,z^{5}+184\,647\,079\,420\,231\,680\,z^{9/2}+43\,379\,764\,606\,402\,560\,z^{4}-
$$
$$
427\,903\,364\,741\,529\,600\,z^{7/2}-82\,398\,544\,994\,304\,000\,z^{3}-210\,518\,409\,662\,668\,800\,z^{5/2}-
$$
$$
65\,428\,463\,376\,460\,800\,z^{2}-153\,572\,427\,430\,329\,600\,z^{3/2}-45\,933\,696\,768\,960\,000\,z-
$$
$$
\left.\left.\left.23\,325\,705\,390\,487\,500\sqrt{z}+17\,494\,279\,042\,865\,625\right)+17\,494\,279\,042\,865\,625\right)-
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-21\,298\,742\,820\,864\,z^{8}+1\,996\,757\,139\,456\,000\,z^{7}-67\,265\,756\,135\,424\,000\,z^{6}+\right.
$$
$$
750\,433\,591\,885\,824\,000\,z^{5}-1\,829\,181\,880\,221\,696\,000\,z^{4}-685\,943\,205\,083\,136\,000\,z^{3}-
$$
$$
\left.459\,336\,967\,689\,600\,000\,z^{2}-64\,594\,261\,081\,350\,000\,z+17\,494\,279\,042\,865\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-21\,298\,742\,820\,864\,z^{8}+1\,996\,757\,139\,456\,000\,z^{7}-\right.
$$
$$
67\,265\,756\,135\,424\,000\,z^{6}+750\,433\,591\,885\,824\,000\,z^{5}-1\,829\,181\,880\,221\,696\,000\,z^{4}-
$$
$$
685\,943\,205\,083\,136\,000\,z^{3}-459\,336\,967\,689\,600\,000\,z^{2}-64\,594\,261\,081\,350\,000\,z+
$$
$$
\left.\left.\left.17\,494\,279\,042\,865\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(6\,327\,744\,393\,432\,268\,800\,z^{17/4}\right)
$$

07.22.03.9575.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{7}{2},\frac{21}{4};-z\right)=
\left(\sqrt{\pi}\left(68\,719\,476\,736\,z^{9}+21\,298\,742\,820\,864\,z^{8}+1\,996\,757\,139\,456\,000\,z^{7}+67\,265\,756\,135\,424\,000\,z^{6}+\right.\right.
$$
$$
750\,433\,591\,885\,824\,000\,z^{5}+1\,829\,181\,880\,221\,696\,000\,z^{4}-685\,943\,205\,083\,136\,000\,z^{3}+
$$
$$
\left.459\,336\,967\,689\,600\,000\,z^{2}-64\,594\,261\,081\,350\,000\,z-17\,494\,279\,042\,865\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$
$$
2\sqrt[4]{z}\left(\left(4\,294\,967\,296\,z^{8}+1\,327\,144\,894\,464\,z^{7}+123\,565\,202\,472\,960\,z^{6}+4\,091\,884\,465\,029\,120\,z^{5}+\right.\right.
$$
$$
43\,379\,764\,606\,402\,560\,z^{4}+82\,398\,544\,994\,304\,000\,z^{3}-65\,428\,463\,376\,460\,800\,z^{2}+
$$
$$
45\,933\,696\,768\,960\,000\,z+17\,494\,279\,042\,865\,625\right)\cos\left(2\sqrt{z}\right)-
$$
$$
4\sqrt{z}\left(4\,294\,967\,296\,z^{8}+1\,330\,366\,119\,936\,z^{7}+124\,549\,488\,181\,248\,z^{6}+4\,181\,245\,349\,068\,800\,z^{5}+\right.
$$
$$
46\,161\,769\,855\,057\,920\,z^{4}+106\,975\,841\,185\,382\,400\,z^{3}-52\,629\,602\,415\,667\,200\,z^{2}+
$$
$$
\left.\left.\left.38\,393\,106\,857\,582\,400\,z-5\,831\,426\,347\,621\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(1\,581\,936\,098\,358\,067\,200\,z^{17/4}\right)
$$

07.22.03.9576.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{7}{2}, \frac{23}{4}; z\right) = $$

$$ -\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 - 22\,492\,743\,729\,152\,z^8 + 2\,242\,917\,821\,317\,120\,z^7 - 81\,174\,542\,659\,092\,480\,z^6 + 989\,101\,516\,337\,971\,200\,z^5 - 2\,757\,848\,795\,077\,017\,600\,z^4 - 831\,141\,400\,036\,147\,200\,z^3 - 602\,241\,802\,081\,920\,000\,z^2 + 50\,877\,948\,851\,730\,000\,z - 57\,566\,644\,713\,703\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-68\,719\,476\,736\,z^9 + 22\,449\,794\,056\,192\,z^8 - 2\,228\,975\,283\,732\,480\,z^7 + 79\,809\,700\,366\,909\,440\,z^6 - 941\,883\,890\,230\,886\,400\,z^5 + 2\,253\,190\,942\,369\,382\,400\,z^4 + 1\,557\,132\,374\,801\,203\,200\,z^3 + 1\,388\,218\,391\,239\,680\,000\,z^2 + 110\,527\,957\,850\,310\,000\,z + 172\,699\,934\,141\,109\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-68\,719\,476\,736\,z^9 + 22\,475\,563\,859\,968\,z^8 - 2\,237\,321\,478\,930\,432\,z^7 + 80\,622\,472\,931\,573\,760\,z^6 - 969\,643\,896\,392\,908\,800\,z^5 + 2\,538\,550\,069\,700\,198\,400\,z^4 + 1\,248\,647\,100\,464\,332\,800\,z^3 + 1\,018\,651\,002\,277\,708\,800\,z^2 + 257\,898\,568\,317\,390\,000\,z - 172\,699\,934\,141\,109\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(3\,368\,414\,349\,361\,152\,000\sqrt{2}\,z^{17/4}\right) $$

07.22.03.9577.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{7}{2}, \frac{23}{4}; -z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 22\,492\,743\,729\,152\,z^8 + 2\,242\,917\,821\,317\,120\,z^7 + 81\,174\,542\,659\,092\,480\,z^6 + 989\,101\,516\,337\,971\,200\,z^5 + 2\,757\,848\,795\,077\,017\,600\,z^4 - 831\,141\,400\,036\,147\,200\,z^3 + 602\,241\,802\,081\,920\,000\,z^2 + 50\,877\,948\,851\,730\,000\,z + 57\,566\,644\,713\,703\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(68\,719\,476\,736\,z^9 + 22\,449\,794\,056\,192\,z^8 + 2\,228\,975\,283\,732\,480\,z^7 + 79\,809\,700\,366\,909\,440\,z^6 + 941\,883\,890\,230\,886\,400\,z^5 + 2\,253\,190\,942\,369\,382\,400\,z^4 - 1\,557\,132\,374\,801\,203\,200\,z^3 + 1\,388\,218\,391\,239\,680\,000\,z^2 - 110\,527\,957\,850\,310\,000\,z + 172\,699\,934\,141\,109\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(68\,719\,476\,736\,z^9 + 22\,475\,563\,859\,968\,z^8 + 2\,237\,321\,478\,930\,432\,z^7 + 80\,622\,472\,931\,573\,760\,z^6 + 969\,643\,896\,392\,908\,800\,z^5 + 2\,538\,550\,069\,700\,198\,400\,z^4 - 1\,248\,647\,100\,464\,332\,800\,z^3 + 1\,018\,651\,002\,277\,708\,800\,z^2 - 257\,898\,568\,317\,390\,000\,z - 172\,699\,934\,141\,109\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(3\,368\,414\,349\,361\,152\,000\sqrt{2}\,z^{17/4}\right) $$

For fixed z and $a_1 = -\frac{19}{4}$, $b_1 = \frac{9}{2}$

07.22.03.9578.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, -\frac{23}{4}; z\right) = -\frac{105\left(\left(32z^2 + 912z + 555\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(172z + 555\right)\cosh\left(2\sqrt{z}\right)\right)}{2944\,z^{7/2}} $$

07.22.03.9579.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, -\frac{23}{4}; -z\right) = \frac{105\left(2\sqrt{z}\,\left(172z - 555\right)\cos\left(2\sqrt{z}\right) + \left(32z^2 - 912z + 555\right)\sin\left(2\sqrt{z}\right)\right)}{2944\,z^{7/2}} $$

07.22.03.9580.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, -\frac{21}{4}; z\right) = \left(\left(4\,z\left(268\,435\,456\,z^7 + 15\,737\,028\,608\,z^6 + 533\,719\,941\,120\,z^5 + 10\,665\,539\,665\,920\,z^4 + 109\,335\,708\,979\,200\,z^3 + 369\,490\,577\,702\,400\,z^2 - 445\,005\,831\,085\,200\,z + 4\,867\,251\,277\,494\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(134\,217\,728\,z^7 + 7\,952\,400\,384\,z^6 + 272\,003\,235\,840\,z^5 + 5\,514\,335\,354\,880\,z^4 + 58\,561\,564\,723\,200\,z^3 + 232\,663\,291\,660\,800\,z^2 + 1\,446\,268\,951\,026\,900\,z + 14\,601\,753\,832\,483\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(1\,073\,741\,824\,z^8 + 63\,216\,549\,888\,z^7 + 2\,151\,036\,223\,488\,z^6 + 43\,222\,444\,277\,760\,z^5 + 448\,978\,205\,491\,200\,z^4 + 1\,609\,420\,148\,582\,400\,z^3 - 1\,090\,982\,037\,499\,200\,z^2 - 12\,682\,666\,185\,928\,200\,z - 43\,805\,261\,497\,449\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(636\,049\,309\,896\,000\,\sqrt{2}\,z^{11/4}\right) $$

07.22.03.9581.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, -\frac{21}{4}; -z\right) = \left(\left(-4\,z\left(268\,435\,456\,z^7 - 15\,737\,028\,608\,z^6 + 533\,719\,941\,120\,z^5 - 10\,665\,539\,665\,920\,z^4 + 109\,335\,708\,979\,200\,z^3 - 369\,490\,577\,702\,400\,z^2 - 445\,005\,831\,085\,200\,z - 4\,867\,251\,277\,494\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(134\,217\,728\,z^7 - 7\,952\,400\,384\,z^6 + 272\,003\,235\,840\,z^5 - 5\,514\,335\,354\,880\,z^4 + 58\,561\,564\,723\,200\,z^3 - 232\,663\,291\,660\,800\,z^2 + 1\,446\,268\,951\,026\,900\,z - 14\,601\,753\,832\,483\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-1\,073\,741\,824\,z^8 + 63\,216\,549\,888\,z^7 - 2\,151\,036\,223\,488\,z^6 + 43\,222\,444\,277\,760\,z^5 - 448\,978\,205\,491\,200\,z^4 + 1\,609\,420\,148\,582\,400\,z^3 + 1\,090\,982\,037\,499\,200\,z^2 - 12\,682\,666\,185\,928\,200\,z + 43\,805\,261\,497\,449\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(636\,049\,309\,896\,000\,\sqrt{2}\,z^{11/4}\right) $$

07.22.03.9582.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, -\frac{19}{4}; z\right) = \frac{105\left(2\sqrt{z}\,(4\,z+15)\cosh\left(2\sqrt{z}\right) - 3\,(8\,z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}} $$

07.22.03.9583.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{105\left(2\sqrt{z}\,(4\,z-15)\cos\left(2\sqrt{z}\right) + 3\,(5-8\,z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}} $$

07.22.03.9584.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, -\frac{17}{4}; z\right) = $$
$$ \left(\left(4z\left(134\,217\,728z^7 + 2\,608\,857\,088z^6 + 53\,186\,396\,160z^5 + 759\,025\,336\,320z^4 + 6\,040\,037\,836\,800z^3 + \right.\right.\right. $$
$$ \left.\left.\left. 16\,497\,916\,617\,600z^2 - 19\,481\,822\,098\,200z + 139\,064\,322\,214\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 4\sqrt{z}\left(67\,108\,864z^7 + 1\,346\,371\,584z^6 + 27\,521\,187\,840z^5 + 399\,105\,146\,880z^4 + 3\,327\,532\,876\,800z^3 + \right. $$
$$ \left. 11\,517\,164\,366\,400z^2 + 21\,019\,860\,684\,900z + 417\,192\,966\,642\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left(536\,870\,912z^8 + 10\,569\,646\,080z^7 + 215\,564\,156\,928z^6 + 3\,094\,352\,363\,520z^5 + 25\,031\,498\,342\,400z^4 + \right. $$
$$ 73\,980\,759\,283\,200z^3 - 34\,178\,635\,260\,000z^2 - 301\,455\,562\,993\,200z - $$
$$ \left.\left. 1\,251\,578\,899\,927\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(30\,288\,062\,376\,000\sqrt{2}\, z^{11/4}\right) $$

07.22.03.9585.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, -\frac{17}{4}; -z\right) = $$
$$ \left(\left(-4z\left(134\,217\,728z^7 - 2\,608\,857\,088z^6 + 53\,186\,396\,160z^5 - 759\,025\,336\,320z^4 + 6\,040\,037\,836\,800z^3 - \right.\right.\right. $$
$$ \left.\left.\left. 16\,497\,916\,617\,600z^2 - 19\,481\,822\,098\,200z - 139\,064\,322\,214\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 4\sqrt{z}\left(67\,108\,864z^7 - 1\,346\,371\,584z^6 + 27\,521\,187\,840z^5 - 399\,105\,146\,880z^4 + 3\,327\,532\,876\,800z^3 - \right. $$
$$ \left. 11\,517\,164\,366\,400z^2 + 21\,019\,860\,684\,900z - 417\,192\,966\,642\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(-536\,870\,912z^8 + 10\,569\,646\,080z^7 - 215\,564\,156\,928z^6 + 3\,094\,352\,363\,520z^5 - 25\,031\,498\,342\,400z^4 + \right. $$
$$ \left. 73\,980\,759\,283\,200z^3 + 34\,178\,635\,260\,000z^2 - 301\,455\,562\,993\,200z + 1\,251\,578\,899\,927\,125\right) $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(30\,288\,062\,376\,000\sqrt{2}\, z^{11/4}\right) $$

07.22.03.9586.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, -\frac{15}{4}; z\right) = \frac{1}{42\,211\,417\,248\,000 z^{7/2}} $$
$$ \left(e^{-2\sqrt{z}}\left(-536\,870\,912 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{33/4} - 536\,870\,912 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{33/4} + \right. $$
$$ 536\,870\,912 e^{4\sqrt{z}} z^8 - 536\,870\,912 z^8 + 134\,217\,728 e^{4\sqrt{z}} z^{15/2} + 134\,217\,728 z^{15/2} + 100\,663\,296 e^{4\sqrt{z}} z^7 - $$
$$ 100\,663\,296 z^7 + 125\,829\,120 e^{4\sqrt{z}} z^{13/2} + 125\,829\,120 z^{13/2} + 220\,200\,960 e^{4\sqrt{z}} z^6 - 220\,200\,960 z^6 + $$
$$ 495\,452\,160 e^{4\sqrt{z}} z^{11/2} + 495\,452\,160 z^{11/2} + 1\,362\,493\,440 e^{4\sqrt{z}} z^5 - 1\,362\,493\,440 z^5 + $$
$$ 4\,428\,103\,680 e^{4\sqrt{z}} z^{9/2} + 4\,428\,103\,680 z^{9/2} + 16\,605\,388\,800 e^{4\sqrt{z}} z^4 - 16\,605\,388\,800 z^4 + $$
$$ 70\,572\,902\,400 e^{4\sqrt{z}} z^{7/2} + 70\,572\,902\,400 z^{7/2} + 335\,221\,286\,400 e^{4\sqrt{z}} z^3 - 335\,221\,286\,400 z^3 + $$
$$ 1\,759\,911\,753\,600 e^{4\sqrt{z}} z^{5/2} + 1\,759\,911\,753\,600 z^{5/2} + 10\,119\,492\,583\,200 e^{4\sqrt{z}} z^2 - 10\,119\,492\,583\,200 z^2 + $$
$$ 63\,246\,828\,645\,000 e^{4\sqrt{z}} z^{3/2} + 63\,246\,828\,645\,000 z^{3/2} - 230\,988\,417\,660\,000 e^{4\sqrt{z}} z + 230\,988\,417\,660\,000 z + $$
$$ \left. 299\,047\,505\,006\,250 e^{4\sqrt{z}}\sqrt{z} + 299\,047\,505\,006\,250\sqrt{z} - 149\,523\,752\,503\,125 e^{4\sqrt{z}} + 149\,523\,752\,503\,125\right)\Big) $$

07.22.03.9587.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{9}{2},-\frac{15}{4};-z\right)=\frac{1}{21\,105\,708\,624\,000\,z^{7/2}}$$
$$\left(1\,073\,741\,824\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{33/4}+2\left(67\,108\,864\,z^7-62\,914\,560\,z^6+247\,726\,080\,z^5-2\,214\,051\,840\,z^4+\right.\right.$$
$$\left.35\,286\,451\,200\,z^3-879\,955\,876\,800\,z^2+31\,623\,414\,322\,500\,z-149\,523\,752\,503\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+$$
$$\left(-536\,870\,912\,z^8+100\,663\,296\,z^7-220\,200\,960\,z^6+1\,362\,493\,440\,z^5-16\,605\,388\,800\,z^4+\right.$$
$$\left.\left.335\,221\,286\,400\,z^3-10\,119\,492\,583\,200\,z^2-230\,988\,417\,660\,000\,z+149\,523\,752\,503\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.9588.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{9}{2},-\frac{13}{4};z\right)=$$
$$-\left(\left(4\,z\left(67\,108\,864\,z^7-1\,325\,400\,064\,z^6-8\,745\,123\,840\,z^5-75\,211\,407\,360\,z^4-426\,671\,308\,800\,z^3-890\,363\,232\,000\,z^2+\right.\right.\right.$$
$$\left.911\,430\,273\,600\,z-4\,485\,945\,877\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$4\sqrt{z}\left(-33\,554\,432\,z^7+641\,728\,512\,z^6+4\,730\,388\,480\,z^5+41\,061\,335\,040\,z^4+246\,655\,411\,200\,z^3+\right.$$
$$\left.680\,870\,836\,800\,z^2-170\,893\,176\,300\,z+13\,457\,837\,633\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-268\,435\,456\,z^8+5\,234\,491\,392\,z^7+36\,201\,037\,824\,z^6+311\,167\,549\,440\,z^5+1\,800\,316\,108\,800\,z^4+\right.$$
$$\left.\left.4\,180\,406\,630\,400\,z^3-1\,545\,468\,724\,800\,z^2-7\,177\,513\,404\,600\,z-\right.\right.$$
$$\left.\left.40\,373\,512\,900\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(1\,781\,650\,728\,000\sqrt{2}\;z^{11/4}\right)$$

07.22.03.9589.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{9}{2},-\frac{13}{4};-z\right)=$$
$$\left(\left(4\,z\left(67\,108\,864\,z^7+1\,325\,400\,064\,z^6-8\,745\,123\,840\,z^5+75\,211\,407\,360\,z^4-426\,671\,308\,800\,z^3+890\,363\,232\,000\,z^2+\right.\right.\right.$$
$$\left.911\,430\,273\,600\,z+4\,485\,945\,877\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\left(33\,554\,432\,z^7+641\,728\,512\,z^6-4\,730\,388\,480\,z^5+41\,061\,335\,040\,z^4-246\,655\,411\,200\,z^3+\right.$$
$$\left.680\,870\,836\,800\,z^2+170\,893\,176\,300\,z+13\,457\,837\,633\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(268\,435\,456\,z^8+5\,234\,491\,392\,z^7-36\,201\,037\,824\,z^6+311\,167\,549\,440\,z^5-1\,800\,316\,108\,800\,z^4+\right.$$
$$\left.4\,180\,406\,630\,400\,z^3+1\,545\,468\,724\,800\,z^2-7\,177\,513\,404\,600\,z+40\,373\,512\,900\,875\right)$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(1\,781\,650\,728\,000\sqrt{2}\;z^{11/4}\right)$$

07.22.03.9590.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, -\frac{11}{4}; z\right) = \frac{1}{2\,814\,094\,483\,200\, z^{7/2}} \left(e^{-2\sqrt{z}} \left(-134\,217\,728\, e^{4\sqrt{z}}\, z^8 + 134\,217\,728\, z^8 - 33\,554\,432\, e^{4\sqrt{z}}\, z^{15/2} - 33\,554\,432\, z^{15/2} + 8\,388\,608\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16z - 627) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{29/4} + 8\,388\,608\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16z - 627) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{29/4} + 5\,234\,491\,392\, e^{4\sqrt{z}}\, z^7 - 5\,234\,491\,392\, z^7 + 1\,283\,457\,024\, e^{4\sqrt{z}}\, z^{13/2} + 1\,283\,457\,024\, z^{13/2} + 931\,135\,488\, e^{4\sqrt{z}}\, z^6 - 931\,135\,488\, z^6 + 1\,108\,869\,120\, e^{4\sqrt{z}}\, z^{11/2} + 1\,108\,869\,120\, z^{11/2} + 1\,816\,657\,920\, e^{4\sqrt{z}}\, z^5 - 1\,816\,657\,920\, z^5 + 3\,746\,856\,960\, e^{4\sqrt{z}}\, z^{9/2} + 3\,746\,856\,960\, z^{9/2} + 9\,196\,830\,720\, e^{4\sqrt{z}}\, z^4 - 9\,196\,830\,720\, z^4 + 25\,738\,352\,640\, e^{4\sqrt{z}}\, z^{7/2} + 25\,738\,352\,640\, z^{7/2} + 78\,875\,596\,800\, e^{4\sqrt{z}}\, z^3 - 78\,875\,596\,800\, z^3 + 251\,415\,964\,800\, e^{4\sqrt{z}}\, z^{5/2} + 251\,415\,964\,800\, z^{5/2} + 754\,247\,894\,400\, e^{4\sqrt{z}}\, z^2 - 754\,247\,894\,400\, z^2 + 1\,429\,928\,299\,800\, e^{4\sqrt{z}}\, z^{3/2} + 1\,429\,928\,299\,800\, z^{3/2} - 7\,589\,619\,437\,400\, e^{4\sqrt{z}}\, z + 7\,589\,619\,437\,400\, z + 10\,311\,982\,931\,250\, e^{4\sqrt{z}}\, \sqrt{z} + 10\,311\,982\,931\,250\, \sqrt{z} - 5\,155\,991\,465\,625\, e^{4\sqrt{z}} + 5\,155\,991\,465\,625\right)\right) $$

07.22.03.9591.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, -\frac{11}{4}; -z\right) = \frac{1}{1\,407\,047\,241\,600\, z^{7/2}} \left(-16\,777\,216\, \sqrt{\pi}\, (16z + 627)\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{29/4} - 2\left(16\,777\,216\, z^7 + 641\,728\,512\, z^6 - 554\,434\,560\, z^5 + 1\,873\,428\,480\, z^4 - 12\,869\,176\,320\, z^3 + 125\,707\,982\,400\, z^2 - 714\,964\,149\,900\, z + 5\,155\,991\,465\,625\right) \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(134\,217\,728\, z^8 + 5\,234\,491\,392\, z^7 - 931\,135\,488\, z^6 + 1\,816\,657\,920\, z^5 - 9\,196\,830\,720\, z^4 + 78\,875\,596\,800\, z^3 - 754\,247\,894\,400\, z^2 - 7\,589\,619\,437\,400\, z + 5\,155\,991\,465\,625\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.9592.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, -\frac{9}{4}; z\right) = \left(\left(4z\left(33\,554\,432\, z^7 - 1\,977\,614\,336\, z^6 + 13\,707\,509\,760\, z^5 + 36\,666\,408\,960\, z^4 + 125\,184\,153\,600\, z^3 + 183\,240\,921\,600\, z^2 - 143\,649\,336\,600\, z + 498\,438\,430\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,777\,216\, z^7 - 978\,321\,408\, z^6 + 6\,263\,930\,880\, z^5 + 21\,151\,088\,640\, z^4 + 76\,678\,272\,000\, z^3 + 144\,478\,857\,600\, z^2 - 146\,126\,049\,300\, z + 1\,495\,315\,292\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-134\,217\,728\, z^8 + 7\,876\,902\,912\, z^7 - 52\,904\,853\,504\, z^6 - 157\,530\,193\,920\, z^5 - 546\,761\,318\,400\, z^4 - 913\,136\,716\,800\, z^3 + 305\,548\,135\,200\, z^2 + 416\,087\,733\,600\, z + 4\,485\,945\,877\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(411\,150\,168\,000\, \sqrt{2}\, z^{11/4}\right) $$

07.22.03.9593.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{9}{2},-\frac{9}{4};-z\right)= $$

$$ \left(\left(-4z\left(33\,554\,432z^7+1\,977\,614\,336z^6+13\,707\,509\,760z^5-36\,666\,408\,960z^4+125\,184\,153\,600z^3-183\,240\,921\,600z^2-\right.\right.\right. $$

$$ \left.\left.\left.143\,649\,336\,600z-498\,438\,430\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$

$$ \left.4\sqrt{z}\left(16\,777\,216z^7+978\,321\,408z^6+6\,263\,930\,880z^5-21\,151\,088\,640z^4+76\,678\,272\,000z^3-\right.\right. $$

$$ \left.144\,478\,857\,600z^2-146\,126\,049\,300z-1\,495\,315\,292\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-134\,217\,728z^8-\right. $$

$$ 7\,876\,902\,912z^7-52\,904\,853\,504z^6+157\,530\,193\,920z^5-546\,761\,318\,400z^4+913\,136\,716\,800z^3+ $$

$$ \left.\left.\left.305\,548\,135\,200z^2-416\,087\,733\,600z+4\,485\,945\,877\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(411\,150\,168\,000\sqrt{2}\,z^{11/4}\right) $$

07.22.03.9594.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{9}{2},-\frac{7}{4};z\right)= $$

$$ \frac{1}{255\,826\,771\,200z^{7/2}}\left(e^{-2\sqrt{z}}\left(16\,777\,216e^{4\sqrt{z}}z^8-16\,777\,216z^8+4\,194\,304e^{4\sqrt{z}}z^{15/2}+4\,194\,304z^{15/2}-\right.\right. $$

$$ 1\,311\,768\,576e^{4\sqrt{z}}z^7+1\,311\,768\,576z^7-324\,796\,416e^{4\sqrt{z}}z^{13/2}-324\,796\,416z^{13/2}- $$

$$ 65\,536e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-20\,064z+272\,745\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{25/4}- $$

$$ 65\,536e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-20\,064z+272\,745\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{25/4}+17\,634\,951\,168e^{4\sqrt{z}}z^6- $$

$$ 17\,634\,951\,168z^6+4\,175\,953\,920e^{4\sqrt{z}}z^{11/2}+4\,175\,953\,920z^{11/2}+2\,854\,748\,160e^{4\sqrt{z}}z^5- $$

$$ 2\,854\,748\,160z^5+3\,114\,270\,720e^{4\sqrt{z}}z^{9/2}+3\,114\,270\,720z^{9/2}+4\,513\,259\,520e^{4\sqrt{z}}z^4-4\,513\,259\,520z^4+ $$

$$ 7\,855\,626\,240e^{4\sqrt{z}}z^{7/2}+7\,855\,626\,240z^{7/2}+15\,168\,384\,000e^{4\sqrt{z}}z^3-15\,168\,384\,000z^3+ $$

$$ 29\,578\,348\,800e^{4\sqrt{z}}z^{5/2}+29\,578\,348\,800z^{5/2}+48\,064\,816\,800e^{4\sqrt{z}}z^2-48\,064\,816\,800z^2+ $$

$$ 15\,713\,497\,800e^{4\sqrt{z}}z^{3/2}+15\,713\,497\,800z^{3/2}-282\,842\,960\,400e^{4\sqrt{z}}z+282\,842\,960\,400z+ $$

$$ \left.412\,479\,317\,250e^{4\sqrt{z}}\sqrt{z}+412\,479\,317\,250\sqrt{z}-206\,239\,658\,625e^{4\sqrt{z}}+206\,239\,658\,625\right)\Big) $$

07.22.03.9595.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{9}{2},-\frac{7}{4};-z\right)=\frac{1}{127\,913\,385\,600z^{7/2}} $$

$$ \left(131\,072\sqrt{\pi}\left(256z^2+20\,064z+272\,745\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{25/4}+2\left(2\,097\,152z^7+162\,398\,208z^6+2\,087\,976\,960z^5-\right.\right. $$

$$ \left.1\,557\,135\,360z^4+3\,927\,813\,120z^3-14\,789\,174\,400z^2+7\,856\,748\,900z-206\,239\,658\,625\right)\cos\left(2\sqrt{z}\right)\sqrt{z}- $$

$$ \left(16\,777\,216z^8+1\,311\,768\,576z^7+17\,634\,951\,168z^6-2\,854\,748\,160z^5+4\,513\,259\,520z^4-\right. $$

$$ \left.\left.15\,168\,384\,000z^3+48\,064\,816\,800z^2+282\,842\,960\,400z-206\,239\,658\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.9596.01

$${}_1F_2\left(-\frac{19}{4};\frac{9}{2},-\frac{5}{4};z\right)=$$
$$\left(\left(4z\left(-16\,777\,216z^7+1\,646\,264\,320z^6-33\,768\,407\,040z^5+100\,933\,632\,000z^4+100\,504\,166\,400z^3+87\,727\,622\,400z^2-\right.\right.\right.$$
$$\left.\left.\left.44\,320\,122\,000z+108\,356\,180\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(8\,388\,608z^7-817\,889\,280z^6+16\,383\,836\,160z^5-41\,199\,206\,400z^4-61\,699\,968\,000z^3-\right.$$
$$63\,328\,003\,200z^2+71\,042\,548\,500z-325\,068\,541\,875\Big)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(67\,108\,864z^8-\right.$$
$$6\,568\,280\,064z^7+133\,453\,578\,240z^6-372\,414\,873\,600z^5-461\,058\,048\,000z^4-461\,118\,873\,600z^3+$$
$$\left.\left.139\,738\,737\,600z^2-27\,374\,193\,000z+975\,205\,625\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(228\,416\,760\,000\sqrt{2}\,z^{11/4}\right)$$

07.22.03.9597.01

$${}_1F_2\left(-\frac{19}{4};\frac{9}{2},-\frac{5}{4};-z\right)=$$
$$\left(\left(4z\left(16\,777\,216z^7+1\,646\,264\,320z^6+33\,768\,407\,040z^5+100\,933\,632\,000z^4-100\,504\,166\,400z^3+87\,727\,622\,400z^2+\right.\right.\right.$$
$$\left.\left.\left.44\,320\,122\,000z+108\,356\,180\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(8\,388\,608z^7+817\,889\,280z^6+16\,383\,836\,160z^5+41\,199\,206\,400z^4-61\,699\,968\,000z^3+\right.$$
$$63\,328\,003\,200z^2+71\,042\,548\,500z+325\,068\,541\,875\Big)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(67\,108\,864z^8+\right.$$
$$6\,568\,280\,064z^7+133\,453\,578\,240z^6+372\,414\,873\,600z^5-461\,058\,048\,000z^4+461\,118\,873\,600z^3+$$
$$\left.\left.139\,738\,737\,600z^2+27\,374\,193\,000z+975\,205\,625\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(228\,416\,760\,000\sqrt{2}\,z^{11/4}\right)$$

07.22.03.9598.01

$${}_1F_2\left(-\frac{19}{4};\frac{9}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{109\,640\,044\,800z^{7/2}}\left(e^{-2\sqrt{z}}\left(-4\,194\,304e^{4\sqrt{z}}z^8+4\,194\,304z^8-1\,048\,576e^{4\sqrt{z}}z^{15/2}-1\,048\,576z^{15/2}+\right.\right.$$
$$492\,306\,432e^{4\sqrt{z}}z^7-492\,306\,432z^7+122\,290\,176e^{4\sqrt{z}}z^{13/2}+122\,290\,176z^{13/2}-$$
$$13\,315\,227\,648e^{4\sqrt{z}}z^6+13\,315\,227\,648z^6-3\,239\,792\,640e^{4\sqrt{z}}z^{11/2}-3\,239\,792\,640z^{11/2}+$$
$$1024e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-481\,536z^2+13\,091\,760z-75\,004\,875\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+$$
$$1024e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-481\,536z^2+13\,091\,760z-75\,004\,875\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+74\,482\,974\,720e^{4\sqrt{z}}z^5-$$
$$74\,482\,974\,720z^5+16\,479\,682\,560e^{4\sqrt{z}}z^{9/2}+16\,479\,682\,560z^{9/2}+10\,024\,058\,880e^{4\sqrt{z}}z^4-$$
$$10\,024\,058\,880z^4+9\,145\,128\,960e^{4\sqrt{z}}z^{7/2}+9\,145\,128\,960z^{7/2}+10\,112\,256\,000e^{4\sqrt{z}}z^3-$$
$$10\,112\,256\,000z^3+11\,376\,288\,000e^{4\sqrt{z}}z^{5/2}+11\,376\,288\,000z^{5/2}+9\,101\,030\,400e^{4\sqrt{z}}z^2-$$
$$9\,101\,030\,400z^2-6\,470\,263\,800e^{4\sqrt{z}}z^{3/2}-6\,470\,263\,800z^{3/2}-36\,048\,612\,600e^{4\sqrt{z}}z+36\,048\,612\,600z+$$
$$\left.58\,925\,616\,750e^{4\sqrt{z}}\sqrt{z}+58\,925\,616\,750\sqrt{z}-29\,462\,808\,375e^{4\sqrt{z}}+29\,462\,808\,375\right)\Big)$$

07.22.03.9599.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{1}{54\,820\,022\,400\, z^{7/2}} $$
$$ \left(-2048\sqrt{\pi}\left(4096 z^3 + 481\,536 z^2 + 13\,091\,760 z + 75\,004\,875\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{21/4} - 2\left(524\,288 z^7 + 61\,145\,088 z^6 + \right.\right. $$
$$ 1\,619\,896\,320 z^5 + 8\,239\,841\,280 z^4 - 4\,572\,564\,480 z^3 + 5\,688\,144\,000 z^2 + 3\,235\,131\,900 z + 29\,462\,808\,375\Big) $$
$$ \cos\left(2\sqrt{z}\right)\sqrt{z} + \left(4\,194\,304 z^8 + 492\,306\,432 z^7 + 13\,315\,227\,648 z^6 + 74\,482\,974\,720 z^5 - \right. $$
$$ \left.\left. 10\,024\,058\,880 z^4 + 10\,112\,256\,000 z^3 - 9\,101\,030\,400 z^2 - 36\,048\,612\,600 z + 29\,462\,808\,375\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.9600.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, -\frac{1}{4}; z\right) = $$
$$ \left(\left(4 z\left(8\,388\,608 z^7 - 1\,151\,860\,736 z^6 + 39\,278\,837\,760 z^5 - 341\,911\,664\,640 z^4 + 431\,669\,145\,600 z^3 + 102\,113\,827\,200 z^2 - \right.\right. $$
$$ 23\,724\,300\,600 z + 39\,920\,698\,125\Big) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ 4\sqrt{z}\left(4\,194\,304 z^7 - 573\,308\,928 z^6 + 19\,286\,507\,520 z^5 - 159\,599\,784\,960 z^4 + 135\,930\,009\,600 z^3 + \right. $$
$$ 51\,762\,110\,400 z^2 - 48\,361\,074\,300 z + 119\,762\,094\,375\Big) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-33\,554\,432 z^8 + \right. $$
$$ 4\,599\,054\,336 z^7 - 155\,976\,597\,504 z^6 + 1\,330\,105\,835\,520 z^5 - 1\,438\,282\,137\,600 z^4 - 520\,275\,571\,200 z^3 + $$
$$ \left.\left.\left. 124\,096\,341\,600 z^2 - 76\,647\,740\,400 z + 359\,286\,283\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(319\,783\,464\,000\sqrt{2}\, z^{11/4}\right) $$

07.22.03.9601.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, -\frac{1}{4}; -z\right) = $$
$$ \left(\left(-4 z\left(8\,388\,608 z^7 + 1\,151\,860\,736 z^6 + 39\,278\,837\,760 z^5 + 341\,911\,664\,640 z^4 + 431\,669\,145\,600 z^3 - 102\,113\,827\,200 z^2 - \right.\right. $$
$$ 23\,724\,300\,600 z - 39\,920\,698\,125\Big) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ 4\sqrt{z}\left(4\,194\,304 z^7 + 573\,308\,928 z^6 + 19\,286\,507\,520 z^5 + 159\,599\,784\,960 z^4 + 135\,930\,009\,600 z^3 - \right. $$
$$ 51\,762\,110\,400 z^2 - 48\,361\,074\,300 z - 119\,762\,094\,375\Big) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-33\,554\,432 z^8 - \right. $$
$$ 4\,599\,054\,336 z^7 - 155\,976\,597\,504 z^6 - 1\,330\,105\,835\,520 z^5 - 1\,438\,282\,137\,600 z^4 + 520\,275\,571\,200 z^3 + $$
$$ \left.\left.\left. 124\,096\,341\,600 z^2 + 76\,647\,740\,400 z + 359\,286\,283\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(319\,783\,464\,000\sqrt{2}\, z^{11/4}\right) $$

07.22.03.9602.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{9}{2},\frac{1}{4};z\right)=\frac{1}{36\,546\,681\,600\,z^{7/2}}$$
$$\left(e^{-2\sqrt{z}}\left(262\,144\,e^{4\sqrt{z}}\,z^8-262\,144\,z^8+65\,536\,e^{4\sqrt{z}}\,z^{15/2}+65\,536\,z^{15/2}-41\,041\,920\,e^{4\sqrt{z}}\,z^7+41\,041\,920\,z^7-\right.\right.$$
$$10\,211\,328\,e^{4\sqrt{z}}\,z^{13/2}-10\,211\,328\,z^{13/2}+1\,668\,148\,224\,e^{4\sqrt{z}}\,z^6-1\,668\,148\,224\,z^6+409\,547\,520\,e^{4\sqrt{z}}\,z^{11/2}+$$
$$409\,547\,520\,z^{11/2}-18\,903\,234\,240\,e^{4\sqrt{z}}\,z^5+18\,903\,234\,240\,z^5-4\,443\,318\,000\,e^{4\sqrt{z}}\,z^{9/2}-4\,443\,318\,000\,z^{9/2}-$$
$$4\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536\,z^4-10\,272\,768\,z^3+418\,936\,320\,z^2-4\,800\,312\,000\,z+11\,025\,716\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}-$$
$$4\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536\,z^4-10\,272\,768\,z^3+418\,936\,320\,z^2-4\,800\,312\,000\,z+11\,025\,716\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}+$$
$$41\,093\,775\,360\,e^{4\sqrt{z}}\,z^4-41\,093\,775\,360\,z^4+7\,767\,429\,120\,e^{4\sqrt{z}}\,z^{7/2}+7\,767\,429\,120\,z^{7/2}+$$
$$3\,539\,289\,600\,e^{4\sqrt{z}}\,z^3-3\,539\,289\,600\,z^3+1\,896\,048\,000\,e^{4\sqrt{z}}\,z^{5/2}+1\,896\,048\,000\,z^{5/2}+$$
$$474\,012\,000\,e^{4\sqrt{z}}\,z^2-474\,012\,000\,z^2-1\,208\,730\,600\,e^{4\sqrt{z}}\,z^{3/2}-1\,208\,730\,600\,z^{3/2}-1\,706\,443\,200\,e^{4\sqrt{z}}\,z+$$
$$\left.\left.1\,706\,443\,200\,z+3\,466\,212\,750\,e^{4\sqrt{z}}\,\sqrt{z}+3\,466\,212\,750\,\sqrt{z}-1\,733\,106\,375\,e^{4\sqrt{z}}+1\,733\,106\,375\right)\right)$$

07.22.03.9603.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{9}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{18\,273\,340\,800\,z^{7/2}}\left(8\sqrt{\pi}\,\left(65\,536\,z^4+10\,272\,768\,z^3+418\,936\,320\,z^2+4\,800\,312\,000\,z+11\,025\,716\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}+\right.$$
$$2\left(32\,768\,z^7+5\,105\,664\,z^6+204\,773\,760\,z^5+2\,221\,659\,000\,z^4+3\,883\,714\,560\,z^3-948\,024\,000\,z^2-604\,365\,300\,z-\right.$$
$$\left.1\,733\,106\,375\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(262\,144\,z^8+41\,041\,920\,z^7+1\,668\,148\,224\,z^6+18\,903\,234\,240\,z^5+\right.$$
$$\left.\left.41\,093\,775\,360\,z^4-3\,539\,289\,600\,z^3+474\,012\,000\,z^2+1\,706\,443\,200\,z-1\,733\,106\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.9604.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{9}{2},\frac{3}{4};z\right)=$$
$$\left(\left(-4\,z\left(4\,194\,304\,z^7-740\,294\,656\,z^6+35\,305\,390\,080\,z^5-509\,388\,963\,840\,z^4+1\,808\,999\,438\,400\,z^3-751\,793\,011\,200\,z^2+\right.\right.\right.$$
$$\left.21\,899\,354\,400\,z-23\,952\,418\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$4\sqrt{z}\,\left(2\,097\,152\,z^7-368\,836\,608\,z^6+17\,424\,875\,520\,z^5-244\,258\,882\,560\,z^4+770\,988\,002\,400\,z^3-\right.$$
$$\left.83\,615\,716\,800\,z^2+52\,010\,966\,700\,z-71\,857\,256\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(16\,777\,216\,z^8-2\,956\,984\,320\,z^7+140\,487\,819\,264\,z^6-2\,003\,376\,291\,840\,z^5+6\,776\,635\,219\,200\,z^4-\right.$$
$$\left.\left.1\,783\,801\,958\,400\,z^3+218\,993\,544\,000\,z^2-114\,971\,610\,600\,z+215\,571\,769\,875\right)$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(2\,878\,051\,176\,000\,\sqrt{2}\,z^{11/4}\right)$$

07.22.03.9605.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{9}{2},\frac{3}{4};-z\right)= $$
$$ \left(\left(4z\left(4\,194\,304z^7+740\,294\,656z^6+35\,305\,390\,080z^5+509\,388\,963\,840z^4+1\,808\,999\,438\,400z^3+751\,793\,011\,200z^2+\right.\right. $$
$$ \left.21\,899\,354\,400z+23\,952\,418\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- $$
$$ 4\sqrt{z}\left(2\,097\,152z^7+368\,836\,608z^6+17\,424\,875\,520z^5+244\,258\,882\,560z^4+770\,988\,002\,400z^3+\right. $$
$$ 83\,615\,716\,800z^2+52\,010\,966\,700z+71\,857\,256\,625\left.\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left(16\,777\,216z^8+2\,956\,984\,320z^7+140\,487\,819\,264z^6+2\,003\,376\,291\,840z^5+6\,776\,635\,219\,200z^4+\right. $$
$$ \left.\left.1\,783\,801\,958\,400z^3+218\,993\,544\,000z^2+114\,971\,610\,600z+215\,571\,769\,875\right) $$
$$ \left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(2\,878\,051\,176\,000\sqrt{2}\,z^{11/4}\right) $$

07.22.03.9606.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{9}{2},\frac{5}{4};z\right)= $$
$$ \frac{1}{2\,923\,734\,528\,000z^{7/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-1\,048\,576z^5+205\,455\,360z^4-11\,171\,635\,200z^3+192\,012\,480\,000z^2-\right.\right.\right. $$
$$ \left.882\,057\,330\,000z+562\,311\,547\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}+e^{2\sqrt{z}}\sqrt{2\pi} $$
$$ \left(-1\,048\,576z^5+205\,455\,360z^4-11\,171\,635\,200z^3+192\,012\,480\,000z^2-882\,057\,330\,000z+562\,311\,547\,875\right) $$
$$ \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}+4\left(-262\,144z^8+65\,536z^{15/2}+51\,314\,688z^7-12\,779\,520z^{13/2}-2\,783\,385\,600z^6+\right. $$
$$ 686\,430\,720z^{11/2}+47\,499\,851\,520z^5-11\,391\,431\,040z^{9/2}-212\,537\,031\,300z^4+46\,066\,103\,325z^{7/2}+ $$
$$ 113\,257\,267\,200z^3-10\,617\,868\,800z^{5/2}-1\,516\,838\,400z^2+4\,266\,108\,000z^{3/2}-1\,422\,036\,000z- $$
$$ 5\,332\,635\,000\sqrt{z}+e^{4\sqrt{z}}\left(262\,144z^8+65\,536z^{15/2}-51\,314\,688z^7-12\,779\,520z^{13/2}+\right. $$
$$ 2\,783\,385\,600z^6+686\,430\,720z^{11/2}-47\,499\,851\,520z^5-11\,391\,431\,040z^{9/2}+212\,537\,031\,300z^4+ $$
$$ 46\,066\,103\,325z^{7/2}-113\,257\,267\,200z^3-10\,617\,868\,800z^{5/2}+1\,516\,838\,400z^2+ $$
$$ \left.\left.\left.\left.4\,266\,108\,000z^{3/2}+1\,422\,036\,000z-5\,332\,635\,000\sqrt{z}+2\,666\,317\,500\right)-2\,666\,317\,500\right)\right)\right) $$

07.22.03.9607.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{9}{2},\frac{5}{4};-z\right)=\frac{1}{730\,933\,632\,000z^{7/2}} $$
$$ \left(\sqrt{\pi}\left(1\,048\,576z^5+205\,455\,360z^4+11\,171\,635\,200z^3+192\,012\,480\,000z^2+882\,057\,330\,000z+562\,311\,547\,875\right)\right. $$
$$ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}+2\left(\sqrt{z}\left(65\,536z^7+12\,779\,520z^6+686\,430\,720z^5+11\,391\,431\,040z^4+\right.\right. $$
$$ \left.46\,066\,103\,325z^3+10\,617\,868\,800z^2+4\,266\,108\,000z+5\,332\,635\,000\right)\cos\left(2\sqrt{z}\right)- $$
$$ 4\left(65\,536z^8+12\,828\,672z^7+695\,846\,400z^6+11\,874\,962\,880z^5+53\,134\,257\,825z^4+\right. $$
$$ \left.\left.\left.28\,314\,316\,800z^3+379\,209\,600z^2-355\,509\,000z+666\,579\,375\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9608.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, \frac{7}{4}; z\right) = $$

$$ \left(\left(-4z\left(2\,097\,152z^7 - 452\,329\,472z^6 + 27\,720\,007\,680z^5 - 558\,668\,897\,280z^4 + 3\,265\,241\,997\,600z^3 - 3\,454\,136\,358\,750z^2 - 38\,323\,870\,200z + 23\,952\,418\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,048\,576z^7 - 225\,509\,376z^6 + 13\,720\,412\,160z^5 - 271\,039\,633\,920z^4 + 1\,478\,850\,080\,400z^3 - 1\,046\,342\,976\,525z^2 - 101\,284\,514\,100z + 71\,857\,256\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(8\,388\,608z^8 - 1\,807\,220\,736z^7 + 110\,430\,978\,048z^6 - 2\,207\,646\,904\,320z^5 + 12\,542\,437\,353\,600z^4 - 11\,251\,077\,730\,200z^3 - 1\,073\,068\,365\,600z^2 + 262\,792\,252\,800z - 215\,571\,769\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(10\,552\,854\,312\,000\sqrt{2}\, z^{11/4}\right) $$

07.22.03.9609.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, \frac{7}{4}; -z\right) = $$

$$ \left(\left(4z\left(2\,097\,152z^7 + 452\,329\,472z^6 + 27\,720\,007\,680z^5 + 558\,668\,897\,280z^4 + 3\,265\,241\,997\,600z^3 + 3\,454\,136\,358\,750z^2 - 38\,323\,870\,200z - 23\,952\,418\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,048\,576z^7 + 225\,509\,376z^6 + 13\,720\,412\,160z^5 + 271\,039\,633\,920z^4 + 1\,478\,850\,080\,400z^3 + 1\,046\,342\,976\,525z^2 - 101\,284\,514\,100z - 71\,857\,256\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(8\,388\,608z^8 + 1\,807\,220\,736z^7 + 110\,430\,978\,048z^6 + 2\,207\,646\,904\,320z^5 + 12\,542\,437\,353\,600z^4 + 11\,251\,077\,730\,200z^3 - 1\,073\,068\,365\,600z^2 - 262\,792\,252\,800z - 215\,571\,769\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(10\,552\,854\,312\,000\sqrt{2}\, z^{11/4}\right) $$

07.22.03.9610.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{9}{2},\frac{9}{4};z\right)=\frac{1}{224\,542\,811\,750\,400\,z^{7/2}}
\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-16\,777\,216\,z^6+3\,944\,742\,912\,z^5-268\,119\,244\,800\,z^4+6\,144\,399\,360\,000\,z^3-\right.\right.\right.
\left.42\,338\,751\,840\,000\,z^2+53\,981\,908\,596\,000\,z+7\,310\,050\,122\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}+
e^{2\sqrt{z}}\sqrt{2\pi}\left(-16\,777\,216\,z^6+3\,944\,742\,912\,z^5-268\,119\,244\,800\,z^4+6\,144\,399\,360\,000\,z^3-\right.
\left.42\,338\,751\,840\,000\,z^2+53\,981\,908\,596\,000\,z+7\,310\,050\,122\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}+
4\left(-4\,194\,304\,z^8+1\,048\,576\,z^{15/2}+985\,399\,296\,z^7-245\,563\,392\,z^{13/2}-66\,846\,621\,696\,z^6+\right.
16\,530\,186\,240\,z^{11/2}+1\,523\,925\,596\,160\,z^5-369\,190\,356\,480\,z^{9/2}-10\,321\,788\,882\,240\,z^4+
2\,340\,424\,460\,880\,z^{7/2}+11\,998\,661\,805\,900\,z^3-1\,873\,701\,296\,775\,z^{5/2}+
2\,378\,402\,611\,200\,z^2-448\,984\,166\,400\,z^{3/2}-72\,808\,243\,200\,z+227\,525\,760\,000\,\sqrt{z}+
e^{4\sqrt{z}}\left(4\,194\,304\,z^8+1\,048\,576\,z^{15/2}-985\,399\,296\,z^7-245\,563\,392\,z^{13/2}+66\,846\,621\,696\,z^6+\right.
16\,530\,186\,240\,z^{11/2}-1\,523\,925\,596\,160\,z^5-369\,190\,356\,480\,z^{9/2}+10\,321\,788\,882\,240\,z^4+
2\,340\,424\,460\,880\,z^{7/2}-11\,998\,661\,805\,900\,z^3-1\,873\,701\,296\,775\,z^{5/2}-2\,378\,402\,611\,200\,z^2-
\left.\left.\left.\left.\left.448\,984\,166\,400\,z^{3/2}+72\,808\,243\,200\,z+227\,525\,760\,000\,\sqrt{z}-113\,762\,880\,000\right)+113\,762\,880\,000\right)\right)\right)
$$

07.22.03.9611.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{9}{2},\frac{9}{4};-z\right)=
\frac{1}{56\,135\,702\,937\,600\,z^{7/2}}\left(\sqrt{\pi}\left(16\,777\,216\,z^6+3\,944\,742\,912\,z^5+268\,119\,244\,800\,z^4+6\,144\,399\,360\,000\,z^3+\right.\right.
\left.42\,338\,751\,840\,000\,z^2+53\,981\,908\,596\,000\,z-7\,310\,050\,122\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+
2\left(\sqrt{z}\left(1\,048\,576\,z^7+245\,563\,392\,z^6+16\,530\,186\,240\,z^5+369\,190\,356\,480\,z^4+2\,340\,424\,460\,880\,z^3+\right.\right.
\left.1\,873\,701\,296\,775\,z^2-448\,984\,166\,400\,z-227\,525\,760\,000\right)\cos\left(2\sqrt{z}\right)-
4\left(1\,048\,576\,z^8+246\,349\,824\,z^7+16\,711\,655\,424\,z^6+380\,981\,399\,040\,z^5+2\,580\,447\,220\,560\,z^4+\right.
\left.\left.\left.2\,999\,665\,451\,475\,z^3-594\,600\,652\,800\,z^2-18\,202\,060\,800\,z-28\,440\,720\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)
$$

07.22.03.9612.01

$${}_1F_2\left(-\frac{19}{4};\frac{9}{2},\frac{11}{4};z\right)=$$

$$\left(\left(2z\left(-16\,777\,216z^7+4\,276\,092\,928z^6-320\,173\,178\,880z^5+8\,286\,429\,265\,920z^4-67\,448\,198\,188\,800z^3+\right.\right.\right.$$
$$\left.114\,518\,183\,551\,200z^2+12\,736\,136\,588\,175z+711\,729\,018\,000\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\sqrt{z}\left(16\,777\,216z^7-4\,265\,607\,168z^6+317\,528\,801\,280z^5-8\,093\,308\,354\,560z^4+62\,759\,844\,576\,000z^3-\right.$$
$$\left.83\,166\,922\,238\,400z^2-30\,237\,044\,762\,925z-4\,270\,374\,108\,000\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\left(16\,777\,216z^8-4\,271\,898\,624z^7+319\,110\,709\,248z^6-8\,208\,025\,436\,160z^5+65\,494\,099\,756\,800z^4-\right.$$
$$\left.\left.\left.100\,377\,823\,946\,400z^3-25\,562\,510\,248\,275z^2-5\,978\,523\,751\,200z+1\,601\,390\,290\,500\right)\right.$$
$$\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(156\,785\,264\,064\,000\sqrt{2}\,z^{11/4}\right)$$

07.22.03.9613.01

$${}_1F_2\left(-\frac{19}{4};\frac{9}{2},\frac{11}{4};-z\right)=$$

$$\left(\left(2z\left(16\,777\,216z^7+4\,276\,092\,928z^6+320\,173\,178\,880z^5+8\,286\,429\,265\,920z^4+67\,448\,198\,188\,800z^3+\right.\right.\right.$$
$$\left.114\,518\,183\,551\,200z^2-12\,736\,136\,588\,175z+711\,729\,018\,000\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\sqrt{z}\left(16\,777\,216z^7+4\,265\,607\,168z^6+317\,528\,801\,280z^5+8\,093\,308\,354\,560z^4+62\,759\,844\,576\,000z^3+\right.$$
$$\left.83\,166\,922\,238\,400z^2-30\,237\,044\,762\,925z+4\,270\,374\,108\,000\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\left(16\,777\,216z^8+4\,271\,898\,624z^7+319\,110\,709\,248z^6+8\,208\,025\,436\,160z^5+65\,494\,099\,756\,800z^4+\right.$$
$$\left.\left.\left.100\,377\,823\,946\,400z^3-25\,562\,510\,248\,275z^2+5\,978\,523\,751\,200z+1\,601\,390\,290\,500\right)\right.$$
$$\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(156\,785\,264\,064\,000\sqrt{2}\,z^{11/4}\right)$$

07.22.03.9614.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{9}{2},\frac{13}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-268\,435\,456\,z^7+73\,635\,201\,024\,z^6-6\,005\,871\,083\,520\,z^5+172\,043\,182\,080\,000\,z^4-\right.\right.\right.
$$
$$
\left.1\,580\,646\,735\,360\,000\,z^3+3\,022\,986\,881\,376\,000\,z^2+818\,725\,613\,706\,000\,z+328\,952\,255\,506\,875\right)
$$
$$
\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(-268\,435\,456\,z^7+73\,635\,201\,024\,z^6-6\,005\,871\,083\,520\,z^5+\right.
$$
$$
172\,043\,182\,080\,000\,z^4-1\,580\,646\,735\,360\,000\,z^3+3\,022\,986\,881\,376\,000\,z^2+
$$
$$
\left.818\,725\,613\,706\,000\,z+328\,952\,255\,506\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+
$$
$$
4\left(-67\,108\,864\,z^8+16\,777\,216\,z^{15/2}+18\,396\,217\,344\,z^7-4\,586\,471\,424\,z^{13/2}-1\,498\,043\,645\,952\,z^6+\right.
$$
$$
371\,114\,311\,680\,z^{11/2}+42\,736\,650\,485\,760\,z^5-10\,417\,227\,448\,320\,z^{9/2}-387\,668\,353\,121\,280\,z^4+
$$
$$
89\,952\,383\,727\,360\,z^{7/2}+696\,012\,044\,112\,000\,z^3-125\,829\,045\,064\,800\,z^{5/2}+
$$
$$
257\,249\,642\,334\,300\,z^2-73\,443\,860\,703\,675\,z^{3/2}+114\,163\,325\,337\,600\,z-20\,386\,308\,096\,000\sqrt{z}+
$$
$$
e^{4\sqrt{z}}\left(67\,108\,864\,z^8+16\,777\,216\,z^{15/2}-18\,396\,217\,344\,z^7-4\,586\,471\,424\,z^{13/2}+1\,498\,043\,645\,952\,z^6+\right.
$$
$$
371\,114\,311\,680\,z^{11/2}-42\,736\,650\,485\,760\,z^5-10\,417\,227\,448\,320\,z^{9/2}+387\,668\,353\,121\,280\,z^4+
$$
$$
89\,952\,383\,727\,360\,z^{7/2}-696\,012\,044\,112\,000\,z^3-125\,829\,045\,064\,800\,z^{5/2}-257\,249\,642\,334\,300\,z^2-
$$
$$
\left.\left.73\,443\,860\,703\,675\,z^{3/2}-114\,163\,325\,337\,600\,z-20\,386\,308\,096\,000\sqrt{z}+10\,193\,154\,048\,000\right)-
$$
$$
\left.\left.10\,193\,154\,048\,000\right)\right)\right)\Big/\left(11\,177\,242\,184\,908\,800\,z^{7/2}\right)
$$

07.22.03.9615.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{9}{2},\frac{13}{4};-z\right)=
\left(\sqrt{\pi}\,z^{5/4}\left(268\,435\,456\,z^7+73\,635\,201\,024\,z^6+6\,005\,871\,083\,520\,z^5+172\,043\,182\,080\,000\,z^4+1\,580\,646\,735\,360\,000\,z^3+\right.\right.
$$
$$
\left.3\,022\,986\,881\,376\,000\,z^2-818\,725\,613\,706\,000\,z+328\,952\,255\,506\,875\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$
$$
2\left(4\left(16\,777\,216\,z^8+4\,599\,054\,336\,z^7+374\,510\,911\,488\,z^6+10\,684\,162\,621\,440\,z^5+96\,917\,088\,280\,320\,z^4+\right.\right.
$$
$$
\left.174\,003\,011\,028\,000\,z^3-64\,312\,410\,583\,575\,z^2+28\,540\,831\,334\,400\,z+2\,548\,288\,512\,000\right)\sin\left(2\sqrt{z}\right)-
$$
$$
\sqrt{z}\left(16\,777\,216\,z^7+4\,586\,471\,424\,z^6+371\,114\,311\,680\,z^5+10\,417\,227\,448\,320\,z^4+\right.
$$
$$
89\,952\,383\,727\,360\,z^3+125\,829\,045\,064\,800\,z^2-73\,443\,860\,703\,675\,z+
$$
$$
\left.\left.\left.20\,386\,308\,096\,000\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(2\,794\,310\,546\,227\,200\,z^{7/2}\right)
$$

07.22.03.9616.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, \frac{15}{4}; z\right) = $$

$$ -\left(\left(2z\left(268\,435\,456 z^7 - 78\,936\,801\,280 z^6 + 6\,983\,374\,602\,240 z^5 - 220\,736\,161\,382\,400 z^4 + 2\,303\,430\,608\,793\,600 z^3 - \right.\right.\right. $$

$$ \left. 5\,383\,001\,282\,630\,400 z^2 - 1\,221\,225\,319\,314\,000 z - 653\,678\,619\,969\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$

$$ \sqrt{z}\left(-268\,435\,456 z^7 + 78\,769\,029\,120 z^6 - 6\,934\,489\,989\,120 z^5 + 216\,501\,018\,624\,000 z^4 - \right. $$

$$ \left. 2\,176\,324\,001\,280\,000 z^3 + 4\,244\,286\,004\,358\,400 z^2 + 2\,435\,231\,672\,874\,000 z + 1\,619\,405\,931\,268\,125\right) $$

$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\left(-268\,435\,456 z^8 + 78\,869\,692\,416 z^7 - 6\,963\,745\,259\,520 z^6 + \right. $$

$$ 219\,020\,658\,278\,400 z^5 - 2\,250\,834\,144\,768\,000 z^4 + 4\,881\,896\,609\,990\,400 z^3 + 1\,966\,954\,649\,259\,600 z^2 + $$

$$ \left.\left.\left. 1\,250\,285\,469\,307\,875 z + 256\,222\,446\,480\,000\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(6\,841\,538\,795\,520\,000\sqrt{2}\, z^{11/4}\right) $$

07.22.03.9617.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, \frac{15}{4}; -z\right) = $$

$$ \left(\left(2z\left(268\,435\,456 z^7 + 78\,936\,801\,280 z^6 + 6\,983\,374\,602\,240 z^5 + 220\,736\,161\,382\,400 z^4 + 2\,303\,430\,608\,793\,600 z^3 + \right.\right.\right. $$

$$ \left. 5\,383\,001\,282\,630\,400 z^2 - 1\,221\,225\,319\,314\,000 z + 653\,678\,619\,969\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$

$$ \sqrt{z}\left(268\,435\,456 z^7 + 78\,769\,029\,120 z^6 + 6\,934\,489\,989\,120 z^5 + 216\,501\,018\,624\,000 z^4 + 2\,176\,324\,001\,280\,000 z^3 + \right. $$

$$ \left. 4\,244\,286\,004\,358\,400 z^2 - 2\,435\,231\,672\,874\,000 z + 1\,619\,405\,931\,268\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\left(268\,435\,456 z^8 + 78\,869\,692\,416 z^7 + 6\,963\,745\,259\,520 z^6 + 219\,020\,658\,278\,400 z^5 + \right. $$

$$ 2\,250\,834\,144\,768\,000 z^4 + 4\,881\,896\,609\,990\,400 z^3 - 1\,966\,954\,649\,259\,600 z^2 + $$

$$ \left.\left.\left. 1\,250\,285\,469\,307\,875 z - 256\,222\,446\,480\,000\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(6\,841\,538\,795\,520\,000\sqrt{2}\, z^{11/4}\right) $$

07.22.03.9618.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{9}{2},\frac{17}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(4\left(-1\,073\,741\,824\,z^8+268\,435\,456\,z^{15/2}+336\,416\,735\,232\,z^7-83\,902\,857\,216\,z^{13/2}-31\,968\,636\,960\,768\,z^6+\right.\right.\right.
$$
$$
7\,929\,924\,157\,440\,z^{11/2}+1\,095\,205\,835\,243\,520\,z^5-268\,063\,544\,770\,560\,z^{9/2}-12\,451\,038\,834\,769\,920\,z^4+
$$
$$
2\,930\,153\,569\,136\,640\,z^{7/2}+30\,254\,287\,383\,936\,000\,z^3-5\,890\,251\,340\,512\,000\,z^{5/2}+15\,952\,662\,071\,438\,400
$$
$$
z^2-5\,010\,795\,593\,773\,200\,z^{3/2}+13\,663\,791\,854\,073\,900\,z-4\,365\,061\,752\,657\,375\sqrt{z}+e^{4\sqrt{z}}
$$
$$
\left(1\,073\,741\,824\,z^8+268\,435\,456\,z^{15/2}-336\,416\,735\,232\,z^7-83\,902\,857\,216\,z^{13/2}+31\,968\,636\,960\,768\,z^6+\right.
$$
$$
7\,929\,924\,157\,440\,z^{11/2}-1\,095\,205\,835\,243\,520\,z^5-268\,063\,544\,770\,560\,z^{9/2}+12\,451\,038\,834\,769\,920
$$
$$
z^4+2\,930\,153\,569\,136\,640\,z^{7/2}-30\,254\,287\,383\,936\,000\,z^3-5\,890\,251\,340\,512\,000\,z^{5/2}-
$$
$$
15\,952\,662\,071\,438\,400\,z^2-5\,010\,795\,593\,773\,200\,z^{3/2}-13\,663\,791\,854\,073\,900\,z-
$$
$$
\left.4\,365\,061\,752\,657\,375\sqrt{z}-5\,218\,894\,872\,576\,000\right)+5\,218\,894\,872\,576\,000\Big)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(-4\,294\,967\,296\,z^8+1\,346\,472\,247\,296\,z^7-128\,125\,249\,781\,760\,z^6+\right.
$$
$$
4\,404\,305\,461\,248\,000\,z^5-50\,580\,695\,531\,520\,000\,z^4+128\,980\,773\,605\,376\,000\,z^3+
$$
$$
\left.52\,398\,439\,277\,184\,000\,z^2+42\,105\,888\,704\,880\,000\,z+14\,802\,851\,497\,809\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(-4\,294\,967\,296\,z^8+1\,346\,472\,247\,296\,z^7-128\,125\,249\,781\,760\,z^6+4\,404\,305\,461\,248\,000\,z^5-\right.
$$
$$
50\,580\,695\,531\,520\,000\,z^4+128\,980\,773\,605\,376\,000\,z^3+52\,398\,439\,277\,184\,000\,z^2+
$$
$$
\left.\left.\left.42\,105\,888\,704\,880\,000\,z+14\,802\,851\,497\,809\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)\Big/\left(440\,211\,384\,513\,331\,200\,z^{7/2}\right)
$$

07.22.03.9619.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{9}{2},\frac{17}{4};-z\right)=
\left(\sqrt{\pi}\sqrt[4]{z}\left(4\,294\,967\,296\,z^8+1\,346\,472\,247\,296\,z^7+128\,125\,249\,781\,760\,z^6+4\,404\,305\,461\,248\,000\,z^5+\right.\right.
$$
$$
50\,580\,695\,531\,520\,000\,z^4+128\,980\,773\,605\,376\,000\,z^3-52\,398\,439\,277\,184\,000\,z^2+
$$
$$
\left.42\,105\,888\,704\,880\,000\,z-14\,802\,851\,497\,809\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$
$$
2\left(4\left(268\,435\,456\,z^8+84\,104\,183\,808\,z^7+7\,992\,159\,240\,192\,z^6+273\,801\,458\,810\,880\,z^5+3\,112\,759\,708\,692\,480\,z^4+\right.\right.
$$
$$
7\,563\,571\,845\,984\,000\,z^3-3\,988\,165\,517\,859\,600\,z^2+3\,415\,947\,963\,518\,475\,z-1\,304\,723\,718\,144\,000\Big)
$$
$$
\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(268\,435\,456\,z^7+83\,902\,857\,216\,z^6+7\,929\,924\,157\,440\,z^5+268\,063\,544\,770\,560\,z^4+\right.
$$
$$
2\,930\,153\,569\,136\,640\,z^3+5\,890\,251\,340\,512\,000\,z^2-5\,010\,795\,593\,773\,200\,z+
$$
$$
\left.\left.\left.4\,365\,061\,752\,657\,375\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(110\,052\,846\,128\,332\,800\,z^{7/2}\right)
$$

07.22.03.9620.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{9}{2},\frac{19}{4};z\right) = -\left(\left(2\sqrt{z}\left(4\,294\,967\,296\,z^8-1\,431\,297\,851\,392\,z^7+146\,079\,555\,256\,320\,z^6-\right.\right.\right.$$
$$5\,454\,160\,283\,566\,080\,z^5+69\,438\,154\,928\,947\,200\,z^4-206\,616\,030\,949\,785\,600\,z^3-$$
$$\left.\left.\left.72\,192\,585\,796\,531\,200\,z^2-71\,386\,420\,505\,400\,000\,z-25\,329\,323\,674\,029\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-4\,294\,967\,296\,z^8+1\,428\,613\,496\,832\,z^7-145\,192\,208\,302\,080\,z^6+5\,365\,214\,729\,994\,240\,z^5-\right.$$
$$66\,258\,692\,466\,278\,400\,z^4+170\,887\,766\,495\,846\,400\,z^3+129\,771\,870\,055\,027\,200\,z^2+$$
$$\left.144\,103\,774\,274\,460\,000\,z+75\,987\,971\,022\,088\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(-4\,294\,967\,296\,z^8+1\,430\,224\,109\,568\,z^7-145\,723\,408\,515\,072\,z^6+5\,418\,191\,589\,212\,160\,z^5-\right.$$
$$68\,129\,122\,487\,500\,800\,z^4+191\,143\,383\,795\,302\,400\,z^3+104\,472\,384\,349\,132\,800\,z^2+$$
$$\left.\left.\left.107\,210\,304\,205\,804\,800\,z+63\,397\,039\,863\,031\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(248\,119\,806\,984\,192\,000\sqrt{2}\;z^{13/4}\right)$$

07.22.03.9621.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{9}{2},\frac{19}{4};-z\right) =$$
$$\left(\left(2\sqrt{z}\left(4\,294\,967\,296\,z^8+1\,431\,297\,851\,392\,z^7+146\,079\,555\,256\,320\,z^6+5\,454\,160\,283\,566\,080\,z^5+69\,438\,154\,928\,947\,200\right.\right.\right.$$
$$z^4+206\,616\,030\,949\,785\,600\,z^3-72\,192\,585\,796\,531\,200\,z^2+71\,386\,420\,505\,400\,000\,z-$$
$$\left.25\,329\,323\,674\,029\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4\,294\,967\,296\,z^8+1\,428\,613\,496\,832\,z^7+145\,192\,208\,302\,080\,z^6+\right.$$
$$5\,365\,214\,729\,994\,240\,z^5+66\,258\,692\,466\,278\,400\,z^4+170\,887\,766\,495\,846\,400\,z^3-$$
$$\left.129\,771\,870\,055\,027\,200\,z^2+144\,103\,774\,274\,460\,000\,z-75\,987\,971\,022\,088\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(4\,294\,967\,296\,z^8+1\,430\,224\,109\,568\,z^7+145\,723\,408\,515\,072\,z^6+5\,418\,191\,589\,212\,160\,z^5+\right.$$
$$68\,129\,122\,487\,500\,800\,z^4+191\,143\,383\,795\,302\,400\,z^3-104\,472\,384\,349\,132\,800\,z^2+$$
$$\left.\left.\left.107\,210\,304\,205\,804\,800\,z-63\,397\,039\,863\,031\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(248\,119\,806\,984\,192\,000\sqrt{2}\;z^{13/4}\right)$$

07.22.03.9622.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{9}{2},\frac{21}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}+6\,055\,903\,887\,360\,z^{15/2}-1\,510\,754\,746\,368\,z^{7}-\right.\right.\right.
$$

$$
657\,800\,816\,492\,544\,z^{13/2}+163\,328\,211\,025\,920\,z^{6}+26\,304\,725\,007\,728\,640\,z^{11/2}-6\,457\,471\,480\,627\,200\,z^{5}-
$$

$$
359\,481\,582\,653\,276\,160\,z^{9/2}+85\,412\,074\,603\,806\,720\,z^{4}+1\,101\,886\,165\,558\,886\,400\,z^{7/2}-
$$

$$
224\,544\,262\,440\,960\,000\,z^{3}+747\,208\,611\,426\,816\,000\,z^{5/2}-242\,359\,656\,863\,385\,600\,z^{2}+
$$

$$
934\,151\,334\,248\,563\,200\,z^{3/2}-332\,821\,192\,051\,656\,000\,z+745\,445\,056\,239\,229\,500\sqrt{z}+
$$

$$
e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}-6\,055\,903\,887\,360\,z^{15/2}-1\,510\,754\,746\,368\,z^{7}+\right.
$$

$$
657\,800\,816\,492\,544\,z^{13/2}+163\,328\,211\,025\,920\,z^{6}-26\,304\,725\,007\,728\,640\,z^{11/2}-
$$

$$
6\,457\,471\,480\,627\,200\,z^{5}+359\,481\,582\,653\,276\,160\,z^{9/2}+85\,412\,074\,603\,806\,720\,z^{4}-
$$

$$
1\,101\,886\,165\,558\,886\,400\,z^{7/2}-224\,544\,262\,440\,960\,000\,z^{3}-747\,208\,611\,426\,816\,000\,z^{5/2}-
$$

$$
242\,359\,656\,863\,385\,600\,z^{2}-934\,151\,334\,248\,563\,200\,z^{3/2}-332\,821\,192\,051\,656\,000\,z-
$$

$$
\left.\left.745\,445\,056\,239\,229\,500\sqrt{z}-192\,437\,069\,471\,521\,875\right)-192\,437\,069\,471\,521\,875\right)-
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-24\,236\,500\,451\,328\,z^{8}+2\,635\,719\,424\,081\,920\,z^{7}-105\,703\,331\,069\,952\,000\,z^{6}+\right.
$$

$$
1\,456\,724\,031\,307\,776\,000\,z^{5}-4\,643\,307\,849\,793\,536\,000\,z^{4}-2\,515\,125\,085\,304\,832\,000\,z^{3}-
$$

$$
\left.3\,031\,623\,986\,751\,360\,000\,z^{2}-2\,131\,610\,615\,684\,550\,000\,z-192\,437\,069\,471\,521\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-24\,236\,500\,451\,328\,z^{8}+2\,635\,719\,424\,081\,920\,z^{7}-\right.
$$

$$
105\,703\,331\,069\,952\,000\,z^{6}+1\,456\,724\,031\,307\,776\,000\,z^{5}-4\,643\,307\,849\,793\,536\,000\,z^{4}-
$$

$$
2\,515\,125\,085\,304\,832\,000\,z^{3}-3\,031\,623\,986\,751\,360\,000\,z^{2}-2\,131\,610\,615\,684\,550\,000\,z-
$$

$$
\left.\left.\left.192\,437\,069\,471\,521\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(14\,915\,397\,498\,804\,633\,600\,z^{17/4}\right)
$$

07.22.03.9623.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{9}{2},\frac{21}{4};-z\right)=
$$

$$
\left(\sqrt{\pi}\left(68\,719\,476\,736\,z^{9}+24\,236\,500\,451\,328\,z^{8}+2\,635\,719\,424\,081\,920\,z^{7}+105\,703\,331\,069\,952\,000\,z^{6}+\right.\right.
$$

$$
1\,456\,724\,031\,307\,776\,000\,z^{5}+4\,643\,307\,849\,793\,536\,000\,z^{4}-2\,515\,125\,085\,304\,832\,000\,z^{3}+
$$

$$
\left.3\,031\,623\,986\,751\,360\,000\,z^{2}-2\,131\,610\,615\,684\,550\,000\,z+192\,437\,069\,471\,521\,875\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$

$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^{8}+1\,513\,975\,971\,840\,z^{7}+164\,450\,204\,123\,136\,z^{6}+6\,576\,181\,251\,932\,160\,z^{5}+\right.\right.
$$

$$
89\,870\,395\,663\,319\,040\,z^{4}+275\,471\,541\,389\,721\,600\,z^{3}-186\,802\,152\,856\,704\,000\,z^{2}+
$$

$$
\left.233\,537\,833\,562\,140\,800\,z-186\,361\,264\,059\,807\,375\right)\sin\left(2\sqrt{z}\right)-
$$

$$
\left(4\,294\,967\,296\,z^{8}+1\,510\,754\,746\,368\,z^{7}+163\,328\,211\,025\,920\,z^{6}+6\,457\,471\,480\,627\,200\,z^{5}+\right.
$$

$$
85\,412\,074\,603\,806\,720\,z^{4}+224\,544\,262\,440\,960\,000\,z^{3}-242\,359\,656\,863\,385\,600\,z^{2}+
$$

$$
\left.\left.\left.332\,821\,192\,051\,656\,000\,z-192\,437\,069\,471\,521\,875\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(3\,728\,849\,374\,701\,158\,400\,z^{17/4}\right)
$$

07.22.03.9624.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, \frac{23}{4}; z\right) = $$

$$ -\left(\left(2\sqrt{z}\left(68\,719\,476\,736\,z^9 - 25\,593\,710\,116\,864\,z^8 + 2\,960\,016\,298\,475\,520\,z^7 - 127\,473\,908\,931\,624\,960\,z^6 + \right.\right.\right. $$

$$ 1\,915\,609\,631\,529\,369\,600\,z^5 - 6\,922\,707\,315\,985\,612\,800\,z^4 - 3\,293\,085\,192\,619\,622\,400\,z^3 - $$

$$ \left.\left.\left. 4\,705\,792\,839\,715\,968\,000\,z^2 - 3\,415\,840\,221\,183\,390\,000\,z + 379\,939\,855\,110\,440\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$

$$ \left(-68\,719\,476\,736\,z^9 + 25\,550\,760\,443\,904\,z^8 - 2\,944\,135\,656\,898\,560\,z^7 + 125\,666\,088\,745\,697\,280\,z^6 - \right. $$

$$ 1\,840\,623\,328\,375\,603\,200\,z^5 + 5\,908\,892\,186\,256\,998\,400\,z^4 + 5\,503\,185\,725\,003\,366\,400\,z^3 + $$

$$ \left. 8\,360\,777\,569\,592\,448\,000\,z^2 + 8\,510\,652\,754\,473\,870\,000\,z - 1\,139\,819\,565\,331\,321\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\left(-68\,719\,476\,736\,z^9 + 25\,576\,530\,247\,680\,z^8 - 2\,953\,644\,714\,491\,904\,z^7 + 126\,743\,775\,899\,811\,840\,z^6 - \right. $$

$$ 1\,884\,851\,578\,286\,899\,200\,z^5 + 6\,488\,605\,009\,487\,462\,400\,z^4 + 4\,462\,771\,073\,789\,952\,000\,z^3 + $$

$$ \left. 6\,313\,676\,376\,392\,985\,600\,z^2 + 6\,006\,949\,496\,449\,902\,000\,z + 1\,139\,819\,565\,331\,321\,875\right) $$

$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(7\,939\,833\,823\,494\,144\,000\sqrt{2}\, z^{17/4}\right) $$

07.22.03.9625.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) = $$

$$ \left(\left(2\sqrt{z}\left(68\,719\,476\,736\,z^9 + 25\,593\,710\,116\,864\,z^8 + 2\,960\,016\,298\,475\,520\,z^7 + 127\,473\,908\,931\,624\,960\,z^6 + \right.\right. \right. $$

$$ 1\,915\,609\,631\,529\,369\,600\,z^5 + 6\,922\,707\,315\,985\,612\,800\,z^4 - 3\,293\,085\,192\,619\,622\,400\,z^3 + $$

$$ \left.\left. 4\,705\,792\,839\,715\,968\,000\,z^2 - 3\,415\,840\,221\,183\,390\,000\,z - 379\,939\,855\,110\,440\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$

$$ \left(68\,719\,476\,736\,z^9 + 25\,550\,760\,443\,904\,z^8 + 2\,944\,135\,656\,898\,560\,z^7 + 125\,666\,088\,745\,697\,280\,z^6 + \right. $$

$$ 1\,840\,623\,328\,375\,603\,200\,z^5 + 5\,908\,892\,186\,256\,998\,400\,z^4 - 5\,503\,185\,725\,003\,366\,400\,z^3 + $$

$$ \left. 8\,360\,777\,569\,592\,448\,000\,z^2 - 8\,510\,652\,754\,473\,870\,000\,z - 1\,139\,819\,565\,331\,321\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\left(68\,719\,476\,736\,z^9 + 25\,576\,530\,247\,680\,z^8 + 2\,953\,644\,714\,491\,904\,z^7 + 126\,743\,775\,899\,811\,840\,z^6 + \right. $$

$$ 1\,884\,851\,578\,286\,899\,200\,z^5 + 6\,488\,605\,009\,487\,462\,400\,z^4 - 4\,462\,771\,073\,789\,952\,000\,z^3 + $$

$$ \left. 6\,313\,676\,376\,392\,985\,600\,z^2 - 6\,006\,949\,496\,449\,902\,000\,z + 1\,139\,819\,565\,331\,321\,875\right) $$

$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(7\,939\,833\,823\,494\,144\,000\sqrt{2}\, z^{17/4}\right) $$

For fixed z and $a_1 = -\frac{19}{4}$, $b_1 = \frac{11}{2}$

07.22.03.9626.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{11}{2}, -\frac{23}{4}; z\right) = -\frac{945\left(2\sqrt{z}\left(32z^2 + 1760z + 4305\right)\cosh\left(2\sqrt{z}\right) - \left(848z^2 + 7500z + 4305\right)\sinh\left(2\sqrt{z}\right)\right)}{11\,776\, z^{9/2}} $$

07.22.03.9627.01

$$ {}_1F_2\left(-\frac{19}{4}; \frac{11}{2}, -\frac{23}{4}; -z\right) = -\frac{945\left(2\sqrt{z}\left(32z^2 - 1760z + 4305\right)\cos\left(2\sqrt{z}\right) + \left(-848z^2 + 7500z - 4305\right)\sin\left(2\sqrt{z}\right)\right)}{11\,776\, z^{9/2}} $$

07.22.03.9628.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{21}{4};z\right)= \left(\left(4z\left(2\,147\,483\,648z^8+141\,197\,049\,856z^7+5\,450\,791\,649\,280z^6+126\,426\,745\,405\,440z^5+1\,545\,405\,714\,432\,000z^4+ 6\,508\,250\,942\,054\,400z^3-9\,385\,577\,528\,342\,400z^2-19\,469\,005\,109\,977\,500z-1\,328\,759\,598\,755\,964\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1\,073\,741\,824z^8+71\,269\,613\,568z^7+2\,771\,323\,453\,440z^6+65\,047\,819\,714\,560z^5+ 817\,777\,929\,830\,400z^4+3\,889\,652\,978\,534\,400z^3+161\,820\,302\,212\,800z^2- 817\,698\,214\,619\,055\,000z-3\,986\,278\,796\,267\,893\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)- \left(8\,589\,934\,592z^9+566\,935\,683\,072z^8+21\,947\,719\,090\,176z^7+511\,394\,206\,187\,520z^6+ 6\,317\,766\,269\,337\,600z^5+27\,829\,446\,259\,507\,200z^4-27\,018\,770\,459\,788\,800z^3+ 348\,439\,565\,739\,711\,600z^2+4\,730\,968\,241\,724\,532\,500z+11\,958\,836\,388\,803\,679\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(10\,459\,477\,540\,512\,000\sqrt{2}\,z^{15/4}\right) $$

07.22.03.9629.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{21}{4};-z\right)= \left(\left(-4z\left(2\,147\,483\,648z^8-141\,197\,049\,856z^7+5\,450\,791\,649\,280z^6-126\,426\,745\,405\,440z^5+1\,545\,405\,714\,432\,000z^4- 6\,508\,250\,942\,054\,400z^3-9\,385\,577\,528\,342\,400z^2+19\,469\,005\,109\,977\,500z-1\,328\,759\,598\,755\,964\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1\,073\,741\,824z^8-71\,269\,613\,568z^7+2\,771\,323\,453\,440z^6-65\,047\,819\,714\,560z^5+ 817\,777\,929\,830\,400z^4-3\,889\,652\,978\,534\,400z^3+161\,820\,302\,212\,800z^2+ 817\,698\,214\,619\,055\,000z-3\,986\,278\,796\,267\,893\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ \left(-8\,589\,934\,592z^9+566\,935\,683\,072z^8-21\,947\,719\,090\,176z^7+511\,394\,206\,187\,520z^6- 6\,317\,766\,269\,337\,600z^5+27\,829\,446\,259\,507\,200z^4+27\,018\,770\,459\,788\,800z^3+ 348\,439\,565\,739\,711\,600z^2-4\,730\,968\,241\,724\,532\,500z+11\,958\,836\,388\,803\,679\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(10\,459\,477\,540\,512\,000\sqrt{2}\,z^{15/4}\right) $$

07.22.03.9630.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{19}{4};z\right)=\frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.9631.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{19}{4};-z\right)=\frac{945\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.9632.01

$${}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{17}{4};z\right)=$$

$$\left(\left(4z\left(1\,073\,741\,824z^8+23\,420\,993\,536z^7+543\,434\,997\,760z^6+9\,002\,519\,101\,440z^5+85\,468\,126\,003\,200z^4+\right.\right.\right.$$
$$\left.\left.292\,093\,186\,176\,000z^3-388\,517\,868\,446\,400z^2+556\,257\,288\,856\,500z-34\,070\,758\,942\,460\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\left(536\,870\,912z^8+12\,046\,041\,088z^7+279\,938\,334\,720z^6+4\,696\,998\,543\,360z^5+46\,223\,786\,188\,800z^4+\right.$$
$$\left.187\,147\,016\,179\,200z^3+163\,684\,591\,408\,800z^2-17\,800\,233\,243\,408\,000z-102\,212\,276\,827\,381\,875\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(4\,294\,967\,296z^9+94\,757\,715\,968z^8+2\,198\,838\,706\,176z^7+36\,598\,012\,968\,960z^6+\right.$$
$$351\,976\,660\,992\,000z^5+1\,275\,070\,538\,649\,600z^4-952\,196\,064\,019\,200z^3+6\,646\,377\,412\,659\,600z^2+$$
$$\left.\left.\left.111\,807\,715\,060\,156\,500z+306\,636\,830\,482\,145\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(498\,070\,359\,072\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.9633.01

$${}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{17}{4};-z\right)=$$

$$\left(\left(-4z\left(1\,073\,741\,824z^8-23\,420\,993\,536z^7+543\,434\,997\,760z^6-9\,002\,519\,101\,440z^5+85\,468\,126\,003\,200z^4-\right.\right.\right.$$
$$\left.292\,093\,186\,176\,000z^3-388\,517\,868\,446\,400z^2-556\,257\,288\,856\,500z-34\,070\,758\,942\,460\,625\right)$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(536\,870\,912z^8-12\,046\,041\,088z^7+279\,938\,334\,720z^6-4\,696\,998\,543\,360z^5+\right.$$
$$46\,223\,786\,188\,800z^4-187\,147\,016\,179\,200z^3+163\,684\,591\,408\,800z^2+$$
$$\left.17\,800\,233\,243\,408\,000z-102\,212\,276\,827\,381\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-4\,294\,967\,296z^9+94\,757\,715\,968z^8-2\,198\,838\,706\,176z^7+36\,598\,012\,968\,960z^6-\right.$$
$$351\,976\,660\,992\,000z^5+1\,275\,070\,538\,649\,600z^4+952\,196\,064\,019\,200z^3+6\,646\,377\,412\,659\,600z^2-$$
$$\left.\left.\left.111\,807\,715\,060\,156\,500z+306\,636\,830\,482\,145\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(498\,070\,359\,072\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.9634.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{15}{4};z\right)=\frac{1}{694\,143\,305\,856\,000\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(-4\,294\,967\,296\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{37/4}-4\,294\,967\,296\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{37/4}+4\,294\,967\,296\,e^{4\sqrt{z}}\,z^9-4\,294\,967\,296\,z^9+1\,073\,741\,824\,e^{4\sqrt{z}}\,z^{17/2}+1\,073\,741\,824\,z^{17/2}+805\,306\,368\,e^{4\sqrt{z}}\,z^8-805\,306\,368\,z^8+1\,006\,632\,960\,e^{4\sqrt{z}}\,z^{15/2}+1\,006\,632\,960\,z^{15/2}+1\,761\,607\,680\,e^{4\sqrt{z}}\,z^7-1\,761\,607\,680\,z^7+3\,963\,617\,280\,e^{4\sqrt{z}}\,z^{13/2}+3\,963\,617\,280\,z^{13/2}+10\,899\,947\,520\,e^{4\sqrt{z}}\,z^6-10\,899\,947\,520\,z^6+35\,424\,829\,440\,e^{4\sqrt{z}}\,z^{11/2}+35\,424\,829\,440\,z^{11/2}+132\,843\,110\,400\,e^{4\sqrt{z}}\,z^5-132\,843\,110\,400\,z^5+564\,583\,219\,200\,e^{4\sqrt{z}}\,z^{9/2}+564\,583\,219\,200\,z^{9/2}+2\,681\,770\,291\,200\,e^{4\sqrt{z}}\,z^4-2\,681\,770\,291\,200\,z^4+14\,079\,294\,028\,800\,e^{4\sqrt{z}}\,z^{7/2}+14\,079\,294\,028\,800\,z^{7/2}+80\,955\,940\,665\,600\,e^{4\sqrt{z}}\,z^3-80\,955\,940\,665\,600\,z^3+505\,974\,629\,160\,000\,e^{4\sqrt{z}}\,z^{5/2}+505\,974\,629\,160\,000\,z^{5/2}+3\,415\,328\,746\,830\,000\,e^{4\sqrt{z}}\,z^2-3\,415\,328\,746\,830\,000\,z^2-23\,923\,800\,400\,500\,000\,e^{4\sqrt{z}}\,z^{3/2}-23\,923\,800\,400\,500\,000\,z^{3/2}+58\,015\,215\,971\,212\,500\,e^{4\sqrt{z}}\,z-58\,015\,215\,971\,212\,500\,z-69\,079\,973\,656\,443\,750\,e^{4\sqrt{z}}\,\sqrt{z}-69\,079\,973\,656\,443\,750\,\sqrt{z}+34\,539\,986\,828\,221\,875\,e^{4\sqrt{z}}-34\,539\,986\,828\,221\,875\right)\right) $$

07.22.03.9635.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{15}{4};-z\right)=\frac{1}{347\,071\,652\,928\,000\,z^{9/2}}\left(8\,589\,934\,592\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{37/4}+2\left(536\,870\,912\,z^8-503\,316\,480\,z^7+1\,981\,808\,640\,z^6-17\,712\,414\,720\,z^5+282\,291\,609\,600\,z^4-7\,039\,647\,014\,400\,z^3+252\,987\,314\,580\,000\,z^2+11\,961\,900\,200\,250\,000\,z-34\,539\,986\,828\,221\,875\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-4\,294\,967\,296\,z^9+805\,306\,368\,z^8-1\,761\,607\,680\,z^7+10\,899\,947\,520\,z^6-132\,843\,110\,400\,z^5+2\,681\,770\,291\,200\,z^4-80\,955\,940\,665\,600\,z^3+3\,415\,328\,746\,830\,000\,z^2-58\,015\,215\,971\,212\,500\,z+34\,539\,986\,828\,221\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.9636.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{13}{4};z\right)=-\left(\left(4z\left(536\,870\,912\,z^8-11\,878\,268\,928\,z^7-89\,485\,475\,840\,z^6-893\,288\,448\,000\,z^5-6\,050\,366\,668\,800\,z^4-15\,875\,448\,652\,800\,z^3+18\,808\,606\,555\,200\,z^2-53\,831\,350\,534\,500\,z+973\,450\,255\,498\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(268\,435\,456\,z^8-5\,771\,362\,304\,z^7-48\,003\,809\,280\,z^6-481\,461\,534\,720\,z^5-3\,406\,679\,654\,400\,z^4-11\,105\,279\,539\,200\,z^3-3\,231\,434\,606\,400\,z^2+394\,763\,237\,253\,000\,z+2\,920\,350\,766\,496\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-2\,147\,483\,648\,z^9+46\,976\,204\,800\,z^8+368\,981\,311\,488\,z^7+3\,677\,245\,931\,520\,z^6+25\,282\,006\,548\,480\,z^5+71\,784\,882\,892\,800\,z^4-40\,275\,851\,616\,000\,z^3+129\,195\,241\,282\,800\,z^2+2\,853\,061\,578\,328\,500\,z+8\,761\,052\,299\,489\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(29\,298\,256\,416\,000\,\sqrt{2}\,z^{15/4}\right) $$

07.22.03.9637.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{13}{4};-z\right)= $$

$$ \left(\left(4z\left(536\,870\,912z^8+11\,878\,268\,928z^7-89\,485\,475\,840z^6+893\,288\,448\,000z^5-6\,050\,366\,668\,800z^4+\right.\right.\right. $$

$$ \left.\left.\left.15\,875\,448\,652\,800z^3+18\,808\,606\,555\,200z^2+53\,831\,350\,534\,500z+973\,450\,255\,498\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$

$$ 4\sqrt{z}\left(268\,435\,456z^8+5\,771\,362\,304z^7-48\,003\,809\,280z^6+481\,461\,534\,720z^5-3\,406\,679\,654\,400z^4+\right. $$

$$ \left.11\,105\,279\,539\,200z^3-3\,231\,434\,606\,400z^2-394\,763\,237\,253\,000z+2\,920\,350\,766\,496\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right) $$

$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(2\,147\,483\,648z^9+46\,976\,204\,800z^8-368\,981\,311\,488z^7+3\,677\,245\,931\,520z^6-\right. $$

$$ 25\,282\,006\,548\,480z^5+71\,784\,882\,892\,800z^4+40\,275\,851\,616\,000z^3+129\,195\,241\,282\,800z^2- $$

$$ \left.\left.2\,853\,061\,578\,328\,500z+8\,761\,052\,299\,489\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(29\,298\,256\,416\,000\sqrt{2}\,z^{15/4}\right) $$

07.22.03.9638.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{11}{4};z\right)= $$

$$ \frac{1}{46\,276\,220\,390\,400z^{9/2}}\left(e^{-2\sqrt{z}}\left(-1\,073\,741\,824e^{4\sqrt{z}}z^9+1\,073\,741\,824z^9-268\,435\,456e^{4\sqrt{z}}z^{17/2}-268\,435\,456z^{17/2}+\right.\right. $$

$$ 67\,108\,864e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-703)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{33/4}+67\,108\,864e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-703)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{33/4}+ $$

$$ 46\,976\,204\,800e^{4\sqrt{z}}z^8-46\,976\,204\,800z^8+11\,542\,724\,608e^{4\sqrt{z}}z^{15/2}+11\,542\,724\,608z^{15/2}+ $$

$$ 8\,405\,385\,216e^{4\sqrt{z}}z^7-8\,405\,385\,216z^7+10\,066\,329\,600e^{4\sqrt{z}}z^{13/2}+10\,066\,329\,600z^{13/2}+ $$

$$ 16\,625\,172\,480e^{4\sqrt{z}}z^6-16\,625\,172\,480z^6+34\,681\,651\,200e^{4\sqrt{z}}z^{11/2}+34\,681\,651\,200z^{11/2}+ $$

$$ 86\,518\,333\,440e^{4\sqrt{z}}z^5-86\,518\,333\,440z^5+247\,973\,806\,080e^{4\sqrt{z}}z^{9/2}+247\,973\,806\,080z^{9/2}+ $$

$$ 788\,755\,968\,000e^{4\sqrt{z}}z^4-788\,755\,968\,000z^4+2\,681\,770\,291\,200e^{4\sqrt{z}}z^{7/2}+2\,681\,770\,291\,200z^{7/2}+ $$

$$ 9\,218\,585\,376\,000e^{4\sqrt{z}}z^3-9\,218\,585\,376\,000z^3+28\,158\,588\,057\,600e^{4\sqrt{z}}z^{5/2}+28\,158\,588\,057\,600z^{5/2}+ $$

$$ 35\,418\,224\,041\,200e^{4\sqrt{z}}z^2-35\,418\,224\,041\,200z^2-632\,468\,286\,450\,000e^{4\sqrt{z}}z^{3/2}-632\,468\,286\,450\,000z^{3/2}+ $$

$$ 1\,711\,789\,166\,587\,500e^{4\sqrt{z}}z-1\,711\,789\,166\,587\,500z-2\,093\,332\,535\,043\,750e^{4\sqrt{z}}\sqrt{z}- $$

$$ \left.\left.2\,093\,332\,535\,043\,750\sqrt{z}+1\,046\,666\,267\,521\,875e^{4\sqrt{z}}-1\,046\,666\,267\,521\,875\right)\right) $$

07.22.03.9639.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{11}{4};-z\right)=\frac{1}{23\,138\,110\,195\,200z^{9/2}}\left(-134\,217\,728\sqrt{\pi}\,(16z+703)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{33/4}- \right. $$

$$ 2\left(134\,217\,728z^8+5\,771\,362\,304z^7-5\,033\,164\,800z^6+17\,340\,825\,600z^5-123\,986\,903\,040z^4+\right. $$

$$ \left.1\,340\,885\,145\,600z^3-14\,079\,294\,028\,800z^2-316\,234\,143\,225\,000z+1\,046\,666\,267\,521\,875\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+ $$

$$ \left(1\,073\,741\,824z^9+46\,976\,204\,800z^8-8\,405\,385\,216z^7+16\,625\,172\,480z^6-86\,518\,333\,440z^5+788\,755\,968\,000z^4- \right. $$

$$ \left.\left.9\,218\,585\,376\,000z^3+35\,418\,224\,041\,200z^2-1\,711\,789\,166\,587\,500z+1\,046\,666\,267\,521\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.9640.01

$${}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{9}{4};z\right)=$$

$$\left(\left(4z\left(268\,435\,456z^8-17\,733\,517\,312z^7+139\,544\,494\,080z^6+436\,552\,335\,360z^5+1\,780\,826\,112\,000z^4+\right.\right.\right.$$
$$\left.3\,285\,988\,992\,000z^3-3\,191\,807\,203\,200z^2+9\,968\,768\,617\,500z-94\,204\,863\,435\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\left(134\,217\,728z^8-8\,782\,872\,576z^7+64\,455\,966\,720z^6+248\,551\,833\,600z^5+1\,061\,832\,499\,200z^4+\right.$$
$$\left.2\,454\,244\,531\,200z^3-1\,082\,548\,605\,600z^2-23\,925\,044\,682\,000z-282\,614\,590\,306\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left(1\,073\,741\,824z^9-70\,665\,633\,792z^8+540\,863\,889\,408z^7+1\,860\,021\,780\,480z^6+7\,667\,334\,512\,640z^5+\right.$$
$$15\,665\,906\,995\,200z^4-6\,815\,154\,931\,200z^3+8\,529\,798\,538\,800z^2+233\,269\,185\,649\,500z+$$
$$\left.\left.\left.847\,843\,770\,918\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(6\,761\,136\,096\,000\sqrt{2}\;z^{15/4}\right)$$

07.22.03.9641.01

$${}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{9}{4};-z\right)=$$

$$\left(\left(-4z\left(268\,435\,456z^8+17\,733\,517\,312z^7+139\,544\,494\,080z^6-436\,552\,335\,360z^5+1\,780\,826\,112\,000z^4-\right.\right.\right.$$
$$\left.3\,285\,988\,992\,000z^3-3\,191\,807\,203\,200z^2-9\,968\,768\,617\,500z-94\,204\,863\,435\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$4\sqrt{z}\left(134\,217\,728z^8+8\,782\,872\,576z^7+64\,455\,966\,720z^6-248\,551\,833\,600z^5+1\,061\,832\,499\,200z^4-\right.$$
$$\left.2\,454\,244\,531\,200z^3-1\,082\,548\,605\,600z^2+23\,925\,044\,682\,000z-282\,614\,590\,306\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-1\,073\,741\,824z^9-70\,665\,633\,792z^8-540\,863\,889\,408z^7+1\,860\,021\,780\,480z^6-\right.$$
$$7\,667\,334\,512\,640z^5+15\,665\,906\,995\,200z^4+6\,815\,154\,931\,200z^3+8\,529\,798\,538\,800z^2-$$
$$\left.\left.\left.233\,269\,185\,649\,500z+847\,843\,770\,918\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(6\,761\,136\,096\,000\sqrt{2}\;z^{15/4}\right)$$

07.22.03.9642.01

$${}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{4\,206\,929\,126\,400\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(134\,217\,728\,e^{4\sqrt{z}}\,z^9-134\,217\,728\,z^9+33\,554\,432\,e^{4\sqrt{z}}\,z^{17/2}+33\,554\,432\,z^{17/2}-\right.\right.$$
$$11\,769\,217\,024\,e^{4\sqrt{z}}\,z^8+11\,769\,217\,024\,z^8-2\,917\,138\,432\,e^{4\sqrt{z}}\,z^{15/2}-$$
$$2\,917\,138\,432\,z^{15/2}-524\,288\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-22\,496\,z+347\,985\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{29/4}-$$
$$524\,288\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-22\,496\,z+347\,985\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{29/4}+180\,287\,963\,136\,e^{4\sqrt{z}}\,z^7-$$
$$180\,287\,963\,136\,z^7+42\,970\,644\,480\,e^{4\sqrt{z}}\,z^{13/2}+42\,970\,644\,480\,z^{13/2}+29\,711\,400\,960\,e^{4\sqrt{z}}\,z^6-$$
$$29\,711\,400\,960\,z^6+32\,982\,958\,080\,e^{4\sqrt{z}}\,z^{11/2}+32\,982\,958\,080\,z^{11/2}+49\,049\,763\,840\,e^{4\sqrt{z}}\,z^5-49\,049\,763\,840\,z^5+$$
$$88\,732\,385\,280\,e^{4\sqrt{z}}\,z^{9/2}+88\,732\,385\,280\,z^{9/2}+182\,020\,608\,000\,e^{4\sqrt{z}}\,z^4-182\,020\,608\,000\,z^4+$$
$$394\,377\,984\,000\,e^{4\sqrt{z}}\,z^{7/2}+394\,377\,984\,000\,z^{7/2}+808\,474\,867\,200\,e^{4\sqrt{z}}\,z^3-808\,474\,867\,200\,z^3+$$
$$1\,131\,371\,841\,600\,e^{4\sqrt{z}}\,z^{5/2}+1\,131\,371\,841\,600\,z^{5/2}-1\,665\,630\,766\,800\,e^{4\sqrt{z}}\,z^2+1\,665\,630\,766\,800\,z^2-$$
$$17\,599\,117\,536\,000\,e^{4\sqrt{z}}\,z^{3/2}-17\,599\,117\,536\,000\,z^{3/2}+56\,922\,145\,780\,500\,e^{4\sqrt{z}}\,z-56\,922\,145\,780\,500\,z-$$
$$\left.\left.72\,183\,880\,518\,750\,e^{4\sqrt{z}}\,\sqrt{z}-72\,183\,880\,518\,750\,\sqrt{z}+36\,091\,940\,259\,375\,e^{4\sqrt{z}}-36\,091\,940\,259\,375\right)\right)$$

07.22.03.9643.01

$${}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{7}{4};-z\right)=\frac{1}{2\,103\,464\,563\,200\,z^{9/2}}\left(1\,048\,576\,\sqrt{\pi}\,\left(256\,z^2+22\,496\,z+347\,985\right)C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{29/4}+\right.$$
$$2\left(16\,777\,216\,z^8+1\,458\,569\,216\,z^7+21\,485\,322\,240\,z^6-16\,491\,479\,040\,z^5+44\,366\,192\,640\,z^4-\right.$$
$$\left.197\,188\,992\,000\,z^3+565\,685\,920\,800\,z^2+8\,799\,558\,768\,000\,z-36\,091\,940\,259\,375\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-$$
$$\left.\left(134\,217\,728\,z^9+11\,769\,217\,024\,z^8+180\,287\,963\,136\,z^7-29\,711\,400\,960\,z^6+49\,049\,763\,840\,z^5-182\,020\,608\,000\,z^4+\right.\right.$$
$$\left.\left.808\,474\,867\,200\,z^3+1\,665\,630\,766\,800\,z^2+56\,922\,145\,780\,500\,z-36\,091\,940\,259\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.9644.01

$${}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{5}{4};z\right)=$$
$$-\left(\left(4\,z\left(134\,217\,728\,z^8-14\,763\,950\,080\,z^7+344\,360\,222\,720\,z^6-1\,187\,374\,694\,400\,z^5-1\,431\,606\,067\,200\,z^4-\right.\right.\right.$$
$$\left.\left.\left.1\,570\,271\,155\,200\,z^3+1\,076\,955\,264\,000\,z^2-3\,033\,973\,057\,500\,z+17\,445\,345\,080\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\,\left(67\,108\,864\,z^8-7\,340\,032\,000\,z^7+167\,679\,098\,880\,z^6-497\,693\,491\,200\,z^5-873\,050\,112\,000\,z^4-\right.$$
$$\left.1\,148\,752\,281\,600\,z^3+979\,308\,792\,000\,z^2+866\,849\,445\,000\,z+52\,336\,035\,241\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-536\,870\,912\,z^9+58\,921\,582\,592\,z^8-1\,362\,886\,656\,000\,z^7+4\,427\,218\,944\,000\,z^6+\right.$$
$$\left.\left.\left.6\,474\,439\,065\,600\,z^5+7\,956\,323\,020\,800\,z^4-2\,794\,016\,332\,800\,z^3+1\,879\,694\,586\,000\,z^2+\right.\right.\right.$$
$$\left.\left.\left.32\,506\,854\,187\,500\,z+157\,008\,105\,725\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(3\,756\,186\,720\,000\,\sqrt{2}\,z^{15/4}\right)$$

07.22.03.9645.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{5}{4};-z\right)= $$
$$ \left(\left(4z\left(134\,217\,728z^8+14\,763\,950\,080z^7+344\,360\,222\,720z^6+1\,187\,374\,694\,400z^5-1\,431\,606\,067\,200z^4+\right.\right.\right. $$
$$ \left.\left.\left.1\,570\,271\,155\,200z^3+1\,076\,955\,264\,000z^2+3\,033\,973\,057\,500z+17\,445\,345\,080\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$
$$ 4\sqrt{z}\left(67\,108\,864z^8+7\,340\,032\,000z^7+167\,679\,098\,880z^6+497\,693\,491\,200z^5-873\,050\,112\,000z^4+\right. $$
$$ \left.1\,148\,752\,281\,600z^3+979\,308\,792\,000z^2-866\,849\,445\,000z+52\,336\,035\,241\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left(536\,870\,912z^9+58\,921\,582\,592z^8+1\,362\,886\,656\,000z^7+4\,427\,218\,944\,000z^6-6\,474\,439\,065\,600z^5+\right. $$
$$ 7\,956\,323\,020\,800z^4+2\,794\,016\,332\,800z^3+1\,879\,694\,586\,000z^2-32\,506\,854\,187\,500z+ $$
$$ \left.\left.157\,008\,105\,725\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(3\,756\,186\,720\,000\sqrt{2}\,z^{15/4}\right) $$

07.22.03.9646.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{3}{4};z\right)= $$
$$ \frac{1}{1\,802\,969\,625\,600z^{9/2}}\left(e^{-2\sqrt{z}}\left(-33\,554\,432e^{4\sqrt{z}}z^9+33\,554\,432z^9-8\,388\,608e^{4\sqrt{z}}z^{17/2}-8\,388\,608z^{17/2}+\right.\right. $$
$$ 4\,416\,602\,112e^{4\sqrt{z}}z^8-4\,416\,602\,112z^8+1\,097\,859\,072e^{4\sqrt{z}}z^{15/2}+1\,097\,859\,072z^{15/2}- $$
$$ 136\,017\,739\,776e^{4\sqrt{z}}z^7+136\,017\,739\,776z^7-33\,202\,667\,520e^{4\sqrt{z}}z^{13/2}-33\,202\,667\,520z^{13/2}+ $$
$$ 8192e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-539\,904z^2+16\,703\,280z-111\,007\,215\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{25/4}+ $$
$$ 8192e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-539\,904z^2+16\,703\,280z-111\,007\,215\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{25/4}+ $$
$$ 885\,443\,788\,800e^{4\sqrt{z}}z^6-885\,443\,788\,800z^6+199\,077\,396\,480e^{4\sqrt{z}}z^{11/2}+199\,077\,396\,480z^{11/2}+ $$
$$ 124\,570\,828\,800e^{4\sqrt{z}}z^5-124\,570\,828\,800z^5+118\,926\,213\,120e^{4\sqrt{z}}z^{9/2}+118\,926\,213\,120z^{9/2}+ $$
$$ 141\,571\,584\,000e^{4\sqrt{z}}z^4-141\,571\,584\,000z^4+182\,020\,608\,000e^{4\sqrt{z}}z^{7/2}+182\,020\,608\,000z^{7/2}+ $$
$$ 204\,773\,184\,000e^{4\sqrt{z}}z^3-204\,773\,184\,000z^3+59\,156\,697\,600e^{4\sqrt{z}}z^{5/2}+59\,156\,697\,600z^{5/2}- $$
$$ 626\,691\,265\,200e^{4\sqrt{z}}z^2+626\,691\,265\,200z^2-1\,414\,214\,802\,000e^{4\sqrt{z}}z^{3/2}- $$
$$ 1\,414\,214\,802\,000z^{3/2}+6\,481\,817\,842\,500e^{4\sqrt{z}}z-6\,481\,817\,842\,500z- $$
$$ \left.\left.8\,662\,065\,662\,250e^{4\sqrt{z}}\sqrt{z}-8\,662\,065\,662\,250\sqrt{z}+4\,331\,032\,831\,125e^{4\sqrt{z}}-4\,331\,032\,831\,125\right)\right) $$

07.22.03.9647.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{3}{4};-z\right)= $$
$$ \frac{1}{901\,484\,812\,800z^{9/2}}\left(-16\,384\sqrt{\pi}\left(4096z^3+539\,904z^2+16\,703\,280z+111\,007\,215\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{25/4}- \right. $$
$$ 2\left(4\,194\,304z^8+548\,929\,536z^7+16\,601\,333\,760z^6+99\,538\,698\,240z^5-59\,463\,106\,560z^4+\right. $$
$$ \left.91\,010\,304\,000z^3-29\,578\,348\,800z^2-707\,107\,401\,000z+4\,331\,032\,831\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+ $$
$$ \left(33\,554\,432z^9+4\,416\,602\,112z^8+136\,017\,739\,776z^7+885\,443\,788\,800z^6-124\,570\,828\,800z^5+141\,571\,584\,000z^4-\right. $$
$$ \left.\left.204\,773\,184\,000z^3-626\,691\,265\,200z^2-6\,481\,817\,842\,500z+4\,331\,032\,831\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.9648.01

$${}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{1}{4};z\right)=$$
$$\left(\left(4z\left(67\,108\,864z^8-10\,330\,570\,752z^7+400\,696\,279\,040z^6-4\,038\,879\,559\,680z^5+5\,991\,100\,416\,000z^4+\right.\right.\right.$$
$$\left.\left.\left.1\,792\,069\,171\,200z^3-633\,090\,427\,200z^2+1\,437\,145\,132\,500z-5\,309\,452\,850\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(33\,554\,432z^8-5\,144\,313\,856z^7+197\,176\,197\,120z^6-1\,902\,507\,909\,120z^5+2\,015\,071\,027\,200z^4+\right.$$
$$\left.1\,015\,776\,115\,200z^3-920\,436\,501\,600z^2+1\,277\,462\,340\,000z-15\,928\,358\,551\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left(268\,435\,456z^9-41\,255\,174\,144z^8+1\,592\,559\,403\,008z^7-15\,770\,469\,335\,040z^6+\right.$$
$$\left.\left.20\,480\,547\,225\,600z^5+9\,117\,210\,009\,600z^4-2\,447\,418\,758\,400z^3+1\,558\,504\,054\,800z^2+\right.\right.$$
$$\left.\left.5\,269\,532\,152\,500z+47\,785\,075\,655\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)\Big/\left(5\,258\,661\,408\,000\sqrt{2}\;z^{15/4}\right)$$

07.22.03.9649.01

$${}_1F_2\left(-\frac{19}{4};\frac{11}{2},-\frac{1}{4};-z\right)=$$
$$-\left(\left(4z\left(67\,108\,864z^8+10\,330\,570\,752z^7+400\,696\,279\,040z^6+4\,038\,879\,559\,680z^5+5\,991\,100\,416\,000z^4-\right.\right.\right.$$
$$\left.\left.\left.1\,792\,069\,171\,200z^3-633\,090\,427\,200z^2-1\,437\,145\,132\,500z-5\,309\,452\,850\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(33\,554\,432z^8+5\,144\,313\,856z^7+197\,176\,197\,120z^6+1\,902\,507\,909\,120z^5+2\,015\,071\,027\,200z^4-\right.$$
$$\left.1\,015\,776\,115\,200z^3-920\,436\,501\,600z^2-1\,277\,462\,340\,000z-15\,928\,358\,551\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(268\,435\,456z^9+41\,255\,174\,144z^8+1\,592\,559\,403\,008z^7+15\,770\,469\,335\,040z^6+\right.$$
$$\left.\left.20\,480\,547\,225\,600z^5-9\,117\,210\,009\,600z^4-2\,447\,418\,758\,400z^3-1\,558\,504\,054\,800z^2+\right.\right.$$
$$\left.\left.5\,269\,532\,152\,500z-47\,785\,075\,655\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)\Big/\left(5\,258\,661\,408\,000\sqrt{2}\;z^{15/4}\right)$$

07.22.03.9650.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{1}{4};z\right) = \frac{1}{600\,989\,875\,200\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(2\,097\,152\,e^{4\sqrt{z}}\,z^9 - 2\,097\,152\,z^9 + 524\,288\,e^{4\sqrt{z}}\,z^{17/2} + 524\,288\,z^{17/2} - 368\,181\,248\,e^{4\sqrt{z}}\,z^8 + 368\,181\,248\,z^8 - 91\,652\,096\,e^{4\sqrt{z}}\,z^{15/2} - 91\,652\,096\,z^{15/2} + 17\,035\,911\,168\,e^{4\sqrt{z}}\,z^7 - 17\,035\,911\,168\,z^7 + 4\,191\,590\,400\,e^{4\sqrt{z}}\,z^{13/2} + 4\,191\,590\,400\,z^{13/2} - 224\,281\,597\,440\,e^{4\sqrt{z}}\,z^6 + 224\,281\,597\,440\,z^6 - 53\,149\,749\,120\,e^{4\sqrt{z}}\,z^{11/2} - 53\,149\,749\,120\,z^{11/2} - 32\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536\,z^4 - 11\,517\,952\,z^3 + 534\,504\,960\,z^2 - 7\,104\,461\,760\,z + 19\,426\,262\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{21/4} - 32\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536\,z^4 - 11\,517\,952\,z^3 + 534\,504\,960\,z^2 - 7\,104\,461\,760\,z + 19\,426\,262\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{21/4} + 585\,158\,492\,160\,e^{4\sqrt{z}}\,z^5 - 585\,158\,492\,160\,z^5 + 115\,146\,915\,840\,e^{4\sqrt{z}}\,z^{9/2} + 115\,146\,915\,840\,z^{9/2} + 56\,628\,633\,600\,e^{4\sqrt{z}}\,z^4 - 56\,628\,633\,600\,z^4 + 35\,392\,896\,000\,e^{4\sqrt{z}}\,z^{7/2} + 35\,392\,896\,000\,z^{7/2} + 16\,432\,416\,000\,e^{4\sqrt{z}}\,z^3 - 16\,432\,416\,000\,z^3 - 14\,220\,360\,000\,e^{4\sqrt{z}}\,z^{5/2} - 14\,220\,360\,000\,z^{5/2} - 53\,895\,164\,400\,e^{4\sqrt{z}}\,z^2 + 53\,895\,164\,400\,z^2 - 18\,486\,468\,000\,e^{4\sqrt{z}}\,z^{3/2} + 18\,486\,468\,000\,z^{3/2} + 284\,229\,445\,500\,e^{4\sqrt{z}}\,z - 284\,229\,445\,500\,z - 412\,479\,317\,250\,e^{4\sqrt{z}}\,\sqrt{z} - 412\,479\,317\,250\,\sqrt{z} + 206\,239\,658\,625\,e^{4\sqrt{z}} - 206\,239\,658\,625\right)\right) $$

07.22.03.9651.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{1}{4};-z\right) = \frac{1}{300\,494\,937\,600\,z^{9/2}}\left(64\,\sqrt{\pi}\,\left(65\,536\,z^4 + 11\,517\,952\,z^3 + 534\,504\,960\,z^2 + 7\,104\,461\,760\,z + 19\,426\,262\,625\right)C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4} + 2\left(262\,144\,z^8 + 45\,826\,048\,z^7 + 2\,095\,795\,200\,z^6 + 26\,574\,874\,560\,z^5 + 57\,573\,457\,920\,z^4 - 17\,696\,448\,000\,z^3 - 7\,110\,180\,000\,z^2 + 9\,243\,234\,000\,z - 206\,239\,658\,625\right)\cos\left(2\,\sqrt{z}\right)\sqrt{z} - \left(2\,097\,152\,z^9 + 368\,181\,248\,z^8 + 17\,035\,911\,168\,z^7 + 224\,281\,597\,440\,z^6 + 585\,158\,492\,160\,z^5 - 56\,628\,633\,600\,z^4 + 16\,432\,416\,000\,z^3 + 53\,895\,164\,400\,z^2 + 284\,229\,445\,500\,z - 206\,239\,658\,625\right)\sin\left(2\,\sqrt{z}\right)\right) $$

07.22.03.9652.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{3}{4};z\right) = \left(\left(-4\,z\left(33\,554\,432\,z^8 - 6\,639\,583\,232\,z^7 + 360\,217\,313\,280\,z^6 - 6\,022\,590\,382\,080\,z^5 + 25\,344\,417\,369\,600\,z^4 - 12\,561\,018\,624\,000\,z^3 + 641\,053\,828\,800\,z^2 - 1\,053\,906\,430\,500\,z + 2\,515\,003\,981\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\,\sqrt{z}\,\left(16\,777\,216\,z^8 - 3\,309\,305\,856\,z^7 + 178\,061\,967\,360\,z^6 - 2\,904\,108\,318\,720\,z^5 + 11\,056\,674\,182\,400\,z^4 - 1\,783\,801\,958\,400\,z^3 + 1\,246\,272\,350\,400\,z^2 - 1\,724\,574\,159\,000\,z + 7\,545\,011\,945\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(134\,217\,728\,z^9 - 26\,524\,778\,496\,z^8 + 1\,434\,282\,098\,688\,z^7 - 23\,740\,271\,493\,120\,z^6 + 95\,871\,531\,571\,200\,z^5 - 32\,108\,435\,251\,200\,z^4 + 4\,570\,992\,518\,400\,z^3 - 2\,529\,375\,433\,200\,z^2 + 862\,287\,079\,500\,z - 22\,635\,035\,836\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(47\,327\,952\,672\,000\,\sqrt{2}\,z^{15/4}\right) $$

07.22.03.9653.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{3}{4};-z\right)= $$

$$ \left(\left(4z\left(33\,554\,432z^8+6\,639\,583\,232z^7+360\,217\,313\,280z^6+6\,022\,590\,382\,080z^5+25\,344\,417\,369\,600z^4+\right.\right.\right. $$

$$ \left.\left.\left.12\,561\,018\,624\,000z^3+641\,053\,828\,800z^2+1\,053\,906\,430\,500z+2\,515\,003\,981\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$

$$ 4\sqrt{z}\left(16\,777\,216z^8+3\,309\,305\,856z^7+178\,061\,967\,360z^6+2\,904\,108\,318\,720z^5+11\,056\,674\,182\,400z^4+\right. $$

$$ \left.1\,783\,801\,958\,400z^3+1\,246\,272\,350\,400z^2+1\,724\,574\,159\,000z+7\,545\,011\,945\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ \left(134\,217\,728z^9+26\,524\,778\,496z^8+1\,434\,282\,098\,688z^7+23\,740\,271\,493\,120z^6+\right. $$

$$ 95\,871\,531\,571\,200z^5+32\,108\,435\,251\,200z^4+4\,570\,992\,518\,400z^3+2\,529\,375\,433\,200z^2+ $$

$$ \left.\left.862\,287\,079\,500z+22\,635\,035\,836\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(47\,327\,952\,672\,000\sqrt{2}\,z^{15/4}\right) $$

07.22.03.9654.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{5}{4};z\right)= $$

$$ \frac{1}{6\,009\,898\,752\,000z^{9/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-1\,048\,576z^5+230\,359\,040z^4-14\,253\,465\,600z^3+284\,178\,470\,400z^2-\right.\right.\right. $$

$$ \left.\left.1\,554\,101\,010\,000z+1\,223\,854\,545\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(-1\,048\,576z^5+230\,359\,040z^4-\right. \right. $$

$$ \left.\left.14\,253\,465\,600z^3+284\,178\,470\,400z^2-1\,554\,101\,010\,000z+1\,223\,854\,545\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}+ \right. $$

$$ 2\left(-524\,288z^9+131\,072z^{17/2}+115\,081\,216z^8-28\,672\,000z^{15/2}-7\,105\,351\,680z^7+1\,755\,171\,840z^{13/2}+\right. $$

$$ 140\,798\,883\,840z^6-33\,953\,950\,080z^{11/2}-753\,055\,756\,200z^5+166\,656\,298\,050z^{9/2}+ $$

$$ 509\,657\,702\,400z^4-56\,628\,633\,600z^{7/2}-1\,769\,644\,800z^3+22\,752\,576\,000z^{5/2}- $$

$$ 22\,041\,558\,000z^2-17\,775\,450\,000z^{3/2}+71\,990\,572\,500z+121\,317\,446\,250\sqrt{z}+ $$

$$ e^{4\sqrt{z}}\left(524\,288z^9+131\,072z^{17/2}-115\,081\,216z^8-28\,672\,000z^{15/2}+7\,105\,351\,680z^7+1\,755\,171\,840z^{13/2}- \right. $$

$$ 140\,798\,883\,840z^6-33\,953\,950\,080z^{11/2}+753\,055\,756\,200z^5+166\,656\,298\,050z^{9/2}- $$

$$ \left.\left.\left.509\,657\,702\,400z^4-56\,628\,633\,600z^{7/2}+1\,769\,644\,800z^3+22\,752\,576\,000z^{5/2}+22\,041\,558\,000z^2- \right. \right. \right. $$

$$ \left.\left.\left.17\,775\,450\,000z^{3/2}-71\,990\,572\,500z+121\,317\,446\,250\sqrt{z}-60\,658\,723\,125\right)+60\,658\,723\,125\right)\Big)\Big) $$

07.22.03.9655.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{5}{4};-z\right)=\frac{1}{1\,502\,474\,688\,000z^{9/2}} $$

$$ \left(\sqrt{\pi}\left(1\,048\,576z^5+230\,359\,040z^4+14\,253\,465\,600z^3+284\,178\,470\,400z^2+1\,554\,101\,010\,000z+1\,223\,854\,545\,375\right)\right. $$

$$ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}+2\left(65\,536z^8+14\,336\,000z^7+877\,585\,920z^6+16\,976\,975\,040z^5+83\,328\,149\,025z^4+\right. $$

$$ \left.28\,314\,316\,800z^3+11\,376\,288\,000z^2+8\,887\,725\,000z+60\,658\,723\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z}- $$

$$ \left(524\,288z^9+115\,081\,216z^8+7\,105\,351\,680z^7+140\,798\,883\,840z^6+753\,055\,756\,200z^5+\right. $$

$$ \left.\left.509\,657\,702\,400z^4+1\,769\,644\,800z^3-22\,041\,558\,000z^2-71\,990\,572\,500z+60\,658\,723\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.9656.01

$${}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{7}{4};z\right)=$$
$$\left(\left(-4z\left(16\,777\,216z^8-4\,056\,940\,544z^7+282\,848\,788\,480z^6-6\,607\,833\,292\,800z^5+45\,848\,202\,681\,600z^4-\right.\right.\right.$$
$$\left.\left.58\,950\,210\,488\,400z^3-1\,226\,363\,846\,400z^2+1\,245\,525\,781\,500z-1\,844\,336\,253\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$4\sqrt{z}\left(8\,388\,608z^8-2\,023\,227\,392z^7+140\,170\,690\,560z^6-3\,218\,836\,008\,960z^5+21\,074\,413\,852\,800z^4-\right.$$
$$\left.19\,339\,713\,300\,600z^3-2\,912\,614\,135\,200z^2+2\,682\,670\,914\,000z-5\,533\,008\,760\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(67\,108\,864z^9-16\,210\,984\,960z^8+1\,127\,364\,427\,776z^7-26\,154\,699\,816\,960z^6+177\,198\,307\,292\,160z^5-\right.$$
$$198\,475\,081\,358\,400z^4-24\,527\,276\,928\,000z^3+7\,040\,642\,439\,600z^2-4\,886\,293\,450\,500z+$$
$$\left.\left.\left.16\,599\,026\,280\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(173\,535\,826\,464\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.9657.01

$${}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{7}{4};-z\right)=$$
$$\left(\left(4z\left(16\,777\,216z^8+4\,056\,940\,544z^7+282\,848\,788\,480z^6+6\,607\,833\,292\,800z^5+45\,848\,202\,681\,600z^4+\right.\right.\right.$$
$$\left.\left.58\,950\,210\,488\,400z^3-1\,226\,363\,846\,400z^2-1\,245\,525\,781\,500z-1\,844\,336\,253\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\left(8\,388\,608z^8+2\,023\,227\,392z^7+140\,170\,690\,560z^6+3\,218\,836\,008\,960z^5+21\,074\,413\,852\,800z^4+\right.$$
$$\left.19\,339\,713\,300\,600z^3-2\,912\,614\,135\,200z^2-2\,682\,670\,914\,000z-5\,533\,008\,760\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(67\,108\,864z^9+16\,210\,984\,960z^8+1\,127\,364\,427\,776z^7+26\,154\,699\,816\,960z^6+177\,198\,307\,292\,160z^5+\right.$$
$$198\,475\,081\,358\,400z^4-24\,527\,276\,928\,000z^3-7\,040\,642\,439\,600z^2-4\,886\,293\,450\,500z-$$
$$\left.\left.\left.16\,599\,026\,280\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(173\,535\,826\,464\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.9658.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{9}{4};z\right)=\frac{1}{461\,560\,224\,153\,600\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-16\,777\,216\,z^6+4\,422\,893\,568\,z^5-342\,083\,174\,400\,z^4+9\,093\,711\,052\,800\,z^3-74\,596\,848\,480\,000\,z^2+117\,490\,036\,356\,000\,z+20\,805\,527\,271\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(-16\,777\,216\,z^6+4\,422\,893\,568\,z^5-342\,083\,174\,400\,z^4+9\,093\,711\,052\,800\,z^3-74\,596\,848\,480\,000\,z^2+117\,490\,036\,356\,000\,z+20\,805\,527\,271\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+4\left(-4\,194\,304\,z^9+1\,048\,576\,z^{17/2}+1\,104\,936\,960\,z^8-275\,447\,808\,z^{15/2}-85\,315\,190\,784\,z^7+21\,124\,915\,200\,z^{13/2}+2\,257\,835\,489\,280\,z^6-549\,298\,828\,800\,z^{11/2}-18\,255\,344\,880\,960\,z^5+4\,199\,822\,755\,920\,z^{9/2}+26\,622\,785\,227\,500\,z^4-4\,496\,480\,794\,575\,z^{7/2}+6\,795\,436\,032\,000\,z^3-1\,613\,916\,057\,600\,z^{5/2}+118\,313\,395\,200\,z^2+910\,103\,040\,000\,z^{3/2}-739\,458\,720\,000\,z-1\,791\,765\,360\,000\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^9+1\,048\,576\,z^{17/2}-1\,104\,936\,960\,z^8-275\,447\,808\,z^{15/2}+85\,315\,190\,784\,z^7+21\,124\,915\,200\,z^{13/2}-2\,257\,835\,489\,280\,z^6-549\,298\,828\,800\,z^{11/2}+18\,255\,344\,880\,960\,z^5+4\,199\,822\,755\,920\,z^{9/2}-26\,622\,785\,227\,500\,z^4-4\,496\,480\,794\,575\,z^{7/2}-6\,795\,436\,032\,000\,z^3-1\,613\,916\,057\,600\,z^{5/2}-118\,313\,395\,200\,z^2+910\,103\,040\,000\,z^{3/2}+739\,458\,720\,000\,z-1\,791\,765\,360\,000\sqrt{z}+895\,882\,680\,000\right)-895\,882\,680\,000\right)\right)\right) $$

07.22.03.9659.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{9}{4};-z\right)=\frac{1}{115\,390\,056\,038\,400\,z^{9/2}}\left(\sqrt{\pi}\,z^{13/4}\left(16\,777\,216\,z^6+4\,422\,893\,568\,z^5+342\,083\,174\,400\,z^4+9\,093\,711\,052\,800\,z^3+74\,596\,848\,480\,000\,z^2+117\,490\,036\,356\,000\,z-20\,805\,527\,271\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\left(4\left(1\,048\,576\,z^9+276\,234\,240\,z^8+21\,328\,797\,696\,z^7+564\,458\,872\,320\,z^6+4\,563\,836\,220\,240\,z^5+6\,655\,696\,306\,875\,z^4-1\,698\,859\,008\,000\,z^3+29\,578\,348\,800\,z^2+184\,864\,680\,000\,z-223\,970\,670\,000\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(1\,048\,576\,z^8+275\,447\,808\,z^7+21\,124\,915\,200\,z^6+549\,298\,828\,800\,z^5+4\,199\,822\,755\,920\,z^4+4\,496\,480\,794\,575\,z^3-1\,613\,916\,057\,600\,z^2-910\,103\,040\,000\,z-1\,791\,765\,360\,000\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9660.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{11}{4};z\right)= $$

$$ -\left(\left(2z\left(16\,777\,216z^8-4\,794\,089\,472z^7+408\,394\,465\,280z^6-12\,254\,019\,747\,840z^5+118\,502\,733\,024\,000z^4-\right.\right.\right. $$

$$ \left.\left.\left.245\,860\,665\,336\,000z^3-39\,941\,053\,977\,825z^2-5\,337\,967\,635\,000z+4\,359\,340\,235\,250\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right. $$

$$ \sqrt{z}\left(-16\,777\,216z^8+4\,783\,603\,712z^7-405\,426\,339\,840z^6+12\,006\,630\,604\,800z^5-111\,476\,793\,542\,400z^4+\right. $$

$$ \left.188\,319\,184\,653\,600z^3+87\,937\,701\,927\,075z^2+27\,045\,702\,684\,000z-26\,156\,041\,411\,500\right)I_{\frac{3}{4}}\left(\sqrt{z}\right) $$

$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-33\,554\,432z^9+9\,579\,790\,336z^8-814\,404\,993\,024z^7+24\,307\,525\,877\,760z^6-\right. $$

$$ 231\,180\,489\,745\,920z^5+440\,707\,537\,670\,400z^4+142\,979\,196\,209\,850z^3+48\,539\,919\,027\,600z^2- $$

$$ \left.\left.16\,547\,699\,668\,500z+19\,617\,031\,058\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(322\,280\,820\,576\,000\sqrt{2}\,z^{15/4}\right) $$

07.22.03.9661.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{11}{4};-z\right)= $$

$$ \left(\left(2z\left(16\,777\,216z^8+4\,794\,089\,472z^7+408\,394\,465\,280z^6+12\,254\,019\,747\,840z^5+118\,502\,733\,024\,000z^4+\right.\right.\right. $$

$$ \left.\left.\left.245\,860\,665\,336\,000z^3-39\,941\,053\,977\,825z^2+5\,337\,967\,635\,000z+4\,359\,340\,235\,250\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right. $$

$$ \sqrt{z}\left(16\,777\,216z^8+4\,783\,603\,712z^7+405\,426\,339\,840z^6+12\,006\,630\,604\,800z^5+111\,476\,793\,542\,400z^4+\right. $$

$$ \left.188\,319\,184\,653\,600z^3-87\,937\,701\,927\,075z^2+27\,045\,702\,684\,000z+26\,156\,041\,411\,500\right) $$

$$ J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(33\,554\,432z^9+9\,579\,790\,336z^8+814\,404\,993\,024z^7+24\,307\,525\,877\,760z^6+\right. $$

$$ 231\,180\,489\,745\,920z^5+440\,707\,537\,670\,400z^4-142\,979\,196\,209\,850z^3+48\,539\,919\,027\,600z^2+ $$

$$ \left.\left.16\,547\,699\,668\,500z+19\,617\,031\,058\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(322\,280\,820\,576\,000\sqrt{2}\,z^{15/4}\right) $$

07.22.03.9662.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{13}{4};z\right)= \left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-268\,435\,456\,z^7+82\,560\,679\,936\,z^6-7\,662\,663\,106\,560\,z^5+254\,623\,909\,478\,400\,z^4-2\,784\,949\,009\,920\,000\,z^3+6\,579\,442\,035\,936\,000\,z^2+2\,330\,219\,054\,394\,000\,z+1\,352\,359\,272\,639\,375\right)\right.\right. \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(-268\,435\,456\,z^7+82\,560\,679\,936\,z^6-7\,662\,663\,106\,560\,z^5+254\,623\,909\,478\,400\,z^4-2\,784\,949\,009\,920\,000\,z^3+6\,579\,442\,035\,936\,000\,z^2+2\,330\,219\,054\,394\,000\,z+1\,352\,359\,272\,639\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+ 4\left(-67\,108\,864\,z^9+16\,777\,216\,z^{17/2}+20\,627\,587\,072\,z^8-5\,144\,313\,856\,z^{15/2}-1\,911\,823\,269\,888\,z^7+474\,140\,835\,840\,z^{13/2}+63\,305\,085\,419\,520\,z^6-15\,483\,504\,476\,160\,z^{11/2}-685\,037\,173\,201\,920\,z^5+160\,746\,400\,362\,240\,z^{9/2}+1\,536\,159\,761\,136\,000\,z^4-293\,472\,363\,492\,000\,z^{7/2}+719\,320\,158\,225\,900\,z^3-221\,598\,716\,914\,575\,z^{5/2}+463\,448\,737\,382\,400\,z^2-129\,113\,284\,608\,000\,z^{3/2}-5\,096\,577\,024\,000\,z+89\,190\,097\,920\,000\sqrt{z}+ e^{4\sqrt{z}}\left(67\,108\,864\,z^9+16\,777\,216\,z^{17/2}-20\,627\,587\,072\,z^8-5\,144\,313\,856\,z^{15/2}+1\,911\,823\,269\,888\,z^7+474\,140\,835\,840\,z^{13/2}-63\,305\,085\,419\,520\,z^6-15\,483\,504\,476\,160\,z^{11/2}+685\,037\,173\,201\,920\,z^5+160\,746\,400\,362\,240\,z^{9/2}-1\,536\,159\,761\,136\,000\,z^4-293\,472\,363\,492\,000\,z^{7/2}-719\,320\,158\,225\,900\,z^3-221\,598\,716\,914\,575\,z^{5/2}-463\,448\,737\,382\,400\,z^2-129\,113\,284\,608\,000\,z^{3/2}+5\,096\,577\,024\,000\,z+89\,190\,097\,920\,000\sqrt{z}-44\,595\,048\,960\,000\right)\right)\Big)\Big/\left(22\,975\,442\,268\,979\,200\,z^{9/2}\right) $$

07.22.03.9663.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{13}{4};-z\right)= \left(\sqrt{\pi}\,z^{9/4}\left(268\,435\,456\,z^7+82\,560\,679\,936\,z^6+7\,662\,663\,106\,560\,z^5+254\,623\,909\,478\,400\,z^4+2\,784\,949\,009\,920\,000\,z^3+6\,579\,442\,035\,936\,000\,z^2+2\,330\,219\,054\,394\,000\,z+1\,352\,359\,272\,639\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)- 2\left(4\left(16\,777\,216\,z^9+5\,156\,896\,768\,z^8+477\,955\,817\,472\,z^7+15\,826\,271\,354\,880\,z^6+171\,259\,293\,300\,480\,z^5+384\,039\,940\,284\,000\,z^4-179\,830\,039\,556\,475\,z^3+115\,862\,184\,345\,600\,z^2+1\,274\,144\,256\,000\,z+11\,148\,762\,240\,000\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(16\,777\,216\,z^8+5\,144\,313\,856\,z^7+474\,140\,835\,840\,z^6+15\,483\,504\,476\,160\,z^5+160\,746\,400\,362\,240\,z^4+293\,472\,363\,492\,000\,z^3-221\,598\,716\,914\,575\,z^2+129\,113\,284\,608\,000\,z+89\,190\,097\,920\,000\right)\cos\left(2\sqrt{z}\right)\right)\Big)\Big/\left(5\,743\,860\,567\,244\,800\,z^{9/2}\right) $$

07.22.03.9664.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{15}{4};z\right) = $$

$$ -\left(\left(2z\left(268\,435\,456z^8-88\,499\,814\,400z^7+8\,907\,930\,992\,640z^6-326\,472\,641\,740\,800z^5+4\,049\,374\,381\,977\,600z^4-\right.\right.\right. $$

$$ \left.\left.\left.11\,593\,989\,728\,006\,400z^3-3\,716\,232\,986\,466\,000z^2-3\,089\,126\,353\,438\,125z-298\,926\,187\,560\,000\right)\right. $$

$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-268\,435\,456z^8+88\,332\,042\,240z^7-8\,853\,069\,496\,320z^6+\right. $$

$$ 321\,050\,714\,112\,000z^5-3\,859\,303\,878\,144\,000z^4+9\,520\,767\,646\,790\,400z^3+ $$

$$ \left.6\,841\,924\,995\,906\,000z^2+6\,705\,154\,595\,514\,375z+1\,793\,557\,125\,360\,000\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\left(-268\,435\,456z^9+88\,432\,705\,536z^8-8\,885\,910\,896\,640z^7+324\,279\,735\,091\,200z^6-\right. $$

$$ 3\,971\,077\,973\,913\,600z^5+10\,694\,337\,932\,678\,400z^4+5\,494\,616\,418\,891\,600z^3+4\,944\,425\,971\,109\,625z^2+ $$

$$ \left.\left.1\,921\,668\,348\,600\,000z-672\,583\,922\,010\,000\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(14\,063\,163\,079\,680\,000\sqrt{2}\,z^{15/4}\right) $$

07.22.03.9665.01

$$ {}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{15}{4};-z\right) = $$

$$ \left(\left(2z\left(268\,435\,456z^8+88\,499\,814\,400z^7+8\,907\,930\,992\,640z^6+326\,472\,641\,740\,800z^5+4\,049\,374\,381\,977\,600z^4+\right.\right. $$

$$ \left.\left.11\,593\,989\,728\,006\,400z^3+3\,716\,232\,986\,466\,000z^2+3\,089\,126\,353\,438\,125z-298\,926\,187\,560\,000\right)\right. $$

$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(268\,435\,456z^8+88\,332\,042\,240z^7+8\,853\,069\,496\,320z^6+321\,050\,714\,112\,000z^5+\right. $$

$$ 3\,859\,303\,878\,144\,000z^4+9\,520\,767\,646\,790\,400z^3-6\,841\,924\,995\,906\,000z^2+ $$

$$ \left.6\,705\,154\,595\,514\,375z-1\,793\,557\,125\,360\,000\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\left(268\,435\,456z^9+88\,432\,705\,536z^8+8\,885\,910\,896\,640z^7+324\,279\,735\,091\,200z^6+\right. $$

$$ 3\,971\,077\,973\,913\,600z^5+10\,694\,337\,932\,678\,400z^4-5\,494\,616\,418\,891\,600z^3+4\,944\,425\,971\,109\,625z^2- $$

$$ \left.\left.1\,921\,668\,348\,600\,000z-672\,583\,922\,010\,000\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(14\,063\,163\,079\,680\,000\sqrt{2}\,z^{15/4}\right) $$

07.22.03.9666.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{17}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-4\,294\,967\,296\,z^8+1\,509\,681\,004\,544\,z^7-163\,470\,146\,273\,280\,z^6+6\,518\,372\,082\,647\,040\,z^5-\right.\right.\right.
$$

$$
89\,118\,368\,317\,440\,000\,z^4+280\,722\,860\,199\,936\,000\,z^3+149\,134\,019\,481\,216\,000\,z^2+
$$

$$
173\,101\,986\,897\,840\,000\,z+109\,541\,101\,083\,789\,375\Big)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(-4\,294\,967\,296\,z^8+1\,509\,681\,004\,544\,z^7-163\,470\,146\,273\,280\,z^6+6\,518\,372\,082\,647\,040\,z^5-\right.
$$

$$
89\,118\,368\,317\,440\,000\,z^4+280\,722\,860\,199\,936\,000\,z^3+149\,134\,019\,481\,216\,000\,z^2+
$$

$$
173\,101\,986\,897\,840\,000\,z+109\,541\,101\,083\,789\,375\Big)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+
$$

$$
4\left(-1\,073\,741\,824\,z^9+268\,435\,456\,z^{17/2}+377\,218\,924\,544\,z^8-94\,103\,404\,544\,z^{15/2}-40\,797\,210\,673\,152\,z^7+\right.
$$

$$
10\,129\,417\,175\,040\,z^{13/2}+1\,622\,082\,433\,843\,200\,z^6-398\,159\,372\,943\,360\,z^{11/2}-21\,989\,880\,841\,420\,800\,z^5+
$$

$$
5\,222\,705\,014\,517\,760\,z^{9/2}+66\,578\,967\,100\,800\,000\,z^4-13\,536\,289\,898\,208\,000\,z^{7/2}+
$$

$$
44\,391\,315\,126\,312\,000\,z^3-14\,388\,178\,781\,869\,200\,z^{5/2}+53\,654\,909\,012\,189\,100\,z^2-
$$

$$
19\,080\,256\,625\,805\,375\,z^{3/2}+39\,141\,711\,544\,320\,000\,z-9\,133\,066\,027\,008\,000\,\sqrt{z}+e^{4\sqrt{z}}
$$

$$
\left(1\,073\,741\,824\,z^9+268\,435\,456\,z^{17/2}-377\,218\,924\,544\,z^8-94\,103\,404\,544\,z^{15/2}+40\,797\,210\,673\,152\,z^7+\right.
$$

$$
10\,129\,417\,175\,040\,z^{13/2}-1\,622\,082\,433\,843\,200\,z^6-398\,159\,372\,943\,360\,z^{11/2}+21\,989\,880\,841\,420\,800
$$

$$
z^5+5\,222\,705\,014\,517\,760\,z^{9/2}-66\,578\,967\,100\,800\,000\,z^4-13\,536\,289\,898\,208\,000\,z^{7/2}-
$$

$$
44\,391\,315\,126\,312\,000\,z^3-14\,388\,178\,781\,869\,200\,z^{5/2}-53\,654\,909\,012\,189\,100\,z^2-
$$

$$
19\,080\,256\,625\,805\,375\,z^{3/2}-39\,141\,711\,544\,320\,000\,z-9\,133\,066\,027\,008\,000\,\sqrt{z}+
$$

$$
\left.\left.\left.\left.4\,566\,533\,013\,504\,000\right)-4\,566\,533\,013\,504\,000\right)\right)\right)\Big/\left(904\,878\,957\,055\,180\,800\,z^{9/2}\right)
$$

07.22.03.9667.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{17}{4};-z\right)=
$$

$$
\left(\sqrt{\pi}\,z^{5/4}\left(4\,294\,967\,296\,z^8+1\,509\,681\,004\,544\,z^7+163\,470\,146\,273\,280\,z^6+6\,518\,372\,082\,647\,040\,z^5+\right.\right.
$$

$$
89\,118\,368\,317\,440\,000\,z^4+280\,722\,860\,199\,936\,000\,z^3-149\,134\,019\,481\,216\,000\,z^2+
$$

$$
\left.173\,101\,986\,897\,840\,000\,z-109\,541\,101\,083\,789\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$

$$
2\left(4\left(268\,435\,456\,z^9+94\,304\,731\,136\,z^8+10\,199\,302\,668\,288\,z^7+405\,520\,608\,460\,800\,z^6+\right.\right.
$$

$$
5\,497\,470\,210\,355\,200\,z^5+16\,644\,741\,775\,200\,000\,z^4-11\,097\,828\,781\,578\,000\,z^3+
$$

$$
13\,413\,727\,253\,047\,275\,z^2-9\,785\,427\,886\,080\,000\,z-1\,141\,633\,253\,376\,000\Big)\sin\left(2\sqrt{z}\right)-
$$

$$
\sqrt{z}\left(268\,435\,456\,z^8+94\,103\,404\,544\,z^7+10\,129\,417\,175\,040\,z^6+398\,159\,372\,943\,360\,z^5+\right.
$$

$$
5\,222\,705\,014\,517\,760\,z^4+13\,536\,289\,898\,208\,000\,z^3-14\,388\,178\,781\,869\,200\,z^2+
$$

$$
\left.\left.\left.19\,080\,256\,625\,805\,375\,z-9\,133\,066\,027\,008\,000\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(226\,219\,739\,263\,795\,200\,z^{9/2}\right)
$$

07.22.03.9668.01

$${}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{19}{4};z\right)=$$

$$-\left(\left(2z\left(4\,294\,967\,296z^8-1\,604\,707\,155\,968z^7+186\,343\,028\,162\,560z^6-8\,067\,604\,461\,649\,920z^5+122\,117\,356\,191\,744\,000\right.\right.\right.$$
$$z^4-445\,887\,577\,702\,195\,200z^3-216\,498\,309\,944\,716\,800z^2-$$
$$\left.320\,270\,940\,809\,820\,000z-258\,189\,709\,968\,815\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\sqrt{z}\left(-4\,294\,967\,296z^8+1\,602\,022\,801\,408z^7-185\,347\,300\,392\,960z^6+7\,953\,785\,510\,952\,960z^5-\right.$$
$$117\,370\,103\,847\,321\,600z^4+381\,183\,253\,497\,446\,400z^3+359\,850\,664\,754\,380\,800z^2+$$
$$\left.561\,411\,849\,398\,400\,000z+611\,953\,283\,873\,806\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\left(-4\,294\,967\,296z^9+1\,603\,633\,414\,144z^8-185\,943\,529\,095\,168z^7+8\,021\,637\,637\,079\,040z^6-\right.$$
$$120\,170\,371\,409\,510\,400z^5+418\,195\,121\,683\,046\,400z^4+292\,135\,629\,680\,294\,400z^3+$$
$$\left.\left.425\,671\,175\,777\,047\,200z^2+433\,434\,297\,764\,593\,125z+121\,961\,884\,524\,480\,000\right)$$
$$\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)\Big/\left(510\,024\,047\,689\,728\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.9669.01

$${}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{19}{4};-z\right)=$$

$$\left(\left(2z\left(4\,294\,967\,296z^8+1\,604\,707\,155\,968z^7+186\,343\,028\,162\,560z^6+8\,067\,604\,461\,649\,920z^5+122\,117\,356\,191\,744\,000\right.\right.\right.$$
$$z^4+445\,887\,577\,702\,195\,200z^3-216\,498\,309\,944\,716\,800z^2+320\,270\,940\,809\,820\,000z-$$
$$258\,189\,709\,968\,815\,625\left.\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(4\,294\,967\,296z^8+1\,602\,022\,801\,408z^7+\right.$$
$$185\,347\,300\,392\,960z^6+7\,953\,785\,510\,952\,960z^5+117\,370\,103\,847\,321\,600z^4+381\,183\,253\,497\,446\,400z^3-$$
$$\left.359\,850\,664\,754\,380\,800z^2+561\,411\,849\,398\,400\,000z-611\,953\,283\,873\,806\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\left(4\,294\,967\,296z^9+1\,603\,633\,414\,144z^8+185\,943\,529\,095\,168z^7+8\,021\,637\,637\,079\,040z^6+\right.$$
$$120\,170\,371\,409\,510\,400z^5+418\,195\,121\,683\,046\,400z^4-292\,135\,629\,680\,294\,400z^3+$$
$$\left.\left.425\,671\,175\,777\,047\,200z^2-433\,434\,297\,764\,593\,125z+121\,961\,884\,524\,480\,000\right)$$
$$\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)\Big/\left(510\,024\,047\,689\,728\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.9670.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{21}{4};z\right)=
\left(e^{-2\sqrt{z}}\left(4\left(-17\,179\,869\,184\,z^9+4\,294\,967\,296\,z^{17/2}+6\,790\,343\,294\,976\,z^8-1\,694\,364\,598\,272\,z^{15/2}-839\,436\,862\,488\,576\,z^7+\right.\right.\right.
$$
$$
208\,599\,515\,136\,000\,z^{13/2}+38\,955\,343\,392\,276\,480\,z^6-9\,586\,645\,967\,831\,040\,z^{11/2}-634\,647\,193\,512\,837\,120
$$
$$
z^5+151\,968\,671\,978\,618\,880\,z^{9/2}+2\,420\,303\,075\,617\,996\,800\,z^4-511\,234\,728\,947\,712\,000\,z^{7/2}+
$$
$$
2\,077\,321\,110\,036\,480\,000\,z^3-679\,716\,325\,588\,608\,000\,z^{5/2}+3\,658\,371\,776\,175\,916\,800\,z^2-
$$
$$
1\,324\,156\,289\,447\,376\,000\,z^{3/2}+5\,035\,841\,231\,323\,171\,500\,z-1\,859\,525\,538\,889\,701\,375\,\sqrt{z}\,+
$$
$$
e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^9+4\,294\,967\,296\,z^{17/2}-6\,790\,343\,294\,976\,z^8-1\,694\,364\,598\,272\,z^{15/2}+\right.
$$
$$
839\,436\,862\,488\,576\,z^7+208\,599\,515\,136\,000\,z^{13/2}-38\,955\,343\,392\,276\,480\,z^6-9\,586\,645\,967\,831\,040
$$
$$
z^{11/2}+634\,647\,193\,512\,837\,120\,z^5+151\,968\,671\,978\,618\,880\,z^{9/2}-2\,420\,303\,075\,617\,996\,800\,z^4-
$$
$$
511\,234\,728\,947\,712\,000\,z^{7/2}-2\,077\,321\,110\,036\,480\,000\,z^3-679\,716\,325\,588\,608\,000\,z^{5/2}-
$$
$$
3\,658\,371\,776\,175\,916\,800\,z^2-1\,324\,156\,289\,447\,376\,000\,z^{3/2}-5\,035\,841\,231\,323\,171\,500\,z-
$$
$$
\left.1\,859\,525\,538\,889\,701\,375\,\sqrt{z}\,-2\,630\,323\,015\,778\,304\,000\right)+2\,630\,323\,015\,778\,304\,000\Big)+
$$
$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\sqrt[4]{z}\,\left(-68\,719\,476\,736\,z^9+27\,174\,258\,081\,792\,z^8-3\,362\,814\,437\,621\,760\,z^7+\right.
$$
$$
156\,440\,929\,983\,528\,960\,z^6-2\,566\,609\,007\,542\,272\,000\,z^5+10\,106\,022\,967\,197\,696\,000\,z^4+
$$
$$
7\,158\,432\,935\,098\,368\,000\,z^3+12\,463\,343\,056\,644\,480\,000\,z^2+
$$
$$
\left.15\,773\,918\,556\,065\,670\,000\,z+7\,120\,171\,570\,446\,309\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$
$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\sqrt[4]{z}\,\left(-68\,719\,476\,736\,z^9+27\,174\,258\,081\,792\,z^8-3\,362\,814\,437\,621\,760\,z^7+\right.
$$
$$
156\,440\,929\,983\,528\,960\,z^6-2\,566\,609\,007\,542\,272\,000\,z^5+10\,106\,022\,967\,197\,696\,000\,z^4+
$$
$$
7\,158\,432\,935\,098\,368\,000\,z^3+12\,463\,343\,056\,644\,480\,000\,z^2+15\,773\,918\,556\,065\,670\,000\,z+
$$
$$
\left.\left.7\,120\,171\,570\,446\,309\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)\Big/\left(30\,659\,428\,191\,987\,302\,400\,z^{9/2}\right)
$$

07.22.03.9671.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{21}{4};-z\right)=
\left(\sqrt{\pi}\,\sqrt[4]{z}\,\left(68\,719\,476\,736\,z^9+27\,174\,258\,081\,792\,z^8+3\,362\,814\,437\,621\,760\,z^7+156\,440\,929\,983\,528\,960\,z^6+\right.\right.
$$
$$
2\,566\,609\,007\,542\,272\,000\,z^5+10\,106\,022\,967\,197\,696\,000\,z^4-7\,158\,432\,935\,098\,368\,000\,z^3+
$$
$$
\left.12\,463\,343\,056\,644\,480\,000\,z^2-15\,773\,918\,556\,065\,670\,000\,z+7\,120\,171\,570\,446\,309\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$
$$
2\left(4\left(4\,294\,967\,296\,z^9+1\,697\,585\,823\,744\,z^8+209\,859\,215\,622\,144\,z^7+9\,738\,835\,848\,069\,120\,z^6+\right.\right.
$$
$$
158\,661\,798\,378\,209\,280\,z^5+605\,075\,768\,904\,499\,200\,z^4-519\,330\,277\,509\,120\,000\,z^3+
$$
$$
914\,592\,944\,043\,979\,200\,z^2-1\,258\,960\,307\,830\,792\,875\,z+657\,580\,753\,944\,576\,000\Big)\sin\left(2\sqrt{z}\right)-
$$
$$
\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,694\,364\,598\,272\,z^7+208\,599\,515\,136\,000\,z^6+9\,586\,645\,967\,831\,040\,z^5+\right.
$$
$$
151\,968\,671\,978\,618\,880\,z^4+511\,234\,728\,947\,712\,000\,z^3-679\,716\,325\,588\,608\,000\,z^2+
$$
$$
\left.\left.\left.1\,324\,156\,289\,447\,376\,000\,z-1\,859\,525\,538\,889\,701\,375\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(7\,664\,857\,047\,996\,825\,600\,z^{9/2}\right)
$$

07.22.03.9672.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{23}{4};z\right)=
$$

$$
-\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9-28\,694\,676\,504\,576\,z^8+3\,775\,958\,079\,242\,240\,z^7-188\,568\,882\,213\,027\,840\,z^6+\right.\right.\right.
$$

$$
3\,369\,796\,197\,993\,676\,800\,z^5-14\,959\,476\,551\,467\,008\,000\,z^4-9\,786\,820\,319\,461\,785\,600\,z^3-
$$

$$
\left.20\,610\,396\,942\,879\,744\,000\,z^2-30\,593\,255\,477\,254\,470\,000\,z-14\,057\,774\,639\,086\,303\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+
$$

$$
\left(-68\,719\,476\,736\,z^9+28\,651\,726\,831\,616\,z^8-3\,758\,139\,333\,672\,960\,z^7+186\,256\,307\,068\,600\,320\,z^6-\right.
$$

$$
3\,257\,959\,989\,274\,214\,400\,z^5+13\,130\,407\,234\,938\,470\,400\,z^4+15\,171\,332\,345\,538\,969\,600\,z^3+
$$

$$
\left.31\,989\,634\,359\,306\,624\,000\,z^2+57\,173\,444\,679\,741\,390\,000\,z+42\,173\,323\,917\,258\,909\,375\right)
$$

$$
I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-68\,719\,476\,736\,z^9+28\,677\,496\,635\,392\,z^8-3\,768\,811\,253\,661\,696\,z^7+\right.
$$

$$
187\,635\,975\,051\,018\,240\,z^6-3\,324\,077\,420\,367\,052\,800\,z^5+14\,184\,248\,632\,256\,102\,400\,z^4+
$$

$$
12\,495\,933\,115\,390\,771\,200\,z^3+25\,202\,048\,945\,904\,230\,400\,z^2+41\,270\,921\,672\,226\,246\,000\,z+
$$

$$
\left.\left.\left.31\,979\,501\,873\,624\,930\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(16\,320\,769\,526\,071\,296\,000\,\sqrt{2}\;z^{17/4}\right)
$$

07.22.03.9673.01

$$
{}_1F_2\left(-\frac{19}{4};\frac{11}{2},\frac{23}{4};-z\right)=
$$

$$
\left(\left(2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+28\,694\,676\,504\,576\,z^8+3\,775\,958\,079\,242\,240\,z^7+188\,568\,882\,213\,027\,840\,z^6+\right.\right.\right.
$$

$$
3\,369\,796\,197\,993\,676\,800\,z^5+14\,959\,476\,551\,467\,008\,000\,z^4-9\,786\,820\,319\,461\,785\,600\,z^3+
$$

$$
\left.20\,610\,396\,942\,879\,744\,000\,z^2-30\,593\,255\,477\,254\,470\,000\,z+14\,057\,774\,639\,086\,303\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-
$$

$$
\left(68\,719\,476\,736\,z^9+28\,651\,726\,831\,616\,z^8+3\,758\,139\,333\,672\,960\,z^7+186\,256\,307\,068\,600\,320\,z^6+\right.
$$

$$
3\,257\,959\,989\,274\,214\,400\,z^5+13\,130\,407\,234\,938\,470\,400\,z^4-15\,171\,332\,345\,538\,969\,600\,z^3+
$$

$$
\left.31\,989\,634\,359\,306\,624\,000\,z^2-57\,173\,444\,679\,741\,390\,000\,z+42\,173\,323\,917\,258\,909\,375\right)
$$

$$
J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(68\,719\,476\,736\,z^9+28\,677\,496\,635\,392\,z^8+3\,768\,811\,253\,661\,696\,z^7+\right.
$$

$$
187\,635\,975\,051\,018\,240\,z^6+3\,324\,077\,420\,367\,052\,800\,z^5+14\,184\,248\,632\,256\,102\,400\,z^4-
$$

$$
12\,495\,933\,115\,390\,771\,200\,z^3+25\,202\,048\,945\,904\,230\,400\,z^2-41\,270\,921\,672\,226\,246\,000\,z+
$$

$$
\left.\left.\left.31\,979\,501\,873\,624\,930\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(16\,320\,769\,526\,071\,296\,000\,\sqrt{2}\;z^{17/4}\right)
$$

For fixed z and $a_1 = -\frac{17}{4}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = -\frac{17}{4}$, $b_{1.} = -\frac{11}{2}$

07.22.03.9674.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,049\,344\,065\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-16\,384\,z^5 + 9\,058\,560\,z^4 + 217\,058\,688\,z^3 + 992\,320\,560\,z^2 - 2\,239\,706\,700\,z + 1\,049\,344\,065\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 84\sqrt{z}\left(15\,872\,z^4 + 1\,498\,112\,z^3 + 18\,807\,360\,z^2 + 40\,027\,680\,z - 49\,968\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4096\,z^4 + 2\,321\,088\,z^3 + 83\,270\,880\,z^2 + 558\,544\,140\,z + 1\,049\,344\,065\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9675.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{1\,049\,344\,065\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(16\,384\,z^5 + 9\,058\,560\,z^4 - 217\,058\,688\,z^3 + 992\,320\,560\,z^2 + 2\,239\,706\,700\,z + 1\,049\,344\,065\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 84\sqrt{z}\left(15\,872\,z^4 - 1\,498\,112\,z^3 + 18\,807\,360\,z^2 - 40\,027\,680\,z - 49\,968\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4096\,z^4 - 2\,321\,088\,z^3 + 83\,270\,880\,z^2 - 558\,544\,140\,z + 1\,049\,344\,065\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9676.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{21}{4}; z\right) = \left(\frac{1088\,z^3}{72\,765} + \frac{800\,z^2}{2079} + \frac{428\,z}{231} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(128\,z^3 + 10\,416\,z^2 + 113\,400\,z + 218\,295\right)\sinh\left(2\sqrt{z}\right)}{218\,295} $$

07.22.03.9677.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{21}{4}; -z\right) = \left(-\frac{1088\,z^3}{72\,765} + \frac{800\,z^2}{2079} - \frac{428\,z}{231} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-128\,z^3 + 10\,416\,z^2 - 113\,400\,z + 218\,295\right)\sin\left(2\sqrt{z}\right)}{218\,295} $$

07.22.03.9678.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{19}{4}; z\right) = \frac{1}{136\,870\,965\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-8192\,z^5 + 632\,064\,z^4 + 24\,151\,680\,z^3 + 137\,923\,632\,z^2 - 296\,008\,020\,z + 136\,870\,965\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(1024\,z^4 - 947\,968\,z^3 - 16\,062\,816\,z^2 - 37\,837\,800\,z + 45\,623\,655\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(2048\,z^4 + 98\,112\,z^3 + 9\,025\,632\,z^2 + 68\,981\,220\,z + 136\,870\,965\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9679.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{19}{4}; -z\right) = \frac{1}{136\,870\,965\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192z^5 + 632\,064z^4 - 24\,151\,680z^3 + 137\,923\,632z^2 + 296\,008\,020z + 136\,870\,965\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1024z^4 + 947\,968z^3 - 16\,062\,816z^2 + 37\,837\,800z + 45\,623\,655\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(2048z^4 - 98\,112z^3 + 9\,025\,632z^2 - 68\,981\,220z + 136\,870\,965\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9680.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{17}{4}; z\right) = \left(\frac{64z^3}{10\,395} + \frac{32z^2}{99} + \frac{20z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16z^2 + 240z + 495\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.9681.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{17}{4}; -z\right) = \left(-\frac{64z^3}{10\,395} + \frac{32z^2}{99} - \frac{20z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(16z^2 - 240z + 495\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.9682.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{15}{4}; z\right) = \frac{1}{7\,203\,735\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096z^5 + 22\,272z^4 + 883\,584z^3 + 7\,966\,224z^2 - 15\,891\,876z + 7\,203\,735\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(512z^4 - 23\,552z^3 - 748\,608z^2 - 2\,095\,632z + 2\,401\,245\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(1024z^4 - 4800z^3 + 348\,768z^2 + 3\,318\,084z + 7\,203\,735\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9683.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{15}{4}; -z\right) = \frac{1}{7\,203\,735\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^5 + 22\,272z^4 - 883\,584z^3 + 7\,966\,224z^2 + 15\,891\,876z + 7\,203\,735\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(512z^4 + 23\,552z^3 - 748\,608z^2 + 2\,095\,632z + 2\,401\,245\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(1024z^4 + 4800z^3 + 348\,768z^2 - 3\,318\,084z + 7\,203\,735\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9684.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{13}{4}; z\right) = \frac{1}{2\,432\,430}\left(e^{-2\sqrt{z}}\left(1024e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4} - 1024e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4} + 1024e^{4\sqrt{z}}z^4 + 1024z^4 + 256e^{4\sqrt{z}}z^{7/2} - 256z^{7/2} + 192e^{4\sqrt{z}}z^3 + 192z^3 - 31\,584e^{4\sqrt{z}}z^{5/2} + 31\,584z^{5/2} + 278\,880e^{4\sqrt{z}}z^2 + 278\,880z^2 - 1\,043\,280e^{4\sqrt{z}}z^{3/2} + 1\,043\,280z^{3/2} + 2\,143\,260e^{4\sqrt{z}}z + 2\,143\,260z - 2\,432\,430e^{4\sqrt{z}}\sqrt{z} + 2\,432\,430\sqrt{z} + 1\,216\,215e^{4\sqrt{z}} + 1\,216\,215\right)\right) $$

07.22.03.9685.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{1\,216\,215}\left(2048\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{17/4} + 2\left(128 z^3 + 15\,792 z^2 - 521\,640 z + 1\,216\,215\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\, + \right.$$
$$\left.\left(1024 z^4 - 192 z^3 + 278\,880 z^2 - 2\,143\,260 z + 1\,216\,215\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9686.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{480\,249\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2048 z^5 + 8448 z^4 - 1152 z^3 + 617\,904 z^2 - 1\,095\,444 z + 480\,249\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\right.\right.$$
$$\sqrt{z}\left(256 z^4 + 1280 z^3 + 36\,960 z^2 + 151\,704 z - 160\,083\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(-512 z^4 - 2496 z^3 + 14\,112 z^2 + 185\,220 z + 480\,249\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9687.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{480\,249\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-2048 z^5 + 8448 z^4 + 1152 z^3 + 617\,904 z^2 + 1\,095\,444 z + 480\,249\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$12\sqrt{z}\left(256 z^4 - 1280 z^3 + 36\,960 z^2 - 151\,704 z - 160\,083\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(-512 z^4 + 2496 z^3 + 14\,112 z^2 - 185\,220 z + 480\,249\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9688.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{187\,110}\left(e^{-2\sqrt{z}}\left(-256 e^{4\sqrt{z}} z^4 - 256 z^4 - 64 e^{4\sqrt{z}} z^{7/2} + 64 z^{7/2} - 16 e^{2\sqrt{z}}\sqrt{2\pi}\,(16 z + 153)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} + \right.\right.$$
$$16 e^{2\sqrt{z}}\sqrt{2\pi}\,(16 z + 153)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} - 2496 e^{4\sqrt{z}} z^3 - 2496 z^3 -$$
$$672 e^{4\sqrt{z}} z^{5/2} + 672 z^{5/2} + 7392 e^{4\sqrt{z}} z^2 + 7392 z^2 - 60\,480 e^{4\sqrt{z}} z^{3/2} + 60\,480 z^{3/2} +$$
$$\left.\left.154\,980 e^{4\sqrt{z}} z + 154\,980 z - 187\,110 e^{4\sqrt{z}}\sqrt{z} + 187\,110\sqrt{z} + 93\,555 e^{4\sqrt{z}} + 93\,555\right)\right)$$

07.22.03.9689.01

$${}_1F_2\left(-\frac{17}{4};-\frac{11}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{93\,555}\left(32\sqrt{\pi}\,(153-16z)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}+2\left(-32z^3+336z^2-30\,240z+93\,555\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(-256z^4+2496z^3+7392z^2-154\,980z+93\,555\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9690.01

$${}_1F_2\left(-\frac{17}{4};-\frac{11}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{130\,977\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(1024z^5+14\,016z^4+28\,800z^3-230\,832z^2+319\,788z-130\,977\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\right.\right.$$
$$\sqrt{z}\left(128z^4+1864z^3+1344z^2-48\,384z+43\,659\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(256z^4+3696z^3+10\,080z^2+29\,484z+130\,977\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9691.01

$${}_1F_2\left(-\frac{17}{4};-\frac{11}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{130\,977\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024z^5-14\,016z^4+28\,800z^3+230\,832z^2+319\,788z+130\,977\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(128z^4-1864z^3+1344z^2+48\,384z+43\,659\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(256z^4-3696z^3+10\,080z^2-29\,484z+130\,977\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9692.01

$${}_1F_2\left(-\frac{17}{4};-\frac{11}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{166\,320}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+4896z+25\,857\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+4896z+25\,857\right)\right.\right.$$
$$\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+4\left(64z^4-16z^{7/2}+1236z^3-321z^{5/2}+6720z^2+2016z^{3/2}+28\,728z+41\,580\sqrt{z}+\right.$$
$$\left.\left.\left.e^{4\sqrt{z}}\left(64z^4+16z^{7/2}+1236z^3+321z^{5/2}+6720z^2-2016z^{3/2}+28\,728z-41\,580\sqrt{z}+20\,790\right)+20\,790\right)\right)\right)$$

07.22.03.9693.01

$${}_1F_2\left(-\frac{17}{4};-\frac{11}{2},-\frac{5}{4};-z\right)=\frac{1}{41\,580}\left(\sqrt{\pi}\left(256z^2-4896z+25\,857\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+\right.$$
$$\left.2\left(2\left(32z^4-618z^3+3360z^2-14\,364z+10\,395\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\left(16z^3-321z^2-2016z+41\,580\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.9694.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{3}{4}; z\right) = \frac{1}{93\,555\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512z^5 + 11\,904z^4 + 88\,758z^3 + 115\,920z^2 - 283\,500z + 93\,555\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(256z^4 + 6176z^3 + 49\,965z^2 + 211\,680z - 124\,740\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2z\left(256z^4 + 6144z^3 + 49\,095z^2 + 68\,040z - 187\,110\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9695.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{3}{4}; -z\right) = \frac{1}{93\,555\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-512z^5 + 11\,904z^4 - 88\,758z^3 + 115\,920z^2 + 283\,500z + 93\,555\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(256z^4 - 6176z^3 + 49\,965z^2 - 211\,680z - 124\,740\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(-256z^4 + 6144z^3 - 49\,095z^2 + 68\,040z + 187\,110\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9696.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{1}{4}; z\right) = \frac{1}{6\,386\,688}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3 + 117\,504z^2 + 1\,241\,136z + 3\,956\,121\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4} + e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3 + 117\,504z^2 + 1\,241\,136z + 3\,956\,121\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4} - 4\left(1024z^4 - 256z^{7/2} + 29\,568z^3 - 7584z^{5/2} + 316\,212z^2 - 85\,401z^{3/2} + 870\,912z - 1\,596\,672\sqrt{z} + e^{4\sqrt{z}}\left(1024z^4 + 256z^{7/2} + 29\,568z^3 + 7584z^{5/2} + 316\,212z^2 + 85\,401z^{3/2} + 870\,912z + 1\,596\,672\sqrt{z} - 798\,336\right) - 798\,336\right)\right)\right) $$

07.22.03.9697.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) = \frac{1}{1\,596\,672}\left(\sqrt{\pi}\left(-4096z^3 + 117\,504z^2 - 1\,241\,136z + 3\,956\,121\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4} + 2\left(\sqrt{z}\left(-256z^3 + 7584z^2 - 85\,401z + 1\,596\,672\right)\sin\left(2\sqrt{z}\right) - 4\left(256z^4 - 7392z^3 + 79\,053z^2 - 217\,728z - 199\,584\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9698.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) = \frac{1}{3\,492\,720\sqrt{2}\,\sqrt[4]{z}}\left(\left(-2\left(4096z^5 + 134\,400z^4 + 1\,718\,640z^3 + 7\,414\,407z^2 - 3\,810\,240z - 3\,492\,720\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(4096z^4 + 137\,984z^3 + 1\,842\,288z^2 + 8\,029\,665z + 9\,313\,920\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(4096z^4 + 137\,472z^3 + 1\,823\,472z^2 + 8\,848\,035z + 13\,970\,880\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9699.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) = \frac{1}{3\,492\,720\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(4096z^5 - 134\,400z^4 + 1\,718\,640z^3 - 7\,414\,407z^2 - 3\,810\,240z + 3\,492\,720\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(4096z^4 - 137\,984z^3 + 1\,842\,288z^2 - 8\,029\,665z + 9\,313\,920\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(4096z^4 - 137\,472z^3 + 1\,823\,472z^2 - 8\,848\,035z + 13\,970\,880\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9700.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) = \frac{1}{1\,634\,992\,128}\left(e^{-2\sqrt{z}}\left(4\left(16\,384z^4 - 4096z^{7/2} + 629\,760z^3 - 160\,512z^{5/2} + 10\,053\,312z^2 - 2\,644\,272z^{3/2} + 65\,458\,260z - 6\,644\,673\sqrt{z} + e^{4\sqrt{z}}\left(16\,384z^4 + 4096z^{7/2} + 629\,760z^3 + 160\,512z^{5/2} + 10\,053\,312z^2 + 2\,644\,272z^{3/2} + 65\,458\,260z + 6\,644\,673\sqrt{z} + 204\,374\,016\right) + 204\,374\,016\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(65\,536z^4 + 2\,506\,752z^3 + 39\,716\,352z^2 + 253\,191\,744z + 415\,392\,705\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(65\,536z^4 + 2\,506\,752z^3 + 39\,716\,352z^2 + 253\,191\,744z + 415\,392\,705\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9701.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{3}{4}; -z\right) = \frac{1}{408\,748\,032}\left(\sqrt{\pi}\,\sqrt[4]{z}\left(65\,536z^4 - 2\,506\,752z^3 + 39\,716\,352z^2 - 253\,191\,744z + 415\,392\,705\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\left(4\left(4096z^4 - 157\,440z^3 + 2\,513\,328z^2 - 16\,364\,565z + 51\,093\,504\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\left(4096z^3 - 160\,512z^2 + 2\,644\,272z - 6\,644\,673\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9702.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{1\,005\,903\,360\,\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(-2\left(65\,536\,z^5 + 2\,777\,088\,z^4 + 50\,254\,848\,z^3 + 380\,143\,008\,z^2 + 787\,624\,803\,z - 1\,005\,903\,360\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 3\sqrt{z}\left(65\,536\,z^4 + 2\,834\,432\,z^3 + 52\,781\,568\,z^2 + 428\,645\,952\,z + 1\,678\,491\,045\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2z\left(65\,536\,z^4 + 2\,826\,240\,z^3 + 52\,402\,176\,z^2 + 420\,765\,408\,z + 1\,011\,859\,695\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9703.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) = \frac{1}{1\,005\,903\,360\,\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\left(65\,536\,z^5 - 2\,777\,088\,z^4 + 50\,254\,848\,z^3 - 380\,143\,008\,z^2 + 787\,624\,803\,z + 1\,005\,903\,360\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\sqrt{z}\left(65\,536\,z^4 - 2\,834\,432\,z^3 + 52\,781\,568\,z^2 - 428\,645\,952\,z + 1\,678\,491\,045\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2z\left(65\,536\,z^4 - 2\,826\,240\,z^3 + 52\,402\,176\,z^2 - 420\,765\,408\,z + 1\,011\,859\,695\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9704.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{7}{4}; z\right) = $$
$$ \frac{1}{174\,399\,160\,320\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144\,z^{9/2} - 65\,536\,z^4 + 12\,582\,912\,z^{7/2} - 3\,194\,880\,z^3 + 267\,233\,280\,z^{5/2} - \right.\right.\right. $$
$$ 69\,373\,440\,z^2 + 2\,587\,368\,960\,z^{3/2} - 708\,765\,120\,z + 7\,953\,471\,540\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(262\,144\,z^{9/2} + 65\,536\,z^4 + 12\,582\,912\,z^{7/2} + 3\,194\,880\,z^3 + 267\,233\,280\,z^{5/2} + 69\,373\,440\,z^2 + \right. $$
$$ \left.\left.\left. 2\,587\,368\,960\,z^{3/2} + 708\,765\,120\,z + 7\,953\,471\,540\sqrt{z} + 10\,384\,817\,625\right) - 10\,384\,817\,625\right) + e^{2\sqrt{z}} $$
$$ \sqrt{2\pi}\left(1\,048\,576\,z^5 + 50\,135\,040\,z^4 + 1\,059\,102\,720\,z^3 + 10\,127\,669\,760\,z^2 + 33\,231\,416\,400\,z + 10\,384\,817\,625\right) $$
$$ \left.\left.\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5 + 50\,135\,040\,z^4 + 1\,059\,102\,720\,z^3 + \right.\right.\right. $$
$$ \left.\left.\left. 10\,127\,669\,760\,z^2 + 33\,231\,416\,400\,z + 10\,384\,817\,625\right)\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9705.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{7}{4}; -z\right) = \frac{1}{43\,599\,790\,080\,z^{3/4}} $$
$$ \left(\sqrt{\pi}\left(1\,048\,576\,z^5 - 50\,135\,040\,z^4 + 1\,059\,102\,720\,z^3 - 10\,127\,669\,760\,z^2 + 33\,231\,416\,400\,z - 10\,384\,817\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536\,z^4 - 3\,145\,728\,z^3 + 66\,808\,320\,z^2 - 646\,842\,240\,z + 1\,988\,367\,885\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left.\left(65\,536\,z^4 - 3\,194\,880\,z^3 + 69\,373\,440\,z^2 - 708\,765\,120\,z + 10\,384\,817\,625\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9706.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{9}{4}; z\right) = \frac{1}{70\,815\,596\,544\sqrt{2}\, z^{3/4}} $$
$$ \left(\left(-2\sqrt{z}\left(1\,048\,576 z^5 + 54\,460\,416 z^4 + 1\,274\,093\,568 z^3 + 13\,741\,668\,864 z^2 + 49\,847\,401\,296 z - 54\,552\,126\,321\right)\right.\right. $$
$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(1\,048\,576 z^5 + 55\,377\,920 z^4 + 1\,323\,294\,720 z^3 + 14\,943\,785\,472 z^2 + \right. $$
$$ \left. 57\,127\,560\,336 z + 27\,105\,783\,705\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 + 55\,246\,848 z^4 + \right. $$
$$ \left.\left. 1\,315\,971\,072 z^3 + 14\,754\,009\,600 z^2 + 61\,597\,310\,544 z + 81\,317\,351\,115\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.9707.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{9}{4}; -z\right) = \frac{1}{70\,815\,596\,544\sqrt{2}\, z^{3/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576 z^5 - 54\,460\,416 z^4 + 1\,274\,093\,568 z^3 - 13\,741\,668\,864 z^2 + 49\,847\,401\,296 z + 54\,552\,126\,321\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 3\left(1\,048\,576 z^5 - 55\,377\,920 z^4 + 1\,323\,294\,720 z^3 - 14\,943\,785\,472 z^2 + 57\,127\,560\,336 z - 27\,105\,783\,705\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 - 55\,246\,848 z^4 + 1\,315\,971\,072 z^3 - \right. $$
$$ \left.\left. 14\,754\,009\,600 z^2 + 61\,597\,310\,544 z - 81\,317\,351\,115\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.9708.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{11}{4}; z\right) = $$
$$ \frac{1}{9\,567\,039\,651\,840 z^{7/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304 z^{11/2} - 1\,048\,576 z^5 + 241\,434\,624 z^{9/2} - 61\,145\,088 z^4 + 6\,401\,458\,176 z^{7/2} - \right.\right.\right. $$
$$ 1\,648\,926\,720 z^3 + 82\,322\,196\,480 z^{5/2} - 22\,001\,379\,840 z^2 + 417\,315\,343\,680 z^{3/2} - 33\,231\,416\,400 z + $$
$$ 1\,204\,638\,844\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 241\,434\,624 z^{9/2} + 61\,145\,088 z^4 + \right. $$
$$ \left. 6\,401\,458\,176 z^{7/2} + 1\,648\,926\,720 z^3 + 82\,322\,196\,480 z^{5/2} + 22\,001\,379\,840 z^2 + 417\,315\,343\,680 z^{3/2} + \right. $$
$$ \left. 33\,231\,416\,400 z + 1\,204\,638\,844\,500\sqrt{z} - 903\,479\,133\,375\right) + 903\,479\,133\,375\Big) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 962\,592\,768 z^5 + 25\,418\,465\,280 z^4 + 324\,085\,432\,320 z^3 + \right. $$
$$ \left. 1\,595\,107\,987\,200 z^2 + 996\,942\,492\,000 z - 903\,479\,133\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 962\,592\,768 z^5 + 25\,418\,465\,280 z^4 + 324\,085\,432\,320 z^3 + \right. $$
$$ \left.\left.\left. 1\,595\,107\,987\,200 z^2 + 996\,942\,492\,000 z - 903\,479\,133\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9709.01

$${}_1F_2\left(-\frac{17}{4};-\frac{11}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{2\,391\,759\,912\,960\,z^{7/4}}\left(\sqrt{\pi}\,\left(16\,777\,216\,z^6-962\,592\,768\,z^5+25\,418\,465\,280\,z^4-324\,085\,432\,320\,z^3+\right.\right.$$
$$\left.1\,595\,107\,987\,200\,z^2-996\,942\,492\,000\,z-903\,479\,133\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\,\left(1\,048\,576\,z^5-60\,358\,656\,z^4+1\,600\,364\,544\,z^3-20\,580\,549\,120\,z^2+104\,328\,835\,920\,z-301\,159\,711\,125\right)\right.$$
$$\cos\left(2\sqrt{z}\right)+\left(1\,048\,576\,z^5-61\,145\,088\,z^4+1\,648\,926\,720\,z^3-\right.$$
$$\left.\left.\left.22\,001\,379\,840\,z^2+33\,231\,416\,400\,z+903\,479\,133\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.9710.01

$${}_1F_2\left(-\frac{17}{4};-\frac{11}{2},\frac{13}{4};z\right)=$$
$$\left(\left(-2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,031\,798\,784\,z^5+29\,600\,317\,440\,z^4+414\,223\,958\,016\,z^3+2\,197\,887\,664\,896\,z^2+\right.\right.\right.$$
$$\left.658\,891\,449\,216\,z-2\,520\,837\,884\,565\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(16\,777\,216\,z^6+1\,046\,478\,848\,z^5+30\,527\,913\,984\,z^4+\right.$$
$$\left.\left.441\,757\,679\,616\,z^3+2\,612\,006\,901\,504\,z^2+9\,541\,235\,864\,160\,z-4\,201\,396\,474\,275\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,044\,381\,696\,z^5+30\,390\,681\,600\,z^4+437\,490\,450\,432\,z^3+2\,541\,208\,640\,256\,z^2+\right.$$
$$\left.\left.1\,734\,770\,157\,120\,z-12\,604\,189\,422\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(3\,273\,254\,240\,256\sqrt{2}\;z^{7/4}\right)$$

07.22.03.9711.01

$${}_1F_2\left(-\frac{17}{4};-\frac{11}{2},\frac{13}{4};-z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-1\,031\,798\,784\,z^5+29\,600\,317\,440\,z^4-414\,223\,958\,016\,z^3+2\,197\,887\,664\,896\,z^2-\right.\right.\right.$$
$$\left.658\,891\,449\,216\,z-2\,520\,837\,884\,565\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216\,z^6-1\,046\,478\,848\,z^5+30\,527\,913\,984\,z^4-\right.$$
$$\left.\left.441\,757\,679\,616\,z^3+2\,612\,006\,901\,504\,z^2-9\,541\,235\,864\,160\,z-4\,201\,396\,474\,275\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(16\,777\,216\,z^6-1\,044\,381\,696\,z^5+30\,390\,681\,600\,z^4-437\,490\,450\,432\,z^3+2\,541\,208\,640\,256\,z^2-\right.$$
$$\left.\left.1\,734\,770\,157\,120\,z-12\,604\,189\,422\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(3\,273\,254\,240\,256\sqrt{2}\;z^{7/4}\right)$$

07.22.03.9712.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) = $$

$$ \frac{1}{389\,639\,433\,093\,120\, z^{11/4}} \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(67\,108\,864\, z^{13/2} - 16\,777\,216\, z^6 + 4\,504\,682\,496\, z^{11/2} - 1\,138\,753\,536\, z^5 + \right.\right.\right. $$
$$ 143\,213\,199\,360\, z^{9/2} - 36\,700\,618\,752\, z^4 + 2\,297\,300\,189\,184\, z^{7/2} - 605\,210\,296\,320\, z^3 + $$
$$ 15\,384\,895\,626\,240\, z^{5/2} - 4\,430\,855\,520\,000\, z^2 + 7\,709\,688\,604\,800\, z^{3/2} - 121\,427\,595\,525\,600\, z - $$
$$ 278\,271\,573\,079\,500\sqrt{z} + e^{4\sqrt{z}} \left(67\,108\,864\, z^{13/2} + 16\,777\,216\, z^6 + 4\,504\,682\,496\, z^{11/2} + \right. $$
$$ 1\,138\,753\,536\, z^5 + 143\,213\,199\,360\, z^{9/2} + 36\,700\,618\,752\, z^4 + 2\,297\,300\,189\,184\, z^{7/2} + $$
$$ 605\,210\,296\,320\, z^3 + 15\,384\,895\,626\,240\, z^{5/2} + 4\,430\,855\,520\,000\, z^2 + 7\,709\,688\,604\,800\, z^{3/2} + $$
$$ \left.\left. 121\,427\,595\,525\,600\, z - 278\,271\,573\,079\,500\sqrt{z} + 208\,703\,679\,809\,625\right) - 208\,703\,679\,809\,625\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\, \left(268\,435\,456\, z^7 + 17\,968\,398\,336\, z^6 + 569\,373\,622\,272\, z^5 + 9\,074\,392\,104\,960\, z^4 + \right. $$
$$ \left. 59\,550\,698\,188\,800\, z^3 + 55\,828\,779\,552\,000\, z^2 - 101\,189\,662\,938\,000\, z + 208\,703\,679\,809\,625\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\, \left(268\,435\,456\, z^7 + 17\,968\,398\,336\, z^6 + 569\,373\,622\,272\, z^5 + 9\,074\,392\,104\,960\, z^4 + \right. $$
$$ \left. \left. 59\,550\,698\,188\,800\, z^3 + 55\,828\,779\,552\,000\, z^2 - 101\,189\,662\,938\,000\, z + 208\,703\,679\,809\,625\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9713.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) = $$

$$ \frac{1}{97\,409\,858\,273\,280\, z^{11/4}} \left(\sqrt{\pi}\, \left(268\,435\,456\, z^7 - 17\,968\,398\,336\, z^6 + 569\,373\,622\,272\, z^5 - 9\,074\,392\,104\,960\, z^4 + \right.\right. $$
$$ \left. 59\,550\,698\,188\,800\, z^3 - 55\,828\,779\,552\,000\, z^2 - 101\,189\,662\,938\,000\, z - 208\,703\,679\,809\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\, \left(4\sqrt{z}\, \left(16\,777\,216\, z^6 - 1\,126\,170\,624\, z^5 + 35\,803\,299\,840\, z^4 - 574\,325\,047\,296\, z^3 + 3\,846\,223\,906\,560\, z^2 - \right. $$
$$ \left. 1\,927\,422\,151\,200\, z - 69\,567\,893\,269\,875\right) \cos\left(2\sqrt{z}\right) + \left(16\,777\,216\, z^6 - 1\,138\,753\,536\, z^5 + 36\,700\,618\,752 \right. $$
$$ \left.\left. z^4 - 605\,210\,296\,320\, z^3 + 4\,430\,855\,520\,000\, z^2 - 121\,427\,595\,525\,600\, z + 208\,703\,679\,809\,625\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9714.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) = $$
$$ \left(\left(-2\sqrt{z}\,\left(268\,435\,456\,z^7 + 19\,075\,694\,592\,z^6 + 648\,155\,234\,304\,z^5 + 11\,145\,482\,403\,840\,z^4 + 77\,681\,924\,812\,800\,z^3 + \right.\right.\right. $$
$$ 32\,334\,931\,157\,760\,z^2 - 1\,008\,335\,153\,826\,000\,z + 794\,063\,933\,637\,975\Big) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ 3\left(268\,435\,456\,z^7 + 19\,310\,575\,616\,z^6 + 665\,242\,828\,800\,z^5 + 11\,742\,543\,544\,320\,z^4 + 88\,535\,547\,555\,840\,z^3 + \right. $$
$$ 34\,695\,403\,142\,400\,z^2 - 2\,621\,671\,399\,947\,600\,z + 1\,323\,439\,889\,396\,625\Big) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7 + 19\,277\,021\,184\,z^6 + 662\,726\,246\,400\,z^5 + 11\,651\,185\,704\,960\,z^4 + \right. $$
$$ \left.\left.\left. 86\,743\,045\,877\,760\,z^3 + 104\,086\,209\,427\,200\,z^2 + 605\,001\,092\,295\,600\,z + 3\,970\,319\,668\,189\,875\right)\right. $$
$$ \left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(120\,858\,618\,101\,760\,\sqrt{2}\,z^{11/4}\right) $$

07.22.03.9715.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) = $$
$$ \left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 - 19\,075\,694\,592\,z^6 + 648\,155\,234\,304\,z^5 - 11\,145\,482\,403\,840\,z^4 + 77\,681\,924\,812\,800\,z^3 - \right.\right.\right. $$
$$ 32\,334\,931\,157\,760\,z^2 - 1\,008\,335\,153\,826\,000\,z - 794\,063\,933\,637\,975\Big) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ 3\left(-268\,435\,456\,z^7 + 19\,310\,575\,616\,z^6 - 665\,242\,828\,800\,z^5 + 11\,742\,543\,544\,320\,z^4 - 88\,535\,547\,555\,840\,z^3 + \right. $$
$$ 34\,695\,403\,142\,400\,z^2 + 2\,621\,671\,399\,947\,600\,z + 1\,323\,439\,889\,396\,625\Big) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7 - 19\,277\,021\,184\,z^6 + 662\,726\,246\,400\,z^5 - 11\,651\,185\,704\,960\,z^4 + \right. $$
$$ \left.\left.\left. 86\,743\,045\,877\,760\,z^3 - 104\,086\,209\,427\,200\,z^2 + 605\,001\,092\,295\,600\,z - 3\,970\,319\,668\,189\,875\right)\right. $$
$$ \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(120\,858\,618\,101\,760\,\sqrt{2}\,z^{11/4}\right) $$

07.22.03.9716.01

$$
{}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) =
$$

$$
\left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(1\,073\,741\,824\, z^{15/2} - 268\,435\,456\, z^7 + 82\,342\,576\,128\, z^{13/2} - 20\,786\,970\,624\, z^6 + 3\,052\,501\,204\,992\, z^{11/2} - \right.\right.\right.
$$

$$
779\,407\,589\,376\, z^5 + 58\,681\,898\,827\,776\, z^{9/2} - 15\,315\,404\,783\,616\, z^4 + 488\,782\,033\,108\,992\, z^{7/2} -
$$

$$
136\,334\,016\,000\,000\, z^3 + 719\,570\,936\,448\,000\, z^{5/2} + 991\,979\,933\,817\,600\, z^2 +
$$

$$
16\,155\,652\,471\,358\,400\, z^{3/2} + 63\,891\,153\,179\,053\,200\, z + 113\,256\,530\,243\,356\,500\sqrt{z} +
$$

$$
e^{4\sqrt{z}}\left(1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 + 82\,342\,576\,128\, z^{13/2} + 20\,786\,970\,624\, z^6 + \right.
$$

$$
3\,052\,501\,204\,992\, z^{11/2} + 779\,407\,589\,376\, z^5 + 58\,681\,898\,827\,776\, z^{9/2} + 15\,315\,404\,783\,616\, z^4 +
$$

$$
488\,782\,033\,108\,992\, z^{7/2} + 136\,334\,016\,000\,000\, z^3 + 719\,570\,936\,448\,000\, z^{5/2} -
$$

$$
991\,979\,933\,817\,600\, z^2 + 16\,155\,652\,471\,358\,400\, z^{3/2} - 63\,891\,153\,179\,053\,200\, z +
$$

$$
\left.\left.\left.113\,256\,530\,243\,356\,500\sqrt{z} - 84\,942\,397\,682\,517\,375\right) + 84\,942\,397\,682\,517\,375\right) +
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\, z^8 + 328\,564\,998\,144\, z^7 + 12\,146\,637\,275\,136\, z^6 + 232\,304\,437\,886\,976\, z^5 + \right.
$$

$$
1\,905\,622\,342\,041\,600\, z^4 + 2\,382\,027\,927\,552\,000\, z^3 - 6\,476\,138\,428\,032\,000\, z^2 +
$$

$$
\left.26\,714\,071\,015\,632\,000\, z - 84\,942\,397\,682\,517\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) -
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\, z^8 + 328\,564\,998\,144\, z^7 + 12\,146\,637\,275\,136\, z^6 + 232\,304\,437\,886\,976\, z^5 + \right.
$$

$$
1\,905\,622\,342\,041\,600\, z^4 + 2\,382\,027\,927\,552\,000\, z^3 - 6\,476\,138\,428\,032\,000\, z^2 +
$$

$$
\left.\left.\left.26\,714\,071\,015\,632\,000\, z - 84\,942\,397\,682\,517\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(13\,299\,692\,649\,578\,496\, z^{15/4}\right)
$$

07.22.03.9717.01

$$
{}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) =
$$

$$
\left(\sqrt{\pi}\left(4\,294\,967\,296\, z^8 - 328\,564\,998\,144\, z^7 + 12\,146\,637\,275\,136\, z^6 - 232\,304\,437\,886\,976\, z^5 + 1\,905\,622\,342\,041\,600\, z^4 - \right.\right.
$$

$$
2\,382\,027\,927\,552\,000\, z^3 - 6\,476\,138\,428\,032\,000\, z^2 - 26\,714\,071\,015\,632\,000\, z - 84\,942\,397\,682\,517\,375\Big)
$$

$$
S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\, z^7 - 20\,585\,644\,032\, z^6 + 763\,125\,301\,248\, z^5 - 14\,670\,474\,706\,944\, z^4 + \right.\right.
$$

$$
122\,195\,508\,277\,248\, z^3 - 179\,892\,734\,112\,000\, z^2 + 4\,038\,913\,117\,839\,600\, z - 28\,314\,132\,560\,839\,125\Big)
$$

$$
\cos\left(2\sqrt{z}\right) + \left(268\,435\,456\, z^7 - 20\,786\,970\,624\, z^6 + 779\,407\,589\,376\, z^5 - 15\,315\,404\,783\,616\, z^4 + \right.
$$

$$
136\,334\,016\,000\,000\, z^3 + 991\,979\,933\,817\,600\, z^2 - 63\,891\,153\,179\,053\,200\, z +
$$

$$
\left.\left.84\,942\,397\,682\,517\,375\right)\sin\left(2\sqrt{z}\right)\right)\Big/\left(3\,324\,923\,162\,394\,624\, z^{15/4}\right)
$$

07.22.03.9718.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) = $$

$$ \left(\left(-2\sqrt{z}\left(4\,294\,967\,296\,z^8 + 346\,281\,738\,240\,z^7 + 13\,597\,094\,707\,200\,z^6 + 277\,293\,324\,828\,672\,z^5 + 2\,391\,934\,772\,183\,040\,z^4 + 1\,818\,425\,726\,853\,120\,z^3 - 6\,453\,344\,984\,486\,400\,z^2 + 465\,850\,841\,067\,612\,000\,z - 402\,590\,414\,354\,453\,325\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(4\,294\,967\,296\,z^8 + 350\,039\,834\,624\,z^7 + 13\,906\,433\,015\,808\,z^6 + 289\,730\,231\,009\,280\,z^5 + 2\,657\,221\,039\,226\,880\,z^4 + 4\,441\,011\,602\,227\,200\,z^3 + 154\,880\,279\,627\,673\,600\,z^2 + 1\,253\,562\,263\,236\,483\,200\,z - 670\,984\,023\,924\,088\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4\,294\,967\,296\,z^8 + 349\,502\,963\,712\,z^7 + 13\,861\,033\,869\,312\,z^6 + 287\,844\,964\,761\,600\,z^5 + 2\,614\,436\,922\,654\,720\,z^4 + 3\,936\,351\,192\,883\,200\,z^3 - 19\,360\,034\,953\,459\,200\,z^2 - 533\,610\,963\,404\,719\,200\,z - 2\,012\,952\,071\,772\,266\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(3\,867\,475\,779\,256\,320\sqrt{2}\; z^{15/4}\right) $$

07.22.03.9719.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) = $$

$$ \left(\left(2\sqrt{z}\left(4\,294\,967\,296\,z^8 - 346\,281\,738\,240\,z^7 + 13\,597\,094\,707\,200\,z^6 - 277\,293\,324\,828\,672\,z^5 + 2\,391\,934\,772\,183\,040\,z^4 - 1\,818\,425\,726\,853\,120\,z^3 - 6\,453\,344\,984\,486\,400\,z^2 - 465\,850\,841\,067\,612\,000\,z - 402\,590\,414\,354\,453\,325\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4\,294\,967\,296\,z^8 - 350\,039\,834\,624\,z^7 + 13\,906\,433\,015\,808\,z^6 - 289\,730\,231\,009\,280\,z^5 + 2\,657\,221\,039\,226\,880\,z^4 - 4\,441\,011\,602\,227\,200\,z^3 + 154\,880\,279\,627\,673\,600\,z^2 - 1\,253\,562\,263\,236\,483\,200\,z - 670\,984\,023\,924\,088\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4\,294\,967\,296\,z^8 - 349\,502\,963\,712\,z^7 + 13\,861\,033\,869\,312\,z^6 - 287\,844\,964\,761\,600\,z^5 + 2\,614\,436\,922\,654\,720\,z^4 - 3\,936\,351\,192\,883\,200\,z^3 - 19\,360\,034\,953\,459\,200\,z^2 + 533\,610\,963\,404\,719\,200\,z - 2\,012\,952\,071\,772\,266\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(3\,867\,475\,779\,256\,320\sqrt{2}\; z^{15/4}\right) $$

07.22.03.9720.01

$$
{}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) =
$$

$$
\left(19\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(17\,179\,869\,184\, z^{17/2} - 4\,294\,967\,296\, z^8 + 1\,481\,763\,717\,120\, z^{15/2} - 373\,662\,154\,752\, z^7 + \right.\right.\right.
$$

$$
62\,752\,693\,420\,032\, z^{13/2} - 15\,979\,492\,933\,632\, z^6 + 1\,406\,189\,489\,356\,800\, z^{11/2} - 364\,603\,867\,398\,144\, z^5 +
$$

$$
14\,011\,728\,847\,699\,968\, z^{9/2} - 3\,828\,900\,741\,120\,000\, z^4 + 24\,797\,521\,502\,208\,000\, z^{7/2} -
$$

$$
10\,627\,509\,215\,232\,000\, z^3 - 255\,098\,176\,555\,622\,400\, z^{5/2} - 3\,027\,933\,941\,403\,571\,200\, z^2 -
$$

$$
15\,532\,324\,147\,660\,320\,000\, z^{3/2} - 43\,490\,507\,613\,448\,896\,000\, z - 69\,652\,766\,099\,664\,247\,500\sqrt{z} +
$$

$$
e^{4\sqrt{z}}\left(17\,179\,869\,184\, z^{17/2} + 4\,294\,967\,296\, z^8 + 1\,481\,763\,717\,120\, z^{15/2} + 373\,662\,154\,752\, z^7 + \right.
$$

$$
62\,752\,693\,420\,032\, z^{13/2} + 15\,979\,492\,933\,632\, z^6 + 1\,406\,189\,489\,356\,800\, z^{11/2} +
$$

$$
364\,603\,867\,398\,144\, z^5 + 14\,011\,728\,847\,699\,968\, z^{9/2} + 3\,828\,900\,741\,120\,000\, z^4 +
$$

$$
24\,797\,521\,502\,208\,000\, z^{7/2} + 10\,627\,509\,215\,232\,000\, z^3 - 255\,098\,176\,555\,622\,400\, z^{5/2} +
$$

$$
3\,027\,933\,941\,403\,571\,200\, z^2 - 15\,532\,324\,147\,660\,320\,000\, z^{3/2} + 43\,490\,507\,613\,448\,896\,000\, z -
$$

$$
\left.\left.\left.\left.69\,652\,766\,099\,664\,247\,500\sqrt{z} + 52\,239\,574\,574\,748\,185\,625\right) - 52\,239\,574\,574\,748\,185\,625\right) +\right.\right.
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\, z^9 + 5\,914\,169\,966\,592\, z^8 + 249\,873\,681\,088\,512\, z^7 + 5\,575\,306\,509\,287\,424\, z^6 + \right.
$$

$$
54\,881\,923\,450\,798\,080\, z^5 + 85\,753\,005\,391\,872\,000\, z^4 - 310\,854\,644\,545\,536\,000\, z^3 +
$$

$$
\left.1\,923\,413\,113\,125\,504\,000\, z^2 - 12\,231\,705\,266\,282\,502\,000\, z + 52\,239\,574\,574\,748\,185\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) -
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\, z^9 + 5\,914\,169\,966\,592\, z^8 + 249\,873\,681\,088\,512\, z^7 + \right.
$$

$$
5\,575\,306\,509\,287\,424\, z^6 + 54\,881\,923\,450\,798\,080\, z^5 + 85\,753\,005\,391\,872\,000\, z^4 -
$$

$$
310\,854\,644\,545\,536\,000\, z^3 + 1\,923\,413\,113\,125\,504\,000\, z^2 - 12\,231\,705\,266\,282\,502\,000\, z +
$$

$$
\left.\left.\left.52\,239\,574\,574\,748\,185\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(7\,660\,622\,966\,157\,213\,696\, z^{19/4}\right)
$$

07.22.03.9721.01

$$
{}_1F_2\left(-\frac{17}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) =
$$

$$
\left(19\left(\sqrt{\pi}\left(68\,719\,476\,736\, z^9 - 5\,914\,169\,966\,592\, z^8 + 249\,873\,681\,088\,512\, z^7 - 5\,575\,306\,509\,287\,424\, z^6 + \right.\right.\right.
$$

$$
54\,881\,923\,450\,798\,080\, z^5 - 85\,753\,005\,391\,872\,000\, z^4 - 310\,854\,644\,545\,536\,000\, z^3 -
$$

$$
\left.1\,923\,413\,113\,125\,504\,000\, z^2 - 12\,231\,705\,266\,282\,502\,000\, z - 52\,239\,574\,574\,748\,185\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) +
$$

$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\, z^8 - 370\,440\,929\,280\, z^7 + 15\,688\,173\,355\,008\, z^6 - 351\,547\,372\,339\,200\, z^5 + \right.\right.
$$

$$
3\,502\,932\,211\,924\,992\, z^4 - 6\,199\,380\,375\,552\,000\, z^3 - 63\,774\,544\,138\,905\,600\, z^2 +
$$

$$
3\,883\,081\,036\,915\,080\,000\, z - 17\,413\,191\,524\,916\,061\,875\right)\cos\left(2\sqrt{z}\right) + \left(4\,294\,967\,296\, z^8 - \right.
$$

$$
373\,662\,154\,752\, z^7 + 15\,979\,492\,933\,632\, z^6 - 364\,603\,867\,398\,144\, z^5 + 3\,828\,900\,741\,120\,000\, z^4 -
$$

$$
10\,627\,509\,215\,232\,000\, z^3 + 3\,027\,933\,941\,403\,571\,200\, z^2 - 43\,490\,507\,613\,448\,896\,000\, z +
$$

$$
\left.\left.\left.\left.52\,239\,574\,574\,748\,185\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)\Big/\left(1\,915\,155\,741\,539\,303\,424\, z^{19/4}\right)
$$

For fixed z and $a_1 = -\frac{17}{4}$, $b_1 = -\frac{9}{2}$

07.22.03.9722.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) = \frac{1}{476\,974\,575\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-32\,768 z^5 + 2\,153\,984 z^4 + 83\,263\,488 z^3 + 482\,328\,000 z^2 - 1\,032\,292\,800 z + 476\,974\,575\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(4096 z^4 - 3\,235\,904 z^3 - 55\,748\,000 z^2 - 132\,108\,900 z + 158\,991\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8192 z^4 + 316\,288 z^3 + 31\,138\,800 z^2 + 239\,639\,400 z + 476\,974\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9723.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{23}{4}; -z\right) = \frac{1}{476\,974\,575\sqrt[4]{z}} \left(\sqrt{2}\left(\left(32\,768 z^5 + 2\,153\,984 z^4 - 83\,263\,488 z^3 + 482\,328\,000 z^2 + 1\,032\,292\,800 z + 476\,974\,575\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(4096 z^4 + 3\,235\,904 z^3 - 55\,748\,000 z^2 + 132\,108\,900 z + 158\,991\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8192 z^4 - 316\,288 z^3 + 31\,138\,800 z^2 - 239\,639\,400 z + 476\,974\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9724.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{21}{4}; z\right) = \left(\frac{128 z^3}{19\,845} + \frac{16 z^2}{49} + \frac{344 z}{189} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(656 z^2 + 9660 z + 19\,845\right)\sinh\left(2\sqrt{z}\right)}{19\,845} $$

07.22.03.9725.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) = \left(-\frac{128 z^3}{19\,845} + \frac{16 z^2}{49} - \frac{344 z}{189} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(656 z^2 - 9660 z + 19\,845\right)\sin\left(2\sqrt{z}\right)}{19\,845} $$

07.22.03.9726.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{19}{4}; z\right) = \frac{1}{62\,214\,075\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-16\,384 z^5 + 141\,312 z^4 + 8\,273\,664 z^3 + 67\,747\,680 z^2 - 136\,798\,200 z + 62\,214\,075\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(2048 z^4 - 228\,032 z^3 - 6\,615\,840 z^2 - 17\,948\,700 z + 20\,738\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4096 z^4 - 32\,256 z^3 + 3\,160\,080 z^2 + 29\,106\,000 z + 62\,214\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9727.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{62\,214\,075\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384 z^5 + 141\,312 z^4 - 8\,273\,664 z^3 + 67\,747\,680 z^2 + 136\,798\,200 z + 62\,214\,075\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(2048 z^4 + 228\,032 z^3 - 6\,615\,840 z^2 + 17\,948\,700 z + 20\,738\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4096 z^4 + 32\,256 z^3 + 3\,160\,080 z^2 - 29\,106\,000 z + 62\,214\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9728.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{17}{4}; z\right) = \left(\frac{16 z^2}{63} + \frac{16 z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(16 z^2 + 420 z + 945\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.9729.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{17}{4}; -z\right) = \left(\frac{16 z^2}{63} - \frac{16 z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(16 z^2 - 420 z + 945\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.9730.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{15}{4}; z\right) = \frac{1}{3\,274\,425\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-8192 z^5 + 27\,136 z^4 + 187\,392 z^3 + 3\,971\,520 z^2 - 7\,373\,520 z + 3\,274\,425\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(1024 z^4 - 2496 z^3 - 290\,080 z^2 - 1\,002\,540 z + 1\,091\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(2048 z^4 - 5248 z^3 + 109\,200 z^2 + 1\,358\,280 z + 3\,274\,425\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9731.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{3\,274\,425\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192 z^5 + 27\,136 z^4 - 187\,392 z^3 + 3\,971\,520 z^2 + 7\,373\,520 z + 3\,274\,425\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1024 z^4 + 2496 z^3 - 290\,080 z^2 + 1\,002\,540 z + 1\,091\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(2048 z^4 + 5248 z^3 + 109\,200 z^2 - 1\,358\,280 z + 3\,274\,425\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9732.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{13}{4}; z\right) =$$
$$\frac{1}{1\,105\,650}\left(e^{-2\sqrt{z}}\left(2048\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4} - 2048\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4} + 2048\,e^{4\sqrt{z}}\,z^4 + \right.\right.$$
$$2048\,z^4 + 512\,e^{4\sqrt{z}}\,z^{7/2} - 512\,z^{7/2} + 384\,e^{4\sqrt{z}}\,z^3 + 384\,z^3 + 480\,e^{4\sqrt{z}}\,z^{5/2} - 480\,z^{5/2} +$$
$$80\,400\,e^{4\sqrt{z}}\,z^2 + 80\,400\,z^2 - 415\,800\,e^{4\sqrt{z}}\,z^{3/2} + 415\,800\,z^{3/2} + 945\,000\,e^{4\sqrt{z}}\,z +$$
$$\left.\left.945\,000\,z - 1\,105\,650\,e^{4\sqrt{z}}\,\sqrt{z} + 1\,105\,650\,\sqrt{z} + 552\,825\,e^{4\sqrt{z}} + 552\,825\right)\right)$$

07.22.03.9733.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{13}{4}; -z\right) = \frac{1}{552\,825}\left(4096\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4} + 2\left(256\,z^3 - 240\,z^2 - 207\,900\,z + 552\,825\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \right.$$
$$\left.\left(2048\,z^4 - 384\,z^3 + 80\,400\,z^2 - 945\,000\,z + 552\,825\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9734.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{218\,295\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096\,z^5 + 8192\,z^4 - 28\,416\,z^3 + 315\,360\,z^2 - 511\,560\,z + 218\,295\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\right.\right.$$
$$\sqrt{z}\left(512\,z^4 + 1472\,z^3 + 11\,360\,z^2 + 73\,500\,z - 72\,765\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(-1024\,z^4 - 2816\,z^3 + 4560\,z^2 + 70\,560\,z + 218\,295\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9735.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{218\,295\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096\,z^5 + 8192\,z^4 + 28\,416\,z^3 + 315\,360\,z^2 + 511\,560\,z + 218\,295\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$12\sqrt{z}\left(512\,z^4 - 1472\,z^3 + 11\,360\,z^2 - 73\,500\,z - 72\,765\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(-1024\,z^4 + 2816\,z^3 + 4560\,z^2 - 70\,560\,z + 218\,295\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9736.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{85\,050}\left(e^{-2\sqrt{z}}\left(-512\,e^{4\sqrt{z}}\,z^4 - 512\,z^4 - 128\,e^{4\sqrt{z}}\,z^{7/2} + 128\,z^{7/2} - 32\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z+85)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4} + \right.\right.$$
$$32\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z+85)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4} - 2816\,e^{4\sqrt{z}}\,z^3 - 2816\,z^3 -$$
$$800\,e^{4\sqrt{z}}\,z^{5/2} + 800\,z^{5/2} - 720\,e^{4\sqrt{z}}\,z^2 - 720\,z^2 - 21\,000\,e^{4\sqrt{z}}\,z^{3/2} + 21\,000\,z^{3/2} +$$
$$\left.\left.67\,200\,e^{4\sqrt{z}}\,z + 67\,200\,z - 85\,050\,e^{4\sqrt{z}}\,\sqrt{z} + 85\,050\,\sqrt{z} + 42\,525\,e^{4\sqrt{z}} + 42\,525\right)\right)$$

07.22.03.9737.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) = \frac{1}{42\,525}\left(-64\sqrt{\pi}\,(16z-85)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4} + 2\left(-64z^3+400z^2-10\,500z+42\,525\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\, + \left(-512z^4+2816z^3-720z^2-67\,200z+42\,525\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9738.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) = \frac{1}{59\,535\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(2048z^5+14\,976z^4+18\,432z^3-123\,840z^2+151\,200z-59\,535\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(256z^4+2096z^3+4320z^2-23\,940z+19\,845\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(512z^4+4128z^3+7920z^2+7560z+59\,535\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9739.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) = \frac{1}{59\,535\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2048z^5-14\,976z^4+18\,432z^3+123\,840z^2+151\,200z+59\,535\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(256z^4-2096z^3+4320z^2+23\,940z+19\,845\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(512z^4-4128z^3+7920z^2-7560z+59\,535\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9740.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{5}{4}; z\right) = \frac{1}{37\,800}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+2720z+9945\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4} - e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+2720z+9945\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4} + 4\left(64z^4-16z^{7/2}+692z^3-185z^{5/2}+2640z^2-840z^{3/2}+5880z+9450\sqrt{z}\, + e^{4\sqrt{z}}\left(64z^4+16z^{7/2}+692z^3+185z^{5/2}+2640z^2+840z^{3/2}+5880z-9450\sqrt{z}\, +4725\right)+4725\right)\right)\right) $$

07.22.03.9741.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{5}{4}; -z\right) = \frac{1}{9450}\left(\sqrt{\pi}\left(256z^2-2720z+9945\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4} + 2\left(\left(64z^4-692z^3+2640z^2-5880z+4725\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\left(16z^3-185z^2+840z+9450\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9742.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) = \frac{1}{42\,525\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024z^5 + 12\,928z^4 + 65\,316z^3 + 36\,000z^2 - 138\,600z + 42\,525\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 6\sqrt{z}\left(256z^4 + 3456z^3 + 19\,535z^2 + 54\,600z - 28\,350\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(256z^4 + 3424z^3 + 19\,005z^2 + 25\,200z - 42\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9743.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{1}{42\,525\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1024z^5 + 12\,928z^4 - 65\,316z^3 + 36\,000z^2 + 138\,600z + 42\,525\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 6\sqrt{z}\left(256z^4 - 3456z^3 + 19\,535z^2 - 54\,600z - 28\,350\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-256z^4 + 3424z^3 - 19\,005z^2 + 25\,200z + 42\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9744.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) = \frac{1}{1\,451\,520}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3 + 65\,280z^2 + 477\,360z + 1\,163\,565\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4} + e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3 + 65\,280z^2 + 477\,360z + 1\,163\,565\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4} - 4\left(1024z^4 - 256z^{7/2} + 16\,512z^3 - 4320z^{5/2} + 122\,820z^2 - 34\,605z^{3/2} + 322\,560z - 362\,880\sqrt{z} + e^{4\sqrt{z}}\left(1024z^4 + 256z^{7/2} + 16\,512z^3 + 4320z^{5/2} + 122\,820z^2 + 34\,605z^{3/2} + 322\,560z + 362\,880\sqrt{z} - 181\,440\right) - 181\,440\right)\right)\right) $$

07.22.03.9745.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) = \frac{1}{362\,880}\left(\sqrt{\pi}\left(-4096z^3 + 65\,280z^2 - 477\,360z + 1\,163\,565\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4} + 2\left(-256z^3 + 4320z^2 - 34\,605z + 362\,880\right)\sin\left(2\sqrt{z}\right)\sqrt{z} - 8\left(256z^4 - 4128z^3 + 30\,705z^2 - 80\,640z - 45\,360\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9746.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) = \frac{1}{793\,800\sqrt{2}\,\sqrt[4]{z}}\left(\left(-2\left(4096 z^5 + 73\,472 z^4 + 644\,784 z^3 + 2\,057\,265 z^2 - 1\,411\,200 z - 793\,800\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(4096 z^4 + 77\,056 z^3 + 715\,120 z^2 + 2\,756\,775 z + 2\,116\,800\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2 z\left(4096 z^4 + 76\,544 z^3 + 703\,920 z^2 + 2\,625\,525 z + 3\,175\,200\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9747.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) = \frac{1}{793\,800\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(4096 z^5 - 73\,472 z^4 + 644\,784 z^3 - 2\,057\,265 z^2 - 1\,411\,200 z + 793\,800\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(4096 z^4 - 77\,056 z^3 + 715\,120 z^2 - 2\,756\,775 z + 2\,116\,800\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2 z\left(4096 z^4 - 76\,544 z^3 + 703\,920 z^2 - 2\,625\,525 z + 3\,175\,200\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9748.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) = \frac{1}{371\,589\,120}\left(e^{-2\sqrt{z}}\left(4\left(16\,384 z^4 - 4096 z^{7/2} + 351\,232 z^3 - 90\,880 z^{5/2} + 3\,890\,880 z^2 - 1\,051\,440 z^{3/2} + 19\,517\,460 z - 6\,005\,745\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^4 + 4096 z^{7/2} + 351\,232 z^3 + 90\,880 z^{5/2} + 3\,890\,880 z^2 + 1\,051\,440 z^{3/2} + 19\,517\,460 z + 6\,005\,745\sqrt{z} + 46\,448\,640\right) + 46\,448\,640\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(65\,536 z^4 + 1\,392\,640 z^3 + 15\,275\,520 z^2 + 74\,468\,160 z + 98\,903\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(65\,536 z^4 + 1\,392\,640 z^3 + 15\,275\,520 z^2 + 74\,468\,160 z + 98\,903\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9749.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) = \frac{1}{92\,897\,280}\left(\sqrt{\pi}\,\sqrt[4]{z}\left(65\,536 z^4 - 1\,392\,640 z^3 + 15\,275\,520 z^2 - 74\,468\,160 z + 98\,903\,025\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\left(4\left(4096 z^4 - 87\,808 z^3 + 972\,720 z^2 - 4\,879\,365 z + 11\,612\,160\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\left(4096 z^3 - 90\,880 z^2 + 1\,051\,440 z - 6\,005\,745\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9750.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) = \frac{1}{228\,614\,400\,\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(-2\left(65\,536\,z^5 + 1\,523\,712\,z^4 + 18\,998\,784\,z^3 + 108\,400\,320\,z^2 + 153\,552\,105\,z - 228\,614\,400\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 3\sqrt{z}\left(65\,536\,z^4 + 1\,581\,056\,z^3 + 20\,428\,800\,z^2 + 127\,703\,520\,z + 391\,395\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\,z\left(65\,536\,z^4 + 1\,572\,864\,z^3 + 20\,206\,080\,z^2 + 124\,346\,880\,z + 259\,728\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9751.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{5}{4}; -z\right) = $$
$$ \frac{1}{228\,614\,400\,\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(65\,536\,z^5 - 1\,523\,712\,z^4 + 18\,998\,784\,z^3 - 108\,400\,320\,z^2 + 153\,552\,105\,z + 228\,614\,400\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\sqrt{z}\left(65\,536\,z^4 - 1\,581\,056\,z^3 + 20\,428\,800\,z^2 - 127\,703\,520\,z + 391\,395\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\,z\left(65\,536\,z^4 - 1\,572\,864\,z^3 + 20\,206\,080\,z^2 - 124\,346\,880\,z + 259\,728\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9752.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{7}{4}; z\right) = $$
$$ \frac{1}{39\,636\,172\,800\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144\,z^{9/2} - 65\,536\,z^4 + 7\,012\,352\,z^{7/2} - 1\,802\,240\,z^3 + 103\,249\,920\,z^{5/2} - \right.\right.\right. $$
$$ 27\,333\,120\,z^2 + 767\,297\,280\,z^{3/2} - 218\,626\,560\,z + 2\,185\,236\,900\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(262\,144\,z^{9/2} + 65\,536\,z^4 + 7\,012\,352\,z^{7/2} + 1\,802\,240\,z^3 + 103\,249\,920\,z^{5/2} + 27\,333\,120\,z^2 + \right. $$
$$ \left.\left. 767\,297\,280\,z^{3/2} + 218\,626\,560\,z + 2\,185\,236\,900\sqrt{z} + 2\,076\,963\,525\right) - 2\,076\,963\,525\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5 + 27\,852\,800\,z^4 + 407\,347\,200\,z^3 + 2\,978\,726\,400\,z^2 + 7\,912\,242\,000\,z + 2\,076\,963\,525\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi} $$
$$ \left.\left.\left(1\,048\,576\,z^5 + 27\,852\,800\,z^4 + 407\,347\,200\,z^3 + 2\,978\,726\,400\,z^2 + 7\,912\,242\,000\,z + 2\,076\,963\,525\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9753.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{7}{4}; -z\right) = \frac{1}{9\,909\,043\,200\,z^{3/4}} $$
$$ \left(\sqrt{\pi}\left(1\,048\,576\,z^5 - 27\,852\,800\,z^4 + 407\,347\,200\,z^3 - 2\,978\,726\,400\,z^2 + 7\,912\,242\,000\,z - 2\,076\,963\,525\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536\,z^4 - 1\,753\,088\,z^3 + 25\,812\,480\,z^2 - 191\,824\,320\,z + 546\,309\,225\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left.\left(65\,536\,z^4 - 1\,802\,240\,z^3 + 27\,333\,120\,z^2 - 218\,626\,560\,z + 2\,076\,963\,525\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9754.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{9}{4}; z\right) = \frac{1}{16\,094\,453\,760\sqrt{2}\, z^{3/4}} $$
$$ \left(\left(-2\sqrt{z}\left(1\,048\,576 z^5 + 29\,949\,952 z^4 + 483\,631\,104 z^3 + 3\,957\,972\,480 z^2 + 11\,232\,864\,720 z - 13\,082\,700\,015\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. \right. $$
$$ 3\left(1\,048\,576 z^5 + 30\,867\,456 z^4 + 511\,385\,600 z^3 + 4\,432\,243\,200 z^2 + 15\,681\,813\,840 z + 5\,019\,589\,575\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 + 30\,736\,384 z^4 + 507\,125\,760 z^3 + \right. $$
$$ \left. \left. 4\,353\,338\,880 z^2 + 14\,792\,999\,760 z + 15\,058\,768\,725\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2 \Bigg) $$

07.22.03.9755.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = \frac{1}{16\,094\,453\,760\sqrt{2}\, z^{3/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576 z^5 - 29\,949\,952 z^4 + 483\,631\,104 z^3 - 3\,957\,972\,480 z^2 + 11\,232\,864\,720 z + 13\,082\,700\,015\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 3\left(1\,048\,576 z^5 - 30\,867\,456 z^4 + 511\,385\,600 z^3 - 4\,432\,243\,200 z^2 + 15\,681\,813\,840 z - 5\,019\,589\,575\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 - 30\,736\,384 z^4 + 507\,125\,760 z^3 - \right. $$
$$ \left. \left. 4\,353\,338\,880 z^2 + 14\,792\,999\,760 z - 15\,058\,768\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2 \Bigg) $$

07.22.03.9756.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = $$
$$ \frac{1}{2\,174\,327\,193\,600 z^{7/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304 z^{11/2} - 1\,048\,576 z^5 + 134\,479\,872 z^{9/2} - 34\,406\,400 z^4 + 2\,470\,871\,040 z^{7/2} - \right. \right. \right. $$
$$ 646\,225\,920 z^3 + 24\,353\,556\,480 z^{5/2} - 6\,688\,258\,560 z^2 + 100\,886\,472\,000 z^{3/2} - 33\,231\,416\,400 z + $$
$$ 207\,696\,352\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 134\,479\,872 z^{9/2} + 34\,406\,400 z^4 + \right. $$
$$ \left. \left. 2\,470\,871\,040 z^{7/2} + 646\,225\,920 z^3 + 24\,353\,556\,480 z^{5/2} + 6\,688\,258\,560 z^2 + 100\,886\,472\,000 z^{3/2} + \right. \right. $$
$$ \left. \left. 33\,231\,416\,400 z + 207\,696\,352\,500\sqrt{z} - 155\,772\,264\,375\right) + 155\,772\,264\,375\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 534\,773\,760 z^5 + 9\,776\,332\,800 z^4 + 95\,319\,244\,800 z^3 + \right. $$
$$ \left. 379\,787\,616\,000 z^2 + 199\,388\,498\,400 z - 155\,772\,264\,375\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 534\,773\,760 z^5 + 9\,776\,332\,800 z^4 + 95\,319\,244\,800 z^3 + \right. $$
$$ \left. \left. 379\,787\,616\,000 z^2 + 199\,388\,498\,400 z - 155\,772\,264\,375\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Bigg) $$

07.22.03.9757.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) =$$
$$\frac{1}{543\,581\,798\,400\,z^{7/4}}\left(\sqrt{\pi}\,\left(16\,777\,216\,z^6 - 534\,773\,760\,z^5 + 9\,776\,332\,800\,z^4 - 95\,319\,244\,800\,z^3 + 379\,787\,616\,000\,z^2 - 199\,388\,498\,400\,z - 155\,772\,264\,375\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(1\,048\,576\,z^5 - 33\,619\,968\,z^4 + 617\,717\,760\,z^3 - 6\,088\,389\,120\,z^2 + 25\,221\,618\,000\,z - 51\,924\,088\,125\right)\cos\left(2\sqrt{z}\right) + \left(1\,048\,576\,z^5 - 34\,406\,400\,z^4 + 646\,225\,920\,z^3 - 6\,688\,258\,560\,z^2 + 33\,231\,416\,400\,z + 155\,772\,264\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.9758.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = \frac{1}{743\,921\,418\,240\sqrt{2}\,z^{7/4}}$$
$$\left(\left(-2\sqrt{z}\,\left(16\,777\,216\,z^6 + 568\,328\,192\,z^5 + 11\,264\,262\,144\,z^4 + 119\,923\,752\,960\,z^3 + 505\,235\,808\,000\,z^2 - 69\,288\,579\,360\,z - 406\,586\,755\,575\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,777\,216\,z^6 + 583\,008\,256\,z^5 + 11\,786\,321\,920\,z^4 + 130\,729\,082\,880\,z^3 + 631\,731\,260\,160\,z^2 + 1\,606\,268\,664\,000\,z - 677\,644\,592\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216\,z^6 + 580\,911\,104\,z^5 + 11\,707\,023\,360\,z^4 + 128\,981\,975\,040\,z^3 + 608\,384\,874\,240\,z^2 + 481\,880\,599\,200\,z - 2\,032\,933\,777\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9759.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = \frac{1}{743\,921\,418\,240\sqrt{2}\,z^{7/4}}$$
$$\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6 - 568\,328\,192\,z^5 + 11\,264\,262\,144\,z^4 - 119\,923\,752\,960\,z^3 + 505\,235\,808\,000\,z^2 + 69\,288\,579\,360\,z - 406\,586\,755\,575\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,777\,216\,z^6 - 583\,008\,256\,z^5 + 11\,786\,321\,920\,z^4 - 130\,729\,082\,880\,z^3 + 631\,731\,260\,160\,z^2 - 1\,606\,268\,664\,000\,z - 677\,644\,592\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216\,z^6 - 580\,911\,104\,z^5 + 11\,707\,023\,360\,z^4 - 128\,981\,975\,040\,z^3 + 608\,384\,874\,240\,z^2 - 481\,880\,599\,200\,z - 2\,032\,933\,777\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9760.01

$$
{}_1F_2\left(-\frac{17}{4};-\frac{9}{2},\frac{15}{4};z\right)=
$$

$$
\frac{1}{974\,098\,582\,732\,800\,z^{11/4}}\left(11\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(67\,108\,864\,z^{13/2}-16\,777\,216\,z^{6}+2\,508\,193\,792\,z^{11/2}-639\,631\,360\,z^{5}+\right.\right.\right.
$$

$$
55\,242\,915\,840\,z^{9/2}-14\,333\,706\,240\,z^{4}+678\,693\,765\,120\,z^{7/2}-182\,496\,706\,560\,z^{3}+
$$

$$
3\,700\,655\,078\,400\,z^{5/2}-1\,122\,483\,398\,400\,z^{2}+3\,987\,769\,968\,000\,z^{3/2}-16\,283\,394\,036\,000\,z-
$$

$$
42\,162\,359\,557\,500\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^{6}+2\,508\,193\,792\,z^{11/2}+\right.
$$

$$
639\,631\,360\,z^{5}+55\,242\,915\,840\,z^{9/2}+14\,333\,706\,240\,z^{4}+678\,693\,765\,120\,z^{7/2}+
$$

$$
182\,496\,706\,560\,z^{3}+3\,700\,655\,078\,400\,z^{5/2}+1\,122\,483\,398\,400\,z^{2}+3\,987\,769\,968\,000\,z^{3/2}+
$$

$$
\left.16\,283\,394\,036\,000\,z-42\,162\,359\,557\,500\sqrt{z}+31\,621\,769\,668\,125\right)-31\,621\,769\,668\,125\Big)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^{7}+9\,982\,443\,520\,z^{6}+218\,989\,854\,720\,z^{5}+2\,668\,938\,854\,400\,z^{4}+\right.
$$

$$
\left.14\,178\,737\,664\,000\,z^{3}+11\,165\,755\,910\,400\,z^{2}-17\,446\,493\,610\,000\,z+31\,621\,769\,668\,125\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^{7}+9\,982\,443\,520\,z^{6}+218\,989\,854\,720\,z^{5}+2\,668\,938\,854\,400\,z^{4}+\right.
$$

$$
\left.\left.\left.14\,178\,737\,664\,000\,z^{3}+11\,165\,755\,910\,400\,z^{2}-17\,446\,493\,610\,000\,z+31\,621\,769\,668\,125\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)
$$

07.22.03.9761.01

$$
{}_1F_2\left(-\frac{17}{4};-\frac{9}{2},\frac{15}{4};-z\right)=
$$

$$
\frac{1}{243\,524\,645\,683\,200\,z^{11/4}}\left(11\left(\sqrt{\pi}\left(268\,435\,456\,z^{7}-9\,982\,443\,520\,z^{6}+218\,989\,854\,720\,z^{5}-2\,668\,938\,854\,400\,z^{4}+\right.\right.\right.
$$

$$
\left.14\,178\,737\,664\,000\,z^{3}-11\,165\,755\,910\,400\,z^{2}-17\,446\,493\,610\,000\,z-31\,621\,769\,668\,125\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$

$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216\,z^{6}-627\,048\,448\,z^{5}+13\,810\,728\,960\,z^{4}-169\,673\,441\,280\,z^{3}+\right.\right.
$$

$$
\left.925\,163\,769\,600\,z^{2}-996\,942\,492\,000\,z-10\,540\,589\,889\,375\right)\cos\left(2\sqrt{z}\right)+
$$

$$
\left(16\,777\,216\,z^{6}-639\,631\,360\,z^{5}+14\,333\,706\,240\,z^{4}-182\,496\,706\,560\,z^{3}+1\,122\,483\,398\,400\,z^{2}-\right.
$$

$$
\left.\left.\left.16\,283\,394\,036\,000\,z+31\,621\,769\,668\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\Bigg)
$$

07.22.03.9762.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{17}{4}; z\right) = $$

$$ \left(\left(-2\sqrt{z}\left(268\,435\,456\,z^7 + 10\,519\,314\,432\,z^6 + 247\,074\,914\,304\,z^5 + 3\,236\,880\,384\,000\,z^4 + 18\,026\,366\,054\,400\,z^3 + 3\,669\,032\,505\,600\,z^2 - 149\,623\,926\,051\,600\,z + 113\,437\,704\,805\,425\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(268\,435\,456\,z^7 + 10\,754\,195\,456\,z^6 + 256\,675\,676\,160\,z^5 + 3\,470\,362\,214\,400\,z^4 + 21\,311\,678\,361\,600\,z^3 + 26\,985\,313\,555\,200\,z^2 - 383\,817\,897\,262\,800\,z + 189\,062\,841\,342\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(268\,435\,456\,z^7 + 10\,720\,641\,024\,z^6 + 255\,228\,641\,280\,z^5 + 3\,433\,350\,758\,400\,z^4 + 20\,735\,427\,686\,400\,z^3 + 21\,478\,106\,707\,200\,z^2 + 58\,548\,492\,802\,800\,z + 567\,188\,524\,027\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(27\,467\,867\,750\,400\sqrt{2}\, z^{11/4}\right) $$

07.22.03.9763.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = $$

$$ \left(\left(2\sqrt{z}\left(268\,435\,456\,z^7 - 10\,519\,314\,432\,z^6 + 247\,074\,914\,304\,z^5 - 3\,236\,880\,384\,000\,z^4 + 18\,026\,366\,054\,400\,z^3 - 3\,669\,032\,505\,600\,z^2 - 149\,623\,926\,051\,600\,z - 113\,437\,704\,805\,425\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-268\,435\,456\,z^7 + 10\,754\,195\,456\,z^6 - 256\,675\,676\,160\,z^5 + 3\,470\,362\,214\,400\,z^4 - 21\,311\,678\,361\,600\,z^3 + 26\,985\,313\,555\,200\,z^2 + 383\,817\,897\,262\,800\,z + 189\,062\,841\,342\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(268\,435\,456\,z^7 - 10\,720\,641\,024\,z^6 + 255\,228\,641\,280\,z^5 - 3\,433\,350\,758\,400\,z^4 + 20\,735\,427\,686\,400\,z^3 - 21\,478\,106\,707\,200\,z^2 + 58\,548\,492\,802\,800\,z - 567\,188\,524\,027\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(27\,467\,867\,750\,400\sqrt{2}\, z^{11/4}\right) $$

07.22.03.9764.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) = $$
$$ \left(11\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(1\,073\,741\,824\, z^{15/2} - 268\,435\,456\, z^7 + 45\,835\,354\,112\, z^{13/2} - 11\,660\,165\,120\, z^6 + 1\,176\,942\,673\,920\, z^{11/2} - \right.\right.\right. $$
$$ 303\,672\,852\,480\, z^5 + 17\,321\,640\,591\,360\, z^{9/2} - 4\,595\,009\,126\,400\, z^4 + 117\,260\,690\,964\,480\, z^{7/2} - $$
$$ 33\,956\,258\,918\,400\, z^3 + 152\,421\,429\,888\,000\, z^{5/2} - 91\,275\,623\,712\,000\, z^2 + 1\,599\,760\,385\,496\,000\, z^{3/2} + $$
$$ 8\,196\,362\,697\,978\,000\, z + 15\,304\,936\,519\,372\,500\sqrt{z} + e^{4\sqrt{z}} \left(1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 + \right. $$
$$ 45\,835\,354\,112\, z^{13/2} + 11\,660\,165\,120\, z^6 + 1\,176\,942\,673\,920\, z^{11/2} + 303\,672\,852\,480\, z^5 + $$
$$ 17\,321\,640\,591\,360\, z^{9/2} + 4\,595\,009\,126\,400\, z^4 + 117\,260\,690\,964\,480\, z^{7/2} + 33\,956\,258\,918\,400\, z^3 + $$
$$ 152\,421\,429\,888\,000\, z^{5/2} + 91\,275\,623\,712\,000\, z^2 + 1\,599\,760\,385\,496\,000\, z^{3/2} - 8\,196\,362\,697\,978\,000\, z + $$
$$ \left.\left. 15\,304\,936\,519\,372\,500\sqrt{z} - 11\,478\,702\,389\,529\,375\right) + 11\,478\,702\,389\,529\,375\right) + $$
$$ e^{2\sqrt{z}} \sqrt{2\pi} \left(4\,294\,967\,296\, z^8 + 182\,536\,110\,080\, z^7 + 4\,671\,783\,567\,360\, z^6 + 68\,324\,834\,672\,640\, z^5 + \right. $$
$$ 453\,719\,605\,248\,000\, z^4 + 476\,405\,585\,510\,400\, z^3 - 1\,116\,575\,591\,040\,000\, z^2 + $$
$$ \left. 4\,047\,586\,517\,520\,000\, z - 11\,478\,702\,389\,529\,375\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}} \sqrt{2\pi} \left(4\,294\,967\,296\, z^8 + 182\,536\,110\,080\, z^7 + 4\,671\,783\,567\,360\, z^6 + 68\,324\,834\,672\,640\, z^5 + \right. $$
$$ 453\,719\,605\,248\,000\, z^4 + 476\,405\,585\,510\,400\, z^3 - 1\,116\,575\,591\,040\,000\, z^2 + $$
$$ \left. \left. 4\,047\,586\,517\,520\,000\, z - 11\,478\,702\,389\,529\,375\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big) \Big/ \left(33\,249\,231\,623\,946\,240\, z^{15/4}\right) $$

07.22.03.9765.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) = $$
$$ \left(11\left(\sqrt{\pi}\left(4\,294\,967\,296\, z^8 - 182\,536\,110\,080\, z^7 + 4\,671\,783\,567\,360\, z^6 - 68\,324\,834\,672\,640\, z^5 + 453\,719\,605\,248\,000\, z^4 - \right.\right.\right. $$
$$ \left. 476\,405\,585\,510\,400\, z^3 - 1\,116\,575\,591\,040\,000\, z^2 - 4\,047\,586\,517\,520\,000\, z - 11\,478\,702\,389\,529\,375\right) $$
$$ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\, z^7 - 11\,458\,838\,528\, z^6 + 294\,235\,668\,480\, z^5 - 4\,330\,410\,147\,840\, z^4 + \right.\right. $$
$$ \left. 29\,315\,172\,741\,120\, z^3 - 38\,105\,357\,472\,000\, z^2 + 399\,940\,096\,374\,000\, z - 3\,826\,234\,129\,843\,125\right) $$
$$ \cos\left(2\sqrt{z}\right) + \left(268\,435\,456\, z^7 - 11\,660\,165\,120\, z^6 + 303\,672\,852\,480\, z^5 - 4\,595\,009\,126\,400\, z^4 + \right. $$
$$ 33\,956\,258\,918\,400\, z^3 - 91\,275\,623\,712\,000\, z^2 - 8\,196\,362\,697\,978\,000\, z + $$
$$ \left.\left.\left. 11\,478\,702\,389\,529\,375\right) \sin\left(2\sqrt{z}\right)\right)\right)\Big) \Big/ \left(8\,312\,307\,905\,986\,560\, z^{15/4}\right) $$

07.22.03.9766.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) =$$

$$\left(\left(-2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 191\,126\,044\,672\,z^7 + 5\,189\,595\,561\,984\,z^6 + 80\,700\,757\,770\,240\,z^5 + 558\,102\,999\,859\,200\,z^4 + 284\,309\,803\,008\,000\,z^3 - 2\,914\,413\,863\,961\,600\,z^2 + 61\,306\,777\,352\,620\,800\,z - 51\,614\,155\,686\,468\,375\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(4\,294\,967\,296\,z^8 + 194\,884\,141\,056\,z^7 + 5\,363\,172\,638\,720\,z^6 + 85\,552\,005\,120\,000\,z^5 + 637\,939\,954\,483\,200\,z^4 + 945\,770\,989\,363\,200\,z^3 + 14\,502\,678\,513\,523\,200\,z^2 + 163\,350\,294\,919\,812\,000\,z - 86\,023\,592\,810\,780\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 194\,347\,270\,144\,z^7 + 5\,337\,167\,953\,920\,z^6 + 84\,794\,041\,958\,400\,z^5 + 624\,416\,853\,196\,800\,z^4 + 804\,252\,461\,875\,200\,z^3 - 1\,665\,379\,350\,835\,200\,z^2 - 60\,500\,109\,229\,560\,000\,z - 258\,070\,778\,432\,341\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(878\,971\,768\,012\,800\,\sqrt{2}\,z^{15/4}\right)$$

07.22.03.9767.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 191\,126\,044\,672\,z^7 + 5\,189\,595\,561\,984\,z^6 - 80\,700\,757\,770\,240\,z^5 + 558\,102\,999\,859\,200\,z^4 - 284\,309\,803\,008\,000\,z^3 - 2\,914\,413\,863\,961\,600\,z^2 - 61\,306\,777\,352\,620\,800\,z - 51\,614\,155\,686\,468\,375\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4\,294\,967\,296\,z^8 - 194\,884\,141\,056\,z^7 + 5\,363\,172\,638\,720\,z^6 - 85\,552\,005\,120\,000\,z^5 + 637\,939\,954\,483\,200\,z^4 - 945\,770\,989\,363\,200\,z^3 + 14\,502\,678\,513\,523\,200\,z^2 - 163\,350\,294\,919\,812\,000\,z - 86\,023\,592\,810\,780\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 194\,347\,270\,144\,z^7 + 5\,337\,167\,953\,920\,z^6 - 84\,794\,041\,958\,400\,z^5 + 624\,416\,853\,196\,800\,z^4 - 804\,252\,461\,875\,200\,z^3 - 1\,665\,379\,350\,835\,200\,z^2 + 60\,500\,109\,229\,560\,000\,z - 258\,070\,778\,432\,341\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(878\,971\,768\,012\,800\,\sqrt{2}\,z^{15/4}\right)$$

07.22.03.9768.01

$$
{}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) =
\left(209\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(17\,179\,869\,184\, z^{17/2} - 4\,294\,967\,296\, z^8 + 824\,633\,720\,832\, z^{15/2} - 209\,379\,655\,680\, z^7 + \right.\right.\right.
$$
$$
24\,187\,376\,762\,880\, z^{13/2} - 6\,214\,951\,895\,040\, z^6 + 414\,834\,449\,448\,960\, z^{11/2} - 109\,018\,160\,824\,320\, z^5 +
$$
$$
3\,356\,117\,127\,659\,520\, z^{9/2} - 943\,983\,142\,502\,400\, z^4 + 5\,165\,423\,198\,208\,000\, z^{7/2} -
$$
$$
2\,578\,348\,910\,592\,000\, z^3 - 8\,634\,851\,237\,376\,000\, z^{5/2} - 254\,111\,336\,414\,208\,000\, z^2 -
$$
$$
1\,679\,170\,178\,125\,440\,000\, z^{3/2} - 5\,142\,458\,670\,509\,160\,000\, z - 8\,494\,239\,768\,251\,737\,500\, \sqrt{z} +
$$
$$
e^{4\sqrt{z}} \left(17\,179\,869\,184\, z^{17/2} + 4\,294\,967\,296\, z^8 + 824\,633\,720\,832\, z^{15/2} + 209\,379\,655\,680\, z^7 + \right.
$$
$$
24\,187\,376\,762\,880\, z^{13/2} + 6\,214\,951\,895\,040\, z^6 + 414\,834\,449\,448\,960\, z^{11/2} +
$$
$$
109\,018\,160\,824\,320\, z^5 + 3\,356\,117\,127\,659\,520\, z^{9/2} + 943\,983\,142\,502\,400\, z^4 +
$$
$$
5\,165\,423\,198\,208\,000\, z^{7/2} + 2\,578\,348\,910\,592\,000\, z^3 - 8\,634\,851\,237\,376\,000\, z^{5/2} +
$$
$$
\left.\left.\left.\left.254\,111\,336\,414\,208\,000\, z^2 - 1\,679\,170\,178\,125\,440\,000\, z^{3/2} + 5\,142\,458\,670\,509\,160\,000\, z - 8\,494\,239\,768\,251\,737\,500\, \sqrt{z} + 6\,370\,679\,826\,188\,803\,125\right) - 6\,370\,679\,826\,188\,803\,125\right) +\right.\right.
$$
$$
e^{2\sqrt{z}}\, \sqrt{2\,\pi}\, \left(68\,719\,476\,736\, z^9 + 3\,285\,649\,981\,440\, z^8 + 96\,105\,261\,957\,120\, z^7 + 1\,639\,796\,032\,143\,360\, z^6 + \right.
$$
$$
13\,067\,124\,631\,142\,400\, z^5 + 17\,150\,601\,078\,374\,400\, z^4 - 53\,595\,628\,369\,920\,000\, z^3 +
$$
$$
\left.291\,426\,229\,261\,440\,000\, z^2 - 1\,652\,933\,144\,092\,230\,000\, z + 6\,370\,679\,826\,188\,803\,125\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) -
$$
$$
e^{2\sqrt{z}}\, \sqrt{2\,\pi}\, \left(68\,719\,476\,736\, z^9 + 3\,285\,649\,981\,440\, z^8 + 96\,105\,261\,957\,120\, z^7 + 1\,639\,796\,032\,143\,360\, z^6 + \right.
$$
$$
13\,067\,124\,631\,142\,400\, z^5 + 17\,150\,601\,078\,374\,400\, z^4 - 53\,595\,628\,369\,920\,000\, z^3 +
$$
$$
\left.\left.\left.291\,426\,229\,261\,440\,000\, z^2 - 1\,652\,933\,144\,092\,230\,000\, z + 6\,370\,679\,826\,188\,803\,125\right) \right.\right.
$$
$$
\left.\left.\operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) \Big/ \left(19\,151\,557\,415\,393\,034\,240\, z^{19/4}\right)
$$

07.22.03.9769.01

$$
{}_1F_2\left(-\frac{17}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) =
\left(209 \left(\sqrt{\pi}\, \left(68\,719\,476\,736\, z^9 - 3\,285\,649\,981\,440\, z^8 + 96\,105\,261\,957\,120\, z^7 - 1\,639\,796\,032\,143\,360\, z^6 + \right.\right.\right.
$$
$$
13\,067\,124\,631\,142\,400\, z^5 - 17\,150\,601\,078\,374\,400\, z^4 - 53\,595\,628\,369\,920\,000\, z^3 -
$$
$$
\left.291\,426\,229\,261\,440\,000\, z^2 - 1\,652\,933\,144\,092\,230\,000\, z - 6\,370\,679\,826\,188\,803\,125\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) +
$$
$$
2\sqrt[4]{z}\, \left(4\sqrt{z}\, \left(4\,294\,967\,296\, z^8 - 206\,158\,430\,208\, z^7 + 6\,046\,844\,190\,720\, z^6 - 103\,708\,612\,362\,240\, z^5 + \right.\right.
$$
$$
839\,029\,281\,914\,880\, z^4 - 1\,291\,355\,799\,552\,000\, z^3 - 2\,158\,712\,809\,344\,000\, z^2 +
$$
$$
\left.419\,792\,544\,531\,360\,000\, z - 2\,123\,559\,942\,062\,934\,375\right) \cos\left(2\sqrt{z}\right) +
$$
$$
\left(4\,294\,967\,296\, z^8 - 209\,379\,655\,680\, z^7 + 6\,214\,951\,895\,040\, z^6 - 109\,018\,160\,824\,320\, z^5 + \right.
$$
$$
943\,983\,142\,502\,400\, z^4 - 2\,578\,348\,910\,592\,000\, z^3 + 254\,111\,336\,414\,208\,000\, z^2 -
$$
$$
\left.\left.\left.\left.5\,142\,458\,670\,509\,160\,000\, z + 6\,370\,679\,826\,188\,803\,125\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) \Big/ \left(4\,787\,889\,353\,848\,258\,560\, z^{19/4}\right)
$$

For fixed z and $a_1 = -\frac{17}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.9770.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) = \frac{1}{52\,997\,175\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-65\,536 z^5 + 217\,088 z^4 + 6\,095\,936 z^3 + 59\,246\,880 z^2 - 117\,186\,300 z + 52\,997\,175\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(8192 z^4 - 161\,408 z^3 - 5\,414\,640 z^2 - 15\,507\,800 z + 17\,665\,725\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(16\,384 z^4 - 41\,984 z^3 + 2\,482\,480 z^2 + 24\,139\,500 z + 52\,997\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9771.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{52\,997\,175\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536 z^5 + 217\,088 z^4 - 6\,095\,936 z^3 + 59\,246\,880 z^2 + 117\,186\,300 z + 52\,997\,175\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(8192 z^4 + 161\,408 z^3 - 5\,414\,640 z^2 + 15\,507\,800 z + 17\,665\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(16\,384 z^4 + 41\,984 z^3 + 2\,482\,480 z^2 - 24\,139\,500 z + 52\,997\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9772.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) = \frac{3\left(176 z^2 + 1300 z + 735\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(32 z^2 + 960 z + 2205\right)\sinh\left(2\sqrt{z}\right)}{2205} $$

07.22.03.9773.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) = \frac{3\left(176 z^2 - 1300 z + 735\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(32 z^2 - 960 z + 2205\right)\sin\left(2\sqrt{z}\right)}{2205} $$

07.22.03.9774.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) = \frac{1}{6\,912\,675\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32\,768 z^5 + 73\,728 z^4 + 348\,096 z^3 + 8\,449\,056 z^2 - 15\,592\,500 z + 6\,912\,675\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(4096 z^4 - 5632 z^3 - 602\,448 z^2 - 2\,125\,200 z + 2\,304\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8192 z^4 - 12\,288 z^3 + 225\,456 z^2 + 2\,841\,300 z + 6\,912\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9775.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) = \frac{1}{6\,912\,675\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768 z^5 + 73\,728 z^4 - 348\,096 z^3 + 8\,449\,056 z^2 + 15\,592\,500 z + 6\,912\,675\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(4096 z^4 + 5632 z^3 - 602\,448 z^2 + 2\,125\,200 z + 2\,304\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8192 z^4 + 12\,288 z^3 + 225\,456 z^2 - 2\,841\,300 z + 6\,912\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9776.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) = \left(\frac{16 z^2}{105} + \frac{12 z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,(8z + 21)\sinh\left(2\sqrt{z}\right) $$

07.22.03.9777.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{17}{4}; -z\right) = \left(\frac{16 z^2}{105} - \frac{12 z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}(21 - 8z)\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.9778.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{15}{4}; z\right) = \frac{1}{363\,825\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,384 z^5 + 19\,456 z^4 - 26\,688 z^3 + 506\,016 z^2 - 845\,460 z + 363\,825\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(2048 z^4 - 640 z^3 - 22\,288 z^2 - 120\,120 z + 121\,275\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4096 z^4 - 1792 z^3 + 7056 z^2 + 124\,740 z + 363\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9779.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{15}{4}; -z\right) = \frac{1}{363\,825\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384 z^5 + 19\,456 z^4 + 26\,688 z^3 + 506\,016 z^2 + 845\,460 z + 363\,825\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(2048 z^4 + 640 z^3 - 22\,288 z^2 + 120\,120 z + 121\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4096 z^4 + 1792 z^3 + 7056 z^2 - 124\,740 z + 363\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9780.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{13}{4}; z\right) = \frac{1}{122\,850}\left(e^{-2\sqrt{z}}\left(4096 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} - 4096 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} + 4096 e^{4\sqrt{z}} z^4 + 4096 z^4 + 1024 e^{4\sqrt{z}} z^{7/2} - 1024 z^{7/2} + 768 e^{4\sqrt{z}} z^3 + 768 z^3 + 960 e^{4\sqrt{z}} z^{5/2} - 960 z^{5/2} + 1680 e^{4\sqrt{z}} z^2 + 1680 z^2 - 36\,000 e^{4\sqrt{z}} z^{3/2} + 36\,000 z^{3/2} + 99\,900 e^{4\sqrt{z}} z + 99\,900 z - 122\,850 e^{4\sqrt{z}}\sqrt{z} + 122\,850\sqrt{z} + 61\,425 e^{4\sqrt{z}} + 61\,425\right)\right) $$

07.22.03.9781.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{13}{4}; -z\right) = \frac{1}{61\,425}\left(8192\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{17/4} + 2\left(512z^3 - 480z^2 - 18\,000z + 61\,425\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(4096z^4 - 768z^3 + 1680z^2 - 99\,900z + 61\,425\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9782.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{11}{4}; z\right) = \frac{1}{24\,255\sqrt[4]{z}} \left(\sqrt{2}\left(\left(8192z^5 - 1024z^4 - 10\,048z^3 + 41\,568z^2 - 59\,220z + 24\,255\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1024z^4 + 768z^3 + 144z^2 + 8960z - 8085\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-2048z^4 - 1280z^3 + 688z^2 + 5460z + 24\,255\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9783.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{11}{4}; -z\right) = \frac{1}{24\,255\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-8192z^5 - 1024z^4 + 10\,048z^3 + 41\,568z^2 + 59\,220z + 24\,255\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(1024z^4 - 768z^3 + 144z^2 - 8960z - 8085\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-2048z^4 + 1280z^3 + 688z^2 - 5460z + 24\,255\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9784.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{9}{4}; z\right) = \frac{1}{9450}\left(e^{-2\sqrt{z}}\left(-1024e^{4\sqrt{z}}z^4 - 1024z^4 - 256e^{4\sqrt{z}}z^{7/2} + 256z^{7/2} - 64e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+17)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} + 64e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+17)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} - 1280e^{4\sqrt{z}}z^3 - 1280z^3 - 512e^{4\sqrt{z}}z^{5/2} + 512z^{5/2} - 624e^{4\sqrt{z}}z^2 - 624z^2 - 1200e^{4\sqrt{z}}z^{3/2} + 1200z^{3/2} + 6900e^{4\sqrt{z}}z + 6900z - 9450e^{4\sqrt{z}}\sqrt{z} + 9450\sqrt{z} + 4725e^{4\sqrt{z}} + 4725\right)\right) $$

07.22.03.9785.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{9}{4}; -z\right) = \frac{1}{4725}\left(-128\sqrt{\pi}\,(16z-17) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{13/4} + 2\left(-128z^3 + 256z^2 - 600z + 4725\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-1024z^4 + 1280z^3 - 624z^2 - 6900z + 4725\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9786.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{7}{4}; z\right) = \frac{1}{6615\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(4096z^5+3840z^4+960z^3-17568z^2+17820z-6615\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(512z^4+928z^3+1296z^2-3000z+2205\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1024z^4+1728z^3+1968z^2-180z+6615\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9787.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{1}{6615\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^5-3840z^4+960z^3+17568z^2+17820z+6615\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(512z^4-928z^3+1296z^2+3000z+2205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1024z^4-1728z^3+1968z^2+180z+6615\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9788.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{5}{4}; z\right) = \frac{1}{2100}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+544z+1105\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+544z+1105\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+2\left(128z^4-32z^{7/2}+296z^3-98z^{5/2}+656z^2-320z^{3/2}+540z+1050\sqrt{z}+e^{4\sqrt{z}}\left(128z^4+32z^{7/2}+296z^3+98z^{5/2}+656z^2+320z^{3/2}+540z-1050\sqrt{z}+525\right)+525\right)\right)\right) $$

07.22.03.9789.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{5}{4}; -z\right) = \frac{1}{525}\left(\sqrt{\pi}\left(256z^2-544z+1105\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+2\left(16z^3-49z^2+160z+525\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(128z^4-296z^3+656z^2-540z+525\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9790.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{3}{4}; z\right) = \frac{1}{4725\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2048z^5+4096z^4+12312z^3-1440z^2-17100z+4725\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(256z^4+736z^3+2365z^2+3600z-1575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(512z^4+1408z^3+4350z^2+4500z-4725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9791.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{4725\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-2048z^5+4096z^4-12\,312z^3-1440z^2+17\,100z+4725\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(256z^4-736z^3+2365z^2-\right.\right.\right.$$
$$\left.\left.\left.3600z-1575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-512z^4+1408z^3-4350z^2+4500z+4725\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9792.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) =$$
$$\frac{1}{80\,640}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+13\,056z^2+53\,040z+89\,505\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left(4096z^3+13\,056z^2+53\,040z+89\,505\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-$$
$$4\left(1024z^4-256z^{7/2}+3456z^3-1056z^{5/2}+14\,292z^2-5025z^{3/2}+28\,800z-20\,160\sqrt{z}+e^{4\sqrt{z}}\right.$$
$$\left.\left.\left.\left(1024z^4+256z^{7/2}+3456z^3+1056z^{5/2}+14\,292z^2+5025z^{3/2}+28\,800z+20\,160\sqrt{z}-10\,080\right)-10\,080\right)\right)\right)$$

07.22.03.9793.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) = \frac{1}{20\,160}\left(\sqrt{\pi}\left(-4096z^3+13\,056z^2-53\,040z+89\,505\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+\right.$$
$$\left.2\left(-256z^3+1056z^2-5025z+20\,160\right)\sin\left(2\sqrt{z}\right)\sqrt{z}-8\left(256z^4-864z^3+3573z^2-7200z-2520\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9794.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{44\,100\sqrt{2}\sqrt[4]{z}}\left(\left(-2\left(4096z^5+12\,544z^4+65\,968z^3+134\,463z^2-126\,000z-44\,100\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\right.\right.$$
$$\left(4096z^4+16\,128z^3+82\,992z^2+237\,545z+117\,600\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2z\left(4096z^4+15\,616z^3+79\,408z^2+208\,635z+176\,400\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9795.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) =$$
$$\frac{1}{44\,100\sqrt{2}\sqrt[4]{z}}\left(\left(2\left(4096z^5-12\,544z^4+65\,968z^3-134\,463z^2-126\,000z+44\,100\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\right.\right.$$
$$\left(4096z^4-16\,128z^3+82\,992z^2-237\,545z+117\,600\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2z\left(4096z^4-15\,616z^3+79\,408z^2-208\,635z+176\,400\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9796.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) = \frac{1}{20\,643\,840}\left(e^{-2\sqrt{z}}\left(4\left(16\,384 z^4 - 4096 z^{7/2} + 72\,704 z^3 - 21\,248 z^{5/2} + 444\,096 z^2 - 137\,520 z^{3/2} + 1\,581\,780 z - 656\,865\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^4 + 4096 z^{7/2} + 72\,704 z^3 + 21\,248 z^{5/2} + 444\,096 z^2 + 137\,520 z^{3/2} + 1\,581\,780 z + 656\,865\sqrt{z} + 2\,580\,480\right) + 2\,580\,480\right) + e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(65\,536 z^4 + 278\,528 z^3 + 1\,697\,280 z^2 + 5\,728\,320 z + 5\,817\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(65\,536 z^4 + 278\,528 z^3 + 1\,697\,280 z^2 + 5\,728\,320 z + 5\,817\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9797.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) = \frac{1}{5\,160\,960}\left(\sqrt{\pi}\sqrt[4]{z}\left(65\,536 z^4 - 278\,528 z^3 + 1\,697\,280 z^2 - 5\,728\,320 z + 5\,817\,825\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\left(4\left(4096 z^4 - 18\,176 z^3 + 111\,024 z^2 - 395\,445 z + 645\,120\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\left(4096 z^3 - 21\,248 z^2 + 137\,520 z - 656\,865\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9798.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) = \frac{1}{12\,700\,800\sqrt{2}\sqrt[4]{z}}\left(\left(-2\left(65\,536 z^5 + 270\,336 z^4 + 1\,999\,872 z^3 + 7\,743\,456 z^2 + 6\,171\,795 z - 12\,700\,800\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(65\,536 z^4 + 327\,680 z^3 + 2\,333\,184 z^2 + 10\,321\,920 z + 22\,382\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(65\,536 z^4 + 319\,488 z^3 + 2\,267\,136 z^2 + 9\,707\,040 z + 16\,343\,775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9799.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = \frac{1}{12\,700\,800\sqrt{2}\sqrt[4]{z}}\left(\left(2\left(65\,536 z^5 - 270\,336 z^4 + 1\,999\,872 z^3 - 7\,743\,456 z^2 + 6\,171\,795 z + 12\,700\,800\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(65\,536 z^4 - 327\,680 z^3 + 2\,333\,184 z^2 - 10\,321\,920 z + 22\,382\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(65\,536 z^4 - 319\,488 z^3 + 2\,267\,136 z^2 - 9\,707\,040 z + 16\,343\,775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9800.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) = \frac{1}{2\,202\,009\,600\, z^{3/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(262\,144\, z^{9/2} - 65\,536\, z^4 + 1\,441\,792\, z^{7/2} - 409\,600\, z^3 + 11\,683\,840\, z^{5/2} - 3\,397\,120\, z^2 + 60\,641\,280\, z^{3/2} - \right.\right.\right. $$
$$ \left.\left.\left. 20\,420\,160\, z + 143\,380\,500\sqrt{z} + e^{4\sqrt{z}}\left(262\,144\, z^{9/2} + 65\,536\, z^4 + 1\,441\,792\, z^{7/2} + 409\,600\, z^3 + 11\,683\,840 \right.\right.\right.\right. $$
$$ \left.\left.\left.\left. z^{5/2} + 3\,397\,120\, z^2 + 60\,641\,280\, z^{3/2} + 20\,420\,160\, z + 143\,380\,500\sqrt{z} + 98\,903\,025\right) - 98\,903\,025\right) + \right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 + 5\,570\,560\, z^4 + 45\,260\,800\, z^3 + 229\,132\,800\, z^2 + 465\,426\,000\, z + 98\,903\,025\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi} $$
$$ \left.\left(1\,048\,576\, z^5 + 5\,570\,560\, z^4 + 45\,260\,800\, z^3 + 229\,132\,800\, z^2 + 465\,426\,000\, z + 98\,903\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.9801.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) = $$
$$ \frac{1}{550\,502\,400\, z^{3/4}}\left(\sqrt{\pi}\left(1\,048\,576\, z^5 - 5\,570\,560\, z^4 + 45\,260\,800\, z^3 - 229\,132\,800\, z^2 + 465\,426\,000\, z - 98\,903\,025\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536\, z^4 - 360\,448\, z^3 + 2\,920\,960\, z^2 - 15\,160\,320\, z + 35\,845\,125\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left(65\,536\, z^4 - 409\,600\, z^3 + 3\,397\,120\, z^2 - 20\,420\,160\, z + 98\,903\,025\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9802.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) = \frac{1}{894\,136\,320\sqrt{2}\, z^{3/4}} $$
$$ \left(\left(-2\sqrt{z}\left(1\,048\,576\, z^5 + 5\,439\,488\, z^4 + 51\,634\,176\, z^3 + 290\,594\,304\, z^2 + 582\,840\,720\, z - 763\,190\,505\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. \right. $$
$$ 3\left(1\,048\,576\, z^5 + 6\,356\,992\, z^4 + 57\,942\,016\, z^3 + 350\,676\,480\, z^2 + 1\,024\,364\,880\, z + 218\,243\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(1\,048\,576\, z^5 + 6\,225\,920\, z^4 + 56\,745\,984\, z^3 + 337\,835\,520\, z^2 + 893\,304\,720\, z + 654\,729\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9803.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{9}{4}; -z\right) = \frac{1}{894\,136\,320\sqrt{2}\, z^{3/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576\, z^5 - 5\,439\,488\, z^4 + 51\,634\,176\, z^3 - 290\,594\,304\, z^2 + 582\,840\,720\, z + 763\,190\,505\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 3\left(1\,048\,576\, z^5 - 6\,356\,992\, z^4 + 57\,942\,016\, z^3 - 350\,676\,480\, z^2 + 1\,024\,364\,880\, z - 218\,243\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(1\,048\,576\, z^5 - 6\,225\,920\, z^4 + 56\,745\,984\, z^3 - 337\,835\,520\, z^2 + 893\,304\,720\, z - 654\,729\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9804.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{11}{4}; z\right) = \frac{1}{120\,795\,955\,200\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(4\,194\,304\, z^{11/2} - 1\,048\,576\, z^5 + 27\,525\,120\, z^{9/2} - 7\,667\,712\, z^4 + 278\,298\,624\, z^{7/2} - 78\,028\,800\, z^3 + 1\,905\,592\,320\, z^{5/2} - 581\,184\,000\, z^2 + 6\,237\,783\,360\, z^{3/2} - 2\,848\,407\,120\, z + 8\,307\,854\,100\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304\, z^{11/2} + 1\,048\,576\, z^5 + 27\,525\,120\, z^{9/2} + 7\,667\,712\, z^4 + 278\,298\,624\, z^{7/2} + 78\,028\,800\, z^3 + 1\,905\,592\,320\, z^{5/2} + 581\,184\,000\, z^2 + 6\,237\,783\,360\, z^{3/2} + 2\,848\,407\,120\, z + 8\,307\,854\,100\sqrt{z} - 6\,230\,890\,575\right) + 6\,230\,890\,575\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\, z^6 + 106\,954\,752\, z^5 + 1\,086\,259\,200\, z^4 + 7\,332\,249\,600\, z^3 + 22\,340\,448\,000\, z^2 + 9\,494\,690\,400\, z - 6\,230\,890\,575\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\, z^6 + 106\,954\,752\, z^5 + 1\,086\,259\,200\, z^4 + 7\,332\,249\,600\, z^3 + 22\,340\,448\,000\, z^2 + 9\,494\,690\,400\, z - 6\,230\,890\,575\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right) $$

07.22.03.9805.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{11}{4}; -z\right) = \frac{1}{30\,198\,988\,800\, z^{7/4}} \left(\sqrt{\pi}\left(16\,777\,216\, z^6 - 106\,954\,752\, z^5 + 1\,086\,259\,200\, z^4 - 7\,332\,249\,600\, z^3 + 22\,340\,448\,000\, z^2 - 9\,494\,690\,400\, z - 6\,230\,890\,575\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576\, z^5 - 6\,881\,280\, z^4 + 69\,574\,656\, z^3 - 476\,398\,080\, z^2 + 1\,559\,445\,840\, z - 2\,076\,963\,525\right)\cos\left(2\sqrt{z}\right) + \left(1\,048\,576\, z^5 - 7\,667\,712\, z^4 + 78\,028\,800\, z^3 - 581\,184\,000\, z^2 + 2\,848\,407\,120\, z + 6\,230\,890\,575\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9806.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{13}{4}; z\right) = \frac{1}{41\,328\,967\,680\sqrt{2}\, z^{7/4}} \left(\left(-2\sqrt{z}\left(16\,777\,216\, z^6 + 104\,857\,600\, z^5 + 1\,212\,743\,680\, z^4 + 8\,918\,925\,312\, z^3 + 27\,692\,501\,760\, z^2 - 14\,325\,030\,720\, z - 15\,058\,768\,725\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,777\,216\, z^6 + 119\,537\,664\, z^5 + 1\,329\,266\,688\, z^4 + 10\,244\,833\,280\, z^3 + 39\,180\,261\,120\, z^2 + 62\,853\,991\,200\, z - 25\,097\,947\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216\, z^6 + 117\,440\,512\, z^5 + 1\,307\,901\,952\, z^4 + 9\,982\,279\,680\, z^3 + 36\,296\,282\,880\, z^2 + 27\,935\,107\,200\, z - 75\,293\,843\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9807.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) = \frac{1}{41\,328\,967\,680\sqrt{2}\, z^{7/4}}\left(\left(2\sqrt{z}\left(16\,777\,216 z^6 - 104\,857\,600 z^5 + 1\,212\,743\,680 z^4 - 8\,918\,925\,312 z^3 + 27\,692\,501\,760 z^2 + 14\,325\,030\,720 z - 15\,058\,768\,725\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-16\,777\,216 z^6 + 119\,537\,664 z^5 - 1\,329\,266\,688 z^4 + 10\,244\,833\,280 z^3 - 39\,180\,261\,120 z^2 + 62\,853\,991\,200 z + 25\,097\,947\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216 z^6 - 117\,440\,512 z^5 + 1\,307\,901\,952 z^4 - 9\,982\,279\,680 z^3 + 36\,296\,282\,880 z^2 - 27\,935\,107\,200 z - 75\,293\,843\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9808.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) = \frac{1}{54\,116\,587\,929\,600 z^{11/4}}\left(11 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(67\,108\,864 z^{13/2} - 16\,777\,216 z^6 + 511\,705\,088 z^{11/2} - 140\,509\,184 z^5 + 6\,204\,162\,048 z^{9/2} - 1\,699\,676\,160 z^4 + 52\,841\,349\,120 z^{7/2} - 15\,271\,280\,640 z^3 + 223\,971\,793\,920 z^{5/2} - 82\,709\,303\,040 z^2 + 265\,851\,331\,200 z^{3/2} - 465\,239\,829\,600 z - 1\,453\,874\,467\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 + 511\,705\,088 z^{11/2} + 140\,509\,184 z^5 + 6\,204\,162\,048 z^{9/2} + 1\,699\,676\,160 z^4 + 52\,841\,349\,120 z^{7/2} + 15\,271\,280\,640 z^3 + 223\,971\,793\,920 z^{5/2} + 82\,709\,303\,040 z^2 + 265\,851\,331\,200 z^{3/2} + 465\,239\,829\,600 z - 1\,453\,874\,467\,500\sqrt{z} + 1\,090\,405\,850\,625\right) - 1\,090\,405\,850\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 + 1\,996\,488\,704 z^6 + 24\,332\,206\,080 z^5 + 205\,302\,988\,800 z^4 + 834\,043\,392\,000 z^3 + 531\,702\,662\,400 z^2 - 697\,859\,744\,400 z + 1\,090\,405\,850\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 + 1\,996\,488\,704 z^6 + 24\,332\,206\,080 z^5 + 205\,302\,988\,800 z^4 + 834\,043\,392\,000 z^3 + 531\,702\,662\,400 z^2 - 697\,859\,744\,400 z + 1\,090\,405\,850\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right) $$

07.22.03.9809.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{15}{4}; -z\right) = \frac{1}{13\,529\,146\,982\,400 z^{11/4}}\left(11\left(\sqrt{\pi}\left(268\,435\,456 z^7 - 1\,996\,488\,704 z^6 + 24\,332\,206\,080 z^5 - 205\,302\,988\,800 z^4 + 834\,043\,392\,000 z^3 - 531\,702\,662\,400 z^2 - 697\,859\,744\,400 z - 1\,090\,405\,850\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216 z^6 - 127\,926\,272 z^5 + 1\,551\,040\,512 z^4 - 13\,210\,337\,280 z^3 + 55\,992\,948\,480 z^2 - 66\,462\,832\,800 z - 363\,468\,616\,875\right)\cos\left(2\sqrt{z}\right) + \left(16\,777\,216 z^6 - 140\,509\,184 z^5 + 1\,699\,676\,160 z^4 - 15\,271\,280\,640 z^3 + 82\,709\,303\,040 z^2 - 465\,239\,829\,600 z + 1\,090\,405\,850\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.9810.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) = \left(\left(-2\sqrt{z}\,\left(268\,435\,456\,z^7 + 1\,962\,934\,272\,z^6 + 26\,748\,125\,184\,z^5 + 242\,514\,984\,960\,z^4 + 1\,010\,282\,803\,200\,z^3 - 103\,451\,040\,000\,z^2 - 5\,059\,746\,291\,600\,z + 3\,659\,280\,800\,175\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(268\,435\,456\,z^7 + 2\,197\,815\,296\,z^6 + 28\,862\,054\,400\,z^5 + 270\,576\,844\,800\,z^4 + 1\,294\,135\,603\,200\,z^3 + 1\,843\,717\,075\,200\,z^2 - 12\,769\,835\,878\,800\,z + 6\,098\,801\,333\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(268\,435\,456\,z^7 + 2\,164\,260\,864\,z^6 + 28\,484\,567\,040\,z^5 + 265\,317\,580\,800\,z^4 + 1\,230\,891\,724\,800\,z^3 + 1\,125\,385\,747\,200\,z^2 + 722\,820\,898\,800\,z + 18\,296\,404\,000\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(1\,525\,992\,652\,800\,\sqrt{2}\;z^{11/4}\right) $$

07.22.03.9811.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) = \left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 - 1\,962\,934\,272\,z^6 + 26\,748\,125\,184\,z^5 - 242\,514\,984\,960\,z^4 + 1\,010\,282\,803\,200\,z^3 - 103\,451\,040\,000\,z^2 - 5\,059\,746\,291\,600\,z - 3\,659\,280\,800\,175\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-268\,435\,456\,z^7 + 2\,197\,815\,296\,z^6 - 28\,862\,054\,400\,z^5 + 270\,576\,844\,800\,z^4 - 1\,294\,135\,603\,200\,z^3 + 1\,843\,717\,075\,200\,z^2 + 12\,769\,835\,878\,800\,z + 6\,098\,801\,333\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(268\,435\,456\,z^7 - 2\,164\,260\,864\,z^6 + 28\,484\,567\,040\,z^5 - 265\,317\,580\,800\,z^4 + 1\,230\,891\,724\,800\,z^3 - 1\,125\,385\,747\,200\,z^2 + 722\,820\,898\,800\,z - 18\,296\,404\,000\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(1\,525\,992\,652\,800\,\sqrt{2}\;z^{11/4}\right) $$

07.22.03.9812.01

$$
{}_1F_2\left(-\frac{17}{4};-\frac{7}{2},\frac{19}{4};z\right)=
$$

$$
\left(11\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2}-268\,435\,456\,z^7+9\,328\,132\,096\,z^{13/2}-2\,533\,359\,616\,z^6+131\,923\,443\,712\,z^{11/2}-\right.\right.\right.
$$

$$
35\,572\,940\,800\,z^5+1\,344\,739\,737\,600\,z^{9/2}-376\,178\,933\,760\,z^4+7\,028\,310\,589\,440\,z^{7/2}-
$$

$$
2\,312\,224\,911\,360\,z^3+8\,743\,554\,892\,800\,z^{5/2}-9\,984\,194\,438\,400\,z^2+
$$

$$
25\,920\,504\,792\,000\,z^{3/2}+231\,456\,815\,226\,000\,z+463\,785\,955\,132\,500\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^7+9\,328\,132\,096\,z^{13/2}+2\,533\,359\,616\,z^6+131\,923\,443\,712\,z^{11/2}+\right.
$$

$$
35\,572\,940\,800\,z^5+1\,344\,739\,737\,600\,z^{9/2}+376\,178\,933\,760\,z^4+7\,028\,310\,589\,440\,z^{7/2}+
$$

$$
2\,312\,224\,911\,360\,z^3+8\,743\,554\,892\,800\,z^{5/2}+9\,984\,194\,438\,400\,z^2+25\,920\,504\,792\,000\,z^{3/2}-
$$

$$
\left.231\,456\,815\,226\,000\,z+463\,785\,955\,132\,500\sqrt{z}\;-347\,839\,466\,349\,375\right)+347\,839\,466\,349\,375\Big)+
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(4\,294\,967\,296\,z^8+36\,507\,222\,016\,z^7+519\,087\,063\,040\,z^6+5\,255\,756\,513\,280\,z^5+\right.
$$

$$
26\,689\,388\,544\,000\,z^4+22\,685\,980\,262\,400\,z^3-44\,663\,023\,641\,600\,z^2+
$$

$$
\left.139\,571\,948\,880\,000\,z-347\,839\,466\,349\,375\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-
$$

$$
e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(4\,294\,967\,296\,z^8+36\,507\,222\,016\,z^7+519\,087\,063\,040\,z^6+5\,255\,756\,513\,280\,z^5+\right.
$$

$$
26\,689\,388\,544\,000\,z^4+22\,685\,980\,262\,400\,z^3-44\,663\,023\,641\,600\,z^2+
$$

$$
\left.\left.\left.139\,571\,948\,880\,000\,z-347\,839\,466\,349\,375\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)\Big/\left(1\,847\,179\,534\,663\,680\,z^{15/4}\right)
$$

07.22.03.9813.01

$$
{}_1F_2\left(-\frac{17}{4};-\frac{7}{2},\frac{19}{4};-z\right)=\frac{1}{461\,794\,883\,665\,920\,z^{15/4}}
$$

$$
\left(11\left(\sqrt{\pi}\,\left(4\,294\,967\,296\,z^8-36\,507\,222\,016\,z^7+519\,087\,063\,040\,z^6-5\,255\,756\,513\,280\,z^5+26\,689\,388\,544\,000\,z^4-\right.\right.\right.
$$

$$
\left.22\,685\,980\,262\,400\,z^3-44\,663\,023\,641\,600\,z^2-139\,571\,948\,880\,000\,z-347\,839\,466\,349\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$

$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^7-2\,332\,033\,024\,z^6+32\,980\,860\,928\,z^5-336\,184\,934\,400\,z^4+\right.\right.
$$

$$
\left.1\,757\,077\,647\,360\,z^3-2\,185\,888\,723\,200\,z^2+6\,480\,126\,198\,000\,z-115\,946\,488\,783\,125\right)\cos\left(2\sqrt{z}\right)+
$$

$$
\left.\left.\left.\left(268\,435\,456\,z^7-2\,533\,359\,616\,z^6+35\,572\,940\,800\,z^5-376\,178\,933\,760\,z^4+2\,312\,224\,911\,360\,z^3-\right.\right.\right.\right.
$$

$$
\left.\left.\left.\left.9\,984\,194\,438\,400\,z^2-231\,456\,815\,226\,000\,z+347\,839\,466\,349\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)
$$

07.22.03.9814.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) = $$

$$ \left(\left(-2\sqrt{z}\left(4\,294\,967\,296\,z^8 + 35\,970\,351\,104\,z^7 + 564\,016\,447\,488\,z^6 + 6\,075\,111\,702\,528\,z^5 + 31\,648\,481\,280\,000\,z^4 + 6\,515\,212\,492\,800\,z^3 - 161\,911\,881\,331\,200\,z^2 + 1\,808\,497\,888\,797\,600\,z - 1\,474\,690\,162\,470\,525\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(4\,294\,967\,296\,z^8 + 39\,728\,447\,488\,z^7 + 601\,832\,292\,352\,z^6 + 6\,649\,880\,248\,320\,z^5 + 38\,341\,420\,646\,400\,z^4 + 55\,678\,659\,379\,200\,z^3 + 215\,882\,508\,441\,600\,z^2 + 4\,761\,944\,081\,294\,400\,z - 2\,457\,816\,937\,450\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4\,294\,967\,296\,z^8 + 39\,191\,576\,576\,z^7 + 595\,222\,069\,248\,z^6 + 6\,546\,480\,168\,960\,z^5 + 36\,972\,055\,756\,800\,z^4 + 40\,470\,351\,667\,200\,z^3 - 36\,347\,565\,196\,800\,z^2 - 1\,444\,196\,155\,802\,400\,z - 7\,373\,450\,812\,352\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(48\,831\,764\,889\,600\sqrt{2}\, z^{15/4}\right) $$

07.22.03.9815.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) = $$

$$ \left(\left(2\sqrt{z}\left(4\,294\,967\,296\,z^8 - 35\,970\,351\,104\,z^7 + 564\,016\,447\,488\,z^6 - 6\,075\,111\,702\,528\,z^5 + 31\,648\,481\,280\,000\,z^4 - 6\,515\,212\,492\,800\,z^3 - 161\,911\,881\,331\,200\,z^2 - 1\,808\,497\,888\,797\,600\,z - 1\,474\,690\,162\,470\,525\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4\,294\,967\,296\,z^8 - 39\,728\,447\,488\,z^7 + 601\,832\,292\,352\,z^6 - 6\,649\,880\,248\,320\,z^5 + 38\,341\,420\,646\,400\,z^4 - 55\,678\,659\,379\,200\,z^3 + 215\,882\,508\,441\,600\,z^2 - 4\,761\,944\,081\,294\,400\,z - 2\,457\,816\,937\,450\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4\,294\,967\,296\,z^8 - 39\,191\,576\,576\,z^7 + 595\,222\,069\,248\,z^6 - 6\,546\,480\,168\,960\,z^5 + 36\,972\,055\,756\,800\,z^4 - 40\,470\,351\,667\,200\,z^3 - 36\,347\,565\,196\,800\,z^2 + 1\,444\,196\,155\,802\,400\,z - 7\,373\,450\,812\,352\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(48\,831\,764\,889\,600\sqrt{2}\, z^{15/4}\right) $$

07.22.03.9816.01

$$
{}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) =
\left(209\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(17\,179\,869\,184\, z^{17/2} - 4\,294\,967\,296\, z^8 + 167\,503\,724\,544\, z^{15/2} - 45\,097\,156\,608\, z^7 + \right.\right.\right.
$$
$$
2\,707\,440\,009\,216\, z^{13/2} - 721\,755\,832\,320\, z^6 + 32\,146\,068\,602\,880\, z^{11/2} - 8\,802\,627\,747\,840\, z^5 +
$$
$$
200\,119\,568\,302\,080\, z^{9/2} - 61\,508\,775\,444\,480\, z^4 + 275\,721\,913\,958\,400\, z^{7/2} -
$$
$$
225\,114\,727\,219\,200\, z^3 + 170\,144\,851\,968\,000\, z^{5/2} - 3\,264\,654\,347\,136\,000\, z^2 -
$$
$$
38\,162\,958\,593\,760\,000\, z^{3/2} - 133\,570\,355\,078\,160\,000\, z - 229\,574\,047\,790\,587\,500\, \sqrt{z} +
$$
$$
e^{4\sqrt{z}} \left(17\,179\,869\,184\, z^{17/2} + 4\,294\,967\,296\, z^8 + 167\,503\,724\,544\, z^{15/2} + 45\,097\,156\,608\, z^7 + 2\,707\,440\,009\,216\right.
$$
$$
z^{13/2} + 721\,755\,832\,320\, z^6 + 32\,146\,068\,602\,880\, z^{11/2} + 8\,802\,627\,747\,840\, z^5 + 200\,119\,568\,302\,080\, z^{9/2} +
$$
$$
61\,508\,775\,444\,480\, z^4 + 275\,721\,913\,958\,400\, z^{7/2} + 225\,114\,727\,219\,200\, z^3 + 170\,144\,851\,968\,000\, z^{5/2} +
$$
$$
3\,264\,654\,347\,136\,000\, z^2 - 38\,162\,958\,593\,760\,000\, z^{3/2} + 133\,570\,355\,078\,160\,000\, z -
$$
$$
\left.\left.\left.\left.229\,574\,047\,790\,587\,500\, \sqrt{z} + 172\,180\,535\,842\,940\,625\right) - 172\,180\,535\,842\,940\,625\right) +\right.\right.\right.
$$
$$
e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(68\,719\,476\,736\, z^9 + 657\,129\,996\,288\, z^8 + 10\,678\,362\,439\,680\, z^7 + 126\,138\,156\,318\,720\, z^6 +\right.
$$
$$
768\,654\,390\,067\,200\, z^5 + 816\,695\,289\,446\,400\, z^4 - 2\,143\,825\,134\,796\,800\, z^3 +
$$
$$
\left.10\,049\,180\,319\,360\,000\, z^2 - 50\,088\,883\,154\,310\,000\, z + 172\,180\,535\,842\,940\,625\right) \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) -
$$
$$
e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(68\,719\,476\,736\, z^9 + 657\,129\,996\,288\, z^8 + 10\,678\,362\,439\,680\, z^7 + 126\,138\,156\,318\,720\, z^6 +\right.
$$
$$
\left.\left.768\,654\,390\,067\,200\, z^5 + 816\,695\,289\,446\,400\, z^4 - 2\,143\,825\,134\,796\,800\, z^3 + 10\,049\,180\,319\,360\,000\, z^2 -\right.\right.
$$
$$
\left.\left.50\,088\,883\,154\,310\,000\, z + 172\,180\,535\,842\,940\,625\right) \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\Big) \Big/ \left(1\,063\,975\,411\,966\,279\,680\, z^{19/4}\right)
$$

07.22.03.9817.01

$$
{}_1F_2\left(-\frac{17}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) =
\left(209 \left(\sqrt{\pi}\, \left(68\,719\,476\,736\, z^9 - 657\,129\,996\,288\, z^8 + 10\,678\,362\,439\,680\, z^7 - 126\,138\,156\,318\,720\, z^6 +\right.\right.\right.
$$
$$
768\,654\,390\,067\,200\, z^5 - 816\,695\,289\,446\,400\, z^4 - 2\,143\,825\,134\,796\,800\, z^3 -
$$
$$
\left.\left.10\,049\,180\,319\,360\,000\, z^2 - 50\,088\,883\,154\,310\,000\, z - 172\,180\,535\,842\,940\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) +\right.
$$
$$
2\sqrt[4]{z}\, \left(4\sqrt{z}\, \left(4\,294\,967\,296\, z^8 - 41\,875\,931\,136\, z^7 + 676\,860\,002\,304\, z^6 - 8\,036\,517\,150\,720\, z^5 + 50\,029\,892\,075\,520\right.\right.
$$
$$
z^4 - 68\,930\,478\,489\,600\, z^3 + 42\,536\,212\,992\,000\, z^2 + 9\,540\,739\,648\,440\,000\, z - 57\,393\,511\,947\,646\,875\Big)
$$
$$
\cos\left(2\sqrt{z}\right) + \left(4\,294\,967\,296\, z^8 - 45\,097\,156\,608\, z^7 + 721\,755\,832\,320\, z^6 - 8\,802\,627\,747\,840\, z^5 +\right.
$$
$$
61\,508\,775\,444\,480\, z^4 - 225\,114\,727\,219\,200\, z^3 + 3\,264\,654\,347\,136\,000\, z^2 -
$$
$$
\left.\left.\left.\left.133\,570\,355\,078\,160\,000\, z + 172\,180\,535\,842\,940\,625\right) \sin\left(2\sqrt{z}\right)\right)\right)\Big) \Big/ \left(265\,993\,852\,991\,569\,920\, z^{19/4}\right)
$$

For fixed z and $a_1 = -\frac{17}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.9818.01

$${}_1F_2\left(-\frac{17}{4};-\frac{5}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{22\,713\,075\sqrt[4]{z}}\left(\sqrt{2}\left(\left(131\,072\,z^5+958\,464\,z^4-941\,952\,z^3+30\,103\,920\,z^2-52\,141\,320\,z+22\,713\,075\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(16\,384\,z^4+134\,144\,z^3+1\,602\,480\,z^2+7\,285\,740\,z-7\,571\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(-32\,768\,z^4-264\,192\,z^3+660\,000\,z^2+8\,426\,880\,z+22\,713\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9819.01

$${}_1F_2\left(-\frac{17}{4};-\frac{5}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{22\,713\,075\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-131\,072\,z^5+958\,464\,z^4+941\,952\,z^3+30\,103\,920\,z^2+52\,141\,320\,z+22\,713\,075\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(16\,384\,z^4-134\,144\,z^3+1\,602\,480\,z^2-7\,285\,740\,z-7\,571\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(-32\,768\,z^4+264\,192\,z^3+660\,000\,z^2-8\,426\,880\,z+22\,713\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9820.01

$${}_1F_2\left(-\frac{17}{4};-\frac{5}{2},-\frac{21}{4};z\right)=\frac{1}{315}\left(\left(32\,z^2+528\,z+315\right)\cosh\left(2\sqrt{z}\right)-18\sqrt{z}\,\left(12\,z+35\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.9821.01

$${}_1F_2\left(-\frac{17}{4};-\frac{5}{2},-\frac{21}{4};-z\right)=\frac{1}{315}\left(\left(32\,z^2-528\,z+315\right)\cos\left(2\sqrt{z}\right)+18\left(35-12\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.9822.01

$${}_1F_2\left(-\frac{17}{4};-\frac{5}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{2\,962\,575\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536\,z^5+270\,336\,z^4-546\,048\,z^3+4\,401\,936\,z^2-6\,985\,440\,z+2\,962\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(8192\,z^4+40\,960\,z^3+132\,528\,z^2+1\,011\,780\,z-987\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(-16\,384\,z^4-79\,872\,z^3+69\,696\,z^2+914\,760\,z+2\,962\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9823.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, -\frac{19}{4}; -z\right) = \frac{1}{2\,962\,575\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-65\,536 z^5 + 270\,336 z^4 + 546\,048 z^3 + 4\,401\,936 z^2 + 6\,985\,440 z + 2\,962\,575\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(8192 z^4 - 40\,960 z^3 + 132\,528 z^2 - 1\,011\,780 z - 987\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-16\,384 z^4 + 79\,872 z^3 + 69\,696 z^2 - 914\,760 z + 2\,962\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9824.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, -\frac{17}{4}; z\right) = \left(\frac{8z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,(4z + 15)\sinh\left(2\sqrt{z}\right) $$

07.22.03.9825.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, -\frac{17}{4}; -z\right) = \left(1 - \frac{8z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}(15 - 4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.9826.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, -\frac{15}{4}; z\right) = \frac{1}{155\,925\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768 z^5 + 30\,720 z^4 - 77\,184 z^3 + 273\,168 z^2 - 382\,536 z + 155\,925\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(4096 z^4 + 7424 z^3 - 240 z^2 + 58\,212 z - 51\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-8192 z^4 - 13\,824 z^3 + 5472 z^2 + 33\,264 z + 155\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9827.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, -\frac{15}{4}; -z\right) = \frac{1}{155\,925\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32\,768 z^5 + 30\,720 z^4 + 77\,184 z^3 + 273\,168 z^2 + 382\,536 z + 155\,925\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(4096 z^4 - 7424 z^3 - 240 z^2 - 58\,212 z - 51\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-8192 z^4 + 13\,824 z^3 + 5472 z^2 - 33\,264 z + 155\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9828.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, -\frac{13}{4}; z\right) = -\frac{1}{52\,650}\left(e^{-2\sqrt{z}}\left(8192 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} - 8192 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} + 8192 e^{4\sqrt{z}} z^4 + 8192 z^4 + 2048 e^{4\sqrt{z}} z^{7/2} - 2048 z^{7/2} + 1536 e^{4\sqrt{z}} z^3 + 1536 z^3 + 1920 e^{4\sqrt{z}} z^{5/2} - 1920 z^{5/2} + 3360 e^{4\sqrt{z}} z^2 + 3360 z^2 + 7560 e^{4\sqrt{z}} z^{3/2} - 7560 z^{3/2} - 38\,880 e^{4\sqrt{z}} z - 38\,880 z + 52\,650 e^{4\sqrt{z}}\sqrt{z} - 52\,650\sqrt{z} - 26\,325 e^{4\sqrt{z}} - 26\,325\right)\right) $$

07.22.03.9829.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, -\frac{13}{4}; -z\right) = \frac{1}{26\,325}\left(-16\,384\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{17/4} + 2\left(-1024 z^3 + 960 z^2 - 3780 z + 26\,325\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-8192 z^4 + 1536 z^3 - 3360 z^2 - 38\,880 z + 26\,325\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9830.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, -\frac{11}{4}; z\right) = \frac{1}{10\,395\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-16\,384 z^5 + 36\,864 z^4 - 16\,896 z^3 + 23\,760 z^2 - 27\,216 z + 10\,395\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(2048 z^4 - 2816 z^3 + 1104 z^2 - 4452 z + 3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^4 - 6144 z^3 + 1344 z^2 + 504 z + 10\,395\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9831.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, -\frac{11}{4}; -z\right) = \frac{1}{10\,395\sqrt[4]{z}} \left(\sqrt{2}\left(\left(16\,384 z^5 + 36\,864 z^4 + 16\,896 z^3 + 23\,760 z^2 + 27\,216 z + 10\,395\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(2048 z^4 + 2816 z^3 + 1104 z^2 + 4452 z + 3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^4 + 6144 z^3 + 1344 z^2 - 504 z + 10\,395\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9832.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) = \frac{1}{4050} \left(e^{-2\sqrt{z}}\left(2048 e^{4\sqrt{z}} z^4 + 2048 z^4 + 512 e^{4\sqrt{z}} z^{7/2} - 512 z^{7/2} + 128 e^{2\sqrt{z}}\sqrt{2\pi}\,(16 z - 51)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} - 128 e^{2\sqrt{z}}\sqrt{2\pi}\,(16 z - 51)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} - 6144 e^{4\sqrt{z}} z^3 - 6144 z^3 - 1152 e^{4\sqrt{z}} z^{5/2} + 1152 z^{5/2} - 384 e^{4\sqrt{z}} z^2 - 384 z^2 + 360 e^{4\sqrt{z}} z^{3/2} - 360 z^{3/2} + 2520 e^{4\sqrt{z}} z + 2520 z - 4050 e^{4\sqrt{z}}\sqrt{z} + 4050\sqrt{z} + 2025 e^{4\sqrt{z}} + 2025\right)\right) $$

07.22.03.9833.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) = \frac{1}{2025}\left(256\sqrt{\pi}\,(16 z + 51) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{13/4} + 2\left(256 z^3 + 576 z^2 + 180 z + 2025\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(2048 z^4 + 6144 z^3 - 384 z^2 - 2520 z + 2025\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9834.01

$${}_1F_2\left(-\frac{17}{4};-\frac{5}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{2835\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192z^5-44544z^4+14976z^3+11376z^2-8424z+2835\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(1024z^4-4672z^3-\right.\right.\right.$$
$$\left.\left.\left.1488z^2+1548z-945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-2048z^4+9600z^3+2592z^2-864z+2835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9835.01

$${}_1F_2\left(-\frac{17}{4};-\frac{5}{2},-\frac{7}{4};-z\right)=\frac{1}{2835\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-8192z^5-44544z^4-14976z^3+11376z^2+8424z+2835\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(1024z^4+4672z^3-1488z^2-\right.\right.\right.$$
$$\left.\left.\left.1548z-945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-2048z^4-9600z^3+2592z^2+864z+2835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9836.01

$${}_1F_2\left(-\frac{17}{4};-\frac{5}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{450}e^{-2\sqrt{z}}\left(-256e^{4\sqrt{z}}z^4-256z^4-64e^{4\sqrt{z}}z^{7/2}+64z^{7/2}+1584e^{4\sqrt{z}}z^3+1584z^3+348e^{4\sqrt{z}}z^{5/2}-348z^{5/2}-\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-1632z-663\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-1632z-663\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+$$
$$\left.864e^{4\sqrt{z}}z^2+864z^2+312e^{4\sqrt{z}}z^{3/2}-312z^{3/2}+144e^{4\sqrt{z}}z+144z-450e^{4\sqrt{z}}\sqrt{z}+450\sqrt{z}+225e^{4\sqrt{z}}+225\right)$$

07.22.03.9837.01

$${}_1F_2\left(-\frac{17}{4};-\frac{5}{2},-\frac{5}{4};-z\right)=\frac{1}{225}\left(-2\sqrt{\pi}\left(256z^2+1632z-663\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+\right.$$
$$\left.2\left(-32z^3-174z^2+156z+225\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-256z^4-1584z^3+864z^2-144z+225\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9838.01

$${}_1F_2\left(-\frac{17}{4};-\frac{5}{2},-\frac{3}{4};z\right)=$$
$$-\frac{1}{2025\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^5-35328z^4+144z^3+9360z^2+8640z-2025\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(512z^4-3968z^3-3090z^2-\right.\right.\right.$$
$$\left.\left.\left.1980z+675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-1024z^4+8064z^3+5580z^2+3240z-2025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9839.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, -\frac{3}{4}; -z\right) = $$
$$ \frac{1}{2025\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^5+35\,328z^4+144z^3-9360z^2+8640z+2025\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(512z^4+3968z^3-3090z^2+\right.\right.\right. $$
$$ \left.\left.\left.1980z+675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1024z^4+8064z^3-5580z^2+3240z+2025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9840.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, -\frac{1}{4}; z\right) = $$
$$ \frac{1}{17\,280}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-39\,168z^2-31\,824z-29\,835\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-e^{2\sqrt{z}}\sqrt{2\pi}\right.\right. $$
$$ \left(4096z^3-39\,168z^2-31\,824z-29\,835\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+ $$
$$ 4\left(1024z^4-256z^{7/2}-9600z^3+2208z^{5/2}-9372z^2+3339z^{3/2}-10\,368z+4320\sqrt{z}+\right. $$
$$ \left.\left.\left.e^{4\sqrt{z}}\left(1024z^4+256z^{7/2}-9600z^3-2208z^{5/2}-9372z^2-3339z^{3/2}-10\,368z-4320\sqrt{z}+2160\right)+2160\right)\right)\right) $$

07.22.03.9841.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, -\frac{1}{4}; -z\right) = \frac{1}{4320}\left(\sqrt{\pi}\left(4096z^3+39\,168z^2-31\,824z+29\,835\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+\right. $$
$$ \left.2\left(4\left(256z^4+2400z^3-2343z^2+2592z+540\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\left(256z^3+2208z^2-3339z+4320\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9842.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, \frac{1}{4}; z\right) = \frac{1}{9450\sqrt{2}\sqrt[4]{z}}\left(\left(2\left(4096z^5-48\,384z^4-17\,808z^3-24\,759z^2+45\,360z+9450\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right. $$
$$ 3\sqrt{z}\left(-4096z^4+44\,800z^3+54\,096z^2+84\,945z+25\,200\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.2z\left(-4096z^4+45\,312z^3+50\,064z^2+73\,395z+37\,800\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9843.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) = -\frac{1}{9450\sqrt{2}\sqrt[4]{z}}\left(\left(2\left(4096z^5+48\,384z^4-17\,808z^3+24\,759z^2+45\,360z-9450\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right. $$
$$ 3\sqrt{z}\left(4096z^4+44\,800z^3-54\,096z^2+84\,945z-25\,200\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.2z\left(4096z^4+45\,312z^3-50\,064z^2+73\,395z-37\,800\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9844.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, \frac{3}{4}; z\right) = \frac{1}{4\,423\,680}\left(e^{-2\sqrt{z}}\left(-4\left(16\,384 z^4 - 4096 z^{7/2} - 205\,824 z^3 + 48\,384 z^{5/2} - 287\,040 z^2 + 97\,488 z^{3/2} - 569\,196 z + 236\,655\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^4 + 4096 z^{7/2} - 205\,824 z^3 - 48\,384 z^{5/2} - 287\,040 z^2 - 97\,488 z^{3/2} - 569\,196 z - 236\,655\sqrt{z} - 552\,960\right) - 552\,960\right) - e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(65\,536 z^4 - 835\,584 z^3 - 1\,018\,368 z^2 - 1\,909\,440 z - 1\,342\,575\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(65\,536 z^4 - 835\,584 z^3 - 1\,018\,368 z^2 - 1\,909\,440 z - 1\,342\,575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9845.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) = \frac{1}{1\,105\,920}\left(\sqrt{\pi}\sqrt[4]{z}\left(-65\,536 z^4 - 835\,584 z^3 + 1\,018\,368 z^2 - 1\,909\,440 z + 1\,342\,575\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\left(4\left(4096 z^4 + 51\,456 z^3 - 71\,760 z^2 + 142\,299 z - 138\,240\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\left(4096 z^3 + 48\,384 z^2 - 97\,488 z + 236\,655\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9846.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, \frac{5}{4}; z\right) = \frac{1}{2\,721\,600\sqrt{2}\sqrt[4]{z}}\left(\left(2\left(65\,536 z^5 - 983\,040 z^4 - 741\,888 z^3 - 2\,024\,064 z^2 - 363\,447 z + 2\,721\,600\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(-65\,536 z^4 + 925\,696 z^3 + 1\,505\,280 z^2 + 3\,695\,328 z + 4\,960\,305\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2 z\left(-65\,536 z^4 + 933\,888 z^3 + 1\,414\,656 z^2 + 3\,350\,592 z + 3\,994\,515\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9847.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, \frac{5}{4}; -z\right) = \frac{1}{2\,721\,600\sqrt{2}\sqrt[4]{z}}\left(\left(-2\left(65\,536 z^5 + 983\,040 z^4 - 741\,888 z^3 + 2\,024\,064 z^2 - 363\,447 z - 2\,721\,600\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(65\,536 z^4 + 925\,696 z^3 - 1\,505\,280 z^2 + 3\,695\,328 z - 4\,960\,305\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2 z\left(65\,536 z^4 + 933\,888 z^3 - 1\,414\,656 z^2 + 3\,350\,592 z - 3\,994\,515\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9848.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) = \frac{1}{471\,859\,200\, z^{3/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(262\,144\, z^{9/2} - 65\,536\, z^4 - 4\,128\,768\, z^{7/2} + 983\,040\, z^3 - 7\,464\,960\, z^{5/2} + 2\,434\,560\, z^2 - 21\,415\,680\, z^{3/2} + \right.\right.\right. $$
$$ \left.\left.\left. 8\,058\,240\, z - 35\,711\,100\sqrt{z} + e^{4\sqrt{z}}\left(262\,144\, z^{9/2} + 65\,536\, z^4 - 4\,128\,768\, z^{7/2} - 983\,040\, z^3 - 7\,464\,960\, z^{5/2} - \right.\right.\right.\right. $$
$$ \left.\left.\left.\left. 2\,434\,560\, z^2 - 21\,415\,680\, z^{3/2} - 8\,058\,240\, z - 35\,711\,100\sqrt{z} - 17\,453\,475\right) + 17\,453\,475\right) - e^{2\sqrt{z}}\sqrt{2\pi} $$
$$ \left(1\,048\,576\, z^5 - 16\,711\,680\, z^4 - 27\,156\,480\, z^3 - 76\,377\,600\, z^2 - 107\,406\,000\, z - 17\,453\,475\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}} $$
$$ \left.\sqrt{2\pi}\left(1\,048\,576\, z^5 - 16\,711\,680\, z^4 - 27\,156\,480\, z^3 - 76\,377\,600\, z^2 - 107\,406\,000\, z - 17\,453\,475\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9849.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, \frac{7}{4}; -z\right) = \frac{1}{117\,964\,800\, z^{3/4}} $$
$$ \left(-\sqrt{\pi}\left(1\,048\,576\, z^5 + 16\,711\,680\, z^4 - 27\,156\,480\, z^3 + 76\,377\,600\, z^2 - 107\,406\,000\, z + 17\,453\,475\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536\, z^4 + 1\,032\,192\, z^3 - 1\,866\,240\, z^2 + 5\,353\,920\, z - 8\,927\,775\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left(65\,536\, z^4 + 983\,040\, z^3 - 2\,434\,560\, z^2 + 8\,058\,240\, z - 17\,453\,475\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9850.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) = \frac{1}{191\,600\,640\sqrt{2}\, z^{3/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576\, z^5 - 19\,070\,976\, z^4 - 21\,897\,216\, z^3 - 83\,381\,760\, z^2 - 98\,760\,816\, z + 170\,924\,985\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. \right. $$
$$ 3\left(-1\,048\,576\, z^5 + 18\,153\,472\, z^4 + 37\,036\,032\, z^3 + 123\,830\,784\, z^2 + 253\,638\,000\, z + 34\,459\,425\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\left(-1\,048\,576\, z^5 + 18\,284\,544\, z^4 + 35\,168\,256\, z^3 + 115\,416\,576\, z^2 + 215\,051\,760\, z + 103\,378\,275\right) $$
$$ \left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9851.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, \frac{9}{4}; -z\right) = \frac{1}{191\,600\,640\sqrt{2}\, z^{3/4}} $$
$$ \left(\left(-2\sqrt{z}\left(1\,048\,576\, z^5 + 19\,070\,976\, z^4 - 21\,897\,216\, z^3 + 83\,381\,760\, z^2 - 98\,760\,816\, z - 170\,924\,985\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. \right. $$
$$ 3\left(1\,048\,576\, z^5 + 18\,153\,472\, z^4 - 37\,036\,032\, z^3 + 123\,830\,784\, z^2 - 253\,638\,000\, z + 34\,459\,425\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ 2\sqrt{z}\left(1\,048\,576\, z^5 + 18\,284\,544\, z^4 - 35\,168\,256\, z^3 + 115\,416\,576\, z^2 - 215\,051\,760\, z + 103\,378\,275\right) $$
$$ \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9852.01

$$
{}_1F_2\left(-\frac{17}{4};-\frac{5}{2},\frac{11}{4};z\right)=
$$

$$
-\frac{1}{181\,193\,932\,800\,z^{7/4}}\left(7\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304\,z^{11/2}-1\,048\,576\,z^5-79\,429\,632\,z^{9/2}+19\,070\,976\,z^4-\right.\right.\right.
$$

$$
176\,259\,072\,z^{7/2}+55\,664\,640\,z^3-663\,828\,480\,z^{5/2}+230\,376\,960\,z^2-1\,544\,114\,880\,z^{3/2}+
$$

$$
726\,064\,560\,z-1\,186\,836\,300\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-79\,429\,632\,z^{9/2}-\right.
$$

$$
19\,070\,976\,z^4-176\,259\,072\,z^{7/2}-55\,664\,640\,z^3-663\,828\,480\,z^{5/2}-230\,376\,960\,z^2-
$$

$$
\left.1\,544\,114\,880\,z^{3/2}-726\,064\,560\,z-1\,186\,836\,300\sqrt{z}+890\,127\,225\right)-890\,127\,225\Big)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-320\,864\,256\,z^5-651\,755\,520\,z^4-2\,444\,083\,200\,z^3-5\,155\,488\,000\,z^2-\right.
$$

$$
1\,675\,533\,600\,z+890\,127\,225\Big)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-320\,864\,256\,z^5-
$$

$$
\left.\left.651\,755\,520\,z^4-2\,444\,083\,200\,z^3-5\,155\,488\,000\,z^2-1\,675\,533\,600\,z+890\,127\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)
$$

07.22.03.9853.01

$$
{}_1F_2\left(-\frac{17}{4};-\frac{5}{2},\frac{11}{4};-z\right)=
$$

$$
-\frac{1}{45\,298\,483\,200\,z^{7/4}}\left(7\left(\sqrt{\pi}\left(16\,777\,216\,z^6+320\,864\,256\,z^5-651\,755\,520\,z^4+2\,444\,083\,200\,z^3-5\,155\,488\,000\,z^2+\right.\right.\right.
$$

$$
\left.1\,675\,533\,600\,z+890\,127\,225\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}
$$

$$
\left(4\sqrt{z}\left(1\,048\,576\,z^5+19\,857\,408\,z^4-44\,064\,768\,z^3+165\,957\,120\,z^2-386\,028\,720\,z+296\,709\,075\right)\cos\left(2\sqrt{z}\right)+\right.
$$

$$
\left.\left.\left.\left(1\,048\,576\,z^5+19\,070\,976\,z^4-55\,664\,640\,z^3+230\,376\,960\,z^2-726\,064\,560\,z-890\,127\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)
$$

07.22.03.9854.01

$$
{}_1F_2\left(-\frac{17}{4};-\frac{5}{2},\frac{13}{4};z\right)=\frac{1}{8\,856\,207\,360\sqrt{2}\,z^{7/4}}
$$

$$
\left(\left(2\sqrt{z}\left(16\,777\,216\,z^6-358\,612\,992\,z^5-554\,237\,952\,z^4-2\,671\,460\,352\,z^3-5\,398\,348\,032\,z^2+4\,959\,995\,040\,z+\right.\right.\right.
$$

$$
\left.1\,964\,187\,225\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216\,z^6-343\,932\,928\,z^5-843\,251\,712\,z^4-3\,576\,004\,608\,z^3-\right.
$$

$$
9\,698\,008\,320\,z^2-8\,821\,612\,800\,z+3\,273\,645\,375\Big)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-16\,777\,216\,z^6+346\,030\,080\,z^5+
$$

$$
\left.\left.\left.806\,682\,624\,z^4+3\,389\,571\,072\,z^3+8\,623\,929\,600\,z^2+5\,513\,508\,000\,z-9\,820\,936\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)
$$

07.22.03.9855.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, \frac{13}{4}; -z\right) = \frac{1}{8\,856\,207\,360\sqrt{2}\,z^{7/4}}\left(\left(-2\sqrt{z}\left(16\,777\,216 z^6 + 358\,612\,992 z^5 - 554\,237\,952 z^4 + 2\,671\,460\,352 z^3 - 5\,398\,348\,032 z^2 - 4\,959\,995\,040 z + 1\,964\,187\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,777\,216 z^6 + 343\,932\,928 z^5 - 843\,251\,712 z^4 + 3\,576\,004\,608 z^3 - 9\,698\,008\,320 z^2 + 8\,821\,612\,800 z + 3\,273\,645\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(16\,777\,216 z^6 + 346\,030\,080 z^5 - 806\,682\,624 z^4 + 3\,389\,571\,072 z^3 - 8\,623\,929\,600 z^2 + 5\,513\,508\,000 z + 9\,820\,936\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9856.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, \frac{15}{4}; z\right) = -\frac{1}{11\,596\,411\,699\,200 z^{11/4}}\left(11 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(67\,108\,864 z^{13/2} - 16\,777\,216 z^6 - 1\,484\,783\,616 z^{11/2} + 358\,612\,992 z^5 - 3\,903\,062\,016 z^{9/2} + 1\,201\,471\,488 z^4 - 18\,236\,768\,256 z^{7/2} + 5\,960\,908\,800 z^3 - 54\,547\,153\,920 z^{5/2} + 22\,936\,193\,280 z^2 - 53\,170\,266\,240 z^{3/2} + 39\,877\,699\,680 z + 174\,464\,936\,100\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 - 1\,484\,783\,616 z^{11/2} - 358\,612\,992 z^5 - 3\,903\,062\,016 z^{9/2} - 1\,201\,471\,488 z^4 - 18\,236\,768\,256 z^{7/2} - 5\,960\,908\,800 z^3 - 54\,547\,153\,920 z^{5/2} - 22\,936\,193\,280 z^2 - 53\,170\,266\,240 z^{3/2} - 39\,877\,699\,680 z + 174\,464\,936\,100\sqrt{z} - 130\,848\,702\,075\right) + 130\,848\,702\,075\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 5\,989\,466\,112 z^6 - 14\,599\,323\,648 z^5 - 68\,434\,329\,600 z^4 - 192\,471\,552\,000 z^3 - 93\,829\,881\,600 z^2 + 99\,694\,249\,200 z - 130\,848\,702\,075\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 5\,989\,466\,112 z^6 - 14\,599\,323\,648 z^5 - 68\,434\,329\,600 z^4 - 192\,471\,552\,000 z^3 - 93\,829\,881\,600 z^2 + 99\,694\,249\,200 z - 130\,848\,702\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9857.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, \frac{15}{4}; -z\right) = -\frac{1}{2\,899\,102\,924\,800 z^{11/4}}\left(11\left(\sqrt{\pi}\left(268\,435\,456 z^7 + 5\,989\,466\,112 z^6 - 14\,599\,323\,648 z^5 + 68\,434\,329\,600 z^4 - 192\,471\,552\,000 z^3 + 93\,829\,881\,600 z^2 + 99\,694\,249\,200 z + 130\,848\,702\,075\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216 z^6 + 371\,195\,904 z^5 - 975\,765\,504 z^4 + 4\,559\,192\,064 z^3 - 13\,636\,788\,480 z^2 + 13\,292\,566\,560 z + 43\,616\,234\,025\right)\cos\left(2\sqrt{z}\right) + \left(16\,777\,216 z^6 + 358\,612\,992 z^5 - 1\,201\,471\,488 z^4 + 5\,960\,908\,800 z^3 - 22\,936\,193\,280 z^2 + 39\,877\,699\,680 z - 130\,848\,702\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.9858.01

$${}_1F_2\left(-\frac{17}{4};-\frac{5}{2},\frac{17}{4};z\right)=$$
$$\left(\left(2\sqrt{z}\left(268\,435\,456\,z^7-6\,593\,445\,888\,z^6-12\,825\,133\,056\,z^5-74\,438\,737\,920\,z^4-208\,224\,276\,480\,z^3+\right.\right.\right.$$
$$\left.99\,672\,249\,600\,z^2+597\,112\,916\,400\,z-406\,586\,755\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$3\left(-268\,435\,456\,z^7+6\,358\,564\,864\,z^6+18\,198\,036\,480\,z^5+93\,637\,509\,120\,z^4+316\,201\,881\,600\,z^3+\right.$$
$$\left.361\,686\,124\,800\,z^2-1\,477\,068\,793\,200\,z+677\,644\,592\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(-268\,435\,456\,z^7+6\,392\,119\,296\,z^6+17\,505\,976\,320\,z^5+89\,738\,772\,480\,z^4+290\,080\,051\,200\,z^3+\right.$$
$$\left.\left.\left.223\,060\,780\,800\,z^2-94\,280\,986\,800\,z+2\,032\,933\,777\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(326\,998\,425\,600\sqrt{2}\,z^{11/4}\right)$$

07.22.03.9859.01

$${}_1F_2\left(-\frac{17}{4};-\frac{5}{2},\frac{17}{4};-z\right)=$$
$$-\left(\left(2\sqrt{z}\left(268\,435\,456\,z^7+6\,593\,445\,888\,z^6-12\,825\,133\,056\,z^5+74\,438\,737\,920\,z^4-208\,224\,276\,480\,z^3-\right.\right.\right.$$
$$\left.99\,672\,249\,600\,z^2+597\,112\,916\,400\,z+406\,586\,755\,575\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\left(268\,435\,456\,z^7+6\,358\,564\,864\,z^6-18\,198\,036\,480\,z^5+93\,637\,509\,120\,z^4-316\,201\,881\,600\,z^3+\right.$$
$$\left.361\,686\,124\,800\,z^2+1\,477\,068\,793\,200\,z+677\,644\,592\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(268\,435\,456\,z^7+6\,392\,119\,296\,z^6-17\,505\,976\,320\,z^5+89\,738\,772\,480\,z^4-290\,080\,051\,200\,z^3+\right.$$
$$\left.\left.\left.223\,060\,780\,800\,z^2+94\,280\,986\,800\,z+2\,032\,933\,777\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(326\,998\,425\,600\sqrt{2}\,z^{11/4}\right)$$

07.22.03.9860.01

$$
{}_1F_2\left(-\frac{17}{4};-\frac{5}{2},\frac{19}{4};z\right)=
$$

$$
-\Big(11\,e^{-2\sqrt{z}}\Big(4\sqrt[4]{z}\Big(1\,073\,741\,824\,z^{15/2}-268\,435\,456\,z^{7}-27\,179\,089\,920\,z^{13/2}+6\,593\,445\,888\,z^{6}-82\,556\,485\,632\,z^{11/2}+
$$

$$
24\,892\,145\,664\,z^{5}-461\,084\,295\,168\,z^{9/2}+144\,155\,934\,720\,z^{4}-1\,690\,106\,019\,840\,z^{7/2}+
$$

$$
644\,138\,127\,360\,z^{3}-1\,843\,235\,896\,320\,z^{5/2}+1\,736\,895\,363\,840\,z^{2}+
$$

$$
398\,776\,996\,800\,z^{3/2}-21\,633\,652\,076\,400\,z-47\,977\,857\,427\,500\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\Big(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-27\,179\,089\,920\,z^{13/2}-6\,593\,445\,888\,z^{6}-82\,556\,485\,632\,z^{11/2}-
$$

$$
24\,892\,145\,664\,z^{5}-461\,084\,295\,168\,z^{9/2}-144\,155\,934\,720\,z^{4}-1\,690\,106\,019\,840\,z^{7/2}-
$$

$$
644\,138\,127\,360\,z^{3}-1\,843\,235\,896\,320\,z^{5/2}-1\,736\,895\,363\,840\,z^{2}+398\,776\,996\,800\,z^{3/2}+
$$

$$
21\,633\,652\,076\,400\,z-47\,977\,857\,427\,500\sqrt{z}\;+35\,983\,393\,070\,625\Big)-35\,983\,393\,070\,625\Big)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\,\Big(4\,294\,967\,296\,z^{8}-109\,521\,666\,048\,z^{7}-311\,452\,237\,824\,z^{6}-1\,751\,918\,837\,760\,z^{5}-
$$

$$
6\,159\,089\,664\,000\,z^{4}-4\,003\,408\,281\,600\,z^{3}+6\,380\,431\,948\,800\,z^{2}-
$$

$$
16\,748\,633\,865\,600\,z+35\,983\,393\,070\,625\Big)\operatorname{erf}\Big(\sqrt{2}\,\sqrt[4]{z}\Big)-
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\,\Big(4\,294\,967\,296\,z^{8}-109\,521\,666\,048\,z^{7}-311\,452\,237\,824\,z^{6}-1\,751\,918\,837\,760\,z^{5}-
$$

$$
6\,159\,089\,664\,000\,z^{4}-4\,003\,408\,281\,600\,z^{3}+6\,380\,431\,948\,800\,z^{2}-
$$

$$
16\,748\,633\,865\,600\,z+35\,983\,393\,070\,625\Big)\operatorname{erfi}\Big(\sqrt{2}\,\sqrt[4]{z}\Big)\Big)\Big)\Big/\Big(395\,824\,185\,999\,360\,z^{15/4}\Big)
$$

07.22.03.9861.01

$$
{}_1F_2\left(-\frac{17}{4};-\frac{5}{2},\frac{19}{4};-z\right)=-\frac{1}{98\,956\,046\,499\,840\,z^{15/4}}
$$

$$
\Bigg(11\Bigg(\sqrt{\pi}\,\Big(4\,294\,967\,296\,z^{8}+109\,521\,666\,048\,z^{7}-311\,452\,237\,824\,z^{6}+1\,751\,918\,837\,760\,z^{5}-6\,159\,089\,664\,000\,z^{4}+
$$

$$
4\,003\,408\,281\,600\,z^{3}+6\,380\,431\,948\,800\,z^{2}+16\,748\,633\,865\,600\,z+35\,983\,393\,070\,625\Big)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$

$$
2\sqrt[4]{z}\,\Big(4\sqrt{z}\,\Big(268\,435\,456\,z^{7}+6\,794\,772\,480\,z^{6}-20\,639\,121\,408\,z^{5}+115\,271\,073\,792\,z^{4}-
$$

$$
422\,526\,504\,960\,z^{3}+460\,808\,974\,080\,z^{2}+99\,694\,249\,200\,z+11\,994\,464\,356\,875\Big)\cos\Big(2\sqrt{z}\Big)+
$$

$$
\Big(268\,435\,456\,z^{7}+6\,593\,445\,888\,z^{6}-24\,892\,145\,664\,z^{5}+144\,155\,934\,720\,z^{4}-644\,138\,127\,360\,z^{3}+
$$

$$
1\,736\,895\,363\,840\,z^{2}+21\,633\,652\,076\,400\,z-35\,983\,393\,070\,625\Big)\sin\Big(2\sqrt{z}\Big)\Big)\Bigg)\Bigg)
$$

07.22.03.9862.01

$${}_1F_2\left(-\frac{17}{4};-\frac{5}{2},\frac{21}{4};z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-119\,185\,342\,464\,z^7-279\,642\,636\,288\,z^6-1\,894\,193\,823\,744\,z^5-6\,716\,756\,459\,520\,z^4+\right.\right.\right.$$
$$\left.1\,118\,582\,784\,000\,z^3+26\,147\,260\,339\,200\,z^2-182\,150\,866\,497\,600\,z+142\,711\,951\,206\,825\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\left(4\,294\,967\,296\,z^8-115\,427\,246\,080\,z^7-377\,588\,023\,296\,z^6-2\,286\,724\,055\,040\,z^5-9\,259\,293\,081\,600\,z^4-\right.$$
$$\left.11\,735\,265\,484\,800\,z^3+5\,028\,319\,296\,000\,z^2-472\,724\,867\,815\,200\,z+237\,853\,252\,011\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-4\,294\,967\,296\,z^8+115\,964\,116\,992\,z^7+364\,803\,784\,704\,z^6+2\,208\,301\,056\,000\,z^5+\right.$$
$$8\,668\,377\,907\,200\,z^4+7\,830\,842\,572\,800\,z^3-5\,171\,985\,561\,600\,z^2-104\,086\,209\,427\,200\,z-$$
$$\left.\left.\left.713\,559\,756\,034\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(10\,463\,949\,619\,200\sqrt{2}\;z^{15/4}\right)$$

07.22.03.9863.01

$${}_1F_2\left(-\frac{17}{4};-\frac{5}{2},\frac{21}{4};-z\right)=$$

$$\left(\left(-2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+119\,185\,342\,464\,z^7-279\,642\,636\,288\,z^6+1\,894\,193\,823\,744\,z^5-6\,716\,756\,459\,520\,z^4-\right.\right.\right.$$
$$\left.1\,118\,582\,784\,000\,z^3+26\,147\,260\,339\,200\,z^2+182\,150\,866\,497\,600\,z+142\,711\,951\,206\,825\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$3\left(4\,294\,967\,296\,z^8+115\,427\,246\,080\,z^7-377\,588\,023\,296\,z^6+2\,286\,724\,055\,040\,z^5-9\,259\,293\,081\,600\,z^4+\right.$$
$$\left.11\,735\,265\,484\,800\,z^3+5\,028\,319\,296\,000\,z^2+472\,724\,867\,815\,200\,z+237\,853\,252\,011\,375\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+115\,964\,116\,992\,z^7-364\,803\,784\,704\,z^6+\right.$$
$$2\,208\,301\,056\,000\,z^5-8\,668\,377\,907\,200\,z^4+7\,830\,842\,572\,800\,z^3+5\,171\,985\,561\,600\,z^2-$$
$$\left.\left.\left.104\,086\,209\,427\,200\,z+713\,559\,756\,034\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(10\,463\,949\,619\,200\sqrt{2}\;z^{15/4}\right)$$

07.22.03.9864.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{5}{2}, \frac{23}{4}; z\right) = $$

$$ -\left(209\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(17\,179\,869\,184\, z^{17/2} - 4\,294\,967\,296\, z^8 - 489\,626\,271\,744\, z^{15/2} + 119\,185\,342\,464\, z^7 - 1\,687\,116\,840\,960\right.\right.\right. $$
$$ z^{13/2} + 500\,095\,254\,528\, z^6 - 10\,970\,386\,661\,376\, z^{11/2} + 3\,316\,415\,201\,280\, z^5 - 47\,692\,720\,373\,760\, z^{9/2} + $$
$$ 16\,834\,845\,081\,600\, z^4 - 57\,238\,473\,277\,440\, z^{7/2} + 50\,781\,694\,279\,680\, z^3 - 8\,507\,242\,598\,400\, z^{5/2} - $$
$$ 80\,818\,804\,684\,800\, z^2 + 2\,631\,928\,178\,880\,000\, z^{3/2} + 11\,514\,685\,782\,600\,000\, z + 20\,870\,367\,980\,962\,500\sqrt{z} + $$
$$ e^{4\sqrt{z}} \left(17\,179\,869\,184\, z^{17/2} + 4\,294\,967\,296\, z^8 - 489\,626\,271\,744\, z^{15/2} - 119\,185\,342\,464\, z^7 - \right. $$
$$ 1\,687\,116\,840\,960\, z^{13/2} - 500\,095\,254\,528\, z^6 - 10\,970\,386\,661\,376\, z^{11/2} - 3\,316\,415\,201\,280\, z^5 - $$
$$ 47\,692\,720\,373\,760\, z^{9/2} - 16\,834\,845\,081\,600\, z^4 - 57\,238\,473\,277\,440\, z^{7/2} - 50\,781\,694\,279\,680\, z^3 - $$
$$ 8\,507\,242\,598\,400\, z^{5/2} + 80\,818\,804\,684\,800\, z^2 + 2\,631\,928\,178\,880\,000\, z^{3/2} - 11\,514\,685\,782\,600\,000\, z + $$
$$ \left.\left.\left.\

07.22.03.9866.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{31\,798\,305\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(262\,144 z^5 + 4\,702\,208 z^4 + 17\,504\,256 z^3 - 63\,257\,040 z^2 + 79\,265\,340 z - 31\,798\,305\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$12\sqrt{z}\left(32\,768 z^4 + 616\,448 z^3 + 2\,008\,160 z^2 - 12\,289\,200 z + 10\,599\,435\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(65\,536 z^4 + 1\,224\,704 z^3 + 5\,322\,240 z^2 + 5\,530\,140 z + 31\,798\,305\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9867.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{31\,798\,305\sqrt[4]{z}}\left(\sqrt{2}\left(\left(262\,144 z^5 - 4\,702\,208 z^4 + 17\,504\,256 z^3 + 63\,257\,040 z^2 + 79\,265\,340 z + 31\,798\,305\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$12\sqrt{z}\left(32\,768 z^4 - 616\,448 z^3 + 2\,008\,160 z^2 + 12\,289\,200 z + 10\,599\,435\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(65\,536 z^4 - 1\,224\,704 z^3 + 5\,322\,240 z^2 - 5\,530\,140 z + 31\,798\,305\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9868.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, -\frac{21}{4}; z\right) = \left(\frac{92 z}{63} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{63}\sqrt{z}\,(8 z + 63)\sinh\left(2\sqrt{z}\right)$$

07.22.03.9869.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, -\frac{21}{4}; -z\right) = \left(1 - \frac{92 z}{63}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{63}(63 - 8 z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.9870.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{4\,147\,605\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(131\,072 z^5 + 1\,376\,256 z^4 + 3\,451\,392 z^3 - 9\,857\,232 z^2 + 10\,769\,220 z - 4\,147\,605\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$12\sqrt{z}\left(16\,384 z^4 + 186\,368 z^3 + 606\,144 z^2 - 1\,746\,360 z + 1\,382\,535\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(32\,768 z^4 + 368\,640 z^3 + 1\,153\,152 z^2 + 291\,060 z + 4\,147\,605\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9871.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, -\frac{19}{4}; -z\right) = \frac{1}{4\,147\,605\sqrt[4]{z}}\left(\sqrt{2}\left(\left(131\,072 z^5 - 1\,376\,256 z^4 + 3\,451\,392 z^3 + 9\,857\,232 z^2 + 10\,769\,220 z + 4\,147\,605\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(16\,384 z^4 - 186\,368 z^3 + 606\,144 z^2 + 1\,746\,360 z + 1\,382\,535\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(32\,768 z^4 - 368\,640 z^3 + 1\,153\,152 z^2 - 291\,060 z + 4\,147\,605\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9872.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, -\frac{17}{4}; z\right) = \left(\frac{4z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right) $$

07.22.03.9873.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, -\frac{17}{4}; -z\right) = \left(1 - \frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.9874.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, -\frac{15}{4}; z\right) = \frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(65\,536 z^5 + 200\,704 z^4 + 263\,424 z^3 - 670\,320 z^2 + 601\,524 z - 218\,295\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(8192 z^4 + 32\,256 z^3 + 66\,976 z^2 - 103\,488 z + 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(16\,384 z^4 + 62\,464 z^3 + 119\,616 z^2 - 19\,404 z + 218\,295\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9875.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, -\frac{15}{4}; -z\right) = \frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536 z^5 - 200\,704 z^4 + 263\,424 z^3 + 670\,320 z^2 + 601\,524 z + 218\,295\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(8192 z^4 - 32\,256 z^3 + 66\,976 z^2 + 103\,488 z + 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(16\,384 z^4 - 62\,464 z^3 + 119\,616 z^2 + 19\,404 z + 218\,295\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9876.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, -\frac{13}{4}; z\right) = \frac{1}{73\,710}\left(e^{-2\sqrt{z}}\left(16\,384 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} - 16\,384 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} + 16\,384 e^{4\sqrt{z}} z^4 + 16\,384 z^4 + 4096 e^{4\sqrt{z}} z^{7/2} - 4096 z^{7/2} + 3072 e^{4\sqrt{z}} z^3 + 3072 z^3 + 3840 e^{4\sqrt{z}} z^{5/2} - 3840 z^{5/2} + 6720 e^{4\sqrt{z}} z^2 + 6720 z^2 + 15\,120 e^{4\sqrt{z}} z^{3/2} - 15\,120 z^{3/2} + 41\,580 e^{4\sqrt{z}} z + 41\,580 z - 73\,710 e^{4\sqrt{z}}\sqrt{z} + 73\,710\sqrt{z} + 36\,855 e^{4\sqrt{z}} + 36\,855\right)\right) $$

07.22.03.9877.01

$${}_1F_2\left(-\frac{17}{4};-\frac{3}{2},-\frac{13}{4};-z\right)=\frac{1}{36\,855}\left(32\,768\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}+\right.$$
$$\left.2\left(2048z^3-1920z^2+7560z+36\,855\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(16\,384z^4-3072z^3+6720z^2-41\,580z+36\,855\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9878.01

$${}_1F_2\left(-\frac{17}{4};-\frac{3}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{14\,553\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768z^5-143\,360z^4-5376z^3+67\,536z^2-44\,100z+14\,553\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\right.\right.$$
$$\left(4096z^4-14\,336z^3-10\,304z^2+8232z-4851\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(-8192z^4+29\,696z^3+20\,160z^2-5292z+14\,553\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9879.01

$${}_1F_2\left(-\frac{17}{4};-\frac{3}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{14\,553\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32\,768z^5-143\,360z^4+5376z^3+67\,536z^2+44\,100z+14\,553\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\right.\right.$$
$$\sqrt{z}\left(4096z^4+14\,336z^3-10\,304z^2-8232z-4851\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(-8192z^4-29\,696z^3+20\,160z^2+5292z+14\,553\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9880.01

$${}_1F_2\left(-\frac{17}{4};-\frac{3}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{5670}\left(e^{-2\sqrt{z}}\left(-4096e^{4\sqrt{z}}z^4-4096z^4-1024e^{4\sqrt{z}}z^{7/2}+1024z^{7/2}-256e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-119)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+\right.\right.$$
$$256e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-119)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+29\,696e^{4\sqrt{z}}z^3+29\,696z^3+$$
$$6656e^{4\sqrt{z}}z^{5/2}-6656z^{5/2}+4032e^{4\sqrt{z}}z^2+4032z^2+3360e^{4\sqrt{z}}z^{3/2}-3360z^{3/2}+$$
$$\left.\left.2100e^{4\sqrt{z}}z+2100z-5670e^{4\sqrt{z}}\sqrt{z}+5670\sqrt{z}+2835e^{4\sqrt{z}}+2835\right)\right)$$

07.22.03.9881.01

$${}_1F_2\left(-\frac{17}{4};-\frac{3}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{2835}\left(-512\sqrt{\pi}\,(16z+119)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}+2\left(-512z^3-3328z^2+1680z+2835\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(-4096z^4-29\,696z^3+4032z^2-2100z+2835\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9882.01

$${}_1F_2\left(-\frac{17}{4};-\frac{3}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{3969\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16384z^5+193536z^4-225792z^3+43344z^2-14364z+3969\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\right.\right.$$
$$\left(2048z^4-22400z^3+10080z^2-3024z+1323\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(4096z^4-45312z^3+24192z^2-3780z+3969\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9883.01

$${}_1F_2\left(-\frac{17}{4};-\frac{3}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{3969\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16384z^5+193536z^4+225792z^3+43344z^2+14364z+3969\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\right.\right.$$
$$\left(2048z^4+22400z^3+10080z^2+3024z+1323\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(4096z^4+45312z^3+24192z^2+3780z+3969\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9884.01

$${}_1F_2\left(-\frac{17}{4};-\frac{3}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{630}e^{-2\sqrt{z}}\left(512e^{4\sqrt{z}}z^4+512z^4+128e^{4\sqrt{z}}z^{7/2}-128z^{7/2}-7520e^{4\sqrt{z}}z^3-7520z^3-1784e^{4\sqrt{z}}z^{5/2}+1784z^{5/2}+\right.$$
$$2e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-3808z+4641\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-2e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-3808z+4641\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+$$
$$\left.8064e^{4\sqrt{z}}z^2+8064z^2+1008e^{4\sqrt{z}}z^{3/2}-1008z^{3/2}-84e^{4\sqrt{z}}z-84z-630e^{4\sqrt{z}}\sqrt{z}+630\sqrt{z}+315e^{4\sqrt{z}}+315\right)$$

07.22.03.9885.01

$${}_1F_2\left(-\frac{17}{4};-\frac{3}{2},-\frac{5}{4};-z\right)=\frac{1}{315}\left(4\sqrt{\pi}\left(256z^2+3808z+4641\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+\right.$$
$$\left.2\left(64z^3+892z^2+504z+315\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(512z^4+7520z^3+8064z^2+84z+315\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9886.01

$${}_1F_2\left(-\frac{17}{4};-\frac{3}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{2835\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192z^5-157696z^4+375648z^3-115920z^2-16380z+2835\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\right.\right.$$
$$\left(1024z^4-18816z^3+31220z^2+4200z-945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4z\left(2048z^4-37888z^3+66360z^2+8820z-2835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9887.01

$${}_1F_2\left(-\frac{17}{4};-\frac{3}{2},-\frac{3}{4};-z\right)=$$
$$-\frac{1}{2835\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192z^5+157\,696z^4+375\,648z^3+115\,920z^2-16\,380z-2835\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\right.\right.$$
$$\left(1024z^4+18\,816z^3+31\,220z^2-4200z-945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(2048z^4+37\,888z^3+66\,360z^2-8820z-2835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9888.01

$${}_1F_2\left(-\frac{17}{4};-\frac{3}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{12\,096}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-91\,392z^2+222\,768z+41\,769\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left(4096z^3-91\,392z^2+222\,768z+41\,769\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-$$
$$4\left(1024z^4-256z^{7/2}-22\,656z^3+5472z^{5/2}+51\,828z^2-9513z^{3/2}+14\,112z-3024\sqrt{z}+e^{4\sqrt{z}}\right.$$
$$\left.\left.\left.\left(1024z^4+256z^{7/2}-22\,656z^3-5472z^{5/2}+51\,828z^2+9513z^{3/2}+14\,112z+3024\sqrt{z}-1512\right)-1512\right)\right)\right)$$

07.22.03.9889.01

$${}_1F_2\left(-\frac{17}{4};-\frac{3}{2},-\frac{1}{4};-z\right)=\frac{1}{3024}\left(-\sqrt{\pi}\left(4096z^3+91\,392z^2+222\,768z-41\,769\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}-\right.$$
$$\left.2\left(4\left(256z^4+5664z^3+12\,957z^2-3528z-378\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\left(256z^3+5472z^2+9513z-3024\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.9890.01

$${}_1F_2\left(-\frac{17}{4};-\frac{3}{2},\frac{1}{4};z\right)=\frac{1}{6615\sqrt{2}\sqrt[4]{z}}\left(\left(2\left(-4096z^5+109\,312z^4-393\,456z^3+91\,161z^2+61\,740z+6615\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$3\sqrt{z}\left(4096z^4-105\,728z^3+303\,856z^2+118\,545z+17\,640\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2z\left(4096z^4-106\,240z^3+315\,504z^2+108\,675z+26\,460\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9891.01

$${}_1F_2\left(-\frac{17}{4};-\frac{3}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{6615\sqrt{2}\sqrt[4]{z}}\left(\left(2\left(4096z^5+109\,312z^4+393\,456z^3+91\,161z^2-61\,740z+6615\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\right.\right.$$
$$\left(4096z^4+105\,728z^3+303\,856z^2-118\,545z+17\,640\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2z\left(4096z^4+106\,240z^3+315\,504z^2-108\,675z+26\,460\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9892.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{3}{4}; z\right) = \frac{1}{3\,096\,576}\left(e^{-2\sqrt{z}}\left(4\left(16\,384 z^4 - 4096 z^{7/2} - 484\,352 z^3 + 118\,016 z^{5/2} + 1\,697\,472 z^2 - 346\,416 z^{3/2} + 844\,116 z - 270\,081\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^4 + 4096 z^{7/2} - 484\,352 z^3 - 118\,016 z^{5/2} + 1\,697\,472 z^2 + 346\,416 z^{3/2} + 844\,116 z + 270\,081\sqrt{z} + 387\,072\right) + 387\,072\right) + e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(65\,536 z^4 - 1\,949\,696 z^3 + 7\,128\,576 z^2 + 2\,673\,216 z + 1\,044\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(65\,536 z^4 - 1\,949\,696 z^3 + 7\,128\,576 z^2 + 2\,673\,216 z + 1\,044\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9893.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{3}{4}; -z\right) = \frac{1}{774\,144}\left(8\left(4096 z^4 + 121\,088 z^3 + 424\,368 z^2 - 211\,029 z + 96\,768\right)\cos\left(2\sqrt{z}\right) + \sqrt{\pi}\sqrt[4]{z}\left(65\,536 z^4 + 1\,949\,696 z^3 + 7\,128\,576 z^2 - 2\,673\,216 z + 1\,044\,225\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt{z}\left(4096 z^3 + 118\,016 z^2 + 346\,416 z - 270\,081\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.9894.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{5}{4}; z\right) = \frac{1}{1\,905\,120\sqrt{2}\sqrt[4]{z}}\left(\left(\left(-131\,072 z^5 + 4\,472\,832 z^4 - 21\,547\,008 z^3 + 2\,197\,440 z^2 + 2\,770\,362 z + 3\,810\,240\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(65\,536 z^4 - 2\,179\,072 z^3 + 8\,913\,408 z^2 + 5\,455\,296 z + 3\,618\,405\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(65\,536 z^4 - 2\,187\,264 z^3 + 9\,160\,704 z^2 + 4\,977\,504 z + 3\,234\,735\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9895.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{5}{4}; -z\right) = \frac{1}{1\,905\,120\sqrt{2}\sqrt[4]{z}}\left(\left(2\left(65\,536 z^5 + 2\,236\,416 z^4 + 10\,773\,504 z^3 + 1\,098\,720 z^2 - 1\,385\,181 z + 1\,905\,120\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(65\,536 z^4 + 2\,179\,072 z^3 + 8\,913\,408 z^2 - 5\,455\,296 z + 3\,618\,405\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(65\,536 z^4 + 2\,187\,264 z^3 + 9\,160\,704 z^2 - 4\,977\,504 z + 3\,234\,735\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9896.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{7}{4}; z\right) = \frac{1}{330\,301\,440\, z^{3/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(262\,144\, z^{9/2} - 65\,536\, z^4 - 9\,699\,328\, z^{7/2} + 2\,375\,680\, z^3 + 45\,803\,520\, z^{5/2} - 9\,838\,080\, z^2 + 32\,309\,760\, z^{3/2} - 10\,987\,200\, z + 28\,756\,980\sqrt{z} + e^{4\sqrt{z}}\left(262\,144\, z^{9/2} + 65\,536\, z^4 - 9\,699\,328\, z^{7/2} - 2\,375\,680\, z^3 + 45\,803\,520\, z^{5/2} + 9\,838\,080\, z^2 + 32\,309\,760\, z^{3/2} + 10\,987\,200\, z + 28\,756\,980\sqrt{z} + 9\,398\,025\right) - 9\,398\,025\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 - 38\,993\,920\, z^4 + 190\,095\,360\, z^3 + 106\,928\,640\, z^2 + 83\,538\,000\, z + 9\,398\,025\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi} \left(1\,048\,576\, z^5 - 38\,993\,920\, z^4 + 190\,095\,360\, z^3 + 106\,928\,640\, z^2 + 83\,538\,000\, z + 9\,398\,025\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9897.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{7}{4}; -z\right) = $$
$$ \frac{1}{82\,575\,360\, z^{3/4}}\left(\sqrt{\pi}\left(1\,048\,576\, z^5 + 38\,993\,920\, z^4 + 190\,095\,360\, z^3 - 106\,928\,640\, z^2 + 83\,538\,000\, z - 9\,398\,025\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536\, z^4 + 2\,424\,832\, z^3 + 11\,450\,880\, z^2 - 8\,077\,440\, z + 7\,189\,245\right)\cos\left(2\sqrt{z}\right) + \left(65\,536\, z^4 + 2\,375\,680\, z^3 + 9\,838\,080\, z^2 - 10\,987\,200\, z + 9\,398\,025\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9898.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{9}{4}; z\right) = \frac{1}{134\,120\,448\sqrt{2}\, z^{3/4}} $$
$$ \left(\left(-2\sqrt{z}\left(1\,048\,576\, z^5 - 43\,581\,440\, z^4 + 263\,036\,928\, z^3 + 13\,128\,192\, z^2 + 13\,582\,800\, z - 124\,471\,809\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(1\,048\,576\, z^5 - 42\,663\,936\, z^4 + 226\,451\,456\, z^3 + 185\,805\,312\, z^2 + 203\,276\,304\, z + 16\,081\,065\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576\, z^5 - 42\,795\,008\, z^4 + 231\,383\,040\, z^3 + 170\,666\,496\, z^2 + 176\,265\,936\, z + 48\,243\,195\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9899.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) = \frac{1}{134\,120\,448\sqrt{2}\, z^{3/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576\, z^5 + 43\,581\,440\, z^4 + 263\,036\,928\, z^3 - 13\,128\,192\, z^2 + 13\,582\,800\, z + 124\,471\,809\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(1\,048\,576\, z^5 + 42\,663\,936\, z^4 + 226\,451\,456\, z^3 - 185\,805\,312\, z^2 + 203\,276\,304\, z - 16\,081\,065\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576\, z^5 + 42\,795\,008\, z^4 + 231\,383\,040\, z^3 - 170\,666\,496\, z^2 + 176\,265\,936\, z - 48\,243\,195\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9900.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) = \frac{1}{18\,119\,393\,280\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(4\,194\,304\, z^{11/2} - 1\,048\,576\, z^5 - 186\,384\,384\, z^{9/2} + 45\,809\,664\, z^4 + 1\,107\,197\,952\, z^{7/2} - 245\,145\,600\, z^3 + 1\,003\,161\,600\, z^{5/2} - 343\,042\,560\, z^2 + 1\,285\,381\,440\, z^{3/2} - 511\,252\,560\, z + 488\,697\,300\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304\, z^{11/2} + 1\,048\,576\, z^5 - 186\,384\,384\, z^{9/2} - 45\,809\,664\, z^4 + 1\,107\,197\,952\, z^{7/2} + 245\,145\,600\, z^3 + 1\,003\,161\,600\, z^{5/2} + 343\,042\,560\, z^2 + 1\,285\,381\,440\, z^{3/2} + 511\,252\,560\, z + 488\,697\,300\sqrt{z} - 366\,522\,975\right) + 366\,522\,975\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\, z^6 - 748\,683\,264\, z^5 + 4\,562\,288\,640\, z^4 + 3\,421\,716\,480\, z^3 + 4\,009\,824\,000\, z^2 + 902\,210\,400\, z - 366\,522\,975\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\, z^6 - 748\,683\,264\, z^5 + 4\,562\,288\,640\, z^4 + 3\,421\,716\,480\, z^3 + 4\,009\,824\,000\, z^2 + 902\,210\,400\, z - 366\,522\,975\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9901.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) = \frac{1}{4\,529\,848\,320\, z^{7/4}} \left(\sqrt{\pi}\left(16\,777\,216\, z^6 + 748\,683\,264\, z^5 + 4\,562\,288\,640\, z^4 - 3\,421\,716\,480\, z^3 + 4\,009\,824\,000\, z^2 - 902\,210\,400\, z - 366\,522\,975\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576\, z^5 + 46\,596\,096\, z^4 + 276\,799\,488\, z^3 - 250\,790\,400\, z^2 + 321\,345\,360\, z - 122\,174\,325\right)\cos\left(2\sqrt{z}\right) + \left(1\,048\,576\, z^5 + 45\,809\,664\, z^4 + 245\,145\,600\, z^3 - 343\,042\,560\, z^2 + 511\,252\,560\, z + 366\,522\,975\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9902.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) = \frac{1}{6\,199\,345\,152\sqrt{2}\, z^{7/4}} \left(\left(-2\sqrt{z}\left(16\,777\,216\, z^6 - 822\,083\,584\, z^5 + 5\,963\,317\,248\, z^4 + 1\,271\,660\,544\, z^3 + 2\,286\,256\,896\, z^2 - 4\,552\,644\,096\, z - 723\,647\,925\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,777\,216\, z^6 - 807\,403\,520\, z^5 + 5\,268\,766\,720\, z^4 + 5\,385\,633\,792\, z^3 + 8\,023\,631\,616\, z^2 + 3\,602\,158\,560\, z - 1\,206\,079\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216\, z^6 - 809\,500\,672\, z^5 + 5\,363\,269\,632\, z^4 + 4\,985\,487\,360\, z^3 + 7\,036\,533\,504\, z^2 + 3\,087\,564\,480\, z - 3\,618\,239\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9903.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) = \frac{1}{6\,199\,345\,152\sqrt{2}\, z^{7/4}}\left(\left(2\sqrt{z}\left(16\,777\,216 z^6 + 822\,083\,584 z^5 + 5\,963\,317\,248 z^4 - 1\,271\,660\,544 z^3 + 2\,286\,256\,896 z^2 + 4\,552\,644\,096 z - 723\,647\,925\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,777\,216 z^6 + 807\,403\,520 z^5 + 5\,268\,766\,720 z^4 - 5\,385\,633\,792 z^3 + 8\,023\,631\,616 z^2 - 3\,602\,158\,560 z - 1\,206\,079\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216 z^6 + 809\,500\,672 z^5 + 5\,363\,269\,632 z^4 - 4\,985\,487\,360 z^3 + 7\,036\,533\,504 z^2 - 3\,087\,564\,480 z - 3\,618\,239\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9904.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) = \frac{1}{8\,117\,488\,189\,440 z^{11/4}}\left(11 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(67\,108\,864 z^{13/2} - 16\,777\,216 z^6 - 3\,481\,272\,320 z^{11/2} + 857\,735\,168 z^5 + 24\,921\,243\,648 z^{9/2} - 5\,630\,263\,296 z^4 + 27\,479\,703\,552 z^{7/2} - 9\,305\,210\,880 z^3 + 45\,603\,855\,360 z^{5/2} - 18\,552\,119\,040 z^2 + 28\,148\,964\,480 z^{3/2} - 5\,473\,409\,760 z - 58\,154\,978\,700\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 - 3\,481\,272\,320 z^{11/2} - 857\,735\,168 z^5 + 24\,921\,243\,648 z^{9/2} + 5\,630\,263\,296 z^4 + 27\,479\,703\,552 z^{7/2} + 9\,305\,210\,880 z^3 + 45\,603\,855\,360 z^{5/2} + 18\,552\,119\,040 z^2 + 28\,148\,964\,480 z^{3/2} + 5\,473\,409\,760 z - 58\,154\,978\,700\sqrt{z} + 43\,616\,234\,025\right) - 43\,616\,234\,025\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 13\,975\,420\,928 z^6 + 102\,195\,265\,536 z^5 + 95\,808\,061\,440 z^4 + 149\,700\,096\,000 z^3 + 50\,523\,782\,400 z^2 - 41\,050\,573\,200 z + 43\,616\,234\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 13\,975\,420\,928 z^6 + 102\,195\,265\,536 z^5 + 95\,808\,061\,440 z^4 + 149\,700\,096\,000 z^3 + 50\,523\,782\,400 z^2 - 41\,050\,573\,200 z + 43\,616\,234\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9905.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{15}{4}; -z\right) = \frac{1}{2\,029\,372\,047\,360 z^{11/4}}\left(11\left(\sqrt{\pi}\left(268\,435\,456 z^7 + 13\,975\,420\,928 z^6 + 102\,195\,265\,536 z^5 - 95\,808\,061\,440 z^4 + 149\,700\,096\,000 z^3 - 50\,523\,782\,400 z^2 - 41\,050\,573\,200 z - 43\,616\,234\,025\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216 z^6 + 870\,318\,080 z^5 + 6\,230\,310\,912 z^4 - 6\,869\,925\,888 z^3 + 11\,400\,963\,840 z^2 - 7\,037\,241\,120 z - 14\,538\,744\,675\right)\cos\left(2\sqrt{z}\right) + \left(16\,777\,216 z^6 + 857\,735\,168 z^5 + 5\,630\,263\,296 z^4 - 9\,305\,210\,880 z^3 + 18\,552\,119\,040 z^2 - 5\,473\,409\,760 z + 43\,616\,234\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.9906.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) =$$

$$\left(\left(-2\sqrt{z}\left(268\,435\,456\,z^7 - 15\,149\,826\,048\,z^6 + 128\,355\,139\,584\,z^5 + 49\,194\,270\,720\,z^4 + 111\,085\,793\,280\,z^3 - 125\,346\,735\,360\,z^2 - 196\,832\,235\,600\,z + 123\,743\,795\,175\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(268\,435\,456\,z^7 - 14\,914\,945\,024\,z^6 + 115\,495\,403\,520\,z^5 + 140\,894\,208\,000\,z^4 + 263\,685\,058\,560\,z^3 + 185\,253\,868\,800\,z^2 - 474\,713\,038\,800\,z + 206\,239\,658\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(268\,435\,456\,z^7 - 14\,948\,499\,456\,z^6 + 117\,257\,011\,200\,z^5 + 131\,356\,753\,920\,z^4 + 235\,134\,627\,840\,z^3 + 132\,324\,192\,000\,z^2 - 104\,205\,301\,200\,z + 618\,718\,975\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(228\,898\,897\,920\sqrt{2}\, z^{11/4}\right)$$

07.22.03.9907.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) =$$

$$\left(\left(2\sqrt{z}\left(268\,435\,456\,z^7 + 15\,149\,826\,048\,z^6 + 128\,355\,139\,584\,z^5 - 49\,194\,270\,720\,z^4 + 111\,085\,793\,280\,z^3 + 125\,346\,735\,360\,z^2 - 196\,832\,235\,600\,z - 123\,743\,795\,175\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-268\,435\,456\,z^7 - 14\,914\,945\,024\,z^6 - 115\,495\,403\,520\,z^5 + 140\,894\,208\,000\,z^4 - 263\,685\,058\,560\,z^3 + 185\,253\,868\,800\,z^2 + 474\,713\,038\,800\,z + 206\,239\,658\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(268\,435\,456\,z^7 + 14\,948\,499\,456\,z^6 + 117\,257\,011\,200\,z^5 - 131\,356\,753\,920\,z^4 + 235\,134\,627\,840\,z^3 - 132\,324\,192\,000\,z^2 - 104\,205\,301\,200\,z - 618\,718\,975\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(228\,898\,897\,920\sqrt{2}\, z^{11/4}\right)$$

07.22.03.9908.01

$$
{}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) =
$$

$$
\frac{1}{277\,076\,930\,199\,552\, z^{15/4}} \left(11\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(1\,073\,741\,824\, z^{15/2} - 268\,435\,456\, z^7 - 63\,686\,311\,936\, z^{13/2} + \right.\right.\right.
$$

$$
15\,720\,251\,392\, z^6 + 533\,502\,885\,888\, z^{11/2} - 122\,277\,593\,088\, z^5 + 691\,887\,931\,392\, z^{9/2} -
$$

$$
230\,934\,380\,544\, z^4 + 1\,407\,196\,643\,328\, z^{7/2} - 560\,306\,073\,600\, z^3 + 1\,092\,596\,843\,520\, z^{5/2} -
$$

$$
598\,426\,133\,760\, z^2 - 1\,302\,671\,522\,880\, z^{3/2} + 5\,164\,162\,108\,560\, z + 13\,433\,800\,079\,700\, \sqrt{z} +
$$

$$
e^{4\sqrt{z}} \left(1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 - 63\,686\,311\,936\, z^{13/2} - 15\,720\,251\,392\, z^6 + 533\,502\,885\,888\, z^{11/2} + \right.
$$

$$
122\,277\,593\,088\, z^5 + 691\,887\,931\,392\, z^{9/2} + 230\,934\,380\,544\, z^4 + 1\,407\,196\,643\,328\, z^{7/2} +
$$

$$
560\,306\,073\,600\, z^3 + 1\,092\,596\,843\,520\, z^{5/2} + 598\,426\,133\,760\, z^2 - 1\,302\,671\,522\,880\, z^{3/2} -
$$

$$
\left.\left.\left.\left.5\,164\,162\,108\,560\, z + 13\,433\,800\,079\,700\, \sqrt{z} - 10\,075\,350\,059\,775\right) + 10\,075\,350\,059\,775\right) +\right.\right.
$$

$$
e^{2\sqrt{z}}\, \sqrt{2\,\pi}\, \left(4\,294\,967\,296\, z^8 - 255\,550\,554\,112\, z^7 + 2\,180\,165\,664\,768\, z^6 + 2\,452\,686\,372\,864\, z^5 + \right.
$$

$$
4\,790\,403\,072\,000\, z^4 + 2\,155\,681\,382\,400\, z^3 - 2\,627\,236\,684\,800\, z^2 + 5\,582\,877\,955\,200\, z - 10\,075\,350\,059\,775\Big)
$$

$$
\mathrm{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - e^{2\sqrt{z}}\, \sqrt{2\,\pi}\, \left(4\,294\,967\,296\, z^8 - 255\,550\,554\,112\, z^7 + 2\,180\,165\,664\,768\, z^6 + \right.
$$

$$
2\,452\,686\,372\,864\, z^5 + 4\,790\,403\,072\,000\, z^4 + 2\,155\,681\,382\,400\, z^3 -
$$

$$
\left.\left.2\,627\,236\,684\,800\, z^2 + 5\,582\,877\,955\,200\, z - 10\,075\,350\,059\,775\right) \mathrm{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\Big)
$$

07.22.03.9909.01

$$
{}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{19}{4}; -z\right) = \frac{1}{69\,269\,232\,549\,888\, z^{15/4}}
$$

$$
\left(11 \left(\sqrt{\pi}\, \left(4\,294\,967\,296\, z^8 + 255\,550\,554\,112\, z^7 + 2\,180\,165\,664\,768\, z^6 - 2\,452\,686\,372\,864\, z^5 + 4\,790\,403\,072\,000\, z^4 - \right.\right.\right.
$$

$$
\left.\left.2\,155\,681\,382\,400\, z^3 - 2\,627\,236\,684\,800\, z^2 - 5\,582\,877\,955\,200\, z - 10\,075\,350\,059\,775\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) +
$$

$$
2\sqrt[4]{z}\, \left(4\sqrt{z}\, \left(268\,435\,456\, z^7 + 15\,921\,577\,984\, z^6 + 133\,375\,721\,472\, z^5 - 172\,971\,982\,848\, z^4 + \right.\right.
$$

$$
\left.351\,799\,160\,832\, z^3 - 273\,149\,210\,880\, z^2 - 325\,667\,880\,720\, z - 3\,358\,450\,019\,925\right) \cos\left(2\sqrt{z}\right) +
$$

$$
\left(268\,435\,456\, z^7 + 15\,720\,251\,392\, z^6 + 122\,277\,593\,088\, z^5 - 230\,934\,380\,544\, z^4 + 560\,306\,073\,600\, z^3 - \right.
$$

$$
\left.\left.\left.\left.598\,426\,133\,760\, z^2 - 5\,164\,162\,108\,560\, z + 10\,075\,350\,059\,775\right) \sin\left(2\sqrt{z}\right)\right)\right)\right)
$$

07.22.03.9910.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) = $$

$$ \left(\left(-2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 274\,341\,036\,032\,z^7 + 2\,658\,618\,310\,656\,z^6 + 1\,482\,260\,742\,144\,z^5 + 3\,979\,554\,324\,480\,z^4 - \right.\right.\right. $$

$$ \left.\left.\left. 2\,815\,507\,537\,920\,z^3 - 10\,744\,724\,390\,400\,z^2 + 49\,717\,507\,039\,200\,z - 36\,999\,394\,757\,325\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$

$$ 3\left(4\,294\,967\,296\,z^8 - 270\,582\,939\,648\,z^7 + 2\,424\,911\,691\,776\,z^6 + 3\,431\,611\,760\,640\,z^5 + 7\,713\,323\,089\,920\,z^4 + \right. $$

$$ \left. 6\,774\,998\,630\,400\,z^3 - 10\,868\,226\,969\,600\,z^2 + 126\,713\,646\,259\,200\,z - 61\,665\,657\,928\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 271\,119\,810\,560\,z^7 + 2\,457\,090\,392\,064\,z^6 + 3\,219\,117\,834\,240\,z^5 + \right. $$

$$ 6\,984\,884\,551\,680\,z^4 + 4\,696\,305\,868\,800\,z^3 - 3\,440\,428\,992\,000\,z^2 - 14\,519\,271\,967\,200\,z - $$

$$ \left.\left. 184\,996\,973\,786\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(7\,324\,764\,733\,440\,\sqrt{2}\;z^{15/4}\right) $$

07.22.03.9911.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 274\,341\,036\,032\,z^7 + 2\,658\,618\,310\,656\,z^6 - 1\,482\,260\,742\,144\,z^5 + 3\,979\,554\,324\,480\,z^4 + \right.\right.\right. $$

$$ \left.\left.\left. 2\,815\,507\,537\,920\,z^3 - 10\,744\,724\,390\,400\,z^2 - 49\,717\,507\,039\,200\,z - 36\,999\,394\,757\,325\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$

$$ 3\left(4\,294\,967\,296\,z^8 + 270\,582\,939\,648\,z^7 + 2\,424\,911\,691\,776\,z^6 - 3\,431\,611\,760\,640\,z^5 + 7\,713\,323\,089\,920\,z^4 - \right. $$

$$ \left. 6\,774\,998\,630\,400\,z^3 - 10\,868\,226\,969\,600\,z^2 - 126\,713\,646\,259\,200\,z - 61\,665\,657\,928\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 271\,119\,810\,560\,z^7 + 2\,457\,090\,392\,064\,z^6 - 3\,219\,117\,834\,240\,z^5 + \right. $$

$$ 6\,984\,884\,551\,680\,z^4 - 4\,696\,305\,868\,800\,z^3 - 3\,440\,428\,992\,000\,z^2 + 14\,519\,271\,967\,200\,z - $$

$$ \left.\left. 184\,996\,973\,786\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(7\,324\,764\,733\,440\,\sqrt{2}\;z^{15/4}\right) $$

07.22.03.9912.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) = $$

$$ \left(209\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(17\,179\,869\,184\, z^{17/2} - 4\,294\,967\,296\, z^8 - 1\,146\,756\,268\,032\, z^{15/2} + 283\,467\,841\,536\, z^7 + \right.\right.\right. $$

$$ 11\,003\,706\,212\,352\, z^{13/2} - 2\,549\,398\,634\,496\, z^6 + 16\,390\,350\,176\,256\, z^{11/2} - 5\,387\,348\,606\,976\, z^5 + $$

$$ 39\,461\,872\,730\,112\, z^{9/2} - 15\,192\,421\,171\,200\, z^4 + 35\,517\,417\,062\,400\, z^{7/2} - 24\,143\,631\,482\,880\, z^3 - $$

$$ 23\,820\,279\,275\,520\, z^{5/2} + 122\,078\,931\,287\,040\, z^2 - 368\,469\,945\,043\,200\, z^{3/2} - 2\,579\,289\,615\,302\,400\, z - $$

$$ 5\,037\,675\,029\,887\,500\sqrt{z} + e^{4\sqrt{z}}\left(17\,179\,869\,184\, z^{17/2} + 4\,294\,967\,296\, z^8 - 1\,146\,756\,268\,032\, z^{15/2} - \right. $$

$$ 283\,467\,841\,536\, z^7 + 11\,003\,706\,212\,352\, z^{13/2} + 2\,549\,398\,634\,496\, z^6 + 16\,390\,350\,176\,256\, z^{11/2} + $$

$$ 5\,387\,348\,606\,976\, z^5 + 39\,461\,872\,730\,112\, z^{9/2} + 15\,192\,421\,171\,200\, z^4 + 35\,517\,417\,062\,400\, z^{7/2} + $$

$$ 24\,143\,631\,482\,880\, z^3 - 23\,820\,279\,275\,520\, z^{5/2} - 122\,078\,931\,287\,040\, z^2 - 368\,469\,945\,043\,200\, z^{3/2} + $$

$$ \left.\left.\left.\left. 2\,579\,289\,615\,302\,400\, z - 5\,037\,675\,029\,887\,500\sqrt{z} + 3\,778\,256\,272\,415\,625\right) - 3\,778\,256\,272\,415\,625\right) + \right. $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\, z^9 - 4\,599\,909\,974\,016\, z^8 + 44\,849\,122\,246\,656\, z^7 + 58\,864\,472\,948\,736\, z^6 + \right. $$

$$ 137\,963\,608\,473\,600\, z^5 + 77\,604\,529\,766\,400\, z^4 - 126\,107\,360\,870\,400\, z^3 + $$

$$ \left. 401\,967\,212\,774\,400\, z^2 - 1\,450\,850\,408\,607\,600\, z + 3\,778\,256\,272\,415\,625\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\, z^9 - 4\,599\,909\,974\,016\, z^8 + 44\,849\,122\,246\,656\, z^7 + 58\,864\,472\,948\,736\, z^6 + \right. $$

$$ 137\,963\,608\,473\,600\, z^5 + 77\,604\,529\,766\,400\, z^4 - 126\,107\,360\,870\,400\, z^3 + 401\,967\,212\,774\,400\, z^2 - $$

$$ \left. \left. 1\,450\,850\,408\,607\,600\, z + 3\,778\,256\,272\,415\,625\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big/\left(159\,596\,311\,794\,941\,952\, z^{19/4}\right) $$

07.22.03.9913.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) = $$

$$ \left(209\left(\sqrt{\pi}\left(68\,719\,476\,736\, z^9 + 4\,599\,909\,974\,016\, z^8 + 44\,849\,122\,246\,656\, z^7 - 58\,864\,472\,948\,736\, z^6 + \right.\right.\right. $$

$$ 137\,963\,608\,473\,600\, z^5 - 77\,604\,529\,766\,400\, z^4 - 126\,107\,360\,870\,400\, z^3 - $$

$$ \left. 401\,967\,212\,774\,400\, z^2 - 1\,450\,850\,408\,607\,600\, z - 3\,778\,256\,272\,415\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$

$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\, z^8 + 286\,689\,067\,008\, z^7 + 2\,750\,926\,553\,088\, z^6 - 4\,097\,587\,544\,064\, z^5 + \right.\right. $$

$$ 9\,865\,468\,182\,528\, z^4 - 8\,879\,354\,265\,600\, z^3 - 5\,955\,069\,818\,880\, z^2 + 92\,117\,486\,260\,800\, z - $$

$$ 1\,259\,418\,757\,471\,875\left.\right) \cos\left(2\sqrt{z}\right) + \left(4\,294\,967\,296\, z^8 + 283\,467\,841\,536\, z^7 + 2\,549\,398\,634\,496\, z^6 - \right. $$

$$ 5\,387\,348\,606\,976\, z^5 + 15\,192\,421\,171\,200\, z^4 - 24\,143\,631\,482\,880\, z^3 - 122\,078\,931\,287\,040\, z^2 - $$

$$ \left.\left.\left. 2\,579\,289\,615\,302\,400\, z + 3\,778\,256\,272\,415\,625\right) \sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(39\,899\,077\,948\,735\,488\, z^{19/4}\right) $$

For fixed z and $a_1 = -\frac{17}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.9914.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) = \frac{1}{116\,593\,785\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(524\,288\,z^5 + 14\,974\,976\,z^4 + 142\,241\,792\,z^3 + 304\,513\,440\,z^2 - 405\,543\,600\,z + 116\,593\,785\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$12\sqrt{z}\left(65\,536\,z^4 + 1\,929\,216\,z^3 + 19\,514\,880\,z^2 + 83\,361\,740\,z - 38\,864\,595\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4\,z\left(131\,072\,z^4 + 3\,842\,048\,z^3 + 38\,497\,280\,z^2 + 94\,626\,840\,z - 116\,593\,785\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9915.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) = \frac{1}{116\,593\,785\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-524\,288\,z^5 + 14\,974\,976\,z^4 - 142\,241\,792\,z^3 + 304\,513\,440\,z^2 + 405\,543\,600\,z + 116\,593\,785\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$12\sqrt{z}\left(65\,536\,z^4 - 1\,929\,216\,z^3 + 19\,514\,880\,z^2 - 83\,361\,740\,z - 38\,864\,595\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(-131\,072\,z^4 + 3\,842\,048\,z^3 - 38\,497\,280\,z^2 + 94\,626\,840\,z + 116\,593\,785\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9916.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) = \left(\frac{8\,z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.9917.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, -\frac{21}{4}; -z\right) = \left(1 - \frac{8\,z}{21}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.9918.01

$${}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{15\,207\,885\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(262\,144\,z^5 + 4\,423\,680\,z^4 + 29\,568\,000\,z^3 + 40\,981\,248\,z^2 - 57\,629\,880\,z + 15\,207\,885\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$12\sqrt{z}\left(32\,768\,z^4 + 581\,632\,z^3 + 4\,228\,224\,z^2 + 12\,450\,900\,z - 5\,069\,295\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4\,z\left(65\,536\,z^4 + 1\,155\,072\,z^3 + 8\,285\,952\,z^2 + 17\,075\,520\,z - 15\,207\,885\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9919.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, -\frac{19}{4}; -z\right) = \frac{1}{15\,207\,885\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-262\,144\,z^5 + 4\,423\,680\,z^4 - 29\,568\,000\,z^3 + 40\,981\,248\,z^2 + 57\,629\,880\,z + 15\,207\,885\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(32\,768\,z^4 - 581\,632\,z^3 + 4\,228\,224\,z^2 - 12\,450\,900\,z - 5\,069\,295\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-65\,536\,z^4 + 1\,155\,072\,z^3 - 8\,285\,952\,z^2 + 17\,075\,520\,z + 15\,207\,885\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9920.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, -\frac{17}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right) $$

07.22.03.9921.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.9922.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) = \frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(\left(131\,072\,z^5 + 679\,936\,z^4 + 2\,720\,256\,z^3 + 2\,018\,016\,z^2 - 3\,415\,104\,z + 800\,415\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(16\,384\,z^4 + 99\,328\,z^3 + 438\,592\,z^2 + 782\,628\,z - 266\,805\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(32\,768\,z^4 + 194\,560\,z^3 + 839\,808\,z^2 + 1\,280\,664\,z - 800\,415\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9923.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) = \frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-131\,072\,z^5 + 679\,936\,z^4 - 2\,720\,256\,z^3 + 2\,018\,016\,z^2 + 3\,415\,104\,z + 800\,415\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(16\,384\,z^4 - 99\,328\,z^3 + 438\,592\,z^2 - 782\,628\,z - 266\,805\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-32\,768\,z^4 + 194\,560\,z^3 - 839\,808\,z^2 + 1\,280\,664\,z + 800\,415\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9924.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) = -\frac{1}{270\,270}\left(e^{-2\sqrt{z}}\left(32\,768\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} - 32\,768\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} + 32\,768\,e^{4\sqrt{z}}z^4 + 32\,768\,z^4 + 8192\,e^{4\sqrt{z}}z^{7/2} - 8192\,z^{7/2} + 6144\,e^{4\sqrt{z}}z^3 + 6144\,z^3 + 7680\,e^{4\sqrt{z}}z^{5/2} - 7680\,z^{5/2} + 13\,440\,e^{4\sqrt{z}}z^2 + 13\,440\,z^2 + 30\,240\,e^{4\sqrt{z}}z^{3/2} - 30\,240\,z^{3/2} + 83\,160\,e^{4\sqrt{z}}z + 83\,160\,z + 270\,270\,e^{4\sqrt{z}}\sqrt{z} - 270\,270\sqrt{z} - 135\,135\,e^{4\sqrt{z}} - 135\,135\right)\right) $$

07.22.03.9925.01

$${}_1F_2\left(-\frac{17}{4};-\frac{1}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{135\,135}\left(-65\,536\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}+2\left(-4096\,z^3+3840\,z^2-15\,120\,z+135\,135\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\,+\right.$$
$$\left.\left(-32\,768\,z^4+6144\,z^3-13\,440\,z^2+83\,160\,z+135\,135\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9926.01

$${}_1F_2\left(-\frac{17}{4};-\frac{1}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{53\,361\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-65\,536\,z^5+425\,984\,z^4+315\,392\,z^3+59\,136\,z^2-271\,656\,z+53\,361\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(8192\,z^4-46\,080\,z^3-73\,920\,z^2-66\,836\,z+17\,787\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(16\,384\,z^4-94\,208\,z^3-142\,592\,z^2-129\,360\,z+53\,361\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9927.01

$${}_1F_2\left(-\frac{17}{4};-\frac{1}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{53\,361\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536\,z^5+425\,984\,z^4-315\,392\,z^3+59\,136\,z^2+271\,656\,z+53\,361\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(8192\,z^4+46\,080\,z^3-73\,920\,z^2+66\,836\,z+17\,787\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(16\,384\,z^4+94\,208\,z^3-142\,592\,z^2+129\,360\,z+53\,361\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9928.01

$${}_1F_2\left(-\frac{17}{4};-\frac{1}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{20\,790}\left(e^{-2\sqrt{z}}\left(8192\,e^{4\sqrt{z}}\,z^4+8192\,z^4+2048\,e^{4\sqrt{z}}\,z^{7/2}-2048\,z^{7/2}+512\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z-187)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}-\right.\right.$$
$$512\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z-187)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}-94\,208\,e^{4\sqrt{z}}\,z^3-94\,208\,z^3-$$
$$22\,016\,e^{4\sqrt{z}}\,z^{5/2}+22\,016\,z^{5/2}-14\,592\,e^{4\sqrt{z}}\,z^2-14\,592\,z^2-14\,880\,e^{4\sqrt{z}}\,z^{3/2}+14\,880\,z^{3/2}-$$
$$\left.\left.18\,480\,e^{4\sqrt{z}}\,z-18\,480\,z-20\,790\,e^{4\sqrt{z}}\,\sqrt{z}+20\,790\sqrt{z}+10\,395\,e^{4\sqrt{z}}+10\,395\right)\right)$$

07.22.03.9929.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, -\frac{9}{4}; -z\right) = \frac{1}{10\,395}\left(1024\sqrt{\pi}\,(16z+187)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4} + 2\left(1024z^3+11\,008z^2-7440z+10\,395\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\, + \left(8192z^4+94\,208z^3-14\,592z^2+18\,480z+10\,395\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9930.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, -\frac{7}{4}; z\right) = \frac{1}{14\,553\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768z^5-595\,968z^4+1\,182\,720z^3-155\,232z^2-99\,792z+14\,553\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(4096z^4-70\,912z^3+88\,704z^2+26\,796z-4851\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(8192z^4-142\,848z^3+192\,000z^2+60\,984z-14\,553\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9931.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) = -\frac{1}{14\,553\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768z^5+595\,968z^4+1\,182\,720z^3+155\,232z^2-99\,792z-14\,553\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(4096z^4+70\,912z^3+88\,704z^2-26\,796z-4851\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8192z^4+142\,848z^3+192\,000z^2-60\,984z-14\,553\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9932.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) = \frac{1}{2310}\left(e^{-2\sqrt{z}}\left(-1024e^{4\sqrt{z}}z^4-1024z^4-256e^{4\sqrt{z}}z^{7/2}+256z^{7/2}+23\,744e^{4\sqrt{z}}z^3+23\,744z^3+5744e^{4\sqrt{z}}z^{5/2} - 5744z^{5/2}-4e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-5984z+17\,017\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4} + 4e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-5984z+17\,017\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4} - 64\,000e^{4\sqrt{z}}z^2-64\,000z^2 - 12\,352e^{4\sqrt{z}}z^{3/2}+12\,352z^{3/2}-5544e^{4\sqrt{z}}z-5544z-2310e^{4\sqrt{z}}\sqrt{z}+2310\sqrt{z}+1155e^{4\sqrt{z}}+1155\right)\right) $$

07.22.03.9933.01

$${}_1F_2\left(-\frac{17}{4};-\frac{1}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{1155}\left(-8\sqrt{\pi}\left(256z^2+5984z+17\,017\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}-2\left(128z^3+2872z^2+6176z-1155\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(-1024z^4-23\,744z^3-64\,000z^2+5544z+1155\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9934.01

$${}_1F_2\left(-\frac{17}{4};-\frac{1}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{10\,395\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,384z^5+489\,472z^4-2\,350\,656z^3+1\,774\,080z^2-138\,600z+10\,395\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(2048z^4-59\,392z^3+243\,320z^2-41\,580z+3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(4096z^4-119\,296z^3+499\,920z^2-110\,880z+10\,395\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9935.01

$${}_1F_2\left(-\frac{17}{4};-\frac{1}{2},-\frac{3}{4};-z\right)=$$
$$\frac{1}{10\,395\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384z^5+489\,472z^4+2\,350\,656z^3+1\,774\,080z^2+138\,600z+10\,395\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(2048z^4+59\,392z^3+243\,320z^2+41\,580z+3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(4096z^4+119\,296z^3+499\,920z^2+110\,880z+10\,395\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9936.01

$${}_1F_2\left(-\frac{17}{4};-\frac{1}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{22\,176}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-143\,616z^2+816\,816z-459\,459\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left(4096z^3-143\,616z^2+816\,816z-459\,459\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+$$
$$4\left(1024z^4-256z^{7/2}-35\,712z^3+8736z^{5/2}+197\,892z^2-43\,581z^{3/2}-88\,704z+5544\sqrt{z}+e^{4\sqrt{z}}\right.$$
$$\left.\left.\left.\left(1024z^4+256z^{7/2}-35\,712z^3-8736z^{5/2}+197\,892z^2+43\,581z^{3/2}-88\,704z-5544\sqrt{z}+2772\right)+2772\right)\right)\right)$$

07.22.03.9937.01

$${}_1F_2\left(-\frac{17}{4};-\frac{1}{2},-\frac{1}{4};-z\right)=\frac{1}{5544}\left(\sqrt{\pi}\left(4096z^3+143\,616z^2+816\,816z+459\,459\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+\right.$$
$$\left.2\left(4\left(256z^4+8928z^3+49\,473z^2+22\,176z+693\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\left(256z^3+8736z^2+43\,581z+5544\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.9938.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) = \frac{1}{24\,255\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192 z^5 - 340\,480 z^4 + 2\,599\,520 z^3 - 3\,471\,006 z^2 + 776\,160 z + 24\,255\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(-4096 z^4 + 166\,656 z^3 - 1\,156\,848 z^2 + 822\,745 z + 32\,340\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2 z\left(-4096 z^4 + 167\,168 z^3 - 1\,176\,112 z^2 + 915\,915 z + 48\,510\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9939.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{1}{4}; -z\right) = -\frac{1}{24\,255\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192 z^5 + 340\,480 z^4 + 2\,599\,520 z^3 + 3\,471\,006 z^2 + 776\,160 z - 24\,255\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(4096 z^4 + 166\,656 z^3 + 1\,156\,848 z^2 + 822\,745 z - 32\,340\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2 z\left(4096 z^4 + 167\,168 z^3 + 1\,176\,112 z^2 + 915\,915 z - 48\,510\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9940.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{3}{4}; z\right) = \frac{1}{5\,677\,056}\left(e^{-2\sqrt{z}}\left(-4\left(16\,384 z^4 - 4096 z^{7/2} - 762\,880 z^3 + 187\,648 z^{5/2} + 6\,397\,632 z^2 - 1\,469\,232 z^{3/2} - 6\,398\,700 z + 878\,031\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^4 + 4096 z^{7/2} - 762\,880 z^3 - 187\,648 z^{5/2} + 6\,397\,632 z^2 + 1\,469\,232 z^{3/2} - 6\,398\,700 z - 878\,031\sqrt{z} - 709\,632\right) - 709\,632\right) - e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(65\,536 z^4 - 3\,063\,808 z^3 + 26\,138\,112 z^2 - 29\,405\,376 z - 2\,297\,295\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(65\,536 z^4 - 3\,063\,808 z^3 + 26\,138\,112 z^2 - 29\,405\,376 z - 2\,297\,295\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9941.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{3}{4}; -z\right) = \frac{1}{1\,419\,264}\left(-\sqrt{\pi}\sqrt[4]{z}\left(65\,536 z^4 + 3\,063\,808 z^3 + 26\,138\,112 z^2 + 29\,405\,376 z - 2\,297\,295\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\left(4\left(4096 z^4 + 190\,720 z^3 + 1\,599\,408 z^2 + 1\,599\,675 z - 177\,408\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\left(4096 z^3 + 187\,648 z^2 + 1\,469\,232 z + 878\,031\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9942.01

$$ {}_1F_2\left(-\frac{17}{4};-\frac{1}{2},\frac{5}{4};z\right)= $$
$$ \frac{1}{3\,492\,720\sqrt{2}\sqrt[4]{z}}\left(\left(2\left(65\,536z^5-3\,489\,792z^4+36\,546\,048z^3-69\,676\,992z^2+18\,143\,433z+3\,492\,720\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 3\sqrt{z}\left(65\,536z^4-3\,432\,448z^3+33\,589\,248z^2-42\,422\,688z-7\,016\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.2z\left(-65\,536z^4+3\,440\,640z^3-33\,993\,216z^2+45\,505\,152z+7\,078\,995\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9943.01

$$ {}_1F_2\left(-\frac{17}{4};-\frac{1}{2},\frac{5}{4};-z\right)= $$
$$ -\frac{1}{3\,492\,720\sqrt{2}\sqrt[4]{z}}\left(\left(2\left(65\,536z^5+3\,489\,792z^4+36\,546\,048z^3+69\,676\,992z^2+18\,143\,433z-3\,492\,720\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 3\sqrt{z}\left(65\,536z^4+3\,432\,448z^3+33\,589\,248z^2+42\,422\,688z-7\,016\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.2z\left(65\,536z^4+3\,440\,640z^3+33\,993\,216z^2+45\,505\,152z-7\,078\,995\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9944.01

$$ {}_1F_2\left(-\frac{17}{4};-\frac{1}{2},\frac{7}{4};z\right)= $$
$$ \frac{1}{605\,552\,640z^{3/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(262\,144z^{9/2}-65\,536z^4-15\,269\,888z^{7/2}+3\,768\,320z^3+171\,489\,280z^{5/2}-\right.\right.\right. $$
$$ 40\,215\,040z^2-266\,999\,040z^{3/2}+44\,647\,680z-60\,378\,780\sqrt{z}+ $$
$$ e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4-15\,269\,888z^{7/2}-3\,768\,320z^3+171\,489\,280z^{5/2}+40\,215\,040z^2-\right. $$
$$ \left.\left.266\,999\,040z^{3/2}-44\,647\,680z-60\,378\,780\sqrt{z}-11\,486\,475\right)+11\,486\,475\right)- $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-61\,276\,160z^4+697\,016\,320z^3-1\,176\,215\,040z^2-183\,783\,600z-11\,486\,475\right) $$
$$ \left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\right.\right. $$
$$ \left.\left.\left(1\,048\,576z^5-61\,276\,160z^4+697\,016\,320z^3-1\,176\,215\,040z^2-183\,783\,600z-11\,486\,475\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9945.01

$$ {}_1F_2\left(-\frac{17}{4};-\frac{1}{2},\frac{7}{4};-z\right)=\frac{1}{151\,388\,160z^{3/4}} $$
$$ \left(-\sqrt{\pi}\left(1\,048\,576z^5+61\,276\,160z^4+697\,016\,320z^3+1\,176\,215\,040z^2-183\,783\,600z+11\,486\,475\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right. $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4+3\,817\,472z^3+42\,872\,320z^2+66\,749\,760z-15\,094\,695\right)\cos\left(2\sqrt{z}\right)+\right. $$
$$ \left.\left.\left.\left(65\,536z^4+3\,768\,320z^3+40\,215\,040z^2+44\,647\,680z-11\,486\,475\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.9946.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{9}{4}; z\right) = \frac{1}{245\,887\,488\sqrt{2}\, z^{3/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576 z^5 - 68\,091\,904 z^4 + 906\,436\,608 z^3 - 2\,242\,791\,936 z^2 + 567\,007\,056 z + 236\,238\,849\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 3\left(-1\,048\,576 z^5 + 67\,174\,400 z^4 - 848\,404\,480 z^3 + 1\,543\,331\,328 z^2 + 427\,808\,304 z + 16\,081\,065\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\left(-1\,048\,576 z^5 + 67\,305\,472 z^4 - 856\,399\,872 z^3 + 1\,626\,831\,360 z^2 + 402\,793\,776 z + 48\,243\,195\right) $$
$$ \left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9947.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{9}{4}; -z\right) = -\frac{1}{245\,887\,488\sqrt{2}\, z^{3/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576 z^5 + 68\,091\,904 z^4 + 906\,436\,608 z^3 + 2\,242\,791\,936 z^2 + 567\,007\,056 z - 236\,238\,849\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\left(1\,048\,576 z^5 + 67\,174\,400 z^4 + 848\,404\,480 z^3 + 1\,543\,331\,328 z^2 - 427\,808\,304 z + 16\,081\,065\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z} $$
$$ \left.\left.\left(1\,048\,576 z^5 + 67\,305\,472 z^4 + 856\,399\,872 z^3 + 1\,626\,831\,360 z^2 - 402\,793\,776 z + 48\,243\,195\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9948.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) = $$
$$ \frac{1}{33\,218\,887\,680 z^{7/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(4\,194\,304 z^{11/2} - 1\,048\,576 z^5 - 293\,339\,136 z^{9/2} + 72\,548\,352 z^4 + 4\,128\,669\,696 z^{7/2} - \right.\right.\right. $$
$$ 980\,459\,520 z^3 - 8\,735\,569\,920 z^{5/2} + 1\,609\,090\,560 z^2 - 2\,871\,126\,720 z^{3/2} + 771\,891\,120 z - $$
$$ 413\,513\,100\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 293\,339\,136 z^{9/2} - 72\,548\,352 z^4 + \right. $$
$$ 4\,128\,669\,696 z^{7/2} + 980\,459\,520 z^3 - 8\,735\,569\,920 z^{5/2} - 1\,609\,090\,560 z^2 - $$
$$ \left.\left.\left.\left. 2\,871\,126\,720 z^{3/2} - 771\,891\,120 z - 413\,513\,100\sqrt{z} + 310\,134\,825\right) - 310\,134\,825\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 1\,176\,502\,272 z^5 + 16\,728\,391\,680 z^4 - 37\,638\,881\,280 z^3 - \right. $$
$$ \left. 8\,821\,612\,800 z^2 - 1\,102\,701\,600 z + 310\,134\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 1\,176\,502\,272 z^5 + 16\,728\,391\,680 z^4 - 37\,638\,881\,280 z^3 - \right. $$
$$ \left.\left. 8\,821\,612\,800 z^2 - 1\,102\,701\,600 z + 310\,134\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.9949.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = \frac{1}{8\,304\,721\,920\, z^{7/4}}\left(-\sqrt{\pi}\,\left(16\,777\,216\, z^6 + 1\,176\,502\,272\, z^5 + 16\,728\,391\,680\, z^4 + 37\,638\,881\,280\, z^3 - 8\,821\,612\,800\, z^2 + 1\,102\,701\,600\, z + 310\,134\,825\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(4\sqrt{z}\,\left(1\,048\,576\, z^5 + 73\,334\,784\, z^4 + 1\,032\,167\,424\, z^3 + 2\,183\,892\,480\, z^2 - 717\,781\,680\, z + 103\,378\,275\right)\cos\left(2\sqrt{z}\right) + \left(1\,048\,576\, z^5 + 72\,548\,352\, z^4 + 980\,459\,520\, z^3 + 1\,609\,090\,560\, z^2 - 771\,891\,120\, z - 310\,134\,825\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9950.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) = \frac{1}{11\,365\,466\,112\sqrt{2}\, z^{7/4}}\left(\left(2\sqrt{z}\,\left(16\,777\,216\, z^6 - 1\,285\,554\,176\, z^5 + 20\,765\,409\,280\, z^4 - 63\,132\,647\,424\, z^3 + 14\,048\,407\,296\, z^2 + 9\,890\,296\,416\, z + 530\,675\,145\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-16\,777\,216\, z^6 + 1\,270\,874\,112\, z^5 - 19\,665\,321\,984\, z^4 + 46\,751\,186\,944\, z^3 + 17\,748\,546\,816\, z^2 + 3\,087\,564\,480\, z - 884\,458\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-16\,777\,216\, z^6 + 1\,272\,971\,264\, z^5 - 19\,817\,758\,720\, z^4 + 48\,773\,480\,448\, z^3 + 16\,330\,938\,624\, z^2 + 3\,602\,158\,560\, z - 2\,653\,375\,725\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9951.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) = -\frac{1}{11\,365\,466\,112\sqrt{2}\, z^{7/4}}\left(\left(2\sqrt{z}\,\left(16\,777\,216\, z^6 + 1\,285\,554\,176\, z^5 + 20\,765\,409\,280\, z^4 + 63\,132\,647\,424\, z^3 + 14\,048\,407\,296\, z^2 - 9\,890\,296\,416\, z + 530\,675\,145\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,777\,216\, z^6 + 1\,270\,874\,112\, z^5 + 19\,665\,321\,984\, z^4 + 46\,751\,186\,944\, z^3 - 17\,748\,546\,816\, z^2 + 3\,087\,564\,480\, z + 884\,458\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216\, z^6 + 1\,272\,971\,264\, z^5 + 19\,817\,758\,720\, z^4 + 48\,773\,480\,448\, z^3 - 16\,330\,938\,624\, z^2 + 3\,602\,158\,560\, z + 2\,653\,375\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9952.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) = $$
$$ \frac{1}{1\,352\,914\,698\,240\,z^{11/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(67\,108\,864\,z^{13/2} - 16\,777\,216\,z^6 - 5\,477\,761\,024\,z^{11/2} + 1\,356\,857\,344\,z^5 + \right.\right.\right. $$
$$ 92\,677\,079\,040\,z^{9/2} - 22\,194\,880\,512\,z^4 - 247\,988\,944\,896\,z^{7/2} + 48\,425\,287\,680\,z^3 - $$
$$ 105\,171\,010\,560\,z^{5/2} + 32\,345\,913\,600\,z^2 - 29\,111\,322\,240\,z^{3/2} - 4\,631\,346\,720\,z + 37\,629\,692\,100\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 - 5\,477\,761\,024\,z^{11/2} - 1\,356\,857\,344\,z^5 + 92\,677\,079\,040\,z^{9/2} + \right. $$
$$ \left. 22\,194\,880\,512\,z^4 - 247\,988\,944\,896\,z^{7/2} - 48\,425\,287\,680\,z^3 - 105\,171\,010\,560\,z^{5/2} - 32\,345\,913\,600\,z^2 - \right. $$
$$ \left. 29\,111\,322\,240\,z^{3/2} + 4\,631\,346\,720\,z + 37\,629\,692\,100\sqrt{z} - 28\,222\,269\,075\right) + 28\,222\,269\,075\Big) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7 - 21\,961\,375\,744\,z^6 + 374\,715\,973\,632\,z^5 - 1\,053\,888\,675\,840\,z^4 - \right. $$
$$ \left. 329\,340\,211\,200\,z^3 - 61\,751\,289\,600\,z^2 + 34\,735\,100\,400\,z - 28\,222\,269\,075\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7 - 21\,961\,375\,744\,z^6 + 374\,715\,973\,632\,z^5 - 1\,053\,888\,675\,840\,z^4 - \right. $$
$$ \left. \left. 329\,340\,211\,200\,z^3 - 61\,751\,289\,600\,z^2 + 34\,735\,100\,400\,z - 28\,222\,269\,075\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9953.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) = $$
$$ \frac{1}{338\,228\,674\,560\,z^{11/4}} \left(-\sqrt{\pi}\left(268\,435\,456\,z^7 + 21\,961\,375\,744\,z^6 + 374\,715\,973\,632\,z^5 + 1\,053\,888\,675\,840\,z^4 - \right.\right. $$
$$ \left. 329\,340\,211\,200\,z^3 + 61\,751\,289\,600\,z^2 + 34\,735\,100\,400\,z + 28\,222\,269\,075\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216\,z^6 + 1\,369\,440\,256\,z^5 + 23\,169\,269\,760\,z^4 + 61\,997\,236\,224\,z^3 - 26\,292\,752\,640\,z^2 + \right.\right. $$
$$ \left. 7\,277\,830\,560\,z + 9\,407\,423\,025\right)\cos\left(2\sqrt{z}\right) + \left(16\,777\,216\,z^6 + 1\,356\,857\,344\,z^5 + 22\,194\,880\,512\,z^4 + \right. $$
$$ \left.\left. \left. 48\,425\,287\,680\,z^3 - 32\,345\,913\,600\,z^2 - 4\,631\,346\,720\,z - 28\,222\,269\,075\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9954.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) = $$
$$ \left(\left(2\sqrt{z}\left(268\,435\,456\,z^7 - 23\,706\,206\,208\,z^6 + 450\,288\,943\,104\,z^5 - 1\,623\,410\,933\,760\,z^4 + 290\,594\,304\,000\,z^3 + \right.\right.\right. $$
$$ \left. 322\,429\,282\,560\,z^2 + 127\,362\,034\,800\,z - 71\,641\,144\,575\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ 3\left(-268\,435\,456\,z^7 + 23\,471\,325\,184\,z^6 - 429\,942\,374\,400\,z^5 + 1\,262\,652\,948\,480\,z^4 + 601\,044\,111\,360\,z^3 + \right. $$
$$ \left. 185\,253\,868\,800\,z^2 - 297\,178\,081\,200\,z + 119\,401\,907\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\left(-268\,435\,456\,z^7 + 23\,504\,879\,616\,z^6 - 432\,773\,529\,600\,z^5 + 1\,308\,220\,784\,640\,z^4 + 548\,701\,655\,040\,z^3 + \right. $$
$$ \left.\left. \left. 167\,610\,643\,200\,z^2 - 127\,362\,034\,800\,z + 358\,205\,722\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(419\,647\,979\,520\sqrt{2}\,z^{11/4}\right) $$

07.22.03.9955.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) = $$

$$ -\left(\left(2\sqrt{z}\left(268\,435\,456\,z^7 + 23\,706\,206\,208\,z^6 + 450\,288\,943\,104\,z^5 + 1\,623\,410\,933\,760\,z^4 + 290\,594\,304\,000\,z^3 - \right.\right.\right. $$

$$ 322\,429\,282\,560\,z^2 + 127\,362\,034\,800\,z + 71\,641\,144\,575\Big) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$

$$ 3\left(268\,435\,456\,z^7 + 23\,471\,325\,184\,z^6 + 429\,942\,374\,400\,z^5 + 1\,262\,652\,948\,480\,z^4 - 601\,044\,111\,360\,z^3 + \right. $$

$$ 185\,253\,868\,800\,z^2 + 297\,178\,081\,200\,z + 119\,401\,907\,625\Big) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\left(268\,435\,456\,z^7 + 23\,504\,879\,616\,z^6 + 432\,773\,529\,600\,z^5 + 1\,308\,220\,784\,640\,z^4 - 548\,701\,655\,040\,z^3 + \right. $$

$$ \left.\left.\left. 167\,610\,643\,200\,z^2 + 127\,362\,034\,800\,z + 358\,205\,722\,875\Big) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(419\,647\,979\,520\sqrt{2}\; z^{11/4}\right) $$

07.22.03.9956.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) = $$

$$ \frac{1}{46\,179\,488\,366\,592\,z^{15/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2} - 268\,435\,456\,z^7 - 100\,193\,533\,952\,z^{13/2} + \right.\right.\right. $$

$$ 24\,847\,056\,896\,z^6 + 1\,980\,101\,558\,272\,z^{11/2} - 477\,082\,157\,056\,z^5 - 6\,408\,624\,144\,384\,z^{9/2} + $$

$$ 1\,301\,620\,260\,864\,z^4 - 3\,301\,272\,403\,968\,z^{7/2} + 1\,082\,117\,836\,800\,z^3 - 1\,282\,074\,393\,600\,z^{5/2} + $$

$$ 200\,544\,664\,320\,z^2 + 1\,599\,799\,481\,280\,z^{3/2} - 2\,016\,951\,496\,560\,z - 7\,036\,752\,422\,700\sqrt{z} + $$

$$ e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 - 100\,193\,533\,952\,z^{13/2} - 24\,847\,056\,896\,z^6 + 1\,980\,101\,558\,272\right. $$

$$ z^{11/2} + 477\,082\,157\,056\,z^5 - 6\,408\,624\,144\,384\,z^{9/2} - 1\,301\,620\,260\,864\,z^4 - 3\,301\,272\,403\,968\,z^{7/2} - $$

$$ 1\,082\,117\,836\,800\,z^3 - 1\,282\,074\,393\,600\,z^{5/2} - 200\,544\,664\,320\,z^2 + 1\,599\,799\,481\,280\,z^{3/2} + $$

$$ \left.2\,016\,951\,496\,560\,z - 7\,036\,752\,422\,700\sqrt{z} + 5\,277\,564\,317\,025\right) - 5\,277\,564\,317\,025\Big) - $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8 - 401\,579\,442\,176\,z^7 + 7\,993\,940\,770\,816\,z^6 - 26\,979\,550\,101\,504\,z^5 - \right. $$

$$ 10\,538\,886\,758\,400\,z^4 - 2\,634\,721\,689\,600\,z^3 + 2\,223\,046\,425\,600\,z^2 - 3\,612\,450\,441\,600\,z + 5\,277\,564\,317\,025\Big) $$

$$ \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8 - 401\,579\,442\,176\,z^7 + 7\,993\,940\,770\,816\,z^6 - \right. $$

$$ 26\,979\,550\,101\,504\,z^5 - 10\,538\,886\,758\,400\,z^4 - 2\,634\,721\,689\,600\,z^3 + $$

$$ \left.\left.2\,223\,046\,425\,600\,z^2 - 3\,612\,450\,441\,600\,z + 5\,277\,564\,317\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.9957.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) = \frac{1}{11\,544\,872\,091\,648\, z^{15/4}} $$
$$ \left(-\sqrt{\pi}\,\left(4\,294\,967\,296\, z^8 + 401\,579\,442\,176\, z^7 + 7\,993\,940\,770\,816\, z^6 + 26\,979\,550\,101\,504\, z^5 - 10\,538\,886\,758\,400\, z^4 + \right.\right. $$
$$ 2\,634\,721\,689\,600\, z^3 + 2\,223\,046\,425\,600\, z^2 + 3\,612\,450\,441\,600\, z + 5\,277\,564\,317\,025\Big) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - $$
$$ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(268\,435\,456\, z^7 + 25\,048\,383\,488\, z^6 + 495\,025\,389\,568\, z^5 + 1\,602\,156\,036\,096\, z^4 - \right.\right. $$
$$ 825\,318\,100\,992\, z^3 + 320\,518\,598\,400\, z^2 + 399\,949\,870\,320\, z + 1\,759\,188\,105\,675\Big) \cos\left(2\sqrt{z}\right) + $$
$$ \left.\left(268\,435\,456\, z^7 + 24\,847\,056\,896\, z^6 + 477\,082\,157\,056\, z^5 + 1\,301\,620\,260\,864\, z^4 - 1\,082\,117\,836\,800\, z^3 + \right.\right. $$
$$ \left.\left.\left. 200\,544\,664\,320\, z^2 + 2\,016\,951\,496\,560\, z - 5\,277\,564\,317\,025\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9958.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) = $$
$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 - 429\,496\,729\,600\, z^7 + 9\,378\,799\,288\,320\, z^6 - 39\,106\,105\,049\,088\, z^5 + 4\,969\,921\,904\,640\, z^4 + \right.\right.\right. $$
$$ 8\,972\,700\,549\,120\, z^3 + 8\,151\,170\,227\,200\, z^2 - 25\,472\,406\,960\,000\, z + 17\,695\,362\,710\,025\Big) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ 3\left(4\,294\,967\,296\, z^8 - 425\,738\,633\,216\, z^7 + 9\,009\,331\,437\,568\, z^6 - 31\,505\,692\,753\,920\, z^5 - 17\,904\,980\,459\,520\, z^4 - \right. $$
$$ \left. 7\,621\,873\,459\,200\, z^3 + 12\,226\,755\,340\,800\, z^2 - 63\,426\,293\,330\,400\, z + 29\,492\,271\,183\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\,\left(-4\,294\,967\,296\, z^8 + 426\,275\,504\,128\, z^7 - 9\,060\,904\,599\,552\, z^6 + 32\,481\,843\,609\,600\, z^5 + \right. $$
$$ 16\,318\,583\,930\,880\, z^4 + 6\,210\,415\,411\,200\, z^3 - 4\,657\,811\,558\,400\, z^2 + 1\,528\,344\,417\,600\, z - $$
$$ \left.\left.\left. 88\,476\,813\,550\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(13\,428\,735\,344\,640\,\sqrt{2}\; z^{15/4}\right) $$

07.22.03.9959.01

$$ {}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) = $$
$$ -\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 + 429\,496\,729\,600\, z^7 + 9\,378\,799\,288\,320\, z^6 + 39\,106\,105\,049\,088\, z^5 + 4\,969\,921\,904\,640\, z^4 - \right.\right.\right. $$
$$ 8\,972\,700\,549\,120\, z^3 + 8\,151\,170\,227\,200\, z^2 + 25\,472\,406\,960\,000\, z + 17\,695\,362\,710\,025\Big) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ 3\left(4\,294\,967\,296\, z^8 + 425\,738\,633\,216\, z^7 + 9\,009\,331\,437\,568\, z^6 + 31\,505\,692\,753\,920\, z^5 - 17\,904\,980\,459\,520\, z^4 + \right. $$
$$ 7\,621\,873\,459\,200\, z^3 + 12\,226\,755\,340\,800\, z^2 + 63\,426\,293\,330\,400\, z + 29\,492\,271\,183\,375\Big) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 + 426\,275\,504\,128\, z^7 + 9\,060\,904\,599\,552\, z^6 + 32\,481\,843\,609\,600\, z^5 - \right. $$
$$ 16\,318\,583\,930\,880\, z^4 + 6\,210\,415\,411\,200\, z^3 + 4\,657\,811\,558\,400\, z^2 + 1\,528\,344\,417\,600\, z + $$
$$ \left.\left.\left. 88\,476\,813\,550\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(13\,428\,735\,344\,640\,\sqrt{2}\; z^{15/4}\right) $$

07.22.03.9960.01

$$
{}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) =
$$

$$
-\Big(19\, e^{-2\sqrt{z}} \Big(4\sqrt[4]{z}\, \Big(17\,179\,869\,184\, z^{17/2} - 4\,294\,967\,296\, z^8 - 1\,803\,886\,264\,320\, z^{15/2} + 447\,750\,340\,608\, z^7 +
$$

$$
40\,779\,909\,169\,152\, z^{13/2} - 9\,870\,237\,499\,392\, z^6 - 154\,866\,454\,364\,160\, z^{11/2} + 32\,359\,764\,197\,376\, z^5 -
$$

$$
93\,424\,540\,188\,672\, z^{9/2} + 31\,616\,660\,275\,200\, z^4 - 45\,166\,657\,536\,000\, z^{7/2} + 15\,243\,746\,918\,400\, z^3 +
$$

$$
47\,340\,302\,929\,920\, z^{5/2} - 100\,185\,292\,247\,040\, z^2 + 1\,013\,292\,348\,868\,800\, z + 2\,216\,577\,013\,150\,500\sqrt{z} +
$$

$$
e^{4\sqrt{z}} \Big(17\,179\,869\,184\, z^{17/2} + 4\,294\,967\,296\, z^8 - 1\,803\,886\,264\,320\, z^{15/2} - 447\,750\,340\,608\, z^7 +
$$

$$
40\,779\,909\,169\,152\, z^{13/2} + 9\,870\,237\,499\,392\, z^6 - 154\,866\,454\,364\,160\, z^{11/2} -
$$

$$
32\,359\,764\,197\,376\, z^5 - 93\,424\,540\,188\,672\, z^{9/2} - 31\,616\,660\,275\,200\, z^4 - 45\,166\,657\,536\,000\, z^{7/2} -
$$

$$
15\,243\,746\,918\,400\, z^3 + 47\,340\,302\,929\,920\, z^{5/2} + 100\,185\,292\,247\,040\, z^2 - 1\,013\,292\,348\,868\,800\, z +
$$

$$
2\,216\,577\,013\,150\,500\sqrt{z} - 1\,662\,432\,759\,862\,875\Big) + 1\,662\,432\,759\,862\,875\Big) +
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\, \Big(68\,719\,476\,736\, z^9 - 7\,228\,429\,959\,168\, z^8 + 164\,446\,781\,571\,072\, z^7 - 647\,509\,202\,436\,096\, z^6 -
$$

$$
303\,519\,938\,641\,920\, z^5 - 94\,849\,980\,825\,600\, z^4 + 106\,706\,228\,428\,800\, z^3 -
$$

$$
260\,096\,431\,795\,200\, z^2 + 759\,969\,261\,651\,600\, z - 1\,662\,432\,759\,862\,875\Big) \operatorname{erf}\Big(\sqrt{2}\,\sqrt[4]{z}\Big) -
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\, \Big(68\,719\,476\,736\, z^9 - 7\,228\,429\,959\,168\, z^8 + 164\,446\,781\,571\,072\, z^7 - 647\,509\,202\,436\,096\, z^6 -
$$

$$
303\,519\,938\,641\,920\, z^5 - 94\,849\,980\,825\,600\, z^4 + 106\,706\,228\,428\,800\, z^3 - 260\,096\,431\,795\,200\, z^2 +
$$

$$
759\,969\,261\,651\,600\, z - 1\,662\,432\,759\,862\,875\Big) \operatorname{erfi}\Big(\sqrt{2}\,\sqrt[4]{z}\Big)\Big)\Big)\Big/\Big(26\,599\,385\,299\,156\,992\, z^{19/4}\Big)
$$

07.22.03.9961.01

$$
{}_1F_2\left(-\frac{17}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) =
$$

$$
-\Bigg(19\Bigg(\sqrt{\pi}\, \Big(68\,719\,476\,736\, z^9 + 7\,228\,429\,959\,168\, z^8 + 164\,446\,781\,571\,072\, z^7 + 647\,509\,202\,436\,096\, z^6 -
$$

$$
303\,519\,938\,641\,920\, z^5 + 94\,849\,980\,825\,600\, z^4 + 106\,706\,228\,428\,800\, z^3 +
$$

$$
260\,096\,431\,795\,200\, z^2 + 759\,969\,261\,651\,600\, z + 1\,662\,432\,759\,862\,875\Big) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) +
$$

$$
2\sqrt[4]{z}\, \Big(4\sqrt{z}\, \Big(4\,294\,967\,296\, z^8 + 450\,971\,566\,080\, z^7 + 10\,194\,977\,292\,288\, z^6 + 38\,716\,613\,591\,040\, z^5 -
$$

$$
23\,356\,135\,047\,168\, z^4 + 11\,291\,664\,384\,000\, z^3 + 11\,835\,075\,732\,480\, z^2 + 554\,144\,253\,287\,625\Big)
$$

$$
\cos\Big(2\sqrt{z}\Big) + \Big(4\,294\,967\,296\, z^8 + 447\,750\,340\,608\, z^7 + 9\,870\,237\,499\,392\, z^6 + 32\,359\,764\,197\,376\, z^5 -
$$

$$
31\,616\,660\,275\,200\, z^4 + 15\,243\,746\,918\,400\, z^3 + 100\,185\,292\,247\,040\, z^2 +
$$

$$
1\,013\,292\,348\,868\,800\, z - 1\,662\,432\,759\,862\,875\Big) \sin\Big(2\sqrt{z}\Big)\Big)\Bigg)\Bigg)\Big/\Big(6\,649\,846\,324\,789\,248\, z^{19/4}\Big)
$$

For fixed z and $a_1 = -\frac{17}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.9962.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},-\frac{23}{4};z\right)=\frac{1}{1\,748\,906\,775\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(-\left(1\,048\,576\,z^5+41\,091\,072\,z^4+625\,680\,384\,z^3+3\,415\,104\,000\,z^2+912\,473\,100\,z-1\,748\,906\,775\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(131\,072\,z^4+5\,251\,072\,z^3+82\,897\,920\,z^2+473\,134\,200\,z+582\,968\,925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(262\,144\,z^4+10\,469\,376\,z^3+164\,382\,720\,z^2+981\,993\,600\,z+1\,748\,906\,775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9963.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},-\frac{23}{4};-z\right)=\frac{1}{1\,748\,906\,775\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(1\,048\,576\,z^5-41\,091\,072\,z^4+625\,680\,384\,z^3-3\,415\,104\,000\,z^2+912\,473\,100\,z+1\,748\,906\,775\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(131\,072\,z^4-5\,251\,072\,z^3+82\,897\,920\,z^2-473\,134\,200\,z+582\,968\,925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(262\,144\,z^4-10\,469\,376\,z^3+164\,382\,720\,z^2-981\,993\,600\,z+1\,748\,906\,775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9964.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},-\frac{21}{4};z\right)=\cosh\left(2\sqrt{z}\right)-\frac{4}{21}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.9965.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},-\frac{21}{4};-z\right)=\cos\left(2\sqrt{z}\right)+\frac{4}{21}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.9966.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},-\frac{19}{4};z\right)=\frac{1}{228\,118\,275\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(-\left(524\,288\,z^5+12\,189\,696\,z^4+131\,622\,912\,z^3+546\,416\,640\,z^2+48\,024\,900\,z-228\,118\,275\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(65\,536\,z^4+1\,581\,056\,z^3+17\,882\,880\,z^2+85\,377\,600\,z+76\,039\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(131\,072\,z^4+3\,145\,728\,z^3+35\,320\,320\,z^2+164\,678\,400\,z+228\,118\,275\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9967.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{1}{2}, -\frac{19}{4}; -z\right) = \frac{1}{228\,118\,275\sqrt[4]{z}} \left(\sqrt{2}\left(\left(524\,288 z^5 - 12\,189\,696 z^4 + 131\,622\,912 z^3 - 546\,416\,640 z^2 + 48\,024\,900 z + 228\,118\,275\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(65\,536 z^4 - 1\,581\,056 z^3 + 17\,882\,880 z^2 - 85\,377\,600 z + 76\,039\,425\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(131\,072 z^4 - 3\,145\,728 z^3 + 35\,320\,320 z^2 - 164\,678\,400 z + 228\,118\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9968.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{1}{2}, -\frac{17}{4}; z\right) = \cosh\left(2\sqrt{z}\right) $$

07.22.03.9969.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{1}{2}, -\frac{17}{4}; -z\right) = \cos\left(2\sqrt{z}\right) $$

07.22.03.9970.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{1}{2}, -\frac{15}{4}; z\right) = \frac{1}{12\,006\,225\sqrt[4]{z}} \left(\sqrt{2}\left(-\left(262\,144 z^5 + 1\,916\,928 z^4 + 12\,542\,976 z^3 + 35\,703\,360 z^2 - 3\,201\,660 z - 12\,006\,225\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(32\,768 z^4 + 268\,288 z^3 + 1\,825\,920 z^2 + 6\,403\,320 z + 4\,002\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(65\,536 z^4 + 528\,384 z^3 + 3\,559\,680 z^2 + 11\,946\,960 z + 12\,006\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9971.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{1}{2}, -\frac{15}{4}; -z\right) = \frac{1}{12\,006\,225\sqrt[4]{z}} \left(\sqrt{2}\left(\left(262\,144 z^5 - 1\,916\,928 z^4 + 12\,542\,976 z^3 - 35\,703\,360 z^2 - 3\,201\,660 z + 12\,006\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(32\,768 z^4 - 268\,288 z^3 + 1\,825\,920 z^2 - 6\,403\,320 z + 4\,002\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(65\,536 z^4 - 528\,384 z^3 + 3\,559\,680 z^2 - 11\,946\,960 z + 12\,006\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9972.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{1}{2}, -\frac{13}{4}; z\right) = \frac{1}{4\,054\,050}\left(e^{-2\sqrt{z}}\left(65\,536 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} - 65\,536 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} + 65\,536 e^{4\sqrt{z}} z^4 + 65\,536 z^4 + 16\,384 e^{4\sqrt{z}} z^{7/2} - 16\,384 z^{7/2} + 12\,288 e^{4\sqrt{z}} z^3 + 12\,288 z^3 + 15\,360 e^{4\sqrt{z}} z^{5/2} - 15\,360 z^{5/2} + 26\,880 e^{4\sqrt{z}} z^2 + 26\,880 z^2 + 60\,480 e^{4\sqrt{z}} z^{3/2} - 60\,480 z^{3/2} + 166\,320 e^{4\sqrt{z}} z + 166\,320 z + 540\,540 e^{4\sqrt{z}}\sqrt{z} - 540\,540\sqrt{z} + 2\,027\,025 e^{4\sqrt{z}} + 2\,027\,025\right)\right) $$

07.22.03.9973.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},-\frac{13}{4};-z\right)= \frac{1}{2\,027\,025}\left(131\,072\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}+4\left(4096z^3-3840z^2+15\,120z-135\,135\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(65\,536z^4-12\,288z^3+26\,880z^2-166\,320z+2\,027\,025\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9974.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},-\frac{11}{4};z\right)= \frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(\left(131\,072z^5-1\,130\,496z^4-1\,692\,672z^3-2\,882\,880z^2+873\,180z+800\,415\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(-16\,384z^4+126\,976z^3+311\,040z^2+646\,800z+266\,805\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-32\,768z^4+258\,048z^3+602\,880z^2+1\,217\,520z+800\,415\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9975.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},-\frac{11}{4};-z\right)= -\frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(\left(131\,072z^5+1\,130\,496z^4-1\,692\,672z^3+2\,882\,880z^2+873\,180z-800\,415\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(16\,384z^4+126\,976z^3-311\,040z^2+646\,800z-266\,805\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(32\,768z^4+258\,048z^3-602\,880z^2+1\,217\,520z-800\,415\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9976.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},-\frac{9}{4};z\right)= \frac{1}{311\,850}\left(e^{-2\sqrt{z}}\left(-16\,384e^{4\sqrt{z}}z^4-16\,384z^4-4096e^{4\sqrt{z}}z^{7/2}+4096z^{7/2}-1024e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-255)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+1024e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-255)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+258\,048e^{4\sqrt{z}}z^3+258\,048z^3+61\,440e^{4\sqrt{z}}z^{5/2}-61\,440z^{5/2}+42\,240e^{4\sqrt{z}}z^2+42\,240z^2+46\,080e^{4\sqrt{z}}z^{3/2}-46\,080z^{3/2}+65\,520e^{4\sqrt{z}}z+65\,520z+105\,840e^{4\sqrt{z}}\sqrt{z}-105\,840\sqrt{z}+155\,925e^{4\sqrt{z}}+155\,925\right)\right) $$

07.22.03.9977.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},-\frac{9}{4};-z\right)= \frac{1}{155\,925}\left(-2048\sqrt{\pi}\,(16z+255)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}-16\left(256z^3+3840z^2-2880z+6615\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-16\,384z^4-258\,048z^3+42\,240z^2-65\,520z+155\,925\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.9978.01

$${}_1F_2\left(-\frac{17}{4};\frac{1}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-65\,536z^5+1\,609\,728z^4-4\,506\,624z^3-443\,520z^2+623\,700z+218\,295\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(8192z^4-194\,048z^3+399\,360z^2+304\,920z+72\,765\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(16\,384z^4-390\,144z^3+840\,960z^2+609\,120z+218\,295\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9979.01

$${}_1F_2\left(-\frac{17}{4};\frac{1}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536z^5+1\,609\,728z^4+4\,506\,624z^3-443\,520z^2-623\,700z+218\,295\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(8192z^4+194\,048z^3+399\,360z^2-304\,920z+72\,765\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(16\,384z^4+390\,144z^3+840\,960z^2-609\,120z+218\,295\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9980.01

$${}_1F_2\left(-\frac{17}{4};\frac{1}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{34\,650}\left(e^{-2\sqrt{z}}\left(2048e^{4\sqrt{z}}z^4+2048z^4+512e^{4\sqrt{z}}z^{7/2}-512z^{7/2}-64\,896e^{4\sqrt{z}}z^3-64\,896z^3-15\,840e^{4\sqrt{z}}z^{5/2}+\right.\right.$$
$$15\,840z^{5/2}+8e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-8160z+36\,465\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-$$
$$8e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-8160z+36\,465\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+280\,320e^{4\sqrt{z}}z^2+280\,320z^2+59\,520e^{4\sqrt{z}}z^{3/2}-$$
$$\left.\left.59\,520z^{3/2}+33\,120e^{4\sqrt{z}}z+33\,120z+25\,020e^{4\sqrt{z}}\sqrt{z}-25\,020\sqrt{z}+17\,325e^{4\sqrt{z}}+17\,325\right)\right)$$

07.22.03.9981.01

$${}_1F_2\left(-\frac{17}{4};\frac{1}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{17\,325}\left(16\sqrt{\pi}\left(256z^2+8160z+36\,465\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+4\left(128z^3+3960z^2+14\,880z-6255\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(2048z^4+64\,896z^3+280\,320z^2-33\,120z+17\,325\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.9982.01

$${}_1F_2\left(-\frac{17}{4};\frac{1}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{155\,925\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768z^5-1\,327\,104z^4+9\,597\,312z^3-11\,088\,000z^2+1\,455\,300z+155\,925\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(4096z^4-162\,304z^3+1\,060\,560z^2-554\,400z-51\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(-8192z^4+325\,632z^3-2\,158\,560z^2+1\,274\,400z+155\,925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9983.01

$${}_1F_2\left(-\frac{17}{4};\frac{1}{2},-\frac{3}{4};-z\right)=$$
$$-\frac{1}{155\,925\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768z^5+1\,327\,104z^4+9\,597\,312z^3+11\,088\,000z^2+1\,455\,300z-155\,925\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(4096z^4+162\,304z^3+1\,060\,560z^2+554\,400z-51\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(8192z^4+325\,632z^3+2\,158\,560z^2+1\,274\,400z-155\,925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9984.01

$${}_1F_2\left(-\frac{17}{4};\frac{1}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{166\,320}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-195\,840z^2+1\,750\,320z-2\,297\,295\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left(4096z^3-195\,840z^2+1\,750\,320z-2\,297\,295\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-4\left(1024z^4-256z^{7/2}-48\,768z^3+\right.$$
$$12\,000z^{5/2}+428\,820z^2-98\,865z^{3/2}-509\,760z+77\,760\sqrt{z}+e^{4\sqrt{z}}\left(1024z^4+256z^{7/2}-\right.$$
$$\left.\left.\left.\left.48\,768z^3-12\,000z^{5/2}+428\,820z^2+98\,865z^{3/2}-509\,760z-77\,760\sqrt{z}-20\,790\right)-20\,790\right)\right)\right)$$

07.22.03.9985.01

$${}_1F_2\left(-\frac{17}{4};\frac{1}{2},-\frac{1}{4};-z\right)=\frac{1}{41\,580}\left(-\sqrt{\pi}\left(4096z^3+195\,840z^2+1\,750\,320z+2\,297\,295\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}-\right.$$
$$2\left(2\left(512z^4+24\,384z^3+214\,410z^2+254\,880z-10\,395\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\sqrt{z}\left(256z^3+12\,000z^2+98\,865z+77\,760\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.9986.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{1}{4};z\right)= \frac{1}{363\,825\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,384z^5+924\,672z^4-10\,804\,416z^3+26\,514\,180z^2-13\,097\,700z+363\,825\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+ 6\sqrt{z}\left(4096z^4-227\,584z^3+2\,504\,880z^2-4\,579\,575z+242\,550\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ 4z\left(4096z^4-228\,096z^3+2\,531\,760z^2-4\,817\,925z+363\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9987.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{1}{4};-z\right)= \frac{1}{363\,825\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384z^5+924\,672z^4+10\,804\,416z^3+26\,514\,180z^2+13\,097\,700z+363\,825\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 6\sqrt{z}\left(4096z^4+227\,584z^3+2\,504\,880z^2+4\,579\,575z+242\,550\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ 4z\left(4096z^4+228\,096z^3+2\,531\,760z^2+4\,817\,925z+363\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9988.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{3}{4};z\right)= \frac{1}{42\,577\,920}\left(e^{-2\sqrt{z}}\left(4\left(16\,384z^4-4096z^{7/2}-1\,041\,408z^3+257\,280z^{5/2}+13\,813\,440z^2-3\,270\,960z^{3/2}- 34\,518\,060z+6\,736\,095\sqrt{z}\right)+e^{4\sqrt{z}}\left(16\,384z^4+4096z^{7/2}-1\,041\,408z^3-257\,280z^{5/2}+ 13\,813\,440z^2+3\,270\,960z^{3/2}-34\,518\,060z-6\,736\,095\sqrt{z}+5\,322\,240\right)+5\,322\,240\right)+ e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(65\,536z^4-4\,177\,920z^3+56\,010\,240z^2-147\,026\,880z+34\,459\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)- e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(65\,536z^4-4\,177\,920z^3+56\,010\,240z^2-147\,026\,880z+34\,459\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9989.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{3}{4};-z\right)= \frac{1}{10\,644\,480}\left(\sqrt{\pi}\sqrt[4]{z}\left(65\,536z^4+4\,177\,920z^3+56\,010\,240z^2+147\,026\,880z+34\,459\,425\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ 2\left(4\left(4096z^4+260\,352z^3+3\,453\,360z^2+8\,629\,515z+1\,330\,560\right)\cos\left(2\sqrt{z}\right)+ \sqrt{z}\left(4096z^3+257\,280z^2+3\,270\,960z+6\,736\,095\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.9990.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{5}{4};z\right)= $$

$$ \frac{1}{26\,195\,400\sqrt{2}\,\sqrt[4]{z}}\left(\left(-2\left(65\,536z^5-4\,743\,168z^4+76\,575\,744z^3-287\,955\,360z^2+223\,627\,635z-26\,195\,400\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$

$$ 3\sqrt{z}\left(65\,536z^4-4\,685\,824z^3+72\,522\,240z^2-227\,525\,760z+58\,367\,925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ \left.\left.2z\left(65\,536z^4-4\,694\,016z^3+73\,082\,880z^2-234\,995\,040z+70\,322\,175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9991.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{5}{4};-z\right)= $$

$$ \frac{1}{26\,195\,400\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(65\,536z^5+4\,743\,168z^4+76\,575\,744z^3+287\,955\,360z^2+223\,627\,635z+26\,195\,400\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$

$$ 3\sqrt{z}\left(65\,536z^4+4\,685\,824z^3+72\,522\,240z^2+227\,525\,760z+58\,367\,925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ \left.\left.2z\left(65\,536z^4+4\,694\,016z^3+73\,082\,880z^2+234\,995\,040z+70\,322\,175\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.9992.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{7}{4};z\right)= $$

$$ \frac{1}{4\,541\,644\,800z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144z^{9/2}-65\,536z^4-20\,840\,448z^{7/2}+5\,160\,960z^3+369\,592\,320z^{5/2}-\right.\right.\right. $$

$$ 88\,696\,320z^2-1\,408\,158\,720z^{3/2}+297\,167\,040z+521\,759\,700\sqrt{z}\,+ $$

$$ e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4-20\,840\,448z^{7/2}-5\,160\,960z^3+369\,592\,320z^{5/2}+88\,696\,320z^2-\right. $$

$$ \left.\left.1\,408\,158\,720z^{3/2}-297\,167\,040z+521\,759\,700\sqrt{z}\,+34\,459\,425\right)-34\,459\,425\right)+ $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-83\,558\,400z^4+1\,493\,606\,400z^3-5\,881\,075\,200z^2+2\,756\,754\,000z+34\,459\,425\right) $$

$$ \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi} $$

$$ \left.\left.\left(1\,048\,576z^5-83\,558\,400z^4+1\,493\,606\,400z^3-5\,881\,075\,200z^2+2\,756\,754\,000z+34\,459\,425\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.9993.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{7}{4};-z\right)=\frac{1}{1\,135\,411\,200z^{3/4}} $$

$$ \left(\sqrt{\pi}\left(1\,048\,576z^5+83\,558\,400z^4+1\,493\,606\,400z^3+5\,881\,075\,200z^2+2\,756\,754\,000z-34\,459\,425\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right. $$

$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4+5\,210\,112z^3+92\,398\,080z^2+352\,039\,680z+130\,439\,925\right)\cos\left(2\sqrt{z}\right)+\right. $$

$$ \left.\left.\left.\left(65\,536z^4+5\,160\,960z^3+88\,696\,320z^2+297\,167\,040z+34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.9994.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{9}{4};z\right)=\frac{1}{1\,844\,156\,160\sqrt{2}\,z^{3/4}}$$
$$\left(\left(-2\sqrt{z}\left(1\,048\,576z^5-92\,602\,368z^4+1\,908\,301\,824z^3-9\,674\,058\,240z^2+10\,030\,260\,240z-1\,823\,480\,505\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$3\left(1\,048\,576z^5-91\,684\,864z^4+1\,828\,823\,040z^3-8\,134\,156\,800z^2+3\,851\,804\,880z+34\,459\,425\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576z^5-91\,815\,936z^4+1\,839\,882\,240z^3-\right.$$
$$\left.\left.\left.8\,330\,826\,240z^2+4\,399\,330\,320z+103\,378\,275\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9995.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{9}{4};-z\right)=\frac{1}{1\,844\,156\,160\sqrt{2}\,z^{3/4}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576z^5+92\,602\,368z^4+1\,908\,301\,824z^3+9\,674\,058\,240z^2+10\,030\,260\,240z+1\,823\,480\,505\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(1\,048\,576z^5+91\,684\,864z^4+1\,828\,823\,040z^3+8\,134\,156\,800z^2+3\,851\,804\,880z-34\,459\,425\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576z^5+91\,815\,936z^4+1\,839\,882\,240z^3+\right.$$
$$\left.\left.\left.8\,330\,826\,240z^2+4\,399\,330\,320z-103\,378\,275\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9996.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{249\,141\,657\,600z^{7/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304z^{11/2}-1\,048\,576z^5-400\,293\,888z^{9/2}+99\,287\,040z^4+8\,888\,156\,160z^{7/2}-\right.\right.\right.$$
$$2\,150\,277\,120z^3-45\,522\,155\,520z^{5/2}+9\,997\,309\,440z^2+27\,046\,958\,400z^{3/2}-2\,756\,754\,000z+$$
$$689\,188\,500\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^{11/2}+1\,048\,576z^5-400\,293\,888z^{9/2}-99\,287\,040z^4+\right.$$
$$8\,888\,156\,160z^{7/2}+2\,150\,277\,120z^3-45\,522\,155\,520z^{5/2}-9\,997\,309\,440z^2+$$
$$\left.27\,046\,958\,400z^{3/2}+2\,756\,754\,000z+689\,188\,500\sqrt{z}-516\,891\,375\right)+516\,891\,375\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-1\,604\,321\,280z^5+35\,846\,553\,600z^4-188\,194\,406\,400z^3+\right.$$
$$132\,324\,192\,000z^2+3\,308\,104\,800z-516\,891\,375\Big)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-1\,604\,321\,280z^5+35\,846\,553\,600z^4-188\,194\,406\,400z^3+\right.$$
$$\left.\left.132\,324\,192\,000z^2+3\,308\,104\,800z-516\,891\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.9997.01

$${}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{62\,285\,414\,400\,z^{7/4}}\left(\sqrt{\pi}\,\left(16\,777\,216\,z^6+1\,604\,321\,280\,z^5+35\,846\,553\,600\,z^4+188\,194\,406\,400\,z^3+132\,324\,192\,000\,z^2-\right.\right.$$
$$3\,308\,104\,800\,z-516\,891\,375\Big)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(1\,048\,576\,z^5+100\,073\,472\,z^4+\right.\right.$$
$$2\,222\,039\,040\,z^3+11\,380\,538\,880\,z^2+6\,761\,739\,600\,z-172\,297\,125\Big)\cos\left(2\sqrt{z}\right)+$$
$$\left.\left.\left(1\,048\,576\,z^5+99\,287\,040\,z^4+2\,150\,277\,120\,z^3+9\,997\,309\,440\,z^2+2\,756\,754\,000\,z+516\,891\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.9998.01

$${}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{85\,240\,995\,840\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\,\left(-16\,777\,216\,z^6+1\,749\,024\,768\,z^5-43\,852\,038\,144\,z^4+279\,765\,319\,680\,z^3-\right.\right.\right.$$
$$360\,169\,286\,400\,z^2+82\,447\,485\,120\,z+723\,647\,925\Big)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$3\left(16\,777\,216\,z^6-1\,734\,344\,704\,z^5+42\,346\,414\,080\,z^4-243\,867\,402\,240\,z^3+169\,870\,821\,120\,z^2+5\,513\,508\,000\,z-\right.$$
$$1\,206\,079\,875\Big)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(16\,777\,216\,z^6-1\,736\,441\,856\,z^5+42\,556\,784\,640\,z^4-$$
$$\left.\left.248\,547\,409\,920\,z^3+188\,644\,135\,680\,z^2+8\,821\,612\,800\,z-3\,618\,239\,625\Big)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.9999.01

$${}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{85\,240\,995\,840\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,749\,024\,768\,z^5+43\,852\,038\,144\,z^4+279\,765\,319\,680\,z^3+\right.\right.\right.$$
$$360\,169\,286\,400\,z^2+82\,447\,485\,120\,z-723\,647\,925\Big)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\left(16\,777\,216\,z^6+1\,734\,344\,704\,z^5+42\,346\,414\,080\,z^4+243\,867\,402\,240\,z^3+169\,870\,821\,120\,z^2-5\,513\,508\,000\,z-\right.$$
$$1\,206\,079\,875\Big)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,736\,441\,856\,z^5+42\,556\,784\,640\,z^4+$$
$$\left.\left.248\,547\,409\,920\,z^3+188\,644\,135\,680\,z^2-8\,821\,612\,800\,z-3\,618\,239\,625\Big)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7ps.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{15}{4};z\right)=\frac{1}{10\,146\,860\,236\,800\,z^{11/4}}$$
$$\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(67\,108\,864\,z^{13/2}-16\,777\,216\,z^6-7\,474\,249\,728\,z^{11/2}+1\,855\,979\,520\,z^5+199\,364\,444\,160\,z^{9/2}-\right.\right.\right.$$
$$48\,492\,380\,160\,z^4-1\,282\,622\,423\,040\,z^{7/2}+288\,647\,331\,840\,z^3+1\,053\,430\,963\,200\,z^{5/2}-$$
$$132\,324\,192\,000\,z^2+57\,340\,483\,200\,z^{3/2}+23\,156\,733\,600\,z-43\,418\,875\,500\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+\right.$$
$$16\,777\,216\,z^6-7\,474\,249\,728\,z^{11/2}-1\,855\,979\,520\,z^5+199\,364\,444\,160\,z^{9/2}+48\,492\,380\,160\,z^4-$$
$$1\,282\,622\,423\,040\,z^{7/2}-288\,647\,331\,840\,z^3+1\,053\,430\,963\,200\,z^{5/2}+132\,324\,192\,000\,z^2+$$
$$\left.57\,340\,483\,200\,z^{3/2}-23\,156\,733\,600\,z-43\,418\,875\,500\sqrt{z}+32\,564\,156\,625\right)-32\,564\,156\,625\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-29\,947\,330\,560\,z^6+802\,962\,800\,640\,z^5-5\,269\,443\,379\,200\,z^4+\right.$$
$$\left.4\,940\,103\,168\,000\,z^3+185\,253\,868\,800\,z^2-57\,891\,834\,000\,z+32\,564\,156\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-29\,947\,330\,560\,z^6+802\,962\,800\,640\,z^5-5\,269\,443\,379\,200\,z^4+\right.$$
$$\left.\left.\left.4\,940\,103\,168\,000\,z^3+185\,253\,868\,800\,z^2-57\,891\,834\,000\,z+32\,564\,156\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a7pt.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{2\,536\,715\,059\,200\,z^{11/4}}\left(\sqrt{\pi}\left(268\,435\,456\,z^7+29\,947\,330\,560\,z^6+802\,962\,800\,640\,z^5+5\,269\,443\,379\,200\,z^4+\right.\right.$$
$$\left.4\,940\,103\,168\,000\,z^3-185\,253\,868\,800\,z^2-57\,891\,834\,000\,z-32\,564\,156\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216\,z^6+1\,868\,562\,432\,z^5+49\,841\,111\,040\,z^4+320\,655\,605\,760\,z^3+263\,357\,740\,800\,z^2-\right.\right.$$
$$\left.14\,335\,120\,800\,z-10\,854\,718\,875\right)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6+1\,855\,979\,520\,z^5+48\,492\,380\,160\,z^4+\right.$$
$$\left.\left.\left.288\,647\,331\,840\,z^3+132\,324\,192\,000\,z^2+23\,156\,733\,600\,z+32\,564\,156\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a7pu.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{17}{4};z\right)=$$
$$\left(\left(-2\sqrt{z}\left(268\,435\,456\,z^7-32\,262\,586\,368\,z^6+952\,976\,277\,504\,z^5-7\,329\,079\,296\,000\,z^4+11\,234\,822\,860\,800\,z^3-\right.\right.\right.$$
$$\left.2\,960\,748\,806\,400\,z^2-150\,518\,768\,400\,z+71\,641\,144\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$3\left(268\,435\,456\,z^7-32\,027\,705\,344\,z^6+925\,142\,876\,160\,z^5-6\,541\,103\,923\,200\,z^4+6\,036\,910\,387\,200\,z^3+\right.$$
$$\left.361\,686\,124\,800\,z^2-335\,772\,637\,200\,z+119\,401\,907\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(268\,435\,456\,z^7-32\,061\,259\,776\,z^6+929\,043\,578\,880\,z^5-6\,645\,296\,332\,800\,z^4+6\,585\,313\,996\,800\,z^3+\right.$$
$$\left.\left.\left.449\,902\,252\,800\,z^2-243\,145\,702\,800\,z+358\,205\,722\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(3\,147\,359\,846\,400\sqrt{2}\,z^{11/4}\right)$$

07.22.03.a7pv.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{1}{2}, \frac{17}{4}; -z\right) = $$

$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 + 32\,262\,586\,368\,z^6 + 952\,976\,277\,504\,z^5 + 7\,329\,079\,296\,000\,z^4 + 11\,234\,822\,860\,800\,z^3 + \right.\right.\right.$$
$$\left.\left.\left. 2\,960\,748\,806\,400\,z^2 - 150\,518\,768\,400\,z - 71\,641\,144\,575\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.$$
$$3\left(268\,435\,456\,z^7 + 32\,027\,705\,344\,z^6 + 925\,142\,876\,160\,z^5 + 6\,541\,103\,923\,200\,z^4 + 6\,036\,910\,387\,200\,z^3 - \right.$$
$$\left. 361\,686\,124\,800\,z^2 - 335\,772\,637\,200\,z - 119\,401\,907\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7 + 32\,061\,259\,776\,z^6 + 929\,043\,578\,880\,z^5 + 6\,645\,296\,332\,800\,z^4 + 6\,585\,313\,996\,800\,z^3 - \right.$$
$$\left.\left. 449\,902\,252\,800\,z^2 - 243\,145\,702\,800\,z - 358\,205\,722\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(3\,147\,359\,846\,400\,\sqrt{2}\; z^{11/4}\right)$$

07.22.03.a7pw.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{1}{2}, \frac{19}{4}; z\right) = $$

$$\frac{1}{346\,346\,162\,749\,440\,z^{15/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(1\,073\,741\,824\,z^{15/2} - 268\,435\,456\,z^7 - 136\,700\,755\,968\,z^{13/2} + 33\,973\,862\,400\,z^6 + \right.\right.\right.$$
$$4\,257\,239\,531\,520\,z^{11/2} - 1\,039\,521\,546\,240\,z^5 - 32\,974\,901\,084\,160\,z^{9/2} +$$
$$7\,544\,889\,999\,360\,z^4 + 34\,639\,749\,365\,760\,z^{7/2} - 4\,940\,103\,168\,000\,z^3 + 2\,858\,202\,547\,200\,z^{5/2} +$$
$$520\,475\,155\,200\,z^2 - 2\,719\,262\,145\,600\,z^{3/2} + 798\,907\,309\,200\,z + 6\,208\,899\,196\,500\,\sqrt{z} +$$
$$e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 - 136\,700\,755\,968\,z^{13/2} - 33\,973\,862\,400\,z^6 + 4\,257\,239\,531\,520\right.$$
$$z^{11/2} + 1\,039\,521\,546\,240\,z^5 - 32\,974\,901\,084\,160\,z^{9/2} - 7\,544\,889\,999\,360\,z^4 + 34\,639\,749\,365\,760\,z^{7/2} +$$
$$4\,940\,103\,168\,000\,z^3 + 2\,858\,202\,547\,200\,z^{5/2} - 520\,475\,155\,200\,z^2 - 2\,719\,262\,145\,600\,z^{3/2} -$$
$$\left.798\,907\,309\,200\,z + 6\,208\,899\,196\,500\,\sqrt{z} - 4\,656\,674\,397\,375\right) + 4\,656\,674\,397\,375\Big) +$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4\,294\,967\,296\,z^8 - 547\,608\,330\,240\,z^7 + 17\,129\,873\,080\,320\,z^6 - 134\,897\,750\,507\,520\,z^5 + \right.$$
$$158\,083\,301\,376\,000\,z^4 + 7\,904\,165\,068\,800\,z^3 - 3\,705\,077\,376\,000\,z^2 +$$
$$\left.4\,168\,212\,048\,000\,z - 4\,656\,674\,397\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\,\sqrt{2\pi}$$
$$\left.\left.\left(4\,294\,967\,296\,z^8 - 547\,608\,330\,240\,z^7 + 17\,129\,873\,080\,320\,z^6 - 134\,897\,750\,507\,520\,z^5 + 158\,083\,301\,376\,000\,z^4 + \right.\right.\right.$$
$$\left.\left.\left.7\,904\,165\,068\,800\,z^3 - 3\,705\,077\,376\,000\,z^2 + 4\,168\,212\,048\,000\,z - 4\,656\,674\,397\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a7px.01

$${}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{19}{4};-z\right)=\frac{1}{86\,586\,540\,687\,360\,z^{15/4}}$$
$$\left(\sqrt{\pi}\,\left(4\,294\,967\,296\,z^8+547\,608\,330\,240\,z^7+17\,129\,873\,080\,320\,z^6+134\,897\,750\,507\,520\,z^5+158\,083\,301\,376\,000\,z^4-\right.\right.$$
$$\left.7\,904\,165\,068\,800\,z^3-3\,705\,077\,376\,000\,z^2-4\,168\,212\,048\,000\,z-4\,656\,674\,397\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(268\,435\,456\,z^7+34\,175\,188\,992\,z^6+1\,064\,309\,882\,880\,z^5+8\,243\,725\,271\,040\,z^4+\right.\right.$$
$$\left.8\,659\,937\,341\,440\,z^3-714\,550\,636\,800\,z^2-679\,815\,536\,400\,z-1\,552\,224\,799\,125\right)\cos\left(2\sqrt{z}\right)+$$
$$\left(268\,435\,456\,z^7+33\,973\,862\,400\,z^6+1\,039\,521\,546\,240\,z^5+7\,544\,889\,999\,360\,z^4+\right.$$
$$\left.\left.\left.4\,940\,103\,168\,000\,z^3+520\,475\,155\,200\,z^2-798\,907\,309\,200\,z+4\,656\,674\,397\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a7py.01

$${}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{21}{4};z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(-4\,294\,967\,296\,z^8+584\,652\,423\,168\,z^7-19\,880\,900\,296\,704\,z^6+178\,969\,871\,646\,720\,z^5-317\,747\,095\,142\,400\,z^4+\right.\right.\right.$$
$$\left.91\,854\,624\,153\,600\,z^3+10\,744\,724\,390\,400\,z^2-22\,160\,994\,055\,200\,z+13\,970\,023\,192\,125\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$3\left(4\,294\,967\,296\,z^8-580\,894\,326\,784\,z^7+19\,375\,671\,214\,080\,z^6-162\,409\,218\,048\,000\,z^5+186\,981\,787\,238\,400\,z^4+\right.$$
$$\left.16\,372\,913\,356\,800\,z^3-19\,266\,402\,355\,200\,z^2+53\,492\,054\,616\,000\,z-23\,283\,371\,986\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-581\,431\,197\,696\,z^7+19\,446\,638\,837\,760\,z^6-164\,621\,765\,836\,800\,z^5+\right.$$
$$201\,431\,030\,169\,600\,z^4+17\,784\,371\,404\,800\,z^3-10\,638\,865\,036\,800\,z^2+$$
$$\left.\left.11\,462\,583\,132\,000\,z-69\,850\,115\,960\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(100\,715\,515\,084\,800\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a7pz.01

$${}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{21}{4};-z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+584\,652\,423\,168\,z^7+19\,880\,900\,296\,704\,z^6+178\,969\,871\,646\,720\,z^5+317\,747\,095\,142\,400\,z^4+\right.\right.\right.$$
$$\left.91\,854\,624\,153\,600\,z^3-10\,744\,724\,390\,400\,z^2-22\,160\,994\,055\,200\,z-13\,970\,023\,192\,125\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\left(4\,294\,967\,296\,z^8+580\,894\,326\,784\,z^7+19\,375\,671\,214\,080\,z^6+162\,409\,218\,048\,000\,z^5+186\,981\,787\,238\,400\,z^4-\right.$$
$$\left.16\,372\,913\,356\,800\,z^3-19\,266\,402\,355\,200\,z^2-53\,492\,054\,616\,000\,z-23\,283\,371\,986\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+581\,431\,197\,696\,z^7+19\,446\,638\,837\,760\,z^6+164\,621\,765\,836\,800\,z^5+\right.$$
$$201\,431\,030\,169\,600\,z^4-17\,784\,371\,404\,800\,z^3-10\,638\,865\,036\,800\,z^2-$$
$$\left.\left.11\,462\,583\,132\,000\,z-69\,850\,115\,960\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(100\,715\,515\,084\,800\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a7q0.01

$$
{}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{23}{4};z\right)=
\left(19\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(17\,179\,869\,184\,z^{17/2}-4\,294\,967\,296\,z^{8}-2\,461\,016\,260\,608\,z^{15/2}+612\,032\,839\,680\,z^{7}+\right.\right.\right.
$$
$$
87\,641\,492\,029\,440\,z^{13/2}-21\,462\,421\,340\,160\,z^{6}-793\,835\,533\,762\,560\,z^{11/2}+183\,831\,436\,984\,320\,z^{5}+
$$
$$
1\,016\,850\,654\,167\,040\,z^{9/2}-158\,083\,301\,376\,000\,z^{4}+110\,658\,310\,963\,200\,z^{7/2}+3\,387\,499\,315\,200\,z^{3}-
$$
$$
108\,399\,978\,086\,400\,z^{5/2}+93\,473\,809\,228\,800\,z^{2}+170\,301\,235\,104\,000\,z^{3/2}-596\,054\,322\,864\,000\,z-
$$
$$
1\,583\,269\,295\,107\,500\sqrt{z}+e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}-2\,461\,016\,260\,608\,z^{15/2}-\right.
$$
$$
612\,032\,839\,680\,z^{7}+87\,641\,492\,029\,440\,z^{13/2}+21\,462\,421\,340\,160\,z^{6}-793\,835\,533\,762\,560\,z^{11/2}-
$$
$$
183\,831\,436\,984\,320\,z^{5}+1\,016\,850\,654\,167\,040\,z^{9/2}+158\,083\,301\,376\,000\,z^{4}+110\,658\,310\,963\,200\,z^{7/2}-
$$
$$
3\,387\,499\,315\,200\,z^{3}-108\,399\,978\,086\,400\,z^{5/2}-93\,473\,809\,228\,800\,z^{2}+170\,301\,235\,104\,000\,z^{3/2}+
$$
$$
\left.\left.596\,054\,322\,864\,000\,z-1\,583\,269\,295\,107\,500\sqrt{z}+1\,187\,451\,971\,330\,625\right)-1\,187\,451\,971\,330\,625\right)+
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-9\,856\,949\,944\,320\,z^{8}+352\,385\,960\,509\,440\,z^{7}-3\,237\,546\,012\,180\,480\,z^{6}+\right.
$$
$$
4\,552\,799\,079\,628\,800\,z^{5}+284\,549\,942\,476\,800\,z^{4}-177\,843\,714\,048\,000\,z^{3}+
$$
$$
\left.300\,111\,267\,456\,000\,z^{2}-670\,561\,113\,222\,000\,z+1\,187\,451\,971\,330\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-
$$
$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-9\,856\,949\,944\,320\,z^{8}+352\,385\,960\,509\,440\,z^{7}-3\,237\,546\,012\,180\,480\,z^{6}+\right.
$$
$$
4\,552\,799\,079\,628\,800\,z^{5}+284\,549\,942\,476\,800\,z^{4}-177\,843\,714\,048\,000\,z^{3}+300\,111\,267\,456\,000\,z^{2}-
$$
$$
\left.\left.\left.670\,561\,113\,222\,000\,z+1\,187\,451\,971\,330\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(199\,495\,389\,743\,677\,440\,z^{19/4}\right)
$$

07.22.03.a7q1.01

$$
{}_1F_2\left(-\frac{17}{4};\frac{1}{2},\frac{23}{4};-z\right)=
\left(19\left(\sqrt{\pi}\left(68\,719\,476\,736\,z^{9}+9\,856\,949\,944\,320\,z^{8}+352\,385\,960\,509\,440\,z^{7}+3\,237\,546\,012\,180\,480\,z^{6}+\right.\right.\right.
$$
$$
4\,552\,799\,079\,628\,800\,z^{5}-284\,549\,942\,476\,800\,z^{4}-177\,843\,714\,048\,000\,z^{3}-
$$
$$
\left.300\,111\,267\,456\,000\,z^{2}-670\,561\,113\,222\,000\,z-1\,187\,451\,971\,330\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$
$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^{8}+615\,254\,065\,152\,z^{7}+21\,910\,373\,007\,360\,z^{6}+198\,458\,883\,440\,640\,z^{5}+\right.\right.
$$
$$
254\,212\,663\,541\,760\,z^{4}-27\,664\,577\,740\,800\,z^{3}-27\,099\,994\,521\,600\,z^{2}-42\,575\,308\,776\,000\,z-
$$
$$
\left.395\,817\,323\,776\,875\right)\cos\left(2\sqrt{z}\right)+\left(4\,294\,967\,296\,z^{8}+612\,032\,839\,680\,z^{7}+21\,462\,421\,340\,160\,z^{6}+\right.
$$
$$
183\,831\,436\,984\,320\,z^{5}+158\,083\,301\,376\,000\,z^{4}+3\,387\,499\,315\,200\,z^{3}-93\,473\,809\,228\,800\,z^{2}-
$$
$$
\left.\left.\left.596\,054\,322\,864\,000\,z+1\,187\,451\,971\,330\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(49\,873\,847\,435\,919\,360\,z^{19/4}\right)
$$

For fixed z and $a_1 = -\frac{17}{4}$, $b_{1.} = \frac{3}{2}$

07.22.03.a7q2.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, -\frac{23}{4}; z\right) = \frac{1}{33\,229\,228\,725\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left(-\left(2\,097\,152 z^5 + 104\,464\,384 z^4 + 2\,187\,214\,848 z^3 + 19\,431\,336\,960 z^2 + 50\,084\,634\,600 z - 33\,229\,228\,725\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.$$
$$12\sqrt{z}\left(262\,144 z^4 + 13\,287\,424 z^3 + 285\,214\,720 z^2 + 2\,689\,142\,400 z + 11\,076\,409\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left. 8 z\left(262\,144 z^4 + 13\,254\,656 z^3 + 283\,453\,440 z^2 + 2\,647\,612\,800 z + 7\,960\,599\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7q3.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, -\frac{23}{4}; -z\right) = \frac{1}{33\,229\,228\,725\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(2\,097\,152 z^5 - 104\,464\,384 z^4 + 2\,187\,214\,848 z^3 - 19\,431\,336\,960 z^2 + 50\,084\,634\,600 z + 33\,229\,228\,725\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$12\sqrt{z}\left(262\,144 z^4 - 13\,287\,424 z^3 + 285\,214\,720 z^2 - 2\,689\,142\,400 z + 11\,076\,409\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left. 8 z\left(262\,144 z^4 - 13\,254\,656 z^3 + 283\,453\,440 z^2 - 2\,647\,612\,800 z + 7\,960\,599\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7q4.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, -\frac{21}{4}; z\right) = \frac{1}{42}\left(\frac{23\sinh\left(2\sqrt{z}\right)}{\sqrt{z}} - 4\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.a7q5.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, -\frac{21}{4}; -z\right) = \frac{1}{42}\left(\frac{23\sin\left(2\sqrt{z}\right)}{\sqrt{z}} - 4\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a7q6.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, -\frac{19}{4}; z\right) = \frac{1}{4\,334\,247\,225\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(-\left(1\,048\,576 z^5 + 31\,064\,064 z^4 + 462\,532\,608 z^3 + 3\,162\,313\,728 z^2 + 6\,083\,154\,000 z - 4\,334\,247\,225\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$12\sqrt{z}\left(131\,072 z^4 + 3\,997\,696 z^3 + 61\,407\,744 z^2 + 452\,471\,040 z + 1\,444\,749\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left. 16 z\left(65\,536 z^4 + 1\,990\,656 z^3 + 30\,428\,928 z^2 + 221\,434\,560 z + 564\,320\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7q7.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, -\frac{19}{4}; -z\right) = \frac{1}{4\,334\,247\,225\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(1\,048\,576\,z^5 - 31\,064\,064\,z^4 + 462\,532\,608\,z^3 - 3\,162\,313\,728\,z^2 + 6\,083\,154\,000\,z + 4\,334\,247\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(131\,072\,z^4 - 3\,997\,696\,z^3 + 61\,407\,744\,z^2 - 452\,471\,040\,z + 1\,444\,749\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 16\,z\left(65\,536\,z^4 - 1\,990\,656\,z^3 + 30\,428\,928\,z^2 - 221\,434\,560\,z + 564\,320\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7q8.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, -\frac{17}{4}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}} $$

07.22.03.a7q9.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, -\frac{17}{4}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}} $$

07.22.03.a7qa.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, -\frac{15}{4}; z\right) = \frac{1}{228\,118\,275\,\sqrt[4]{z}} \left(\sqrt{2}\left(-\left(524\,288\,z^5 + 4\,947\,968\,z^4 + 44\,722\,176\,z^3 + 215\,192\,448\,z^2 + 283\,880\,520\,z - 228\,118\,275\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(65\,536\,z^4 + 675\,840\,z^3 + 6\,228\,224\,z^2 + 33\,133\,200\,z + 76\,039\,425\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 8\,z\left(65\,536\,z^4 + 667\,648\,z^3 + 6\,118\,656\,z^2 + 31\,898\,160\,z + 64\,607\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7qb.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, -\frac{15}{4}; -z\right) = \frac{1}{228\,118\,275\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(524\,288\,z^5 - 4\,947\,968\,z^4 + 44\,722\,176\,z^3 - 215\,192\,448\,z^2 + 283\,880\,520\,z + 228\,118\,275\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(65\,536\,z^4 - 675\,840\,z^3 + 6\,228\,224\,z^2 - 33\,133\,200\,z + 76\,039\,425\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 8\,z\left(65\,536\,z^4 - 667\,648\,z^3 + 6\,118\,656\,z^2 - 31\,898\,160\,z + 64\,607\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7qc.01

$${}_1F_2\left(-\frac{17}{4};\frac{3}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{154\,053\,900\sqrt{z}}\left(e^{-2\sqrt{z}}\left(262\,144\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}-262\,144\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}+\right.\right.$$
$$262\,144\,e^{4\sqrt{z}}z^{9/2}+262\,144\,z^{9/2}+65\,536\,e^{4\sqrt{z}}z^4-65\,536\,z^4+49\,152\,e^{4\sqrt{z}}z^{7/2}+49\,152\,z^{7/2}+61\,440\,e^{4\sqrt{z}}z^3-$$
$$61\,440\,z^3+107\,520\,e^{4\sqrt{z}}z^{5/2}+107\,520\,z^{5/2}+241\,920\,e^{4\sqrt{z}}z^2-241\,920\,z^2+665\,280\,e^{4\sqrt{z}}z^{3/2}+665\,280\,z^{3/2}+$$
$$\left.\left.2\,162\,160\,e^{4\sqrt{z}}z-2\,162\,160\,z+8\,108\,100\,e^{4\sqrt{z}}\sqrt{z}+8\,108\,100\sqrt{z}+34\,459\,425\,e^{4\sqrt{z}}-34\,459\,425\right)\right)$$

07.22.03.a7qd.01

$${}_1F_2\left(-\frac{17}{4};\frac{3}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{77\,026\,950\sqrt{z}}\left(524\,288\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}+4\left(65\,536\,z^4-12\,288\,z^3+26\,880\,z^2-166\,320\,z+2\,027\,025\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(65\,536\,z^4-61\,440\,z^3+241\,920\,z^2-2\,162\,160\,z+34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a7qe.01

$${}_1F_2\left(-\frac{17}{4};\frac{3}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{15\,207\,885\sqrt[4]{z}}\left(\sqrt{2}\left(\left(262\,144\,z^5-2\,818\,048\,z^4-6\,414\,336\,z^3-19\,102\,464\,z^2-14\,747\,040\,z+15\,207\,885\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(-32\,768\,z^4+323\,584\,z^3+1\,061\,632\,z^2+3\,394\,800\,z+5\,069\,295\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.16\,z\left(-16\,384\,z^4+163\,840\,z^3+516\,864\,z^2+1\,618\,560\,z+2\,347\,515\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7qf.01

$${}_1F_2\left(-\frac{17}{4};\frac{3}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{15\,207\,885\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-262\,144\,z^5-2\,818\,048\,z^4+6\,414\,336\,z^3-19\,102\,464\,z^2+14\,747\,040\,z+15\,207\,885\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(32\,768\,z^4+323\,584\,z^3-1\,061\,632\,z^2+3\,394\,800\,z-5\,069\,295\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.16\,z\left(16\,384\,z^4+163\,840\,z^3-516\,864\,z^2+1\,618\,560\,z-2\,347\,515\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7qg.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{3}{2},-\frac{9}{4};z\right)=\frac{1}{11\,850\,300\sqrt{z}}$$
$$\left(e^{-2\sqrt{z}}\left(-65\,536\,e^{4\sqrt{z}}\,z^{9/2}-65\,536\,z^{9/2}-16\,384\,e^{4\sqrt{z}}\,z^4+16\,384\,z^4-4096\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-323)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+\right.\right.$$
$$4096\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-323)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+1\,310\,720\,e^{4\sqrt{z}}\,z^{7/2}+1\,310\,720\,z^{7/2}+315\,392\,e^{4\sqrt{z}}\,z^3-$$
$$315\,392\,z^3+221\,184\,e^{4\sqrt{z}}\,z^{5/2}+221\,184\,z^{5/2}+249\,600\,e^{4\sqrt{z}}\,z^2-249\,600\,z^2+376\,320\,e^{4\sqrt{z}}\,z^{3/2}+$$
$$\left.\left.376\,320\,z^{3/2}+680\,400\,e^{4\sqrt{z}}\,z-680\,400\,z+1\,330\,560\,e^{4\sqrt{z}}\,\sqrt{z}+1\,330\,560\,\sqrt{z}+2\,297\,295\,e^{4\sqrt{z}}-2\,297\,295\right)\right)$$

07.22.03.a7qh.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{3}{2},-\frac{9}{4};-z\right)=\frac{1}{5\,925\,150\sqrt{z}}$$
$$\left(-8192\sqrt{\pi}\,(16z+323)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}-128\left(512z^4+10\,240z^3-1728z^2+2940z-10\,395\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(-16\,384z^4-315\,392z^3+249\,600z^2-680\,400z+2\,297\,295\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a7qi.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{3}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{4\,147\,605\,\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(131\,072z^5-4\,055\,040z^4+14\,653\,440z^3+5\,704\,704z^2+1\,580\,040z-4\,147\,605\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(16\,384z^4-492\,544z^3+1\,412\,352z^2+1\,674\,720z+1\,382\,535\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.8z\left(16\,384z^4-494\,592z^3+1\,467\,648z^2+1\,637\,280z+1\,402\,515\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7qj.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{3}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{4\,147\,605\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(131\,072z^5+4\,055\,040z^4+14\,653\,440z^3-5\,704\,704z^2+1\,580\,040z+4\,147\,605\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(16\,384z^4+492\,544z^3+1\,412\,352z^2-1\,674\,720z+1\,382\,535\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.8z\left(16\,384z^4+494\,592z^3+1\,467\,648z^2-1\,637\,280z+1\,402\,515\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7qk.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, -\frac{5}{4}; z\right) = \frac{1}{1\,316\,700\sqrt{z}}\left(e^{-2\sqrt{z}}\left(8192\,e^{4\sqrt{z}}\,z^{9/2} + 8192\,z^{9/2} + 2048\,e^{4\sqrt{z}}\,z^4 - 2048\,z^4 - 329\,216\,e^{4\sqrt{z}}\,z^{7/2} - 329\,216\,z^{7/2} - 80\,768\,e^{4\sqrt{z}}\,z^3 + 80\,768\,z^3 + 32\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2 - 10\,336\,z + 62\,985\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4} - 32\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2 - 10\,336\,z + 62\,985\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4} + 1\,956\,864\,e^{4\sqrt{z}}\,z^{5/2} + 1\,956\,864\,z^{5/2} + 433\,920\,e^{4\sqrt{z}}\,z^2 - 433\,920\,z^2 + 263\,040\,e^{4\sqrt{z}}\,z^{3/2} + 263\,040\,z^{3/2} + 234\,720\,e^{4\sqrt{z}}\,z - 234\,720\,z + 240\,660\,e^{4\sqrt{z}}\,\sqrt{z} + 240\,660\,\sqrt{z} + 208\,845\,e^{4\sqrt{z}} - 208\,845\right)\right) $$

07.22.03.a7ql.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, -\frac{5}{4}; -z\right) = \frac{1}{658\,350\sqrt{z}}\left(64\sqrt{\pi}\,\left(256\,z^2 + 10\,336\,z + 62\,985\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4} + 4\left(2048\,z^4 + 82\,304\,z^3 + 489\,216\,z^2 - 65\,760\,z + 60\,165\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(2048\,z^4 + 80\,768\,z^3 + 433\,920\,z^2 - 234\,720\,z + 208\,845\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a7qm.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, -\frac{3}{4}; z\right) = \frac{1}{2\,962\,575\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(65\,536\,z^5 - 3\,350\,528\,z^4 + 32\,381\,184\,z^3 - 49\,985\,280\,z^2 + 5\,266\,800\,z + 2\,962\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,\left(8192\,z^4 - 411\,648\,z^3 + 3\,693\,280\,z^2 - 3\,271\,200\,z - 987\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 16\,z\left(-4096\,z^4 + 206\,336\,z^3 - 1\,870\,800\,z^2 + 1\,800\,000\,z + 554\,175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7qn.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, -\frac{3}{4}; -z\right) = -\frac{1}{2\,962\,575\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(65\,536\,z^5 + 3\,350\,528\,z^4 + 32\,381\,184\,z^3 + 49\,985\,280\,z^2 + 5\,266\,800\,z - 2\,962\,575\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,\left(8192\,z^4 + 411\,648\,z^3 + 3\,693\,280\,z^2 + 3\,271\,200\,z - 987\,525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 16\,z\left(4096\,z^4 + 206\,336\,z^3 + 1\,870\,800\,z^2 + 1\,800\,000\,z - 554\,175\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7qo.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{3}{2},-\frac{1}{4};z\right)= \frac{1}{1\,580\,040\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-248\,064z^2+3\,023\,280z-6\,235\,515\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+ e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-248\,064z^2+3\,023\,280z-6\,235\,515\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}- 2\left(2048z^{9/2}-512z^4-123\,648z^{7/2}+30\,528z^3+1\,489\,224z^{5/2}-350\,730z^2-2\,880\,000z^{3/2}+ 522\,720z-216\,000\sqrt{z}+e^{4\sqrt{z}}\left(2048z^{9/2}+512z^4-123\,648z^{7/2}-30\,528z^3+1\,489\,224z^{5/2}+ 350\,730z^2-2\,880\,000z^{3/2}-522\,720z-216\,000\sqrt{z}-89\,505\right)+89\,505\right)\right)\right) $$

07.22.03.a7qp.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{3}{2},-\frac{1}{4};-z\right)= \frac{1}{395\,010\sqrt{z}}\left(-\sqrt{\pi}\left(4096z^3+248\,064z^2+3\,023\,280z+6\,235\,515\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}- 8\left(256z^4+15\,456z^3+186\,153z^2+360\,000z-27\,000\right)\cos\left(2\sqrt{z}\right)\sqrt{z}- \left(512z^4+30\,528z^3+350\,730z^2+522\,720z-89\,505\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a7qq.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{3}{2},\frac{1}{4};z\right)= \frac{1}{6\,912\,675\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32\,768z^5+2\,336\,768z^4-36\,779\,904z^3+131\,528\,376z^2-92\,169\,000z+6\,912\,675\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+ 12\sqrt{z}\left(4096z^4-288\,512z^3+4\,347\,952z^2-12\,822\,705z+2\,304\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ 8z\left(4096z^4-289\,024z^3+4\,382\,448z^2-13\,268\,115z+2\,934\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7qr.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{3}{2},\frac{1}{4};-z\right)= \frac{1}{6\,912\,675\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768z^5+2\,336\,768z^4+36\,779\,904z^3+131\,528\,376z^2+92\,169\,000z+6\,912\,675\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 12\sqrt{z}\left(4096z^4+288\,512z^3+4\,347\,952z^2+12\,822\,705z+2\,304\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ 8z\left(4096z^4+289\,024z^3+4\,382\,448z^2+13\,268\,115z+2\,934\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7qs.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, \frac{3}{4}; z\right) = \frac{1}{404\,490\,240\sqrt{z}} \left(e^{-2\sqrt{z}} \left(4\left(16\,384 z^{9/2} - 4096 z^4 - 1\,319\,936 z^{7/2} + 326\,912 z^3 + 23\,944\,896 z^{5/2} - 5\,751\,600 z^2 - 95\,734\,380 z^{3/2} + 20\,359\,215 z + 42\,923\,520\sqrt{z} + e^{4\sqrt{z}} \left(16\,384 z^{9/2} + 4096 z^4 - 1\,319\,936 z^{7/2} - 326\,912 z^3 + 23\,944\,896 z^{5/2} + 5\,751\,600 z^2 - 95\,734\,380 z^{3/2} - 20\,359\,215 z + 42\,923\,520\sqrt{z} + 3\,818\,880\right) - 3\,818\,880\right) + e^{2\sqrt{z}} \sqrt{2\pi}\, z^{3/4} \left(65\,536 z^4 - 5\,292\,032 z^3 + 96\,744\,960 z^2 - 399\,072\,960 z + 218\,243\,025\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - e^{2\sqrt{z}} \sqrt{2\pi}\, z^{3/4} \left(65\,536 z^4 - 5\,292\,032 z^3 + 96\,744\,960 z^2 - 399\,072\,960 z + 218\,243\,025\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.a7qt.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, \frac{3}{4}; -z\right) = \frac{1}{101\,122\,560\sqrt{z}} \left(\sqrt{\pi}\, z^{3/4} \left(65\,536 z^4 + 5\,292\,032 z^3 + 96\,744\,960 z^2 + 399\,072\,960 z + 218\,243\,025\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\left(4\sqrt{z}\, \left(4096 z^4 + 329\,984 z^3 + 5\,986\,224 z^2 + 23\,933\,595 z + 10\,730\,880\right) \cos\left(2\sqrt{z}\right) + \left(4096 z^4 + 326\,912 z^3 + 5\,751\,600 z^2 + 20\,359\,215 z + 3\,818\,880\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a7qu.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, \frac{5}{4}; z\right) = \frac{1}{248\,856\,300\sqrt{2}\, \sqrt[4]{z}} \left(\left(-2\left(65\,536 z^5 - 5\,996\,544 z^4 + 130\,862\,592 z^3 - 736\,130\,304 z^2 + 930\,841\,065 z - 248\,856\,300\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\, \left(65\,536 z^4 - 5\,939\,200 z^3 + 125\,712\,384 z^2 - 630\,050\,400 z + 445\,373\,775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(65\,536 z^4 - 5\,947\,392 z^3 + 126\,429\,696 z^2 - 643\,688\,640 z + 491\,064\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7qv.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, \frac{5}{4}; -z\right) = \frac{1}{248\,856\,300\sqrt{2}\, \sqrt[4]{z}} \left(\left(2\left(65\,536 z^5 + 5\,996\,544 z^4 + 130\,862\,592 z^3 + 736\,130\,304 z^2 + 930\,841\,065 z + 248\,856\,300\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\, \left(65\,536 z^4 + 5\,939\,200 z^3 + 125\,712\,384 z^2 + 630\,050\,400 z + 445\,373\,775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(65\,536 z^4 + 5\,947\,392 z^3 + 126\,429\,696 z^2 + 643\,688\,640 z + 491\,064\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7qw.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, \frac{7}{4}; z\right) = \frac{1}{43\,145\,625\,600\, z^{3/4}} \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(262\,144\, z^{9/2} - 65\,536\, z^4 - 26\,411\,008\, z^{7/2} + 6\,553\,600\, z^3 + 640\,112\,640\, z^{5/2} - 155\,281\,920\, z^2 - 3\,879\,985\,920\, z^{3/2} + 868\,775\,040\, z + 3\,822\,092\,100\sqrt{z} + e^{4\sqrt{z}}\left(262\,144\, z^{9/2} + 65\,536\, z^4 - 26\,411\,008\, z^{7/2} - 6\,553\,600\, z^3 + 640\,112\,640\, z^{5/2} + 155\,281\,920\, z^2 - 3\,879\,985\,920\, z^{3/2} - 868\,775\,040\, z + 3\,822\,092\,100\sqrt{z} + 567\,312\,525\right) - 567\,312\,525\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 - 105\,840\,640\, z^4 + 2\,579\,865\,600\, z^3 - 15\,962\,918\,400\, z^2 + 17\,459\,442\,000\, z - 654\,729\,075\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 - 105\,840\,640\, z^4 + 2\,579\,865\,600\, z^3 - 15\,962\,918\,400\, z^2 + 17\,459\,442\,000\, z - 654\,729\,075\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a7qx.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, \frac{7}{4}; -z\right) = \frac{1}{10\,786\,406\,400\, z^{3/4}} \left(\sqrt{\pi}\left(1\,048\,576\, z^5 + 105\,840\,640\, z^4 + 2\,579\,865\,600\, z^3 + 15\,962\,918\,400\, z^2 + 17\,459\,442\,000\, z + 654\,729\,075\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536\, z^4 + 6\,602\,752\, z^3 + 160\,028\,160\, z^2 + 969\,996\,480\, z + 955\,523\,025\right)\cos\left(2\sqrt{z}\right) + \left(65\,536\, z^4 + 6\,553\,600\, z^3 + 155\,281\,920\, z^2 + 868\,775\,040\, z + 567\,312\,525\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a7qy.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, \frac{9}{4}; z\right) = \frac{1}{17\,519\,483\,520\sqrt{2}\, z^{3/4}} \left(\left(2\sqrt{z}\left(-1\,048\,576\, z^5 + 117\,112\,832\, z^4 - 3\,268\,632\,576\, z^3 + 25\,103\,586\,816\, z^2 - 45\,693\,703\,440\, z + 17\,650\,429\,335\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(1\,048\,576\, z^5 - 116\,195\,328\, z^4 + 3\,167\,707\,136\, z^3 - 22\,409\,587\,200\, z^2 + 27\,862\,425\,360\, z - 218\,243\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576\, z^5 - 116\,326\,400\, z^4 + 3\,181\,830\,144\, z^3 - 22\,764\,234\,240\, z^2 + 29\,755\,812\,240\, z - 654\,729\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7qz.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{3}{2},\frac{9}{4};-z\right)=\frac{1}{17\,519\,483\,520\sqrt{2}\,z^{3/4}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576z^5+117\,112\,832z^4+3\,268\,632\,576z^3+25\,103\,586\,816z^2+45\,693\,703\,440z+17\,650\,429\,335\right)\right.\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(1\,048\,576z^5+116\,195\,328z^4+3\,167\,707\,136z^3+22\,409\,587\,200z^2+\right.$$
$$\left.27\,862\,425\,360z+218\,243\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576z^5+116\,326\,400z^4+\right.$$
$$\left.\left.3\,181\,830\,144z^3+22\,764\,234\,240z^2+29\,755\,812\,240z+654\,729\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a7r0.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{3}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{2\,366\,845\,747\,200z^{7/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304z^{11/2}-1\,048\,576z^5-507\,248\,640z^{9/2}+126\,025\,728z^4+15\,385\,657\,344z^{7/2}-\right.\right.\right.$$
$$3\,754\,598\,400z^3-124\,998\,727\,680z^{5/2}+28\,732\,147\,200z^2+190\,758\,231\,360z^{3/2}-33\,093\,936\,720z-$$
$$2\,618\,916\,300\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^{11/2}+1\,048\,576z^5-507\,248\,640z^{9/2}-126\,025\,728z^4+\right.$$
$$15\,385\,657\,344z^{7/2}+3\,754\,598\,400z^3-124\,998\,727\,680z^{5/2}-28\,732\,147\,200z^2+$$
$$\left.190\,758\,231\,360z^{3/2}+33\,093\,936\,720z-2\,618\,916\,300\sqrt{z}+1\,964\,187\,225\right)-1\,964\,187\,225\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-2\,032\,140\,288z^5+61\,916\,774\,400z^4-510\,813\,388\,800z^3+\right.$$
$$\left.838\,053\,216\,000z^2-62\,853\,991\,200z+1\,964\,187\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-2\,032\,140\,288z^5+61\,916\,774\,400z^4-510\,813\,388\,800z^3+\right.$$
$$\left.\left.\left.838\,053\,216\,000z^2-62\,853\,991\,200z+1\,964\,187\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a7r1.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{3}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{591\,711\,436\,800z^{7/4}}\left(\sqrt{\pi}\left(16\,777\,216z^6+2\,032\,140\,288z^5+61\,916\,774\,400z^4+510\,813\,388\,800z^3+838\,053\,216\,000z^2+\right.\right.$$
$$\left.62\,853\,991\,200z+1\,964\,187\,225\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576z^5+126\,812\,160z^4+3\,846\,414\,336z^3+31\,249\,681\,920z^2+47\,689\,557\,840z+654\,729\,075\right)\right.$$
$$\cos\left(2\sqrt{z}\right)+\left(1\,048\,576z^5+126\,025\,728z^4+3\,754\,598\,400z^3+\right.$$
$$\left.\left.\left.28\,732\,147\,200z^2+33\,093\,936\,720z-1\,964\,187\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a7r2.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{3}{2},\frac{13}{4};z\right)=\frac{1}{809\,789\,460\,480\sqrt{2}\,z^{7/4}}$$
$$\left(\left(-2\sqrt{z}\left(16\,777\,216z^6-2\,212\,495\,360z^5+75\,223\,203\,840z^4-732\,507\,291\,648z^3+1\,737\,909\,169\,920z^2-\right.\right.\right.$$
$$\left.\left.825\,153\,769\,440z+1\,964\,187\,225\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(16\,777\,216z^6-2\,197\,815\,296z^5+73\,312\,043\,008z^4-\right.\right.$$
$$\left.\left.669\,843\,947\,520z^3+1\,194\,746\,192\,640z^2-27\,935\,107\,200z+3\,273\,645\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(16\,777\,216z^6-2\,199\,912\,448z^5+73\,580\,347\,392z^4-678\,217\,236\,480z^3+\right.$$
$$\left.\left.\left.1\,256\,311\,330\,560z^2-62\,853\,991\,200z+9\,820\,936\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7r3.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{3}{2},\frac{13}{4};-z\right)=\frac{1}{809\,789\,460\,480\sqrt{2}\,z^{7/4}}$$
$$\left(\left(2\sqrt{z}\left(16\,777\,216z^6+2\,212\,495\,360z^5+75\,223\,203\,840z^4+732\,507\,291\,648z^3+1\,737\,909\,169\,920z^2+\right.\right.\right.$$
$$\left.\left.825\,153\,769\,440z+1\,964\,187\,225\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216z^6+2\,197\,815\,296z^5+73\,312\,043\,008z^4+\right.\right.$$
$$\left.\left.669\,843\,947\,520z^3+1\,194\,746\,192\,640z^2+27\,935\,107\,200z+3\,273\,645\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(16\,777\,216z^6+2\,199\,912\,448z^5+73\,580\,347\,392z^4+678\,217\,236\,480z^3+\right.$$
$$\left.\left.\left.1\,256\,311\,330\,560z^2+62\,853\,991\,200z+9\,820\,936\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7r4.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{3}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{96\,395\,172\,249\,600z^{11/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(67\,108\,864z^{13/2}-16\,777\,216z^6-9\,470\,738\,432z^{11/2}+2\,355\,101\,696z^5+\right.\right.\right.$$
$$344\,983\,339\,008z^{9/2}-84\,522\,762\,240z^4-3\,514\,400\,440\,320z^{7/2}+820\,855\,848\,960z^3+$$
$$7\,271\,611\,038\,720z^{5/2}-1\,367\,991\,555\,840z^2-251\,415\,964\,800z^{3/2}-146\,659\,312\,800z+$$
$$91\,662\,070\,500\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864z^{13/2}+16\,777\,216z^6-9\,470\,738\,432z^{11/2}-\right.$$
$$2\,355\,101\,696z^5+344\,983\,339\,008z^{9/2}+84\,522\,762\,240z^4-3\,514\,400\,440\,320z^{7/2}-$$
$$820\,855\,848\,960z^3+7\,271\,611\,038\,720z^{5/2}+1\,367\,991\,555\,840z^2-251\,415\,964\,800z^{3/2}+$$
$$\left.146\,659\,312\,800z+91\,662\,070\,500\sqrt{z}-68\,746\,552\,875\right)+68\,746\,552\,875\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7-37\,933\,285\,376z^6+1\,386\,935\,746\,560z^5-14\,302\,774\,886\,400z^4+\right.$$
$$31\,287\,320\,064\,000z^3-3\,519\,823\,507\,200z^2+219\,988\,969\,200z-68\,746\,552\,875\Big)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7-37\,933\,285\,376z^6+1\,386\,935\,746\,560z^5-14\,302\,774\,886\,400z^4+\right.$$
$$\left.\left.\left.31\,287\,320\,064\,000z^3-3\,519\,823\,507\,200z^2+219\,988\,969\,200z-68\,746\,552\,875\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a7r5.01

$${}_1F_2\left(-\frac{17}{4};\frac{3}{2},\frac{15}{4};-z\right)=$$

$$\frac{1}{24\,098\,793\,062\,400\,z^{11/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+37\,933\,285\,376\,z^6+1\,386\,935\,746\,560\,z^5+14\,302\,774\,886\,400\,z^4+\right.\right.$$

$$\left.31\,287\,320\,064\,000\,z^3+3\,519\,823\,507\,200\,z^2+219\,988\,969\,200\,z+68\,746\,552\,875\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$

$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+2\,367\,684\,608\,z^5+86\,245\,834\,752\,z^4+878\,600\,110\,080\,z^3+1\,817\,902\,759\,680\,z^2+\right.\right.$$

$$\left.62\,853\,991\,200\,z+22\,915\,517\,625\right)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6+2\,355\,101\,696\,z^5+84\,522\,762\,240\,z^4+\right.$$

$$\left.\left.\left.820\,855\,848\,960\,z^3+1\,367\,991\,555\,840\,z^2-146\,659\,312\,800\,z-68\,746\,552\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a7r6.01

$${}_1F_2\left(-\frac{17}{4};\frac{3}{2},\frac{17}{4};z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(-268\,435\,456\,z^7+40\,818\,966\,528\,z^6-1\,636\,417\,142\,784\,z^5+19\,304\,635\,760\,640\,z^4-56\,430\,433\,382\,400\,z^3+\right.\right.\right.$$

$$\left.30\,892\,689\,273\,600\,z^2-345\,696\,951\,600\,z+123\,743\,795\,175\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$

$$3\left(268\,435\,456\,z^7-40\,584\,085\,504\,z^6+1\,601\,096\,908\,800\,z^5-17\,931\,283\,660\,800\,z^4+\right.$$

$$\left.41\,706\,988\,646\,400\,z^3-1\,843\,717\,075\,200\,z^2+722\,820\,898\,800\,z-206\,239\,658\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$2\sqrt{z}\,\left(268\,435\,456\,z^7-40\,617\,639\,936\,z^6+1\,606\,067\,159\,040\,z^5-18\,116\,694\,835\,200\,z^4+43\,446\,224\,793\,600\,z^3-\right.$$

$$\left.\left.3\,519\,823\,507\,200\,z^2+848\,528\,881\,200\,z-618\,718\,975\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(29\,899\,918\,540\,800\sqrt{2}\,z^{11/4}\right)$$

07.22.03.a7r7.01

$${}_1F_2\left(-\frac{17}{4};\frac{3}{2},\frac{17}{4};-z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+40\,818\,966\,528\,z^6+1\,636\,417\,142\,784\,z^5+19\,304\,635\,760\,640\,z^4+56\,430\,433\,382\,400\,z^3+\right.\right.\right.$$

$$\left.30\,892\,689\,273\,600\,z^2+345\,696\,951\,600\,z+123\,743\,795\,175\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$

$$3\left(268\,435\,456\,z^7+40\,584\,085\,504\,z^6+1\,601\,096\,908\,800\,z^5+17\,931\,283\,660\,800\,z^4+\right.$$

$$\left.41\,706\,988\,646\,400\,z^3+1\,843\,717\,075\,200\,z^2+722\,820\,898\,800\,z+206\,239\,658\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$2\sqrt{z}\,\left(268\,435\,456\,z^7+40\,617\,639\,936\,z^6+1\,606\,067\,159\,040\,z^5+18\,116\,694\,835\,200\,z^4+43\,446\,224\,793\,600\,z^3+\right.$$

$$\left.\left.3\,519\,823\,507\,200\,z^2+848\,528\,881\,200\,z+618\,718\,975\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(29\,899\,918\,540\,800\sqrt{2}\,z^{11/4}\right)$$

07.22.03.a7r8.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{3}{2},\frac{19}{4};z\right) = $$
$$ \left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2}-268\,435\,456\,z^{7}-173\,207\,977\,984\,z^{13/2}+43\,100\,667\,904\,z^{6}+7\,364\,916\,805\,632\,z^{11/2}-\right.\right.\right. $$
$$ 1\,809\,595\,760\,640\,z^{5}-90\,219\,223\,449\,600\,z^{9/2}+21\,301\,944\,975\,360\,z^{4}+ $$
$$ 235\,762\,277\,990\,400\,z^{7/2}-46\,657\,670\,492\,160\,z^{3}-14\,079\,294\,028\,800\,z^{5/2}-6\,536\,815\,084\,800\,z^{2}+ $$
$$ 7\,584\,381\,604\,800\,z^{3/2}+1\,539\,922\,784\,400\,z-9\,074\,544\,979\,500\sqrt{z}+e^{4\sqrt{z}} $$
$$ \left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-173\,207\,977\,984\,z^{13/2}-43\,100\,667\,904\,z^{6}+7\,364\,916\,805\,632\,z^{11/2}+\right. $$
$$ 1\,809\,595\,760\,640\,z^{5}-90\,219\,223\,449\,600\,z^{9/2}-21\,301\,944\,975\,360\,z^{4}+235\,762\,277\,990\,400\,z^{7/2}+ $$
$$ 46\,657\,670\,492\,160\,z^{3}-14\,079\,294\,028\,800\,z^{5/2}+6\,536\,815\,084\,800\,z^{2}+7\,584\,381\,604\,800\,z^{3/2}- $$
$$ \left.1\,539\,922\,784\,400\,z-9\,074\,544\,979\,500\sqrt{z}+6\,805\,908\,734\,625\right)-6\,805\,908\,734\,625\Big)+ $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-693\,637\,218\,304\,z^{7}+29\,587\,962\,593\,280\,z^{6}-366\,151\,037\,091\,840\,z^{5}+\right. $$
$$ 1\,001\,194\,242\,048\,000\,z^{4}-150\,179\,136\,307\,200\,z^{3}+14\,079\,294\,028\,800\,z^{2}- $$
$$ \left.8\,799\,558\,768\,000\,z+6\,805\,908\,734\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)- $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-693\,637\,218\,304\,z^{7}+29\,587\,962\,593\,280\,z^{6}-366\,151\,037\,091\,840\,z^{5}+\right. $$
$$ 1\,001\,194\,242\,048\,000\,z^{4}-150\,179\,136\,307\,200\,z^{3}+14\,079\,294\,028\,800\,z^{2}- $$
$$ \left.\left.\left.8\,799\,558\,768\,000\,z+6\,805\,908\,734\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(3\,290\,288\,546\,119\,680\,z^{15/4}\right) $$

07.22.03.a7r9.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{3}{2},\frac{19}{4};-z\right) = \frac{1}{822\,572\,136\,529\,920\,z^{15/4}} $$
$$ \left(\sqrt{\pi}\left(4\,294\,967\,296\,z^{8}+693\,637\,218\,304\,z^{7}+29\,587\,962\,593\,280\,z^{6}+366\,151\,037\,091\,840\,z^{5}+1\,001\,194\,242\,048\,000\,z^{4}+\right.\right. $$
$$ \left.150\,179\,136\,307\,200\,z^{3}+14\,079\,294\,028\,800\,z^{2}+8\,799\,558\,768\,000\,z+6\,805\,908\,734\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^{7}+43\,301\,994\,496\,z^{6}+1\,841\,229\,201\,408\,z^{5}+22\,554\,805\,862\,400\,z^{4}+\right.\right. $$
$$ \left.58\,940\,569\,497\,600\,z^{3}+3\,519\,823\,507\,200\,z^{2}+1\,896\,095\,401\,200\,z+2\,268\,636\,244\,875\right)\cos\left(2\sqrt{z}\right)+ $$
$$ \left(268\,435\,456\,z^{7}+43\,100\,667\,904\,z^{6}+1\,809\,595\,760\,640\,z^{5}+21\,301\,944\,975\,360\,z^{4}+\right. $$
$$ \left.\left.\left.46\,657\,670\,492\,160\,z^{3}-6\,536\,815\,084\,800\,z^{2}-1\,539\,922\,784\,400\,z-6\,805\,908\,734\,625\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a7ra.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, \frac{21}{4}; z\right) = $$

$$ \left(\left(-2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 739\,808\,116\,736\,z^7 + 34\,164\,921\,335\,808\,z^6 - 473\,419\,619\,500\,032\,z^5 + 1\,644\,064\,063\,488\,000\,z^4 - 1\,004\,025\,673\,728\,000\,z^3 + 26\,147\,260\,339\,200\,z^2 - 32\,558\,367\,441\,600\,z + 17\,695\,362\,710\,025\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(4\,294\,967\,296\,z^8 - 736\,050\,020\,352\,z^7 + 33\,523\,931\,021\,312\,z^6 - 444\,589\,544\,570\,880\,z^5 + 1\,275\,729\,857\,740\,800\,z^4 - 87\,604\,496\,179\,200\,z^3 + 50\,618\,414\,246\,400\,z^2 - 75\,236\,227\,466\,400\,z + 29\,492\,271\,183\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 736\,586\,891\,264\,z^7 + 33\,614\,293\,106\,688\,z^6 - 448\,511\,229\,296\,640\,z^5 + 1\,320\,503\,780\,966\,400\,z^4 - 150\,179\,136\,307\,200\,z^3 + 44\,249\,209\,804\,800\,z^2 - 36\,958\,146\,825\,600\,z + 88\,476\,813\,550\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(956\,797\,393\,305\,600\,\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a7rb.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, \frac{21}{4}; -z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 739\,808\,116\,736\,z^7 + 34\,164\,921\,335\,808\,z^6 + 473\,419\,619\,500\,032\,z^5 + 1\,644\,064\,063\,488\,000\,z^4 + 1\,004\,025\,673\,728\,000\,z^3 + 26\,147\,260\,339\,200\,z^2 + 32\,558\,367\,441\,600\,z + 17\,695\,362\,710\,025\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4\,294\,967\,296\,z^8 + 736\,050\,020\,352\,z^7 + 33\,523\,931\,021\,312\,z^6 + 444\,589\,544\,570\,880\,z^5 + 1\,275\,729\,857\,740\,800\,z^4 + 87\,604\,496\,179\,200\,z^3 + 50\,618\,414\,246\,400\,z^2 + 75\,236\,227\,466\,400\,z + 29\,492\,271\,183\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 736\,586\,891\,264\,z^7 + 33\,614\,293\,106\,688\,z^6 + 448\,511\,229\,296\,640\,z^5 + 1\,320\,503\,780\,966\,400\,z^4 + 150\,179\,136\,307\,200\,z^3 + 44\,249\,209\,804\,800\,z^2 + 36\,958\,146\,825\,600\,z + 88\,476\,813\,550\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(956\,797\,393\,305\,600\,\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a7rc.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, \frac{23}{4}; z\right) = $$

$$ \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(17\,179\,869\,184\,z^{17/2} - 4\,294\,967\,296\,z^8 - 3\,118\,146\,256\,896\,z^{15/2} + 776\,315\,338\,752\,z^7 + 151\,588\,454\,793\,216\right.\right.\right. $$
$$ z^{13/2} - 37\,325\,950\,156\,800\,z^6 - 2\,169\,611\,621\,498\,880\,z^{11/2} + 516\,301\,353\,123\,840\,z^5 + $$
$$ 6\,851\,700\,570\,193\,920\,z^{9/2} - 1\,404\,190\,322\,196\,480\,z^4 - 600\,716\,545\,228\,800\,z^{7/2} - $$
$$ 225\,268\,704\,460\,800\,z^3 + 378\,129\,611\,059\,200\,z^{5/2} - 52\,294\,520\,678\,400\,z^2 - $$
$$ 497\,803\,610\,304\,000\,z^{3/2} + 435\,578\,159\,016\,000\,z + 1\,769\,536\,271\,002\,500\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2} + 4\,294\,967\,296\,z^8 - 3\,118\,146\,256\,896\,z^{15/2} - 776\,315\,338\,752\,z^7 + \right. $$
$$ 151\,588\,454\,793\,216\,z^{13/2} + 37\,325\,950\,156\,800\,z^6 - 2\,169\,611\,621\,498\,880\,z^{11/2} - 516\,301\,353\,123\,840\, $$
$$ z^5 + 6\,851\,700\,570\,193\,920\,z^{9/2} + 1\,404\,190\,322\,196\,480\,z^4 - 600\,716\,545\,228\,800\,z^{7/2} + $$
$$ 225\,268\,704\,460\,800\,z^3 + 378\,129\,611\,059\,200\,z^{5/2} + 52\,294\,520\,678\,400\,z^2 - 497\,803\,610\,304\,000\,z^{3/2} - $$
$$ \left.\left.\left.\left.435\,578\,159\,016\,000\,z + 1\,769\,536\,271\,002\,500\sqrt{z} - 1\,327\,152\,203\,251\,875\right) + 1\,327\,152\,203\,251\,875\right) + \right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9 - 12\,485\,469\,929\,472\,z^8 + 608\,666\,659\,061\,760\,z^7 - 8\,787\,624\,890\,204\,160\,z^6 + \right. $$
$$ 28\,834\,394\,170\,982\,400\,z^5 - 5\,406\,448\,907\,059\,200\,z^4 + 675\,806\,113\,382\,400\,z^3 - $$
$$ \left.633\,568\,231\,296\,000\,z^2 + 980\,050\,857\,786\,000\,z - 1\,327\,152\,203\,251\,875\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9 - 12\,485\,469\,929\,472\,z^8 + 608\,666\,659\,061\,760\,z^7 - 8\,787\,624\,890\,204\,160\,z^6 + \right. $$
$$ 28\,834\,394\,170\,982\,400\,z^5 - 5\,406\,448\,907\,059\,200\,z^4 + 675\,806\,113\,382\,400\,z^3 - 633\,568\,231\,296\,000\,z^2 + $$
$$ \left.\left.\left.980\,050\,857\,786\,000\,z - 1\,327\,152\,203\,251\,875\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right) \Big/ \left(99\,747\,694\,871\,838\,720\,z^{19/4}\right) $$

07.22.03.a7rd.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{3}{2}, \frac{23}{4}; -z\right) = $$

$$ \left(\sqrt{\pi}\left(68\,719\,476\,736\,z^9 + 12\,485\,469\,929\,472\,z^8 + 608\,666\,659\,061\,760\,z^7 + 8\,787\,624\,890\,204\,160\,z^6 + 28\,834\,394\,170\,982\,400\right.\right. $$
$$ z^5 + 5\,406\,448\,907\,059\,200\,z^4 + 675\,806\,113\,382\,400\,z^3 + $$
$$ \left.633\,568\,231\,296\,000\,z^2 + 980\,050\,857\,786\,000\,z + 1\,327\,152\,203\,251\,875\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^8 + 779\,536\,564\,224\,z^7 + 37\,897\,113\,698\,304\,z^6 + 542\,402\,905\,374\,720\,z^5 + \right.\right. $$
$$ 1\,712\,925\,142\,548\,480\,z^4 + 150\,179\,136\,307\,200\,z^3 + 94\,532\,402\,764\,800\,z^2 + 124\,450\,902\,576\,000\,z + $$
$$ 442\,384\,067\,750\,625\right)\cos\left(2\sqrt{z}\right) + \left(4\,294\,967\,296\,z^8 + 776\,315\,338\,752\,z^7 + 37\,325\,950\,156\,800\,z^6 + \right. $$
$$ 516\,301\,353\,123\,840\,z^5 + 1\,404\,190\,322\,196\,480\,z^4 - 225\,268\,704\,460\,800\,z^3 + 52\,294\,520\,678\,400\,z^2 + $$
$$ \left.\left.\left.435\,578\,159\,016\,000\,z - 1\,327\,152\,203\,251\,875\right)\sin\left(2\sqrt{z}\right)\right)\right) \Big/ \left(24\,936\,923\,717\,959\,680\,z^{19/4}\right) $$

For fixed z and $a_1 = -\frac{17}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.a7re.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},-\frac{23}{4};z\right)=\frac{1}{254\,757\,420\,225\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(-\left(4\,194\,304\,z^5+253\,493\,248\,z^4+6\,753\,058\,816\,z^3+82\,979\,420\,160\,z^2+353\,885\,999\,040\,z-254\,757\,420\,225\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+24\sqrt{z}\left(262\,144\,z^4+16\,072\,704\,z^3+436\,316\,160\,z^2+5\,580\,632\,960\,z+25\,728\,474\,975\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(4\,194\,304\,z^5+256\,638\,976\,z^4+6\,947\,307\,520\,z^3+\right.$$
$$\left.\left.\left.88\,306\,391\,040\,z^2+423\,633\,470\,400\,z+501\,932\,851\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7rf.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},-\frac{23}{4};-z\right)=\frac{1}{254\,757\,420\,225\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left(\left(4\,194\,304\,z^5-253\,493\,248\,z^4+6\,753\,058\,816\,z^3-82\,979\,420\,160\,z^2+353\,885\,999\,040\,z+254\,757\,420\,225\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$24\sqrt{z}\left(262\,144\,z^4-16\,072\,704\,z^3+436\,316\,160\,z^2-5\,580\,632\,960\,z+25\,728\,474\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(4\,194\,304\,z^5-256\,638\,976\,z^4+6\,947\,307\,520\,z^3-88\,306\,391\,040\,z^2+423\,633\,470\,400\,z-501\,932\,851\,875\right)$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7rg.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},-\frac{21}{4};z\right)=\frac{54\sqrt{z}\,\cosh\left(2\sqrt{z}\right)-(8z+27)\sinh\left(2\sqrt{z}\right)}{56\,z^{3/2}}$$

07.22.03.a7rh.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},-\frac{21}{4};-z\right)=\frac{(27-8z)\sin\left(2\sqrt{z}\right)-54\sqrt{z}\,\cos\left(2\sqrt{z}\right)}{56\,z^{3/2}}$$

07.22.03.a7ri.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},-\frac{19}{4};z\right)=\frac{1}{33\,229\,228\,725\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(-\left(2\,097\,152\,z^5+75\,497\,472\,z^4+1\,432\,264\,704\,z^3+13\,600\,161\,792\,z^2+46\,258\,037\,280\,z-33\,229\,228\,725\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$48\sqrt{z}\left(65\,536\,z^4+2\,416\,640\,z^3+46\,919\,424\,z^2+468\,081\,600\,z+1\,903\,700\,925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(2\,097\,152\,z^5+\right.$$
$$\left.\left.\left.77\,070\,336\,z^4+1\,490\,952\,192\,z^3+14\,755\,000\,320\,z^2+58\,146\,228\,000\,z+51\,924\,088\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7rj.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},-\frac{19}{4};-z\right)=\frac{1}{33\,229\,228\,725\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2\,097\,152\,z^5-75\,497\,472\,z^4+1\,432\,264\,704\,z^3-13\,600\,161\,792\,z^2+46\,258\,037\,280\,z+33\,229\,228\,725\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-48\sqrt{z}\left(65\,536\,z^4-2\,416\,640\,z^3+46\,919\,424\,z^2-468\,081\,600\,z+1\,903\,700\,925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(2\,097\,152\,z^5-77\,070\,336\,z^4+1\,490\,952\,192\,z^3-14\,755\,000\,320\,z^2+58\,146\,228\,000\,z-51\,924\,088\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7rk.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},-\frac{17}{4};z\right)=\frac{3\cosh\left(2\sqrt{z}\right)}{4z}-\frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}} $$

07.22.03.a7rl.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},-\frac{17}{4};-z\right)=\frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}} $$

07.22.03.a7rm.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},-\frac{15}{4};z\right)=\frac{1}{1\,748\,906\,775\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(1\,048\,576\,z^5+12\,124\,160\,z^4+139\,579\,392\,z^3+939\,960\,576\,z^2+2\,372\,661\,648\,z-1\,748\,906\,775\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+24\sqrt{z}\left(65\,536\,z^4+815\,104\,z^3+9\,483\,520\,z^2+67\,929\,072\,z+222\,252\,345\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,048\,576\,z^5+12\,910\,592\,z^4+149\,704\,704\,z^3+1\,059\,740\,928\,z^2+3\,276\,873\,360\,z+2\,076\,963\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7rn.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},-\frac{15}{4};-z\right)=\frac{1}{1\,748\,906\,775\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,048\,576\,z^5-12\,124\,160\,z^4+139\,579\,392\,z^3-939\,960\,576\,z^2+2\,372\,661\,648\,z+1\,748\,906\,775\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-24\sqrt{z}\left(65\,536\,z^4-815\,104\,z^3+9\,483\,520\,z^2-67\,929\,072\,z+222\,252\,345\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,048\,576\,z^5-12\,910\,592\,z^4+149\,704\,704\,z^3-1\,059\,740\,928\,z^2+3\,276\,873\,360\,z-2\,076\,963\,525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7ro.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{5}{2}, -\frac{13}{4}; z\right) = \frac{1}{4\,724\,319\,600\, z^{3/2}} $$
$$ \left(e^{-2\sqrt{z}} \left(2\,097\,152\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{23/4} - 2\,097\,152\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{23/4} + 2\,097\,152\, e^{4\sqrt{z}}\, z^{11/2} + \right.\right. $$
$$ 2\,097\,152\, z^{11/2} + 524\,288\, e^{4\sqrt{z}}\, z^5 - 524\,288\, z^5 + 393\,216\, e^{4\sqrt{z}}\, z^{9/2} + 393\,216\, z^{9/2} + 491\,520\, e^{4\sqrt{z}}\, z^4 - $$
$$ 491\,520\, z^4 + 860\,160\, e^{4\sqrt{z}}\, z^{7/2} + 860\,160\, z^{7/2} + 1\,935\,360\, e^{4\sqrt{z}}\, z^3 - 1\,935\,360\, z^3 + 5\,322\,240\, e^{4\sqrt{z}}\, z^{5/2} + $$
$$ \left.\left. 5\,322\,240\, z^{5/2} + 17\,297\,280\, e^{4\sqrt{z}}\, z^2 - 17\,297\,280\, z^2 + 64\,864\,800\, e^{4\sqrt{z}}\, z^{3/2} + 64\,864\,800\, z^{3/2} + 275\,675\,400\, e^{4\sqrt{z}}\, z - \right.\right. $$
$$ \left.\left. 275\,675\,400\, z + 1\,309\,458\,150\, e^{4\sqrt{z}}\, \sqrt{z} + 1\,309\,458\,150\, \sqrt{z} - 654\,729\,075\, e^{4\sqrt{z}} + 654\,729\,075\right)\right) $$

07.22.03.a7rp.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{5}{2}, -\frac{13}{4}; -z\right) = \frac{1}{2\,362\,159\,800\, z^{3/2}} $$
$$ \left(4\,194\,304\, \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{23/4} + 2\left(1\,048\,576\, z^5 - 196\,608\, z^4 + 430\,080\, z^3 - 2\,661\,120\, z^2 + 32\,432\,400\, z - 654\,729\,075\right)\right. $$
$$ \left. \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(524\,288\, z^5 - 491\,520\, z^4 + 1\,935\,360\, z^3 - 17\,297\,280\, z^2 + 275\,675\,400\, z + 654\,729\,075\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a7rq.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{5}{2}, -\frac{11}{4}; z\right) = $$
$$ \frac{1}{116\,593\,785\, \sqrt[4]{z}} \left(\sqrt{2} \left(\left(524\,288\, z^5 - 6\,750\,208\, z^4 - 20\,697\,088\, z^3 - 86\,603\,520\, z^2 - 145\,286\,928\, z + 116\,593\,785\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 48\sqrt{z} \left(16\,384\, z^4 - 196\,608\, z^3 - 807\,168\, z^2 - 3\,476\,416\, z - 8\,067\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. \left(-524\,288\, z^5 + 6\,356\,992\, z^4 + 25\,243\,648\, z^3 + 107\,190\,528\, z^2 + 238\,316\,400\, z + 98\,903\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7rr.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{5}{2}, -\frac{11}{4}; -z\right) = $$
$$ \frac{1}{116\,593\,785\, \sqrt[4]{z}} \left(\sqrt{2} \left(\left(-524\,288\, z^5 - 6\,750\,208\, z^4 + 20\,697\,088\, z^3 - 86\,603\,520\, z^2 + 145\,286\,928\, z + 116\,593\,785\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 48\sqrt{z} \left(16\,384\, z^4 + 196\,608\, z^3 - 807\,168\, z^2 + 3\,476\,416\, z - 8\,067\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. \left(524\,288\, z^5 + 6\,356\,992\, z^4 - 25\,243\,648\, z^3 + 107\,190\,528\, z^2 - 238\,316\,400\, z + 98\,903\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7rs.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},-\frac{9}{4};z\right)=\frac{1}{363\,409\,200\,z^{3/2}} \left(e^{-2\sqrt{z}}\left(-524\,288\,e^{4\sqrt{z}}\,z^{11/2}-524\,288\,z^{11/2}-131\,072\,e^{4\sqrt{z}}\,z^5+131\,072\,z^5-32\,768\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-391)\right.\right. \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+32\,768\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-391)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+12\,713\,984\,e^{4\sqrt{z}}\,z^{9/2}+12\,713\,984\,z^{9/2}+ 3\,080\,192\,e^{4\sqrt{z}}\,z^4-3\,080\,192\,z^4+2\,187\,264\,e^{4\sqrt{z}}\,z^{7/2}+2\,187\,264\,z^{7/2}+2\,519\,040\,e^{4\sqrt{z}}\,z^3-2\,519\,040\,z^3+ 3\,924\,480\,e^{4\sqrt{z}}\,z^{5/2}+3\,924\,480\,z^{5/2}+7\,499\,520\,e^{4\sqrt{z}}\,z^2-7\,499\,520\,z^2+16\,299\,360\,e^{4\sqrt{z}}\,z^{3/2}+16\,299\,360\,z^{3/2}+ \left.\left.36\,756\,720\,e^{4\sqrt{z}}\,z-36\,756\,720\,z+68\,918\,850\,e^{4\sqrt{z}}\,\sqrt{z}+68\,918\,850\,\sqrt{z}-34\,459\,425\,e^{4\sqrt{z}}+34\,459\,425\right)\right) $$

07.22.03.a7rt.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},-\frac{9}{4};-z\right)=\frac{1}{181\,704\,600\,z^{3/2}}\left(-65\,536\,\sqrt{\pi}\,(16z+391)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}- 2\left(262\,144\,z^5+6\,356\,992\,z^4-1\,093\,632\,z^3+1\,962\,240\,z^2-8\,149\,680\,z+34\,459\,425\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+ \left(-131\,072\,z^5-3\,080\,192\,z^4+2\,519\,040\,z^3-7\,499\,520\,z^2+36\,756\,720\,z+34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a7ru.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},-\frac{7}{4};z\right)= \frac{1}{31\,798\,305\,\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(262\,144\,z^5-9\,781\,248\,z^4+43\,302\,912\,z^3+30\,719\,232\,z^2+29\,914\,272\,z-31\,798\,305\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+ 24\sqrt{z}\,\left(16\,384\,z^4-596\,992\,z^3+2\,195\,712\,z^2+3\,492\,768\,z+4\,717\,935\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ \left(262\,144\,z^5-9\,584\,640\,z^4+36\,225\,024\,z^3+54\,358\,272\,z^2+72\,416\,160\,z+17\,453\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7rv.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},-\frac{7}{4};-z\right)= \frac{1}{31\,798\,305\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(262\,144\,z^5+9\,781\,248\,z^4+43\,302\,912\,z^3-30\,719\,232\,z^2+29\,914\,272\,z+31\,798\,305\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 24\sqrt{z}\,\left(16\,384\,z^4+596\,992\,z^3+2\,195\,712\,z^2-3\,492\,768\,z+4\,717\,935\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ \left(262\,144\,z^5+9\,584\,640\,z^4+36\,225\,024\,z^3-54\,358\,272\,z^2+72\,416\,160\,z-17\,453\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7rw.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{5}{2}, -\frac{5}{4}; z\right) = \frac{1}{40\,378\,800\, z^{3/2}} \left(e^{-2\sqrt{z}} \left(65\,536\, e^{4\sqrt{z}}\, z^{11/2} + 65\,536\, z^{11/2} + 16\,384\, e^{4\sqrt{z}}\, z^5 - 16\,384\, z^5 - 3\,190\,784\, e^{4\sqrt{z}}\, z^{9/2} - 3\,190\,784\, z^{9/2} - 785\,408\, e^{4\sqrt{z}}\, z^4 + 785\,408\, z^4 + 256\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(256\, z^2 - 12\,512\, z + 96\,577\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{15/4} - 256\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(256\, z^2 - 12\,512\, z + 96\,577\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{15/4} + 24\,150\,016\, e^{4\sqrt{z}}\, z^{7/2} + 24\,150\,016\, z^{7/2} + 5\,490\,688\, e^{4\sqrt{z}}\, z^3 - 5\,490\,688\, z^3 + 3\,488\,256\, e^{4\sqrt{z}}\, z^{5/2} + 3\,488\,256\, z^{5/2} + 3\,379\,200\, e^{4\sqrt{z}}\, z^2 - 3\,379\,200\, z^2 + 4\,038\,720\, e^{4\sqrt{z}}\, z^{3/2} + 4\,038\,720\, z^{3/2} + 5\,012\,280\, e^{4\sqrt{z}}\, z - 5\,012\,280\, z + 4\,594\,590\, e^{4\sqrt{z}}\, \sqrt{z} + 4\,594\,590\, \sqrt{z} - 2\,297\,295\, e^{4\sqrt{z}} + 2\,297\,295\right)\right) $$

07.22.03.a7rx.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{5}{2}, -\frac{5}{4}; -z\right) = \frac{1}{20\,189\,400\, z^{3/2}} \left(512\, \sqrt{\pi}\, \left(256\, z^2 + 12\,512\, z + 96\,577\right) S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) z^{15/4} + 2\left(32\,768\, z^5 + 1\,595\,392\, z^4 + 12\,075\,008\, z^3 - 1\,744\,128\, z^2 + 2\,019\,360\, z - 2\,297\,295\right) \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(16\,384\, z^5 + 785\,408\, z^4 + 5\,490\,688\, z^3 - 3\,379\,200\, z^2 + 5\,012\,280\, z + 2\,297\,295\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a7ry.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{5}{2}, -\frac{3}{4}; z\right) = \frac{1}{22\,713\,075\, \sqrt[4]{z}} \left(\sqrt{2}\, \left(\left(131\,072\, z^5 - 8\,093\,696\, z^4 + 97\,924\,608\, z^3 - 188\,686\,080\, z^2 + 7\,130\,880\, z + 22\,713\,075\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 48\, \sqrt{z}\, \left(4096\, z^4 - 249\,344\, z^3 + 2\,844\,880\, z^2 - 3\,565\,440\, z - 1\,780\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-131\,072\, z^5 + 7\,995\,392\, z^4 - 91\,983\,360\, z^3 + 122\,814\,720\, z^2 + 59\,227\,200\, z + 6\,712\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7rz.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{5}{2}, -\frac{3}{4}; -z\right) = -\frac{1}{22\,713\,075\, \sqrt[4]{z}} \left(\sqrt{2}\, \left(\left(131\,072\, z^5 + 8\,093\,696\, z^4 + 97\,924\,608\, z^3 + 188\,686\,080\, z^2 + 7\,130\,880\, z - 22\,713\,075\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 48\, \sqrt{z}\, \left(4096\, z^4 + 249\,344\, z^3 + 2\,844\,880\, z^2 + 3\,565\,440\, z - 1\,780\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(131\,072\, z^5 + 7\,995\,392\, z^4 + 91\,983\,360\, z^3 + 122\,814\,720\, z^2 - 59\,227\,200\, z + 6\,712\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7s0.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{5}{2}, -\frac{1}{4}; z\right) = \frac{1}{24\,227\,280\, z^{3/2}} \left(e^{-2\sqrt{z}} \left(-16\,384\, e^{4\sqrt{z}}\, z^{11/2} - 16\,384\, z^{11/2} - 4096\, e^{4\sqrt{z}}\, z^5 + 4096\, z^5 + 1\,198\,080\, e^{4\sqrt{z}}\, z^{9/2} + 1\,198\,080\, z^{9/2} + 296\,448\, e^{4\sqrt{z}}\, z^4 - 296\,448\, z^4 - 18\,324\,288\, e^{4\sqrt{z}}\, z^{7/2} - 18\,324\,288\, z^{7/2} - 4\,369\,296\, e^{4\sqrt{z}}\, z^3 + 4\,369\,296\, z^3 - 4\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(4096\, z^3 - 300\,288\, z^2 + 4\,635\,696\, z - 13\,037\,895\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{11/4} + 4\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(4096\, z^3 - 300\,288\, z^2 + 4\,635\,696\, z - 13\,037\,895\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{11/4} + 49\,125\,888\, e^{4\sqrt{z}}\, z^{5/2} + 49\,125\,888\, z^{5/2} + 9\,665\,280\, e^{4\sqrt{z}}\, z^2 - 9\,665\,280\, z^2 + 4\,714\,560\, e^{4\sqrt{z}}\, z^{3/2} + 4\,714\,560\, z^{3/2} + 2\,864\,160\, e^{4\sqrt{z}}\, z - 2\,864\,160\, z + 1\,253\,070\, e^{4\sqrt{z}}\, \sqrt{z} + 1\,253\,070\, \sqrt{z} - 626\,535\, e^{4\sqrt{z}} + 626\,535\right)\right) $$

07.22.03.a7s1.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{5}{2}, -\frac{1}{4}; -z\right) = \frac{1}{12\,113\,640\, z^{3/2}} \left(-8\, \sqrt{\pi}\, \left(4096\, z^3 + 300\,288\, z^2 + 4\,635\,696\, z + 13\,037\,895\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{11/4} - 2\left(8192\, z^5 + 599\,040\, z^4 + 9\,162\,144\, z^3 + 24\,562\,944\, z^2 - 2\,357\,280\, z + 626\,535\right) \cos\left(2\sqrt{z}\right) \sqrt{z} - \left(4096\, z^5 + 296\,448\, z^4 + 4\,369\,296\, z^3 + 9\,665\,280\, z^2 - 2\,864\,160\, z - 626\,535\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a7s2.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{5}{2}, \frac{1}{4}; z\right) = \frac{1}{52\,997\,175\, \sqrt[4]{z}} \left(\sqrt{2}\, \left(\left(-65\,536\, z^5 + 5\,648\,384\, z^4 - 111\,822\,592\, z^3 + 525\,500\,304\, z^2 - 465\,539\,760\, z + 52\,997\,175\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 24\, \sqrt{z}\, \left(4096\, z^4 - 349\,440\, z^3 + 6\,686\,064\, z^2 - 27\,222\,895\, z + 8\,658\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(65\,536\, z^5 - 5\,599\,232\, z^4 + 107\,650\,816\, z^3 - 446\,995\,920\, z^2 + 166\,042\,800\, z + 5\,221\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7s3.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{5}{2}, \frac{1}{4}; -z\right) = \frac{1}{52\,997\,175\, \sqrt[4]{z}} \left(\sqrt{2}\, \left(\left(65\,536\, z^5 + 5\,648\,384\, z^4 + 111\,822\,592\, z^3 + 525\,500\,304\, z^2 + 465\,539\,760\, z + 52\,997\,175\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 24\, \sqrt{z}\, \left(4096\, z^4 + 349\,440\, z^3 + 6\,686\,064\, z^2 + 27\,222\,895\, z + 8\,658\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(65\,536\, z^5 + 5\,599\,232\, z^4 + 107\,650\,816\, z^3 + 446\,995\,920\, z^2 + 166\,042\,800\, z - 5\,221\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7s4.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{3}{4};z\right)=\frac{1}{1\,550\,545\,920\,z^{3/2}}$$
$$\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-6\,406\,144\,z^3+148\,342\,272\,z^2-834\,425\,280\,z+717\,084\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+\right.\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536\,z^4+6\,406\,144\,z^3-148\,342\,272\,z^2+834\,425\,280\,z-717\,084\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+$$
$$4\left(16\,384\,z^{11/2}-4096\,z^5-1\,598\,464\,z^{9/2}+396\,544\,z^4+36\,792\,000\,z^{7/2}-8\,911\,152\,z^3-\right.$$
$$202\,268\,076\,z^{5/2}+44\,802\,495\,z^2+151\,810\,560\,z^{3/2}-19\,094\,400\,z+2\,864\,160\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(16\,384\,z^{11/2}+4096\,z^5-1\,598\,464\,z^{9/2}-396\,544\,z^4+36\,792\,000\,z^{7/2}+8\,911\,152\,z^3-202\,268\,076\,z^{5/2}-\right.$$
$$\left.\left.\left.\left.44\,802\,495\,z^2+151\,810\,560\,z^{3/2}+19\,094\,400\,z+2\,864\,160\sqrt{z}-1\,432\,080\right)+1\,432\,080\right)\right)\right)$$

07.22.03.a7s5.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{3}{4};-z\right)=$$
$$\frac{1}{387\,636\,480\,z^{3/2}}\left(\sqrt{\pi}\left(65\,536\,z^4+6\,406\,144\,z^3+148\,342\,272\,z^2+834\,425\,280\,z+717\,084\,225\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+\right.$$
$$8\left(4096\,z^5+399\,616\,z^4+9\,198\,000\,z^3+50\,567\,019\,z^2+37\,952\,640\,z-716\,040\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left.2\left(4096\,z^5+396\,544\,z^4+8\,911\,152\,z^3+44\,802\,495\,z^2+19\,094\,400\,z+1\,432\,080\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a7s6.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{5}{4};z\right)=\frac{1}{953\,949\,150\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(-2\left(65\,536\,z^5-7\,249\,920\,z^4+199\,406\,592\,z^3-1\,494\,398\,304\,z^2+2\,605\,925\,763\,z-953\,949\,150\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$3\sqrt{z}\left(65\,536\,z^4-7\,192\,576\,z^3+193\,159\,680\,z^2-1\,330\,193\,088\,z+1\,549\,971\,045\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\left(65\,536\,z^5-7\,200\,768\,z^4+194\,033\,664\,z^3-1\,351\,782\,432\,z^2+1\,661\,142\,735\,z-18\,796\,050\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7s7.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{5}{4};-z\right)=\frac{1}{953\,949\,150\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(2\left(65\,536\,z^5+7\,249\,920\,z^4+199\,406\,592\,z^3+1\,494\,398\,304\,z^2+2\,605\,925\,763\,z+953\,949\,150\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\sqrt{z}\left(65\,536\,z^4+7\,192\,576\,z^3+193\,159\,680\,z^2+1\,330\,193\,088\,z+1\,549\,971\,045\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\left(65\,536\,z^5+7\,200\,768\,z^4+194\,033\,664\,z^3+1\,351\,782\,432\,z^2+1\,661\,142\,735\,z+18\,796\,050\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7s8.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{7}{4};z\right)= \frac{1}{165\,391\,564\,800\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(4\left(262\,144\,z^{11/2}-65\,536\,z^5-31\,981\,568\,z^{9/2}+7\,946\,240\,z^4+983\,050\,240\,z^{7/2}-239\,971\,840\,z^3-8\,171\,297\,280\,z^{5/2}+1\,881\,675\,840\,z^2+13\,109\,579\,700\,z^{3/2}-2\,312\,660\,025\,z-305\,510\,400\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^{11/2}+65\,536\,z^5-31\,981\,568\,z^{9/2}-7\,946\,240\,z^4+983\,050\,240\,z^{7/2}+239\,971\,840\,z^3-8\,171\,297\,280\,z^{5/2}-1\,881\,675\,840\,z^2+13\,109\,579\,700\,z^{3/2}+2\,312\,660\,025\,z-305\,510\,400\sqrt{z}+152\,755\,200\right)-152\,755\,200\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(1\,048\,576\,z^5-128\,122\,880\,z^4+3\,955\,793\,920\,z^3-33\,377\,011\,200\,z^2+57\,366\,738\,000\,z-5\,019\,589\,575\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(-1\,048\,576\,z^5+128\,122\,880\,z^4-3\,955\,793\,920\,z^3+33\,377\,011\,200\,z^2-57\,366\,738\,000\,z+5\,019\,589\,575\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a7s9.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{7}{4};-z\right)= \frac{1}{41\,347\,891\,200\,z^{3/2}}\left(\sqrt{\pi}\,z^{3/4}\left(1\,048\,576\,z^5+128\,122\,880\,z^4+3\,955\,793\,920\,z^3+33\,377\,011\,200\,z^2+57\,366\,738\,000\,z+5\,019\,589\,575\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\left(4\sqrt{z}\left(65\,536\,z^5+7\,995\,392\,z^4+245\,762\,560\,z^3+2\,042\,824\,320\,z^2+3\,277\,394\,925\,z+76\,377\,600\right)\cos\left(2\sqrt{z}\right)+\left(65\,536\,z^5+7\,946\,240\,z^4+239\,971\,840\,z^3+1\,881\,675\,840\,z^2+2\,312\,660\,025\,z-152\,755\,200\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a7sa.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{9}{4};z\right)= \frac{1}{67\,158\,020\,160\sqrt{2}\,z^{3/4}}\left(\left(-2\sqrt{z}\left(1\,048\,576\,z^5-141\,623\,296\,z^4+4\,987\,428\,864\,z^3-51\,354\,293\,760\,z^2+133\,669\,310\,544\,z-70\,169\,773\,905\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(1\,048\,576\,z^5-140\,705\,792\,z^4+4\,865\,056\,768\,z^3-47\,192\,538\,624\,z^2+95\,245\,975\,440\,z-5\,019\,589\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576\,z^5-140\,836\,864\,z^4+4\,882\,243\,584\,z^3-47\,749\,971\,456\,z^2+99\,661\,438\,800\,z-8\,442\,559\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7sb.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{9}{4};-z\right)=\frac{1}{67\,158\,020\,160\sqrt{2}\,z^{3/4}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576z^5+141\,623\,296z^4+4\,987\,428\,864z^3+51\,354\,293\,760z^2+133\,669\,310\,544z+70\,169\,773\,905\right)\right.\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(1\,048\,576z^5+140\,705\,792z^4+4\,865\,056\,768z^3+47\,192\,538\,624z^2+\right.$$
$$95\,245\,975\,440z+5\,019\,589\,575\left.\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576z^5+140\,836\,864z^4+\right.$$
$$\left.\left.4\,882\,243\,584z^3+47\,749\,971\,456z^2+99\,661\,438\,800z+8\,442\,559\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a7sc.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{9\,072\,908\,697\,600z^{7/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304z^{11/2}-1\,048\,576z^5-614\,203\,392z^{9/2}+152\,764\,416z^4+23\,621\,173\,248z^{7/2}-\right.\right.\right.$$
$$5\,793\,423\,360z^3-262\,807\,418\,880z^{5/2}+61\,724\,136\,960z^2+646\,639\,283\,520z^{3/2}-126\,900\,905\,040z-$$
$$57\,080\,918\,700\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^{11/2}+1\,048\,576z^5-614\,203\,392z^{9/2}-152\,764\,416z^4+\right.$$
$$23\,621\,173\,248z^{7/2}+5\,793\,423\,360z^3-262\,807\,418\,880z^{5/2}-61\,724\,136\,960z^2+$$
$$\left.646\,639\,283\,520z^{3/2}+126\,900\,905\,040z-57\,080\,918\,700\sqrt{z}+13\,481\,690\,625\right)-13\,481\,690\,625\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-2\,459\,959\,296z^5+94\,939\,054\,080z^4-1\,068\,064\,358\,400z^3+\right.$$
$$2\,753\,603\,424\,000z^2-481\,880\,599\,200z-45\,176\,306\,175\left.\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-2\,459\,959\,296z^5+94\,939\,054\,080z^4-1\,068\,064\,358\,400z^3+\right.$$
$$\left.\left.2\,753\,603\,424\,000z^2-481\,880\,599\,200z-45\,176\,306\,175\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a7sd.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{2\,268\,227\,174\,400z^{7/4}}\left(\sqrt{\pi}\left(16\,777\,216z^6+2\,459\,959\,296z^5+94\,939\,054\,080z^4+1\,068\,064\,358\,400z^3+\right.\right.$$
$$\left.2\,753\,603\,424\,000z^2+481\,880\,599\,200z-45\,176\,306\,175\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576z^5+153\,550\,848z^4+5\,905\,293\,312z^3+65\,701\,854\,720z^2+161\,659\,820\,880z+14\,270\,229\,675\right)\right.$$
$$\cos\left(2\sqrt{z}\right)+\left(1\,048\,576z^5+152\,764\,416z^4+5\,793\,423\,360z^3+\right.$$
$$\left.\left.\left.61\,724\,136\,960z^2+126\,900\,905\,040z-13\,481\,690\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a7se.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{13}{4};z\right)= $$

$$ \left(\left(2\sqrt{z}\left(-16\,777\,216\,z^6+2\,675\,965\,952\,z^5-114\,878\,906\,368\,z^4+1\,505\,239\,498\,752\,z^3-5\,211\,507\,426\,048\,z^2+\right.\right.\right. $$

$$ \left.\left.\left.3\,404\,029\,749\,120\,z+15\,058\,768\,725\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(16\,777\,216\,z^6-2\,661\,285\,888\,z^5+112\,562\,208\,768\,z^4-\right.\right.\right. $$

$$ \left.\left.\left.1\,408\,561\,758\,208\,z^3+4\,047\,721\,117\,440\,z^2-481\,880\,599\,200\,z-25\,097\,947\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right. $$

$$ \left.\left.2\sqrt{z}\left(16\,777\,216\,z^6-2\,663\,383\,040\,z^5+112\,888\,446\,976\,z^4-1\,421\,663\,895\,552\,z^3+4\,187\,999\,312\,640\,z^2-\right.\right.\right. $$

$$ \left.\left.\left.688\,820\,932\,800\,z-75\,293\,843\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(3\,104\,192\,931\,840\sqrt{2}\;z^{7/4}\right) $$

07.22.03.a7sf.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{13}{4};-z\right)= $$

$$ \left(\left(2\sqrt{z}\left(16\,777\,216\,z^6+2\,675\,965\,952\,z^5+114\,878\,906\,368\,z^4+1\,505\,239\,498\,752\,z^3+5\,211\,507\,426\,048\,z^2+\right.\right.\right. $$

$$ \left.\left.\left.3\,404\,029\,749\,120\,z-15\,058\,768\,725\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216\,z^6+2\,661\,285\,888\,z^5+112\,562\,208\,768\,z^4+\right.\right.\right. $$

$$ \left.\left.\left.1\,408\,561\,758\,208\,z^3+4\,047\,721\,117\,440\,z^2+481\,880\,599\,200\,z-25\,097\,947\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right. $$

$$ \left.\left.2\sqrt{z}\left(16\,777\,216\,z^6+2\,663\,383\,040\,z^5+112\,888\,446\,976\,z^4+1\,421\,663\,895\,552\,z^3+4\,187\,999\,312\,640\,z^2+\right.\right.\right. $$

$$ \left.\left.\left.688\,820\,932\,800\,z-75\,293\,843\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(3\,104\,192\,931\,840\sqrt{2}\;z^{7/4}\right) $$

07.22.03.a7sg.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{15}{4};z\right)= $$

$$ \frac{1}{369\,514\,826\,956\,800\,z^{11/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(67\,108\,864\,z^{13/2}-16\,777\,216\,z^6-11\,467\,227\,136\,z^{11/2}+2\,854\,223\,872\,z^5+\right.\right.\right. $$

$$ 529\,533\,763\,584\,z^{9/2}-130\,286\,026\,752\,z^4-7\,381\,302\,706\,176\,z^{7/2}+1\,754\,545\,766\,400\,z^3+ $$

$$ 24\,489\,469\,025\,280\,z^{5/2}-5\,077\,559\,934\,720\,z^2-3\,957\,936\,877\,440\,z^{3/2}-533\,326\,641\,120\,z- $$

$$ 421\,645\,524\,300\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^6-11\,467\,227\,136\,z^{11/2}-\right. $$

$$ 2\,854\,223\,872\,z^5+529\,533\,763\,584\,z^{9/2}+130\,286\,026\,752\,z^4-7\,381\,302\,706\,176\,z^{7/2}- $$

$$ 1\,754\,545\,766\,400\,z^3+24\,489\,469\,025\,280\,z^{5/2}+5\,077\,559\,934\,720\,z^2-3\,957\,936\,877\,440\,z^{3/2}+ $$

$$ \left.533\,326\,641\,120\,z-421\,645\,524\,300\sqrt{z}+316\,234\,143\,225\right)-316\,234\,143\,225\Big)+ $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-45\,919\,240\,192\,z^6+2\,126\,634\,811\,392\,z^5-29\,905\,802\,035\,200\,z^4+\right. $$

$$ \left.102\,801\,194\,496\,000\,z^3-26\,985\,313\,555\,200\,z^2-5\,059\,746\,291\,600\,z+316\,234\,143\,225\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)- $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-45\,919\,240\,192\,z^6+2\,126\,634\,811\,392\,z^5-29\,905\,802\,035\,200\,z^4+\right. $$

$$ \left.\left.\left.102\,801\,194\,496\,000\,z^3-26\,985\,313\,555\,200\,z^2-5\,059\,746\,291\,600\,z+316\,234\,143\,225\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a7sh.01

$${}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{15}{4};-z\right)=$$

$$\frac{1}{92\,378\,706\,739\,200\,z^{11/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+45\,919\,240\,192\,z^6+2\,126\,634\,811\,392\,z^5+29\,905\,802\,035\,200\,z^4+\right.\right.$$

$$\left.102\,801\,194\,496\,000\,z^3+26\,985\,313\,555\,200\,z^2-5\,059\,746\,291\,600\,z-316\,234\,143\,225\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$

$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+2\,866\,806\,784\,z^5+132\,383\,440\,896\,z^4+1\,845\,325\,676\,544\,z^3+6\,122\,367\,256\,320\,z^2+\right.\right.$$

$$989\,484\,219\,360\,z-105\,411\,381\,075\big)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6+2\,854\,223\,872\,z^5+130\,286\,026\,752\,z^4+\right.$$

$$\left.\left.\left.1\,754\,545\,766\,400\,z^3+5\,077\,559\,934\,720\,z^2-533\,326\,641\,120\,z+316\,234\,143\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a7si.01

$${}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{17}{4};z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(-268\,435\,456\,z^7+49\,375\,346\,688\,z^6-2\,500\,611\,538\,944\,z^5+39\,786\,905\,272\,320\,z^4-171\,946\,228\,101\,120\,z^3+\right.\right.\right.$$

$$131\,914\,632\,326\,400\,z^2+2\,168\,462\,696\,400\,z-406\,586\,755\,575\big)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$

$$3\left(268\,435\,456\,z^7-49\,140\,465\,664\,z^6+2\,457\,804\,472\,320\,z^5-37\,670\,017\,105\,920\,z^4+140\,520\,771\,072\,000\,z^3-\right.$$

$$\left.26\,985\,313\,555\,200\,z^2-4\,095\,985\,093\,200\,z+677\,644\,592\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$2\sqrt{z}\,\left(268\,435\,456\,z^7-49\,174\,020\,096\,z^6+2\,463\,844\,270\,080\,z^5-37\,959\,241\,236\,480\,z^4+\right.$$

$$\left.\left.144\,425\,214\,259\,200\,z^3-35\,668\,301\,011\,200\,z^2-7\,951\,029\,886\,800\,z+2\,032\,933\,777\,875\right)$$

$$\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(114\,616\,354\,406\,400\sqrt{2}\,z^{11/4}\right)$$

07.22.03.a7sj.01

$${}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{17}{4};-z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+49\,375\,346\,688\,z^6+2\,500\,611\,538\,944\,z^5+39\,786\,905\,272\,320\,z^4+171\,946\,228\,101\,120\,z^3+\right.\right.\right.$$

$$131\,914\,632\,326\,400\,z^2-2\,168\,462\,696\,400\,z-406\,586\,755\,575\big)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$

$$3\left(268\,435\,456\,z^7+49\,140\,465\,664\,z^6+2\,457\,804\,472\,320\,z^5+37\,670\,017\,105\,920\,z^4+140\,520\,771\,072\,000\,z^3+\right.$$

$$\left.26\,985\,313\,555\,200\,z^2-4\,095\,985\,093\,200\,z-677\,644\,592\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$2\sqrt{z}\,\left(268\,435\,456\,z^7+49\,174\,020\,096\,z^6+2\,463\,844\,270\,080\,z^5+37\,959\,241\,236\,480\,z^4+\right.$$

$$\left.\left.144\,425\,214\,259\,200\,z^3+35\,668\,301\,011\,200\,z^2-7\,951\,029\,886\,800\,z-2\,032\,933\,777\,875\right)$$

$$\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(114\,616\,354\,406\,400\sqrt{2}\,z^{11/4}\right)$$

07.22.03.a7sk.01

$${}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{19}{4};z\right)=$$

$$\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2}-268\,435\,456\,z^7-209\,715\,200\,000\,z^{13/2}+52\,227\,473\,408\,z^6+11\,303\,133\,380\,608\,z^{11/2}-\right.\right.\right.$$
$$2\,787\,304\,800\,256\,z^5-189\,353\,871\,802\,368\,z^{9/2}+45\,375\,855\,329\,280\,z^4+790\,675\,083\,018\,240\,z^{7/2}-$$
$$169\,620\,473\,917\,440\,z^3-189\,182\,213\,176\,320\,z^{5/2}-13\,635\,165\,922\,560\,z^2-$$
$$43\,369\,253\,928\,000\,z^{3/2}-21\,925\,567\,263\,600\,z+23\,190\,503\,836\,500\sqrt{z}+e^{4\sqrt{z}}$$
$$\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^7-209\,715\,200\,000\,z^{13/2}-52\,227\,473\,408\,z^6+11\,303\,133\,380\,608\,z^{11/2}+\right.$$
$$2\,787\,304\,800\,256\,z^5-189\,353\,871\,802\,368\,z^{9/2}-45\,375\,855\,329\,280\,z^4+790\,675\,083\,018\,240\,z^{7/2}+$$
$$169\,620\,473\,917\,440\,z^3-189\,182\,213\,176\,320\,z^{5/2}+13\,635\,165\,922\,560\,z^2-43\,369\,253\,928\,000\,z^{3/2}+$$
$$\left.21\,925\,567\,263\,600\,z+23\,190\,503\,836\,500\sqrt{z}-17\,392\,877\,877\,375\right)+17\,392\,877\,877\,375\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-839\,666\,106\,368\,z^7+45\,368\,209\,309\,696\,z^6-765\,588\,532\,101\,120\,z^5+\right.$$
$$3\,289\,638\,223\,872\,000\,z^4-1\,151\,373\,378\,355\,200\,z^3-323\,823\,762\,662\,400\,z^2+$$
$$\left.40\,477\,970\,332\,800\,z-17\,392\,877\,877\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-839\,666\,106\,368\,z^7+45\,368\,209\,309\,696\,z^6-765\,588\,532\,101\,120\,z^5+\right.$$
$$3\,289\,638\,223\,872\,000\,z^4-1\,151\,373\,378\,355\,200\,z^3-323\,823\,762\,662\,400\,z^2+$$
$$\left.\left.\left.40\,477\,970\,332\,800\,z-17\,392\,877\,877\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(12\,612\,772\,760\,125\,440\,z^{15/4}\right)$$

07.22.03.a7sl.01

$${}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{19}{4};-z\right)=$$

$$\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^8+839\,666\,106\,368\,z^7+45\,368\,209\,309\,696\,z^6+765\,588\,532\,101\,120\,z^5+3\,289\,638\,223\,872\,000\,z^4+\right.\right.$$
$$\left.1\,151\,373\,378\,355\,200\,z^3-323\,823\,762\,662\,400\,z^2-40\,477\,970\,332\,800\,z-17\,392\,877\,877\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^7+52\,428\,800\,000\,z^6+2\,825\,783\,345\,152\,z^5+47\,338\,467\,950\,592\,z^4+\right.\right.$$
$$\left.197\,668\,770\,754\,560\,z^3+47\,295\,553\,294\,080\,z^2-10\,842\,313\,482\,000\,z-5\,797\,625\,959\,125\right)\cos\left(2\sqrt{z}\right)+$$
$$\left(268\,435\,456\,z^7+52\,227\,473\,408\,z^6+2\,787\,304\,800\,256\,z^5+45\,375\,855\,329\,280\,z^4+\right.$$
$$169\,620\,473\,917\,440\,z^3-13\,635\,165\,922\,560\,z^2+21\,925\,567\,263\,600\,z+$$
$$\left.\left.17\,392\,877\,877\,375\right)\sin\left(2\sqrt{z}\right)\right)\Big/\left(3\,153\,193\,190\,031\,360\,z^{15/4}\right)$$

07.22.03.a7sm.01

$${}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{21}{4};z\right)=$$

$$\left(\left(-2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-894\,963\,810\,304\,z^7+52\,230\,862\,405\,632\,z^6-977\,765\,929\,058\,304\,z^5+5\,065\,934\,056\,980\,480\,z^4-\right.\right.\right.$$
$$\left.\left.4\,424\,451\,771\,801\,600\,z^3-161\,911\,881\,331\,200\,z^2+88\,184\,149\,653\,600\,z-36\,999\,394\,757\,325\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$3\left(4\,294\,967\,296\,z^8-891\,205\,713\,920\,z^7+51\,454\,110\,859\,264\,z^6-933\,357\,252\,771\,840\,z^5+4\,281\,955\,703\,193\,600\right.$$
$$\left.z^4-1\,151\,373\,378\,355\,200\,z^3-308\,403\,583\,488\,000\,z^2+190\,824\,717\,283\,200\,z-61\,665\,657\,928\,875\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-891\,742\,584\,832\,z^7+51\,563\,867\,406\,336\,z^6-\right.$$
$$939\,460\,814\,438\,400\,z^5+4\,381\,429\,963\,161\,600\,z^4-1\,449\,948\,692\,275\,200\,z^3-485\,735\,643\,993\,600\,z^2+$$
$$\left.\left.177\,813\,941\,104\,800\,z-184\,996\,973\,786\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(3\,667\,723\,341\,004\,800\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a7sn.01

$${}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{21}{4};-z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+894\,963\,810\,304\,z^7+52\,230\,862\,405\,632\,z^6+977\,765\,929\,058\,304\,z^5+5\,065\,934\,056\,980\,480\,z^4+\right.\right.\right.$$
$$\left.\left.4\,424\,451\,771\,801\,600\,z^3-161\,911\,881\,331\,200\,z^2-88\,184\,149\,653\,600\,z-36\,999\,394\,757\,325\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\left(4\,294\,967\,296\,z^8+891\,205\,713\,920\,z^7+51\,454\,110\,859\,264\,z^6+933\,357\,252\,771\,840\,z^5+4\,281\,955\,703\,193\,600\right.$$
$$\left.z^4+1\,151\,373\,378\,355\,200\,z^3-308\,403\,583\,488\,000\,z^2-190\,824\,717\,283\,200\,z-61\,665\,657\,928\,875\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+891\,742\,584\,832\,z^7+51\,563\,867\,406\,336\,z^6+\right.$$
$$939\,460\,814\,438\,400\,z^5+4\,381\,429\,963\,161\,600\,z^4+1\,449\,948\,692\,275\,200\,z^3-485\,735\,643\,993\,600\,z^2-$$
$$\left.\left.177\,813\,941\,104\,800\,z-184\,996\,973\,786\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(3\,667\,723\,341\,004\,800\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a7so.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{23}{4};z\right) = $$

$$ \left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(17\,179\,869\,184\,z^{17/2}-4\,294\,967\,296\,z^{8}-3\,775\,276\,253\,184\,z^{15/2}+940\,597\,837\,824\,z^{7}+232\,620\,797\,460\,480\right.\right.\right. $$
$$ z^{13/2}-57\,460\,823\,949\,312\,z^{6}-4\,551\,289\,451\,053\,056\,z^{11/2}+1\,097\,043\,195\,985\,920\,z^{5}+ $$
$$ 22\,910\,748\,823\,388\,160\,z^{9/2}-5\,031\,155\,043\,532\,800\,z^{4}-7\,319\,421\,096\,099\,840\,z^{7/2}-205\,590\,412\,984\,320\,z^{3}- $$
$$ 2\,590\,590\,101\,299\,200\,z^{5/2}-878\,950\,212\,940\,800\,z^{2}+1\,908\,247\,172\,832\,000\,z^{3/2}-3\,130\,718\,017\,927\,500\sqrt{z}+ $$
$$ e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2}+4\,294\,967\,296\,z^{8}-3\,775\,276\,253\,184\,z^{15/2}-940\,597\,837\,824\,z^{7}+\right. $$
$$ 232\,620\,797\,460\,480\,z^{13/2}+57\,460\,823\,949\,312\,z^{6}-4\,551\,289\,451\,053\,056\,z^{11/2}-1\,097\,043\,195\,985\,920 $$
$$ z^{5}+22\,910\,748\,823\,388\,160\,z^{9/2}+5\,031\,155\,043\,532\,800\,z^{4}-7\,319\,421\,096\,099\,840\,z^{7/2}+ $$
$$ \left.205\,590\,412\,984\,320\,z^{3}-2\,590\,590\,101\,299\,200\,z^{5/2}+878\,950\,212\,940\,800\,z^{2}+1\,908\,247\,172\,832\,000\right. $$
$$ \left.z^{3/2}-3\,130\,718\,017\,927\,500\sqrt{z}+2\,348\,038\,513\,445\,625\right)-2\,348\,038\,513\,445\,625\Big)+ $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-15\,113\,989\,914\,624\,z^{8}+933\,288\,877\,228\,032\,z^{7}-18\,374\,124\,770\,426\,880\,z^{6}+\right. $$
$$ 94\,741\,580\,847\,513\,600\,z^{5}-41\,449\,441\,620\,787\,200\,z^{4}-15\,543\,540\,607\,795\,200\,z^{3}+ $$
$$ \left.2\,914\,413\,863\,961\,600\,z^{2}-2\,504\,574\,414\,342\,000\,z+2\,348\,038\,513\,445\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)- $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^{9}-15\,113\,989\,914\,624\,z^{8}+933\,288\,877\,228\,032\,z^{7}-18\,374\,124\,770\,426\,880\,z^{6}+\right. $$
$$ 94\,741\,580\,847\,513\,600\,z^{5}-41\,449\,441\,620\,787\,200\,z^{4}-15\,543\,540\,607\,795\,200\,z^{3}+2\,914\,413\,863\,961\,600\,z^{2}- $$
$$ \left.\left.2\,504\,574\,414\,342\,000\,z+2\,348\,038\,513\,445\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)\Big/\left(382\,366\,163\,675\,381\,760\,z^{19/4}\right) $$

07.22.03.a7sp.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{5}{2},\frac{23}{4};-z\right) = $$

$$ \left(\sqrt{\pi}\left(68\,719\,476\,736\,z^{9}+15\,113\,989\,914\,624\,z^{8}+933\,288\,877\,228\,032\,z^{7}+18\,374\,124\,770\,426\,880\,z^{6}+\right.\right. $$
$$ 94\,741\,580\,847\,513\,600\,z^{5}+41\,449\,441\,620\,787\,200\,z^{4}-15\,543\,540\,607\,795\,200\,z^{3}- $$
$$ \left.2\,914\,413\,863\,961\,600\,z^{2}-2\,504\,574\,414\,342\,000\,z-2\,348\,038\,513\,445\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^{8}+943\,819\,063\,296\,z^{7}+58\,155\,199\,365\,120\,z^{6}+1\,137\,822\,362\,763\,264\,z^{5}+\right.\right. $$
$$ 5\,727\,687\,205\,847\,040\,z^{4}+1\,829\,855\,274\,024\,960\,z^{3}-647\,647\,525\,324\,800\,z^{2}- $$
$$ 477\,061\,793\,208\,000\,z-782\,679\,504\,481\,875\Big)\cos\left(2\sqrt{z}\right)+\left(4\,294\,967\,296\,z^{8}+940\,597\,837\,824\,z^{7}+\right. $$
$$ \left.\left.57\,460\,823\,949\,312\,z^{6}+1\,097\,043\,195\,985\,920\,z^{5}+5\,031\,155\,043\,532\,800\,z^{4}-205\,590\,412\,984\,320\,z^{3}+\right.\right. $$
$$ \left.\left.878\,950\,212\,940\,800\,z^{2}+2\,348\,038\,513\,445\,625\right)\sin\left(2\sqrt{z}\right)\right)\Big)\Big/\left(95\,591\,540\,918\,845\,440\,z^{19/4}\right) $$

For fixed z and $a_1 = -\frac{17}{4}$, $b_{1.} = \frac{7}{2}$

07.22.03.a7sq.01

$${}_1F_2\left(-\frac{17}{4};\frac{7}{2},-\frac{23}{4};z\right)=$$
$$\left(\left(-8z\left(4\,194\,304z^5+298\,057\,728z^4+9\,638\,608\,896z^3+151\,143\,229\,440z^2+909\,193\,844\,160z+305\,982\,012\,105\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(4\,194\,304z^5+301\,727\,744z^4+9\,905\,602\,560z^3+\right.$$
$$\left.160\,044\,595\,200z^2+1\,057\,930\,614\,720z+3\,312\,756\,822\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(33\,554\,432z^6+2\,409\,627\,648z^5+78\,930\,247\,680z^4+1\,269\,425\,848\,320z^3+8\,264\,311\,856\,640z^2+\right.$$
$$\left.\left.7\,227\,833\,067\,000z-49\,691\,352\,335\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(2\,751\,380\,138\,430\sqrt{2}\;z^{5/4}\right)$$

07.22.03.a7sr.01

$${}_1F_2\left(-\frac{17}{4};\frac{7}{2},-\frac{23}{4};-z\right)=$$
$$\left(\left(8z\left(4\,194\,304z^5-298\,057\,728z^4+9\,638\,608\,896z^3-151\,143\,229\,440z^2+909\,193\,844\,160z-305\,982\,012\,105\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(4\,194\,304z^5-301\,727\,744z^4+9\,905\,602\,560z^3-160\,044\,595\,200z^2+\right.$$
$$\left.1\,057\,930\,614\,720z-3\,312\,756\,822\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(33\,554\,432z^6-2\,409\,627\,648z^5+78\,930\,247\,680z^4-1\,269\,425\,848\,320z^3+8\,264\,311\,856\,640z^2-\right.$$
$$\left.\left.7\,227\,833\,067\,000z-49\,691\,352\,335\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(2\,751\,380\,138\,430\sqrt{2}\;z^{5/4}\right)$$

07.22.03.a7ss.01

$${}_1F_2\left(-\frac{17}{4};\frac{7}{2},-\frac{21}{4};z\right)=\frac{15\,(44z+31)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\;(8z+93)\cosh\left(2\sqrt{z}\right)}{224\,z^{5/2}}$$

07.22.03.a7st.01

$${}_1F_2\left(-\frac{17}{4};\frac{7}{2},-\frac{21}{4};-z\right)=\frac{10\sqrt{z}\;(8z-93)\cos\left(2\sqrt{z}\right)+15\,(31-44z)\sin\left(2\sqrt{z}\right)}{224\,z^{5/2}}$$

07.22.03.a7su.01

$${}_1F_2\left(-\frac{17}{4};\frac{7}{2},-\frac{19}{4};z\right)=\frac{1}{358\,875\,670\,230\sqrt{2}\;z^{5/4}}$$
$$\left(\left(-32z\left(524\,288z^5+22\,216\,704z^4+512\,022\,528z^3+6\,216\,924\,672z^2+30\,125\,367\,720z+157\,248\,945\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(2\,097\,152z^5+90\,701\,824z^4+2\,128\,945\,152z^3+26\,804\,736\,000z^2+146\,017\,861\,920z+301\,159\,711\,125\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,777\,216z^6+723\,517\,440z^5+16\,934\,436\,864z^4+211\,980\,533\,760z^3+\right.$$
$$\left.\left.1\,131\,894\,570\,240z^2+996\,942\,492\,000z-4\,517\,395\,666\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)$$

07.22.03.a7sv.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, -\frac{19}{4}; -z\right) = \frac{1}{358\,875\,670\,230\sqrt{2}\, z^{5/4}} \left(\left(32 z \left(524\,288 z^5 - 22\,216\,704 z^4 + 512\,022\,528 z^3 - 6\,216\,924\,672 z^2 + 30\,125\,367\,720 z - 157\,248\,945\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(2\,097\,152 z^5 - 90\,701\,824 z^4 + 2\,128\,945\,152 z^3 - 26\,804\,736\,000 z^2 + 146\,017\,861\,920 z - 301\,159\,711\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(16\,777\,216 z^6 - 723\,517\,440 z^5 + 16\,934\,436\,864 z^4 - 211\,980\,533\,760 z^3 + 1\,131\,894\,570\,240 z^2 - 996\,942\,492\,000 z - 4\,517\,395\,666\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7sw.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, -\frac{17}{4}; z\right) = \frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\cosh\left(2\sqrt{z}\right)\right)}{32 z^{5/2}} $$

07.22.03.a7sx.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, -\frac{17}{4}; -z\right) = -\frac{15\left(6\sqrt{z}\cos\left(2\sqrt{z}\right) + (4z-3)\sin\left(2\sqrt{z}\right)\right)}{32 z^{5/2}} $$

07.22.03.a7sy.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, -\frac{15}{4}; z\right) = \frac{1}{18\,888\,193\,170\sqrt{2}\, z^{5/4}} \left(\left(-8 z \left(1\,048\,576 z^5 + 14\,352\,384 z^4 + 200\,577\,024 z^3 + 1\,732\,642\,560 z^2 + 6\,364\,252\,944 z - 1\,606\,603\,005\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(1\,048\,576 z^5 + 15\,269\,888 z^4 + 214\,683\,648 z^3 + 1\,936\,210\,176 z^2 + 8\,345\,892\,240 z + 10\,384\,817\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(8\,388\,608 z^6 + 121\,110\,528 z^5 + 1\,698\,988\,032 z^4 + 15\,202\,916\,352 z^3 + 63\,437\,904\,000 z^2 + 49\,847\,124\,600 z - 155\,772\,264\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7sz.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, -\frac{15}{4}; -z\right) = \frac{1}{18\,888\,193\,170\sqrt{2}\, z^{5/4}} \left(\left(8 z \left(1\,048\,576 z^5 - 14\,352\,384 z^4 + 200\,577\,024 z^3 - 1\,732\,642\,560 z^2 + 6\,364\,252\,944 z + 1\,606\,603\,005\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1\,048\,576 z^5 - 15\,269\,888 z^4 + 214\,683\,648 z^3 - 1\,936\,210\,176 z^2 + 8\,345\,892\,240 z - 10\,384\,817\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(8\,388\,608 z^6 - 121\,110\,528 z^5 + 1\,698\,988\,032 z^4 - 15\,202\,916\,352 z^3 + 63\,437\,904\,000 z^2 - 49\,847\,124\,600 z - 155\,772\,264\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7t0.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, -\frac{13}{4}; z\right) = \frac{1}{102\,045\,303\,360\, z^{5/2}} $$
$$ \left(e^{-2\sqrt{z}} \left(16\,777\,216\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{27/4} - 16\,777\,216\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{27/4} + 16\,777\,216\, e^{4\sqrt{z}}\, z^{13/2} + \right.\right. $$
$$ 16\,777\,216\, z^{13/2} + 4\,194\,304\, e^{4\sqrt{z}}\, z^6 - 4\,194\,304\, z^6 + 3\,145\,728\, e^{4\sqrt{z}}\, z^{11/2} + 3\,145\,728\, z^{11/2} + 3\,932\,160\, e^{4\sqrt{z}}\, z^5 - $$
$$ 3\,932\,160\, z^5 + 6\,881\,280\, e^{4\sqrt{z}}\, z^{9/2} + 6\,881\,280\, z^{9/2} + 15\,482\,880\, e^{4\sqrt{z}}\, z^4 - 15\,482\,880\, z^4 + 42\,577\,920\, e^{4\sqrt{z}}\, z^{7/2} + $$
$$ 42\,577\,920\, z^{7/2} + 138\,378\,240\, e^{4\sqrt{z}}\, z^3 - 138\,378\,240\, z^3 + 518\,918\,400\, e^{4\sqrt{z}}\, z^{5/2} + 518\,918\,400\, z^{5/2} + $$
$$ 2\,205\,403\,200\, e^{4\sqrt{z}}\, z^2 - 2\,205\,403\,200\, z^2 + 10\,475\,665\,200\, e^{4\sqrt{z}}\, z^{3/2} + 10\,475\,665\,200\, z^{3/2} + 54\,997\,242\,300\, e^{4\sqrt{z}}\, z - $$
$$ \left.\left. 54\,997\,242\,300\, z - 90\,352\,612\,350\, e^{4\sqrt{z}}\, \sqrt{z} - 90\,352\,612\,350\, \sqrt{z} + 45\,176\,306\,175\, e^{4\sqrt{z}} - 45\,176\,306\,175\right)\right) $$

07.22.03.a7t1.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, -\frac{13}{4}; -z\right) = $$
$$ \frac{1}{51\,022\,651\,680\, z^{5/2}} \left(33\,554\,432\, \sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{27/4} + 2\left(8\,388\,608\, z^6 - 1\,572\,864\, z^5 + 3\,440\,640\, z^4 - 21\,288\,960\, z^3 + \right.\right. $$
$$ \left.\left. 259\,459\,200\, z^2 - 5\,237\,832\,600\, z - 45\,176\,306\,175\right) \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(4\,194\,304\, z^6 - 3\,932\,160\, z^5 + \right.\right. $$
$$ \left.\left. 15\,482\,880\, z^4 - 138\,378\,240\, z^3 + 2\,205\,403\,200\, z^2 - 54\,997\,242\,300\, z + 45\,176\,306\,175\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a7t2.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, -\frac{11}{4}; z\right) = $$
$$ \frac{1}{1\,259\,212\,878\, \sqrt{2}\, z^{5/4}} \left(\left(512\, z \left(8192\, z^5 - 122\,880\, z^4 - 474\,624\, z^3 - 2\,544\,336\, z^2 - 6\,429\,375\, z + 2\,971\,647\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 12\sqrt{z} \left(-524\,288\, z^5 + 7\,405\,568\, z^4 + 36\,483\,072\, z^3 + 197\,593\,344\, z^2 + 612\,657\,648\, z + 415\,392\,705\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-4\,194\,304\, z^6 + 59\,768\,832\, z^5 + 286\,064\,640\, z^4 + 1\,534\,242\,816\, z^3 + \right. $$
$$ \left.\left.\left. 4\,596\,569\,856\, z^2 + 2\,848\,407\,120\, z - 6\,230\,890\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7t3.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, -\frac{11}{4}; -z\right) = $$
$$ -\frac{1}{1\,259\,212\,878\, \sqrt{2}\, z^{5/4}} \left(\left(512\, z \left(8192\, z^5 + 122\,880\, z^4 - 474\,624\, z^3 + 2\,544\,336\, z^2 - 6\,429\,375\, z - 2\,971\,647\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 12\sqrt{z} \left(524\,288\, z^5 + 7\,405\,568\, z^4 - 36\,483\,072\, z^3 + 197\,593\,344\, z^2 - 612\,657\,648\, z + 415\,392\,705\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(4\,194\,304\, z^6 + 59\,768\,832\, z^5 - 286\,064\,640\, z^4 + 1\,534\,242\,816\, z^3 - \right. $$
$$ \left.\left.\left. 4\,596\,569\,856\, z^2 + 2\,848\,407\,120\, z + 6\,230\,890\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7t4.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, -\frac{9}{4}; z\right) = \frac{1}{7\,849\,638\,720\, z^{5/2}} \left(e^{-2\sqrt{z}} \left(-4\,194\,304\, e^{4\sqrt{z}}\, z^{13/2} - 4\,194\,304\, z^{13/2} - 1\,048\,576\, e^{4\sqrt{z}}\, z^6 + 1\,048\,576\, z^6 - 262\,144\right.\right. $$
$$ e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16z - 459) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{23/4} + 262\,144\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16z - 459) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{23/4} + $$
$$ 119\,537\,664\, e^{4\sqrt{z}}\, z^{11/2} + 119\,537\,664\, z^{11/2} + 29\,097\,984\, e^{4\sqrt{z}}\, z^5 - 29\,097\,984\, z^5 + 20\,840\,448\, e^{4\sqrt{z}}\, z^{9/2} + $$
$$ 20\,840\,448\, z^{9/2} + 24\,330\,240\, e^{4\sqrt{z}}\, z^4 - 24\,330\,240\, z^4 + 38\,707\,200\, e^{4\sqrt{z}}\, z^{7/2} + 38\,707\,200\, z^{7/2} + $$
$$ 76\,446\,720\, e^{4\sqrt{z}}\, z^3 - 76\,446\,720\, z^3 + 175\,633\,920\, e^{4\sqrt{z}}\, z^{5/2} + 175\,633\,920\, z^{5/2} + 441\,080\,640\, e^{4\sqrt{z}}\, z^2 - $$
$$ 441\,080\,640\, z^2 + 1\,102\,701\,600\, e^{4\sqrt{z}}\, z^{3/2} + 1\,102\,701\,600\, z^{3/2} + 2\,067\,565\,500\, e^{4\sqrt{z}}\, z - $$
$$ \left.\left. 2\,067\,565\,500\, z - 3\,928\,374\,450\, e^{4\sqrt{z}}\, \sqrt{z} - 3\,928\,374\,450\, \sqrt{z} + 1\,964\,187\,225\, e^{4\sqrt{z}} - 1\,964\,187\,225\right)\right) $$

07.22.03.a7t5.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, -\frac{9}{4}; -z\right) = \frac{1}{3\,924\,819\,360\, z^{5/2}} \left(-524\,288\, \sqrt{\pi}\, (16z + 459) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{23/4} - 2\left(2\,097\,152\, z^6 + 59\,768\,832\, z^5 - 10\,420\,224\, z^4 + \right.\right. $$
$$ \left.\left. 19\,353\,600\, z^3 - 87\,816\,960\, z^2 + 551\,350\,800\, z + 1\,964\,187\,225\right) \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(-1\,048\,576\, z^6 - \right.\right. $$
$$ \left.\left. 29\,097\,984\, z^5 + 24\,330\,240\, z^4 - 76\,446\,720\, z^3 + 441\,080\,640\, z^2 - 2\,067\,565\,500\, z + 1\,964\,187\,225\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a7t6.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, -\frac{7}{4}; z\right) = \frac{1}{343\,421\,694\, \sqrt{2}\, z^{5/4}} \left(\left(-8z\left(262\,144\, z^5 - 11\,452\,416\, z^4 + 60\,014\,592\, z^3 + 62\,758\,656\, z^2 + 97\,244\,064\, z - 68\,052\,879\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 12\sqrt{z}\left(262\,144\, z^5 - 11\,223\,040\, z^4 + 50\,380\,800\, z^3 + 100\,078\,848\, z^2 + 184\,577\,184\, z + 59\,341\,815\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(2\,097\,152\, z^6 - 90\,046\,464\, z^5 + 413\,466\,624\, z^4 + 778\,291\,200\, z^3 + 1\,401\,504\,768\, z^2 + 586\,436\,760\, z - 890\,127\,225\right) $$
$$ \left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7t7.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{1}{343\,421\,694\, \sqrt{2}\, z^{5/4}} \left(\left(8z\left(262\,144\, z^5 + 11\,452\,416\, z^4 + 60\,014\,592\, z^3 - 62\,758\,656\, z^2 + 97\,244\,064\, z + 68\,052\,879\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 12\sqrt{z}\left(262\,144\, z^5 + 11\,223\,040\, z^4 + 50\,380\,800\, z^3 - 100\,078\,848\, z^2 + 184\,577\,184\, z - 59\,341\,815\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(2\,097\,152\, z^6 + 90\,046\,464\, z^5 + 413\,466\,624\, z^4 - 778\,291\,200\, z^3 + 1\,401\,504\,768\, z^2 - 586\,436\,760\, z - 890\,127\,225\right) $$
$$ \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7t8.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{7}{2},-\frac{5}{4};z\right)=\frac{1}{872\,182\,080\,z^{5/2}}\left(e^{-2\sqrt{z}}\left(524\,288\,e^{4\sqrt{z}}\,z^{13/2}+524\,288\,z^{13/2}+131\,072\,e^{4\sqrt{z}}\,z^{6}-131\,072\,z^{6}-29\,982\,720\,e^{4\sqrt{z}}\,z^{11/2}-29\,982\,720\,z^{11/2}-7\,397\,376\,e^{4\sqrt{z}}\,z^{5}+7\,397\,376\,z^{5}+2048\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-14\,688\,z+137\,241\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}-2048\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-14\,688\,z+137\,241\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+275\,644\,416\,e^{4\sqrt{z}}\,z^{9/2}+275\,644\,416\,z^{9/2}+63\,700\,992\,e^{4\sqrt{z}}\,z^{4}-63\,700\,992\,z^{4}+41\,693\,184\,e^{4\sqrt{z}}\,z^{7/2}+41\,693\,184\,z^{7/2}+42\,439\,680\,e^{4\sqrt{z}}\,z^{3}-42\,439\,680\,z^{3}+55\,157\,760\,e^{4\sqrt{z}}\,z^{5/2}+55\,157\,760\,z^{5/2}+80\,196\,480\,e^{4\sqrt{z}}\,z^{2}-80\,196\,480\,z^{2}+110\,270\,160\,e^{4\sqrt{z}}\,z^{3/2}+110\,270\,160\,z^{3/2}+82\,702\,620\,e^{4\sqrt{z}}\,z-82\,702\,620\,z-206\,756\,550\,e^{4\sqrt{z}}\,\sqrt{z}-206\,756\,550\,\sqrt{z}+103\,378\,275\,e^{4\sqrt{z}}-103\,378\,275\right)\right) $$

07.22.03.a7t9.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{7}{2},-\frac{5}{4};-z\right)=\frac{1}{436\,091\,040\,z^{5/2}}\left(4096\,\sqrt{\pi}\,\left(256\,z^2+14\,688\,z+137\,241\right)S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}+2\left(262\,144\,z^6+14\,991\,360\,z^5+137\,822\,208\,z^4-20\,846\,592\,z^3+27\,578\,880\,z^2-55\,135\,080\,z-103\,378\,275\right)\cos\left(2\,\sqrt{z}\right)\sqrt{z}+\left(131\,072\,z^6+7\,397\,376\,z^5+63\,700\,992\,z^4-42\,439\,680\,z^3+80\,196\,480\,z^2-82\,702\,620\,z+103\,378\,275\right)\sin\left(2\,\sqrt{z}\right)\right) $$

07.22.03.a7ta.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{7}{2},-\frac{3}{4};z\right)=\frac{1}{245\,301\,210\,\sqrt{2}\,z^{5/4}}\left(\left(32\,z\left(32\,768\,z^5-2\,371\,584\,z^4+34\,468\,992\,z^3-79\,534\,080\,z^2-4\,318\,920\,z+14\,022\,315\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\,\sqrt{z}\,\left(131\,072\,z^5-9\,371\,648\,z^4+129\,768\,960\,z^3-210\,643\,200\,z^2-144\,797\,760\,z-17\,453\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1\,048\,576\,z^6+75\,104\,256\,z^5-1\,047\,121\,920\,z^4+1\,789\,378\,560\,z^3+1\,164\,741\,120\,z^2+257\,774\,400\,z-261\,802\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7tb.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{7}{2},-\frac{3}{4};-z\right)=-\frac{1}{245\,301\,210\,\sqrt{2}\,z^{5/4}}\left(\left(32\,z\left(32\,768\,z^5+2\,371\,584\,z^4+34\,468\,992\,z^3+79\,534\,080\,z^2-4\,318\,920\,z-14\,022\,315\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\,\sqrt{z}\,\left(131\,072\,z^5+9\,371\,648\,z^4+129\,768\,960\,z^3+210\,643\,200\,z^2-144\,797\,760\,z+17\,453\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,048\,576\,z^6+75\,104\,256\,z^5+1\,047\,121\,920\,z^4+1\,789\,378\,560\,z^3-1\,164\,741\,120\,z^2+257\,774\,400\,z+261\,802\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7tc.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, -\frac{1}{4}; z\right) = \frac{1}{523\,309\,248\, z^{5/2}} \left(e^{-2\sqrt{z}} \left(-131\,072\, e^{4\sqrt{z}}\, z^{13/2} - 131\,072\, z^{13/2} - 32\,768\, e^{4\sqrt{z}}\, z^6 + 32\,768\, z^6 + 11\,255\,808\, e^{4\sqrt{z}}\, z^{11/2} + 11\,255\,808\, z^{11/2} + 2\,789\,376\, e^{4\sqrt{z}}\, z^5 - 2\,789\,376\, z^5 - 208\,740\,864\, e^{4\sqrt{z}}\, z^{9/2} - 208\,740\,864\, z^{9/2} - 50\,177\,664\, e^{4\sqrt{z}}\, z^4 + 50\,177\,664\, z^4 - 32\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(4096\, z^3 - 352\,512\, z^2 + 6\,587\,568\, z - 23\,468\,211\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{15/4} + 32\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(4096\, z^3 - 352\,512\, z^2 + 6\,587\,568\, z - 23\,468\,211\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{15/4} + 715\,751\,424\, e^{4\sqrt{z}}\, z^{7/2} + 715\,751\,424\, z^{7/2} + 147\,667\,968\, e^{4\sqrt{z}}\, z^3 - 147\,667\,968\, z^3 + 78\,921\,216\, e^{4\sqrt{z}}\, z^{5/2} + 78\,921\,216\, z^{5/2} + 57\,283\,200\, e^{4\sqrt{z}}\, z^2 - 57\,283\,200\, z^2 + 40\,098\,240\, e^{4\sqrt{z}}\, z^{3/2} + 40\,098\,240\, z^{3/2} + 7\,518\,420\, e^{4\sqrt{z}}\, z - 7\,518\,420\, z - 41\,351\,310\, e^{4\sqrt{z}}\, \sqrt{z} - 41\,351\,310\, \sqrt{z} + 20\,675\,655\, e^{4\sqrt{z}} - 20\,675\,655\right)\right) $$

07.22.03.a7td.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, -\frac{1}{4}; -z\right) = \frac{1}{261\,654\,624\, z^{5/2}} \left(-64\, \sqrt{\pi}\, \left(4096\, z^3 + 352\,512\, z^2 + 6\,587\,568\, z + 23\,468\,211\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{15/4} - 2\left(65\,536\, z^6 + 5\,627\,904\, z^5 + 104\,370\,432\, z^4 + 357\,875\,712\, z^3 - 39\,460\,608\, z^2 + 20\,049\,120\, z + 20\,675\,655\right) \cos\left(2\sqrt{z}\right) \sqrt{z} - \left(32\,768\, z^6 + 2\,789\,376\, z^5 + 50\,177\,664\, z^4 + 147\,667\,968\, z^3 - 57\,283\,200\, z^2 + 7\,518\,420\, z - 20\,675\,655\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a7te.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, \frac{1}{4}; z\right) = \frac{1}{572\,369\,490\, \sqrt{2}\, z^{5/4}} \left(\left(-8\, z\left(65\,536\, z^5 - 6\,623\,232\, z^4 + 158\,006\,016\, z^3 - 920\,119\,536\, z^2 + 976\,192\,560\, z - 140\,272\,965\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\, \sqrt{z}\, \left(65\,536\, z^5 - 6\,565\,888\, z^4 + 152\,307\,456\, z^3 - 791\,214\,480\, z^2 + 365\,707\,440\, z + 9\,398\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(524\,288\, z^6 - 52\,592\,640\, z^5 + 1\,224\,824\,832\, z^4 - 6\,463\,497\,600\, z^3 + 3\,386\,033\,280\, z^2 + 225\,552\,600\, z - 140\,970\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7tf.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, \frac{1}{4}; -z\right) = \frac{1}{572\,369\,490\, \sqrt{2}\, z^{5/4}} \left(\left(8\, z\left(65\,536\, z^5 + 6\,623\,232\, z^4 + 158\,006\,016\, z^3 + 920\,119\,536\, z^2 + 976\,192\,560\, z + 140\,272\,965\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\, \sqrt{z}\, \left(65\,536\, z^5 + 6\,565\,888\, z^4 + 152\,307\,456\, z^3 + 791\,214\,480\, z^2 + 365\,707\,440\, z - 9\,398\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(524\,288\, z^6 + 52\,592\,640\, z^5 + 1\,224\,824\,832\, z^4 + 6\,463\,497\,600\, z^3 + 3\,386\,033\,280\, z^2 - 225\,552\,600\, z - 140\,970\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7tg.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{7}{2},\frac{3}{4};z\right)=\frac{1}{4\,186\,473\,984\,z^{5/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-7\,520\,256\,z^3+210\,802\,176\,z^2-1\,501\,965\,504\,z+1\,760\,115\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536\,z^4+7\,520\,256\,z^3-210\,802\,176\,z^2+1\,501\,965\,504\,z-1\,760\,115\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+4\left(16\,384\,z^{13/2}-4096\,z^6-1\,876\,992\,z^{11/2}+466\,176\,z^5+52\,354\,752\,z^{9/2}-12\,749\,616\,z^4-366\,339\,564\,z^{7/2}+83\,121\,039\,z^3+386\,975\,232\,z^{5/2}-57\,283\,200\,z^2+14\,320\,800\,z^{3/2}+2\,148\,120\,z-7\,518\,420\sqrt{z}+e^{4\sqrt{z}}\left(16\,384\,z^{13/2}+4096\,z^6-1\,876\,992\,z^{11/2}-466\,176\,z^5+52\,354\,752\,z^{9/2}+12\,749\,616\,z^4-366\,339\,564\,z^{7/2}-83\,121\,039\,z^3+386\,975\,232\,z^{5/2}+57\,283\,200\,z^2+14\,320\,800\,z^{3/2}-2\,148\,120\,z-7\,518\,420\sqrt{z}+3\,759\,210\right)-3\,759\,210\right)\right)\right) $$

07.22.03.a7th.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{7}{2},\frac{3}{4};-z\right)=\frac{1}{1\,046\,618\,496\,z^{5/2}}\left(\sqrt{\pi}\left(65\,536\,z^4+7\,520\,256\,z^3+210\,802\,176\,z^2+1\,501\,965\,504\,z+1\,760\,115\,825\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2\left(4\sqrt{z}\left(4096\,z^6+469\,248\,z^5+13\,088\,688\,z^4+91\,584\,891\,z^3+96\,743\,808\,z^2-3\,580\,200\,z-1\,879\,605\right)\cos\left(2\sqrt{z}\right)+\left(4096\,z^6+466\,176\,z^5+12\,749\,616\,z^4+83\,121\,039\,z^3+57\,283\,200\,z^2+2\,148\,120\,z+3\,759\,210\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a7ti.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{7}{2},\frac{5}{4};z\right)=\frac{1}{5\,151\,325\,410\sqrt{2}\,z^{5/4}}\left(\left(-4z\left(65\,536\,z^5-8\,503\,296\,z^4+282\,207\,744\,z^3-2\,642\,955\,840\,z^2+5\,865\,392\,169\,z-2\,581\,301\,520\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+6\sqrt{z}\left(65\,536\,z^5-8\,445\,952\,z^4+274\,864\,128\,z^3-2\,408\,150\,304\,z^2+3\,918\,498\,255\,z-18\,796\,050\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(262\,144\,z^6-33\,816\,576\,z^5+1\,103\,579\,136\,z^4-9\,757\,891\,584\,z^3+16\,547\,679\,540\,z^2-451\,105\,200\,z+140\,970\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7tj.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{7}{2},\frac{5}{4};-z\right)=\frac{1}{5\,151\,325\,410\sqrt{2}\,z^{5/4}}\left(\left(4z\left(65\,536\,z^5+8\,503\,296\,z^4+282\,207\,744\,z^3+2\,642\,955\,840\,z^2+5\,865\,392\,169\,z+2\,581\,301\,520\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-6\sqrt{z}\left(65\,536\,z^5+8\,445\,952\,z^4+274\,864\,128\,z^3+2\,408\,150\,304\,z^2+3\,918\,498\,255\,z+18\,796\,050\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(262\,144\,z^6+33\,816\,576\,z^5+1\,103\,579\,136\,z^4+9\,757\,891\,584\,z^3+16\,547\,679\,540\,z^2+451\,105\,200\,z+140\,970\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7tk.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, \frac{7}{4}; z\right) = \frac{1}{446\,557\,224\,960\, z^{5/2}} \left(e^{-2\sqrt{z}} \left(e^{2\sqrt{z}}\ \sqrt{2\pi}\ \left(1\,048\,576\, z^5 - 150\,405\,120\, z^4 + 5\,621\,391\,360\, z^3 - 60\,078\,620\,160\, z^2 + 140\,809\,266\,000\, z - 19\,361\,274\,075\right) \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) z^{7/4} + e^{2\sqrt{z}}\ \sqrt{2\pi}\ \left(-1\,048\,576\, z^5 + 150\,405\,120\, z^4 - 5\,621\,391\,360\, z^3 + 60\,078\,620\,160\, z^2 - 140\,809\,266\,000\, z + 19\,361\,274\,075\right) \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right) z^{7/4} + 4\left(262\,144\, z^{13/2} - 65\,536\, z^6 - 37\,552\,128\, z^{11/2} + 9\,338\,880\, z^5 + 1\,398\,405\,120\, z^{9/2} - 342\,766\,080\, z^4 - 14\,770\,909\,440\, z^{7/2} + 3\,458\,073\,600\, z^3 + 32\,875\,225\,380\, z^{5/2} - 6\,301\,599\,525\, z^2 - 1\,833\,062\,400\, z^{3/2} - 687\,398\,400\, z + 343\,699\,200\ \sqrt{z}\ + e^{4\sqrt{z}}\ \left(262\,144\, z^{13/2} + 65\,536\, z^6 - 37\,552\,128\, z^{11/2} - 9\,338\,880\, z^5 + 1\,398\,405\,120\, z^{9/2} + 342\,766\,080\, z^4 - 14\,770\,909\,440\, z^{7/2} - 3\,458\,073\,600\, z^3 + 32\,875\,225\,380\, z^{5/2} + 6\,301\,599\,525\, z^2 - 1\,833\,062\,400\, z^{3/2} + 687\,398\,400\, z + 343\,699\,200\ \sqrt{z}\ - 171\,849\,600\right) + 171\,849\,600\right)\right)\right) $$

07.22.03.a7tl.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, \frac{7}{4}; -z\right) = \frac{1}{111\,639\,306\,240\, z^{5/2}} \left(\sqrt{\pi}\ \left(1\,048\,576\, z^5 + 150\,405\,120\, z^4 + 5\,621\,391\,360\, z^3 + 60\,078\,620\,160\, z^2 + 140\,809\,266\,000\, z + 19\,361\,274\,075\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} + 2\left(4\sqrt{z}\ \left(65\,536\, z^6 + 9\,388\,032\, z^5 + 349\,601\,280\, z^4 + 3\,692\,727\,360\, z^3 + 8\,218\,806\,345\, z^2 + 458\,265\,600\, z + 85\,924\,800\right) \cos\left(2\sqrt{z}\right) + \left(65\,536\, z^6 + 9\,338\,880\, z^5 + 342\,766\,080\, z^4 + 3\,458\,073\,600\, z^3 + 6\,301\,599\,525\, z^2 - 687\,398\,400\, z - 171\,849\,600\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a7tm.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, \frac{9}{4}; z\right) = \frac{1}{181\,326\,654\,432\sqrt{2}\ z^{5/4}} \left(\left(-2\, z\left(1\,048\,576\, z^5 - 166\,133\,760\, z^4 + 7\,064\,690\,688\, z^3 - 91\,249\,095\,168\, z^2 + 308\,890\,668\,240\, z - 197\,193\,152\,079\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\ \left(1\,048\,576\, z^5 - 165\,216\,256\, z^4 + 6\,920\,871\,936\, z^3 - 85\,305\,927\,168\, z^2 + 238\,465\,990\,224\, z - 25\,782\,541\,785\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\left(1\,048\,576\, z^6 - 165\,347\,328\, z^5 + 6\,941\,122\,560\, z^4 - 86\,110\,953\,984\, z^3 + 246\,932\,609\,616\, z^2 - 37\,650\,367\,755\, z - 2\,481\,078\,600\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7tn.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{7}{2},\frac{9}{4};-z\right)=\frac{1}{181\,326\,654\,432\sqrt{2}\,z^{5/4}}$$
$$\left(\left(2z\left(1\,048\,576z^5+166\,133\,760z^4+7\,064\,690\,688z^3+91\,249\,095\,168z^2+308\,890\,668\,240z+197\,193\,152\,079\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\sqrt{z}\left(1\,048\,576z^5+165\,216\,256z^4+6\,920\,871\,936z^3+85\,305\,927\,168z^2+238\,465\,990\,224z+25\,782\,541\,785\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(1\,048\,576z^6+165\,347\,328z^5+6\,941\,122\,560z^4+86\,110\,953\,984z^3+\right.$$
$$\left.\left.\left.246\,932\,609\,616z^2+37\,650\,367\,755z-2\,481\,078\,600\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7to.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{7}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{24\,496\,853\,483\,520z^{5/2}}\left(e^{-2\sqrt{z}}\left(4\left(4\,194\,304z^{13/2}-1\,048\,576z^6-721\,158\,144z^{11/2}+179\,503\,104z^5+33\,594\,703\,872z^{9/2}-\right.\right.\right.$$
$$8\,266\,752\,000z^4-474\,590\,361\,600z^{7/2}+112\,883\,811\,840z^3+1\,611\,724\,703\,040z^{5/2}-$$
$$335\,503\,406\,160z^2-279\,096\,281\,100z^{3/2}-33\,348\,220\,425z-43\,993\,497\,600\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(4\,194\,304z^{13/2}+1\,048\,576z^6-721\,158\,144z^{11/2}-179\,503\,104z^5+33\,594\,703\,872z^{9/2}+8\,266\,752\,000\right.$$
$$z^4-474\,590\,361\,600z^{7/2}-112\,883\,811\,840z^3+1\,611\,724\,703\,040z^{5/2}+335\,503\,406\,160z^2-$$
$$\left.279\,096\,281\,100z^{3/2}+33\,348\,220\,425z-43\,993\,497\,600\sqrt{z}+21\,996\,748\,800\right)-21\,996\,748\,800\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(16\,777\,216z^6-2\,887\,778\,304z^5+134\,913\,392\,640z^4-1\,922\,515\,845\,120z^3+\right.$$
$$\left.6\,758\,844\,768\,000z^2-1\,858\,682\,311\,200z-406\,586\,755\,575\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(-16\,777\,216z^6+2\,887\,778\,304z^5-134\,913\,392\,640z^4+1\,922\,515\,845\,120z^3-\right.$$
$$\left.\left.6\,758\,844\,768\,000z^2+1\,858\,682\,311\,200z+406\,586\,755\,575\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a7tp.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{7}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{6\,124\,213\,370\,880z^{5/2}}\left(\sqrt{\pi}\,z^{3/4}\left(16\,777\,216z^6+2\,887\,778\,304z^5+134\,913\,392\,640z^4+1\,922\,515\,845\,120z^3+\right.\right.$$
$$\left.6\,758\,844\,768\,000z^2+1\,858\,682\,311\,200z-406\,586\,755\,575\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\left(4\sqrt{z}\left(1\,048\,576z^6+180\,289\,536z^5+8\,398\,675\,968z^4+118\,647\,590\,400z^3+402\,931\,175\,760z^2+\right.\right.$$
$$\left.69\,774\,070\,275z-10\,998\,374\,400\right)\cos\left(2\sqrt{z}\right)+\left(1\,048\,576z^6+179\,503\,104z^5+8\,266\,752\,000z^4+\right.$$
$$\left.\left.\left.112\,883\,811\,840z^3+335\,503\,406\,160z^2-33\,348\,220\,425z+21\,996\,748\,800\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a7tq.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, \frac{13}{4}; z\right) = $$
$$ \left(\left(2\sqrt{z}\,\left(-16\,777\,216\,z^6 + 3\,139\,436\,544\,z^5 - 162\,819\,145\,728\,z^4 + 2\,681\,842\,876\,416\,z^3 - 12\,212\,182\,515\,456\,z^2 + 9\,876\,451\,961\,376\,z + 406\,586\,755\,575\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,777\,216\,z^6 - 3\,124\,756\,480\,z^5 + 160\,096\,911\,360\,z^4 - 2\,543\,901\,769\,728\,z^3 + 10\,086\,618\,237\,696\,z^2 - 2\,285\,238\,795\,840\,z - 677\,644\,592\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216\,z^6 - 3\,126\,853\,632\,z^5 + 160\,481\,083\,392\,z^4 - 2\,562\,768\,322\,560\,z^3 + 10\,352\,015\,841\,024\,z^2 - 2\,935\,612\,199\,520\,z - 1\,000\,805\,080\,275\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(8\,381\,320\,915\,968\,\sqrt{2}\,z^{7/4}\right) $$

07.22.03.a7tr.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, \frac{13}{4}; -z\right) = $$
$$ \left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6 + 3\,139\,436\,544\,z^5 + 162\,819\,145\,728\,z^4 + 2\,681\,842\,876\,416\,z^3 + 12\,212\,182\,515\,456\,z^2 + 9\,876\,451\,961\,376\,z - 406\,586\,755\,575\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,777\,216\,z^6 + 3\,124\,756\,480\,z^5 + 160\,096\,911\,360\,z^4 + 2\,543\,901\,769\,728\,z^3 + 10\,086\,618\,237\,696\,z^2 + 2\,285\,238\,795\,840\,z - 677\,644\,592\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216\,z^6 + 3\,126\,853\,632\,z^5 + 160\,481\,083\,392\,z^4 + 2\,562\,768\,322\,560\,z^3 + 10\,352\,015\,841\,024\,z^2 + 2\,935\,612\,199\,520\,z - 1\,000\,805\,080\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(8\,381\,320\,915\,968\,\sqrt{2}\,z^{7/4}\right) $$

07.22.03.a7ts.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, \frac{15}{4}; z\right) = $$
$$ \frac{1}{997\,690\,032\,783\,360\,z^{11/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(67\,108\,864\,z^{13/2} - 16\,777\,216\,z^6 - 13\,463\,715\,840\,z^{11/2} + 3\,353\,346\,048\,z^5 + 753\,015\,717\,888\,z^{9/2} - 185\,782\,173\,696\,z^4 - 13\,321\,308\,930\,048\,z^{7/2} + 3\,199\,212\,011\,520\,z^3 + 60\,837\,003\,279\,360\,z^{5/2} - 13\,211\,407\,722\,240\,z^2 - 18\,170\,838\,241\,920\,z^{3/2} - 540\,183\,440\,160\,z - 8\,324\,657\,768\,700\,\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 - 13\,463\,715\,840\,z^{11/2} - 3\,353\,346\,048\,z^5 + 753\,015\,717\,888\,z^{9/2} + 185\,782\,173\,696\,z^4 - 13\,321\,308\,930\,048\,z^{7/2} - 3\,199\,212\,011\,520\,z^3 + 60\,837\,003\,279\,360\,z^{5/2} + 13\,211\,407\,722\,240\,z^2 - 18\,170\,838\,241\,920\,z^{3/2} + 540\,183\,440\,160\,z - 8\,324\,657\,768\,700\,\sqrt{z} + 1\,316\,221\,595\,325\right) - 1\,316\,221\,595\,325\right) + e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7 - 53\,905\,195\,008\,z^6 + 3\,022\,059\,995\,136\,z^5 - 53\,830\,443\,663\,360\,z^4 + 252\,330\,204\,672\,000\,z^3 - 104\,086\,209\,427\,200\,z^2 - 45\,537\,716\,624\,400\,z - 8\,538\,321\,867\,075\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7 - 53\,905\,195\,008\,z^6 + 3\,022\,059\,995\,136\,z^5 - 53\,830\,443\,663\,360\,z^4 + 252\,330\,204\,672\,000\,z^3 - 104\,086\,209\,427\,200\,z^2 - 45\,537\,716\,624\,400\,z - 8\,538\,321\,867\,075\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right) $$

07.22.03.a7tt.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{7}{2},\frac{15}{4};-z\right)= $$

$$ \frac{1}{249\,422\,508\,195\,840\,z^{11/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+53\,905\,195\,008\,z^6+3\,022\,059\,995\,136\,z^5+53\,830\,443\,663\,360\,z^4+\right.\right. $$

$$ \left.252\,330\,204\,672\,000\,z^3+104\,086\,209\,427\,200\,z^2-45\,537\,716\,624\,400\,z+8\,538\,321\,867\,075\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ $$

$$ 2\sqrt[4]{z}\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+3\,365\,928\,960\,z^5+188\,253\,929\,472\,z^4+3\,330\,327\,232\,512\,z^3+15\,209\,250\,819\,840\,z^2+\right.\right. $$

$$ 4\,542\,709\,560\,480\,z-2\,081\,164\,442\,175\big)\cos\big(2\sqrt{z}\big)+\big(16\,777\,216\,z^6+3\,353\,346\,048\,z^5+185\,782\,173\,696 $$

$$ \left.\left.z^4+3\,199\,212\,011\,520\,z^3+13\,211\,407\,722\,240\,z^2-540\,183\,440\,160\,z+1\,316\,221\,595\,325\big)\sin\big(2\sqrt{z}\big)\right)\right) $$

07.22.03.a7tu.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{7}{2},\frac{17}{4};z\right)= $$

$$ -\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-57\,931\,726\,848\,z^6+3\,545\,559\,465\,984\,z^5-71\,012\,712\,775\,680\,z^4+406\,433\,149\,562\,880\,z^3-\right.\right.\right. $$

$$ 393\,000\,622\,882\,560\,z^2-45\,537\,716\,624\,400\,z-3\,659\,280\,800\,175\big)I_{\frac{1}{4}}\big(\sqrt{z}\big)^2- $$

$$ 3\left(268\,435\,456\,z^7-57\,696\,845\,824\,z^6+3\,495\,265\,566\,720\,z^5-67\,994\,129\,203\,200\,z^4+349\,171\,978\,383\,360\,z^3-\right. $$

$$ 122\,770\,385\,337\,600\,z^2-71\,559\,268\,981\,200\,z-6\,098\,801\,333\,625\big)I_{\frac{5}{4}}\big(\sqrt{z}\big)I_{\frac{1}{4}}\big(\sqrt{z}\big)+ $$

$$ 2\sqrt{z}\,\left(-268\,435\,456\,z^7+57\,730\,400\,256\,z^6-3\,502\,374\,912\,000\,z^5+68\,409\,760\,481\,280\,z^4-\right. $$

$$ \left.\left.\left.356\,495\,606\,231\,040\,z^3+148\,683\,242\,822\,400\,z^2+88\,569\,543\,862\,800\,z+18\,296\,404\,000\,875\right)\right. $$

$$ \left.\left.I_{\frac{5}{4}}\big(\sqrt{z}\big)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(309\,464\,156\,897\,280\sqrt{2}\,z^{11/4}\right) $$

07.22.03.a7tv.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{7}{2},\frac{17}{4};-z\right)= $$

$$ \left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+57\,931\,726\,848\,z^6+3\,545\,559\,465\,984\,z^5+71\,012\,712\,775\,680\,z^4+406\,433\,149\,562\,880\,z^3+\right.\right.\right. $$

$$ 393\,000\,622\,882\,560\,z^2-45\,537\,716\,624\,400\,z+3\,659\,280\,800\,175\big)J_{\frac{1}{4}}\big(\sqrt{z}\big)^2- $$

$$ 3\left(268\,435\,456\,z^7+57\,696\,845\,824\,z^6+3\,495\,265\,566\,720\,z^5+67\,994\,129\,203\,200\,z^4+349\,171\,978\,383\,360\,z^3+\right. $$

$$ 122\,770\,385\,337\,600\,z^2-71\,559\,268\,981\,200\,z+6\,098\,801\,333\,625\big)J_{\frac{5}{4}}\big(\sqrt{z}\big)J_{\frac{1}{4}}\big(\sqrt{z}\big)+ $$

$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7+57\,730\,400\,256\,z^6+3\,502\,374\,912\,000\,z^5+68\,409\,760\,481\,280\,z^4+\right. $$

$$ \left.\left.\left.356\,495\,606\,231\,040\,z^3+148\,683\,242\,822\,400\,z^2-88\,569\,543\,862\,800\,z+18\,296\,404\,000\,875\right)\right. $$

$$ \left.\left.J_{\frac{5}{4}}\big(\sqrt{z}\big)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(309\,464\,156\,897\,280\sqrt{2}\,z^{11/4}\right) $$

07.22.03.a7tw.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, \frac{19}{4}; z\right) = $$
$$ \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(1\,073\,741\,824 z^{15/2} - 268\,435\,456 z^7 - 246\,222\,422\,016 z^{13/2} + 61\,354\,278\,912 z^6 + 16\,071\,889\,256\,448 z^{11/2} - \right.\right.\right. $$
$$ 3\,972\,648\,665\,088 z^5 - 341\,591\,126\,704\,128 z^{9/2} + 82\,569\,691\,201\,536 z^4 + 1\,960\,063\,687\,507\,968 z^{7/2} - $$
$$ 436\,897\,591\,603\,200 z^3 - 839\,109\,884\,820\,480 z^{5/2} + 18\,315\,111\,709\,440 z^2 - $$
$$ 618\,250\,984\,303\,680 z^{3/2} - 16\,383\,028\,137\,840 z - 125\,228\,720\,717\,100\sqrt{z} + e^{4\sqrt{z}} $$
$$ \left(1\,073\,741\,824 z^{15/2} + 268\,435\,456 z^7 - 246\,222\,422\,016 z^{13/2} - 61\,354\,278\,912 z^6 + 16\,071\,889\,256\,448 z^{11/2} + \right. $$
$$ 3\,972\,648\,665\,088 z^5 - 341\,591\,126\,704\,128 z^{9/2} - 82\,569\,691\,201\,536 z^4 + 1\,960\,063\,687\,507\,968 z^{7/2} + $$
$$ 436\,897\,591\,603\,200 z^3 - 839\,109\,884\,820\,480 z^{5/2} - 18\,315\,111\,709\,440 z^2 - 618\,250\,984\,303\,680 z^{3/2} + $$
$$ \left.\left.\left. 16\,383\,028\,137\,840 z - 125\,228\,720\,717\,100\sqrt{z} + 93\,921\,540\,537\,825\right) - 93\,921\,540\,537\,825\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296 z^8 - 985\,694\,994\,432 z^7 + 64\,470\,613\,229\,568 z^6 - 1\,378\,059\,357\,782\,016 z^5 + \right. $$
$$ 8\,074\,566\,549\,504\,000 z^4 - 4\,441\,011\,602\,227\,200 z^3 - 2\,914\,413\,863\,961\,600 z^2 - $$
$$ \left. 1\,092\,905\,198\,985\,600 z + 93\,921\,540\,537\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296 z^8 - 985\,694\,994\,432 z^7 + 64\,470\,613\,229\,568 z^6 - 1\,378\,059\,357\,782\,016 z^5 + \right. $$
$$ 8\,074\,566\,549\,504\,000 z^4 - 4\,441\,011\,602\,227\,200 z^3 - 2\,914\,413\,863\,961\,600 z^2 - $$
$$ \left.\left. 1\,092\,905\,198\,985\,600 z + 93\,921\,540\,537\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big/\left(34\,054\,486\,452\,338\,688 z^{15/4}\right) $$

07.22.03.a7tx.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, \frac{19}{4}; -z\right) = $$
$$ \left(\sqrt{\pi}\left(4\,294\,967\,296 z^8 + 985\,694\,994\,432 z^7 + 64\,470\,613\,229\,568 z^6 + 1\,378\,059\,357\,782\,016 z^5 + 8\,074\,566\,549\,504\,000 z^4 + \right.\right. $$
$$ \left. 4\,441\,011\,602\,227\,200 z^3 - 2\,914\,413\,863\,961\,600 z^2 + 1\,092\,905\,198\,985\,600 z + 93\,921\,540\,537\,825\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456 z^7 + 61\,555\,605\,504 z^6 + 4\,017\,972\,314\,112 z^5 + 85\,397\,781\,676\,032 z^4 + \right.\right. $$
$$ \left. 490\,015\,921\,876\,992 z^3 + 209\,777\,471\,205\,120 z^2 - 154\,562\,746\,075\,920 z + 31\,307\,180\,179\,275\right)\cos\left(2\sqrt{z}\right) + $$
$$ \left(268\,435\,456 z^7 + 61\,354\,278\,912 z^6 + 3\,972\,648\,665\,088 z^5 + 82\,569\,691\,201\,536 z^4 + \right. $$
$$ 436\,897\,591\,603\,200 z^3 + 18\,315\,111\,709\,440 z^2 + 16\,383\,028\,137\,840 z - $$
$$ \left.\left.\left. 93\,921\,540\,537\,825\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(8\,513\,621\,613\,084\,672 z^{15/4}\right) $$

07.22.03.a7ty.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{7}{2},\frac{21}{4};z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(-4\,294\,967\,296\,z^8+1\,050\,119\,503\,872\,z^7-74\,078\,723\,506\,176\,z^6+1\,747\,319\,380\,770\,816\,z^5-12\,045\,630\,546\,247\,680\right.\right.\right. $$
$$ z^4+13\,476\,020\,144\,209\,920\,z^3+2\,914\,413\,863\,961\,600\,z^2+624\,517\,256\,563\,200\,z-142\,711\,951\,206\,825\Big) $$
$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(4\,294\,967\,296\,z^8-1\,046\,361\,407\,488\,z^7+73\,166\,210\,727\,936\,z^6-\right. $$
$$ 1\,684\,022\,923\,100\,160\,z^5+10\,619\,536\,036\,331\,520\,z^4-5\,100\,001\,201\,152\,000\,z^3- $$
$$ \left.4\,371\,620\,795\,942\,400\,z^2-1\,210\,002\,184\,591\,200\,z+237\,853\,252\,011\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-1\,046\,898\,278\,400\,z^7+73\,295\,361\,736\,704\,z^6-1\,692\,781\,101\,711\,360\,z^5+\right. $$
$$ 10\,805\,000\,112\,046\,080\,z^4-5\,962\,152\,771\,993\,600\,z^3-5\,009\,567\,067\,648\,000\,z^2- $$
$$ \left.\left.\left.2\,107\,745\,740\,900\,800\,z+713\,559\,756\,034\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(9\,902\,853\,020\,712\,960\,\sqrt{2}\;z^{15/4}\right) $$

07.22.03.a7tz.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{7}{2},\frac{21}{4};-z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,050\,119\,503\,872\,z^7+74\,078\,723\,506\,176\,z^6+1\,747\,319\,380\,770\,816\,z^5+12\,045\,630\,546\,247\,680\right.\right.\right. $$
$$ z^4+13\,476\,020\,144\,209\,920\,z^3-2\,914\,413\,863\,961\,600\,z^2+624\,517\,256\,563\,200\,z+142\,711\,951\,206\,825\Big) $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4\,294\,967\,296\,z^8+1\,046\,361\,407\,488\,z^7+73\,166\,210\,727\,936\,z^6+\right. $$
$$ 1\,684\,022\,923\,100\,160\,z^5+10\,619\,536\,036\,331\,520\,z^4+5\,100\,001\,201\,152\,000\,z^3- $$
$$ \left.4\,371\,620\,795\,942\,400\,z^2+1\,210\,002\,184\,591\,200\,z+237\,853\,252\,011\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,046\,898\,278\,400\,z^7+73\,295\,361\,736\,704\,z^6+1\,692\,781\,101\,711\,360\,z^5+\right. $$
$$ 10\,805\,000\,112\,046\,080\,z^4+5\,962\,152\,771\,993\,600\,z^3-5\,009\,567\,067\,648\,000\,z^2+ $$
$$ \left.\left.\left.2\,107\,745\,740\,900\,800\,z+713\,559\,756\,034\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(9\,902\,853\,020\,712\,960\,\sqrt{2}\;z^{15/4}\right) $$

07.22.03.a7u0.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, \frac{23}{4}; z\right) = $$

$$\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(17\,179\,869\,184\,z^{17/2} - 4\,294\,967\,296\,z^8 - 4\,432\,406\,249\,472\,z^{15/2} + 1\,104\,880\,336\,896\,z^7 + 330\,738\,520\,031\,232\right.\right.\right.$$
$$z^{13/2} - 81\,867\,042\,717\,696\,z^6 - 8\,207\,963\,755\,905\,024\,z^{11/2} + 1\,993\,330\,648\,940\,544\,z^5 +$$
$$56\,711\,829\,530\,345\,472\,z^{9/2} - 12\,867\,980\,732\,006\,400\,z^4 - 31\,744\,769\,340\,211\,200\,z^{7/2} +$$
$$1\,788\,938\,388\,357\,120\,z^3 - 31\,796\,292\,691\,537\,920\,z^{5/2} + 1\,588\,336\,838\,000\,640\,z^2 -$$
$$13\,739\,379\,644\,390\,400\,z^{3/2} - 6\,010\,978\,594\,420\,800\,z + 9\,392\,154\,053\,782\,500\sqrt{z} +$$
$$e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2} + 4\,294\,967\,296\,z^8 - 4\,432\,406\,249\,472\,z^{15/2} - 1\,104\,880\,336\,896\,z^7 +\right.$$
$$330\,738\,520\,031\,232\,z^{13/2} + 81\,867\,042\,717\,696\,z^6 - 8\,207\,963\,755\,905\,024\,z^{11/2} -$$
$$1\,993\,330\,648\,940\,544\,z^5 + 56\,711\,829\,530\,345\,472\,z^{9/2} + 12\,867\,980\,732\,006\,400\,z^4 -$$
$$31\,744\,769\,340\,211\,200\,z^{7/2} - 1\,788\,938\,388\,357\,120\,z^3 - 31\,796\,292\,691\,537\,920\,z^{5/2} -$$
$$1\,588\,336\,838\,000\,640\,z^2 - 13\,739\,379\,644\,390\,400\,z^{3/2} + 6\,010\,978\,594\,420\,800\,z +$$
$$\left.\left.\left.9\,392\,154\,053\,782\,500\sqrt{z} - 7\,044\,115\,540\,336\,875\right) + 7\,044\,115\,540\,336\,875\right) +$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9 - 17\,742\,509\,899\,776\,z^8 + 1\,326\,252\,615\,008\,256\,z^7 - 33\,073\,424\,586\,768\,384\,z^6 +\right.$$
$$232\,547\,516\,625\,715\,200\,z^5 - 159\,876\,417\,680\,179\,200\,z^4 - 139\,891\,865\,470\,156\,800\,z^3 -$$
$$\left.78\,689\,174\,326\,963\,200\,z^2 + 13\,524\,701\,837\,446\,800\,z - 7\,044\,115\,540\,336\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) -$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9 - 17\,742\,509\,899\,776\,z^8 + 1\,326\,252\,615\,008\,256\,z^7 -\right.$$
$$33\,073\,424\,586\,768\,384\,z^6 + 232\,547\,516\,625\,715\,200\,z^5 - 159\,876\,417\,680\,179\,200\,z^4 -$$
$$139\,891\,865\,470\,156\,800\,z^3 - 78\,689\,174\,326\,963\,200\,z^2 + 13\,524\,701\,837\,446\,800\,z -$$
$$\left.\left.\left.7\,044\,115\,540\,336\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(1\,032\,388\,641\,923\,530\,752\,z^{19/4}\right)$$

07.22.03.a7u1.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{7}{2}, \frac{23}{4}; -z\right) = $$

$$\left(\sqrt{\pi}\left(68\,719\,476\,736\,z^9 + 17\,742\,509\,899\,776\,z^8 + 1\,326\,252\,615\,008\,256\,z^7 + 33\,073\,424\,586\,768\,384\,z^6 +\right.\right.$$
$$232\,547\,516\,625\,715\,200\,z^5 + 159\,876\,417\,680\,179\,200\,z^4 - 139\,891\,865\,470\,156\,800\,z^3 +$$
$$\left.78\,689\,174\,326\,963\,200\,z^2 + 13\,524\,701\,837\,446\,800\,z + 7\,044\,115\,540\,336\,875\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) +$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^8 + 1\,108\,101\,562\,368\,z^7 + 82\,684\,630\,007\,808\,z^6 + 2\,051\,990\,938\,976\,256\,z^5 +\right.\right.$$
$$14\,177\,957\,382\,586\,368\,z^4 + 7\,936\,192\,335\,052\,800\,z^3 - 7\,949\,073\,172\,884\,480\,z^2 + 3\,434\,844\,911\,097\,600\,z +$$
$$2\,348\,038\,513\,445\,625\right)\cos\left(2\sqrt{z}\right) + \left(4\,294\,967\,296\,z^8 + 1\,104\,880\,336\,896\,z^7 + 81\,867\,042\,717\,696\,z^6 +\right.$$
$$1\,993\,330\,648\,940\,544\,z^5 + 12\,867\,980\,732\,006\,400\,z^4 + 1\,788\,938\,388\,357\,120\,z^3 - 1\,588\,336\,838\,000\,640\,z^2 -$$
$$\left.\left.\left.6\,010\,978\,594\,420\,800\,z - 7\,044\,115\,540\,336\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(258\,097\,160\,480\,882\,688\,z^{19/4}\right)$$

For fixed z and $a_1 = -\frac{17}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.a7u2.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{23}{4}; z\right) = $$

$$ \left(\left(-4\,z\left(67\,108\,864\,z^6 + 5\,481\,955\,328\,z^5 + 208\,497\,278\,976\,z^4 + 3\,975\,786\,823\,680\,z^3 + 30\,829\,492\,915\,200\,z^2 + 17\,150\,518\,566\,720\,z - 367\,716\,007\,283\,625\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,\left(33\,554\,432\,z^6 + 2\,770\,337\,792\,z^5 + 106\,696\,540\,160\,z^4 + 2\,083\,378\,053\,120\,z^3 + 17\,328\,454\,295\,040\,z^2 + 14\,723\,363\,655\,000\,z - 612\,860\,012\,139\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(268\,435\,456\,z^7 + 22\,129\,147\,904\,z^6 + 850\,699\,223\,040\,z^5 + 16\,551\,033\,569\,280\,z^4 + 136\,138\,869\,780\,480\,z^3 + 179\,892\,734\,112\,000\,z^2 + 596\,296\,228\,027\,500\,z + 9\,192\,900\,182\,090\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(48\,738\,733\,880\,760\,\sqrt{2}\,z^{9/4}\right) $$

07.22.03.a7u3.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{23}{4}; -z\right) = $$

$$ \left(\left(4\,z\left(67\,108\,864\,z^6 - 5\,481\,955\,328\,z^5 + 208\,497\,278\,976\,z^4 - 3\,975\,786\,823\,680\,z^3 + 30\,829\,492\,915\,200\,z^2 - 17\,150\,518\,566\,720\,z - 367\,716\,007\,283\,625\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,\left(33\,554\,432\,z^6 - 2\,770\,337\,792\,z^5 + 106\,696\,540\,160\,z^4 - 2\,083\,378\,053\,120\,z^3 + 17\,328\,454\,295\,040\,z^2 - 14\,723\,363\,655\,000\,z - 612\,860\,012\,139\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(268\,435\,456\,z^7 - 22\,129\,147\,904\,z^6 + 850\,699\,223\,040\,z^5 - 16\,551\,033\,569\,280\,z^4 + 136\,138\,869\,780\,480\,z^3 - 179\,892\,734\,112\,000\,z^2 + 596\,296\,228\,027\,500\,z - 9\,192\,900\,182\,090\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(48\,738\,733\,880\,760\,\sqrt{2}\,z^{9/4}\right) $$

07.22.03.a7u4.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{21}{4}; z\right) = -\frac{5\left(\left(32\,z^2 + 864\,z + 525\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(164\,z + 525\right)\cosh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}} $$

07.22.03.a7u5.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{5\left(2\sqrt{z}\,\left(164\,z - 525\right)\cos\left(2\sqrt{z}\right) + \left(32\,z^2 - 864\,z + 525\right)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}} $$

07.22.03.a7u6.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{19}{4}; z\right) = \left(\left(-4z\left(33\,554\,432z^6 + 1\,635\,778\,560z^5 + 44\,360\,663\,040z^4 + 655\,722\,676\,224z^3 + 4\,115\,059\,683\,840z^2 + 1\,399\,014\,529\,920z - 29\,814\,811\,401\,375\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(16\,777\,216z^6 + 832\,569\,344z^5 + 22\,920\,757\,248z^4 + 348\,586\,721\,280z^3 + 2\,383\,724\,125\,440z^2 + 3\,212\,370\,252\,000z - 49\,691\,352\,335\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(134\,217\,728z^7 + 6\,643\,777\,536z^6 + 182\,482\,108\,416z^5 + 2\,762\,818\,191\,360z^4 + 18\,625\,039\,534\,080z^3 + 21\,268\,106\,496\,000z^2 + 18\,069\,582\,667\,500z + 745\,370\,285\,034\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(6\,357\,226\,158\,360\sqrt{2}\, z^{9/4}\right) $$

07.22.03.a7u7.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{19}{4}; -z\right) = \left(\left(4z\left(33\,554\,432z^6 - 1\,635\,778\,560z^5 + 44\,360\,663\,040z^4 - 655\,722\,676\,224z^3 + 4\,115\,059\,683\,840z^2 - 1\,399\,014\,529\,920z - 29\,814\,811\,401\,375\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(16\,777\,216z^6 - 832\,569\,344z^5 + 22\,920\,757\,248z^4 - 348\,586\,721\,280z^3 + 2\,383\,724\,125\,440z^2 - 3\,212\,370\,252\,000z - 49\,691\,352\,335\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(134\,217\,728z^7 - 6\,643\,777\,536z^6 + 182\,482\,108\,416z^5 - 2\,762\,818\,191\,360z^4 + 18\,625\,039\,534\,080z^3 - 21\,268\,106\,496\,000z^2 + 18\,069\,582\,667\,500z - 745\,370\,285\,034\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(6\,357\,226\,158\,360\sqrt{2}\, z^{9/4}\right) $$

07.22.03.a7u8.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{17}{4}; z\right) = \frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right) - 3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}} $$

07.22.03.a7u9.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{17}{4}; -z\right) = \frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right) + 3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}} $$

07.22.03.a7ua.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{15}{4}; z\right) = $$

$$ \frac{1}{334\,590\,850\,440\sqrt{2}\, z^{9/4}}\left(\left(-4z\left(16\,777\,216 z^6 + 265\,289\,728 z^5 + 4\,358\,995\,968 z^4 + 45\,912\,526\,848 z^3 + 220\,355\,428\,608 z^2 + 18\,246\,649\,680 z - 903\,479\,133\,375\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(8\,388\,608 z^6 + 139\,984\,896 z^5 + 2\,307\,948\,544 z^4 + 25\,114\,146\,816 z^3 + 134\,954\,709\,120 z^2 + 175\,388\,031\,000 z - 1\,505\,798\,555\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(67\,108\,864 z^7 + 1\,111\,490\,560 z^6 + 18\,297\,913\,344 z^5 + 197\,973\,983\,232 z^4 + 1\,041\,140\,597\,760 z^3 + 1\,019\,096\,769\,600 z^2 - 623\,089\,057\,500 z + 22\,586\,978\,334\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7ub.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{15}{4}; -z\right) = $$

$$ \frac{1}{334\,590\,850\,440\sqrt{2}\, z^{9/4}}\left(\left(4z\left(16\,777\,216 z^6 - 265\,289\,728 z^5 + 4\,358\,995\,968 z^4 - 45\,912\,526\,848 z^3 + 220\,355\,428\,608 z^2 - 18\,246\,649\,680 z - 903\,479\,133\,375\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(8\,388\,608 z^6 - 139\,984\,896 z^5 + 2\,307\,948\,544 z^4 - 25\,114\,146\,816 z^3 + 134\,954\,709\,120 z^2 - 175\,388\,031\,000 z - 1\,505\,798\,555\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(67\,108\,864 z^7 - 1\,111\,490\,560 z^6 + 18\,297\,913\,344 z^5 - 197\,973\,983\,232 z^4 + 1\,041\,140\,597\,760 z^3 - 1\,019\,096\,769\,600 z^2 - 623\,089\,057\,500 z - 22\,586\,978\,334\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7uc.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{13}{4}; z\right) = $$

$$ \frac{1}{1\,807\,659\,659\,520 z^{7/2}}\left(e^{-2\sqrt{z}}\left(134\,217\,728 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{31/4} - 134\,217\,728 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{31/4} + 134\,217\,728 e^{4\sqrt{z}} z^{15/2} + 134\,217\,728 z^{15/2} + 33\,554\,432 e^{4\sqrt{z}} z^7 - 33\,554\,432 z^7 + 25\,165\,824 e^{4\sqrt{z}} z^{13/2} + 25\,165\,824 z^{13/2} + 31\,457\,280 e^{4\sqrt{z}} z^6 - 31\,457\,280 z^6 + 55\,050\,240 e^{4\sqrt{z}} z^{11/2} + 55\,050\,240 z^{11/2} + 123\,863\,040 e^{4\sqrt{z}} z^5 - 123\,863\,040 z^5 + 340\,623\,360 e^{4\sqrt{z}} z^{9/2} + 340\,623\,360 z^{9/2} + 1\,107\,025\,920 e^{4\sqrt{z}} z^4 - 1\,107\,025\,920 z^4 + 4\,151\,347\,200 e^{4\sqrt{z}} z^{7/2} + 4\,151\,347\,200 z^{7/2} + 17\,643\,225\,600 e^{4\sqrt{z}} z^3 - 17\,643\,225\,600 z^3 + 83\,805\,321\,600 e^{4\sqrt{z}} z^{5/2} + 83\,805\,321\,600 z^{5/2} + 439\,977\,938\,400 e^{4\sqrt{z}} z^2 - 439\,977\,938\,400 z^2 + 2\,529\,873\,145\,800 e^{4\sqrt{z}} z^{3/2} + 2\,529\,873\,145\,800 z^{3/2} - 9\,396\,671\,684\,400 e^{4\sqrt{z}} z + 9\,396\,671\,684\,400 z + 12\,197\,602\,667\,250 e^{4\sqrt{z}}\sqrt{z} + 12\,197\,602\,667\,250\sqrt{z} - 6\,098\,801\,333\,625 e^{4\sqrt{z}} + 6\,098\,801\,333\,625\right)\right) $$

07.22.03.a7ud.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{13}{4}; -z\right) = \frac{1}{903\,829\,829\,760\, z^{7/2}}\left(268\,435\,456\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{31/4} + 2\left(67\,108\,864\, z^7 - 12\,582\,912\, z^6 + 27\,525\,120\, z^5 - 170\,311\,680\, z^4 + 2\,075\,673\,600\, z^3 - 41\,902\,660\,800\, z^2 + 1\,264\,936\,572\,900\, z - 6\,098\,801\,333\,625\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(33\,554\,432\, z^7 - 31\,457\,280\, z^6 + 123\,863\,040\, z^5 - 1\,107\,025\,920\, z^4 + 17\,643\,225\,600\, z^3 - 439\,977\,938\,400\, z^2 - 9\,396\,671\,684\,400\, z + 6\,098\,801\,333\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a7ue.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{11}{4}; z\right) = \frac{1}{22\,306\,056\,696\sqrt{2}\, z^{9/4}}\left(\left(4z\left(8\,388\,608\, z^6 - 143\,654\,912\, z^5 - 669\,843\,456\, z^4 - 4\,368\,273\,408\, z^3 - 14\,636\,189\,952\, z^2 + 2\,623\,631\,472\, z + 31\,154\,452\,875\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(4\,194\,304\, z^6 - 68\,157\,440\, z^5 - 391\,577\,600\, z^4 - 2\,555\,768\,832\, z^3 - 9\,892\,889\,856\, z^2 - 9\,600\,186\,960\, z + 51\,924\,088\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-33\,554\,432\, z^7 + 549\,453\,824\, z^6 + 3\,077\,308\,416\, z^5 + 19\,947\,110\,400\, z^4 + 75\,209\,997\,312\, z^3 + 59\,500\,059\,840\, z^2 - 74\,770\,686\,900\, z + 778\,861\,321\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7uf.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{11}{4}; -z\right) = -\frac{1}{22\,306\,056\,696\sqrt{2}\, z^{9/4}}\left(\left(4z\left(8\,388\,608\, z^6 + 143\,654\,912\, z^5 - 669\,843\,456\, z^4 + 4\,368\,273\,408\, z^3 - 14\,636\,189\,952\, z^2 - 2\,623\,631\,472\, z + 31\,154\,452\,875\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(4\,194\,304\, z^6 + 68\,157\,440\, z^5 - 391\,577\,600\, z^4 + 2\,555\,768\,832\, z^3 - 9\,892\,889\,856\, z^2 + 9\,600\,186\,960\, z + 51\,924\,088\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(33\,554\,432\, z^7 + 549\,453\,824\, z^6 - 3\,077\,308\,416\, z^5 + 19\,947\,110\,400\, z^4 - 75\,209\,997\,312\, z^3 + 59\,500\,059\,840\, z^2 + 74\,770\,686\,900\, z + 778\,861\,321\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7ug.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{9}{4}; z\right) = \frac{1}{139\,050\,743\,040\, z^{7/2}} \left(e^{-2\sqrt{z}} \left(-33\,554\,432\, e^{4\sqrt{z}}\, z^{15/2} - 33\,554\,432\, z^{15/2} - 8\,388\,608\, e^{4\sqrt{z}}\, z^7 + 8\,388\,608\, z^7 - 2\,097\,152\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16z - 527) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{27/4} + 2\,097\,152\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16z - 527) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{27/4} + 1\,098\,907\,648\, e^{4\sqrt{z}}\, z^{13/2} + 1\,098\,907\,648\, z^{13/2} + 268\,435\,456\, e^{4\sqrt{z}}\, z^6 - 268\,435\,456\, z^6 + 193\,462\,272\, e^{4\sqrt{z}}\, z^{11/2} + 193\,462\,272\, z^{11/2} + 228\,065\,280\, e^{4\sqrt{z}}\, z^5 - 228\,065\,280\, z^5 + 368\,148\,480\, e^{4\sqrt{z}}\, z^{9/2} + 368\,148\,480\, z^{9/2} + 743\,178\,240\, e^{4\sqrt{z}}\, z^4 - 743\,178\,240\, z^4 + 1\,766\,983\,680\, e^{4\sqrt{z}}\, z^{7/2} + 1\,766\,983\,680\, z^{7/2} + 4\,704\,860\,160\, e^{4\sqrt{z}}\, z^3 - 4\,704\,860\,160\, z^3 + 13\,232\,419\,200\, e^{4\sqrt{z}}\, z^{5/2} + 13\,232\,419\,200\, z^{5/2} + 35\,286\,451\,200\, e^{4\sqrt{z}}\, z^2 - 35\,286\,451\,200\, z^2 + 57\,616\,158\,600\, e^{4\sqrt{z}}\, z^{3/2} + 57\,616\,158\,600\, z^{3/2} - 329\,983\,453\,800\, e^{4\sqrt{z}}\, z + 329\,983\,453\,800\, z + 451\,763\,061\,750\, e^{4\sqrt{z}}\, \sqrt{z} + 451\,763\,061\,750\, \sqrt{z} - 225\,881\,530\,875\, e^{4\sqrt{z}} + 225\,881\,530\,875\right)\right) $$

07.22.03.a7uh.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{9}{4}; -z\right) = \frac{1}{69\,525\,371\,520\, z^{7/2}} \left(-4\,194\,304\, \sqrt{\pi}\, (16z + 527) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{27/4} - 2\left(16\,777\,216\, z^7 + 549\,453\,824\, z^6 - 96\,731\,136\, z^5 + 184\,074\,240\, z^4 - 883\,491\,840\, z^3 + 6\,616\,209\,600\, z^2 - 28\,808\,079\,300\, z + 225\,881\,530\,875\right) \cos\left(2\sqrt{z}\right) \sqrt{z} - \left(8\,388\,608\, z^7 + 268\,435\,456\, z^6 - 228\,065\,280\, z^5 + 743\,178\,240\, z^4 - 4\,704\,860\,160\, z^3 + 35\,286\,451\,200\, z^2 + 329\,983\,453\,800\, z - 225\,881\,530\,875\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a7ui.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{7}{4}; z\right) = \frac{1}{6\,083\,470\,008\sqrt{2}\, z^{9/4}} \left(\left(-4z\left(4\,194\,304\, z^6 - 209\,977\,344\, z^5 + 1\,271\,070\,720\, z^4 + 1\,769\,324\,544\, z^3 + 3\,685\,665\,024\, z^2 - 1\,665\,004\,896\, z - 3\,738\,534\,345\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(2\,097\,152\, z^6 - 103\,153\,664\, z^5 + 546\,766\,848\, z^4 + 1\,299\,474\,432\, z^3 + 3\,018\,152\,448\, z^2 + 1\,740\,693\,240\, z - 6\,230\,890\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(16\,777\,216\, z^7 - 827\,326\,464\, z^6 + 4\,470\,865\,920\, z^5 + 10\,114\,301\,952\, z^4 + 22\,928\,126\,976\, z^3 + 12\,957\,459\,840\, z^2 - 17\,802\,544\,500\, z + 93\,463\,358\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7uj.01

$${}_1F_2\left(-\frac{17}{4};\frac{9}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{6\,083\,470\,008\sqrt{2}\,z^{9/4}}\left(\left(4z\left(4\,194\,304z^6+209\,977\,344z^5+1\,271\,070\,720z^4-1\,769\,324\,544z^3+3\,685\,665\,024z^2+\right.\right.\right.$$
$$\left.\left.1\,665\,004\,896z-3\,738\,534\,345\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(2\,097\,152z^6+103\,153\,664z^5+546\,766\,848z^4-\right.\right.$$
$$\left.\left.1\,299\,474\,432z^3+3\,018\,152\,448z^2-1\,740\,693\,240z-6\,230\,890\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(16\,777\,216z^7+827\,326\,464z^6+4\,470\,865\,920z^5-10\,114\,301\,952z^4+22\,928\,126\,976z^3-\right.$$
$$\left.\left.12\,957\,459\,840z^2-17\,802\,544\,500z-93\,463\,358\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a7uk.01

$${}_1F_2\left(-\frac{17}{4};\frac{9}{2},-\frac{5}{4};z\right)=\frac{1}{15\,450\,082\,560\,z^{7/2}}$$
$$\left(e^{-2\sqrt{z}}\left(4\,194\,304\,e^{4\sqrt{z}}\,z^{15/2}+4\,194\,304z^{15/2}+1\,048\,576\,e^{4\sqrt{z}}\,z^7-1\,048\,576z^7-275\,513\,344\,e^{4\sqrt{z}}\,z^{13/2}-\right.\right.$$
$$275\,513\,344z^{13/2}-68\,091\,904\,e^{4\sqrt{z}}\,z^6+68\,091\,904z^6+16\,384\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2-16\,864z+184\,977\right)$$
$$\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4}-16\,384\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2-16\,864z+184\,977\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4}+$$
$$2\,980\,577\,280\,e^{4\sqrt{z}}\,z^{11/2}+2\,980\,577\,280z^{11/2}+696\,778\,752\,e^{4\sqrt{z}}\,z^5-696\,778\,752z^5+$$
$$465\,567\,744\,e^{4\sqrt{z}}\,z^{9/2}+465\,567\,744z^{9/2}+489\,922\,560\,e^{4\sqrt{z}}\,z^4-489\,922\,560z^4+671\,569\,920\,e^{4\sqrt{z}}\,z^{7/2}+$$
$$671\,569\,920z^{7/2}+1\,069\,286\,400\,e^{4\sqrt{z}}\,z^3-1\,069\,286\,400z^3+1\,764\,322\,560\,e^{4\sqrt{z}}\,z^{5/2}+1\,764\,322\,560z^{5/2}+$$
$$2\,425\,943\,520\,e^{4\sqrt{z}}\,z^2-2\,425\,943\,520z^2+275\,675\,400\,e^{4\sqrt{z}}\,z^{3/2}+275\,675\,400z^{3/2}-13\,232\,419\,200\,e^{4\sqrt{z}}\,z+$$
$$\left.13\,232\,419\,200z+19\,641\,872\,250\,e^{4\sqrt{z}}\,\sqrt{z}+19\,641\,872\,250\sqrt{z}-9\,820\,936\,125\,e^{4\sqrt{z}}+9\,820\,936\,125\right)\Bigg)$$

07.22.03.a7ul.01

$${}_1F_2\left(-\frac{17}{4};\frac{9}{2},-\frac{5}{4};-z\right)=\frac{1}{7\,725\,041\,280\,z^{7/2}}$$
$$\left(32\,768\sqrt{\pi}\,\left(256z^2+16\,864z+184\,977\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{23/4}+2\left(2\,097\,152z^7+137\,756\,672z^6+1\,490\,288\,640z^5-\right.\right.$$
$$\left.232\,783\,872z^4+335\,784\,960z^3-882\,161\,280z^2+137\,837\,700z-9\,820\,936\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left(1\,048\,576z^7+68\,091\,904z^6+696\,778\,752z^5-489\,922\,560z^4+1\,069\,286\,400z^3-\right.$$
$$\left.\left.2\,425\,943\,520z^2-13\,232\,419\,200z+9\,820\,936\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a7um.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{3}{4}; z\right) = \frac{1}{4\,345\,335\,720\sqrt{2}\, z^{9/4}} $$
$$ \left(\left(4z\left(2\,097\,152 z^6 - 174\,063\,616 z^5 + 2\,953\,863\,168 z^4 - 7\,935\,344\,640 z^3 - 1\,285\,574\,400 z^2 + 1\,721\,204\,640 z + 890\,127\,225\right)\right.\right. $$
$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1\,048\,576 z^6 - 86\,114\,304 z^5 + 1\,402\,327\,040 z^4 - 2\,796\,994\,560 z^3 - 2\,428\,600\,320 z^2 - \right. $$
$$ \left. 620\,568\,000 z + 1\,483\,545\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-8\,388\,608 z^7 + 689\,963\,008 z^6 - 11\,301\,519\,360 z^5 + \right. $$
$$ \left.\left. 23\,539\,875\,840 z^4 + 19\,214\,115\,840 z^3 + 6\,129\,302\,400 z^2 - 7\,330\,459\,500 z + 22\,253\,180\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.a7un.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{3}{4}; -z\right) = $$
$$ -\frac{1}{4\,345\,335\,720\sqrt{2}\, z^{9/4}}\left(\left(4z\left(2\,097\,152 z^6 + 174\,063\,616 z^5 + 2\,953\,863\,168 z^4 + 7\,935\,344\,640 z^3 - 1\,285\,574\,400 z^2 - \right.\right. $$
$$ 1\,721\,204\,640 z + 890\,127\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1\,048\,576 z^6 + 86\,114\,304 z^5 + 1\,402\,327\,040 z^4 + \right. $$
$$ \left. 2\,796\,994\,560 z^3 - 2\,428\,600\,320 z^2 + 620\,568\,000 z + 1\,483\,545\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(8\,388\,608 z^7 + 689\,963\,008 z^6 + 11\,301\,519\,360 z^5 + 23\,539\,875\,840 z^4 - 19\,214\,115\,840 z^3 + \right. $$
$$ \left.\left. 6\,129\,302\,400 z^2 + 7\,330\,459\,500 z + 22\,253\,180\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.a7uo.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{1}{4}; z\right) = $$
$$ \frac{1}{9\,270\,049\,536 z^{7/2}}\left(e^{-2\sqrt{z}}\left(-1\,048\,576\, e^{4\sqrt{z}}\, z^{15/2} - 1\,048\,576 z^{15/2} - 262\,144\, e^{4\sqrt{z}}\, z^7 + 262\,144 z^7 + 103\,415\,808\, e^{4\sqrt{z}}\, z^{13/2} + \right. $$
$$ 103\,415\,808 z^{13/2} + 25\,657\,344\, e^{4\sqrt{z}}\, z^6 - 25\,657\,344 z^6 - 2\,254\,000\,128\, e^{4\sqrt{z}}\, z^{11/2} - 2\,254\,000\,128 z^{11/2} - $$
$$ 544\,932\,864\, e^{4\sqrt{z}}\, z^5 + 544\,932\,864 z^5 - 256\, e^{2\sqrt{z}}\,\sqrt{2\pi}\left(4096 z^3 - 404\,736 z^2 + 8\,878\,896 z - 38\,290\,239\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{19/4} + 256\, e^{2\sqrt{z}}\,\sqrt{2\pi}\left(4096 z^3 - 404\,736 z^2 + 8\,878\,896 z - 38\,290\,239\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{19/4} + $$
$$ 9\,415\,950\,336\, e^{4\sqrt{z}}\, z^{9/2} + 9\,415\,950\,336 z^{9/2} + 2\,004\,811\,776\, e^{4\sqrt{z}}\, z^4 - 2\,004\,811\,776 z^4 + 1\,136\,166\,912\, e^{4\sqrt{z}}\, z^{7/2} + $$
$$ 1\,136\,166\,912 z^{7/2} + 916\,531\,200\, e^{4\sqrt{z}}\, z^3 - 916\,531\,200 z^3 + 801\,964\,800\, e^{4\sqrt{z}}\, z^{5/2} + 801\,964\,800 z^{5/2} + $$
$$ 481\,178\,880\, e^{4\sqrt{z}}\, z^2 - 481\,178\,880 z^2 - 496\,215\,720\, e^{4\sqrt{z}}\, z^{3/2} - 496\,215\,720 z^{3/2} - 1\,819\,457\,640\, e^{4\sqrt{z}}\, z + $$
$$ \left.\left. 1\,819\,457\,640 z + 3\,101\,348\,250\, e^{4\sqrt{z}}\,\sqrt{z} + 3\,101\,348\,250\sqrt{z} - 1\,550\,674\,125\, e^{4\sqrt{z}} + 1\,550\,674\,125\right)\right) $$

07.22.03.a7up.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, -\frac{1}{4}; -z\right) = \frac{1}{4\,635\,024\,768\,z^{7/2}} $$
$$ \left(-512\sqrt{\pi}\left(4096z^3+404\,736z^2+8\,878\,896z+38\,290\,239\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4} - 2\left(524\,288z^7+51\,707\,904z^6+\right.\right. $$
$$ 1\,127\,000\,064z^5+4\,707\,975\,168z^4-568\,083\,456z^3+400\,982\,400z^2+248\,107\,860z+1\,550\,674\,125\Big) $$
$$ \cos\left(2\sqrt{z}\right)\sqrt{z} - \left(262\,144z^7+25\,657\,344z^6+544\,932\,864z^5+2\,004\,811\,776z^4-\right. $$
$$ \left.\left.916\,531\,200z^3+481\,178\,880z^2+1\,819\,457\,640z-1\,550\,674\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a7uq.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, \frac{1}{4}; z\right) = $$
$$ \frac{1}{10\,139\,116\,680\sqrt{2}\,z^{9/4}}\left(\left(-4z\left(1\,048\,576z^6-121\,569\,280z^5+3\,393\,761\,280z^4-23\,578\,345\,728z^3+29\,011\,207\,680z^2-\right.\right. $$
$$ 4\,801\,401\,360z-366\,522\,975\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(524\,288z^6-60\,325\,888z^5+1\,644\,468\,224z^4-\right. $$
$$ \left.10\,390\,719\,360z^3+6\,335\,038\,080z^2+392\,628\,600z-610\,871\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left(4\,194\,304z^7-483\,131\,392z^6+13\,214\,466\,048z^5-84\,598\,133\,760z^4+57\,307\,944\,960z^3+\right. $$
$$ \left.\left.5\,814\,244\,800z^2-5\,074\,933\,500z+9\,163\,074\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big) $$

07.22.03.a7ur.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, \frac{1}{4}; -z\right) = $$
$$ \frac{1}{10\,139\,116\,680\sqrt{2}\,z^{9/4}}\left(\left(4z\left(1\,048\,576z^6+121\,569\,280z^5+3\,393\,761\,280z^4+23\,578\,345\,728z^3+29\,011\,207\,680z^2+\right.\right. $$
$$ 4\,801\,401\,360z-366\,522\,975\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(524\,288z^6+60\,325\,888z^5+1\,644\,468\,224z^4+\right. $$
$$ \left.10\,390\,719\,360z^3+6\,335\,038\,080z^2-392\,628\,600z-610\,871\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left(4\,194\,304z^7+483\,131\,392z^6+13\,214\,466\,048z^5+84\,598\,133\,760z^4+57\,307\,944\,960z^3-\right. $$
$$ \left.\left.5\,814\,244\,800z^2-5\,074\,933\,500z-9\,163\,074\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big) $$

07.22.03.a7us.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, \frac{3}{4}; z\right) = \frac{1}{9\,270\,049\,536\,z^{7/2}} $$
$$ \left(e^{-2\sqrt{z}}\left(65\,536\,e^{4\sqrt{z}}\,z^{15/2} + 65\,536\,z^{15/2} + 16\,384\,e^{4\sqrt{z}}\,z^{7} - 16\,384\,z^{7} - 8\,622\,080\,e^{4\sqrt{z}}\,z^{13/2} - 8\,622\,080\,z^{13/2} - \right.\right. $$
$$ 2\,143\,232\,e^{4\sqrt{z}}\,z^{6} + 2\,143\,232\,z^{6} + 282\,532\,608\,e^{4\sqrt{z}}\,z^{11/2} + 282\,532\,608\,z^{11/2} + 69\,067\,968\,e^{4\sqrt{z}}\,z^{5} - $$
$$ 69\,067\,968\,z^{5} - 2\,400\,677\,040\,e^{4\sqrt{z}}\,z^{9/2} - 2\,400\,677\,040\,z^{9/2} - 553\,479\,804\,e^{4\sqrt{z}}\,z^{4} + 553\,479\,804\,z^{4} + $$
$$ e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536\,z^{4} - 8\,634\,368\,z^{3} + 284\,124\,672\,z^{2} - 2\,450\,575\,296\,z + 3\,637\,572\,705\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4} + $$
$$ e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(-65\,536\,z^{4} + 8\,634\,368\,z^{3} - 284\,124\,672\,z^{2} + 2\,450\,575\,296\,z - 3\,637\,572\,705\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4} + $$
$$ 3\,274\,739\,712\,e^{4\sqrt{z}}\,z^{7/2} + 3\,274\,739\,712\,z^{7/2} + 534\,643\,200\,e^{4\sqrt{z}}\,z^{3} - 534\,643\,200\,z^{3} + 171\,849\,600\,e^{4\sqrt{z}}\,z^{5/2} + $$
$$ 171\,849\,600\,z^{5/2} + 14\,320\,800\,e^{4\sqrt{z}}\,z^{2} - 14\,320\,800\,z^{2} - 95\,233\,320\,e^{4\sqrt{z}}\,z^{3/2} - 95\,233\,320\,z^{3/2} - $$
$$ \left.\left. 90\,221\,040\,e^{4\sqrt{z}}\,z + 90\,221\,040\,z + 206\,756\,550\,e^{4\sqrt{z}}\,\sqrt{z} + 206\,756\,550\,\sqrt{z} - 103\,378\,275\,e^{4\sqrt{z}} + 103\,378\,275\right)\right) $$

07.22.03.a7ut.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, \frac{3}{4}; -z\right) = $$
$$ \frac{1}{4\,635\,024\,768\,z^{7/2}}\left(2\sqrt{\pi}\,\left(65\,536\,z^{4} + 8\,634\,368\,z^{3} + 284\,124\,672\,z^{2} + 2\,450\,575\,296\,z + 3\,637\,572\,705\right)S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4} + \right. $$
$$ 2\left(32\,768\,z^{7} + 4\,311\,040\,z^{6} + 141\,266\,304\,z^{5} + 1\,200\,338\,520\,z^{4} + 1\,637\,369\,856\,z^{3} - 85\,924\,800\,z^{2} - \right. $$
$$ \left. 47\,616\,660\,z - 103\,378\,275\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(16\,384\,z^{7} + 2\,143\,232\,z^{6} + 69\,067\,968\,z^{5} + \right. $$
$$ \left.\left. 553\,479\,804\,z^{4} + 534\,643\,200\,z^{3} - 14\,320\,800\,z^{2} - 90\,221\,040\,z + 103\,378\,275\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a7uu.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, \frac{5}{4}; z\right) = $$
$$ \frac{1}{91\,252\,050\,120\,\sqrt{2}\,z^{9/4}}\left(\left(-4\,z\left(524\,288\,z^{6} - 78\,053\,376\,z^{5} + 3\,034\,128\,384\,z^{4} - 34\,095\,995\,136\,z^{3} + 91\,808\,952\,984\,z^{2} - \right.\right. $$
$$ \left. 45\,919\,243\,440\,z + 253\,746\,675\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^{2} + 12\,\sqrt{z}\,\left(262\,144\,z^{6} - 38\,797\,312\,z^{5} + 1\,483\,302\,912\,z^{4} - \right. $$
$$ \left. 15\,776\,474\,112\,z^{3} + 32\,990\,649\,300\,z^{2} - 451\,105\,200\,z + 422\,911\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left(2\,097\,152\,z^{7} - 310\,640\,640\,z^{6} + 11\,904\,417\,792\,z^{5} - 127\,582\,608\,384\,z^{4} + 276\,004\,078\,560\,z^{3} - \right.\right. $$
$$ \left.\left. 12\,630\,945\,600\,z^{2} + 6\,202\,696\,500\,z - 6\,343\,666\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^{2}\right)\Gamma\left(\frac{5}{4}\right)^{2}\Bigg) $$

07.22.03.a7uv.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, \frac{5}{4}; -z\right) = $$
$$ \frac{1}{91\,252\,050\,120\sqrt{2}\, z^{9/4}}\left(\left(4z\left(524\,288 z^6 + 78\,053\,376 z^5 + 3\,034\,128\,384 z^4 + 34\,095\,995\,136 z^3 + 91\,808\,952\,984 z^2 + \right.\right.\right. $$
$$ \left.\left.\left. 45\,919\,243\,440 z + 253\,746\,675\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(262\,144 z^6 + 38\,797\,312 z^5 + 1\,483\,302\,912 z^4 + \right.\right.\right. $$
$$ \left.\left.\left. 15\,776\,474\,112 z^3 + 32\,990\,649\,300 z^2 + 451\,105\,200 z + 422\,911\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left(2\,097\,152 z^7 + 310\,640\,640 z^6 + 11\,904\,417\,792 z^5 + 127\,582\,608\,384 z^4 + 276\,004\,078\,560 z^3 + \right.\right. $$
$$ \left.\left. 12\,630\,945\,600 z^2 + 6\,202\,696\,500 z + 6\,343\,666\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.a7uw.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, \frac{7}{4}; z\right) = $$
$$ \frac{1}{988\,805\,283\,840 z^{7/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576 z^5 - 172\,687\,360 z^4 + 7\,576\,657\,920 z^3 - 98\,023\,011\,840 z^2 + \right.\right.\right. $$
$$ \left.\left.\left. 291\,005\,816\,400 z - 54\,563\,590\,575\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{11/4} + e^{2\sqrt{z}}\sqrt{2\pi}\right.\right. $$
$$ \left(-1\,048\,576 z^5 + 172\,687\,360 z^4 - 7\,576\,657\,920 z^3 + 98\,023\,011\,840 z^2 - 291\,005\,816\,400 z + 54\,563\,590\,575\right) $$
$$ \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{11/4} + 4\left(262\,144 z^{15/2} - 65\,536 z^7 - 43\,122\,688 z^{13/2} + 10\,731\,520 z^6 + 1\,886\,177\,280 z^{11/2} - \right. $$
$$ 463\,664\,640 z^5 - 24\,167\,639\,040 z^{9/2} + 5\,720\,172\,480 z^4 + 68\,832\,073\,620 z^{7/2} - 13\,870\,739\,025 z^3 - $$
$$ 6\,415\,718\,400 z^{5/2} - 1\,833\,062\,400 z^2 + 1\,661\,212\,800 z^{3/2} - 171\,849\,600 z - 1\,503\,684\,000\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(262\,144 z^{15/2} + 65\,536 z^7 - 43\,122\,688 z^{13/2} - 10\,731\,520 z^6 + 1\,886\,177\,280 z^{11/2} + 463\,664\,640 z^5 - \right. $$
$$ \left.\left.\left. \left. 24\,167\,639\,040 z^{9/2} - 5\,720\,172\,480 z^4 + 68\,832\,073\,620 z^{7/2} + 13\,870\,739\,025 z^3 - 6\,415\,718\,400 z^{5/2} + \right.\right.\right. $$
$$ \left.\left.\left. 1\,833\,062\,400 z^2 + 1\,661\,212\,800 z^{3/2} + 171\,849\,600 z - 1\,503\,684\,000\sqrt{z} + 751\,842\,000\right) - 751\,842\,000\right)\Bigg)\Bigg) $$

07.22.03.a7ux.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, \frac{7}{4}; -z\right) = \frac{1}{247\,201\,320\,960 z^{7/2}} $$
$$ \left(\sqrt{\pi}\left(1\,048\,576 z^5 + 172\,687\,360 z^4 + 7\,576\,657\,920 z^3 + 98\,023\,011\,840 z^2 + 291\,005\,816\,400 z + 54\,563\,590\,575\right)\right. $$
$$ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{11/4} + 2\left(4\sqrt{z}\left(65\,536 z^7 + 10\,780\,672 z^6 + 471\,544\,320 z^5 + 6\,041\,909\,760 z^4 + 17\,208\,018\,405 z^3 + \right.\right. $$
$$ \left.\left. 1\,603\,929\,600 z^2 + 415\,303\,200 z + 375\,921\,000\right)\cos\left(2\sqrt{z}\right) + \left(65\,536 z^7 + 10\,731\,520 z^6 + 463\,664\,640 z^5 + \right.\right. $$
$$ \left.\left.\left. 5\,720\,172\,480 z^4 + 13\,870\,739\,025 z^3 - 1\,833\,062\,400 z^2 + 171\,849\,600 z - 751\,842\,000\right)\sin\left(2\sqrt{z}\right)\right)\Bigg) $$

07.22.03.a7uy.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{9}{2},\frac{9}{4};z\right)= \frac{1}{401\,509\,020\,528\sqrt{2}\,z^{9/4}}\left(\left(2z\left(-1\,048\,576z^6+190\,644\,224z^5-9\,500\,418\,048z^4+147\,610\,907\,136z^3-615\,112\,976\,016z^2+454\,726\,778\,121z+1\,240\,539\,300\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\left(1\,048\,576z^6-189\,726\,720z^5+9\,335\,152\,640z^4-139\,572\,668\,928z^3+498\,807\,617\,616z^2-84\,395\,726\,415z-4\,135\,131\,000\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(1\,048\,576z^7-189\,857\,792z^6+9\,358\,467\,072z^5-140\,670\,097\,920z^4+513\,207\,337\,104z^3-114\,246\,777\,645z^2-16\,127\,010\,900z+7\,753\,370\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7uz.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{9}{2},\frac{9}{4};-z\right)= \frac{1}{401\,509\,020\,528\sqrt{2}\,z^{9/4}}\left(\left(2z\left(1\,048\,576z^6+190\,644\,224z^5+9\,500\,418\,048z^4+147\,610\,907\,136z^3+615\,112\,976\,016z^2+454\,726\,778\,121z-1\,240\,539\,300\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(1\,048\,576z^6+189\,726\,720z^5+9\,335\,152\,640z^4+139\,572\,668\,928z^3+498\,807\,617\,616z^2+84\,395\,726\,415z-4\,135\,131\,000\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(1\,048\,576z^7+189\,857\,792z^6+9\,358\,467\,072z^5+140\,670\,097\,920z^4+513\,207\,337\,104z^3+114\,246\,777\,645z^2-16\,127\,010\,900z-7\,753\,370\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7v0.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{9}{2},\frac{11}{4};z\right)= \frac{1}{379\,701\,228\,994\,560\,z^{7/2}}\left(7e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-3\,315\,597\,312z^5+181\,839\,790\,080z^4-3\,136\,736\,378\,880z^3+13\,968\,279\,187\,200z^2-5\,238\,104\,695\,200z-1\,800\,598\,488\,975\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(-16\,777\,216z^6+3\,315\,597\,312z^5-181\,839\,790\,080z^4+3\,136\,736\,378\,880z^3-13\,968\,279\,187\,200z^2+5\,238\,104\,695\,200z+1\,800\,598\,488\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+4\left(4\,194\,304z^{15/2}-1\,048\,576z^7-828\,112\,896z^{13/2}+206\,241\,792z^6+45\,306\,249\,216z^{11/2}-11\,174\,584\,320z^5-775\,989\,688\,320z^{9/2}+186\,121\,704\,960z^4+3\,361\,707\,074\,880z^{7/2}-724\,891\,686\,480z^3-884\,049\,835\,500z^{5/2}-47\,128\,410\,225z^2-285\,957\,734\,400z^{3/2}-87\,986\,995\,200z+82\,487\,808\,000\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^{15/2}+1\,048\,576z^7-828\,112\,896z^{13/2}-206\,241\,792z^6+45\,306\,249\,216z^{11/2}+11\,174\,584\,320z^5-775\,989\,688\,320z^{9/2}-186\,121\,704\,960z^4+3\,361\,707\,074\,880z^{7/2}+724\,891\,686\,480z^3-884\,049\,835\,500z^{5/2}+47\,128\,410\,225z^2-285\,957\,734\,400z^{3/2}+87\,986\,995\,200z+82\,487\,808\,000\sqrt{z}-41\,243\,904\,000\right)+41\,243\,904\,000\right)\right)\right) $$

07.22.03.a7v1.01

$${}_1F_2\left(-\frac{17}{4};\frac{9}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{94\,925\,307\,248\,640\,z^{7/2}}\left(7\left(\sqrt{\pi}\,\left(16\,777\,216\,z^6+3\,315\,597\,312\,z^5+181\,839\,790\,080\,z^4+3\,136\,736\,378\,880\,z^3+\right.\right.\right.$$
$$\left.\left.13\,968\,279\,187\,200\,z^2+5\,238\,104\,695\,200\,z-1\,800\,598\,488\,975\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+$$
$$2\left(4\sqrt{z}\,\left(1\,048\,576\,z^7+207\,028\,224\,z^6+11\,326\,562\,304\,z^5+193\,997\,422\,080\,z^4+840\,426\,768\,720\,z^3+\right.\right.$$
$$\left.221\,012\,458\,875\,z^2-71\,489\,433\,600\,z-20\,621\,952\,000\right)\cos\left(2\sqrt{z}\right)+$$
$$\left(1\,048\,576\,z^7+206\,241\,792\,z^6+11\,174\,584\,320\,z^5+186\,121\,704\,960\,z^4+724\,891\,686\,480\,z^3-\right.$$
$$\left.\left.\left.47\,128\,410\,225\,z^2+87\,986\,995\,200\,z+41\,243\,904\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a7v2.01

$${}_1F_2\left(-\frac{17}{4};\frac{9}{2},\frac{13}{4};z\right)=$$
$$-\left(\left(2\,z\left(16\,777\,216\,z^6-3\,602\,907\,136\,z^5+219\,043\,921\,920\,z^4-4\,346\,198\,360\,064\,z^3+24\,538\,131\,991\,296\,z^2-\right.\right.\right.$$
$$\left.23\,400\,734\,220\,864\,z-2\,417\,625\,014\,805\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\sqrt{z}\,\left(16\,777\,216\,z^6-3\,588\,227\,072\,z^5+215\,916\,150\,784\,z^4-4\,159\,744\,917\,504\,z^3+21\,036\,239\,288\,064\,z^2-\right.$$
$$7\,146\,756\,096\,480\,z-3\,857\,353\,575\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(-16\,777\,216\,z^7+3\,590\,324\,224\,z^6-$$
$$216\,358\,256\,640\,z^5+4\,185\,411\,452\,928\,z^4-21\,483\,647\,767\,296\,z^3+8\,695\,463\,736\,960\,z^2+$$
$$\left.\left.4\,863\,224\,190\,825\,z+645\,080\,436\,000\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(18\,558\,639\,171\,072\sqrt{2}\;z^{9/4}\right)$$

07.22.03.a7v3.01

$${}_1F_2\left(-\frac{17}{4};\frac{9}{2},\frac{13}{4};-z\right)=$$
$$\left(\left(2\,z\left(16\,777\,216\,z^6+3\,602\,907\,136\,z^5+219\,043\,921\,920\,z^4+4\,346\,198\,360\,064\,z^3+24\,538\,131\,991\,296\,z^2+\right.\right.\right.$$
$$\left.23\,400\,734\,220\,864\,z-2\,417\,625\,014\,805\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\sqrt{z}\,\left(16\,777\,216\,z^6+3\,588\,227\,072\,z^5+215\,916\,150\,784\,z^4+4\,159\,744\,917\,504\,z^3+21\,036\,239\,288\,064\,z^2+\right.$$
$$7\,146\,756\,096\,480\,z-3\,857\,353\,575\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(16\,777\,216\,z^7+3\,590\,324\,224\,z^6+$$
$$216\,358\,256\,640\,z^5+4\,185\,411\,452\,928\,z^4+21\,483\,647\,767\,296\,z^3+8\,695\,463\,736\,960\,z^2-$$
$$\left.\left.4\,863\,224\,190\,825\,z+645\,080\,436\,000\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(18\,558\,639\,171\,072\sqrt{2}\;z^{9/4}\right)$$

07.22.03.a7v4.01

$${}_1F_2\left(-\frac{17}{4};\frac{9}{2},\frac{15}{4};z\right)=$$
$$\left(e^{-2\sqrt{z}}\left(4\left(67\,108\,864\,z^{15/2}-16\,777\,216\,z^{7}-15\,460\,204\,544\,z^{13/2}+3\,852\,468\,224\,z^{6}+1\,015\,429\,201\,920\,z^{11/2}-\right.\right.\right.$$
$$251\,011\,203\,072\,z^{5}-21\,772\,398\,821\,376\,z^{9/2}+5\,264\,349\,511\,680\,z^{4}+$$
$$126\,634\,110\,704\,640\,z^{7/2}-28\,267\,387\,948\,800\,z^{3}-55\,747\,219\,731\,840\,z^{5/2}+$$
$$1\,455\,947\,045\,280\,z^{2}-43\,318\,441\,939\,500\,z^{3/2}-461\,565\,201\,825\,z-12\,318\,179\,328\,000\sqrt{z}\,+$$
$$e^{4\sqrt{z}}\left(67\,108\,864\,z^{15/2}+16\,777\,216\,z^{7}-15\,460\,204\,544\,z^{13/2}-3\,852\,468\,224\,z^{6}+1\,015\,429\,201\,920\,z^{11/2}+\right.$$
$$251\,011\,203\,072\,z^{5}-21\,772\,398\,821\,376\,z^{9/2}-5\,264\,349\,511\,680\,z^{4}+126\,634\,110\,704\,640\,z^{7/2}+$$
$$28\,267\,387\,948\,800\,z^{3}-55\,747\,219\,731\,840\,z^{5/2}-1\,455\,947\,045\,280\,z^{2}-43\,318\,441\,939\,500\,z^{3/2}+$$
$$\left.461\,565\,201\,825\,z-12\,318\,179\,328\,000\sqrt{z}\,+6\,159\,089\,664\,000\right)-6\,159\,089\,664\,000\Big)+$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(268\,435\,456\,z^{7}-61\,891\,149\,824\,z^{6}+4\,073\,211\,297\,792\,z^{5}-87\,828\,618\,608\,640\,z^{4}+\right.$$
$$\left.521\,482\,422\,988\,800\,z^{3}-293\,333\,862\,931\,200\,z^{2}-201\,667\,030\,765\,200\,z-88\,229\,325\,959\,775\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(-268\,435\,456\,z^{7}+61\,891\,149\,824\,z^{6}-4\,073\,211\,297\,792\,z^{5}+87\,828\,618\,608\,640\,z^{4}-\right.$$
$$521\,482\,422\,988\,800\,z^{3}+293\,333\,862\,931\,200\,z^{2}+201\,667\,030\,765\,200\,z+$$
$$\left.\left.88\,229\,325\,959\,775\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)\Big/\left(2\,209\,170\,786\,877\,440\,z^{7/2}\right)$$

07.22.03.a7v5.01

$${}_1F_2\left(-\frac{17}{4};\frac{9}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{552\,292\,696\,719\,360\,z^{7/2}}\left(\sqrt{\pi}\,z^{3/4}\left(268\,435\,456\,z^{7}+61\,891\,149\,824\,z^{6}+4\,073\,211\,297\,792\,z^{5}+87\,828\,618\,608\,640\,z^{4}+\right.\right.$$
$$\left.521\,482\,422\,988\,800\,z^{3}+293\,333\,862\,931\,200\,z^{2}-201\,667\,030\,765\,200\,z+88\,229\,325\,959\,775\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\left(4\sqrt{z}\,\left(16\,777\,216\,z^{7}+3\,865\,051\,136\,z^{6}+253\,857\,300\,480\,z^{5}+5\,443\,099\,705\,344\,z^{4}+31\,658\,527\,676\,160\,z^{3}+\right.\right.$$
$$13\,936\,804\,932\,960\,z^{2}-10\,829\,610\,484\,875\,z+3\,079\,544\,832\,000\big)\cos\left(2\sqrt{z}\right)+$$
$$\left(16\,777\,216\,z^{7}+3\,852\,468\,224\,z^{6}+251\,011\,203\,072\,z^{5}+5\,264\,349\,511\,680\,z^{4}+28\,267\,387\,948\,800\,z^{3}+\right.$$
$$\left.\left.\left.1\,455\,947\,045\,280\,z^{2}+461\,565\,201\,825\,z-6\,159\,089\,664\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a7v6.01

$${}_1F_2\left(-\frac{17}{4};\frac{9}{2},\frac{17}{4};z\right)=$$

$$-\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-66\,488\,107\,008\,z^6+4\,771\,260\,923\,904\,z^5-115\,218\,883\,215\,360\,z^4+821\,124\,280\,627\,200\,z^3-\right.\right.\right.$$
$$\left.950\,666\,883\,344\,640\,z^2-251\,209\,208\,250\,000\,z-113\,437\,704\,805\,425\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\left(268\,435\,456\,z^7-66\,253\,225\,984\,z^6+4\,713\,480\,192\,000\,z^5-111\,140\,444\,897\,280\,z^4+726\,936\,471\,613\,440\,z^3-\right.$$
$$\left.375\,439\,019\,155\,200\,z^2-366\,807\,622\,381\,200\,z-189\,062\,841\,342\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-268\,435\,456\,z^7+66\,286\,780\,416\,z^6-4\,721\,659\,084\,800\,z^5+111\,705\,077\,514\,240\,z^4-\right.$$
$$\left.\left.\left.739\,212\,864\,860\,160\,z^3+435\,357\,933\,753\,600\,z^2+411\,308\,248\,150\,800\,z+257\,549\,914\,747\,125\right)\right.$$
$$\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(685\,242\,061\,701\,120\,\sqrt{2}\,z^{11/4}\right)$$

07.22.03.a7v7.01

$${}_1F_2\left(-\frac{17}{4};\frac{9}{2},\frac{17}{4};-z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+66\,488\,107\,008\,z^6+4\,771\,260\,923\,904\,z^5+115\,218\,883\,215\,360\,z^4+821\,124\,280\,627\,200\,z^3+\right.\right.\right.$$
$$\left.950\,666\,883\,344\,640\,z^2-251\,209\,208\,250\,000\,z+113\,437\,704\,805\,425\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\left(268\,435\,456\,z^7+66\,253\,225\,984\,z^6+4\,713\,480\,192\,000\,z^5+111\,140\,444\,897\,280\,z^4+726\,936\,471\,613\,440\,z^3+\right.$$
$$\left.375\,439\,019\,155\,200\,z^2-366\,807\,622\,381\,200\,z+189\,062\,841\,342\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+66\,286\,780\,416\,z^6+4\,721\,659\,084\,800\,z^5+111\,705\,077\,514\,240\,z^4+\right.$$
$$\left.\left.\left.739\,212\,864\,860\,160\,z^3+435\,357\,933\,753\,600\,z^2-411\,308\,248\,150\,800\,z+257\,549\,914\,747\,125\right)\right.$$
$$\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(685\,242\,061\,701\,120\,\sqrt{2}\,z^{11/4}\right)$$

07.22.03.a7v8.01

$${}_1F_2\left(-\frac{17}{4};\frac{9}{2},\frac{19}{4};z\right)=$$

$$\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2}-268\,435\,456\,z^{7}-282\,729\,644\,032\,z^{13/2}+70\,481\,084\,416\,z^{6}+21\,671\,184\,433\,152\,z^{11/2}-\right.\right.\right.$$
$$5\,365\,627\,355\,136\,z^{5}-558\,143\,268\,716\,544\,z^{9/2}+135\,686\,522\,732\,544\,z^{4}+4\,074\,690\,368\,028\,672\,z^{7/2}-$$
$$929\,077\,290\,086\,400\,z^{3}-2\,530\,170\,073\,267\,200\,z^{5/2}+177\,676\,424\,190\,720\,z^{2}-3\,013\,261\,759\,609\,920\,z^{3/2}+$$
$$271\,552\,488\,938\,640\,z-2\,424\,817\,473\,705\,900\sqrt{z}+e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-\right.$$
$$282\,729\,644\,032\,z^{13/2}-70\,481\,084\,416\,z^{6}+21\,671\,184\,433\,152\,z^{11/2}+5\,365\,627\,355\,136\,z^{5}-$$
$$558\,143\,268\,716\,544\,z^{9/2}-135\,686\,522\,732\,544\,z^{4}+4\,074\,690\,368\,028\,672\,z^{7/2}+929\,077\,290\,086\,400\,z^{3}-$$
$$2\,530\,170\,073\,267\,200\,z^{5/2}-177\,676\,424\,190\,720\,z^{2}-3\,013\,261\,759\,609\,920\,z^{3/2}-$$
$$\left.271\,552\,488\,938\,640\,z-2\,424\,817\,473\,705\,900\sqrt{z}+241\,886\,151\,295\,425\right)-241\,886\,151\,295\,425\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-1\,131\,723\,882\,496\,z^{7}+86\,895\,174\,352\,896\,z^{6}-2\,248\,412\,636\,381\,184\,z^{5}+\right.$$
$$16\,687\,437\,535\,641\,600\,z^{4}-12\,515\,578\,151\,731\,200\,z^{3}-12\,906\,689\,968\,972\,800\,z^{2}-$$
$$\left.11\,293\,353\,722\,851\,200\,z-2\,911\,567\,756\,672\,575\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-1\,131\,723\,882\,496\,z^{7}+86\,895\,174\,352\,896\,z^{6}-2\,248\,412\,636\,381\,184\,z^{5}+\right.$$
$$16\,687\,437\,535\,641\,600\,z^{4}-12\,515\,578\,151\,731\,200\,z^{3}-12\,906\,689\,968\,972\,800\,z^{2}-$$
$$\left.\left.11\,293\,353\,722\,851\,200\,z-2\,911\,567\,756\,672\,575\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)\Big/\left(75\,406\,362\,858\,749\,952\,z^{15/4}\right)$$

07.22.03.a7v9.01

$${}_1F_2\left(-\frac{17}{4};\frac{9}{2},\frac{19}{4};-z\right)=$$

$$\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^{8}+1\,131\,723\,882\,496\,z^{7}+86\,895\,174\,352\,896\,z^{6}+2\,248\,412\,636\,381\,184\,z^{5}+16\,687\,437\,535\,641\,600\,z^{4}+\right.\right.$$
$$\left.12\,515\,578\,151\,731\,200\,z^{3}-12\,906\,689\,968\,972\,800\,z^{2}+11\,293\,353\,722\,851\,200\,z-2\,911\,567\,756\,672\,575\right)$$
$$S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^{7}+70\,682\,411\,008\,z^{6}+5\,417\,796\,108\,288\,z^{5}+139\,535\,817\,179\,136\,z^{4}+\right.\right.$$
$$1\,018\,672\,592\,007\,168\,z^{3}+632\,542\,518\,316\,800\,z^{2}-753\,315\,439\,902\,480\,z+606\,204\,368\,426\,475\Big)$$
$$\cos\left(2\sqrt{z}\right)+\left(268\,435\,456\,z^{7}+70\,481\,084\,416\,z^{6}+5\,365\,627\,355\,136\,z^{5}+135\,686\,522\,732\,544\,z^{4}+\right.$$
$$929\,077\,290\,086\,400\,z^{3}+177\,676\,424\,190\,720\,z^{2}-271\,552\,488\,938\,640\,z-$$
$$\left.\left.241\,886\,151\,295\,425\right)\sin\left(2\sqrt{z}\right)\right)\Big)\Big/\left(18\,851\,590\,714\,687\,488\,z^{15/4}\right)$$

07.22.03.a7va.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{9}{2},\frac{21}{4};z\right) = $$

$$ -\left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-1\,205\,275\,197\,440\,z^7+99\,708\,504\,637\,440\,z^6-2\,837\,390\,555\,086\,848\,z^5+24\,425\,687\,242\,506\,240\right.\right.\right. $$

$$ z^4-33\,135\,386\,689\,658\,880\,z^3-15\,436\,993\,168\,396\,800\,z^2-14\,116\,692\,153\,564\,000\,z- $$

$$ \left.1\,474\,690\,162\,470\,525\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-4\,294\,967\,296\,z^8+1\,201\,517\,101\,056\,z^7-98\,660\,230\,627\,328\,z^6+\right. $$

$$ 2\,751\,897\,136\,005\,120\,z^5-22\,082\,607\,810\,478\,080\,z^4+15\,379\,596\,394\,905\,600\,z^3+ $$

$$ \left.21\,341\,033\,967\,052\,800\,z^2+21\,780\,039\,322\,641\,600\,z+2\,457\,816\,937\,450\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\,\left(-4\,294\,967\,296\,z^8+1\,202\,053\,971\,968\,z^7-98\,808\,776\,097\,792\,z^6+2\,763\,782\,671\,564\,800\,z^5-\right. $$

$$ 22\,392\,265\,003\,499\,520\,z^4+17\,335\,993\,343\,385\,600\,z^3+22\,818\,369\,298\,982\,400\,z^2+ $$

$$ \left.\left.\left.24\,922\,345\,218\,170\,400\,z+7\,373\,450\,812\,352\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(21\,927\,745\,974\,435\,840\,\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a7vb.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{9}{2},\frac{21}{4};-z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,205\,275\,197\,440\,z^7+99\,708\,504\,637\,440\,z^6+2\,837\,390\,555\,086\,848\,z^5+24\,425\,687\,242\,506\,240\right.\right.\right. $$

$$ z^4+33\,135\,386\,689\,658\,880\,z^3-15\,436\,993\,168\,396\,800\,z^2+14\,116\,692\,153\,564\,000\,z- $$

$$ \left.1\,474\,690\,162\,470\,525\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4\,294\,967\,296\,z^8+1\,201\,517\,101\,056\,z^7+98\,660\,230\,627\,328\,z^6+\right. $$

$$ 2\,751\,897\,136\,005\,120\,z^5+22\,082\,607\,810\,478\,080\,z^4+15\,379\,596\,394\,905\,600\,z^3- $$

$$ \left.21\,341\,033\,967\,052\,800\,z^2+21\,780\,039\,322\,641\,600\,z-2\,457\,816\,937\,450\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,202\,053\,971\,968\,z^7+98\,808\,776\,097\,792\,z^6+2\,763\,782\,671\,564\,800\,z^5+\right. $$

$$ 22\,392\,265\,003\,499\,520\,z^4+17\,335\,993\,343\,385\,600\,z^3-22\,818\,369\,298\,982\,400\,z^2+ $$

$$ \left.\left.\left.24\,922\,345\,218\,170\,400\,z-7\,373\,450\,812\,352\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(21\,927\,745\,974\,435\,840\,\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a7vc.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, \frac{23}{4}; z\right) = \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(17\,179\,869\,184\,z^{17/2} - 4\,294\,967\,296\,z^8 - 5\,089\,536\,245\,760\,z^{15/2} + 1\,269\,162\,835\,968\,z^7 + 445\,941\,622\,505\,472\,z^{13/2} - 110\,544\,606\,461\,952\,z^6 - 13\,408\,729\,269\,534\,720\,z^{11/2} + 3\,272\,437\,395\,357\,696\,z^5 + 117\,790\,987\,308\,761\,088\,z^{9/2} - 27\,248\,223\,279\,513\,600\,z^4 - 94\,658\,022\,531\,072\,000\,z^{7/2} + 9\,376\,906\,058\,956\,800\,z^3 - 149\,990\,740\,019\,527\,680\,z^{5/2} + 21\,435\,158\,330\,127\,360\,z^2 - 194\,154\,819\,175\,699\,200\,z^{3/2} + 9\,402\,782\,656\,176\,000\,z - 58\,231\,355\,133\,451\,500\sqrt{z} + e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2} + 4\,294\,967\,296\,z^8 - 5\,089\,536\,245\,760\,z^{15/2} - 1\,269\,162\,835\,968\,z^7 + 445\,941\,622\,505\,472\,z^{13/2} + 110\,544\,606\,461\,952\,z^6 - 13\,408\,729\,269\,534\,720\,z^{11/2} - 3\,272\,437\,395\,357\,696\,z^5 + 117\,790\,987\,308\,761\,088\,z^{9/2} + 27\,248\,223\,279\,513\,600\,z^4 - 94\,658\,022\,531\,072\,000\,z^{7/2} - 9\,376\,906\,058\,956\,800\,z^3 - 149\,990\,740\,019\,527\,680\,z^{5/2} - 21\,435\,158\,330\,127\,360\,z^2 - 194\,154\,819\,175\,699\,200\,z^{3/2} - 9\,402\,782\,656\,176\,000\,z - 58\,231\,355\,133\,451\,500\sqrt{z} + 43\,673\,516\,350\,088\,625\right) - 43\,673\,516\,350\,088\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9 - 20\,371\,029\,884\,928\,z^8 + 1\,787\,557\,872\,402\,432\,z^7 - 53\,961\,903\,273\,148\,416\,z^6 + 480\,598\,201\,026\,478\,080\,z^5 - 450\,560\,813\,462\,323\,200\,z^4 - 619\,521\,118\,510\,694\,400\,z^3 - 813\,121\,468\,045\,286\,400\,z^2 - 419\,265\,756\,960\,850\,800\,z + 43\,673\,516\,350\,088\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9 - 20\,371\,029\,884\,928\,z^8 + 1\,787\,557\,872\,402\,432\,z^7 - 53\,961\,903\,273\,148\,416\,z^6 + 480\,598\,201\,026\,478\,080\,z^5 - 450\,560\,813\,462\,323\,200\,z^4 - 619\,521\,118\,510\,694\,400\,z^3 - 813\,121\,468\,045\,286\,400\,z^2 - 419\,265\,756\,960\,850\,800\,z + 43\,673\,516\,350\,088\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big/\left(2\,286\,003\,421\,402\,103\,808\,z^{19/4}\right) $$

07.22.03.a7vd.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) = \left(\sqrt{\pi}\left(68\,719\,476\,736\,z^9 + 20\,371\,029\,884\,928\,z^8 + 1\,787\,557\,872\,402\,432\,z^7 + 53\,961\,903\,273\,148\,416\,z^6 + 480\,598\,201\,026\,478\,080\,z^5 + 450\,560\,813\,462\,323\,200\,z^4 - 619\,521\,118\,510\,694\,400\,z^3 + 813\,121\,468\,045\,286\,400\,z^2 - 419\,265\,756\,960\,850\,800\,z - 43\,673\,516\,350\,088\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^8 + 1\,272\,384\,061\,440\,z^7 + 111\,485\,405\,626\,368\,z^6 + 3\,352\,182\,317\,383\,680\,z^5 + 29\,447\,746\,827\,190\,272\,z^4 + 23\,664\,505\,632\,768\,000\,z^3 - 37\,497\,685\,004\,881\,920\,z^2 + 48\,538\,704\,793\,924\,800\,z - 14\,557\,838\,783\,362\,875\right)\cos\left(2\sqrt{z}\right) + \left(4\,294\,967\,296\,z^8 + 1\,269\,162\,835\,968\,z^7 + 110\,544\,606\,461\,952\,z^6 + 3\,272\,437\,395\,357\,696\,z^5 + 27\,248\,223\,279\,513\,600\,z^4 + 9\,376\,906\,058\,956\,800\,z^3 - 21\,435\,158\,330\,127\,360\,z^2 + 9\,402\,782\,656\,176\,000\,z + 43\,673\,516\,350\,088\,625\right)\sin\left(2\sqrt{z}\right)\right)\Big/\left(571\,500\,855\,350\,525\,952\,z^{19/4}\right) $$

For fixed z and $a_1 = -\frac{17}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.a7ve.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{23}{4};z\right)=$$
$$\left(\left(-4z\left(536\,870\,912z^7+49\,559\,896\,064z^6+2\,167\,100\,407\,808z^5+48\,658\,219\,008\,000z^4+461\,614\,493\,491\,200z^3+\right.\right.\right.$$
$$\left.\left.\left.419\,002\,773\,235\,200z^2-2\,288\,010\,711\,987\,000z+105\,534\,494\,090\,400\,375\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$12\sqrt{z}\left(268\,435\,456z^7+25\,014\,829\,056z^6+1\,105\,629\,020\,160z^5+25\,315\,563\,929\,600z^4+253\,876\,806\,758\,400z^3+\right.$$
$$\left.456\,650\,786\,592\,000z^2+11\,821\,388\,678\,599\,500z+175\,890\,823\,484\,000\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(2\,147\,483\,648z^8+199\,850\,196\,992z^7+8\,819\,195\,248\,640z^6+201\,335\,793\,254\,400z^5+\right.$$
$$2\,001\,615\,011\,020\,800z^4+3\,284\,195\,556\,096\,000z^3-14\,593\,798\,054\,836\,000z^2-$$
$$\left.\left.411\,841\,928\,157\,660\,000z-2\,638\,362\,352\,260\,009\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(758\,158\,082\,589\,600\sqrt{2}\;z^{13/4}\right)$$

07.22.03.a7vf.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{23}{4};-z\right)=$$
$$\left(\left(4z\left(536\,870\,912z^7-49\,559\,896\,064z^6+2\,167\,100\,407\,808z^5-48\,658\,219\,008\,000z^4+461\,614\,493\,491\,200z^3-\right.\right.\right.$$
$$\left.\left.\left.419\,002\,773\,235\,200z^2-2\,288\,010\,711\,987\,000z-105\,534\,494\,090\,400\,375\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$12\sqrt{z}\left(268\,435\,456z^7-25\,014\,829\,056z^6+1\,105\,629\,020\,160z^5-25\,315\,563\,929\,600z^4+253\,876\,806\,758\,400z^3-\right.$$
$$\left.456\,650\,786\,592\,000z^2+11\,821\,388\,678\,599\,500z-175\,890\,823\,484\,000\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(2\,147\,483\,648z^8-199\,850\,196\,992z^7+8\,819\,195\,248\,640z^6-201\,335\,793\,254\,400z^5+\right.$$
$$2\,001\,615\,011\,020\,800z^4-3\,284\,195\,556\,096\,000z^3-14\,593\,798\,054\,836\,000z^2+$$
$$\left.\left.411\,841\,928\,157\,660\,000z-2\,638\,362\,352\,260\,009\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(758\,158\,082\,589\,600\sqrt{2}\;z^{13/4}\right)$$

07.22.03.a7vg.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{21}{4};z\right)=-\frac{45\left(2\sqrt{z}\left(32z^2+1680z+4095\right)\cosh\left(2\sqrt{z}\right)-3\left(272z^2+2380z+1365\right)\sinh\left(2\sqrt{z}\right)\right)}{512z^{9/2}}$$

07.22.03.a7vh.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{21}{4};-z\right)=-\frac{45\left(2\sqrt{z}\left(32z^2-1680z+4095\right)\cos\left(2\sqrt{z}\right)-3\left(272z^2-2380z+1365\right)\sin\left(2\sqrt{z}\right)\right)}{512z^{9/2}}$$

07.22.03.a7vi.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{19}{4};z\right)= \left(\left(-4z\left(268\,435\,456z^7+14\,797\,504\,512z^6+461\,519\,192\,064z^5+8\,038\,463\,569\,920z^4+61\,879\,516\,876\,800z^3+ 40\,212\,985\,075\,200z^2-371\,028\,764\,106\,000z+7\,722\,036\,152\,956\,125\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+ 12\sqrt{z}\left(134\,217\,728z^7+7\,516\,192\,768z^6+237\,431\,685\,120z^5+4\,232\,950\,579\,200z^4+34\,855\,443\,302\,400z^3+ 55\,351\,610\,496\,000z^2+525\,624\,082\,483\,500z+12\,870\,060\,254\,926\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ \left(1\,073\,741\,824z^8+59\,995\,324\,416z^7+1\,891\,526\,246\,400z^6+33\,599\,913\,984\,000z^5+ 273\,655\,026\,892\,800z^4+385\,552\,597\,248\,000z^3-944\,436\,854\,088\,000z^2-25\,044\,441\,577\,155\,000z- 193\,050\,903\,823\,903\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(98\,890\,184\,685\,600\sqrt{2}\,z^{13/4}\right) $$

07.22.03.a7vj.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{19}{4};-z\right)= \left(\left(4z\left(268\,435\,456z^7-14\,797\,504\,512z^6+461\,519\,192\,064z^5-8\,038\,463\,569\,920z^4+61\,879\,516\,876\,800z^3- 40\,212\,985\,075\,200z^2-371\,028\,764\,106\,000z-7\,722\,036\,152\,956\,125\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 12\sqrt{z}\left(134\,217\,728z^7-7\,516\,192\,768z^6+237\,431\,685\,120z^5-4\,232\,950\,579\,200z^4+34\,855\,443\,302\,400z^3- 55\,351\,610\,496\,000z^2+525\,624\,082\,483\,500z-12\,870\,060\,254\,926\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ \left(1\,073\,741\,824z^8-59\,995\,324\,416z^7+1\,891\,526\,246\,400z^6-33\,599\,913\,984\,000z^5+ 273\,655\,026\,892\,800z^4-385\,552\,597\,248\,000z^3-944\,436\,854\,088\,000z^2+25\,044\,441\,577\,155\,000z- 193\,050\,903\,823\,903\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(98\,890\,184\,685\,600\sqrt{2}\,z^{13/4}\right) $$

07.22.03.a7vk.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{17}{4};z\right)=\frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.a7vl.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{17}{4};-z\right)=\frac{945\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.a7vm.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{15}{4};z\right)= $$

$$ \left(\left(-4z\left(134\,217\,728z^7+2\,407\,530\,496z^6+45\,460\,488\,192z^5+564\,701\,921\,280z^4+3\,339\,973\,969\,920z^3+\right.\right.\right. $$

$$ \left.\left.\left.1\,224\,920\,188\,800z^2-16\,864\,943\,823\,000z+208\,703\,679\,809\,625\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right. $$

$$ 12\sqrt{z}\left(67\,108\,864z^7+1\,262\,485\,504z^6+23\,882\,629\,120z^5+304\,457\,072\,640z^4+1\,963\,317\,888\,000z^3+\right. $$

$$ \left.2\,823\,250\,248\,000z^2+2\,810\,823\,970\,500z+347\,839\,466\,349\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ \left(536\,870\,912z^8+10\,032\,775\,168z^7+189\,593\,026\,560z^6+2\,406\,287\,278\,080z^5+15\,274\,983\,628\,800z^4+\right. $$

$$ 18\,132\,424\,128\,000z^3-30\,240\,588\,924\,000z^2-505\,948\,314\,690\,000z- $$

$$ \left.\left.5\,217\,591\,995\,240\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(5\,204\,746\,562\,400\sqrt{2}\,z^{13/4}\right) $$

07.22.03.a7vn.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{15}{4};-z\right)= $$

$$ \left(\left(4z\left(134\,217\,728z^7-2\,407\,530\,496z^6+45\,460\,488\,192z^5-564\,701\,921\,280z^4+3\,339\,973\,969\,920z^3-\right.\right.\right. $$

$$ \left.\left.\left.1\,224\,920\,188\,800z^2-16\,864\,943\,823\,000z-208\,703\,679\,809\,625\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right. $$

$$ 12\sqrt{z}\left(67\,108\,864z^7-1\,262\,485\,504z^6+23\,882\,629\,120z^5-304\,457\,072\,640z^4+1\,963\,317\,888\,000z^3-\right. $$

$$ \left.2\,823\,250\,248\,000z^2+2\,810\,823\,970\,500z-347\,839\,466\,349\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ \left(536\,870\,912z^8-10\,032\,775\,168z^7+189\,593\,026\,560z^6-2\,406\,287\,278\,080z^5+15\,274\,983\,628\,800z^4-\right. $$

$$ 18\,132\,424\,128\,000z^3-30\,240\,588\,924\,000z^2+505\,948\,314\,690\,000z- $$

$$ \left.\left.5\,217\,591\,995\,240\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(5\,204\,746\,562\,400\sqrt{2}\,z^{13/4}\right) $$

07.22.03.a7vo.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{13}{4};z\right)=\frac{1}{28\,119\,150\,259\,200z^{9/2}} $$

$$ \left(e^{-2\sqrt{z}}\left(1\,073\,741\,824e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{35/4}-1\,073\,741\,824e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{35/4}+\right.\right. $$

$$ 1\,073\,741\,824e^{4\sqrt{z}}z^{17/2}+1\,073\,741\,824z^{17/2}+268\,435\,456e^{4\sqrt{z}}z^8-268\,435\,456z^8+ $$

$$ 201\,326\,592e^{4\sqrt{z}}z^{15/2}+201\,326\,592z^{15/2}+251\,658\,240e^{4\sqrt{z}}z^7-251\,658\,240z^7+440\,401\,920e^{4\sqrt{z}}z^{13/2}+ $$

$$ 440\,401\,920z^{13/2}+990\,904\,320e^{4\sqrt{z}}z^6-990\,904\,320z^6+2\,724\,986\,880e^{4\sqrt{z}}z^{11/2}+2\,724\,986\,880z^{11/2}+ $$

$$ 8\,856\,207\,360e^{4\sqrt{z}}z^5-8\,856\,207\,360z^5+33\,210\,777\,600e^{4\sqrt{z}}z^{9/2}+33\,210\,777\,600z^{9/2}+ $$

$$ 141\,145\,804\,800e^{4\sqrt{z}}z^4-141\,145\,804\,800z^4+670\,442\,572\,800e^{4\sqrt{z}}z^{7/2}+670\,442\,572\,800z^{7/2}+ $$

$$ 3\,519\,823\,507\,200e^{4\sqrt{z}}z^3-3\,519\,823\,507\,200z^3+20\,238\,985\,166\,400e^{4\sqrt{z}}z^{5/2}+20\,238\,985\,166\,400z^{5/2}+ $$

$$ 126\,493\,657\,290\,000e^{4\sqrt{z}}z^2-126\,493\,657\,290\,000z^2-910\,754\,332\,488\,000e^{4\sqrt{z}}z^{3/2}-910\,754\,332\,488\,000z^{3/2}+ $$

$$ 2\,219\,963\,685\,439\,500e^{4\sqrt{z}}z-2\,219\,963\,685\,439\,500z-2\,646\,879\,778\,793\,250e^{4\sqrt{z}}\sqrt{z}- $$

$$ \left.\left.2\,646\,879\,778\,793\,250\sqrt{z}+1\,323\,439\,889\,396\,625e^{4\sqrt{z}}-1\,323\,439\,889\,396\,625\right)\right) $$

07.22.03.a7vp.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{13}{4};-z\right)=\frac{1}{14\,059\,575\,129\,600\,z^{9/2}}$$
$$\left(2\,147\,483\,648\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{35/4}+2\left(536\,870\,912\,z^8-100\,663\,296\,z^7+220\,200\,960\,z^6-1\,362\,493\,440\,z^5+\right.\right.$$
$$16\,605\,388\,800\,z^4-335\,221\,286\,400\,z^3+10\,119\,492\,583\,200\,z^2+455\,377\,166\,244\,000\,z-1\,323\,439\,889\,396\,625\Big)$$
$$\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(268\,435\,456\,z^8-251\,658\,240\,z^7+990\,904\,320\,z^6-8\,856\,207\,360\,z^5+141\,145\,804\,800\,z^4-\right.$$
$$\left.\left.3\,519\,823\,507\,200\,z^3+126\,493\,657\,290\,000\,z^2-2\,219\,963\,685\,439\,500\,z+1\,323\,439\,889\,396\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a7vq.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{11}{4};z\right)=$$
$$\left(\left(4\,z\left(67\,108\,864\,z^7-1\,291\,845\,632\,z^6-7\,061\,110\,784\,z^5-54\,176\,317\,440\,z^4-225\,397\,186\,560\,z^3-14\,857\,678\,080\,z^2+\right.\right.\right.$$
$$\left.775\,399\,716\,000\,z-6\,324\,353\,933\,625\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$12\sqrt{z}\left(33\,554\,432\,z^7-616\,562\,688\,z^6-4\,046\,192\,640\,z^5-30\,911\,283\,200\,z^4-143\,434\,152\,960\,z^3-\right.$$
$$\left.167\,009\,169\,600\,z^2+355\,391\,536\,500\,z-10\,540\,589\,889\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-268\,435\,456\,z^8+4\,966\,055\,936\,z^7+31\,855\,738\,880\,z^6+242\,166\,005\,760\,z^5+1\,101\,023\,723\,520\,z^4+\right.$$
$$1\,054\,316\,390\,400\,z^3-1\,550\,799\,432\,000\,z^2-8\,723\,246\,805\,000\,z-$$
$$\left.\left.\left.158\,108\,848\,340\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(346\,983\,104\,160\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a7vr.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{11}{4};-z\right)=$$
$$-\left(\left(4\,z\left(67\,108\,864\,z^7+1\,291\,845\,632\,z^6-7\,061\,110\,784\,z^5+54\,176\,317\,440\,z^4-225\,397\,186\,560\,z^3+\right.\right.\right.$$
$$\left.14\,857\,678\,080\,z^2+775\,399\,716\,000\,z+6\,324\,353\,933\,625\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$12\sqrt{z}\left(33\,554\,432\,z^7+616\,562\,688\,z^6-4\,046\,192\,640\,z^5+30\,911\,283\,200\,z^4-143\,434\,152\,960\,z^3+\right.$$
$$\left.167\,009\,169\,600\,z^2+355\,391\,536\,500\,z+10\,540\,589\,889\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(268\,435\,456\,z^8+4\,966\,055\,936\,z^7-31\,855\,738\,880\,z^6+242\,166\,005\,760\,z^5-1\,101\,023\,723\,520\,z^4+\right.$$
$$1\,054\,316\,390\,400\,z^3+1\,550\,799\,432\,000\,z^2-8\,723\,246\,805\,000\,z+$$
$$\left.\left.\left.158\,108\,848\,340\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(346\,983\,104\,160\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a7vs.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{2\,163\,011\,558\,400\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(-268\,435\,456\,e^{4\sqrt{z}}\,z^{17/2}-268\,435\,456\,z^{17/2}-67\,108\,864\,e^{4\sqrt{z}}\,z^8+67\,108\,864\,z^8-\right.\right.$$
$$16\,777\,216\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-595)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{31/4}+16\,777\,216\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-595)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{31/4}+$$
$$9\,932\,111\,872\,e^{4\sqrt{z}}\,z^{15/2}+9\,932\,111\,872\,z^{15/2}+2\,432\,696\,320\,e^{4\sqrt{z}}\,z^7-2\,432\,696\,320\,z^7+$$
$$1\,761\,607\,680\,e^{4\sqrt{z}}\,z^{13/2}+1\,761\,607\,680\,z^{13/2}+2\,091\,909\,120\,e^{4\sqrt{z}}\,z^6-2\,091\,909\,120\,z^6+$$
$$3\,413\,114\,880\,e^{4\sqrt{z}}\,z^{11/2}+3\,413\,114\,880\,z^{11/2}+6\,998\,261\,760\,e^{4\sqrt{z}}\,z^5-6\,998\,261\,760\,z^5+$$
$$17\,031\,168\,000\,e^{4\sqrt{z}}\,z^{9/2}+17\,031\,168\,000\,z^{9/2}+47\,048\,601\,600\,e^{4\sqrt{z}}\,z^4-47\,048\,601\,600\,z^4+$$
$$141\,145\,804\,800\,e^{4\sqrt{z}}\,z^{7/2}+141\,145\,804\,800\,z^{7/2}+432\,259\,027\,200\,e^{4\sqrt{z}}\,z^3-432\,259\,027\,200\,z^3+$$
$$1\,173\,274\,502\,400\,e^{4\sqrt{z}}\,z^{5/2}+1\,173\,274\,502\,400\,z^{5/2}+1\,099\,944\,846\,000\,e^{4\sqrt{z}}\,z^2-1\,099\,944\,846\,000\,z^2-$$
$$25\,298\,731\,458\,000\,e^{4\sqrt{z}}\,z^{3/2}-25\,298\,731\,458\,000\,z^{3/2}+69\,571\,511\,509\,500\,e^{4\sqrt{z}}\,z-69\,571\,511\,509\,500\,z-$$
$$\left.\left.85\,383\,218\,670\,750\,e^{4\sqrt{z}}\,\sqrt{z}-85\,383\,218\,670\,750\,\sqrt{z}+42\,691\,609\,335\,375\,e^{4\sqrt{z}}-42\,691\,609\,335\,375\right)\right)$$

07.22.03.a7vt.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{9}{4};-z\right)=\frac{1}{1\,081\,505\,779\,200\,z^{9/2}}$$
$$\left(-33\,554\,432\,\sqrt{\pi}\,(16z+595)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{31/4}-2\left(134\,217\,728\,z^8+4\,966\,055\,936\,z^7-880\,803\,840\,z^6+1\,706\,557\,440\,z^5-\right.\right.$$
$$\left.8\,515\,584\,000\,z^4+70\,572\,902\,400\,z^3-586\,637\,251\,200\,z^2-12\,649\,365\,729\,000\,z+42\,691\,609\,335\,375\right)\cos\left(2\sqrt{z}\right)$$
$$\sqrt{z}+\left(-67\,108\,864\,z^8-2\,432\,696\,320\,z^7+2\,091\,909\,120\,z^6-6\,998\,261\,760\,z^5+47\,048\,601\,600\,z^4-\right.$$
$$\left.\left.432\,259\,027\,200\,z^3+1\,099\,944\,846\,000\,z^2-69\,571\,511\,509\,500\,z+42\,691\,609\,335\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a7vu.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{94\,631\,755\,680\,\sqrt{2}\,z^{13/4}}\left(\left(-4z\left(33\,554\,432\,z^7-1\,893\,728\,256\,z^6+13\,002\,866\,688\,z^5+22\,687\,580\,160\,z^4+\right.\right.\right.$$
$$\left.58\,902\,681\,600\,z^3-14\,538\,908\,160\,z^2-116\,309\,957\,400\,z+654\,243\,510\,375\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$12\sqrt{z}\left(16\,777\,216\,z^7-932\,184\,064\,z^6+5\,697\,699\,840\,z^5+15\,744\,368\,640\,z^4+43\,978\,798\,080\,z^3+\right.$$
$$\left.34\,083\,504\,000\,z^2-96\,924\,964\,500\,z+1\,090\,405\,850\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(134\,217\,728\,z^8-7\,474\,249\,728\,z^7+46\,462\,402\,560\,z^6-122\,706\,984\,960\,z^5+335\,274\,024\,960\,z^4+\right.$$
$$\left.\left.\left.234\,173\,721\,600\,z^3-332\,314\,164\,000\,z^2-16\,356\,087\,759\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7vv.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{7}{4};-z\right)= \frac{1}{94\,631\,755\,680\sqrt{2}\,z^{13/4}}\left(\left(4z\left(33\,554\,432z^7+1\,893\,728\,256z^6+13\,002\,866\,688z^5-22\,687\,580\,160z^4+58\,902\,681\,600z^3+14\,538\,908\,160z^2-116\,309\,957\,400z-654\,243\,510\,375\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(16\,777\,216z^7+932\,184\,064z^6+5\,697\,699\,840z^5-15\,744\,368\,640z^4+43\,978\,798\,080z^3-34\,083\,504\,000z^2-96\,924\,964\,500z-1\,090\,405\,850\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(134\,217\,728z^8+7\,474\,249\,728z^7+46\,462\,402\,560z^6-122\,706\,984\,960z^5+335\,274\,024\,960z^4-234\,173\,721\,600z^3-332\,314\,164\,000z^2-16\,356\,087\,759\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a7vw.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{5}{4};z\right)= \frac{1}{240\,334\,617\,600z^{9/2}}\left(e^{-2\sqrt{z}}\left(33\,554\,432e^{4\sqrt{z}}z^{17/2}+33\,554\,432z^{17/2}+8\,388\,608e^{4\sqrt{z}}z^8-8\,388\,608z^8-2\,489\,319\,424e^{4\sqrt{z}}z^{15/2}-2\,489\,319\,424z^{15/2}-616\,038\,400e^{4\sqrt{z}}z^7+616\,038\,400z^7+131\,072e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-19\,040z+239\,785\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{27/4}-131\,072e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-19\,040z+239\,785\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{27/4}+30\,974\,935\,040e^{4\sqrt{z}}z^{13/2}+30\,974\,935\,040z^{13/2}+7\,303\,331\,840e^{4\sqrt{z}}z^6-7\,303\,331\,840z^6+4\,954\,521\,600e^{4\sqrt{z}}z^{11/2}+4\,954\,521\,600z^{11/2}+5\,339\,873\,280e^{4\sqrt{z}}z^5-5\,339\,873\,280z^5+7\,595\,212\,800e^{4\sqrt{z}}z^{9/2}+7\,595\,212\,800z^{9/2}+12\,831\,436\,800e^{4\sqrt{z}}z^4-12\,831\,436\,800z^4+23\,524\,300\,800e^{4\sqrt{z}}z^{7/2}+23\,524\,300\,800z^{7/2}+41\,167\,526\,400e^{4\sqrt{z}}z^3-41\,167\,526\,400z^3+46\,313\,467\,200e^{4\sqrt{z}}z^{5/2}+46\,313\,467\,200z^{5/2}-96\,486\,390\,000e^{4\sqrt{z}}z^2+96\,486\,390\,000z^2-733\,296\,564\,000e^{4\sqrt{z}}z^{3/2}-733\,296\,564\,000z^{3/2}+2\,474\,875\,903\,500e^{4\sqrt{z}}z-2\,474\,875\,903\,500z-3\,162\,341\,432\,250e^{4\sqrt{z}}\sqrt{z}-3\,162\,341\,432\,250\sqrt{z}+1\,581\,170\,716\,125e^{4\sqrt{z}}-1\,581\,170\,716\,125\right)\right) $$

07.22.03.a7vx.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{5}{4};-z\right)= \frac{1}{120\,167\,308\,800z^{9/2}}\left(262\,144\sqrt{\pi}\left(256z^2+19\,040z+239\,785\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{27/4}+2\left(16\,777\,216z^8+1\,244\,659\,712z^7+15\,487\,467\,520z^6-2\,477\,260\,800z^5+3\,797\,606\,400z^4-11\,762\,150\,400z^3+23\,156\,733\,600z^2+366\,648\,282\,000z-1\,581\,170\,716\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8\,388\,608z^8+616\,038\,400z^7+7\,303\,331\,840z^6-5\,339\,873\,280z^5+12\,831\,436\,800z^4-41\,167\,526\,400z^3-96\,486\,390\,000z^2-2\,474\,875\,903\,500z+1\,581\,170\,716\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a7vy.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{67\,594\,111\,200\sqrt{2}\,z^{13/4}}\left(\left(4z\left(16\,777\,216z^7-1\,570\,766\,848z^6+30\,482\,694\,144z^5-93\,413\,376\,000z^4-\right.\right.\right.$$
$$\left.26\,178\,969\,600z^3+22\,185\,273\,600z^2+33\,231\,416\,400z-130\,848\,702\,075\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$12\sqrt{z}\left(8\,388\,608z^7-778\,043\,392z^6+14\,566\,522\,880z^5-34\,475\,212\,800z^4-35\,996\,083\,200z^3-\right.$$
$$\left.13\,767\,062\,400z^2+36\,000\,701\,100z-218\,081\,170\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-67\,108\,864z^8+6\,232\,735\,744z^7-117\,284\,536\,320z^6+288\,188\,006\,400z^5+282\,252\,902\,400z^4+\right.$$
$$\left.\left.\left.115\,482\,931\,200z^3-148\,563\,979\,200z^2+249\,235\,623\,000z-3\,271\,217\,551\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7vz.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{3}{4};-z\right)=$$
$$-\frac{1}{67\,594\,111\,200\sqrt{2}\,z^{13/4}}\left(\left(4z\left(16\,777\,216z^7+1\,570\,766\,848z^6+30\,482\,694\,144z^5+93\,413\,376\,000z^4-\right.\right.\right.$$
$$\left.26\,178\,969\,600z^3-22\,185\,273\,600z^2+33\,231\,416\,400z+130\,848\,702\,075\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$12\sqrt{z}\left(8\,388\,608z^7+778\,043\,392z^6+14\,566\,522\,880z^5+34\,475\,212\,800z^4-35\,996\,083\,200z^3+\right.$$
$$\left.13\,767\,062\,400z^2+36\,000\,701\,100z+218\,081\,170\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(67\,108\,864z^8+6\,232\,735\,744z^7+117\,284\,536\,320z^6+288\,188\,006\,400z^5-282\,252\,902\,400z^4+\right.$$
$$\left.\left.\left.115\,482\,931\,200z^3+148\,563\,979\,200z^2+249\,235\,623\,000z+3\,271\,217\,551\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a7w0.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{144\,200\,770\,560z^{9/2}}\left(e^{-2\sqrt{z}}\left(-8\,388\,608e^{4\sqrt{z}}z^{17/2}-8\,388\,608z^{17/2}-2\,097\,152e^{4\sqrt{z}}z^8+2\,097\,152z^8+\right.\right.$$
$$934\,281\,216e^{4\sqrt{z}}z^{15/2}+934\,281\,216z^{15/2}+231\,997\,440e^{4\sqrt{z}}z^7-231\,997\,440z^7-$$
$$23\,399\,792\,640e^{4\sqrt{z}}z^{13/2}-23\,399\,792\,640z^{13/2}-5\,681\,356\,800e^{4\sqrt{z}}z^6+5\,681\,356\,800z^6-$$
$$2048e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-456\,960z^2+11\,509\,680z-58\,267\,755\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{23/4}+2048e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left(4096z^3-456\,960z^2+11\,509\,680z-58\,267\,755\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{23/4}+115\,275\,202\,560e^{4\sqrt{z}}z^{11/2}+$$
$$115\,275\,202\,560z^{11/2}+25\,102\,909\,440e^{4\sqrt{z}}z^5-25\,102\,909\,440z^5+14\,822\,277\,120e^{4\sqrt{z}}z^{9/2}+$$
$$14\,822\,277\,120z^{9/2}+12\,831\,436\,800e^{4\sqrt{z}}z^4-12\,831\,436\,800z^4+12\,831\,436\,800e^{4\sqrt{z}}z^{7/2}+$$
$$12\,831\,436\,800z^{7/2}+11\,227\,507\,200e^{4\sqrt{z}}z^3-11\,227\,507\,200z^3-34\,735\,100\,400e^{4\sqrt{z}}z^2+34\,735\,100\,400z^2-$$
$$57\,891\,834\,000e^{4\sqrt{z}}z^{3/2}-57\,891\,834\,000z^{3/2}+303\,932\,128\,500e^{4\sqrt{z}}z-303\,932\,128\,500z-$$
$$\left.412\,479\,317\,250e^{4\sqrt{z}}\sqrt{z}-412\,479\,317\,250\sqrt{z}+206\,239\,658\,625e^{4\sqrt{z}}-206\,239\,658\,625\right)\Big)$$

07.22.03.a7w1.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},-\frac{1}{4};-z\right)=\frac{1}{72\,100\,385\,280\,z^{9/2}}$$
$$\left(-4096\sqrt{\pi}\left(4096z^3+456\,960z^2+11\,509\,680z+58\,267\,755\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{23/4}-2\left(4\,194\,304z^8+467\,140\,608z^7+\right.\right.$$
$$11\,699\,896\,320z^6+57\,637\,601\,280z^5-7\,411\,138\,560z^4+6\,415\,718\,400z^3-28\,945\,917\,000z+206\,239\,658\,625\Big)$$
$$\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(2\,097\,152z^8+231\,997\,440z^7+5\,681\,356\,800z^6+25\,102\,909\,440z^5-12\,831\,436\,800z^4+\right.$$
$$\left.\left.11\,227\,507\,200z^3+34\,735\,100\,400z^2+303\,932\,128\,500z-206\,239\,658\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a7w2.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{1}{4};z\right)=$$
$$\left(\left(-4z\left(8\,388\,608z^7-1\,097\,334\,784z^6+35\,089\,252\,352z^5-283\,240\,151\,040z^4+395\,542\,425\,600z^3-71\,413\,776\,000z^2-\right.\right.$$
$$15\,964\,111\,800z+43\,616\,234\,025\Big)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$12\sqrt{z}\left(4\,194\,304z^7-544\,997\,376z^6+17\,070\,735\,360z^5-127\,051\,187\,200z^4+96\,465\,868\,800z^3+\right.$$
$$9\,824\,068\,800z^2-20\,145\,188\,700z+72\,693\,723\,375\Big)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(33\,554\,432z^8-\right.$$
$$4\,364\,173\,312z^7+137\,098\,035\,200z^6-1\,031\,912\,448\,000z^5+858\,190\,233\,600z^4+116\,017\,574\,400z^3-$$
$$\left.\left.117\,187\,106\,400z^2+205\,252\,866\,000z-1\,090\,405\,850\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(157\,719\,592\,800\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a7w3.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{1}{4};-z\right)=$$
$$\left(\left(4z\left(8\,388\,608z^7+1\,097\,334\,784z^6+35\,089\,252\,352z^5+283\,240\,151\,040z^4+395\,542\,425\,600z^3+71\,413\,776\,000z^2-\right.\right.$$
$$15\,964\,111\,800z-43\,616\,234\,025\Big)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$12\sqrt{z}\left(4\,194\,304z^7+544\,997\,376z^6+17\,070\,735\,360z^5+127\,051\,187\,200z^4+96\,465\,868\,800z^3-\right.$$
$$9\,824\,068\,800z^2-20\,145\,188\,700z-72\,693\,723\,375\Big)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(33\,554\,432z^8+\right.$$
$$4\,364\,173\,312z^7+137\,098\,035\,200z^6+1\,031\,912\,448\,000z^5+858\,190\,233\,600z^4-116\,017\,574\,400z^3-$$
$$\left.\left.117\,187\,106\,400z^2-205\,252\,866\,000z-1\,090\,405\,850\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(157\,719\,592\,800\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a7w4.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{3}{4};z\right)=\frac{1}{144\,200\,770\,560\,z^{9/2}}$$
$$\left(e^{-2\sqrt{z}}\left(524\,288\,e^{4\sqrt{z}}\,z^{17/2}+524\,288\,z^{17/2}+131\,072\,e^{4\sqrt{z}}\,z^{8}-131\,072\,z^{8}-77\,889\,536\,e^{4\sqrt{z}}\,z^{15/2}-77\,889\,536\,z^{15/2}-\right.\right.$$
$$19\,374\,080\,e^{4\sqrt{z}}\,z^{7}+19\,374\,080\,z^{7}+2\,932\,070\,400\,e^{4\sqrt{z}}\,z^{13/2}+2\,932\,070\,400\,z^{13/2}+718\,824\,960\,e^{4\sqrt{z}}\,z^{6}-$$
$$718\,824\,960\,z^{6}-29\,311\,282\,560\,e^{4\sqrt{z}}\,z^{11/2}-29\,311\,282\,560\,z^{11/2}-6\,835\,338\,720\,e^{4\sqrt{z}}\,z^{5}+6\,835\,338\,720\,z^{5}+$$
$$8\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536\,z^{4}-9\,748\,480\,z^{3}+368\,309\,760\,z^{2}-3\,729\,136\,320\,z+6\,700\,791\,825\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}-$$
$$8\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536\,z^{4}-9\,748\,480\,z^{3}+368\,309\,760\,z^{2}-3\,729\,136\,320\,z+6\,700\,791\,825\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+$$
$$49\,039\,441\,920\,e^{4\sqrt{z}}\,z^{9/2}+49\,039\,441\,920\,z^{9/2}+8\,554\,291\,200\,e^{4\sqrt{z}}\,z^{4}-8\,554\,291\,200\,z^{4}+$$
$$3\,207\,859\,200\,e^{4\sqrt{z}}\,z^{7/2}+3\,207\,859\,200\,z^{7/2}+801\,964\,800\,e^{4\sqrt{z}}\,z^{3}-801\,964\,800\,z^{3}-1\,403\,438\,400\,e^{4\sqrt{z}}\,z^{5/2}-$$
$$1\,403\,438\,400\,z^{5/2}-3\,157\,736\,400\,e^{4\sqrt{z}}\,z^{2}+3\,157\,736\,400\,z^{2}+14\,472\,958\,500\,e^{4\sqrt{z}}\,z-14\,472\,958\,500\,z-$$
$$\left.\left.21\,709\,437\,750\,e^{4\sqrt{z}}\,\sqrt{z}-21\,709\,437\,750\,\sqrt{z}+10\,854\,718\,875\,e^{4\sqrt{z}}-10\,854\,718\,875\right)\right)$$

07.22.03.a7w5.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{3}{4};-z\right)=$$
$$\frac{1}{72\,100\,385\,280\,z^{9/2}}\left(16\,\sqrt{\pi}\,\left(65\,536\,z^{4}+9\,748\,480\,z^{3}+368\,309\,760\,z^{2}+3\,729\,136\,320\,z+6\,700\,791\,825\right)S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}+\right.$$
$$2\left(262\,144\,z^{8}+38\,944\,768\,z^{7}+1\,466\,035\,200\,z^{6}+14\,655\,641\,280\,z^{5}+\right.$$
$$\left.24\,519\,720\,960\,z^{4}-1\,603\,929\,600\,z^{3}-701\,719\,200\,z^{2}-10\,854\,718\,875\right)\cos\left(2\,\sqrt{z}\right)\sqrt{z}\,+$$
$$\left.\left(131\,072\,z^{8}+19\,374\,080\,z^{7}+718\,824\,960\,z^{6}+6\,835\,338\,720\,z^{5}+8\,554\,291\,200\,z^{4}-801\,964\,800\,z^{3}-\right.\right.$$
$$\left.\left.3\,157\,736\,400\,z^{2}-14\,472\,958\,500\,z+10\,854\,718\,875\right)\sin\left(2\,\sqrt{z}\right)\right)$$

07.22.03.a7w6.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{5}{4};z\right)=$$
$$\left(\left(-4\,z\left(4\,194\,304\,z^{7}-704\,643\,072\,z^{6}+31\,397\,216\,256\,z^{5}-411\,630\,428\,160\,z^{4}+1\,302\,742\,647\,360\,z^{3}-718\,509\,657\,600\,z^{2}+\right.\right.\right.$$
$$\left.\left.12\,630\,945\,600\,z-23\,090\,947\,425\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^{2}+$$
$$12\,\sqrt{z}\,\left(2\,097\,152\,z^{7}-350\,486\,528\,z^{6}+15\,393\,423\,360\,z^{5}-192\,585\,415\,680\,z^{4}+492\,305\,234\,400\,z^{3}-\right.$$
$$\left.12\,630\,945\,600\,z^{2}+17\,630\,694\,900\,z-38\,484\,912\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(16\,777\,216\,z^{8}-2\,805\,989\,376\,z^{7}+123\,491\,450\,880\,z^{6}-1\,555\,054\,018\,560\,z^{5}+4\,091\,613\,523\,200\,z^{4}-\right.$$
$$\left.\left.\left.269\,460\,172\,800\,z^{3}+164\,202\,292\,800\,z^{2}-213\,147\,207\,000\,z+577\,273\,685\,625\right)\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^{2}\right)\Gamma\left(\frac{5}{4}\right)^{2}\right)\Big/\left(1\,419\,476\,335\,200\,\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a7w7.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{5}{4};-z\right)=$$

$$\left(\left(4z\left(4\,194\,304z^7+704\,643\,072z^6+31\,397\,216\,256z^5+411\,630\,428\,160z^4+1\,302\,742\,647\,360z^3+718\,509\,657\,600z^2+\right.\right.\right.$$
$$\left.12\,630\,945\,600z+23\,090\,947\,425\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$12\sqrt{z}\left(2\,097\,152z^7+350\,486\,528z^6+15\,393\,423\,360z^5+192\,585\,415\,680z^4+492\,305\,234\,400z^3+\right.$$
$$\left.12\,630\,945\,600z^2+17\,630\,694\,900z+38\,484\,912\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(16\,777\,216z^8+2\,805\,989\,376z^7+123\,491\,450\,880z^6+1\,555\,054\,018\,560z^5+4\,091\,613\,523\,200z^4+\right.$$
$$\left.\left.\left.269\,460\,172\,800z^3+164\,202\,292\,800z^2+213\,147\,207\,000z+577\,273\,685\,625\right)\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(1\,419\,476\,335\,200\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a7w8.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{1\,922\,676\,940\,800z^{9/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-194\,969\,600z^4+9\,821\,593\,600z^3-149\,165\,452\,800z^2+\right.\right.\right.$$
$$\left.536\,063\,346\,000z-127\,315\,044\,675\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left(-1\,048\,576z^5+194\,969\,600z^4-9\,821\,593\,600z^3+149\,165\,452\,800z^2-536\,063\,346\,000z+127\,315\,044\,675\right)$$
$$\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+4\left(262\,144z^{17/2}-65\,536z^8-48\,693\,248z^{15/2}+12\,124\,160z^7+2\,446\,366\,720z^{13/2}-\right.$$
$$602\,667\,520z^6-36\,850\,302\,720z^{11/2}+8\,790\,176\,640z^5+127\,915\,210\,500z^{9/2}-26\,662\,196\,925z^4-$$
$$17\,108\,582\,400z^{7/2}-3\,742\,502\,400z^3+4\,811\,788\,800z^{5/2}-2\,506\,140\,000z^2-3\,508\,596\,000z^{3/2}+$$
$$7\,894\,341\,000z+14\,472\,958\,500\sqrt{z}+e^{4\sqrt{z}}\left(262\,144z^{17/2}+65\,536z^8-48\,693\,248z^{15/2}-12\,124\,160z^7+\right.$$
$$2\,446\,366\,720z^{13/2}+602\,667\,520z^6-36\,850\,302\,720z^{11/2}-8\,790\,176\,640z^5+127\,915\,210\,500z^{9/2}+$$
$$26\,662\,196\,925z^4-17\,108\,582\,400z^{7/2}+3\,742\,502\,400z^3+4\,811\,788\,800z^{5/2}+2\,506\,140\,000z^2-$$
$$\left.\left.\left.\left.3\,508\,596\,000z^{3/2}-7\,894\,341\,000z+14\,472\,958\,500\sqrt{z}-7\,236\,479\,250\right)+7\,236\,479\,250\right)\right)\right)$$

07.22.03.a7w9.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{7}{4};-z\right)=\frac{1}{480\,669\,235\,200z^{9/2}}$$
$$\left(\sqrt{\pi}\left(1\,048\,576z^5+194\,969\,600z^4+9\,821\,593\,600z^3+149\,165\,452\,800z^2+536\,063\,346\,000z+127\,315\,044\,675\right)\right.$$
$$S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+2\left(4\sqrt{z}\left(65\,536z^8+12\,173\,312z^7+611\,591\,680z^6+9\,212\,575\,680z^5+31\,978\,802\,625z^4+\right.\right.$$
$$\left.4\,277\,145\,600z^3+1\,202\,947\,200z^2+877\,149\,000z+3\,618\,239\,625\right)\cos\left(2\sqrt{z}\right)+$$
$$\left(65\,536z^8+12\,124\,160z^7+602\,667\,520z^6+8\,790\,176\,640z^5+26\,662\,196\,925z^4-\right.$$
$$\left.\left.\left.3\,742\,502\,400z^3+2\,506\,140\,000z^2+7\,894\,341\,000z-7\,236\,479\,250\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a7wa.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{9}{4};z\right)=$$

$$\left(\left(-4z\left(2\,097\,152z^7-430\,309\,376z^6+24\,589\,221\,888z^5-446\,525\,291\,520z^4+2\,209\,826\,092\,320z^3-1\,840\,559\,094\,990z^2-\right.\right.\right.$$
$$\left.\left.17\,367\,550\,200z+19\,538\,493\,975\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$12\sqrt{z}\left(1\,048\,576z^7-214\,237\,184z^6+12\,107\,898\,880z^5-212\,815\,680\,000z^4+926\,377\,618\,320z^3-\right.$$
$$\left.216\,531\,540\,225z^2-26\,051\,325\,300z+32\,564\,156\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(8\,388\,608z^8-1\,714\,946\,048z^7+97\,074\,216\,960z^6-1\,714\,002\,554\,880z^5+7\,591\,561\,971\,840z^4-\right.$$
$$\left.\left.2\,232\,695\,064\,600z^3-486\,291\,405\,600z^2+347\,351\,004\,000z-488\,462\,349\,375\right)$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(3\,122\,847\,937\,440\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a7wb.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{9}{4};-z\right)=$$

$$\left(\left(4z\left(2\,097\,152z^7+430\,309\,376z^6+24\,589\,221\,888z^5+446\,525\,291\,520z^4+2\,209\,826\,092\,320z^3+1\,840\,559\,094\,990z^2-\right.\right.\right.$$
$$\left.\left.17\,367\,550\,200z-19\,538\,493\,975\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$12\sqrt{z}\left(1\,048\,576z^7+214\,237\,184z^6+12\,107\,898\,880z^5+212\,815\,680\,000z^4+926\,377\,618\,320z^3+\right.$$
$$\left.216\,531\,540\,225z^2-26\,051\,325\,300z-32\,564\,156\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(8\,388\,608z^8+1\,714\,946\,048z^7+97\,074\,216\,960z^6+1\,714\,002\,554\,880z^5+7\,591\,561\,971\,840z^4+\right.$$
$$\left.\left.2\,232\,695\,064\,600z^3-486\,291\,405\,600z^2-347\,351\,004\,000z-488\,462\,349\,375\right)$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(3\,122\,847\,937\,440\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a7wc.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{11}{4};z\right) = \frac{1}{105\,472\,563\,609\,600\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-3\,743\,416\,320\,z^5+235\,718\,246\,400\,z^4-4\,773\,294\,489\,600\,z^3+25\,731\,040\,608\,000\,z^2-12\,222\,244\,288\,800\,z-5\,729\,177\,010\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(-16\,777\,216\,z^6+3\,743\,416\,320\,z^5-235\,718\,246\,400\,z^4+4\,773\,294\,489\,600\,z^3-25\,731\,040\,608\,000\,z^2+12\,222\,244\,288\,800\,z+5\,729\,177\,010\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+4\left(4\,194\,304\,z^{17/2}-1\,048\,576\,z^8-935\,067\,648\,z^{15/2}+232\,980\,480\,z^7+58\,755\,809\,280\,z^{13/2}-14\,516\,920\,320\,z^6-1\,182\,647\,531\,520\,z^{11/2}+285\,348\,349\,440\,z^5+6\,230\,936\,980\,800\,z^{9/2}-1\,375\,720\,491\,600\,z^4-2\,215\,640\,781\,900\,z^{7/2}-19\,306\,676\,025\,z^3-1\,077\,840\,691\,200\,z^{5/2}-192\,471\,552\,000\,z^2+384\,943\,104\,000\,z^{3/2}-144\,353\,664\,000\,z-505\,237\,824\,000\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{17/2}+1\,048\,576\,z^8-935\,067\,648\,z^{15/2}-232\,980\,480\,z^7+58\,755\,809\,280\,z^{13/2}+14\,516\,920\,320\,z^6-1\,182\,647\,531\,520\,z^{11/2}-285\,348\,349\,440\,z^5+6\,230\,936\,980\,800\,z^{9/2}+1\,375\,720\,491\,600\,z^4-2\,215\,640\,781\,900\,z^{7/2}+19\,306\,676\,025\,z^3-1\,077\,840\,691\,200\,z^{5/2}+192\,471\,552\,000\,z^2+384\,943\,104\,000\,z^{3/2}+144\,353\,664\,000\,z-505\,237\,824\,000\sqrt{z}+252\,618\,912\,000\right)-252\,618\,912\,000\right)\right)\right) $$

07.22.03.a7wd.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{11}{4};-z\right) = \frac{1}{26\,368\,140\,902\,400\,z^{9/2}}\left(\sqrt{\pi}\left(16\,777\,216\,z^6+3\,743\,416\,320\,z^5+235\,718\,246\,400\,z^4+4\,773\,294\,489\,600\,z^3+25\,731\,040\,608\,000\,z^2+12\,222\,244\,288\,800\,z-5\,729\,177\,010\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2\left(4\sqrt{z}\left(1\,048\,576\,z^8+233\,766\,912\,z^7+14\,688\,952\,320\,z^6+295\,661\,882\,880\,z^5+1\,557\,734\,245\,200\,z^4+553\,910\,195\,475\,z^3-269\,460\,172\,800\,z^2-96\,235\,776\,000\,z-126\,309\,456\,000\right)\cos\left(2\sqrt{z}\right)+\left(1\,048\,576\,z^8+232\,980\,480\,z^7+14\,516\,920\,320\,z^6+285\,348\,349\,440\,z^5+1\,375\,720\,491\,600\,z^4-19\,306\,676\,025\,z^3+192\,471\,552\,000\,z^2-144\,353\,664\,000\,z+252\,618\,912\,000\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a7we.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{13}{4};z\right) = $$
$$ \left(\left(2z\left(-16\,777\,216z^7+4\,066\,377\,728z^6-283\,553\,234\,944z^5+6\,582\,186\,885\,120z^4-44\,354\,532\,499\,200z^3+\right.\right.\right. $$
$$ \left.\left.\left.48\,465\,489\,552\,480z^2+9\,000\,491\,675\,175z+451\,556\,305\,200\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right. $$
$$ 3\sqrt{z}\left(16\,777\,216z^7-4\,051\,697\,664z^6+280\,019\,927\,040z^5-6\,339\,972\,136\,960z^4+38\,988\,365\,095\,680z^3-\right. $$
$$ \left.17\,784\,371\,404\,800z^2-13\,796\,669\,311\,425z-1\,505\,187\,684\,000\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ 2\left(16\,777\,216z^8-4\,053\,794\,816z^7+280\,519\,966\,720z^6-6\,373\,474\,222\,080z^5+39\,685\,161\,035\,520z^4-\right. $$
$$ \left.\left.20\,915\,676\,381\,600z^3-16\,102\,854\,843\,075z^2-4\,515\,563\,052\,000z+2\,822\,226\,907\,500\right) $$
$$ \left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(36\,086\,242\,832\,640\sqrt{2}\,z^{13/4}\right) $$

07.22.03.a7wf.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{13}{4};-z\right) = $$
$$ \left(\left(2z\left(16\,777\,216z^7+4\,066\,377\,728z^6+283\,553\,234\,944z^5+6\,582\,186\,885\,120z^4+44\,354\,532\,499\,200z^3+\right.\right.\right. $$
$$ \left.\left.\left.48\,465\,489\,552\,480z^2-9\,000\,491\,675\,175z+451\,556\,305\,200\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right. $$
$$ 3\sqrt{z}\left(16\,777\,216z^7+4\,051\,697\,664z^6+280\,019\,927\,040z^5+6\,339\,972\,136\,960z^4+38\,988\,365\,095\,680z^3+\right. $$
$$ \left.17\,784\,371\,404\,800z^2-13\,796\,669\,311\,425z+1\,505\,187\,684\,000\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ 2\left(16\,777\,216z^8+4\,053\,794\,816z^7+280\,519\,966\,720z^6+6\,373\,474\,222\,080z^5+39\,685\,161\,035\,520z^4+\right. $$
$$ \left.\left.20\,915\,676\,381\,600z^3-16\,102\,854\,843\,075z^2+4\,515\,563\,052\,000z+2\,822\,226\,907\,500\right) $$
$$ \left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(36\,086\,242\,832\,640\sqrt{2}\,z^{13/4}\right) $$

07.22.03.a7wg.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{15}{4};z\right)=$$
$$\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-69\,877\,104\,640\,z^6+5\,280\,088\,719\,360\,z^5-133\,652\,245\,708\,800\,z^4+\right.\right.\right.$$
$$\left.960\,625\,516\,032\,000\,z^3-684\,445\,680\,172\,800\,z^2-641\,667\,825\,162\,000\,z-441\,146\,629\,798\,875\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)$$
$$z^{7/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(-268\,435\,456\,z^7+69\,877\,104\,640\,z^6-5\,280\,088\,719\,360\,z^5+133\,652\,245\,708\,800\,z^4-\right.$$
$$\left.960\,625\,516\,032\,000\,z^3+684\,445\,680\,172\,800\,z^2+641\,667\,825\,162\,000\,z+441\,146\,629\,798\,875\right)$$
$$\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+4\left(67\,108\,864\,z^{17/2}-16\,777\,216\,z^8-17\,456\,693\,248\,z^{15/2}+4\,351\,590\,400\,z^7+\right.$$
$$1\,316\,774\,215\,680\,z^{13/2}-325\,973\,114\,880\,z^6-33\,172\,552\,089\,600\,z^{11/2}+8\,059\,453\,194\,240\,z^5+$$
$$234\,390\,586\,752\,000\,z^{9/2}-53\,290\,828\,281\,600\,z^4-136\,935\,088\,617\,600\,z^{7/2}+8\,515\,362\,492\,000\,z^3-$$
$$147\,610\,405\,460\,700\,z^{5/2}+10\,010\,353\,318\,875\,z^2-86\,227\,255\,296\,000\,z^{3/2}-21\,556\,813\,824\,000\,z+$$
$$32\,335\,220\,736\,000\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864\,z^{17/2}+16\,777\,216\,z^8-17\,456\,693\,248\,z^{15/2}-4\,351\,590\,400\,z^7+\right.$$
$$1\,316\,774\,215\,680\,z^{13/2}+325\,973\,114\,880\,z^6-33\,172\,552\,089\,600\,z^{11/2}-8\,059\,453\,194\,240\,z^5+$$
$$234\,390\,586\,752\,000\,z^{9/2}+53\,290\,828\,281\,600\,z^4-136\,935\,088\,617\,600\,z^{7/2}-8\,515\,362\,492\,000\,z^3-$$
$$147\,610\,405\,460\,700\,z^{5/2}-10\,010\,353\,318\,875\,z^2-86\,227\,255\,296\,000\,z^{3/2}+21\,556\,813\,824\,000\,z+$$
$$\left.\left.\left.\left.32\,335\,220\,736\,000\sqrt{z}-16\,167\,610\,368\,000\right)+16\,167\,610\,368\,000\right)\right)\right)\Big/\left(4\,295\,609\,863\,372\,800\,z^{9/2}\right)$$

07.22.03.a7wh.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{15}{4};-z\right)=$$
$$\left(\sqrt{\pi}\left(268\,435\,456\,z^7+69\,877\,104\,640\,z^6+5\,280\,088\,719\,360\,z^5+133\,652\,245\,708\,800\,z^4+960\,625\,516\,032\,000\,z^3+\right.\right.$$
$$\left.684\,445\,680\,172\,800\,z^2-641\,667\,825\,162\,000\,z+441\,146\,629\,798\,875\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+$$
$$2\left(4\sqrt{z}\left(16\,777\,216\,z^8+4\,364\,173\,312\,z^7+329\,193\,553\,920\,z^6+8\,293\,138\,022\,400\,z^5+58\,597\,646\,688\,000\,z^4+\right.\right.$$
$$34\,233\,772\,154\,400\,z^3-36\,902\,601\,365\,175\,z^2+21\,556\,813\,824\,000\,z+8\,083\,805\,184\,000\left.\right)\cos\left(2\sqrt{z}\right)+$$
$$\left(16\,777\,216\,z^8+4\,351\,590\,400\,z^7+325\,973\,114\,880\,z^6+8\,059\,453\,194\,240\,z^5+53\,290\,828\,281\,600\,z^4+\right.$$
$$8\,515\,362\,492\,000\,z^3-10\,010\,353\,318\,875\,z^2-21\,556\,813\,824\,000\,z-$$
$$\left.\left.16\,167\,610\,368\,000\right)\sin\left(2\sqrt{z}\right)\right)\Big/\left(1\,073\,902\,465\,843\,200\,z^{9/2}\right)$$

07.22.03.a7wi.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{17}{4};z\right)= $$

$$ -\left(\left(2z\left(268\,435\,456z^7-75\,044\,487\,168z^6+6\,177\,715\,912\,704z^5-174\,642\,241\,536\,000z^4+1\,489\,834\,844\,467\,200z^3-\right.\right.\right. $$

$$ \left.\left.\left.2\,001\,981\,186\,374\,400z^2-894\,417\,256\,933\,200z-750\,714\,528\,338\,775\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right. $$

$$ 3\sqrt{z}\left(-268\,435\,456z^7+74\,809\,606\,144z^6-6\,112\,448\,348\,160z^5+169\,345\,789\,132\,800z^4-\right. $$

$$ \left.1\,345\,672\,252\,108\,800z^3+920\,773\,479\,225\,600z^2+1\,243\,173\,102\,771\,600z+1\,178\,941\,871\,732\,625\right) $$

$$ I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(-268\,435\,456z^8+74\,843\,160\,576z^7-6\,121\,696\,788\,480z^6+\right. $$

$$ 170\,082\,017\,280\,000z^5-1\,364\,714\,594\,611\,200z^4+1\,039\,600\,603\,641\,600z^3+1\,333\,283\,672\,120\,400z^2+ $$

$$ \left.\left.\left.1\,369\,355\,350\,237\,875z+270\,933\,783\,120\,000\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(1\,332\,415\,119\,974\,400\sqrt{2}\,z^{13/4}\right) $$

07.22.03.a7wj.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{17}{4};-z\right)= $$

$$ \left(\left(2z\left(268\,435\,456z^7+75\,044\,487\,168z^6+6\,177\,715\,912\,704z^5+174\,642\,241\,536\,000z^4+1\,489\,834\,844\,467\,200z^3+\right.\right. $$

$$ \left.\left.2\,001\,981\,186\,374\,400z^2-894\,417\,256\,933\,200z+750\,714\,528\,338\,775\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right. $$

$$ 3\sqrt{z}\left(268\,435\,456z^7+74\,809\,606\,144z^6+6\,112\,448\,348\,160z^5+169\,345\,789\,132\,800z^4+\right. $$

$$ \left.1\,345\,672\,252\,108\,800z^3+920\,773\,479\,225\,600z^2-1\,243\,173\,102\,771\,600z+1\,178\,941\,871\,732\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right) $$

$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(268\,435\,456z^8+74\,843\,160\,576z^7+6\,121\,696\,788\,480z^6+170\,082\,017\,280\,000z^5+\right. $$

$$ 1\,364\,714\,594\,611\,200z^4+1\,039\,600\,603\,641\,600z^3-1\,333\,283\,672\,120\,400z^2+ $$

$$ \left.\left.\left.1\,369\,355\,350\,237\,875z-270\,933\,783\,120\,000\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(1\,332\,415\,119\,974\,400\sqrt{2}\,z^{13/4}\right) $$

07.22.03.a7wk.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{19}{4};z\right) = $$

$$\left(e^{-2\sqrt{z}}\left(4\left(1\,073\,741\,824\,z^{17/2}-268\,435\,456\,z^{8}-319\,236\,866\,048\,z^{15/2}+79\,607\,889\,920\,z^{7}+28\,101\,018\,910\,720\,z^{13/2}-\right.\right.\right.$$
$$6\,966\,240\,870\,400\,z^{6}-850\,222\,578\,401\,280\,z^{11/2}+207\,529\,420\,062\,720\,z^{5}+7\,535\,394\,154\,659\,840\,z^{9/2}-$$
$$1\,744\,267\,024\,281\,600\,z^{4}-6\,148\,395\,730\,713\,600\,z^{7/2}+619\,603\,083\,590\,400\,z^{3}-9\,962\,544\,663\,489\,600\,z^{5/2}+$$
$$1\,459\,678\,737\,862\,800\,z^{2}-13\,573\,418\,956\,051\,500\,z^{3/2}+857\,024\,460\,849\,375\,z-5\,518\,544\,338\,944\,000\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{17/2}+268\,435\,456\,z^{8}-319\,236\,866\,048\,z^{15/2}-79\,607\,889\,920\,z^{7}+\right.$$
$$28\,101\,018\,910\,720\,z^{13/2}+6\,966\,240\,870\,400\,z^{6}-850\,222\,578\,401\,280\,z^{11/2}-207\,529\,420\,062\,720\,z^{5}+$$
$$7\,535\,394\,154\,659\,840\,z^{9/2}+1\,744\,267\,024\,281\,600\,z^{4}-6\,148\,395\,730\,713\,600\,z^{7/2}-619\,603\,083\,590\,400$$
$$z^{3}-9\,962\,544\,663\,489\,600\,z^{5/2}-1\,459\,678\,737\,862\,800\,z^{2}-13\,573\,418\,956\,051\,500\,z^{3/2}-$$
$$\left.857\,024\,460\,849\,375\,z-5\,518\,544\,338\,944\,000\sqrt{z}+2\,759\,272\,169\,472\,000\right)-2\,759\,272\,169\,472\,000\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(4\,294\,967\,296\,z^{8}-1\,277\,752\,770\,560\,z^{7}+112\,641\,892\,679\,680\,z^{6}-\right.$$
$$3\,421\,497\,490\,145\,280\,z^{5}+30\,740\,016\,513\,024\,000\,z^{4}-29\,203\,015\,687\,372\,800\,z^{3}-$$
$$\left.41\,066\,740\,810\,368\,000\,z^{2}-56\,466\,768\,614\,256\,000\,z-33\,968\,290\,494\,513\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(-4\,294\,967\,296\,z^{8}+1\,277\,752\,770\,560\,z^{7}-112\,641\,892\,679\,680\,z^{6}+3\,421\,497\,490\,145\,280\,z^{5}-\right.$$
$$30\,740\,016\,513\,024\,000\,z^{4}+29\,203\,015\,687\,372\,800\,z^{3}+41\,066\,740\,810\,368\,000\,z^{2}+$$
$$\left.\left.\left.56\,466\,768\,614\,256\,000\,z+33\,968\,290\,494\,513\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(146\,623\,483\,336\,458\,240\,z^{9/2}\right)$$

07.22.03.a7wl.01

$$ {}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{19}{4};-z\right) = $$

$$\left(\sqrt{\pi}\,z^{3/4}\left(4\,294\,967\,296\,z^{8}+1\,277\,752\,770\,560\,z^{7}+112\,641\,892\,679\,680\,z^{6}+3\,421\,497\,490\,145\,280\,z^{5}+\right.\right.$$
$$30\,740\,016\,513\,024\,000\,z^{4}+29\,203\,015\,687\,372\,800\,z^{3}-41\,066\,740\,810\,368\,000\,z^{2}+$$
$$\left.56\,466\,768\,614\,256\,000\,z-33\,968\,290\,494\,513\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\left(4\sqrt{z}\left(268\,435\,456\,z^{8}+79\,809\,216\,512\,z^{7}+7\,025\,254\,727\,680\,z^{6}+212\,555\,644\,600\,320\,z^{5}+1\,883\,848\,538\,664\,960\,z^{4}+\right.\right.$$
$$\left.1\,537\,098\,932\,678\,400\,z^{3}-2\,490\,636\,165\,872\,400\,z^{2}+3\,393\,354\,739\,012\,875\,z-1\,379\,636\,084\,736\,000\right)$$
$$\cos\left(2\sqrt{z}\right)+\left(268\,435\,456\,z^{8}+79\,607\,889\,920\,z^{7}+6\,966\,240\,870\,400\,z^{6}+207\,529\,420\,062\,720\,z^{5}+\right.$$
$$1\,744\,267\,024\,281\,600\,z^{4}+619\,603\,083\,590\,400\,z^{3}-1\,459\,678\,737\,862\,800\,z^{2}+$$
$$\left.\left.857\,024\,460\,849\,375\,z+2\,759\,272\,169\,472\,000\right)\sin\left(2\sqrt{z}\right)\right)\Big/\left(36\,655\,870\,834\,114\,560\,z^{9/2}\right)$$

07.22.03.a7wm.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{21}{4};z\right)=$$

$$-\left(\left(2\sqrt{z}\left(4\,294\,967\,296\,z^8-1\,360\,430\,891\,008\,z^7+129\,120\,205\,799\,424\,z^6-4\,303\,290\,032\,455\,680\,z^5+\right.\right.\right.$$
$$44\,428\,898\,097\,561\,600\,z^4-70\,660\,768\,750\,387\,200\,z^3-53\,731\,773\,122\,227\,200\,z^2-$$
$$\left.85\,695\,521\,958\,446\,400\,z-51\,614\,155\,686\,468\,375\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4\,294\,967\,296\,z^8-1\,356\,672\,794\,624\,z^7+\right.$$
$$127\,936\,170\,557\,440\,z^6-4\,192\,290\,471\,936\,000\,z^5+40\,845\,568\,219\,545\,600\,z^4-37\,385\,101\,122\,969\,600\,z^3-$$
$$\left.70\,650\,020\,939\,097\,600\,z^2-120\,956\,998\,069\,908\,000\,z-86\,023\,592\,810\,780\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(-4\,294\,967\,296\,z^8+1\,357\,209\,665\,536\,z^7-128\,104\,110\,489\,600\,z^6+4\,207\,776\,104\,448\,000\,z^5-\right.$$
$$41\,324\,535\,653\,990\,400\,z^4+41\,217\,038\,637\,465\,600\,z^3+73\,336\,607\,830\,886\,400\,z^2+$$
$$\left.\left.\left.127\,352\,772\,106\,560\,000\,z+110\,682\,800\,415\,061\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(42\,637\,283\,839\,180\,800\sqrt{2}\;z^{15/4}\right)$$

07.22.03.a7wn.01

$${}_1F_2\left(-\frac{17}{4};\frac{11}{2},\frac{21}{4};-z\right)=$$

$$\left(\left(2\sqrt{z}\left(4\,294\,967\,296\,z^8+1\,360\,430\,891\,008\,z^7+129\,120\,205\,799\,424\,z^6+4\,303\,290\,032\,455\,680\,z^5+\right.\right.\right.$$
$$44\,428\,898\,097\,561\,600\,z^4+70\,660\,768\,750\,387\,200\,z^3-53\,731\,773\,122\,227\,200\,z^2+$$
$$\left.85\,695\,521\,958\,446\,400\,z-51\,614\,155\,686\,468\,375\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4\,294\,967\,296\,z^8+1\,356\,672\,794\,624\,z^7+\right.$$
$$127\,936\,170\,557\,440\,z^6+4\,192\,290\,471\,936\,000\,z^5+40\,845\,568\,219\,545\,600\,z^4+37\,385\,101\,122\,969\,600\,z^3-$$
$$\left.70\,650\,020\,939\,097\,600\,z^2+120\,956\,998\,069\,908\,000\,z-86\,023\,592\,810\,780\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(4\,294\,967\,296\,z^8+1\,357\,209\,665\,536\,z^7+128\,104\,110\,489\,600\,z^6+4\,207\,776\,104\,448\,000\,z^5+\right.$$
$$41\,324\,535\,653\,990\,400\,z^4+41\,217\,038\,637\,465\,600\,z^3-73\,336\,607\,830\,886\,400\,z^2+$$
$$\left.\left.\left.127\,352\,772\,106\,560\,000\,z-110\,682\,800\,415\,061\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(42\,637\,283\,839\,180\,800\sqrt{2}\;z^{15/4}\right)$$

07.22.03.a7wo.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{11}{2}, \frac{23}{4}; z\right) = $$
$$ \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(17\,179\,869\,184\,z^{17/2} - 4\,294\,967\,296\,z^8 - 5\,746\,666\,242\,048\,z^{15/2} + 1\,433\,445\,335\,040\,z^7 + \right.\right.\right. $$
$$ 578\,230\,104\,883\,200\,z^{13/2} - 143\,493\,515\,182\,080\,z^6 - 20\,422\,680\,725\,422\,080\,z^{11/2} + 5\,001\,637\,118\,607\,360\,z^5 + $$
$$ 217\,702\,477\,277\,429\,760\,z^{9/2} - 51\,009\,991\,203\,225\,600\,z^4 - 228\,445\,152\,303\,513\,600\,z^{7/2} + $$
$$ 28\,699\,664\,084\,582\,400\,z^3 - 488\,749\,825\,486\,540\,800\,z^{5/2} + 90\,544\,411\,454\,515\,200\,z^2 - $$
$$ 1\,022\,870\,647\,536\,192\,000\,z^{3/2} + 164\,548\,696\,483\,080\,000\,z - 1\,140\,584\,109\,560\,941\,500\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(17\,179\,869\,184\,z^{17/2} + 4\,294\,967\,296\,z^8 - 5\,746\,666\,242\,048\,z^{15/2} - 1\,433\,445\,335\,040\,z^7 + \right. $$
$$ 578\,230\,104\,883\,200\,z^{13/2} + 143\,493\,515\,182\,080\,z^6 - 20\,422\,680\,725\,422\,080\,z^{11/2} - $$
$$ 5\,001\,637\,118\,607\,360\,z^5 + 217\,702\,477\,277\,429\,760\,z^{9/2} + 51\,009\,991\,203\,225\,600\,z^4 - $$
$$ 228\,445\,152\,303\,513\,600\,z^{7/2} - 28\,699\,664\,084\,582\,400\,z^3 - 488\,749\,825\,486\,540\,800\,z^{5/2} - $$
$$ 90\,544\,411\,454\,515\,200\,z^2 - 1\,022\,870\,647\,536\,192\,000\,z^{3/2} - 164\,548\,696\,483\,080\,000\,z - $$
$$ \left.\left.\left.1\,140\,584\,109\,560\,941\,500\sqrt{z} + 60\,767\,697\,362\,770\,125\right) - 60\,767\,697\,362\,770\,125\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9 - 22\,999\,549\,870\,080\,z^8 + 2\,317\,204\,649\,410\,560\,z^7 - 82\,115\,939\,763\,486\,720\,z^6 + \right. $$
$$ 885\,312\,475\,575\,091\,200\,z^5 - 1\,051\,308\,564\,745\,420\,800\,z^4 - 1\,971\,203\,558\,897\,664\,000\,z^3 - $$
$$ \left.4\,065\,607\,340\,226\,432\,000\,z^2 - 4\,891\,433\,831\,209\,926\,000\,z - 1\,528\,573\,072\,253\,101\,875\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(68\,719\,476\,736\,z^9 - 22\,999\,549\,870\,080\,z^8 + 2\,317\,204\,649\,410\,560\,z^7 - \right. $$
$$ 82\,115\,939\,763\,486\,720\,z^6 + 885\,312\,475\,575\,091\,200\,z^5 - 1\,051\,308\,564\,745\,420\,800\,z^4 - $$
$$ 1\,971\,203\,558\,897\,664\,000\,z^3 - 4\,065\,607\,340\,226\,432\,000\,z^2 - 4\,891\,433\,831\,209\,926\,000\,z - $$
$$ \left.\left.\left.1\,528\,573\,072\,253\,101\,875\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right) \Big/ \left(4\,445\,006\,652\,726\,312\,960\,z^{19/4}\right) $$

07.22.03.a7wp.01

$$ {}_1F_2\left(-\frac{17}{4}; \frac{11}{2}, \frac{23}{4}; -z\right) = $$
$$ \left(\sqrt{\pi}\left(68\,719\,476\,736\,z^9 + 22\,999\,549\,870\,080\,z^8 + 2\,317\,204\,649\,410\,560\,z^7 + 82\,115\,939\,763\,486\,720\,z^6 + \right.\right. $$
$$ 885\,312\,475\,575\,091\,200\,z^5 + 1\,051\,308\,564\,745\,420\,800\,z^4 - 1\,971\,203\,558\,897\,664\,000\,z^3 + $$
$$ \left.4\,065\,607\,340\,226\,432\,000\,z^2 - 4\,891\,433\,831\,209\,926\,000\,z + 1\,528\,573\,072\,253\,101\,875\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,294\,967\,296\,z^8 + 1\,436\,666\,560\,512\,z^7 + 144\,557\,526\,220\,800\,z^6 + 5\,105\,670\,181\,355\,520\,z^5 + \right.\right. $$
$$ 54\,425\,619\,319\,357\,440\,z^4 + 57\,111\,288\,075\,878\,400\,z^3 - 122\,187\,456\,371\,635\,200\,z^2 + $$
$$ 255\,717\,661\,884\,048\,000\,z - 285\,146\,027\,390\,235\,375\right)\cos\left(2\sqrt{z}\right) + $$
$$ \left(4\,294\,967\,296\,z^8 + 1\,433\,445\,335\,040\,z^7 + 143\,493\,515\,182\,080\,z^6 + 5\,001\,637\,118\,607\,360\,z^5 + \right. $$
$$ 51\,009\,991\,203\,225\,600\,z^4 + 28\,699\,664\,084\,582\,400\,z^3 - 90\,544\,411\,454\,515\,200\,z^2 + $$
$$ \left.\left.\left.164\,548\,696\,483\,080\,000\,z + 60\,767\,697\,362\,770\,125\right)\sin\left(2\sqrt{z}\right)\right)\right) \Big/ \left(1\,111\,251\,663\,181\,578\,240\,z^{19/4}\right) $$

For fixed z and $a_1 = -\frac{15}{4}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = -\frac{15}{4}$, $b_{1.} = -\frac{11}{2}$

07.22.03.a7wq.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{23}{4};z\right)=\frac{1}{4\,542\,615}\left(\left(1024\,z^4+112\,448\,z^3+1\,985\,760\,z^2+8\,546\,580\,z+4\,542\,615\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(7424\,z^3+281\,232\,z^2+2\,489\,760\,z+4\,542\,615\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.a7wr.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{23}{4};-z\right)=\frac{1}{4\,542\,615}\left(\left(1024\,z^4-112\,448\,z^3+1\,985\,760\,z^2-8\,546\,580\,z+4\,542\,615\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(-7424\,z^3+281\,232\,z^2-2\,489\,760\,z+4\,542\,615\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a7ws.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{21}{4};z\right)=\frac{1}{34\,459\,425\sqrt{2}}\left(\sqrt[4]{z}\left(\left(30\,208\,z^4+2\,403\,840\,z^3+32\,722\,560\,z^2+64\,443\,600\,z+34\,459\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(62\,272\,z^3+1\,890\,720\,z^2+12\,292\,020\,z+11\,486\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(2176\,z^3+225\,264\,z^2+3\,102\,840\,z+11\,486\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7wt.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{21}{4};-z\right)=\frac{1}{34\,459\,425\sqrt{2}}\left(\sqrt[4]{z}\left(\left(30\,208\,z^4-2\,403\,840\,z^3+32\,722\,560\,z^2-64\,443\,600\,z+34\,459\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(62\,272\,z^3-1\,890\,720\,z^2+12\,292\,020\,z-11\,486\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(-2176\,z^3+225\,264\,z^2-3\,102\,840\,z+11\,486\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7wu.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{19}{4};z\right)=\frac{1}{197\,505}\left(7\left(448\,z^3+11\,040\,z^2+52\,380\,z+28\,215\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(128\,z^3+9744\,z^2+103\,320\,z+197\,505\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.a7wv.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{19}{4};-z\right)=\left(-\frac{448\,z^3}{28\,215}+\frac{736\,z^2}{1881}-\frac{388\,z}{209}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-128\,z^3+9744\,z^2-103\,320\,z+197\,505\right)\sin\left(2\sqrt{z}\right)}{197\,505}$$

07.22.03.a7ww.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{4\,922\,775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^4+216\,320z^3+4\,402\,080z^2+9\,055\,800z+4\,922\,775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(10\,688z^3+658\,080z^2+5\,117\,580z+4\,922\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(-256z^3+64\,656z^2+1\,179\,360z+4\,922\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7wx.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{4\,922\,775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^4-216\,320z^3+4\,402\,080z^2-9\,055\,800z+4\,922\,775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\right.\right.$$
$$\sqrt{z}\left(10\,688z^3-658\,080z^2+5\,117\,580z-4\,922\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(256z^3+64\,656z^2-1\,179\,360z+4\,922\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7wy.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{15}{4};z\right)=\left(\frac{64z^3}{10\,395}+\frac{32z^2}{99}+\frac{20z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{495}\sqrt{z}\left(16z^2+240z+495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a7wz.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{15}{4};-z\right)=\left(-\frac{64z^3}{10\,395}+\frac{32z^2}{99}-\frac{20z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\left(16z^2-240z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.a7x0.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{13}{4};z\right)=\frac{1}{289\,575\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(512z^4+2560z^3+234\,240z^2+518\,400z+289\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z^3+25\,440z^2+286\,740z+289\,575\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-128z^3+1968z^2+55\,080z+289\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7x1.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{13}{4};-z\right)=\frac{1}{289\,575\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(512z^4-2560z^3+234\,240z^2-518\,400z+289\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z^3-25\,440z^2+286\,740z-289\,575\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(128z^3+1968z^2-55\,080z+289\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7x2.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{228\,690}\left(e^{-2\sqrt{z}}\left(-256\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}-256\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+256\,e^{4\sqrt{z}}\,z^{7/2}-256\,z^{7/2}+\right.\right.$$
$$64\,e^{4\sqrt{z}}\,z^3+64\,z^3-2592\,e^{4\sqrt{z}}\,z^{5/2}+2592\,z^{5/2}+24\,480\,e^{4\sqrt{z}}\,z^2+24\,480\,z^2-95\,760\,e^{4\sqrt{z}}\,z^{3/2}+$$
$$\left.\left.95\,760\,z^{3/2}+200\,340\,e^{4\sqrt{z}}\,z+200\,340\,z-228\,690\,e^{4\sqrt{z}}\,\sqrt{z}+228\,690\,\sqrt{z}+114\,345\,e^{4\sqrt{z}}+114\,345\right)\right)$$

07.22.03.a7x3.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{11}{4};-z\right)=\frac{1}{114\,345}\left(-512\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+\right.$$
$$\left.2\left(128\,z^3+1296\,z^2-47\,880\,z+114\,345\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-64\,z^3+24\,480\,z^2-200\,340\,z+114\,345\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a7x4.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{9}{4};z\right)=-\frac{1}{22\,275\,\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(256\,z^4+1280\,z^3-14\,880\,z^2-37\,800\,z-22\,275\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\,\sqrt{z}\left(-32\,z^3+480\,z^2+19\,980\,z+22\,275\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-4\,z\left(64\,z^3+336\,z^2+2160\,z+22\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7x5.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{9}{4};-z\right)=$$
$$-\frac{1}{22\,275\,\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256\,z^4-1280\,z^3-14\,880\,z^2+37\,800\,z-22\,275\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\,\sqrt{z}\left(32\,z^3+480\,z^2-19\,980\,z+22\,275\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(64\,z^3-336\,z^2+2160\,z-22\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7x6.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{20\,790}\left(e^{-2\sqrt{z}}\left(-64\,e^{4\sqrt{z}}\,z^{7/2}+64\,z^{7/2}-16\,e^{4\sqrt{z}}\,z^3-16\,z^3+4\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z+165)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+\right.\right.$$
$$4\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z+165)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}-672\,e^{4\sqrt{z}}\,z^{5/2}+672\,z^{5/2}+480\,e^{4\sqrt{z}}\,z^2+480\,z^2-$$
$$\left.\left.5760\,e^{4\sqrt{z}}\,z^{3/2}+5760\,z^{3/2}+16\,740\,e^{4\sqrt{z}}\,z+16\,740\,z-20\,790\,e^{4\sqrt{z}}\,\sqrt{z}+20\,790\,\sqrt{z}+10\,395\,e^{4\sqrt{z}}+10\,395\right)\right)$$

07.22.03.a7x7.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{7}{4};-z\right)=\frac{1}{10\,395}\left(8\,\sqrt{\pi}\,(16\,z-165)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+\right.$$
$$\left.2\left(-32\,z^3+336\,z^2-2880\,z+10\,395\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(16\,z^3+480\,z^2-16\,740\,z+10\,395\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a7x8.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{5}{4};z\right)=\frac{1}{7425\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(128z^4+1960z^3+5760z^2+10\,800z+7425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(16z^3+255z^2+4860z+7425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(32z^3+498z^2+1080z-7425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7x9.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{7425\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^4-1960z^3+5760z^2-10\,800z+7425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(16z^3-255z^2+4860z-7425\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(32z^3-498z^2+1080z+7425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7xa.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{95\,040}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\,z^{7/4}\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)(16z+165)^2-e^{2\sqrt{z}}\sqrt{2\pi}\,z^{7/4}\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)(16z+165)^2+\right.\right.$$
$$4\left(-64z^{7/2}+16z^3-1332z^{5/2}+345z^2-5760z^{3/2}+12\,960z+23\,760\sqrt{z}+\right.$$
$$\left.\left.\left.e^{4\sqrt{z}}\left(64z^{7/2}+16z^3+1332z^{5/2}+345z^2+5760z^{3/2}+12\,960z-23\,760\sqrt{z}+11\,880\right)+11\,880\right)\right)\right)$$

07.22.03.a7xb.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{3}{4};-z\right)=$$
$$\frac{1}{23\,760}\left(2\left(\left(-16z^3+345z^2-12\,960z+11\,880\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(16z^3-333z^2+1440z+5940\right)\sin\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.\sqrt{\pi}\,(165-16z)^2z^{7/4}C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.a7xc.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},-\frac{1}{4};z\right)=\frac{1}{59\,400\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(-2\left(256z^4+6560z^3+49\,965z^2+21\,600z-29\,700\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(256z^3+6720z^2+34\,695z-237\,600\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(256z^3+6624z^2+51\,705z+118\,800\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7xd.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) = \frac{1}{59\,400\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(-512z^4+13\,120z^3-99\,930z^2+43\,200z+59\,400\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(256z^3-6720z^2+34\,695z+237\,600\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(-256z^3+6624z^2-51\,705z+118\,800\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7xe.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) = $$
$$ \frac{1}{6\,082\,560}\left(e^{-2\sqrt{z}}\left(-4\left(-1024z^{7/2}+256z^3-31\,872z^{5/2}+8160z^2-333\,060z^{3/2}+26\,685z-1\,520\,640\sqrt{z}\right.\right.\right. $$
$$ \left.\left. +e^{4\sqrt{z}}\left(1024z^{7/2}+256z^3+31\,872z^{5/2}+8160z^2+333\,060z^{3/2}+26\,685z+1\,520\,640\sqrt{z}-760\,320\right)-760\,320\right)+ $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(4096z^3+126\,720z^2+1\,306\,800z+3\,620\,925\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+ $$
$$ \left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(4096z^3+126\,720z^2+1\,306\,800z+3\,620\,925\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a7xf.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) = \frac{1}{1\,520\,640}\left(\sqrt{\pi}\,z^{3/4}\left(4096z^3-126\,720z^2+1\,306\,800z-3\,620\,925\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right. $$
$$ \left. 2\left(\left(256z^3-8160z^2+26\,685z+760\,320\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^3-7968z^2+83\,265z-380\,160\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a7xg.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) = $$
$$ \frac{1}{13\,305\,600\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(4096z^4+147\,200z^3+1\,881\,840z^2+7\,867\,125z+6\,652\,800\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\right.\right. $$
$$ \left(4096z^3+149\,760z^2+1\,980\,720z+18\,762\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- $$
$$ \left.\left. 2z\left(4096z^3+148\,224z^2+1\,920\,240z+7\,848\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7xh.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{3}{4}; -z\right) = $$
$$ \frac{1}{13\,305\,600\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(4096z^4-147\,200z^3+1\,881\,840z^2-7\,867\,125z+6\,652\,800\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\right.\right. $$
$$ \left(-4096z^3+149\,760z^2-1\,980\,720z+18\,762\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left. 2z\left(4096z^3-148\,224z^2+1\,920\,240z-7\,848\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7xi.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{1\,557\,135\,360\,\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384\,z^{7/2}+4096\,z^3-678\,912\,z^{5/2}+172\,800\,z^2-10\,587\,840\,z^{3/2}+2\,787\,120\,z-56\,158\,740\sqrt{z}\right)+e^{4\sqrt{z}}\left(16\,384\,z^{7/2}+4096\,z^3+678\,912\,z^{5/2}+172\,800\,z^2+10\,587\,840\,z^{3/2}+2\,787\,120\,z+56\,158\,740\sqrt{z}+55\,201\,905\right)+55\,201\,905\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4+2\,703\,360\,z^3+41\,817\,600\,z^2+231\,739\,200\,z+249\,843\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4+2\,703\,360\,z^3+41\,817\,600\,z^2+231\,739\,200\,z+249\,843\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a7xj.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) = \frac{1}{389\,283\,840\,\sqrt[4]{z}}\left(\sqrt{\pi}\left(65\,536\,z^4-2\,703\,360\,z^3+41\,817\,600\,z^2-231\,739\,200\,z+249\,843\,825\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(4096\,z^3-172\,800\,z^2+2\,787\,120\,z-55\,201\,905\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(-4096\,z^3+169\,728\,z^2-2\,646\,960\,z+14\,039\,685\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a7xk.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{7}{4}; z\right) = \frac{1}{1\,277\,337\,600\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(65\,536\,z^4+3\,031\,040\,z^3+54\,397\,440\,z^2+370\,958\,400\,z+351\,506\,925\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(65\,536\,z^4+3\,072\,000\,z^3+56\,401\,920\,z^2+330\,976\,800\,z-861\,485\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(65\,536\,z^4+3\,047\,424\,z^3+55\,180\,800\,z^2+385\,862\,400\,z+861\,485\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7xl.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{7}{4}; -z\right) = \frac{1}{1\,277\,337\,600\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(65\,536\,z^4-3\,031\,040\,z^3+54\,397\,440\,z^2-370\,958\,400\,z+351\,506\,925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-65\,536\,z^4+3\,072\,000\,z^3-56\,401\,920\,z^2+330\,976\,800\,z+861\,485\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(65\,536\,z^4-3\,047\,424\,z^3+55\,180\,800\,z^2-385\,862\,400\,z+861\,485\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7xm.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{9}{4}; z\right) = $$
$$ \frac{1}{99\,656\,663\,040\, z^{5/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-262\,144\, z^{9/2} + 65\,536\, z^4 - 13\,565\,952\, z^{7/2} + 3\,440\,640\, z^3 - 281\,425\,920\, z^{5/2} + \right.\right.\right. $$
$$ 73\,105\,920\, z^2 - 2\,375\,873\,280\, z^{3/2} + 334\,920\,960\, z - 8\,994\,377\,700\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(262\,144\, z^{9/2} + 65\,536\, z^4 + 13\,565\,952\, z^{7/2} + 3\,440\,640\, z^3 + 281\,425\,920\, z^{5/2} + 73\,105\,920\, z^2 + \right. $$
$$ \left.\left.\left. 2\,375\,873\,280\, z^{3/2} + 334\,920\,960\, z + 8\,994\,377\,700\sqrt{z} - 6\,745\,783\,275\right) - 6\,745\,783\,275\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 + 54\,067\,200\, z^4 + 1\,115\,136\,000\, z^3 + 9\,269\,568\,000\, z^2 + 19\,987\,506\,000\, z - 6\,745\,783\,275\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 + 54\,067\,200\, z^4 + 1\,115\,136\,000\, z^3 + \right. $$
$$ \left.\left. 9\,269\,568\,000\, z^2 + 19\,987\,506\,000\, z - 6\,745\,783\,275\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.a7xn.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{9}{4}; -z\right) = \frac{1}{24\,914\,165\,760\, z^{5/4}} $$
$$ \left(\sqrt{\pi}\left(1\,048\,576\, z^5 - 54\,067\,200\, z^4 + 1\,115\,136\,000\, z^3 - 9\,269\,568\,000\, z^2 + 19\,987\,506\,000\, z + 6\,745\,783\,275\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$
$$ 2\sqrt[4]{z}\left(\left(-65\,536\, z^4 + 3\,440\,640\, z^3 - 73\,105\,920\, z^2 + 334\,920\,960\, z + 6\,745\,783\,275\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 4\sqrt{z}\left(65\,536\, z^4 - 3\,391\,488\, z^3 + 70\,356\,480\, z^2 - 593\,968\,320\, z + 2\,248\,594\,425\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a7xo.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{11}{4}; z\right) = \frac{1}{64\,231\,833\,600\sqrt{2}\, z^{5/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576\, z^5 + 59\,310\,080\, z^4 + 1\,370\,480\,640\, z^3 + 13\,154\,572\,800\, z^2 + 35\,397\,766\,800\, z + 24\,983\,083\,125\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(1\,048\,576\, z^5 + 59\,965\,440\, z^4 + 1\,409\,310\,720\, z^3 + 14\,122\,944\,000\, z^2 + \right. $$
$$ 124\,053\,930\,000\, z + 74\,949\,249\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(1\,048\,576\, z^5 + 59\,572\,224\, z^4 + $$
$$ \left.\left. 1\,385\,717\,760\, z^3 + 13\,522\,291\,200\, z^2 + 35\,837\,802\,000\, z - 74\,949\,249\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big) $$

07.22.03.a7xp.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{11}{4}; -z\right) = \frac{1}{64\,231\,833\,600\sqrt{2}\,z^{5/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576 z^5 - 59\,310\,080 z^4 + 1\,370\,480\,640 z^3 - 13\,154\,572\,800 z^2 + 35\,397\,766\,800 z - 24\,983\,083\,125\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-1\,048\,576 z^5 + 59\,965\,440 z^4 - 1\,409\,310\,720 z^3 + 14\,122\,944\,000 z^2 - \right. $$
$$ 124\,053\,930\,000 z + 74\,949\,249\,375\Big) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 - 59\,572\,224 z^4 + \right. $$
$$ \left.\left. 1\,385\,717\,760 z^3 - 13\,522\,291\,200 z^2 + 35\,837\,802\,000 z + 74\,949\,249\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2 \Big) $$

07.22.03.a7xq.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) = \frac{1}{4\,252\,017\,623\,040 z^{9/4}} $$
$$ \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 260\,308\,992 z^{9/2} + 65\,863\,680 z^4 - 6\,741\,196\,800 z^{7/2} + \right.\right.\right. $$
$$ 1\,737\,400\,320 z^3 - 75\,528\,161\,280 z^{5/2} + 20\,381\,391\,360 z^2 - 226\,144\,353\,600 z^{3/2} + 467\,707\,640\,400 z + $$
$$ 1\,394\,128\,543\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 260\,308\,992 z^{9/2} + 65\,863\,680 z^4 + \right. $$
$$ \left. 6\,741\,196\,800 z^{7/2} + 1\,737\,400\,320 z^3 + 75\,528\,161\,280 z^{5/2} + 20\,381\,391\,360 z^2 + 226\,144\,353\,600 z^{3/2} + \right. $$
$$ \left. 467\,707\,640\,400 z - 1\,394\,128\,543\,500\sqrt{z} + 1\,045\,596\,407\,625\right) + 1\,045\,596\,407\,625\Big) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 1\,038\,090\,240 z^5 + 26\,763\,264\,000 z^4 + 296\,626\,176\,000 z^3 + \right. $$
$$ \left. 959\,400\,288\,000 z^2 - 647\,595\,194\,400 z + 1\,045\,596\,407\,625\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 1\,038\,090\,240 z^5 + 26\,763\,264\,000 z^4 + 296\,626\,176\,000 z^3 + \right. $$
$$ \left. \left. 959\,400\,288\,000 z^2 - 647\,595\,194\,400 z + 1\,045\,596\,407\,625\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.a7xr.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) = $$
$$ \frac{1}{1\,063\,004\,405\,760 z^{9/4}}\left(\sqrt{\pi}\left(16\,777\,216 z^6 - 1\,038\,090\,240 z^5 + 26\,763\,264\,000 z^4 - 296\,626\,176\,000 z^3 + \right.\right. $$
$$ 959\,400\,288\,000 z^2 + 647\,595\,194\,400 z + 1\,045\,596\,407\,625\Big) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - $$
$$ 2\sqrt[4]{z}\left(\left(-1\,048\,576 z^5 + 65\,863\,680 z^4 - 1\,737\,400\,320 z^3 + 20\,381\,391\,360 z^2 - 467\,707\,640\,400 z + 1\,045\,596\,407\,625\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(1\,048\,576 z^5 - 65\,077\,248 z^4 + 1\,685\,299\,200 z^3 - \right. $$
$$ \left.\left. 18\,882\,040\,320 z^2 + 56\,536\,088\,400 z + 348\,532\,135\,875\right) \sin\left(2\sqrt{z}\right)\right)\Big) $$

07.22.03.a7xs.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) = \left(\left(2\sqrt{z}\,\left(16\,777\,216 z^6 + 1\,121\,976\,320 z^5 + 31\,713\,853\,440 z^4 + 392\,443\,084\,800 z^3 + 1\,430\,905\,132\,800 z^2 - 3\,997\,293\,300\,000 z - 5\,771\,092\,201\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(16\,777\,216 z^6 + 1\,132\,462\,080 z^5 + 32\,443\,269\,120 z^4 + 414\,343\,987\,200 z^3 + 1\,014\,485\,472\,000 z^2 - 38\,374\,015\,680\,000 z - 17\,313\,276\,605\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,777\,216 z^6 + 1\,126\,170\,624 z^5 + 32\,000\,901\,120 z^4 + 400\,840\,704\,000 z^3 + 1\,543\,782\,240\,000 z^2 + 1\,439\,025\,588\,000 z + 17\,313\,276\,605\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(2\,429\,131\,161\,600\sqrt{2}\, z^{9/4}\right) $$

07.22.03.a7xt.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) = \left(\left(2\sqrt{z}\,\left(16\,777\,216 z^6 - 1\,121\,976\,320 z^5 + 31\,713\,853\,440 z^4 - 392\,443\,084\,800 z^3 + 1\,430\,905\,132\,800 z^2 + 3\,997\,293\,300\,000 z - 5\,771\,092\,201\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,777\,216 z^6 + 1\,132\,462\,080 z^5 - 32\,443\,269\,120 z^4 + 414\,343\,987\,200 z^3 - 1\,014\,485\,472\,000 z^2 - 38\,374\,015\,680\,000 z + 17\,313\,276\,605\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216 z^6 - 1\,126\,170\,624 z^5 + 32\,000\,901\,120 z^4 - 400\,840\,704\,000 z^3 + 1\,543\,782\,240\,000 z^2 - 1\,439\,025\,588\,000 z + 17\,313\,276\,605\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(2\,429\,131\,161\,600\sqrt{2}\, z^{9/4}\right) $$

07.22.03.a7xu.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) = \left(13 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-67\,108\,864 z^{13/2} + 16\,777\,216 z^6 - 4\,857\,004\,032 z^{11/2} + 1\,226\,833\,920 z^5 - 150\,810\,132\,480 z^{9/2} + 38\,665\,912\,320 z^4 - 2\,106\,641\,940\,480 z^{7/2} + 559\,246\,786\,560 z^3 - 9\,419\,566\,464\,000 z^{5/2} - 575\,640\,172\,800 z^2 - 44\,612\,113\,392\,000 z^{3/2} - 234\,213\,595\,308\,000 z - 439\,150\,491\,202\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 + 4\,857\,004\,032 z^{11/2} + 1\,226\,833\,920 z^5 + 150\,810\,132\,480 z^{9/2} + 38\,665\,912\,320 z^4 + 2\,106\,641\,940\,480 z^{7/2} + 559\,246\,786\,560 z^3 + 9\,419\,566\,464\,000 z^{5/2} - 575\,640\,172\,800 z^2 + 44\,612\,113\,392\,000 z^{3/2} - 234\,213\,595\,308\,000 z + 439\,150\,491\,202\,500\sqrt{z} - 329\,362\,868\,401\,875\right) - 329\,362\,868\,401\,875\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456 z^7 + 19\,377\,684\,480 z^6 + 599\,497\,113\,600 z^5 + 8\,305\,532\,928\,000 z^4 + 35\,817\,610\,752\,000 z^3 - 36\,265\,330\,886\,400 z^2 + 117\,106\,797\,654\,000 z - 329\,362\,868\,401\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456 z^7 + 19\,377\,684\,480 z^6 + 599\,497\,113\,600 z^5 + 8\,305\,532\,928\,000 z^4 + 35\,817\,610\,752\,000 z^3 - 36\,265\,330\,886\,400 z^2 + 117\,106\,797\,654\,000 z - 329\,362\,868\,401\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big) \Big/ \left(1\,904\,903\,895\,121\,920 z^{13/4}\right) $$

07.22.03.a7xv.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) = \frac{1}{476\,225\,973\,780\,480\, z^{13/4}}\left(13\left(\sqrt{\pi}\,\left(268\,435\,456\, z^7 - 19\,377\,684\,480\, z^6 + 599\,497\,113\,600\, z^5 - 8\,305\,532\,928\,000\, z^4 + 35\,817\,610\,752\,000\, z^3 + 36\,265\,330\,886\,400\, z^2 + 117\,106\,797\,654\,000\, z + 329\,362\,868\,401\,875\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\,\left(\left(-16\,777\,216\, z^6 + 1\,226\,833\,920\, z^5 - 38\,665\,912\,320\, z^4 + 559\,246\,786\,560\, z^3 + 575\,640\,172\,800\, z^2 - 234\,213\,595\,308\,000\, z + 329\,362\,868\,401\,875\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(16\,777\,216\, z^6 - 1\,214\,251\,008\, z^5 + 37\,702\,533\,120\, z^4 - 526\,660\,485\,120\, z^3 + 2\,354\,891\,616\,000\, z^2 - 11\,153\,028\,348\,000\, z + 109\,787\,622\,800\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a7xw.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) = \left(\left(2\sqrt{z}\,\left(268\,435\,456\, z^7 + 20\,719\,861\,760\, z^6 + 692\,547\,747\,840\, z^5 + 10\,491\,302\,707\,200\, z^4 + 49\,631\,266\,713\,600\, z^3 - 49\,886\,220\,384\,000\, z^2 + 1\,991\,851\,251\,390\,000\, z + 2\,348\,834\,526\,163\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(268\,435\,456\, z^7 + 20\,887\,633\,920\, z^6 + 705\,948\,549\,120\, z^5 + 10\,962\,070\,732\,800\, z^4 + 57\,634\,536\,960\,000\, z^3 + 1\,369\,952\,359\,776\,000\, z^2 + 16\,713\,083\,016\,630\,000\, z + 7\,046\,503\,578\,489\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(268\,435\,456\, z^7 + 20\,786\,970\,624\, z^6 + 697\,832\,570\,880\, z^5 + 10\,673\,027\,481\,600\, z^4 + 52\,567\,764\,480\,000\, z^3 - 75\,468\,897\,504\,000\, z^2 - 1\,680\,542\,049\,186\,000\, z - 7\,046\,503\,578\,489\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(77\,732\,197\,171\,200\,\sqrt{2}\, z^{13/4}\right) $$

07.22.03.a7xx.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) = \left(\left(2\sqrt{z}\,\left(268\,435\,456\, z^7 - 20\,719\,861\,760\, z^6 + 692\,547\,747\,840\, z^5 - 10\,491\,302\,707\,200\, z^4 + 49\,631\,266\,713\,600\, z^3 + 49\,886\,220\,384\,000\, z^2 + 1\,991\,851\,251\,390\,000\, z - 2\,348\,834\,526\,163\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-268\,435\,456\, z^7 + 20\,887\,633\,920\, z^6 - 705\,948\,549\,120\, z^5 + 10\,962\,070\,732\,800\, z^4 - 57\,634\,536\,960\,000\, z^3 + 1\,369\,952\,359\,776\,000\, z^2 - 16\,713\,083\,016\,630\,000\, z + 7\,046\,503\,578\,489\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(268\,435\,456\, z^7 - 20\,786\,970\,624\, z^6 + 697\,832\,570\,880\, z^5 - 10\,673\,027\,481\,600\, z^4 + 52\,567\,764\,480\,000\, z^3 + 75\,468\,897\,504\,000\, z^2 - 1\,680\,542\,049\,186\,000\, z + 7\,046\,503\,578\,489\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(77\,732\,197\,171\,200\,\sqrt{2}\, z^{13/4}\right) $$

07.22.03.a7xy.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) =$$

$$\left(221\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\, \left(-1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 - 88\,785\,027\,072\, z^{13/2} + 22\,397\,583\,360\, z^6 - \right.\right.\right.$$
$$3\,214\,367\,784\,960\, z^{11/2} + 821\,082\,193\,920\, z^5 - 53\,793\,965\,998\,080\, z^{9/2} + 14\,128\,829\,890\,560\, z^4 -$$
$$298\,076\,947\,660\,800\, z^{7/2} + 87\,915\,953\,664\,000\, z^3 + 746\,238\,987\,648\,000\, z^{5/2} + 7\,762\,507\,730\,208\,000\, z^2 +$$
$$45\,571\,273\,829\,928\,000\, z^{3/2} + 135\,960\,992\,076\,294\,000\, z + 222\,649\,299\,039\,667\,500\, \sqrt{z} +$$
$$e^{4\sqrt{z}} \left(1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 + 88\,785\,027\,072\, z^{13/2} + 22\,397\,583\,360\, z^6 + \right.$$
$$3\,214\,367\,784\,960\, z^{11/2} + 821\,082\,193\,920\, z^5 + 53\,793\,965\,998\,080\, z^{9/2} + 14\,128\,829\,890\,560\, z^4 +$$
$$298\,076\,947\,660\,800\, z^{7/2} + 87\,915\,953\,664\,000\, z^3 - 746\,238\,987\,648\,000\, z^{5/2} +$$
$$7\,762\,507\,730\,208\,000\, z^2 - 45\,571\,273\,829\,928\,000\, z^{3/2} + 135\,960\,992\,076\,294\,000\, z -$$
$$\left.\left.\left.222\,649\,299\,039\,667\,500\, \sqrt{z} + 166\,986\,974\,279\,750\,625\right) + 166\,986\,974\,279\,750\,625\right) +$$
$$e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(4\,294\,967\,296\, z^8 + 354\,334\,801\,920\, z^7 + 12\,789\,271\,756\,800\, z^6 + 212\,621\,642\,956\,800\, z^5 + \right.$$
$$1\,146\,163\,544\,064\,000\, z^4 - 1\,547\,320\,784\,486\,400\, z^3 + 7\,494\,835\,049\,856\,000\, z^2 -$$
$$\left.42\,158\,447\,155\,440\,000\, z + 166\,986\,974\,279\,750\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) +$$
$$e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(4\,294\,967\,296\, z^8 + 354\,334\,801\,920\, z^7 + 12\,789\,271\,756\,800\, z^6 + 212\,621\,642\,956\,800\, z^5 + \right.$$
$$1\,146\,163\,544\,064\,000\, z^4 - 1\,547\,320\,784\,486\,400\, z^3 + 7\,494\,835\,049\,856\,000\, z^2 -$$
$$\left.\left.\left.42\,158\,447\,155\,440\,000\, z + 166\,986\,974\,279\,750\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) \Big/ \left(975\,310\,794\,302\,423\,040\, z^{17/4}\right)$$

07.22.03.a7xz.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) =$$

$$\left(221 \left(\sqrt{\pi}\, \left(4\,294\,967\,296\, z^8 - 354\,334\,801\,920\, z^7 + 12\,789\,271\,756\,800\, z^6 - 212\,621\,642\,956\,800\, z^5 + \right.\right.\right.$$
$$1\,146\,163\,544\,064\,000\, z^4 + 1\,547\,320\,784\,486\,400\, z^3 + 7\,494\,835\,049\,856\,000\, z^2 +$$
$$\left.42\,158\,447\,155\,440\,000\, z + 166\,986\,974\,279\,750\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) -$$
$$2\sqrt[4]{z}\, \left(\left(-268\,435\,456\, z^7 + 22\,397\,583\,360\, z^6 - 821\,082\,193\,920\, z^5 + 14\,128\,829\,890\,560\, z^4 - 87\,915\,953\,664\,000\, z^3 + \right.\right.$$
$$\left.7\,762\,507\,730\,208\,000\, z^2 - 135\,960\,992\,076\,294\,000\, z + 166\,986\,974\,279\,750\,625\right) \cos\left(2\sqrt{z}\right) +$$
$$4\sqrt{z}\, \left(268\,435\,456\, z^7 - 22\,196\,256\,768\, z^6 + 803\,591\,946\,240\, z^5 - 13\,448\,491\,499\,520\, z^4 + \right.$$
$$74\,519\,236\,915\,200\, z^3 + 186\,559\,746\,912\,000\, z^2 - 11\,392\,818\,457\,482\,000\, z +$$
$$\left.\left.\left.\left.55\,662\,324\,759\,916\,875\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) \Big/ \left(243\,827\,698\,575\,605\,760\, z^{17/4}\right)$$

07.22.03.a7y0.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},\frac{23}{4};z\right)=$$

$$\left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+375\,809\,638\,400\,z^7+14\,499\,541\,155\,840\,z^6+259\,864\,186\,060\,800\,z^5+1\,510\,623\,402\,393\,600\right.\right.\right.$$
$$z^4-2\,674\,242\,514\,944\,000\,z^3-42\,211\,417\,248\,000\,000\,z^2-1\,331\,453\,628\,545\,040\,000\,z-$$
$$1\,444\,533\,233\,590\,321\,875\Big)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4\,294\,967\,296\,z^8-378\,493\,992\,960\,z^7-\right.$$
$$14\,741\,636\,382\,720\,z^6-269\,607\,606\,681\,600\,z^5-1\,702\,435\,553\,280\,000\,z^4+12\,975\,533\,835\,264\,000\,z^3+$$
$$1\,547\,892\,670\,484\,160\,000\,z^2+10\,597\,941\,382\,048\,020\,000\,z+4\,333\,599\,700\,770\,965\,625\Big)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+376\,883\,380\,224\,z^7+14\,595\,171\,287\,040\,z^6+263\,643\,778\,252\,800\,z^5+\right.$$
$$1\,582\,025\,195\,520\,000\,z^4-2\,159\,965\,108\,224\,000\,z^3+70\,408\,643\,969\,664\,000\,z^2+1\,352\,928\,687\,069\,960\,000\,z+$$
$$\left.\left.\left.4\,333\,599\,700\,770\,965\,625\Big)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(42\,286\,315\,261\,132\,800\,\sqrt{2}\;z^{17/4}\right)$$

07.22.03.a7y1.01

$${}_1F_2\left(-\frac{15}{4};-\frac{11}{2},\frac{23}{4};-z\right)=$$

$$\left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-375\,809\,638\,400\,z^7+14\,499\,541\,155\,840\,z^6-259\,864\,186\,060\,800\,z^5+\right.\right.\right.$$
$$1\,510\,623\,402\,393\,600\,z^4+2\,674\,242\,514\,944\,000\,z^3-42\,211\,417\,248\,000\,000\,z^2+$$
$$1\,331\,453\,628\,545\,040\,000\,z-1\,444\,533\,233\,590\,321\,875\Big)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(-4\,294\,967\,296\,z^8+378\,493\,992\,960\,z^7-14\,741\,636\,382\,720\,z^6+269\,607\,606\,681\,600\,z^5-\right.$$
$$1\,702\,435\,553\,280\,000\,z^4-12\,975\,533\,835\,264\,000\,z^3+1\,547\,892\,670\,484\,160\,000\,z^2-$$
$$10\,597\,941\,382\,048\,020\,000\,z+4\,333\,599\,700\,770\,965\,625\Big)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-376\,883\,380\,224\,z^7+14\,595\,171\,287\,040\,z^6-263\,643\,778\,252\,800\,z^5+\right.$$
$$1\,582\,025\,195\,520\,000\,z^4+2\,159\,965\,108\,224\,000\,z^3+70\,408\,643\,969\,664\,000\,z^2-1\,352\,928\,687\,069\,960\,000\,z+$$
$$\left.\left.\left.4\,333\,599\,700\,770\,965\,625\Big)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(42\,286\,315\,261\,132\,800\,\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1=-\frac{15}{4}$, $b_{1.}=-\frac{9}{2}$

07.22.03.a7y2.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{23}{4};z\right)=\frac{1}{412\,965}$$
$$\left(5\left(1280\,z^3+32\,112\,z^2+153\,216\,z+82\,593\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(256\,z^3+20\,112\,z^2+215\,460\,z+412\,965\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.a7y3.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{23}{4};-z\right)=\frac{1}{412\,965}$$
$$\left(2\sqrt{z}\,\left(-256\,z^3+20\,112\,z^2-215\,460\,z+412\,965\right)\sin\left(2\sqrt{z}\right)-5\left(1280\,z^3-32\,112\,z^2+153\,216\,z-82\,593\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a7y4.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{21\,928\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096z^4+991\,680z^3+19\,674\,720z^2+40\,376\,700z+21\,928\,725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(49\,792z^3+2\,967\,120z^2+22\,833\,720z+21\,928\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(-1024z^3+293\,904z^2+5\,290\,740z+21\,928\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7y5.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{21\,928\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096z^4-991\,680z^3+19\,674\,720z^2-40\,376\,700z+21\,928\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(49\,792z^3-2\,967\,120z^2+22\,833\,720z-21\,928\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(1024z^3+293\,904z^2-5\,290\,740z+21\,928\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7y6.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{19}{4};z\right)=\frac{\left(128z^3+6000z^2+32\,760z+17\,955\right)\cosh\left(2\sqrt{z}\right)-6\sqrt{z}\left(208z^2+2940z+5985\right)\sinh\left(2\sqrt{z}\right)}{17\,955}$$

07.22.03.a7y7.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{19}{4};-z\right)=\left(-\frac{128z^3}{17\,955}+\frac{400z^2}{1197}-\frac{104z}{57}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(208z^2-2940z+5985\right)\sin\left(2\sqrt{z}\right)}{5985}$$

07.22.03.a7y8.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{3\,132\,675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^4+53\,440z^3+2\,604\,960z^2+5\,651\,100z+3\,132\,675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^3+311\,760z^2+\right.\right.\right.$$
$$\left.\left.\left.3\,144\,960z+3\,132\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-512z^3+23\,472z^2+638\,820z+3\,132\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7y9.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{3\,132\,675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^4-53\,440z^3+2\,604\,960z^2-5\,651\,100z+3\,132\,675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^3-311\,760z^2+\right.\right.\right.$$
$$\left.\left.\left.3\,144\,960z-3\,132\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(512z^3+23\,472z^2-638\,820z+3\,132\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7ya.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{15}{4};z\right)=\left(\frac{16z^2}{63}+\frac{16z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{945}\sqrt{z}\left(16z^2+420z+945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a7yb.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{15}{4};-z\right)=\left(\frac{16z^2}{63}-\frac{16z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\left(16z^2-420z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.a7yc.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{13}{4};z\right)=\frac{1}{184\,275\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(1024z^4-3520z^3+134\,880z^2+321\,300z+184\,275\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(128z^3+8880z^2+173\,880z+184\,275\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-256z^3+816z^2+26\,460z+184\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7yd.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{13}{4};-z\right)=\frac{1}{184\,275\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(1024z^4+3520z^3+134\,880z^2-321\,300z+184\,275\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-128z^3+8880z^2-173\,880z+184\,275\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(256z^3+816z^2-26\,460z+184\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7ye.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{145\,530}\left(e^{-2\sqrt{z}}\left(-512e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}-512e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+512e^{4\sqrt{z}}z^{7/2}-\right.\right.$$
$$512z^{7/2}+128e^{4\sqrt{z}}z^3+128z^3+96e^{4\sqrt{z}}z^{5/2}-96z^{5/2}+9360e^{4\sqrt{z}}z^2+9360z^2-52\,920e^{4\sqrt{z}}z^{3/2}+$$
$$\left.\left.52\,920z^{3/2}+123\,480e^{4\sqrt{z}}z+123\,480z-145\,530e^{4\sqrt{z}}\sqrt{z}+145\,530\sqrt{z}+72\,765e^{4\sqrt{z}}+72\,765\right)\right)$$

07.22.03.a7yf.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{11}{4};-z\right)=\frac{1}{72\,765}\left(-1024\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+\right.$$
$$\left.2\left(256z^3-48z^2-26\,460z+72\,765\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-128z^3+9360z^2-123\,480z+72\,765\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a7yg.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{14\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-512z^4-1600z^3+8160z^2+23\,100z+14\,175\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(64z^3+240z^2-11\,760z-14\,175\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(128z^3+432z^2+420z+14\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7yh.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{9}{4};-z\right)=$$
$$-\frac{1}{14\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^4-1600z^3-8160z^2+23\,100z-14\,175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-64z^3+240z^2+11\,760z-14\,175\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(128z^3-432z^2+420z-14\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7yi.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{13\,230}\left(e^{-2\sqrt{z}}\left(-128e^{4\sqrt{z}}z^{7/2}+128z^{7/2}-32e^{4\sqrt{z}}z^3-32z^3+8e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+105)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+\right.\right.$$
$$8e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+105)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-864e^{4\sqrt{z}}z^{5/2}+864z^{5/2}-240e^{4\sqrt{z}}z^2-240z^2-$$
$$\left.\left.2520e^{4\sqrt{z}}z^{3/2}+2520z^{3/2}+10\,080e^{4\sqrt{z}}z+10\,080z-13\,230e^{4\sqrt{z}}\sqrt{z}+13\,230\sqrt{z}+6615e^{4\sqrt{z}}+6615\right)\right)$$

07.22.03.a7yj.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{7}{4};-z\right)=\frac{1}{6615}\left(16\sqrt{\pi}\,(16z-105)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+\right.$$
$$\left.2\left(-64z^3+432z^2-1260z+6615\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(32z^3-240z^2-10\,080z+6615\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a7yk.01

$${}_1F_2\left(-\frac{15}{4};-\frac{9}{2},-\frac{5}{4};z\right)=\frac{1}{4725\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(256z^4+2480z^3+4320z^2+6300z+4725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(32z^3+330z^2+2520z+4725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(64z^3+636z^2+1260z-4725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7yl.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, -\frac{5}{4}; -z\right) = \frac{1}{4725\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(256z^4 - 2480z^3 + 4320z^2 - 6300z + 4725\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(32z^3 - 330z^2 + 2520z - 4725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. 4z\left(64z^3 - 636z^2 + 1260z + 4725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7ym.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) = $$
$$ \frac{1}{30\,240}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 + 3360z + 12\,705\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} - e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 + 3360z + 12\,705\right)\right.\right. $$
$$ \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} + 4\left(-64z^{7/2} + 16z^3 - 852z^{5/2} + 225z^2 - 3360z^{3/2} + 3360z + 7560\sqrt{z} + \right. $$
$$ \left.\left.\left. e^{4\sqrt{z}}\left(64z^{7/2} + 16z^3 + 852z^{5/2} + 225z^2 + 3360z^{3/2} + 3360z - 7560\sqrt{z} + 3780\right) + 3780\right)\right)\right) $$

07.22.03.a7yn.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{1}{7560}\left(\sqrt{\pi}\left(-256z^2 + 3360z - 12\,705\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} + \right. $$
$$ \left. 2\left(\left(-16z^3 + 225z^2 - 3360z + 3780\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(16z^3 - 213z^2 + 840z + 1890\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a7yo.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) = $$
$$ \frac{1}{18\,900\sqrt{2}}\left(\sqrt[4]{z}\left(-2\left(256z^4 + 4160z^3 + 23\,115z^2 + 12\,600z - 9450\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(256z^3 + 4320z^2 + 26\,145z - 75\,600\right)\right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(256z^3 + 4224z^2 + 24\,255z + 37\,800\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7yp.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) = $$
$$ \frac{1}{18\,900\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-512z^4 + 8320z^3 - 46\,230z^2 + 25\,200z + 18\,900\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(256z^3 - 4320z^2 + 26\,145z + 75\,600\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(-256z^3 + 4224z^2 - 24\,255z + 37\,800\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7yq.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) = \frac{1}{1\,935\,360}\left(e^{-2\sqrt{z}}\left(-4\left(-1024 z^{7/2} + 256 z^3 - 20\,352 z^{5/2} + 5280 z^2 - 156\,660 z^{3/2} + 43\,785 z - 483\,840\sqrt{z} + e^{4\sqrt{z}}\right.\right.\right. \left.\left.\left.\left(1024 z^{7/2} + 256 z^3 + 20\,352 z^{5/2} + 5280 z^2 + 156\,660 z^{3/2} + 43\,785 z + 483\,840\sqrt{z} - 241\,920\right) - 241\,920\right) + e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(4096 z^3 + 80\,640 z^2 + 609\,840 z + 1\,334\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(4096 z^3 + 80\,640 z^2 + 609\,840 z + 1\,334\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a7yr.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) = \frac{1}{483\,840}\left(2\left(256 z^3 - 5280 z^2 + 43\,785 z + 241\,920\right)\cos\left(2\sqrt{z}\right) + \sqrt{\pi}\, z^{3/4}\left(4096 z^3 - 80\,640 z^2 + 609\,840 z - 1\,334\,025\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 8\sqrt{z}\left(-256 z^3 + 5088 z^2 - 39\,165 z + 120\,960\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a7ys.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) = \frac{1}{4\,233\,600\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(4096 z^4 + 93\,440 z^3 + 873\,840 z^2 + 2\,756\,775 z + 2\,116\,800\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(4096 z^3 + 96\,000 z^2 + 939\,120 z + 5\,447\,925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2 z\left(4096 z^3 + 94\,464 z^2 + 898\,800 z + 3\,019\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7yt.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) = \frac{1}{4\,233\,600\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(4096 z^4 - 93\,440 z^3 + 873\,840 z^2 - 2\,756\,775 z + 2\,116\,800\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-4096 z^3 + 96\,000 z^2 - 939\,120 z + 5\,447\,925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2 z\left(4096 z^3 - 94\,464 z^2 + 898\,800 z - 3\,019\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7yu.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) = \frac{1}{495\,452\,160\,\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384\,z^{7/2}+4096\,z^3-433\,152\,z^{5/2}+111\,360\,z^2-4\,966\,080\,z^{3/2}+1\,335\,600\,z-22\,477\,140\sqrt{z}+e^{4\sqrt{z}}\left(16\,384\,z^{7/2}+4096\,z^3+433\,152\,z^{5/2}+111\,360\,z^2+4\,966\,080\,z^{3/2}+1\,335\,600\,z+22\,477\,140\sqrt{z}+14\,107\,905\right)+14\,107\,905\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4+1\,720\,320\,z^3+19\,514\,880\,z^2+85\,377\,600\,z+76\,039\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4+1\,720\,320\,z^3+19\,514\,880\,z^2+85\,377\,600\,z+76\,039\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a7yv.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{5}{4}; -z\right) = \frac{1}{123\,863\,040\,\sqrt[4]{z}}\left(\sqrt{\pi}\left(65\,536\,z^4-1\,720\,320\,z^3+19\,514\,880\,z^2-85\,377\,600\,z+76\,039\,425\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(4096\,z^3-111\,360\,z^2+1\,335\,600\,z-14\,107\,905\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(-4096\,z^3+108\,288\,z^2-1\,241\,520\,z+5\,619\,285\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a7yw.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{7}{4}; z\right) = \frac{1}{406\,425\,600\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(65\,536\,z^4+1\,925\,120\,z^3+25\,297\,920\,z^2+135\,626\,400\,z+122\,807\,475\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(65\,536\,z^4+1\,966\,080\,z^3+26\,611\,200\,z^2+155\,433\,600\,z-241\,215\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(65\,536\,z^4+1\,941\,504\,z^3+25\,804\,800\,z^2+142\,823\,520\,z+241\,215\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7yx.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{7}{4}; -z\right) = \frac{1}{406\,425\,600\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(65\,536\,z^4-1\,925\,120\,z^3+25\,297\,920\,z^2-135\,626\,400\,z+122\,807\,475\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-65\,536\,z^4+1\,966\,080\,z^3-26\,611\,200\,z^2+155\,433\,600\,z+241\,215\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(65\,536\,z^4-1\,941\,504\,z^3+25\,804\,800\,z^2-142\,823\,520\,z+241\,215\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7yy.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{9}{4}; z\right) = \frac{1}{31\,708\,938\,240\, z^{5/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-262\,144\, z^{9/2} + 65\,536\, z^4 - 8\,650\,752\, z^{7/2} + 2\,211\,840\, z^3 - 131\,819\,520\, z^{5/2} + 34\,782\,720\, z^2 - 882\,362\,880\, z^{3/2} + 254\,036\,160\, z + 2\,331\,875\,700\sqrt{z} + e^{4\sqrt{z}}\left(262\,144\, z^{9/2} + 65\,536\, z^4 + 8\,650\,752\, z^{7/2} + 2\,211\,840\, z^3 + 131\,819\,520\, z^{5/2} + 34\,782\,720\, z^2 + 882\,362\,880\, z^{3/2} + 254\,036\,160\, z + 2\,331\,875\,700\sqrt{z} - 1\,748\,906\,775\right) - 1\,748\,906\,775\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 + 34\,406\,400\, z^4 + 520\,396\,800\, z^3 + 3\,415\,104\,000\, z^2 + 6\,083\,154\,000\, z - 1\,748\,906\,775\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 + 34\,406\,400\, z^4 + 520\,396\,800\, z^3 + 3\,415\,104\,000\, z^2 + 6\,083\,154\,000\, z - 1\,748\,906\,775\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a7yz.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = \frac{1}{7\,927\,234\,560\, z^{5/4}} \left(\sqrt{\pi}\left(1\,048\,576\, z^5 - 34\,406\,400\, z^4 + 520\,396\,800\, z^3 - 3\,415\,104\,000\, z^2 + 6\,083\,154\,000\, z + 1\,748\,906\,775\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(-65\,536\, z^4 + 2\,211\,840\, z^3 - 34\,782\,720\, z^2 + 254\,036\,160\, z + 1\,748\,906\,775\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(65\,536\, z^4 - 2\,162\,688\, z^3 + 32\,954\,880\, z^2 - 220\,590\,720\, z + 582\,968\,925\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a7z0.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = \frac{1}{20\,437\,401\,600\sqrt{2}\, z^{5/4}} \left(\left(2\sqrt{z}\left(1\,048\,576\, z^5 + 37\,683\,200\, z^4 + 637\,870\,080\, z^3 + 4\,821\,465\,600\, z^2 + 10\,034\,917\,200\, z + 6\,030\,399\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(1\,048\,576\, z^5 + 38\,338\,560\, z^4 + 663\,183\,360\, z^3 + 5\,295\,628\,800\, z^2 + 27\,016\,189\,200\, z + 18\,091\,198\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(1\,048\,576\, z^5 + 37\,945\,344\, z^4 + 647\,700\,480\, z^3 + 4\,997\,583\,360\, z^2 + 11\,578\,366\,800\, z - 18\,091\,198\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7z1.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = \frac{1}{20\,437\,401\,600\sqrt{2}\, z^{5/4}} \left(\left(2\sqrt{z}\left(1\,048\,576\, z^5 - 37\,683\,200\, z^4 + 637\,870\,080\, z^3 - 4\,821\,465\,600\, z^2 + 10\,034\,917\,200\, z - 6\,030\,399\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-1\,048\,576\, z^5 + 38\,338\,560\, z^4 - 663\,183\,360\, z^3 + 5\,295\,628\,800\, z^2 - 27\,016\,189\,200\, z + 18\,091\,198\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576\, z^5 - 37\,945\,344\, z^4 + 647\,700\,480\, z^3 - 4\,997\,583\,360\, z^2 + 11\,578\,366\,800\, z + 18\,091\,198\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7z2.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = $$
$$ \frac{1}{1\,352\,914\,698\,240\,z^{9/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-165\,937\,152\,z^{9/2}+42\,270\,720\,z^4-\right.\right.\right. $$
$$ 3\,155\,066\,880\,z^{7/2}+823\,173\,120\,z^3-27\,984\,660\,480\,z^{5/2}+7\,749\,020\,160\,z^2-79\,950\,024\,000\,z^{3/2}+ $$
$$ 83\,947\,525\,200\,z+314\,803\,219\,500\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5+165\,937\,152\,z^{9/2}+\right. $$
$$ 42\,270\,720\,z^4+3\,155\,066\,880\,z^{7/2}+823\,173\,120\,z^3+27\,984\,660\,480\,z^{5/2}+7\,749\,020\,160\,z^2+ $$
$$ \left.79\,950\,024\,000\,z^{3/2}+83\,947\,525\,200\,z-314\,803\,219\,500\sqrt{z}+236\,102\,414\,625\right)+236\,102\,414\,625\Big)+ $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6+660\,602\,880\,z^5+12\,489\,523\,200\,z^4+109\,283\,328\,000\,z^3+\right. $$
$$ \left.291\,991\,392\,000\,z^2-167\,895\,050\,400\,z+236\,102\,414\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+ $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6+660\,602\,880\,z^5+12\,489\,523\,200\,z^4+109\,283\,328\,000\,z^3+\right. $$
$$ \left.\left.\left.291\,991\,392\,000\,z^2-167\,895\,050\,400\,z+236\,102\,414\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a7z3.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = $$
$$ \frac{1}{338\,228\,674\,560\,z^{9/4}}\left(\sqrt{\pi}\left(16\,777\,216\,z^6-660\,602\,880\,z^5+12\,489\,523\,200\,z^4-109\,283\,328\,000\,z^3+291\,991\,392\,000\,z^2+\right.\right. $$
$$ \left.167\,895\,050\,400\,z+236\,102\,414\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)- $$
$$ 2\sqrt[4]{z}\left(\left(-1\,048\,576\,z^5+42\,270\,720\,z^4-823\,173\,120\,z^3+7\,749\,020\,160\,z^2-83\,947\,525\,200\,z+236\,102\,414\,625\right)\right. $$
$$ \cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(1\,048\,576\,z^5-41\,484\,288\,z^4+788\,766\,720\,z^3-\right. $$
$$ \left.\left.\left.6\,996\,165\,120\,z^2+19\,987\,506\,000\,z+78\,700\,804\,875\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a7z4.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{15}{4}; z\right) = $$
$$ \frac{1}{772\,905\,369\,600\sqrt{2}\,z^{9/4}}\left(\left(2\sqrt{z}\left(16\,777\,216\,z^6+713\,031\,680\,z^5+14\,768\,209\,920\,z^4+144\,025\,190\,400\,z^3+\right.\right.\right. $$
$$ \left.430\,026\,105\,600\,z^2-771\,891\,120\,000\,z-1\,224\,171\,073\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- $$
$$ \left(16\,777\,216\,z^6+723\,517\,440\,z^5+15\,242\,035\,200\,z^4+154\,648\,166\,400\,z^3+555\,761\,606\,400\,z^2-7\,911\,883\,980\,000\,z-\right. $$
$$ 3\,672\,513\,219\,375\Big)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(16\,777\,216\,z^6+717\,225\,984\,z^5+14\,953\,021\,440\,z^4+\right. $$
$$ \left.\left.\left.148\,026\,654\,720\,z^3+473\,426\,553\,600\,z^2+77\,189\,112\,000\,z+3\,672\,513\,219\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7z5.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{15}{4}; -z\right) = \frac{1}{772\,905\,369\,600\sqrt{2}\,z^{9/4}} $$
$$ \left(\left(2\sqrt{z}\left(16\,777\,216 z^6 - 713\,031\,680 z^5 + 14\,768\,209\,920 z^4 - 144\,025\,190\,400 z^3 + 430\,026\,105\,600 z^2 + 771\,891\,120\,000 z - \right.\right.\right. $$
$$ \left.\left.\left. 1\,224\,171\,073\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,777\,216 z^6 + 723\,517\,440 z^5 - 15\,242\,035\,200 z^4 + \right.\right.\right. $$
$$ \left.\left.\left. 154\,648\,166\,400 z^3 - 555\,761\,606\,400 z^2 - 7\,911\,883\,980\,000 z + 3\,672\,513\,219\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. 2\sqrt{z}\left(16\,777\,216 z^6 - 717\,225\,984 z^5 + 14\,953\,021\,440 z^4 - 148\,026\,654\,720 z^3 + \right.\right.\right. $$
$$ \left.\left.\left. 473\,426\,553\,600 z^2 - 77\,189\,112\,000 z + 3\,672\,513\,219\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7z6.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{17}{4}; z\right) = $$
$$ \frac{1}{606\,105\,784\,811\,520 z^{13/4}}\left(13 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-67\,108\,864 z^{13/2} + 16\,777\,216 z^6 - 3\,095\,396\,352 z^{11/2} + \right.\right.\right. $$
$$ 786\,432\,000 z^5 - 70\,546\,882\,560 z^{9/2} + 18\,269\,798\,400 z^4 - 779\,532\,042\,240 z^{7/2} + 211\,036\,815\,360 z^3 - $$
$$ 2\,907\,273\,600\,000 z^{5/2} + 959\,400\,288\,000 z^2 - 4\,892\,941\,468\,800 z^{3/2} - 43\,820\,608\,154\,400 z - $$
$$ \left.\left. 87\,830\,098\,240\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 + 3\,095\,396\,352 z^{11/2} + \right.\right.\right. $$
$$ 786\,432\,000 z^5 + 70\,546\,882\,560 z^{9/2} + 18\,269\,798\,400 z^4 + 779\,532\,042\,240 z^{7/2} + $$
$$ 211\,036\,815\,360 z^3 + 2\,907\,273\,600\,000 z^{5/2} + 959\,400\,288\,000 z^2 + 4\,892\,941\,468\,800 z^{3/2} - $$
$$ \left.\left.\left. 43\,820\,608\,154\,400 z + 87\,830\,098\,240\,500\sqrt{z} - 65\,872\,573\,680\,375\right) - 65\,872\,573\,680\,375\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 + 12\,331\,253\,760 z^6 + 279\,765\,319\,680 z^5 + 3\,059\,933\,184\,000 z^4 + \right. $$
$$ \left. 10\,901\,011\,968\,000 z^3 - 9\,402\,122\,822\,400 z^2 + 26\,443\,470\,438\,000 z - 65\,872\,573\,680\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 + 12\,331\,253\,760 z^6 + 279\,765\,319\,680 z^5 + 3\,059\,933\,184\,000 z^4 + \right. $$
$$ \left. \left. 10\,901\,011\,968\,000 z^3 - 9\,402\,122\,822\,400 z^2 + 26\,443\,470\,438\,000 z - 65\,872\,573\,680\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a7z7.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = $$
$$ \frac{1}{151\,526\,446\,202\,880 z^{13/4}}\left(13\left(\sqrt{\pi}\left(268\,435\,456 z^7 - 12\,331\,253\,760 z^6 + 279\,765\,319\,680 z^5 - 3\,059\,933\,184\,000 z^4 + \right.\right.\right. $$
$$ \left.\left.\left. 10\,901\,011\,968\,000 z^3 + 9\,402\,122\,822\,400 z^2 + 26\,443\,470\,438\,000 z + 65\,872\,573\,680\,375\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right.\right. $$
$$ 2\sqrt[4]{z}\left(\left(-16\,777\,216 z^6 + 786\,432\,000 z^5 - 18\,269\,798\,400 z^4 + 211\,036\,815\,360 z^3 - \right.\right. $$
$$ \left.\left. 959\,400\,288\,000 z^2 - 43\,820\,608\,154\,400 z + 65\,872\,573\,680\,375\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 4\sqrt{z}\left(16\,777\,216 z^6 - 773\,849\,088 z^5 + 17\,636\,720\,640 z^4 - 194\,883\,010\,560 z^3 + \right.\right. $$
$$ \left.\left.\left. 726\,818\,400\,000 z^2 - 1\,223\,235\,367\,200 z + 21\,957\,524\,560\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a7z8.01

$${}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 + 13\,170\,114\,560\,z^6 + 322\,610\,135\,040\,z^5 + 3\,853\,275\,955\,200\,z^4 + 14\,968\,416\,153\,600\,z^3 - 19\,451\,656\,224\,000\,z^2 + 360\,955\,584\,990\,000\,z + 444\,374\,099\,544\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(268\,435\,456\,z^7 + 13\,337\,886\,720\,z^6 + 331\,292\,344\,320\,z^5 + 4\,080\,151\,756\,800\,z^4 + 18\,113\,711\,616\,000\,z^3 + 156\,539\,519\,136\,000\,z^2 + 3\,114\,291\,210\,030\,000\,z + 1\,333\,122\,298\,633\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(268\,435\,456\,z^7 + 13\,237\,223\,424\,z^6 + 326\,007\,521\,280\,z^5 + 3\,939\,567\,206\,400\,z^4 + 16\,087\,002\,624\,000\,z^3 - 13\,276\,527\,264\,000\,z^2 - 270\,296\,972\,946\,000\,z - 1\,333\,122\,298\,633\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(24\,732\,971\,827\,200\,\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a7z9.01

$${}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) =$$

$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 - 13\,170\,114\,560\,z^6 + 322\,610\,135\,040\,z^5 - 3\,853\,275\,955\,200\,z^4 + 14\,968\,416\,153\,600\,z^3 - 19\,451\,656\,224\,000\,z^2 + 360\,955\,584\,990\,000\,z - 444\,374\,099\,544\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-268\,435\,456\,z^7 + 13\,337\,886\,720\,z^6 - 331\,292\,344\,320\,z^5 + 4\,080\,151\,756\,800\,z^4 - 18\,113\,711\,616\,000\,z^3 + 156\,539\,519\,136\,000\,z^2 - 3\,114\,291\,210\,030\,000\,z + 1\,333\,122\,298\,633\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(268\,435\,456\,z^7 - 13\,237\,223\,424\,z^6 + 326\,007\,521\,280\,z^5 - 3\,939\,567\,206\,400\,z^4 + 16\,087\,002\,624\,000\,z^3 + 13\,276\,527\,264\,000\,z^2 - 270\,296\,972\,946\,000\,z + 1\,333\,122\,298\,633\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(24\,732\,971\,827\,200\,\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a7za.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) = $$

$$ \left(221\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\, \left(-1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 - 56\,572\,772\,352\, z^{13/2} + 14\,344\,519\,680\, z^6 - \right.\right.\right. $$
$$ 1\,503\,091\,752\,960\, z^{11/2} + 387\,223\,388\,160\, z^5 - 19\,889\,183\,784\,960\, z^{9/2} + 5\,306\,478\,428\,160\, z^4 - $$
$$ 91\,668\,274\,790\,400\, z^{7/2} + 28\,374\,990\,336\,000\, z^3 + 69\,704\,791\,833\,600\, z^{5/2} + 817\,984\,685\,548\,800\, z^2 + $$
$$ 7\,026\,407\,859\,240\,000\, z^{3/2} + 23\,538\,466\,328\,454\,000\, z + 39\,962\,694\,699\,427\,500\, \sqrt{z} + $$
$$ e^{4\sqrt{z}} \left(1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 + 56\,572\,772\,352\, z^{13/2} + 14\,344\,519\,680\, z^6 + \right. $$
$$ 1\,503\,091\,752\,960\, z^{11/2} + 387\,223\,388\,160\, z^5 + 19\,889\,183\,784\,960\, z^{9/2} + 5\,306\,478\,428\,160\, z^4 + $$
$$ 91\,668\,274\,790\,400\, z^{7/2} + 28\,374\,990\,336\,000\, z^3 - 69\,704\,791\,833\,600\, z^{5/2} + $$
$$ 817\,984\,685\,548\,800\, z^2 - 7\,026\,407\,859\,240\,000\, z^{3/2} + 23\,538\,466\,328\,454\,000\, z - $$
$$ \left.\left.\left.\

07.22.03.a7zc.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) = $$

$$ \left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 238\,907\,555\,840\,z^7 + 6\,756\,017\,111\,040\,z^6 + 95\,493\,449\,318\,400\,z^5 + 456\,516\,639\,129\,600\,z^4 - 714\,668\,258\,304\,000\,z^3 - 2\,417\,562\,987\,840\,000\,z^2 - 221\,425\,265\,601\,540\,000\,z - 246\,627\,625\,247\,128\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4\,294\,967\,296\,z^8 - 241\,591\,910\,400\,z^7 - 6\,912\,548\,536\,320\,z^6 - 100\,167\,214\,694\,400\,z^5 - 530\,997\,755\,904\,000\,z^4 + 138\,322\,888\,704\,000\,z^3 + 222\,953\,031\,100\,800\,000\,z^2 + 1\,791\,716\,369\,362\,920\,000\,z + 739\,882\,875\,741\,384\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 239\,981\,297\,664\,z^7 + 6\,817\,421\,721\,600\,z^6 + 97\,283\,683\,123\,200\,z^5 + 483\,548\,921\,856\,000\,z^4 - 544\,931\,380\,224\,000\,z^3 + 8\,434\,608\,646\,464\,000\,z^2 + 213\,299\,567\,781\,300\,000\,z + 739\,882\,875\,741\,384\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(13\,454\,736\,673\,996\,800\,\sqrt{2}\,z^{17/4}\right) $$

07.22.03.a7zd.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) = $$

$$ \left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 238\,907\,555\,840\,z^7 + 6\,756\,017\,111\,040\,z^6 - 95\,493\,449\,318\,400\,z^5 + 456\,516\,639\,129\,600\,z^4 + 714\,668\,258\,304\,000\,z^3 - 2\,417\,562\,987\,840\,000\,z^2 + 221\,425\,265\,601\,540\,000\,z - 246\,627\,625\,247\,128\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4\,294\,967\,296\,z^8 + 241\,591\,910\,400\,z^7 - 6\,912\,548\,536\,320\,z^6 + 100\,167\,214\,694\,400\,z^5 - 530\,997\,755\,904\,000\,z^4 - 138\,322\,888\,704\,000\,z^3 + 222\,953\,031\,100\,800\,000\,z^2 - 1\,791\,716\,369\,362\,920\,000\,z + 739\,882\,875\,741\,384\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 239\,981\,297\,664\,z^7 + 6\,817\,421\,721\,600\,z^6 - 97\,283\,683\,123\,200\,z^5 + 483\,548\,921\,856\,000\,z^4 + 544\,931\,380\,224\,000\,z^3 + 8\,434\,608\,646\,464\,000\,z^2 - 213\,299\,567\,781\,300\,000\,z + 739\,882\,875\,741\,384\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(13\,454\,736\,673\,996\,800\,\sqrt{2}\,z^{17/4}\right) $$

For fixed z and $a_1 = -\frac{15}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.a7ze.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) = $$

$$ \frac{1}{45\,885}\left(\left(256\,z^3 + 14\,480\,z^2 + 83\,220\,z + 45\,885\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(1408\,z^2 + 22\,040\,z + 45\,885\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.a7zf.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) = $$

$$ \frac{1}{45\,885}\left(\left(-256\,z^3 + 14\,480\,z^2 - 83\,220\,z + 45\,885\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(1408\,z^2 - 22\,040\,z + 45\,885\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a7zg.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{7\,309\,575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192z^4+88\,960z^3+5\,981\,040z^2+13\,127\,400z+7\,309\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(1024z^3+677\,040z^2+7\,279\,740z+7\,309\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(-2048z^3+51\,168z^2+1\,432\,080z+7\,309\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7zh.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{7\,309\,575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192z^4-88\,960z^3+5\,981\,040z^2-13\,127\,400z+7\,309\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(1024z^3-677\,040z^2+7\,279\,740z-7\,309\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(2048z^3+51\,168z^2-1\,432\,080z+7\,309\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7zi.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},-\frac{19}{4};z\right)=\frac{\left(496z^2+3540z+1995\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(32z^2+880z+1995\right)\sinh\left(2\sqrt{z}\right)}{1995}$$

07.22.03.a7zj.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},-\frac{19}{4};-z\right)=\frac{\left(496z^2-3540z+1995\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(32z^2-880z+1995\right)\sin\left(2\sqrt{z}\right)}{1995}$$

07.22.03.a7zk.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096z^4-17\,920z^3+771\,120z^2+1\,825\,200z+1\,044\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^3+53\,520z^2+\right.\right.\right.$$
$$\left.\left.\left.989\,820z+1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-1024z^3+4224z^2+154\,440z+1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7zl.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096z^4+17\,920z^3+771\,120z^2-1\,825\,200z+1\,044\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^3-53\,520z^2+\right.\right.\right.$$
$$\left.\left.\left.989\,820z-1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1024z^3+4224z^2-154\,440z+1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7zm.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},-\frac{15}{4};z\right)=\left(\frac{16\,z^2}{105}+\frac{12\,z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\,(8\,z+21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a7zn.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},-\frac{15}{4};-z\right)=\left(\frac{16\,z^2}{105}-\frac{12\,z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}(21-8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a7zo.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},-\frac{13}{4};z\right)=\frac{1}{61\,425\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(2048\,z^4-3200\,z^3+38\,160\,z^2+102\,600\,z+61\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256\,z^3-240\,z^2+53\,460\,z+61\,425\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-512\,z^3+672\,z^2+4320\,z+61\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7zp.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},-\frac{13}{4};-z\right)=\frac{1}{61\,425\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(2048\,z^4+3200\,z^3+38\,160\,z^2-102\,600\,z+61\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256\,z^3+240\,z^2+53\,460\,z-61\,425\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(512\,z^3+672\,z^2-4320\,z+61\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a7zq.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{48\,510}\left(e^{-2\sqrt{z}}\left(-1024\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}-1024\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+1024\,e^{4\sqrt{z}}\,z^{7/2}-\right.\right.$$
$$1024\,z^{7/2}+256\,e^{4\sqrt{z}}\,z^3+256\,z^3+192\,e^{4\sqrt{z}}\,z^{5/2}-192\,z^{5/2}+240\,e^{4\sqrt{z}}\,z^2+240\,z^2-13\,440\,e^{4\sqrt{z}}\,z^{3/2}+$$
$$\left.\left.13\,440\,z^{3/2}+39\,060\,e^{4\sqrt{z}}\,z+39\,060\,z-48\,510\,e^{4\sqrt{z}}\sqrt{z}+48\,510\sqrt{z}+24\,255\,e^{4\sqrt{z}}+24\,255\right)\right)$$

07.22.03.a7zr.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},-\frac{11}{4};-z\right)=\frac{1}{24\,255}\left(-2048\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+\right.$$
$$\left.2\left(512\,z^3-96\,z^2-6720\,z+24\,255\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-256\,z^3+240\,z^2-39\,060\,z+24\,255\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a7zs.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, -\frac{9}{4}; z\right) = \frac{1}{4725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-1024z^4 - 1280z^3 + 2160z^2 + 7200z + 4725\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(128z^3 + 240z^2 - 3420z - 4725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(256z^3 + 384z^2 - 360z + 4725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7zt.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, -\frac{9}{4}; -z\right) = -\frac{1}{4725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^4 - 1280z^3 - 2160z^2 + 7200z - 4725\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(128z^3 - 240z^2 - 3420z + 4725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(256z^3 - 384z^2 - 360z - 4725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7zu.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, -\frac{7}{4}; z\right) = \frac{1}{4410}\left(e^{-2\sqrt{z}}\left(-256e^{4\sqrt{z}}z^{7/2} + 256z^{7/2} - 64e^{4\sqrt{z}}z^3 - 64z^3 + 16e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+45)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4} + 16e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+45)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4} - 768e^{4\sqrt{z}}z^{5/2} + 768z^{5/2} - 240e^{4\sqrt{z}}z^2 - 240z^2 - 240e^{4\sqrt{z}}z^{3/2} + 240z^{3/2} + 3060e^{4\sqrt{z}}z + 3060z - 4410e^{4\sqrt{z}}\sqrt{z} + 4410\sqrt{z} + 2205e^{4\sqrt{z}} + 2205\right)\right) $$

07.22.03.a7zv.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{1}{2205}\left(32\sqrt{\pi}\,(16z-45)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4} + 2\left(-128z^3 + 384z^2 - 120z + 2205\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(64z^3 - 240z^2 - 3060z + 2205\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.a7zw.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, -\frac{5}{4}; z\right) = \frac{1}{1575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^4 + 2080z^3 + 2160z^2 + 1800z + 1575\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(64z^3 + 300z^2 + 540z + 1575\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(128z^3 + 552z^2 + 720z - 1575\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7zx.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, -\frac{5}{4}; -z\right) = \frac{1}{1575\sqrt{2}} \left(\sqrt[4]{z}\left(\left(512z^4 - 2080z^3 + 2160z^2 - 1800z + 1575\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(64z^3 - 300z^2 + 540z - 1575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(128z^3 - 552z^2 + 720z + 1575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a7zy.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, -\frac{3}{4}; z\right) = \frac{1}{5040}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 + 1440z + 3465\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} - e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 + 1440z + 3465\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} + 4\left(-64z^{7/2} + 16z^3 - 372z^{5/2} + 105z^2 - 960z^{3/2} + 360z + 1260\sqrt{z} + e^{4\sqrt{z}}\left(64z^{7/2} + 16z^3 + 372z^{5/2} + 105z^2 + 960z^{3/2} + 360z - 1260\sqrt{z} + 630\right) + 630\right)\right)\right) $$

07.22.03.a7zz.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) = \frac{1}{1260}\left(\sqrt{\pi}\left(-256z^2 + 1440z - 3465\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} + 2\left(\left(-16z^3 + 105z^2 - 360z + 630\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(16z^3 - 93z^2 + 240z + 315\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a800.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) = \frac{1}{3150\sqrt{2}}\left(\sqrt[4]{z}\left(-2\left(256z^4 + 1760z^3 + 6165z^2 + 3600z - 1575\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(256z^3 + 1920z^2 + 7695z - 12600\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(256z^3 + 1824z^2 + 6705z + 6300\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a801.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) = \frac{1}{3150\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-512z^4 + 3520z^3 - 12330z^2 + 7200z + 3150\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(256z^3 - 1920z^2 + 7695z + 12600\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(-256z^3 + 1824z^2 - 6705z + 6300\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a802.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{322\,560}\left(e^{-2\sqrt{z}}\left(-4\left(-1024\,z^{7/2}+256\,z^3-8832\,z^{5/2}+2400\,z^2-43\,620\,z^{3/2}+13\,365\,z-80\,640\,\sqrt{z}+e^{4\sqrt{z}}\right.\right.\right.$$
$$\left.\left.\left(1024\,z^{7/2}+256\,z^3+8832\,z^{5/2}+2400\,z^2+43\,620\,z^{3/2}+13\,365\,z+80\,640\,\sqrt{z}-40\,320\right)-40\,320\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(4096\,z^3+34\,560\,z^2+166\,320\,z+266\,805\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(4096\,z^3+34\,560\,z^2+166\,320\,z+266\,805\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a803.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},\frac{1}{4};-z\right)=\frac{1}{80\,640}\left(\sqrt{\pi}\,z^{3/4}\left(4096\,z^3-34\,560\,z^2+166\,320\,z-266\,805\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\left(\left(256\,z^3-2400\,z^2+13\,365\,z+40\,320\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(-256\,z^3+2208\,z^2-10\,905\,z+20\,160\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a804.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{705\,600\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(4096\,z^4+39\,680\,z^3+235\,440\,z^2+533\,925\,z+352\,800\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(4096\,z^3+42\,240\,z^2+\right.\right.\right.$$
$$\left.\left.\left.267\,120\,z+795\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\,z\left(4096\,z^3+40\,704\,z^2+246\,960\,z+615\,825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a805.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},\frac{3}{4};-z\right)=$$
$$\frac{1}{705\,600\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(4096\,z^4-39\,680\,z^3+235\,440\,z^2-533\,925\,z+352\,800\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-4096\,z^3+42\,240\,z^2-\right.\right.\right.$$
$$\left.\left.\left.267\,120\,z+795\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\,z\left(4096\,z^3-40\,704\,z^2+246\,960\,z-615\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a806.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},\frac{5}{4};z\right)=\frac{1}{82\,575\,360\,\sqrt[4]{z}}$$
$$\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384\,z^{7/2}+4096\,z^3-187\,392\,z^{5/2}+49\,920\,z^2-1\,371\,840\,z^{3/2}+390\,960\,z-4\,635\,540\,\sqrt{z}+e^{4\sqrt{z}}\right.\right.\right.$$
$$\left.\left.\left(16\,384\,z^{7/2}+4096\,z^3+187\,392\,z^{5/2}+49\,920\,z^2+1\,371\,840\,z^{3/2}+390\,960\,z+4\,635\,540\,\sqrt{z}+1\,684\,305\right)+\right.\right.$$
$$\left.\left.1\,684\,305\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4+737\,280\,z^3+5\,322\,240\,z^2+17\,075\,520\,z+12\,006\,225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4+737\,280\,z^3+5\,322\,240\,z^2+17\,075\,520\,z+12\,006\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a807.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = \frac{1}{20\,643\,840\sqrt[4]{z}}\left(\sqrt{\pi}\left(65\,536z^4 - 737\,280z^3 + 5\,322\,240z^2 - 17\,075\,520z + 12\,006\,225\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(4096z^3 - 49\,920z^2 + 390\,960z - 1\,684\,305\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(-4096z^3 + 46\,848z^2 - 342\,960z + 1\,158\,885\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a808.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) = \frac{1}{67\,737\,600\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(65\,536z^4 + 819\,200z^3 + 6\,842\,880z^2 + 26\,697\,600z + 22\,382\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(65\,536z^4 + 860\,160z^3 + 7\,464\,960z^2 + 33\,112\,800z - 34\,459\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(65\,536z^4 + 835\,584z^3 + 7\,073\,280z^2 + 28\,848\,960z + 34\,459\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a809.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) = \frac{1}{67\,737\,600\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(65\,536z^4 - 819\,200z^3 + 6\,842\,880z^2 - 26\,697\,600z + 22\,382\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-65\,536z^4 + 860\,160z^3 - 7\,464\,960z^2 + 33\,112\,800z + 34\,459\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(65\,536z^4 - 835\,584z^3 + 7\,073\,280z^2 - 28\,848\,960z + 34\,459\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a80a.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) = \frac{1}{5\,284\,823\,040z^{5/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-262\,144z^{9/2} + 65\,536z^4 - 3\,735\,552z^{7/2} + 983\,040z^3 - 36\,280\,320z^{5/2} + 9\,976\,320z^2 - 179\,585\,280z^{3/2} + 56\,568\,960z - 304\,157\,700\sqrt{z} + e^{4\sqrt{z}}\left(262\,144z^{9/2} + 65\,536z^4 + 3\,735\,552z^{7/2} + 983\,040z^3 + 36\,280\,320z^{5/2} + 9\,976\,320z^2 + 179\,585\,280z^{3/2} + 56\,568\,960z + 304\,157\,700\sqrt{z} - 228\,118\,275\right) - 228\,118\,275\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5 + 14\,745\,600z^4 + 141\,926\,400z^3 + 683\,020\,800z^2 + 960\,498\,000z - 228\,118\,275\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5 + 14\,745\,600z^4 + 141\,926\,400z^3 + 683\,020\,800z^2 + 960\,498\,000z - 228\,118\,275\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a80b.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, \frac{9}{4}; -z\right) = \frac{1}{1\,321\,205\,760\, z^{5/4}} $$
$$ \left(\sqrt{\pi}\,\left(1\,048\,576\, z^5 - 14\,745\,600\, z^4 + 141\,926\,400\, z^3 - 683\,020\,800\, z^2 + 960\,498\,000\, z + 228\,118\,275\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$
$$ 2\sqrt[4]{z}\,\left(\left(-65\,536\, z^4 + 983\,040\, z^3 - 9\,976\,320\, z^2 + 56\,568\,960\, z + 228\,118\,275\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 4\sqrt{z}\,\left(65\,536\, z^4 - 933\,888\, z^3 + 9\,070\,080\, z^2 - 44\,896\,320\, z + 76\,039\,425\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a80c.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, \frac{11}{4}; z\right) = \frac{1}{3\,406\,233\,600\sqrt{2}\, z^{5/4}} $$
$$ \left(\left(2\sqrt{z}\,\left(1\,048\,576\, z^5 + 16\,056\,320\, z^4 + 172\,892\,160\, z^3 + 954\,478\,080\, z^2 + 1\,519\,333\,200\, z + 723\,647\,925\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ \left(1\,048\,576\, z^5 + 16\,711\,680\, z^4 + 184\,688\,640\, z^3 + 1\,101\,703\,680\, z^2 + 2\,756\,754\,000\, z + 2\,170\,943\,775\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(1\,048\,576\, z^5 + 16\,318\,464\, z^4 + 177\,315\,840\, z^3 + \right. $$
$$ \left.\left. 1\,005\,903\,360\, z^2 + 1\,874\,592\,720\, z - 2\,170\,943\,775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a80d.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, \frac{11}{4}; -z\right) = \frac{1}{3\,406\,233\,600\sqrt{2}\, z^{5/4}} $$
$$ \left(\left(2\sqrt{z}\,\left(1\,048\,576\, z^5 - 16\,056\,320\, z^4 + 172\,892\,160\, z^3 - 954\,478\,080\, z^2 + 1\,519\,333\,200\, z - 723\,647\,925\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. \right. $$
$$ \left(-1\,048\,576\, z^5 + 16\,711\,680\, z^4 - 184\,688\,640\, z^3 + 1\,101\,703\,680\, z^2 - 2\,756\,754\,000\, z + 2\,170\,943\,775\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(1\,048\,576\, z^5 - 16\,318\,464\, z^4 + 177\,315\,840\, z^3 - \right. $$
$$ \left.\left. 1\,005\,903\,360\, z^2 + 1\,874\,592\,720\, z + 2\,170\,943\,775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a80e.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, \frac{13}{4}; z\right) = $$
$$ \frac{1}{225\,485\,783\,040\,z^{9/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z} \left(-4\,194\,304\,z^{11/2} + 1\,048\,576\,z^5 - 71\,565\,312\,z^{9/2} + 18\,677\,760\,z^4 - \right.\right.\right. $$
$$ 866\,549\,760\,z^{7/2} + 233\,349\,120\,z^3 - 5\,663\,508\,480\,z^{5/2} + 1\,665\,538\,560\,z^2 - 13\,209\,134\,400\,z^{3/2} + $$
$$ 6\,083\,154\,000\,z + 34\,978\,135\,500\sqrt{z} + e^{4\sqrt{z}} \left(4\,194\,304\,z^{11/2} + 1\,048\,576\,z^5 + 71\,565\,312\,z^{9/2} + \right. $$
$$ \left. 18\,677\,760\,z^4 + 866\,549\,760\,z^{7/2} + 233\,349\,120\,z^3 + 5\,663\,508\,480\,z^{5/2} + 1\,665\,538\,560\,z^2 + \right. $$
$$ \left. 13\,209\,134\,400\,z^{3/2} + 6\,083\,154\,000\,z - 34\,978\,135\,500\sqrt{z} + 26\,233\,601\,625\right) + 26\,233\,601\,625\Big) + $$
$$ e^{2\sqrt{z}} \sqrt{2\pi} \left(16\,777\,216\,z^6 + 283\,115\,520\,z^5 + 3\,406\,233\,600\,z^4 + 21\,856\,665\,600\,z^3 + \right. $$
$$ \left. 46\,103\,904\,000\,z^2 - 21\,899\,354\,400\,z + 26\,233\,601\,625\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}} \sqrt{2\pi} \left(16\,777\,216\,z^6 + 283\,115\,520\,z^5 + 3\,406\,233\,600\,z^4 + 21\,856\,665\,600\,z^3 + \right. $$
$$ \left. \left. 46\,103\,904\,000\,z^2 - 21\,899\,354\,400\,z + 26\,233\,601\,625\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.a80f.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) = $$
$$ \frac{1}{56\,371\,445\,760\,z^{9/4}} \left(\sqrt{\pi} \left(16\,777\,216\,z^6 - 283\,115\,520\,z^5 + 3\,406\,233\,600\,z^4 - 21\,856\,665\,600\,z^3 + 46\,103\,904\,000\,z^2 + \right.\right. $$
$$ \left. 21\,899\,354\,400\,z + 26\,233\,601\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - $$
$$ 2\sqrt[4]{z} \left(\left(-1\,048\,576\,z^5 + 18\,677\,760\,z^4 - 233\,349\,120\,z^3 + 1\,665\,538\,560\,z^2 - 6\,083\,154\,000\,z + 26\,233\,601\,625\right) \right. $$
$$ \cos\left(2\sqrt{z}\right) + 4\sqrt{z} \left(1\,048\,576\,z^5 - 17\,891\,328\,z^4 + 216\,637\,440\,z^3 - \right. $$
$$ \left.\left.\left. 1\,415\,877\,120\,z^2 + 3\,302\,283\,600\,z + 8\,744\,533\,875\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a80g.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) = $$
$$ \frac{1}{128\,817\,561\,600\sqrt{2}\,z^{9/4}} \left(\left(2\sqrt{z} \left(16\,777\,216\,z^6 + 304\,087\,040\,z^5 + 4\,007\,854\,080\,z^4 + 28\,590\,981\,120\,z^3 + \right.\right. \right. $$
$$ \left. 66\,280\,032\,000\,z^2 - 69\,470\,200\,800\,z - 126\,638\,386\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ \left(16\,777\,216\,z^6 + 314\,572\,800\,z^5 + 4\,226\,088\,960\,z^4 + 31\,801\,835\,520\,z^3 + 97\,037\,740\,800\,z^2 - 787\,328\,942\,400\,z - \right. $$
$$ \left. 379\,915\,160\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z} \left(16\,777\,216\,z^6 + 308\,281\,344\,z^5 + 4\,090\,429\,440\,z^4 + \right. $$
$$ \left.\left. 29\,742\,612\,480\,z^3 + 75\,865\,870\,080\,z^2 - 23\,156\,733\,600\,z + 379\,915\,160\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a80h.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{128\,817\,561\,600\sqrt{2}\,z^{9/4}}\left(\left(2\sqrt{z}\left(16\,777\,216z^6-304\,087\,040z^5+4\,007\,854\,080z^4-28\,590\,981\,120z^3+\right.\right.\right.$$
$$\left.66\,280\,032\,000z^2+69\,470\,200\,800z-126\,638\,386\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(-16\,777\,216z^6+314\,572\,800z^5-4\,226\,088\,960z^4+31\,801\,835\,520z^3-97\,037\,740\,800z^2-787\,328\,942\,400z+\right.$$
$$379\,915\,160\,625\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(16\,777\,216z^6-308\,281\,344z^5+4\,090\,429\,440z^4-\right.\right.$$
$$\left.\left.\left.29\,742\,612\,480z^3+75\,865\,870\,080z^2+23\,156\,733\,600z+379\,915\,160\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a80i.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},\frac{17}{4};z\right)=\frac{1}{101\,017\,630\,801\,920z^{13/4}}$$
$$\left(13e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-67\,108\,864z^{13/2}+16\,777\,216z^6-1\,333\,788\,672z^{11/2}+346\,030\,080z^5-19\,350\,159\,360z^{9/2}+\right.\right.\right.$$
$$5\,140\,316\,160z^4-157\,285\,416\,960z^{7/2}+44\,492\,636\,160z^3-472\,242\,355\,200z^{5/2}+180\,756\,576\,000z^2+$$
$$31\,980\,009\,600z^{3/2}-3\,861\,586\,159\,200z-8\,499\,686\,926\,500\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864z^{13/2}+16\,777\,216z^6+\right.$$
$$1\,333\,788\,672z^{11/2}+346\,030\,080z^5+19\,350\,159\,360z^{9/2}+5\,140\,316\,160z^4+157\,285\,416\,960z^{7/2}+$$
$$44\,492\,636\,160z^3+472\,242\,355\,200z^{5/2}+180\,756\,576\,000z^2-31\,980\,009\,600z^{3/2}-$$
$$\left.3\,861\,586\,159\,200z+8\,499\,686\,926\,500\sqrt{z}-6\,374\,765\,194\,875\right)-6\,374\,765\,194\,875\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7+5\,284\,823\,040z^6+76\,299\,632\,640z^5+611\,986\,636\,800z^4+\right.$$
$$\left.1\,721\,212\,416\,000z^3-1\,226\,363\,846\,400z^2+2\,938\,163\,382\,000z-6\,374\,765\,194\,875\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7+5\,284\,823\,040z^6+76\,299\,632\,640z^5+611\,986\,636\,800z^4+\right.$$
$$\left.\left.1\,721\,212\,416\,000z^3-1\,226\,363\,846\,400z^2+2\,938\,163\,382\,000z-6\,374\,765\,194\,875\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a80j.01

$${}_1F_2\left(-\frac{15}{4};-\frac{7}{2},\frac{17}{4};-z\right)=$$
$$\frac{1}{25\,254\,407\,700\,480z^{13/4}}\left(13\left(\sqrt{\pi}\left(268\,435\,456z^7-5\,284\,823\,040z^6+76\,299\,632\,640z^5-611\,986\,636\,800z^4+\right.\right.\right.$$
$$\left.\left.1\,721\,212\,416\,000z^3+1\,226\,363\,846\,400z^2+2\,938\,163\,382\,000z+6\,374\,765\,194\,875\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}$$
$$\left(\left(-16\,777\,216z^6+346\,030\,080z^5-5\,140\,316\,160z^4+44\,492\,636\,160z^3-180\,756\,576\,000z^2-3\,861\,586\,159\,200\right.\right.$$
$$\left.z+6\,374\,765\,194\,875\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(16\,777\,216z^6-333\,447\,168z^5+4\,837\,539\,840z^4-\right.$$
$$\left.\left.\left.39\,321\,354\,240z^3+118\,060\,588\,800z^2+7\,995\,002\,400z+2\,124\,921\,731\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big)$$

07.22.03.a80k.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 + 5\,620\,367\,360\,z^6 + 87\,624\,253\,440\,z^5 + 766\,166\,630\,400\,z^4 + 2\,324\,838\,297\,600\,z^3 - \right.\right.\right. $$

$$ \left.\left.\left. 2\,778\,808\,032\,000\,z^2 + 30\,972\,131\,190\,000\,z + 40\,397\,645\,413\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$

$$ \left(268\,435\,456\,z^7 + 5\,788\,139\,520\,z^6 + 91\,587\,870\,720\,z^5 + 833\,495\,040\,000\,z^4 + 3\,058\,159\,104\,000\,z^3 + \right. $$

$$ \left. 2\,778\,808\,032\,000\,z^2 + 277\,591\,344\,030\,000\,z + 121\,192\,936\,239\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$

$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7 + 5\,687\,476\,224\,z^6 + 89\,134\,202\,880\,z^5 + 790\,762\,291\,200\,z^4 + \right. $$

$$ 2\,565\,958\,348\,800\,z^3 - 1\,543\,782\,240\,000\,z^2 - 19\,046\,413\,386\,000\,z - $$

$$ \left.\left. 121\,192\,936\,239\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(4\,122\,161\,971\,200\,\sqrt{2}\;z^{13/4}\right) $$

07.22.03.a80l.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = $$

$$ \left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 - 5\,620\,367\,360\,z^6 + 87\,624\,253\,440\,z^5 - 766\,166\,630\,400\,z^4 + 2\,324\,838\,297\,600\,z^3 + \right.\right.\right. $$

$$ \left.\left.\left. 2\,778\,808\,032\,000\,z^2 + 30\,972\,131\,190\,000\,z - 40\,397\,645\,413\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$

$$ \left(-268\,435\,456\,z^7 + 5\,788\,139\,520\,z^6 - 91\,587\,870\,720\,z^5 + 833\,495\,040\,000\,z^4 - 3\,058\,159\,104\,000\,z^3 + \right. $$

$$ \left. 2\,778\,808\,032\,000\,z^2 - 277\,591\,344\,030\,000\,z + 121\,192\,936\,239\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7 - 5\,687\,476\,224\,z^6 + 89\,134\,202\,880\,z^5 - 790\,762\,291\,200\,z^4 + \right. $$

$$ 2\,565\,958\,348\,800\,z^3 + 1\,543\,782\,240\,000\,z^2 - 19\,046\,413\,386\,000\,z + $$

$$ \left.\left. 121\,192\,936\,239\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(4\,122\,161\,971\,200\,\sqrt{2}\;z^{13/4}\right) $$

07.22.03.a80m.01

$$
{}_1F_2\left(-\frac{15}{4};-\frac{7}{2},\frac{21}{4};z\right)=
$$

$$
\left(221\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-24\,360\,517\,632\,z^{13/2}+6\,291\,456\,000\,z^{6}-411\,901\,624\,320\,z^{11/2}+\right.\right.\right.
$$

$$
108\,386\,058\,240\,z^{5}-4\,005\,648\,138\,240\,z^{9/2}+1\,105\,704\,714\,240\,z^{4}-14\,765\,511\,720\,960\,z^{7/2}+
$$

$$
5\,076\,352\,512\,000\,z^{3}+6\,442\,518\,297\,600\,z^{5/2}+13\,623\,484\,089\,600\,z^{2}+
$$

$$
477\,925\,253\,467\,200\,z^{3/2}+1\,924\,329\,120\,159\,600\,z+3\,425\,373\,831\,379\,500\sqrt{z}\;+
$$

$$
e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}+24\,360\,517\,632\,z^{13/2}+6\,291\,456\,000\,z^{6}+411\,901\,624\,320\,z^{11/2}+\right.
$$

$$
108\,386\,058\,240\,z^{5}+4\,005\,648\,138\,240\,z^{9/2}+1\,105\,704\,714\,240\,z^{4}+14\,765\,511\,720\,960\,z^{7/2}+
$$

$$
5\,076\,352\,512\,000\,z^{3}-6\,442\,518\,297\,600\,z^{5/2}+13\,623\,484\,089\,600\,z^{2}-477\,925\,253\,467\,200\,z^{3/2}+
$$

$$
\left.\left.1\,924\,329\,120\,159\,600\,z-3\,425\,373\,831\,379\,500\sqrt{z}\;+2\,569\,030\,373\,534\,625\right)+2\,569\,030\,373\,534\,625\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}+96\,636\,764\,160\,z^{7}+1\,627\,725\,496\,320\,z^{6}+15\,666\,857\,902\,080\,z^{5}+\right.
$$

$$
55\,078\,797\,312\,000\,z^{4}-52\,324\,857\,446\,400\,z^{3}+188\,042\,456\,448\,000\,z^{2}-
$$

$$
\left.815\,969\,944\,944\,000\,z+2\,569\,030\,373\,534\,625\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}+96\,636\,764\,160\,z^{7}+1\,627\,725\,496\,320\,z^{6}+15\,666\,857\,902\,080\,z^{5}+\right.
$$

$$
55\,078\,797\,312\,000\,z^{4}-52\,324\,857\,446\,400\,z^{3}+188\,042\,456\,448\,000\,z^{2}-
$$

$$
\left.\left.\left.815\,969\,944\,944\,000\,z+2\,569\,030\,373\,534\,625\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)\Big/\left(51\,721\,026\,970\,583\,040\,z^{17/4}\right)
$$

07.22.03.a80n.01

$$
{}_1F_2\left(-\frac{15}{4};-\frac{7}{2},\frac{21}{4};-z\right)=
$$

$$
\left(221\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^{8}-96\,636\,764\,160\,z^{7}+1\,627\,725\,496\,320\,z^{6}-15\,666\,857\,902\,080\,z^{5}+55\,078\,797\,312\,000\,z^{4}+\right.\right.\right.
$$

$$
\left.52\,324\,857\,446\,400\,z^{3}+188\,042\,456\,448\,000\,z^{2}+815\,969\,944\,944\,000\,z+2\,569\,030\,373\,534\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$

$$
2\sqrt[4]{z}\left(\left(-268\,435\,456\,z^{7}+6\,291\,456\,000\,z^{6}-108\,386\,058\,240\,z^{5}+1\,105\,704\,714\,240\,z^{4}-5\,076\,352\,512\,000\,z^{3}+\right.\right.
$$

$$
\left.13\,623\,484\,089\,600\,z^{2}-1\,924\,329\,120\,159\,600\,z+2\,569\,030\,373\,534\,625\right)\cos\left(2\sqrt{z}\right)+
$$

$$
4\sqrt{z}\left(268\,435\,456\,z^{7}-6\,090\,129\,408\,z^{6}+102\,975\,406\,080\,z^{5}-1\,001\,412\,034\,560\,z^{4}+\right.
$$

$$
3\,691\,377\,930\,240\,z^{3}+1\,610\,629\,574\,400\,z^{2}-119\,481\,313\,366\,800\,z+
$$

$$
\left.\left.\left.856\,343\,457\,844\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(12\,930\,256\,742\,645\,760\,z^{17/4}\right)
$$

07.22.03.a80o.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = \left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 102\,005\,473\,280\,z^7 + 1\,836\,098\,519\,040\,z^6 + 19\,007\,432\,294\,400\,z^5 + 71\,196\,268\,953\,600\,z^4 - 98\,802\,063\,360\,000\,z^3 + 259\,355\,416\,320\,000\,z^2 - 17\,359\,445\,343\,240\,000\,z - 19\,996\,834\,479\,496\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4\,294\,967\,296\,z^8 + 104\,689\,827\,840\,z^7 + 1\,907\,066\,142\,720\,z^6 + 20\,376\,295\,833\,600\,z^5 + 88\,017\,076\,224\,000\,z^4 + 29\,640\,619\,008\,000\,z^3 - 13\,995\,929\,787\,840\,000\,z^2 - 143\,492\,436\,507\,420\,000\,z - 59\,990\,503\,438\,490\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 103\,079\,215\,104\,z^7 + 1\,863\,277\,608\,960\,z^6 + 19\,514\,209\,075\,200\,z^5 + 76\,933\,192\,089\,600\,z^4 - 66\,881\,396\,736\,000\,z^3 + 403\,853\,433\,984\,000\,z^2 + 15\,512\,695\,838\,640\,000\,z + 59\,990\,503\,438\,490\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(2\,242\,456\,112\,332\,800\,\sqrt{2}\,z^{17/4}\right) $$

07.22.03.a80p.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) = \left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 102\,005\,473\,280\,z^7 + 1\,836\,098\,519\,040\,z^6 - 19\,007\,432\,294\,400\,z^5 + 71\,196\,268\,953\,600\,z^4 + 98\,802\,063\,360\,000\,z^3 + 259\,355\,416\,320\,000\,z^2 + 17\,359\,445\,343\,240\,000\,z - 19\,996\,834\,479\,496\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4\,294\,967\,296\,z^8 + 104\,689\,827\,840\,z^7 - 1\,907\,066\,142\,720\,z^6 + 20\,376\,295\,833\,600\,z^5 - 88\,017\,076\,224\,000\,z^4 + 29\,640\,619\,008\,000\,z^3 + 13\,995\,929\,787\,840\,000\,z^2 - 143\,492\,436\,507\,420\,000\,z + 59\,990\,503\,438\,490\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 103\,079\,215\,104\,z^7 + 1\,863\,277\,608\,960\,z^6 - 19\,514\,209\,075\,200\,z^5 + 76\,933\,192\,089\,600\,z^4 + 66\,881\,396\,736\,000\,z^3 + 403\,853\,433\,984\,000\,z^2 - 15\,512\,695\,838\,640\,000\,z + 59\,990\,503\,438\,490\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(2\,242\,456\,112\,332\,800\,\sqrt{2}\,z^{17/4}\right) $$

For fixed z and $a_1 = -\frac{15}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.a80q.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) = \left(\frac{256\,z^2}{1311} + \frac{40\,z}{23} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(64\,z^2 + 2660\,z + 6555\right)\sinh\left(2\sqrt{z}\right)}{6555} $$

07.22.03.a80r.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, -\frac{23}{4}; -z\right) = \left(\frac{256\,z^2}{1311} - \frac{40\,z}{23} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(64\,z^2 - 2660\,z + 6555\right)\sin\left(2\sqrt{z}\right)}{6555} $$

07.22.03.a80s.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},-\frac{21}{4};z\right)=$$
$$-\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^4+35\,840\,z^3-720\,720\,z^2-1\,790\,100\,z-1\,044\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(-2048\,z^3+31\,200\,z^2+954\,720\,z+1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4\,z\left(4096\,z^3+9984\,z^2+119\,340\,z+1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a80t.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},-\frac{21}{4};-z\right)=$$
$$-\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^4-35\,840\,z^3-720\,720\,z^2+1\,790\,100\,z-1\,044\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2048\,z^3+31\,200\,z^2-\right.\right.\right.$$
$$\left.\left.\left.954\,720\,z+1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(4096\,z^3-9984\,z^2+119\,340\,z-1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a80u.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},-\frac{19}{4};z\right)=\left(\frac{32\,z^2}{285}+\frac{32\,z}{19}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{57}\sqrt{z}\,(20\,z+57)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a80v.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},-\frac{19}{4};-z\right)=\left(\frac{32\,z^2}{285}-\frac{32\,z}{19}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{57}(57-20\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a80w.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},-\frac{17}{4};z\right)=\frac{1}{149\,175\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(-8192\,z^4-10\,240\,z^3+88\,560\,z^2+245\,700\,z+149\,175\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024\,z^3+1920\,z^2-126\,360\,z-149\,175\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(2048\,z^3+3072\,z^2+7020\,z+149\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a80x.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},-\frac{17}{4};-z\right)=$$
$$-\frac{1}{149\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192\,z^4-10\,240\,z^3-88\,560\,z^2+245\,700\,z-149\,175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-1024\,z^3+1920\,z^2+\right.\right.\right.$$
$$\left.\left.\left.126\,360\,z-149\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(2048\,z^3-3072\,z^2+7020\,z-149\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a80y.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},-\frac{15}{4};z\right)=\left(\frac{8\,z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\,(4\,z+15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a80z.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},-\frac{15}{4};-z\right)=\left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}(15-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a810.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{8775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-4096z^4-1280z^3+4080z^2+13\,500z+8775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(512z^3+480z^2-6480z-8775\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1024z^3+576z^2-540z+8775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a811.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},-\frac{13}{4};-z\right)=$$
$$-\frac{1}{8775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096z^4-1280z^3-4080z^2+13\,500z-8775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^3-480z^2-6480z+8775\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1024z^3-576z^2-540z-8775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a812.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{6930}\left(e^{-2\sqrt{z}}\left(2048e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+2048e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}-2048e^{4\sqrt{z}}z^{7/2}+\right.\right.$$
$$2048z^{7/2}-512e^{4\sqrt{z}}z^3-512z^3-384e^{4\sqrt{z}}z^{5/2}+384z^{5/2}-480e^{4\sqrt{z}}z^2-480z^2-840e^{4\sqrt{z}}z^{3/2}+$$
$$\left.\left.840z^{3/2}+5040e^{4\sqrt{z}}z+5040z-6930e^{4\sqrt{z}}\sqrt{z}+6930\sqrt{z}+3465e^{4\sqrt{z}}+3465\right)\right)$$

07.22.03.a813.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},-\frac{11}{4};-z\right)=\frac{1}{3465}\left(4096\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+\right.$$
$$\left.2\left(-1024z^3+192z^2-420z+3465\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(512z^3-480z^2-5040z+3465\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a814.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^4-1280z^3+240z^2+900z+675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^3+360z+675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(-512z^3+192z^2-180z+675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a815.01

$${}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^4+1280z^3+240z^2-900z+675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^3+360z-675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(512z^3+192z^2+180z+675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a816.01

$${}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{630}e^{-2\sqrt{z}}\left(512e^{4\sqrt{z}}z^{7/2}-512z^{7/2}+128e^{4\sqrt{z}}z^3+128z^3-32e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-15)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-\right.$$
$$32e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-15)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-384e^{4\sqrt{z}}z^{5/2}+384z^{5/2}+120e^{4\sqrt{z}}z^{3/2}-$$
$$\left.120z^{3/2}+360e^{4\sqrt{z}}z+360z-630e^{4\sqrt{z}}\sqrt{z}+630\sqrt{z}+315e^{4\sqrt{z}}+315\right)$$

07.22.03.a817.01

$${}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, -\frac{7}{4}; -z\right) = \frac{1}{315}$$
$$\left(-64\sqrt{\pi}\,(16z+15)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2\left(256z^3+192z^2+60z+315\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-128z^3-360z+315\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a818.01

$${}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, -\frac{5}{4}; z\right) =$$
$$-\frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^4-1600z^3-720z^2-180z-225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-128z^3+120z^2+225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(-256z^3+336z^2+180z-225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a819.01

$${}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, -\frac{5}{4}; -z\right) =$$
$$-\frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^4+1600z^3-720z^2+180z-225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(128z^3+120z^2+225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(256z^3+336z^2-180z-225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a81a.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{360}e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-480z-495\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-480z-495\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-\right.$$
$$4\left(-64z^{7/2}+16z^3+108z^{5/2}-15z^2+120z^{3/2}-90\sqrt{z}+e^{4\sqrt{z}}\right.$$
$$\left.\left.\left(64z^{7/2}+16z^3-108z^{5/2}-15z^2-120z^{3/2}+90\sqrt{z}-45\right)-45\right)\right)$$

07.22.03.a81b.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},-\frac{3}{4};-z\right)=\frac{1}{90}\left(\sqrt{\pi}\left(256z^2+480z-495\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+\right.$$
$$\left.2\left(\left(16z^3+15z^2+45\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(-32z^3-54z^2+60z+45\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a81c.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},-\frac{1}{4};z\right)=\frac{1}{225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(512z^4-1280z^3-1770z^2-900z+225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-256z^3+480z^2+855z-900\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(-256z^3+576z^2+945z+450\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a81d.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},-\frac{1}{4};-z\right)=\frac{1}{225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(512z^4+1280z^3-1770z^2+900z+225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-256z^3-480z^2+855z+900\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(256z^3+576z^2-945z+450\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a81e.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{23040}\left(e^{-2\sqrt{z}}\left(4\left(-1024z^{7/2}+256z^3+2688z^{5/2}-480z^2+6060z^{3/2}-1215z+5760\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{7/2}+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.256z^3-2688z^{5/2}-480z^2-6060z^{3/2}-1215z-5760\sqrt{z}+2880\right)+2880\right)-\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(4096z^3-11520z^2-23760z-24255\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(4096z^3-11520z^2-23760z-24255\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a81f.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},\frac{1}{4};-z\right)=$$

$$\frac{1}{5760}\left(2\left(\left(-256\,z^3-480\,z^2+1215\,z+2880\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(256\,z^3+672\,z^2-1515\,z+1440\right)\sin\left(2\sqrt{z}\right)\right)-\right.$$

$$\left.\sqrt{\pi}\,z^{3/4}\left(4096\,z^3+11\,520\,z^2-23\,760\,z+24\,255\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.a81g.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},\frac{3}{4};z\right)=-\frac{1}{50\,400\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(8192\,z^4-28\,160\,z^3-66\,720\,z^2-97\,650\,z-50\,400\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,\left(-4096\,z^3+11\,520\,z^2+35\,280\,z+45\,675\right)\right.\right.$$

$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\,z\left(-4096\,z^3+13\,056\,z^2+35\,280\,z+55\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a81h.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},\frac{3}{4};-z\right)=\frac{1}{50\,400\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(-8192\,z^4-28\,160\,z^3+66\,720\,z^2-97\,650\,z+50\,400\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,\left(4096\,z^3+11\,520\,z^2-35\,280\,z+45\,675\right)\right.\right.$$

$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\,z\left(4096\,z^3+13\,056\,z^2-35\,280\,z+55\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a81i.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},\frac{5}{4};z\right)=\frac{1}{5\,898\,240\sqrt[4]{z}}$$

$$\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-16\,384\,z^{7/2}+4096\,z^3+58\,368\,z^{5/2}-11\,520\,z^2+194\,880\,z^{3/2}-46\,800\,z+407\,340\sqrt{z}\right.\right.\right.+e^{4\sqrt{z}}$$

$$\left.\left.\left.\left(16\,384\,z^{7/2}+4096\,z^3-58\,368\,z^{5/2}-11\,520\,z^2-194\,880\,z^{3/2}-46\,800\,z-407\,340\sqrt{z}-63\,135\right)-63\,135\right)-\right.$$

$$e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-245\,760\,z^3-760\,320\,z^2-1\,552\,320\,z-800\,415\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$

$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-245\,760\,z^3-760\,320\,z^2-1\,552\,320\,z-800\,415\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a81j.01

$${}_1F_2\left(-\frac{15}{4};-\frac{5}{2},\frac{5}{4};-z\right)=$$

$$\frac{1}{1\,474\,560\sqrt[4]{z}}\left(\sqrt{\pi}\,\left(-65\,536\,z^4-245\,760\,z^3+760\,320\,z^2-1\,552\,320\,z+800\,415\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\right.$$

$$\left.\left(4\sqrt{z}\,\left(4096\,z^3+14\,592\,z^2-48\,720\,z+101\,835\right)\sin\left(2\sqrt{z}\right)-\left(4096\,z^3+11\,520\,z^2-46\,800\,z+63\,135\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a81k.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) = \frac{1}{4\,838\,400\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(-65\,536z^4+286\,720z^3+967\,680z^2+2\,397\,600z+1\,743\,525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(65\,536z^4-245\,760z^3-1\,036\,800z^2-2\,721\,600z+2\,027\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(65\,536z^4-270\,336z^3-1\,013\,760z^2-2\,630\,880z-2\,027\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a81l.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, \frac{7}{4}; -z\right) = \frac{1}{4\,838\,400\sqrt{2}\,\sqrt[4]{z}}\left(\left(-2\sqrt{z}\left(65\,536z^4+286\,720z^3-967\,680z^2+2\,397\,600z-1\,743\,525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(65\,536z^4+245\,760z^3-1\,036\,800z^2+2\,721\,600z+2\,027\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(65\,536z^4+270\,336z^3-1\,013\,760z^2+2\,630\,880z-2\,027\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a81m.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) = \frac{1}{377\,487\,360z^{5/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-262\,144z^{9/2}+65\,536z^4+1\,179\,648z^{7/2}-245\,760z^3+5\,191\,680z^{5/2}-1\,313\,280z^2+16\,312\,320z^{3/2}-4\,040\,640z+16\,008\,300\sqrt{z}+e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4-1\,179\,648z^{7/2}-245\,760z^3-5\,191\,680z^{5/2}-1\,313\,280z^2-16\,312\,320z^{3/2}-4\,040\,640z-16\,008\,300\sqrt{z}+12\,006\,225\right)+12\,006\,225\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-4\,915\,200z^4-20\,275\,200z^3-62\,092\,800z^2-64\,033\,200z+12\,006\,225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-4\,915\,200z^4-20\,275\,200z^3-62\,092\,800z^2-64\,033\,200z+12\,006\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a81n.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, \frac{9}{4}; -z\right) = \frac{1}{94\,371\,840z^{5/4}}\left(\sqrt{\pi}\left(-1\,048\,576z^5-4\,915\,200z^4+20\,275\,200z^3-62\,092\,800z^2+64\,033\,200z+12\,006\,225\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4+294\,912z^3-1\,297\,920z^2+4\,078\,080z-4\,002\,075\right)\sin\left(2\sqrt{z}\right)-\left(65\,536z^4+245\,760z^3-1\,313\,280z^2+4\,040\,640z+12\,006\,225\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a81o.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, \frac{11}{4}; z\right) = -\frac{1}{243\,302\,400\sqrt{2}\, z^{5/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576 z^5 - 5\,570\,560 z^4 - 24\,453\,120 z^3 - 85\,639\,680 z^2 - 101\,574\,000 z - 34\,459\,425\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(-1\,048\,576 z^5 + 4\,915\,200 z^4 + 26\,173\,440 z^3 + 98\,081\,280 z^2 + 97\,297\,200 z + 103\,378\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\left(-1\,048\,576 z^5 + 5\,308\,416 z^4 + 25\,436\,160 z^3 + 91\,998\,720 z^2 + 123\,243\,120 z - 103\,378\,275\right) $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a81p.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, \frac{11}{4}; -z\right) = \frac{1}{243\,302\,400\sqrt{2}\, z^{5/4}} $$
$$ \left(\left(-2\sqrt{z}\left(1\,048\,576 z^5 + 5\,570\,560 z^4 - 24\,453\,120 z^3 + 85\,639\,680 z^2 - 101\,574\,000 z + 34\,459\,425\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(1\,048\,576 z^5 + 4\,915\,200 z^4 - 26\,173\,440 z^3 + 98\,081\,280 z^2 - 97\,297\,200 z + 103\,378\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(-1\,048\,576 z^5 - 5\,308\,416 z^4 + 25\,436\,160 z^3 - 91\,998\,720 z^2 + 123\,243\,120 z + 103\,378\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a81q.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, \frac{13}{4}; z\right) = $$
$$ \frac{1}{16\,106\,127\,360 z^{9/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 22\,806\,528 z^{9/2} - 4\,915\,200 z^4 + 124\,354\,560 z^{7/2} - \right.\right.\right. $$
$$ 32\,071\,680 z^3 + 518\,584\,320 z^{5/2} - 139\,875\,840 z^2 + 841\,579\,200 z^{3/2} - 64\,033\,200 z - $$
$$ 1\,520\,788\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 22\,806\,528 z^{9/2} - \right. $$
$$ \left. 4\,915\,200 z^4 - 124\,354\,560 z^{7/2} - 32\,071\,680 z^3 - 518\,584\,320 z^{5/2} - 139\,875\,840 z^2 - \right. $$
$$ \left.\left. 841\,579\,200 z^{3/2} - 64\,033\,200 z + 1\,520\,788\,500\sqrt{z} - 1\,140\,591\,375\right) - 1\,140\,591\,375\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 94\,371\,840 z^5 - 486\,604\,800 z^4 - 1\,986\,969\,600 z^3 - 3\,073\,593\,600 z^2 + \right. $$
$$ \left. 1\,152\,597\,600 z - 1\,140\,591\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 94\,371\,840 z^5 - 486\,604\,800 z^4 - 1\,986\,969\,600 z^3 - \right. $$
$$ \left.\left.\left. 3\,073\,593\,600 z^2 + 1\,152\,597\,600 z - 1\,140\,591\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a81r.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, \frac{13}{4}; -z\right) = $$

$$ \frac{1}{4\,026\,531\,840\, z^{9/4}}\left(\sqrt{\pi}\,\left(-16\,777\,216\, z^6 - 94\,371\,840\, z^5 + 486\,604\,800\, z^4 - 1\,986\,969\,600\, z^3 + 3\,073\,593\,600\, z^2 + 1\,152\,597\,600\, z + 1\,140\,591\,375\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(1\,048\,576\, z^5 + 5\,701\,632\, z^4 - 31\,088\,640\, z^3 + 129\,646\,080\, z^2 - 210\,394\,800\, z - 380\,197\,125\right)\sin\left(2\sqrt{z}\right) - \left(1\,048\,576\, z^5 + 4\,915\,200\, z^4 - 32\,071\,680\, z^3 + 139\,875\,840\, z^2 - 64\,033\,200\, z + 1\,140\,591\,375\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a81s.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, \frac{15}{4}; z\right) = $$

$$ -\frac{1}{9\,201\,254\,400\sqrt{2}\, z^{9/4}}\left(\left(2\sqrt{z}\,\left(16\,777\,216\, z^6 - 104\,857\,600\, z^5 - 567\,214\,080\, z^4 - 2\,568\,683\,520\, z^3 - 4\,341\,392\,640\, z^2 + 2\,205\,403\,200\, z + 5\,065\,535\,475\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,777\,216\, z^6 + 94\,371\,840\, z^5 + 604\,569\,600\, z^4 + 2\,904\,145\,920\, z^3 + 5\,500\,535\,040\, z^2 - 29\,772\,943\,200\, z - 15\,196\,606\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-16\,777\,216\, z^6 + 100\,663\,296\, z^5 + 586\,874\,880\, z^4 + 2\,720\,563\,200\, z^3 + 5\,085\,400\,320\, z^2 - 2\,646\,483\,840\, z + 15\,196\,606\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a81t.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, \frac{15}{4}; -z\right) = $$

$$ \frac{1}{9\,201\,254\,400\sqrt{2}\, z^{9/4}}\left(\left(-2\sqrt{z}\,\left(16\,777\,216\, z^6 + 104\,857\,600\, z^5 - 567\,214\,080\, z^4 + 2\,568\,683\,520\, z^3 - 4\,341\,392\,640\, z^2 - 2\,205\,403\,200\, z + 5\,065\,535\,475\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216\, z^6 + 94\,371\,840\, z^5 - 604\,569\,600\, z^4 + 2\,904\,145\,920\, z^3 - 5\,500\,535\,040\, z^2 - 29\,772\,943\,200\, z + 15\,196\,606\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-16\,777\,216\, z^6 - 100\,663\,296\, z^5 + 586\,874\,880\, z^4 - 2\,720\,563\,200\, z^3 + 5\,085\,400\,320\, z^2 + 2\,646\,483\,840\, z + 15\,196\,606\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a81u.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, \frac{17}{4}; z\right) = $$
$$ -\frac{1}{7\,215\,545\,057\,280\,z^{13/4}}\left(13\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-67\,108\,864\,z^{13/2}+16\,777\,216\,z^6+427\,819\,008\,z^{11/2}-94\,371\,840\,z^5+\right.\right.\right. $$
$$ 2\,780\,037\,120\,z^{9/2}-722\,534\,400\,z^4+14\,430\,044\,160\,z^{7/2}-3\,968\,778\,240\,z^3+31\,454\,438\,400\,z^{5/2}- $$
$$ 7\,757\,164\,800\,z^2-26\,418\,268\,800\,z^{3/2}+124\,096\,341\,600\,z+314\,803\,219\,500\sqrt{z}\;+ $$
$$ e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^6-427\,819\,008\,z^{11/2}-94\,371\,840\,z^5-2\,780\,037\,120\,z^{9/2}-\right. $$
$$ \left.\left.\left.722\,534\,400\,z^4-14\,430\,044\,160\,z^{7/2}-3\,968\,778\,240\,z^3-31\,454\,438\,400\,z^{5/2}-7\,757\,164\,800\,z^2+ \right.\right.\right. $$
$$ \left.\left.\left.26\,418\,268\,800\,z^{3/2}+124\,096\,341\,600\,z-314\,803\,219\,500\sqrt{z}\;+236\,102\,414\,625\right)+236\,102\,414\,625\right)+ $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-1\,761\,607\,680\,z^6-10\,899\,947\,520\,z^5-55\,635\,148\,800\,z^4- \right. $$
$$ \left.114\,747\,494\,400\,z^3+64\,545\,465\,600\,z^2-127\,746\,234\,000\,z+236\,102\,414\,625\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+ $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-1\,761\,607\,680\,z^6-10\,899\,947\,520\,z^5-55\,635\,148\,800\,z^4- \right. $$
$$ \left.\left.114\,747\,494\,400\,z^3+64\,545\,465\,600\,z^2-127\,746\,234\,000\,z+236\,102\,414\,625\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a81v.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, \frac{17}{4}; -z\right) = $$
$$ \frac{1}{1\,803\,886\,264\,320\,z^{13/4}}\left(13\left(\sqrt{\pi}\left(-268\,435\,456\,z^7-1\,761\,607\,680\,z^6+10\,899\,947\,520\,z^5-55\,635\,148\,800\,z^4+ \right.\right.\right. $$
$$ \left.\left.\left.114\,747\,494\,400\,z^3+64\,545\,465\,600\,z^2+127\,746\,234\,000\,z+236\,102\,414\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ \right. $$
$$ 2\sqrt[4]{z}\left(\left(-16\,777\,216\,z^6-94\,371\,840\,z^5+722\,534\,400\,z^4-3\,968\,778\,240\,z^3+7\,757\,164\,800\,z^2+ \right.\right. $$
$$ \left.\left.124\,096\,341\,600\,z-236\,102\,414\,625\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(16\,777\,216\,z^6+106\,954\,752\,z^5- \right.\right. $$
$$ \left.\left.\left.\left.695\,009\,280\,z^4+3\,607\,511\,040\,z^3-7\,863\,609\,600\,z^2-6\,604\,567\,200\,z-78\,700\,804\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a81w.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) = $$
$$ \left(\left(2\sqrt{z}\left(-268\,435\,456\,z^7+1\,929\,379\,840\,z^6+12\,409\,896\,960\,z^5+68\,935\,680\,000\,z^4+152\,024\,371\,200\,z^3- \right.\right.\right. $$
$$ \left.\left.\left.132\,324\,192\,000\,z^2+984\,161\,178\,000\,z+1\,393\,022\,255\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ \right. $$
$$ \left(268\,435\,456\,z^7-1\,761\,607\,680\,z^6-13\,164\,871\,680\,z^5-76\,809\,830\,400\,z^4-196\,497\,100\,800\,z^3+ \right. $$
$$ \left.396\,972\,576\,000\,z^2-9\,320\,585\,274\,000\,z-4\,179\,066\,766\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ 2\sqrt{z}\left(268\,435\,456\,z^7-1\,862\,270\,976\,z^6-12\,787\,384\,320\,z^5-72\,297\,676\,800\,z^4-172\,653\,465\,600\,z^3+ \right. $$
$$ \left.\left.97\,037\,740\,800\,z^2+405\,242\,838\,000\,z+4\,179\,066\,766\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(294\,440\,140\,800\sqrt{2}\;z^{13/4}\right) $$

07.22.03.a81x.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) = $$

$$ \left(\left(-2\sqrt{z}\left(268\,435\,456\,z^7 + 1\,929\,379\,840\,z^6 - 12\,409\,896\,960\,z^5 + 68\,935\,680\,000\,z^4 - 152\,024\,371\,200\,z^3 - 132\,324\,192\,000\,z^2 - 984\,161\,178\,000\,z + 1\,393\,022\,255\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(268\,435\,456\,z^7 + 1\,761\,607\,680\,z^6 - 13\,164\,871\,680\,z^5 + 76\,809\,830\,400\,z^4 - 196\,497\,100\,800\,z^3 - 396\,972\,576\,000\,z^2 - 9\,320\,585\,274\,000\,z + 4\,179\,066\,766\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-268\,435\,456\,z^7 - 1\,862\,270\,976\,z^6 + 12\,787\,384\,320\,z^5 - 72\,297\,676\,800\,z^4 + 172\,653\,465\,600\,z^3 + 97\,037\,740\,800\,z^2 - 405\,242\,838\,000\,z + 4\,179\,066\,766\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(294\,440\,140\,800\sqrt{2}\, z^{13/4}\right) $$

07.22.03.a81y.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) = $$

$$ -\Big(221\, e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 + 7\,851\,737\,088\,z^{13/2} - 1\,761\,607\,680\,z^6 + 59\,202\,600\,960\,z^{11/2} - 15\,429\,795\,840\,z^5 + 367\,542\,927\,360\,z^{9/2} - 101\,216\,747\,520\,z^4 + 995\,812\,392\,960\,z^{7/2} - 291\,871\,641\,600\,z^3 - 644\,150\,707\,200\,z^{5/2} + 1\,610\,123\,961\,600\,z^2 - 10\,217\,613\,067\,200\,z^{3/2} - 58\,175\,634\,963\,600\,z - 110\,495\,930\,044\,500\sqrt{z} + e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 - 7\,851\,737\,088\,z^{13/2} - 1\,761\,607\,680\,z^6 - 59\,202\,600\,960\,z^{11/2} - 15\,429\,795\,840\,z^5 - 367\,542\,927\,360\,z^{9/2} - 101\,216\,747\,520\,z^4 - 995\,812\,392\,960\,z^{7/2} - 291\,871\,641\,600\,z^3 + 644\,150\,707\,200\,z^{5/2} + 1\,610\,123\,961\,600\,z^2 + 10\,217\,613\,067\,200\,z^{3/2} - 58\,175\,634\,963\,600\,z + 110\,495\,930\,044\,500\sqrt{z} - 82\,871\,947\,533\,375\right) - 82\,871\,947\,533\,375\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8 - 32\,212\,254\,720\,z^7 - 232\,532\,213\,760\,z^6 - 1\,424\,259\,809\,280\,z^5 - 3\,671\,919\,820\,800\,z^4 + 2\,753\,939\,865\,600\,z^3 - 8\,175\,758\,976\,000\,z^2 + 30\,221\,109\,072\,000\,z - 82\,871\,947\,533\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8 - 32\,212\,254\,720\,z^7 - 232\,532\,213\,760\,z^6 - 1\,424\,259\,809\,280\,z^5 - 3\,671\,919\,820\,800\,z^4 + 2\,753\,939\,865\,600\,z^3 - 8\,175\,758\,976\,000\,z^2 + 30\,221\,109\,072\,000\,z - 82\,871\,947\,533\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\Big)\Big) \Big/ \left(3\,694\,359\,069\,327\,360\, z^{17/4}\right) $$

07.22.03.a81z.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) = \frac{1}{923\,589\,767\,331\,840\, z^{17/4}} $$
$$ \left(221\left(\sqrt{\pi}\,\left(-4\,294\,967\,296\, z^8 - 32\,212\,254\,720\, z^7 + 232\,532\,213\,760\, z^6 - 1\,424\,259\,809\,280\, z^5 + 3\,671\,919\,820\,800\, z^4 + \right.\right.\right. $$
$$ \left. 2\,753\,939\,865\,600\, z^3 + 8\,175\,758\,976\,000\, z^2 + 30\,221\,109\,072\,000\, z + 82\,871\,947\,533\,375\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\,\left(\left(-268\,435\,456\, z^7 - 1\,761\,607\,680\, z^6 + 15\,429\,795\,840\, z^5 - 101\,216\,747\,520\, z^4 + 291\,871\,641\,600\, z^3 + \right.\right. $$
$$ \left. 1\,610\,123\,961\,600\, z^2 + 58\,175\,634\,963\,600\, z - 82\,871\,947\,533\,375\right)\cos\left(2\sqrt{z}\right) + $$
$$ 4\sqrt{z}\,\left(268\,435\,456\, z^7 + 1\,962\,934\,272\, z^6 - 14\,800\,650\,240\, z^5 + 91\,885\,731\,840\, z^4 - \right. $$
$$ \left.\left.\left. 248\,953\,098\,240\, z^3 - 161\,037\,676\,800\, z^2 + 2\,554\,403\,266\,800\, z - 27\,623\,982\,511\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a820.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, \frac{23}{4}; z\right) = $$
$$ -\left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 - 34\,896\,609\,280\, z^7 - 260\,214\,620\,160\, z^6 - 1\,712\,377\,036\,800\, z^5 - 4\,663\,561\,420\,800\, z^4 + \right.\right.\right. $$
$$ \left. 5\,175\,346\,176\,000\, z^3 - 24\,083\,002\,944\,000\, z^2 + 503\,080\,037\,460\,000\, z + 605\,964\,681\,196\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ \left(-4\,294\,967\,296\, z^8 + 32\,212\,254\,720\, z^7 + 274\,810\,798\,080\, z^6 + 1\,883\,661\,926\,400\, z^5 + 5\,906\,409\,062\,400\, z^4 - \right. $$
$$ \left. 5\,645\,832\,192\,000\, z^3 - 270\,470\,648\,448\,000\, z^2 - 4\,279\,364\,369\,280\,000\, z - 1\,817\,894\,043\,590\,625\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-4\,294\,967\,296\, z^8 + 33\,822\,867\,456\, z^7 + 267\,261\,050\,880\, z^6 + \right. $$
$$ 1\,783\,155\,916\,800\, z^5 + 5\,177\,475\,072\,000\, z^4 - 3\,626\,361\,446\,400\, z^3 + 5\,557\,616\,064\,000\, z^2 + $$
$$ \left.\left.\left. 401\,190\,409\,620\,000\, z + 1\,817\,894\,043\,590\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(160\,175\,436\,595\,200\sqrt{2}\, z^{17/4}\right) $$

07.22.03.a821.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{5}{2}, \frac{23}{4}; -z\right) = $$
$$ -\left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 + 34\,896\,609\,280\, z^7 - 260\,214\,620\,160\, z^6 + 1\,712\,377\,036\,800\, z^5 - 4\,663\,561\,420\,800\, z^4 - \right.\right.\right. $$
$$ \left. 5\,175\,346\,176\,000\, z^3 - 24\,083\,002\,944\,000\, z^2 - 503\,080\,037\,460\,000\, z + 605\,964\,681\,196\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ \left(-4\,294\,967\,296\, z^8 - 32\,212\,254\,720\, z^7 + 274\,810\,798\,080\, z^6 - 1\,883\,661\,926\,400\, z^5 + 5\,906\,409\,062\,400\, z^4 + \right. $$
$$ \left. 5\,645\,832\,192\,000\, z^3 - 270\,470\,648\,448\,000\, z^2 + 4\,279\,364\,369\,280\,000\, z - 1\,817\,894\,043\,590\,625\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 + 33\,822\,867\,456\, z^7 - 267\,261\,050\,880\, z^6 + \right. $$
$$ 1\,783\,155\,916\,800\, z^5 - 5\,177\,475\,072\,000\, z^4 - 3\,626\,361\,446\,400\, z^3 - 5\,557\,616\,064\,000\, z^2 + $$
$$ \left.\left.\left. 401\,190\,409\,620\,000\, z - 1\,817\,894\,043\,590\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(160\,175\,436\,595\,200\sqrt{2}\, z^{17/4}\right) $$

For fixed z and $a_1 = -\frac{15}{4}$, $b_1 = -\frac{3}{2}$

07.22.03.a822.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, -\frac{23}{4}; z\right) = \left(\frac{64\,z^2}{1311} + \frac{36\,z}{23} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{69}\sqrt{z}\,(16\,z + 69)\sinh\left(2\sqrt{z}\right) $$

07.22.03.a823.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, -\frac{23}{4}; -z\right) = \left(\frac{64\,z^2}{1311} - \frac{36\,z}{23} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{69}(69 - 16\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.a824.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, -\frac{21}{4}; z\right) = \frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768\,z^4 + 378\,880\,z^3 + 580\,320\,z^2 + 1\,591\,200\,z + 1\,044\,225\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4096\,z^3 + 49\,920\,z^2 + 755\,820\,z + 1\,044\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(8192\,z^3 + 96\,768\,z^2 + 79\,560\,z - 1\,044\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a825.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, -\frac{21}{4}; -z\right) = \frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768\,z^4 - 378\,880\,z^3 + 580\,320\,z^2 - 1\,591\,200\,z + 1\,044\,225\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4096\,z^3 - 49\,920\,z^2 + 755\,820\,z - 1\,044\,225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(8192\,z^3 - 96\,768\,z^2 + 79\,560\,z + 1\,044\,225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a826.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, -\frac{19}{4}; z\right) = \left(\frac{28\,z}{19} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{57}\sqrt{z}\,(8\,z + 57)\sinh\left(2\sqrt{z}\right) $$

07.22.03.a827.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, -\frac{19}{4}; -z\right) = \left(1 - \frac{28\,z}{19}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{57}(57 - 8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.a828.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, -\frac{17}{4}; z\right) = \frac{1}{149\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^4 + 112\,640\,z^3 + 77\,760\,z^2 + 210\,600\,z + 149\,175\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048\,z^3 + 15\,360\,z^2 + 91\,260\,z + 149\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(4096\,z^3 + 29\,184\,z^2 + 28\,080\,z - 149\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a829.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{149\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384z^4-112\,640z^3+77\,760z^2-210\,600z+149\,175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-2048z^3+15\,360z^2-\right.\right.\right.$$
$$\left.\left.\left.91\,260z+149\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(4096z^3-29\,184z^2+28\,080z+149\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a82a.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},-\frac{15}{4};z\right)=\left(\frac{4z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.a82b.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},-\frac{15}{4};-z\right)=\left(1-\frac{4z}{3}\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a82c.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{8775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192z^4+17\,920z^3+5280z^2+10\,800z+8775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1024z^3+2880z^2+3780z+8775\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(2048z^3+4992z^2+3240z-8775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a82d.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{8775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192z^4-17\,920z^3+5280z^2-10\,800z+8775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1024z^3-2880z^2+3780z-8775\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(2048z^3-4992z^2+3240z+8775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a82e.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{6930}\left(e^{-2\sqrt{z}}\left(-4096e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}-4096e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+4096e^{4\sqrt{z}}z^{7/2}-\right.\right.$$
$$4096z^{7/2}+1024e^{4\sqrt{z}}z^3+1024z^3+768e^{4\sqrt{z}}z^{5/2}-768z^{5/2}+960e^{4\sqrt{z}}z^2+960z^2+$$
$$\left.\left.1680e^{4\sqrt{z}}z^{3/2}-1680z^{3/2}+3780e^{4\sqrt{z}}z+3780z-6930e^{4\sqrt{z}}\sqrt{z}+6930\sqrt{z}+3465e^{4\sqrt{z}}+3465\right)\right)$$

07.22.03.a82f.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},-\frac{11}{4};-z\right)=\frac{1}{3465}\left(-8192\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+\right.$$
$$\left.2\left(2048z^3-384z^2+840z+3465\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-1024z^3+960z^2-3780z+3465\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a82g.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},-\frac{9}{4};z\right)=\frac{1}{675\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(-4096z^4+10\,240z^3+960z^2+600z+675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(512z^3-960z^2-60z-675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(1024z^3-2304z^2-480z+675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a82h.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},-\frac{9}{4};-z\right)=$$
$$-\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096z^4+10\,240z^3-960z^2+600z-675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^3+960z^2-60z+675\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1024z^3+2304z^2-480z-675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a82i.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{630}e^{-2\sqrt{z}}\left(-1024e^{4\sqrt{z}}z^{7/2}+1024z^{7/2}-256e^{4\sqrt{z}}z^3-256z^3+64e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-75)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+\right.$$
$$64e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-75)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+4608e^{4\sqrt{z}}z^{5/2}-4608z^{5/2}+960e^{4\sqrt{z}}z^2+960z^2+$$
$$\left.480e^{4\sqrt{z}}z^{3/2}-480z^{3/2}+180e^{4\sqrt{z}}z+180z-630e^{4\sqrt{z}}\sqrt{z}+630\sqrt{z}+315e^{4\sqrt{z}}+315\right)$$

07.22.03.a82j.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},-\frac{7}{4};-z\right)=\frac{1}{315}\left(128\sqrt{\pi}\,(16z+75)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+\right.$$
$$\left.2\left(-512z^3-2304z^2+240z+315\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(256z^3+960z^2-180z+315\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a82k.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},-\frac{5}{4};z\right)=\frac{1}{225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(2048z^4-14\,720z^3+4320z^2+225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-256z^3+1680z^2+180z-225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(-512z^3+3552z^2-360z+225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a82l.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, -\frac{5}{4}; -z\right) = \frac{1}{225\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(2048z^4 + 14\,720z^3 + 4320z^2 + 225\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-256z^3 - 1680z^2 + 180z + 225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. 4z\left(512z^3 + 3552z^2 + 360z + 225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a82m.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, -\frac{3}{4}; z\right) = \frac{1}{180} e^{-2\sqrt{z}} $$
$$ \left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 - 2400z + 825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} - e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 - 2400z + 825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} + \right. $$
$$ 2\left(-128z^{7/2} + 32z^3 + 1176z^{5/2} - 270z^2 - 240z^{3/2} - 60z + 90\sqrt{z} + \right. $$
$$ \left.\left. e^{4\sqrt{z}}\left(128z^{7/2} + 32z^3 - 1176z^{5/2} - 270z^2 + 240z^{3/2} - 60z - 90\sqrt{z} + 45\right) + 45\right)\right) $$

07.22.03.a82n.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, -\frac{3}{4}; -z\right) = \frac{1}{45}\left(-\sqrt{\pi}\left(256z^2 + 2400z + 825\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} + \right. $$
$$ \left. 2\left(64z^3 + 588z^2 + 120z + 45\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-32z^3 - 270z^2 + 60z + 45\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.a82o.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, -\frac{1}{4}; z\right) = $$
$$ \frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-1024z^4 + 12\,160z^3 - 7860z^2 - 1800z + 225\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\sqrt{z}\left(256z^3 - 2880z^2 + 495z - 450\right)\right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(256z^3 - 2976z^2 + 1305z + 225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a82p.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, -\frac{1}{4}; -z\right) = $$
$$ -\frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^4 + 12\,160z^3 + 7860z^2 - 1800z - 225\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(256z^3 + 2880z^2 + 495z + 450\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(256z^3 + 2976z^2 + 1305z - 225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a82q.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{11\,520}\left(e^{-2\sqrt{z}}\left(-4\left(-1024\,z^{7/2}+256\,z^3+14\,208\,z^{5/2}-3360\,z^2-7620\,z^{3/2}+45\,z-2880\sqrt{z}+e^{4\sqrt{z}}\left(1024\,z^{7/2}+256\,z^3-14\,208\,z^{5/2}-3360\,z^2+7620\,z^{3/2}+45\,z+2880\sqrt{z}-1440\right)-1440\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(4096\,z^3-57\,600\,z^2+39\,600\,z+17\,325\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(4096\,z^3-57\,600\,z^2+39\,600\,z+17\,325\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a82r.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},\frac{1}{4};-z\right)=\frac{1}{2880}\left(\left(512\,z^3+6720\,z^2+90\,z+2880\right)\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\,z^{3/4}\left(4096\,z^3+57\,600\,z^2+39\,600\,z-17\,325\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-8\sqrt{z}\left(256\,z^3+3552\,z^2+1905\,z-720\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a82s.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},\frac{3}{4};z\right)=\frac{1}{25\,200\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(2\left(4096\,z^4-67\,840\,z^3+67\,440\,z^2+38\,325\,z+12\,600\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(4096\,z^3-65\,280\,z^2+31\,920\,z+14\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\,z\left(4096\,z^3-66\,816\,z^2+52\,080\,z+36\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a82t.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},\frac{3}{4};-z\right)=\frac{1}{25\,200\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(2\left(4096\,z^4+67\,840\,z^3+67\,440\,z^2-38\,325\,z+12\,600\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(4096\,z^3+65\,280\,z^2+31\,920\,z-14\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\,z\left(4096\,z^3+66\,816\,z^2+52\,080\,z-36\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a82u.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},\frac{5}{4};z\right)=\frac{1}{2\,949\,120\sqrt[4]{z}}$$
$$\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384\,z^{7/2}+4096\,z^3+304\,128\,z^{5/2}-72\,960\,z^2-265\,920\,z^{3/2}+22\,320\,z-252\,180\sqrt{z}+e^{4\sqrt{z}}\left(16\,384\,z^{7/2}+4096\,z^3-304\,128\,z^{5/2}-72\,960\,z^2+265\,920\,z^{3/2}+22\,320\,z+252\,180\sqrt{z}-4815\right)-4815\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-1\,228\,800\,z^3+1\,267\,200\,z^2+1\,108\,800\,z+363\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-1\,228\,800\,z^3+1\,267\,200\,z^2+1\,108\,800\,z+363\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a82v.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},\frac{5}{4};-z\right)=\frac{1}{737\,280\sqrt[4]{z}}\left(\sqrt{\pi}\left(65\,536z^4+1\,228\,800z^3+1\,267\,200z^2-1\,108\,800z+363\,825\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\sqrt[4]{z}\left(\left(4096z^3+72\,960z^2+22\,320z+4815\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(4096z^3+76\,032z^2+66\,480z-63\,045\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a82w.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{2\,419\,200\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(65\,536z^4-1\,392\,640z^3+1\,866\,240z^2+1\,771\,200z+949\,725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-65\,536z^4+1\,351\,680z^3-1\,105\,920z^2-1\,360\,800z+779\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-1\,376\,256z^3+1\,543\,680z^2+1\,814\,400z+779\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a82x.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},\frac{7}{4};-z\right)=$$
$$\frac{1}{2\,419\,200\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(65\,536z^4+1\,392\,640z^3+1\,866\,240z^2-1\,771\,200z+949\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-65\,536z^4-1\,351\,680z^3-1\,105\,920z^2+1\,360\,800z+779\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+1\,376\,256z^3+1\,543\,680z^2-1\,814\,400z+779\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a82y.01

$${}_1F_2\left(-\frac{15}{4};-\frac{3}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{188\,743\,680z^{5/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-262\,144z^{9/2}+65\,536z^4+6\,094\,848z^{7/2}-1\,474\,560z^3-7\,403\,520z^{5/2}+913\,920z^2-\right.\right.\right.$$
$$\left.10\,817\,280z^{3/2}+1\,244\,160z-5\,336\,100\sqrt{z}\right)+e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4-6\,094\,848z^{7/2}-1\,474\,560z^3+\right.$$
$$\left.\left.7\,403\,520z^{5/2}+913\,920z^2+10\,817\,280z^{3/2}+1\,244\,160z+5\,336\,100\sqrt{z}-4\,002\,075\right)-4\,002\,075\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-24\,576\,000z^4+33\,792\,000z^3+44\,352\,000z^2+29\,106\,000z-4\,002\,075\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-24\,576\,000z^4+33\,792\,000z^3+44\,352\,000z^2+29\,106\,000z-4\,002\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a82z.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) = $$
$$ \frac{1}{47\,185\,920\, z^{5/4}}\left(\sqrt{\pi}\,\left(1\,048\,576\, z^5 + 24\,576\,000\, z^4 + 33\,792\,000\, z^3 - 44\,352\,000\, z^2 + 29\,106\,000\, z + 4\,002\,075\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$
$$ 2\sqrt[4]{z}\,\left(\left(-65\,536\, z^4 - 1\,474\,560\, z^3 - 913\,920\, z^2 + 1\,244\,160\, z + 4\,002\,075\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 4\sqrt{z}\,\left(65\,536\, z^4 + 1\,523\,712\, z^3 + 1\,850\,880\, z^2 - 2\,704\,320\, z + 1\,334\,025\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a830.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) = \frac{1}{121\,651\,200\sqrt{2}\, z^{5/4}} $$
$$ \left(\left(2\sqrt{z}\,\left(1\,048\,576\, z^5 - 27\,197\,440\, z^4 + 45\,834\,240\, z^3 + 61\,862\,400\, z^2 + 49\,539\,600\, z + 10\,135\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ \left(1\,048\,576\, z^5 - 26\,542\,080\, z^4 + 30\,597\,120\, z^3 + 57\,024\,000\, z^2 + 12\,474\,000\, z + 30\,405\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 2\sqrt{z}\,\left(1\,048\,576\, z^5 - 26\,935\,296\, z^4 + 39\,444\,480\, z^3 + 64\,627\,200\, z^2 + 52\,390\,800\, z - 30\,405\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a831.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) = \frac{1}{121\,651\,200\sqrt{2}\, z^{5/4}} $$
$$ \left(\left(2\sqrt{z}\,\left(1\,048\,576\, z^5 + 27\,197\,440\, z^4 + 45\,834\,240\, z^3 - 61\,862\,400\, z^2 + 49\,539\,600\, z - 10\,135\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ \left(1\,048\,576\, z^5 + 26\,542\,080\, z^4 + 30\,597\,120\, z^3 - 57\,024\,000\, z^2 + 12\,474\,000\, z - 30\,405\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\,\left(1\,048\,576\, z^5 + 26\,935\,296\, z^4 + 39\,444\,480\, z^3 - 64\,627\,200\, z^2 + 52\,390\,800\, z + 30\,405\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a832.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) = $$
$$ \frac{1}{8\,053\,063\,680\, z^{9/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-4\,194\,304\, z^{11/2} + 1\,048\,576\, z^5 + 117\,178\,368\, z^{9/2} - 28\,508\,160\, z^4 - 182\,353\,920\, z^{7/2} + \right.\right.\right. $$
$$ 26\,910\,720\, z^3 - 355\,092\,480\, z^{5/2} + 61\,954\,560\, z^2 - 329\,313\,600\, z^{3/2} - 64\,033\,200\, z + 400\,207\,500\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(4\,194\,304\, z^{11/2} + 1\,048\,576\, z^5 - 117\,178\,368\, z^{9/2} - 28\,508\,160\, z^4 + 182\,353\,920\, z^{7/2} + 26\,910\,720\, z^3 + \right. $$
$$ \left.\left. 355\,092\,480\, z^{5/2} + 61\,954\,560\, z^2 + 329\,313\,600\, z^{3/2} - 64\,033\,200\, z - 400\,207\,500\sqrt{z} + 300\,155\,625\right) + $$
$$ \left.\left. 300\,155\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(16\,777\,216\, z^6 - 471\,859\,200\, z^5 + 811\,008\,000\, z^4 + \right.\right. $$
$$ \left. 1\,419\,264\,000\, z^3 + 1\,397\,088\,000\, z^2 - 384\,199\,200\, z + 300\,155\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\,\left(16\,777\,216\, z^6 - 471\,859\,200\, z^5 + 811\,008\,000\, z^4 + 1\,419\,264\,000\, z^3 + \right. $$
$$ \left.\left.\left. 1\,397\,088\,000\, z^2 - 384\,199\,200\, z + 300\,155\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a833.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) = \frac{1}{2\,013\,265\,920\, z^{9/4}} $$
$$ \left(\sqrt{\pi}\,\left(16\,777\,216\, z^6 + 471\,859\,200\, z^5 + 811\,008\,000\, z^4 - 1\,419\,264\,000\, z^3 + 1\,397\,088\,000\, z^2 + 384\,199\,200\, z + 300\,155\,625\right)\right. $$
$$ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - $$
$$ 2\sqrt[4]{z}\,\left(\left(-1\,048\,576\, z^5 - 28\,508\,160\, z^4 - 26\,910\,720\, z^3 + 61\,954\,560\, z^2 + 64\,033\,200\, z + 300\,155\,625\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 4\sqrt{z}\,\left(1\,048\,576\, z^5 + 29\,294\,592\, z^4 + 45\,588\,480\, z^3 - 88\,773\,120\, z^2 + 82\,328\,400\, z + 100\,051\,875\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a834.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) = \frac{1}{4\,600\,627\,200\sqrt{2}\, z^{9/4}} $$
$$ \left(\left(2\sqrt{z}\,\left(16\,777\,216\, z^6 - 513\,802\,240\, z^5 + 1\,043\,005\,440\, z^4 + 1\,837\,056\,000\, z^3 + 2\,015\,020\,800\, z^2 - 324\,324\,000\, z - \right.\right.\right. $$
$$ \left.\left. 1\,206\,079\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,777\,216\, z^6 + 503\,316\,480\, z^5 - 750\,059\,520\, z^4 - 1\,821\,081\,600\, z^3 - \right. $$
$$ \left. 1\,556\,755\,200\, z^2 + 6\,486\,480\,000\, z + 3\,618\,239\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,777\,216\, z^6 - 509\,607\,936\, z^5 + \right. $$
$$ \left.\left.\left. 921\,108\,480\, z^4 + 1\,927\,987\,200\, z^3 + 2\,248\,646\,400\, z^2 - 1\,232\,431\,200\, z + 3\,618\,239\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a835.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, \frac{15}{4}; -z\right) = $$
$$ \frac{1}{4\,600\,627\,200\sqrt{2}\, z^{9/4}}\left(\left(2\sqrt{z}\,\left(16\,777\,216\, z^6 + 513\,802\,240\, z^5 + 1\,043\,005\,440\, z^4 - 1\,837\,056\,000\, z^3 + \right.\right.\right. $$
$$ \left. 2\,015\,020\,800\, z^2 + 324\,324\,000\, z - 1\,206\,079\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ \left(16\,777\,216\, z^6 + 503\,316\,480\, z^5 + 750\,059\,520\, z^4 - 1\,821\,081\,600\, z^3 + 1\,556\,755\,200\, z^2 + 6\,486\,480\,000\, z - \right. $$
$$ \left. 3\,618\,239\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216\, z^6 + 509\,607\,936\, z^5 + 921\,108\,480\, z^4 - \right. $$
$$ \left.\left.\left. 1\,927\,987\,200\, z^3 + 2\,248\,646\,400\, z^2 + 1\,232\,431\,200\, z + 3\,618\,239\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a836.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) = \frac{1}{3\,607\,772\,528\,640\, z^{13/4}} \left(13\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\, \left(-67\,108\,864\, z^{13/2} + 16\,777\,216\, z^6 + 2\,189\,426\,688\, z^{11/2} - 534\,773\,760\, z^5 - 4\,156\,293\,120\, z^{9/2} + 681\,246\,720\, z^4 + 10\,053\,550\,080\, z^{7/2} + 2\,069\,544\,960\, z^3 - 13\,252\,377\,600\, z^{5/2} + 439\,084\,800\, z^2 + 13\,538\,448\,000\, z^{3/2} - 21\,130\,956\,000\, z - 68\,435\,482\,500\sqrt{z} + e^{4\sqrt{z}} \left(67\,108\,864\, z^{13/2} + 16\,777\,216\, z^6 - 2\,189\,426\,688\, z^{11/2} - 534\,773\,760\, z^5 + 4\,156\,293\,120\, z^{9/2} + 681\,246\,720\, z^4 + 10\,053\,550\,080\, z^{7/2} + 2\,069\,544\,960\, z^3 + 13\,252\,377\,600\, z^{5/2} + 439\,084\,800\, z^2 - 13\,538\,448\,000\, z^{3/2} - 21\,130\,956\,000\, z + 68\,435\,482\,500\sqrt{z} - 51\,326\,611\,875\right) - 51\,326\,611\,875\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\, z^7 - 8\,808\,038\,400\, z^6 + 18\,166\,579\,200\, z^5 + 39\,739\,392\,000\, z^4 + 52\,157\,952\,000\, z^3 - 21\,515\,155\,200\, z^2 + 33\,617\,430\,000\, z - 51\,326\,611\,875\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\, z^7 - 8\,808\,038\,400\, z^6 + 18\,166\,579\,200\, z^5 + 39\,739\,392\,000\, z^4 + 52\,157\,952\,000\, z^3 - 21\,515\,155\,200\, z^2 + 33\,617\,430\,000\, z - 51\,326\,611\,875\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a837.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) = \frac{1}{901\,943\,132\,160\, z^{13/4}} \left(13\left(\sqrt{\pi}\left(268\,435\,456\, z^7 + 8\,808\,038\,400\, z^6 + 18\,166\,579\,200\, z^5 - 39\,739\,392\,000\, z^4 + 52\,157\,952\,000\, z^3 + 21\,515\,155\,200\, z^2 + 33\,617\,430\,000\, z + 51\,326\,611\,875\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216\, z^6 + 547\,356\,672\, z^5 + 1\,039\,073\,280\, z^4 - 2\,513\,387\,520\, z^3 + 3\,313\,094\,400\, z^2 + 3\,384\,612\,000\, z + 17\,108\,870\,625\right)\sin\left(2\sqrt{z}\right) - \left(16\,777\,216\, z^6 + 534\,773\,760\, z^5 + 681\,246\,720\, z^4 - 2\,069\,544\,960\, z^3 + 439\,084\,800\, z^2 + 21\,130\,956\,000\, z - 51\,326\,611\,875\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a838.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) = \left(\left(2\sqrt{z}\left(268\,435\,456\, z^7 - 9\,479\,127\,040\, z^6 + 22\,507\,683\,840\, z^5 + 49\,058\,611\,200\, z^4 + 69\,093\,273\,600\, z^3 - 32\,691\,859\,200\, z^2 + 173\,675\,502\,000\, z + 278\,604\,451\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(268\,435\,456\, z^7 - 9\,311\,354\,880\, z^6 + 17\,034\,117\,120\, z^5 + 50\,326\,732\,800\, z^4 + 69\,189\,120\,000\, z^3 - 203\,934\,931\,200\, z^2 + 1\,794\,646\,854\,000\, z + 835\,813\,353\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(268\,435\,456\, z^7 - 9\,412\,018\,176\, z^6 + 20\,242\,759\,680\, z^5 + 51\,476\,889\,600\, z^4 + 77\,704\,704\,000\, z^3 - 43\,070\,227\,200\, z^2 - 11\,578\,366\,800\, z - 835\,813\,353\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(147\,220\,070\,400\sqrt{2}\, z^{13/4}\right) $$

07.22.03.a839.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, \frac{19}{4}; -z\right) = $$

$$ \left(\left(2\sqrt{z}\left(268\,435\,456\,z^7 + 9\,479\,127\,040\,z^6 + 22\,507\,683\,840\,z^5 - 49\,058\,611\,200\,z^4 + 69\,093\,273\,600\,z^3 + 32\,691\,859\,200\,z^2 + 173\,675\,502\,000\,z - 278\,604\,451\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(268\,435\,456\,z^7 + 9\,311\,354\,880\,z^6 + 17\,034\,117\,120\,z^5 - 50\,326\,732\,800\,z^4 + 69\,189\,120\,000\,z^3 + 203\,934\,931\,200\,z^2 + 1\,794\,646\,854\,000\,z - 835\,813\,353\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(268\,435\,456\,z^7 + 9\,412\,018\,176\,z^6 + 20\,242\,759\,680\,z^5 - 51\,476\,889\,600\,z^4 + 77\,704\,704\,000\,z^3 + 43\,070\,227\,200\,z^2 - 11\,578\,366\,800\,z + 835\,813\,353\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(147\,220\,070\,400\sqrt{2}\, z^{13/4}\right) $$

07.22.03.a83a.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) = $$

$$ \left(221\, e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 + 40\,063\,991\,808\,z^{13/2} - 9\,814\,671\,360\,z^6 - 89\,779\,077\,120\,z^{11/2} + 15\,775\,825\,920\,z^5 - 258\,708\,602\,880\,z^{9/2} + 57\,988\,546\,560\,z^4 - 435\,714\,048\,000\,z^{7/2} + 62\,376\,652\,800\,z^3 + 376\,016\,256\,000\,z^{5/2} - 698\,876\,640\,000\,z^2 + 594\,411\,048\,000\,z^{3/2} + 9\,799\,961\,094\,000\,z + 20\,462\,209\,267\,500\sqrt{z} + e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 - 40\,063\,991\,808\,z^{13/2} - 9\,814\,671\,360\,z^6 + 89\,779\,077\,120\,z^{11/2} + 15\,775\,825\,920\,z^5 + 258\,708\,602\,880\,z^{9/2} + 57\,988\,546\,560\,z^4 + 435\,714\,048\,000\,z^{7/2} + 62\,376\,652\,800\,z^3 - 376\,016\,256\,000\,z^{5/2} - 698\,876\,640\,000\,z^2 - 594\,411\,048\,000\,z^{3/2} + 9\,799\,961\,094\,000\,z - 20\,462\,209\,267\,500\sqrt{z} + 15\,346\,656\,950\,625\right) + 15\,346\,656\,950\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8 - 161\,061\,273\,600\,z^7 + 387\,553\,689\,600\,z^6 + 1\,017\,328\,435\,200\,z^5 + 1\,669\,054\,464\,000\,z^4 - 917\,979\,955\,200\,z^3 + 2\,151\,515\,520\,000\,z^2 - 6\,569\,806\,320\,000\,z + 15\,346\,656\,950\,625\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8 - 161\,061\,273\,600\,z^7 + 387\,553\,689\,600\,z^6 + 1\,017\,328\,435\,200\,z^5 + 1\,669\,054\,464\,000\,z^4 - 917\,979\,955\,200\,z^3 + 2\,151\,515\,520\,000\,z^2 - 6\,569\,806\,320\,000\,z + 15\,346\,656\,950\,625\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big/\left(1\,847\,179\,534\,663\,680\, z^{17/4}\right) $$

07.22.03.a83b.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) = \frac{1}{461\,794\,883\,665\,920\, z^{17/4}} $$
$$ \left(221\left(\sqrt{\pi}\,\left(4\,294\,967\,296\, z^8 + 161\,061\,273\,600\, z^7 + 387\,553\,689\,600\, z^6 - 1\,017\,328\,435\,200\, z^5 + 1\,669\,054\,464\,000\, z^4 + \right.\right.\right. $$
$$ \left.\left.\left. 917\,979\,955\,200\, z^3 + 2\,151\,515\,520\,000\, z^2 + 6\,569\,806\,320\,000\, z + 15\,346\,656\,950\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$
$$ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(268\,435\,456\, z^7 + 10\,015\,997\,952\, z^6 + 22\,444\,769\,280\, z^5 - 64\,677\,150\,720\, z^4 + \right.\right. $$
$$ \left.\left. 108\,928\,512\,000\, z^3 + 94\,004\,064\,000\, z^2 - 148\,602\,762\,000\, z + 5\,115\,552\,316\,875\right) \sin\left(2\sqrt{z}\right) - $$
$$ \left(268\,435\,456\, z^7 + 9\,814\,671\,360\, z^6 + 15\,775\,825\,920\, z^5 - 57\,988\,546\,560\, z^4 + 62\,376\,652\,800\, z^3 + \right. $$
$$ \left.\left. 698\,876\,640\,000\, z^2 + 9\,799\,961\,094\,000\, z - 15\,346\,656\,950\,625\right) \cos\left(2\sqrt{z}\right)\right)\Bigg)\Bigg) $$

07.22.03.a83c.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) = $$
$$ \left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 - 171\,798\,691\,840\, z^7 + 467\,077\,693\,440\, z^6 + 1\,215\,509\,299\,200\, z^5 + 2\,100\,156\,825\,600\, z^4 - \right.\right.\right. $$
$$ \left.\left.\left. 1\,505\,555\,251\,200\, z^3 + 7\,410\,154\,752\,000\, z^2 - 81\,511\,702\,272\,000\, z - 104\,476\,669\,171\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(-4\,294\,967\,296\, z^8 + 169\,114\,337\,280\, z^7 - 366\,917\,713\,920\, z^6 - 1\,268\,829\,388\,800\, z^5 - 2\,316\,238\,848\,000\, z^4 + \right. $$
$$ \left. 4\,798\,957\,363\,200\, z^3 + 12\,967\,770\,816\,000\, z^2 + 722\,142\,737\,316\,000\, z + 313\,430\,007\,515\,625\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 - 170\,724\,950\,016\, z^7 + 425\,805\,742\,080\, z^6 + \right. $$
$$ 1\,273\,076\,121\,600\, z^5 + 2\,350\,301\,184\,000\, z^4 - 1\,433\,172\,787\,200\, z^3 + 741\,015\,475\,200\, z^2 + $$
$$ \left.\left. 53\,492\,054\,616\,000\, z + 313\,430\,007\,515\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(80\,087\,718\,297\,600\sqrt{2}\, z^{17/4}\right) $$

07.22.03.a83d.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) = $$
$$ \left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 + 171\,798\,691\,840\, z^7 + 467\,077\,693\,440\, z^6 - 1\,215\,509\,299\,200\, z^5 + 2\,100\,156\,825\,600\, z^4 + \right.\right.\right. $$
$$ \left.\left.\left. 1\,505\,555\,251\,200\, z^3 + 7\,410\,154\,752\,000\, z^2 + 81\,511\,702\,272\,000\, z - 104\,476\,669\,171\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ \left(4\,294\,967\,296\, z^8 + 169\,114\,337\,280\, z^7 + 366\,917\,713\,920\, z^6 - 1\,268\,829\,388\,800\, z^5 + 2\,316\,238\,848\,000\, z^4 + \right. $$
$$ \left. 4\,798\,957\,363\,200\, z^3 - 12\,967\,770\,816\,000\, z^2 + 722\,142\,737\,316\,000\, z - 313\,430\,007\,515\,625\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\, z^8 + 170\,724\,950\,016\, z^7 + 425\,805\,742\,080\, z^6 - \right. $$
$$ 1\,273\,076\,121\,600\, z^5 + 2\,350\,301\,184\,000\, z^4 + 1\,433\,172\,787\,200\, z^3 + 741\,015\,475\,200\, z^2 - $$
$$ \left.\left. 53\,492\,054\,616\,000\, z + 313\,430\,007\,515\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(80\,087\,718\,297\,600\sqrt{2}\, z^{17/4}\right) $$

For fixed z and $a_1 = -\frac{15}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.a83e.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) = \left(\frac{16\,z}{23} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{437}\sqrt{z}\,(16\,z + 437)\sinh\left(2\sqrt{z}\right) $$

07.22.03.a83f.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) = \left(1 - \frac{16\,z}{23}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{437}(437 - 16\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.a83g.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) = $$

$$ \frac{1}{3\,132\,675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-65\,536\,z^4 - 1\,372\,160\,z^3 - 8\,087\,040\,z^2 + 1\,790\,100\,z + 3\,132\,675\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$

$$ 4\sqrt{z}\left(8192\,z^3 + 176\,640\,z^2 + 716\,040\,z - 3\,132\,675\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ \left.\left. 4\,z\left(16\,384\,z^3 + 347\,136\,z^2 + 2\,113\,920\,z + 3\,132\,675\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a83h.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, -\frac{21}{4}; -z\right) = $$

$$ -\frac{1}{3\,132\,675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536\,z^4 - 1\,372\,160\,z^3 + 8\,087\,040\,z^2 + 1\,790\,100\,z - 3\,132\,675\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$

$$ 4\sqrt{z}\left(8192\,z^3 - 176\,640\,z^2 + 716\,040\,z + 3\,132\,675\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ \left.\left. 4\,z\left(16\,384\,z^3 - 347\,136\,z^2 + 2\,113\,920\,z - 3\,132\,675\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a83i.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, -\frac{19}{4}; z\right) = \left(\frac{8\,z}{19} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right) $$

07.22.03.a83j.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, -\frac{19}{4}; -z\right) = \left(1 - \frac{8\,z}{19}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.a83k.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, -\frac{17}{4}; z\right) = $$

$$ \frac{1}{447\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-32\,768\,z^4 - 409\,600\,z^3 - 1\,710\,720\,z^2 + 105\,300\,z + 447\,525\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096\,z^3 + 53\,760\,z^2 + \right.\right. \right. $$

$$ \left.\left.\left. 252\,720\,z - 447\,525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(8192\,z^3 + 104\,448\,z^2 + 456\,480\,z + 447\,525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a83l.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) = -\frac{1}{447\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768 z^4 - 409\,600 z^3 + 1\,710\,720 z^2 + 105\,300 z - 447\,525\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4096 z^3 - 53\,760 z^2 + 252\,720 z + 447\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8192 z^3 - 104\,448 z^2 + 456\,480 z - 447\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a83m.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right) $$

07.22.03.a83n.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.a83o.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) = \frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(-\left(16\,384 z^4 + 66\,560 z^3 + 164\,160 z^2 + 8100 z - 26\,325\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048 z^3 + 9600 z^2 + 29\,160 z - 26\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4096 z^3 + 17\,664 z^2 + 46\,800 z + 26\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a83p.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) = -\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384 z^4 - 66\,560 z^3 + 164\,160 z^2 - 8100 z - 26\,325\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048 z^3 - 9600 z^2 + 29\,160 z + 26\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4096 z^3 - 17\,664 z^2 + 46\,800 z - 26\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a83q.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) = -\frac{1}{20\,790}\left(e^{-2\sqrt{z}}\left(-8192 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{15/4} - 8192 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{15/4} + 8192 e^{4\sqrt{z}} z^{7/2} - 8192 z^{7/2} + 2048 e^{4\sqrt{z}} z^3 + 2048 z^3 + 1536 e^{4\sqrt{z}} z^{5/2} - 1536 z^{5/2} + 1920 e^{4\sqrt{z}} z^2 + 1920 z^2 + 3360 e^{4\sqrt{z}} z^{3/2} - 3360 z^{3/2} + 7560 e^{4\sqrt{z}} z + 7560 z + 20\,790 e^{4\sqrt{z}}\sqrt{z} - 20\,790\sqrt{z} - 10\,395 e^{4\sqrt{z}} - 10\,395\right)\right) $$

07.22.03.a83r.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, -\frac{11}{4}; -z\right) = \frac{1}{10\,395}\left(16\,384\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{15/4} + 2\left(-4096 z^3 + 768 z^2 - 1680 z + 10\,395\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(2048 z^3 - 1920 z^2 + 7560 z + 10\,395\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.a83s.01

$${}_1F_2\left(-\frac{15}{4};-\frac{1}{2},-\frac{9}{4};z\right)=$$

$$\frac{1}{2025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192z^4-35\,840z^3-25\,920z^2-2700z+2025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1024z^3-3840z^2-4320z+2025\right)\right.\right.$$

$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-2048z^3+8448z^2+7920z+2025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a83t.01

$${}_1F_2\left(-\frac{15}{4};-\frac{1}{2},-\frac{9}{4};-z\right)=$$

$$\frac{1}{2025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192z^4+35\,840z^3-25\,920z^2+2700z+2025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1024z^3+3840z^2-4320z-2025\right)\right.\right.$$

$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(2048z^3+8448z^2-7920z+2025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a83u.01

$${}_1F_2\left(-\frac{15}{4};-\frac{1}{2},-\frac{7}{4};z\right)=$$

$$\frac{1}{1890}\left(e^{-2\sqrt{z}}\left(2048e^{4\sqrt{z}}z^{7/2}-2048z^{7/2}+512e^{4\sqrt{z}}z^3+512z^3-128e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-135)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-\right.\right.$$

$$\left.\left.128e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-135)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-16\,896e^{4\sqrt{z}}z^{5/2}+16\,896z^{5/2}-3840e^{4\sqrt{z}}z^2-3840z^2-\right.\right.$$

$$\left.\left.2400e^{4\sqrt{z}}z^{3/2}+2400z^{3/2}-2160e^{4\sqrt{z}}z-2160z-1890e^{4\sqrt{z}}\sqrt{z}+1890\sqrt{z}+945e^{4\sqrt{z}}+945\right)\right)$$

07.22.03.a83v.01

$${}_1F_2\left(-\frac{15}{4};-\frac{1}{2},-\frac{7}{4};-z\right)=\frac{1}{945}\left(-256\sqrt{\pi}\,(16z+135)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+\right.$$

$$\left.2\left(1024z^3+8448z^2-1200z+945\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-512z^3-3840z^2+2160z+945\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a83w.01

$${}_1F_2\left(-\frac{15}{4};-\frac{1}{2},-\frac{5}{4};z\right)=$$

$$\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-4096z^4+52\,480z^3-51\,840z^2-2700z+675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(512z^3-6240z^2+3240z-675\right)\right.\right.$$

$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1024z^3-12\,864z^2+10\,080z+675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a83x.01

$${}_1F_2\left(-\frac{15}{4};-\frac{1}{2},-\frac{5}{4};-z\right)=$$

$$-\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096z^4+52\,480z^3+51\,840z^2-2700z-675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^3+6240z^2+3240z+675\right)\right.\right.$$

$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1024z^3+12\,864z^2+10\,080z-675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a83y.01

$${}_1F_2\left(-\frac{15}{4};-\frac{1}{2},-\frac{3}{4};z\right)=$$

$$\frac{1}{270}e^{-2\sqrt{z}}\left(-256e^{4\sqrt{z}}z^{7/2}+256z^{7/2}-64e^{4\sqrt{z}}z^3-64z^3+4272e^{4\sqrt{z}}z^{5/2}-4272z^{5/2}+1020e^{4\sqrt{z}}z^2+1020z^2+\right.$$

$$e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-4320z+7425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-4320z+7425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-$$

$$\left.6720e^{4\sqrt{z}}z^{3/2}+6720z^{3/2}-1080e^{4\sqrt{z}}z-1080z-270e^{4\sqrt{z}}\sqrt{z}+270\sqrt{z}+135e^{4\sqrt{z}}+135\right)$$

07.22.03.a83z.01

$${}_1F_2\left(-\frac{15}{4};-\frac{1}{2},-\frac{3}{4};-z\right)=\frac{1}{135}\left(2\sqrt{\pi}\left(256z^2+4320z+7425\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}-\right.$$

$$\left.2\left(128z^3+2136z^2+3360z-135\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(64z^3+1020z^2+1080z+135\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a840.01

$${}_1F_2\left(-\frac{15}{4};-\frac{1}{2},-\frac{1}{4};z\right)=$$

$$\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^4-43\,520z^3+117\,720z^2-18\,900z+675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^3-5280z^2+11\,745z+675\right)\right.\right.$$

$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-512z^3+10\,752z^2-26\,910z+675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a841.01

$${}_1F_2\left(-\frac{15}{4};-\frac{1}{2},-\frac{1}{4};-z\right)=$$

$$\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^4+43\,520z^3+117\,720z^2+18\,900z+675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^3+5280z^2+11\,745z-675\right)\right.\right.$$

$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(512z^3+10\,752z^2+26\,910z+675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a842.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) = \frac{1}{17\,280}\left(e^{-2\sqrt{z}}\left(4\left(-1024\,z^{7/2}+256\,z^3+25\,728\,z^{5/2}-6240\,z^2-84\,660\,z^{3/2}+17\,145\,z+4320\sqrt{z}+e^{4\sqrt{z}}\left(1024\,z^{7/2}+256\,z^3-25\,728\,z^{5/2}-6240\,z^2+84\,660\,z^{3/2}+17\,145\,z-4320\sqrt{z}+2160\right)+2160\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(4096\,z^3-103\,680\,z^2+356\,400\,z-51\,975\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(4096\,z^3-103\,680\,z^2+356\,400\,z-51\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a843.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{1}{4}; -z\right) = \frac{1}{4320}\left(2\left(4\sqrt{z}\left(256\,z^3+6432\,z^2+21\,165\,z+1080\right)\sin\left(2\sqrt{z}\right)-\left(256\,z^3+6240\,z^2+17\,145\,z-2160\right)\cos\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,z^{3/4}\left(4096\,z^3+103\,680\,z^2+356\,400\,z+51\,975\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.a844.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{3}{4}; z\right) = \frac{1}{37\,800\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-8192\,z^4+243\,200\,z^3-1\,075\,680\,z^2+349\,650\,z+37\,800\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(4096\,z^3-119\,040\,z^2+468\,720\,z+4725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\,z\left(4096\,z^3-120\,576\,z^2+509\,040\,z-80\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a845.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{3}{4}; -z\right) = \frac{1}{37\,800\sqrt{2}}\left(\sqrt[4]{z}\left(-2\left(4096\,z^4+121\,600\,z^3+537\,840\,z^2+174\,825\,z-18\,900\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(4096\,z^3+119\,040\,z^2+468\,720\,z-4725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\,z\left(4096\,z^3+120\,576\,z^2+509\,040\,z+80\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a846.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{5}{4}; z\right) = \frac{1}{4\,423\,680\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-16\,384\,z^{7/2}+4096\,z^3+549\,888\,z^{5/2}-134\,400\,z^2-2\,754\,240\,z^{3/2}+598\,320\,z+482\,220\sqrt{z}+e^{4\sqrt{z}}\left(16\,384\,z^{7/2}+4096\,z^3-549\,888\,z^{5/2}-134\,400\,z^2+2\,754\,240\,z^{3/2}+598\,320\,z-482\,220\sqrt{z}+85\,185\right)+85\,185\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-2\,211\,840\,z^3+11\,404\,800\,z^2-3\,326\,400\,z-467\,775\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-2\,211\,840\,z^3+11\,404\,800\,z^2-3\,326\,400\,z-467\,775\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a847.01

$$ {}_1F_2\left(-\frac{15}{4};-\frac{1}{2},\frac{5}{4};-z\right)=\frac{1}{1\,105\,920\sqrt[4]{z}}$$
$$\left(2\sqrt[4]{z}\left(4\sqrt{z}\left(4096z^3+137\,472z^2+688\,560z+120\,555\right)\sin\left(2\sqrt{z}\right)-\left(4096z^3+134\,400z^2+598\,320z-85\,185\right)\right.\right.$$
$$\left.\left.\cos\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\left(65\,536z^4+2\,211\,840z^3+11\,404\,800z^2+3\,326\,400z-467\,775\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.a848.01

$$ {}_1F_2\left(-\frac{15}{4};-\frac{1}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{3\,628\,800\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(-65\,536z^4+2\,498\,560z^3-15\,344\,640z^2+7\,365\,600z+1\,554\,525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(65\,536z^4-2\,457\,600z^3+13\,893\,120z^2-1\,209\,600z+779\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-2\,482\,176z^3+14\,745\,600z^2-4\,384\,800z-779\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a849.01

$$ {}_1F_2\left(-\frac{15}{4};-\frac{1}{2},\frac{7}{4};-z\right)=$$
$$\frac{1}{3\,628\,800\sqrt{2}\sqrt[4]{z}}\left(\left(-2\sqrt{z}\left(65\,536z^4+2\,498\,560z^3+15\,344\,640z^2+7\,365\,600z-1\,554\,525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(65\,536z^4+2\,457\,600z^3+13\,893\,120z^2+1\,209\,600z+779\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+2\,482\,176z^3+14\,745\,600z^2+4\,384\,800z-779\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a84a.01

$$ {}_1F_2\left(-\frac{15}{4};-\frac{1}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{283\,115\,520z^{5/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-262\,144z^{9/2}+65\,536z^4+11\,010\,048z^{7/2}-2\,703\,360z^3-74\,065\,920z^{5/2}+\right.\right.\right.$$
$$16\,657\,920z^2+22\,878\,720z^{3/2}+1\,460\,160z+4\,365\,900\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4-11\,010\,048z^{7/2}-2\,703\,360z^3+74\,065\,920z^{5/2}+16\,657\,920z^2-\right.$$
$$\left.22\,878\,720z^{3/2}+1\,460\,160z-4\,365\,900\sqrt{z}+3\,274\,425\right)+3\,274\,425\Big)-e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left(1\,048\,576z^5-44\,236\,800z^4+304\,128\,000z^3-133\,056\,000z^2-37\,422\,000z+3\,274\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}$$
$$\left.\left.\sqrt{2\pi}\left(1\,048\,576z^5-44\,236\,800z^4+304\,128\,000z^3-133\,056\,000z^2-37\,422\,000z+3\,274\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a84b.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{9}{4}; -z\right) = $$
$$ \frac{1}{70\,778\,880\, z^{5/4}}\left(2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536 z^4 + 2\,752\,512 z^3 + 18\,516\,480 z^2 + 5\,719\,680 z - 1\,091\,475\right)\sin\left(2\sqrt{z}\right) - \right.\right. $$
$$ \left.\left(65\,536 z^4 + 2\,703\,360 z^3 + 16\,657\,920 z^2 - 1\,460\,160 z + 3\,274\,425\right)\cos\left(2\sqrt{z}\right)\right) - $$
$$ \left.\sqrt{\pi}\left(1\,048\,576 z^5 + 44\,236\,800 z^4 + 304\,128\,000 z^3 + 133\,056\,000 z^2 - 37\,422\,000 z - 3\,274\,425\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.a84c.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) = \frac{1}{182\,476\,800\sqrt{2}\, z^{5/4}} $$
$$ \left(\left(2\sqrt{z}\left(-1\,048\,576 z^5 + 48\,824\,320 z^4 - 383\,754\,240 z^3 + 242\,265\,600 z^2 + 76\,388\,400 z + 7\,016\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(1\,048\,576 z^5 - 48\,168\,960 z^4 + 355\,000\,320 z^3 - 72\,230\,400 z^2 + 12\,474\,000 z - 21\,049\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left.2\sqrt{z}\left(1\,048\,576 z^5 - 48\,562\,176 z^4 + 371\,957\,760 z^3 - 163\,468\,800 z^2 - 57\,380\,400 z + 21\,049\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a84d.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = \frac{1}{182\,476\,800\sqrt{2}\, z^{5/4}} $$
$$ \left(\left(-2\sqrt{z}\left(1\,048\,576 z^5 + 48\,824\,320 z^4 + 383\,754\,240 z^3 + 242\,265\,600 z^2 - 76\,388\,400 z + 7\,016\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(1\,048\,576 z^5 + 48\,168\,960 z^4 + 355\,000\,320 z^3 + 72\,230\,400 z^2 + 12\,474\,000 z + 21\,049\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left.2\sqrt{z}\left(1\,048\,576 z^5 + 48\,562\,176 z^4 + 371\,957\,760 z^3 + 163\,468\,800 z^2 - 57\,380\,400 z - 21\,049\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a84e.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) = $$
$$ \frac{1}{12\,079\,595\,520\, z^{9/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 211\,550\,208 z^{9/2} - 52\,101\,120 z^4 - 1\,786\,675\,200 z^{7/2} + \right.\right.\right. $$
$$ 410\,296\,320 z^3 + 798\,750\,720 z^{5/2} + 207\,360 z^2 + 309\,355\,200 z^{3/2} + 122\,245\,200 z - 240\,124\,500\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 211\,550\,208 z^{9/2} - 52\,101\,120 z^4 + 1\,786\,675\,200 z^{7/2} + 410\,296\,320 z^3 - \right. $$
$$ \left.\left.\left.798\,750\,720 z^{5/2} + 207\,360 z^2 - 309\,355\,200 z^{3/2} + 122\,245\,200 z + 240\,124\,500\sqrt{z} - 180\,093\,375\right) - \right. $$
$$ \left.180\,093\,375\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 849\,346\,560 z^5 + 7\,299\,072\,000 z^4 - \right. $$
$$ 4\,257\,792\,000 z^3 - 1\,796\,256\,000 z^2 + 314\,344\,800 z - 180\,093\,375\left.\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 849\,346\,560 z^5 + 7\,299\,072\,000 z^4 - 4\,257\,792\,000 z^3 - \right. $$
$$ \left.\left.1\,796\,256\,000 z^2 + 314\,344\,800 z - 180\,093\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a84f.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) = \frac{1}{3\,019\,898\,880\, z^{9/4}}\left(\sqrt{\pi}\,\left(-16\,777\,216\, z^6 - 849\,346\,560\, z^5 - 7\,299\,072\,000\, z^4 - 4\,257\,792\,000\, z^3 + 1\,796\,256\,000\, z^2 + 314\,344\,800\, z + 180\,093\,375\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(1\,048\,576\, z^5 + 52\,887\,552\, z^4 + 446\,668\,800\, z^3 + 199\,687\,680\, z^2 - 77\,338\,800\, z - 60\,031\,125\right)\sin\left(2\sqrt{z}\right) - \left(1\,048\,576\, z^5 + 52\,101\,120\, z^4 + 410\,296\,320\, z^3 - 207\,360\, z^2 + 122\,245\,200\, z + 180\,093\,375\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a84g.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) = \frac{1}{6\,900\,940\,800\sqrt{2}\, z^{9/4}}\left(\left(-2\sqrt{z}\,\left(16\,777\,216\, z^6 - 922\,746\,880\, z^5 + 8\,838\,512\,640\, z^4 - 6\,900\,940\,800\, z^3 - 2\,936\,044\,800\, z^2 + 638\,512\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216\, z^6 - 912\,261\,120\, z^5 + 8\,289\,976\,320\, z^4 - 2\,731\,622\,400\, z^3 - 518\,918\,400\, z^2 + 2\,918\,916\,000\, z + 1\,915\,538\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216\, z^6 - 918\,552\,576\, z^5 + 8\,614\,379\,520\, z^4 - 5\,020\,876\,800\, z^3 - 2\,594\,592\,000\, z^2 + 1\,167\,566\,400\, z - 1\,915\,538\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a84h.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) = -\frac{1}{6\,900\,940\,800\sqrt{2}\, z^{9/4}}\left(\left(2\sqrt{z}\,\left(16\,777\,216\, z^6 + 922\,746\,880\, z^5 + 8\,838\,512\,640\, z^4 + 6\,900\,940\,800\, z^3 - 2\,936\,044\,800\, z^2 + 638\,512\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(16\,777\,216\, z^6 + 912\,261\,120\, z^5 + 8\,289\,976\,320\, z^4 + 2\,731\,622\,400\, z^3 - 518\,918\,400\, z^2 - 2\,918\,916\,000\, z + 1\,915\,538\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216\, z^6 + 918\,552\,576\, z^5 + 8\,614\,379\,520\, z^4 + 5\,020\,876\,800\, z^3 - 2\,594\,592\,000\, z^2 - 1\,167\,566\,400\, z - 1\,915\,538\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a84i.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) = $$
$$ -\frac{1}{5\,411\,658\,792\,960\, z^{13/4}} \left(13\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\, \left(-67\,108\,864\, z^{13/2} + 16\,777\,216\, z^6 + 3\,951\,034\,368\, z^{11/2} - 975\,175\,680\, z^5 - \right.\right.\right. $$
$$ 40\,159\,150\,080\, z^{9/2} + 9\,351\,659\,520\, z^4 + 23\,595\,909\,120\, z^{7/2} - 975\,421\,440\, z^3 + 13\,571\,712\,000\, z^{5/2} + $$
$$ 2\,674\,425\,600\, z^2 - 12\,074\,832\,000\, z^{3/2} + 5\,762\,988\,000\, z + 32\,416\,807\,500\, \sqrt{z} + $$
$$ e^{4\sqrt{z}} \left(67\,108\,864\, z^{13/2} + 16\,777\,216\, z^6 - 3\,951\,034\,368\, z^{11/2} - 975\,175\,680\, z^5 + 40\,159\,150\,080\, z^{9/2} + \right. $$
$$ \left. 9\,351\,659\,520\, z^4 - 23\,595\,909\,120\, z^{7/2} - 975\,421\,440\, z^3 - 13\,571\,712\,000\, z^{5/2} + 2\,674\,425\,600\, z^2 + \right. $$
$$ \left. 12\,074\,832\,000\, z^{3/2} + 5\,762\,988\,000\, z - 32\,416\,807\,500\, \sqrt{z} + 24\,312\,605\,625\right) + 24\,312\,605\,625\Big) + $$
$$ e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(268\,435\,456\, z^7 - 15\,854\,469\,120\, z^6 + 163\,499\,212\,800\, z^5 - 119\,218\,176\,000\, z^4 - \right. $$
$$ \left. 67\,060\,224\,000\, z^3 + 17\,603\,308\,800\, z^2 - 20\,170\,458\,000\, z + 24\,312\,605\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(268\,435\,456\, z^7 - 15\,854\,469\,120\, z^6 + 163\,499\,212\,800\, z^5 - 119\,218\,176\,000\, z^4 - \right. $$
$$ \left. \left. 67\,060\,224\,000\, z^3 + 17\,603\,308\,800\, z^2 - 20\,170\,458\,000\, z + 24\,312\,605\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.a84j.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) = $$
$$ -\frac{1}{1\,352\,914\,698\,240\, z^{13/4}} \left(13 \left(\sqrt{\pi}\, \left(268\,435\,456\, z^7 + 15\,854\,469\,120\, z^6 + 163\,499\,212\,800\, z^5 + 119\,218\,176\,000\, z^4 - \right.\right.\right. $$
$$ \left. 67\,060\,224\,000\, z^3 - 17\,603\,308\,800\, z^2 - 20\,170\,458\,000\, z - 24\,312\,605\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\, \left(\left(16\,777\,216\, z^6 + 975\,175\,680\, z^5 + 9\,351\,659\,520\, z^4 + 975\,421\,440\, z^3 + 2\,674\,425\,600\, z^2 - \right.\right. $$
$$ \left. 5\,762\,988\,000\, z + 24\,312\,605\,625\right) \cos\left(2\sqrt{z}\right) - 4\sqrt{z}\, \left(16\,777\,216\, z^6 + 987\,758\,592\, z^5 + \right. $$
$$ \left. \left. \left. 10\,039\,787\,520\, z^4 + 5\,898\,977\,280\, z^3 - 3\,392\,928\,000\, z^2 - 3\,018\,708\,000\, z - 8\,104\,201\,875\right) \sin\left(2\sqrt{z}\right)\right)\right)\Big) $$

07.22.03.a84k.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) = $$
$$ \left(\left(2\sqrt{z}\, \left(-268\,435\,456\, z^7 + 17\,028\,874\,240\, z^6 - 192\,376\,995\,840\, z^5 + 178\,760\,908\,800\, z^4 + 96\,720\,998\,400\, z^3 - \right.\right.\right. $$
$$ \left. 14\,010\,796\,800\, z^2 + 59\,837\,778\,000\, z + 119\,401\,907\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ \left(268\,435\,456\, z^7 - 16\,861\,102\,080\, z^6 + 182\,184\,837\,120\, z^5 - 84\,005\,683\,200\, z^4 - 41\,513\,472\,000\, z^3 + \right. $$
$$ \left. 154\,118\,764\,800\, z^2 - 725\,350\,626\,000\, z - 358\,205\,722\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\, \left(268\,435\,456\, z^7 - 16\,961\,765\,376\, z^6 + 188\,224\,634\,880\, z^5 - 136\,824\,422\,400\, z^4 - 92\,606\,976\,000\, z^3 + \right. $$
$$ \left. \left. 45\,145\,900\,800\, z^2 - 38\,821\,582\,800\, z + 358\,205\,722\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(220\,830\,105\,600\, \sqrt{2}\, z^{13/4}\right) $$

07.22.03.a84l.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) = $$

$$ \left(\left(-2\sqrt{z}\left(268\,435\,456\,z^7 + 17\,028\,874\,240\,z^6 + 192\,376\,995\,840\,z^5 + 178\,760\,908\,800\,z^4 - 96\,720\,998\,400\,z^3 - \right.\right.\right. $$

$$ 14\,010\,796\,800\,z^2 - 59\,837\,778\,000\,z + 119\,401\,907\,625\Big) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$

$$ \left(268\,435\,456\,z^7 + 16\,861\,102\,080\,z^6 + 182\,184\,837\,120\,z^5 + 84\,005\,683\,200\,z^4 - 41\,513\,472\,000\,z^3 - \right. $$

$$ 154\,118\,764\,800\,z^2 - 725\,350\,626\,000\,z + 358\,205\,722\,875\Big) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\left(-268\,435\,456\,z^7 - 16\,961\,765\,376\,z^6 - 188\,224\,634\,880\,z^5 - 136\,824\,422\,400\,z^4 + 92\,606\,976\,000\,z^3 + \right. $$

$$ \left.\left.\left. 45\,145\,900\,800\,z^2 + 38\,821\,582\,800\,z + 358\,205\,722\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(220\,830\,105\,600\sqrt{2}\,z^{13/4}\right) $$

07.22.03.a84m.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) = $$

$$ -\Big(221\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 + 72\,276\,246\,528\,z^{13/2} - 17\,867\,735\,040\,z^6 - \right.\right. $$

$$ 858\,846\,658\,560\,z^{11/2} + 202\,002\,923\,520\,z^5 + 626\,499\,256\,320\,z^{9/2} - 44\,404\,899\,840\,z^4 + $$

$$ 472\,614\,912\,000\,z^{7/2} + 35\,126\,784\,000\,z^3 - 415\,933\,056\,000\,z^{5/2} + 401\,762\,592\,000\,z^2 + $$

$$ 489\,030\,696\,000\,z^{3/2} - 3\,293\,547\,642\,000\,z - 8\,006\,951\,452\,500\sqrt{z} + $$

$$ e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 - 72\,276\,246\,528\,z^{13/2} - 17\,867\,735\,040\,z^6 + 858\,846\,658\,560\right. $$

$$ z^{11/2} + 202\,002\,923\,520\,z^5 - 626\,499\,256\,320\,z^{9/2} - 44\,404\,899\,840\,z^4 - 472\,614\,912\,000\,z^{7/2} + $$

$$ 35\,126\,784\,000\,z^3 + 415\,933\,056\,000\,z^{5/2} + 401\,762\,592\,000\,z^2 - 489\,030\,696\,000\,z^{3/2} - $$

$$ \left.\left. 3\,293\,547\,642\,000\,z + 8\,006\,951\,452\,500\sqrt{z} - 6\,005\,213\,589\,375\right) - 6\,005\,213\,589\,375\right) + $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8 - 289\,910\,292\,480\,z^7 + 3\,487\,983\,206\,400\,z^6 - 3\,051\,985\,305\,600\,z^5 - \right. $$

$$ 2\,145\,927\,168\,000\,z^4 + 751\,074\,508\,800\,z^3 - 1\,290\,909\,312\,000\,z^2 + 3\,112\,013\,520\,000\,z - 6\,005\,213\,589\,375\Big) $$

$$ \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8 - 289\,910\,292\,480\,z^7 + 3\,487\,983\,206\,400\,z^6 - \right. $$

$$ 3\,051\,985\,305\,600\,z^5 - 2\,145\,927\,168\,000\,z^4 + 751\,074\,508\,800\,z^3 - 1\,290\,909\,312\,000\,z^2 + $$

$$ \left.\left.\left. 3\,112\,013\,520\,000\,z - 6\,005\,213\,589\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)\Big/\left(2\,770\,769\,301\,995\,520\,z^{17/4}\right) $$

07.22.03.a84n.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) = $$

$$ -\left(221\left(\sqrt{\pi}\,\left(4\,294\,967\,296\,z^8 + 289\,910\,292\,480\,z^7 + 3\,487\,983\,206\,400\,z^6 + 3\,051\,985\,305\,600\,z^5 - 2\,145\,927\,168\,000\,z^4 - \right.\right.\right. $$

$$ \left.\left.\left. 751\,074\,508\,800\,z^3 - 1\,290\,909\,312\,000\,z^2 - 3\,112\,013\,520\,000\,z - 6\,005\,213\,589\,375\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$

$$ 2\sqrt[4]{z}\,\left(\left(268\,435\,456\,z^7 + 17\,867\,735\,040\,z^6 + 202\,002\,923\,520\,z^5 + 44\,404\,899\,840\,z^4 + 35\,126\,784\,000\,z^3 - \right.\right. $$

$$ \left. 401\,762\,592\,000\,z^2 - 3\,293\,547\,642\,000\,z + 6\,005\,213\,589\,375\right)\cos\left(2\sqrt{z}\right) + $$

$$ \left. \left. 4\sqrt{z}\,\left(-268\,435\,456\,z^7 - 18\,069\,061\,632\,z^6 - 214\,711\,664\,640\,z^5 - 156\,624\,814\,080\,z^4 + 118\,153\,728\,000\,z^3 + \right.\right. \right. $$

$$ \left. \left. \left. 103\,983\,264\,000\,z^2 + 122\,257\,674\,000\,z + 2\,001\,737\,863\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(692\,692\,325\,498\,880\,z^{17/4}\right) $$

07.22.03.a84o.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) = $$

$$ -\left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 308\,700\,774\,400\,z^7 + 4\,017\,975\,459\,840\,z^6 - 4\,327\,420\,723\,200\,z^5 - 2\,860\,705\,382\,400\,z^4 + \right.\right.\right. $$

$$ \left.\left.\left. 846\,874\,828\,800\,z^3 - 3\,969\,725\,760\,000\,z^2 + 26\,746\,027\,308\,000\,z + 37\,611\,600\,901\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$

$$ \left(-4\,294\,967\,296\,z^8 + 306\,016\,419\,840\,z^7 - 3\,832\,251\,678\,720\,z^6 + 2\,284\,742\,246\,400\,z^5 + 1\,737\,179\,136\,000\,z^4 - \right. $$

$$ \left. 5\,081\,248\,972\,800\,z^3 + 11\,115\,232\,128\,000\,z^2 - 252\,176\,828\,904\,000\,z - 112\,834\,802\,705\,625\right) $$

$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-4\,294\,967\,296\,z^8 + 307\,627\,032\,576\,z^7 - 3\,942\,477\,987\,840\,z^6 + \right. $$

$$ 3\,435\,606\,835\,200\,z^5 + 2\,861\,236\,224\,000\,z^4 - 1\,498\,317\,004\,800\,z^3 + 1\,111\,523\,212\,800\,z^2 + $$

$$ \left. \left. 11\,462\,583\,132\,000\,z + 112\,834\,802\,705\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(120\,131\,577\,446\,400\,\sqrt{2}\,z^{17/4}\right) $$

07.22.03.a84p.01

$$ {}_1F_2\left(-\frac{15}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) = $$

$$ -\left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 308\,700\,774\,400\,z^7 + 4\,017\,975\,459\,840\,z^6 + 4\,327\,420\,723\,200\,z^5 - 2\,860\,705\,382\,400\,z^4 - \right.\right.\right. $$

$$ \left.\left.\left. 846\,874\,828\,800\,z^3 - 3\,969\,725\,760\,000\,z^2 - 26\,746\,027\,308\,000\,z + 37\,611\,600\,901\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$

$$ \left(-4\,294\,967\,296\,z^8 - 306\,016\,419\,840\,z^7 - 3\,832\,251\,678\,720\,z^6 - 2\,284\,742\,246\,400\,z^5 + 1\,737\,179\,136\,000\,z^4 + \right. $$

$$ \left. 5\,081\,248\,972\,800\,z^3 + 11\,115\,232\,128\,000\,z^2 + 252\,176\,828\,904\,000\,z - 112\,834\,802\,705\,625\right) $$

$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 307\,627\,032\,576\,z^7 + 3\,942\,477\,987\,840\,z^6 + \right. $$

$$ 3\,435\,606\,835\,200\,z^5 - 2\,861\,236\,224\,000\,z^4 - 1\,498\,317\,004\,800\,z^3 - 1\,111\,523\,212\,800\,z^2 + $$

$$ \left. \left. 11\,462\,583\,132\,000\,z - 112\,834\,802\,705\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(120\,131\,577\,446\,400\,\sqrt{2}\,z^{17/4}\right) $$

For fixed z and $a_1 = -\frac{15}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.a84q.01

$${}_1F_2\left(-\frac{15}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) = \left(\frac{16\,z}{437} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{160}{437}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.a84r.01

$${}_1F_2\left(-\frac{15}{4}; \frac{1}{2}, -\frac{23}{4}; -z\right) = \left(1 - \frac{16\,z}{437}\right)\cos\left(2\sqrt{z}\right) + \frac{160}{437}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a84s.01

$${}_1F_2\left(-\frac{15}{4}; \frac{1}{2}, -\frac{21}{4}; z\right) =$$

$$\frac{1}{40\,724\,775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072\,z^4 + 3\,973\,120\,z^3 + 42\,593\,280\,z^2 + 139\,627\,800\,z + 40\,724\,775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$

$$4\sqrt{z}\left(16\,384\,z^3 + 506\,880\,z^2 + 5\,662\,080\,z + 40\,724\,775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$

$$\left.\left.8\,z\left(16\,384\,z^3 + 500\,736\,z^2 + 5\,454\,720\,z + 17\,657\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a84t.01

$${}_1F_2\left(-\frac{15}{4}; \frac{1}{2}, -\frac{21}{4}; -z\right) =$$

$$\frac{1}{40\,724\,775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072\,z^4 - 3\,973\,120\,z^3 + 42\,593\,280\,z^2 - 139\,627\,800\,z + 40\,724\,775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$

$$4\sqrt{z}\left(16\,384\,z^3 - 506\,880\,z^2 + 5\,662\,080\,z - 40\,724\,775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$

$$\left.\left.8\,z\left(16\,384\,z^3 - 500\,736\,z^2 + 5\,454\,720\,z - 17\,657\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a84u.01

$${}_1F_2\left(-\frac{15}{4}; \frac{1}{2}, -\frac{19}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - \frac{4}{19}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.a84v.01

$${}_1F_2\left(-\frac{15}{4}; \frac{1}{2}, -\frac{19}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + \frac{4}{19}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a84w.01

$${}_1F_2\left(-\frac{15}{4}; \frac{1}{2}, -\frac{17}{4}; z\right) = \frac{1}{5\,817\,825\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(65\,536\,z^4 + 1\,187\,840\,z^3 + 9\,066\,240\,z^2 + 21\,902\,400\,z + 5\,817\,825\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(8192\,z^3 + 153\,600\,z^2 + \right.\right.\right.$$

$$\left.\left.\left.1\,239\,840\,z + 5\,817\,825\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 64\,z\left(1024\,z^3 + 18\,816\,z^2 + 146\,700\,z + 386\,775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a84x.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536z^4-1\,187\,840z^3+9\,066\,240z^2-21\,902\,400z+5\,817\,825\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(8192z^3-153\,600z^2+1\,239\,840z-5\,817\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.64z\left(1024z^3-18\,816z^2+146\,700z-386\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a84y.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},-\frac{15}{4};z\right)=\cosh\left(2\sqrt{z}\right)$$

07.22.03.a84z.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},-\frac{15}{4};-z\right)=\cos\left(2\sqrt{z}\right)$$

07.22.03.a850.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{342\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768z^4+194\,560z^3+888\,960z^2+1\,474\,200z+342\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4096z^3+26\,880z^2+\right.\right.\right.$$
$$\left.\left.\left.133\,200z+342\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-8z\left(4096z^3+25\,344z^2+118\,800z+229\,095\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a851.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{342\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768z^4-194\,560z^3+888\,960z^2-1\,474\,200z+342\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4096z^3-26\,880z^2+\right.\right.\right.$$
$$\left.\left.\left.133\,200z-342\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(4096z^3-25\,344z^2+118\,800z-229\,095\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a852.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{270\,270}\left(e^{-2\sqrt{z}}\left(-16\,384e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}-16\,384e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+16\,384e^{4\sqrt{z}}z^{7/2}-\right.\right.$$
$$16\,384z^{7/2}+4096e^{4\sqrt{z}}z^3+4096z^3+3072e^{4\sqrt{z}}z^{5/2}-3072z^{5/2}+3840e^{4\sqrt{z}}z^2+3840z^2+6720e^{4\sqrt{z}}z^{3/2}-$$
$$\left.\left.6720z^{3/2}+15\,120e^{4\sqrt{z}}z+15\,120z+41\,580e^{4\sqrt{z}}\sqrt{z}-41\,580\sqrt{z}+135\,135e^{4\sqrt{z}}+135\,135\right)\right)$$

07.22.03.a853.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},-\frac{11}{4};-z\right)=\frac{1}{135\,135}\left(-32\,768\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+\right.$$
$$\left.4\left(4096z^3-768z^2+1680z-10\,395\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-4096z^3+3840z^2-15\,120z+135\,135\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a854.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},-\frac{9}{4};z\right)=$$
$$-\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384z^4-102\,400z^3-142\,080z^2-140\,400z-26\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-2048z^3+11\,520z^2+\right.\right.\right.$$
$$\left.\left.\left.22\,320z+26\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-32z\left(512z^3-3072z^2-5040z-5805\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a855.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},-\frac{9}{4};-z\right)=$$
$$-\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384z^4+102\,400z^3-142\,080z^2+140\,400z-26\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2048z^3+11\,520z^2-\right.\right.\right.$$
$$\left.\left.\left.22\,320z+26\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+32z\left(512z^3+3072z^2-5040z+5805\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a856.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{24\,570}\left(e^{-2\sqrt{z}}\left(-4096e^{4\sqrt{z}}z^{7/2}+4096z^{7/2}-1024e^{4\sqrt{z}}z^3-1024z^3+256e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-195)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+\right.\right.$$
$$256e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-195)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+49\,152e^{4\sqrt{z}}z^{5/2}-49\,152z^{5/2}+11\,520e^{4\sqrt{z}}z^2+11\,520z^2+$$
$$\left.\left.7680e^{4\sqrt{z}}z^{3/2}-7680z^{3/2}+7920e^{4\sqrt{z}}z+7920z+10\,080e^{4\sqrt{z}}\sqrt{z}-10\,080\sqrt{z}+12\,285e^{4\sqrt{z}}+12\,285\right)\right)$$

07.22.03.a857.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},-\frac{7}{4};-z\right)=\frac{1}{12\,285}\left(512\sqrt{\pi}\,(16z+195)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}-\right.$$
$$\left.32\left(128z^3+1536z^2-240z+315\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(1024z^3+11\,520z^2-7920z+12\,285\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a858.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},-\frac{5}{4};z\right)=\frac{1}{8775\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(8192z^4-151040z^3+253440z^2+70200z+8775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1024z^3-18240z^2+21600z+8775\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-8z\left(1024z^3-18624z^2+27360z+11205\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a859.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},-\frac{5}{4};-z\right)=\frac{1}{8775\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(8192z^4+151040z^3+253440z^2-70200z+8775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1024z^3+18240z^2+21600z-8775\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(1024z^3+18624z^2+27360z-11205\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a85a.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{3510}\left(e^{-2\sqrt{z}}\left(512e^{4\sqrt{z}}z^{7/2}-512z^{7/2}+128e^{4\sqrt{z}}z^3+128z^3-12384e^{4\sqrt{z}}z^{5/2}+12384z^{5/2}-3000e^{4\sqrt{z}}z^2-3000z^2-\right.\right.$$
$$2e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-6240z+19305\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-2e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-6240z+19305\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)$$
$$\left.\left.z^{7/4}+36480e^{4\sqrt{z}}z^{3/2}-36480z^{3/2}+7200e^{4\sqrt{z}}z+7200z+3420e^{4\sqrt{z}}\sqrt{z}-3420\sqrt{z}+1755e^{4\sqrt{z}}+1755\right)\right)$$

07.22.03.a85b.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},-\frac{3}{4};-z\right)=\frac{1}{1755}\left(-4\sqrt{\pi}\left(256z^2+6240z+19305\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+\right.$$
$$\left.4\left(128z^3+3096z^2+9120z-855\right)\sin\left(2\sqrt{z}\right)\sqrt{z}-\left(128z^3+3000z^2+7200z-1755\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a85c.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},-\frac{1}{4};z\right)=\frac{1}{8775\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(-4096z^4+125440z^3-597840z^2+280800z+8775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(512z^3-15360z^2+65790z-8775\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+16z\left(256z^3-7776z^2+35505z-10800\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a85d.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},-\frac{1}{4};-z\right)=-\frac{1}{8775\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(4096z^4+125\,440z^3+597\,840z^2+280\,800z-8775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^3+15\,360z^2+65\,790z+8775\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+16z\left(256z^3+7776z^2+35\,505z+10\,800\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a85e.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{112\,320}\left(e^{-2\sqrt{z}}\left(-4\left(-1024z^{7/2}+256z^3+37\,248z^{5/2}-9120z^2-225\,060z^{3/2}+50\,085z+138\,240\sqrt{z}+\right.\right.\right.$$
$$\left.\left.e^{4\sqrt{z}}\left(1024z^{7/2}+256z^3-37\,248z^{5/2}-9120z^2+225\,060z^{3/2}+50\,085z-138\,240\sqrt{z}-14\,040\right)-14\,040\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(4096z^3-149\,760z^2+926\,640z-675\,675\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(4096z^3-149\,760z^2+926\,640z-675\,675\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a85f.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{1}{4};-z\right)=\frac{1}{28\,080}\left(\sqrt{\pi}\,z^{3/4}\left(4096z^3+149\,760z^2+926\,640z+675\,675\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\left(\left(256z^3+9120z^2+50\,085z+14\,040\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^3+9312z^2+56\,265z+34\,560\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a85g.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{3}{4};z\right)=\frac{1}{245\,700\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(8192z^4-350\,720z^3+2\,755\,680z^2-3\,316\,950z+245\,700\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-4096z^3+172\,800z^2-1\,275\,120z+\right.\right.\right.$$
$$\left.\left.\left.1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(-4096z^3+174\,336z^2-1\,335\,600z+1\,374\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a85h.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{3}{4};-z\right)=\frac{1}{245\,700\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(8192z^4+350\,720z^3+2\,755\,680z^2+3\,316\,950z+245\,700\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(4096z^3+172\,800z^2+1\,275\,120z+\right.\right.\right.$$
$$\left.\left.\left.1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(4096z^3+174\,336z^2+1\,335\,600z+1\,374\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a85i.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{5}{4};z\right)= \frac{1}{28\,753\,920\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384\,z^{7/2}+4096\,z^3+795\,648\,z^{5/2}-195\,840\,z^2-7\,270\,080\,z^{3/2}+1\,681\,200\,z+9\,706\,860\sqrt{z}\right)+e^{4\sqrt{z}}\left(16\,384\,z^{7/2}+4096\,z^3-795\,648\,z^{5/2}-195\,840\,z^2+7\,270\,080\,z^{3/2}+1\,681\,200\,z-9\,706\,860\sqrt{z}-1\,567\,215\right)-1\,567\,215\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-3\,194\,880\,z^3+29\,652\,480\,z^2-43\,243\,200\,z+2\,027\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-3\,194\,880\,z^3+29\,652\,480\,z^2-43\,243\,200\,z+2\,027\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right) $$

07.22.03.a85j.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{5}{4};-z\right)= \frac{1}{7\,188\,480\sqrt[4]{z}}\left(\sqrt{\pi}\left(65\,536\,z^4+3\,194\,880\,z^3+29\,652\,480\,z^2+43\,243\,200\,z+2\,027\,025\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(4096\,z^3+195\,840\,z^2+1\,681\,200\,z+1\,567\,215\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(4096\,z^3+198\,912\,z^2+1\,817\,520\,z+2\,426\,715\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a85k.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{7}{4};z\right)= \frac{1}{23\,587\,200\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(65\,536\,z^4-3\,604\,480\,z^3+39\,467\,520\,z^2-76\,377\,600\,z+11\,117\,925\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-65\,536\,z^4+3\,563\,520\,z^3-37\,324\,800\,z^2+57\,002\,400\,z+2\,027\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(65\,536\,z^4-3\,588\,096\,z^3+38\,592\,000\,z^2-67\,798\,080\,z+2\,027\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a85l.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{7}{4};-z\right)= \frac{1}{23\,587\,200\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(65\,536\,z^4+3\,604\,480\,z^3+39\,467\,520\,z^2+76\,377\,600\,z+11\,117\,925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(65\,536\,z^4+3\,563\,520\,z^3+37\,324\,800\,z^2+57\,002\,400\,z-2\,027\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(65\,536\,z^4+3\,588\,096\,z^3+38\,592\,000\,z^2+67\,798\,080\,z+2\,027\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a85m.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{9}{4};z\right)= $$

$$ \frac{1}{1\,840\,250\,880\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-262\,144\,z^{9/2}+65\,536\,z^4+15\,925\,248\,z^{7/2}-3\,932\,160\,z^3-194\,795\,520\,z^{5/2}+\right.\right.\right. $$

$$ 45\,918\,720\,z^2+401\,253\,120\,z^{3/2}-74\,355\,840\,z-8\,108\,100\sqrt{z}+ $$

$$ e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-15\,925\,248\,z^{7/2}-3\,932\,160\,z^3+194\,795\,520\,z^{5/2}+\right. $$

$$ \left.\left.45\,918\,720\,z^2-401\,253\,120\,z^{3/2}-74\,355\,840\,z+8\,108\,100\sqrt{z}-6\,081\,075\right)-6\,081\,075\right)+ $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-63\,897\,600\,z^4+790\,732\,800\,z^3-1\,729\,728\,000\,z^2+162\,162\,000\,z-6\,081\,075\right) $$

$$ \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi} $$

$$ \left.\left.\left(1\,048\,576\,z^5-63\,897\,600\,z^4+790\,732\,800\,z^3-1\,729\,728\,000\,z^2+162\,162\,000\,z-6\,081\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a85n.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{9}{4};-z\right)=\frac{1}{460\,062\,720\,z^{5/4}} $$

$$ \left(\sqrt{\pi}\left(1\,048\,576\,z^5+63\,897\,600\,z^4+790\,732\,800\,z^3+1\,729\,728\,000\,z^2+162\,162\,000\,z+6\,081\,075\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right. $$

$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536\,z^4+3\,981\,312\,z^3+48\,698\,880\,z^2+100\,313\,280\,z+2\,027\,025\right)\sin\left(2\sqrt{z}\right)-\right. $$

$$ \left.\left.\left(65\,536\,z^4+3\,932\,160\,z^3+45\,918\,720\,z^2+74\,355\,840\,z-6\,081\,075\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a85o.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{11}{4};z\right)=\frac{1}{1\,186\,099\,200\sqrt{2}\,z^{5/4}} $$

$$ \left(\left(2\sqrt{z}\left(1\,048\,576\,z^5-70\,451\,200\,z^4+989\,306\,880\,z^3-2\,637\,273\,600\,z^2+545\,173\,200\,z+10\,135\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$

$$ \left(-1\,048\,576\,z^5+69\,795\,840\,z^4-947\,036\,160\,z^3+2\,125\,094\,400\,z^2+97\,297\,200\,z-30\,405\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\left(-1\,048\,576\,z^5+70\,189\,056\,z^4-972\,103\,680\,z^3+2\,415\,536\,640\,z^2-162\,162\,000\,z+30\,405\,375\right) $$

$$ \left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a85p.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{11}{4};-z\right)=\frac{1}{1\,186\,099\,200\sqrt{2}\,z^{5/4}} $$

$$ \left(\left(2\sqrt{z}\left(1\,048\,576\,z^5+70\,451\,200\,z^4+989\,306\,880\,z^3+2\,637\,273\,600\,z^2+545\,173\,200\,z-10\,135\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$

$$ \left(1\,048\,576\,z^5+69\,795\,840\,z^4+947\,036\,160\,z^3+2\,125\,094\,400\,z^2-97\,297\,200\,z-30\,405\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\left(1\,048\,576\,z^5+70\,189\,056\,z^4+972\,103\,680\,z^3+2\,415\,536\,640\,z^2+162\,162\,000\,z+30\,405\,375\right) $$

$$ \left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a85q.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{13}{4};z\right)= $$

$$ \frac{1}{78\,517\,370\,880\,z^{9/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304\,z^{11/2}+1\,048\,576\,z^5+305\,922\,048\,z^{9/2}-75\,694\,080\,z^4-4\,688\,609\,280\,z^{7/2}+\right.\right.\right. $$

$$ 1\,118\,085\,120\,z^3+13\,063\,403\,520\,z^{5/2}-2\,595\,939\,840\,z^2-648\,648\,000\,z^{3/2}-356\,756\,400\,z+ $$

$$ 283\,783\,500\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-305\,922\,048\,z^{9/2}-75\,694\,080\,z^4+\right. $$

$$ 4\,688\,609\,280\,z^{7/2}+1\,118\,085\,120\,z^3-13\,063\,403\,520\,z^{5/2}-2\,595\,939\,840\,z^2+ $$

$$ \left.\left.\left.\left.648\,648\,000\,z^{3/2}-356\,756\,400\,z-283\,783\,500\sqrt{z}+212\,837\,625\right)+212\,837\,625\right)+ $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-1\,226\,833\,920\,z^5+18\,977\,587\,200\,z^4-55\,351\,296\,000\,z^3+\right. $$

$$ \left.7\,783\,776\,000\,z^2-583\,783\,200\,z+212\,837\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+ $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-1\,226\,833\,920\,z^5+18\,977\,587\,200\,z^4-55\,351\,296\,000\,z^3+\right. $$

$$ \left.\left.\left.7\,783\,776\,000\,z^2-583\,783\,200\,z+212\,837\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a85r.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{13}{4};-z\right)= $$

$$ \frac{1}{19\,629\,342\,720\,z^{9/4}}\left(\sqrt{\pi}\left(16\,777\,216\,z^6+1\,226\,833\,920\,z^5+18\,977\,587\,200\,z^4+55\,351\,296\,000\,z^3+7\,783\,776\,000\,z^2+\right.\right. $$

$$ \left.583\,783\,200\,z+212\,837\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z} $$

$$ \left(4\sqrt{z}\left(1\,048\,576\,z^5+76\,480\,512\,z^4+1\,172\,152\,320\,z^3+3\,265\,850\,880\,z^2+162\,162\,000\,z+70\,945\,875\right)\sin\left(2\sqrt{z}\right)-\right. $$

$$ \left.\left.\left(1\,048\,576\,z^5+75\,694\,080\,z^4+1\,118\,085\,120\,z^3+2\,595\,939\,840\,z^2-356\,756\,400\,z-212\,837\,625\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a85s.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{15}{4};z\right)= $$

$$ \frac{1}{44\,856\,115\,200\sqrt{2}\,z^{9/4}}\left(\left(2\sqrt{z}\left(16\,777\,216\,z^6-1\,331\,691\,520\,z^5+22\,819\,307\,520\,z^4-77\,491\,814\,400\,z^3+\right.\right.\right. $$

$$ \left.20\,381\,587\,200\,z^2+324\,324\,000\,z-638\,512\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ $$

$$ \left(-16\,777\,216\,z^6+1\,321\,205\,760\,z^5-22\,015\,180\,800\,z^4+65\,271\,398\,400\,z^3+2\,594\,592\,000\,z^2+\right. $$

$$ \left.1\,945\,944\,000\,z+1\,915\,538\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(16\,777\,216\,z^6-1\,327\,497\,216\,z^5+\right. $$

$$ \left.\left.\left.22\,492\,938\,240\,z^4-72\,276\,295\,680\,z^3+7\,783\,776\,000\,z^2-2\,140\,538\,400\,z+1\,915\,538\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a85t.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{15}{4};-z\right)= \frac{1}{44\,856\,115\,200\sqrt{2}\,z^{9/4}}\left(\left(2\sqrt{z}\left(16\,777\,216z^6+1\,331\,691\,520z^5+22\,819\,307\,520z^4+77\,491\,814\,400z^3+20\,381\,587\,200z^2-324\,324\,000z-638\,512\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,777\,216z^6+1\,321\,205\,760z^5+22\,015\,180\,800z^4+65\,271\,398\,400z^3-2\,594\,592\,000z^2+1\,945\,944\,000z-1\,915\,538\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(16\,777\,216z^6+1\,327\,497\,216z^5+22\,492\,938\,240z^4+72\,276\,295\,680z^3+7\,783\,776\,000z^2+2\,140\,538\,400z+1\,915\,538\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a85u.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{17}{4};z\right)= \frac{1}{2\,705\,829\,396\,480\,z^{13/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-67\,108\,864z^{13/2}+16\,777\,216z^6+5\,712\,642\,048z^{11/2}-1\,415\,577\,600z^5-105\,228\,533\,760z^{9/2}+25\,288\,704\,000z^4+369\,710\,530\,560z^{7/2}-76\,686\,704\,640z^3-31\,135\,104\,000z^{5/2}-12\,972\,960\,000z^2+18\,940\,521\,600z^{3/2}+1\,362\,160\,800z-28\,094\,566\,500\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864z^{13/2}+16\,777\,216z^6-5\,712\,642\,048z^{11/2}-1\,415\,577\,600z^5+105\,228\,533\,760z^{9/2}+25\,288\,704\,000z^4-369\,710\,530\,560z^{7/2}-76\,686\,704\,640z^3+31\,135\,104\,000z^{5/2}-12\,972\,960\,000z^2-18\,940\,521\,600z^{3/2}+1\,362\,160\,800z+28\,094\,566\,500\sqrt{z}-21\,070\,924\,875\right)-21\,070\,924\,875\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7-22\,900\,899\,840z^6+425\,097\,953\,280z^5-1\,549\,836\,288\,000z^4+290\,594\,304\,000z^3-32\,691\,859\,200z^2+23\,837\,814\,000z-21\,070\,924\,875\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7-22\,900\,899\,840z^6+425\,097\,953\,280z^5-1\,549\,836\,288\,000z^4+290\,594\,304\,000z^3-32\,691\,859\,200z^2+23\,837\,814\,000z-21\,070\,924\,875\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a85v.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{17}{4};-z\right)= \frac{1}{676\,457\,349\,120\,z^{13/4}}\left(\sqrt{\pi}\left(268\,435\,456z^7+22\,900\,899\,840z^6+425\,097\,953\,280z^5+1\,549\,836\,288\,000z^4+290\,594\,304\,000z^3+32\,691\,859\,200z^2+23\,837\,814\,000z+21\,070\,924\,875\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(\left(-16\,777\,216z^6-1\,415\,577\,600z^5-25\,288\,704\,000z^4-76\,686\,704\,640z^3+12\,972\,960\,000z^2+1\,362\,160\,800z+21\,070\,924\,875\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(16\,777\,216z^6+1\,428\,160\,512z^5+26\,307\,133\,440z^4+92\,427\,632\,640z^3+7\,783\,776\,000z^2+4\,735\,130\,400z+7\,023\,641\,625\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a85w.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{19}{4};z\right)= $$

$$ \left(\left(2\sqrt{z}\left(268\,435\,456\,z^7-24\,578\,621\,440\,z^6+497\,198\,039\,040\,z^5-2\,051\,304\,652\,800\,z^4+649\,443\,225\,600\,z^3-\right.\right.\right. $$

$$ \left.1\,556\,755\,200\,z^2+27\,729\,702\,000\,z+91\,307\,341\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ $$

$$ \left(-268\,435\,456\,z^7+24\,410\,849\,280\,z^6-482\,287\,288\,320\,z^5+1\,778\,717\,491\,200\,z^4+41\,513\,472\,000\,z^3+\right. $$

$$ \left.172\,799\,827\,200\,z^2-500\,594\,094\,000\,z-273\,922\,023\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\left(-268\,435\,456\,z^7+24\,511\,512\,576\,z^6-491\,158\,241\,280\,z^5+1\,936\,112\,025\,600\,z^4-290\,594\,304\,000\,z^3+\right. $$

$$ \left.\left.\left.94\,962\,067\,200\,z^2-83\,772\,889\,200\,z+273\,922\,023\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(1\,435\,395\,686\,400\sqrt{2}\;z^{13/4}\right) $$

07.22.03.a85x.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{19}{4};-z\right)= $$

$$ \left(\left(2\sqrt{z}\left(268\,435\,456\,z^7+24\,578\,621\,440\,z^6+497\,198\,039\,040\,z^5+2\,051\,304\,652\,800\,z^4+649\,443\,225\,600\,z^3+\right.\right.\right. $$

$$ \left.1\,556\,755\,200\,z^2+27\,729\,702\,000\,z-91\,307\,341\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- $$

$$ \left(268\,435\,456\,z^7+24\,410\,849\,280\,z^6+482\,287\,288\,320\,z^5+1\,778\,717\,491\,200\,z^4-41\,513\,472\,000\,z^3+\right. $$

$$ \left.172\,799\,827\,200\,z^2+500\,594\,094\,000\,z-273\,922\,023\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ 2\sqrt{z}\left(268\,435\,456\,z^7+24\,511\,512\,576\,z^6+491\,158\,241\,280\,z^5+1\,936\,112\,025\,600\,z^4+290\,594\,304\,000\,z^3+\right. $$

$$ \left.\left.\left.94\,962\,067\,200\,z^2+83\,772\,889\,200\,z+273\,922\,023\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(1\,435\,395\,686\,400\sqrt{2}\;z^{13/4}\right) $$

07.22.03.a85y.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{21}{4};z\right)= $$

$$ \left(17\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^7+104\,488\,501\,248\,z^{13/2}-25\,920\,798\,720\,z^6-2\,248\,000\,143\,360\right.\right.\right. $$

$$ z^{11/2}+543\,251\,496\,960\,z^5+9\,534\,068\,490\,240\,z^{9/2}-2\,036\,122\,583\,040\,z^4- $$

$$ 1\,162\,377\,216\,000\,z^{7/2}-373\,621\,248\,000\,z^3+794\,982\,988\,800\,z^{5/2}-238\,183\,545\,600\,z^2- $$

$$ 1\,091\,674\,584\,000\,z^{3/2}+1\,685\,673\,990\,000\,z+5\,478\,440\,467\,500\sqrt{z}+e^{4\sqrt{z}} $$

$$ \left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^7-104\,488\,501\,248\,z^{13/2}-25\,920\,798\,720\,z^6+2\,248\,000\,143\,360\,z^{11/2}+\right. $$

$$ 543\,251\,496\,960\,z^5-9\,534\,068\,490\,240\,z^{9/2}-2\,036\,122\,583\,040\,z^4+1\,162\,377\,216\,000\,z^{7/2}- $$

$$ 373\,621\,248\,000\,z^3-794\,982\,988\,800\,z^{5/2}-238\,183\,545\,600\,z^2+1\,091\,674\,584\,000\,z^{3/2}+ $$

$$ \left.1\,685\,673\,990\,000\,z-5\,478\,440\,467\,500\sqrt{z}+4\,108\,830\,350\,625\right)+4\,108\,830\,350\,625\Big)+ $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-418\,759\,311\,360\,z^7+9\,068\,756\,336\,640\,z^6-39\,675\,808\,972\,800\,z^5+\right. $$

$$ 9\,299\,017\,728\,000\,z^4-1\,394\,852\,659\,200\,z^3+1\,525\,620\,096\,000\,z^2-2\,697\,078\,384\,000\,z+4\,108\,830\,350\,625\Big) $$

$$ \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-418\,759\,311\,360\,z^7+9\,068\,756\,336\,640\,z^6-\right. $$

$$ 39\,675\,808\,972\,800\,z^5+9\,299\,017\,728\,000\,z^4-1\,394\,852\,659\,200\,z^3+1\,525\,620\,096\,000\,z^2- $$

$$ \left.\left.2\,697\,078\,384\,000\,z+4\,108\,830\,350\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)\Big/\left(1\,385\,384\,650\,997\,760\,z^{17/4}\right) $$

07.22.03.a85z.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{21}{4};-z\right)=\frac{1}{346\,346\,162\,749\,440\,z^{17/4}}$$
$$\left(17\left(\sqrt{\pi}\,\left(4\,294\,967\,296\,z^8+418\,759\,311\,360\,z^7+9\,068\,756\,336\,640\,z^6+39\,675\,808\,972\,800\,z^5+9\,299\,017\,728\,000\,z^4+\right.\right.\right.$$
$$\left.\left.\left.1\,394\,852\,659\,200\,z^3+1\,525\,620\,096\,000\,z^2+2\,697\,078\,384\,000\,z+4\,108\,830\,350\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.\right.$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(268\,435\,456\,z^7+26\,122\,125\,312\,z^6+562\,000\,035\,840\,z^5+2\,383\,517\,122\,560\,z^4+\right.\right.$$
$$\left.\left.290\,594\,304\,000\,z^3+198\,745\,747\,200\,z^2+272\,918\,646\,000\,z+1\,369\,610\,116\,875\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left(268\,435\,456\,z^7+25\,920\,798\,720\,z^6+543\,251\,496\,960\,z^5+2\,036\,122\,583\,040\,z^4-373\,621\,248\,000\,z^3+\right.\right.\right.$$
$$\left.\left.\left.238\,183\,545\,600\,z^2+1\,685\,673\,990\,000\,z-4\,108\,830\,350\,625\right)\cos\left(2\sqrt{z}\right)\right)\right)\Bigg)$$

07.22.03.a860.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{23}{4};z\right)=$$
$$\left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-445\,602\,856\,960\,z^7+10\,392\,478\,679\,040\,z^6-50\,459\,679\,129\,600\,z^5+18\,594\,584\,985\,600\,z^4-\right.\right.\right.$$
$$\left.\left.\left.564\,583\,219\,200\,z^3+3\,175\,780\,608\,000\,z^2-14\,191\,769\,592\,000\,z-23\,283\,371\,986\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-4\,294\,967\,296\,z^8+442\,918\,502\,400\,z^7-10\,121\,191\,096\,320\,z^6+44\,662\,888\,857\,600\,z^5+\right.$$
$$\left.7\,621\,873\,459\,200\,z^3-19\,848\,628\,800\,000\,z^2+149\,013\,580\,716\,000\,z+69\,850\,115\,960\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-444\,529\,115\,136\,z^7+10\,282\,755\,686\,400\,z^6-48\,027\,716\,812\,800\,z^5+\right.$$
$$\left.\left.9\,299\,017\,728\,000\,z^4-3\,387\,499\,315\,200\,z^3+2\,858\,202\,547\,200\,z^2+69\,850\,115\,960\,625\right)\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(780\,855\,253\,401\,600\,\sqrt{2}\;z^{17/4}\right)$$

07.22.03.a861.01

$${}_1F_2\left(-\frac{15}{4};\frac{1}{2},\frac{23}{4};-z\right)=$$
$$\left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+445\,602\,856\,960\,z^7+10\,392\,478\,679\,040\,z^6+50\,459\,679\,129\,600\,z^5+18\,594\,584\,985\,600\,z^4+\right.\right.\right.$$
$$\left.\left.\left.564\,583\,219\,200\,z^3+3\,175\,780\,608\,000\,z^2+14\,191\,769\,592\,000\,z-23\,283\,371\,986\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$\left(4\,294\,967\,296\,z^8+442\,918\,502\,400\,z^7+10\,121\,191\,096\,320\,z^6+44\,662\,888\,857\,600\,z^5+7\,621\,873\,459\,200\,z^3+\right.$$
$$\left.19\,848\,628\,800\,000\,z^2+149\,013\,580\,716\,000\,z-69\,850\,115\,960\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+444\,529\,115\,136\,z^7+10\,282\,755\,686\,400\,z^6+48\,027\,716\,812\,800\,z^5+\right.$$
$$\left.\left.9\,299\,017\,728\,000\,z^4+3\,387\,499\,315\,200\,z^3+2\,858\,202\,547\,200\,z^2+69\,850\,115\,960\,625\right)\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(780\,855\,253\,401\,600\,\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{15}{4}$, $b_1 = \frac{3}{2}$

07.22.03.a862.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{3}{2}, -\frac{23}{4}; z\right) = \frac{(16z + 525)\sinh\left(2\sqrt{z}\right) - 176\sqrt{z}\cosh\left(2\sqrt{z}\right)}{874\sqrt{z}} $$

07.22.03.a863.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{3}{2}, -\frac{23}{4}; -z\right) = \frac{(525 - 16z)\sin\left(2\sqrt{z}\right) - 176\sqrt{z}\cos\left(2\sqrt{z}\right)}{874\sqrt{z}} $$

07.22.03.a864.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{3}{2}, -\frac{21}{4}; z\right) = $$
$$ \frac{1}{692\,321\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(262\,144z^4 + 10\,403\,840z^3 + 161\,679\,360z^2 + 937\,027\,200z + 692\,321\,175\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 8\sqrt{z}\left(16\,384z^3 + 660\,480z^2 + 10\,538\,880z + 54\,676\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left.\left(262\,144z^4 + 10\,469\,376z^3 + 164\,382\,720z^2 + 981\,993\,600z + 1\,748\,906\,775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a865.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{3}{2}, -\frac{21}{4}; -z\right) = $$
$$ \frac{1}{692\,321\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(262\,144z^4 - 10\,403\,840z^3 + 161\,679\,360z^2 - 937\,027\,200z + 692\,321\,175\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 8\sqrt{z}\left(16\,384z^3 - 660\,480z^2 + 10\,538\,880z - 54\,676\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left.\left(262\,144z^4 - 10\,469\,376z^3 + 164\,382\,720z^2 - 981\,993\,600z + 1\,748\,906\,775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a866.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{3}{2}, -\frac{19}{4}; z\right) = \frac{1}{38}\left(\frac{21\sinh\left(2\sqrt{z}\right)}{\sqrt{z}} - 4\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.a867.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{3}{2}, -\frac{19}{4}; -z\right) = \frac{1}{38}\left(\frac{21\sin\left(2\sqrt{z}\right)}{\sqrt{z}} - 4\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.a868.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{3}{2}, -\frac{17}{4}; z\right) = \frac{1}{98\,903\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072 z^4 + 3\,112\,960 z^3 + 34\,490\,880 z^2 + 154\,598\,400 z + 98\,903\,025\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 64\sqrt{z}\left(1024 z^3 + 24\,960 z^2 + 286\,380 z + 1\,428\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(131\,072 z^4 + 3\,145\,728 z^3 + 35\,320\,320 z^2 + 164\,678\,400 z + 228\,118\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a869.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{3}{2}, -\frac{17}{4}; -z\right) = \frac{1}{98\,903\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072 z^4 - 3\,112\,960 z^3 + 34\,490\,880 z^2 - 154\,598\,400 z + 98\,903\,025\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 64\sqrt{z}\left(1024 z^3 - 24\,960 z^2 + 286\,380 z - 1\,428\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(131\,072 z^4 - 3\,145\,728 z^3 + 35\,320\,320 z^2 - 164\,678\,400 z + 228\,118\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a86a.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{3}{2}, -\frac{15}{4}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}} $$

07.22.03.a86b.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{3}{2}, -\frac{15}{4}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}} $$

07.22.03.a86c.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{3}{2}, -\frac{13}{4}; z\right) = \frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536 z^4 + 512\,000 z^3 + 3\,406\,080 z^2 + 10\,774\,800 z + 5\,817\,825\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 8\sqrt{z}\left(4096 z^3 + 34\,560 z^2 + 239\,760 z + 907\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(65\,536 z^4 + 528\,384 z^3 + 3\,559\,680 z^2 + 11\,946\,960 z + 12\,006\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a86d.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536\,z^4-512\,000\,z^3+3\,406\,080\,z^2-10\,774\,800\,z+5\,817\,825\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-8\right.\right.$$
$$\sqrt{z}\left(4096\,z^3-34\,560\,z^2+239\,760\,z-907\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(65\,536\,z^4-528\,384\,z^3+3\,559\,680\,z^2-11\,946\,960\,z+12\,006\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a86e.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{9\,189\,180\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-65\,536\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}-65\,536\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+\right.\right.$$
$$65\,536\,e^{4\sqrt{z}}z^4-65\,536\,z^4+16\,384\,e^{4\sqrt{z}}z^{7/2}+16\,384\,z^{7/2}+12\,288\,e^{4\sqrt{z}}z^3-12\,288\,z^3+$$
$$15\,360\,e^{4\sqrt{z}}z^{5/2}+15\,360\,z^{5/2}+26\,880\,e^{4\sqrt{z}}z^2-26\,880\,z^2+60\,480\,e^{4\sqrt{z}}z^{3/2}+60\,480\,z^{3/2}+$$
$$\left.\left.166\,320\,e^{4\sqrt{z}}z-166\,320\,z+540\,540\,e^{4\sqrt{z}}\sqrt{z}+540\,540\sqrt{z}+2\,027\,025\,e^{4\sqrt{z}}-2\,027\,025\right)\right)$$

07.22.03.a86f.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{4\,594\,590\sqrt{z}}\left(-131\,072\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}-4\left(4096\,z^3-3840\,z^2+15\,120\,z-135\,135\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(65\,536\,z^4-12\,288\,z^3+26\,880\,z^2-166\,320\,z+2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a86g.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},-\frac{9}{4};z\right)=-\frac{1}{447\,525\sqrt{2}}\left(\sqrt[4]{z}\right.$$
$$\left(\left(32\,768\,z^4-266\,240\,z^3-549\,120\,z^2-1\,036\,560\,z-447\,525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-64\sqrt{z}\left(256\,z^3-1920\,z^2-5160\,z-11\,295\right)\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-32\,768\,z^4+258\,048\,z^3+602\,880\,z^2+1\,217\,520\,z+800\,415\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a86h.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},-\frac{9}{4};-z\right)=$$
$$-\frac{1}{447\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768\,z^4+266\,240\,z^3-549\,120\,z^2+1\,036\,560\,z-447\,525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-64\sqrt{z}\right.\right.$$
$$\left(256\,z^3+1920\,z^2-5160\,z+11\,295\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(32\,768\,z^4+258\,048\,z^3-602\,880\,z^2+1\,217\,520\,z-800\,415\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a86i.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},-\frac{7}{4};z\right)=\frac{1}{835\,380\sqrt{z}}$$
$$\left(e^{-2\sqrt{z}}\left(-16\,384\,e^{4\sqrt{z}}\,z^4+16\,384\,z^4-4096\,e^{4\sqrt{z}}\,z^{7/2}-4096\,z^{7/2}+1024\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-255)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}+\right.\right.$$
$$1024\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-255)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}+258\,048\,e^{4\sqrt{z}}\,z^3-258\,048\,z^3+$$
$$61\,440\,e^{4\sqrt{z}}\,z^{5/2}+61\,440\,z^{5/2}+42\,240\,e^{4\sqrt{z}}\,z^2-42\,240\,z^2+46\,080\,e^{4\sqrt{z}}\,z^{3/2}+46\,080\,z^{3/2}+$$
$$\left.\left.65\,520\,e^{4\sqrt{z}}\,z-65\,520\,z+105\,840\,e^{4\sqrt{z}}\,\sqrt{z}+105\,840\sqrt{z}+155\,925\,e^{4\sqrt{z}}-155\,925\right)\right)$$

07.22.03.a86j.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{417\,690\sqrt{z}}\left(2048\sqrt{\pi}\,(16z+255)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}+16\left(256z^3+3840z^2-2880z+6615\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(-16\,384z^4-258\,048z^3+42\,240z^2-65\,520z+155\,925\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a86k.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},-\frac{5}{4};z\right)=\frac{1}{149\,175\sqrt{2}}\left(\sqrt[4]{z}\right.$$
$$\left(\left(16\,384z^4-394\,240z^3+933\,120z^2+499\,680z+149\,175\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\,\left(1024z^3-24\,000z^2+44\,640z+38\,205\right)\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(16\,384z^4-390\,144z^3+840\,960z^2+609\,120z+218\,295\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a86l.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},-\frac{5}{4};-z\right)=\frac{1}{149\,175\sqrt{2}}\left(\sqrt[4]{z}\right.$$
$$\left(\left(16\,384z^4+394\,240z^3+933\,120z^2-499\,680z+149\,175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\,\left(1024z^3+24\,000z^2+44\,640z-38\,205\right)\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,384z^4+390\,144z^3+840\,960z^2-609\,120z+218\,295\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a86m.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{119\,340\sqrt{z}}\left(e^{-2\sqrt{z}}\left(2048\,e^{4\sqrt{z}}\,z^4-2048\,z^4+512\,e^{4\sqrt{z}}\,z^{7/2}+512\,z^{7/2}-64\,896\,e^{4\sqrt{z}}\,z^3+64\,896\,z^3-\right.\right.$$
$$15\,840\,e^{4\sqrt{z}}\,z^{5/2}-15\,840\,z^{5/2}-8\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2-8160z+36\,465\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}-$$
$$8\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2-8160z+36\,465\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}+280\,320\,e^{4\sqrt{z}}\,z^2-280\,320\,z^2+59\,520\,e^{4\sqrt{z}}\,z^{3/2}+$$
$$\left.\left.59\,520\,z^{3/2}+33\,120\,e^{4\sqrt{z}}\,z-33\,120z+25\,020\,e^{4\sqrt{z}}\,\sqrt{z}+25\,020\sqrt{z}+17\,325\,e^{4\sqrt{z}}-17\,325\right)\right)$$

07.22.03.a86n.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},-\frac{3}{4};-z\right)=$$
$$\frac{1}{59\,670\sqrt{z}}\left(-16\sqrt{\pi}\left(256z^2+8160z+36\,465\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}-4\left(128z^3+3960z^2+14\,880z-6255\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(2048z^4+64\,896z^3+280\,320z^2-33\,120z+17\,325\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a86o.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},-\frac{1}{4};z\right)=-\frac{1}{149\,175\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(8192z^4-327\,680z^3+2\,237\,280z^2-1\,720\,800z-149\,175\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-16\sqrt{z}\left(256z^3-10\,080z^2+63\,945z-\right.\right.\right.$$
$$\left.\left.\left.24\,300\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-8192z^4+325\,632z^3-2\,158\,560z^2+1\,274\,400z+155\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a86p.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},-\frac{1}{4};-z\right)=$$
$$-\frac{1}{149\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192z^4+327\,680z^3+2\,237\,280z^2+1\,720\,800z-149\,175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-16\sqrt{z}\right.\right.$$
$$\left(256z^3+10\,080z^2+63\,945z+24\,300\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(8192z^4+325\,632z^3+2\,158\,560z^2+1\,274\,400z-155\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a86q.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{954\,720\sqrt{z}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-195\,840z^2+1\,750\,320z-2\,297\,295\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left(4096z^3-195\,840z^2+1\,750\,320z-2\,297\,295\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-4\left(-1024z^4+256z^{7/2}+48\,768z^3-\right.$$
$$12\,000z^{5/2}-428\,820z^2+98\,865z^{3/2}+509\,760z-77\,760\sqrt{z}+e^{4\sqrt{z}}\left(1024z^4+256z^{7/2}-\right.$$
$$\left.\left.\left.\left.48\,768z^3-12\,000z^{5/2}+428\,820z^2+98\,865z^{3/2}-509\,760z-77\,760\sqrt{z}-20\,790\right)+20\,790\right)\right)\right)$$

07.22.03.a86r.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{1}{4};-z\right)=\frac{1}{238\,680\sqrt{z}}$$
$$\left(\sqrt{\pi}\left(4096z^3+195\,840z^2+1\,750\,320z+2\,297\,295\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+2\left(\sqrt{z}\left(256z^3+12\,000z^2+98\,865z+77\,760\right)\right.\right.$$
$$\left.\left.\cos\left(2\sqrt{z}\right)-2\left(512z^4+24\,384z^3+214\,410z^2+254\,880z-10\,395\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a86s.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{3}{4};z\right)=\frac{1}{2\,088\,450\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(4096z^4-229\,120z^3+2\,587\,440z^2-5\,382\,825z+1\,044\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ \sqrt{z}\left(-4096z^3+226\,560z^2-2\,451\,120z+4\,102\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- $$
$$ \left.\left.2\left(4096z^4-228\,096z^3+2\,531\,760z^2-4\,817\,925z+363\,825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a86t.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{3}{4};-z\right)=\frac{1}{2\,088\,450\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(4096z^4+229\,120z^3+2\,587\,440z^2+5\,382\,825z+1\,044\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ \sqrt{z}\left(4096z^3+226\,560z^2+2\,451\,120z+4\,102\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.2\left(4096z^4+228\,096z^3+2\,531\,760z^2+4\,817\,925z+363\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a86u.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{5}{4};z\right)= $$
$$ \frac{1}{244\,408\,320\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-4\left(-16\,384z^4+4096z^{7/2}+1\,041\,408z^3-257\,280z^{5/2}-13\,813\,440z^2+3\,270\,960z^{3/2}+\right.\right.\right. $$
$$ \left.34\,518\,060z-6\,736\,095\sqrt{z}\right)+e^{4\sqrt{z}}\left(16\,384z^4+4096z^{7/2}-1\,041\,408z^3-257\,280z^{5/2}+\right. $$
$$ \left.\left.13\,813\,440z^2+3\,270\,960z^{3/2}-34\,518\,060z-6\,736\,095\sqrt{z}+5\,322\,240\right)-5\,322\,240\right)+ $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(65\,536z^4-4\,177\,920z^3+56\,010\,240z^2-147\,026\,880z+34\,459\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+ $$
$$ \left.e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(65\,536z^4-4\,177\,920z^3+56\,010\,240z^2-147\,026\,880z+34\,459\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.a86v.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{5}{4};-z\right)= $$
$$ \frac{1}{61\,102\,080\sqrt{z}}\left(\sqrt{\pi}\sqrt[4]{z}\left(65\,536z^4+4\,177\,920z^3+56\,010\,240z^2+147\,026\,880z+34\,459\,425\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right. $$
$$ 2\left(4\left(4096z^4+260\,352z^3+3\,453\,360z^2+8\,629\,515z+1\,330\,560\right)\sin\left(2\sqrt{z}\right)-\right. $$
$$ \left.\left.\sqrt{z}\left(4096z^3+257\,280z^2+3\,270\,960z+6\,736\,095\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a86w.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{3}{2}, \frac{7}{4}; z\right) = $$
$$ \frac{1}{200\,491\,200\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(65\,536z^4-4\,710\,400z^3+74\,234\,880z^2-251\,834\,400z+111\,732\,075\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ \left(-65\,536z^4+4\,669\,440z^3-71\,400\,960z^2+212\,587\,200z-34\,459\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- $$
$$ \left.\left.2\sqrt{z}\left(65\,536z^4-4\,694\,016z^3+73\,082\,880z^2-234\,995\,040z+70\,322\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a86x.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{3}{2}, \frac{7}{4}; -z\right) = $$
$$ \frac{1}{200\,491\,200\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(65\,536z^4+4\,710\,400z^3+74\,234\,880z^2+251\,834\,400z+111\,732\,075\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ \left(65\,536z^4+4\,669\,440z^3+71\,400\,960z^2+212\,587\,200z+34\,459\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.2\sqrt{z}\left(65\,536z^4+4\,694\,016z^3+73\,082\,880z^2+234\,995\,040z+70\,322\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a86y.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{3}{2}, \frac{9}{4}; z\right) = $$
$$ \frac{1}{15\,642\,132\,480z^{5/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-262\,144z^{9/2}+65\,536z^4+20\,840\,448z^{7/2}-5\,160\,960z^3-369\,592\,320z^{5/2}+\right.\right.\right. $$
$$ 88\,696\,320z^2+1\,408\,158\,720z^{3/2}-297\,167\,040z-521\,759\,700\sqrt{z}\,+ $$
$$ e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4-20\,840\,448z^{7/2}-5\,160\,960z^3+369\,592\,320z^{5/2}+88\,696\,320z^2-\right. $$
$$ \left.\left.1\,408\,158\,720z^{3/2}-297\,167\,040z+521\,759\,700\sqrt{z}\,+34\,459\,425\right)+34\,459\,425\right)+ $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-83\,558\,400z^4+1\,493\,606\,400z^3-5\,881\,075\,200z^2+2\,756\,754\,000z+34\,459\,425\right) $$
$$ \left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\right.\right. $$
$$ \left.\left.\left(1\,048\,576z^5-83\,558\,400z^4+1\,493\,606\,400z^3-5\,881\,075\,200z^2+2\,756\,754\,000z+34\,459\,425\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a86z.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{3}{2}, \frac{9}{4}; -z\right) = \frac{1}{3\,910\,533\,120z^{5/4}} $$
$$ \left(\sqrt{\pi}\left(1\,048\,576z^5+83\,558\,400z^4+1\,493\,606\,400z^3+5\,881\,075\,200z^2+2\,756\,754\,000z-34\,459\,425\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right. $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4+5\,210\,112z^3+92\,398\,080z^2+352\,039\,680z+130\,439\,925\right)\sin\left(2\sqrt{z}\right)- $$
$$ \left.\left.\left(65\,536z^4+5\,160\,960z^3+88\,696\,320z^2+297\,167\,040z+34\,459\,425\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a870.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{11}{4};z\right)=\frac{1}{10\,081\,843\,200\sqrt{2}\,z^{5/4}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576z^5-92\,078\,080z^4+1\,862\,492\,160z^3-8\,762\,411\,520z^2+6\,012\,349\,200z-34\,459\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-1\,048\,576z^5+91\,422\,720z^4-1\,806\,704\,640z^3+7\,740\,817\,920z^2-2\,756\,754\,000z+103\,378\,275\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(1\,048\,576z^5-91\,815\,936z^4+1\,839\,882\,240z^3-\right.$$
$$\left.\left.\left.8\,330\,826\,240z^2+4\,399\,330\,320z+103\,378\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a871.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{11}{4};-z\right)=\frac{1}{10\,081\,843\,200\sqrt{2}\,z^{5/4}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576z^5+92\,078\,080z^4+1\,862\,492\,160z^3+8\,762\,411\,520z^2+6\,012\,349\,200z+34\,459\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(1\,048\,576z^5+91\,422\,720z^4+1\,806\,704\,640z^3+7\,740\,817\,920z^2+2\,756\,754\,000z+103\,378\,275\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576z^5+91\,815\,936z^4+1\,839\,882\,240z^3+\right.$$
$$\left.\left.\left.8\,330\,826\,240z^2+4\,399\,330\,320z-103\,378\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a872.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{667\,397\,652\,480z^{9/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304z^{11/2}+1\,048\,576z^5+400\,293\,888z^{9/2}-99\,287\,040z^4-\right.\right.\right.$$
$$8\,888\,156\,160z^{7/2}+2\,150\,277\,120z^3+45\,522\,155\,520z^{5/2}-9\,997\,309\,440z^2-27\,046\,958\,400z^{3/2}+$$
$$2\,756\,754\,000z-689\,188\,500\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^{11/2}+1\,048\,576z^5-400\,293\,888z^{9/2}-\right.$$
$$\left.\left.99\,287\,040z^4+8\,888\,156\,160z^{7/2}+2\,150\,277\,120z^3-45\,522\,155\,520z^{5/2}-9\,997\,309\,440z^2+\right.\right.$$
$$\left.\left.27\,046\,958\,400z^{3/2}+2\,756\,754\,000z+689\,188\,500\sqrt{z}-516\,891\,375\right)-516\,891\,375\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-1\,604\,321\,280z^5+35\,846\,553\,600z^4-188\,194\,406\,400z^3+\right.$$
$$\left.132\,324\,192\,000z^2+3\,308\,104\,800z-516\,891\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-1\,604\,321\,280z^5+35\,846\,553\,600z^4-188\,194\,406\,400z^3+\right.$$
$$\left.\left.132\,324\,192\,000z^2+3\,308\,104\,800z-516\,891\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a873.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{166\,849\,413\,120\,z^{9/4}}\left(\sqrt{\pi}\,\left(16\,777\,216\,z^6+1\,604\,321\,280\,z^5+35\,846\,553\,600\,z^4+188\,194\,406\,400\,z^3+132\,324\,192\,000\,z^2-\right.\right.$$
$$\left.3\,308\,104\,800\,z-516\,891\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\,\left(\left(1\,048\,576\,z^5+99\,287\,040\,z^4+2\,150\,277\,120\,z^3+9\,997\,309\,440\,z^2+2\,756\,754\,000\,z+516\,891\,375\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$4\sqrt{z}\,\left(1\,048\,576\,z^5+100\,073\,472\,z^4+2\,222\,039\,040\,z^3+11\,380\,538\,880\,z^2+6\,761\,739\,600\,z-172\,297\,125\right)$$
$$\left.\left.\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a874.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{381\,276\,979\,200\sqrt{2}\,z^{9/4}}\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-1\,740\,636\,160\,z^5+42\,985\,390\,080\,z^4-258\,644\,705\,280\,z^3+\right.\right.\right.$$
$$\left.239\,405\,587\,200\,z^2-2\,205\,403\,200\,z+1\,206\,079\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(-16\,777\,216\,z^6+1\,730\,150\,400\,z^5-41\,925\,672\,960\,z^4+234\,507\,386\,880\,z^3-132\,324\,192\,000\,z^2+1\,102\,701\,600\,z-\right.$$
$$3\,618\,239\,625\left)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(16\,777\,216\,z^6-1\,736\,441\,856\,z^5+42\,556\,784\,640\,z^4-\right.\right.$$
$$\left.\left.\left.248\,547\,409\,920\,z^3+188\,644\,135\,680\,z^2+8\,821\,612\,800\,z-3\,618\,239\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a875.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{381\,276\,979\,200\sqrt{2}\,z^{9/4}}\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,740\,636\,160\,z^5+42\,985\,390\,080\,z^4+258\,644\,705\,280\,z^3+\right.\right.\right.$$
$$\left.239\,405\,587\,200\,z^2+2\,205\,403\,200\,z+1\,206\,079\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(16\,777\,216\,z^6+1\,730\,150\,400\,z^5+41\,925\,672\,960\,z^4+234\,507\,386\,880\,z^3+132\,324\,192\,000\,z^2+1\,102\,701\,600\,z+\right.$$
$$3\,618\,239\,625\left)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,736\,441\,856\,z^5+42\,556\,784\,640\,z^4+\right.\right.$$
$$\left.\left.\left.248\,547\,409\,920\,z^3+188\,644\,135\,680\,z^2-8\,821\,612\,800\,z-3\,618\,239\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a876.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{17}{4};z\right)=\frac{1}{22\,999\,549\,870\,080\,z^{13/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-67\,108\,864\,z^{13/2}+16\,777\,216\,z^{6}+7\,474\,249\,728\,z^{11/2}-1\,855\,979\,520\,z^{5}-199\,364\,444\,160\,z^{9/2}+48\,492\,380\,160\,z^{4}+1\,282\,622\,423\,040\,z^{7/2}-288\,647\,331\,840\,z^{3}-1\,053\,430\,963\,200\,z^{5/2}+132\,324\,192\,000\,z^{2}-57\,340\,483\,200\,z^{3/2}-23\,156\,733\,600\,z+43\,418\,875\,500\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^{6}-7\,474\,249\,728\,z^{11/2}-1\,855\,979\,520\,z^{5}+199\,364\,444\,160\,z^{9/2}+48\,492\,380\,160\,z^{4}-1\,282\,622\,423\,040\,z^{7/2}-288\,647\,331\,840\,z^{3}+1\,053\,430\,963\,200\,z^{5/2}+132\,324\,192\,000\,z^{2}+57\,340\,483\,200\,z^{3/2}-23\,156\,733\,600\,z-43\,418\,875\,500\sqrt{z}+32\,564\,156\,625\right)+32\,564\,156\,625\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^{7}-29\,947\,330\,560\,z^{6}+802\,962\,800\,640\,z^{5}-5\,269\,443\,379\,200\,z^{4}+4\,940\,103\,168\,000\,z^{3}+185\,253\,868\,800\,z^{2}-57\,891\,834\,000\,z+32\,564\,156\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^{7}-29\,947\,330\,560\,z^{6}+802\,962\,800\,640\,z^{5}-5\,269\,443\,379\,200\,z^{4}+4\,940\,103\,168\,000\,z^{3}+185\,253\,868\,800\,z^{2}-57\,891\,834\,000\,z+32\,564\,156\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a877.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{17}{4};-z\right)=\frac{1}{5\,749\,887\,467\,520\,z^{13/4}}\left(\sqrt{\pi}\left(268\,435\,456\,z^{7}+29\,947\,330\,560\,z^{6}+802\,962\,800\,640\,z^{5}+5\,269\,443\,379\,200\,z^{4}+4\,940\,103\,168\,000\,z^{3}-185\,253\,868\,800\,z^{2}-57\,891\,834\,000\,z-32\,564\,156\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(16\,777\,216\,z^{6}+1\,855\,979\,520\,z^{5}+48\,492\,380\,160\,z^{4}+288\,647\,331\,840\,z^{3}+132\,324\,192\,000\,z^{2}+23\,156\,733\,600\,z+32\,564\,156\,625\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(16\,777\,216\,z^{6}+1\,868\,562\,432\,z^{5}+49\,841\,111\,040\,z^{4}+320\,655\,605\,760\,z^{3}+263\,357\,740\,800\,z^{2}-14\,335\,120\,800\,z-10\,854\,718\,875\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a878.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{19}{4};z\right)=\left(\left(2\sqrt{z}\left(268\,435\,456\,z^{7}-32\,128\,368\,640\,z^{6}+936\,970\,813\,440\,z^{5}-6\,867\,483\,033\,600\,z^{4}+7\,990\,319\,001\,600\,z^{3}-79\,394\,515\,200\,z^{2}+8\,270\,262\,000\,z-119\,401\,907\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^{2}+\left(-268\,435\,456\,z^{7}+31\,960\,596\,480\,z^{6}-917\,341\,470\,720\,z^{5}+6\,332\,719\,104\,000\,z^{4}-4\,940\,103\,168\,000\,z^{3}-185\,253\,868\,800\,z^{2}+521\,026\,506\,000\,z+358\,205\,722\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(268\,435\,456\,z^{7}-32\,061\,259\,776\,z^{6}+929\,043\,578\,880\,z^{5}-6\,645\,296\,332\,800\,z^{4}+6\,585\,313\,996\,800\,z^{3}+449\,902\,252\,800\,z^{2}-243\,145\,702\,800\,z+358\,205\,722\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^{2}\right)\Gamma\left(\frac{3}{4}\right)^{2}\right)\Big/\left(12\,200\,863\,334\,400\sqrt{2}\,z^{13/4}\right) $$

07.22.03.a879.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{19}{4};-z\right)=$$

$$\left(\left(2\sqrt{z}\left(268\,435\,456\,z^7+32\,128\,368\,640\,z^6+936\,970\,813\,440\,z^5+6\,867\,483\,033\,600\,z^4+7\,990\,319\,001\,600\,z^3+\right.\right.\right.$$
$$\left.79\,394\,515\,200\,z^2+8\,270\,262\,000\,z+119\,401\,907\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(268\,435\,456\,z^7+31\,960\,596\,480\,z^6+917\,341\,470\,720\,z^5+6\,332\,719\,104\,000\,z^4+4\,940\,103\,168\,000\,z^3-\right.$$
$$185\,253\,868\,800\,z^2-521\,026\,506\,000\,z+358\,205\,722\,875\Big)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(268\,435\,456\,z^7+32\,061\,259\,776\,z^6+929\,043\,578\,880\,z^5+6\,645\,296\,332\,800\,z^4+6\,585\,313\,996\,800\,z^3-\right.$$
$$\left.\left.\left.449\,902\,252\,800\,z^2-243\,145\,702\,800\,z-358\,205\,722\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(12\,200\,863\,334\,400\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a87a.01

$${}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{21}{4};z\right)=$$
$$\frac{1}{692\,692\,325\,498\,880\,z^{17/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^7+136\,700\,755\,968\,z^{13/2}-\right.\right.\right.$$
$$33\,973\,862\,400\,z^6-4\,257\,239\,531\,520\,z^{11/2}+1\,039\,521\,546\,240\,z^5+32\,974\,901\,084\,160\,z^{9/2}-$$
$$7\,544\,889\,999\,360\,z^4-34\,639\,749\,365\,760\,z^{7/2}+4\,940\,103\,168\,000\,z^3-2\,858\,202\,547\,200\,z^{5/2}-$$
$$520\,475\,155\,200\,z^2+2\,719\,262\,145\,600\,z^{3/2}-798\,907\,309\,200\,z-6\,208\,899\,196\,500\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^7-136\,700\,755\,968\,z^{13/2}-33\,973\,862\,400\,z^6+4\,257\,239\,531\,520\right.$$
$$z^{11/2}+1\,039\,521\,546\,240\,z^5-32\,974\,901\,084\,160\,z^{9/2}-7\,544\,889\,999\,360\,z^4+34\,639\,749\,365\,760\,z^{7/2}+$$
$$4\,940\,103\,168\,000\,z^3+2\,858\,202\,547\,200\,z^{5/2}-520\,475\,155\,200\,z^2-2\,719\,262\,145\,600\,z^{3/2}-$$
$$\left.798\,907\,309\,200\,z+6\,208\,899\,196\,500\sqrt{z}-4\,656\,674\,397\,375\right)-4\,656\,674\,397\,375\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-547\,608\,330\,240\,z^7+17\,129\,873\,080\,320\,z^6-134\,897\,750\,507\,520\,z^5+\right.$$
$$158\,083\,301\,376\,000\,z^4+7\,904\,165\,068\,800\,z^3-3\,705\,077\,376\,000\,z^2+$$
$$4\,168\,212\,048\,000\,z-4\,656\,674\,397\,375\Big)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left(4\,294\,967\,296\,z^8-547\,608\,330\,240\,z^7+17\,129\,873\,080\,320\,z^6-134\,897\,750\,507\,520\,z^5+158\,083\,301\,376\,000\,z^4+\right.$$
$$\left.\left.7\,904\,165\,068\,800\,z^3-3\,705\,077\,376\,000\,z^2+4\,168\,212\,048\,000\,z-4\,656\,674\,397\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a87b.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{21}{4};-z\right)=\frac{1}{173\,173\,081\,374\,720\,z^{17/4}}$$
$$\left(\sqrt{\pi}\,\left(4\,294\,967\,296\,z^8+547\,608\,330\,240\,z^7+17\,129\,873\,080\,320\,z^6+134\,897\,750\,507\,520\,z^5+158\,083\,301\,376\,000\,z^4-\right.\right.$$
$$7\,904\,165\,068\,800\,z^3-3\,705\,077\,376\,000\,z^2-4\,168\,212\,048\,000\,z-4\,656\,674\,397\,375\big)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\,\Big(\big(268\,435\,456\,z^7+33\,973\,862\,400\,z^6+1\,039\,521\,546\,240\,z^5+7\,544\,889\,999\,360\,z^4+$$
$$4\,940\,103\,168\,000\,z^3+520\,475\,155\,200\,z^2-798\,907\,309\,200\,z+4\,656\,674\,397\,375\big)\cos\big(2\sqrt{z}\big)-$$
$$4\sqrt{z}\,\big(268\,435\,456\,z^7+34\,175\,188\,992\,z^6+1\,064\,309\,882\,880\,z^5+8\,243\,725\,271\,040\,z^4+$$
$$\left.\left.8\,659\,937\,341\,440\,z^3-714\,550\,636\,800\,z^2-679\,815\,536\,400\,z-1\,552\,224\,799\,125\big)\sin\big(2\sqrt{z}\big)\Big)\right)$$

07.22.03.a87c.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{23}{4};z\right)=$$
$$\left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-582\,504\,939\,520\,z^7+19\,590\,587\,351\,040\,z^6-169\,299\,777\,945\,600\,z^5+237\,095\,623\,065\,600\,z^4-\right.\right.\right.$$
$$1\,976\,041\,267\,200\,z^3-2\,911\,132\,224\,000\,z^2+10\,370\,908\,548\,000\,z+23\,283\,371\,986\,875\big)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\big(4\,294\,967\,296\,z^8-579\,820\,584\,960\,z^7+19\,233\,735\,966\,720\,z^6-157\,984\,122\,470\,400\,z^5+158\,083\,301\,376\,000\,z^4+$$
$$13\,549\,997\,260\,800\,z^3-36\,521\,476\,992\,000\,z^2+137\,550\,997\,584\,000\,z+69\,850\,115\,960\,625\big)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\big(4\,294\,967\,296\,z^8-581\,431\,197\,696\,z^7+19\,446\,638\,837\,760\,z^6-$$
$$164\,621\,765\,836\,800\,z^5+201\,431\,030\,169\,600\,z^4+17\,784\,371\,404\,800\,z^3-10\,638\,865\,036\,800\,z^2+$$
$$\left.\left.11\,462\,583\,132\,000\,z-69\,850\,115\,960\,625\big)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(6\,637\,269\,653\,913\,600\sqrt{2}\;z^{17/4}\right)$$

07.22.03.a87d.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{3}{2},\frac{23}{4};-z\right)=$$
$$\left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+582\,504\,939\,520\,z^7+19\,590\,587\,351\,040\,z^6+169\,299\,777\,945\,600\,z^5+237\,095\,623\,065\,600\,z^4+\right.\right.\right.$$
$$1\,976\,041\,267\,200\,z^3-2\,911\,132\,224\,000\,z^2-10\,370\,908\,548\,000\,z+23\,283\,371\,986\,875\big)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\big(4\,294\,967\,296\,z^8+579\,820\,584\,960\,z^7+19\,233\,735\,966\,720\,z^6+157\,984\,122\,470\,400\,z^5+158\,083\,301\,376\,000\,z^4-$$
$$13\,549\,997\,260\,800\,z^3-36\,521\,476\,992\,000\,z^2-137\,550\,997\,584\,000\,z+69\,850\,115\,960\,625\big)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\big(4\,294\,967\,296\,z^8+581\,431\,197\,696\,z^7+19\,446\,638\,837\,760\,z^6+$$
$$164\,621\,765\,836\,800\,z^5+201\,431\,030\,169\,600\,z^4-17\,784\,371\,404\,800\,z^3-10\,638\,865\,036\,800\,z^2-$$
$$\left.\left.11\,462\,583\,132\,000\,z-69\,850\,115\,960\,625\big)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(6\,637\,269\,653\,913\,600\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{15}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.a87e.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{5}{2}, -\frac{23}{4}; z\right) = \frac{3\left(2\sqrt{z}\ (16z+725)\cosh\left(2\sqrt{z}\right) - 25\,(16z+29)\sinh\left(2\sqrt{z}\right)\right)}{3496\,z^{3/2}} $$

07.22.03.a87f.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{5}{2}, -\frac{23}{4}; -z\right) = \frac{3\left(2\sqrt{z}\ (16z-725)\cos\left(2\sqrt{z}\right) + 25\,(29-16z)\sin\left(2\sqrt{z}\right)\right)}{3496\,z^{3/2}} $$

07.22.03.a87g.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{5}{2}, -\frac{21}{4}; z\right) = $$
$$ \frac{1}{19\,384\,992\,900\sqrt{2}\ z^{3/4}}\left(\left(8z\left(262\,144z^4 + 12\,861\,440z^3 + 261\,826\,560z^2 + 2\,207\,318\,400z + 5\,046\,484\,275\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 4\sqrt{z}\ \left(262\,144z^4 + 13\,025\,280z^3 + 270\,305\,280z^2 + 2\,395\,612\,800z + 15\,740\,160\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left(2\,097\,152z^5 + 103\,415\,808z^4 + 2\,121\,154\,560z^3 + 18\,226\,252\,800z^2 + 41\,973\,762\,600z - 47\,220\,482\,925\right) $$
$$ \left. I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a87h.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{5}{2}, -\frac{21}{4}; -z\right) = $$
$$ \frac{1}{19\,384\,992\,900\sqrt{2}\ z^{3/4}}\left(\left(8z\left(262\,144z^4 - 12\,861\,440z^3 + 261\,826\,560z^2 - 2\,207\,318\,400z + 5\,046\,484\,275\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 4\sqrt{z}\ \left(262\,144z^4 - 13\,025\,280z^3 + 270\,305\,280z^2 - 2\,395\,612\,800z + 15\,740\,160\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(2\,097\,152z^5 - 103\,415\,808z^4 + 2\,121\,154\,560z^3 - 18\,226\,252\,800z^2 + 41\,973\,762\,600z + 47\,220\,482\,925\right) $$
$$ \left. J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a87i.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{5}{2}, -\frac{19}{4}; z\right) = -\frac{3\left((8z+25)\sinh\left(2\sqrt{z}\right) - 50\sqrt{z}\ \cosh\left(2\sqrt{z}\right)\right)}{152\,z^{3/2}} $$

07.22.03.a87j.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{5}{2}, -\frac{19}{4}; -z\right) = -\frac{3\left(50\sqrt{z}\ \cos\left(2\sqrt{z}\right) + (8z-25)\sin\left(2\sqrt{z}\right)\right)}{152\,z^{3/2}} $$

07.22.03.a87k.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{2\,769\,284\,700\sqrt{2}\,z^{3/4}}\left(\left(16z\left(65\,536z^4+1\,925\,120z^3+27\,959\,040z^2+182\,750\,400z+318\,822\,525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(131\,072z^4+3\,932\,160z^3+58\,544\,640z^2+408\,441\,600z+1\,748\,906\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left(1\,048\,576z^5+31\,064\,064z^4+455\,454\,720z^3+3\,049\,804\,800z^2+6\,083\,154\,000z-5\,246\,720\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a87l.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{2\,769\,284\,700\sqrt{2}\,z^{3/4}}\left(\left(16z\left(65\,536z^4-1\,925\,120z^3+27\,959\,040z^2-182\,750\,400z+318\,822\,525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(131\,072z^4-3\,932\,160z^3+58\,544\,640z^2-408\,441\,600z+1\,748\,906\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,048\,576z^5-\right.$$
$$\left.\left.31\,064\,064z^4+455\,454\,720z^3-3\,049\,804\,800z^2+6\,083\,154\,000z+5\,246\,720\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a87m.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},-\frac{15}{4};z\right)=\frac{3\cosh\left(2\sqrt{z}\right)}{4z}-\frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.a87n.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},-\frac{15}{4};-z\right)=\frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}}$$

07.22.03.a87o.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{162\,899\,100\sqrt{2}\,z^{3/4}}\left(\left(8z\left(65\,536z^4+634\,880z^3+5\,541\,120z^2+25\,729\,200z+33\,035\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(65\,536z^4+675\,840z^3+6\,048\,000z^2+31\,021\,200z+76\,039\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left(524\,288z^5+5\,210\,112z^4+45\,803\,520z^3+219\,864\,960z^2+352\,182\,600z-228\,118\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a87p.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{5}{2},-\frac{13}{4};-z\right)= $$
$$ \frac{1}{162\,899\,100\sqrt{2}\,z^{3/4}}\left(\left(8z\left(65\,536z^4-634\,880z^3+5\,541\,120z^2-25\,729\,200z+33\,035\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 4\sqrt{z}\left(65\,536z^4-675\,840z^3+6\,048\,000z^2-31\,021\,200z+76\,039\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.\left(524\,288z^5-5\,210\,112z^4+45\,803\,520z^3-219\,864\,960z^2+352\,182\,600z+228\,118\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a87q.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{5}{2},-\frac{11}{4};z\right)= $$
$$ \frac{1}{257\,297\,040\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(-524\,288\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}-524\,288\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+\right.\right. $$
$$ 524\,288\,e^{4\sqrt{z}}z^5-524\,288z^5+131\,072\,e^{4\sqrt{z}}z^{9/2}+131\,072z^{9/2}+98\,304\,e^{4\sqrt{z}}z^4-98\,304z^4+ $$
$$ 122\,880\,e^{4\sqrt{z}}z^{7/2}+122\,880z^{7/2}+215\,040\,e^{4\sqrt{z}}z^3-215\,040z^3+483\,840\,e^{4\sqrt{z}}z^{5/2}+483\,840z^{5/2}+ $$
$$ 1\,330\,560\,e^{4\sqrt{z}}z^2-1\,330\,560z^2+4\,324\,320\,e^{4\sqrt{z}}z^{3/2}+4\,324\,320z^{3/2}+16\,216\,200\,e^{4\sqrt{z}}z- $$
$$ \left.\left.16\,216\,200z+68\,918\,850\,e^{4\sqrt{z}}\sqrt{z}+68\,918\,850\sqrt{z}-34\,459\,425\,e^{4\sqrt{z}}+34\,459\,425\right)\right) $$

07.22.03.a87r.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{5}{2},-\frac{11}{4};-z\right)=\frac{1}{128\,648\,520\,z^{3/2}} $$
$$ \left(-1\,048\,576\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4}-2\left(65\,536z^4-61\,440z^3+241\,920z^2-2\,162\,160z+34\,459\,425\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right. $$
$$ \left.\left(524\,288z^5-98\,304z^4+215\,040z^3-1\,330\,560z^2+16\,216\,200z+34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a87s.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{5}{2},-\frac{9}{4};z\right)= $$
$$ -\frac{1}{12\,530\,700\sqrt{2}\,z^{3/4}}\left(\left(16z\left(16\,384z^4-163\,840z^3-449\,280z^2-1\,249\,920z-1\,116\,675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\right.\right. $$
$$ \sqrt{z}\left(-32\,768z^4+307\,200z^3+1\,048\,320z^2+3\,230\,640z+4\,002\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.\left(-262\,144z^5+2\,555\,904z^4+7\,741\,440z^3+22\,337\,280z^2+25\,613\,280z-12\,006\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a87t.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{12\,530\,700\sqrt{2}\,z^{3/4}}\left(\left(-16z\left(16\,384z^4+163\,840z^3-449\,280z^2+1\,249\,920z-1\,116\,675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(32\,768z^4+307\,200z^3-1\,048\,320z^2+3\,230\,640z-4\,002\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-262\,144z^5-2\,555\,904z^4+7\,741\,440z^3-22\,337\,280z^2+25\,613\,280z+12\,006\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a87u.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{23\,390\,640z^{3/2}}\left(e^{-2\sqrt{z}}\left(-131\,072e^{4\sqrt{z}}z^5+131\,072z^5-32\,768e^{4\sqrt{z}}z^{9/2}-32\,768z^{9/2}+8192e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$(16z-315)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+8192e^{2\sqrt{z}}\sqrt{2\pi}(16z-315)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+$$
$$2\,555\,904e^{4\sqrt{z}}z^4-2\,555\,904z^4+614\,400e^{4\sqrt{z}}z^{7/2}+614\,400z^{7/2}+430\,080e^{4\sqrt{z}}z^3-430\,080z^3+$$
$$483\,840e^{4\sqrt{z}}z^{5/2}+483\,840z^{5/2}+725\,760e^{4\sqrt{z}}z^2-725\,760z^2+1\,300\,320e^{4\sqrt{z}}z^{3/2}+1\,300\,320z^{3/2}+$$
$$\left.2\,494\,800e^{4\sqrt{z}}z-2\,494\,800z+4\,054\,050e^{4\sqrt{z}}\sqrt{z}+4\,054\,050\sqrt{z}-2\,027\,025e^{4\sqrt{z}}+2\,027\,025\right)\Big)$$

07.22.03.a87v.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},-\frac{7}{4};-z\right)=\frac{1}{11\,695\,320z^{3/2}}$$
$$\left(16\,384\sqrt{\pi}(16z+315)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}+2\left(16\,384z^4+307\,200z^3-241\,920z^2+650\,160z-2\,027\,025\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(-131\,072z^5-2\,555\,904z^4+430\,080z^3-725\,760z^2+2\,494\,800z+2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a87w.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{4\,176\,900\sqrt{2}\,z^{3/4}}\left(\left(8z\left(16\,384z^4-486\,400z^3+1\,486\,080z^2+1\,199\,520z+655\,515\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(16\,384z^4-476\,160z^3+1\,209\,600z^2+1\,501\,920z+800\,415\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(131\,072z^5-3\,858\,432z^4+10\,967\,040z^3+11\,289\,600z^2+7\,567\,560z-2\,401\,245\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a87x.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{4\,176\,900\sqrt{2}\,z^{3/4}}\left(\left(8z\left(16\,384z^4+486\,400z^3+1\,486\,080z^2-1\,199\,520z+655\,515\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(16\,384z^4+476\,160z^3+1\,209\,600z^2-1\,501\,920z+800\,415\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(131\,072z^5+3\,858\,432z^4+10\,967\,040z^3-11\,289\,600z^2+7\,567\,560z+2\,401\,245\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a87y.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{3\,341\,520z^{3/2}}\left(e^{-2\sqrt{z}}\left(16\,384e^{4\sqrt{z}}z^5-16\,384z^5+4096e^{4\sqrt{z}}z^{9/2}+4096z^{9/2}-642\,048e^{4\sqrt{z}}z^4+642\,048z^4-\right.\right.$$
$$157\,440e^{4\sqrt{z}}z^{7/2}-157\,440z^{7/2}-64e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-10\,080z+58\,905\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-$$
$$64e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-10\,080z+58\,905\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+3\,655\,680e^{4\sqrt{z}}z^3-3\,655\,680z^3+$$
$$806\,400e^{4\sqrt{z}}z^{5/2}+806\,400z^{5/2}+483\,840e^{4\sqrt{z}}z^2-483\,840z^2+423\,360e^{4\sqrt{z}}z^{3/2}+423\,360z^{3/2}+$$
$$\left.\left.415\,800e^{4\sqrt{z}}z-415\,800z+311\,850e^{4\sqrt{z}}\sqrt{z}+311\,850\sqrt{z}-155\,925e^{4\sqrt{z}}+155\,925\right)\right)$$

07.22.03.a87z.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},-\frac{3}{4};-z\right)=\frac{1}{1\,670\,760z^{3/2}}$$
$$\left(-128\sqrt{\pi}\left(256z^2+10\,080z+58\,905\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}-2\left(2048z^4+78\,720z^3+403\,200z^2-211\,680z+155\,925\right)\right.$$
$$\left.\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(16\,384z^5+642\,048z^4+3\,655\,680z^3-483\,840z^2+415\,800z+155\,925\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a880.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{4\,176\,900\sqrt{2}\,z^{3/4}}\left(\left(-16z\left(4096z^4-202\,240z^3+1\,797\,840z^2-1\,915\,200z-291\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(8192z^4-399\,360z^3+3\,356\,640z^2-2\,167\,200z-363\,825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(65\,536z^5-3\,219\,456z^4+27\,982\,080z^3-24\,595\,200z^2-5\,821\,200z+1\,091\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a881.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},-\frac{1}{4};-z\right)=$$
$$-\frac{1}{4\,176\,900\sqrt{2}\,z^{3/4}}\left(\left(16z\left(4096z^4+202\,240z^3+1\,797\,840z^2+1\,915\,200z-291\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\right.\right.$$
$$\sqrt{z}\left(8192z^4+399\,360z^3+3\,356\,640z^2+2\,167\,200z-363\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(65\,536z^5+3\,219\,456z^4+27\,982\,080z^3+24\,595\,200z^2-5\,821\,200z-1\,091\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a882.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{3\,341\,520z^{3/2}}\left(e^{-2\sqrt{z}}\left(-4096e^{4\sqrt{z}}z^5+4096z^5-1024e^{4\sqrt{z}}z^{9/2}-1024z^{9/2}+241\,152e^{4\sqrt{z}}z^4-241\,152z^4+\right.\right.$$
$$59\,520e^{4\sqrt{z}}z^{7/2}+59\,520z^{7/2}-2\,783\,760e^{4\sqrt{z}}z^3+2\,783\,760z^3-653\,940e^{4\sqrt{z}}z^{5/2}-$$
$$653\,940z^{5/2}+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-241\,920z^2+2\,827\,440z-5\,360\,355\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-241\,920z^2+2\,827\,440z-5\,360\,355\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+$$
$$4\,919\,040e^{4\sqrt{z}}z^2-4\,919\,040z^2+866\,880e^{4\sqrt{z}}z^{3/2}+866\,880z^{3/2}+332\,640e^{4\sqrt{z}}z-$$
$$\left.\left.332\,640z+103\,950e^{4\sqrt{z}}\sqrt{z}+103\,950\sqrt{z}-51\,975e^{4\sqrt{z}}+51\,975\right)\right)$$

07.22.03.a883.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{1}{4};-z\right)=\frac{1}{1\,670\,760z^{3/2}}\left(2\sqrt{\pi}\left(4096z^3+241\,920z^2+2\,827\,440z+5\,360\,355\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+\right.$$
$$2\left(512z^4+29\,760z^3+326\,970z^2+433\,440z-51\,975\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-$$
$$\left.\left(4096z^5+241\,152z^4+2\,783\,760z^3+4\,919\,040z^2-332\,640z-51\,975\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a884.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{29\,238\,300\sqrt{2}\,z^{3/4}}\left(\left(8z\left(4096z^4-282\,880z^3+4\,166\,640z^2-12\,318\,075z+3\,715\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(4096z^4-280\,320z^3+3\,996\,720z^2-10\,141\,425z+363\,825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-32\,768z^5+2\,254\,848z^4-32\,780\,160z^3+91\,035\,000z^2-14\,553\,000z+1\,091\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a885.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{3}{4};-z\right)= \frac{1}{29\,238\,300\sqrt{2}\,z^{3/4}}\left(\left(8z\left(4096z^4+282\,880z^3+4\,166\,640z^2+12\,318\,075z+3\,715\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right. \left(4096z^4+280\,320z^3+3\,996\,720z^2+10\,141\,425z+363\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ \left.\left.\left(32\,768z^5+2\,254\,848z^4+32\,780\,160z^3+91\,035\,000z^2+14\,553\,000z+1\,091\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a886.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{5}{4};z\right)= \frac{1}{855\,429\,120z^{3/2}} \left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-5\,160\,960z^3+90\,478\,080z^2-343\,062\,720z+144\,729\,585\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+ e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-5\,160\,960z^3+90\,478\,080z^2-343\,062\,720z+144\,729\,585\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}- 4\left(-16\,384z^5+4096z^{9/2}+1\,287\,168z^4-318\,720z^{7/2}-22\,384\,320z^3+ 5\,367\,600z^{5/2}+82\,012\,140z^2-17\,195\,535z^{3/2}-26\,611\,200z+1\,330\,560\sqrt{z}+ e^{4\sqrt{z}}\left(16\,384z^5+4096z^{9/2}-1\,287\,168z^4-318\,720z^{7/2}+22\,384\,320z^3+5\,367\,600z^{5/2}- 82\,012\,140z^2-17\,195\,535z^{3/2}+26\,611\,200z+1\,330\,560\sqrt{z}-665\,280\right)+665\,280\right)\right)\right) $$

07.22.03.a887.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{5}{4};-z\right)= \frac{1}{213\,857\,280z^{3/2}}\left(\sqrt{\pi}\,z^{5/4}\left(65\,536z^4+5\,160\,960z^3+90\,478\,080z^2+343\,062\,720z+144\,729\,585\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)- 2\left(4\left(4096z^5+321\,792z^4+5\,596\,080z^3+20\,503\,035z^2+6\,652\,800z+166\,320\right)\sin\left(2\sqrt{z}\right)- \sqrt{z}\left(4096z^4+318\,720z^3+5\,367\,600z^2+17\,195\,535z+1\,330\,560\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a888.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{7}{4};z\right)= \frac{1}{701\,719\,200\sqrt{2}\,z^{3/4}}\left(\left(2z\left(65\,536z^4-5\,816\,320z^3+119\,646\,720z^2-580\,305\,600z+425\,443\,725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ \sqrt{z}\left(-65\,536z^4+5\,775\,360z^3-116\,121\,600z^2+514\,533\,600z-206\,288\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- \left.2\left(65\,536z^5-5\,799\,936z^4+118\,218\,240z^3-552\,545\,280z^2+317\,619\,225z+13\,097\,700\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a889.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{7}{4};-z\right)= \frac{1}{701\,719\,200\sqrt{2}\,z^{3/4}}\left(\left(2z\left(65\,536z^4+5\,816\,320z^3+119\,646\,720z^2+580\,305\,600z+425\,443\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- \sqrt{z}\left(65\,536z^4+5\,775\,360z^3+116\,121\,600z^2+514\,533\,600z+206\,288\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ 2\left(65\,536z^5+5\,799\,936z^4+118\,218\,240z^3+552\,545\,280z^2+317\,619\,225z-13\,097\,700\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a88a.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{9}{4};z\right)= \frac{1}{54\,747\,463\,680\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(-4\left(-262\,144z^5+65\,536z^{9/2}+25\,755\,648z^4-6\,389\,760z^{7/2}-598\,456\,320z^3+ 144\,990\,720z^{5/2}+3\,327\,448\,320z^2-737\,936\,640z^{3/2}-2\,441\,369\,700z+297\,868\,725\sqrt{z}+ e^{4\sqrt{z}}\left(262\,144z^5+65\,536z^{9/2}-25\,755\,648z^4-6\,389\,760z^{7/2}+598\,456\,320z^3+144\,990\,720z^{5/2}- 3\,327\,448\,320z^2-737\,936\,640z^{3/2}+2\,441\,369\,700z+297\,868\,725\sqrt{z}+212\,889\,600\right)-212\,889\,600\right)+ e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(1\,048\,576z^5-103\,219\,200z^4+2\,412\,748\,800z^3-13\,722\,508\,800z^2+ 11\,578\,366\,800z+723\,647\,925\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(1\,048\,576z^5-103\,219\,200z^4+ 2\,412\,748\,800z^3-13\,722\,508\,800z^2+11\,578\,366\,800z+723\,647\,925\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a88b.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{9}{4};-z\right)= \frac{1}{13\,686\,865\,920\,z^{3/2}}\left(\sqrt{\pi}\sqrt[4]{z}\left(1\,048\,576z^5+103\,219\,200z^4+2\,412\,748\,800z^3+13\,722\,508\,800z^2+11\,578\,366\,800z-723\,647\,925\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\left(\sqrt{z}\left(65\,536z^4+6\,389\,760z^3+144\,990\,720z^2+737\,936\,640z+297\,868\,725\right)\cos\left(2\sqrt{z}\right)- 4\left(65\,536z^5+6\,438\,912z^4+149\,614\,080z^3+831\,862\,080z^2+610\,342\,425z-53\,222\,400\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a88c.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{11}{4};z\right)= \frac{1}{35\,286\,451\,200\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(1\,048\,576z^5-113\,704\,960z^4+3\,003\,310\,080z^3-20\,256\,929\,280z^2+23\,496\,858\,000z+723\,647\,925\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- \left(1\,048\,576z^5-113\,049\,600z^4+2\,934\,005\,760z^3-18\,558\,650\,880z^2+14\,721\,814\,800z+2\,170\,943\,775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(1\,048\,576z^5-113\,442\,816z^4+2\,975\,293\,440z^3- 19\,548\,587\,520z^2+19\,416\,030\,480z+2\,439\,446\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a88d.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{11}{4};-z\right)=\frac{1}{35\,286\,451\,200\sqrt{2}\,z^{5/4}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576z^5+113\,704\,960z^4+3\,003\,310\,080z^3+20\,256\,929\,280z^2+23\,496\,858\,000z-723\,647\,925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(1\,048\,576z^5+113\,049\,600z^4+2\,934\,005\,760z^3+18\,558\,650\,880z^2+14\,721\,814\,800z-2\,170\,943\,775\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576z^5+113\,442\,816z^4+2\,975\,293\,440z^3+\right.$$
$$\left.\left.\left.19\,548\,587\,520z^2+19\,416\,030\,480z-2\,439\,446\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a88e.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{2\,335\,891\,783\,680z^{9/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304z^{11/2}+1\,048\,576z^5+494\,665\,728z^{9/2}-122\,880\,000z^4-\right.\right.\right.$$
$$14\,385\,315\,840z^{7/2}+3\,506\,872\,320z^3+107\,258\,296\,320z^{5/2}-24\,474\,723\,840z^2-123\,166\,612\,800z^{3/2}+$$
$$18\,829\,918\,800z-22\,425\,549\,300\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^{11/2}+1\,048\,576z^5-494\,665\,728z^{9/2}-\right.$$
$$122\,880\,000z^4+14\,385\,315\,840z^{7/2}+3\,506\,872\,320z^3-107\,258\,296\,320z^{5/2}-24\,474\,723\,840z^2+$$
$$\left.\left.123\,166\,612\,800z^{3/2}+18\,829\,918\,800z+22\,425\,549\,300\sqrt{z}+3\,618\,239\,625\right)+3\,618\,239\,625\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-1\,981\,808\,640z^5+57\,905\,971\,200z^4-439\,120\,281\,600z^3+\right.$$
$$555\,761\,606\,400z^2+69\,470\,200\,800z+3\,618\,239\,625\left.\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-1\,981\,808\,640z^5+57\,905\,971\,200z^4-439\,120\,281\,600z^3+\right.$$
$$\left.\left.555\,761\,606\,400z^2+69\,470\,200\,800z+3\,618\,239\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a88f.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{583\,972\,945\,920z^{9/4}}\left(\sqrt{\pi}\left(16\,777\,216z^6+1\,981\,808\,640z^5+57\,905\,971\,200z^4+439\,120\,281\,600z^3+555\,761\,606\,400z^2-\right.\right.$$
$$\left.69\,470\,200\,800z+3\,618\,239\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(\left(1\,048\,576z^5+122\,880\,000z^4+3\,506\,872\,320z^3+24\,474\,723\,840z^2+18\,829\,918\,800z-3\,618\,239\,625\right)\right.$$
$$\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(1\,048\,576z^5+123\,666\,432z^4+3\,596\,328\,960z^3+\right.$$
$$\left.\left.\left.26\,814\,574\,080z^2+30\,791\,653\,200z-5\,606\,387\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a88g.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{5}{2}, \frac{15}{4}; z\right) = \left(\left(2\sqrt{z}\,\left(16\,777\,216 z^6 - 2\,149\,580\,800 z^5 + 69\,336\,760\,320 z^4 - 599\,068\,753\,920 z^3 + 949\,435\,119\,360 z^2 + 69\,470\,200\,800 z - 5\,065\,535\,475\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,777\,216 z^6 + 2\,139\,095\,040 z^5 - 68\,021\,452\,800 z^4 + 559\,148\,728\,320 z^3 - 669\,093\,384\,960 z^2 - 185\,253\,868\,800 z + 15\,196\,606\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,777\,216 z^6 - 2\,145\,386\,496 z^5 + 68\,805\,918\,720 z^4 - 582\,543\,360\,000 z^3 + 823\,108\,366\,080 z^2 + 165\,911\,185\,440 z + 15\,196\,606\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(1\,334\,469\,427\,200\sqrt{2}\, z^{9/4}\right) $$

07.22.03.a88h.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{5}{2}, \frac{15}{4}; -z\right) = \left(\left(2\sqrt{z}\,\left(16\,777\,216 z^6 + 2\,149\,580\,800 z^5 + 69\,336\,760\,320 z^4 + 599\,068\,753\,920 z^3 + 949\,435\,119\,360 z^2 - 69\,470\,200\,800 z - 5\,065\,535\,475\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(16\,777\,216 z^6 + 2\,139\,095\,040 z^5 + 68\,021\,452\,800 z^4 + 559\,148\,728\,320 z^3 + 669\,093\,384\,960 z^2 - 185\,253\,868\,800 z - 15\,196\,606\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216 z^6 + 2\,145\,386\,496 z^5 + 68\,805\,918\,720 z^4 + 582\,543\,360\,000 z^3 + 823\,108\,366\,080 z^2 - 165\,911\,185\,440 z + 15\,196\,606\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(1\,334\,469\,427\,200\sqrt{2}\, z^{9/4}\right) $$

07.22.03.a88i.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{5}{2}, \frac{17}{4}; z\right) = \frac{1}{80\,498\,424\,545\,280\, z^{13/4}} \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-67\,108\,864 z^{13/2} + 16\,777\,216 z^6 + 9\,235\,857\,408 z^{11/2} - 2\,296\,381\,440 z^5 - 322\,566\,881\,280 z^{9/2} + 78\,962\,688\,000 z^4 + 3\,016\,663\,695\,360 z^{7/2} - 700\,440\,330\,240 z^3 - 4\,722\,370\,329\,600 z^{5/2} + 808\,142\,227\,200 z^2 - 1\,263\,213\,705\,600 z^{3/2} + 301\,037\,536\,800 z - 130\,256\,626\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 - 9\,235\,857\,408 z^{11/2} - 2\,296\,381\,440 z^5 + 322\,566\,881\,280 z^{9/2} + 78\,962\,688\,000 z^4 - 3\,016\,663\,695\,360 z^{7/2} - 700\,440\,330\,240 z^3 + 4\,722\,370\,329\,600 z^{5/2} + 808\,142\,227\,200 z^2 + 1\,263\,213\,705\,600 z^{3/2} + 301\,037\,536\,800 z + 130\,256\,626\,500\sqrt{z} - 97\,692\,469\,875\right) - 97\,692\,469\,875\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456 z^7 - 36\,993\,761\,280 z^6 + 1\,297\,093\,754\,880 z^5 - 12\,295\,367\,884\,800 z^4 + 20\,748\,433\,305\,600 z^3 + 3\,890\,331\,244\,800 z^2 + 405\,242\,838\,000 z - 97\,692\,469\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456 z^7 - 36\,993\,761\,280 z^6 + 1\,297\,093\,754\,880 z^5 - 12\,295\,367\,884\,800 z^4 + 20\,748\,433\,305\,600 z^3 + 3\,890\,331\,244\,800 z^2 + 405\,242\,838\,000 z - 97\,692\,469\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a88j.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{17}{4};-z\right)=$$

$$\frac{1}{20\,124\,606\,136\,320\,z^{13/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+36\,993\,761\,280\,z^6+1\,297\,093\,754\,880\,z^5+12\,295\,367\,884\,800\,z^4+\right.\right.$$

$$\left.20\,748\,433\,305\,600\,z^3-3\,890\,331\,244\,800\,z^2+405\,242\,838\,000\,z+97\,692\,469\,875\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$

$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+2\,308\,964\,352\,z^5+80\,641\,720\,320\,z^4+754\,165\,923\,840\,z^3+1\,180\,592\,582\,400\,z^2-\right.\right.$$

$$315\,803\,426\,400\,z+32\,564\,156\,625\big)\sin\left(2\sqrt{z}\right)-\left(16\,777\,216\,z^6+2\,296\,381\,440\,z^5+78\,962\,688\,000\,z^4+\right.$$

$$\left.\left.\left.700\,440\,330\,240\,z^3+808\,142\,227\,200\,z^2-301\,037\,536\,800\,z-97\,692\,469\,875\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a88k.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{19}{4};z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-39\,678\,115\,840\,z^6+1\,511\,695\,319\,040\,z^5-15\,926\,206\,464\,000\,z^4+31\,992\,462\,028\,800\,z^3+\right.\right.\right.$$

$$3\,890\,331\,244\,800\,z^2-289\,459\,170\,000\,z+278\,604\,451\,125\big)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$

$$\left(268\,435\,456\,z^7-39\,510\,343\,680\,z^6+1\,487\,347\,384\,320\,z^5-15\,044\,920\,934\,400\,z^4+24\,158\,073\,139\,200\,z^3+\right.$$

$$9\,447\,947\,308\,800\,z^2+405\,242\,838\,000\,z+835\,813\,353\,375\big)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$

$$2\sqrt{z}\,\left(268\,435\,456\,z^7-39\,611\,006\,976\,z^6+1\,501\,880\,647\,680\,z^5-15\,563\,287\,756\,800\,z^4+\right.$$

$$\left.\left.28\,533\,380\,198\,400\,z^3+7\,798\,824\,633\,600\,z^2+1\,377\,825\,649\,200\,z-835\,813\,353\,375\right)\right)$$

$$\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)\Big/\left(42\,703\,021\,670\,400\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a88l.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{19}{4};-z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+39\,678\,115\,840\,z^6+1\,511\,695\,319\,040\,z^5+15\,926\,206\,464\,000\,z^4+31\,992\,462\,028\,800\,z^3-\right.\right.\right.$$

$$3\,890\,331\,244\,800\,z^2-289\,459\,170\,000\,z-278\,604\,451\,125\big)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$

$$\left(268\,435\,456\,z^7+39\,510\,343\,680\,z^6+1\,487\,347\,384\,320\,z^5+15\,044\,920\,934\,400\,z^4+24\,158\,073\,139\,200\,z^3-\right.$$

$$9\,447\,947\,308\,800\,z^2+405\,242\,838\,000\,z-835\,813\,353\,375\big)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$2\sqrt{z}\,\left(268\,435\,456\,z^7+39\,611\,006\,976\,z^6+1\,501\,880\,647\,680\,z^5+15\,563\,287\,756\,800\,z^4+\right.$$

$$\left.\left.28\,533\,380\,198\,400\,z^3-7\,798\,824\,633\,600\,z^2+1\,377\,825\,649\,200\,z+835\,813\,353\,375\right)\right)$$

$$\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)\Big/\left(42\,703\,021\,670\,400\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a88m.01

$$
{}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{21}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}+168\,913\,010\,688\,z^{13/2}-42\,026\,926\,080\,z^{6}-6\,886\,564\,823\,040\,z^{11/2}+\right.\right.\right.
$$

$$
1\,690\,813\,071\,360\,z^{5}+77\,459\,899\,023\,360\,z^{9/2}-18\,198\,432\,645\,120\,z^{4}-153\,674\,442\,915\,840\,z^{7/2}+
$$

$$
28\,184\,241\,254\,400\,z^{3}-53\,340\,287\,616\,000\,z^{5/2}+15\,005\,563\,372\,800\,z^{2}-
$$

$$
11\,254\,172\,529\,600\,z^{3/2}-3\,021\,953\,734\,800\,z+11\,853\,353\,011\,500\sqrt{z}+e^{4\sqrt{z}}
$$

$$
\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-168\,913\,010\,688\,z^{13/2}-42\,026\,926\,080\,z^{6}+6\,886\,564\,823\,040\,z^{11/2}+\right.
$$

$$
1\,690\,813\,071\,360\,z^{5}-77\,459\,899\,023\,360\,z^{9/2}-18\,198\,432\,645\,120\,z^{4}+153\,674\,442\,915\,840\,z^{7/2}+
$$

$$
28\,184\,241\,254\,400\,z^{3}+53\,340\,287\,616\,000\,z^{5/2}+15\,005\,563\,372\,800\,z^{2}+11\,254\,172\,529\,600\,z^{3/2}-
$$

$$
\left.\left.3\,021\,953\,734\,800\,z-11\,853\,353\,011\,500\sqrt{z}+8\,890\,014\,758\,625\right)+8\,890\,014\,758\,625\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-676\,457\,349\,120\,z^{7}+27\,671\,333\,437\,440\,z^{6}-314\,761\,417\,850\,880\,z^{5}+\right.
$$

$$
663\,949\,865\,779\,200\,z^{4}+165\,987\,466\,444\,800\,z^{3}+25\,935\,541\,632\,000\,z^{2}-
$$

$$
\left.12\,504\,636\,144\,000\,z+8\,890\,014\,758\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-676\,457\,349\,120\,z^{7}+27\,671\,333\,437\,440\,z^{6}-314\,761\,417\,850\,880\,z^{5}+\right.
$$

$$
663\,949\,865\,779\,200\,z^{4}+165\,987\,466\,444\,800\,z^{3}+25\,935\,541\,632\,000\,z^{2}-
$$

$$
\left.\left.\left.12\,504\,636\,144\,000\,z+8\,890\,014\,758\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(2\,424\,423\,139\,246\,080\,z^{17/4}\right)
$$

07.22.03.a88n.01

$$
{}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{21}{4};-z\right)=\frac{1}{606\,105\,784\,811\,520\,z^{17/4}}
$$

$$
\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^{8}+676\,457\,349\,120\,z^{7}+27\,671\,333\,437\,440\,z^{6}+314\,761\,417\,850\,880\,z^{5}+663\,949\,865\,779\,200\,z^{4}-\right.\right.
$$

$$
\left.165\,987\,466\,444\,800\,z^{3}+25\,935\,541\,632\,000\,z^{2}+12\,504\,636\,144\,000\,z+8\,890\,014\,758\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-
$$

$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^{7}+42\,228\,252\,672\,z^{6}+1\,721\,641\,205\,760\,z^{5}+19\,364\,974\,755\,840\,z^{4}+\right.\right.
$$

$$
\left.38\,418\,610\,728\,960\,z^{3}-13\,335\,071\,904\,000\,z^{2}+2\,813\,543\,132\,400\,z+2\,963\,338\,252\,875\right)\sin\left(2\sqrt{z}\right)-
$$

$$
\left(268\,435\,456\,z^{7}+42\,026\,926\,080\,z^{6}+1\,690\,813\,071\,360\,z^{5}+18\,198\,432\,645\,120\,z^{4}+\right.
$$

$$
\left.\left.\left.28\,184\,241\,254\,400\,z^{3}-15\,005\,563\,372\,800\,z^{2}-3\,021\,953\,734\,800\,z-8\,890\,014\,758\,625\right)\cos\left(2\sqrt{z}\right)\right)\right)
$$

07.22.03.a88o.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{23}{4};z\right)=$$

$$\left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-719\,407\,022\,080\,z^7+31\,612\,301\,475\,840\,z^6-392\,966\,229\,196\,800\,z^5+955\,760\,866\,099\,200\,z^4+\right.\right.\right.$$
$$\left.\left.\left.165\,987\,466\,444\,800\,z^3-7\,410\,154\,752\,000\,z^2-5\,094\,481\,392\,000\,z-37\,611\,600\,901\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-4\,294\,967\,296\,z^8+716\,722\,667\,520\,z^7-31\,169\,886\,289\,920\,z^6+374\,366\,955\,110\,400\,z^5-755\,557\,112\,217\,600\,z^4-\right.$$
$$\left.373\,471\,799\,500\,800\,z^3-75\,954\,086\,208\,000\,z^2+187\,222\,191\,156\,000\,z+112\,834\,802\,705\,625\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-718\,333\,280\,256\,z^7+31\,434\,127\,441\,920\,z^6-\right.$$
$$385\,336\,265\,932\,800\,z^5+868\,623\,630\,336\,000\,z^4+297\,622\,215\,475\,200\,z^3+74\,842\,562\,995\,200\,z^2-$$
$$\left.\left.53\,492\,054\,616\,000\,z+112\,834\,802\,705\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(23\,230\,443\,788\,697\,600\,\sqrt{2}\;z^{17/4}\right)$$

07.22.03.a88p.01

$${}_1F_2\left(-\frac{15}{4};\frac{5}{2},\frac{23}{4};-z\right)=$$

$$\left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+719\,407\,022\,080\,z^7+31\,612\,301\,475\,840\,z^6+392\,966\,229\,196\,800\,z^5+955\,760\,866\,099\,200\,z^4-\right.\right.\right.$$
$$\left.\left.\left.165\,987\,466\,444\,800\,z^3-7\,410\,154\,752\,000\,z^2+5\,094\,481\,392\,000\,z-37\,611\,600\,901\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$\left(4\,294\,967\,296\,z^8+716\,722\,667\,520\,z^7+31\,169\,886\,289\,920\,z^6+374\,366\,955\,110\,400\,z^5+755\,557\,112\,217\,600\,z^4-\right.$$
$$\left.373\,471\,799\,500\,800\,z^3+75\,954\,086\,208\,000\,z^2+187\,222\,191\,156\,000\,z-112\,834\,802\,705\,625\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+718\,333\,280\,256\,z^7+31\,434\,127\,441\,920\,z^6+\right.$$
$$385\,336\,265\,932\,800\,z^5+868\,623\,630\,336\,000\,z^4-297\,622\,215\,475\,200\,z^3+74\,842\,562\,995\,200\,z^2+$$
$$\left.\left.53\,492\,054\,616\,000\,z+112\,834\,802\,705\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(23\,230\,443\,788\,697\,600\,\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{15}{4}$, $b_1 = \frac{7}{2}$

07.22.03.a88q.01

$${}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{23}{4};z\right)=\frac{15\left(\left(64\,z^2+4292\,z+2871\right)\sinh\left(2\sqrt{z}\right)-58\sqrt{z}\,\left(16\,z+99\right)\cosh\left(2\sqrt{z}\right)\right)}{13\,984\,z^{5/2}}$$

07.22.03.a88r.01

$${}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{23}{4};-z\right)=\frac{15\left(58\sqrt{z}\,\left(16\,z-99\right)\cos\left(2\sqrt{z}\right)+\left(64\,z^2-4292\,z+2871\right)\sin\left(2\sqrt{z}\right)\right)}{13\,984\,z^{5/2}}$$

07.22.03.a88s.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{21}{4};z\right)=\frac{1}{387\,699\,858\,000\sqrt{2}\,z^{7/4}}$$
$$\left(\left(4z\left(4\,194\,304z^5+245\,104\,640z^4+6\,170\,050\,560z^3+68\,249\,548\,800z^2+219\,848\,126\,400z-487\,944\,990\,225\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2\,097\,152z^5+123\,863\,040z^4+3\,165\,143\,040z^3+36\,283\,161\,600z^2+89\,943\,777\,000z-\right.$$
$$\left.1\,463\,834\,970\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(16\,777\,216z^6+984\,612\,864z^5+24\,931\,860\,480z^4+\right.$$
$$\left.\left.\left.279\,582\,105\,600z^3+959\,400\,288\,000z^2+566\,645\,795\,100z+4\,391\,504\,912\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a88t.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{21}{4};-z\right)=\frac{1}{387\,699\,858\,000\sqrt{2}\,z^{7/4}}$$
$$\left(\left(4z\left(4\,194\,304z^5-245\,104\,640z^4+6\,170\,050\,560z^3-68\,249\,548\,800z^2+219\,848\,126\,400z+487\,944\,990\,225\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2\,097\,152z^5-123\,863\,040z^4+3\,165\,143\,040z^3-36\,283\,161\,600z^2+89\,943\,777\,000z+\right.$$
$$\left.1\,463\,834\,970\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,777\,216z^6-984\,612\,864z^5+24\,931\,860\,480z^4-\right.$$
$$\left.\left.\left.279\,582\,105\,600z^3+959\,400\,288\,000z^2-566\,645\,795\,100z+4\,391\,504\,912\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a88u.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{19}{4};z\right)=-\frac{15\left(2\sqrt{z}\,(8z+87)\cosh\left(2\sqrt{z}\right)-(124z+87)\sinh\left(2\sqrt{z}\right)\right)}{608\,z^{5/2}}$$

07.22.03.a88v.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{19}{4};-z\right)=\frac{15\left(2\sqrt{z}\,(8z-87)\cos\left(2\sqrt{z}\right)+(87-124z)\sin\left(2\sqrt{z}\right)\right)}{608\,z^{5/2}}$$

07.22.03.a88w.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{17}{4};z\right)=\frac{1}{55\,385\,694\,000\sqrt{2}\,z^{7/4}}$$
$$\left(\left(4z\left(2\,097\,152z^5+73\,400\,320z^4+1\,318\,625\,280z^3+11\,320\,934\,400z^2+29\,503\,303\,200z-47\,220\,482\,925\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(1\,048\,576z^5+37\,355\,520z^4+684\,011\,520z^3+6\,146\,380\,800z^2+19\,987\,506\,000z-141\,661\,448\,775\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(8\,388\,608z^6+295\,698\,432z^5+5\,351\,178\,240z^4+46\,732\,492\,800z^3+\right.$$
$$\left.\left.132\,091\,344\,000z^2+20\,986\,881\,300z+424\,984\,346\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a88x.01

$${}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{17}{4};-z\right)=\frac{1}{55\,385\,694\,000\sqrt{2}\,z^{7/4}}$$
$$\left(\left(4z\left(2\,097\,152z^5-73\,400\,320z^4+1\,318\,625\,280z^3-11\,320\,934\,400z^2+29\,503\,303\,200z+47\,220\,482\,925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(1\,048\,576z^5-37\,355\,520z^4+684\,011\,520z^3-6\,146\,380\,800z^2+19\,987\,506\,000z+141\,661\,448\,775\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(8\,388\,608z^6-295\,698\,432z^5+5\,351\,178\,240z^4-46\,732\,492\,800z^3+\right.$$
$$\left.\left.\left.132\,091\,344\,000z^2-20\,986\,881\,300z+424\,984\,346\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a88y.01

$${}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{15}{4};z\right)=\frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.a88z.01

$${}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{15}{4};-z\right)=-\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.a890.01

$${}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{13}{4};z\right)=\frac{1}{3\,257\,982\,000\sqrt{2}\,z^{7/4}}$$
$$\left(\left(4z\left(1\,048\,576z^5+12\,124\,160z^4+130\,928\,640z^3+800\,467\,200z^2+1\,582\,131\,600z-1\,748\,906\,775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(524\,288z^5+6\,389\,760z^4+70\,133\,760z^3+457\,430\,400z^2+1\,303\,533\,000z-5\,246\,720\,325\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(4\,194\,304z^6+49\,545\,216z^5+537\,477\,120z^4+3\,359\,462\,400z^3+\right.$$
$$\left.\left.\left.7\,501\,032\,000z^2-912\,473\,100z+15\,740\,160\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a891.01

$${}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{13}{4};-z\right)=\frac{1}{3\,257\,982\,000\sqrt{2}\,z^{7/4}}$$
$$\left(\left(4z\left(1\,048\,576z^5-12\,124\,160z^4+130\,928\,640z^3-800\,467\,200z^2+1\,582\,131\,600z+1\,748\,906\,775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(524\,288z^5-6\,389\,760z^4+70\,133\,760z^3-457\,430\,400z^2+1\,303\,533\,000z+5\,246\,720\,325\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(4\,194\,304z^6-49\,545\,216z^5+537\,477\,120z^4-3\,359\,462\,400z^3+\right.$$
$$\left.\left.\left.7\,501\,032\,000z^2+912\,473\,100z+15\,740\,160\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a892.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{11}{4};z\right)= \frac{1}{5\,145\,940\,800\,z^{5/2}}\left(e^{-2\sqrt{z}}\left(-4\,194\,304\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{25/4}-4\,194\,304\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{25/4}+ 4\,194\,304\,e^{4\sqrt{z}}\,z^6-4\,194\,304\,z^6+1\,048\,576\,e^{4\sqrt{z}}\,z^{11/2}+1\,048\,576\,z^{11/2}+786\,432\,e^{4\sqrt{z}}\,z^5- 786\,432\,z^5+983\,040\,e^{4\sqrt{z}}\,z^{9/2}+983\,040\,z^{9/2}+1\,720\,320\,e^{4\sqrt{z}}\,z^4-1\,720\,320\,z^4+3\,870\,720\,e^{4\sqrt{z}}\,z^{7/2}+ 3\,870\,720\,z^{7/2}+10\,644\,480\,e^{4\sqrt{z}}\,z^3-10\,644\,480\,z^3+34\,594\,560\,e^{4\sqrt{z}}\,z^{5/2}+34\,594\,560\,z^{5/2}+ 129\,729\,600\,e^{4\sqrt{z}}\,z^2-129\,729\,600\,z^2+551\,350\,800\,e^{4\sqrt{z}}\,z^{3/2}+551\,350\,800\,z^{3/2}+2\,618\,916\,300\,e^{4\sqrt{z}}\,z- 2\,618\,916\,300\,z-4\,341\,887\,550\,e^{4\sqrt{z}}\,\sqrt{z}-4\,341\,887\,550\,\sqrt{z}+2\,170\,943\,775\,e^{4\sqrt{z}}-2\,170\,943\,775\right)\right) $$

07.22.03.a893.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{11}{4};-z\right)= \frac{1}{2\,572\,970\,400\,z^{5/2}}\left(-8\,388\,608\,\sqrt{\pi}\,C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{25/4}- 2\left(524\,288\,z^5-491\,520\,z^4+1\,935\,360\,z^3-17\,297\,280\,z^2+275\,675\,400\,z+2\,170\,943\,775\right)\cos\left(2\,\sqrt{z}\right)\sqrt{z}+ \left(4\,194\,304\,z^6-786\,432\,z^5+1\,720\,320\,z^4-10\,644\,480\,z^3+129\,729\,600\,z^2-2\,618\,916\,300\,z+2\,170\,943\,775\right)\sin\left(2\,\sqrt{z}\right)\right) $$

07.22.03.a894.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{9}{4};z\right)=-\frac{1}{250\,614\,000\,\sqrt{2}\,z^{7/4}} \left(\left(4\,z\left(524\,288\,z^5-6\,225\,920\,z^4-21\,319\,680\,z^3-78\,278\,400\,z^2-107\,629\,200\,z+76\,039\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- 4\,\sqrt{z}\left(262\,144\,z^5-2\,949\,120\,z^4-12\,165\,120\,z^3-47\,980\,800\,z^2-91\,476\,000\,z+228\,118\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ \left(-2\,097\,152\,z^6+24\,379\,392\,z^5+90\,685\,440\,z^4+340\,300\,800\,z^3+548\,856\,000\,z^2+144\,074\,700\,z+684\,354\,825\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a895.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{9}{4};-z\right)=\frac{1}{250\,614\,000\,\sqrt{2}\,z^{7/4}} \left(\left(-4\,z\left(524\,288\,z^5+6\,225\,920\,z^4-21\,319\,680\,z^3+78\,278\,400\,z^2-107\,629\,200\,z-76\,039\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ 4\,\sqrt{z}\left(262\,144\,z^5+2\,949\,120\,z^4-12\,165\,120\,z^3+47\,980\,800\,z^2-91\,476\,000\,z-228\,118\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ \left(-2\,097\,152\,z^6-24\,379\,392\,z^5+90\,685\,440\,z^4-340\,300\,800\,z^3+548\,856\,000\,z^2+144\,074\,700\,z+684\,354\,825\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a896.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{7}{4};z\right)= $$
$$ \frac{1}{467\,812\,800\,z^{5/2}}\left(e^{-2\sqrt{z}}\left(-1\,048\,576\,e^{4\sqrt{z}}\,z^6+1\,048\,576\,z^6-262\,144\,e^{4\sqrt{z}}\,z^{11/2}-262\,144\,z^{11/2}+65\,536\right.\right. $$
$$ e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-375)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{21/4}+65\,536\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-375)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{21/4}+ $$
$$ 24\,379\,392\,e^{4\sqrt{z}}\,z^5-24\,379\,392\,z^5+5\,898\,240\,e^{4\sqrt{z}}\,z^{9/2}+5\,898\,240\,z^{9/2}+4\,177\,920\,e^{4\sqrt{z}}\,z^4-4\,177\,920\,z^4+ $$
$$ 4\,792\,320\,e^{4\sqrt{z}}\,z^{7/2}+4\,792\,320\,z^{7/2}+7\,418\,880\,e^{4\sqrt{z}}\,z^3-7\,418\,880\,z^3+14\,031\,360\,e^{4\sqrt{z}}\,z^{5/2}+14\,031\,360\,z^{5/2}+ $$
$$ 29\,937\,600\,e^{4\sqrt{z}}\,z^2-29\,937\,600\,z^2+64\,864\,800\,e^{4\sqrt{z}}\,z^{3/2}+64\,864\,800\,z^{3/2}+105\,405\,300\,e^{4\sqrt{z}}\,z- $$
$$ \left.\left.105\,405\,300\,z-206\,756\,550\,e^{4\sqrt{z}}\,\sqrt{z}-206\,756\,550\,\sqrt{z}+103\,378\,275\,e^{4\sqrt{z}}-103\,378\,275\right)\right) $$

07.22.03.a897.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{7}{4};-z\right)=\frac{1}{233\,906\,400\,z^{5/2}}\left(131\,072\,\sqrt{\pi}\,(16z+375)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4}+\right. $$
$$ 2\left(131\,072\,z^5+2\,949\,120\,z^4-2\,396\,160\,z^3+7\,015\,680\,z^2-32\,432\,400\,z-103\,378\,275\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+ $$
$$ \left.\left(-1\,048\,576\,z^6-24\,379\,392\,z^5+4\,177\,920\,z^4-7\,418\,880\,z^3+29\,937\,600\,z^2-105\,405\,300\,z+103\,378\,275\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a898.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{5}{4};z\right)= $$
$$ \frac{1}{83\,538\,000\sqrt{2}\,z^{7/4}}\left(\left(4z\left(262\,144\,z^5-9\,256\,960\,z^4+34\,652\,160\,z^3+37\,612\,800\,z^2+30\,794\,400\,z-12\,006\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right. $$
$$ 4\sqrt{z}\,\left(131\,072\,z^5-4\,546\,560\,z^4+14\,653\,440\,z^3+23\,385\,600\,z^2+22\,869\,000\,z-36\,018\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- $$
$$ \left(1\,048\,576\,z^6-36\,765\,696\,z^5+129\,761\,280\,z^4+172\,569\,600\,z^3+166\,320\,000\,z^2-48\,024\,900\,z+108\,056\,025\right) $$
$$ \left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a899.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{5}{4};-z\right)= $$
$$ \frac{1}{83\,538\,000\sqrt{2}\,z^{7/4}}\left(\left(4z\left(262\,144\,z^5+9\,256\,960\,z^4+34\,652\,160\,z^3-37\,612\,800\,z^2+30\,794\,400\,z+12\,006\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right. $$
$$ 4\sqrt{z}\,\left(131\,072\,z^5+4\,546\,560\,z^4+14\,653\,440\,z^3-23\,385\,600\,z^2+22\,869\,000\,z+36\,018\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left(1\,048\,576\,z^6+36\,765\,696\,z^5+129\,761\,280\,z^4-172\,569\,600\,z^3+166\,320\,000\,z^2+48\,024\,900\,z+108\,056\,025\right) $$
$$ \left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a89a.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{3}{4};z\right)= \frac{1}{66\,830\,400\,z^{5/2}}\left(e^{-2\sqrt{z}}\left(131\,072\,e^{4\sqrt{z}}\,z^6-131\,072\,z^6+32\,768\,e^{4\sqrt{z}}\,z^{11/2}+32\,768\,z^{11/2}-6\,119\,424\,e^{4\sqrt{z}}\,z^5+6\,119\,424\,z^5-1\,505\,280\,e^{4\sqrt{z}}\,z^{9/2}-1\,505\,280\,z^{9/2}-512\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-12\,000\,z+86\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}-512\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-12\,000\,z+86\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}+43\,253\,760\,e^{4\sqrt{z}}\,z^4-43\,253\,760\,z^4+9\,768\,960\,e^{4\sqrt{z}}\,z^{7/2}+9\,768\,960\,z^{7/2}+6\,128\,640\,e^{4\sqrt{z}}\,z^3-6\,128\,640\,z^3+5\,806\,080\,e^{4\sqrt{z}}\,z^{5/2}+5\,806\,080\,z^{5/2}+6\,652\,800\,e^{4\sqrt{z}}\,z^2-6\,652\,800\,z^2+7\,484\,400\,e^{4\sqrt{z}}\,z^{3/2}+7\,484\,400\,z^{3/2}+4\,365\,900\,e^{4\sqrt{z}}\,z-4\,365\,900\,z-12\,162\,150\,e^{4\sqrt{z}}\,\sqrt{z}-12\,162\,150\,\sqrt{z}+6\,081\,075\,e^{4\sqrt{z}}-6\,081\,075\right)\right) $$

07.22.03.a89b.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{3}{4};-z\right)= \frac{1}{33\,415\,200\,z^{5/2}}\left(-1024\,\sqrt{\pi}\,\left(256\,z^2+12\,000\,z+86\,625\right)C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}-2\left(16\,384\,z^5+752\,640\,z^4+4\,884\,480\,z^3-2\,903\,040\,z^2+3\,742\,200\,z+6\,081\,075\right)\cos\left(2\,\sqrt{z}\right)\sqrt{z}+\left(131\,072\,z^6+6\,119\,424\,z^5+43\,253\,760\,z^4-6\,128\,640\,z^3+6\,652\,800\,z^2-4\,365\,900\,z+6\,081\,075\right)\sin\left(2\,\sqrt{z}\right)\right) $$

07.22.03.a89c.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{1}{4};z\right)= \frac{1}{83\,538\,000\,\sqrt{2}\,z^{7/4}}\left(\left(-4\,z\left(131\,072\,z^5-7\,700\,480\,z^4+84\,334\,080\,z^3-114\,681\,600\,z^2-25\,804\,800\,z+4\,002\,075\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\,\sqrt{z}\,\left(65\,536\,z^5-3\,809\,280\,z^4+39\,870\,720\,z^3-36\,691\,200\,z^2-12\,474\,000\,z+12\,006\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(524\,288\,z^6-30\,670\,848\,z^5+329\,840\,640\,z^4-385\,459\,200\,z^3-133\,056\,000\,z^2+30\,561\,300\,z-36\,018\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a89d.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},-\frac{1}{4};-z\right)= \frac{1}{83\,538\,000\,\sqrt{2}\,z^{7/4}}\left(\left(-4\,z\left(131\,072\,z^5+7\,700\,480\,z^4+84\,334\,080\,z^3+114\,681\,600\,z^2-25\,804\,800\,z-4\,002\,075\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\,\sqrt{z}\,\left(65\,536\,z^5+3\,809\,280\,z^4+39\,870\,720\,z^3+36\,691\,200\,z^2-12\,474\,000\,z-12\,006\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-524\,288\,z^6-30\,670\,848\,z^5-329\,840\,640\,z^4-385\,459\,200\,z^3+133\,056\,000\,z^2+30\,561\,300\,z+36\,018\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a89e.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{7}{2}, \frac{1}{4}; z\right) = $$
$$ \frac{1}{66\,830\,400\, z^{5/2}} \left(e^{-2\sqrt{z}} \left(-32\,768\, e^{4\sqrt{z}}\, z^6 + 32\,768\, z^6 - 8192\, e^{4\sqrt{z}}\, z^{11/2} - 8192\, z^{11/2} + 2\,297\,856\, e^{4\sqrt{z}}\, z^5 - 2\,297\,856\, z^5 + \right.\right. $$
$$ 568\,320\, e^{4\sqrt{z}}\, z^{9/2} + 568\,320\, z^{9/2} - 32\,845\,440\, e^{4\sqrt{z}}\, z^4 + 32\,845\,440\, z^4 - 7\,806\,240\, e^{4\sqrt{z}}\, z^{7/2} - $$
$$ 7\,806\,240\, z^{7/2} + 8\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(4096\, z^3 - 288\,000\, z^2 + 4\,158\,000\, z - 10\,308\,375\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{13/4} + $$
$$ 8\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(4096\, z^3 - 288\,000\, z^2 + 4\,158\,000\, z - 10\,308\,375\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{13/4} + 77\,091\,840\, e^{4\sqrt{z}}\, z^3 - $$
$$ 77\,091\,840\, z^3 + 14\,676\,480\, e^{4\sqrt{z}}\, z^{5/2} + 14\,676\,480\, z^{5/2} + 6\,652\,800\, e^{4\sqrt{z}}\, z^2 - 6\,652\,800\, z^2 + 3\,326\,400\, e^{4\sqrt{z}}\, z^{3/2} + $$
$$ \left.\left. 3\,326\,400\, z^{3/2} + 207\,900\, e^{4\sqrt{z}}\, z - 207\,900\, z - 2\,806\,650\, e^{4\sqrt{z}}\, \sqrt{z} - 2\,806\,650\, \sqrt{z} + 1\,403\,325\, e^{4\sqrt{z}} - 1\,403\,325\right)\right) $$

07.22.03.a89f.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{7}{2}, \frac{1}{4}; -z\right) = \frac{1}{33\,415\,200\, z^{5/2}} \left(16\sqrt{\pi}\, \left(4096\, z^3 + 288\,000\, z^2 + 4\,158\,000\, z + 10\,308\,375\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{13/4} + \right. $$
$$ 2\left(4096\, z^5 + 284\,160\, z^4 + 3\,903\,120\, z^3 + 7\,338\,240\, z^2 - 1\,663\,200\, z - 1\,403\,325\right) \cos\left(2\sqrt{z}\right) \sqrt{z} - $$
$$ \left. \left(32\,768\, z^6 + 2\,297\,856\, z^5 + 32\,845\,440\, z^4 + 77\,091\,840\, z^3 - 6\,652\,800\, z^2 + 207\,900\, z - 1\,403\,325\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a89g.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{7}{2}, \frac{3}{4}; z\right) = $$
$$ \frac{1}{584\,766\,000\sqrt{2}\, z^{7/4}} \left(\left(4\, z \left(65\,536\, z^5 - 5\,386\,240\, z^4 + 97\,847\,040\, z^3 - 374\,950\,800\, z^2 + 151\,527\,600\, z - 2\,546\,775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 4\sqrt{z}\, \left(32\,768\, z^5 - 2\,672\,640\, z^4 + 47\,295\,360\, z^3 - 161\,040\,600\, z^2 + 14\,553\,000\, z - 7\,640\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(-262\,144\, z^6 + 21\,479\,424\, z^5 - 386\,104\,320\, z^4 + 1\,409\,889\,600\, z^3 - 349\,272\,000\, z^2 + 39\,293\,100\, z - 22\,920\,975\right) $$
$$ \left. I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a89h.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{7}{2}, \frac{3}{4}; -z\right) = $$
$$ \frac{1}{584\,766\,000\sqrt{2}\, z^{7/4}} \left(\left(4\, z \left(65\,536\, z^5 + 5\,386\,240\, z^4 + 97\,847\,040\, z^3 + 374\,950\,800\, z^2 + 151\,527\,600\, z + 2\,546\,775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 4\sqrt{z}\, \left(32\,768\, z^5 + 2\,672\,640\, z^4 + 47\,295\,360\, z^3 + 161\,040\,600\, z^2 + 14\,553\,000\, z + 7\,640\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(262\,144\, z^6 + 21\,479\,424\, z^5 + 386\,104\,320\, z^4 + 1\,409\,889\,600\, z^3 + 349\,272\,000\, z^2 + 39\,293\,100\, z + 22\,920\,975\right) $$
$$ \left. J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a89i.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{7}{2}, \frac{5}{4}; z\right) = \frac{1}{2\,138\,572\,800\, z^{5/2}} $$
$$ \left(e^{-2\sqrt{z}} \left(e^{2\sqrt{z}}\ \sqrt{2\pi}\ \left(65\,536 z^4 - 6\,144\,000 z^3 + 133\,056\,000 z^2 - 659\,736\,000 z + 402\,026\,625\right) \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) z^{9/4} + \right.\right. $$
$$ e^{2\sqrt{z}}\ \sqrt{2\pi}\ \left(65\,536 z^4 - 6\,144\,000 z^3 + 133\,056\,000 z^2 - 659\,736\,000 z + 402\,026\,625\right) \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right) z^{9/4} - $$
$$ 4\left(-16\,384 z^6 + 4096 z^{11/2} + 1\,532\,928 z^5 - 380\,160 z^{9/2} - 32\,982\,720 z^4 + 7\,971\,120 z^{7/2} + \right. $$
$$ 159\,285\,420 z^3 - 34\,719\,615 z^{5/2} - 79\,833\,600 z^2 + 6\,652\,800 z^{3/2} + 1\,663\,200 z - 2\,494\,800 \sqrt{z}\ + $$
$$ \left.\left.\left.\left. e^{4\sqrt{z}} \left(16\,384 z^6 + 4096 z^{11/2} - 1\,532\,928 z^5 - 380\,160 z^{9/2} + 32\,982\,720 z^4 + 7\,971\,120 z^{7/2} - 159\,285\,420 z^3 - \right.\right.\right.\right. $$
$$ \left.\left.\left.\left. 34\,719\,615 z^{5/2} + 79\,833\,600 z^2 + 6\,652\,800 z^{3/2} - 1\,663\,200 z - 2\,494\,800 \sqrt{z}\ + 1\,247\,400\right) - 1\,247\,400\right)\right)\right) $$

07.22.03.a89j.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{7}{2}, \frac{5}{4}; -z\right) = $$
$$ \frac{1}{534\,643\,200 z^{5/2}} \left(\sqrt{\pi}\ z^{9/4} \left(65\,536 z^4 + 6\,144\,000 z^3 + 133\,056\,000 z^2 + 659\,736\,000 z + 402\,026\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$
$$ 2\left(4\left(4096 z^6 + 383\,232 z^5 + 8\,245\,680 z^4 + 39\,821\,355 z^3 + 19\,958\,400 z^2 + 415\,800 z + 311\,850\right) \sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left. \sqrt{z}\ \left(4096 z^5 + 380\,160 z^4 + 7\,971\,120 z^3 + 34\,719\,615 z^2 + 6\,652\,800 z + 2\,494\,800\right) \cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a89k.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{7}{2}, \frac{7}{4}; z\right) = \frac{1}{1\,754\,298\,000\ \sqrt{2}\ z^{7/4}} $$
$$ \left(\left(2 z \left(65\,536 z^5 - 6\,922\,240 z^4 + 175\,703\,040 z^3 - 1\,108\,360\,800 z^2 + 1\,129\,799\,475 z + 6\,548\,850\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ \sqrt{z}\ \left(65\,536 z^5 - 6\,881\,280 z^4 + 171\,486\,720 z^3 - 1\,009\,411\,200 z^2 + 661\,901\,625 z + 39\,293\,100\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(-131\,072 z^6 + 13\,811\,712 z^5 - 347\,996\,160 z^4 + 2\,134\,036\,800 z^3 - 1\,819\,644\,750 z^2 - 144\,074\,700 z + 29\,469\,825\right) $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a89l.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{7}{2}, \frac{7}{4}; -z\right) = \frac{1}{1\,754\,298\,000\ \sqrt{2}\ z^{7/4}} $$
$$ \left(\left(2 z \left(65\,536 z^5 + 6\,922\,240 z^4 + 175\,703\,040 z^3 + 1\,108\,360\,800 z^2 + 1\,129\,799\,475 z - 6\,548\,850\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ \sqrt{z}\ \left(65\,536 z^5 + 6\,881\,280 z^4 + 171\,486\,720 z^3 + 1\,009\,411\,200 z^2 + 661\,901\,625 z - 39\,293\,100\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(131\,072 z^6 + 13\,811\,712 z^5 + 347\,996\,160 z^4 + 2\,134\,036\,800 z^3 + 1\,819\,644\,750 z^2 - 144\,074\,700 z - 29\,469\,825\right) $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a89m.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},\frac{9}{4};z\right)= \frac{1}{136\,868\,659\,200\,z^{5/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-122\,880\,000\,z^4+3\,548\,160\,000\,z^3-26\,389\,440\,000\,z^2+32\,162\,130\,000\,z+3\,618\,239\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-122\,880\,000\,z^4+3\,548\,160\,000\,z^3-26\,389\,440\,000\,z^2+32\,162\,130\,000\,z+3\,618\,239\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-4\left(-262\,144\,z^6+65\,536\,z^{11/2}+30\,670\,848\,z^5-7\,618\,560\,z^{9/2}-881\,387\,520\,z^4+214\,801\,920\,z^{7/2}+6\,442\,974\,720\,z^3-1\,467\,627\,840\,z^{5/2}-7\,097\,498\,100\,z^2+1\,063\,564\,425\,z^{3/2}-1\,170\,892\,800\,z+159\,667\,200\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^6+65\,536\,z^{11/2}-30\,670\,848\,z^5-7\,618\,560\,z^{9/2}+881\,387\,520\,z^4+214\,801\,920\,z^{7/2}-6\,442\,974\,720\,z^3-1\,467\,627\,840\,z^{5/2}+7\,097\,498\,100\,z^2+1\,063\,564\,425\,z^{3/2}+1\,170\,892\,800\,z+159\,667\,200\sqrt{z}-79\,833\,600\right)+79\,833\,600\right)\right)\right) $$

07.22.03.a89n.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},\frac{9}{4};-z\right)= \frac{1}{34\,217\,164\,800\,z^{5/2}}\left(\sqrt{\pi}\,z^{5/4}\left(1\,048\,576\,z^5+122\,880\,000\,z^4+3\,548\,160\,000\,z^3+26\,389\,440\,000\,z^2+32\,162\,130\,000\,z-3\,618\,239\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\left(4\left(65\,536\,z^6+7\,667\,712\,z^5+220\,346\,880\,z^4+1\,610\,743\,680\,z^3+1\,774\,374\,525\,z^2-292\,723\,200\,z-19\,958\,400\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(65\,536\,z^5+7\,618\,560\,z^4+214\,801\,920\,z^3+1\,467\,627\,840\,z^2+1\,063\,564\,425\,z-159\,667\,200\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a89o.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},\frac{11}{4};z\right)= \frac{1}{88\,216\,128\,000\sqrt{2}\,z^{7/4}}\left(\left(2z\left(1\,048\,576\,z^5-135\,331\,840\,z^4+4\,411\,760\,640\,z^3-38\,760\,076\,800\,z^2+63\,244\,011\,600\,z+5\,262\,000\,975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(1\,048\,576\,z^5-134\,676\,480\,z^4+4\,328\,939\,520\,z^3-36\,217\,843\,200\,z^2+45\,018\,666\,000\,z+13\,480\,807\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\left(1\,048\,576\,z^6-135\,069\,696\,z^5+4\,378\,337\,280\,z^4-37\,708\,070\,400\,z^3+55\,047\,762\,000\,z^2+11\,876\,339\,475\,z+1\,728\,896\,400\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a89p.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},\frac{11}{4};-z\right)=\frac{1}{88\,216\,128\,000\sqrt{2}\,z^{7/4}}$$
$$\left(\left(2z\left(1\,048\,576z^5+135\,331\,840z^4+4\,411\,760\,640z^3+38\,760\,076\,800z^2+63\,244\,011\,600z-5\,262\,000\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\sqrt{z}\left(1\,048\,576z^5+134\,676\,480z^4+4\,328\,939\,520z^3+36\,217\,843\,200z^2+45\,018\,666\,000z-13\,480\,807\,725\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(1\,048\,576z^6+135\,069\,696z^5+4\,378\,337\,280z^4+37\,708\,070\,400z^3+\right.$$
$$\left.\left.55\,047\,762\,000z^2-11\,876\,339\,475z+1\,728\,896\,400\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a89q.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},\frac{13}{4};z\right)=\frac{1}{5\,839\,729\,459\,200z^{5/2}}$$
$$\left(e^{-2\sqrt{z}}\left(-4\left(-4\,194\,304z^6+1\,048\,576z^{11/2}+589\,037\,568z^5-146\,472\,960z^{9/2}-21\,180\,088\,320z^4+5\,187\,870\,720z^{7/2}+\right.\right.\right.$$
$$207\,355\,115\,520z^3-48\,299\,005\,440z^{5/2}-353\,726\,049\,600z^2+62\,339\,230\,800z^{3/2}-111\,015\,897\,300z+$$
$$29\,143\,785\,825\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^6+1\,048\,576z^{11/2}-589\,037\,568z^5-146\,472\,960z^{9/2}+\right.$$
$$21\,180\,088\,320z^4+5\,187\,870\,720z^{7/2}-207\,355\,115\,520z^3-48\,299\,005\,440z^{5/2}+353\,726\,049\,600z^2+$$
$$\left.62\,339\,230\,800z^{3/2}+111\,015\,897\,300z+29\,143\,785\,825\sqrt{z}+30\,656\,102\,400\right)-30\,656\,102\,400\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(16\,777\,216z^6-2\,359\,296\,000z^5+85\,155\,840\,000z^4-844\,462\,080\,000z^3+\right.$$
$$\left.1\,543\,782\,240\,000z^2+347\,351\,004\,000z+90\,455\,990\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(16\,777\,216z^6-2\,359\,296\,000z^5+85\,155\,840\,000z^4-844\,462\,080\,000z^3+\right.$$
$$\left.\left.1\,543\,782\,240\,000z^2+347\,351\,004\,000z+90\,455\,990\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a89r.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{7}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{1\,459\,932\,364\,800z^{5/2}}\left(\sqrt{\pi}\sqrt[4]{z}\left(16\,777\,216z^6+2\,359\,296\,000z^5+85\,155\,840\,000z^4+844\,462\,080\,000z^3+\right.\right.$$
$$\left.1\,543\,782\,240\,000z^2-347\,351\,004\,000z+90\,455\,990\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\left(4\left(1\,048\,576z^6+147\,259\,392z^5+5\,295\,022\,080z^4+51\,838\,778\,880z^3+88\,431\,512\,400z^2-\right.\right.$$
$$27\,753\,974\,325z+7\,664\,025\,600\Big)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(1\,048\,576z^5+146\,472\,960z^4+\right.$$
$$\left.\left.\left.5\,187\,870\,720z^3+48\,299\,005\,440z^2+62\,339\,230\,800z-29\,143\,785\,825\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a89s.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{7}{2}, \frac{15}{4}; z\right) = \left(\left(2\sqrt{z}\,\left(16\,777\,216 z^6 - 2\,558\,525\,440 z^5 + 101\,873\,418\,240 z^4 - 1\,147\,473\,100\,800 z^3 + 2\,573\,630\,841\,600 z^2 + 452\,237\,385\,600 z + 126\,638\,386\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(16\,777\,216 z^6 - 2\,548\,039\,680 z^5 + 100\,302\,520\,320 z^4 - 1\,087\,904\,563\,200 z^3 + 2\,000\,430\,432\,000 z^2 + 976\,669\,293\,600 z + 379\,915\,160\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,777\,216 z^6 - 2\,554\,331\,136 z^5 + 101\,240\,340\,480 z^4 - 1\,122\,973\,286\,400 z^3 + 2\,322\,159\,840\,000 z^2 + 792\,777\,585\,600 z + 339\,305\,741\,775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(3\,336\,173\,568\,000\sqrt{2}\, z^{9/4}\right) $$

07.22.03.a89t.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{7}{2}, \frac{15}{4}; -z\right) = \left(\left(2\sqrt{z}\,\left(16\,777\,216 z^6 + 2\,558\,525\,440 z^5 + 101\,873\,418\,240 z^4 + 1\,147\,473\,100\,800 z^3 + 2\,573\,630\,841\,600 z^2 - 452\,237\,385\,600 z + 126\,638\,386\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(16\,777\,216 z^6 + 2\,548\,039\,680 z^5 + 100\,302\,520\,320 z^4 + 1\,087\,904\,563\,200 z^3 + 2\,000\,430\,432\,000 z^2 - 976\,669\,293\,600 z + 379\,915\,160\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216 z^6 + 2\,554\,331\,136 z^5 + 101\,240\,340\,480 z^4 + 1\,122\,973\,286\,400 z^3 + 2\,322\,159\,840\,000 z^2 - 792\,777\,585\,600 z + 339\,305\,741\,775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(3\,336\,173\,568\,000\sqrt{2}\, z^{9/4}\right) $$

07.22.03.a89u.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{7}{2}, \frac{17}{4}; z\right) = \frac{1}{201\,246\,061\,363\,200 z^{13/4}} \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-67\,108\,864 z^{13/2} + 16\,777\,216 z^6 + 10\,997\,465\,088 z^{11/2} - 2\,736\,783\,360 z^5 - 474\,835\,845\,120 z^{9/2} + 116\,699\,627\,520 z^4 + 5\,826\,166\,456\,320 z^{7/2} - 1\,375\,648\,727\,040 z^3 - 13\,470\,003\,993\,600 z^{5/2} + 2\,574\,806\,572\,800 z^2 - 6\,051\,593\,116\,800 z^{3/2} + 1\,843\,492\,543\,200 z - 3\,492\,506\,070\,900\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 - 10\,997\,465\,088 z^{11/2} - 2\,736\,783\,360 z^5 + 474\,835\,845\,120 z^{9/2} + 116\,699\,627\,520 z^4 - 5\,826\,166\,456\,320 z^{7/2} - 1\,375\,648\,727\,040 z^3 + 13\,470\,003\,993\,600 z^{5/2} + 2\,574\,806\,572\,800 z^2 + 6\,051\,593\,116\,800 z^{3/2} + 1\,843\,492\,543\,200 z + 3\,492\,506\,070\,900\sqrt{z} + 814\,103\,915\,625\right) + 814\,103\,915\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456 z^7 - 44\,040\,192\,000 z^6 + 1\,907\,490\,816\,000 z^5 - 23\,644\,938\,240\,000 z^4 + 57\,634\,536\,960\,000 z^3 + 19\,451\,656\,224\,000 z^2 + 10\,131\,070\,950\,000 z + 814\,103\,915\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456 z^7 - 44\,040\,192\,000 z^6 + 1\,907\,490\,816\,000 z^5 - 23\,644\,938\,240\,000 z^4 + 57\,634\,536\,960\,000 z^3 + 19\,451\,656\,224\,000 z^2 + 10\,131\,070\,950\,000 z + 814\,103\,915\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right) $$

07.22.03.a89v.01

$${}_1F_2\left(-\frac{15}{4};\frac{7}{2},\frac{17}{4};-z\right)=$$

$$\frac{1}{50\,311\,515\,340\,800\,z^{13/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+44\,040\,192\,000\,z^6+1\,907\,490\,816\,000\,z^5+23\,644\,938\,240\,000\,z^4+\right.\right.$$

$$57\,634\,536\,960\,000\,z^3-19\,451\,656\,224\,000\,z^2+10\,131\,070\,950\,000\,z-814\,103\,915\,625\big)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$

$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+2\,749\,366\,272\,z^5+118\,708\,961\,280\,z^4+1\,456\,541\,614\,080\,z^3+3\,367\,500\,998\,400\,z^2-\right.\right.$$

$$1\,512\,898\,279\,200\,z+873\,126\,517\,725\big)\sin\left(2\sqrt{z}\right)-\left(16\,777\,216\,z^6+2\,736\,783\,360\,z^5+116\,699\,627\,520\,z^4+\right.$$

$$\left.\left.\left.1\,375\,648\,727\,040\,z^3+2\,574\,806\,572\,800\,z^2-1\,843\,492\,543\,200\,z+814\,103\,915\,625\big)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a89w.01

$${}_1F_2\left(-\frac{15}{4};\frac{7}{2},\frac{19}{4};z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-47\,227\,863\,040\,z^6+2\,221\,371\,555\,840\,z^5-30\,526\,385\,356\,800\,z^4+87\,106\,250\,649\,600\,z^3+\right.\right.\right.$$

$$23\,963\,132\,793\,600\,z^2+13\,604\,580\,990\,000\,z-1\,393\,022\,255\,625\big)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$

$$\left(268\,435\,456\,z^7-47\,060\,090\,880\,z^6+2\,192\,305\,029\,120\,z^5-29\,214\,233\,395\,200\,z^4+71\,250\,955\,776\,000\,z^3+\right.$$

$$46\,520\,515\,641\,600\,z^2+34\,445\,641\,230\,000\,z-4\,179\,066\,766\,875\big)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$

$$2\sqrt{z}\,\left(268\,435\,456\,z^7-47\,160\,754\,176\,z^6+2\,209\,669\,447\,680\,z^5-29\,988\,996\,710\,400\,z^4+\right.$$

$$\left.\left.\left.80\,260\,443\,648\,000\,z^3+37\,112\,525\,049\,600\,z^2+25\,684\,222\,964\,400\,z+4\,179\,066\,766\,875\right)\right.\right.$$

$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(106\,757\,554\,176\,000\sqrt{2}\;z^{13/4}\right)$$

07.22.03.a89x.01

$${}_1F_2\left(-\frac{15}{4};\frac{7}{2},\frac{19}{4};-z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+47\,227\,863\,040\,z^6+2\,221\,371\,555\,840\,z^5+30\,526\,385\,356\,800\,z^4+87\,106\,250\,649\,600\,z^3-\right.\right.\right.$$

$$23\,963\,132\,793\,600\,z^2+13\,604\,580\,990\,000\,z+1\,393\,022\,255\,625\big)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$

$$\left(268\,435\,456\,z^7+47\,060\,090\,880\,z^6+2\,192\,305\,029\,120\,z^5+29\,214\,233\,395\,200\,z^4+71\,250\,955\,776\,000\,z^3-\right.$$

$$46\,520\,515\,641\,600\,z^2+34\,445\,641\,230\,000\,z+4\,179\,066\,766\,875\big)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$2\sqrt{z}\,\left(268\,435\,456\,z^7+47\,160\,754\,176\,z^6+2\,209\,669\,447\,680\,z^5+29\,988\,996\,710\,400\,z^4+\right.$$

$$\left.\left.\left.80\,260\,443\,648\,000\,z^3-37\,112\,525\,049\,600\,z^2+25\,684\,222\,964\,400\,z-4\,179\,066\,766\,875\right)\right.\right.$$

$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(106\,757\,554\,176\,000\sqrt{2}\;z^{13/4}\right)$$

07.22.03.a89y.01

$${}_1F_2\left(-\frac{15}{4};\frac{7}{2},\frac{21}{4};z\right)=$$

$$\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}+201\,125\,265\,408\,z^{13/2}-50\,079\,989\,760\,z^{6}-10\,135\,976\,017\,920\right.\right.\right.$$
$$z^{11/2}+2\,497\,126\,072\,320\,z^{5}+149\,499\,964\,293\,120\,z^{9/2}-35\,624\,476\,016\,640\,z^{4}-$$
$$436\,397\,281\,689\,600\,z^{7/2}+87\,670\,704\,844\,800\,z^{3}-252\,129\,783\,628\,800\,z^{5/2}+81\,247\,013\,971\,200\,z^{2}-$$
$$215\,258\,399\,294\,400\,z^{3/2}+70\,338\,578\,310\,000\,z-42\,333\,403\,612\,500\sqrt{z}+e^{4\sqrt{z}}$$
$$\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-201\,125\,265\,408\,z^{13/2}-50\,079\,989\,760\,z^{6}+10\,135\,976\,017\,920\,z^{11/2}+\right.$$
$$2\,497\,126\,072\,320\,z^{5}-149\,499\,964\,293\,120\,z^{9/2}-35\,624\,476\,016\,640\,z^{4}+436\,397\,281\,689\,600\,z^{7/2}+$$
$$87\,670\,704\,844\,800\,z^{3}+252\,129\,783\,628\,800\,z^{5/2}+81\,247\,013\,971\,200\,z^{2}+215\,258\,399\,294\,400\,z^{3/2}+$$
$$\left.70\,338\,578\,310\,000\,z+42\,333\,403\,612\,500\sqrt{z}-31\,750\,052\,709\,375\right)-31\,750\,052\,709\,375\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-805\,306\,368\,000\,z^{7}+40\,693\,137\,408\,000\,z^{6}-605\,310\,418\,944\,000\,z^{5}+\right.$$
$$1\,844\,305\,182\,720\,000\,z^{4}+829\,937\,332\,224\,000\,z^{3}+648\,388\,540\,800\,000\,z^{2}+$$
$$\left.104\,205\,301\,200\,000\,z-31\,750\,052\,709\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-805\,306\,368\,000\,z^{7}+40\,693\,137\,408\,000\,z^{6}-605\,310\,418\,944\,000\,z^{5}+\right.$$
$$1\,844\,305\,182\,720\,000\,z^{4}+829\,937\,332\,224\,000\,z^{3}+648\,388\,540\,800\,000\,z^{2}+$$
$$\left.\left.\left.104\,205\,301\,200\,000\,z-31\,750\,052\,709\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(6\,061\,057\,848\,115\,200\,z^{17/4}\right)$$

07.22.03.a89z.01

$${}_1F_2\left(-\frac{15}{4};\frac{7}{2},\frac{21}{4};-z\right)=$$

$$\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^{8}+805\,306\,368\,000\,z^{7}+40\,693\,137\,408\,000\,z^{6}+605\,310\,418\,944\,000\,z^{5}+1\,844\,305\,182\,720\,000\,z^{4}-\right.\right.$$
$$\left.829\,937\,332\,224\,000\,z^{3}+648\,388\,540\,800\,000\,z^{2}-104\,205\,301\,200\,000\,z-31\,750\,052\,709\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(\left(268\,435\,456\,z^{7}+50\,079\,989\,760\,z^{6}+2\,497\,126\,072\,320\,z^{5}+35\,624\,476\,016\,640\,z^{4}+\right.\right.$$
$$\left.87\,670\,704\,844\,800\,z^{3}-81\,247\,013\,971\,200\,z^{2}+70\,338\,578\,310\,000\,z+31\,750\,052\,709\,375\right)\cos\left(2\sqrt{z}\right)-$$
$$4\sqrt{z}\left(268\,435\,456\,z^{7}+50\,281\,316\,352\,z^{6}+2\,533\,994\,004\,480\,z^{5}+37\,374\,991\,073\,280\,z^{4}+\right.$$
$$109\,099\,320\,422\,400\,z^{3}-63\,032\,445\,907\,200\,z^{2}+53\,814\,599\,823\,600\,z-$$
$$\left.\left.10\,583\,350\,903\,125\right)\sin\left(2\sqrt{z}\right)\right)\Big/\left(1\,515\,264\,462\,028\,800\,z^{17/4}\right)$$

07.22.03.a8a0.01

$${}_1F_2\left(-\frac{15}{4};\frac{7}{2},\frac{23}{4};z\right)=$$

$$\left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-856\,309\,104\,640\,z^7+46\,457\,621\,053\,440\,z^6-753\,577\,544\,908\,800\,z^5+2\,610\,197\,633\,433\,600\right.\right.\right.$$
$$\left.\left.\left.z^4+987\,361\,953\,177\,600\,z^3+842\,905\,103\,040\,000\,z^2-70\,049\,119\,140\,000\,z+104\,476\,669\,171\,875\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4\,294\,967\,296\,z^8-853\,624\,750\,080\,z^7+45\,929\,642\,065\,920\,z^6-725\,929\,898\,803\,200\,z^5+\right.$$
$$2\,207\,954\,681\,856\,000\,z^4+1\,774\,485\,057\,945\,600\,z^3+1\,871\,064\,074\,880\,000\,z^2+$$
$$\left.267\,460\,273\,080\,000\,z+313\,430\,007\,515\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-855\,235\,362\,816\,z^7+46\,245\,221\,498\,880\,z^6-742\,289\,729\,126\,400\,z^5+\right.$$
$$2\,438\,454\,509\,568\,000\,z^4+1\,416\,517\,582\,233\,600\,z^3+1\,344\,572\,579\,750\,400\,z^2+$$
$$\left.\left.401\,190\,409\,620\,000\,z-313\,430\,007\,515\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(58\,076\,109\,471\,744\,000\,\sqrt{2}\;z^{17/4}\right)$$

07.22.03.a8a1.01

$${}_1F_2\left(-\frac{15}{4};\frac{7}{2},\frac{23}{4};-z\right)=$$

$$\left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+856\,309\,104\,640\,z^7+46\,457\,621\,053\,440\,z^6+753\,577\,544\,908\,800\,z^5+2\,610\,197\,633\,433\,600\right.\right.\right.$$
$$\left.\left.\left.z^4-987\,361\,953\,177\,600\,z^3+842\,905\,103\,040\,000\,z^2+70\,049\,119\,140\,000\,z+104\,476\,669\,171\,875\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4\,294\,967\,296\,z^8+853\,624\,750\,080\,z^7+45\,929\,642\,065\,920\,z^6+725\,929\,898\,803\,200\,z^5+\right.$$
$$2\,207\,954\,681\,856\,000\,z^4-1\,774\,485\,057\,945\,600\,z^3+1\,871\,064\,074\,880\,000\,z^2-$$
$$\left.267\,460\,273\,080\,000\,z+313\,430\,007\,515\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+855\,235\,362\,816\,z^7+46\,245\,221\,498\,880\,z^6+742\,289\,729\,126\,400\,z^5+\right.$$
$$2\,438\,454\,509\,568\,000\,z^4-1\,416\,517\,582\,233\,600\,z^3+1\,344\,572\,579\,750\,400\,z^2-$$
$$\left.\left.401\,190\,409\,620\,000\,z-313\,430\,007\,515\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(58\,076\,109\,471\,744\,000\,\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{15}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.a8a2.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},-\frac{23}{4};z\right)=\frac{105\left(2\sqrt{z}\,\left(64\,z^2+6468\,z+18\,315\right)\cosh\left(2\sqrt{z}\right)-\left(2176\,z^2+30\,888\,z+18\,315\right)\sinh\left(2\sqrt{z}\right)\right)}{55\,936\,z^{7/2}}$$

07.22.03.a8a3.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},-\frac{23}{4};-z\right)=-\frac{105\left(2\sqrt{z}\,\left(64\,z^2-6468\,z+18\,315\right)\cos\left(2\sqrt{z}\right)+\left(-2176\,z^2+30\,888\,z-18\,315\right)\sin\left(2\sqrt{z}\right)\right)}{55\,936\,z^{7/2}}$$

07.22.03.a8a4.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{9}{2}, -\frac{21}{4}; z\right) = $$

$$ \left(\left(4\,z\left(33\,554\,432\,z^6 + 2\,275\,409\,920\,z^5 + 68\,234\,772\,480\,z^4 + 934\,162\,022\,400\,z^3 + 3\,979\,610\,611\,200\,z^2 - \right.\right.\right. $$

$$ \left.\left.\left. 3\,903\,559\,921\,800\,z + 85\,390\,373\,289\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$

$$ 4\sqrt{z}\,\left(16\,777\,216\,z^6 + 1\,148\,190\,720\,z^5 + 34\,856\,632\,320\,z^4 + 490\,510\,540\,800\,z^3 + 2\,354\,891\,616\,000\,z^2 + \right. $$

$$ 37\,083\,819\,257\,100\,z + 256\,171\,119\,868\,125\Big) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(134\,217\,728\,z^7 + 9\,135\,194\,112\,z^6 + \right. $$

$$ 275\,266\,928\,640\,z^5 + 3\,808\,685\,260\,800\,z^4 + 16\,978\,477\,824\,000\,z^3 - 20\,651\,091\,199\,200\,z^2 - $$

$$ \left.\left.\left. 257\,634\,954\,838\,800\,z - 768\,513\,359\,604\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(6\,424\,740\,504\,000\,\sqrt{2}\; z^{11/4}\right) $$

07.22.03.a8a5.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{9}{2}, -\frac{21}{4}; -z\right) = $$

$$ \left(\left(4\,z\left(33\,554\,432\,z^6 - 2\,275\,409\,920\,z^5 + 68\,234\,772\,480\,z^4 - 934\,162\,022\,400\,z^3 + 3\,979\,610\,611\,200\,z^2 + \right.\right.\right. $$

$$ \left.\left.\left. 3\,903\,559\,921\,800\,z + 85\,390\,373\,289\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$

$$ 4\sqrt{z}\,\left(16\,777\,216\,z^6 - 1\,148\,190\,720\,z^5 + 34\,856\,632\,320\,z^4 - 490\,510\,540\,800\,z^3 + 2\,354\,891\,616\,000\,z^2 - \right. $$

$$ 37\,083\,819\,257\,100\,z + 256\,171\,119\,868\,125\Big) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(134\,217\,728\,z^7 - 9\,135\,194\,112\,z^6 + \right. $$

$$ 275\,266\,928\,640\,z^5 - 3\,808\,685\,260\,800\,z^4 + 16\,978\,477\,824\,000\,z^3 + 20\,651\,091\,199\,200\,z^2 - $$

$$ \left.\left.\left. 257\,634\,954\,838\,800\,z + 768\,513\,359\,604\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(6\,424\,740\,504\,000\,\sqrt{2}\; z^{11/4}\right) $$

07.22.03.a8a6.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{9}{2}, -\frac{19}{4}; z\right) = -\frac{105\left(\left(32\,z^2 + 816\,z + 495\right)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\;(52\,z + 165)\cosh\left(2\sqrt{z}\right)\right)}{2432\,z^{7/2}} $$

07.22.03.a8a7.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{105\left(6\sqrt{z}\;(52\,z - 165)\cos\left(2\sqrt{z}\right) + \left(32\,z^2 - 816\,z + 495\right)\sin\left(2\sqrt{z}\right)\right)}{2432\,z^{7/2}} $$

07.22.03.a8a8.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},-\frac{17}{4};z\right)=$$
$$\left(\left(4z\left(16\,777\,216z^6+681\,574\,400z^5+14\,589\,296\,640z^4+155\,112\,652\,800z^3+536\,674\,233\,600z^2-647\,595\,194\,400z+\right.\right.\right.$$
$$\left.\left.\left.7\,319\,174\,853\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(8\,388\,608z^6+346\,030\,080z^5+7\,521\,730\,560z^4+\right.\right.\right.$$
$$\left.\left.\left.82\,785\,484\,800z^3+334\,336\,464\,000z^2+2\,239\,600\,047\,300z+21\,957\,524\,560\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.$$
$$\left(67\,108\,864z^7+2\,743\,074\,816z^6+59\,064\,975\,360z^5+636\,228\,403\,200z^4+2\,330\,875\,008\,000z^3-1\,630\,980\,489\,600\right.$$
$$\left.\left.z^2-19\,265\,957\,033\,400z-65\,872\,573\,680\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(917\,820\,072\,000\sqrt{2}\,z^{11/4}\right)$$

07.22.03.a8a9.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},-\frac{17}{4};-z\right)=$$
$$\left(\left(4z\left(16\,777\,216z^6-681\,574\,400z^5+14\,589\,296\,640z^4-155\,112\,652\,800z^3+536\,674\,233\,600z^2+647\,595\,194\,400z+\right.\right.\right.$$
$$\left.\left.\left.7\,319\,174\,853\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(8\,388\,608z^6-346\,030\,080z^5+7\,521\,730\,560z^4-\right.\right.\right.$$
$$\left.\left.\left.82\,785\,484\,800z^3+334\,336\,464\,000z^2-2\,239\,600\,047\,300z+21\,957\,524\,560\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.$$
$$\left(67\,108\,864z^7-2\,743\,074\,816z^6+59\,064\,975\,360z^5-636\,228\,403\,200z^4+2\,330\,875\,008\,000z^3+1\,630\,980\,489\,600\right.$$
$$\left.\left.z^2-19\,265\,957\,033\,400z+65\,872\,573\,680\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(917\,820\,072\,000\sqrt{2}\,z^{11/4}\right)$$

07.22.03.a8aa.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},-\frac{15}{4};z\right)=\frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right)-3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.a8ab.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},-\frac{15}{4};-z\right)=\frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right)+3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.a8ac.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{53\,989\,416\,000\sqrt{2}\,z^{11/4}}\left(\left(4z\left(8\,388\,608z^6+112\,721\,920z^5+1\,450\,475\,520z^4+10\,994\,227\,200z^3+29\,152\,540\,800z^2-\right.\right.\right.$$
$$\left.\left.\left.33\,978\,760\,200z+236\,102\,414\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4\,194\,304z^6+58\,982\,400z^5+767\,508\,480z^4+\right.\right.\right.$$
$$\left.\left.\left.6\,093\,849\,600z^3+20\,540\,520\,000z^2+32\,979\,384\,900z+708\,307\,243\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.$$
$$\left(33\,554\,432z^7+459\,276\,288z^6+5\,927\,731\,200z^5+45\,665\,280\,000z^4+131\,326\,272\,000z^3-\right.$$
$$\left.\left.59\,441\,104\,800z^2-503\,685\,151\,200z-2\,124\,921\,731\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a8ad.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{53\,989\,416\,000\sqrt{2}\,z^{11/4}}\left(\left(4z\left(8\,388\,608z^6-112\,721\,920z^5+1\,450\,475\,520z^4-10\,994\,227\,200z^3+29\,152\,540\,800z^2+\right.\right.$$
$$\left.33\,978\,760\,200z+236\,102\,414\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4\,194\,304z^6-58\,982\,400z^5+767\,508\,480z^4-\right.$$
$$\left.6\,093\,849\,600z^3+20\,540\,520\,000z^2-32\,979\,384\,900z+708\,307\,243\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(33\,554\,432z^7-459\,276\,288z^6+5\,927\,731\,200z^5-45\,665\,280\,000z^4+131\,326\,272\,000z^3+\right.$$
$$\left.\left.59\,441\,104\,800z^2-503\,685\,151\,200z+2\,124\,921\,731\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a8ae.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{85\,275\,590\,400z^{7/2}}\left(e^{-2\sqrt{z}}\left(-33\,554\,432e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{29/4}-33\,554\,432e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{29/4}+\right.\right.$$
$$33\,554\,432e^{4\sqrt{z}}z^7-33\,554\,432z^7+8\,388\,608e^{4\sqrt{z}}z^{13/2}+8\,388\,608z^{13/2}+6\,291\,456e^{4\sqrt{z}}z^6-6\,291\,456z^6+$$
$$7\,864\,320e^{4\sqrt{z}}z^{11/2}+7\,864\,320z^{11/2}+13\,762\,560e^{4\sqrt{z}}z^5-13\,762\,560z^5+30\,965\,760e^{4\sqrt{z}}z^{9/2}+$$
$$30\,965\,760z^{9/2}+85\,155\,840e^{4\sqrt{z}}z^4-85\,155\,840z^4+276\,756\,480e^{4\sqrt{z}}z^{7/2}+276\,756\,480z^{7/2}+$$
$$1\,037\,836\,800e^{4\sqrt{z}}z^3-1\,037\,836\,800z^3+4\,410\,806\,400e^{4\sqrt{z}}z^{5/2}+4\,410\,806\,400z^{5/2}+20\,951\,330\,400e^{4\sqrt{z}}z^2-$$
$$20\,951\,330\,400z^2+109\,994\,484\,600e^{4\sqrt{z}}z^{3/2}+109\,994\,484\,600z^{3/2}-416\,821\,204\,800e^{4\sqrt{z}}z+$$
$$\left.416\,821\,204\,800z+542\,735\,943\,750e^{4\sqrt{z}}\sqrt{z}+542\,735\,943\,750\sqrt{z}-271\,367\,971\,875e^{4\sqrt{z}}+271\,367\,971\,875\right)\Bigg)$$

07.22.03.a8af.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},-\frac{11}{4};-z\right)=\frac{1}{42\,637\,795\,200z^{7/2}}\left(-67\,108\,864\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{29/4}-\right.$$
$$2\left(4\,194\,304z^6-3\,932\,160z^5+15\,482\,880z^4-138\,378\,240z^3+2\,205\,403\,200z^2-54\,997\,242\,300z+271\,367\,971\,875\right)$$
$$\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(33\,554\,432z^7-6\,291\,456z^6+13\,762\,560z^5-85\,155\,840z^4+\right.$$
$$\left.\left.1\,037\,836\,800z^3-20\,951\,330\,400z^2-416\,821\,204\,800z+271\,367\,971\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8ag.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{9}{2},-\frac{9}{4};z\right)=\frac{1}{4\,153\,032\,000\sqrt{2}\,z^{11/4}}\left(\left(4z\left(-4\,194\,304z^6+57\,671\,680z^5+236\,912\,640z^4+1\,079\,808\,000z^3+2\,004\,537\,600z^2-1\,911\,848\,400z+8\,744\,533\,875\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2\,097\,152z^6-27\,525\,120z^5-132\,956\,160z^4-637\,977\,600z^3-1\,546\,776\,000z^2+\right. $$
$$ \left.738\,668\,700z-26\,233\,601\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,777\,216z^7-226\,492\,416z^6-998\,768\,640z^5-\right. $$
$$ \left.\left.\left.4\,615\,372\,800z^4-9\,580\,032\,000z^3+3\,439\,497\,600z^2+12\,774\,623\,400z+78\,700\,804\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8ah.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{9}{2},-\frac{9}{4};-z\right)=\frac{1}{4\,153\,032\,000\sqrt{2}\,z^{11/4}}\left(\left(-4z\left(4\,194\,304z^6+57\,671\,680z^5-236\,912\,640z^4+1\,079\,808\,000z^3-2\,004\,537\,600z^2-1\,911\,848\,400z-8\,744\,533\,875\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2\,097\,152z^6+27\,525\,120z^5-132\,956\,160z^4+637\,977\,600z^3-1\,546\,776\,000z^2-\right. $$
$$ \left.738\,668\,700z-26\,233\,601\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-16\,777\,216z^7-226\,492\,416z^6+998\,768\,640z^5-\right. $$
$$ \left.\left.\left.4\,615\,372\,800z^4+9\,580\,032\,000z^3+3\,439\,497\,600z^2-12\,774\,623\,400z+78\,700\,804\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8ai.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{9}{2},-\frac{7}{4};z\right)= $$
$$ \frac{1}{7\,752\,326\,400z^{7/2}}\left(e^{-2\sqrt{z}}\left(-8\,388\,608e^{4\sqrt{z}}z^7+8\,388\,608z^7-2\,097\,152e^{4\sqrt{z}}z^{13/2}-2\,097\,152z^{13/2}+524\,288e^{2\sqrt{z}}\sqrt{2\pi}\right.\right. $$
$$ (16z-435)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{25/4}+524\,288e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-435)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{25/4}+226\,492\,416e^{4\sqrt{z}}z^6- $$
$$ 226\,492\,416z^6+55\,050\,240e^{4\sqrt{z}}z^{11/2}+55\,050\,240z^{11/2}+39\,321\,600e^{4\sqrt{z}}z^5-39\,321\,600z^5+ $$
$$ 45\,711\,360e^{4\sqrt{z}}z^{9/2}+45\,711\,360z^{9/2}+72\,253\,440e^{4\sqrt{z}}z^4-72\,253\,440z^4+141\,281\,280e^{4\sqrt{z}}z^{7/2}+ $$
$$ 141\,281\,280z^{7/2}+319\,334\,400e^{4\sqrt{z}}z^3-319\,334\,400z^3+778\,377\,600e^{4\sqrt{z}}z^{5/2}+778\,377\,600z^{5/2}+ $$
$$ 1\,816\,214\,400e^{4\sqrt{z}}z^2-1\,816\,214\,400z^2+2\,481\,078\,600e^{4\sqrt{z}}z^{3/2}+2\,481\,078\,600z^{3/2}-15\,713\,497\,800e^{4\sqrt{z}}z+ $$
$$ \left.\left.15\,713\,497\,800z+21\,709\,437\,750e^{4\sqrt{z}}\sqrt{z}+21\,709\,437\,750\sqrt{z}-10\,854\,718\,875e^{4\sqrt{z}}+10\,854\,718\,875\right)\right) $$

07.22.03.a8aj.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{9}{2},-\frac{7}{4};-z\right)=\frac{1}{3\,876\,163\,200z^{7/2}}\left(1\,048\,576\sqrt{\pi}\,(16z+435)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{25/4}+\right. $$
$$ 2\left(1\,048\,576z^6+27\,525\,120z^5-22\,855\,680z^4+70\,640\,640z^3-389\,188\,800z^2+1\,240\,539\,300z-10\,854\,718\,875\right) $$
$$ \cos\left(2\sqrt{z}\right)\sqrt{z}-\left(8\,388\,608z^7+226\,492\,416z^6-39\,321\,600z^5+72\,253\,440z^4-\right. $$
$$ \left.\left.319\,334\,400z^3+1\,816\,214\,400z^2+15\,713\,497\,800z-10\,854\,718\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a8ak.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{9}{2},-\frac{5}{4};z\right)=\frac{1}{1\,384\,344\,000\sqrt{2}\,z^{11/4}}$$
$$\left(\left(4z\left(2\,097\,152z^6-85\,852\,160z^5+380\,436\,480z^4+520\,243\,200z^3+572\,083\,200z^2-370\,477\,800z+1\,140\,591\,375\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1\,048\,576z^6-42\,270\,720z^5+165\,150\,720z^4+319\,104\,000z^3+432\,432\,000z^2-\right.$$
$$459\,666\,900z+3\,421\,774\,125\left.\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-8\,388\,608z^7+341\,311\,488z^6+1\,439\,170\,560z^5-\right.$$
$$\left.\left.\left.2\,342\,707\,200z^4-2\,927\,232\,000z^3+933\,055\,200z^2+576\,298\,800z+10\,265\,322\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8al.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{9}{2},-\frac{5}{4};-z\right)=\frac{1}{1\,384\,344\,000\sqrt{2}\,z^{11/4}}$$
$$\left(\left(4z\left(2\,097\,152z^6+85\,852\,160z^5+380\,436\,480z^4-520\,243\,200z^3+572\,083\,200z^2+370\,477\,800z+1\,140\,591\,375\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1\,048\,576z^6+42\,270\,720z^5+165\,150\,720z^4-319\,104\,000z^3+432\,432\,000z^2+\right.$$
$$459\,666\,900z+3\,421\,774\,125\left.\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(8\,388\,608z^7+341\,311\,488z^6+1\,439\,170\,560z^5-\right.$$
$$\left.\left.\left.2\,342\,707\,200z^4+2\,927\,232\,000z^3+933\,055\,200z^2-576\,298\,800z+10\,265\,322\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8am.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{9}{2},-\frac{3}{4};z\right)=\frac{1}{1\,107\,475\,200z^{7/2}}$$
$$\left(e^{-2\sqrt{z}}\left(1\,048\,576e^{4\sqrt{z}}z^7-1\,048\,576z^7+262\,144e^{4\sqrt{z}}z^{13/2}+262\,144z^{13/2}-56\,819\,712e^{4\sqrt{z}}z^6+56\,819\,712z^6-\right.\right.$$
$$14\,008\,320e^{4\sqrt{z}}z^{11/2}-14\,008\,320z^{11/2}-4096e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-13\,920z+119\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}-$$
$$4096e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-13\,920z+119\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+479\,723\,520e^{4\sqrt{z}}z^5-479\,723\,520z^5+$$
$$110\,100\,480e^{4\sqrt{z}}z^{9/2}+110\,100\,480z^{9/2}+71\,147\,520e^{4\sqrt{z}}z^4-71\,147\,520z^4+70\,871\,040e^{4\sqrt{z}}z^{7/2}+$$
$$70\,871\,040z^{7/2}+88\,704\,000e^{4\sqrt{z}}z^3-88\,704\,000z^3+119\,750\,400e^{4\sqrt{z}}z^{5/2}+119\,750\,400z^{5/2}+$$
$$134\,719\,200e^{4\sqrt{z}}z^2-134\,719\,200z^2-16\,216\,200e^{4\sqrt{z}}z^{3/2}-16\,216\,200z^{3/2}-681\,080\,400e^{4\sqrt{z}}z+$$
$$\left.\left.681\,080\,400z+1\,033\,782\,750e^{4\sqrt{z}}\sqrt{z}+1\,033\,782\,750\sqrt{z}-516\,891\,375e^{4\sqrt{z}}+516\,891\,375\right)\right)$$

07.22.03.a8an.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{9}{2},-\frac{3}{4};-z\right)=\frac{1}{553\,737\,600z^{7/2}}\left(-8192\sqrt{\pi}\left(256z^2+13\,920z+119\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4}-\right.$$
$$2\left(131\,072z^6+7\,004\,160z^5+55\,050\,240z^4-35\,435\,520z^3+59\,875\,200z^2+8\,108\,100z+516\,891\,375\right)$$
$$\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(1\,048\,576z^7+56\,819\,712z^6+479\,723\,520z^5-71\,147\,520z^4+\right.$$
$$\left.\left.88\,704\,000z^3-134\,719\,200z^2-681\,080\,400z+516\,891\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8ao.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{9}{2}, -\frac{1}{4}; z\right) = \frac{1}{1\,384\,344\,000\,\sqrt{2}\,z^{11/4}} $$
$$ \left(\left(-4\,z\left(1\,048\,576\,z^6 - 71\,434\,240\,z^5 + 929\,648\,640\,z^4 - 1\,537\,228\,800\,z^3 - 465\,638\,400\,z^2 + 146\,361\,600\,z - 300\,155\,625\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(524\,288\,z^6 - 35\,389\,440\,z^5 + 443\,381\,760\,z^4 - 531\,993\,600\,z^3 - 266\,112\,000\,z^2 + \right. $$
$$ \left. 267\,567\,300\,z - 900\,466\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(4\,194\,304\,z^7 - 284\,688\,384\,z^6 + 3\,648\,798\,720\,z^5 - \right. $$
$$ \left.\left. \left. 5\,323\,161\,600\,z^4 - 2\,395\,008\,000\,z^3 + 618\,710\,400\,z^2 - 288\,149\,400\,z + 2\,701\,400\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8ap.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{9}{2}, -\frac{1}{4}; -z\right) = \frac{1}{1\,384\,344\,000\,\sqrt{2}\,z^{11/4}} $$
$$ \left(\left(-4\,z\left(1\,048\,576\,z^6 + 71\,434\,240\,z^5 + 929\,648\,640\,z^4 + 1\,537\,228\,800\,z^3 - 465\,638\,400\,z^2 - 146\,361\,600\,z - 300\,155\,625\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(524\,288\,z^6 + 35\,389\,440\,z^5 + 443\,381\,760\,z^4 + 531\,993\,600\,z^3 - 266\,112\,000\,z^2 - \right. $$
$$ \left. 267\,567\,300\,z - 900\,466\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-4\,194\,304\,z^7 - 284\,688\,384\,z^6 - 3\,648\,798\,720\,z^5 - \right. $$
$$ \left.\left. \left. 5\,323\,161\,600\,z^4 + 2\,395\,008\,000\,z^3 + 618\,710\,400\,z^2 + 288\,149\,400\,z + 2\,701\,400\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8aq.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{9}{2}, \frac{1}{4}; z\right) = \frac{1}{1\,107\,475\,200\,z^{7/2}} $$
$$ \left(e^{-2\sqrt{z}}\left(-262\,144\,e^{4\sqrt{z}}\,z^7 + 262\,144\,z^7 - 65\,536\,e^{4\sqrt{z}}\,z^{13/2} - 65\,536\,z^{13/2} + 21\,331\,968\,e^{4\sqrt{z}}\,z^6 - 21\,331\,968\,z^6 + \right. $$
$$ 5\,283\,840\,e^{4\sqrt{z}}\,z^{11/2} + 5\,283\,840\,z^{11/2} - 363\,586\,560\,e^{4\sqrt{z}}\,z^5 + 363\,586\,560\,z^5 - 87\,102\,720\,e^{4\sqrt{z}}\,z^{9/2} - $$
$$ 87\,102\,720\,z^{9/2} + 64\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3 - 334\,080\,z^2 + 5\,742\,000\,z - 17\,584\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4} + $$
$$ 64\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3 - 334\,080\,z^2 + 5\,742\,000\,z - 17\,584\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4} + $$
$$ 1\,064\,632\,320\,e^{4\sqrt{z}}\,z^4 - 1\,064\,632\,320\,z^4 + 212\,797\,440\,e^{4\sqrt{z}}\,z^{7/2} + 212\,797\,440\,z^{7/2} + $$
$$ 106\,444\,800\,e^{4\sqrt{z}}\,z^3 - 106\,444\,800\,z^3 + 66\,528\,000\,e^{4\sqrt{z}}\,z^{5/2} + 66\,528\,000\,z^{5/2} + $$
$$ 26\,611\,200\,e^{4\sqrt{z}}\,z^2 - 26\,611\,200\,z^2 - 41\,164\,200\,e^{4\sqrt{z}}\,z^{3/2} - 41\,164\,200\,z^{3/2} - 101\,039\,400\,e^{4\sqrt{z}}\,z + $$
$$ \left. 101\,039\,400\,z + 182\,432\,250\,e^{4\sqrt{z}}\,\sqrt{z} + 182\,432\,250\,\sqrt{z} - 91\,216\,125\,e^{4\sqrt{z}} + 91\,216\,125\right)\Big) $$

07.22.03.a8ar.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{9}{2},\frac{1}{4};-z\right)=\frac{1}{553\,737\,600\,z^{7/2}}\left(128\sqrt{\pi}\,\left(4096z^3+334\,080z^2+5\,742\,000z+17\,584\,875\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}+\right.$$
$$2\left(32\,768z^6+2\,641\,920z^5+43\,551\,360z^4+106\,398\,720z^3-33\,264\,000z^2-20\,582\,100z-91\,216\,125\right)$$
$$\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(262\,144z^7+21\,331\,968z^6+363\,586\,560z^5+1\,064\,632\,320z^4-\right.$$
$$\left.\left.106\,444\,800z^3+26\,611\,200z^2+101\,039\,400z-91\,216\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a8as.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{9}{2},\frac{3}{4};z\right)=\frac{1}{9\,690\,408\,000\sqrt{2}\,z^{11/4}}$$
$$\left(\left(4z\left(524\,288z^6-49\,971\,200z^5+1\,079\,531\,520z^4-5\,081\,865\,600z^3+2\,560\,924\,800z^2-107\,692\,200z+140\,072\,625\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(262\,144z^6-24\,821\,760z^5+524\,590\,080z^4-2\,242\,497\,600z^3+349\,272\,000z^2-\right.$$
$$243\,035\,100z+420\,217\,875\left)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-2\,097\,152z^7+199\,360\,512z^6-4\,268\,974\,080z^5+\right.\right.$$
$$\left.\left.\left.19\,322\,150\,400z^4-6\,519\,744\,000z^3+896\,464\,800z^2-488\,980\,800z+1\,260\,653\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8at.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{9}{2},\frac{3}{4};-z\right)=\frac{1}{9\,690\,408\,000\sqrt{2}\,z^{11/4}}$$
$$\left(\left(4z\left(524\,288z^6+49\,971\,200z^5+1\,079\,531\,520z^4+5\,081\,865\,600z^3+2\,560\,924\,800z^2+107\,692\,200z+140\,072\,625\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(262\,144z^6+24\,821\,760z^5+524\,590\,080z^4+2\,242\,497\,600z^3+349\,272\,000z^2+\right.$$
$$243\,035\,100z+420\,217\,875\left)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(2\,097\,152z^7+199\,360\,512z^6+4\,268\,974\,080z^5+\right.\right.$$
$$\left.\left.\left.19\,322\,150\,400z^4+6\,519\,744\,000z^3+896\,464\,800z^2+488\,980\,800z+1\,260\,653\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8au.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{9}{2},\frac{5}{4};z\right)=\frac{1}{4\,429\,900\,800\,z^{7/2}}$$
$$\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536z^4-7\,127\,040z^3+183\,744\,000z^2-1\,125\,432\,000z+896\,828\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}+\right.\right.$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536z^4-7\,127\,040z^3+183\,744\,000z^2-1\,125\,432\,000z+896\,828\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}-$$
$$4\left(-16\,384z^7+4096z^{13/2}+1\,778\,688z^6-441\,600z^{11/2}-45\,608\,640z^5+11\,081\,520z^{9/2}+273\,434\,220z^4-\right.$$
$$61\,082\,415z^{7/2}-186\,278\,400z^3+19\,958\,400z^{5/2}+1\,663\,200z^2-8\,731\,800z^{3/2}+4\,989\,600z+$$
$$14\,033\,250\sqrt{z}+e^{4\sqrt{z}}\,\left(16\,384z^7+4096z^{13/2}-1\,778\,688z^6-441\,600z^{11/2}+45\,608\,640z^5+\right.$$
$$11\,081\,520z^{9/2}-273\,434\,220z^4-61\,082\,415z^{7/2}+186\,278\,400z^3+19\,958\,400z^{5/2}-$$
$$\left.\left.\left.\left.1\,663\,200z^2-8\,731\,800z^{3/2}-4\,989\,600z+14\,033\,250\sqrt{z}-7\,016\,625\right)+7\,016\,625\right)\right)\right) $$

07.22.03.a8av.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{9}{2}, \frac{5}{4}; -z\right) = $$

$$ \frac{1}{1\,107\,475\,200\, z^{7/2}} \left(\sqrt{\pi}\, \left(65\,536\, z^4 + 7\,127\,040\, z^3 + 183\,744\,000\, z^2 + 1\,125\,432\,000\, z + 896\,828\,625\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{13/4} + \right. $$

$$ 2\left(\sqrt{z}\, \left(4096\, z^6 + 441\,600\, z^5 + 11\,081\,520\, z^4 + 61\,082\,415\, z^3 + 19\,958\,400\, z^2 + 8\,731\,800\, z + 14\,033\,250\right) \cos\left(2\sqrt{z}\right) - \right. $$

$$ \left(16\,384\, z^7 + 1\,778\,688\, z^6 + 45\,608\,640\, z^5 + 273\,434\,220\, z^4 + \right. $$

$$ \left. \left. \left. 186\,278\,400\, z^3 + 1\,663\,200\, z^2 - 4\,989\,600\, z + 7\,016\,625\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8aw.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{9}{2}, \frac{7}{4}; z\right) = \frac{1}{29\,071\,224\,000\sqrt{2}\, z^{11/4}} $$

$$ \left(\left(4\, z \left(262\,144\, z^6 - 32\,112\,640\, z^5 + 969\,615\,360\, z^4 - 7\,530\,278\,400\, z^3 + 9\,818\,946\,900\, z^2 + 157\,172\,400\, z - 114\,604\,875\right) \right. \right. $$

$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\, \left(131\,072\, z^6 - 15\,974\,400\, z^5 + 474\,992\,640\, z^4 - 3\,487\,579\,200\, z^3 + 3\,204\,258\,750\, z^2 + \right. $$

$$ \left. 406\,028\,700\, z - 343\,814\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(1\,048\,576\, z^7 - 128\,188\,416\, z^6 + 3\,846\,758\,400\, z^5 - \right. $$

$$ \left. \left. 29\,199\,744\,000\, z^4 + 33\,043\,626\,000\, z^3 + 3\,772\,137\,600\, z^2 - 1\,021\,620\,600\, z + 1\,031\,443\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2 \right) \Gamma\left(\frac{3}{4}\right)^2 \right) $$

07.22.03.a8ax.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{9}{2}, \frac{7}{4}; -z\right) = \frac{1}{29\,071\,224\,000\sqrt{2}\, z^{11/4}} $$

$$ \left(\left(4\, z \left(262\,144\, z^6 + 32\,112\,640\, z^5 + 969\,615\,360\, z^4 + 7\,530\,278\,400\, z^3 + 9\,818\,946\,900\, z^2 - 157\,172\,400\, z - 114\,604\,875\right) \right. \right. $$

$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\, \left(131\,072\, z^6 + 15\,974\,400\, z^5 + 474\,992\,640\, z^4 + 3\,487\,579\,200\, z^3 + 3\,204\,258\,750\, z^2 - \right. $$

$$ \left. 406\,028\,700\, z - 343\,814\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(1\,048\,576\, z^7 + 128\,188\,416\, z^6 + 3\,846\,758\,400\, z^5 + \right. $$

$$ \left. \left. 29\,199\,744\,000\, z^4 + 33\,043\,626\,000\, z^3 - 3\,772\,137\,600\, z^2 - 1\,021\,620\,600\, z - 1\,031\,443\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2 \right) \Gamma\left(\frac{3}{4}\right)^2 \right) $$

07.22.03.a8ay.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{9}{2},\frac{9}{4};z\right)= \frac{1}{283\,513\,651\,200\,z^{7/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-142\,540\,800\,z^4+4\,899\,840\,000\,z^3-45\,017\,280\,000\,z^2+71\,746\,290\,000\,z+11\,658\,772\,125\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-142\,540\,800\,z^4+4\,899\,840\,000\,z^3-45\,017\,280\,000\,z^2+71\,746\,290\,000\,z+11\,658\,772\,125\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-4\left(-262\,144\,z^7+65\,536\,z^{13/2}+35\,586\,048\,z^6-8\,847\,360\,z^{11/2}-1\,218\,385\,920\,z^5+298\,129\,920\,z^{9/2}+11\,038\,590\,720\,z^4-2\,557\,203\,840\,z^{7/2}-16\,246\,484\,100\,z^3+2\,717\,408\,925\,z^{5/2}-3\,832\,012\,800\,z^2+824\,947\,200\,z^{3/2}+79\,833\,600\,z-498\,960\,000\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^7+65\,536\,z^{13/2}-35\,586\,048\,z^6-8\,847\,360\,z^{11/2}+1\,218\,385\,920\,z^5+298\,129\,920\,z^{9/2}-11\,038\,590\,720\,z^4-2\,557\,203\,840\,z^{7/2}+16\,246\,484\,100\,z^3+2\,717\,408\,925\,z^{5/2}+3\,832\,012\,800\,z^2+824\,947\,200\,z^{3/2}-79\,833\,600\,z-498\,960\,000\sqrt{z}+249\,480\,000\right)-249\,480\,000\right)\right)\right) $$

07.22.03.a8az.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{9}{2},\frac{9}{4};-z\right)= \frac{1}{70\,878\,412\,800\,z^{7/2}}\left(\sqrt{\pi}\left(1\,048\,576\,z^5+142\,540\,800\,z^4+4\,899\,840\,000\,z^3+45\,017\,280\,000\,z^2+71\,746\,290\,000\,z-11\,658\,772\,125\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+2\left(\sqrt{z}\left(65\,536\,z^6+8\,847\,360\,z^5+298\,129\,920\,z^4+2\,557\,203\,840\,z^3+2\,717\,408\,925\,z^2-824\,947\,200\,z-498\,960\,000\right)\cos\left(2\sqrt{z}\right)-4\left(65\,536\,z^7+8\,896\,512\,z^6+304\,596\,480\,z^5+2\,759\,647\,680\,z^4+4\,061\,621\,025\,z^3-958\,003\,200\,z^2-19\,958\,400\,z-62\,370\,000\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8b0.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{9}{2},\frac{11}{4};z\right)= \left(\left(2z\left(1\,048\,576\,z^6-156\,958\,720\,z^5+6\,087\,843\,840\,z^4-65\,911\,104\,000\,z^3+138\,572\,715\,600\,z^2+19\,823\,836\,725\,z+1\,440\,747\,000\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(1\,048\,576\,z^6-156\,303\,360\,z^5+5\,991\,505\,920\,z^4-62\,357\,644\,800\,z^3+105\,941\,682\,000\,z^2+45\,640\,338\,975\,z+8\,644\,482\,000\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\left(1\,048\,576\,z^7-156\,696\,576\,z^6+6\,049\,013\,760\,z^5-64\,448\,524\,800\,z^4+124\,203\,618\,000\,z^3+37\,346\,688\,225\,z^2+10\,373\,378\,400\,z-3\,241\,680\,750\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(182\,733\,408\,000\sqrt{2}\,z^{11/4}\right) $$

07.22.03.a8b1.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},\frac{11}{4};-z\right)=$$

$$\left(\left(2z\left(1\,048\,576z^6+156\,958\,720z^5+6\,087\,843\,840z^4+65\,911\,104\,000z^3+138\,572\,715\,600z^2-19\,823\,836\,725z+\right.\right.\right.$$
$$\left.1\,440\,747\,000\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(1\,048\,576z^6+156\,303\,360z^5+5\,991\,505\,920z^4+\right.$$
$$\left.62\,357\,644\,800z^3+105\,941\,682\,000z^2-45\,640\,338\,975z+8\,644\,482\,000\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\left(1\,048\,576z^7+156\,696\,576z^6+6\,049\,013\,760z^5+64\,448\,524\,800z^4+124\,203\,618\,000z^3-\right.$$
$$\left.\left.37\,346\,688\,225z^2+10\,373\,378\,400z+3\,241\,680\,750\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(182\,733\,408\,000\sqrt{2}\;z^{11/4}\right)$$

07.22.03.a8b2.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{12\,096\,582\,451\,200z^{7/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-2\,736\,783\,360z^5+117\,596\,160\,000z^4-1\,440\,552\,960\,000z^3+\right.\right.\right.$$
$$\left.3\,443\,821\,920\,000z^2+1\,119\,242\,124\,000z+524\,644\,745\,625\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{5/4}+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-2\,736\,783\,360z^5+117\,596\,160\,000z^4-1\,440\,552\,960\,000z^3+\right.$$
$$\left.3\,443\,821\,920\,000z^2+1\,119\,242\,124\,000z+524\,644\,745\,625\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{5/4}-$$
$$4\left(-4\,194\,304z^7+1\,048\,576z^{13/2}+683\,409\,408z^6-170\,065\,920z^{11/2}-29\,272\,473\,600z^5+7\,193\,272\,320z^{9/2}+\right.$$
$$354\,895\,902\,720z^4-83\,740\,976\,640z^{7/2}-803\,881\,108\,800z^3+152\,870\,533\,200z^{5/2}-349\,593\,621\,300z^2+$$
$$105\,678\,012\,825z^{3/2}-183\,936\,614\,400z+38\,320\,128\,000\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^7+1\,048\,576z^{13/2}-\right.$$
$$683\,409\,408z^6-170\,065\,920z^{11/2}+29\,272\,473\,600z^5+7\,193\,272\,320z^{9/2}-354\,895\,902\,720z^4-$$
$$83\,740\,976\,640z^{7/2}+803\,881\,108\,800z^3+152\,870\,533\,200z^{5/2}+349\,593\,621\,300z^2+$$
$$\left.\left.\left.\left.105\,678\,012\,825z^{3/2}+183\,936\,614\,400z+38\,320\,128\,000\sqrt{z}-19\,160\,064\,000\right)+19\,160\,064\,000\right)\right)\right)$$

07.22.03.a8b3.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{3\,024\,145\,612\,800z^{7/2}}\left(\sqrt{\pi}\;z^{5/4}\left(16\,777\,216z^6+2\,736\,783\,360z^5+117\,596\,160\,000z^4+1\,440\,552\,960\,000z^3+\right.\right.$$
$$\left.3\,443\,821\,920\,000z^2-1\,119\,242\,124\,000z+524\,644\,745\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\left(4\left(1\,048\,576z^7+170\,852\,352z^6+7\,318\,118\,400z^5+88\,723\,975\,680z^4+200\,970\,277\,200z^3-\right.\right.$$
$$87\,398\,405\,325z^2+45\,984\,153\,600z+4\,790\,016\,000\Big)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(1\,048\,576z^6+170\,065\,920z^5+\right.$$
$$\left.\left.\left.7\,193\,272\,320z^4+83\,740\,976\,640z^3+152\,870\,533\,200z^2-105\,678\,012\,825z+38\,320\,128\,000\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8b4.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},\frac{15}{4};z\right)=$$

$$\left(\left(2z\left(16\,777\,216z^6-2\,967\,470\,080z^5+140\,595\,363\,840z^4-1\,952\,566\,886\,400z^3+5\,663\,014\,905\,600z^2+1\,622\,722\,701\,600\right.\right.\right.$$
$$\left.z+1\,024\,387\,489\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(16\,777\,216z^6-2\,956\,984\,320z^5+138\,768\,875\,520z^4-\right.$$
$$\left.1\,869\,484\,032\,000z^3+4\,646\,914\,272\,000z^2+3\,112\,342\,833\,600z+2\,473\,811\,715\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\left(16\,777\,216z^7-2\,963\,275\,776z^6+139\,860\,049\,920z^5-1\,918\,546\,329\,600z^4+5\,224\,643\,424\,000z^3+\right.$$
$$\left.\left.\left.2\,484\,775\,893\,600z^2+1\,841\,513\,699\,025z+449\,513\,064\,000\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(6\,910\,645\,248\,000\sqrt{2}\,z^{11/4}\right)$$

07.22.03.a8b5.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},\frac{15}{4};-z\right)=$$

$$\left(\left(2z\left(16\,777\,216z^6+2\,967\,470\,080z^5+140\,595\,363\,840z^4+1\,952\,566\,886\,400z^3+5\,663\,014\,905\,600z^2-\right.\right.\right.$$
$$\left.1\,622\,722\,701\,600z+1\,024\,387\,489\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\sqrt{z}\left(16\,777\,216z^6+2\,956\,984\,320z^5+138\,768\,875\,520z^4+1\,869\,484\,032\,000z^3+4\,646\,914\,272\,000z^2-\right.$$
$$\left.3\,112\,342\,833\,600z+2\,473\,811\,715\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(16\,777\,216z^7+2\,963\,275\,776z^6+\right.$$
$$139\,860\,049\,920z^5+1\,918\,546\,329\,600z^4+5\,224\,643\,424\,000z^3-2\,484\,775\,893\,600z^2+$$
$$\left.\left.\left.1\,841\,513\,699\,025z-449\,513\,064\,000\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(6\,910\,645\,248\,000\sqrt{2}\,z^{11/4}\right)$$

07.22.03.a8b6.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},\frac{17}{4};z\right)=\frac{1}{416\,866\,841\,395\,200z^{7/2}}$$
$$\left(e^{-2\sqrt{z}}\left(-4\left(-67\,108\,864z^7+16\,777\,216z^{13/2}+12\,759\,072\,768z^6-3\,177\,185\,280z^{11/2}-656\,171\,335\,680z^5+\right.\right.\right.$$
$$161\,703\,198\,720z^{9/2}+9\,965\,462\,814\,720z^4-2\,377\,855\,549\,440z^{7/2}-30\,491\,379\,072\,000z^3+$$
$$6\,183\,391\,737\,600z^{5/2}-18\,878\,258\,044\,800z^2+6\,117\,534\,007\,200z^{3/2}-18\,879\,072\,804\,900z+$$
$$6\,441\,596\,209\,125\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864z^7+16\,777\,216z^{13/2}-12\,759\,072\,768z^6-3\,177\,185\,280z^{11/2}+\right.$$
$$656\,171\,335\,680z^5+161\,703\,198\,720z^{9/2}-9\,965\,462\,814\,720z^4-2\,377\,855\,549\,440z^{7/2}+$$
$$30\,491\,379\,072\,000z^3+6\,183\,391\,737\,600z^{5/2}+18\,878\,258\,044\,800z^2+6\,117\,534\,007\,200z^{3/2}+$$
$$\left.18\,879\,072\,804\,900z+6\,441\,596\,209\,125\sqrt{z}+8\,583\,708\,672\,000\right)-8\,583\,708\,672\,000\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(268\,435\,456z^7-51\,086\,622\,720z^6+2\,634\,153\,984\,000z^5-40\,335\,482\,880\,000z^4+\right.$$
$$\left.128\,569\,351\,680\,000z^3+62\,677\,558\,944\,000z^2+58\,760\,211\,510\,000z+23\,609\,013\,553\,125\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(268\,435\,456z^7-51\,086\,622\,720z^6+2\,634\,153\,984\,000z^5-40\,335\,482\,880\,000z^4+\right.$$
$$\left.\left.128\,569\,351\,680\,000z^3+62\,677\,558\,944\,000z^2+58\,760\,211\,510\,000z+23\,609\,013\,553\,125\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a8b7.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},\frac{17}{4};-z\right)=$$
$$\frac{1}{104\,216\,710\,348\,800\,z^{7/2}}\left(\sqrt{\pi}\,\sqrt[4]{z}\,\left(268\,435\,456\,z^7+51\,086\,622\,720\,z^6+2\,634\,153\,984\,000\,z^5+40\,335\,482\,880\,000\,z^4+\right.\right.$$
$$\left.128\,569\,351\,680\,000\,z^3-62\,677\,558\,944\,000\,z^2+58\,760\,211\,510\,000\,z-23\,609\,013\,553\,125\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\left(4\left(16\,777\,216\,z^7+3\,189\,768\,192\,z^6+164\,042\,833\,920\,z^5+2\,491\,365\,703\,680\,z^4+7\,622\,844\,768\,000\,z^3-\right.\right.$$
$$\left.4\,719\,564\,511\,200\,z^2+4\,719\,768\,201\,225\,z-2\,145\,927\,168\,000\right)\sin\left(2\sqrt{z}\right)-$$
$$\sqrt{z}\,\left(16\,777\,216\,z^6+3\,177\,185\,280\,z^5+161\,703\,198\,720\,z^4+2\,377\,855\,549\,440\,z^3+\right.$$
$$\left.\left.\left.6\,183\,391\,737\,600\,z^2-6\,117\,534\,007\,200\,z+6\,441\,596\,209\,125\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8b8.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},\frac{19}{4};z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-54\,777\,610\,240\,z^6+3\,065\,999\,523\,840\,z^5-51\,966\,930\,124\,800\,z^4+192\,165\,885\,849\,600\,z^3+\right.\right.\right.$$
$$\left.83\,976\,045\,753\,600\,z^2+97\,173\,146\,070\,000\,z+40\,397\,645\,413\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(268\,435\,456\,z^7-54\,609\,838\,080\,z^6+3\,032\,214\,405\,120\,z^5-50\,139\,566\,899\,200\,z^4+164\,241\,133\,056\,000\,z^3+\right.$$
$$\left.144\,829\,606\,521\,600\,z^2+188\,506\,027\,710\,000\,z+121\,192\,936\,239\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7-54\,710\,501\,376\,z^6+3\,052\,409\,978\,880\,z^5-51\,221\,333\,606\,400\,z^4+\right.$$
$$\left.\left.\left.180\,275\,977\,728\,000\,z^3+116\,429\,202\,489\,600\,z^2+139\,084\,109\,564\,400\,z+94\,573\,334\,480\,625\right)\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(221\,140\,647\,936\,000\,\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a8b9.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},\frac{19}{4};-z\right)=$$
$$\left(\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+54\,777\,610\,240\,z^6+3\,065\,999\,523\,840\,z^5+51\,966\,930\,124\,800\,z^4+192\,165\,885\,849\,600\,z^3-\right.\right.\right.$$
$$\left.83\,976\,045\,753\,600\,z^2+97\,173\,146\,070\,000\,z-40\,397\,645\,413\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(268\,435\,456\,z^7+54\,609\,838\,080\,z^6+3\,032\,214\,405\,120\,z^5+50\,139\,566\,899\,200\,z^4+164\,241\,133\,056\,000\,z^3-\right.$$
$$\left.144\,829\,606\,521\,600\,z^2+188\,506\,027\,710\,000\,z-121\,192\,936\,239\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+54\,710\,501\,376\,z^6+3\,052\,409\,978\,880\,z^5+51\,221\,333\,606\,400\,z^4+\right.$$
$$\left.\left.\left.180\,275\,977\,728\,000\,z^3-116\,429\,202\,489\,600\,z^2+139\,084\,109\,564\,400\,z-94\,573\,334\,480\,625\right)\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(221\,140\,647\,936\,000\,\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a8ba.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},\frac{21}{4};z\right)=$$

$$\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^7+233\,337\,520\,128\,z^{13/2}-58\,133\,053\,440\,z^6-14\,005\,473\,116\,160\right.\right.\right.$$
$$z^{11/2}+3\,458\,460\,549\,120\,z^5+255\,605\,998\,878\,720\,z^{9/2}-61\,450\,745\,610\,240\,z^4-$$
$$985\,354\,971\,955\,200\,z^{7/2}+207\,815\,376\,384\,000\,z^3-784\,634\,797\,900\,800\,z^{5/2}+258\,671\,335\,507\,200\,z^2-$$
$$1\,141\,197\,232\,190\,400\,z^{3/2}+419\,426\,162\,694\,000\,z-1\,055\,730\,045\,100\,500\sqrt{z}+e^{4\sqrt{z}}$$
$$\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^7-233\,337\,520\,128\,z^{13/2}-58\,133\,053\,440\,z^6+14\,005\,473\,116\,160\,z^{11/2}+\right.$$
$$3\,458\,460\,549\,120\,z^5-255\,605\,998\,878\,720\,z^{9/2}-61\,450\,745\,610\,240\,z^4+985\,354\,971\,955\,200\,z^{7/2}+$$
$$207\,815\,376\,384\,000\,z^3+784\,634\,797\,900\,800\,z^{5/2}+258\,671\,335\,507\,200\,z^2+1\,141\,197\,232\,190\,400\,z^{3/2}+$$
$$\left.\left.\left.419\,426\,162\,694\,000\,z+1\,055\,730\,045\,100\,500\sqrt{z}+306\,917\,176\,190\,625\right)+306\,917\,176\,190\,625\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-934\,155\,386\,880\,z^7+56\,195\,284\,992\,000\,z^6-1\,032\,588\,361\,728\,000\,z^5+\right.$$
$$4\,114\,219\,253\,760\,000\,z^4+2\,674\,242\,514\,944\,000\,z^3+3\,760\,653\,536\,640\,000\,z^2+$$
$$\left.3\,021\,953\,734\,800\,000\,z+306\,917\,176\,190\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-934\,155\,386\,880\,z^7+56\,195\,284\,992\,000\,z^6-1\,032\,588\,361\,728\,000\,z^5+\right.$$
$$4\,114\,219\,253\,760\,000\,z^4+2\,674\,242\,514\,944\,000\,z^3+3\,760\,653\,536\,640\,000\,z^2+$$
$$\left.\left.3\,021\,953\,734\,800\,000\,z+306\,917\,176\,190\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big/\left(12\,555\,048\,399\,667\,200\,z^{17/4}\right)$$

07.22.03.a8bb.01

$${}_1F_2\left(-\frac{15}{4};\frac{9}{2},\frac{21}{4};-z\right)=$$

$$\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^8+934\,155\,386\,880\,z^7+56\,195\,284\,992\,000\,z^6+1\,032\,588\,361\,728\,000\,z^5+4\,114\,219\,253\,760\,000\,z^4-\right.\right.$$
$$\left.2\,674\,242\,514\,944\,000\,z^3+3\,760\,653\,536\,640\,000\,z^2-3\,021\,953\,734\,800\,000\,z+306\,917\,176\,190\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^7+58\,334\,380\,032\,z^6+3\,501\,368\,279\,040\,z^5+63\,901\,499\,719\,680\,z^4+\right.\right.$$
$$246\,338\,742\,988\,800\,z^3-196\,158\,699\,475\,200\,z^2+285\,299\,308\,047\,600\,z-263\,932\,511\,275\,125\left.\right)\sin\left(2\sqrt{z}\right)-$$
$$\left(268\,435\,456\,z^7+58\,133\,053\,440\,z^6+3\,458\,460\,549\,120\,z^5+61\,450\,745\,610\,240\,z^4+\right.$$
$$207\,815\,376\,384\,000\,z^3-258\,671\,335\,507\,200\,z^2+419\,426\,162\,694\,000\,z-$$
$$\left.\left.\left.306\,917\,176\,190\,625\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big/\left(3\,138\,762\,099\,916\,800\,z^{17/4}\right)$$

07.22.03.a8bc.01

$${}_1F_2\left(-\frac{15}{4}; \frac{9}{2}, \frac{23}{4}; z\right) =$$

$$\left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 993\,211\,187\,200\,z^7 + 64\,126\,546\,083\,840\,z^6 - 1\,283\,252\,237\,107\,200\,z^5 + 5\,768\,502\,106\,521\,600\right.\right.\right.$$
$$z^4 + 3\,409\,894\,449\,561\,600\,z^3 + 5\,683\,588\,694\,784\,000\,z^2 + 4\,801\,548\,711\,960\,000\,z - 605\,964\,681\,196\,875\Big)$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4\,294\,967\,296\,z^8 - 990\,526\,832\,640\,z^7 + 63\,513\,003\,294\,720\,z^6 - 1\,244\,791\,465\,574\,400\,z^5 +\right.$$
$$5\,063\,298\,121\,728\,000\,z^4 + 5\,465\,447\,853\,465\,600\,z^3 + 9\,657\,284\,180\,544\,000\,z^2 +$$
$$\left.11\,634\,521\,878\,980\,000\,z - 1\,817\,894\,043\,590\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 - 992\,137\,445\,376\,z^7 + 63\,879\,921\,008\,640\,z^6 - 1\,267\,600\,667\,443\,200\,z^5 +\right.$$
$$5\,470\,990\,221\,312\,000\,z^4 + 4\,451\,695\,253\,913\,600\,z^3 + 7\,333\,830\,158\,054\,400\,z^2 +$$
$$\left.\left.\left.7\,962\,674\,415\,696\,000\,z + 1\,817\,894\,043\,590\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(120\,300\,512\,477\,184\,000\,\sqrt{2}\,z^{17/4}\right)$$

07.22.03.a8bd.01

$${}_1F_2\left(-\frac{15}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) =$$

$$\left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 993\,211\,187\,200\,z^7 + 64\,126\,546\,083\,840\,z^6 + 1\,283\,252\,237\,107\,200\,z^5 + 5\,768\,502\,106\,521\,600\right.\right.\right.$$
$$z^4 - 3\,409\,894\,449\,561\,600\,z^3 + 5\,683\,588\,694\,784\,000\,z^2 - 4\,801\,548\,711\,960\,000\,z - 605\,964\,681\,196\,875\Big)$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4\,294\,967\,296\,z^8 + 990\,526\,832\,640\,z^7 + 63\,513\,003\,294\,720\,z^6 + 1\,244\,791\,465\,574\,400\,z^5 +\right.$$
$$5\,063\,298\,121\,728\,000\,z^4 - 5\,465\,447\,853\,465\,600\,z^3 + 9\,657\,284\,180\,544\,000\,z^2 -$$
$$\left.11\,634\,521\,878\,980\,000\,z - 1\,817\,894\,043\,590\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$2\sqrt{z}\,\left(4\,294\,967\,296\,z^8 + 992\,137\,445\,376\,z^7 + 63\,879\,921\,008\,640\,z^6 + 1\,267\,600\,667\,443\,200\,z^5 +\right.$$
$$5\,470\,990\,221\,312\,000\,z^4 - 4\,451\,695\,253\,913\,600\,z^3 + 7\,333\,830\,158\,054\,400\,z^2 -$$
$$\left.\left.\left.7\,962\,674\,415\,696\,000\,z + 1\,817\,894\,043\,590\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(120\,300\,512\,477\,184\,000\,\sqrt{2}\,z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{15}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.a8be.01

$${}_1F_2\left(-\frac{15}{4}; \frac{11}{2}, -\frac{23}{4}; z\right) =$$

$$\frac{1}{223\,744\,z^{9/2}}\left(945\left(\left(256\,z^3 + 38\,672\,z^2 + 281\,940\,z + 159\,285\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\,\left(512\,z^2 + 13\,912\,z + 31\,857\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8bf.01

$${}_1F_2\left(-\frac{15}{4}; \frac{11}{2}, -\frac{23}{4}; -z\right) =$$

$$-\frac{1}{223\,744\,z^{9/2}}\left(945\left(10\sqrt{z}\,\left(512\,z^2 - 13\,912\,z + 31\,857\right)\cos\left(2\sqrt{z}\right) + \left(256\,z^3 - 38\,672\,z^2 + 281\,940\,z - 159\,285\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8bg.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},-\frac{21}{4};z\right)=$$
$$\left(\left(4z\left(268\,435\,456z^7+20\,719\,861\,760z^6+721\,095\,229\,440z^5+11\,767\,018\,291\,200z^4+62\,321\,514\,393\,600z^3-\right.\right.\right.$$
$$\left.\left.\left.102\,202\,296\,134\,400z^2-1\,024\,684\,479\,472\,500z-23\,311\,571\,907\,999\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(134\,217\,728z^7+10\,443\,816\,960z^6+367\,248\,015\,360z^5+6\,127\,814\,246\,400z^4+35\,585\,028\,864\,000z^3-\right.$$
$$\left.200\,146\,163\,263\,200z^2-16\,394\,951\,671\,560\,000z-69\,934\,715\,723\,998\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left(1\,073\,741\,824z^8+83\,147\,882\,496z^7+2\,905\,520\,209\,920z^6+47\,823\,519\,744\,000z^5+\right.$$
$$262\,352\,369\,664\,000z^4-320\,893\,230\,873\,600z^3+7\,892\,998\,161\,879\,600z^2+$$
$$\left.\left.89\,147\,549\,714\,107\,500z+209\,804\,147\,171\,994\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(94\,229\,527\,392\,000\sqrt{2}\;z^{15/4}\right)$$

07.22.03.a8bh.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},-\frac{21}{4};-z\right)=$$
$$\left(\left(4z\left(268\,435\,456z^7-20\,719\,861\,760z^6+721\,095\,229\,440z^5-11\,767\,018\,291\,200z^4+62\,321\,514\,393\,600z^3+\right.\right.\right.$$
$$\left.\left.\left.102\,202\,296\,134\,400z^2-1\,024\,684\,479\,472\,500z+23\,311\,571\,907\,999\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(134\,217\,728z^7-10\,443\,816\,960z^6+367\,248\,015\,360z^5-6\,127\,814\,246\,400z^4+35\,585\,028\,864\,000z^3+\right.$$
$$\left.200\,146\,163\,263\,200z^2-16\,394\,951\,671\,560\,000z+69\,934\,715\,723\,998\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(1\,073\,741\,824z^8-83\,147\,882\,496z^7+2\,905\,520\,209\,920z^6-47\,823\,519\,744\,000z^5+\right.$$
$$262\,352\,369\,664\,000z^4+320\,893\,230\,873\,600z^3+7\,892\,998\,161\,879\,600z^2-$$
$$\left.\left.89\,147\,549\,714\,107\,500z+209\,804\,147\,171\,994\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(94\,229\,527\,392\,000\sqrt{2}\;z^{15/4}\right)$$

07.22.03.a8bi.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},-\frac{19}{4};z\right)=-\frac{945\left(2\sqrt{z}\left(32z^2+1600z+3885\right)\cosh\left(2\sqrt{z}\right)-\left(784z^2+6780z+3885\right)\sinh\left(2\sqrt{z}\right)\right)}{9728z^{9/2}}$$

07.22.03.a8bj.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},-\frac{19}{4};-z\right)=-\frac{945\left(2\sqrt{z}\left(32z^2-1600z+3885\right)\cos\left(2\sqrt{z}\right)+\left(-784z^2+6780z-3885\right)\sin\left(2\sqrt{z}\right)\right)}{9728z^{9/2}}$$

07.22.03.a8bk.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{11}{2},-\frac{17}{4};z\right)= \left(\left(4z\left(134\,217\,728z^7+6\,207\,569\,920z^6+154\,227\,179\,520z^5+1\,955\,148\,595\,200z^4+8\,426\,834\,380\,800z^3-\right.\right.\right. $$
$$ \left.\left.\left.12\,245\,436\,403\,200z^2-29\,276\,699\,413\,500z-1\,793\,197\,839\,076\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$
$$ 4\sqrt{z}\left(67\,108\,864z^7+3\,145\,728\,000z^6+79\,166\,177\,280z^5+1\,031\,764\,377\,600z^4+5\,000\,510\,592\,000z^3- \right. $$
$$ \left. 235\,489\,161\,600z^2-1\,112\,514\,577\,713\,000z-5\,379\,593\,517\,230\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- $$
$$ \left(536\,870\,912z^8+24\,964\,497\,408z^7+623\,326\,003\,200z^6+7\,985\,509\,171\,200z^5+35\,959\,182\,336\,000z^4- \right. $$
$$ 35\,724\,577\,996\,800z^3+476\,737\,995\,610\,800z^2+6\,411\,597\,171\,556\,500z+ $$
$$ \left.\left.16\,138\,780\,551\,691\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(13\,461\,361\,056\,000\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a8bl.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{11}{2},-\frac{17}{4};-z\right)= \left(\left(4z\left(134\,217\,728z^7-6\,207\,569\,920z^6+154\,227\,179\,520z^5-1\,955\,148\,595\,200z^4+8\,426\,834\,380\,800z^3+\right.\right.\right. $$
$$ \left.\left.\left.12\,245\,436\,403\,200z^2-29\,276\,699\,413\,500z+1\,793\,197\,839\,076\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- \right. $$
$$ 4\sqrt{z}\left(67\,108\,864z^7-3\,145\,728\,000z^6+79\,166\,177\,280z^5-1\,031\,764\,377\,600z^4+5\,000\,510\,592\,000z^3+ \right. $$
$$ \left. 235\,489\,161\,600z^2-1\,112\,514\,577\,713\,000z+5\,379\,593\,517\,230\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left(536\,870\,912z^8-24\,964\,497\,408z^7+623\,326\,003\,200z^6-7\,985\,509\,171\,200z^5+35\,959\,182\,336\,000z^4+ \right. $$
$$ 35\,724\,577\,996\,800z^3+476\,737\,995\,610\,800z^2-6\,411\,597\,171\,556\,500z+ $$
$$ \left.\left.16\,138\,780\,551\,691\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(13\,461\,361\,056\,000\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a8bm.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{11}{2},-\frac{15}{4};z\right)=\frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.a8bn.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{11}{2},-\frac{15}{4};-z\right)=\frac{945\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.a8bo.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{11}{2}, -\frac{13}{4}; z\right) = $$

$$ \left(\left(4\,z\left(67\,108\,864\,z^7 + 1\,027\,604\,480\,z^6 + 15\,347\,220\,480\,z^5 + 138\,789\,273\,600\,z^4 + 460\,660\,147\,200\,z^3 - \right.\right.\right. $$

$$ \left.\left.\left. 606\,166\,545\,600\,z^2 + 944\,409\,658\,500\,z - 51\,234\,223\,973\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$

$$ 4\sqrt{z}\,\left(33\,554\,432\,z^7 + 534\,773\,760\,z^6 + 8\,051\,097\,600\,z^5 + 75\,444\,019\,200\,z^4 + 297\,805\,939\,200\,z^3 + \right. $$

$$ \left. 242\,030\,527\,200\,z^2 - 26\,443\,470\,438\,000\,z - 153\,702\,671\,920\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$

$$ \left(268\,435\,456\,z^8 + 4\,177\,526\,784\,z^7 + 62\,521\,344\,000\,z^6 + 572\,604\,088\,320\,z^5 + 2\,017\,980\,518\,400\,z^4 - \right. $$

$$ 1\,469\,057\,990\,400\,z^3 + 9\,821\,860\,448\,400\,z^2 + 167\,160\,509\,554\,500\,z + $$

$$ \left.\left. 461\,108\,015\,762\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(791\,844\,768\,000\,\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a8bp.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{11}{2}, -\frac{13}{4}; -z\right) = $$

$$ \left(\left(4\,z\left(67\,108\,864\,z^7 - 1\,027\,604\,480\,z^6 + 15\,347\,220\,480\,z^5 - 138\,789\,273\,600\,z^4 + 460\,660\,147\,200\,z^3 + \right.\right.\right. $$

$$ \left.\left.\left. 606\,166\,545\,600\,z^2 + 944\,409\,658\,500\,z + 51\,234\,223\,973\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$

$$ 4\sqrt{z}\,\left(33\,554\,432\,z^7 - 534\,773\,760\,z^6 + 8\,051\,097\,600\,z^5 - 75\,444\,019\,200\,z^4 + 297\,805\,939\,200\,z^3 - \right. $$

$$ \left. 242\,030\,527\,200\,z^2 - 26\,443\,470\,438\,000\,z + 153\,702\,671\,920\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ \left(268\,435\,456\,z^8 - 4\,177\,526\,784\,z^7 + 62\,521\,344\,000\,z^6 - 572\,604\,088\,320\,z^5 + 2\,017\,980\,518\,400\,z^4 + \right. $$

$$ 1\,469\,057\,990\,400\,z^3 + 9\,821\,860\,448\,400\,z^2 - 167\,160\,509\,554\,500\,z + $$

$$ \left.\left. 461\,108\,015\,762\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(791\,844\,768\,000\,\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a8bq.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{11}{2}, -\frac{11}{4}; z\right) = $$

$$ \frac{1}{1\,250\,708\,659\,200\,z^{9/2}} \left(e^{-2\sqrt{z}}\,\left(-268\,435\,456\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{33/4} - 268\,435\,456\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{33/4} + \right. \right. $$

$$ 268\,435\,456\,e^{4\sqrt{z}}\,z^8 - 268\,435\,456\,z^8 + 67\,108\,864\,e^{4\sqrt{z}}\,z^{15/2} + 67\,108\,864\,z^{15/2} + 50\,331\,648\,e^{4\sqrt{z}}\,z^7 - $$

$$ 50\,331\,648\,z^7 + 62\,914\,560\,e^{4\sqrt{z}}\,z^{13/2} + 62\,914\,560\,z^{13/2} + 110\,100\,480\,e^{4\sqrt{z}}\,z^6 - 110\,100\,480\,z^6 + $$

$$ 247\,726\,080\,e^{4\sqrt{z}}\,z^{11/2} + 247\,726\,080\,z^{11/2} + 681\,246\,720\,e^{4\sqrt{z}}\,z^5 - 681\,246\,720\,z^5 + $$

$$ 2\,214\,051\,840\,e^{4\sqrt{z}}\,z^{9/2} + 2\,214\,051\,840\,z^{9/2} + 8\,302\,694\,400\,e^{4\sqrt{z}}\,z^4 - 8\,302\,694\,400\,z^4 + $$

$$ 35\,286\,451\,200\,e^{4\sqrt{z}}\,z^{7/2} + 35\,286\,451\,200\,z^{7/2} + 167\,610\,643\,200\,e^{4\sqrt{z}}\,z^3 - 167\,610\,643\,200\,z^3 + $$

$$ 879\,955\,876\,800\,e^{4\sqrt{z}}\,z^{5/2} + 879\,955\,876\,800\,z^{5/2} + 5\,059\,746\,291\,600\,e^{4\sqrt{z}}\,z^2 - 5\,059\,746\,291\,600\,z^2 - $$

$$ 37\,629\,692\,100\,000\,e^{4\sqrt{z}}\,z^{3/2} - 37\,629\,692\,100\,000\,z^{3/2} + 92\,265\,110\,437\,500\,e^{4\sqrt{z}}\,z - 92\,265\,110\,437\,500\,z - $$

$$ \left. \left. 110\,175\,396\,581\,250\,e^{4\sqrt{z}}\,\sqrt{z} - 110\,175\,396\,581\,250\,\sqrt{z} + 55\,087\,698\,290\,625\,e^{4\sqrt{z}} - 55\,087\,698\,290\,625\right)\right) $$

07.22.03.a8br.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{11}{2},-\frac{11}{4};-z\right)=\frac{1}{625\,354\,329\,600\,z^{9/2}}\left(-536\,870\,912\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{33/4}-2\left(33\,554\,432\,z^7-31\,457\,280\,z^6+123\,863\,040\,z^5-1\,107\,025\,920\,z^4+17\,643\,225\,600\,z^3-439\,977\,938\,400\,z^2-18\,814\,846\,050\,000\,z+55\,087\,698\,290\,625\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(268\,435\,456\,z^8-50\,331\,648\,z^7+110\,100\,480\,z^6-681\,246\,720\,z^5+8\,302\,694\,400\,z^4-167\,610\,643\,200\,z^3+5\,059\,746\,291\,600\,z^2-92\,265\,110\,437\,500\,z+55\,087\,698\,290\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a8bs.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{11}{2},-\frac{9}{4};z\right)=-\frac{1}{60\,911\,136\,000\sqrt{2}\;z^{15/4}}\left(\left(4z\left(33\,554\,432\,z^7-524\,288\,000\,z^6-2\,512\,650\,240\,z^5-13\,672\,857\,600\,z^4-31\,930\,905\,600\,z^3+35\,835\,307\,200\,z^2-104\,934\,406\,500\,z+1\,652\,716\,902\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(16\,777\,216\,z^7-251\,658\,240\,z^6-1\,391\,984\,640\,z^5-7\,866\,777\,600\,z^4-22\,779\,187\,200\,z^3-1\,516\,838\,400\,z^2+629\,606\,439\,000\,z+4\,958\,150\,707\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-134\,217\,728\,z^8+2\,063\,597\,568\,z^7+10\,522\,460\,160\,z^6+57\,776\,209\,920\,z^5+146\,680\,934\,400\,z^4-76\,680\,172\,800\,z^3+208\,043\,866\,800\,z^2+4\,722\,048\,292\,500\,z+14\,874\,452\,121\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8bt.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{11}{2},-\frac{9}{4};-z\right)=\frac{1}{60\,911\,136\,000\sqrt{2}\;z^{15/4}}\left(\left(-4z\left(33\,554\,432\,z^7+524\,288\,000\,z^6-2\,512\,650\,240\,z^5+13\,672\,857\,600\,z^4-31\,930\,905\,600\,z^3-35\,835\,307\,200\,z^2-104\,934\,406\,500\,z-1\,652\,716\,902\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(16\,777\,216\,z^7+251\,658\,240\,z^6-1\,391\,984\,640\,z^5+7\,866\,777\,600\,z^4-22\,779\,187\,200\,z^3+1\,516\,838\,400\,z^2+629\,606\,439\,000\,z-4\,958\,150\,707\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-134\,217\,728\,z^8-2\,063\,597\,568\,z^7+10\,522\,460\,160\,z^6-57\,776\,209\,920\,z^5+146\,680\,934\,400\,z^4+76\,680\,172\,800\,z^3+208\,043\,866\,800\,z^2-4\,722\,048\,292\,500\,z+14\,874\,452\,121\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8bu.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{11}{2},-\frac{7}{4};z\right)= $$

$$ \frac{1}{113\,700\,787\,200\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(-67\,108\,864\,e^{4\sqrt{z}}\,z^8+67\,108\,864\,z^8-16\,777\,216\,e^{4\sqrt{z}}\,z^{15/2}-16\,777\,216\,z^{15/2}+\right.\right. $$

$$ 4\,194\,304\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-495)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{29/4}+4\,194\,304\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-495)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{29/4}+ $$

$$ 2\,063\,597\,568\,e^{4\sqrt{z}}\,z^7-2\,063\,597\,568\,z^7+503\,316\,480\,e^{4\sqrt{z}}\,z^{13/2}+503\,316\,480\,z^{13/2}+361\,758\,720\,e^{4\sqrt{z}}\,z^6- $$

$$ 361\,758\,720\,z^6+424\,673\,280\,e^{4\sqrt{z}}\,z^{11/2}+424\,673\,280\,z^{11/2}+681\,246\,720\,e^{4\sqrt{z}}\,z^5-681\,246\,720\,z^5+ $$

$$ 1\,362\,493\,440\,e^{4\sqrt{z}}\,z^{9/2}+1\,362\,493\,440\,z^{9/2}+3\,193\,344\,000\,e^{4\sqrt{z}}\,z^4-3\,193\,344\,000\,z^4+ $$

$$ 8\,302\,694\,400\,e^{4\sqrt{z}}\,z^{7/2}+8\,302\,694\,400\,z^{7/2}+22\,313\,491\,200\,e^{4\sqrt{z}}\,z^3-22\,313\,491\,200\,z^3+ $$

$$ 52\,929\,676\,800\,e^{4\sqrt{z}}\,z^{5/2}+52\,929\,676\,800\,z^{5/2}+31\,426\,995\,600\,e^{4\sqrt{z}}\,z^2-31\,426\,995\,600\,z^2- $$

$$ 1\,099\,944\,846\,000\,e^{4\sqrt{z}}\,z^{3/2}-1\,099\,944\,846\,000\,z^{3/2}+3\,082\,740\,160\,500\,e^{4\sqrt{z}}\,z-3\,082\,740\,160\,500\,z- $$

$$ \left.\left.3\,799\,151\,606\,250\,e^{4\sqrt{z}}\,\sqrt{z}-3\,799\,151\,606\,250\,\sqrt{z}+1\,899\,575\,803\,125\,e^{4\sqrt{z}}-1\,899\,575\,803\,125\right)\right) $$

07.22.03.a8bv.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{11}{2},-\frac{7}{4};-z\right)= $$

$$ \frac{1}{56\,850\,393\,600\,z^{9/2}}\left(8\,388\,608\,\sqrt{\pi}\,(16z+495)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{29/4}+2\left(8\,388\,608\,z^7+251\,658\,240\,z^6-212\,336\,640\,z^5+\right.\right. $$

$$ \left.681\,246\,720\,z^4-4\,151\,347\,200\,z^3+26\,464\,838\,400\,z^2+549\,972\,423\,000\,z-1\,899\,575\,803\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+ $$

$$ \left(-67\,108\,864\,z^8-2\,063\,597\,568\,z^7+361\,758\,720\,z^6-681\,246\,720\,z^5+3\,193\,344\,000\,z^4-\right. $$

$$ \left.\left.22\,313\,491\,200\,z^3+31\,426\,995\,600\,z^2-3\,082\,740\,160\,500\,z+1\,899\,575\,803\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a8bw.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{11}{2},-\frac{5}{4};z\right)= $$

$$ \frac{1}{20\,303\,712\,000\sqrt{2}\,z^{15/4}}\left(\left(4z\left(16\,777\,216\,z^7-781\,189\,120\,z^6+3\,999\,006\,720\,z^5+6\,606\,028\,800\,z^4+9\,141\,580\,800\,z^3-\right.\right.\right. $$

$$ \left.7\,604\,150\,400\,z^2+22\,811\,827\,500\,z-183\,635\,211\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- $$

$$ 4\sqrt{z}\left(8\,388\,608\,z^7-385\,351\,680\,z^6+1\,769\,472\,000\,z^5+3\,994\,214\,400\,z^4+6\,759\,244\,800\,z^3-\right. $$

$$ \left.4\,325\,983\,200\,z^2-36\,498\,924\,000\,z-550\,905\,634\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- $$

$$ \left(67\,108\,864\,z^8-3\,107\,979\,264\,z^7+15\,241\,052\,160\,z^6+29\,326\,049\,280\,z^5+44\,919\,705\,600\,z^4-\right. $$

$$ \left.\left.\left.17\,643\,225\,600\,z^3+17\,481\,063\,600\,z^2+424\,299\,991\,500\,z+1\,652\,716\,902\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8bx.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{20\,303\,712\,000\sqrt{2}\,z^{15/4}}\left(\left(4z\left(16\,777\,216z^7+781\,189\,120z^6+3\,999\,006\,720z^5-6\,606\,028\,800z^4+9\,141\,580\,800z^3+\right.\right.\right.$$
$$\left.\left.7\,604\,150\,400z^2+22\,811\,827\,500z+183\,635\,211\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\left(8\,388\,608z^7+385\,351\,680z^6+1\,769\,472\,000z^5-3\,994\,214\,400z^4+6\,759\,244\,800z^3+\right.$$
$$\left.4\,325\,983\,200z^2-36\,498\,924\,000z+550\,905\,634\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(67\,108\,864z^8+3\,107\,979\,264z^7+15\,241\,052\,160z^6-29\,326\,049\,280z^5+44\,919\,705\,600z^4+\right.$$
$$\left.\left.17\,643\,225\,600z^3+17\,481\,063\,600z^2-424\,299\,991\,500z+1\,652\,716\,902\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a8by.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},-\frac{3}{4};z\right)=\frac{1}{16\,242\,969\,600z^{9/2}}$$
$$\left(e^{-2\sqrt{z}}\left(8\,388\,608e^{4\sqrt{z}}z^8-8\,388\,608z^8+2\,097\,152e^{4\sqrt{z}}z^{15/2}+2\,097\,152z^{15/2}-517\,472\,256e^{4\sqrt{z}}z^7+517\,472\,256z^7-\right.\right.$$
$$127\,795\,200e^{4\sqrt{z}}z^{13/2}-127\,795\,200z^{13/2}-32\,768e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-15\,840z+157\,905\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{25/4}-$$
$$32\,768e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-15\,840z+157\,905\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{25/4}+5\,080\,350\,720e^{4\sqrt{z}}z^6-5\,080\,350\,720z^6+$$
$$1\,179\,648\,000e^{4\sqrt{z}}z^{11/2}+1\,179\,648\,000z^{11/2}+778\,567\,680e^{4\sqrt{z}}z^5-778\,567\,680z^5+802\,897\,920e^{4\sqrt{z}}z^{9/2}+$$
$$802\,897\,920z^{9/2}+1\,064\,448\,000e^{4\sqrt{z}}z^4-1\,064\,448\,000z^4+1\,596\,672\,000e^{4\sqrt{z}}z^{7/2}+1\,596\,672\,000z^{7/2}+$$
$$2\,315\,174\,400e^{4\sqrt{z}}z^3-2\,315\,174\,400z^3+1\,945\,944\,000e^{4\sqrt{z}}z^{5/2}+1\,945\,944\,000z^{5/2}-5\,935\,129\,200e^{4\sqrt{z}}z^2+$$
$$5\,935\,129\,200z^2-33\,081\,048\,000e^{4\sqrt{z}}z^{3/2}-33\,081\,048\,000z^{3/2}+117\,851\,233\,500e^{4\sqrt{z}}z-$$
$$\left.117\,851\,233\,500z-151\,966\,064\,250e^{4\sqrt{z}}\sqrt{z}-151\,966\,064\,250\sqrt{z}+75\,983\,032\,125e^{4\sqrt{z}}-75\,983\,032\,125\right)\Bigg)$$

07.22.03.a8bz.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},-\frac{3}{4};-z\right)=\frac{1}{8\,121\,484\,800z^{9/2}}$$
$$\left(-65\,536\sqrt{\pi}\left(256z^2+15\,840z+157\,905\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{25/4}-2\left(1\,048\,576z^7+63\,897\,600z^6+589\,824\,000z^5-\right.\right.$$
$$\left.401\,448\,960z^4+798\,336\,000z^3-972\,972\,000z^2-16\,540\,524\,000z+75\,983\,032\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left(8\,388\,608z^8+517\,472\,256z^7+5\,080\,350\,720z^6-778\,567\,680z^5+1\,064\,448\,000z^4-\right.$$
$$\left.\left.2\,315\,174\,400z^3-5\,935\,129\,200z^2-117\,851\,233\,500z+75\,983\,032\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8c0.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{11}{2}, -\frac{1}{4}; z\right) = $$
$$ -\frac{1}{20\,303\,712\,000\sqrt{2}\, z^{15/4}}\left(\left(4z\left(8\,388\,608 z^7 - 650\,117\,120 z^6 + 9\,801\,400\,320 z^5 - 19\,080\,806\,400 z^4 - 7\,332\,019\,200 z^3 + \right.\right.\right. $$
$$ \left. 3\,333\,052\,800 z^2 - 8\,404\,357\,500 z + 39\,920\,698\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ 4\sqrt{z}\left(4\,194\,304 z^7 - 322\,437\,120 z^6 + 4\,704\,583\,680 z^5 - 6\,974\,668\,800 z^4 - 4\,523\,904\,000 z^3 + \right. $$
$$ \left. 4\,011\,638\,400 z^2 - 2\,401\,245\,000 z + 119\,762\,094\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(-33\,554\,432 z^8 + 2\,592\,079\,872 z^7 - 38\,568\,591\,360 z^6 + 67\,475\,865\,600 z^5 + 37\,255\,680\,000 z^4 - \right. $$
$$ \left.\left.\left. 10\,937\,203\,200 z^3 + 7\,107\,685\,200 z^2 + 61\,231\,747\,500 z + 359\,286\,283\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8c1.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{11}{2}, -\frac{1}{4}; -z\right) = \frac{1}{20\,303\,712\,000\sqrt{2}\, z^{15/4}} $$
$$ \left(\left(-4z\left(8\,388\,608 z^7 + 650\,117\,120 z^6 + 9\,801\,400\,320 z^5 + 19\,080\,806\,400 z^4 - 7\,332\,019\,200 z^3 - 3\,333\,052\,800 z^2 - \right.\right. $$
$$ \left. 8\,404\,357\,500 z - 39\,920\,698\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4\,194\,304 z^7 + 322\,437\,120 z^6 + 4\,704\,583\,680 z^5 + \right. $$
$$ \left. 6\,974\,668\,800 z^4 - 4\,523\,904\,000 z^3 - 4\,011\,638\,400 z^2 - 2\,401\,245\,000 z - 119\,762\,094\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(-33\,554\,432 z^8 - 2\,592\,079\,872 z^7 - 38\,568\,591\,360 z^6 - 67\,475\,865\,600 z^5 + 37\,255\,680\,000 z^4 + \right. $$
$$ \left.\left. 10\,937\,203\,200 z^3 + 7\,107\,685\,200 z^2 - 61\,231\,747\,500 z + 359\,286\,283\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8c2.01

$$ {}_1F_2\left(-\frac{15}{4}; \frac{11}{2}, \frac{1}{4}; z\right) = \frac{1}{16\,242\,969\,600 z^{9/2}} $$
$$ \left(e^{-2\sqrt{z}}\left(-2\,097\,152 e^{4\sqrt{z}} z^8 + 2\,097\,152 z^8 - 524\,288 e^{4\sqrt{z}} z^{15/2} - 524\,288 z^{15/2} + 194\,248\,704 e^{4\sqrt{z}} z^7 - 194\,248\,704 z^7 + \right. $$
$$ 48\,168\,960 e^{4\sqrt{z}} z^{13/2} + 48\,168\,960 z^{13/2} - 3\,845\,038\,080 e^{4\sqrt{z}} z^6 + 3\,845\,038\,080 z^6 - 926\,484\,480 e^{4\sqrt{z}} z^{11/2} - $$
$$ 926\,484\,480 z^{11/2} + 512 e^{2\sqrt{z}} \sqrt{2\pi}\left(4096 z^3 - 380\,160 z^2 + 7\,579\,440 z - 27\,633\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{21/4} + $$
$$ 512 e^{2\sqrt{z}} \sqrt{2\pi}\left(4096 z^3 - 380\,160 z^2 + 7\,579\,440 z - 27\,633\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{21/4} + $$
$$ 13\,495\,173\,120 e^{4\sqrt{z}} z^5 - 13\,495\,173\,120 z^5 + 2\,789\,867\,520 e^{4\sqrt{z}} z^{9/2} + 2\,789\,867\,520 z^{9/2} + $$
$$ 1\,490\,227\,200 e^{4\sqrt{z}} z^4 - 1\,490\,227\,200 z^4 + 1\,064\,448\,000 e^{4\sqrt{z}} z^{7/2} + 1\,064\,448\,000 z^{7/2} + $$
$$ 665\,280\,000 e^{4\sqrt{z}} z^3 - 665\,280\,000 z^3 - 239\,500\,800 e^{4\sqrt{z}} z^{5/2} - 239\,500\,800 z^{5/2} - 2\,118\,085\,200 e^{4\sqrt{z}} z^2 + $$
$$ 2\,118\,085\,200 z^2 - 2\,432\,430\,000 e^{4\sqrt{z}} z^{3/2} - 2\,432\,430\,000 z^{3/2} + 15\,689\,173\,500 e^{4\sqrt{z}} z - 15\,689\,173\,500 z - $$
$$ \left. 21\,709\,437\,750 e^{4\sqrt{z}} \sqrt{z} - 21\,709\,437\,750\sqrt{z} + 10\,854\,718\,875 e^{4\sqrt{z}} - 10\,854\,718\,875\right)\Big) $$

07.22.03.a8c3.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{1}{4};-z\right)=\frac{1}{8\,121\,484\,800\,z^{9/2}}$$
$$\left(1024\sqrt{\pi}\left(4096z^3+380\,160z^2+7\,579\,440z+27\,633\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4}+2\left(262\,144z^7+24\,084\,480z^6+\right.\right.$$
$$\left.463\,242\,240z^5+1\,394\,933\,760z^4-532\,224\,000z^3-119\,750\,400z^2+1\,216\,215\,000z-10\,854\,718\,875\right)$$
$$\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(2\,097\,152z^8+194\,248\,704z^7+3\,845\,038\,080z^6+13\,495\,173\,120z^5-1\,490\,227\,200z^4+\right.$$
$$\left.\left.665\,280\,000z^3+2\,118\,085\,200z^2+15\,689\,173\,500z-10\,854\,718\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8c4.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{3}{4};z\right)=$$
$$\left(\left(4z\left(4\,194\,304z^7-454\,819\,840z^6+11\,388\,764\,160z^5-63\,581\,414\,400z^4+38\,284\,646\,400z^3-2\,724\,321\,600z^2+\right.\right.\right.$$
$$5\,042\,614\,500z-14\,707\,625\,625\left.\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2\,097\,152z^7-226\,099\,200z^6+5\,555\,773\,440z^5-\right.$$
$$\left.28\,589\,299\,200z^4+6\,519\,744\,000z^3-4\,854\,880\,800z^2+6\,723\,486\,000z-44\,122\,876\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left(16\,777\,216z^8-1\,815\,085\,056z^7+45\,106\,790\,400z^6-243\,616\,665\,600z^5+104\,315\,904\,000z^4-16\,485\,638\,400z^3+\right.$$
$$\left.\left.\left.9\,412\,880\,400z^2+5\,042\,614\,500z+132\,368\,630\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(142\,125\,984\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a8c5.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{3}{4};-z\right)=$$
$$\left(\left(4z\left(4\,194\,304z^7+454\,819\,840z^6+11\,388\,764\,160z^5+63\,581\,414\,400z^4+38\,284\,646\,400z^3+2\,724\,321\,600z^2+\right.\right.\right.$$
$$5\,042\,614\,500z+14\,707\,625\,625\left.\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2\,097\,152z^7+226\,099\,200z^6+5\,555\,773\,440z^5+\right.$$
$$\left.28\,589\,299\,200z^4+6\,519\,744\,000z^3+4\,854\,880\,800z^2+6\,723\,486\,000z+44\,122\,876\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(16\,777\,216z^8+1\,815\,085\,056z^7+45\,106\,790\,400z^6+243\,616\,665\,600z^5+104\,315\,904\,000z^4+16\,485\,638\,400z^3+\right.$$
$$\left.\left.\left.9\,412\,880\,400z^2-5\,042\,614\,500z+132\,368\,630\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(142\,125\,984\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a8c6.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{5}{4};z\right)=\frac{1}{16\,242\,969\,600\,z^{9/2}} \left(e^{-2\sqrt{z}}\left(-131\,072\,e^{4\sqrt{z}}\,z^8+131\,072\,z^8-32\,768\,e^{4\sqrt{z}}\,z^{15/2}-32\,768\,z^{15/2}+16\,195\,584\,e^{4\sqrt{z}}\,z^7-16\,195\,584\,z^7+4\,024\,320\,e^{4\sqrt{z}}\,z^{13/2}+4\,024\,320\,z^{13/2}-482\,096\,640\,e^{4\sqrt{z}}\,z^6+482\,096\,640\,z^6-117\,590\,400\,e^{4\sqrt{z}}\,z^{11/2}-117\,590\,400\,z^{11/2}+3\,452\,438\,880\,e^{4\sqrt{z}}\,z^5-3\,452\,438\,880\,z^5+784\,464\,120\,e^{4\sqrt{z}}\,z^{9/2}+784\,464\,120\,z^{9/2}+2\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536\,z^4-8\,110\,080\,z^3+242\,542\,080\,z^2-1\,768\,536\,000\,z+1\,740\,902\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}+2\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536\,z^4-8\,110\,080\,z^3+242\,542\,080\,z^2-1\,768\,536\,000\,z+1\,740\,902\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}-2\,980\,454\,400\,e^{4\sqrt{z}}\,z^4+2\,980\,454\,400\,z^4-372\,556\,800\,e^{4\sqrt{z}}\,z^{7/2}-372\,556\,800\,z^{7/2}-13\,305\,600\,e^{4\sqrt{z}}\,z^3+13\,305\,600\,z^3+149\,688\,000\,e^{4\sqrt{z}}\,z^{5/2}+149\,688\,000\,z^{5/2}+202\,078\,800\,e^{4\sqrt{z}}\,z^2-202\,078\,800\,z^2-74\,844\,000\,e^{4\sqrt{z}}\,z^{3/2}-74\,844\,000\,z^{3/2}-813\,928\,500\,e^{4\sqrt{z}}\,z+813\,928\,500\,z+1\,277\,025\,750\,e^{4\sqrt{z}}\,\sqrt{z}+1\,277\,025\,750\,\sqrt{z}-638\,512\,875\,e^{4\sqrt{z}}+638\,512\,875\right)\right) $$

07.22.03.a8c7.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{5}{4};-z\right)= \frac{1}{8\,121\,484\,800\,z^{9/2}}\left(4\sqrt{\pi}\,\left(65\,536\,z^4+8\,110\,080\,z^3+242\,542\,080\,z^2+1\,768\,536\,000\,z+1\,740\,902\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}+2\left(16\,384\,z^7+2\,012\,160\,z^6+58\,795\,200\,z^5+392\,232\,060\,z^4+186\,278\,400\,z^3+74\,844\,000\,z^2+37\,422\,000\,z+638\,512\,875\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(131\,072\,z^8+16\,195\,584\,z^7+482\,096\,640\,z^6+3\,452\,438\,880\,z^5+2\,980\,454\,400\,z^4+13\,305\,600\,z^3+202\,078\,800\,z^2+813\,928\,500\,z+638\,512\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a8c8.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{7}{4};z\right)= \left(\left(4\,z\left(2\,097\,152\,z^7-292\,290\,560\,z^6+10\,231\,971\,840\,z^5-94\,384\,051\,200\,z^4+149\,842\,677\,600\,z^3+4\,400\,827\,200\,z^2-5\,042\,614\,500\,z+8\,824\,575\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(1\,048\,576\,z^7-145\,489\,920\,z^6+5\,026\,406\,400\,z^5-44\,227\,814\,400\,z^4+52\,483\,107\,600\,z^3+10\,059\,033\,600\,z^2-10\,085\,229\,000\,z+26\,473\,726\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-8\,388\,608\,z^8+1\,167\,065\,088\,z^7-40\,638\,873\,600\,z^6+367\,745\,495\,040\,z^5-518\,978\,275\,200\,z^4-76\,281\,004\,800\,z^3+23\,628\,250\,800\,z^2-15\,127\,843\,500\,z+79\,421\,178\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(426\,377\,952\,000\,\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a8c9.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{7}{4};-z\right)=$$

$$\left(\left(4\,z\left(2\,097\,152\,z^7+292\,290\,560\,z^6+10\,231\,971\,840\,z^5+94\,384\,051\,200\,z^4+149\,842\,677\,600\,z^3-4\,400\,827\,200\,z^2-5\,042\,614\,500\,z-8\,824\,575\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1\,048\,576\,z^7+145\,489\,920\,z^6+5\,026\,406\,400\,z^5+44\,227\,814\,400\,z^4+52\,483\,107\,600\,z^3-10\,059\,033\,600\,z^2-10\,085\,229\,000\,z-26\,473\,726\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(8\,388\,608\,z^8+1\,167\,065\,088\,z^7+40\,638\,873\,600\,z^6+367\,745\,495\,040\,z^5+518\,978\,275\,200\,z^4-76\,281\,004\,800\,z^3-23\,628\,250\,800\,z^2-15\,127\,843\,500\,z-79\,421\,178\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(426\,377\,952\,000\,\sqrt{2}\;z^{15/4}\right)$$

07.22.03.a8ca.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{9}{4};z\right)=$$

$$\frac{1}{519\,775\,027\,200\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\;\sqrt{2\,\pi}\;\left(1\,048\,576\,z^5-162\,201\,600\,z^4+6\,467\,788\,800\,z^3-70\,741\,440\,000\,z^2+139\,272\,210\,000\,z+29\,595\,344\,625\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{13/4}+e^{2\sqrt{z}}\;\sqrt{2\,\pi}\;\left(1\,048\,576\,z^5-162\,201\,600\,z^4+6\,467\,788\,800\,z^3-70\,741\,440\,000\,z^2+139\,272\,210\,000\,z+29\,595\,344\,625\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{13/4}-4\left(-262\,144\,z^8+65\,536\,z^{15/2}+40\,501\,248\,z^7-10\,076\,160\,z^{13/2}-1\,609\,451\,520\,z^6+394\,974\,720\,z^{11/2}+17\,398\,149\,120\,z^5-4\,077\,627\,840\,z^{9/2}-32\,070\,446\,100\,z^4+5\,751\,709\,425\,z^{7/2}-9\,686\,476\,800\,z^3+2\,554\,675\,200\,z^{5/2}-419\,126\,400\,z^2-1\,496\,880\,000\,z^{3/2}+1\,871\,100\,000\,z+3\,929\,310\,000\,\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^8+65\,536\,z^{15/2}-40\,501\,248\,z^7-10\,076\,160\,z^{13/2}+1\,609\,451\,520\,z^6+394\,974\,720\,z^{11/2}-17\,398\,149\,120\,z^5-4\,077\,627\,840\,z^{9/2}+32\,070\,446\,100\,z^4+5\,751\,709\,425\,z^{7/2}+9\,686\,476\,800\,z^3+2\,554\,675\,200\,z^{5/2}+419\,126\,400\,z^2-1\,496\,880\,000\,z^{3/2}-1\,871\,100\,000\,z+3\,929\,310\,000\,\sqrt{z}-1\,964\,655\,000\right)+1\,964\,655\,000\right)\right)\right)$$

07.22.03.a8cb.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{9}{4};-z\right)=\frac{1}{129\,943\,756\,800\,z^{9/2}}$$

$$\left(\sqrt{\pi}\;z^{13/4}\left(1\,048\,576\,z^5+162\,201\,600\,z^4+6\,467\,788\,800\,z^3+70\,741\,440\,000\,z^2+139\,272\,210\,000\,z-29\,595\,344\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\left(4\left(65\,536\,z^8+10\,125\,312\,z^7+402\,362\,880\,z^6+4\,349\,537\,280\,z^5+8\,017\,611\,525\,z^4-2\,421\,619\,200\,z^3+104\,781\,600\,z^2+467\,775\,000\,z-491\,163\,750\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(65\,536\,z^7+10\,076\,160\,z^6+394\,974\,720\,z^5+4\,077\,627\,840\,z^4+5\,751\,709\,425\,z^3-2\,554\,675\,200\,z^2-1\,496\,880\,000\,z-3\,929\,310\,000\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8cc.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{11}{4};z\right)=$$

$$\left(\left(4z\left(1\,048\,576z^7-178\,585\,600z^6+8\,031\,559\,680z^5-103\,349\,260\,800z^4+265\,875\,469\,200z^3+55\,070\,682\,975z^2+\right.\right.\right.$$
$$\left.9\,364\,855\,500z-8\,824\,575\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$2\sqrt{z}\left(1\,048\,576z^7-177\,930\,240z^6+7\,921\,704\,960z^5-98\,617\,305\,600z^4+212\,858\,830\,800z^3+\right.$$
$$\left.116\,802\,949\,725z^2+46\,103\,904\,000z-52\,947\,452\,250\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(4\,194\,304z^8-713\,293\,824z^7+31\,949\,291\,520z^6-405\,636\,802\,560z^5+971\,465\,140\,800z^4+371\,879\,253\,900z^3+\right.\right.$$
$$\left.\left.148\,108\,791\,600z^2-54\,028\,012\,500z+79\,421\,178\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(670\,022\,496\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a8cd.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{11}{4};-z\right)=$$

$$\left(\left(4z\left(1\,048\,576z^7+178\,585\,600z^6+8\,031\,559\,680z^5+103\,349\,260\,800z^4+265\,875\,469\,200z^3-55\,070\,682\,975z^2+\right.\right.\right.$$
$$\left.9\,364\,855\,500z+8\,824\,575\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$2\sqrt{z}\left(1\,048\,576z^7+177\,930\,240z^6+7\,921\,704\,960z^5+98\,617\,305\,600z^4+212\,858\,830\,800z^3-\right.$$
$$\left.116\,802\,949\,725z^2+46\,103\,904\,000z+52\,947\,452\,250\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(4\,194\,304z^8+713\,293\,824z^7+31\,949\,291\,520z^6+405\,636\,802\,560z^5+971\,465\,140\,800z^4-371\,879\,253\,900z^3+\right.\right.$$
$$\left.\left.148\,108\,791\,600z^2+54\,028\,012\,500z+79\,421\,178\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(670\,022\,496\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a8ce.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{13}{4};z\right)=$$

$$\frac{1}{22\,177\,067\,827\,200z^{9/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-3\,114\,270\,720z^5+155\,226\,931\,200z^4-2\,263\,726\,080\,000z^3+\right.\right.\right.$$
$$\left.6\,685\,066\,080\,000z^2+2\,841\,153\,084\,000z+1\,923\,697\,400\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-3\,114\,270\,720z^5+155\,226\,931\,200z^4-2\,263\,726\,080\,000z^3+\right.$$
$$\left.6\,685\,066\,080\,000z^2+2\,841\,153\,084\,000z+1\,923\,697\,400\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-$$
$$4\left(-4\,194\,304z^8+1\,048\,576z^{15/2}+777\,781\,248z^7-193\,658\,880z^{13/2}-38\,662\,471\,680z^6+9\,523\,077\,120z^{11/2}+\right.$$
$$558\,963\,947\,520z^5-133\,071\,459\,840z^{9/2}-1\,579\,225\,032\,000z^4+315\,119\,019\,600z^{7/2}-868\,553\,601\,300z^3+$$
$$278\,486\,571\,825z^{5/2}-656\,551\,526\,400z^2+204\,374\,016\,000z^{3/2}-9\,580\,032\,000z-167\,650\,560\,000\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(4\,194\,304z^8+1\,048\,576z^{15/2}-777\,781\,248z^7-193\,658\,880z^{13/2}+38\,662\,471\,680z^6+\right.$$
$$9\,523\,077\,120z^{11/2}-558\,963\,947\,520z^5-133\,071\,459\,840z^{9/2}+1\,579\,225\,032\,000z^4+$$
$$315\,119\,019\,600z^{7/2}+868\,553\,601\,300z^3+278\,486\,571\,825z^{5/2}+656\,551\,526\,400z^2+$$
$$\left.\left.\left.\left.204\,374\,016\,000z^{3/2}+9\,580\,032\,000z-167\,650\,560\,000\sqrt{z}+83\,825\,280\,000\right)-83\,825\,280\,000\right)\right)\right)$$

07.22.03.a8cf.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{13}{4};-z\right)=$$

$$\frac{1}{5\,544\,266\,956\,800\,z^{9/2}}\left(\sqrt{\pi}\;z^{9/4}\left(16\,777\,216\,z^6+3\,114\,270\,720\,z^5+155\,226\,931\,200\,z^4+2\,263\,726\,080\,000\,z^3+\right.\right.$$

$$\left.6\,685\,066\,080\,000\,z^2-2\,841\,153\,084\,000\,z+1\,923\,697\,400\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$

$$2\left(4\left(1\,048\,576\,z^8+194\,445\,312\,z^7+9\,665\,617\,920\,z^6+139\,740\,986\,880\,z^5+394\,806\,258\,000\,z^4-\right.\right.$$

$$\left.217\,138\,400\,325\,z^3+164\,137\,881\,600\,z^2-2\,395\,008\,000\,z+20\,956\,320\,000\right)\sin\left(2\sqrt{z}\right)-$$

$$\sqrt{z}\left(1\,048\,576\,z^7+193\,658\,880\,z^6+9\,523\,077\,120\,z^5+133\,071\,459\,840\,z^4+315\,119\,019\,600\,z^3-\right.$$

$$\left.\left.\left.278\,486\,571\,825\,z^2+204\,374\,016\,000\,z+167\,650\,560\,000\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8cg.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{15}{4};z\right)=$$

$$\left(\left(2\,z\left(16\,777\,216\,z^7-3\,376\,414\,720\,z^6+185\,502\,597\,120\,z^5-3\,063\,059\,251\,200\,z^4+10\,896\,470\,956\,800\,z^3+\right.\right.\right.$$

$$\left.4\,377\,206\,433\,600\,z^2+4\,272\,715\,321\,875\,z+524\,431\,908\,000\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$

$$\sqrt{z}\left(16\,777\,216\,z^7-3\,365\,928\,960\,z^6+183\,420\,518\,400\,z^5-2\,952\,596\,275\,200\,z^4+9\,256\,985\,337\,600\,z^3+\right.$$

$$\left.7\,731\,040\,917\,600\,z^2+8\,922\,366\,077\,625\,z+3\,146\,591\,448\,000\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$

$$2\left(16\,777\,216\,z^8-3\,372\,220\,416\,z^7+184\,665\,047\,040\,z^6-3\,017\,971\,630\,080\,z^5+10\,197\,265\,478\,400\,z^4+\right.$$

$$\left.\left.\left.6\,188\,880\,297\,600\,z^3+6\,480\,948\,248\,775\,z^2+2\,921\,834\,916\,000\,z-1\,179\,971\,793\,000\right)\right.\right.$$

$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(12\,669\,516\,288\,000\sqrt{2}\;z^{15/4}\right)$$

07.22.03.a8ch.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{15}{4};-z\right)=$$

$$\left(\left(2\,z\left(16\,777\,216\,z^7+3\,376\,414\,720\,z^6+185\,502\,597\,120\,z^5+3\,063\,059\,251\,200\,z^4+10\,896\,470\,956\,800\,z^3-\right.\right.\right.$$

$$\left.4\,377\,206\,433\,600\,z^2+4\,272\,715\,321\,875\,z-524\,431\,908\,000\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$

$$\sqrt{z}\left(16\,777\,216\,z^7+3\,365\,928\,960\,z^6+183\,420\,518\,400\,z^5+2\,952\,596\,275\,200\,z^4+9\,256\,985\,337\,600\,z^3-\right.$$

$$\left.7\,731\,040\,917\,600\,z^2+8\,922\,366\,077\,625\,z-3\,146\,591\,448\,000\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$2\left(16\,777\,216\,z^8+3\,372\,220\,416\,z^7+184\,665\,047\,040\,z^6+3\,017\,971\,630\,080\,z^5+10\,197\,265\,478\,400\,z^4-\right.$$

$$\left.\left.\left.6\,188\,880\,297\,600\,z^3+6\,480\,948\,248\,775\,z^2-2\,921\,834\,916\,000\,z-1\,179\,971\,793\,000\right)\right.\right.$$

$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(12\,669\,516\,288\,000\sqrt{2}\;z^{15/4}\right)$$

07.22.03.a8ci.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{17}{4};z\right)=\frac{1}{764\,255\,875\,891\,200\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-58\,133\,053\,440\,z^6+3\,477\,083\,258\,880\,z^5-63\,384\,330\,240\,000\,z^4+249\,575\,800\,320\,000\,z^3+159\,104\,572\,704\,000\,z^2+215\,454\,108\,870\,000\,z+155\,819\,489\,450\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-58\,133\,053\,440\,z^6+3\,477\,083\,258\,880\,z^5-63\,384\,330\,240\,000\,z^4+249\,575\,800\,320\,000\,z^3+159\,104\,572\,704\,000\,z^2+215\,454\,108\,870\,000\,z+155\,819\,489\,450\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}-4\left(-67\,108\,864\,z^8+16\,777\,216\,z^{15/2}+14\,520\,680\,448\,z^7-3\,617\,587\,200\,z^{13/2}-866\,573\,352\,960\,z^6+213\,973\,401\,600\,z^{11/2}+15\,688\,884\,879\,360\,z^5-3\,770\,643\,824\,640\,z^{9/2}-59\,744\,539\,008\,000\,z^4+12\,575\,721\,312\,000\,z^{7/2}-46\,774\,100\,419\,200\,z^3+15\,423\,327\,612\,000\,z^{5/2}-65\,774\,863\,746\,900\,z^2+24\,202\,623\,146\,625\,z^{3/2}-55\,794\,106\,368\,000\,z+15\,021\,490\,176\,000\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864\,z^8+16\,777\,216\,z^{15/2}-14\,520\,680\,448\,z^7-3\,617\,587\,200\,z^{13/2}+866\,573\,352\,960\,z^6+213\,973\,401\,600\,z^{11/2}-15\,688\,884\,879\,360\,z^5-3\,770\,643\,824\,640\,z^{9/2}+59\,744\,539\,008\,000\,z^4+12\,575\,721\,312\,000\,z^{7/2}+46\,774\,100\,419\,200\,z^3+15\,423\,327\,612\,000\,z^{5/2}+65\,774\,863\,746\,900\,z^2+24\,202\,623\,146\,625\,z^{3/2}+55\,794\,106\,368\,000\,z+15\,021\,490\,176\,000\sqrt{z}-7\,510\,745\,088\,000\right)+7\,510\,745\,088\,000\right)\right)\right) $$

07.22.03.a8cj.01

$$ {}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{17}{4};-z\right)=\frac{1}{191\,063\,968\,972\,800\,z^{9/2}}\left(\sqrt{\pi}\,z^{5/4}\left(268\,435\,456\,z^7+58\,133\,053\,440\,z^6+3\,477\,083\,258\,880\,z^5+63\,384\,330\,240\,000\,z^4+249\,575\,800\,320\,000\,z^3-159\,104\,572\,704\,000\,z^2+215\,454\,108\,870\,000\,z-155\,819\,489\,450\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\left(4\left(16\,777\,216\,z^8+3\,630\,170\,112\,z^7+216\,643\,338\,240\,z^6+3\,922\,221\,219\,840\,z^5+14\,936\,134\,752\,000\,z^4-11\,693\,525\,104\,800\,z^3+16\,443\,715\,936\,725\,z^2-13\,948\,526\,592\,000\,z-1\,877\,686\,272\,000\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(16\,777\,216\,z^7+3\,617\,587\,200\,z^6+213\,973\,401\,600\,z^5+3\,770\,643\,824\,640\,z^4+12\,575\,721\,312\,000\,z^3-15\,423\,327\,612\,000\,z^2+24\,202\,623\,146\,625\,z-15\,021\,490\,176\,000\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8ck.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{19}{4};z\right)=$$

$$\left(\left(2z\left(268\,435\,456z^7-62\,327\,357\,440z^6+4\,045\,579\,223\,040z^5-81\,546\,751\,180\,800z^4+370\,389\,391\,257\,600z^3+\right.\right.\right.$$
$$\left.223\,383\,473\,913\,600z^2+385\,270\,155\,270\,000z+360\,464\,994\,264\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\sqrt{z}\left(268\,435\,456z^7-62\,159\,585\,280z^6+4\,007\,075\,512\,320z^5-79\,119\,831\,859\,200z^4+325\,534\,809\,600\,000z^3+\right.$$
$$\left.356\,159\,124\,921\,600z^2+645\,987\,732\,390\,000z+829\,667\,666\,953\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\left(268\,435\,456z^8-62\,260\,248\,576z^7+4\,030\,102\,241\,280z^6-80\,559\,208\,857\,600z^5+\right.$$
$$351\,473\,278\,464\,000z^4+290\,500\,379\,769\,600z^3+492\,973\,485\,404\,400z^2+$$
$$\left.\left.\left.572\,813\,092\,726\,875z+188\,795\,486\,880\,000\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(405\,424\,521\,216\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a8cl.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{19}{4};-z\right)=$$

$$\left(\left(2z\left(268\,435\,456z^7+62\,327\,357\,440z^6+4\,045\,579\,223\,040z^5+81\,546\,751\,180\,800z^4+370\,389\,391\,257\,600z^3-\right.\right.\right.$$
$$\left.223\,383\,473\,913\,600z^2+385\,270\,155\,270\,000z-360\,464\,994\,264\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\sqrt{z}\left(268\,435\,456z^7+62\,159\,585\,280z^6+4\,007\,075\,512\,320z^5+79\,119\,831\,859\,200z^4+325\,534\,809\,600\,000z^3-\right.$$
$$\left.356\,159\,124\,921\,600z^2+645\,987\,732\,390\,000z-829\,667\,666\,953\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\left(268\,435\,456z^8+62\,260\,248\,576z^7+4\,030\,102\,241\,280z^6+80\,559\,208\,857\,600z^5+\right.$$
$$351\,473\,278\,464\,000z^4-290\,500\,379\,769\,600z^3+492\,973\,485\,404\,400z^2-$$
$$\left.\left.\left.572\,813\,092\,726\,875z+188\,795\,486\,880\,000\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(405\,424\,521\,216\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a8cm.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{21}{4};z\right)=$$

$$\left(e^{-2\sqrt{z}}\left(-4\left(-1\,073\,741\,824\,z^8+268\,435\,456\,z^{15/2}+265\,549\,774\,848\,z^7-66\,186\,117\,120\,z^{13/2}-18\,495\,056\,117\,760\,z^6+\right.\right.\right.$$
$$4\,574\,816\,501\,760\,z^{11/2}+402\,288\,904\,765\,440\,z^5-97\,304\,966\,922\,240\,z^{9/2}-1\,927\,510\,102\,425\,600\,z^4+$$
$$419\,138\,108\,928\,000\,z^{7/2}-1\,944\,608\,916\,096\,000\,z^3+639\,410\,334\,393\,600\,z^{5/2}-3\,982\,778\,423\,870\,400\,z^2+$$
$$1\,449\,320\,317\,830\,000\,z^{3/2}-6\,272\,509\,027\,900\,500\,z+2\,437\,263\,844\,178\,625\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^8+268\,435\,456\,z^{15/2}-265\,549\,774\,848\,z^7-66\,186\,117\,120\,z^{13/2}+\right.$$
$$18\,495\,056\,117\,760\,z^6+4\,574\,816\,501\,760\,z^{11/2}-402\,288\,904\,765\,440\,z^5-97\,304\,966\,922\,240\,z^{9/2}+$$
$$1\,927\,510\,102\,425\,600\,z^4+419\,138\,108\,928\,000\,z^{7/2}+1\,944\,608\,916\,096\,000\,z^3+$$
$$639\,410\,334\,393\,600\,z^{5/2}+3\,982\,778\,423\,870\,400\,z^2+1\,449\,320\,317\,830\,000\,z^{3/2}+$$
$$\left.6\,272\,509\,027\,900\,500\,z+2\,437\,263\,844\,178\,625\sqrt{z}+3\,845\,501\,485\,056\,000\right)-3\,845\,501\,485\,056\,000\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(4\,294\,967\,296\,z^8-1\,063\,004\,405\,760\,z^7+74\,177\,776\,189\,440\,z^6-\right.$$
$$1\,622\,638\,854\,144\,000\,z^5+7\,986\,425\,610\,240\,000\,z^4+6\,788\,461\,768\,704\,000\,z^3+$$
$$\left.13\,789\,062\,967\,680\,000\,z^2+19\,944\,894\,649\,680\,000\,z+10\,128\,266\,814\,290\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(4\,294\,967\,296\,z^8-1\,063\,004\,405\,760\,z^7+74\,177\,776\,189\,440\,z^6-1\,622\,638\,854\,144\,000\,z^5+\right.$$
$$7\,986\,425\,610\,240\,000\,z^4+6\,788\,461\,768\,704\,000\,z^3+13\,789\,062\,967\,680\,000\,z^2+$$
$$\left.\left.\left.19\,944\,894\,649\,680\,000\,z+10\,128\,266\,814\,290\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)\Big/\left(23\,017\,588\,732\,723\,200\,z^{9/2}\right)$$

07.22.03.a8cn.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{21}{4};-z\right)=$$

$$\left(\sqrt{\pi}\sqrt[4]{z}\left(4\,294\,967\,296\,z^8+1\,063\,004\,405\,760\,z^7+74\,177\,776\,189\,440\,z^6+1\,622\,638\,854\,144\,000\,z^5+\right.\right.$$
$$7\,986\,425\,610\,240\,000\,z^4-6\,788\,461\,768\,704\,000\,z^3+13\,789\,062\,967\,680\,000\,z^2-$$
$$\left.19\,944\,894\,649\,680\,000\,z+10\,128\,266\,814\,290\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\left(4\left(268\,435\,456\,z^8+66\,387\,443\,712\,z^7+4\,623\,764\,029\,440\,z^6+100\,572\,226\,191\,360\,z^5+481\,877\,525\,606\,400\,z^4-\right.\right.$$
$$486\,152\,229\,024\,000\,z^3+995\,694\,605\,967\,600\,z^2-1\,568\,127\,256\,975\,125\,z+961\,375\,371\,264\,000\Big)$$
$$\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(268\,435\,456\,z^7+66\,186\,117\,120\,z^6+4\,574\,816\,501\,760\,z^5+97\,304\,966\,922\,240\,z^4+\right.$$
$$419\,138\,108\,928\,000\,z^3-639\,410\,334\,393\,600\,z^2+1\,449\,320\,317\,830\,000\,z-$$
$$\left.\left.2\,437\,263\,844\,178\,625\right)\cos\left(2\sqrt{z}\right)\right)\Big)\Big/\left(5\,754\,397\,183\,180\,800\,z^{9/2}\right)$$

07.22.03.a8co.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{23}{4};z\right)=$$
$$\left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-1\,130\,113\,269\,760\,z^7+84\,619\,076\,567\,040\,z^6-2\,014\,108\,817\,817\,600\,z^5+\right.\right.\right.$$
$$11\,131\,259\,328\,921\,600\,z^4+8\,994\,092\,973\,465\,600\,z^3+22\,028\,537\,539\,008\,000\,z^2+$$
$$\left.37\,641\,849\,385\,140\,000\,z+19\,996\,834\,479\,496\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4\,294\,967\,296\,z^8-1\,127\,428\,915\,200\,z^7+\right.$$
$$83\,919\,969\,976\,320\,z^6-1\,963\,070\,167\,449\,600\,z^5+10\,002\,098\,405\,376\,000\,z^4+13\,390\,784\,792\,985\,600\,z^3+$$
$$32\,726\,948\,462\,208\,000\,z^2+67\,399\,988\,816\,160\,000\,z+59\,990\,503\,438\,490\,625\Big)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(4\,294\,967\,296\,z^8-1\,129\,039\,527\,936\,z^7+84\,338\,225\,971\,200\,z^6-1\,993\,387\,592\,908\,800\,z^5+\right.$$
$$10\,658\,786\,181\,120\,000\,z^4+11\,126\,263\,215\,513\,600\,z^3+26\,161\,180\,844\,198\,400\,z^2+$$
$$\left.\left.\left.48\,842\,066\,725\,452\,000\,z+42\,714\,241\,424\,229\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(220\,550\,939\,541\,504\,000\,\sqrt{2}\;z^{17/4}\right)$$

07.22.03.a8cp.01

$${}_1F_2\left(-\frac{15}{4};\frac{11}{2},\frac{23}{4};-z\right)=$$
$$\left(19\left(2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,130\,113\,269\,760\,z^7+84\,619\,076\,567\,040\,z^6+2\,014\,108\,817\,817\,600\,z^5+\right.\right.\right.$$
$$11\,131\,259\,328\,921\,600\,z^4-8\,994\,092\,973\,465\,600\,z^3+22\,028\,537\,539\,008\,000\,z^2-$$
$$\left.37\,641\,849\,385\,140\,000\,z+19\,996\,834\,479\,496\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4\,294\,967\,296\,z^8+1\,127\,428\,915\,200\,z^7+\right.$$
$$83\,919\,969\,976\,320\,z^6+1\,963\,070\,167\,449\,600\,z^5+10\,002\,098\,405\,376\,000\,z^4-13\,390\,784\,792\,985\,600\,z^3+$$
$$32\,726\,948\,462\,208\,000\,z^2-67\,399\,988\,816\,160\,000\,z+59\,990\,503\,438\,490\,625\Big)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(4\,294\,967\,296\,z^8+1\,129\,039\,527\,936\,z^7+84\,338\,225\,971\,200\,z^6+1\,993\,387\,592\,908\,800\,z^5+\right.$$
$$10\,658\,786\,181\,120\,000\,z^4-11\,126\,263\,215\,513\,600\,z^3+26\,161\,180\,844\,198\,400\,z^2-$$
$$\left.\left.\left.48\,842\,066\,725\,452\,000\,z+42\,714\,241\,424\,229\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(220\,550\,939\,541\,504\,000\,\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1=-\frac{13}{4}$, $b_{1.}\geq-\frac{11}{2}$

For fixed z and $a_1=-\frac{13}{4}$, $b_{1.}=-\frac{11}{2}$

07.22.03.a8cq.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{349\,781\,355\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(53\,248\,z^5+5\,112\,576\,z^4+83\,233\,920\,z^3+306\,971\,280\,z^2-735\,508\,620\,z+349\,781\,355\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$28\sqrt{z}\,\left(53\,248\,z^4+2\,069\,760\,z^3+20\,100\,960\,z^2+38\,447\,640\,z-49\,968\,765\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.4\,z\left(13\,312\,z^4+1\,552\,320\,z^3+33\,448\,800\,z^2+197\,241\,660\,z+349\,781\,355\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)$$

07.22.03.a8cr.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{349\,781\,355\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-53\,248\,z^5+5\,112\,576\,z^4-83\,233\,920\,z^3+306\,971\,280\,z^2+735\,508\,620\,z+349\,781\,355\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$28\sqrt{z}\left(53\,248\,z^4-2\,069\,760\,z^3+20\,100\,960\,z^2-38\,447\,640\,z-49\,968\,765\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(13\,312\,z^4-1\,552\,320\,z^3+33\,448\,800\,z^2-197\,241\,660\,z+349\,781\,355\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8cs.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},-\frac{21}{4};z\right)=\frac{1}{3\,711\,015}\left(\left(1024\,z^4+99\,648\,z^3+1\,663\,200\,z^2+7\,004\,340\,z+3\,711\,015\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.18\sqrt{z}\left(768\,z^3+26\,768\,z^2+228\,480\,z+412\,335\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.a8ct.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},-\frac{21}{4};-z\right)=\frac{1}{3\,711\,015}\left(\left(1024\,z^4-99\,648\,z^3+1\,663\,200\,z^2-7\,004\,340\,z+3\,711\,015\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.18\sqrt{z}\left(768\,z^3-26\,768\,z^2+228\,480\,z-412\,335\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8cu.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{15\,207\,885\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(50\,944\,z^4+1\,102\,976\,z^3+4\,682\,832\,z^2-10\,769\,220\,z+5\,069\,295\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(6656\,z^4+505\,344\,z^3+5\,854\,464\,z^2+12\,030\,480\,z-15\,207\,885\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.84\,z\left(1984\,z^3+60\,896\,z^2+392\,700\,z+724\,185\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8cv.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{15\,207\,885\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(50\,944\,z^4-1\,102\,976\,z^3+4\,682\,832\,z^2+10\,769\,220\,z+5\,069\,295\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(6656\,z^4-505\,344\,z^3+5\,854\,464\,z^2-12\,030\,480\,z-15\,207\,885\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.84\,z\left(1984\,z^3-60\,896\,z^2+392\,700\,z-724\,185\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8cw.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},-\frac{17}{4};z\right)=$$
$$\left(\frac{3008\,z^3}{176\,715}+\frac{224\,z^2}{561}+\frac{348\,z}{187}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(128\,z^3+9072\,z^2+93\,240\,z+176\,715\right)\sinh\left(2\sqrt{z}\right)}{176\,715}$$

07.22.03.a8cx.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, -\frac{17}{4}; -z\right) =$$

$$\left(-\frac{3008\,z^3}{176\,715} + \frac{224\,z^2}{561} - \frac{348\,z}{187} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-128\,z^3 + 9072\,z^2 - 93\,240\,z + 176\,715\right)\sin\left(2\sqrt{z}\right)}{176\,715}$$

07.22.03.a8cy.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, -\frac{15}{4}; z\right) =$$

$$\frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(1280\,z^4 + 48\,768\,z^3 + 265\,776\,z^2 - 575\,652\,z + 266\,805\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(5888\,z^3 + 95\,200\,z^2 + 219\,912\,z - 266\,805\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(704\,z^3 + 54\,432\,z^2 + 407\,484\,z + 800\,415\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8cz.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, -\frac{15}{4}; -z\right) =$$

$$\frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(1280\,z^4 - 48\,768\,z^3 + 265\,776\,z^2 + 575\,652\,z + 266\,805\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(5888\,z^3 - 95\,200\,z^2 + 219\,912\,z + 266\,805\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(704\,z^3 - 54\,432\,z^2 + 407\,484\,z - 800\,415\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8d0.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, -\frac{13}{4}; z\right) = \left(\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} + \frac{20\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16\,z^2 + 240\,z + 495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8d1.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, -\frac{13}{4}; -z\right) = \left(-\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} - \frac{20\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(16\,z^2 - 240\,z + 495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.a8d2.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, -\frac{11}{4}; z\right) = \frac{1}{53\,361\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(256\,z^4 + 5760\,z^3 + 60\,144\,z^2 - 118\,188\,z + 53\,361\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512\,z^3 + 16\,128\,z^2 + 47\,040\,z - 53\,361\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-64\,z^3 + 2464\,z^2 + 24\,108\,z + 53\,361\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8d3.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) = \frac{1}{53\,361\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(256z^4 - 5760z^3 + 60\,144z^2 + 118\,188z + 53\,361\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512z^3 - 16\,128z^2 + 47\,040z + 53\,361\right)\right.\right.$$
$$\left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(64z^3 + 2464z^2 - 24\,108z + 53\,361\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8d4.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{20\,790}\left(e^{-2\sqrt{z}}\left(-64e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4} + 64e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4} - 64e^{4\sqrt{z}}z^3 -\right.\right.$$
$$64z^3 - 224e^{4\sqrt{z}}z^{5/2} + 224z^{5/2} + 2016e^{4\sqrt{z}}z^2 + 2016z^2 - 8400e^{4\sqrt{z}}z^{3/2} + 8400z^{3/2} +$$
$$\left.\left.18\,060e^{4\sqrt{z}}z + 18\,060z - 20\,790e^{4\sqrt{z}}\sqrt{z} + 20\,790\sqrt{z} + 10\,395e^{4\sqrt{z}} + 10\,395\right)\right)$$

07.22.03.a8d5.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, -\frac{9}{4}; -z\right) = \frac{1}{10\,395}$$
$$\left(128\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4} + 14\left(16z^2 - 600z + 1485\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(64z^3 + 2016z^2 - 18\,060z + 10\,395\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8d6.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, -\frac{7}{4}; z\right) = \frac{1}{4851\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-128z^4 - 384z^3 + 7056z^2 - 11\,340z + 4851\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(16z^3 - 224z^2 - 1624z + 1617\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +\right.\right.$$
$$\left.\left.4z\left(32z^3 + 224z^2 + 1596z + 4851\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8d7.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, -\frac{7}{4}; -z\right) = \frac{1}{4851\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-128z^4 + 384z^3 + 7056z^2 + 11\,340z + 4851\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(16z^3 + 224z^2 - 1624z - 1617\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +\right.\right.$$
$$\left.\left.4z\left(-32z^3 + 224z^2 - 1596z + 4851\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8d8.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{2310}\left(e^{-2\sqrt{z}}\left(16\,e^{4\sqrt{z}}\,z^3+16\,z^3+4\,e^{4\sqrt{z}}\,z^{5/2}-4\,z^{5/2}+e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z+169)\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}-\right.\right.$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z+169)\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}+224\,e^{4\sqrt{z}}\,z^2+224\,z^2-448\,e^{4\sqrt{z}}\,z^{3/2}+$$
$$\left.\left.448\,z^{3/2}+1764\,e^{4\sqrt{z}}\,z+1764\,z-2310\,e^{4\sqrt{z}}\,\sqrt{z}+2310\,\sqrt{z}+1155\,e^{4\sqrt{z}}+1155\right)\right)$$

07.22.03.a8d9.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},-\frac{5}{4};-z\right)=\frac{1}{1155}$$
$$\left(2\sqrt{\pi}\,(169-16\,z)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}-2\left(2\,z^2+224\,z-1155\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-16\,z^3+224\,z^2-1764\,z+1155\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8da.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},-\frac{3}{4};z\right)=\frac{1}{2079\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(64\,z^4+972\,z^3+3024\,z^2-5796\,z+2079\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-6\sqrt{z}\left(16\,z^3+309\,z^2+2016\,z-1386\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4\,z\left(16\,z^3+255\,z^2+252\,z-2079\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8db.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},-\frac{3}{4};-z\right)=\frac{1}{2079\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(64\,z^4-972\,z^3+3024\,z^2+5796\,z+2079\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-6\sqrt{z}\left(16\,z^3-309\,z^2+2016\,z+1386\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(16\,z^3-255\,z^2+252\,z+2079\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8dc.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{59\,136}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\,\sqrt{2\pi}\left(256\,z^2+5408\,z+25\,857\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\,\sqrt{2\pi}\left(256\,z^2+5408\,z+25\,857\right)\right.\right.$$
$$\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}-4\left(64\,z^3-16\,z^{5/2}+1364\,z^2-769\,z^{3/2}+2688\,z-14\,784\,\sqrt{z}+\right.$$
$$\left.\left.\left.e^{4\sqrt{z}}\left(64\,z^3+16\,z^{5/2}+1364\,z^2+769\,z^{3/2}+2688\,z+14\,784\,\sqrt{z}-7392\right)-7392\right)\right)\right)$$

07.22.03.a8dd.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},-\frac{1}{4};-z\right)=\frac{1}{14\,784}\left(\sqrt{\pi}\,\left(256\,z^2-5408\,z+25\,857\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+\right.$$
$$\left.2\left(4\left(16\,z^3-341\,z^2+672\,z+1848\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\,\left(16\,z^2-769\,z+14\,784\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8de.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},\frac{1}{4};z\right)=\frac{1}{27\,720\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(-2\left(256\,z^4+6592\,z^3+42\,399\,z^2-10\,080\,z-27\,720\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\,\left(256\,z^3+6816\,z^2+30\,345\,z+73\,920\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\,z\left(256\,z^3+6784\,z^2+50\,715\,z+110\,880\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8df.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},\frac{1}{4};-z\right)=\frac{1}{27\,720\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(-2\left(256\,z^4-6592\,z^3+42\,399\,z^2+10\,080\,z-27\,720\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\,\left(256\,z^3-6816\,z^2+30\,345\,z-73\,920\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\,z\left(-256\,z^3+6784\,z^2-50\,715\,z+110\,880\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8dg.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{11\,354\,112}\left(e^{-2\sqrt{z}}\left(4\left(1024\,z^3-256\,z^{5/2}+32\,640\,z^2-8352\,z^{3/2}+336\,756\,z+123\,543\sqrt{z}+e^{4\sqrt{z}}\left(1024\,z^3+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.256\,z^{5/2}+32\,640\,z^2+8352\,z^{3/2}+336\,756\,z-123\,543\sqrt{z}+1\,419\,264\right)+1\,419\,264\right)+\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\,\left(4096\,z^3+129\,792\,z^2+1\,241\,136\,z+2\,714\,985\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\,\left(4096\,z^3+129\,792\,z^2+1\,241\,136\,z+2\,714\,985\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8dh.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},\frac{3}{4};-z\right)=\frac{1}{2\,838\,528}\left(-8\left(256\,z^3-8160\,z^2+84\,189\,z-354\,816\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\sqrt{\pi}\,\sqrt[4]{z}\,\left(-4096\,z^3+129\,792\,z^2-1\,241\,136\,z+2\,714\,985\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt{z}\,\left(-256\,z^2+8352\,z+123\,543\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8di.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{6\,209\,280\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(-2\left(4096z^4 + 148\,736z^3 + 1\,709\,232z^2 + 5\,546\,331z - 6\,209\,280\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(4096z^3 + 152\,320z^2 + 1\,961\,904z + \right.\right.\right. $$
$$ \left.\left.\left. 9\,996\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(4096z^3 + 151\,808z^2 + 1\,824\,816z + 5\,152\,455\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8dj.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) = \frac{1}{6\,209\,280\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(\left(-8192z^4 + 297\,472z^3 - 3\,418\,464z^2 + 11\,092\,662z + 12\,418\,560\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(4096z^3 - 152\,320z^2 + 1\,961\,904z - \right.\right.\right. $$
$$ \left.\left.\left. 9\,996\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(-4096z^3 + 151\,808z^2 - 1\,824\,816z + 5\,152\,455\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8dk.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, \frac{7}{4}; z\right) = $$
$$ \frac{1}{968\,884\,224\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384z^{7/2} - 4096z^3 + 695\,296z^{5/2} - 176\,896z^2 + 10\,065\,600z^{3/2} - 3\,937\,584z + \right.\right.\right. $$
$$ 30\,611\,028\sqrt{z} + e^{4\sqrt{z}}\left(16\,384z^{7/2} + 4096z^3 + 695\,296z^{5/2} + 176\,896z^2 + \right. $$
$$ \left. 10\,065\,600z^{3/2} + 3\,937\,584z + 30\,611\,028\sqrt{z} + 67\,874\,625\right) - 67\,874\,625\Big) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 2\,768\,896z^3 + 39\,716\,352z^2 + 173\,759\,040z + 67\,874\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$
$$ \left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 2\,768\,896z^3 + 39\,716\,352z^2 + 173\,759\,040z + 67\,874\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8dl.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, \frac{7}{4}; -z\right) = $$
$$ \frac{1}{242\,221\,056\,z^{3/4}}\left(\sqrt{\pi}\left(-65\,536z^4 + 2\,768\,896z^3 - 39\,716\,352z^2 + 173\,759\,040z - 67\,874\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ 2\sqrt[4]{z}\left(\left(-4096z^3 + 176\,896z^2 - 3\,937\,584z + 67\,874\,625\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left. 4\sqrt{z}\left(4096z^3 - 173\,824z^2 + 2\,516\,400z - 7\,652\,757\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8dm.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{357\,654\,528\sqrt{2}\,z^{3/4}}\left(\left(-2\sqrt{z}\left(65\,536z^4+3\,072\,000z^3+50\,061\,312z^2+243\,434\,016z-251\,357\,337\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$3\left(65\,536z^4+3\,129\,344z^3+52\,846\,080z^2+197\,854\,272z+177\,161\,985\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\left(65\,536z^4+3\,121\,152z^3+52\,429\,824z^2+296\,781\,408z+531\,485\,955\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8dn.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{357\,654\,528\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(-65\,536z^4+3\,072\,000z^3-50\,061\,312z^2+243\,434\,016z+251\,357\,337\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$3\left(65\,536z^4-3\,129\,344z^3+52\,846\,080z^2-197\,854\,272z+177\,161\,985\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.2\sqrt{z}\left(65\,536z^4-3\,121\,152z^3+52\,429\,824z^2-296\,781\,408z+531\,485\,955\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8do.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{44\,291\,850\,240\,z^{7/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144z^{9/2}-65\,536z^4+13\,893\,632z^{7/2}-3\,522\,560z^3+267\,479\,040z^{5/2}-\right.\right.\right.$$
$$69\,680\,640z^2+1\,895\,815\,680z^{3/2}+868\,795\,200z+7\,873\,456\,500\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4+13\,893\,632z^{7/2}+3\,522\,560z^3+267\,479\,040z^{5/2}+69\,680\,640z^2+\right.$$
$$\left.1\,895\,815\,680z^{3/2}-868\,795\,200z+7\,873\,456\,500\sqrt{z}-5\,905\,092\,375\right)+5\,905\,092\,375\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5+55\,377\,920z^4+1\,059\,102\,720z^3+6\,950\,361\,600z^2+5\,429\,970\,000z-5\,905\,092\,375\right)$$
$$\left.\left.\mathrm{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5+55\,377\,920z^4+1\,059\,102\,720z^3+\right.\right.\right.$$
$$\left.\left.\left.6\,950\,361\,600z^2+5\,429\,970\,000z-5\,905\,092\,375\right)\mathrm{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8dp.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},\frac{11}{4};-z\right)=\frac{1}{11\,072\,962\,560\,z^{7/4}}$$
$$\left(-\sqrt{\pi}\left(1\,048\,576z^5-55\,377\,920z^4+1\,059\,102\,720z^3-6\,950\,361\,600z^2+5\,429\,970\,000z+5\,905\,092\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4-3\,473\,408z^3+66\,869\,760z^2-473\,953\,920z+1\,968\,364\,125\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(65\,536z^4-3\,522\,560z^3+69\,680\,640z^2+868\,795\,200z-5\,905\,092\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8dq.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) = \frac{1}{13\,988\,265\,984\sqrt{2}\, z^{7/4}} $$
$$ \left(\left(-2\sqrt{z}\left(1\,048\,576 z^5 + 60\,227\,584 z^4 + 1\,270\,308\,864 z^3 + 9\,152\,478\,720 z^2 + 10\,011\,277\,584 z - 16\,476\,064\,605\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 3\left(1\,048\,576 z^5 + 61\,145\,088 z^4 + 1\,324\,556\,288 z^3 + 11\,097\,816\,576 z^2 + 59\,526\,426\,960 z - 27\,460\,107\,675\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 + 61\,014\,016 z^4 + 1\,316\,511\,744 z^3 + \right. $$
$$ \left.\left. 10\,167\,657\,984 z^2 + 2\,834\,591\,760 z - 82\,380\,323\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2 \Bigg) $$

07.22.03.a8dr.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) = -\frac{1}{13\,988\,265\,984\sqrt{2}\, z^{7/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576 z^5 - 60\,227\,584 z^4 + 1\,270\,308\,864 z^3 - 9\,152\,478\,720 z^2 + 10\,011\,277\,584 z + 16\,476\,064\,605\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(1\,048\,576 z^5 - 61\,145\,088 z^4 + 1\,324\,556\,288 z^3 - 11\,097\,816\,576 z^2 + \right. $$
$$ 59\,526\,426\,960 z + 27\,460\,107\,675\Big) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 - 61\,014\,016 z^4 + \right. $$
$$ \left.\left. 1\,316\,511\,744 z^3 - 10\,167\,657\,984 z^2 + 2\,834\,591\,760 z + 82\,380\,323\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2 \Bigg) $$

07.22.03.a8ds.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) = $$
$$ \frac{1}{1\,546\,188\,226\,560 z^{11/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304 z^{11/2} - 1\,048\,576 z^5 + 266\,600\,448 z^{9/2} - 67\,436\,544 z^4 + 6\,406\,176\,768 z^{7/2} - \right.\right.\right. $$
$$ 1\,654\,824\,960 z^3 + 56\,914\,053\,120 z^{5/2} - 25\,484\,659\,200 z^2 - 75\,585\,182\,400 z^{3/2} - 888\,125\,893\,200 z - $$
$$ 1\,818\,768\,451\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 266\,600\,448 z^{9/2} + 67\,436\,544 z^4 + \right. $$
$$ \left.\left. 6\,406\,176\,768 z^{7/2} + 1\,654\,824\,960 z^3 + 56\,914\,053\,120 z^{5/2} + 25\,484\,659\,200 z^2 - 75\,585\,182\,400 z^{3/2} + \right. \right. $$
$$ \left. 888\,125\,893\,200 z - 1\,818\,768\,451\,500\sqrt{z} + 1\,364\,076\,338\,625\right) - 1\,364\,076\,338\,625\Big) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 1\,063\,256\,064 z^5 + 25\,418\,465\,280 z^4 + 222\,411\,571\,200 z^3 + \right. $$
$$ \left. 260\,638\,560\,000 z^2 - 566\,888\,868\,000 z + 1\,364\,076\,338\,625\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 1\,063\,256\,064 z^5 + 25\,418\,465\,280 z^4 + 222\,411\,571\,200 z^3 + \right. $$
$$ \left. \left. 260\,638\,560\,000 z^2 - 566\,888\,868\,000 z + 1\,364\,076\,338\,625\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.a8dt.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},\frac{15}{4};-z\right)=$$

$$\frac{1}{386\,547\,056\,640\,z^{11/4}}\left(-\sqrt{\pi}\,\left(16\,777\,216\,z^6-1\,063\,256\,064\,z^5+25\,418\,465\,280\,z^4-222\,411\,571\,200\,z^3+\right.\right.$$

$$\left.260\,638\,560\,000\,z^2+566\,888\,868\,000\,z+1\,364\,076\,338\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$

$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(1\,048\,576\,z^5-66\,650\,112\,z^4+1\,601\,544\,192\,z^3-14\,228\,513\,280\,z^2-18\,896\,295\,600\,z+454\,692\,112\,875\right)\right.$$

$$\cos\left(2\sqrt{z}\right)+\left(1\,048\,576\,z^5-67\,436\,544\,z^4+1\,654\,824\,960\,z^3-\right.$$

$$\left.\left.\left.25\,484\,659\,200\,z^2+888\,125\,893\,200\,z-1\,364\,076\,338\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8du.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},\frac{17}{4};z\right)=$$

$$\left(\left(-2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,140\,850\,688\,z^5+29\,528\,752\,128\,z^4+277\,880\,537\,088\,z^3+142\,435\,738\,368\,z^2-\right.\right.\right.$$

$$\left.6\,326\,808\,808\,320\,z+5\,189\,960\,350\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(16\,777\,216\,z^6+1\,155\,530\,752\,z^5+30\,551\,769\,088\,z^4+\right.$$

$$\left.305\,512\,660\,992\,z^3-771\,008\,958\,720\,z^2-16\,695\,745\,466\,400\,z+8\,649\,933\,917\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,153\,433\,600\,z^5+30\,400\,905\,216\,z^4+301\,200\,703\,488\,z^3+498\,888\,149\,760\,z^2+\right.$$

$$\left.\left.5\,272\,340\,673\,600\,z+25\,949\,801\,752\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(447\,624\,511\,488\sqrt{2}\;z^{11/4}\right)$$

07.22.03.a8dv.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},\frac{17}{4};-z\right)=$$

$$-\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-1\,140\,850\,688\,z^5+29\,528\,752\,128\,z^4-277\,880\,537\,088\,z^3+142\,435\,738\,368\,z^2+\right.\right.\right.$$

$$\left.6\,326\,808\,808\,320\,z+5\,189\,960\,350\,575\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216\,z^6-1\,155\,530\,752\,z^5+30\,551\,769\,088\,z^4-\right.$$

$$\left.305\,512\,660\,992\,z^3-771\,008\,958\,720\,z^2+16\,695\,745\,466\,400\,z+8\,649\,933\,917\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$2\sqrt{z}\,\left(16\,777\,216\,z^6-1\,153\,433\,600\,z^5+30\,400\,905\,216\,z^4-301\,200\,703\,488\,z^3+498\,888\,149\,760\,z^2-\right.$$

$$\left.\left.5\,272\,340\,673\,600\,z+25\,949\,801\,752\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(447\,624\,511\,488\sqrt{2}\;z^{11/4}\right)$$

07.22.03.a8dw.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) = \frac{1}{46\,179\,488\,366\,592\,z^{15/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(67\,108\,864\,z^{13/2} - 16\,777\,216\,z^6 + 4\,974\,444\,544\,z^{11/2} - 1\,256\,194\,048\,z^5 + 143\,301\,279\,744\,z^{9/2} - 36\,810\,719\,232\,z^4 + 1\,585\,775\,837\,184\,z^{7/2} - 427\,714\,560\,000\,z^3 + 3\,896\,836\,070\,400\,z^{5/2} + 19\,181\,839\,622\,400\,z^2 + 134\,692\,795\,036\,800\,z^{3/2} + 439\,414\,457\,882\,400\,z + 740\,238\,759\,760\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 + 4\,974\,444\,544\,z^{11/2} + 1\,256\,194\,048\,z^5 + 143\,301\,279\,744\,z^{9/2} + 36\,810\,719\,232\,z^4 + 1\,585\,775\,837\,184\,z^{7/2} + 427\,714\,560\,000\,z^3 + 3\,896\,836\,070\,400\,z^{5/2} - 19\,181\,839\,622\,400\,z^2 + 134\,692\,795\,036\,800\,z^{3/2} - 439\,414\,457\,882\,400\,z + 740\,238\,759\,760\,500\sqrt{z} - 555\,179\,069\,820\,375\right) + 555\,179\,069\,820\,375\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7 + 19\,847\,446\,528\,z^6 + 569\,373\,622\,272\,z^5 + 6\,227\,523\,993\,600\,z^4 + 9\,730\,506\,240\,000\,z^3 - 31\,745\,776\,608\,000\,z^2 + 152\,776\,549\,926\,000\,z - 555\,179\,069\,820\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7 + 19\,847\,446\,528\,z^6 + 569\,373\,622\,272\,z^5 + 6\,227\,523\,993\,600\,z^4 + 9\,730\,506\,240\,000\,z^3 - 31\,745\,776\,608\,000\,z^2 + 152\,776\,549\,926\,000\,z - 555\,179\,069\,820\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8dx.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) = \frac{1}{11\,544\,872\,091\,648\,z^{15/4}}\left(2\sqrt[4]{z}\left(\left(-16\,777\,216\,z^6 + 1\,256\,194\,048\,z^5 - 36\,810\,719\,232\,z^4 + 427\,714\,560\,000\,z^3 + 19\,181\,839\,622\,400\,z^2 - 439\,414\,457\,882\,400\,z + 555\,179\,069\,820\,375\right)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\left(16\,777\,216\,z^6 - 1\,243\,611\,136\,z^5 + 35\,825\,319\,936\,z^4 - 396\,443\,959\,296\,z^3 + 974\,209\,017\,600\,z^2 - 33\,673\,198\,759\,200\,z + 185\,059\,689\,940\,125\right)\cos\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\left(268\,435\,456\,z^7 - 19\,847\,446\,528\,z^6 + 569\,373\,622\,272\,z^5 - 6\,227\,523\,993\,600\,z^4 + 9\,730\,506\,240\,000\,z^3 + 31\,745\,776\,608\,000\,z^2 + 152\,776\,549\,926\,000\,z + 555\,179\,069\,820\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.a8dy.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) = -\left(17\left(2\sqrt{z}\left(268\,435\,456\,z^7 + 21\,088\,960\,512\,z^6 + 646\,834\,028\,544\,z^5 + 7\,509\,960\,622\,080\,z^4 + 8\,503\,704\,760\,320\,z^3 + 63\,268\,088\,083\,200\,z^2 + 2\,961\,737\,373\,394\,800\,z - 2\,631\,309\,897\,741\,525\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(268\,435\,456\,z^7 + 21\,323\,841\,536\,z^6 + 665\,683\,230\,720\,z^5 + 8\,108\,838\,420\,480\,z^4 + 25\,397\,942\,169\,600\,z^3 + 1\,286\,451\,124\,358\,400\,z^2 + 8\,054\,818\,464\,092\,400\,z - 4\,385\,516\,496\,235\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(268\,435\,456\,z^7 + 21\,290\,287\,104\,z^6 + 662\,914\,990\,080\,z^5 + 8\,016\,654\,827\,520\,z^4 + 14\,842\,953\,216\,000\,z^3 - 189\,804\,264\,249\,600\,z^2 - 3\,902\,850\,183\,632\,400\,z - 13\,156\,549\,488\,707\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(214\,859\,765\,514\,240\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a8dz.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) = $$

$$ -\left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 - 21\,088\,960\,512\,z^6 + 646\,834\,028\,544\,z^5 - 7\,509\,960\,622\,080\,z^4 + 8\,503\,704\,760\,320\,z^3 - \right.\right.\right. $$

$$ \left.\left.\left. 63\,268\,088\,083\,200\,z^2 + 2\,961\,737\,373\,394\,800\,z + 2\,631\,309\,897\,741\,525\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$

$$ \left. 3\left(268\,435\,456\,z^7 - 21\,323\,841\,536\,z^6 + 665\,683\,230\,720\,z^5 - 8\,108\,838\,420\,480\,z^4 + 25\,397\,942\,169\,600\,z^3 - \right.\right. $$

$$ \left.\left. 1\,286\,451\,124\,358\,400\,z^2 + 8\,054\,818\,464\,092\,400\,z + 4\,385\,516\,496\,235\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7 - 21\,290\,287\,104\,z^6 + 662\,914\,990\,080\,z^5 - 8\,016\,654\,827\,520\,z^4 + \right. $$

$$ 14\,842\,953\,216\,000\,z^3 + 189\,804\,264\,249\,600\,z^2 - 3\,902\,850\,183\,632\,400\,z + $$

$$ \left.\left. 13\,156\,549\,488\,707\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(214\,859\,765\,514\,240\,\sqrt{2}\;z^{15/4}\right) $$

07.22.03.a8e0.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) = $$

$$ \left(19\,e^{-2\sqrt{z}}\,\left(4\sqrt[4]{z}\,\left(1\,073\,741\,824\,z^{15/2} - 268\,435\,456\,z^7 + 90\,932\,510\,720\,z^{13/2} - 22\,934\,454\,272\,z^6 + 3\,054\,111\,817\,728\,z^{11/2} - \right.\right.\right. $$

$$ 781\,420\,855\,296\,z^5 + 40\,465\,466\,130\,432\,z^{9/2} - 10\,768\,343\,040\,000\,z^4 + 86\,826\,055\,680\,000\,z^{7/2} - $$

$$ 173\,197\,308\,211\,200\,z^3 - 3\,356\,788\,340\,505\,600\,z^{5/2} - 26\,471\,845\,701\,100\,800\,z^2 - $$

$$ 113\,362\,278\,637\,608\,000\,z^{3/2} - 293\,134\,548\,865\,158\,000\,z - 455\,246\,837\,252\,707\,500\,\sqrt{z} + $$

$$ e^{4\sqrt{z}}\,\left(1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 + 90\,932\,510\,720\,z^{13/2} + 22\,934\,454\,272\,z^6 + \right. $$

$$ 3\,054\,111\,817\,728\,z^{11/2} + 781\,420\,855\,296\,z^5 + 40\,465\,466\,130\,432\,z^{9/2} + 10\,768\,343\,040\,000\,z^4 + $$

$$ 86\,826\,055\,680\,000\,z^{7/2} + 173\,197\,308\,211\,200\,z^3 - 3\,356\,788\,340\,505\,600\,z^{5/2} + $$

$$ 26\,471\,845\,701\,100\,800\,z^2 - 113\,362\,278\,637\,608\,000\,z^{3/2} + 293\,134\,548\,865\,158\,000\,z - $$

$$ \left.\left. 455\,246\,837\,252\,707\,500\,\sqrt{z} + 341\,435\,127\,939\,530\,625\right) - 341\,435\,127\,939\,530\,625\right) + $$

$$ e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4\,294\,967\,296\,z^8 + 362\,924\,736\,512\,z^7 + 12\,146\,637\,275\,136\,z^6 + 159\,424\,614\,236\,160\,z^5 + \right. $$

$$ 311\,376\,199\,680\,000\,z^4 - 1\,354\,486\,468\,608\,000\,z^3 + 9\,777\,699\,195\,264\,000\,z^2 - $$

$$ \left. 71\,062\,920\,937\,008\,000\,z + 341\,435\,127\,939\,530\,625\right) \operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right) - $$

$$ e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4\,294\,967\,296\,z^8 + 362\,924\,736\,512\,z^7 + 12\,146\,637\,275\,136\,z^6 + 159\,424\,614\,236\,160\,z^5 + \right. $$

$$ 311\,376\,199\,680\,000\,z^4 - 1\,354\,486\,468\,608\,000\,z^3 + 9\,777\,699\,195\,264\,000\,z^2 - $$

$$ \left.\left. 71\,062\,920\,937\,008\,000\,z + 341\,435\,127\,939\,530\,625\right) \operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\Big) \Big/ \left(23\,643\,898\,043\,695\,104\,z^{19/4}\right) $$

07.22.03.a8e1.01

$${}_1F_2\left(-\frac{13}{4};-\frac{11}{2},\frac{23}{4};-z\right)=$$
$$-\left(19\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^8-362\,924\,736\,512\,z^7+12\,146\,637\,275\,136\,z^6-159\,424\,614\,236\,160\,z^5+311\,376\,199\,680\,000\,z^4+\right.\right.\right.$$
$$\left.\left.\left.1\,354\,486\,468\,608\,000\,z^3+9\,777\,699\,195\,264\,000\,z^2+71\,062\,920\,937\,008\,000\,z+341\,435\,127\,939\,530\,625\right)\right.$$
$$S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^7-22\,733\,127\,680\,z^6+763\,527\,954\,432\,z^5-10\,116\,366\,532\,608\,z^4+\right.\right.$$
$$\left.\left.21\,706\,513\,920\,000\,z^3+839\,197\,085\,126\,400\,z^2-28\,340\,569\,659\,402\,000\,z+113\,811\,709\,313\,176\,875\right)\right.$$
$$\cos\left(2\sqrt{z}\right)+\left(268\,435\,456\,z^7-22\,934\,454\,272\,z^6+781\,420\,855\,296\,z^5-10\,768\,343\,040\,000\,z^4+\right.$$
$$173\,197\,308\,211\,200\,z^3-26\,471\,845\,701\,100\,800\,z^2+293\,134\,548\,865\,158\,000\,z-$$
$$\left.\left.\left.\left.341\,435\,127\,939\,530\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)\Big/\left(5\,910\,974\,510\,923\,776\,z^{19/4}\right)$$

For fixed z and $a_1=-\frac{13}{4}$, $b_{1.}=-\frac{9}{2}$

07.22.03.a8e2.01

$${}_1F_2\left(-\frac{13}{4};-\frac{9}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{95\,394\,915\sqrt[4]{z}}\left(\sqrt{2}\left(7\left(134\,144\,z^4+2\,948\,352\,z^3+12\,624\,480\,z^2-28\,967\,400\,z+13\,627\,845\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$12\sqrt{z}\left(13\,312\,z^4+1\,043\,392\,z^3+12\,209\,120\,z^2+25\,192\,860\,z-31\,798\,305\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.28\,z\left(36\,352\,z^3+1\,137\,840\,z^2+7\,373\,520\,z+13\,627\,845\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8e3.01

$${}_1F_2\left(-\frac{13}{4};-\frac{9}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{95\,394\,915\sqrt[4]{z}}\left(\sqrt{2}\left(7\left(134\,144\,z^4-2\,948\,352\,z^3+12\,624\,480\,z^2+28\,967\,400\,z+13\,627\,845\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$12\sqrt{z}\left(13\,312\,z^4-1\,043\,392\,z^3+12\,209\,120\,z^2-25\,192\,860\,z-31\,798\,305\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.28\,z\left(36\,352\,z^3-1\,137\,840\,z^2+7\,373\,520\,z-13\,627\,845\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8e4.01

$${}_1F_2\left(-\frac{13}{4};-\frac{9}{2},-\frac{21}{4};z\right)=\frac{1}{337\,365}$$
$$\left(\left(5888\,z^3+135\,600\,z^2+628\,320\,z+337\,365\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(256\,z^3+17\,552\,z^2+178\,500\,z+337\,365\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.a8e5.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{1}{337\,365}$$
$$\left(\left(-5888\,z^3 + 135\,600\,z^2 - 628\,320\,z + 337\,365\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-256\,z^3 + 17\,552\,z^2 - 178\,500\,z + 337\,365\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8e6.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, -\frac{19}{4}; z\right) = \frac{1}{4\,147\,605\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(\left(22\,016\,z^4 + 784\,896\,z^3 + 4\,080\,384\,z^2 - 8\,925\,840\,z + 4\,147\,605\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 84\sqrt{z}\,\left(4672\,z^3 + 71\,456\,z^2 + 161\,700\,z - 197\,505\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 28\,z\left(640\,z^3 + 41\,712\,z^2 + 304\,920\,z + 592\,515\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8e7.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{4\,147\,605\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(\left(22\,016\,z^4 - 784\,896\,z^3 + 4\,080\,384\,z^2 + 8\,925\,840\,z + 4\,147\,605\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 84\sqrt{z}\,\left(4672\,z^3 - 71\,456\,z^2 + 161\,700\,z + 197\,505\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 28\,z\left(640\,z^3 - 41\,712\,z^2 + 304\,920\,z - 592\,515\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8e8.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, -\frac{17}{4}; z\right) = \frac{\left(128\,z^3 + 5520\,z^2 + 29\,400\,z + 16\,065\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(592\,z^2 + 7980\,z + 16\,065\right)\sinh\left(2\sqrt{z}\right)}{16\,065}$$

07.22.03.a8e9.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, -\frac{17}{4}; -z\right) = \frac{\left(-128\,z^3 + 5520\,z^2 - 29\,400\,z + 16\,065\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(592\,z^2 - 7980\,z + 16\,065\right)\sin\left(2\sqrt{z}\right)}{16\,065}$$

07.22.03.a8ea.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{654\,885\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(1024\,z^4 + 92\,928\,z^3 + 703\,584\,z^2 - 1\,435\,896\,z + 654\,885\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,\left(2624\,z^3 + 71\,008\,z^2 + 187\,572\,z - 218\,295\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-256\,z^3 + 34\,608\,z^2 + 310\,464\,z + 654\,885\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8eb.01

$${}_1F_2\left(-\frac{13}{4};-\frac{9}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{654\,885\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024z^4-92\,928z^3+703\,584z^2+1\,435\,896z+654\,885\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(2624z^3-71\,008z^2+\right.\right.\right.$$
$$\left.\left.\left.187\,572z+218\,295\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(256z^3+34\,608z^2-310\,464z+654\,885\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8ec.01

$${}_1F_2\left(-\frac{13}{4};-\frac{9}{2},-\frac{13}{4};z\right)=\left(\frac{16z^2}{63}+\frac{16z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{945}\sqrt{z}\left(16z^2+420z+945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8ed.01

$${}_1F_2\left(-\frac{13}{4};-\frac{9}{2},-\frac{13}{4};-z\right)=\left(\frac{16z^2}{63}-\frac{16z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\left(16z^2-420z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.a8ee.01

$${}_1F_2\left(-\frac{13}{4};-\frac{9}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{43\,659\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512z^4+1536z^3+54\,144z^2-98\,784z+43\,659\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(64z^3+3680z^2+13\,524z-14\,553\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-128z^3+1392z^2+17\,640z+43\,659\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8ef.01

$${}_1F_2\left(-\frac{13}{4};-\frac{9}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{43\,659\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512z^4-1536z^3+54\,144z^2+98\,784z+43\,659\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(64z^3-3680z^2+13\,524z+14\,553\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(128z^3+1392z^2-17\,640z+43\,659\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8eg.01

$${}_1F_2\left(-\frac{13}{4};-\frac{9}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{17\,010}\left(e^{-2\sqrt{z}}\left(-128e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+128e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-128e^{4\sqrt{z}}z^3-\right.\right.$$
$$128z^3-32e^{4\sqrt{z}}z^{5/2}+32z^{5/2}+912e^{4\sqrt{z}}z^2+912z^2-5880e^{4\sqrt{z}}z^{3/2}+5880z^{3/2}+$$
$$\left.\left.14\,280e^{4\sqrt{z}}z+14\,280z-17\,010e^{4\sqrt{z}}\sqrt{z}+17\,010\sqrt{z}+8505e^{4\sqrt{z}}+8505\right)\right)$$

07.22.03.a8eh.01

$${}_1F_2\left(-\frac{13}{4};-\frac{9}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{8505}\left(256\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}+2\left(16z^2-2940z+8505\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(128z^3+912z^2-14\,280z+8505\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8ei.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) = \frac{1}{3969\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-256z^4 - 768z^3 + 6624z^2 - 9576z + 3969\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(32z^3 - 32z^2 - 1428z + 1323\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(64z^3 + 240z^2 + 1008z + 3969\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8ej.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) = \frac{1}{3969\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-256z^4 + 768z^3 + 6624z^2 + 9576z + 3969\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(32z^3 + 32z^2 - 1428z - 1323\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-64z^3 + 240z^2 - 1008z + 3969\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8ek.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, -\frac{5}{4}; z\right) = \frac{1}{1890}\left(e^{-2\sqrt{z}}\left(32e^{4\sqrt{z}}z^3 + 32z^3 + 8e^{4\sqrt{z}}z^{5/2} - 8z^{5/2} + 2e^{2\sqrt{z}}\sqrt{2\pi}\,(16z + 117)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4} - 2e^{2\sqrt{z}}\sqrt{2\pi}\,(16z + 117)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4} + 240e^{4\sqrt{z}}z^2 + 240z^2 - 168e^{4\sqrt{z}}z^{3/2} + 168z^{3/2} + 1344e^{4\sqrt{z}}z + 1344z - 1890e^{4\sqrt{z}}\sqrt{z} + 1890\sqrt{z} + 945e^{4\sqrt{z}} + 945\right)\right) $$

07.22.03.a8el.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, -\frac{5}{4}; -z\right) = \frac{1}{945}\left(4\sqrt{\pi}\,(117 - 16z)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4} - 2\left(4z^2 + 84z - 945\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-32z^3 + 240z^2 - 1344z + 945\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.a8em.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) = \frac{1}{1701\sqrt[4]{z}} \left(\sqrt{2}\left(\left(128z^4 + 1320z^3 + 2304z^2 - 5040z + 1701\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(16z^3 + 179z^2 + 924z - 567\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(32z^3 + 354z^2 + 504z - 1701\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8en.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{1}{1701\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(128z^4 - 1320z^3 + 2304z^2 + 5040z + 1701\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(16z^3 - 179z^2 + 924z + 567\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. 4z\left(32z^3 - 354z^2 + 504z + 1701\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8eo.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) = $$
$$ \frac{1}{24\,192}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\, z^{5/4}\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)(16z+117)^2 + e^{2\sqrt{z}}\sqrt{2\pi}\, z^{5/4}\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)(16z+117)^2 - \right.\right. $$
$$ 4\left(64z^3 - 16z^{5/2} + 948z^2 - 249z^{3/2} + 2688z - 6048\sqrt{z} + \right. $$
$$ \left.\left.\left. e^{4\sqrt{z}}\left(64z^3 + 16z^{5/2} + 948z^2 + 249z^{3/2} + 2688z + 6048\sqrt{z} - 3024\right) - 3024\right)\right)\right) $$

07.22.03.a8ep.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) = \frac{1}{6048} $$
$$ \left(\sqrt{\pi}\, z^{5/4} S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)(117 - 16z)^2 + 2\left(4\left(16z^3 - 237z^2 + 672z + 756\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\left(16z^2 - 249z + 6048\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8eq.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) = \frac{1}{11\,340\sqrt{2}\sqrt[4]{z}} $$
$$ \left(\left(\left(-512z^4 - 9024z^3 - 45\,018z^2 + 20\,160z + 22\,680\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(256z^3 + 4736z^2 + 22\,155z + 30\,240\right)\right.\right. $$
$$ \left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(256z^3 + 4704z^2 + 26\,145z + 45\,360\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8er.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) = \frac{1}{11\,340\sqrt{2}\sqrt[4]{z}} $$
$$ \left(\left(\left(-512z^4 + 9024z^3 - 45\,018z^2 - 20\,160z + 22\,680\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(256z^3 - 4736z^2 + 22\,155z - 30\,240\right)\right.\right. $$
$$ \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(-256z^3 + 4704z^2 - 26\,145z + 45\,360\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8es.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) = \frac{1}{4\,644\,864}\left(e^{-2\sqrt{z}}\left(4\left(1024 z^3 - 256 z^{5/2} + 22\,656 z^2 - 5856 z^{3/2} + 168\,900 z - 2349\sqrt{z} + e^{4\sqrt{z}}\left(1024 z^3 + 256 z^{5/2} + 22\,656 z^2 + 5856 z^{3/2} + 168\,900 z + 2349\sqrt{z} + 580\,608\right) + 580\,608\right) + e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(4096 z^3 + 89\,856 z^2 + 657\,072 z + 1\,163\,565\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(4096 z^3 + 89\,856 z^2 + 657\,072 z + 1\,163\,565\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8et.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) = \frac{1}{1\,161\,216}\left(\sqrt{\pi}\sqrt[4]{z}\left(-4096 z^3 + 89\,856 z^2 - 657\,072 z + 1\,163\,565\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\left(4\left(256 z^3 - 5664 z^2 + 42\,225 z - 145\,152\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\left(256 z^2 - 5856 z + 2349\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8eu.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) = \frac{1}{2\,540\,160\sqrt{2}\sqrt[4]{z}}\left(\left(-2\left(4096 z^4 + 102\,144 z^3 + 888\,048 z^2 + 2\,072\,133 z - 2\,540\,160\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(4096 z^3 + 105\,728 z^2 + 983\,472 z + 4\,206\,195\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2 z\left(4096 z^3 + 105\,216 z^2 + 968\,688 z + 2\,457\,945\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8ev.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{5}{4}; -z\right) = \frac{1}{2\,540\,160\sqrt{2}\sqrt[4]{z}}\left(\left(\left(-8192 z^4 + 204\,288 z^3 - 1\,776\,096 z^2 + 4\,144\,266 z + 5\,080\,320\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(4096 z^3 - 105\,728 z^2 + 983\,472 z - 4\,206\,195\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2 z\left(-4096 z^3 + 105\,216 z^2 - 968\,688 z + 2\,457\,945\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8ew.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{7}{4}; z\right) = \frac{1}{396\,361\,728 z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384 z^{7/2} - 4096 z^3 + 482\,304 z^{5/2} - 123\,648 z^2 + 5\,353\,152 z^{3/2} - 1\,441\,584 z + 16\,965\,396\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^{7/2} + 4096 z^3 + 482\,304 z^{5/2} + 123\,648 z^2 + 5\,353\,152 z^{3/2} + 1\,441\,584 z + 16\,965\,396\sqrt{z} + 24\,434\,865\right) - 24\,434\,865\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 + 1\,916\,928 z^3 + 21\,026\,304 z^2 + 74\,468\,160 z + 24\,434\,865\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 + 1\,916\,928 z^3 + 21\,026\,304 z^2 + 74\,468\,160 z + 24\,434\,865\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8ex.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{7}{4}; -z\right) = \frac{1}{99\,090\,432\, z^{3/4}}\left(\sqrt{\pi}\,\left(-65\,536\, z^4 + 1\,916\,928\, z^3 - 21\,026\,304\, z^2 + 74\,468\,160\, z - 24\,434\,865\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(\left(-4096\, z^3 + 123\,648\, z^2 - 1\,441\,584\, z + 24\,434\,865\right)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\,\left(4096\, z^3 - 120\,576\, z^2 + 1\,338\,288\, z - 4\,241\,349\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8ey.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{9}{4}; z\right) = \frac{1}{146\,313\,216\sqrt{2}\, z^{3/4}}\left(\left(-2\sqrt{z}\,\left(65\,536\, z^4 + 2\,113\,536\, z^3 + 26\,159\,616\, z^2 + 103\,247\,424\, z - 110\,880\,819\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(65\,536\, z^4 + 2\,170\,880\, z^3 + 28\,105\,728\, z^2 + 110\,817\,504\, z + 59\,053\,995\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(65\,536\, z^4 + 2\,162\,688\, z^3 + 27\,809\,280\, z^2 + 125\,145\,216\, z + 177\,161\,985\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8ez.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = \frac{1}{146\,313\,216\sqrt{2}\, z^{3/4}}\left(\left(2\sqrt{z}\,\left(-65\,536\, z^4 + 2\,113\,536\, z^3 - 26\,159\,616\, z^2 + 103\,247\,424\, z + 110\,880\,819\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(65\,536\, z^4 - 2\,170\,880\, z^3 + 28\,105\,728\, z^2 - 110\,817\,504\, z + 59\,053\,995\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(65\,536\, z^4 - 2\,162\,688\, z^3 + 27\,809\,280\, z^2 - 125\,145\,216\, z + 177\,161\,985\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8f0.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = \frac{1}{18\,119\,393\,280\, z^{7/4}}\left(e^{-2\sqrt{z}}\,\left(4\sqrt[4]{z}\,\left(262\,144\, z^{9/2} - 65\,536\, z^4 + 9\,633\,792\, z^{7/2} - 2\,457\,600\, z^3 + 142\,080\,000\, z^{5/2} - 37\,532\,160\, z^2 + 775\,560\,960\, z^{3/2} + 2\,443\,486\,500\sqrt{z} + e^{4\sqrt{z}}\,\left(262\,144\, z^{9/2} + 65\,536\, z^4 + 9\,633\,792\, z^{7/2} + 2\,457\,600\, z^3 + 142\,080\,000\, z^{5/2} + 37\,532\,160\, z^2 + 775\,560\,960\, z^{3/2} + 2\,443\,486\,500\sqrt{z} - 1\,832\,614\,875\right) + 1\,832\,614\,875\right) + e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(1\,048\,576\, z^5 + 38\,338\,560\, z^4 + 560\,701\,440\, z^3 + 2\,978\,726\,400\, z^2 + 1\,954\,789\,200\, z - 1\,832\,614\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(1\,048\,576\, z^5 + 38\,338\,560\, z^4 + 560\,701\,440\, z^3 + 2\,978\,726\,400\, z^2 + 1\,954\,789\,200\, z - 1\,832\,614\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8f1.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = \frac{1}{4\,529\,848\,320\,z^{7/4}} $$

$$ \left(-\sqrt{\pi}\,\left(1\,048\,576\,z^5 - 38\,338\,560\,z^4 + 560\,701\,440\,z^3 - 2\,978\,726\,400\,z^2 + 1\,954\,789\,200\,z + 1\,832\,614\,875\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$

$$ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(65\,536\,z^4 - 2\,408\,448\,z^3 + 35\,520\,000\,z^2 - 193\,890\,240\,z + 610\,871\,625\right)\cos\left(2\sqrt{z}\right) + \right. $$

$$ \left.\left.\left(65\,536\,z^4 - 2\,457\,600\,z^3 + 37\,532\,160\,z^2 - 1\,832\,614\,875\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8f2.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = \frac{1}{5\,722\,472\,448\sqrt{2}\,z^{7/4}} $$

$$ \left(\left(-2\sqrt{z}\,\left(1\,048\,576\,z^5 + 41\,484\,288\,z^4 + 665\,837\,568\,z^3 + 3\,829\,529\,088\,z^2 + 1\,647\,466\,128\,z - 4\,783\,373\,595\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. \right. $$

$$ 3\left(1\,048\,576\,z^5 + 42\,401\,792\,z^4 + 703\,684\,608\,z^3 + 4\,480\,261\,632\,z^2 + 17\,952\,414\,480\,z - 7\,972\,289\,325\right) $$

$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(1\,048\,576\,z^5 + 42\,270\,720\,z^4 + 697\,982\,976\,z^3 + \right. $$

$$ \left.\left. 4\,372\,904\,448\,z^2 + 2\,834\,591\,760\,z - 23\,916\,867\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.a8f3.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = -\frac{1}{5\,722\,472\,448\sqrt{2}\,z^{7/4}} $$

$$ \left(\left(2\sqrt{z}\,\left(1\,048\,576\,z^5 - 41\,484\,288\,z^4 + 665\,837\,568\,z^3 - 3\,829\,529\,088\,z^2 + 1\,647\,466\,128\,z + 4\,783\,373\,595\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$

$$ 3\left(1\,048\,576\,z^5 - 42\,401\,792\,z^4 + 703\,684\,608\,z^3 - 4\,480\,261\,632\,z^2 + 17\,952\,414\,480\,z + 7\,972\,289\,325\right) $$

$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(1\,048\,576\,z^5 - 42\,270\,720\,z^4 + 697\,982\,976\,z^3 - \right. $$

$$ \left.\left. 4\,372\,904\,448\,z^2 + 2\,834\,591\,760\,z + 23\,916\,867\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.a8f4.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{15}{4}; z\right) = $$
$$ \frac{1}{6\,957\,847\,019\,520\, z^{11/4}} \left(11\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(4\,194\,304\, z^{11/2} - 1\,048\,576\, z^5 + 184\,811\,520\, z^{9/2} - 46\,989\,312\, z^4 + \right.\right.\right. $$
$$ 3\,400\,433\,664\, z^{7/2} - 888\,053\,760\, z^3 + 24\,546\,723\,840\, z^{5/2} - 6\,950\,361\,600\, z^2 + 7\,819\,156\,800\, z^{3/2} - $$
$$ 220\,891\,179\,600\, z - 496\,027\,759\,500\sqrt{z} + e^{4\sqrt{z}} \left(4\,194\,304\, z^{11/2} + 1\,048\,576\, z^5 + 184\,811\,520\, z^{9/2} + \right. $$
$$ \left. 46\,989\,312\, z^4 + 3\,400\,433\,664\, z^{7/2} + 888\,053\,760\, z^3 + 24\,546\,723\,840\, z^{5/2} + 6\,950\,361\,600\, z^2 + \right. $$
$$ \left. 7\,819\,156\,800\, z^{3/2} + 220\,891\,179\,600\, z - 496\,027\,759\,500\sqrt{z} + 372\,020\,819\,625\right) - 372\,020\,819\,625\Big) + $$
$$ e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(16\,777\,216\, z^6 + 736\,100\,352\, z^5 + 13\,456\,834\,560\, z^4 + 95\,319\,244\,800\, z^3 + \right. $$
$$ \left. 93\,829\,881\,600\, z^2 - 175\,931\,028\,000\, z + 372\,020\,819\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(16\,777\,216\, z^6 + 736\,100\,352\, z^5 + 13\,456\,834\,560\, z^4 + 95\,319\,244\,800\, z^3 + \right. $$
$$ \left. \left. 93\,829\,881\,600\, z^2 - 175\,931\,028\,000\, z + 372\,020\,819\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8f5.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{15}{4}; -z\right) = $$
$$ -\frac{1}{1\,739\,461\,754\,880\, z^{11/4}} \left(11 \left(\sqrt{\pi}\, \left(16\,777\,216\, z^6 - 736\,100\,352\, z^5 + 13\,456\,834\,560\, z^4 - 95\,319\,244\,800\, z^3 + \right.\right. \right. $$
$$ \left. 93\,829\,881\,600\, z^2 + 175\,931\,028\,000\, z + 372\,020\,819\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z} $$
$$ \left(4\sqrt{z}\, \left(1\,048\,576\, z^5 - 46\,202\,880\, z^4 + 850\,108\,416\, z^3 - 6\,136\,680\,960\, z^2 + 1\,954\,789\,200\, z + 124\,006\,939\,875\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + \left(1\,048\,576\, z^5 - 46\,989\,312\, z^4 + 888\,053\,760\, z^3 - \right. $$
$$ \left.\left.\left. 6\,950\,361\,600\, z^2 + 220\,891\,179\,600\, z - 372\,020\,819\,625\right) \sin\left(2\sqrt{z}\right)\right)\right)\Bigg) $$

07.22.03.a8f6.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{17}{4}; z\right) = $$
$$ \left(\left(-2\sqrt{z}\, \left(16\,777\,216\, z^6 + 786\,432\,000\, z^5 + 15\,507\,062\,784\, z^4 + 116\,971\,683\,840\, z^3 + 56\,207\,644\,416\, z^2 - 1\,683\,747\,505\,440\, z + \right.\right.\right. $$
$$ \left. 1\,334\,561\,233\,005\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,777\,216\, z^6 + 801\,112\,064\, z^5 + 16\,219\,963\,392\, z^4 + \right. $$
$$ \left. 131\,811\,508\,224\, z^3 + 15\,117\,822\,720\, z^2 - 4\,387\,948\,044\,480\, z + 2\,224\,268\,721\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\, \left(16\,777\,216\, z^6 + 799\,014\,912\, z^5 + 16\,113\,401\,856\, z^4 + 129\,426\,702\,336\, z^3 + 161\,976\,672\,000\, z^2 + \right. $$
$$ \left.\left. 1\,071\,475\,685\,280\, z + 6\,672\,806\,165\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(183\,119\,118\,336\sqrt{2}\, z^{11/4}\right) $$

07.22.03.a8f7.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = $$
$$ \left(\left(-2\sqrt{z}\,\left(16\,777\,216\,z^6 - 786\,432\,000\,z^5 + 15\,507\,062\,784\,z^4 - 116\,971\,683\,840\,z^3 + 56\,207\,644\,416\,z^2 + 1\,683\,747\,505\,440\,z + \right.\right.\right. $$
$$ \left.\left.\left. 1\,334\,561\,233\,005\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,777\,216\,z^6 - 801\,112\,064\,z^5 + 16\,219\,963\,392\,z^4 - \right.\right.\right. $$
$$ \left.\left.\left. 131\,811\,508\,224\,z^3 + 15\,117\,822\,720\,z^2 + 4\,387\,948\,044\,480\,z + 2\,224\,268\,721\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - \right. $$
$$ \left. 2\sqrt{z}\,\left(16\,777\,216\,z^6 - 799\,014\,912\,z^5 + 16\,113\,401\,856\,z^4 - 129\,426\,702\,336\,z^3 + 161\,976\,672\,000\,z^2 - \right.\right. $$
$$ \left.\left. 1\,071\,475\,685\,280\,z + 6\,672\,806\,165\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(183\,119\,118\,336\,\sqrt{2}\,z^{11/4}\right) $$

07.22.03.a8f8.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{207\,807\,697\,649\,664\,z^{15/4}}\left(11\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(67\,108\,864\,z^{13/2} - 16\,777\,216\,z^6 + 3\,447\,717\,888\,z^{11/2} - 874\,512\,384\,z^5 + \right.\right.\right. $$
$$ 76\,029\,886\,464\,z^{9/2} - 19\,706\,609\,664\,z^4 + 682\,943\,643\,648\,z^{7/2} - 188\,194\,406\,400\,z^3 + $$
$$ 1\,042\,554\,240\,000\,z^{5/2} + 1\,991\,278\,598\,400\,z^2 + 26\,757\,154\,569\,600\,z^{3/2} + 102\,380\,129\,560\,800\,z + $$
$$ 180\,058\,076\,698\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 + 3\,447\,717\,888\,z^{11/2} + \right. $$
$$ 874\,512\,384\,z^5 + 76\,029\,886\,464\,z^{9/2} + 19\,706\,609\,664\,z^4 + 682\,943\,643\,648\,z^{7/2} + $$
$$ 188\,194\,406\,400\,z^3 + 1\,042\,554\,240\,000\,z^{5/2} - 1\,991\,278\,598\,400\,z^2 + 26\,757\,154\,569\,600\,z^{3/2} - $$
$$ \left.\left.\left. 102\,380\,129\,560\,800\,z + 180\,058\,076\,698\,500\sqrt{z} - 135\,043\,557\,523\,875\right) + 135\,043\,557\,523\,875\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456\,z^7 + 13\,740\,539\,904\,z^6 + 301\,433\,094\,144\,z^5 + 2\,668\,938\,854\,400\,z^4 + \right. $$
$$ \left. 3\,502\,982\,246\,400\,z^3 - 9\,852\,137\,568\,000\,z^2 + 41\,666\,331\,798\,000\,z - 135\,043\,557\,523\,875\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456\,z^7 + 13\,740\,539\,904\,z^6 + 301\,433\,094\,144\,z^5 + 2\,668\,938\,854\,400\,z^4 + \right. $$
$$ \left.\left. 3\,502\,982\,246\,400\,z^3 - 9\,852\,137\,568\,000\,z^2 + 41\,666\,331\,798\,000\,z - 135\,043\,557\,523\,875\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.a8f9.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) = $$
$$ -\frac{1}{51\,951\,924\,412\,416\,z^{15/4}}\left(11\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7 - 13\,740\,539\,904\,z^6 + 301\,433\,094\,144\,z^5 - 2\,668\,938\,854\,400\,z^4 + \right.\right.\right. $$
$$ \left.\left.\left. 3\,502\,982\,246\,400\,z^3 + 9\,852\,137\,568\,000\,z^2 + 41\,666\,331\,798\,000\,z + 135\,043\,557\,523\,875\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6 - 861\,929\,472\,z^5 + 19\,007\,471\,616\,z^4 - 170\,735\,910\,912\,z^3 + \right.\right. $$
$$ \left.\left. 260\,638\,560\,000\,z^2 - 6\,689\,288\,642\,400\,z + 45\,014\,519\,174\,625\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left(16\,777\,216\,z^6 - 874\,512\,384\,z^5 + 19\,706\,609\,664\,z^4 - 188\,194\,406\,400\,z^3 - 1\,991\,278\,598\,400\,z^2 + \right. $$
$$ \left.\left.\left. 102\,380\,129\,560\,800\,z - 135\,043\,557\,523\,875\right)\sin\left(2\sqrt{z}\right)\right)\Bigg)\Bigg) $$

07.22.03.a8fa.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) = $$

$$ -\left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 + 14\,545\,846\,272\,z^6 + 340\,125\,548\,544\,z^5 + 3\,172\,719\,329\,280\,z^4 + 2\,654\,179\,799\,040\,z^3 - \right.\right.\right. $$

$$ \left.\left.\left. 6\,122\,718\,201\,600\,z^2 + 699\,903\,224\,420\,400\,z - 607\,225\,361\,017\,275\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$

$$ \left. 3\left(268\,435\,456\,z^7 + 14\,780\,727\,296\,z^6 + 353\,249\,525\,760\,z^5 + 3\,493\,565\,890\,560\,z^4 + 6\,047\,129\,088\,000\,z^3 + \right.\right. $$

$$ \left.\left. 242\,867\,821\,996\,800\,z^2 + 1\,886\,179\,875\,980\,400\,z - 1\,012\,042\,268\,362\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - \right. $$

$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7 + 14\,747\,172\,864\,z^6 + 351\,299\,174\,400\,z^5 + 3\,442\,941\,296\,640\,z^4 + \right. $$

$$ 5\,418\,855\,936\,000\,z^3 - 30\,613\,591\,008\,000\,z^2 - 818\,530\,889\,576\,400\,z - $$

$$ \left.\left.\left. 3\,036\,126\,805\,086\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(87\,897\,176\,801\,280\,\sqrt{2}\; z^{15/4}\right) $$

07.22.03.a8fb.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) = $$

$$ -\left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 - 14\,545\,846\,272\,z^6 + 340\,125\,548\,544\,z^5 - 3\,172\,719\,329\,280\,z^4 + 2\,654\,179\,799\,040\,z^3 + \right.\right.\right. $$

$$ \left.\left.\left. 6\,122\,718\,201\,600\,z^2 + 699\,903\,224\,420\,400\,z + 607\,225\,361\,017\,275\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$

$$ \left. 3\left(268\,435\,456\,z^7 - 14\,780\,727\,296\,z^6 + 353\,249\,525\,760\,z^5 - 3\,493\,565\,890\,560\,z^4 + 6\,047\,129\,088\,000\,z^3 - \right.\right. $$

$$ \left.\left. 242\,867\,821\,996\,800\,z^2 + 1\,886\,179\,875\,980\,400\,z + 1\,012\,042\,268\,362\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right. $$

$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7 - 14\,747\,172\,864\,z^6 + 351\,299\,174\,400\,z^5 - 3\,442\,941\,296\,640\,z^4 + \right. $$

$$ 5\,418\,855\,936\,000\,z^3 + 30\,613\,591\,008\,000\,z^2 - 818\,530\,889\,576\,400\,z + $$

$$ \left.\left.\left. 3\,036\,126\,805\,086\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(87\,897\,176\,801\,280\,\sqrt{2}\; z^{15/4}\right) $$

07.22.03.a8fc.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) = \left(209\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(1\,073\,741\,824\, z^{15/2} - 268\,435\,456\, z^7 + 63\,015\,223\,296\, z^{13/2} - 15\,955\,132\,416\, z^6 + 1\,619\,861\,176\,320\, z^{11/2} - 417\,623\,703\,552\, z^5 + 17\,411\,130\,261\,504\, z^{9/2} - 4\,713\,917\,644\,800\, z^4 + 32\,078\,592\,000\,000\, z^{7/2} - 13\,152\,222\,720\,000\, z^3 - 402\,717\,851\,827\,200\, z^{5/2} - 4\,532\,389\,877\,433\,600\, z^2 - 22\,635\,872\,499\,240\,000\, z^{3/2} - 62\,660\,210\,691\,078\,000\, z - 99\,932\,232\,567\,667\,500\sqrt{z} + e^{4\sqrt{z}}\left(1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 + 63\,015\,223\,296\, z^{13/2} + 15\,955\,132\,416\, z^6 + 1\,619\,861\,176\,320\, z^{11/2} + 417\,623\,703\,552\, z^5 + 17\,411\,130\,261\,504\, z^{9/2} + 4\,713\,917\,644\,800\, z^4 + 32\,078\,592\,000\,000\, z^{7/2} + 13\,152\,222\,720\,000\, z^3 - 402\,717\,851\,827\,200\, z^{5/2} + 4\,532\,389\,877\,433\,600\, z^2 - 22\,635\,872\,499\,240\,000\, z^{3/2} + 62\,660\,210\,691\,078\,000\, z - 99\,932\,232\,567\,667\,500\sqrt{z} + 74\,949\,174\,425\,750\,625\right) - 74\,949\,174\,425\,750\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\, z^8 + 251\,255\,586\,816\, z^7 + 6\,430\,572\,675\,072\, z^6 + 68\,324\,834\,672\,640\, z^5 + 112\,095\,431\,884\,800\, z^4 - 420\,357\,869\,568\,000\, z^3 + 2\,666\,645\,235\,072\,000\, z^2 - 17\,285\,575\,363\,056\,000\, z + 74\,949\,174\,425\,750\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\, z^8 + 251\,255\,586\,816\, z^7 + 6\,430\,572\,675\,072\, z^6 + 68\,324\,834\,672\,640\, z^5 + 112\,095\,431\,884\,800\, z^4 - 420\,357\,869\,568\,000\, z^3 + 2\,666\,645\,235\,072\,000\, z^2 - 17\,285\,575\,363\,056\,000\, z + 74\,949\,174\,425\,750\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big/\left(106\,397\,541\,196\,627\,968\, z^{19/4}\right) $$

07.22.03.a8fd.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) = -\left(209\left(\sqrt{\pi}\left(4\,294\,967\,296\, z^8 - 251\,255\,586\,816\, z^7 + 6\,430\,572\,675\,072\, z^6 - 68\,324\,834\,672\,640\, z^5 + 112\,095\,431\,884\,800\, z^4 + 420\,357\,869\,568\,000\, z^3 + 2\,666\,645\,235\,072\,000\, z^2 + 17\,285\,575\,363\,056\,000\, z + 74\,949\,174\,425\,750\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\, z^7 - 15\,753\,805\,824\, z^6 + 404\,965\,294\,080\, z^5 - 4\,352\,782\,565\,376\, z^4 + 8\,019\,648\,000\,000\, z^3 + 100\,679\,462\,956\,800\, z^2 - 5\,658\,968\,124\,810\,000\, z + 24\,983\,058\,141\,916\,875\right)\cos\left(2\sqrt{z}\right) + \left(268\,435\,456\, z^7 - 15\,955\,132\,416\, z^6 + 417\,623\,703\,552\, z^5 - 4\,713\,917\,644\,800\, z^4 + 13\,152\,222\,720\,000\, z^3 - 4\,532\,389\,877\,433\,600\, z^2 + 62\,660\,210\,691\,078\,000\, z - 74\,949\,174\,425\,750\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(26\,599\,385\,299\,156\,992\, z^{19/4}\right) $$

For fixed z and $a_1 = -\frac{13}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.a8fe.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{10\,599\,435\sqrt[4]{z}}\left(\sqrt{2}\left(\left(48\,128\,z^4+1\,887\,424\,z^3+10\,651\,872\,z^2-22\,910\,580\,z+10\,599\,435\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(74\,240\,z^3+1\,248\,016\,z^2+2\,926\,000\,z-3\,533\,145\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(7936\,z^3+703\,472\,z^2+5\,354\,580\,z+10\,599\,435\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8ff.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{10\,599\,435\sqrt[4]{z}}\left(\sqrt{2}\left(\left(48\,128\,z^4-1\,887\,424\,z^3+10\,651\,872\,z^2+22\,910\,580\,z+10\,599\,435\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(74\,240\,z^3-1\,248\,016\,z^2+2\,926\,000\,z+3\,533\,145\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(-7936\,z^3+703\,472\,z^2-5\,354\,580\,z+10\,599\,435\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8fg.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{37\,485}\left(\left(256\,z^3+12\,432\,z^2+68\,340\,z+37\,485\right)\cosh\left(2\sqrt{z}\right)-10\sqrt{z}\left(256\,z^2+3672\,z+7497\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.a8fh.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) = \left(-\frac{256\,z^3}{37\,485}+\frac{592\,z^2}{1785}-\frac{268\,z}{147}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(256\,z^2-3672\,z+7497\right)\sin\left(2\sqrt{z}\right)}{7497}$$

07.22.03.a8fi.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) = \frac{1}{2\,304\,225\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(4096\,z^4+317\,632\,z^3+2\,491\,104\,z^2-5\,058\,900\,z+2\,304\,225\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(8832\,z^3+247\,632\,z^2+662\,200\,z-\right.\right.\right.$$
$$\left.\left.\left.768\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-1024\,z^3+119\,504\,z^2+1\,085\,700\,z+2\,304\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8fj.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) = \frac{1}{2\,304\,225\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(4096\,z^4-317\,632\,z^3+2\,491\,104\,z^2+5\,058\,900\,z+2\,304\,225\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(8832\,z^3-247\,632\,z^2+662\,200\,z+\right.\right.\right.$$
$$\left.\left.\left.768\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(1024\,z^3+119\,504\,z^2-1\,085\,700\,z+2\,304\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8fk.01

$${}_1F_2\left(-\frac{13}{4};-\frac{7}{2},-\frac{17}{4};z\right)=\frac{\left(464\,z^2+3180\,z+1785\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(32\,z^2+800\,z+1785\right)\sinh\left(2\sqrt{z}\right)}{1785}$$

07.22.03.a8fl.01

$${}_1F_2\left(-\frac{13}{4};-\frac{7}{2},-\frac{17}{4};-z\right)=\frac{\left(464\,z^2-3180\,z+1785\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(32\,z^2-800\,z+1785\right)\sin\left(2\sqrt{z}\right)}{1785}$$

07.22.03.a8fm.01

$${}_1F_2\left(-\frac{13}{4};-\frac{7}{2},-\frac{15}{4};z\right)=\frac{1}{363\,825\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(\left(2048\,z^4+23\,616\,z^3+437\,472\,z^2-817\,740\,z+363\,825\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(256\,z^3+32\,816\,z^2+110\,880\,z-121\,275\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-512\,z^3+12\,432\,z^2+152\,460\,z+363\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8fn.01

$${}_1F_2\left(-\frac{13}{4};-\frac{7}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{363\,825\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(2048\,z^4-23\,616\,z^3+437\,472\,z^2+817\,740\,z+363\,825\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(256\,z^3-32\,816\,z^2+\right.\right.\right.$$
$$\left.\left.\left.110\,880\,z+121\,275\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(512\,z^3+12\,432\,z^2-152\,460\,z+363\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8fo.01

$${}_1F_2\left(-\frac{13}{4};-\frac{7}{2},-\frac{13}{4};z\right)=\left(\frac{16\,z^2}{105}+\frac{12\,z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\,\left(8\,z+21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8fp.01

$${}_1F_2\left(-\frac{13}{4};-\frac{7}{2},-\frac{13}{4};-z\right)=\left(\frac{16\,z^2}{105}-\frac{12\,z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}\left(21-8\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a8fq.01

$${}_1F_2\left(-\frac{13}{4};-\frac{7}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{24\,255\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(1024\,z^4-2752\,z^3+34\,656\,z^2-56\,700\,z+24\,255\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(128\,z^3+1328\,z^2+8120\,z-8085\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-256\,z^3+496\,z^2+7980\,z+24\,255\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8fr.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{24\,255\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024z^4+2752z^3+34\,656z^2+56\,700z+24\,255\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(128z^3-1328z^2+8120z+8085\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(256z^3+496z^2-7980z+24\,255\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8fs.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{9450}\left(e^{-2\sqrt{z}}\left(-256e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+256e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-256e^{4\sqrt{z}}z^3-\right.\right.$$
$$256z^3-64e^{4\sqrt{z}}z^{5/2}+64z^{5/2}-48e^{4\sqrt{z}}z^2-48z^2-2400e^{4\sqrt{z}}z^{3/2}+2400z^{3/2}+$$
$$\left.\left.7500e^{4\sqrt{z}}z+7500z-9450e^{4\sqrt{z}}\sqrt{z}+9450\sqrt{z}+4725e^{4\sqrt{z}}+4725\right)\right)$$

07.22.03.a8ft.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{4725}\left(512\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}+2\left(32z^2-1200z+4725\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(256z^3-48z^2-7500z+4725\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8fu.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, -\frac{7}{4}; z\right) = \frac{1}{2205\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-512z^4-704z^3+4512z^2-5580z+2205\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(64z^3+144z^2-880z+735\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^3+272z^2+300z+2205\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8fv.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{1}{2205\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-512z^4+704z^3+4512z^2+5580z+2205\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(64z^3-144z^2-880z-735\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(-128z^3+272z^2-300z+2205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8fw.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, -\frac{5}{4}; z\right) =$$

$$\frac{1}{1050}\left(e^{-2\sqrt{z}}\left(64\,e^{4\sqrt{z}}\,z^3 + 64\,z^3 + 16\,e^{4\sqrt{z}}\,z^{5/2} - 16\,z^{5/2} + 4\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z+65)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4} - \right.\right.$$

$$4\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z+65)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4} + 272\,e^{4\sqrt{z}}\,z^2 + 272\,z^2 + 80\,e^{4\sqrt{z}}\,z^{3/2} -$$

$$\left.\left.80\,z^{3/2} + 660\,e^{4\sqrt{z}}\,z + 660\,z - 1050\,e^{4\sqrt{z}}\,\sqrt{z} + 1050\sqrt{z} + 525\,e^{4\sqrt{z}} + 525\right)\right)$$

07.22.03.a8fx.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, -\frac{5}{4}; -z\right) =$$

$$\frac{1}{525}\left(-8\sqrt{\pi}\,(16z-65)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4} + 2\left(-8z^2+40z+525\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-64z^3+272z^2-660z+525\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8fy.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, -\frac{3}{4}; z\right) =$$

$$\frac{1}{945\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256z^4+1392z^3+864z^2-3060z+945\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(32z^3+202z^2+600z-315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$

$$\left.\left.4z\left(64z^3+396z^2+540z-945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8fz.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) = \frac{1}{945\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(256z^4-1392z^3+864z^2+3060z+945\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(32z^3-202z^2+600z+315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$

$$\left.\left.4z\left(64z^3-396z^2+540z+945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8g0.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) =$$

$$\frac{1}{6720}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2+2080z+5265\right)\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4} + e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2+2080z+5265\right)\right.\right.$$

$$\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4} - 4\left(64z^3 - 16z^{5/2} + 532z^2 - 145z^{3/2} + 1440z - 1680\sqrt{z} + \right.$$

$$\left.\left.\left.e^{4\sqrt{z}}\left(64z^3 + 16z^{5/2} + 532z^2 + 145z^{3/2} + 1440z + 1680\sqrt{z} - 840\right) - 840\right)\right)\right)$$

07.22.03.a8g1.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) = \frac{1}{1680}\left(\sqrt{\pi}\,\left(256z^2-2080z+5265\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4} + \right.$$

$$\left.2\left(4\left(16z^3-133z^2+360z+210\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\left(16z^2-145z+1680\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8g2.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) = \frac{1}{3150\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(-2\left(256z^4 + 2432z^3 + 8079z^2 - 5400z - 3150\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(256z^3 + 2656z^2 + 10\,585z + 8400\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 2z\left(256z^3 + 2624z^2 + 10\,155z + 12\,600\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8g3.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) = \frac{1}{3150\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(-2\left(256z^4 - 2432z^3 + 8079z^2 + 5400z - 3150\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(256z^3 - 2656z^2 + 10\,585z - 8400\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 2z\left(-256z^3 + 2624z^2 - 10\,155z + 12\,600\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8g4.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{1\,290\,240}\left(e^{-2\sqrt{z}}\left(4\left(1024z^3 - 256z^{5/2} + 12\,672z^2 - 3360z^{3/2} + 65\,940z - 19\,665\sqrt{z} + e^{4\sqrt{z}}\left(1024z^3 + \right.\right.\right.\right.$$
$$\left.\left.\left.\left. 256z^{5/2} + 12\,672z^2 + 3360z^{3/2} + 65\,940z + 19\,665\sqrt{z} + 161\,280\right) + 161\,280\right) + \right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(4096z^3 + 49\,920z^2 + 252\,720z + 342\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) -$$
$$\left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(4096z^3 + 49\,920z^2 + 252\,720z + 342\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8g5.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) = \frac{1}{322\,560}\left(-8\left(256z^3 - 3168z^2 + 16\,485z - 40\,320\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\sqrt{\pi}\sqrt[4]{z}\left(-4096z^3 + 49\,920z^2 - 252\,720z + 342\,225\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt{z}\left(256z^2 - 3360z + 19\,665\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8g6.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) = \frac{1}{705\,600\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(-2\left(4096z^4 + 55\,552z^3 + 328\,944z^2 + 481\,635z - 705\,600\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(4096z^3 + 59\,136z^2 + 383\,600z + 1\,205\,925\right)\right.\right.$$
$$\left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(4096z^3 + 58\,624z^2 + 374\,640z + 795\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8g7.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = \frac{1}{705\,600\sqrt{2}\,\sqrt[4]{z}}\left(\left(\left(-8192z^4 + 111\,104z^3 - 657\,888z^2 + 963\,270z + 1\,411\,200\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(4096z^3 - 59\,136z^2 + 383\,600z - 1\,205\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(-4096z^3 + 58\,624z^2 - 374\,640z + 795\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8g8.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) = \frac{1}{110\,100\,480\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384z^{7/2} - 4096z^3 + 269\,312z^{5/2} - 70\,400z^2 + 2\,078\,400z^{3/2} - 582\,960z + 6\,005\,460\sqrt{z} + e^{4\sqrt{z}}\left(16\,384z^{7/2} + 4096z^3 + 269\,312z^{5/2} + 70\,400z^2 + 2\,078\,400z^{3/2} + 582\,960z + 6\,005\,460\sqrt{z} + 5\,817\,825\right) - 5\,817\,825\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 1\,064\,960z^3 + 8\,087\,040z^2 + 21\,902\,400z + 5\,817\,825\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 1\,064\,960z^3 + 8\,087\,040z^2 + 21\,902\,400z + 5\,817\,825\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8g9.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) = \frac{1}{27\,525\,120\,z^{3/4}}\left(\sqrt{\pi}\left(-65\,536z^4 + 1\,064\,960z^3 - 8\,087\,040z^2 + 21\,902\,400z - 5\,817\,825\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(4\sqrt{z}\left(4096z^3 - 67\,328z^2 + 519\,600z - 1\,501\,365\right)\cos\left(2\sqrt{z}\right) + \left(4096z^3 - 70\,400z^2 + 582\,960z - 5\,817\,825\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8ga.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) = \frac{1}{40\,642\,560\sqrt{2}\,z^{3/4}}\left(\left(-2\sqrt{z}\left(65\,536z^4 + 1\,155\,072z^3 + 9\,805\,824z^2 + 28\,476\,000z - 32\,939\,865\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(65\,536z^4 + 1\,212\,416z^3 + 10\,913\,280z^2 + 39\,191\,040z + 12\,837\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(65\,536z^4 + 1\,204\,224z^3 + 10\,736\,640z^2 + 37\,164\,960z + 38\,513\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8gb.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{9}{4}; -z\right) = \frac{1}{40\,642\,560\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(-65\,536z^4 + 1\,155\,072z^3 - 9\,805\,824z^2 + 28\,476\,000z + 32\,939\,865\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(65\,536z^4 - 1\,212\,416z^3 + 10\,913\,280z^2 - 39\,191\,040z + 12\,837\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(65\,536z^4 - 1\,204\,224z^3 + 10\,736\,640z^2 - 37\,164\,960z + 38\,513\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8gc.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{11}{4}; z\right) = \frac{1}{5\,033\,164\,800\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z} \left(262\,144\, z^{9/2} - 65\,536\, z^4 + 5\,373\,952\, z^{7/2} - 1\,392\,640\, z^3 + 55\,019\,520\, z^{5/2} - 14\,968\,320\, z^2 + 231\,982\,080\, z^{3/2} - 74\,468\,160\, z + 488\,697\,300\sqrt{z} + e^{4\sqrt{z}} \left(262\,144\, z^{9/2} + 65\,536\, z^4 + 5\,373\,952\, z^{7/2} + 1\,392\,640\, z^3 + 55\,019\,520\, z^{5/2} + 14\,968\,320\, z^2 + 231\,982\,080\, z^{3/2} + 74\,468\,160\, z + 488\,697\,300\sqrt{z} - 366\,522\,975\right) + 366\,522\,975\right) + e^{2\sqrt{z}} \sqrt{2\pi} \left(1\,048\,576\, z^5 + 21\,299\,200\, z^4 + 215\,654\,400\, z^3 + 876\,096\,000\, z^2 + 465\,426\,000\, z - 366\,522\,975\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}} \sqrt{2\pi} \left(1\,048\,576\, z^5 + 21\,299\,200\, z^4 + 215\,654\,400\, z^3 + 876\,096\,000\, z^2 + 465\,426\,000\, z - 366\,522\,975\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8gd.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{11}{4}; -z\right) = \frac{1}{1\,258\,291\,200\, z^{7/4}} \left(-\sqrt{\pi} \left(1\,048\,576\, z^5 - 21\,299\,200\, z^4 + 215\,654\,400\, z^3 - 876\,096\,000\, z^2 + 465\,426\,000\, z + 366\,522\,975\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z} \left(4\sqrt{z} \left(65\,536\, z^4 - 1\,343\,488\, z^3 + 13\,754\,880\, z^2 - 57\,995\,520\, z + 122\,174\,325\right) \cos\left(2\sqrt{z}\right) + \left(65\,536\, z^4 - 1\,392\,640\, z^3 + 14\,968\,320\, z^2 - 74\,468\,160\, z - 366\,522\,975\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8ge.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{13}{4}; z\right) = \frac{1}{1\,589\,575\,680\sqrt{2}\, z^{7/4}} \left(\left(-2\sqrt{z} \left(1\,048\,576\, z^5 + 22\,740\,992\, z^4 + 251\,142\,144\, z^3 + 1\,080\,414\,720\, z^2 - 124\,351\,920\, z - 885\,809\,925\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(1\,048\,576\, z^5 + 23\,658\,496\, z^4 + 272\,588\,800\, z^3 + 1\,340\,613\,120\, z^2 + 3\,491\,888\,400\, z - 1\,476\,349\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z} \left(1\,048\,576\, z^5 + 23\,527\,424\, z^4 + 269\,230\,080\, z^3 + 1\,294\,318\,080\, z^2 + 1\,027\,026\,000\, z - 4\,429\,049\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8gf.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) = \frac{1}{1\,589\,575\,680\sqrt{2}\, z^{7/4}} \left(\left(2\sqrt{z} \left(-1\,048\,576\, z^5 + 22\,740\,992\, z^4 - 251\,142\,144\, z^3 + 1\,080\,414\,720\, z^2 + 124\,351\,920\, z - 885\,809\,925\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(1\,048\,576\, z^5 - 23\,658\,496\, z^4 + 272\,588\,800\, z^3 - 1\,340\,613\,120\, z^2 + 3\,491\,888\,400\, z + 1\,476\,349\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z} \left(1\,048\,576\, z^5 - 23\,527\,424\, z^4 + 269\,230\,080\, z^3 - 1\,294\,318\,080\, z^2 + 1\,027\,026\,000\, z + 4\,429\,049\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8gg.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) = \frac{1}{1\,932\,735\,283\,200\, z^{11/4}} \left(11\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(4\,194\,304\, z^{11/2} - 1\,048\,576\, z^5 + 103\,022\,592\, z^{9/2} - 26\,542\,080\, z^4 + 1\,314\,816\,000\, z^{7/2} - 351\,313\,920\, z^3 + 7\,303\,956\,480\, z^{5/2} - 2\,184\,399\,360\, z^2 + 7\,819\,156\,800\, z^{3/2} - 33\,231\,416\,400\, z - 85\,522\,027\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304\, z^{11/2} + 1\,048\,576\, z^5 + 103\,022\,592\, z^{9/2} + 26\,542\,080\, z^4 + 1\,314\,816\,000\, z^{7/2} + 351\,313\,920\, z^3 + 7\,303\,956\,480\, z^{5/2} + 2\,184\,399\,360\, z^2 + 7\,819\,156\,800\, z^{3/2} + 33\,231\,416\,400\, z - 85\,522\,027\,500\sqrt{z} + 64\,141\,520\,625\right) - 64\,141\,520\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\, z^6 + 408\,944\,640\, z^5 + 5\,175\,705\,600\, z^4 + 28\,035\,072\,000\, z^3 + 22\,340\,448\,000\, z^2 - 35\,186\,205\,600\, z + 64\,141\,520\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\, z^6 + 408\,944\,640\, z^5 + 5\,175\,705\,600\, z^4 + 28\,035\,072\,000\, z^3 + 22\,340\,448\,000\, z^2 - 35\,186\,205\,600\, z + 64\,141\,520\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8gh.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{15}{4}; -z\right) = -\frac{1}{483\,183\,820\,800\, z^{11/4}} \left(11\left(\sqrt{\pi}\left(16\,777\,216\, z^6 - 408\,944\,640\, z^5 + 5\,175\,705\,600\, z^4 - 28\,035\,072\,000\, z^3 + 22\,340\,448\,000\, z^2 + 35\,186\,205\,600\, z + 64\,141\,520\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576\, z^5 - 25\,755\,648\, z^4 + 328\,704\,000\, z^3 - 1\,825\,989\,120\, z^2 + 1\,954\,789\,200\, z + 21\,380\,506\,875\right)\cos\left(2\sqrt{z}\right) + \left(1\,048\,576\, z^5 - 26\,542\,080\, z^4 + 351\,313\,920\, z^3 - 2\,184\,399\,360\, z^2 + 33\,231\,416\,400\, z - 64\,141\,520\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a8gi.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) = \frac{1}{50\,866\,421\,760\sqrt{2}\, z^{11/4}} \left(\left(-2\sqrt{z}\left(16\,777\,216\, z^6 + 432\,013\,312\, z^5 + 5\,871\,304\,704\, z^4 + 33\,364\,869\,120\, z^3 + 7\,397\,026\,560\, z^2 - 283\,459\,176\,000\, z + 215\,251\,811\,775\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,777\,216\, z^6 + 446\,693\,376\, z^5 + 6\,274\,088\,960\, z^4 + 39\,250\,083\,840\, z^3 + 49\,297\,248\,000\, z^2 - 727\,545\,218\,400\, z + 358\,753\,019\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216\, z^6 + 444\,596\,224\, z^5 + 6\,211\,829\,760\, z^4 + 38\,244\,188\,160\, z^3 + 39\,907\,296\,000\, z^2 + 113\,383\,670\,400\, z + 1\,076\,259\,058\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8gj.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) = \frac{1}{50\,866\,421\,760\sqrt{2}\, z^{11/4}}\left(\left(-2\sqrt{z}\left(16\,777\,216 z^6 - 432\,013\,312 z^5 + 5\,871\,304\,704 z^4 - 33\,364\,869\,120 z^3 + 7\,397\,026\,560 z^2 + 283\,459\,176\,000 z + 215\,251\,811\,775\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,777\,216 z^6 - 446\,693\,376 z^5 + 6\,274\,088\,960 z^4 - 39\,250\,083\,840 z^3 + 49\,297\,248\,000 z^2 + 727\,545\,218\,400 z + 358\,753\,019\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(16\,777\,216 z^6 - 444\,596\,224 z^5 + 6\,211\,829\,760 z^4 - 38\,244\,188\,160 z^3 + 39\,907\,296\,000 z^2 - 113\,383\,670\,400 z + 1\,076\,259\,058\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8gk.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) = \frac{1}{57\,724\,360\,458\,240 z^{15/4}}\left(11 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(67\,108\,864 z^{13/2} - 16\,777\,216 z^6 + 1\,920\,991\,232 z^{11/2} - 492\,830\,720 z^5 + 29\,369\,303\,040 z^{9/2} - 7\,755\,202\,560 z^4 + 202\,633\,052\,160 z^{7/2} - 58\,169\,180\,160 z^3 + 264\,113\,740\,800 z^{5/2} - 149\,432\,774\,400 z^2 + 2\,893\,088\,016\,000 z^{3/2} + 14\,641\,371\,108\,000 z + 27\,281\,526\,772\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 + 1\,920\,991\,232 z^{11/2} + 492\,830\,720 z^5 + 29\,369\,303\,040 z^{9/2} + 7\,755\,202\,560 z^4 + 202\,633\,052\,160 z^{7/2} + 58\,169\,180\,160 z^3 + 264\,113\,740\,800 z^{5/2} + 149\,432\,774\,400 z^2 + 2\,893\,088\,016\,000 z^{3/2} - 14\,641\,371\,108\,000 z + 27\,281\,526\,772\,500\sqrt{z} - 20\,461\,145\,079\,375\right) + 20\,461\,145\,079\,375\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 + 7\,633\,633\,280 z^6 + 115\,935\,805\,440 z^5 + 784\,982\,016\,000 z^4 + 834\,043\,392\,000 z^3 - 1\,970\,427\,513\,600 z^2 + 7\,183\,850\,310\,000 z - 20\,461\,145\,079\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 + 7\,633\,633\,280 z^6 + 115\,935\,805\,440 z^5 + 784\,982\,016\,000 z^4 + 834\,043\,392\,000 z^3 - 1\,970\,427\,513\,600 z^2 + 7\,183\,850\,310\,000 z - 20\,461\,145\,079\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8gl.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = -\frac{1}{14\,431\,090\,114\,560 z^{15/4}}\left(11\left(\sqrt{\pi}\left(268\,435\,456 z^7 - 7\,633\,633\,280 z^6 + 115\,935\,805\,440 z^5 - 784\,982\,016\,000 z^4 + 834\,043\,392\,000 z^3 + 1\,970\,427\,513\,600 z^2 + 7\,183\,850\,310\,000 z + 20\,461\,145\,079\,375\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216 z^6 - 480\,247\,808 z^5 + 7\,342\,325\,760 z^4 - 50\,658\,263\,040 z^3 + 66\,028\,435\,200 z^2 - 723\,272\,004\,000 z + 6\,820\,381\,693\,125\right)\cos\left(2\sqrt{z}\right) + \left(16\,777\,216 z^6 - 492\,830\,720 z^5 + 7\,755\,202\,560 z^4 - 58\,169\,180\,160 z^3 + 149\,432\,774\,400 z^2 + 14\,641\,371\,108\,000 z - 20\,461\,145\,079\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a8gm.01

$$
{}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) =
$$

$$
-\Bigg(17\Big(2\sqrt{z}\,\big(268\,435\,456\,z^7 + 8\,002\,732\,032\,z^6 + 129\,110\,114\,304\,z^5 + 910\,820\,966\,400\,z^4 + 480\,613\,478\,400\,z^3 -
$$

$$
4\,762\,114\,156\,800\,z^2 + 102\,938\,199\,764\,400\,z - 86\,746\,480\,145\,325\big)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 -
$$

$$
3\big(268\,435\,456\,z^7 + 8\,237\,613\,056\,z^6 + 136\,508\,866\,560\,z^5 + 1\,037\,367\,705\,600\,z^4 + 1\,539\,952\,128\,000\,z^3 +
$$

$$
24\,717\,640\,147\,200\,z^2 + 274\,374\,309\,409\,200\,z - 144\,577\,466\,908\,875\big)\,I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) -
$$

$$
2\sqrt{z}\,\big(268\,435\,456\,z^7 + 8\,204\,058\,624\,z^6 + 135\,376\,404\,480\,z^5 + 1\,016\,340\,480\,000\,z^4 +
$$

$$
1\,321\,422\,336\,000\,z^3 - 2\,818\,394\,092\,800\,z^2 - 102\,172\,859\,989\,200\,z -
$$

$$
433\,732\,400\,726\,625\big)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\Big)\,\Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(24\,415\,882\,444\,800\,\sqrt{2}\;z^{15/4}\right)
$$

07.22.03.a8gn.01

$$
{}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) =
$$

$$
-\Bigg(17\Big(2\sqrt{z}\,\big(268\,435\,456\,z^7 - 8\,002\,732\,032\,z^6 + 129\,110\,114\,304\,z^5 - 910\,820\,966\,400\,z^4 + 480\,613\,478\,400\,z^3 +
$$

$$
4\,762\,114\,156\,800\,z^2 + 102\,938\,199\,764\,400\,z + 86\,746\,480\,145\,325\big)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 -
$$

$$
3\big(268\,435\,456\,z^7 - 8\,237\,613\,056\,z^6 + 136\,508\,866\,560\,z^5 - 1\,037\,367\,705\,600\,z^4 + 1\,539\,952\,128\,000\,z^3 -
$$

$$
24\,717\,640\,147\,200\,z^2 + 274\,374\,309\,409\,200\,z + 144\,577\,466\,908\,875\big)\,J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +
$$

$$
2\sqrt{z}\,\big(268\,435\,456\,z^7 - 8\,204\,058\,624\,z^6 + 135\,376\,404\,480\,z^5 - 1\,016\,340\,480\,000\,z^4 +
$$

$$
1\,321\,422\,336\,000\,z^3 + 2\,818\,394\,092\,800\,z^2 - 102\,172\,859\,989\,200\,z + 433\,732\,400\,726\,625\big)
$$

$$
J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\Big)\,\Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(24\,415\,882\,444\,800\,\sqrt{2}\;z^{15/4}\right)
$$

07.22.03.a8go.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = \left(209\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(1\,073\,741\,824\, z^{15/2} - 268\,435\,456\, z^7 + 35\,097\,935\,872\, z^{13/2} - 8\,975\,810\,560\, z^6 + 625\,307\,811\,840\, z^{11/2} - 163\,750\,871\,040\, z^5 + 5\,156\,858\,757\,120\, z^{9/2} - 1\,441\,951\,580\,160\, z^4 + 7\,989\,707\,980\,800\, z^{7/2} - 3\,845\,153\,894\,400\, z^3 - 14\,387\,248\,512\,000\, z^{5/2} - 409\,880\,199\,456\,000\, z^2 - 2\,681\,384\,345\,640\,000\, z^{3/2} - 8\,184\,458\,031\,750\,000\, z - 13\,504\,355\,752\,387\,500\sqrt{z} + e^{4\sqrt{z}}\left(1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 + 35\,097\,935\,872\, z^{13/2} + 8\,975\,810\,560\, z^6 + 625\,307\,811\,840\, z^{11/2} + 163\,750\,871\,040\, z^5 + 5\,156\,858\,757\,120\, z^{9/2} + 1\,441\,951\,580\,160\, z^4 + 7\,989\,707\,980\,800\, z^{7/2} + 3\,845\,153\,894\,400\, z^3 - 14\,387\,248\,512\,000\, z^{5/2} + 409\,880\,199\,456\,000\, z^2 - 2\,681\,384\,345\,640\,000\, z^{3/2} + 8\,184\,458\,031\,750\,000\, z - 13\,504\,355\,752\,387\,500\sqrt{z} + 10\,128\,266\,814\,290\,625\right) - 10\,128\,266\,814\,290\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\, z^8 + 139\,586\,437\,120\, z^7 + 2\,473\,297\,182\,720\, z^6 + 20\,095\,539\,609\,600\, z^5 + 26\,689\,388\,544\,000\, z^4 - 84\,071\,573\,913\,600\, z^3 + 459\,766\,419\,840\,000\, z^2 - 2\,619\,026\,570\,160\,000\, z + 10\,128\,266\,814\,290\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\, z^8 + 139\,586\,437\,120\, z^7 + 2\,473\,297\,182\,720\, z^6 + 20\,095\,539\,609\,600\, z^5 + 26\,689\,388\,544\,000\, z^4 - 84\,071\,573\,913\,600\, z^3 + 459\,766\,419\,840\,000\, z^2 - 2\,619\,026\,570\,160\,000\, z + 10\,128\,266\,814\,290\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big/\left(29\,554\,872\,554\,618\,880\, z^{19/4}\right) $$

07.22.03.a8gp.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) = -\left(209\left(\sqrt{\pi}\left(4\,294\,967\,296\, z^8 - 139\,586\,437\,120\, z^7 + 2\,473\,297\,182\,720\, z^6 - 20\,095\,539\,609\,600\, z^5 + 26\,689\,388\,544\,000\, z^4 + 84\,071\,573\,913\,600\, z^3 + 459\,766\,419\,840\,000\, z^2 + 2\,619\,026\,570\,160\,000\, z + 10\,128\,266\,814\,290\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\, z^7 - 8\,774\,483\,968\, z^6 + 156\,326\,952\,960\, z^5 - 1\,289\,214\,689\,280\, z^4 + 1\,997\,426\,995\,200\, z^3 + 3\,596\,812\,128\,000\, z^2 - 670\,346\,086\,410\,000\, z + 3\,376\,088\,938\,096\,875\right)\cos\left(2\sqrt{z}\right) + \left(268\,435\,456\, z^7 - 8\,975\,810\,560\, z^6 + 163\,750\,871\,040\, z^5 - 1\,441\,951\,580\,160\, z^4 + 3\,845\,153\,894\,400\, z^3 - 409\,880\,199\,456\,000\, z^2 + 8\,184\,458\,031\,750\,000\, z - 10\,128\,266\,814\,290\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(7\,388\,718\,138\,654\,720\, z^{19/4}\right) $$

For fixed z and $a_1 = -\frac{13}{4}$, $b_1 = -\frac{5}{2}$

07.22.03.a8gq.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,514\,205\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(16\,384\,z^4 + 132\,352\,z^3 + 1\,748\,208\,z^2 - 3\,370\,752\,z + 1\,514\,205\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(5376\,z^3 + 146\,256\,z^2 + 450\,604\,z - 504\,735\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-4096\,z^3 + 66\,176\,z^2 + 667\,128\,z + 1\,514\,205\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8gr.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, -\frac{23}{4}; -z\right) = \frac{1}{1\,514\,205\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(16\,384\,z^4 - 132\,352\,z^3 + 1\,748\,208\,z^2 + 3\,370\,752\,z + 1\,514\,205\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(5376\,z^3 - 146\,256\,z^2 + 450\,604\,z + 504\,735\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(4096\,z^3 + 66\,176\,z^2 - 667\,128\,z + 1\,514\,205\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8gs.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, -\frac{21}{4}; z\right) = \left(\frac{128\,z^2}{595} + \frac{184\,z}{105} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(64\,z^2 + 2244\,z + 5355\right)\sinh\left(2\sqrt{z}\right)}{5355}$$

07.22.03.a8gt.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, -\frac{21}{4}; -z\right) = \left(\frac{128\,z^2}{595} - \frac{184\,z}{105} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(64\,z^2 - 2244\,z + 5355\right)\sin\left(2\sqrt{z}\right)}{5355}$$

07.22.03.a8gu.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, -\frac{19}{4}; z\right) = \frac{1}{329\,175\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(8192\,z^4 + 2944\,z^3 + 417\,648\,z^2 - 748\,440\,z + 329\,175\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1024\,z^3 + 26\,224\,z^2 + 103\,180\,z - 109\,725\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-2048\,z^3 + 10\,208\,z^2 + 129\,360\,z + 329\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8gv.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, -\frac{19}{4}; -z\right) = \frac{1}{329\,175\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(8192\,z^4 - 2944\,z^3 + 417\,648\,z^2 + 748\,440\,z + 329\,175\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1024\,z^3 - 26\,224\,z^2 + 103\,180\,z + 109\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2048\,z^3 + 10\,208\,z^2 - 129\,360\,z + 329\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8gw.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, -\frac{17}{4}; z\right) = \frac{1}{255}\left(\left(32\,z^2 + 432\,z + 255\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(92\,z + 255\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.a8gx.01

$${}_1F_2\left(-\frac{13}{4};-\frac{5}{2},-\frac{17}{4};-z\right)=\frac{1}{255}\left(\left(32z^2-432z+255\right)\cos\left(2\sqrt{z}\right)+2\left(255-92z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8gy.01

$${}_1F_2\left(-\frac{13}{4};-\frac{5}{2},-\frac{15}{4};z\right)=\frac{1}{51\,975\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(4096z^4-7680z^3+75\,600z^2-121\,968z+51\,975\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(512z^3+2608z^2+17\,556z-17\,325\right)\right.\right.$$

$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-1024z^3+1152z^2+16\,632z+51\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8gz.01

$${}_1F_2\left(-\frac{13}{4};-\frac{5}{2},-\frac{15}{4};-z\right)=\frac{1}{51\,975\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(4096z^4+7680z^3+75\,600z^2+121\,968z+51\,975\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(512z^3-2608z^2+17\,556z+17\,325\right)\right.\right.$$

$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1024z^3+1152z^2-16\,632z+51\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8h0.01

$${}_1F_2\left(-\frac{13}{4};-\frac{5}{2},-\frac{13}{4};z\right)=\left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\,\left(4z+15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8h1.01

$${}_1F_2\left(-\frac{13}{4};-\frac{5}{2},-\frac{13}{4};-z\right)=\left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}\left(15-4z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a8h2.01

$${}_1F_2\left(-\frac{13}{4};-\frac{5}{2},-\frac{11}{4};z\right)=\frac{1}{3465\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(2048z^4-2176z^3+6288z^2-8568z+3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(256z^3-48z^2+1316z-1155\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.4z\left(-512z^3+160z^2+672z+3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8h3.01

$${}_1F_2\left(-\frac{13}{4};-\frac{5}{2},-\frac{11}{4};-z\right)=\frac{1}{3465\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(2048z^4+2176z^3+6288z^2+8568z+3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(256z^3+48z^2+1316z+1155\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.4z\left(512z^3+160z^2-672z+3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8h4.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{1350}\left(e^{-2\sqrt{z}}\left(-512\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} + 512\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} - 512\, e^{4\sqrt{z}} z^3 - \right.\right.$$
$$512 z^3 - 128\, e^{4\sqrt{z}} z^{5/2} + 128 z^{5/2} - 96\, e^{4\sqrt{z}} z^2 - 96 z^2 - 120\, e^{4\sqrt{z}} z^{3/2} +$$
$$\left.\left.120 z^{3/2} + 960\, e^{4\sqrt{z}} z + 960 z - 1350\, e^{4\sqrt{z}}\sqrt{z} + 1350\sqrt{z} + 675\, e^{4\sqrt{z}} + 675\right)\right)$$

07.22.03.a8h5.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{675}\left(1024\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{13/4} + 2\left(64 z^2 - 60 z + 675\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(512 z^3 - 96 z^2 - 960 z + 675\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8h6.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, -\frac{7}{4}; z\right) = \frac{1}{315\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-1024 z^4 + 256 z^3 + 912 z^2 - 864 z + 315\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(128 z^3 + 80 z^2 - 148 z + 105\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.4 z\left(256 z^3 + 128 z^2 - 24 z + 315\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8h7.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, -\frac{7}{4}; -z\right) = \frac{1}{315\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-1024 z^4 - 256 z^3 + 912 z^2 + 864 z + 315\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(128 z^3 - 80 z^2 - 148 z - 105\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.4 z\left(-256 z^3 + 128 z^2 + 24 z + 315\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8h8.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{150} e^{-2\sqrt{z}}\left(128\, e^{4\sqrt{z}} z^3 + 128 z^3 + 32\, e^{4\sqrt{z}} z^{5/2} - 32 z^{5/2} + 8\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16 z + 13)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{9/4} - \right.$$
$$8\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16 z + 13)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{9/4} + 128\, e^{4\sqrt{z}} z^2 + 128 z^2 + 56\, e^{4\sqrt{z}} z^{3/2} -$$
$$\left.56 z^{3/2} + 72\, e^{4\sqrt{z}} z + 72 z - 150\, e^{4\sqrt{z}}\sqrt{z} + 150\sqrt{z} + 75\, e^{4\sqrt{z}} + 75\right)$$

07.22.03.a8h9.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, -\frac{5}{4}; -z\right) =$$
$$\frac{1}{75}\left(16\sqrt{\pi}\,(13 - 16 z) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{9/4} + 2\left(-16 z^2 + 28 z + 75\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-128 z^3 + 128 z^2 - 72 z + 75\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8ha.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{135\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512z^4+288z^3-144z^2-504z+135\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(64z^3+92z^2+108z-45\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(128z^3+168z^2+144z-135\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8hb.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{135\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512z^4-288z^3-144z^2+504z+135\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(64z^3-92z^2+108z+45\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^3-168z^2+144z+135\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8hc.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, -\frac{1}{4}; z\right) =$$
$$\frac{1}{480}e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+416z+585\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+416z+585\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-\right.$$
$$4\left(64z^3-16z^{5/2}+116z^2-41z^{3/2}+192z-120\sqrt{z}+e^{4\sqrt{z}}\right.$$
$$\left.\left.\left(64z^3+16z^{5/2}+116z^2+41z^{3/2}+192z+120\sqrt{z}-60\right)-60\right)\right)$$

07.22.03.a8hd.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, -\frac{1}{4}; -z\right) = \frac{1}{120}\left(\sqrt{\pi}\left(256z^2-416z+585\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+\right.$$
$$\left.2\left(4\left(16z^3-29z^2+48z+15\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\left(16z^2-41z+120\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8he.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{1}{4}; z\right) = \frac{1}{225\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(-2\left(256z^4+352z^3+669z^2-720z-225\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\left(256z^3+576z^2+1355z+600\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(256z^3+544z^2+1185z+900\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8hf.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) = \frac{1}{225\sqrt{2}\,\sqrt[4]{z}} \left(\left(-2\left(256z^4 - 352z^3 + 669z^2 + 720z - 225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(256z^3 - 576z^2 + 1355z - 600\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(-256z^3 + 544z^2 - 1185z + 900\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8hg.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{3}{4}; z\right) = \frac{1}{92\,160} \left(e^{-2\sqrt{z}}\left(4\left(1024z^3 - 256z^{5/2} + 2688z^2 - 864z^{3/2} + 7908z - 3285\sqrt{z} + e^{4\sqrt{z}}\left(1024z^3 + 256z^{5/2} + 2688z^2 + 864z^{3/2} + 7908z + 3285\sqrt{z} + 11\,520\right) + 11\,520\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(4096z^3 + 9984z^2 + 28\,080z + 26\,325\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(4096z^3 + 9984z^2 + 28\,080z + 26\,325\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8hh.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) = \frac{1}{23\,040}\left(\sqrt{\pi}\,\sqrt[4]{z}\left(-4096z^3 + 9984z^2 - 28\,080z + 26\,325\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\left(4\left(256z^3 - 672z^2 + 1977z - 2880\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\left(256z^2 - 864z + 3285\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8hi.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{5}{4}; z\right) = \frac{1}{50\,400\sqrt{2}\,\sqrt[4]{z}} \left(\left(-2\left(4096z^4 + 8960z^3 + 31\,920z^2 + 21\,357z - 50\,400\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(4096z^3 + 12\,544z^2 + 45\,808z + 89\,355\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(4096z^3 + 12\,032z^2 + 42\,672z + 66\,465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8hj.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{5}{4}; -z\right) = \frac{1}{50\,400\sqrt{2}\,\sqrt[4]{z}} \left(\left(\left(-8192z^4 + 17\,920z^3 - 63\,840z^2 + 42\,714z + 100\,800\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(4096z^3 - 12\,544z^2 + 45\,808z - 89\,355\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(-4096z^3 + 12\,032z^2 - 42\,672z + 66\,465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8hk.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) = \frac{1}{7\,864\,320\, z^{3/4}} \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(16\,384\, z^{7/2} - 4096\, z^3 + 56\,320\, z^{5/2} - 17\,152\, z^2 + 241\,344\, z^{3/2} - 83\,760\, z + 526\,740\sqrt{z} + e^{4\sqrt{z}} \left(16\,384\, z^{7/2} + 4096\, z^3 + 56\,320\, z^{5/2} + 17\,152\, z^2 + 241\,344\, z^{3/2} + 83\,760\, z + 526\,740\sqrt{z} + 342\,225\right) - 342\,225\right) + e^{2\sqrt{z}} \sqrt{2\pi}\, \left(65\,536\, z^4 + 212\,992\, z^3 + 898\,560\, z^2 + 1\,684\,800\, z + 342\,225\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - e^{2\sqrt{z}} \sqrt{2\pi}\, \left(65\,536\, z^4 + 212\,992\, z^3 + 898\,560\, z^2 + 1\,684\,800\, z + 342\,225\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8hl.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{7}{4}; -z\right) = \frac{1}{1\,966\,080\, z^{3/4}} \left(\sqrt{\pi}\, \left(-65\,536\, z^4 + 212\,992\, z^3 - 898\,560\, z^2 + 1\,684\,800\, z - 342\,225\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\, \left(\left(-4096\, z^3 + 17\,152\, z^2 - 83\,760\, z + 342\,225\right) \sin\left(2\sqrt{z}\right) - 4\sqrt{z}\, \left(4096\, z^3 - 14\,080\, z^2 + 60\,336\, z - 131\,685\right) \cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8hm.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) = \frac{1}{2\,903\,040\sqrt{2}\, z^{3/4}} \left(\left(-2\sqrt{z}\, \left(65\,536\, z^4 + 196\,608\, z^3 + 999\,936\, z^2 + 1\,822\,464\, z - 2\,497\,635\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3 \left(65\,536\, z^4 + 253\,952\, z^3 + 1\,268\,736\, z^2 + 3\,417\,120\, z + 675\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\, \left(65\,536\, z^4 + 245\,760\, z^3 + 1\,211\,904\, z^2 + 2\,963\,520\, z + 2\,027\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8hn.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{9}{4}; -z\right) = \frac{1}{2\,903\,040\sqrt{2}\, z^{3/4}} \left(\left(2\sqrt{z}\, \left(-65\,536\, z^4 + 196\,608\, z^3 - 999\,936\, z^2 + 1\,822\,464\, z + 2\,497\,635\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3 \left(65\,536\, z^4 - 253\,952\, z^3 + 1\,268\,736\, z^2 - 3\,417\,120\, z + 675\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\, \left(65\,536\, z^4 - 245\,760\, z^3 + 1\,211\,904\, z^2 - 2\,963\,520\, z + 2\,027\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8ho.01

$$ {}_1F_2\left(-\frac{13}{4};-\frac{5}{2},\frac{11}{4};z\right)=\frac{1}{2\,516\,582\,400\,z^{7/4}}$$
$$\left(7\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144\,z^{9/2}-65\,536\,z^4+1\,114\,112\,z^{7/2}-327\,680\,z^3+6\,297\,600\,z^{5/2}-1\,989\,120\,z^2+19\,073\,280\,z^{3/2}-\right.\right.\right.$$
$$\left.\left.\left.8\,760\,960\,z+23\,271\,300\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4+1\,114\,112\,z^{7/2}+327\,680\,z^3+6\,297\,600\,z^{5/2}+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.1\,989\,120\,z^2+19\,073\,280\,z^{3/2}+8\,760\,960\,z+23\,271\,300\sqrt{z}-17\,453\,475\right)+17\,453\,475\right)+\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5+4\,259\,840\,z^4+23\,961\,600\,z^3+67\,392\,000\,z^2+27\,378\,000\,z-17\,453\,475\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5+4\,259\,840\,z^4+23\,961\,600\,z^3+67\,392\,000\,z^2+27\,378\,000\,z-17\,453\,475\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8hp.01

$$ {}_1F_2\left(-\frac{13}{4};-\frac{5}{2},\frac{11}{4};-z\right)=$$
$$-\frac{1}{629\,145\,600\,z^{7/4}}\left(7\left(\sqrt{\pi}\left(1\,048\,576\,z^5-4\,259\,840\,z^4+23\,961\,600\,z^3-67\,392\,000\,z^2+27\,378\,000\,z+17\,453\,475\right)\right.\right.$$
$$S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536\,z^4-278\,528\,z^3+1\,574\,400\,z^2-4\,768\,320\,z+5\,817\,825\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(65\,536\,z^4-327\,680\,z^3+1\,989\,120\,z^2-8\,760\,960\,z-17\,453\,475\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a8hq.01

$$ {}_1F_2\left(-\frac{13}{4};-\frac{5}{2},\frac{13}{4};z\right)=\frac{1}{113\,541\,120\sqrt{2}\,z^{7/4}}$$
$$\left(\left(-2\sqrt{z}\left(1\,048\,576\,z^5+3\,997\,696\,z^4+26\,222\,592\,z^3+74\,866\,176\,z^2-43\,631\,280\,z-38\,513\,475\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$3\left(1\,048\,576\,z^5+4\,915\,200\,z^4+31\,268\,864\,z^3+110\,584\,320\,z^2+162\,162\,000\,z-64\,189\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(1\,048\,576\,z^5+4\,784\,128\,z^4+30\,253\,056\,z^3+101\,629\,440\,z^2+75\,675\,600\,z-192\,567\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8hr.01

$$ {}_1F_2\left(-\frac{13}{4};-\frac{5}{2},\frac{13}{4};-z\right)=\frac{1}{113\,541\,120\sqrt{2}\,z^{7/4}}$$
$$\left(\left(2\sqrt{z}\left(-1\,048\,576\,z^5+3\,997\,696\,z^4-26\,222\,592\,z^3+74\,866\,176\,z^2+43\,631\,280\,z-38\,513\,475\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$3\left(1\,048\,576\,z^5-4\,915\,200\,z^4+31\,268\,864\,z^3-110\,584\,320\,z^2+162\,162\,000\,z+64\,189\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(1\,048\,576\,z^5-4\,784\,128\,z^4+30\,253\,056\,z^3-101\,629\,440\,z^2+75\,675\,600\,z+192\,567\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8hs.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{15}{4}; z\right) = \frac{1}{966\,367\,641\,600\, z^{11/4}} \left(77\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(4\,194\,304\, z^{11/2} - 1\,048\,576\, z^5 + 21\,233\,664\, z^{9/2} - 6\,094\,848\, z^4 + 149\,323\,776\, z^{7/2} - 44\,605\,440\, z^3 + 585\,123\,840\, z^{5/2} - 221\,944\,320\, z^2 + 670\,213\,440\, z^{3/2} - 1\,061\,171\,280\, z - 3\,420\,881\,100\sqrt{z} + e^{4\sqrt{z}} \left(4\,194\,304\, z^{11/2} + 1\,048\,576\, z^5 + 21\,233\,664\, z^{9/2} + 6\,094\,848\, z^4 + 149\,323\,776\, z^{7/2} + 44\,605\,440\, z^3 + 585\,123\,840\, z^{5/2} + 221\,944\,320\, z^2 + 670\,213\,440\, z^{3/2} + 1\,061\,171\,280\, z - 3\,420\,881\,100\sqrt{z} + 2\,565\,660\,825\right) - 2\,565\,660\,825\right) + e^{2\sqrt{z}}\sqrt{2\pi}\, \left(16\,777\,216\, z^6 + 81\,788\,928\, z^5 + 575\,078\,400\, z^4 + 2\,156\,544\,000\, z^3 + 1\,314\,144\,000\, z^2 - 1\,675\,533\,600\, z + 2\,565\,660\,825\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\, \left(16\,777\,216\, z^6 + 81\,788\,928\, z^5 + 575\,078\,400\, z^4 + 2\,156\,544\,000\, z^3 + 1\,314\,144\,000\, z^2 - 1\,675\,533\,600\, z + 2\,565\,660\,825\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8ht.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{15}{4}; -z\right) = -\frac{1}{241\,591\,910\,400\, z^{11/4}} \left(77 \left(\sqrt{\pi}\, \left(16\,777\,216\, z^6 - 81\,788\,928\, z^5 + 575\,078\,400\, z^4 - 2\,156\,544\,000\, z^3 + 1\,314\,144\,000\, z^2 + 1\,675\,533\,600\, z + 2\,565\,660\,825\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\, \left(4\sqrt{z}\, \left(1\,048\,576\, z^5 - 5\,308\,416\, z^4 + 37\,330\,944\, z^3 - 146\,280\,960\, z^2 + 167\,553\,360\, z + 855\,220\,275\right) \cos\left(2\sqrt{z}\right) + \left(1\,048\,576\, z^5 - 6\,094\,848\, z^4 + 44\,605\,440\, z^3 - 221\,944\,320\, z^2 + 1\,061\,171\,280\, z - 2\,565\,660\,825\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a8hu.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{17}{4}; z\right) = \frac{1}{3\,633\,315\,840\sqrt{2}\, z^{11/4}} \left(\left(-2\sqrt{z}\, \left(16\,777\,216\, z^6 + 77\,594\,624\, z^5 + 621\,477\,888\, z^4 + 2\,389\,229\,568\, z^3 - 398\,280\,960\, z^2 - 11\,091\,880\,800\, z + 7\,972\,289\,325\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,777\,216\, z^6 + 92\,274\,688\, z^5 + 714\,145\,792\, z^4 + 3\,157\,524\,480\, z^3 + 4\,324\,320\,000\, z^2 - 27\,935\,107\,200\, z + 13\,287\,148\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\, \left(16\,777\,216\, z^6 + 90\,177\,536\, z^5 + 696\,188\,928\, z^4 + 2\,982\,297\,600\, z^3 + 2\,644\,012\,800\, z^2 + 1\,232\,431\,200\, z + 39\,861\,446\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8hv.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{17}{4}; -z\right) = \frac{1}{3\,633\,315\,840\sqrt{2}\, z^{11/4}}\left(\left(-2\sqrt{z}\left(16\,777\,216 z^6 - 77\,594\,624 z^5 + 621\,477\,888 z^4 - 2\,389\,229\,568 z^3 - 398\,280\,960 z^2 + 11\,091\,880\,800 z + 7\,972\,289\,325\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,777\,216 z^6 - 92\,274\,688 z^5 + 714\,145\,792 z^4 - 3\,157\,524\,480 z^3 + 4\,324\,320\,000 z^2 + 27\,935\,107\,200 z + 13\,287\,148\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(16\,777\,216 z^6 - 90\,177\,536 z^5 + 696\,188\,928 z^4 - 2\,982\,297\,600 z^3 + 2\,644\,012\,800 z^2 - 1\,232\,431\,200 z + 39\,861\,446\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8hw.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) = \frac{1}{4\,123\,168\,604\,160 z^{15/4}}\left(11 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(67\,108\,864 z^{13/2} - 16\,777\,216 z^6 + 394\,264\,576 z^{11/2} - 111\,149\,056 z^5 + 3\,319\,529\,472 z^{9/2} - 956\,497\,920 z^4 + 16\,026\,501\,120 z^{7/2} - 5\,434\,490\,880 z^3 + 19\,461\,012\,480 z^{5/2} - 21\,546\,120\,960 z^2 + 46\,914\,940\,800 z^{3/2} + 465\,239\,829\,600 z + 940\,742\,302\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 + 394\,264\,576 z^{11/2} + 111\,149\,056 z^5 + 3\,319\,529\,472 z^{9/2} + 956\,497\,920 z^4 + 16\,026\,501\,120 z^{7/2} + 5\,434\,490\,880 z^3 + 19\,461\,012\,480 z^{5/2} + 21\,546\,120\,960 z^2 + 46\,914\,940\,800 z^{3/2} - 465\,239\,829\,600 z + 940\,742\,302\,500\sqrt{z} - 705\,556\,726\,875\right) + 705\,556\,726\,875\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 + 1\,526\,726\,656 z^6 + 12\,881\,756\,160 z^5 + 60\,383\,232\,000 z^4 + 49\,061\,376\,000 z^3 - 93\,829\,881\,600 z^2 + 287\,354\,012\,400 z - 705\,556\,726\,875\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 + 1\,526\,726\,656 z^6 + 12\,881\,756\,160 z^5 + 60\,383\,232\,000 z^4 + 49\,061\,376\,000 z^3 - 93\,829\,881\,600 z^2 + 287\,354\,012\,400 z - 705\,556\,726\,875\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8hx.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) = -\frac{1}{1\,030\,792\,151\,040 z^{15/4}}\left(11\left(\sqrt{\pi}\left(268\,435\,456 z^7 - 1\,526\,726\,656 z^6 + 12\,881\,756\,160 z^5 - 60\,383\,232\,000 z^4 + 49\,061\,376\,000 z^3 + 93\,829\,881\,600 z^2 + 287\,354\,012\,400 z + 705\,556\,726\,875\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216 z^6 - 98\,566\,144 z^5 + 829\,882\,368 z^4 - 4\,006\,625\,280 z^3 + 4\,865\,253\,120 z^2 - 11\,728\,735\,200 z + 235\,185\,575\,625\right)\cos\left(2\sqrt{z}\right) + \left(16\,777\,216 z^6 - 111\,149\,056 z^5 + 956\,497\,920 z^4 - 5\,434\,490\,880 z^3 + 21\,546\,120\,960 z^2 + 465\,239\,829\,600 z - 705\,556\,726\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a8hy.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) =$$

$$-\left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+1\,459\,617\,792\,z^6+13\,787\,725\,824\,z^5+66\,375\,843\,840\,z^4+9\,336\,729\,600\,z^3-\right.\right.\right.$$

$$\left.\left.\left.325\,361\,836\,800\,z^2+3\,444\,028\,988\,400\,z-2\,798\,273\,553\,075\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$

$$3\left(268\,435\,456\,z^7+1\,694\,498\,816\,z^6+15\,461\,253\,120\,z^5+82\,354\,176\,000\,z^4+116\,633\,088\,000\,z^3+\right.$$

$$\left.364\,799\,635\,200\,z^2+9\,056\,520\,673\,200\,z-4\,663\,789\,255\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}$$

$$\left(268\,435\,456\,z^7+1\,660\,944\,384\,z^6+15\,146\,680\,320\,z^5+78\,962\,688\,000\,z^4+83\,566\,080\,000\,z^3-71\,833\,132\,800\right.$$

$$\left.\left.z^2-2\,678\,689\,213\,200\,z-13\,991\,367\,765\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(1\,743\,991\,603\,200\,\sqrt{2}\;z^{15/4}\right)$$

07.22.03.a8hz.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) =$$

$$-\left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-1\,459\,617\,792\,z^6+13\,787\,725\,824\,z^5-66\,375\,843\,840\,z^4+9\,336\,729\,600\,z^3+\right.\right.\right.$$

$$\left.\left.\left.325\,361\,836\,800\,z^2+3\,444\,028\,988\,400\,z+2\,798\,273\,553\,075\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$

$$3\left(268\,435\,456\,z^7-1\,694\,498\,816\,z^6+15\,461\,253\,120\,z^5-82\,354\,176\,000\,z^4+116\,633\,088\,000\,z^3-\right.$$

$$\left.364\,799\,635\,200\,z^2+9\,056\,520\,673\,200\,z+4\,663\,789\,255\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}$$

$$\left(268\,435\,456\,z^7-1\,660\,944\,384\,z^6+15\,146\,680\,320\,z^5-78\,962\,688\,000\,z^4+83\,566\,080\,000\,z^3+71\,833\,132\,800\right.$$

$$\left.\left.z^2-2\,678\,689\,213\,200\,z+13\,991\,367\,765\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(1\,743\,991\,603\,200\,\sqrt{2}\;z^{15/4}\right)$$

07.22.03.a8i0.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{23}{4}; z\right) = \left(209\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(1\,073\,741\,824\, z^{15/2} - 268\,435\,456\, z^7 + 7\,180\,648\,448\, z^{13/2} - 1\,996\,488\,704\, z^6 + 70\,451\,724\,288\, z^{11/2} - 19\,802\,357\,760\, z^5 + 404\,922\,040\,320\, z^{9/2} - 128\,012\,451\,840\, z^4 + 544\,052\,920\,320\, z^{7/2} - 450\,811\,146\,240\, z^3 + 291\,915\,187\,200\, z^{5/2} - 5\,202\,345\,657\,600\, z^2 - 66\,658\,311\,720\,000\, z^{3/2} - 237\,067\,060\,230\,000\, z - 409\,222\,901\,587\,500\sqrt{z} + e^{4\sqrt{z}}\left(1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 + 7\,180\,648\,448\, z^{13/2} + 1\,996\,488\,704\, z^6 + 70\,451\,724\,288\, z^{11/2} + 19\,802\,357\,760\, z^5 + 404\,922\,040\,320\, z^{9/2} + 128\,012\,451\,840\, z^4 + 544\,052\,920\,320\, z^{7/2} + 450\,811\,146\,240\, z^3 + 291\,915\,187\,200\, z^{5/2} + 5\,202\,345\,657\,600\, z^2 - 66\,658\,311\,720\,000\, z^{3/2} + 237\,067\,060\,230\,000\, z - 409\,222\,901\,587\,500\sqrt{z} + 306\,917\,176\,190\,625\right) - 306\,917\,176\,190\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\, z^8 + 27\,917\,287\,424\, z^7 + 274\,810\,798\,080\, z^6 + 1\,545\,810\,739\,200\, z^5 + 1\,569\,964\,032\,000\, z^4 - 4\,003\,408\,281\,600\, z^3 + 18\,390\,656\,793\,600\, z^2 - 90\,311\,261\,040\,000\, z + 306\,917\,176\,190\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\, z^8 + 27\,917\,287\,424\, z^7 + 274\,810\,798\,080\, z^6 + 1\,545\,810\,739\,200\, z^5 + 1\,569\,964\,032\,000\, z^4 - 4\,003\,408\,281\,600\, z^3 + 18\,390\,656\,793\,600\, z^2 - 90\,311\,261\,040\,000\, z + 306\,917\,176\,190\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big/\left(2\,111\,062\,325\,329\,920\, z^{19/4}\right) $$

07.22.03.a8i1.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{5}{2}, \frac{23}{4}; -z\right) = -\left(209\left(\sqrt{\pi}\left(4\,294\,967\,296\, z^8 - 27\,917\,287\,424\, z^7 + 274\,810\,798\,080\, z^6 - 1\,545\,810\,739\,200\, z^5 + 1\,569\,964\,032\,000\, z^4 + 4\,003\,408\,281\,600\, z^3 + 18\,390\,656\,793\,600\, z^2 + 90\,311\,261\,040\,000\, z + 306\,917\,176\,190\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\, z^7 - 1\,795\,162\,112\, z^6 + 17\,612\,931\,072\, z^5 - 101\,230\,510\,080\, z^4 + 136\,013\,230\,080\, z^3 - 72\,978\,796\,800\, z^2 - 16\,664\,577\,930\,000\, z + 102\,305\,725\,396\,875\right)\cos\left(2\sqrt{z}\right) + \left(268\,435\,456\, z^7 - 1\,996\,488\,704\, z^6 + 19\,802\,357\,760\, z^5 - 128\,012\,451\,840\, z^4 + 450\,811\,146\,240\, z^3 - 5\,202\,345\,657\,600\, z^2 + 237\,067\,060\,230\,000\, z - 306\,917\,176\,190\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(527\,765\,581\,332\,480\, z^{19/4}\right) $$

For fixed z and $a_1 = -\frac{13}{4}$, $b_{1.} = -\frac{3}{2}$

07.22.03.a8i2.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{3}{2}, -\frac{23}{4}; z\right) = \frac{1}{908\,523\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32\,768\, z^4 - 228\,096\, z^3 + 1\,452\,528\, z^2 - 2\,159\,388\, z + 908\,523\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(4096\, z^3 - 14\,080\, z^2 - 316\,008\, z + 302\,841\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\, z\left(8192\, z^3 + 78\,144\, z^2 + 263\,340\, z + 908\,523\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8i3.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{908\,523\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32\,768z^4+228\,096z^3+1\,452\,528z^2+2\,159\,388z+908\,523\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(4096z^3+14\,080z^2-\right.\right.\right.$$
$$\left.\left.\left.316\,008z-302\,841\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(8192z^3-78\,144z^2+263\,340z-908\,523\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8i4.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{21}{4};z\right)=\left(\frac{64z^2}{1071}+\frac{100z}{63}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{63}\sqrt{z}\,(16z+63)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8i5.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{21}{4};-z\right)=\left(\frac{64z^2}{1071}-\frac{100z}{63}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{63}(63-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a8i6.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{197\,505\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,384z^4-89\,088z^3+365\,904z^2-485\,100z+197\,505\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(2048z^3+6688z^2-\right.\right.\right.$$
$$\left.\left.\left.73\,920z+65\,835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(4096z^3+25\,344z^2+41\,580z+197\,505\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8i7.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{197\,505\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,384z^4+89\,088z^3+365\,904z^2+485\,100z+197\,505\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(2048z^3-6688z^2-\right.\right.\right.$$
$$\left.\left.\left.73\,920z-65\,835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-4096z^3+25\,344z^2-41\,580z+197\,505\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8i8.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{17}{4};z\right)=\left(\frac{76z}{51}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{51}\sqrt{z}\,(8z+51)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8i9.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{17}{4};-z\right)=\left(1-\frac{76z}{51}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{51}(51-8z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a8ia.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{15}{4};z\right)=\frac{1}{31\,185\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-8192z^4-24\,576z^3+71\,568z^2-80\,388z+31\,185\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(1024z^3+3968z^2-12\,936z+10\,395\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(2048z^3+7680z^2+2772z+31\,185\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8ib.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{15}{4};-z\right)=\frac{1}{31\,185\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-8192z^4+24\,576z^3+71\,568z^2+80\,388z+31\,185\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(1024z^3-3968z^2-12\,936z-10\,395\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-2048z^3+7680z^2-2772z+31\,185\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8ic.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{13}{4};z\right)=\left(\frac{4z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8id.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{13}{4};-z\right)=\left(1-\frac{4z}{3}\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a8ie.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{2079\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096z^4-2304z^3+6768z^2-5796z+2079\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(512z^3+736z^2-1008z+693\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1024z^3+1344z^2-252z+2079\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8if.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{2079\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096z^4+2304z^3+6768z^2+5796z+2079\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(512z^3-736z^2-1008z-693\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-1024z^3+1344z^2+252z+2079\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8ig.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{810}e^{-2\sqrt{z}}\left(1024\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-1024\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+1024\,e^{4\sqrt{z}}z^3+\right.$$
$$1024\,z^3+256\,e^{4\sqrt{z}}z^{5/2}-256\,z^{5/2}+192\,e^{4\sqrt{z}}z^2+192\,z^2+240\,e^{4\sqrt{z}}z^{3/2}-$$
$$\left.240\,z^{3/2}+420\,e^{4\sqrt{z}}z+420\,z-810\,e^{4\sqrt{z}}\sqrt{z}+810\sqrt{z}+405\,e^{4\sqrt{z}}+405\right)$$

07.22.03.a8ih.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{405}\left(-2048\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}+2\left(-128\,z^2+120\,z+405\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-1024\,z^3+192\,z^2-420\,z+405\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8ii.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{7}{4};z\right)=\frac{1}{189\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(2048\,z^4-3840\,z^3+1296\,z^2-612\,z+189\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(256\,z^3-256\,z^2+120\,z-63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(-512\,z^3+576\,z^2-108\,z+189\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8ij.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{7}{4};-z\right)=\frac{1}{189\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(2048\,z^4+3840\,z^3+1296\,z^2+612\,z+189\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(256\,z^3+256\,z^2+120\,z+63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(512\,z^3+576\,z^2+108\,z+189\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8ik.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{90}e^{-2\sqrt{z}}\left(-256\,e^{4\sqrt{z}}z^3-256\,z^3-64\,e^{4\sqrt{z}}z^{5/2}+64\,z^{5/2}-16\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16\,z-39)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+\right.$$
$$16\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16\,z-39)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+576\,e^{4\sqrt{z}}z^2+576\,z^2+$$
$$\left.96\,e^{4\sqrt{z}}z^{3/2}-96\,z^{3/2}+12\,e^{4\sqrt{z}}z+12\,z-90\,e^{4\sqrt{z}}\sqrt{z}+90\sqrt{z}+45\,e^{4\sqrt{z}}+45\right)$$

07.22.03.a8il.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{45}\left(32\sqrt{\pi}\,(16\,z+39)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+2\left(32\,z^2+48\,z+45\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(256\,z^3+576\,z^2-12\,z+45\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8im.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{3}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{81\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1024z^4+4416z^3-1584z^2-396z+81\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(128z^3-440z^2-96z+27\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(256z^3-912z^2-180z+81\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8in.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{3}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{81\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1024z^4-4416z^3-1584z^2+396z+81\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(128z^3+440z^2-96z-27\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(-256z^3-912z^2+180z+81\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8io.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{3}{2}, -\frac{1}{4}; z\right) = \frac{1}{144}e^{-2\sqrt{z}}$$
$$\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-1248z-351\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-1248z-351\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+4\left(64z^3-\right.\right.$$
$$\left.\left.16z^{5/2}-300z^2+63z^{3/2}-120z+36\sqrt{z}+e^{4\sqrt{z}}\left(64z^3+16z^{5/2}-300z^2-63z^{3/2}-120z-36\sqrt{z}+18\right)+18\right)\right)$$

07.22.03.a8ip.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{3}{2}, -\frac{1}{4}; -z\right) = \frac{1}{36}\left(\sqrt{\pi}\,z^{5/4}\left(-256z^2-1248z+351\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.$$
$$\left.2\left(2\left(32z^3+150z^2-60z-9\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\left(16z^2+63z-36\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8iq.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{3}{2}, \frac{1}{4}; z\right) = \frac{1}{135\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(512z^4-3456z^3+558z^2+900z+135\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\left(-256z^3+1504z^2+855z+180\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(-256z^3+1536z^2+765z+270\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8ir.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},\frac{1}{4};-z\right)=\frac{1}{135\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(512z^4+3456z^3+558z^2-900z+135\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(256z^3+1504z^2-855z+180\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(256z^3+1536z^2-765z+270\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8is.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},\frac{3}{4};z\right)=\frac{1}{27\,648}$$
$$\left(e^{-2\sqrt{z}}\left(-4\left(1024z^3-256z^{5/2}-7296z^2+1632z^{3/2}-5196z+1863\sqrt{z}+e^{4\sqrt{z}}\left(1024z^3+256z^{5/2}-7296z^2-1632z^{3/2}-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.5196z-1863\sqrt{z}-3456\right)-3456\right)-e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(4096z^3-29\,952z^2-16\,848z-8775\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(4096z^3-29\,952z^2-16\,848z-8775\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8it.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},\frac{3}{4};-z\right)=\frac{1}{6912}\left(\sqrt{\pi}\sqrt[4]{z}\left(4096z^3+29\,952z^2-16\,848z+8775\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\left(4\left(256z^3+1824z^2-1299z+864\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\left(256z^2+1632z-1863\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8iu.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},\frac{5}{4};z\right)=\frac{1}{15\,120\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(\left(8192z^4-75\,264z^3-6048z^2+6678z+30\,240\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\left(-4096z^3+34\,048z^2+29\,904z+28\,035\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(-4096z^3+34\,560z^2+27\,216z+23\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8iv.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},\frac{5}{4};-z\right)=\frac{1}{15\,120\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(\left(8192z^4+75\,264z^3-6048z^2-6678z+30\,240\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(4096z^3+34\,048z^2-29\,904z+28\,035\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(4096z^3+34\,560z^2-27\,216z+23\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8iw.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{3}{2}, \frac{7}{4}; z\right) = \frac{1}{2\,359\,296\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(16\,384\,z^{7/2} - 4096\,z^3 - 156\,672\,z^{5/2} + 36\,096\,z^2 - 158\,016\,z^{3/2} + 56\,016\,z - 189\,612\sqrt{z} + e^{4\sqrt{z}}\left(16\,384\,z^{7/2} + 4096\,z^3 - 156\,672\,z^{5/2} - 36\,096\,z^2 - 158\,016\,z^{3/2} - 56\,016\,z - 189\,612\sqrt{z} - 78\,975\right) + 78\,975\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4 - 638\,976\,z^3 - 539\,136\,z^2 - 561\,600\,z - 78\,975\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4 - 638\,976\,z^3 - 539\,136\,z^2 - 561\,600\,z - 78\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8ix.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{3}{2}, \frac{7}{4}; -z\right) = \frac{1}{589\,824\,z^{3/4}}\left(\sqrt{\pi}\left(65\,536\,z^4 + 638\,976\,z^3 - 539\,136\,z^2 + 561\,600\,z - 78\,975\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(4096\,z^3 + 39\,168\,z^2 - 39\,504\,z + 47\,403\right)\cos\left(2\sqrt{z}\right) + \left(4096\,z^3 + 36\,096\,z^2 - 56\,016\,z + 78\,975\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8iy.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{3}{2}, \frac{9}{4}; z\right) = \frac{1}{870\,912\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(65\,536\,z^4 - 761\,856\,z^3 - 258\,048\,z^2 - 300\,384\,z + 789\,831\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-65\,536\,z^4 + 704\,512\,z^3 + 827\,904\,z^2 + 1\,221\,696\,z + 135\,135\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-65\,536\,z^4 + 712\,704\,z^3 + 764\,928\,z^2 + 1\,046\,304\,z + 405\,405\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8iz.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) = \frac{1}{870\,912\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(65\,536\,z^4 + 761\,856\,z^3 - 258\,048\,z^2 + 300\,384\,z + 789\,831\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(65\,536\,z^4 + 704\,512\,z^3 - 827\,904\,z^2 + 1\,221\,696\,z - 135\,135\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(65\,536\,z^4 + 712\,704\,z^3 - 764\,928\,z^2 + 1\,046\,304\,z - 405\,405\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8j0.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) = -\frac{1}{754\,974\,720\,z^{7/4}}\left(7\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144\,z^{9/2} - 65\,536\,z^4 - 3\,145\,728\,z^{7/2} + 737\,280\,z^3 - 4\,085\,760\,z^{5/2} + 1\,405\,440\,z^2 - 6\,935\,040\,z^{3/2} + 3\,032\,640\,z - 4\,106\,700\sqrt{z} + e^{4\sqrt{z}}\left(262\,144\,z^{9/2} + 65\,536\,z^4 - 3\,145\,728\,z^{7/2} - 737\,280\,z^3 - 4\,085\,760\,z^{5/2} - 1\,405\,440\,z^2 - 6\,935\,040\,z^{3/2} - 3\,032\,640\,z - 4\,106\,700\sqrt{z} + 3\,080\,025\right) - 3\,080\,025\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5 - 12\,779\,520\,z^4 - 14\,376\,960\,z^3 - 22\,464\,000\,z^2 - 6\,318\,000\,z + 3\,080\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5 - 12\,779\,520\,z^4 - 14\,376\,960\,z^3 - 22\,464\,000\,z^2 - 6\,318\,000\,z + 3\,080\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8j1.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) = \frac{1}{188\,743\,680\, z^{7/4}}\left(7\left(\sqrt{\pi}\,\left(1\,048\,576\, z^5 + 12\,779\,520\, z^4 - 14\,376\,960\, z^3 + 22\,464\,000\, z^2 - 6\,318\,000\, z - 3\,080\,025\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(65\,536\, z^4 + 786\,432\, z^3 - 1\,021\,440\, z^2 + 1\,733\,760\, z - 1\,026\,675\right)\cos\left(2\sqrt{z}\right) + \left(65\,536\, z^4 + 737\,280\, z^3 - 1\,405\,440\, z^2 + 3\,032\,640\, z + 3\,080\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a8j2.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) = \frac{1}{34\,062\,336\sqrt{2}\, z^{7/4}}\left(\left(2\sqrt{z}\,\left(1\,048\,576\, z^5 - 14\,745\,600\, z^4 - 8\,921\,088\, z^3 - 17\,385\,984\, z^2 + 21\,521\,808\, z + 6\,081\,075\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-1\,048\,576\, z^5 + 13\,828\,096\, z^4 + 20\,275\,200\, z^3 + 40\,094\,208\, z^2 + 28\,108\,080\, z - 10\,135\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-1\,048\,576\, z^5 + 13\,959\,168\, z^4 + 18\,948\,096\, z^3 + 35\,430\,912\, z^2 + 19\,459\,440\, z - 30\,405\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8j3.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) = \frac{1}{34\,062\,336\sqrt{2}\, z^{7/4}}\left(\left(2\sqrt{z}\,\left(1\,048\,576\, z^5 + 14\,745\,600\, z^4 - 8\,921\,088\, z^3 + 17\,385\,984\, z^2 + 21\,521\,808\, z - 6\,081\,075\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-1\,048\,576\, z^5 - 13\,828\,096\, z^4 + 20\,275\,200\, z^3 - 40\,094\,208\, z^2 + 28\,108\,080\, z + 10\,135\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(1\,048\,576\, z^5 + 13\,959\,168\, z^4 - 18\,948\,096\, z^3 + 35\,430\,912\, z^2 - 19\,459\,440\, z - 30\,405\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8j4.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) = -\frac{1}{289\,910\,292\,480\, z^{11/4}}\left(77\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(4\,194\,304\, z^{11/2} - 1\,048\,576\, z^5 - 60\,555\,264\, z^{9/2} + 14\,352\,384\, z^4 - 96\,043\,008\, z^{7/2} + 32\,071\,680\, z^3 - 210\,401\,280\, z^{5/2} + 87\,160\,320\, z^2 - 170\,838\,720\, z^{3/2} + 95\,275\,440\, z + 488\,697\,300\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304\, z^{11/2} + 1\,048\,576\, z^5 - 60\,555\,264\, z^{9/2} - 14\,352\,384\, z^4 - 96\,043\,008\, z^{7/2} - 32\,071\,680\, z^3 - 210\,401\,280\, z^{5/2} - 87\,160\,320\, z^2 - 170\,838\,720\, z^{3/2} - 95\,275\,440\, z + 488\,697\,300\sqrt{z} - 366\,522\,975\right) + 366\,522\,975\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(16\,777\,216\, z^6 - 245\,366\,784\, z^5 - 345\,047\,040\, z^4 - 718\,848\,000\, z^3 - 303\,264\,000\, z^2 + 295\,682\,400\, z - 366\,522\,975\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\,\left(16\,777\,216\, z^6 - 245\,366\,784\, z^5 - 345\,047\,040\, z^4 - 718\,848\,000\, z^3 - 303\,264\,000\, z^2 + 295\,682\,400\, z - 366\,522\,975\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8j5.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},\frac{15}{4};-z\right)=$$

$$\frac{1}{72\,477\,573\,120\,z^{11/4}}\left(77\left(\sqrt{\pi}\,\left(16\,777\,216\,z^6+245\,366\,784\,z^5-345\,047\,040\,z^4+718\,848\,000\,z^3-303\,264\,000\,z^2-\right.\right.\right.$$

$$\left.295\,682\,400\,z-366\,522\,975\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$

$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(1\,048\,576\,z^5+15\,138\,816\,z^4-24\,010\,752\,z^3+52\,600\,320\,z^2-42\,709\,680\,z-122\,174\,325\right)\cos\left(2\sqrt{z}\right)+$$

$$\left.\left.\left.\left(1\,048\,576\,z^5+14\,352\,384\,z^4-32\,071\,680\,z^3+87\,160\,320\,z^2-95\,275\,440\,z+366\,522\,975\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a8j6.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},\frac{17}{4};z\right)=\frac{1}{1\,089\,994\,752\sqrt{2}\,z^{11/4}}$$

$$\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-276\,824\,064\,z^5-242\,417\,664\,z^4-626\,098\,176\,z^3+441\,213\,696\,z^2+1\,556\,755\,200\,z-\right.\right.\right.$$

$$1\,039\,863\,825\left)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-16\,777\,216\,z^6+262\,144\,000\,z^5+459\,866\,112\,z^4+1\,137\,033\,216\,z^3+\right.\right.$$

$$\left.1\,072\,431\,360\,z^2-3\,827\,023\,200\,z+1\,733\,106\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-16\,777\,216\,z^6+264\,241\,152\,z^5+\right.$$

$$\left.\left.\left.433\,520\,640\,z^4+1\,029\,832\,704\,z^3+696\,833\,280\,z^2-389\,188\,800\,z+5\,199\,319\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8j7.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},\frac{17}{4};-z\right)=\frac{1}{1\,089\,994\,752\sqrt{2}\,z^{11/4}}$$

$$\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+276\,824\,064\,z^5-242\,417\,664\,z^4+626\,098\,176\,z^3+441\,213\,696\,z^2-1\,556\,755\,200\,z-\right.\right.\right.$$

$$1\,039\,863\,825\left)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-16\,777\,216\,z^6-262\,144\,000\,z^5+459\,866\,112\,z^4-1\,137\,033\,216\,z^3+\right.\right.$$

$$\left.1\,072\,431\,360\,z^2+3\,827\,023\,200\,z+1\,733\,106\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(16\,777\,216\,z^6+264\,241\,152\,z^5-\right.$$

$$\left.\left.\left.433\,520\,640\,z^4+1\,029\,832\,704\,z^3-696\,833\,280\,z^2-389\,188\,800\,z-5\,199\,319\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8j8.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},\frac{19}{4};z\right)=$$
$$-\frac{1}{1\,236\,950\,581\,248\,z^{15/4}}\left(11\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(67\,108\,864\,z^{13/2}-16\,777\,216\,z^6-1\,132\,462\,080\,z^{11/2}+270\,532\,608\,z^5-\right.\right.\right.$$
$$2\,119\,434\,240\,z^{9/2}+689\,504\,256\,z^4-5\,693\,571\,072\,z^{7/2}+2\,214\,051\,840\,z^3-5\,396\,751\,360\,z^{5/2}+$$
$$4\,292\,870\,400\,z^2+3\,127\,662\,720\,z^{3/2}-49\,260\,687\,840\,z-112\,889\,076\,300\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^6-1\,132\,462\,080\,z^{11/2}-270\,532\,608\,z^5-2\,119\,434\,240\,z^{9/2}-\right.$$
$$\left.689\,504\,256\,z^4-5\,693\,571\,072\,z^{7/2}-2\,214\,051\,840\,z^3-5\,396\,751\,360\,z^{5/2}-4\,292\,870\,400\,z^2+\right.$$
$$\left.3\,127\,662\,720\,z^{3/2}+49\,260\,687\,840\,z-112\,889\,076\,300\sqrt{z}+84\,666\,807\,225\right)-84\,666\,807\,225\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-4\,580\,179\,968\,z^6-7\,729\,053\,696\,z^5-20\,127\,744\,000\,z^4-\right.$$
$$\left.11\,321\,856\,000\,z^3+16\,558\,214\,400\,z^2-41\,050\,573\,200\,z+84\,666\,807\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-4\,580\,179\,968\,z^6-7\,729\,053\,696\,z^5-20\,127\,744\,000\,z^4-\right.$$
$$\left.\left.\left.11\,321\,856\,000\,z^3+16\,558\,214\,400\,z^2-41\,050\,573\,200\,z+84\,666\,807\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8j9.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},\frac{19}{4};-z\right)=$$
$$\frac{1}{309\,237\,645\,312\,z^{15/4}}\left(11\left(\sqrt{\pi}\left(268\,435\,456\,z^7+4\,580\,179\,968\,z^6-7\,729\,053\,696\,z^5+20\,127\,744\,000\,z^4-\right.\right.\right.$$
$$\left.\left.11\,321\,856\,000\,z^3-16\,558\,214\,400\,z^2-41\,050\,573\,200\,z-84\,666\,807\,225\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216\,z^6+283\,115\,520\,z^5-529\,858\,560\,z^4+1\,423\,392\,768\,z^3-1\,349\,187\,840\,z^2-\right.\right.$$
$$\left.781\,915\,680\,z-28\,222\,269\,075\right)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6+270\,532\,608\,z^5-689\,504\,256\,z^4+\right.$$
$$\left.\left.\left.2\,214\,051\,840\,z^3-4\,292\,870\,400\,z^2-49\,260\,687\,840\,z+84\,666\,807\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big)$$

07.22.03.a8ja.01

$${}_1F_2\left(-\frac{13}{4};-\frac{3}{2},\frac{21}{4};z\right)=$$
$$\left(17\left(2\sqrt{z}\left(268\,435\,456\,z^7-5\,083\,496\,448\,z^6-5\,841\,616\,896\,z^5-18\,505\,728\,000\,z^4+6\,806\,384\,640\,z^3+\right.\right.\right.$$
$$\left.63\,826\,963\,200\,z^2-401\,156\,355\,600\,z+310\,919\,283\,675\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$3\left(-268\,435\,456\,z^7+4\,848\,615\,424\,z^6+9\,893\,314\,560\,z^5+29\,364\,387\,840\,z^4+32\,024\,678\,400\,z^3-\right.$$
$$\left.27\,502\,675\,200\,z^2+1\,037\,090\,854\,800\,z-518\,198\,806\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(-268\,435\,456\,z^7+4\,882\,169\,856\,z^6+9\,389\,998\,080\,z^5+27\,081\,768\,960\,z^4+21\,673\,267\,200\,z^3-\right.$$
$$\left.\left.\left.14\,900\,371\,200\,z^2-205\,199\,794\,800\,z-1\,554\,596\,418\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(523\,197\,480\,960\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a8jb.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) = $$

$$ \left(17\left(2\sqrt{z}\left(268\,435\,456\,z^7 + 5\,083\,496\,448\,z^6 - 5\,841\,616\,896\,z^5 + 18\,505\,728\,000\,z^4 + 6\,806\,384\,640\,z^3 - \right.\right.\right. $$

$$ \left.\left.\left. 63\,826\,963\,200\,z^2 - 401\,156\,355\,600\,z - 310\,919\,283\,675\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$

$$ 3\left(-268\,435\,456\,z^7 - 4\,848\,615\,424\,z^6 + 9\,893\,314\,560\,z^5 - 29\,364\,387\,840\,z^4 + 32\,024\,678\,400\,z^3 + \right. $$

$$ \left. 27\,502\,675\,200\,z^2 + 1\,037\,090\,854\,800\,z + 518\,198\,806\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\left(268\,435\,456\,z^7 + 4\,882\,169\,856\,z^6 - 9\,389\,998\,080\,z^5 + 27\,081\,768\,960\,z^4 - 21\,673\,267\,200\,z^3 - \right. $$

$$ \left.\left. 14\,900\,371\,200\,z^2 + 205\,199\,794\,800\,z - 1\,554\,596\,418\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(523\,197\,480\,960\,\sqrt{2}\; z^{15/4}\right) $$

07.22.03.a8jc.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) = $$

$$ -\Big(209\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2} - 268\,435\,456\,z^7 - 20\,736\,638\,976\,z^{13/2} + 4\,982\,833\,152\,z^6 - 44\,707\,086\,336\,z^{11/2} + \right.\right. $$

$$ 14\,221\,836\,288\,z^5 - 142\,409\,465\,856\,z^{9/2} + 52\,332\,134\,400\,z^4 - 151\,561\,912\,320\,z^{7/2} + $$

$$ 122\,427\,002\,880\,z^3 + 25\,021\,301\,760\,z^{5/2} - 331\,532\,248\,320\,z^2 + $$

$$ 4\,902\,611\,313\,600\,z^{3/2} + 23\,029\,371\,565\,200\,z + 42\,333\,403\,612\,500\,\sqrt{z} + $$

$$ e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2} + 268\,435\,456\,z^7 - 20\,736\,638\,976\,z^{13/2} - 4\,982\,833\,152\,z^6 - 44\,707\,086\,336\,z^{11/2} - \right. $$

$$ 14\,221\,836\,288\,z^5 - 142\,409\,465\,856\,z^{9/2} - 52\,332\,134\,400\,z^4 - 151\,561\,912\,320\,z^{7/2} - $$

$$ 122\,427\,002\,880\,z^3 + 25\,021\,301\,760\,z^{5/2} + 331\,532\,248\,320\,z^2 + 4\,902\,611\,313\,600\,z^{3/2} - $$

$$ \left.\left. 23\,029\,371\,565\,200\,z + 42\,333\,403\,612\,500\,\sqrt{z} - 31\,750\,052\,709\,375\right) + 31\,750\,052\,709\,375\right) + $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8 - 83\,751\,862\,272\,z^7 - 164\,886\,478\,848\,z^6 - 515\,270\,246\,400\,z^5 - \right. $$

$$ 362\,299\,392\,000\,z^4 + 706\,483\,814\,400\,z^3 - 2\,627\,236\,684\,800\,z^2 + 10\,837\,351\,324\,800\,z - 31\,750\,052\,709\,375\Big) $$

$$ \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8 - 83\,751\,862\,272\,z^7 - 164\,886\,478\,848\,z^6 - \right. $$

$$ 515\,270\,246\,400\,z^5 - 362\,299\,392\,000\,z^4 + 706\,483\,814\,400\,z^3 - 2\,627\,236\,684\,800\,z^2 + $$

$$ \left.\left. 10\,837\,351\,324\,800\,z - 31\,750\,052\,709\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big) \Big/ \left(633\,318\,697\,598\,976\,z^{19/4}\right) $$

07.22.03.a8jd.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) = \frac{1}{158\,329\,674\,399\,744\,z^{19/4}}$$
$$\left(209\left(\sqrt{\pi}\,\left(4\,294\,967\,296\,z^8 + 83\,751\,862\,272\,z^7 - 164\,886\,478\,848\,z^6 + 515\,270\,246\,400\,z^5 - 362\,299\,392\,000\,z^4 - \right.\right.\right.$$
$$\left.\left.\left. 706\,483\,814\,400\,z^3 - 2\,627\,236\,684\,800\,z^2 - 10\,837\,351\,324\,800\,z - 31\,750\,052\,709\,375\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(268\,435\,456\,z^7 + 5\,184\,159\,744\,z^6 - 11\,176\,771\,584\,z^5 + 35\,602\,366\,464\,z^4 - \right.\right.$$
$$\left.\left. 37\,890\,478\,080\,z^3 - 6\,255\,325\,440\,z^2 + 1\,225\,652\,828\,400\,z - 10\,583\,350\,903\,125\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\left.\left(268\,435\,456\,z^7 + 4\,982\,833\,152\,z^6 - 14\,221\,836\,288\,z^5 + 52\,332\,134\,400\,z^4 - 122\,427\,002\,880\,z^3 - \right.\right.\right.$$
$$\left.\left.\left. 331\,532\,248\,320\,z^2 - 23\,029\,371\,565\,200\,z + 31\,750\,052\,709\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = -\frac{13}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.a8je.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{2\,119\,887\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(65\,536\,z^4 + 1\,261\,568\,z^3 + 5\,070\,912\,z^2 - 6\,636\,168\,z + 2\,119\,887\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\right.\right.$$
$$\sqrt{z}\,\left(8192\,z^3 + 182\,336\,z^2 + 1\,269\,884\,z - 706\,629\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left. 4\,z\left(16\,384\,z^3 + 327\,680\,z^2 + 983\,136\,z - 2\,119\,887\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8jf.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{2\,119\,887\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(65\,536\,z^4 - 1\,261\,568\,z^3 + 5\,070\,912\,z^2 + 6\,636\,168\,z + 2\,119\,887\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\right.\right.$$
$$\sqrt{z}\,\left(8192\,z^3 - 182\,336\,z^2 + 1\,269\,884\,z + 706\,629\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left. 4\,z\left(16\,384\,z^3 - 327\,680\,z^2 + 983\,136\,z + 2\,119\,887\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8jg.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) = \left(\frac{16\,z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{357}\sqrt{z}\,\left(16\,z + 357\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8jh.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{21}{4}; -z\right) = \left(1 - \frac{16\,z}{21}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{357}\left(357 - 16\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a8ji.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{460\,845\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768 z^4 + 444\,416 z^3 + 1\,190\,112 z^2 - 1\,552\,320 z + 460\,845\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(4096 z^3 + 59\,136 z^2 + 312\,620 z - 153\,615\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(8192 z^3 + 117\,248 z^2 + 323\,400 z - 460\,845\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8jj.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{460\,845\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768 z^4 - 444\,416 z^3 + 1\,190\,112 z^2 + 1\,552\,320 z + 460\,845\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(4096 z^3 - 59\,136 z^2 + 312\,620 z + 153\,615\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(8192 z^3 - 117\,248 z^2 + 323\,400 z + 460\,845\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8jk.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{17}{4}; z\right) = \left(\frac{8 z}{17} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8jl.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) = \left(1 - \frac{8 z}{17}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a8jm.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{72\,765\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384 z^4 + 129\,024 z^3 + 197\,568 z^2 - 271\,656 z + 72\,765\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(2048 z^3 + 17\,920 z^2 + 58\,212 z - 24\,255\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(4096 z^3 + 35\,328 z^2 + 77\,616 z - 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8jn.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{72\,765\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384 z^4 - 129\,024 z^3 + 197\,568 z^2 + 271\,656 z + 72\,765\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(2048 z^3 - 17\,920 z^2 + 58\,212 z + 24\,255\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^3 - 35\,328 z^2 + 77\,616 z + 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8jo.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8jp.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a8jq.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192z^4+17\,920z^3+11\,424z^2-21\,168z+4851\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(1024z^3+3136z^2+4900z-1617\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(2048z^3+6016z^2+8232z-4851\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8jr.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192z^4-17\,920z^3+11\,424z^2+21\,168z+4851\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(1024z^3-3136z^2+4900z+1617\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(2048z^3-6016z^2+8232z+4851\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8js.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{9}{4}; z\right) =$$
$$-\frac{1}{1890}\left(e^{-2\sqrt{z}}\left(2048e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-2048e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+2048e^{4\sqrt{z}}z^3+\right.\right.$$
$$2048z^3+512e^{4\sqrt{z}}z^{5/2}-512z^{5/2}+384e^{4\sqrt{z}}z^2+384z^2+480e^{4\sqrt{z}}z^{3/2}-$$
$$\left.\left.480z^{3/2}+840e^{4\sqrt{z}}z+840z+1890e^{4\sqrt{z}}\sqrt{z}-1890\sqrt{z}-945e^{4\sqrt{z}}-945\right)\right)$$

07.22.03.a8jt.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{945}\left(4096\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}+2\left(256z^2-240z+945\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(2048z^3-384z^2+840z+945\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8ju.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{441\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096z^4+14\,336z^3-1344z^2-2520z+441\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(512z^3-1344z^2-644z+147\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1024z^3-2816z^2-1344z+441\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8jv.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{441\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096z^4 - 14\,336z^3 - 1344z^2 + 2520z + 441\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(512z^3 + 1344z^2 - 644z - 147\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-1024z^3 - 2816z^2 + 1344z + 441\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8jw.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{210}e^{-2\sqrt{z}}\left(512e^{4\sqrt{z}}z^3 + 512z^3 + 128e^{4\sqrt{z}}z^{5/2} - 128z^{5/2} + 32e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 91)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4} -\right.$$
$$32e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 91)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4} - 2816e^{4\sqrt{z}}z^2 - 2816z^2 - 608e^{4\sqrt{z}}z^{3/2} +$$
$$\left.608z^{3/2} - 336e^{4\sqrt{z}}z - 336z - 210e^{4\sqrt{z}}\sqrt{z} + 210\sqrt{z} + 105e^{4\sqrt{z}} + 105\right)$$

07.22.03.a8jx.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{5}{4}; -z\right) = \frac{1}{105}$$
$$\left(-64\sqrt{\pi}\,(16z + 91)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4} - 2\left(64z^2 + 304z - 105\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-512z^3 - 2816z^2 + 336z + 105\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8jy.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{3}{4}; z\right) = \frac{1}{189\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(2048z^4 - 18\,816z^3 + 18\,144z^2 - 2016z + 189\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(256z^3 - 2128z^2 + 588z - 63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) +\right.\right.$$
$$\left.\left.4z\left(-512z^3 + 4320z^2 - 1512z + 189\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8jz.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{3}{4}; -z\right) = \frac{1}{189\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(2048z^4 + 18\,816z^3 + 18\,144z^2 + 2016z + 189\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(256z^3 + 2128z^2 + 588z + 63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) +\right.\right.$$
$$\left.\left.4z\left(512z^3 + 4320z^2 + 1512z + 189\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8k0.01

$${}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) = \frac{1}{168}e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 - 2912z + 2457\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4} +\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 - 2912z + 2457\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4} - 4\left(64z^3 - 16z^{5/2} - 716z^2 + 167z^{3/2} +\right.$$
$$\left.\left.504z - 42\sqrt{z} + e^{4\sqrt{z}}\left(64z^3 + 16z^{5/2} - 716z^2 - 167z^{3/2} + 504z + 42\sqrt{z} - 21\right) - 21\right)\right)$$

07.22.03.a8k1.01

$${}_1F_2\left(-\frac{13}{4};-\frac{1}{2},-\frac{1}{4};-z\right)=\frac{1}{42}\left(\sqrt{\pi}\,\left(256\,z^2+2912\,z+2457\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+\right.$$

$$\left.2\left(\left(64\,z^3+716\,z^2+504\,z+21\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\,\left(16\,z^2+167\,z+42\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8k2.01

$${}_1F_2\left(-\frac{13}{4};-\frac{1}{2},\frac{1}{4};z\right)=$$

$$\frac{1}{315\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-1024\,z^4+15\,232\,z^3-27\,636\,z^2+7560\,z+315\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+6\sqrt{z}\,\left(256\,z^3-3584\,z^2+3955\,z+210\right)\right.\right.$$

$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(256\,z^3-3616\,z^2+4305\,z+315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8k3.01

$${}_1F_2\left(-\frac{13}{4};-\frac{1}{2},\frac{1}{4};-z\right)=$$

$$-\frac{1}{315\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(1024\,z^4+15\,232\,z^3+27\,636\,z^2+7560\,z-315\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-6\sqrt{z}\,\left(256\,z^3+3584\,z^2+3955\,z-210\right)\right.\right.$$

$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(256\,z^3+3616\,z^2+4305\,z-315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8k4.01

$${}_1F_2\left(-\frac{13}{4};-\frac{1}{2},\frac{3}{4};z\right)=\frac{1}{32\,256}\left(e^{-2\sqrt{z}}\,\left(4\left(1024\,z^3-256\,z^{5/2}-17\,280\,z^2+4128\,z^{3/2}+26\,628\,z-4221\sqrt{z}\,+\right.\right.\right.$$

$$\left.e^{4\sqrt{z}}\,\left(1024\,z^3+256\,z^{5/2}-17\,280\,z^2-4128\,z^{3/2}+26\,628\,z+4221\sqrt{z}\,+4032\right)+4032\right)+$$

$$e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\sqrt[4]{z}\,\left(4096\,z^3-69\,888\,z^2+117\,936\,z+12\,285\right)\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$

$$\left.\left.e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\sqrt[4]{z}\,\left(4096\,z^3-69\,888\,z^2+117\,936\,z+12\,285\right)\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8k5.01

$${}_1F_2\left(-\frac{13}{4};-\frac{1}{2},\frac{3}{4};-z\right)=\frac{1}{8064}\left(-\sqrt{\pi}\,\sqrt[4]{z}\,\left(4096\,z^3+69\,888\,z^2+117\,936\,z-12\,285\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.$$

$$\left.2\left(4\left(256\,z^3+4320\,z^2+6657\,z-1008\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\,\left(256\,z^2+4128\,z+4221\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8k6.01

$${}_1F_2\left(-\frac{13}{4};-\frac{1}{2},\frac{5}{4};z\right)=\frac{1}{17\,640\sqrt{2}\,\sqrt[4]{z}}$$

$$\left(\left(\left(-8192\,z^4+168\,448\,z^3-448\,224\,z^2+127\,638\,z+35\,280\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\,\left(4096\,z^3-80\,640\,z^2+156\,464\,z+34\,755\right)\right.\right.$$

$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\,z\left(4096\,z^3-81\,152\,z^2+164\,976\,z+33\,705\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8k7.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{5}{4}; -z\right) = -\frac{1}{17\,640\sqrt{2}\,\sqrt[4]{z}} \left(\left(2\left(4096 z^4 + 84\,224 z^3 + 224\,112 z^2 + 63\,819 z - 17\,640\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(4096 z^3 + 80\,640 z^2 + 156\,464 z - 34\,755\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2 z\left(4096 z^3 + 81\,152 z^2 + 164\,976 z - 33\,705\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8k8.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{7}{4}; z\right) = \frac{1}{2\,752\,512 z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384 z^{7/2} - 4096 z^3 - 369\,664 z^{5/2} + 89\,344 z^2 + 880\,320 z^{3/2} - 163\,632 z + 262\,164\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^{7/2} + 4096 z^3 - 369\,664 z^{5/2} - 89\,344 z^2 + 880\,320 z^{3/2} + 163\,632 z + 262\,164\sqrt{z} + 61\,425\right) - 61\,425\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 1\,490\,944 z^3 + 3\,773\,952 z^2 + 786\,240 z + 61\,425\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 1\,490\,944 z^3 + 3\,773\,952 z^2 + 786\,240 z + 61\,425\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8k9.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{7}{4}; -z\right) = \frac{1}{688\,128 z^{3/4}}\left(-\sqrt{\pi}\left(65\,536 z^4 + 1\,490\,944 z^3 + 3\,773\,952 z^2 - 786\,240 z + 61\,425\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(4\sqrt{z}\left(4096 z^3 + 92\,416 z^2 + 220\,080 z - 65\,541\right)\cos\left(2\sqrt{z}\right) + \left(4096 z^3 + 89\,344 z^2 + 163\,632 z - 61\,425\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8ka.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{9}{4}; z\right) = \frac{1}{1\,016\,064\sqrt{2}\,z^{3/4}}\left(\left(-2\sqrt{z}\left(65\,536 z^4 - 1\,720\,320 z^3 + 6\,031\,872 z^2 - 1\,479\,744 z - 964\,467\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(65\,536 z^4 - 1\,662\,976 z^3 + 4\,623\,360 z^2 + 1\,687\,392 z + 85\,995\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(65\,536 z^4 - 1\,671\,168 z^3 + 4\,806\,144 z^2 + 1\,548\,288 z + 257\,985\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8kb.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{9}{4}; -z\right) = -\frac{1}{1\,016\,064\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(65\,536 z^4 + 1\,720\,320 z^3 + 6\,031\,872 z^2 + 1\,479\,744 z - 964\,467\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(65\,536 z^4 + 1\,662\,976 z^3 + 4\,623\,360 z^2 - 1\,687\,392 z + 85\,995\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(65\,536 z^4 + 1\,671\,168 z^3 + 4\,806\,144 z^2 - 1\,548\,288 z + 257\,985\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8kc.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) = \frac{1}{125\,829\,120\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(262\,144\, z^{9/2} - 65\,536\, z^4 - 7\,405\,568\, z^{7/2} + 1\,802\,240\, z^3 + 23\,869\,440\, z^{5/2} - 4\,784\,640\, z^2 + 10\,187\,520\, z^{3/2} - 3\,144\,960\, z + 2\,211\,300\sqrt{z}\right) + e^{4\sqrt{z}}\left(262\,144\, z^{9/2} + 65\,536\, z^4 - 7\,405\,568\, z^{7/2} - 1\,802\,240\, z^3 + 23\,869\,440\, z^{5/2} + 4\,784\,640\, z^2 + 10\,187\,520\, z^{3/2} + 3\,144\,960\, z + 2\,211\,300\sqrt{z} - 1\,658\,475\right) + 1\,658\,475\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 - 29\,818\,880\, z^4 + 100\,638\,720\, z^3 + 31\,449\,600\, z^2 + 4\,914\,000\, z - 1\,658\,475\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 - 29\,818\,880\, z^4 + 100\,638\,720\, z^3 + 31\,449\,600\, z^2 + 4\,914\,000\, z - 1\,658\,475\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8kd.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = \frac{1}{31\,457\,280\, z^{7/4}} \left(-\sqrt{\pi}\left(1\,048\,576\, z^5 + 29\,818\,880\, z^4 + 100\,638\,720\, z^3 - 31\,449\,600\, z^2 + 4\,914\,000\, z + 1\,658\,475\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536\, z^4 + 1\,851\,392\, z^3 + 5\,967\,360\, z^2 - 2\,546\,880\, z + 552\,825\right)\cos\left(2\sqrt{z}\right) + \left(65\,536\, z^4 + 1\,802\,240\, z^3 + 4\,784\,640\, z^2 - 3\,144\,960\, z - 1\,658\,475\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8ke.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) = \frac{1}{39\,739\,392\sqrt{2}\, z^{7/4}} \left(\left(2\sqrt{z}\left(-1\,048\,576\, z^5 + 33\,488\,896\, z^4 - 145\,711\,104\, z^3 + 26\,611\,200\, z^2 + 32\,676\,336\, z + 2\,837\,835\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(1\,048\,576\, z^5 - 32\,571\,392\, z^4 + 117\,956\,608\, z^3 + 58\,308\,096\, z^2 + 15\,135\,120\, z - 4\,729\,725\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576\, z^5 - 32\,702\,464\, z^4 + 121\,626\,624\, z^3 + 52\,867\,584\, z^2 + 15\,135\,120\, z - 14\,189\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8kf.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) = -\frac{1}{39\,739\,392\sqrt{2}\, z^{7/4}} \left(\left(2\sqrt{z}\left(1\,048\,576\, z^5 + 33\,488\,896\, z^4 + 145\,711\,104\, z^3 + 26\,611\,200\, z^2 - 32\,676\,336\, z + 2\,837\,835\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(1\,048\,576\, z^5 + 32\,571\,392\, z^4 + 117\,956\,608\, z^3 - 58\,308\,096\, z^2 + 15\,135\,120\, z + 4\,729\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576\, z^5 + 32\,702\,464\, z^4 + 121\,626\,624\, z^3 - 52\,867\,584\, z^2 + 15\,135\,120\, z + 14\,189\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8kg.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) = $$
$$ \frac{1}{48\,318\,382\,080\,z^{11/4}}\left(11\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304\,z^{11/2} - 1\,048\,576\,z^5 - 142\,344\,192\,z^{9/2} + 34\,799\,616\,z^4 + 578\,715\,648\,z^{7/2} - \right.\right.\right. $$
$$ 121\,282\,560\,z^3 + 316\,753\,920\,z^{5/2} - 106\,928\,640\,z^2 + 120\,294\,720\,z^{3/2} - 1\,769\,040\,z - 201\,228\,300\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2} + 1\,048\,576\,z^5 - 142\,344\,192\,z^{9/2} - 34\,799\,616\,z^4 + 578\,715\,648\,z^{7/2} + 121\,282\,560\,z^3 + \right. $$
$$ \left.\left. 316\,753\,920\,z^{5/2} + 106\,928\,640\,z^2 + 120\,294\,720\,z^{3/2} + 1\,769\,040\,z - 201\,228\,300\sqrt{z} + 150\,921\,225\right) - $$
$$ \left.\left. 150\,921\,225\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6 - 572\,522\,496\,z^5 + 2\,415\,329\,280\,z^4 + \right.\right. $$
$$ \left. 1\,006\,387\,200\,z^3 + 235\,872\,000\,z^2 - 159\,213\,600\,z + 150\,921\,225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6 - 572\,522\,496\,z^5 + 2\,415\,329\,280\,z^4 + 1\,006\,387\,200\,z^3 + \right. $$
$$ \left.\left. 235\,872\,000\,z^2 - 159\,213\,600\,z + 150\,921\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8kh.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) = $$
$$ -\frac{1}{12\,079\,595\,520\,z^{11/4}}\left(11\left(\sqrt{\pi}\left(16\,777\,216\,z^6 + 572\,522\,496\,z^5 + 2\,415\,329\,280\,z^4 - 1\,006\,387\,200\,z^3 + \right.\right.\right. $$
$$ \left. 235\,872\,000\,z^2 + 159\,213\,600\,z + 150\,921\,225\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z} $$
$$ \left(4\sqrt{z}\left(1\,048\,576\,z^5 + 35\,586\,048\,z^4 + 144\,678\,912\,z^3 - 79\,188\,480\,z^2 + 30\,073\,680\,z + 50\,307\,075\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left. \left(1\,048\,576\,z^5 + 34\,799\,616\,z^4 + 121\,282\,560\,z^3 - 106\,928\,640\,z^2 + 1\,769\,040\,z - 150\,921\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a8ki.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) = \frac{1}{1\,271\,660\,544\sqrt{2}\,z^{11/4}} $$
$$ \left(\left(-2\sqrt{z}\left(16\,777\,216\,z^6 - 631\,242\,752\,z^5 + 3\,279\,618\,048\,z^4 - 351\,977\,472\,z^3 - 877\,992\,192\,z^2 - 635\,675\,040\,z + \right.\right.\right. $$
$$ \left. 383\,107\,725\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,777\,216\,z^6 - 616\,562\,688\,z^5 + 2\,752\,053\,248\,z^4 + 1\,695\,547\,392\,z^3 + \right. $$
$$ 726\,485\,760\,z^2 - 1\,513\,512\,000\,z + 638\,512\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216\,z^6 - 618\,659\,840\,z^5 + \right. $$
$$ \left.\left.\left. 2\,822\,701\,056\,z^4 + 1\,536\,933\,888\,z^3 + 588\,107\,520\,z^2 - 454\,053\,600\,z + 1\,915\,538\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8kj.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) = $$
$$ -\frac{1}{1\,271\,660\,544\sqrt{2}\, z^{11/4}}\left(\left(2\sqrt{z}\,\left(16\,777\,216 z^6 + 631\,242\,752 z^5 + 3\,279\,618\,048 z^4 + 351\,977\,472 z^3 - \right.\right.\right. $$
$$ \left. 877\,992\,192 z^2 + 635\,675\,040 z + 383\,107\,725\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ 3\left(16\,777\,216 z^6 + 616\,562\,688 z^5 + 2\,752\,053\,248 z^4 - 1\,695\,547\,392 z^3 + 726\,485\,760 z^2 + 1\,513\,512\,000 z + \right. $$
$$ \left. 638\,512\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216 z^6 + 618\,659\,840 z^5 + 2\,822\,701\,056 z^4 - \right. $$
$$ \left.\left.\left. 1\,536\,933\,888 z^3 + 588\,107\,520 z^2 + 454\,053\,600 z + 1\,915\,538\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8kk.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{1\,443\,109\,011\,456 z^{15/4}}\left(11 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(67\,108\,864 z^{13/2} - 16\,777\,216 z^6 - 2\,659\,188\,736 z^{11/2} + 652\,214\,272 z^5 + \right.\right. $$
$$ 13\,052\,411\,904 z^{9/2} - 2\,817\,196\,032 z^4 + 8\,655\,273\,984 z^{7/2} - 3\,019\,161\,600 z^3 + 4\,365\,204\,480 z^{5/2} - $$
$$ 1\,468\,696\,320 z^2 - 5\,335\,424\,640 z^{3/2} + 13\,200\,576\,480 z + 37\,629\,692\,100\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 - 2\,659\,188\,736 z^{11/2} - 652\,214\,272 z^5 + 13\,052\,411\,904 z^{9/2} + \right. $$
$$ 2\,817\,196\,032 z^4 + 8\,655\,273\,984 z^{7/2} + 3\,019\,161\,600 z^3 + 4\,365\,204\,480 z^{5/2} + 1\,468\,696\,320 z^2 - $$
$$ \left. 5\,335\,424\,640 z^{3/2} - 13\,200\,576\,480 z + 37\,629\,692\,100\sqrt{z} - 28\,222\,269\,075\right) + 28\,222\,269\,075\Big) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456 z^7 - 10\,687\,086\,592 z^6 + 54\,103\,375\,872 z^5 + 28\,178\,841\,600 z^4 + \right. $$
$$ \left. 8\,805\,888\,000 z^3 - 8\,915\,961\,600 z^2 + 16\,903\,177\,200 z - 28\,222\,269\,075\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456 z^7 - 10\,687\,086\,592 z^6 + 54\,103\,375\,872 z^5 + 28\,178\,841\,600 z^4 + \right. $$
$$ \left.\left. 8\,805\,888\,000 z^3 - 8\,915\,961\,600 z^2 + 16\,903\,177\,200 z - 28\,222\,269\,075\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.a8kl.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) = $$
$$ -\frac{1}{360\,777\,252\,864 z^{15/4}}\left(11\left(\sqrt{\pi}\,\left(268\,435\,456 z^7 + 10\,687\,086\,592 z^6 + 54\,103\,375\,872 z^5 - 28\,178\,841\,600 z^4 + \right.\right. $$
$$ \left. 8\,805\,888\,000 z^3 + 8\,915\,961\,600 z^2 + 16\,903\,177\,200 z + 28\,222\,269\,075\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216 z^6 + 664\,797\,184 z^5 + 3\,263\,102\,976 z^4 - 2\,163\,818\,496 z^3 + 1\,091\,301\,120 z^2 + \right. $$
$$ \left. 1\,333\,856\,160 z + 9\,407\,423\,025\right) \cos\left(2\sqrt{z}\right) + \left(16\,777\,216 z^6 + 652\,214\,272 z^5 + 2\,817\,196\,032 z^4 - \right. $$
$$ \left.\left.\left. 3\,019\,161\,600 z^3 + 1\,468\,696\,320 z^2 + 13\,200\,576\,480 z - 28\,222\,269\,075\right) \sin\left(2\sqrt{z}\right)\right)\right)\Big) $$

07.22.03.a8km.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) = $$

$$ -\left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 - 11\,626\,610\,688\,z^6 + 70\,222\,086\,144\,z^5 - 1\,713\,438\,720\,z^4 - 20\,394\,823\,680\,z^3 - \right.\right.\right. $$

$$ \left. 32\,691\,859\,200\,z^2 + 130\,086\,356\,400\,z - 94\,627\,608\,075\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$

$$ 3\left(268\,435\,456\,z^7 - 11\,391\,729\,664\,z^6 + 60\,445\,163\,520\,z^5 + 44\,322\,324\,480\,z^4 + 24\,908\,083\,200\,z^3 - \right. $$

$$ \left. 39\,956\,716\,800\,z^2 + 328\,961\,833\,200\,z - 157\,712\,680\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\,\left(-268\,435\,456\,z^7 + 11\,425\,284\,096\,z^6 - 61\,766\,369\,280\,z^5 - 40\,317\,419\,520\,z^4 - 18\,869\,760\,000\,z^3 + \right. $$

$$ \left.\left.\left. 14\,010\,796\,800\,z^2 + 22\,475\,653\,200\,z + 473\,138\,040\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(610\,397\,061\,120\,\sqrt{2}\; z^{15/4}\right) $$

07.22.03.a8kn.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) = $$

$$ -\left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 + 11\,626\,610\,688\,z^6 + 70\,222\,086\,144\,z^5 + 1\,713\,438\,720\,z^4 - 20\,394\,823\,680\,z^3 + \right.\right.\right. $$

$$ \left. 32\,691\,859\,200\,z^2 + 130\,086\,356\,400\,z + 94\,627\,608\,075\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$

$$ 3\left(268\,435\,456\,z^7 + 11\,391\,729\,664\,z^6 + 60\,445\,163\,520\,z^5 - 44\,322\,324\,480\,z^4 + 24\,908\,083\,200\,z^3 + \right. $$

$$ \left. 39\,956\,716\,800\,z^2 + 328\,961\,833\,200\,z + 157\,712\,680\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7 + 11\,425\,284\,096\,z^6 + 61\,766\,369\,280\,z^5 - 40\,317\,419\,520\,z^4 + 18\,869\,760\,000\,z^3 + \right. $$

$$ \left.\left.\left. 14\,010\,796\,800\,z^2 - 22\,475\,653\,200\,z + 473\,138\,040\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(610\,397\,061\,120\,\sqrt{2}\; z^{15/4}\right) $$

07.22.03.a8ko.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) = \frac{1}{738\,871\,813\,865\,472\, z^{19/4}} \left(209\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(1\,073\,741\,824\, z^{15/2} - 268\,435\,456\, z^7 - 48\,653\,926\,400\, z^{13/2} + 11\,962\,155\,008\, z^6 + 279\,831\,379\,968\, z^{11/2} - 61\,678\,288\,896\, z^5 + 217\,134\,661\,632\, z^{9/2} - 76\,485\,427\,200\, z^4 + 131\,836\,723\,200\, z^{7/2} - 64\,358\,461\,440\, z^3 - 116\,275\,461\,120\, z^{5/2} + 363\,176\,835\,840\, z^2 - 602\,075\,073\,600\, z^{3/2} - 5\,870\,231\,967\,600\, z - 11\,853\,353\,011\,500\sqrt{z} + e^{4\sqrt{z}} \left(1\,073\,741\,824\, z^{15/2} + 268\,435\,456\, z^7 - 48\,653\,926\,400\, z^{13/2} - 11\,962\,155\,008\, z^6 + 279\,831\,379\,968\, z^{11/2} + 61\,678\,288\,896\, z^5 + 217\,134\,661\,632\, z^{9/2} + 76\,485\,427\,200\, z^4 + 131\,836\,723\,200\, z^{7/2} + 64\,358\,461\,440\, z^3 - 116\,275\,461\,120\, z^{5/2} - 363\,176\,835\,840\, z^2 - 602\,075\,073\,600\, z^{3/2} + 5\,870\,231\,967\,600\, z - 11\,853\,353\,011\,500\sqrt{z} + 8\,890\,014\,758\,625\right) - 8\,890\,014\,758\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\, \left(4\,294\,967\,296\, z^8 - 195\,421\,011\,968\, z^7 + 1\,154\,205\,351\,936\, z^6 + 721\,378\,344\,960\, z^5 + 281\,788\,416\,000\, z^4 - 380\,414\,361\,600\, z^3 + 1\,081\,803\,340\,800\, z^2 - 3\,612\,450\,441\,600\, z + 8\,890\,014\,758\,625\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\, \left(4\,294\,967\,296\, z^8 - 195\,421\,011\,968\, z^7 + 1\,154\,205\,351\,936\, z^6 + 721\,378\,344\,960\, z^5 + 281\,788\,416\,000\, z^4 - 380\,414\,361\,600\, z^3 + 1\,081\,803\,340\,800\, z^2 - 3\,612\,450\,441\,600\, z + 8\,890\,014\,758\,625\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8kp.01

$$ {}_1F_2\left(-\frac{13}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) = -\left(209 \left(\sqrt{\pi}\, \left(4\,294\,967\,296\, z^8 + 195\,421\,011\,968\, z^7 + 1\,154\,205\,351\,936\, z^6 - 721\,378\,344\,960\, z^5 + 281\,788\,416\,000\, z^4 + 380\,414\,361\,600\, z^3 + 1\,081\,803\,340\,800\, z^2 + 3\,612\,450\,441\,600\, z + 8\,890\,014\,758\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\, \left(4\sqrt{z}\, \left(268\,435\,456\, z^7 + 12\,163\,481\,600\, z^6 + 69\,957\,844\,992\, z^5 - 54\,283\,665\,408\, z^4 + 32\,959\,180\,800\, z^3 + 29\,068\,865\,280\, z^2 - 150\,518\,768\,400\, z + 2\,963\,338\,252\,875\right) \cos\left(2\sqrt{z}\right) + \left(268\,435\,456\, z^7 + 11\,962\,155\,008\, z^6 + 61\,678\,288\,896\, z^5 - 76\,485\,427\,200\, z^4 + 64\,358\,461\,440\, z^3 + 363\,176\,835\,840\, z^2 + 5\,870\,231\,967\,600\, z - 8\,890\,014\,758\,625\right) \sin\left(2\sqrt{z}\right)\right)\right)\Big/\left(184\,717\,953\,466\,368\, z^{19/4}\right) $$

For fixed z and $a_1 = -\frac{13}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.a8kq.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{23\,318\,757\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(131\,072\,z^4+4\,014\,080\,z^3+33\,012\,672\,z^2+20\,277\,180\,z-23\,318\,757\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(16\,384\,z^3+516\,096\,z^2+3\,604\,832\,z+7\,772\,919\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(32\,768\,z^3+1\,028\,096\,z^2+9\,326\,352\,z+23\,318\,757\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8kr.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{23\,318\,757\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-131\,072\,z^4+4\,014\,080\,z^3-33\,012\,672\,z^2+20\,277\,180\,z+23\,318\,757\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(16\,384\,z^3-516\,096\,z^2+3\,604\,832\,z-7\,772\,919\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(-32\,768\,z^3+1\,028\,096\,z^2-9\,326\,352\,z+23\,318\,757\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8ks.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},-\frac{21}{4};z\right)=\left(\frac{16\,z}{357}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{48}{119}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8kt.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},-\frac{21}{4};-z\right)=\left(1-\frac{16\,z}{357}\right)\cos\left(2\sqrt{z}\right)+\frac{48}{119}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a8ku.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{5\,069\,295\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(65\,536\,z^4+1\,421\,312\,z^3+9\,106\,944\,z^2+3\,201\,660\,z-5\,069\,295\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\right.\right.$$
$$\sqrt{z}\left(8192\,z^3+184\,832\,z^2+1\,185\,800\,z+1\,689\,765\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(16\,384\,z^3+367\,616\,z^2+2\,559\,360\,z+5\,069\,295\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8kv.01

$${}_1F_2\left(-\frac{13}{4}; \frac{1}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{5\,069\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-65\,536\,z^4+1\,421\,312\,z^3-9\,106\,944\,z^2+3\,201\,660\,z+5\,069\,295\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\right.\right.$$
$$\sqrt{z}\left(8192\,z^3-184\,832\,z^2+1\,185\,800\,z-1\,689\,765\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(-16\,384\,z^3+367\,616\,z^2-2\,559\,360\,z+5\,069\,295\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8kw.01

$${}_1F_2\left(-\frac{13}{4}; \frac{1}{2}, -\frac{17}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - \frac{4}{17}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8kx.01

$${}_1F_2\left(-\frac{13}{4}; \frac{1}{2}, -\frac{17}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + \frac{4}{17}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a8ky.01

$${}_1F_2\left(-\frac{13}{4}; \frac{1}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(32\,768\,z^4+417\,792\,z^3+1\,862\,784\,z^2+213\,444\,z-800\,415\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(4096\,z^3+55\,808\,z^2+\right.\right.\right.$$
$$\left.\left.\left.284\,592\,z+266\,805\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(8192\,z^3+110\,592\,z^2+552\,096\,z+800\,415\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8kz.01

$${}_1F_2\left(-\frac{13}{4}; \frac{1}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32\,768\,z^4+417\,792\,z^3-1\,862\,784\,z^2+213\,444\,z+800\,415\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(4096\,z^3-55\,808\,z^2+\right.\right.\right.$$
$$\left.\left.\left.284\,592\,z-266\,805\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-8192\,z^3+110\,592\,z^2-552\,096\,z+800\,415\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8l0.01

$${}_1F_2\left(-\frac{13}{4}; \frac{1}{2}, -\frac{13}{4}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.a8l1.01

$${}_1F_2\left(-\frac{13}{4}; \frac{1}{2}, -\frac{13}{4}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.a8l2.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},-\frac{11}{4};z\right)=\frac{1}{53\,361\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-16\,384z^4-62\,464z^3-162\,624z^2+19\,404z+53\,361\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(2048z^3+9600z^2+30\,184z+17\,787\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(4096z^3+18\,688z^2+56\,400z+53\,361\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8l3.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},-\frac{11}{4};-z\right)=\frac{1}{53\,361\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-16\,384z^4+62\,464z^3-162\,624z^2-19\,404z+53\,361\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(2048z^3-9600z^2+30\,184z-17\,787\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-4096z^3+18\,688z^2-56\,400z+53\,361\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8l4.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{20\,790}\left(e^{-2\sqrt{z}}\left(4096e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-4096e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+4096e^{4\sqrt{z}}z^3+\right.\right.$$
$$4096z^3+1024e^{4\sqrt{z}}z^{5/2}-1024z^{5/2}+768e^{4\sqrt{z}}z^2+768z^2+960e^{4\sqrt{z}}z^{3/2}-$$
$$\left.\left.960z^{3/2}+1680e^{4\sqrt{z}}z+1680z+3780e^{4\sqrt{z}}\sqrt{z}-3780\sqrt{z}+10\,395e^{4\sqrt{z}}+10\,395\right)\right)$$

07.22.03.a8l5.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},-\frac{9}{4};-z\right)=\frac{1}{10\,395}$$
$$\left(-8192\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}-4\left(256z^2-240z+945\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-4096z^3+768z^2-1680z+10\,395\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8l6.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192z^4-41\,984z^3-14\,784z^2+8316z+4851\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(-1024z^3+4352z^2+4928z+1617\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-2048z^3+8960z^2+9552z+4851\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8l7.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192z^4+41\,984z^3-14\,784z^2-8316z+4851\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(1024z^3+4352z^2-4928z+1617\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(2048z^3+8960z^2-9552z+4851\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8l8.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{2310}\left(e^{-2\sqrt{z}}\left(-1024e^{4\sqrt{z}}z^3-1024z^3-256e^{4\sqrt{z}}z^{5/2}+256z^{5/2}-64e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-143)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+\right.\right.$$
$$64e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-143)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+8960e^{4\sqrt{z}}z^2+8960z^2+2048e^{4\sqrt{z}}z^{3/2}-$$
$$\left.\left.2048z^{3/2}+1296e^{4\sqrt{z}}z+1296z+1200e^{4\sqrt{z}}\sqrt{z}-1200\sqrt{z}+1155e^{4\sqrt{z}}+1155\right)\right)$$

07.22.03.a8l9.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},-\frac{5}{4};-z\right)=\frac{1}{1155}\left(128\sqrt{\pi}\,(16z+143)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+\right.$$
$$\left.16\left(16z^2+128z-75\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(1024z^3+8960z^2-1296z+1155\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8la.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{2079\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096z^4+57\,600z^3-88\,704z^2+13\,860z+2079\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(512z^3-6752z^2+5544z+693\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1024z^3-13\,632z^2+12\,384z+2079\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8lb.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},-\frac{3}{4};-z\right)=$$
$$-\frac{1}{2079\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^4+57\,600z^3+88\,704z^2+13\,860z-2079\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(512z^3+6752z^2+5544z-693\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1024z^3+13\,632z^2+12\,384z-2079\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8lc.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},-\frac{1}{4};z\right)=\frac{1}{924}e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-4576z+9009\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-4576z+9009\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+2\left(128z^3-32z^{5/2}-2264z^2+542z^{3/2}+\right.$$
$$\left.\left.\left.4128z-708\sqrt{z}+e^{4\sqrt{z}}\left(128z^3+32z^{5/2}-2264z^2-542z^{3/2}+4128z+708\sqrt{z}+231\right)+231\right)\right)$$

07.22.03.a8ld.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},-\frac{1}{4};-z\right)=\frac{1}{231}\left(-\sqrt{\pi}\,\left(256\,z^2+4576\,z+9009\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}-\right.$$

$$\left.2\left(16\,z^2+271\,z+354\right)\sin\left(2\sqrt{z}\right)\sqrt{z}-\left(128\,z^3+2264\,z^2+4128\,z-231\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8le.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},\frac{1}{4};z\right)=$$

$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(2048\,z^4-47\,104\,z^3+164\,472\,z^2-97\,020\,z+3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(256\,z^3-5664\,z^2+15\,785\,z-1155\right)\right.\right.$$

$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-512\,z^3+11\,392\,z^2-32\,790\,z+3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8lf.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},\frac{1}{4};-z\right)=$$

$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(2048\,z^4+47\,104\,z^3+164\,472\,z^2+97\,020\,z+3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(256\,z^3+5664\,z^2+15\,785\,z+1155\right)\right.\right.$$

$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(512\,z^3+11\,392\,z^2+32\,790\,z+3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8lg.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},\frac{3}{4};z\right)=$$

$$\frac{1}{177\,408}\left(e^{-2\sqrt{z}}\left(-4\left(1024\,z^3-256\,z^{5/2}-27\,264\,z^2+6624\,z^{3/2}+103\,380\,z-21\,537\sqrt{z}+e^{4\sqrt{z}}\left(1024\,z^3+\right.\right.\right.\right.$$

$$\left.\left.\left.\left.256\,z^{5/2}-27\,264\,z^2-6624\,z^{3/2}+103\,380\,z+21\,537\sqrt{z}-22\,176\right)-22\,176\right)-\right.$$

$$e^{2\sqrt{z}}\sqrt{2\,\pi}\,\sqrt[4]{z}\,\left(4096\,z^3-109\,824\,z^2+432\,432\,z-135\,135\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$

$$\left.e^{2\sqrt{z}}\sqrt{2\,\pi}\,\sqrt[4]{z}\,\left(4096\,z^3-109\,824\,z^2+432\,432\,z-135\,135\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a8lh.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},\frac{3}{4};-z\right)=\frac{1}{44\,352}\left(8\left(256\,z^3+6816\,z^2+25\,845\,z+5544\right)\cos\left(2\sqrt{z}\right)+\right.$$

$$\left.\sqrt{\pi}\,\sqrt[4]{z}\,\left(4096\,z^3+109\,824\,z^2+432\,432\,z+135\,135\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt{z}\,\left(256\,z^2+6624\,z+21\,537\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8li.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},\frac{5}{4};z\right)=\frac{1}{97\,020\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\left(4096z^4-130\,816z^3+713\,328z^2-671\,517z+97\,020\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(4096z^3-127\,232z^2+604\,912z-213\,675\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(-4096z^3+127\,744z^2-619\,248z+252\,945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8lj.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},\frac{5}{4};-z\right)=\frac{1}{97\,020\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\left(4096z^4+130\,816z^3+713\,328z^2+671\,517z+97\,020\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(4096z^3+127\,232z^2+604\,912z+213\,675\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(4096z^3+127\,744z^2+619\,248z+252\,945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8lk.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},\frac{7}{4};z\right)=\frac{1}{15\,138\,816z^{3/4}}$$
$$\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(16\,384z^{7/2}-4096z^3-582\,656z^{5/2}+142\,592z^2+3\,356\,352z^{3/2}-742\,704z-1\,712\,172\sqrt{z}+e^{4\sqrt{z}}\right.\right.\right.$$
$$\left(16\,384z^{7/2}+4096z^3-582\,656z^{5/2}-142\,592z^2+3\,356\,352z^{3/2}+742\,704z-1\,712\,172\sqrt{z}-135\,135\right)+$$
$$\left.135\,135\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-2\,342\,912z^3+13\,837\,824z^2-8\,648\,640z-135\,135\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-2\,342\,912z^3+13\,837\,824z^2-8\,648\,640z-135\,135\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8ll.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},\frac{7}{4};-z\right)=\frac{1}{3\,784\,704z^{3/4}}\left(\sqrt{\pi}\left(65\,536z^4+2\,342\,912z^3+13\,837\,824z^2+8\,648\,640z-135\,135\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(4096z^3+145\,664z^2+839\,088z+428\,043\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(4096z^3+142\,592z^2+742\,704z+135\,135\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8lm.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{5\,588\,352\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(65\,536z^4-2\,678\,784z^3+19\,869\,696z^2-25\,302\,816z+5\,507\,271\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$3\left(-65\,536z^4+2\,621\,440z^3-17\,622\,528z^2+11\,442\,816z+135\,135\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(-65\,536z^4+2\,629\,632z^3-17\,925\,120z^2+12\,839\,904z+405\,405\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8ln.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{5\,588\,352\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(65\,536z^4+2\,678\,784z^3+19\,869\,696z^2+25\,302\,816z+5\,507\,271\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(65\,536z^4+2\,621\,440z^3+17\,622\,528z^2+11\,442\,816z-135\,135\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+2\,629\,632z^3+17\,925\,120z^2+12\,839\,904z-405\,405\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8lo.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{692\,060\,160z^{7/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(262\,144z^{9/2}-65\,536z^4-11\,665\,408z^{7/2}+2\,867\,200z^3+90\,163\,200z^{5/2}-\right.\right.\right.$$
$$20\,559\,360z^2-73\,328\,640z^{3/2}+8\,648\,640z-2\,702\,700\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4-11\,665\,408z^{7/2}-2\,867\,200z^3+90\,163\,200z^{5/2}+20\,559\,360z^2-\right.$$
$$\left.\left.73\,328\,640z^{3/2}-8\,648\,640z-2\,702\,700\sqrt{z}+2\,027\,025\right)-2\,027\,025\right)-e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left(1\,048\,576z^5-46\,858\,240z^4+369\,008\,640z^3-345\,945\,600z^2-10\,810\,800z+2\,027\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}$$
$$\left.\left.\sqrt{2\pi}\left(1\,048\,576z^5-46\,858\,240z^4+369\,008\,640z^3-345\,945\,600z^2-10\,810\,800z+2\,027\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8lp.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{173\,015\,040z^{7/4}}\left(\sqrt{\pi}\left(1\,048\,576z^5+46\,858\,240z^4+369\,008\,640z^3+345\,945\,600z^2-10\,810\,800z-2\,027\,025\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4+2\,916\,352z^3+22\,540\,800z^2+18\,332\,160z-675\,675\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(65\,536z^4+2\,867\,200z^3+20\,559\,360z^2+8\,648\,640z+2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8lq.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},\frac{13}{4};z\right)=\frac{1}{218\,566\,656\sqrt{2}\,z^{7/4}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576z^5-52\,232\,192z^4+490\,119\,168z^3-783\,078\,912z^2+208\,909\,008z+2\,837\,835\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(1\,048\,576z^5-51\,314\,688z^4+445\,964\,288z^3-424\,478\,208z^2-19\,459\,440z+4\,729\,725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(-1\,048\,576z^5+51\,445\,760z^4-451\,977\,216z^3+463\,744\,512z^2+28\,108\,080z-14\,189\,175\right)$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8lr.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{1}{2}, \frac{13}{4}; -z\right) = \frac{1}{218\,566\,656\sqrt{2}\,z^{7/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576 z^5 + 52\,232\,192 z^4 + 490\,119\,168 z^3 + 783\,078\,912 z^2 + 208\,909\,008 z - 2\,837\,835\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\left(1\,048\,576 z^5 + 51\,314\,688 z^4 + 445\,964\,288 z^3 + 424\,478\,208 z^2 - 19\,459\,440 z - 4\,729\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(1\,048\,576 z^5 + 51\,445\,760 z^4 + 451\,977\,216 z^3 + 463\,744\,512 z^2 - 28\,108\,080 z - 14\,189\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8ls.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{1}{2}, \frac{15}{4}; z\right) = $$
$$ \frac{1}{24\,159\,191\,040 z^{11/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(4\,194\,304 z^{11/2} - 1\,048\,576 z^5 - 224\,133\,120 z^{9/2} + 55\,246\,848 z^4 + 2\,173\,599\,744 z^{7/2} - \right.\right.\right. $$
$$ 504\,668\,160 z^3 - 2\,434\,037\,760 z^{5/2} + 345\,945\,600 z^2 - 181\,621\,440 z^{3/2} - 58\,378\,320 z + 170\,270\,100\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 224\,133\,120 z^{9/2} - 55\,246\,848 z^4 + 2\,173\,599\,744 z^{7/2} + 504\,668\,160 z^3 - \right. $$
$$ \left.\left. 2\,434\,037\,760 z^{5/2} - 345\,945\,600 z^2 - 181\,621\,440 z^{3/2} + 58\,378\,320 z + 170\,270\,100\sqrt{z} - 127\,702\,575\right) + $$
$$ \left.\left. 127\,702\,575\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 899\,678\,208 z^5 + 8\,856\,207\,360 z^4 - \right.\right. $$
$$ \left.\left. 11\,070\,259\,200 z^3 - 518\,918\,400 z^2 + 194\,594\,400 z - 127\,702\,575\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ \left. e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 899\,678\,208 z^5 + 8\,856\,207\,360 z^4 - 11\,070\,259\,200 z^3 - \right.\right. $$
$$ \left.\left. 518\,918\,400 z^2 + 194\,594\,400 z - 127\,702\,575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8lt.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{1}{2}, \frac{15}{4}; -z\right) = \frac{1}{6\,039\,797\,760 z^{11/4}} $$
$$ \left(\sqrt{\pi}\left(16\,777\,216 z^6 + 899\,678\,208 z^5 + 8\,856\,207\,360 z^4 + 11\,070\,259\,200 z^3 - 518\,918\,400 z^2 - 194\,594\,400 z - 127\,702\,575\right)\right. $$
$$ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576 z^5 + 56\,033\,280 z^4 + 543\,399\,936 z^3 + 608\,509\,440 z^2 - 45\,405\,360 z - 42\,567\,525\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left(1\,048\,576 z^5 + 55\,246\,848 z^4 + 504\,668\,160 z^3 + 345\,945\,600 z^2 + 58\,378\,320 z + 127\,702\,575\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8lu.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{1}{2}, \frac{17}{4}; z\right) = \frac{1}{6\,994\,132\,992\sqrt{2}\, z^{11/4}}\left(\left(2\sqrt{z}\left(16\,777\,216 z^6 - 985\,661\,440 z^5 + 11\,187\,585\,024 z^4 - 21\,459\,271\,680 z^3 + 6\,437\,604\,096 z^2 + 544\,864\,320 z - 280\,945\,665\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-16\,777\,216 z^6 + 970\,981\,376 z^5 - 10\,349\,903\,872 z^4 + 13\,015\,597\,056 z^3 + 1\,072\,431\,360 z^2 - 1\,241\,079\,840 z + 468\,242\,775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-16\,777\,216 z^6 + 973\,078\,528 z^5 - 10\,464\,854\,016 z^4 + 13\,988\,265\,984 z^3 + 1\,210\,809\,600 z^2 - 726\,485\,760 z + 1\,404\,728\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8lv.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{1}{2}, \frac{17}{4}; -z\right) = \frac{1}{6\,994\,132\,992\sqrt{2}\, z^{11/4}}\left(\left(2\sqrt{z}\left(16\,777\,216 z^6 + 985\,661\,440 z^5 + 11\,187\,585\,024 z^4 + 21\,459\,271\,680 z^3 + 6\,437\,604\,096 z^2 - 544\,864\,320 z - 280\,945\,665\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,777\,216 z^6 + 970\,981\,376 z^5 + 10\,349\,903\,872 z^4 + 13\,015\,597\,056 z^3 - 1\,072\,431\,360 z^2 - 1\,241\,079\,840 z - 468\,242\,775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216 z^6 + 973\,078\,528 z^5 + 10\,464\,854\,016 z^4 + 13\,988\,265\,984 z^3 - 1\,210\,809\,600 z^2 - 726\,485\,760 z - 1\,404\,728\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8lw.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{1}{2}, \frac{19}{4}; z\right) = \frac{1}{721\,554\,505\,728 z^{15/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(67\,108\,864 z^{13/2} - 16\,777\,216 z^6 - 4\,185\,915\,392 z^{11/2} + 1\,033\,895\,936 z^5 + 48\,835\,067\,904 z^{9/2} - 11\,476\,598\,784 z^4 - 69\,744\,525\,312 z^{7/2} + 11\,070\,259\,200 z^3 - 7\,610\,803\,200 z^{5/2} - 588\,107\,520 z^2 + 7\,939\,451\,520 z^{3/2} - 5\,176\,211\,040 z - 24\,348\,624\,300\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 - 4\,185\,915\,392 z^{11/2} - 1\,033\,895\,936 z^5 + 48\,835\,067\,904 z^{9/2} + 11\,476\,598\,784 z^4 - 69\,744\,525\,312 z^{7/2} - 11\,070\,259\,200 z^3 - 7\,610\,803\,200 z^{5/2} + 588\,107\,520 z^2 + 7\,939\,451\,520 z^{3/2} + 5\,176\,211\,040 z - 24\,348\,624\,300\sqrt{z} + 18\,261\,468\,225\right) - 18\,261\,468\,225\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 16\,793\,993\,216 z^6 + 198\,379\,044\,864 z^5 - 309\,967\,257\,600 z^4 - 19\,372\,953\,600 z^3 + 10\,897\,286\,400 z^2 - 14\,302\,688\,400 z + 18\,261\,468\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 16\,793\,993\,216 z^6 + 198\,379\,044\,864 z^5 - 309\,967\,257\,600 z^4 - 19\,372\,953\,600 z^3 + 10\,897\,286\,400 z^2 - 14\,302\,688\,400 z + 18\,261\,468\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8lx.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{1}{2},\frac{19}{4};-z\right)= \frac{1}{180\,388\,626\,432\,z^{15/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+16\,793\,993\,216\,z^6+198\,379\,044\,864\,z^5+309\,967\,257\,600\,z^4-19\,372\,953\,600\,z^3-10\,897\,286\,400\,z^2-14\,302\,688\,400\,z-18\,261\,468\,225\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+1\,046\,478\,848\,z^5+12\,208\,766\,976\,z^4+17\,436\,131\,328\,z^3-1\,902\,700\,800\,z^2-1\,984\,862\,880\,z-6\,087\,156\,075\right)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6+1\,033\,895\,936\,z^5+11\,476\,598\,784\,z^4+11\,070\,259\,200\,z^3+588\,107\,520\,z^2-5\,176\,211\,040\,z+18\,261\,468\,225\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8ly.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{1}{2},\frac{21}{4};z\right)= \left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-18\,169\,724\,928\,z^6+241\,978\,834\,944\,z^5-541\,136\,977\,920\,z^4+174\,441\,738\,240\,z^3+32\,691\,859\,200\,z^2-82\,410\,728\,400\,z+54\,784\,404\,675\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(268\,435\,456\,z^7-17\,934\,843\,904\,z^6+226\,476\,687\,360\,z^5-354\,475\,376\,640\,z^4-41\,513\,472\,000\,z^3+54\,486\,432\,000\,z^2-202\,280\,878\,800\,z+91\,307\,341\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-268\,435\,456\,z^7+17\,968\,398\,336\,z^6-228\,615\,782\,400\,z^5+376\,729\,436\,160\,z^4+41\,513\,472\,000\,z^3-26\,464\,838\,400\,z^2+22\,475\,653\,200\,z-273\,922\,023\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(3\,357\,183\,836\,160\,\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a8lz.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{1}{2},\frac{21}{4};-z\right)= \left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+18\,169\,724\,928\,z^6+241\,978\,834\,944\,z^5+541\,136\,977\,920\,z^4+174\,441\,738\,240\,z^3-32\,691\,859\,200\,z^2-82\,410\,728\,400\,z-54\,784\,404\,675\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(268\,435\,456\,z^7+17\,934\,843\,904\,z^6+226\,476\,687\,360\,z^5+354\,475\,376\,640\,z^4-41\,513\,472\,000\,z^3-54\,486\,432\,000\,z^2-202\,280\,878\,800\,z-91\,307\,341\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(268\,435\,456\,z^7+17\,968\,398\,336\,z^6+228\,615\,782\,400\,z^5+376\,729\,436\,160\,z^4-41\,513\,472\,000\,z^3-26\,464\,838\,400\,z^2-22\,475\,653\,200\,z-273\,922\,023\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(3\,357\,183\,836\,160\,\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a8m0.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},\frac{23}{4};z\right)=$$
$$-\left(19\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2}-268\,435\,456\,z^7-76\,571\,213\,824\,z^{13/2}+18\,941\,476\,864\,z^6+1\,044\,067\,123\,200\,z^{11/2}-\right.\right.\right.$$
$$247\,502\,733\,312\,z^5-1\,814\,175\,154\,176\,z^{9/2}+309\,967\,257\,600\,z^4-254\,615\,961\,600\,z^{7/2}+$$
$$19\,372\,953\,600\,z^3+254\,477\,583\,360\,z^{5/2}-316\,436\,440\,320\,z^2-278\,269\,992\,000\,z^{3/2}+2\,629\,651\,424\,400\,z+$$
$$6\,208\,899\,196\,500\sqrt{z}+e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^7-76\,571\,213\,824\,z^{13/2}-18\,941\,476\,864\right.$$
$$z^6+1\,044\,067\,123\,200\,z^{11/2}+247\,502\,733\,312\,z^5-1\,814\,175\,154\,176\,z^{9/2}-309\,967\,257\,600\,z^4-$$
$$254\,615\,961\,600\,z^{7/2}-19\,372\,953\,600\,z^3+254\,477\,583\,360\,z^{5/2}+316\,436\,440\,320\,z^2-278\,269\,992\,000$$
$$\left.z^{3/2}-2\,629\,651\,424\,400\,z+6\,208\,899\,196\,500\sqrt{z}-4\,656\,674\,397\,375\right)+4\,656\,674\,397\,375\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-307\,090\,161\,664\,z^7+4\,232\,086\,290\,432\,z^6-7\,935\,161\,794\,560\,z^5-\right.$$
$$619\,934\,515\,200\,z^4+464\,950\,886\,400\,z^3-915\,372\,057\,600\,z^2+2\,337\,467\,932\,800\,z-4\,656\,674\,397\,375\Big)$$
$$\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-307\,090\,161\,664\,z^7+4\,232\,086\,290\,432\,z^6-\right.$$
$$7\,935\,161\,794\,560\,z^5-619\,934\,515\,200\,z^4+464\,950\,886\,400\,z^3-915\,372\,057\,600\,z^2+$$
$$\left.\left.\left.2\,337\,467\,932\,800\,z-4\,656\,674\,397\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(369\,435\,906\,932\,736\,z^{19/4}\right)$$

07.22.03.a8m1.01

$${}_1F_2\left(-\frac{13}{4};\frac{1}{2},\frac{23}{4};-z\right)=\frac{1}{92\,358\,976\,733\,184\,z^{19/4}}$$
$$\left(19\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^8+307\,090\,161\,664\,z^7+4\,232\,086\,290\,432\,z^6+7\,935\,161\,794\,560\,z^5-619\,934\,515\,200\,z^4-\right.\right.\right.$$
$$\left.464\,950\,886\,400\,z^3-915\,372\,057\,600\,z^2-2\,337\,467\,932\,800\,z-4\,656\,674\,397\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^7+19\,142\,803\,456\,z^6+261\,016\,780\,800\,z^5+453\,543\,788\,544\,z^4-\right.\right.$$
$$63\,653\,990\,400\,z^3-63\,619\,395\,840\,z^2-69\,567\,498\,000\,z-1\,552\,224\,799\,125\Big)\cos\left(2\sqrt{z}\right)+$$
$$\left(268\,435\,456\,z^7+18\,941\,476\,864\,z^6+247\,502\,733\,312\,z^5+309\,967\,257\,600\,z^4-19\,372\,953\,600\,z^3-\right.$$
$$\left.\left.\left.316\,436\,440\,320\,z^2-2\,629\,651\,424\,400\,z+4\,656\,674\,397\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\Bigg)$$

For fixed z and $a_1=-\frac{13}{4}$, $b_{1.}=\frac{3}{2}$

07.22.03.a8m2.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{349\,781\,355\,\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(262\,144\,z^4+11\,010\,048\,z^3+148\,248\,576\,z^2+567\,761\,040\,z-349\,781\,355\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$12\sqrt{z}\left(32\,768\,z^3+1\,404\,928\,z^2+20\,504\,400\,z+116\,593\,785\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.32\,z\left(8192\,z^3+350\,208\,z^2+4\,898\,880\,z+18\,269\,685\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8m3.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{349\,781\,355\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-262\,144\,z^4+11\,010\,048\,z^3-148\,248\,576\,z^2+567\,761\,040\,z+349\,781\,355\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(32\,768\,z^3-1\,404\,928\,z^2+20\,504\,400\,z-116\,593\,785\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.32\,z\left(8192\,z^3-350\,208\,z^2+4\,898\,880\,z-18\,269\,685\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8m4.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{21}{4};z\right)=\frac{(16\,z+437)\sinh\left(2\sqrt{z}\right)-160\sqrt{z}\,\cosh\left(2\sqrt{z}\right)}{714\sqrt{z}}$$

07.22.03.a8m5.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{21}{4};-z\right)=\frac{(437-16\,z)\sin\left(2\sqrt{z}\right)-160\sqrt{z}\,\cos\left(2\sqrt{z}\right)}{714\sqrt{z}}$$

07.22.03.a8m6.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{76\,039\,425\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(131\,072\,z^4+3\,907\,584\,z^3+40\,578\,048\,z^2+117\,394\,200\,z-76\,039\,425\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(16\,384\,z^3+502\,784\,z^2+5\,523\,840\,z+25\,346\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.8\,z\left(16\,384\,z^3+500\,736\,z^2+5\,454\,720\,z+17\,657\,325\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8m7.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{76\,039\,425\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-131\,072\,z^4+3\,907\,584\,z^3-40\,578\,048\,z^2+117\,394\,200\,z+76\,039\,425\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(16\,384\,z^3-502\,784\,z^2+5\,523\,840\,z-25\,346\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.8\,z\left(16\,384\,z^3-500\,736\,z^2+5\,454\,720\,z-17\,657\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8m8.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{17}{4};z\right)=\frac{1}{34}\left(\frac{19\sinh\left(2\sqrt{z}\right)}{\sqrt{z}}-4\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.a8m9.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{17}{4};-z\right)=\frac{1}{34}\left(\frac{19\sin\left(2\sqrt{z}\right)}{\sqrt{z}}-4\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8ma.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{12\,006\,225\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(65\,536\,z^4+1\,155\,072\,z^3+8\,457\,984\,z^2+17\,075\,520\,z-12\,006\,225\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(8192\,z^3+151\,552\,z^2+1\,195\,680\,z+4\,002\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.64\,z\left(1024\,z^3+18\,816\,z^2+146\,700\,z+386\,775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8mb.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{12\,006\,225\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-65\,536\,z^4+1\,155\,072\,z^3-8\,457\,984\,z^2+17\,075\,520\,z+12\,006\,225\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(8192\,z^3-151\,552\,z^2+1\,195\,680\,z-4\,002\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.64\,z\left(1024\,z^3-18\,816\,z^2+146\,700\,z-386\,775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8mc.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{13}{4};z\right)=\frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.a8md.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{13}{4};-z\right)=\frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.a8me.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(32\,768\,z^4+178\,176\,z^3+784\,512\,z^2+970\,200\,z-800\,415\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(4096\,z^3+25\,856\,z^2+\right.\right.\right.$$
$$\left.\left.\left.123\,600\,z+266\,805\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+8\,z\left(4096\,z^3+25\,344\,z^2+118\,800\,z+229\,095\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8mf.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32\,768\,z^4+178\,176\,z^3-784\,512\,z^2+970\,200\,z+800\,415\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(4096\,z^3-25\,856\,z^2+\right.\right.\right.$$
$$\left.\left.\left.123\,600\,z-266\,805\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+8\,z\left(-4096\,z^3+25\,344\,z^2-118\,800\,z+229\,095\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8mg.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{623\,700\sqrt{z}}\left(e^{-2\sqrt{z}}\left(16\,384\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}-16\,384\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+16\,384\,e^{4\sqrt{z}}z^{7/2}+\right.\right.$$
$$\left.\left.16\,384\,z^{7/2}+4096\,e^{4\sqrt{z}}z^3-4096\,z^3+3072\,e^{4\sqrt{z}}z^{5/2}+3072\,z^{5/2}+3840\,e^{4\sqrt{z}}z^2-3840\,z^2+6720\,e^{4\sqrt{z}}z^{3/2}+\right.\right.$$
$$\left.\left.6720\,z^{3/2}+15\,120\,e^{4\sqrt{z}}z-15\,120\,z+41\,580\,e^{4\sqrt{z}}\sqrt{z}+41\,580\sqrt{z}+135\,135\,e^{4\sqrt{z}}-135\,135\right)\right)$$

07.22.03.a8mh.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{9}{4};-z\right)=\frac{1}{311\,850\sqrt{z}}\left(-32\,768\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}-\right.$$
$$\left.4\left(4096\,z^3-768\,z^2+1680\,z-10\,395\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-4096\,z^3+3840\,z^2-15\,120\,z+135\,135\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8mi.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{7}{4};z\right)=\frac{1}{72\,765\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(16\,384\,z^4-110\,592\,z^3-94\,464\,z^2-55\,440\,z+72\,765\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(-2048\,z^3+12\,032\,z^2+20\,880\,z+24\,255\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-32\,z\left(512\,z^3-3072\,z^2-5040\,z-5805\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8mj.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{7}{4};-z\right)=\frac{1}{72\,765\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(16\,384\,z^4+110\,592\,z^3-94\,464\,z^2+55\,440\,z+72\,765\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(2048\,z^3+12\,032\,z^2-20\,880\,z+24\,255\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+32\,z\left(512\,z^3+3072\,z^2-5040\,z+5805\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8mk.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{5}{4};z\right)=\frac{1}{69\,300\sqrt{z}}$$
$$\left(e^{-2\sqrt{z}}\left(-4096\,e^{4\sqrt{z}}z^{7/2}-4096\,z^{7/2}-1024\,e^{4\sqrt{z}}z^3+1024\,z^3-256\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-195)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+\right.\right.$$
$$\left.\left.256\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-195)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+49\,152\,e^{4\sqrt{z}}z^{5/2}+49\,152\,z^{5/2}+11\,520\,e^{4\sqrt{z}}z^2-11\,520\,z^2+\right.\right.$$
$$\left.\left.7680\,e^{4\sqrt{z}}z^{3/2}+7680\,z^{3/2}+7920\,e^{4\sqrt{z}}z-7920\,z+10\,080\,e^{4\sqrt{z}}\sqrt{z}+10\,080\sqrt{z}+12\,285\,e^{4\sqrt{z}}-12\,285\right)\right)$$

07.22.03.a8ml.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{5}{4};-z\right)=\frac{1}{34\,650\sqrt{z}}\left(512\sqrt{\pi}\,(16z+195)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+\right.$$

$$\left.32\left(128z^3+1536z^2-240z+315\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(1024z^3+11\,520z^2-7920z+12\,285\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8mm.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{3}{4};z\right)=\frac{1}{31\,185\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(-8192z^4+155\,136z^3-327\,168z^2+27\,720z+31\,185\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(1024z^3-18\,496z^2+25\,440z+10\,395\right)\right.\right.$$

$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(1024z^3-18\,624z^2+27\,360z+11\,205\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8mn.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{3}{4};-z\right)=-\frac{1}{31\,185\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(8192z^4+155\,136z^3+327\,168z^2+27\,720z-31\,185\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(1024z^3+18\,496z^2+25\,440z-10\,395\right)\right.\right.$$

$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(1024z^3+18\,624z^2+27\,360z-11\,205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8mo.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{1}{4};z\right)=\frac{1}{13\,860\sqrt{z}}$$

$$\left(e^{-2\sqrt{z}}\left(512e^{4\sqrt{z}}z^{7/2}+512z^{7/2}+128e^{4\sqrt{z}}z^3-128z^3-12\,384e^{4\sqrt{z}}z^{5/2}-12\,384z^{5/2}-3000e^{4\sqrt{z}}z^2+3000z^2+\right.\right.$$

$$2e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-6240z+19\,305\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-2e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-6240z+19\,305\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)$$

$$\left.\left.z^{7/4}+36\,480e^{4\sqrt{z}}z^{3/2}+36\,480z^{3/2}+7200e^{4\sqrt{z}}z-7200z+3420e^{4\sqrt{z}}\sqrt{z}+3420\sqrt{z}+1755e^{4\sqrt{z}}-1755\right)\right)$$

07.22.03.a8mp.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},-\frac{1}{4};-z\right)=\frac{1}{6930\sqrt{z}}\left(-4\sqrt{\pi}\left(256z^2+6240z+19\,305\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}-\right.$$

$$\left.4\left(128z^3+3096z^2+9120z-855\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(128z^3+3000z^2+7200z-1755\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8mq.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{1}{4};z\right)=\frac{1}{51\,975\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(4096z^4-127\,488z^3+659\,664z^2-554\,400z+51\,975\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(512z^3-15\,488z^2+69\,270z-17\,325\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-16z\left(256z^3-7776z^2+35\,505z-10\,800\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8mr.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{1}{4};-z\right)=\frac{1}{51\,975\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(4096z^4+127\,488z^3+659\,664z^2+554\,400z+51\,975\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(512z^3+15\,488z^2+69\,270z+17\,325\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+16z\left(256z^3+7776z^2+35\,505z+10\,800\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8ms.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{1\,330\,560\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-4\left(1024z^{7/2}-256z^3-37\,248z^{5/2}+9120z^2+225\,060z^{3/2}-50\,085z-138\,240\sqrt{z}+\right.\right.\right.$$
$$\left.e^{4\sqrt{z}}\left(1024z^{7/2}+256z^3-37\,248z^{5/2}-9120z^2+225\,060z^{3/2}+50\,085z-138\,240\sqrt{z}-14\,040\right)+14\,040\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(4096z^3-149\,760z^2+926\,640z-675\,675\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(4096z^3-149\,760z^2+926\,640z-675\,675\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8mt.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{3}{4};-z\right)=\frac{1}{332\,640\sqrt{z}}\left(\sqrt{\pi}\,z^{3/4}\left(4096z^3+149\,760z^2+926\,640z+675\,675\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\left(4\sqrt{z}\left(256z^3+9312z^2+56\,265z+34\,560\right)\cos\left(2\sqrt{z}\right)+\left(256z^3+9120z^2+50\,085z+14\,040\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8mu.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{5}{4};z\right)=\frac{1}{727\,650\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(2\left(4096z^4-177\,408z^3+1\,464\,624z^2-2\,311\,155z+727\,650\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\left(-4096z^3+173\,824z^2-1\,315\,440z+\right.\right.\right.$$
$$\left.\left.\left.1\,264\,725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(-4096z^3+174\,336z^2-1\,335\,600z+1\,374\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8mv.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{5}{4};-z\right)=\frac{1}{727\,650\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\left(4096z^4+177\,408z^3+1\,464\,624z^2+2\,311\,155z+727\,650\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(4096z^3+173\,824z^2+1\,315\,440z+\right.\right.\right.$$
$$\left.\left.\left.1\,264\,725\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(4096z^3+174\,336z^2+1\,335\,600z+1\,374\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8mw.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{113\,541\,120z^{3/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(16\,384z^{7/2}-4096z^3-795\,648z^{5/2}+195\,840z^2+7\,270\,080z^{3/2}-1\,681\,200z-\right.\right.\right.$$
$$\left.\left.9\,706\,860\sqrt{z}\right)+e^{4\sqrt{z}}\left(16\,384z^{7/2}+4096z^3-795\,648z^{5/2}-195\,840z^2+\right.\right.$$
$$\left.\left.\left.7\,270\,080z^{3/2}+1\,681\,200z-9\,706\,860\sqrt{z}-1\,567\,215\right)+1\,567\,215\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-3\,194\,880z^3+29\,652\,480z^2-43\,243\,200z+2\,027\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-3\,194\,880z^3+29\,652\,480z^2-43\,243\,200z+2\,027\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8mx.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{7}{4};-z\right)=\frac{1}{28\,385\,280z^{3/4}}\left(\sqrt{\pi}\left(65\,536z^4+3\,194\,880z^3+29\,652\,480z^2+43\,243\,200z+2\,027\,025\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(4096z^3+198\,912z^2+1\,817\,520z+2\,426\,715\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(4096z^3+195\,840z^2+1\,681\,200z+1\,567\,215\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8my.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{41\,912\,640\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(65\,536z^4-3\,637\,248z^3+41\,255\,424z^2-95\,356\,800z+42\,318\,045\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$3\left(65\,536z^4-3\,579\,904z^3+38\,169\,600z^2-64\,199\,520z+675\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.2\sqrt{z}\left(65\,536z^4-3\,588\,096z^3+38\,592\,000z^2-67\,798\,080z+2\,027\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8mz.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{41\,912\,640\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(65\,536z^4+3\,637\,248z^3+41\,255\,424z^2+95\,356\,800z+42\,318\,045\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(65\,536z^4+3\,579\,904z^3+38\,169\,600z^2+64\,199\,520z+675\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+3\,588\,096z^3+38\,592\,000z^2+67\,798\,080z+2\,027\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8n0.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{5\,190\,451\,200z^{7/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(262\,144z^{9/2}-65\,536z^4-15\,925\,248z^{7/2}+3\,932\,160z^3+194\,795\,520z^{5/2}-\right.\right.\right.$$
$$45\,918\,720z^2-401\,253\,120z^{3/2}+74\,355\,840z+8\,108\,100\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4-15\,925\,248z^{7/2}-3\,932\,160z^3+194\,795\,520z^{5/2}+\right.$$
$$\left.45\,918\,720z^2-401\,253\,120z^{3/2}-74\,355\,840z+8\,108\,100\sqrt{z}-6\,081\,075\right)+6\,081\,075\Big)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-63\,897\,600z^4+790\,732\,800z^3-1\,729\,728\,000z^2+162\,162\,000z-6\,081\,075\right)$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left.\left.\left(1\,048\,576z^5-63\,897\,600z^4+790\,732\,800z^3-1\,729\,728\,000z^2+162\,162\,000z-6\,081\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8n1.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{11}{4};-z\right)=\frac{1}{1\,297\,612\,800z^{7/4}}$$
$$\left(\sqrt{\pi}\left(1\,048\,576z^5+63\,897\,600z^4+790\,732\,800z^3+1\,729\,728\,000z^2+162\,162\,000z+6\,081\,075\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4+3\,981\,312z^3+48\,698\,880z^2+100\,313\,280z+2\,027\,025\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(65\,536z^4+3\,932\,160z^3+45\,918\,720z^2+74\,355\,840z-6\,081\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8n2.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{13}{4};z\right)=\frac{1}{1\,639\,249\,920\sqrt{2}\,z^{7/4}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576z^5-70\,975\,488z^4+1\,024\,303\,104z^3-3\,117\,058\,560z^2+1\,680\,330\,960z-6\,081\,075\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(1\,048\,576z^5-70\,057\,984z^4+963\,747\,840z^3-2\,318\,722\,560z^2+75\,675\,600z-10\,135\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(-1\,048\,576z^5+70\,189\,056z^4-972\,103\,680z^3+2\,415\,536\,640z^2-162\,162\,000z+30\,405\,375\right)$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8n3.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{13}{4};-z\right)=\frac{1}{1\,639\,249\,920\sqrt{2}\,z^{7/4}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576\,z^5+70\,975\,488\,z^4+1\,024\,303\,104\,z^3+3\,117\,058\,560\,z^2+1\,680\,330\,960\,z+6\,081\,075\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(1\,048\,576\,z^5+70\,057\,984\,z^4+963\,747\,840\,z^3+2\,318\,722\,560\,z^2+75\,675\,600\,z+10\,135\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(1\,048\,576\,z^5+70\,189\,056\,z^4+972\,103\,680\,z^3+2\,415\,536\,640\,z^2+162\,162\,000\,z+30\,405\,375\right)$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8n4.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{181\,193\,932\,800\,z^{11/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(4\,194\,304\,z^{11/2}-1\,048\,576\,z^5-305\,922\,048\,z^{9/2}+75\,694\,080\,z^4+\right.\right.\right.$$
$$4\,688\,609\,280\,z^{7/2}-1\,118\,085\,120\,z^3-13\,063\,403\,520\,z^{5/2}+2\,595\,939\,840\,z^2+648\,648\,000\,z^{3/2}+$$
$$356\,756\,400\,z-283\,783\,500\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-305\,922\,048\,z^{9/2}-\right.$$
$$\left.75\,694\,080\,z^4+4\,688\,609\,280\,z^{7/2}+1\,118\,085\,120\,z^3-13\,063\,403\,520\,z^{5/2}-2\,595\,939\,840\,z^2+\right.$$
$$\left.\left.648\,648\,000\,z^{3/2}-356\,756\,400\,z-283\,783\,500\sqrt{z}+212\,837\,625\right)-212\,837\,625\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-1\,226\,833\,920\,z^5+18\,977\,587\,200\,z^4-55\,351\,296\,000\,z^3+\right.$$
$$\left.7\,783\,776\,000\,z^2-583\,783\,200\,z+212\,837\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-1\,226\,833\,920\,z^5+18\,977\,587\,200\,z^4-55\,351\,296\,000\,z^3+\right.$$
$$\left.\left.7\,783\,776\,000\,z^2-583\,783\,200\,z+212\,837\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a8n5.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{45\,298\,483\,200\,z^{11/4}}\left(\sqrt{\pi}\left(16\,777\,216\,z^6+1\,226\,833\,920\,z^5+18\,977\,587\,200\,z^4+55\,351\,296\,000\,z^3+7\,783\,776\,000\,z^2+\right.\right.$$
$$\left.583\,783\,200\,z+212\,837\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}$$
$$\left(4\sqrt{z}\left(1\,048\,576\,z^5+76\,480\,512\,z^4+1\,172\,152\,320\,z^3+3\,265\,850\,880\,z^2+162\,162\,000\,z+70\,945\,875\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(1\,048\,576\,z^5+75\,694\,080\,z^4+1\,118\,085\,120\,z^3+2\,595\,939\,840\,z^2-356\,756\,400\,z-212\,837\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8n6.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{3}{2}, \frac{17}{4}; z\right) = \frac{1}{52\,455\,997\,440\sqrt{2}\, z^{11/4}} \left(\left(2\sqrt{z}\left(16\,777\,216 z^6 - 1\,340\,080\,128 z^5 + 23\,481\,483\,264 z^4 - 88\,618\,844\,160 z^3 + 54\,768\,510\,720 z^2 - 972\,972\,000 z + 383\,107\,725\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,777\,216 z^6 - 1\,325\,400\,064 z^5 + 22\,333\,685\,760 z^4 - 69\,941\,329\,920 z^3 + 4\,324\,320\,000 z^2 - 2\,075\,673\,600 z + 638\,512\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(16\,777\,216 z^6 - 1\,327\,497\,216 z^5 + 22\,492\,938\,240 z^4 - 72\,276\,295\,680 z^3 + 7\,783\,776\,000 z^2 - 2\,140\,538\,400 z + 1\,915\,538\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8n7.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{3}{2}, \frac{17}{4}; -z\right) = \frac{1}{52\,455\,997\,440\sqrt{2}\, z^{11/4}} \left(\left(2\sqrt{z}\left(16\,777\,216 z^6 + 1\,340\,080\,128 z^5 + 23\,481\,483\,264 z^4 + 88\,618\,844\,160 z^3 + 54\,768\,510\,720 z^2 + 972\,972\,000 z + 383\,107\,725\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,777\,216 z^6 + 1\,325\,400\,064 z^5 + 22\,333\,685\,760 z^4 + 69\,941\,329\,920 z^3 + 4\,324\,320\,000 z^2 + 2\,075\,673\,600 z + 638\,512\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216 z^6 + 1\,327\,497\,216 z^5 + 22\,492\,938\,240 z^4 + 72\,276\,295\,680 z^3 + 7\,783\,776\,000 z^2 + 2\,140\,538\,400 z + 1\,915\,538\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8n8.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{3}{2}, \frac{19}{4}; z\right) = \frac{1}{5\,411\,658\,792\,960 z^{15/4}} \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(67\,108\,864 z^{13/2} - 16\,777\,216 z^6 - 5\,712\,642\,048 z^{11/2} + 1\,415\,577\,600 z^5 + 105\,228\,533\,760 z^{9/2} - 25\,288\,704\,000 z^4 - 369\,710\,530\,560 z^{7/2} + 76\,686\,704\,640 z^3 + 31\,135\,104\,000 z^{5/2} + 12\,972\,960\,000 z^2 - 18\,940\,521\,600 z^{3/2} - 1\,362\,160\,800 z + 28\,094\,566\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 - 5\,712\,642\,048 z^{11/2} - 1\,415\,577\,600 z^5 + 105\,228\,533\,760 z^{9/2} + 25\,288\,704\,000 z^4 - 369\,710\,530\,560 z^{7/2} - 76\,686\,704\,640 z^3 + 31\,135\,104\,000 z^{5/2} - 12\,972\,960\,000 z^2 - 18\,940\,521\,600 z^{3/2} + 1\,362\,160\,800 z + 28\,094\,566\,500\sqrt{z} - 21\,070\,924\,875\right) + 21\,070\,924\,875\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 22\,900\,899\,840 z^6 + 425\,097\,953\,280 z^5 - 1\,549\,836\,288\,000 z^4 + 290\,594\,304\,000 z^3 - 32\,691\,859\,200 z^2 + 23\,837\,814\,000 z - 21\,070\,924\,875\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 22\,900\,899\,840 z^6 + 425\,097\,953\,280 z^5 - 1\,549\,836\,288\,000 z^4 + 290\,594\,304\,000 z^3 - 32\,691\,859\,200 z^2 + 23\,837\,814\,000 z - 21\,070\,924\,875\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8n9.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{19}{4};-z\right)=$$
$$\frac{1}{1\,352\,914\,698\,240\,z^{15/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+22\,900\,899\,840\,z^6+425\,097\,953\,280\,z^5+1\,549\,836\,288\,000\,z^4+\right.\right.$$
$$\left.290\,594\,304\,000\,z^3+32\,691\,859\,200\,z^2+23\,837\,814\,000\,z+21\,070\,924\,875\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+1\,428\,160\,512\,z^5+26\,307\,133\,440\,z^4+92\,427\,632\,640\,z^3+7\,783\,776\,000\,z^2+\right.\right.$$
$$4\,735\,130\,400\,z+7\,023\,641\,625\big)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6+1\,415\,577\,600\,z^5+25\,288\,704\,000\,z^4+\right.$$
$$\left.\left.\left.76\,686\,704\,640\,z^3-12\,972\,960\,000\,z^2-1\,362\,160\,800\,z-21\,070\,924\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8na.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{21}{4};z\right)=$$
$$\left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-24\,712\,839\,168\,z^6+509\,428\,629\,504\,z^5-2\,294\,666\,035\,200\,z^4+1\,578\,150\,604\,800\,z^3-\right.\right.\right.$$
$$\left.63\,826\,963\,200\,z^2+94\,670\,175\,600\,z-54\,784\,404\,675\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\left(268\,435\,456\,z^7-24\,477\,958\,144\,z^6+488\,201\,256\,960\,z^5-1\,883\,647\,180\,800\,z^4+179\,891\,712\,000\,z^3-\right.$$
$$\left.120\,907\,987\,200\,z^2+222\,713\,290\,800\,z-91\,307\,341\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-268\,435\,456\,z^7+24\,511\,512\,576\,z^6-491\,158\,241\,280\,z^5+1\,936\,112\,025\,600\,z^4-290\,594\,304\,000\,z^3+\right.$$
$$\left.\left.\left.94\,962\,067\,200\,z^2-83\,772\,889\,200\,z+273\,922\,023\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(25\,178\,878\,771\,200\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a8nb.01

$${}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{21}{4};-z\right)=$$
$$\left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+24\,712\,839\,168\,z^6+509\,428\,629\,504\,z^5+2\,294\,666\,035\,200\,z^4+1\,578\,150\,604\,800\,z^3+\right.\right.\right.$$
$$\left.63\,826\,963\,200\,z^2+94\,670\,175\,600\,z+54\,784\,404\,675\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\left(268\,435\,456\,z^7+24\,477\,958\,144\,z^6+488\,201\,256\,960\,z^5+1\,883\,647\,180\,800\,z^4+179\,891\,712\,000\,z^3+\right.$$
$$\left.120\,907\,987\,200\,z^2+222\,713\,290\,800\,z+91\,307\,341\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+24\,511\,512\,576\,z^6+491\,158\,241\,280\,z^5+1\,936\,112\,025\,600\,z^4+290\,594\,304\,000\,z^3+\right.$$
$$\left.\left.\left.94\,962\,067\,200\,z^2+83\,772\,889\,200\,z+273\,922\,023\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(25\,178\,878\,771\,200\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a8nc.01

$$
{}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{23}{4};z\right)=
$$

$$
-\left(19\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2}-268\,435\,456\,z^{7}-104\,488\,501\,248\,z^{13/2}+25\,920\,798\,720\,z^{6}+2\,248\,000\,143\,360\right.\right.\right.
$$

$$
z^{11/2}-543\,251\,496\,960\,z^{5}-9\,534\,068\,490\,240\,z^{9/2}+2\,036\,122\,583\,040\,z^{4}+
$$

$$
1\,162\,377\,216\,000\,z^{7/2}+373\,621\,248\,000\,z^{3}-794\,982\,988\,800\,z^{5/2}+238\,183\,545\,600\,z^{2}+
$$

$$
1\,091\,674\,584\,000\,z^{3/2}-1\,685\,673\,990\,000\,z-5\,478\,440\,467\,500\sqrt{z}+e^{4\sqrt{z}}
$$

$$
\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-104\,488\,501\,248\,z^{13/2}-25\,920\,798\,720\,z^{6}+2\,248\,000\,143\,360\,z^{11/2}+\right.
$$

$$
543\,251\,496\,960\,z^{5}-9\,534\,068\,490\,240\,z^{9/2}-2\,036\,122\,583\,040\,z^{4}+1\,162\,377\,216\,000\,z^{7/2}-
$$

$$
373\,621\,248\,000\,z^{3}-794\,982\,988\,800\,z^{5/2}-238\,183\,545\,600\,z^{2}+1\,091\,674\,584\,000\,z^{3/2}+
$$

$$
\left.1\,685\,673\,990\,000\,z-5\,478\,440\,467\,500\sqrt{z}+4\,108\,830\,350\,625\right)-4\,108\,830\,350\,625\Big)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-418\,759\,311\,360\,z^{7}+9\,068\,756\,336\,640\,z^{6}-39\,675\,808\,972\,800\,z^{5}+\right.
$$

$$
9\,299\,017\,728\,000\,z^{4}-1\,394\,852\,659\,200\,z^{3}+1\,525\,620\,096\,000\,z^{2}-2\,697\,078\,384\,000\,z+4\,108\,830\,350\,625\Big)
$$

$$
\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-418\,759\,311\,360\,z^{7}+9\,068\,756\,336\,640\,z^{6}-\right.
$$

$$
39\,675\,808\,972\,800\,z^{5}+9\,299\,017\,728\,000\,z^{4}-1\,394\,852\,659\,200\,z^{3}+1\,525\,620\,096\,000\,z^{2}-
$$

$$
\left.\left.\left.2\,697\,078\,384\,000\,z+4\,108\,830\,350\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(2\,770\,769\,301\,995\,520\,z^{19/4}\right)
$$

07.22.03.a8nd.01

$$
{}_1F_2\left(-\frac{13}{4};\frac{3}{2},\frac{23}{4};-z\right)=\frac{1}{692\,692\,325\,498\,880\,z^{19/4}}
$$

$$
\left(19\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^{8}+418\,759\,311\,360\,z^{7}+9\,068\,756\,336\,640\,z^{6}+39\,675\,808\,972\,800\,z^{5}+9\,299\,017\,728\,000\,z^{4}+\right.\right.\right.
$$

$$
\left.1\,394\,852\,659\,200\,z^{3}+1\,525\,620\,096\,000\,z^{2}+2\,697\,078\,384\,000\,z+4\,108\,830\,350\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$

$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^{7}+26\,122\,125\,312\,z^{6}+562\,000\,035\,840\,z^{5}+2\,383\,517\,122\,560\,z^{4}+\right.\right.
$$

$$
290\,594\,304\,000\,z^{3}+198\,745\,747\,200\,z^{2}+272\,918\,646\,000\,z+1\,369\,610\,116\,875\Big)\cos\left(2\sqrt{z}\right)+
$$

$$
\left(268\,435\,456\,z^{7}+25\,920\,798\,720\,z^{6}+543\,251\,496\,960\,z^{5}+2\,036\,122\,583\,040\,z^{4}-373\,621\,248\,000\,z^{3}+\right.
$$

$$
\left.\left.\left.238\,183\,545\,600\,z^{2}+1\,685\,673\,990\,000\,z-4\,108\,830\,350\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big)
$$

For fixed z and $a_1 = -\frac{13}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.a8ne.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{2\,215\,281\,915\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(524\,288\,z^4+27\,983\,872\,z^3+519\,020\,544\,z^2+2\,984\,902\,704\,z-2\,215\,281\,915\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$192\sqrt{z}\left(4096\,z^3+222\,208\,z^2+4\,252\,192\,z+21\,547\,155\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(524\,288\,z^4+28\,377\,088\,z^3+540\,524\,544\,z^2+3\,485\,457\,360\,z+5\,905\,092\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8nf.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{2\,215\,281\,915\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-524\,288\,z^4+27\,983\,872\,z^3-519\,020\,544\,z^2+2\,984\,902\,704\,z+2\,215\,281\,915\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$192\sqrt{z}\left(4096\,z^3-222\,208\,z^2+4\,252\,192\,z-21\,547\,155\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-524\,288\,z^4+28\,377\,088\,z^3-540\,524\,544\,z^2+3\,485\,457\,360\,z-5\,905\,092\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8ng.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{21}{4};z\right)=\frac{2\sqrt{z}\,(16z+621)\cosh\left(2\sqrt{z}\right)-23\,(16z+27)\sinh\left(2\sqrt{z}\right)}{952\,z^{3/2}}$$

07.22.03.a8nh.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{21}{4};-z\right)=\frac{2\sqrt{z}\,(16z-621)\cos\left(2\sqrt{z}\right)+23\,(27-16z)\sin\left(2\sqrt{z}\right)}{952\,z^{3/2}}$$

07.22.03.a8ni.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{481\,583\,025\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(262\,144\,z^4+9\,945\,088\,z^3+142\,657\,536\,z^2+668\,465\,280\,z-481\,583\,025\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$24\sqrt{z}\left(16\,384\,z^3+635\,904\,z^2+9\,484\,160\,z+46\,326\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(262\,144\,z^4+10\,141\,696\,z^3+150\,374\,400\,z^2+786\,038\,400\,z+1\,018\,119\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8nj.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{481\,583\,025\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-262\,144\,z^4+9\,945\,088\,z^3-142\,657\,536\,z^2+668\,465\,280\,z+481\,583\,025\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$24\sqrt{z}\left(16\,384\,z^3-635\,904\,z^2+9\,484\,160\,z-46\,326\,525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-262\,144\,z^4+10\,141\,696\,z^3-150\,374\,400\,z^2+786\,038\,400\,z-1\,018\,119\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8nk.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{17}{4};z\right)=-\frac{3\left((8z+23)\sinh\left(2\sqrt{z}\right)-46\sqrt{z}\cosh\left(2\sqrt{z}\right)\right)}{136\,z^{3/2}}$$

07.22.03.a8nl.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{17}{4};-z\right)=-\frac{3\left(46\sqrt{z}\cos\left(2\sqrt{z}\right)+(8z-23)\sin\left(2\sqrt{z}\right)\right)}{136\,z^{3/2}}$$

07.22.03.a8nm.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{76\,039\,425\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(131\,072\,z^4+2\,949\,120\,z^3+29\,975\,040\,z^2+106\,170\,624\,z-76\,039\,425\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$192\sqrt{z}\left(1024\,z^3+23\,936\,z^2+255\,852\,z+1\,075\,095\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(131\,072\,z^4+3\,047\,424\,z^3+32\,315\,904\,z^2+131\,950\,080\,z+122\,174\,325\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8nn.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{76\,039\,425\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-131\,072\,z^4+2\,949\,120\,z^3-29\,975\,040\,z^2+106\,170\,624\,z+76\,039\,425\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$192\sqrt{z}\left(1024\,z^3-23\,936\,z^2+255\,852\,z-1\,075\,095\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-131\,072\,z^4+3\,047\,424\,z^3-32\,315\,904\,z^2+131\,950\,080\,z-122\,174\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8no.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{13}{4};z\right)=\frac{3\cosh\left(2\sqrt{z}\right)}{4z}-\frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.a8np.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{13}{4};-z\right)=\frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.a8nq.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{5\,069\,295\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(65\,536z^4+462\,848z^3+2\,846\,976z^2+6\,811\,344z-5\,069\,295\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+24\sqrt{z}\right.\right.$$
$$\left(4096z^3+32\,512z^2+209\,296z+650\,955\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(65\,536z^4+512\,000z^3+3\,258\,624z^2+9\,599\,760z+5\,817\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8nr.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{5\,069\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-65\,536z^4+462\,848z^3-2\,846\,976z^2+6\,811\,344z+5\,069\,295\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+24\right.\right.$$
$$\sqrt{z}\left(4096z^3-32\,512z^2+209\,296z-650\,955\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-65\,536z^4+512\,000z^3-3\,258\,624z^2+9\,599\,760z-5\,817\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8ns.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{15\,800\,400z^{3/2}}\left(e^{-2\sqrt{z}}\left(131\,072e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}-131\,072e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}+\right.\right.$$
$$131\,072e^{4\sqrt{z}}z^{9/2}+131\,072z^{9/2}+32\,768e^{4\sqrt{z}}z^4-32\,768z^4+24\,576e^{4\sqrt{z}}z^{7/2}+24\,576z^{7/2}+30\,720e^{4\sqrt{z}}z^3-$$
$$30\,720z^3+53\,760e^{4\sqrt{z}}z^{5/2}+53\,760z^{5/2}+120\,960e^{4\sqrt{z}}z^2-120\,960z^2+332\,640e^{4\sqrt{z}}z^{3/2}+332\,640z^{3/2}+$$
$$\left.\left.1\,081\,080e^{4\sqrt{z}}z-1\,081\,080z+4\,054\,050e^{4\sqrt{z}}\sqrt{z}+4\,054\,050\sqrt{z}-2\,027\,025e^{4\sqrt{z}}+2\,027\,025\right)\right)$$

07.22.03.a8nt.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{7\,900\,200z^{3/2}}\left(-262\,144\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}-2\left(65\,536z^4-12\,288z^3+26\,880z^2-166\,320z+2\,027\,025\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(-32\,768z^4+30\,720z^3-120\,960z^2+1\,081\,080z+2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8nu.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{5}{2}, -\frac{7}{4}; z\right) = \frac{1}{460\,845\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(32\,768 z^4 - 274\,432 z^3 - 378\,624 z^2 - 524\,592 z + 460\,845\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 192\sqrt{z}\left(256 z^3 - 1920 z^2 - 4456 z - 8175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-32\,768 z^4 + 249\,856 z^3 + 552\,192 z^2 + 979\,920 z + 342\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8nv.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{5}{2}, -\frac{7}{4}; -z\right) = \frac{1}{460\,845\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(32\,768 z^4 + 274\,432 z^3 - 378\,624 z^2 + 524\,592 z + 460\,845\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 192\sqrt{z}\left(256 z^3 + 1920 z^2 - 4456 z + 8175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(32\,768 z^4 + 249\,856 z^3 - 552\,192 z^2 + 979\,920 z - 342\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8nw.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{5}{2}, -\frac{5}{4}; z\right) = \frac{1}{1\,755\,600 z^{3/2}} \left(e^{-2\sqrt{z}}\left(-32\,768 e^{4\sqrt{z}} z^{9/2} - 32\,768 z^{9/2} - 8192 e^{4\sqrt{z}} z^4 + 8192 z^4 - 2048 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 247)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{15/4} + 2048 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 247)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{15/4} + 499\,712 e^{4\sqrt{z}} z^{7/2} + 499\,712 z^{7/2} + 118\,784 e^{4\sqrt{z}} z^3 - 118\,784 z^3 + 81\,408 e^{4\sqrt{z}} z^{5/2} + 81\,408 z^{5/2} + 88\,320 e^{4\sqrt{z}} z^2 - 88\,320 z^2 + 124\,320 e^{4\sqrt{z}} z^{3/2} + 124\,320 z^{3/2} + 196\,560 e^{4\sqrt{z}} z - 196\,560 z + 270\,270 e^{4\sqrt{z}}\sqrt{z} + 270\,270\sqrt{z} - 135\,135 e^{4\sqrt{z}} + 135\,135\right)\right) $$

07.22.03.a8nx.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{5}{2}, -\frac{5}{4}; -z\right) = \frac{1}{877\,800 z^{3/2}} \left(4096\sqrt{\pi}\,(16z + 247) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{15/4} + 2\left(16\,384 z^4 + 249\,856 z^3 - 40\,704 z^2 + 62\,160 z - 135\,135\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(8192 z^4 + 118\,784 z^3 - 88\,320 z^2 + 196\,560 z + 135\,135\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a8ny.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{5}{2}, -\frac{3}{4}; z\right) = \frac{1}{197\,505\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-16\,384 z^4 + 390\,144 z^3 - 1\,043\,712 z^2 - 40\,032 z + 197\,505\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 24\sqrt{z}\left(1024 z^3 - 23\,488 z^2 + 45\,408 z + 30\,285\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(16\,384 z^4 - 377\,856 z^3 + 767\,232 z^2 + 488\,160 z + 78\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8nz.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{3}{4};-z\right)=-\frac{1}{197\,505\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(16\,384z^4+390\,144z^3+1\,043\,712z^2-40\,032z-197\,505\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-24\sqrt{z}\left(1024z^3+23\,488z^2+45\,408z-\right.\right.\right.$$
$$\left.\left.\left.30\,285\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,384z^4+377\,856z^3+767\,232z^2-488\,160z+78\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8o0.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{351\,120z^{3/2}}\left(e^{-2\sqrt{z}}\left(4096e^{4\sqrt{z}}z^{9/2}+4096z^{9/2}+1024e^{4\sqrt{z}}z^4-1024z^4-125\,696e^{4\sqrt{z}}z^{7/2}-125\,696z^{7/2}-\right.\right.$$
$$30\,656e^{4\sqrt{z}}z^3+30\,656z^3+16e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-7904z+33\,345\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-$$
$$16e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-7904z+33\,345\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+511\,488e^{4\sqrt{z}}z^{5/2}+$$
$$511\,488z^{5/2}+107\,520e^{4\sqrt{z}}z^2-107\,520z^2+58\,560e^{4\sqrt{z}}z^{3/2}+58\,560z^{3/2}+$$
$$\left.\left.42\,120e^{4\sqrt{z}}z-42\,120z+24\,570e^{4\sqrt{z}}\sqrt{z}+24\,570\sqrt{z}-12\,285e^{4\sqrt{z}}+12\,285\right)\right)$$

07.22.03.a8o1.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},-\frac{1}{4};-z\right)=$$
$$\frac{1}{175\,560z^{3/2}}\left(-32\sqrt{\pi}\left(256z^2+7904z+33\,345\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}-2\left(2048z^4+62\,848z^3+255\,744z^2-29\,280z+12\,285\right)\right.$$
$$\left.\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-1024z^4-30\,656z^3-107\,520z^2+42\,120z+12\,285\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8o2.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{1}{4};z\right)=\frac{1}{329\,175\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left(\left(8192z^4-321\,536z^3+2\,205\,408z^2-2\,363\,040z+329\,175\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-48\sqrt{z}\left(256z^3-9824z^2+60\,505z-26\,700\right)\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-8192z^4+315\,392z^3-1\,972\,320z^2+1\,000\,800z+43\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8o3.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{1}{4};-z\right)=\frac{1}{329\,175\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left(\left(8192z^4+321\,536z^3+2\,205\,408z^2+2\,363\,040z+329\,175\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-48\sqrt{z}\left(256z^3+9824z^2+60\,505z+26\,700\right)\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(8192z^4+315\,392z^3+1\,972\,320z^2+1\,000\,800z-43\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8o4.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{3}{4};z\right)= $$
$$ \frac{1}{4\,213\,440\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-189\,696z^2+1\,600\,560z-1\,833\,975\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\right.\right. $$
$$ \sqrt{2\pi}\left(4096z^3-189\,696z^2+1\,600\,560z-1\,833\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}- $$
$$ 4\left(1024z^{9/2}-256z^4-47\,232z^{7/2}+11\,616z^3+391\,668z^{5/2}-89\,865z^2-400\,320z^{3/2}+\right. $$
$$ \left.\left.\left.56\,160z-10\,530\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{9/2}+256z^4-47\,232z^{7/2}-11\,616z^3+\right.\right.\right. $$
$$ \left.\left.\left.\left.391\,668z^{5/2}+89\,865z^2-400\,320z^{3/2}-56\,160z-10\,530\sqrt{z}+5265\right)-5265\right)\right)\right) $$

07.22.03.a8o5.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{3}{4};-z\right)=\frac{1}{1\,053\,360\,z^{3/2}}\left(\sqrt{\pi}\left(4096z^3+189\,696z^2+1\,600\,560z+1\,833\,975\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+\right. $$
$$ 2\left(2\sqrt{z}\left(512z^4+23\,616z^3+195\,834z^2+200\,160z-5265\right)\cos\left(2\sqrt{z}\right)+\right. $$
$$ \left.\left.\left(256z^4+11\,616z^3+89\,865z^2+56\,160z+5265\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8o6.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{5}{4};z\right)=\frac{1}{2\,304\,225\sqrt{2}\sqrt[4]{z}} $$
$$ \left(\left(2\left(4096z^4-224\,000z^3+2\,478\,000z^2-5\,474\,133z+2\,304\,225\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(4096z^3-220\,416z^2+2\,288\,048z-\right.\right.\right. $$
$$ \left.\left.\left.3\,609\,795\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\left(4096z^4-220\,928z^3+2\,314\,032z^2-3\,823\,785z+61\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8o7.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{5}{4};-z\right)= $$
$$ \frac{1}{2\,304\,225\sqrt{2}\sqrt[4]{z}}\left(\left(2\left(4096z^4+224\,000z^3+2\,478\,000z^2+5\,474\,133z+2\,304\,225\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\right.\right. $$
$$ \left(4096z^3+220\,416z^2+2\,288\,048z+3\,609\,795\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.2\left(4096z^4+220\,928z^3+2\,314\,032z^2+3\,823\,785z+61\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8o8.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{5}{2}, \frac{7}{4}; z\right) = $$
$$ \frac{1}{359\,546\,880\, z^{3/2}} \left(e^{-2\sqrt{z}} \left(-4\left(16\,384\, z^{9/2} - 4096\, z^4 - 1\,008\,640\, z^{7/2} + 249\,088\, z^3 + 12\,621\,504\, z^{5/2} - 2\,979\,120\, z^2 - \right.\right.\right. $$
$$ \left. 27\,316\,140\, z^{3/2} + 5\,133\,375\, z + 898\,560\sqrt{z} + e^{4\sqrt{z}} \left(16\,384\, z^{9/2} + 4096\, z^4 - 1\,008\,640\, z^{7/2} - 249\,088\, z^3 + \right. \right. $$
$$ \left. \left. 12\,621\,504\, z^{5/2} + 2\,979\,120\, z^2 - 27\,316\,140\, z^{3/2} - 5\,133\,375\, z + 898\,560\sqrt{z} - 449\,280\right) + 449\,280\right) - $$
$$ e^{2\sqrt{z}} \sqrt{2\pi}\, z^{3/4} \left(65\,536\, z^4 - 4\,046\,848\, z^3 + 51\,217\,920\, z^2 - 117\,374\,400\, z + 12\,837\,825\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \left. e^{2\sqrt{z}} \sqrt{2\pi}\, z^{3/4} \left(65\,536\, z^4 - 4\,046\,848\, z^3 + 51\,217\,920\, z^2 - 117\,374\,400\, z + 12\,837\,825\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8o9.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{5}{2}, \frac{7}{4}; -z\right) = $$
$$ \frac{1}{89\,886\,720\, z^{3/2}} \left(\sqrt{\pi}\, z^{3/4} \left(65\,536\, z^4 + 4\,046\,848\, z^3 + 51\,217\,920\, z^2 + 117\,374\,400\, z + 12\,837\,825\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ 2\left(4\sqrt{z} \left(4096\, z^4 + 252\,160\, z^3 + 3\,155\,376\, z^2 + 6\,829\,035\, z + 224\,640\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. \left. \left(4096\, z^4 + 249\,088\, z^3 + 2\,979\,120\, z^2 + 5\,133\,375\, z - 449\,280\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8oa.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{5}{2}, \frac{9}{4}; z\right) = $$
$$ \frac{1}{132\,723\,360\sqrt{2}\, z^{3/4}} \left(\left(2\sqrt{z} \left(65\,536\, z^4 - 4\,595\,712\, z^3 + 70\,189\,056\, z^2 - 235\,228\,896\, z + 140\,426\,055\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 3\left(65\,536\, z^4 - 4\,538\,368\, z^3 + 66\,264\,576\, z^2 - 180\,169\,920\, z + 12\,837\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left. 2\sqrt{z} \left(65\,536\, z^4 - 4\,546\,560\, z^3 + 66\,806\,784\, z^2 - 186\,913\,440\, z + 20\,823\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2 \Bigg) $$

07.22.03.a8ob.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{5}{2}, \frac{9}{4}; -z\right) = $$
$$ \frac{1}{132\,723\,360\sqrt{2}\, z^{3/4}} \left(\left(2\sqrt{z} \left(65\,536\, z^4 + 4\,595\,712\, z^3 + 70\,189\,056\, z^2 + 235\,228\,896\, z + 140\,426\,055\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 3\left(65\,536\, z^4 + 4\,538\,368\, z^3 + 66\,264\,576\, z^2 + 180\,169\,920\, z + 12\,837\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 2\sqrt{z} \left(65\,536\, z^4 + 4\,546\,560\, z^3 + 66\,806\,784\, z^2 + 186\,913\,440\, z + 20\,823\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2 \Bigg) $$

07.22.03.a8oc.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{11}{4};z\right)= $$
$$ \frac{1}{16\,436\,428\,800\,z^{7/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(262\,144\,z^{9/2}-65\,536\,z^4-20\,185\,088\,z^{7/2}+4\,997\,120\,z^3+337\,766\,400\,z^{5/2}-\right.\right.\right. $$
$$ 80\,862\,720\,z^2-1\,117\,355\,520\,z^{3/2}+229\,919\,040\,z+133\,485\,300\sqrt{z}\;+ $$
$$ e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-20\,185\,088\,z^{7/2}-4\,997\,120\,z^3+337\,766\,400\,z^{5/2}+80\,862\,720\,z^2-\right. $$
$$ \left.\left.\left.\left.1\,117\,355\,520\,z^{3/2}-229\,919\,040\,z+133\,485\,300\sqrt{z}-28\,229\,175\right)+28\,229\,175\right)- $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-80\,936\,960\,z^4+1\,365\,811\,200\,z^3-4\,694\,976\,000\,z^2+1\,027\,026\,000\,z+115\,540\,425\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi} $$
$$ \left.\left.\left(1\,048\,576\,z^5-80\,936\,960\,z^4+1\,365\,811\,200\,z^3-4\,694\,976\,000\,z^2+1\,027\,026\,000\,z+115\,540\,425\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8od.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{11}{4};-z\right)=\frac{1}{4\,109\,107\,200\,z^{7/4}} $$
$$ \left(\sqrt{\pi}\left(1\,048\,576\,z^5+80\,936\,960\,z^4+1\,365\,811\,200\,z^3+4\,694\,976\,000\,z^2+1\,027\,026\,000\,z-115\,540\,425\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right. $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536\,z^4+5\,046\,272\,z^3+84\,441\,600\,z^2+279\,338\,880\,z+33\,371\,325\right)\cos\left(2\sqrt{z}\right)+\right. $$
$$ \left.\left.\left(65\,536\,z^4+4\,997\,120\,z^3+80\,862\,720\,z^2+229\,919\,040\,z-28\,229\,175\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8oe.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{13}{4};z\right)=\frac{1}{5\,190\,958\,080\sqrt{2}\,z^{7/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576\,z^5-89\,718\,784\,z^4+1\,748\,262\,912\,z^3-7\,858\,819\,584\,z^2+5\,834\,561\,040\,z+38\,513\,475\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 3\left(1\,048\,576\,z^5-88\,801\,280\,z^4+1\,671\,307\,264\,z^3-6\,454\,694\,400\,z^2+1\,027\,026\,000\,z+64\,189\,125\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(1\,048\,576\,z^5-88\,932\,352\,z^4+1\,682\,006\,016\,z^3-\right. $$
$$ \left.\left.\left.6\,632\,778\,240\,z^2+1\,416\,214\,800\,z+192\,567\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8of.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{13}{4};-z\right)=\frac{1}{5\,190\,958\,080\sqrt{2}\,z^{7/4}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576\,z^5+89\,718\,784\,z^4+1\,748\,262\,912\,z^3+7\,858\,819\,584\,z^2+5\,834\,561\,040\,z-38\,513\,475\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(1\,048\,576\,z^5+88\,801\,280\,z^4+1\,671\,307\,264\,z^3+6\,454\,694\,400\,z^2+1\,027\,026\,000\,z-64\,189\,125\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576\,z^5+88\,932\,352\,z^4+1\,682\,006\,016\,z^3+\right.$$
$$\left.\left.\left.6\,632\,778\,240\,z^2+1\,416\,214\,800\,z-192\,567\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8og.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{573\,780\,787\,200\,z^{11/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(4\,194\,304\,z^{11/2}-1\,048\,576\,z^5-387\,710\,976\,z^{9/2}+96\,141\,312\,z^4+\right.\right.\right.$$
$$8\,123\,744\,256\,z^{7/2}-1\,961\,533\,440\,z^3-36\,171\,970\,560\,z^{5/2}+7\,793\,210\,880\,z^2+7\,786\,808\,640\,z^{3/2}+$$
$$812\,326\,320\,z+1\,078\,377\,300\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-387\,710\,976\,z^{9/2}-\right.$$
$$\left.96\,141\,312\,z^4+8\,123\,744\,256\,z^{7/2}+1\,961\,533\,440\,z^3-36\,171\,970\,560\,z^{5/2}-7\,793\,210\,880\,z^2+\right.$$
$$\left.7\,786\,808\,640\,z^{3/2}-812\,326\,320\,z+1\,078\,377\,300\sqrt{z}-808\,782\,975\right)+808\,782\,975\Big)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-1\,553\,989\,632\,z^5+32\,779\,468\,800\,z^4-150\,239\,232\,000\,z^3+\right.$$
$$\left.49\,297\,248\,000\,z^2+11\,091\,880\,800\,z-808\,782\,975\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-1\,553\,989\,632\,z^5+32\,779\,468\,800\,z^4-150\,239\,232\,000\,z^3+\right.$$
$$\left.\left.49\,297\,248\,000\,z^2+11\,091\,880\,800\,z-808\,782\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a8oh.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{143\,445\,196\,800\,z^{11/4}}\left(\sqrt{\pi}\left(16\,777\,216\,z^6+1\,553\,989\,632\,z^5+32\,779\,468\,800\,z^4+150\,239\,232\,000\,z^3+\right.\right.$$
$$\left.49\,297\,248\,000\,z^2-11\,091\,880\,800\,z-808\,782\,975\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\right.$$
$$\left(1\,048\,576\,z^5+96\,927\,744\,z^4+2\,030\,936\,064\,z^3+9\,042\,992\,640\,z^2+1\,946\,702\,160\,z-269\,594\,325\right)\cos\left(2\sqrt{z}\right)+$$
$$\left.\left.\left(1\,048\,576\,z^5+96\,141\,312\,z^4+1\,961\,533\,440\,z^3+7\,793\,210\,880\,z^2-812\,326\,320\,z+808\,782\,975\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8oi.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{17}{4};z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-1\,694\,498\,816\,z^5+40\,161\,312\,768\,z^4-226\,501\,558\,272\,z^3+198\,082\,241\,280\,z^2+\right.\right.\right.$$
$$\left.\left.4\,929\,724\,800\,z-1\,039\,863\,825\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216\,z^6-1\,679\,818\,752\,z^5+38\,703\,398\,912\,z^4-\right.\right.$$
$$\left.\left.193\,752\,514\,560\,z^3+49\,297\,248\,000\,z^2+9\,448\,639\,200\,z-1\,733\,106\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(16\,777\,216\,z^6-1\,681\,915\,904\,z^5+38\,906\,953\,728\,z^4-197\,998\,018\,560\,z^3+63\,036\,230\,400\,z^2+\right.$$
$$\left.\left.17\,254\,036\,800\,z-5\,199\,319\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(166\,110\,658\,560\,\sqrt{2}\;z^{11/4}\right)$$

07.22.03.a8oj.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{17}{4};-z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,694\,498\,816\,z^5+40\,161\,312\,768\,z^4+226\,501\,558\,272\,z^3+198\,082\,241\,280\,z^2-\right.\right.\right.$$
$$\left.\left.4\,929\,724\,800\,z-1\,039\,863\,825\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216\,z^6+1\,679\,818\,752\,z^5+38\,703\,398\,912\,z^4+\right.\right.$$
$$\left.\left.193\,752\,514\,560\,z^3+49\,297\,248\,000\,z^2-9\,448\,639\,200\,z-1\,733\,106\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,681\,915\,904\,z^5+38\,906\,953\,728\,z^4+197\,998\,018\,560\,z^3+63\,036\,230\,400\,z^2-\right.$$
$$\left.\left.17\,254\,036\,800\,z-5\,199\,319\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(166\,110\,658\,560\,\sqrt{2}\;z^{11/4}\right)$$

07.22.03.a8ok.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{19}{4};z\right)=$$

$$\frac{1}{17\,136\,919\,511\,040\,z^{15/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(67\,108\,864\,z^{13/2}-16\,777\,216\,z^6-7\,239\,368\,704\,z^{11/2}+1\,797\,259\,264\,z^5+\right.\right.\right.$$
$$182\,232\,809\,472\,z^{9/2}-44\,253\,511\,680\,z^4-1\,020\,060\,303\,360\,z^{7/2}+226\,034\,565\,120\,z^3+$$
$$321\,880\,366\,080\,z^{5/2}+13\,048\,439\,040\,z^2+93\,664\,771\,200\,z^{3/2}+43\,135\,092\,000\,z-59\,310\,751\,500\sqrt{z}\;+$$
$$e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^6-7\,239\,368\,704\,z^{11/2}-1\,797\,259\,264\,z^5+182\,232\,809\,472\,z^{9/2}+\right.$$
$$44\,253\,511\,680\,z^4-1\,020\,060\,303\,360\,z^{7/2}-226\,034\,565\,120\,z^3+321\,880\,366\,080\,z^{5/2}-13\,048\,439\,040$$
$$\left.\left.z^2+93\,664\,771\,200\,z^{3/2}-43\,135\,092\,000\,z-59\,310\,751\,500\sqrt{z}\;+44\,483\,063\,625\right)-44\,483\,063\,625\right)-$$
$$e^{2\sqrt{z}}\;\sqrt{2\,\pi}\;\left(268\,435\,456\,z^7-29\,007\,806\,464\,z^6+734\,260\,101\,120\,z^5-4\,206\,698\,496\,000\,z^4+\right.$$
$$\left.1\,840\,430\,592\,000\,z^3+621\,145\,324\,800\,z^2-90\,583\,693\,200\,z+44\,483\,063\,625\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\;\sqrt{2\,\pi}\;\left(268\,435\,456\,z^7-29\,007\,806\,464\,z^6+734\,260\,101\,120\,z^5-4\,206\,698\,496\,000\,z^4+\right.$$
$$\left.\left.1\,840\,430\,592\,000\,z^3+621\,145\,324\,800\,z^2-90\,583\,693\,200\,z+44\,483\,063\,625\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\Bigg)$$

07.22.03.a8ol.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{19}{4};-z\right)=$$

$$\frac{1}{4\,284\,229\,877\,760\,z^{15/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+29\,007\,806\,464\,z^6+734\,260\,101\,120\,z^5+4\,206\,698\,496\,000\,z^4+\right.\right.$$

$$\left.1\,840\,430\,592\,000\,z^3-621\,145\,324\,800\,z^2-90\,583\,693\,200\,z-44\,483\,063\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$

$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+1\,809\,842\,176\,z^5+45\,558\,202\,368\,z^4+255\,015\,075\,840\,z^3+80\,470\,091\,520\,z^2-\right.\right.$$

$$23\,416\,192\,800\,z-14\,827\,687\,875\big)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6+1\,797\,259\,264\,z^5+44\,253\,511\,680\,z^4+\right.$$

$$\left.\left.\left.226\,034\,565\,120\,z^3-13\,048\,439\,040\,z^2+43\,135\,092\,000\,z+44\,483\,063\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8om.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{21}{4};z\right)=$$

$$\left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-31\,255\,953\,408\,z^6+872\,571\,469\,824\,z^5-5\,920\,190\,300\,160\,z^4+5\,917\,692\,211\,200\,z^3+\right.\right.\right.$$

$$325\,361\,836\,800\,z^2-208\,897\,088\,400\,z+94\,627\,608\,075\big)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$

$$3\left(268\,435\,456\,z^7-31\,021\,072\,384\,z^6+845\,618\,872\,320\,z^5-5\,201\,082\,777\,600\,z^4+1\,840\,430\,592\,000\,z^3+\right.$$

$$621\,145\,324\,800\,z^2-460\,313\,053\,200\,z+157\,712\,680\,125\big)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$

$$2\sqrt{z}\,\left(268\,435\,456\,z^7-31\,054\,626\,816\,z^6+849\,393\,745\,920\,z^5-5\,295\,720\,038\,400\,z^4+2\,248\,736\,256\,000\,z^3+\right.$$

$$\left.\left.\left.916\,928\,812\,800\,z^2-371\,578\,006\,800\,z+473\,138\,040\,375\big)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(79\,733\,116\,108\,800\sqrt{2}\;z^{15/4}\right)$$

07.22.03.a8on.01

$${}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{21}{4};-z\right)=$$

$$\left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+31\,255\,953\,408\,z^6+872\,571\,469\,824\,z^5+5\,920\,190\,300\,160\,z^4+5\,917\,692\,211\,200\,z^3-\right.\right.\right.$$

$$325\,361\,836\,800\,z^2-208\,897\,088\,400\,z-94\,627\,608\,075\big)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$

$$3\left(268\,435\,456\,z^7+31\,021\,072\,384\,z^6+845\,618\,872\,320\,z^5+5\,201\,082\,777\,600\,z^4+1\,840\,430\,592\,000\,z^3-\right.$$

$$621\,145\,324\,800\,z^2-460\,313\,053\,200\,z-157\,712\,680\,125\big)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$2\sqrt{z}\,\left(268\,435\,456\,z^7+31\,054\,626\,816\,z^6+849\,393\,745\,920\,z^5+5\,295\,720\,038\,400\,z^4+2\,248\,736\,256\,000\,z^3-\right.$$

$$\left.\left.\left.916\,928\,812\,800\,z^2-371\,578\,006\,800\,z-473\,138\,040\,375\big)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(79\,733\,116\,108\,800\sqrt{2}\;z^{15/4}\right)$$

07.22.03.a8oo.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{23}{4};z\right) = \frac{1}{461\,794\,883\,665\,920\,z^{19/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2}-268\,435\,456\,z^7-132\,405\,788\,672\,z^{13/2}+32\,900\,120\,576\,z^6+3\,891\,630\,440\,448\,z^{11/2}-948\,924\,579\,840\,z^5-26\,240\,274\,923\,520\,z^{9/2}+5\,926\,412\,943\,360\,z^4+10\,978\,275\,409\,920\,z^{7/2}-32\,154\,071\,040\,z^3+4\,850\,849\,203\,200\,z^{5/2}+1\,350\,744\,595\,200\,z^2-3\,931\,455\,528\,000\,z^{3/2}+711\,729\,018\,000\,z+8\,006\,951\,452\,500\sqrt{z}+e^{4\sqrt{z}}\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^7-132\,405\,788\,672\,z^{13/2}-32\,900\,120\,576\,z^6+3\,891\,630\,440\,448\,z^{11/2}+948\,924\,579\,840\,z^5-26\,240\,274\,923\,520\,z^{9/2}-5\,926\,412\,943\,360\,z^4+10\,978\,275\,409\,920\,z^{7/2}+32\,154\,071\,040\,z^3+4\,850\,849\,203\,200\,z^{5/2}-1\,350\,744\,595\,200\,z^2-3\,931\,455\,528\,000\,z^{3/2}-711\,729\,018\,000\,z+8\,006\,951\,452\,500\sqrt{z}-6\,005\,213\,589\,375\right)+6\,005\,213\,589\,375\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-530\,428\,461\,056\,z^7+15\,664\,215\,490\,560\,z^6-107\,691\,481\,497\,600\,z^5+58\,893\,778\,944\,000\,z^4+26\,502\,200\,524\,800\,z^3-5\,797\,356\,364\,800\,z^2+5\,693\,832\,144\,000\,z-6\,005\,213\,589\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-530\,428\,461\,056\,z^7+15\,664\,215\,490\,560\,z^6-107\,691\,481\,497\,600\,z^5+58\,893\,778\,944\,000\,z^4+26\,502\,200\,524\,800\,z^3-5\,797\,356\,364\,800\,z^2+5\,693\,832\,144\,000\,z-6\,005\,213\,589\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8op.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{5}{2},\frac{23}{4};-z\right) = \frac{1}{115\,448\,720\,916\,480\,z^{19/4}}\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^8+530\,428\,461\,056\,z^7+15\,664\,215\,490\,560\,z^6+107\,691\,481\,497\,600\,z^5+58\,893\,778\,944\,000\,z^4-26\,502\,200\,524\,800\,z^3-5\,797\,356\,364\,800\,z^2-5\,693\,832\,144\,000\,z-6\,005\,213\,589\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^7+33\,101\,447\,168\,z^6+972\,907\,610\,112\,z^5+6\,560\,068\,730\,880\,z^4+2\,744\,568\,852\,480\,z^3-1\,212\,712\,300\,800\,z^2-982\,863\,882\,000\,z-2\,001\,737\,863\,125\right)\cos\left(2\sqrt{z}\right)+\left(268\,435\,456\,z^7+32\,900\,120\,576\,z^6+948\,924\,579\,840\,z^5+5\,926\,412\,943\,360\,z^4+32\,154\,071\,040\,z^3+1\,350\,744\,595\,200\,z^2-711\,729\,018\,000\,z+6\,005\,213\,589\,375\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{13}{4}$, $b_1 = \frac{7}{2}$

07.22.03.a8oq.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{20\,380\,593\,618\sqrt{2}\,z^{5/4}}\left(\left(-16z\left(262\,144z^4+16\,973\,824z^3+400\,963\,584z^2+3\,266\,516\,736z+3\,298\,467\,249\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$12\sqrt{z}\left(524\,288z^4+34\,406\,400z^3+832\,405\,504z^2+7\,603\,235\,472z+38\,973\,609\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(4\,194\,304z^5+274\,726\,912z^4+6\,623\,232\,000z^3+57\,355\,812\,864z^2+37\,792\,591\,200z-584\,604\,145\,125\right)$$
$$\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8or.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{23}{4};-z\right)=$$
$$-\frac{1}{20\,380\,593\,618\sqrt{2}\,z^{5/4}}\left(\left(16z\left(262\,144z^4-16\,973\,824z^3+400\,963\,584z^2-3\,266\,516\,736z+3\,298\,467\,249\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$12\sqrt{z}\left(524\,288z^4-34\,406\,400z^3+832\,405\,504z^2-7\,603\,235\,472z+38\,973\,609\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(4\,194\,304z^5-274\,726\,912z^4+6\,623\,232\,000z^3-57\,355\,812\,864z^2+37\,792\,591\,200z+584\,604\,145\,125\right)$$
$$\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8os.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{21}{4};z\right)=\frac{5\left(\left(64z^2+3780z+2511\right)\sinh\left(2\sqrt{z}\right)-54\sqrt{z}\,(16z+93)\cosh\left(2\sqrt{z}\right)\right)}{3808\,z^{5/2}}$$

07.22.03.a8ot.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{21}{4};-z\right)=\frac{5\left(54\sqrt{z}\,(16z-93)\cos\left(2\sqrt{z}\right)+\left(64z^2-3780z+2511\right)\sin\left(2\sqrt{z}\right)\right)}{3808\,z^{5/2}}$$

07.22.03.a8ou.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{4\,430\,563\,830\sqrt{2}\,z^{5/4}}\left(\left(-8z\left(262\,144z^4+12\,075\,008z^3+220\,932\,096z^2+1\,455\,753\,600z+663\,886\,755\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$12\sqrt{z}\left(262\,144z^4+12\,304\,384z^3+231\,884\,800z^2+1\,668\,616\,320z+5\,905\,092\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(2\,097\,152z^5+98\,172\,928z^4+1\,841\,971\,200z^3+13\,073\,034\,240z^2+11\,402\,937\,000z-88\,576\,385\,625\right)$$
$$\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8ov.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{19}{4};-z\right)=$$
$$-\frac{1}{4\,430\,563\,830\sqrt{2}\,z^{5/4}}\left(\left(8z\left(262\,144z^4-12\,075\,008z^3+220\,932\,096z^2-1\,455\,753\,600z+663\,886\,755\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$12\sqrt{z}\left(262\,144z^4-12\,304\,384z^3+231\,884\,800z^2-1\,668\,616\,320z+5\,905\,092\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(2\,097\,152z^5-98\,172\,928z^4+1\,841\,971\,200z^3-13\,073\,034\,240z^2+11\,402\,937\,000z+88\,576\,385\,625\right)$$
$$\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8ow.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{17}{4};z\right)=-\frac{15\left(2\sqrt{z}\,(8z+81)\cosh\left(2\sqrt{z}\right)-(116z+81)\sinh\left(2\sqrt{z}\right)\right)}{544\,z^{5/2}}$$

07.22.03.a8ox.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{17}{4};-z\right)=\frac{15\left(2\sqrt{z}\,(8z-81)\cos\left(2\sqrt{z}\right)+(81-116z)\sin\left(2\sqrt{z}\right)\right)}{544\,z^{5/2}}$$

07.22.03.a8oy.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{699\,562\,710\sqrt{2}\,z^{5/4}}\left(\left(-16z\left(65\,536z^4+1\,794\,048z^3+23\,314\,176z^2+117\,399\,744z+4\,185\,405\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$12\sqrt{z}\left(131\,072z^4+3\,702\,784z^3+49\,961\,472z^2+281\,756\,160z+610\,871\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left(1\,048\,576z^5+29\,491\,200z^4+395\,587\,584z^3+2\,189\,583\,360z^2+1\,954\,789\,200z-9\,163\,074\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8oz.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{15}{4};-z\right)=$$
$$-\frac{1}{699\,562\,710\sqrt{2}\,z^{5/4}}\left(\left(16z\left(65\,536z^4-1\,794\,048z^3+23\,314\,176z^2-117\,399\,744z+4\,185\,405\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$12\sqrt{z}\left(131\,072z^4-3\,702\,784z^3+49\,961\,472z^2-281\,756\,160z+610\,871\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,048\,576\right.$$
$$\left.\left.z^5-29\,491\,200z^4+395\,587\,584z^3-2\,189\,583\,360z^2+1\,954\,789\,200z+9\,163\,074\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8p0.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{13}{4};z\right)=\frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.a8p1.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{13}{4};-z\right)=-\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.a8p2.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{46\,637\,514\sqrt{2}\,z^{5/4}}\left(\left(-8z\left(65\,536z^4+569\,344z^3+4\,484\,352z^2+15\,658\,416z-4\,328\,919\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(65\,536z^4+626\,688z^3+5\,079\,296z^2+20\,852\,304z+24\,434\,865\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(524\,288z^5+4\,947\,968z^4+39\,806\,976z^3+158\,237\,568z^2+121\,010\,760z-366\,522\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8p3.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{11}{4};-z\right)=$$
$$-\frac{1}{46\,637\,514\sqrt{2}\,z^{5/4}}\left(\left(8z\left(65\,536z^4-569\,344z^3+4\,484\,352z^2-15\,658\,416z-4\,328\,919\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(65\,536z^4-626\,688z^3+5\,079\,296z^2-20\,852\,304z+24\,434\,865\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(524\,288z^5-4\,947\,968z^4+39\,806\,976z^3-158\,237\,568z^2+121\,010\,760z+366\,522\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8p4.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{9}{4};z\right)=\frac{1}{290\,727\,360\,z^{5/2}}$$
$$\left(e^{-2\sqrt{z}}\left(1\,048\,576\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{23/4}-1\,048\,576\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{23/4}+1\,048\,576\,e^{4\sqrt{z}}z^{11/2}+\right.\right.$$
$$1\,048\,576z^{11/2}+262\,144\,e^{4\sqrt{z}}z^5-262\,144z^5+196\,608\,e^{4\sqrt{z}}z^{9/2}+196\,608z^{9/2}+245\,760\,e^{4\sqrt{z}}z^4-$$
$$245\,760z^4+430\,080\,e^{4\sqrt{z}}z^{7/2}+430\,080z^{7/2}+967\,680\,e^{4\sqrt{z}}z^3-967\,680z^3+2\,661\,120\,e^{4\sqrt{z}}z^{5/2}+$$
$$\left.\left.2\,661\,120z^{5/2}+8\,648\,640\,e^{4\sqrt{z}}z^2-8\,648\,640z^2+32\,432\,400\,e^{4\sqrt{z}}z^{3/2}+32\,432\,400z^{3/2}+137\,837\,700\,e^{4\sqrt{z}}z-\right.\right.$$
$$\left.\left.137\,837\,700z-231\,080\,850\,e^{4\sqrt{z}}\sqrt{z}-231\,080\,850\sqrt{z}+115\,540\,425\,e^{4\sqrt{z}}-115\,540\,425\right)\right)$$

07.22.03.a8p5.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{9}{4};-z\right)=\frac{1}{145\,363\,680\,z^{5/2}}$$
$$\left(-2\,097\,152\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{23/4}-2\left(524\,288z^5-98\,304z^4+215\,040z^3-1\,330\,560z^2+16\,216\,200z+115\,540\,425\right)\right.$$
$$\left.\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-262\,144z^5+245\,760z^4-967\,680z^3+8\,648\,640z^2-137\,837\,700z+115\,540\,425\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8p6.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{7}{4};z\right)=\frac{1}{4\,239\,774\sqrt{2}\,z^{5/4}}\left(\left(16z\left(16\,384z^4-163\,840z^3-314\,112z^2-660\,096z+355\,437\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(32\,768z^4-299\,008z^3-866\,560z^2-2\,139\,024z-1\,163\,565\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-262\,144z^5+2\,424\,832z^4+6\,733\,824z^3+16\,121\,088z^2+8\,760\,960z-17\,453\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8p7.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{1}{4\,239\,774\sqrt{2}\, z^{5/4}}\left(\left(16 z \left(16\,384 z^4 + 163\,840 z^3 - 314\,112 z^2 + 660\,096 z + 355\,437\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\right.\right. \left(32\,768 z^4 + 299\,008 z^3 - 866\,560 z^2 + 2\,139\,024 z - 1\,163\,565\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left.\left.\left(262\,144 z^5 + 2\,424\,832 z^4 - 6\,733\,824 z^3 + 16\,121\,088 z^2 - 8\,760\,960 z - 17\,453\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8p8.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{7}{2}, -\frac{5}{4}; z\right) = \frac{1}{32\,303\,040 z^{5/2}}\left(e^{-2\sqrt{z}}\left(-262\,144 e^{4\sqrt{z}} z^{11/2} - 262\,144 z^{11/2} - 65\,536 e^{4\sqrt{z}} z^5 + 65\,536 z^5 - 16\,384 e^{2\sqrt{z}} \sqrt{2\pi}\,(16 z - 299)\right.\right. \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{19/4} + 16\,384 e^{2\sqrt{z}} \sqrt{2\pi}\,(16 z - 299) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{19/4} + 4\,849\,664 e^{4\sqrt{z}} z^{9/2} + 4\,849\,664 z^{9/2} + 1\,163\,264 e^{4\sqrt{z}} z^4 - 1\,163\,264 z^4 + 811\,008 e^{4\sqrt{z}} z^{7/2} + 811\,008 z^{7/2} + 906\,240 e^{4\sqrt{z}} z^3 - 906\,240 z^3 + 1\,344\,000 e^{4\sqrt{z}} z^{5/2} + 1\,344\,000 z^{5/2} + 2\,358\,720 e^{4\sqrt{z}} z^2 - 2\,358\,720 z^2 + 4\,324\,320 e^{4\sqrt{z}} z^{3/2} + 4\,324\,320 z^{3/2} + 5\,945\,940 e^{4\sqrt{z}} z - 5\,945\,940 z - 12\,162\,150 e^{4\sqrt{z}} \sqrt{z} - 12\,162\,150 \sqrt{z} + 6\,081\,075 e^{4\sqrt{z}} - \left.\left.6\,081\,075\right)\right) $$

07.22.03.a8p9.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{7}{2}, -\frac{5}{4}; -z\right) = \frac{1}{16\,151\,520 z^{5/2}}\left(32\,768\sqrt{\pi}\,(16 z + 299) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{19/4} + 2\left(131\,072 z^5 + 2\,424\,832 z^4 - 405\,504 z^3 + 672\,000 z^2 - 2\,162\,160 z - 6\,081\,075\right) \cos\left(2\sqrt{z}\right)\sqrt{z} + \left(65\,536 z^5 + 1\,163\,264 z^4 - 906\,240 z^3 + 2\,358\,720 z^2 - 5\,945\,940 z + 6\,081\,075\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a8pa.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{7}{2}, -\frac{3}{4}; z\right) = \frac{1}{1\,817\,046\sqrt{2}\, z^{5/4}}\left(\left(-8 z \left(16\,384 z^4 - 470\,016 z^3 + 1\,522\,944 z^2 + 287\,136 z - 392\,661\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\right.\right. \left(16\,384 z^4 - 455\,680 z^3 + 1\,135\,872 z^2 + 1\,033\,056 z + 205\,335\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left.\left.\left(131\,072 z^5 - 3\,661\,824 z^4 + 9\,492\,480 z^3 + 8\,128\,512 z^2 + 2\,400\,840 z - 3\,080\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8pb.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{3}{4};-z\right)=$$
$$-\frac{1}{1\,817\,046\sqrt{2}\,z^{5/4}}\left(\left(8z\left(16\,384z^4+470\,016z^3+1\,522\,944z^2-287\,136z-392\,661\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\right.\right.$$
$$\left(16\,384z^4+455\,680z^3+1\,135\,872z^2-1\,033\,056z+205\,335\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(131\,072z^5+3\,661\,824z^4+9\,492\,480z^3-8\,128\,512z^2+2\,400\,840z+3\,080\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8pc.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{6\,460\,608z^{5/2}}\left(e^{-2\sqrt{z}}\left(32\,768e^{4\sqrt{z}}z^{11/2}+32\,768z^{11/2}+8192e^{4\sqrt{z}}z^5-8192z^5-1\,218\,560e^{4\sqrt{z}}z^{9/2}-1\,218\,560z^{9/2}-\right.\right.$$
$$298\,496e^{4\sqrt{z}}z^4+298\,496z^4+128e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-9568z+51\,129\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}-128e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left(256z^2-9568z+51\,129\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+6\,328\,320e^{4\sqrt{z}}z^{7/2}+6\,328\,320z^{7/2}+1\,379\,328e^{4\sqrt{z}}z^3-$$
$$1\,379\,328z^3+807\,936e^{4\sqrt{z}}z^{5/2}+807\,936z^{5/2}+673\,920e^{4\sqrt{z}}z^2-673\,920z^2+589\,680e^{4\sqrt{z}}z^{3/2}+$$
$$\left.589\,680z^{3/2}+245\,700e^{4\sqrt{z}}z-245\,700z-810\,810e^{4\sqrt{z}}\sqrt{z}-810\,810\sqrt{z}+405\,405e^{4\sqrt{z}}-405\,405\right)\Big)$$

07.22.03.a8pd.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},-\frac{1}{4};-z\right)=\frac{1}{3\,230\,304z^{5/2}}\left(-256\sqrt{\pi}\left(256z^2+9568z+51\,129\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}-\right.$$
$$2\left(16\,384z^5+609\,280z^4+3\,164\,160z^3-403\,968z^2+294\,840z+405\,405\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-$$
$$\left.\left(8192z^5+298\,496z^4+1\,379\,328z^3-673\,920z^2+245\,700z-405\,405\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8pe.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{1}{4};z\right)=\frac{1}{3\,028\,410\sqrt{2}\,z^{5/4}}\left(\left(16z\left(4096z^4-194\,048z^3+1\,658\,064z^2-2\,145\,600z+366\,705\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(8192z^4-380\,928z^3+2\,988\,640z^2-1\,908\,960z-78\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-65\,536z^5+3\,055\,616z^4-24\,264\,960z^3+17\,291\,520z^2+1\,544\,400z-1\,184\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8pf.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{3\,028\,410\sqrt{2}\,z^{5/4}}\left(\left(16z\left(4096z^4+194\,048z^3+1\,658\,064z^2+2\,145\,600z+366\,705\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\right.\right.$$
$$\left(8192z^4+380\,928z^3+2\,988\,640z^2+1\,908\,960z-78\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(65\,536z^5+3\,055\,616z^4+24\,264\,960z^3+17\,291\,520z^2-1\,544\,400z-1\,184\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8pg.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{19\,381\,824z^{5/2}}\left(e^{-2\sqrt{z}}\left(-8192e^{4\sqrt{z}}z^{11/2}-8192z^{11/2}-2048e^{4\sqrt{z}}z^5+2048z^5+457\,728e^{4\sqrt{z}}z^{9/2}+457\,728z^{9/2}+\right.\right.$$
$$112\,896e^{4\sqrt{z}}z^4-112\,896z^4-4\,825\,632e^{4\sqrt{z}}z^{7/2}-4\,825\,632z^{7/2}-1\,127\,016e^{4\sqrt{z}}z^3+$$
$$1\,127\,016z^3+2e^{2\sqrt{z}}\sqrt{2\pi}\left(-4096z^3+229\,632z^2-2\,454\,192z+3\,834\,675\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+$$
$$2e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-229\,632z^2+2\,454\,192z-3\,834\,675\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+$$
$$6\,916\,608e^{4\sqrt{z}}z^{5/2}+6\,916\,608z^{5/2}+1\,123\,200e^{4\sqrt{z}}z^2-1\,123\,200z^2+336\,960e^{4\sqrt{z}}z^{3/2}+$$
$$\left.\left.336\,960z^{3/2}-21\,060e^{4\sqrt{z}}z+21\,060z-221\,130e^{4\sqrt{z}}\sqrt{z}-221\,130\sqrt{z}+110\,565e^{4\sqrt{z}}-110\,565\right)\right)$$

07.22.03.a8ph.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{3}{4};-z\right)=\frac{1}{9\,690\,912z^{5/2}}\left(4\sqrt{\pi}\left(4096z^3+229\,632z^2+2\,454\,192z+3\,834\,675\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+\right.$$
$$2\left(4096z^5+228\,864z^4+2\,412\,816z^3+3\,458\,304z^2-168\,480z-110\,565\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left.\left(2048z^5+112\,896z^4+1\,127\,016z^3+1\,123\,200z^2+21\,060z+110\,565\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8pi.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{21\,198\,870\sqrt{2}\,z^{5/4}}\left(\left(8z\left(4096z^4-270\,592z^3+3\,753\,456z^2-10\,651\,851z+5\,318\,145\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\right.\right.$$
$$\left(4096z^4-267\,008z^3+3\,522\,736z^2-7\,740\,285z+61\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-32\,768z^5+2\,140\,160z^4-28\,436\,352z^3+64\,726\,200z^2-2\,457\,000z+921\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8pj.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{5}{4};-z\right)=$$
$$\frac{1}{21\,198\,870\sqrt{2}\,z^{5/4}}\left(\left(8z\left(4096z^4+270\,592z^3+3\,753\,456z^2+10\,651\,851z+5\,318\,145\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\right.\right.$$
$$\sqrt{z}\left(4096z^4+267\,008z^3+3\,522\,736z^2+7\,740\,285z+61\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(32\,768z^5+2\,140\,160z^4+28\,436\,352z^3+64\,726\,200z^2+2\,457\,000z+921\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8pk.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{7}{4};z\right)=\frac{1}{826\,957\,824\,z^{5/2}}$$
$$\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536z^4+4\,898\,816z^3-78\,534\,144z^2+245\,419\,200z-42\,181\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+\right.\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-4\,898\,816z^3+78\,534\,144z^2-245\,419\,200z+42\,181\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-$$
$$4\left(16\,384z^{11/2}-4096z^5-1\,221\,632z^{9/2}+302\,336z^4+19\,410\,624z^{7/2}-4\,636\,464z^3-\right.$$
$$58\,134\,252z^{5/2}+11\,732\,175z^2+4\,492\,800z^{3/2}+1\,572\,480z-1\,010\,880\sqrt{z}+$$
$$\left.\left.e^{4\sqrt{z}}\left(16\,384z^{11/2}+4096z^5-1\,221\,632z^{9/2}-302\,336z^4+19\,410\,624z^{7/2}+4\,636\,464z^3-\right.\right.\right.$$
$$\left.\left.\left.58\,134\,252z^{5/2}-11\,732\,175z^2+4\,492\,800z^{3/2}-1\,572\,480z-1\,010\,880\sqrt{z}+505\,440\right)-505\,440\right)\right)\right)$$

07.22.03.a8pl.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{7}{4};-z\right)=$$
$$\frac{1}{206\,739\,456\,z^{5/2}}\left(\sqrt{\pi}\left(65\,536z^4+4\,898\,816z^3+78\,534\,144z^2+245\,419\,200z+42\,181\,425\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+\right.$$
$$2\left(4\sqrt{z}\left(4096z^5+305\,408z^4+4\,852\,656z^3+14\,533\,563z^2+1\,123\,200z+252\,720\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(4096z^5+302\,336z^4+4\,636\,464z^3+11\,732\,175z^2-1\,572\,480z-505\,440\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8pm.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{305\,263\,728\sqrt{2}\,z^{5/4}}\left(\left(2z\left(65\,536z^4-5\,554\,176z^3+106\,670\,592z^2-468\,506\,304z+339\,634\,701\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\sqrt{z}\left(65\,536z^4-5\,496\,832z^3+101\,907\,456z^2-382\,941\,216z+55\,515\,915\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\left(65\,536z^5-5\,505\,024z^4+102\,569\,472z^3-393\,773\,184z^2+78\,095\,745z+6\,633\,900\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8pn.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{9}{4};-z\right)= \frac{1}{305\,263\,728\sqrt{2}\,z^{5/4}}\left(\left(2z\left(65\,536z^4+5\,554\,176z^3+106\,670\,592z^2+468\,506\,304z+339\,634\,701\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 3\sqrt{z}\left(65\,536z^4+5\,496\,832z^3+101\,907\,456z^2+382\,941\,216z+55\,515\,915\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ 2\left(65\,536z^5+5\,505\,024z^4+102\,569\,472z^3+393\,773\,184z^2+78\,095\,745z-6\,633\,900\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8po.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{11}{4};z\right)= \frac{1}{37\,803\,786\,240\,z^{5/2}} \left(e^{-2\sqrt{z}}\left(-4\left(262\,144z^{11/2}-65\,536z^5-24\,444\,928z^{9/2}+6\,062\,080z^4+519\,075\,840z^{7/2}-125\,391\,360z^3- 2\,365\,405\,440z^{5/2}+511\,280\,640z^2+544\,155\,300z^{3/2}+48\,692\,475z+107\,827\,200\sqrt{z}+e^{4\sqrt{z}} \left(262\,144z^{11/2}+65\,536z^5-24\,444\,928z^{9/2}-6\,062\,080z^4+519\,075\,840z^{7/2}+125\,391\,360z^3-2\,365\,405\,440 z^{5/2}-511\,280\,640z^2+544\,155\,300z^{3/2}-48\,692\,475z+107\,827\,200\sqrt{z}-53\,913\,600\right)+53\,913\,600\right)- e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(1\,048\,576z^5-97\,976\,320z^4+2\,094\,243\,840z^3-9\,816\,768\,000z^2+3\,374\,514\,000z+885\,809\,925\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4} \left(1\,048\,576z^5-97\,976\,320z^4+2\,094\,243\,840z^3-9\,816\,768\,000z^2+3\,374\,514\,000z+885\,809\,925\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8pp.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{11}{4};-z\right)= \frac{1}{9\,450\,946\,560\,z^{5/2}} \left(\sqrt{\pi}\,z^{3/4}\left(1\,048\,576z^5+97\,976\,320z^4+2\,094\,243\,840z^3+9\,816\,768\,000z^2+3\,374\,514\,000z-885\,809\,925\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ 2\left(4\sqrt{z}\left(65\,536z^5+6\,111\,232z^4+129\,768\,960z^3+591\,351\,360z^2+136\,038\,825z-26\,956\,800\right)\cos\left(2\sqrt{z}\right)+ \left(65\,536z^5+6\,062\,080z^4+125\,391\,360z^3+511\,280\,640z^2-48\,692\,475z+53\,913\,600\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8pq.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{13}{4};z\right)= \frac{1}{11\,939\,203\,584\sqrt{2}\,z^{7/4}} \left(\left(2\sqrt{z}\left(1\,048\,576z^5-108\,462\,080z^4+2\,661\,998\,592z^3-15\,838\,631\,424z^2+14\,643\,489\,168z+885\,809\,925\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 3\left(1\,048\,576z^5-107\,544\,576z^4+2\,568\,642\,560z^3-13\,662\,663\,168z^2+4\,079\,995\,920z+1\,476\,349\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(1\,048\,576z^5-107\,675\,648z^4+2\,581\,684\,224z^3- 13\,945\,738\,752z^2+5\,083\,238\,160z+2\,093\,916\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8pr.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{13}{4};-z\right)=\frac{1}{11\,939\,203\,584\sqrt{2}\,z^{7/4}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576z^5+108\,462\,080z^4+2\,661\,998\,592z^3+15\,838\,631\,424z^2+14\,643\,489\,168z-885\,809\,925\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(1\,048\,576z^5+107\,544\,576z^4+2\,568\,642\,560z^3+13\,662\,663\,168z^2+4\,079\,995\,920z-1\,476\,349\,875\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576z^5+107\,675\,648z^4+2\,581\,684\,224z^3+\right.$$
$$\left.\left.13\,945\,738\,752z^2+5\,083\,238\,160z-2\,093\,916\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8ps.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{1\,319\,695\,810\,560z^{11/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(4\,194\,304z^{11/2}-1\,048\,576z^5-469\,499\,904z^{9/2}+116\,588\,544z^4+\right.\right.\right.$$
$$12\,479\,004\,672z^{7/2}-3\,035\,013\,120z^3-76\,360\,366\,080z^{5/2}+17\,087\,915\,520z^2+29\,859\,036\,480z^{3/2}+$$
$$14\,405\,040z+16\,602\,966\,900\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^{11/2}+1\,048\,576z^5-469\,499\,904z^{9/2}-\right.$$
$$\left.116\,588\,544z^4+12\,479\,004\,672z^{7/2}+3\,035\,013\,120z^3-76\,360\,366\,080z^{5/2}-17\,087\,915\,520z^2+$$
$$\left.29\,859\,036\,480z^{3/2}-14\,405\,040z+16\,602\,966\,900\sqrt{z}-2\,100\,813\,975\right)+2\,100\,813\,975\Big)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-1\,881\,145\,344z^5+50\,261\,852\,160z^4-314\,136\,576\,000z^3+\right.$$
$$\left.161\,976\,672\,000z^2+85\,037\,752\,800z+18\,602\,008\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-1\,881\,145\,344z^5+50\,261\,852\,160z^4-314\,136\,576\,000z^3+\right.$$
$$\left.\left.161\,976\,672\,000z^2+85\,037\,752\,800z+18\,602\,008\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Bigg)$$

07.22.03.a8pt.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{329\,923\,952\,640z^{11/4}}\left(\sqrt{\pi}\left(16\,777\,216z^6+1\,881\,145\,344z^5+50\,261\,852\,160z^4+314\,136\,576\,000z^3+\right.\right.$$
$$\left.161\,976\,672\,000z^2-85\,037\,752\,800z+18\,602\,008\,425\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576z^5+\right.\right.$$
$$\left.117\,374\,976z^4+3\,119\,751\,168z^3+19\,090\,091\,520z^2+7\,464\,759\,120z-4\,150\,741\,725\right)\cos\left(2\sqrt{z}\right)+$$
$$\left.\left.\left(1\,048\,576z^5+116\,588\,544z^4+3\,035\,013\,120z^3+17\,087\,915\,520z^2-14\,405\,040z+2\,100\,813\,975\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8pu.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{7}{2}, \frac{17}{4}; z\right) = \left(\left(2\sqrt{z}\,\left(16\,777\,216 z^6 - 2\,048\,917\,504 z^5 + 61\,227\,073\,536 z^4 - 459\,778\,277\,376 z^3 + 511\,933\,314\,816 z^2 + 85\,037\,752\,800 z + 7\,972\,289\,325\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,777\,216 z^6 - 2\,034\,237\,440 z^5 + 59\,459\,043\,328 z^4 - 409\,120\,014\,336 z^3 + 187\,813\,866\,240 z^2 + 132\,280\,948\,800 z + 13\,287\,148\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,777\,216 z^6 - 2\,036\,334\,592 z^5 + 59\,706\,900\,480 z^4 - 415\,824\,297\,984 z^3 + 221\,597\,925\,120 z^2 + 158\,075\,517\,600 z + 39\,861\,446\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(382\,054\,514\,688\sqrt{2}\, z^{11/4}\right) $$

07.22.03.a8pv.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{7}{2}, \frac{17}{4}; -z\right) = \left(\left(2\sqrt{z}\,\left(16\,777\,216 z^6 + 2\,048\,917\,504 z^5 + 61\,227\,073\,536 z^4 + 459\,778\,277\,376 z^3 + 511\,933\,314\,816 z^2 - 85\,037\,752\,800 z + 7\,972\,289\,325\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,777\,216 z^6 + 2\,034\,237\,440 z^5 + 59\,459\,043\,328 z^4 + 409\,120\,014\,336 z^3 + 187\,813\,866\,240 z^2 - 132\,280\,948\,800 z + 13\,287\,148\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216 z^6 + 2\,036\,334\,592 z^5 + 59\,706\,900\,480 z^4 + 415\,824\,297\,984 z^3 + 221\,597\,925\,120 z^2 - 158\,075\,517\,600 z + 39\,861\,446\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(382\,054\,514\,688\sqrt{2}\, z^{11/4}\right) $$

07.22.03.a8pw.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{7}{2}, \frac{19}{4}; z\right) = \frac{1}{39\,414\,914\,875\,392\, z^{15/4}} \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(67\,108\,864 z^{13/2} - 16\,777\,216 z^6 - 8\,766\,095\,360 z^{11/2} + 2\,178\,940\,928 z^5 + 279\,847\,895\,040 z^{9/2} - 68\,371\,021\,824 z^4 - 2\,149\,611\,405\,312 z^{7/2} + 491\,318\,231\,040 z^3 + 1\,194\,719\,984\,640 z^{5/2} - 58\,732\,128\,000 z^2 + 1\,056\,767\,886\,720 z^{3/2} - 10\,188\,491\,040 z + 272\,829\,456\,900\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 - 8\,766\,095\,360 z^{11/2} - 2\,178\,940\,928 z^5 + 279\,847\,895\,040 z^{9/2} + 68\,371\,021\,824 z^4 - 2\,149\,611\,405\,312 z^{7/2} - 491\,318\,231\,040 z^3 + 1\,194\,719\,984\,640 z^{5/2} + 58\,732\,128\,000 z^2 + 1\,056\,767\,886\,720 z^{3/2} + 10\,188\,491\,040 z + 272\,829\,456\,900\sqrt{z} - 204\,622\,092\,675\right) + 204\,622\,092\,675\right) - e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456 z^7 - 35\,114\,713\,088 z^6 + 1\,125\,865\,488\,384 z^5 - 8\,795\,824\,128\,000 z^4 + 6\,047\,129\,088\,000 z^3 + 4\,762\,114\,156\,800 z^2 + 2\,083\,424\,943\,600 z - 204\,622\,092\,675\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456 z^7 - 35\,114\,713\,088 z^6 + 1\,125\,865\,488\,384 z^5 - 8\,795\,824\,128\,000 z^4 + 6\,047\,129\,088\,000 z^3 + 4\,762\,114\,156\,800 z^2 + 2\,083\,424\,943\,600 z - 204\,622\,092\,675\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8px.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{19}{4};-z\right)=$$
$$\frac{1}{9\,853\,728\,718\,848\,z^{15/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+35\,114\,713\,088\,z^6+1\,125\,865\,488\,384\,z^5+8\,795\,824\,128\,000\,z^4+\right.\right.$$
$$\left.6\,047\,129\,088\,000\,z^3-4\,762\,114\,156\,800\,z^2+2\,083\,424\,943\,600\,z+204\,622\,092\,675\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+2\,191\,523\,840\,z^5+69\,961\,973\,760\,z^4+537\,402\,851\,328\,z^3+298\,679\,996\,160\,z^2-\right.\right.$$
$$264\,191\,971\,680\,z+68\,207\,364\,225\big)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6+2\,178\,940\,928\,z^5+68\,371\,021\,824\,z^4+\right.$$
$$\left.\left.\left.491\,318\,231\,040\,z^3+58\,732\,128\,000\,z^2-10\,188\,491\,040\,z-204\,622\,092\,675\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8py.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{21}{4};z\right)=$$
$$\left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-37\,799\,067\,648\,z^6+1\,331\,407\,355\,904\,z^5-12\,075\,599\,462\,400\,z^4+15\,660\,152\,893\,440\,z^3+\right.\right.\right.$$
$$\left.4\,762\,114\,156\,800\,z^2+1\,233\,047\,415\,600\,z-310\,919\,283\,675\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\left(268\,435\,456\,z^7-37\,564\,186\,624\,z^6+1\,298\,729\,533\,440\,z^5-10\,964\,671\,856\,640\,z^4+6\,831\,536\,025\,600\,z^3+\right.$$
$$\left.7\,029\,787\,564\,800\,z^2+2\,423\,575\,954\,800\,z-518\,198\,806\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7-37\,597\,741\,056\,z^6+1\,303\,322\,296\,320\,z^5-11\,113\,443\,164\,160\,z^4+\right.$$
$$\left.\left.7\,806\,581\,452\,800\,z^3+7\,826\,697\,964\,800\,z^2+3\,954\,255\,505\,200\,z-1\,554\,596\,418\,375\right)$$
$$\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(183\,386\,167\,050\,240\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a8pz.01

$${}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{21}{4};-z\right)=$$
$$\left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+37\,799\,067\,648\,z^6+1\,331\,407\,355\,904\,z^5+12\,075\,599\,462\,400\,z^4+15\,660\,152\,893\,440\,z^3-\right.\right.\right.$$
$$\left.4\,762\,114\,156\,800\,z^2+1\,233\,047\,415\,600\,z+310\,919\,283\,675\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\left(268\,435\,456\,z^7+37\,564\,186\,624\,z^6+1\,298\,729\,533\,440\,z^5+10\,964\,671\,856\,640\,z^4+6\,831\,536\,025\,600\,z^3-\right.$$
$$\left.7\,029\,787\,564\,800\,z^2+2\,423\,575\,954\,800\,z+518\,198\,806\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+37\,597\,741\,056\,z^6+1\,303\,322\,296\,320\,z^5+11\,113\,443\,164\,160\,z^4+\right.$$
$$\left.\left.7\,806\,581\,452\,800\,z^3-7\,826\,697\,964\,800\,z^2+3\,954\,255\,505\,200\,z+1\,554\,596\,418\,375\right)$$
$$\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(183\,386\,167\,050\,240\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a8q0.01

$$
{}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{23}{4};z\right)=
$$

$$
\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2}-268\,435\,456\,z^{7}-160\,323\,076\,096\,z^{13/2}+39\,879\,442\,432\,z^{6}+5\,974\,958\,014\,464\,z^{11/2}-\right.\right.\right.
$$

$$
1\,464\,521\,981\,952\,z^{5}-55\,230\,524\,030\,976\,z^{9/2}+12\,805\,270\,732\,800\,z^{4}+
$$

$$
39\,910\,699\,745\,280\,z^{7/2}-3\,259\,033\,989\,120\,z^{3}+47\,721\,736\,258\,560\,z^{5/2}-4\,031\,514\,789\,120\,z^{2}+
$$

$$
25\,568\,017\,675\,200\,z^{3/2}+9\,821\,860\,448\,400\,z-20\,462\,209\,267\,500\sqrt{z}+e^{4\sqrt{z}}
$$

$$
\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^{7}-160\,323\,076\,096\,z^{13/2}-39\,879\,442\,432\,z^{6}+5\,974\,958\,014\,464\,z^{11/2}+\right.
$$

$$
1\,464\,521\,981\,952\,z^{5}-55\,230\,524\,030\,976\,z^{9/2}-12\,805\,270\,732\,800\,z^{4}+39\,910\,699\,745\,280\,z^{7/2}+
$$

$$
3\,259\,033\,989\,120\,z^{3}+47\,721\,736\,258\,560\,z^{5/2}+4\,031\,514\,789\,120\,z^{2}+25\,568\,017\,675\,200\,z^{3/2}-
$$

$$
\left.9\,821\,860\,448\,400\,z-20\,462\,209\,267\,500\sqrt{z}+15\,346\,656\,950\,625\right)-15\,346\,656\,950\,625\Big)-
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-642\,097\,610\,752\,z^{7}+24\,018\,463\,752\,192\,z^{6}-225\,173\,097\,676\,800\,z^{5}+\right.
$$

$$
193\,508\,130\,816\,000\,z^{4}+203\,183\,537\,356\,800\,z^{3}+133\,339\,196\,390\,400\,z^{2}-
$$

$$
\left.26\,191\,627\,862\,400\,z+15\,346\,656\,950\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+
$$

$$
e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^{8}-642\,097\,610\,752\,z^{7}+24\,018\,463\,752\,192\,z^{6}-225\,173\,097\,676\,800\,z^{5}+\right.
$$

$$
193\,508\,130\,816\,000\,z^{4}+203\,183\,537\,356\,800\,z^{3}+133\,339\,196\,390\,400\,z^{2}-
$$

$$
\left.\left.\left.26\,191\,627\,862\,400\,z+15\,346\,656\,950\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)\Big/\left(1\,062\,128\,232\,431\,616\,z^{19/4}\right)
$$

07.22.03.a8q1.01

$$
{}_1F_2\left(-\frac{13}{4};\frac{7}{2},\frac{23}{4};-z\right)=\frac{1}{265\,532\,058\,107\,904\,z^{19/4}}
$$

$$
\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^{8}+642\,097\,610\,752\,z^{7}+24\,018\,463\,752\,192\,z^{6}+225\,173\,097\,676\,800\,z^{5}+193\,508\,130\,816\,000\,z^{4}-\right.\right.
$$

$$
\left.203\,183\,537\,356\,800\,z^{3}+133\,339\,196\,390\,400\,z^{2}+26\,191\,627\,862\,400\,z+15\,346\,656\,950\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+
$$

$$
2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^{7}+40\,080\,769\,024\,z^{6}+1\,493\,739\,503\,616\,z^{5}+13\,807\,631\,007\,744\,z^{4}+\right.\right.
$$

$$
9\,977\,674\,936\,320\,z^{3}-11\,930\,434\,064\,640\,z^{2}+6\,392\,004\,418\,800\,z+5\,115\,552\,316\,875\Big)\cos\left(2\sqrt{z}\right)+
$$

$$
\left(268\,435\,456\,z^{7}+39\,879\,442\,432\,z^{6}+1\,464\,521\,981\,952\,z^{5}+12\,805\,270\,732\,800\,z^{4}+3\,259\,033\,989\,120\,z^{3}-\right.
$$

$$
\left.\left.\left.4\,031\,514\,789\,120\,z^{2}-9\,821\,860\,448\,400\,z-15\,346\,656\,950\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)
$$

For fixed z and $a_1 = -\frac{13}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.a8q2.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{23}{4};z\right)=\frac{1}{314\,443\,444\,392\sqrt{2}\,z^{9/4}}$$
$$\left(\left(-4z\left(8\,388\,608z^5+638\,582\,784z^4+18\,323\,472\,384z^3+191\,557\,545\,984z^2+144\,174\,192\,624z-4\,326\,070\,673\,925\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(4\,194\,304z^5+322\,961\,408z^4+9\,447\,309\,312z^3+104\,294\,227\,968z^2-138\,572\,834\,400z-\right.$$
$$\left.7\,210\,117\,789\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(33\,554\,432z^6+2\,579\,496\,960z^5+75\,242\,668\,032z^4+\right.$$
$$\left.\left.\left.823\,816\,175\,616z^3+1\,436\,118\,465\,600z^2+11\,692\,082\,902\,500z+108\,151\,766\,848\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8q3.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{23}{4};-z\right)=$$
$$-\left(\left(4z\left(8\,388\,608z^5-638\,582\,784z^4+18\,323\,472\,384z^3-191\,557\,545\,984z^2+144\,174\,192\,624z+4\,326\,070\,673\,925\right)\right.\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(4\,194\,304z^5-322\,961\,408z^4+9\,447\,309\,312z^3-\right.$$
$$\left.104\,294\,227\,968z^2-138\,572\,834\,400z+7\,210\,117\,789\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(33\,554\,432z^6-2\,579\,496\,960z^5+75\,242\,668\,032z^4-823\,816\,175\,616z^3+1\,436\,118\,465\,600z^2-\right.$$
$$\left.\left.11\,692\,082\,902\,500z+108\,151\,766\,848\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(314\,443\,444\,392\sqrt{2}\,z^{9/4}\right)$$

07.22.03.a8q4.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{21}{4};z\right)=\frac{5\left(2\sqrt{z}\left(64z^2+5828z+16\,275\right)\cosh\left(2\sqrt{z}\right)-\left(2048z^2+27\,528z+16\,275\right)\sinh\left(2\sqrt{z}\right)\right)}{2176z^{7/2}}$$

07.22.03.a8q5.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{21}{4};-z\right)=-\frac{5\left(2\sqrt{z}\left(64z^2-5828z+16\,275\right)\cos\left(2\sqrt{z}\right)+\left(-2048z^2+27\,528z-16\,275\right)\sin\left(2\sqrt{z}\right)\right)}{2176z^{7/2}}$$

07.22.03.a8q6.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{19}{4};z\right)=\frac{1}{68\,357\,270\,520\sqrt{2}\,z^{9/4}}$$
$$\left(\left(-4z\left(4\,194\,304z^5+227\,278\,848z^4+5\,055\,676\,416z^3+42\,883\,061\,760z^2+27\,234\,325\,440z-584\,604\,145\,125\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(2\,097\,152z^5+115\,474\,432z^4+2\,630\,369\,280z^3+23\,834\,926\,080z^2+15\,746\,913\,000z-\right.$$
$$\left.974\,340\,241\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,777\,216z^6+921\,698\,304z^5+20\,921\,057\,280z^4+\right.$$
$$\left.\left.\left.187\,644\,764\,160z^3+260\,638\,560\,000z^2+1\,062\,916\,627\,500z+14\,615\,103\,628\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8q7.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{19}{4};-z\right)=\frac{1}{68\,357\,270\,520\sqrt{2}\,z^{9/4}}$$
$$\left(\left(-4z\left(4\,194\,304z^5-227\,278\,848z^4+5\,055\,676\,416z^3-42\,883\,061\,760z^2+27\,234\,325\,440z+584\,604\,145\,125\right)\right.\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(2\,097\,152z^5-115\,474\,432z^4+2\,630\,369\,280z^3-23\,834\,926\,080z^2+15\,746\,913\,000z+\right.$$
$$\left.974\,340\,241\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-16\,777\,216z^6+921\,698\,304z^5-20\,921\,057\,280z^4+\right.$$
$$\left.\left.\left.187\,644\,764\,160z^3-260\,638\,560\,000z^2+1\,062\,916\,627\,500z-14\,615\,103\,628\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8q8.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{17}{4};z\right)=-\frac{105\left(\left(32z^2+768z+465\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(148z+465\right)\cosh\left(2\sqrt{z}\right)\right)}{2176\,z^{7/2}}$$

07.22.03.a8q9.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{17}{4};-z\right)=\frac{105\left(2\sqrt{z}\,\left(148z-465\right)\cos\left(2\sqrt{z}\right)+\left(32z^2-768z+465\right)\sin\left(2\sqrt{z}\right)\right)}{2176\,z^{7/2}}$$

07.22.03.a8qa.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{15}{4};z\right)=\frac{1}{10\,793\,253\,240\sqrt{2}\,z^{9/4}}$$
$$\left(\left(-4z\left(2\,097\,152z^5+67\,633\,152z^4+1\,070\,014\,464z^3+6\,972\,198\,912z^2+2\,585\,429\,280z-53\,145\,831\,375\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\,\left(1\,048\,576z^5+34\,734\,080z^4+566\,145\,024z^3+4\,011\,033\,600z^2+5\,429\,970\,000z-88\,576\,385\,625\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(8\,388\,608z^6+276\,824\,064z^5+4\,491\,214\,848z^4+31\,390\,433\,280z^3+\right.$$
$$\left.\left.36\,489\,398\,400z^2+36\,652\,297\,500z+1\,328\,645\,784\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8qb.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{15}{4};-z\right)=\frac{1}{10\,793\,253\,240\sqrt{2}\,z^{9/4}}$$
$$\left(\left(-4z\left(2\,097\,152z^5-67\,633\,152z^4+1\,070\,014\,464z^3-6\,972\,198\,912z^2+2\,585\,429\,280z+53\,145\,831\,375\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\,\left(1\,048\,576z^5-34\,734\,080z^4+566\,145\,024z^3-4\,011\,033\,600z^2+5\,429\,970\,000z+88\,576\,385\,625\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-8\,388\,608z^6+276\,824\,064z^5-4\,491\,214\,848z^4+31\,390\,433\,280z^3-\right.$$
$$\left.\left.36\,489\,398\,400z^2+36\,652\,297\,500z-1\,328\,645\,784\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8qc.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{13}{4};z\right)=\frac{105\left(2\sqrt{z}\ (4z+15)\cosh\left(2\sqrt{z}\right)-3\,(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.a8qd.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{13}{4};-z\right)=\frac{105\left(2\sqrt{z}\ (4z-15)\cos\left(2\sqrt{z}\right)+3\,(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.a8qe.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{11}{4};z\right)=\frac{1}{719\,550\,216\sqrt{2}\ z^{9/4}}$$
$$\left(\left(-4z\left(1\,048\,576z^5+10\,813\,440z^4+103\,698\,432z^3+473\,677\,056z^2+24\,666\,768z-1\,832\,614\,875\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\ \left(524\,288z^5+5\,865\,472z^4+57\,354\,240z^3+293\,625\,216z^2+369\,237\,960z-3\,054\,358\,125\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(4\,194\,304z^6+46\,399\,488z^5+451\,362\,816z^4+2\,261\,025\,792z^3+\right.$$
$$\left.\left.\left.2\,159\,576\,640z^2-1\,466\,091\,900z+45\,815\,371\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8qf.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{11}{4};-z\right)=$$
$$-\frac{1}{719\,550\,216\sqrt{2}\ z^{9/4}}\left(\left(4z\left(1\,048\,576z^5-10\,813\,440z^4+103\,698\,432z^3-473\,677\,056z^2+24\,666\,768z+1\,832\,614\,875\right)\right.\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\ \left(524\,288z^5-5\,865\,472z^4+57\,354\,240z^3-293\,625\,216z^2+369\,237\,960z+3\,054\,358\,125\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(4\,194\,304z^6-46\,399\,488z^5+451\,362\,816z^4-2\,261\,025\,792z^3+\right.$$
$$\left.\left.\left.2\,159\,576\,640z^2+1\,466\,091\,900z+45\,815\,371\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8qg.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{9}{4};z\right)=\frac{1}{4\,485\,507\,840\,z^{7/2}}$$
$$\left(e^{-2\sqrt{z}}\left(8\,388\,608\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ \mathrm{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{27/4}-8\,388\,608\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ \mathrm{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{27/4}+8\,388\,608\,e^{4\sqrt{z}}\ z^{13/2}+\right.\right.$$
$$8\,388\,608\,z^{13/2}+2\,097\,152\,e^{4\sqrt{z}}\ z^6-2\,097\,152\,z^6+1\,572\,864\,e^{4\sqrt{z}}\ z^{11/2}+1\,572\,864\,z^{11/2}+1\,966\,080\,e^{4\sqrt{z}}\ z^5-$$
$$1\,966\,080\,z^5+3\,440\,640\,e^{4\sqrt{z}}\ z^{9/2}+3\,440\,640\,z^{9/2}+7\,741\,440\,e^{4\sqrt{z}}\ z^4-7\,741\,440\,z^4+21\,288\,960\,e^{4\sqrt{z}}\ z^{7/2}+$$
$$21\,288\,960\,z^{7/2}+69\,189\,120\,e^{4\sqrt{z}}\ z^3-69\,189\,120\,z^3+259\,459\,200\,e^{4\sqrt{z}}\ z^{5/2}+259\,459\,200\,z^{5/2}+$$
$$1\,102\,701\,600\,e^{4\sqrt{z}}\ z^2-1\,102\,701\,600\,z^2+5\,237\,832\,600\,e^{4\sqrt{z}}\ z^{3/2}+5\,237\,832\,600\,z^{3/2}-20\,335\,114\,800\,e^{4\sqrt{z}}\ z+$$
$$\left.\left.20\,335\,114\,800z+26\,574\,297\,750\,e^{4\sqrt{z}}\ \sqrt{z}\ +26\,574\,297\,750\sqrt{z}\ -13\,287\,148\,875\,e^{4\sqrt{z}}\ +13\,287\,148\,875\right)\right)$$

07.22.03.a8qh.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{2\,242\,753\,920\,z^{7/2}}\left(-16\,777\,216\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{27/4}-2\left(4\,194\,304\,z^6-786\,432\,z^5+1\,720\,320\,z^4-10\,644\,480\,z^3+\right.\right.$$
$$\left.129\,729\,600\,z^2-2\,618\,916\,300\,z+13\,287\,148\,875\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-2\,097\,152\,z^6+1\,966\,080\,z^5-\right.$$
$$\left.\left.7\,741\,440\,z^4+69\,189\,120\,z^3-1\,102\,701\,600\,z^2-20\,335\,114\,800\,z+13\,287\,148\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8qi.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{65\,413\,656\sqrt{2}\,z^{9/4}}\left(\left(4z\left(524\,288\,z^5-6\,094\,848\,z^4-15\,003\,648\,z^3-41\,760\,000\,z^2+11\,297\,232\,z+73\,304\,595\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$12\sqrt{z}\left(262\,144\,z^5-2\,818\,048\,z^4-9\,781\,248\,z^3-30\,226\,176\,z^2-24\,822\,720\,z+122\,174\,325\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-2\,097\,152\,z^6+22\,806\,528\,z^5+76\,234\,752\,z^4+229\,727\,232\,z^3+162\,077\,760\,z^2-209\,441\,700\,z+1\,832\,614\,875\right)$$
$$\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8qj.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{65\,413\,656\sqrt{2}\,z^{9/4}}\left(\left(4z\left(524\,288\,z^5+6\,094\,848\,z^4-15\,003\,648\,z^3+41\,760\,000\,z^2+11\,297\,232\,z-73\,304\,595\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$12\sqrt{z}\left(262\,144\,z^5+2\,818\,048\,z^4-9\,781\,248\,z^3+30\,226\,176\,z^2-24\,822\,720\,z-122\,174\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(2\,097\,152\,z^6+22\,806\,528\,z^5-76\,234\,752\,z^4+229\,727\,232\,z^3-162\,077\,760\,z^2-209\,441\,700\,z-1\,832\,614\,875\right)$$
$$\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8qk.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{498\,389\,760\,z^{7/2}}\left(e^{-2\sqrt{z}}\left(-2\,097\,152\,e^{4\sqrt{z}}\,z^{13/2}-2\,097\,152\,z^{13/2}-524\,288\,e^{4\sqrt{z}}\,z^6+524\,288\,z^6-131\,072\,e^{2\sqrt{z}}\right.\right.$$
$$\sqrt{2\pi}\,(16z-351)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4}+131\,072\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-351)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4}+$$
$$45\,613\,056\,e^{4\sqrt{z}}\,z^{11/2}+45\,613\,056\,z^{11/2}+11\,010\,048\,e^{4\sqrt{z}}\,z^5-11\,010\,048\,z^5+7\,766\,016\,e^{4\sqrt{z}}\,z^{9/2}+$$
$$7\,766\,016\,z^{9/2}+8\,847\,360\,e^{4\sqrt{z}}\,z^4-8\,847\,360\,z^4+13\,547\,520\,e^{4\sqrt{z}}\,z^{7/2}+13\,547\,520\,z^{7/2}+$$
$$25\,159\,680\,e^{4\sqrt{z}}\,z^3-25\,159\,680\,z^3+51\,891\,840\,e^{4\sqrt{z}}\,z^{5/2}+51\,891\,840\,z^{5/2}+103\,783\,680\,e^{4\sqrt{z}}\,z^2-$$
$$103\,783\,680\,z^2+113\,513\,400\,e^{4\sqrt{z}}\,z^{3/2}+113\,513\,400\,z^{3/2}-827\,026\,200\,e^{4\sqrt{z}}\,z+827\,026\,200\,z+$$
$$\left.1\,155\,404\,250\,e^{4\sqrt{z}}\,\sqrt{z}+1\,155\,404\,250\sqrt{z}-577\,702\,125\,e^{4\sqrt{z}}+577\,702\,125\right)\Bigg)$$

07.22.03.a8ql.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{249\,194\,880\,z^{7/2}}\left(262\,144\sqrt{\pi}\,(16z+351)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{23/4}+2\left(1\,048\,576z^6+22\,806\,528z^5-3\,883\,008z^4+\right.\right.$$
$$\left.6\,773\,760z^3-25\,945\,920z^2+56\,756\,700z-577\,702\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+$$
$$\left.\left(524\,288z^6+11\,010\,048z^5-8\,847\,360z^4+25\,159\,680z^3-103\,783\,680z^2-827\,026\,200z+577\,702\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8qm.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{28\,034\,424\sqrt{2}\,z^{9/4}}\left(\left(-4z\left(262\,144z^5-8\,798\,208z^4+33\,472\,512z^3+11\,872\,512z^2-9\,691\,488z-10\,472\,085\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$12\sqrt{z}\,\left(131\,072z^5-4\,284\,416z^4+13\,080\,576z^3+14\,943\,744z^2+5\,658\,120z-17\,453\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(1\,048\,576z^6-34\,406\,400z^5+108\,527\,616z^4+116\,425\,728z^3+47\,848\,320z^2-61\,600\,500z+261\,802\,125\right)$$
$$\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8qn.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{3}{4};-z\right)=$$
$$-\frac{1}{28\,034\,424\sqrt{2}\,z^{9/4}}\left(\left(4z\left(262\,144z^5+8\,798\,208z^4+33\,472\,512z^3-11\,872\,512z^2-9\,691\,488z+10\,472\,085\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$12\sqrt{z}\,\left(131\,072z^5+4\,284\,416z^4+13\,080\,576z^3-14\,943\,744z^2+5\,658\,120z+17\,453\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(1\,048\,576z^6+34\,406\,400z^5+108\,527\,616z^4-116\,425\,728z^3+47\,848\,320z^2+61\,600\,500z+261\,802\,125\right)$$
$$\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8qo.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{1}{4};z\right)=\frac{1}{99\,677\,952\,z^{7/2}}$$
$$\left(e^{-2\sqrt{z}}\left(262\,144\,e^{4\sqrt{z}}\,z^{13/2}+262\,144\,z^{13/2}+65\,536\,e^{4\sqrt{z}}\,z^6-65\,536\,z^6-11\,452\,416\,e^{4\sqrt{z}}\,z^{11/2}-11\,452\,416\,z^{11/2}-\right.\right.$$
$$2\,813\,952\,e^{4\sqrt{z}}\,z^5+2\,813\,952\,z^5+1024\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2-11\,232z+72\,657\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}-$$
$$1024\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2-11\,232z+72\,657\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+72\,351\,744\,e^{4\sqrt{z}}\,z^{9/2}+72\,351\,744\,z^{9/2}+$$
$$16\,146\,432\,e^{4\sqrt{z}}\,z^4-16\,146\,432\,z^4+9\,897\,984\,e^{4\sqrt{z}}\,z^{7/2}+9\,897\,984\,z^{7/2}+8\,985\,600\,e^{4\sqrt{z}}\,z^3-8\,985\,600\,z^3+$$
$$9\,434\,880\,e^{4\sqrt{z}}\,z^{5/2}+9\,434\,880\,z^{5/2}+8\,255\,520\,e^{4\sqrt{z}}\,z^2-8\,255\,520\,z^2-3\,243\,240\,e^{4\sqrt{z}}\,z^{3/2}-3\,243\,240\,z^{3/2}-$$
$$\left.38\,918\,880\,e^{4\sqrt{z}}\,z+38\,918\,880z+60\,810\,750\,e^{4\sqrt{z}}\,\sqrt{z}+60\,810\,750\sqrt{z}-30\,405\,375\,e^{4\sqrt{z}}+30\,405\,375\right)\Bigg)$$

07.22.03.a8qp.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{9}{2},-\frac{1}{4};-z\right)=\frac{1}{49\,838\,976\,z^{7/2}}\left(-2048\sqrt{\pi}\left(256z^2+11\,232z+72\,657\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}-\right.$$
$$2\left(131\,072z^6+5\,726\,208z^5+36\,175\,872z^4-4\,948\,992z^3+4\,717\,440z^2+1\,621\,620z+30\,405\,375\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,-$$
$$\left.\left(65\,536z^6+2\,813\,952z^5+16\,146\,432z^4-8\,985\,600z^3+8\,255\,520z^2+38\,918\,880z-30\,405\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8qq.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{9}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{46\,724\,040\sqrt{2}\,z^{9/4}}\left(\left(4z\left(131\,072z^5-7\,274\,496z^4+74\,423\,808z^3-112\,538\,880z^2+21\,487\,680z+3\,080\,025\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$12\sqrt{z}\left(65\,536z^5-3\,579\,904z^4+34\,126\,080z^3-28\,650\,240z^2-2\,667\,600z+5\,133\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-524\,288z^6+28\,704\,768z^5-276\,387\,840z^4+253\,946\,880z^3+33\,696\,000z^2-33\,169\,500z+77\,000\,625\right)$$
$$\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8qr.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{9}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{46\,724\,040\sqrt{2}\,z^{9/4}}\left(\left(4z\left(131\,072z^5+7\,274\,496z^4+74\,423\,808z^3+112\,538\,880z^2+21\,487\,680z-3\,080\,025\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$12\sqrt{z}\left(65\,536z^5+3\,579\,904z^4+34\,126\,080z^3+28\,650\,240z^2-2\,667\,600z-5\,133\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(524\,288z^6+28\,704\,768z^5+276\,387\,840z^4+253\,946\,880z^3-33\,696\,000z^2-33\,169\,500z-77\,000\,625\right)$$
$$\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8qs.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{9}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{299\,033\,856\,z^{7/2}}\left(e^{-2\sqrt{z}}\left(-65\,536e^{4\sqrt{z}}z^{13/2}-65\,536z^{13/2}-16\,384e^{4\sqrt{z}}z^6+16\,384z^6+4\,300\,800e^{4\sqrt{z}}z^{11/2}+\right.\right.$$
$$4\,300\,800z^{11/2}+1\,062\,912e^{4\sqrt{z}}z^5-1\,062\,912z^5-55\,018\,752e^{4\sqrt{z}}z^{9/2}-55\,018\,752z^{9/2}-12\,999\,744e^{4\sqrt{z}}z^4+$$
$$12\,999\,744z^4-16e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-269\,568z^2+3\,487\,536z-6\,902\,415\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+$$
$$16e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-269\,568z^2+3\,487\,536z-6\,902\,415\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+$$
$$101\,578\,752e^{4\sqrt{z}}z^{7/2}+101\,578\,752z^{7/2}+17\,971\,200e^{4\sqrt{z}}z^3+17\,971\,200z^3+6\,739\,200e^{4\sqrt{z}}z^{5/2}+$$
$$6\,739\,200z^{5/2}+1\,347\,840e^{4\sqrt{z}}z^2-1\,347\,840z^2-3\,832\,920e^{4\sqrt{z}}z^{3/2}-3\,832\,920z^{3/2}-$$
$$\left.\left.6\,191\,640e^{4\sqrt{z}}z+6\,191\,640z+12\,162\,150e^{4\sqrt{z}}\sqrt{z}+12\,162\,150\sqrt{z}-6\,081\,075e^{4\sqrt{z}}+6\,081\,075\right)\right)$$

07.22.03.a8qt.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{9}{2},\frac{3}{4};-z\right)=\frac{1}{149\,516\,928\,z^{7/2}}\left(32\sqrt{\pi}\left(4096z^3+269\,568z^2+3\,487\,536z+6\,902\,415\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+\right.$$
$$2\left(32\,768z^6+2\,150\,400z^5+27\,509\,376z^4+50\,789\,376z^3-3\,369\,600z^2-1\,916\,460z-6\,081\,075\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+$$
$$\left.\left(16\,384z^6+1\,062\,912z^5+12\,999\,744z^4+17\,971\,200z^3-1\,347\,840z^2-6\,191\,640z+6\,081\,075\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8qu.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{9}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{327\,068\,280\sqrt{2}\,z^{9/4}}\left(\left(4z\left(65\,536z^5-5\,074\,944z^4+84\,655\,872z^3-293\,371\,344z^2+165\,155\,760z-1\,658\,475\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$12\sqrt{z}\left(32\,768z^5-2\,508\,800z^4+40\,156\,032z^3-113\,180\,760z^2+2\,457\,000z-2\,764\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-262\,144z^6+20\,103\,168z^5-323\,656\,704z^4+938\,710\,080z^3-58\,968\,000z^2+33\,169\,500z-41\,461\,875\right)$$
$$\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8qv.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{9}{2},\frac{5}{4};-z\right)=$$
$$\frac{1}{327\,068\,280\sqrt{2}\,z^{9/4}}\left(\left(4z\left(65\,536z^5+5\,074\,944z^4+84\,655\,872z^3+293\,371\,344z^2+165\,155\,760z+1\,658\,475\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$12\sqrt{z}\left(32\,768z^5+2\,508\,800z^4+40\,156\,032z^3+113\,180\,760z^2+2\,457\,000z+2\,764\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(262\,144z^6+20\,103\,168z^5+323\,656\,704z^4+938\,710\,080z^3+58\,968\,000z^2+33\,169\,500z+41\,461\,875\right)$$
$$\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8qw.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{9}{2},\frac{7}{4};z\right)=\frac{1}{1\,594\,847\,232\,z^{7/2}}$$
$$\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536z^4+5\,750\,784z^3-111\,601\,152z^2+441\,754\,560z-103\,536\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+\right.\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-5\,750\,784z^3+111\,601\,152z^2-441\,754\,560z+103\,536\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-$$
$$4\left(16\,384z^{13/2}-4096z^6-1\,434\,624z^{11/2}+355\,584z^5+27\,637\,440z^{9/2}-6\,653\,232z^4-\right.$$
$$105\,755\,436z^{7/2}+22\,262\,175z^3+13\,478\,400z^{5/2}+3\,369\,600z^2-3\,875\,040z^{3/2}+$$
$$1\,010\,880z+4\,422\,600\sqrt{z}+e^{4\sqrt{z}}\left(16\,384z^{13/2}+4096z^6-1\,434\,624z^{11/2}-355\,584z^5+\right.$$
$$27\,637\,440z^{9/2}+6\,653\,232z^4-105\,755\,436z^{7/2}-22\,262\,175z^3+13\,478\,400z^{5/2}-$$
$$\left.\left.\left.\left.3\,369\,600z^2-3\,875\,040z^{3/2}-1\,010\,880z+4\,422\,600\sqrt{z}-2\,211\,300\right)+2\,211\,300\right)\right)\right)$$

07.22.03.a8qx.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{9}{2},\frac{7}{4};-z\right)= \frac{1}{398\,711\,808\,z^{7/2}}\left(\sqrt{\pi}\left(65\,536\,z^4+5\,750\,784\,z^3+111\,601\,152\,z^2+441\,754\,560\,z+103\,536\,225\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+ 8\left(4096\,z^6+358\,656\,z^5+6\,909\,360\,z^4+26\,438\,859\,z^3+3\,369\,600\,z^2+968\,760\,z+1\,105\,650\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+ 2\left(4096\,z^6+355\,584\,z^5+6\,653\,232\,z^4+22\,262\,175\,z^3-3\,369\,600\,z^2+1\,010\,880\,z-2\,211\,300\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a8qy.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{9}{2},\frac{9}{4};z\right)= \frac{1}{588\,722\,904\sqrt{2}\,z^{9/4}}\left(\left(2z\left(65\,536\,z^5-6\,512\,640\,z^4+150\,700\,032\,z^3-818\,776\,224\,z^2+688\,592\,583\,z+3\,316\,950\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 3\sqrt{z}\left(65\,536\,z^5-6\,455\,296\,z^4+145\,098\,240\,z^3-696\,100\,608\,z^2+156\,719\,745\,z+11\,056\,500\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ \left(-131\,072\,z^6+12\,926\,976\,z^5-291\,760\,128\,z^4+1\,423\,929\,024\,z^3-409\,606\,470\,z^2-72\,972\,900\,z+41\,461\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8qz.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{9}{2},\frac{9}{4};-z\right)= \frac{1}{588\,722\,904\sqrt{2}\,z^{9/4}}\left(\left(2z\left(65\,536\,z^5+6\,512\,640\,z^4+150\,700\,032\,z^3+818\,776\,224\,z^2+688\,592\,583\,z-3\,316\,950\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 3\sqrt{z}\left(65\,536\,z^5+6\,455\,296\,z^4+145\,098\,240\,z^3+696\,100\,608\,z^2+156\,719\,745\,z-11\,056\,500\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ \left(131\,072\,z^6+12\,926\,976\,z^5+291\,760\,128\,z^4+1\,423\,929\,024\,z^3+409\,606\,470\,z^2-72\,972\,900\,z-41\,461\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8r0.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{9}{2},\frac{11}{4};z\right)= -\frac{1}{510\,351\,114\,240\,z^{7/2}}\left(7e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-115\,015\,680\,z^4+2\,976\,030\,720\,z^3-17\,670\,182\,400\,z^2+ 8\,282\,898\,000\,z+3\,416\,695\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-e^{2\sqrt{z}}\sqrt{2\pi} \left(1\,048\,576\,z^5-115\,015\,680\,z^4+2\,976\,030\,720\,z^3-17\,670\,182\,400\,z^2+8\,282\,898\,000\,z+3\,416\,695\,425\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+4\left(262\,144\,z^{13/2}-65\,536\,z^6-28\,704\,768\,z^{11/2}+7\,127\,040\,z^5+738\,723\,840\,z^{9/2}- 179\,504\,640\,z^4-4\,289\,172\,480\,z^{7/2}+954\,383\,040\,z^3+1\,482\,729\,300\,z^{5/2}+33\,774\,975\,z^2+593\,049\,600\,z^{3/2}+ 161\,740\,800\,z-202\,176\,000\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^{13/2}+65\,536\,z^6-28\,704\,768\,z^{11/2}-7\,127\,040\,z^5+ 738\,723\,840\,z^{9/2}+179\,504\,640\,z^4-4\,289\,172\,480\,z^{7/2}-954\,383\,040\,z^3+1\,482\,729\,300\,z^{5/2}- 33\,774\,975\,z^2+593\,049\,600\,z^{3/2}-161\,740\,800\,z-202\,176\,000\sqrt{z}+101\,088\,000\right)-101\,088\,000\right)\right)\right) $$

07.22.03.a8r1.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{9}{2}, \frac{11}{4}; -z\right) = \frac{1}{127\,587\,778\,560\, z^{7/2}} $$
$$ \left(7\left(\sqrt{\pi}\,\left(1\,048\,576\, z^5 + 115\,015\,680\, z^4 + 2\,976\,030\,720\, z^3 + 17\,670\,182\,400\, z^2 + 8\,282\,898\,000\, z - 3\,416\,695\,425\right)\right.\right. $$
$$ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} + 2\left(4\sqrt{z}\,\left(65\,536\, z^6 + 7\,176\,192\, z^5 + 184\,680\,960\, z^4 + 1\,072\,293\,120\, z^3 + \right.\right. $$
$$ 370\,682\,325\, z^2 - 148\,262\,400\, z - 50\,544\,000\big)\cos\left(2\sqrt{z}\right) + \left(65\,536\, z^6 + 7\,127\,040\, z^5 + \right. $$
$$ \left.\left.\left. 179\,504\,640\, z^4 + 954\,383\,040\, z^3 - 33\,774\,975\, z^2 + 161\,740\,800\, z + 101\,088\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)\Bigg) $$

07.22.03.a8r2.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{9}{2}, \frac{13}{4}; z\right) = \frac{1}{23\,025\,606\,912\sqrt{2}\, z^{9/4}} $$
$$ \left(\left(2\, z\left(1\,048\,576\, z^5 - 127\,205\,376\, z^4 + 3\,765\,510\,144\, z^3 - 27\,886\,763\,520\, z^2 + 30\,597\,923\,664\, z + 4\,549\,860\,315\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 3\sqrt{z}\,\left(1\,048\,576\, z^5 - 126\,287\,872\, z^4 + 3\,655\,753\,728\, z^3 - 24\,772\,898\,304\, z^2 + 10\,998\,907\,920\, z + 7\,193\,911\,725\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\left(1\,048\,576\, z^6 - 126\,418\,944\, z^5 + 3\,671\,138\,304\, z^4 - 25\,184\,687\,616\, z^3 + \right. $$
$$ \left.\left. 13\,031\,338\,320\, z^2 + 8\,738\,504\,775\, z + 1\,459\,458\,000\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.a8r3.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{9}{2}, \frac{13}{4}; -z\right) = \frac{1}{23\,025\,606\,912\sqrt{2}\, z^{9/4}} $$
$$ \left(\left(2\, z\left(1\,048\,576\, z^5 + 127\,205\,376\, z^4 + 3\,765\,510\,144\, z^3 + 27\,886\,763\,520\, z^2 + 30\,597\,923\,664\, z - 4\,549\,860\,315\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 3\sqrt{z}\,\left(1\,048\,576\, z^5 + 126\,287\,872\, z^4 + 3\,655\,753\,728\, z^3 + 24\,772\,898\,304\, z^2 + 10\,998\,907\,920\, z - 7\,193\,911\,725\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\left(1\,048\,576\, z^6 + 126\,418\,944\, z^5 + 3\,671\,138\,304\, z^4 + 25\,184\,687\,616\, z^3 + \right. $$
$$ \left.\left. 13\,031\,338\,320\, z^2 - 8\,738\,504\,775\, z + 1\,459\,458\,000\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.a8r4.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},\frac{15}{4};z\right)=$$
$$-\frac{1}{17\,815\,893\,442\,560\,z^{7/2}}\left(7\,e^{-2\sqrt{z}}\left(4\left(4\,194\,304\,z^{13/2}-1\,048\,576\,z^6-551\,288\,832\,z^{11/2}+137\,035\,776\,z^5+\right.\right.\right.$$
$$17\,754\,390\,528\,z^{9/2}-4\,338\,524\,160\,z^4-138\,229\,217\,280\,z^{7/2}+31\,630\,210\,560\,z^3+$$
$$78\,941\,977\,920\,z^{5/2}-4\,193\,551\,440\,z^2+73\,516\,353\,300\,z^{3/2}-1\,795\,496\,625\,z+25\,878\,528\,000\,\sqrt{z}\,+$$
$$e^{4\sqrt{z}}\left(4\,194\,304\,z^{13/2}+1\,048\,576\,z^6-551\,288\,832\,z^{11/2}-137\,035\,776\,z^5+17\,754\,390\,528\,z^{9/2}+\right.$$
$$\left.4\,338\,524\,160\,z^4-138\,229\,217\,280\,z^{7/2}-31\,630\,210\,560\,z^3+78\,941\,977\,920\,z^{5/2}+4\,193\,551\,440\,z^2+\right.$$
$$\left.73\,516\,353\,300\,z^{3/2}+1\,795\,496\,625\,z+25\,878\,528\,000\,\sqrt{z}\,-12\,939\,264\,000\right)+12\,939\,264\,000\Big)+$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(16\,777\,216\,z^6-2\,208\,301\,056\,z^5+71\,424\,737\,280\,z^4-565\,445\,836\,800\,z^3+\right.$$
$$\left.397\,579\,104\,000\,z^2+328\,002\,760\,800\,z+167\,418\,075\,825\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(16\,777\,216\,z^6-2\,208\,301\,056\,z^5+71\,424\,737\,280\,z^4-565\,445\,836\,800\,z^3+\right.$$
$$\left.\left.\left.397\,579\,104\,000\,z^2+328\,002\,760\,800\,z+167\,418\,075\,825\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8r5.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{4\,453\,973\,360\,640\,z^{7/2}}\left(7\left(\sqrt{\pi}\,z^{3/4}\left(16\,777\,216\,z^6+2\,208\,301\,056\,z^5+71\,424\,737\,280\,z^4+565\,445\,836\,800\,z^3+\right.\right.\right.$$
$$\left.397\,579\,104\,000\,z^2-328\,002\,760\,800\,z+167\,418\,075\,825\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\left(4\sqrt{z}\left(1\,048\,576\,z^6+137\,822\,208\,z^5+4\,438\,597\,632\,z^4+34\,557\,304\,320\,z^3+19\,735\,494\,480\,z^2-\right.\right.$$
$$\left.\left.18\,379\,088\,325\,z+6\,469\,632\,000\right)\cos\left(2\sqrt{z}\right)+\left(1\,048\,576\,z^6+137\,035\,776\,z^5+4\,338\,524\,160\,z^4+\right.\right.$$
$$\left.\left.\left.31\,630\,210\,560\,z^3+4\,193\,551\,440\,z^2-1\,795\,496\,625\,z-12\,939\,264\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big)$$

07.22.03.a8r6.01

$${}_1F_2\left(-\frac{13}{4};\frac{9}{2},\frac{17}{4};z\right)=$$
$$\left(\left(2\sqrt{z}\left(16\,777\,216\,z^6-2\,403\,336\,192\,z^5+86\,678\,765\,568\,z^4-813\,119\,864\,832\,z^3+1\,093\,463\,255\,808\,z^2+\right.\right.\right.$$
$$\left.403\,277\,434\,560\,z+215\,251\,811\,775\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216\,z^6-2\,388\,656\,128\,z^5+84\,600\,619\,008\,z^4-\right.$$
$$\left.740\,714\,692\,608\,z^3+495\,428\,693\,760\,z^2+578\,918\,340\,000\,z+358\,753\,019\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\left(16\,777\,216\,z^6-2\,390\,753\,280\,z^5+84\,892\,778\,496\,z^4-750\,425\,997\,312\,z^3+562\,107\,237\,120\,z^2+\right.$$
$$\left.\left.632\,820\,988\,800\,z+469\,124\,530\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)\Big/\left(736\,819\,421\,184\,\sqrt{2}\,z^{11/4}\right)$$

07.22.03.a8r7.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{9}{2}, \frac{17}{4}; -z\right) = $$
$$ \left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6 + 2\,403\,336\,192\,z^5 + 86\,678\,765\,568\,z^4 + 813\,119\,864\,832\,z^3 + 1\,093\,463\,255\,808\,z^2 - \right.\right.\right. $$
$$ \left.\left.\left. 403\,277\,434\,560\,z + 215\,251\,811\,775\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,777\,216\,z^6 + 2\,388\,656\,128\,z^5 + 84\,600\,619\,008\,z^4 + \right.\right. $$
$$ \left.\left. 740\,714\,692\,608\,z^3 + 495\,428\,693\,760\,z^2 - 578\,918\,340\,000\,z + 358\,753\,019\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\,\left(16\,777\,216\,z^6 + 2\,390\,753\,280\,z^5 + 84\,892\,778\,496\,z^4 + 750\,425\,997\,312\,z^3 + 562\,107\,237\,120\,z^2 - \right. $$
$$ \left. \left. 632\,820\,988\,800\,z + 469\,124\,530\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(736\,819\,421\,184\,\sqrt{2}\; z^{11/4}\right) $$

07.22.03.a8r8.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{9}{2}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{76\,014\,478\,688\,256\,z^{15/4}} \left(e^{-2\sqrt{z}}\,\left(-4\sqrt[4]{z}\,\left(67\,108\,864\,z^{13/2} - 16\,777\,216\,z^6 - 10\,292\,822\,016\,z^{11/2} + 2\,560\,622\,592\,z^5 + \right.\right. $$
$$ 398\,073\,790\,464\,z^{9/2} - 97\,641\,234\,432\,z^4 - 3\,887\,181\,398\,016\,z^{7/2} + 904\,742\,092\,800\,z^3 + $$
$$ 3\,108\,566\,522\,880\,z^{5/2} - 292\,943\,589\,120\,z^2 + 4\,402\,593\,336\,960\,z^{3/2} - 529\,293\,229\,920\,z + $$
$$ 4\,227\,185\,207\,700\,\sqrt{z} + e^{4\sqrt{z}}\,\left(67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 - 10\,292\,822\,016\,z^{11/2} - \right. $$
$$ 2\,560\,622\,592\,z^5 + 398\,073\,790\,464\,z^{9/2} + 97\,641\,234\,432\,z^4 - 3\,887\,181\,398\,016\,z^{7/2} - $$
$$ 904\,742\,092\,800\,z^3 + 3\,108\,566\,522\,880\,z^{5/2} + 292\,943\,589\,120\,z^2 + 4\,402\,593\,336\,960\,z^{3/2} + $$
$$ \left.\left. 529\,293\,229\,920\,z + 4\,227\,185\,207\,700\,\sqrt{z} - 271\,993\,769\,775\right) + 271\,993\,769\,775\right) - $$
$$ e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7 - 41\,221\,619\,712\,z^6 + 1\,599\,914\,115\,072\,z^5 - 15\,832\,483\,430\,400\,z^4 + \right. $$
$$ \left. 14\,842\,953\,216\,000\,z^3 + 18\,368\,154\,604\,800\,z^2 + 18\,750\,824\,492\,400\,z + 5\,524\,796\,502\,225\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7 - 41\,221\,619\,712\,z^6 + 1\,599\,914\,115\,072\,z^5 - 15\,832\,483\,430\,400\,z^4 + \right. $$
$$ \left. \left. 14\,842\,953\,216\,000\,z^3 + 18\,368\,154\,604\,800\,z^2 + 18\,750\,824\,492\,400\,z + 5\,524\,796\,502\,225\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8r9.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{9}{2}, \frac{19}{4}; -z\right) = $$
$$ \frac{1}{19\,003\,619\,672\,064\,z^{15/4}} \left(\sqrt{\pi}\,\left(268\,435\,456\,z^7 + 41\,221\,619\,712\,z^6 + 1\,599\,914\,115\,072\,z^5 + 15\,832\,483\,430\,400\,z^4 + \right.\right. $$
$$ \left. 14\,842\,953\,216\,000\,z^3 - 18\,368\,154\,604\,800\,z^2 + 18\,750\,824\,492\,400\,z - 5\,524\,796\,502\,225\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6 + 2\,573\,205\,504\,z^5 + 99\,518\,447\,616\,z^4 + 971\,795\,349\,504\,z^3 + 777\,141\,630\,720\,z^2 - \right. \right. $$
$$ \left. 1\,100\,648\,334\,240\,z + 1\,056\,796\,301\,925\right) \cos\left(2\sqrt{z}\right) + \left(16\,777\,216\,z^6 + 2\,560\,622\,592\,z^5 + 97\,641\,234\,432\,z^4 + \right. $$
$$ \left.\left. \left. 904\,742\,092\,800\,z^3 + 292\,943\,589\,120\,z^2 - 529\,293\,229\,920\,z - 271\,993\,769\,775\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8ra.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{9}{2}, \frac{21}{4}; z\right) = $$
$$ \left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 - 44\,342\,181\,888\,z^6 + 1\,885\,936\,287\,744\,z^5 - 21\,418\,783\,211\,520\,z^4 + 34\,012\,744\,888\,320\,z^3 + \right.\right.\right. $$
$$ 21\,665\,362\,118\,400\,z^2 + 23\,342\,863\,143\,600\,z + 2\,798\,273\,553\,075\big) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ 3\left(268\,435\,456\,z^7 - 44\,107\,300\,864\,z^6 + 1\,847\,533\,240\,320\,z^5 - 19\,832\,304\,107\,520\,z^4 + 17\,784\,766\,771\,200\,z^3 + \right. $$
$$ 29\,358\,846\,316\,800\,z^2 + 35\,588\,299\,546\,800\,z + 4\,663\,789\,255\,125\big) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7 - 44\,140\,855\,296\,z^6 + 1\,852\,943\,892\,480\,z^5 - 20\,047\,171\,092\,480\,z^4 + \right. $$
$$ \left.\left.\left. 19\,677\,924\,864\,000\,z^3 + 30\,811\,076\,524\,800\,z^2 + 39\,471\,625\,393\,200\,z + 13\,991\,367\,765\,375\right)\right. $$
$$ \left. I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(353\,673\,322\,168\,320\,\sqrt{2}\; z^{15/4}\right) $$

07.22.03.a8rb.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{9}{2}, \frac{21}{4}; -z\right) = $$
$$ \left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 + 44\,342\,181\,888\,z^6 + 1\,885\,936\,287\,744\,z^5 + 21\,418\,783\,211\,520\,z^4 + 34\,012\,744\,888\,320\,z^3 - \right.\right.\right. $$
$$ 21\,665\,362\,118\,400\,z^2 + 23\,342\,863\,143\,600\,z - 2\,798\,273\,553\,075\big) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ 3\left(268\,435\,456\,z^7 + 44\,107\,300\,864\,z^6 + 1\,847\,533\,240\,320\,z^5 + 19\,832\,304\,107\,520\,z^4 + 17\,784\,766\,771\,200\,z^3 - \right. $$
$$ 29\,358\,846\,316\,800\,z^2 + 35\,588\,299\,546\,800\,z - 4\,663\,789\,255\,125\big) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7 + 44\,140\,855\,296\,z^6 + 1\,852\,943\,892\,480\,z^5 + 20\,047\,171\,092\,480\,z^4 + \right. $$
$$ \left.\left.\left. 19\,677\,924\,864\,000\,z^3 - 30\,811\,076\,524\,800\,z^2 + 39\,471\,625\,393\,200\,z - 13\,991\,367\,765\,375\right)\right. $$
$$ \left. J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(353\,673\,322\,168\,320\,\sqrt{2}\; z^{15/4}\right) $$

07.22.03.a8rc.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{9}{2}, \frac{23}{4}; z\right) = \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(1\,073\,741\,824 z^{15/2} - 268\,435\,456 z^7 - 188\,240\,363\,520 z^{13/2} + 46\,858\,764\,288 z^6 + 8\,497\,982\,865\,408 z^{11/2} - 2\,090\,043\,703\,296 z^5 - 99\,802\,545\,389\,568 z^{9/2} + 23\,497\,128\,345\,600 z^4 + 102\,799\,433\,318\,400 z^{7/2} - 12\,398\,639\,984\,640 z^3 + 193\,128\,181\,908\,480 z^{5/2} - 32\,429\,446\,882\,560 z^2 + 294\,796\,469\,822\,400 z^{3/2} - 25\,185\,884\,396\,400 z + 110\,495\,930\,044\,500\sqrt{z} + e^{4\sqrt{z}}\left(1\,073\,741\,824 z^{15/2} + 268\,435\,456 z^7 - 188\,240\,363\,520 z^{13/2} - 46\,858\,764\,288 z^6 + 8\,497\,982\,865\,408 z^{11/2} + 2\,090\,043\,703\,296 z^5 - 99\,802\,545\,389\,568 z^{9/2} - 23\,497\,128\,345\,600 z^4 + 102\,799\,433\,318\,400 z^{7/2} + 12\,398\,639\,984\,640 z^3 + 193\,128\,181\,908\,480 z^{5/2} + 32\,429\,446\,882\,560 z^2 + 294\,796\,469\,822\,400 z^{3/2} + 25\,185\,884\,396\,400 z + 110\,495\,930\,044\,500\sqrt{z} - 82\,871\,947\,533\,375\right) + 82\,871\,947\,533\,375\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296 z^8 - 753\,766\,760\,448 z^7 + 34\,131\,501\,121\,536 z^6 - 405\,311\,575\,818\,240 z^5 + 474\,974\,502\,912\,000 z^4 + 783\,707\,929\,804\,800 z^3 + 1\,200\,052\,767\,513\,600 z^2 + 707\,173\,952\,284\,800 z - 82\,871\,947\,533\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296 z^8 - 753\,766\,760\,448 z^7 + 34\,131\,501\,121\,536 z^6 - 405\,311\,575\,818\,240 z^5 + 474\,974\,502\,912\,000 z^4 + 783\,707\,929\,804\,800 z^3 + 1\,200\,052\,767\,513\,600 z^2 + 707\,173\,952\,284\,800 z - 82\,871\,947\,533\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big/\left(2\,048\,390\,162\,546\,688 z^{19/4}\right) $$

07.22.03.a8rd.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) = \frac{1}{512\,097\,540\,636\,672 z^{19/4}} \left(\sqrt{\pi}\left(4\,294\,967\,296 z^8 + 753\,766\,760\,448 z^7 + 34\,131\,501\,121\,536 z^6 + 405\,311\,575\,818\,240 z^5 + 474\,974\,502\,912\,000 z^4 - 783\,707\,929\,804\,800 z^3 + 1\,200\,052\,767\,513\,600 z^2 - 707\,173\,952\,284\,800 z - 82\,871\,947\,533\,375\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456 z^7 + 47\,060\,090\,880 z^6 + 2\,124\,495\,716\,352 z^5 + 24\,950\,636\,347\,392 z^4 + 25\,699\,858\,329\,600 z^3 - 48\,282\,045\,477\,120 z^2 + 73\,699\,117\,455\,600 z - 27\,623\,982\,511\,125\right)\cos\left(2\sqrt{z}\right) + \left(268\,435\,456 z^7 + 46\,858\,764\,288 z^6 + 2\,090\,043\,703\,296 z^5 + 23\,497\,128\,345\,600 z^4 + 12\,398\,639\,984\,640 z^3 - 32\,429\,446\,882\,560 z^2 + 25\,185\,884\,396\,400 z + 82\,871\,947\,533\,375\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{13}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.a8re.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},-\frac{23}{4};z\right)=$$
$$\left(\left(-4z\left(67\,108\,864z^6+5\,872\,025\,600z^5+198\,257\,934\,336z^4+2\,529\,159\,413\,760z^3+3\,315\,277\,937\,664z^2+\right.\right.\right.$$
$$\left.\left.\left.7\,690\,792\,309\,200z+1\,241\,582\,283\,416\,475\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$12\sqrt{z}\left(33\,554\,432z^6+2\,965\,372\,928z^5+101\,747\,523\,584z^4+1\,355\,872\,616\,448z^3+3\,986\,633\,851\,200z^2+\right.$$
$$196\,756\,103\,243\,700z+2\,069\,303\,805\,694\,125\Big)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(268\,435\,456z^7+23\,689\,428\,992z^6+\right.$$
$$810\,912\,055\,296z^5+10\,735\,341\,797\,376z^4+21\,706\,513\,920\,000z^3-227\,813\,739\,753\,600z^2-$$
$$\left.\left.5\,710\,413\,289\,581\,000z-31\,039\,557\,085\,411\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(4\,332\,331\,900\,512\sqrt{2}\;z^{13/4}\right)$$

07.22.03.a8rf.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},-\frac{23}{4};-z\right)=$$
$$-\left(\left(4z\left(67\,108\,864z^6-5\,872\,025\,600z^5+198\,257\,934\,336z^4-2\,529\,159\,413\,760z^3+3\,315\,277\,937\,664z^2-\right.\right.\right.$$
$$\left.\left.\left.7\,690\,792\,309\,200z+1\,241\,582\,283\,416\,475\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$12\sqrt{z}\left(33\,554\,432z^6-2\,965\,372\,928z^5+101\,747\,523\,584z^4-1\,355\,872\,616\,448z^3+3\,986\,633\,851\,200z^2-\right.$$
$$196\,756\,103\,243\,700z+2\,069\,303\,805\,694\,125\Big)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(268\,435\,456z^7-23\,689\,428\,992z^6+\right.$$
$$810\,912\,055\,296z^5-10\,735\,341\,797\,376z^4+21\,706\,513\,920\,000z^3+227\,813\,739\,753\,600z^2-$$
$$\left.\left.5\,710\,413\,289\,581\,000z+31\,039\,557\,085\,411\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(4\,332\,331\,900\,512\sqrt{2}\;z^{13/4}\right)$$

07.22.03.a8rg.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{8704\,z^{9/2}}\left(45\left(\left(256z^3+35\,472z^2+254\,100z+143\,325\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(2432z^2+63\,000z+143\,325\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8rh.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},-\frac{21}{4};-z\right)=$$
$$-\frac{1}{8704\,z^{9/2}}\left(45\left(2\sqrt{z}\left(2432z^2-63\,000z+143\,325\right)\cos\left(2\sqrt{z}\right)+\left(256z^3-35\,472z^2+254\,100z-143\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8ri.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{11}{2},-\frac{19}{4};z\right)= \left(\left(-4z\left(33\,554\,432z^6+2\,090\,860\,544z^5+54\,758\,473\,728z^4+567\,824\,302\,080z^3+569\,036\,643\,840z^2-\right.\right.\right. $$

$$ \left.2\,598\,240\,645\,000z+151\,412\,473\,587\,375\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+ $$

$$ 12\sqrt{z}\left(16\,777\,216z^6+1\,060\,110\,336z^5+28\,318\,760\,960z^4+309\,522\,554\,880z^3+581\,424\,480\,000z^2+\right. $$

$$ 18\,101\,076\,493\,500z+252\,354\,122\,645\,625\Big)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(134\,217\,728z^7+8\,464\,105\,472z^6+\right. $$

$$ 225\,438\,597\,120z^5+2\,444\,210\,012\,160z^4+4\,223\,681\,280\,000z^3-21\,352\,814\,028\,000z^2- $$

$$ \left.\left.\left.607\,988\,310\,930\,000z-3\,785\,311\,839\,684\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(941\,811\,282\,720\sqrt{2}\,z^{13/4}\right) $$

07.22.03.a8rj.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{11}{2},-\frac{19}{4};-z\right)= -\left(\left(4z\left(33\,554\,432z^6-2\,090\,860\,544z^5+54\,758\,473\,728z^4-567\,824\,302\,080z^3+569\,036\,643\,840z^2+\right.\right. $$

$$ \left.2\,598\,240\,645\,000z+151\,412\,473\,587\,375\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- $$

$$ 12\sqrt{z}\left(16\,777\,216z^6-1\,060\,110\,336z^5+28\,318\,760\,960z^4-309\,522\,554\,880z^3+581\,424\,480\,000z^2-\right. $$

$$ 18\,101\,076\,493\,500z+252\,354\,122\,645\,625\Big)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(134\,217\,728z^7-8\,464\,105\,472z^6+\right. $$

$$ 225\,438\,597\,120z^5-2\,444\,210\,012\,160z^4+4\,223\,681\,280\,000z^3+21\,352\,814\,028\,000z^2- $$

$$ \left.\left.\left.607\,988\,310\,930\,000z+3\,785\,311\,839\,684\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(941\,811\,282\,720\sqrt{2}\,z^{13/4}\right) $$

07.22.03.a8rk.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{11}{2},-\frac{17}{4};z\right)=-\frac{945\left(2\sqrt{z}\left(32z^2+1520z+3675\right)\cosh\left(2\sqrt{z}\right)-\left(752z^2+6420z+3675\right)\sinh\left(2\sqrt{z}\right)\right)}{8704z^{9/2}} $$

07.22.03.a8rl.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{11}{2},-\frac{17}{4};-z\right)=-\frac{945\left(2\sqrt{z}\left(32z^2-1520z+3675\right)\cos\left(2\sqrt{z}\right)+\left(-752z^2+6420z-3675\right)\sin\left(2\sqrt{z}\right)\right)}{8704z^{9/2}} $$

07.22.03.a8rm.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},-\frac{15}{4};z\right)=$$
$$\left(\left(-4z\left(16\,777\,216z^6+622\,854\,144z^5+11\,611\,865\,088z^4+92\,772\,384\,768z^3+63\,467\,470\,080z^2-566\,888\,868\,000z+\right.\right.\right.$$
$$12\,276\,687\,047\,625\Big)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(8\,388\,608z^6+318\,767\,104z^5+6\,090\,817\,536z^4+\right.$$
$$\left.51\,981\,189\,120z^3+83\,538\,000\,000z^2+873\,953\,671\,500z+20\,461\,145\,079\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(67\,108\,864z^7+2\,541\,748\,224z^6+48\,382\,083\,072z^5+408\,579\,932\,160z^4+587\,038\,233\,600z^3-1\,485\,639\,792\,000\right.$$
$$\left.\left.z^2-40\,390\,831\,845\,000z-306\,917\,176\,190\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(148\,707\,044\,640\sqrt{2}\;z^{13/4}\right)$$

07.22.03.a8rn.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},-\frac{15}{4};-z\right)=$$
$$-\left(\left(4z\left(16\,777\,216z^6-622\,854\,144z^5+11\,611\,865\,088z^4-92\,772\,384\,768z^3+63\,467\,470\,080z^2+566\,888\,868\,000z+\right.\right.\right.$$
$$12\,276\,687\,047\,625\Big)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(8\,388\,608z^6-318\,767\,104z^5+6\,090\,817\,536z^4-\right.$$
$$\left.51\,981\,189\,120z^3+83\,538\,000\,000z^2-873\,953\,671\,500z+20\,461\,145\,079\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(67\,108\,864z^7-2\,541\,748\,224z^6+48\,382\,083\,072z^5-408\,579\,932\,160z^4+587\,038\,233\,600z^3+\right.$$
$$\left.\left.1\,485\,639\,792\,000z^2-40\,390\,831\,845\,000z+306\,917\,176\,190\,625\right)$$
$$\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(148\,707\,044\,640\sqrt{2}\;z^{13/4}\right)$$

07.22.03.a8ro.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},-\frac{13}{4};z\right)=\frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\;(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.a8rp.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},-\frac{13}{4};-z\right)=\frac{945\left(10\sqrt{z}\;(8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.a8rq.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{11}{2}, -\frac{11}{4}; z\right) = \frac{1}{9\,913\,802\,976\sqrt{2}\, z^{13/4}}\left(\left(-4z\left(8\,388\,608 z^6 + 100\,139\,008 z^5 + 1\,131\,184\,128 z^4 + 6\,371\,039\,232 z^3 + 2\,108\,631\,168 z^2 - 30\,950\,829\,000 z + 372\,020\,819\,625\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(4\,194\,304 z^6 + 53\,739\,520 z^5 + 615\,596\,032 z^4 + 3\,781\,825\,536 z^3 + 5\,306\,333\,760 z^2 + 3\,529\,480\,500 z + 620\,034\,699\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(33\,554\,432 z^7 + 425\,721\,856 z^6 + 4\,858\,183\,680 z^5 + 29\,373\,161\,472 z^4 + 34\,018\,583\,040 z^3 - 56\,037\,290\,400 z^2 - 879\,655\,140\,000 z - 9\,300\,520\,490\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8rr.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{11}{2}, -\frac{11}{4}; -z\right) = -\frac{1}{9\,913\,802\,976\sqrt{2}\, z^{13/4}}\left(\left(4z\left(8\,388\,608 z^6 - 100\,139\,008 z^5 + 1\,131\,184\,128 z^4 - 6\,371\,039\,232 z^3 + 2\,108\,631\,168 z^2 + 30\,950\,829\,000 z + 372\,020\,819\,625\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(4\,194\,304 z^6 - 53\,739\,520 z^5 + 615\,596\,032 z^4 - 3\,781\,825\,536 z^3 + 5\,306\,333\,760 z^2 - 3\,529\,480\,500 z + 620\,034\,699\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(33\,554\,432 z^7 - 425\,721\,856 z^6 + 4\,858\,183\,680 z^5 - 29\,373\,161\,472 z^4 + 34\,018\,583\,040 z^3 + 56\,037\,290\,400 z^2 - 879\,655\,140\,000 z + 9\,300\,520\,490\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8rs.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{11}{2}, -\frac{9}{4}; z\right) = \frac{1}{61\,800\,330\,240 z^{9/2}}\left(e^{-2\sqrt{z}}\left(67\,108\,864 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{31/4} - 67\,108\,864 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{31/4} + 67\,108\,864 e^{4\sqrt{z}} z^{15/2} + 67\,108\,864 z^{15/2} + 16\,777\,216 e^{4\sqrt{z}} z^7 - 16\,777\,216 z^7 + 12\,582\,912 e^{4\sqrt{z}} z^{13/2} + 12\,582\,912 z^{13/2} + 15\,728\,640 e^{4\sqrt{z}} z^6 - 15\,728\,640 z^6 + 27\,525\,120 e^{4\sqrt{z}} z^{11/2} + 27\,525\,120 z^{11/2} + 61\,931\,520 e^{4\sqrt{z}} z^5 - 61\,931\,520 z^5 + 170\,311\,680 e^{4\sqrt{z}} z^{9/2} + 170\,311\,680 z^{9/2} + 553\,512\,960 e^{4\sqrt{z}} z^4 - 553\,512\,960 z^4 + 2\,075\,673\,600 e^{4\sqrt{z}} z^{7/2} + 2\,075\,673\,600 z^{7/2} + 8\,821\,612\,800 e^{4\sqrt{z}} z^3 - 8\,821\,612\,800 z^3 + 41\,902\,660\,800 e^{4\sqrt{z}} z^{5/2} + 41\,902\,660\,800 z^{5/2} + 219\,988\,969\,200 e^{4\sqrt{z}} z^2 - 219\,988\,969\,200 z^2 - 1\,700\,755\,056\,000 e^{4\sqrt{z}} z^{3/2} - 1\,700\,755\,056\,000 z^{3/2} + 4\,198\,739\,044\,500 e^{4\sqrt{z}} z - 4\,198\,739\,044\,500 z - 5\,022\,542\,274\,750 e^{4\sqrt{z}}\sqrt{z} - 5\,022\,542\,274\,750\sqrt{z} + 2\,511\,271\,137\,375 e^{4\sqrt{z}} - 2\,511\,271\,137\,375\right)\right) $$

07.22.03.a8rt.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{30\,900\,165\,120\,z^{9/2}}\left(-134\,217\,728\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{31/4}-2\left(33\,554\,432\,z^7-6\,291\,456\,z^6+13\,762\,560\,z^5-85\,155\,840\,z^4+\right.\right.$$
$$\left.1\,037\,836\,800\,z^3-20\,951\,330\,400\,z^2-850\,377\,528\,000\,z+2\,511\,271\,137\,375\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,+$$
$$\left(-16\,777\,216\,z^7+15\,728\,640\,z^6-61\,931\,520\,z^5+553\,512\,960\,z^4-8\,821\,612\,800\,z^3+\right.$$
$$\left.\left.219\,988\,969\,200\,z^2-4\,198\,739\,044\,500\,z+2\,511\,271\,137\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8ru.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},-\frac{7}{4};z\right)=\frac{1}{901\,254\,816\sqrt{2}\,z^{13/4}}$$
$$\left(\left(4z\left(4\,194\,304\,z^6-55\,574\,528\,z^5-167\,313\,408\,z^4-576\,811\,008\,z^3+23\,899\,392\,z^2+1\,694\,150\,640\,z-12\,828\,304\,125\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(2\,097\,152\,z^6-25\,952\,256\,z^5-104\,873\,984\,z^4-388\,893\,696\,z^3-395\,254\,080\,z^2+\right.$$
$$\left.923\,094\,900\,z-21\,380\,506\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-16\,777\,216\,z^7+209\,715\,200\,z^6+819\,462\,144\,z^5+\right.$$
$$\left.\left.\left.2\,977\,431\,552\,z^4+2\,559\,098\,880\,z^3-3\,723\,408\,000\,z^2-14\,660\,919\,000\,z-320\,707\,603\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8rv.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},-\frac{7}{4};-z\right)=\frac{1}{901\,254\,816\sqrt{2}\,z^{13/4}}$$
$$\left(\left(4z\left(4\,194\,304\,z^6+55\,574\,528\,z^5-167\,313\,408\,z^4+576\,811\,008\,z^3+23\,899\,392\,z^2-1\,694\,150\,640\,z-12\,828\,304\,125\right)\right.\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(2\,097\,152\,z^6+25\,952\,256\,z^5-104\,873\,984\,z^4+388\,893\,696\,z^3-395\,254\,080\,z^2-\right.$$
$$\left.923\,094\,900\,z-21\,380\,506\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,777\,216\,z^7+209\,715\,200\,z^6-819\,462\,144\,z^5+\right.$$
$$\left.\left.\left.2\,977\,431\,552\,z^4-2\,559\,098\,880\,z^3-3\,723\,408\,000\,z^2+14\,660\,919\,000\,z-320\,707\,603\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8rw.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{6\,866\,703\,360\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(-16\,777\,216\,e^{4\sqrt{z}}\,z^{15/2}-16\,777\,216\,z^{15/2}-4\,194\,304\,e^{4\sqrt{z}}\,z^7+4\,194\,304\,z^7-\right.\right.$$
$$1\,048\,576\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-403)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{27/4}+1\,048\,576\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-403)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{27/4}+$$
$$419\,430\,400\,e^{4\sqrt{z}}\,z^{13/2}+419\,430\,400\,z^{13/2}+101\,711\,872\,e^{4\sqrt{z}}\,z^6-101\,711\,872\,z^6+72\,351\,744\,e^{4\sqrt{z}}\,z^{11/2}+$$
$$72\,351\,744\,z^{11/2}+83\,558\,400\,e^{4\sqrt{z}}\,z^5-83\,558\,400\,z^5+130\,744\,320\,e^{4\sqrt{z}}\,z^{9/2}+130\,744\,320\,z^{9/2}+$$
$$251\,596\,800\,e^{4\sqrt{z}}\,z^4-251\,596\,800\,z^4+553\,512\,960\,e^{4\sqrt{z}}\,z^{7/2}+553\,512\,960\,z^{7/2}+1\,279\,998\,720\,e^{4\sqrt{z}}\,z^3-$$
$$1\,279\,998\,720\,z^3+2\,594\,592\,000\,e^{4\sqrt{z}}\,z^{5/2}+2\,594\,592\,000\,z^{5/2}+551\,350\,800\,e^{4\sqrt{z}}\,z^2-551\,350\,800\,z^2-$$
$$52\,378\,326\,000\,e^{4\sqrt{z}}\,z^{3/2}-52\,378\,326\,000\,z^{3/2}+150\,202\,552\,500\,e^{4\sqrt{z}}\,z-150\,202\,552\,500\,z-$$
$$\left.\left.186\,020\,084\,250\,e^{4\sqrt{z}}\,\sqrt{z}-186\,020\,084\,250\,\sqrt{z}+93\,010\,042\,125\,e^{4\sqrt{z}}-93\,010\,042\,125\right)\right)$$

07.22.03.a8rx.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{3\,433\,351\,680\,z^{9/2}}\left(2\,097\,152\,\sqrt{\pi}\,(16z+403)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{27/4}+2\left(8\,388\,608\,z^7+209\,715\,200\,z^6-36\,175\,872\,z^5+\right.\right.$$
$$\left.65\,372\,160\,z^4-276\,756\,480\,z^3+1\,297\,296\,000\,z^2+26\,189\,163\,000\,z-93\,010\,042\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left(4\,194\,304\,z^7+101\,711\,872\,z^6-83\,558\,400\,z^5+251\,596\,800\,z^4-1\,279\,998\,720\,z^3+\right.$$
$$\left.\left.551\,350\,800\,z^2-150\,202\,552\,500\,z+93\,010\,042\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8ry.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},-\frac{3}{4};z\right)=\frac{1}{386\,252\,064\,\sqrt{2}\,z^{13/4}}$$
$$\left(\left(-4z\left(2\,097\,152\,z^6-80\,609\,280\,z^5+352\,124\,928\,z^4+186\,992\,640\,z^3-99\,007\,488\,z^2-307\,181\,160\,z+1\,539\,396\,495\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(1\,048\,576\,z^6-39\,387\,136\,z^5+142\,344\,192\,z^4+194\,909\,184\,z^3+103\,559\,040\,z^2-\right.$$
$$\left.283\,909\,860\,z+2\,565\,660\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(8\,388\,608\,z^7-316\,145\,664\,z^6+1\,174\,929\,408\,z^5+\right.$$
$$\left.\left.\left.1\,512\,235\,008\,z^4+781\,747\,200\,z^3-1\,057\,885\,920\,z^2+837\,766\,800\,z-38\,484\,912\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8rz.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{11}{2}, -\frac{3}{4}; -z\right) = -\frac{1}{386\,252\,064\sqrt{2}\, z^{13/4}} $$
$$ \left(\left(4z\left(2\,097\,152 z^6 + 80\,609\,280 z^5 + 352\,124\,928 z^4 - 186\,992\,640 z^3 - 99\,007\,488 z^2 + 307\,181\,160 z + 1\,539\,396\,495\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1\,048\,576 z^6 + 39\,387\,136 z^5 + 142\,344\,192 z^4 - 194\,909\,184 z^3 + 103\,559\,040 z^2 + \right. $$
$$ 283\,909\,860 z + 2\,565\,660\,825\Big) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(8\,388\,608 z^7 + 316\,145\,664 z^6 + 1\,174\,929\,408 z^5 - \right. $$
$$ \left.\left. 1\,512\,235\,008 z^4 + 781\,747\,200 z^3 + 1\,057\,885\,920 z^2 + 837\,766\,800 z + 38\,484\,912\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.a8s0.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{11}{2}, -\frac{1}{4}; z\right) = $$
$$ \frac{1}{1\,373\,340\,672 z^{9/2}}\left(e^{-2\sqrt{z}}\left(2\,097\,152 e^{4\sqrt{z}} z^{15/2} + 2\,097\,152 z^{15/2} + 524\,288 e^{4\sqrt{z}} z^7 - 524\,288 z^7 - 105\,250\,816 e^{4\sqrt{z}} z^{13/2} - \right.\right. $$
$$ 105\,250\,816 z^{13/2} - 25\,919\,488 e^{4\sqrt{z}} z^6 + 25\,919\,488 z^6 + 8192 e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2 - 12\,896 z + 97\,929\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{23/4} - 8192 e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2 - 12\,896 z + 97\,929\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{23/4} + $$
$$ 783\,286\,272 e^{4\sqrt{z}} z^{11/2} + 783\,286\,272 z^{11/2} + 177\,733\,632 e^{4\sqrt{z}} z^5 - 177\,733\,632 z^5 + 112\,410\,624 e^{4\sqrt{z}} z^{9/2} + $$
$$ 112\,410\,624 z^{9/2} + 107\,827\,200 e^{4\sqrt{z}} z^4 - 107\,827\,200 z^4 + 125\,798\,400 e^{4\sqrt{z}} z^{7/2} + 125\,798\,400 z^{7/2} + $$
$$ 144\,668\,160 e^{4\sqrt{z}} z^3 - 144\,668\,160 z^3 + 77\,837\,760 e^{4\sqrt{z}} z^{5/2} + 77\,837\,760 z^{5/2} - 395\,675\,280 e^{4\sqrt{z}} z^2 + $$
$$ 395\,675\,280 z^2 - 1\,621\,620\,000 e^{4\sqrt{z}} z^{3/2} - 1\,621\,620\,000 z^{3/2} + 6\,202\,696\,500 e^{4\sqrt{z}} z - $$
$$ \left.\left. 6\,202\,696\,500 z - 8\,087\,829\,750 e^{4\sqrt{z}}\sqrt{z} - 8\,087\,829\,750\sqrt{z} + 4\,043\,914\,875 e^{4\sqrt{z}} - 4\,043\,914\,875\right)\right) $$

07.22.03.a8s1.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{11}{2}, -\frac{1}{4}; -z\right) = $$
$$ \frac{1}{686\,670\,336 z^{9/2}}\left(-16\,384\sqrt{\pi}\left(256 z^2 + 12\,896 z + 97\,929\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{23/4} - 2\left(1\,048\,576 z^7 + 52\,625\,408 z^6 + 391\,643\,136 z^5 - \right.\right. $$
$$ 56\,205\,312 z^4 + 62\,899\,200 z^3 - 38\,918\,880 z^2 - 810\,810\,000 z + 4\,043\,914\,875\Big)\cos\left(2\sqrt{z}\right)\sqrt{z} - $$
$$ \left(524\,288 z^7 + 25\,919\,488 z^6 + 177\,733\,632 z^5 - 107\,827\,200 z^4 + 144\,668\,160 z^3 + \right. $$
$$ \left.\left. 395\,675\,280 z^2 + 6\,202\,696\,500 z - 4\,043\,914\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a8s2.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{1}{4};z\right)=\frac{1}{643\,753\,440\sqrt{2}\,z^{13/4}}$$
$$\left(\left(4z\left(1\,048\,576z^6-66\,715\,648z^5+795\,070\,464z^4-1\,373\,552\,640z^3+277\,332\,480z^2+109\,512\,000z-366\,522\,975\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(524\,288z^6-32\,899\,072z^5+369\,121\,280z^4-384\,752\,640z^3-56\,160\,000z^2+\right.$$
$$128\,220\,300z-610\,871\,625\Big)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-4\,194\,304z^7+263\,716\,864z^6-2\,984\,263\,680z^5+\right.$$
$$\left.\left.3\,359\,047\,680z^4+584\,064\,000z^3-643\,593\,600z^2+1\,108\,809\,000z-9\,163\,074\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8s3.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{1}{4};-z\right)=\frac{1}{643\,753\,440\sqrt{2}\,z^{13/4}}$$
$$\left(\left(4z\left(1\,048\,576z^6+66\,715\,648z^5+795\,070\,464z^4+1\,373\,552\,640z^3+277\,332\,480z^2-109\,512\,000z-366\,522\,975\right)\right.\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(524\,288z^6+32\,899\,072z^5+369\,121\,280z^4+384\,752\,640z^3-56\,160\,000z^2-\right.$$
$$128\,220\,300z-610\,871\,625\Big)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(4\,194\,304z^7+263\,716\,864z^6+2\,984\,263\,680z^5+\right.$$
$$\left.\left.3\,359\,047\,680z^4-584\,064\,000z^3-643\,593\,600z^2-1\,108\,809\,000z-9\,163\,074\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a8s4.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{3}{4};z\right)=\frac{1}{4\,120\,022\,016z^{9/2}}$$
$$\left(e^{-2\sqrt{z}}\left(-524\,288e^{4\sqrt{z}}z^{15/2}-524\,288z^{15/2}-131\,072e^{4\sqrt{z}}z^7+131\,072z^7+39\,518\,208e^{4\sqrt{z}}z^{13/2}+39\,518\,208z^{13/2}+\right.\right.$$
$$9\,781\,248e^{4\sqrt{z}}z^6-9\,781\,248z^6-594\,462\,720e^{4\sqrt{z}}z^{11/2}-594\,462\,720z^{11/2}-141\,617\,664e^{4\sqrt{z}}z^5+$$
$$141\,617\,664z^5-128e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-309\,504z^2+4\,700\,592z-11\,261\,835\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}+$$
$$128e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-309\,504z^2+4\,700\,592z-11\,261\,835\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}+$$
$$1\,343\,619\,072e^{4\sqrt{z}}z^{9/2}+1\,343\,619\,072z^{9/2}+251\,596\,800e^{4\sqrt{z}}z^4-251\,596\,800z^4+107\,827\,200e^{4\sqrt{z}}z^{7/2}+$$
$$107\,827\,200z^{7/2}+40\,435\,200e^{4\sqrt{z}}z^3-40\,435\,200z^3-37\,739\,520e^{4\sqrt{z}}z^{5/2}-37\,739\,520z^{5/2}-$$
$$143\,292\,240e^{4\sqrt{z}}z^2+143\,292\,240z^2-97\,297\,200e^{4\sqrt{z}}z^{3/2}-97\,297\,200z^{3/2}+899\,999\,100e^{4\sqrt{z}}z-$$
$$\left.\left.899\,999\,100z-1\,277\,025\,750e^{4\sqrt{z}}\sqrt{z}-1\,277\,025\,750\sqrt{z}+638\,512\,875e^{4\sqrt{z}}-638\,512\,875\right)\right)$$

07.22.03.a8s5.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{11}{2}, \frac{3}{4}; -z\right) = \frac{1}{2\,060\,011\,008\, z^{9/2}} \left(256\sqrt{\pi}\left(4096 z^3 + 309\,504 z^2 + 4\,700\,592 z + 11\,261\,835\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{19/4} + 2\left(262\,144 z^7 + 19\,759\,104 z^6 + 297\,231\,360 z^5 + 671\,809\,536 z^4 - 53\,913\,600 z^3 - 18\,869\,760 z^2 + 48\,648\,600 z - 638\,512\,875\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(131\,072 z^7 + 9\,781\,248 z^6 + 141\,617\,664 z^5 + 251\,596\,800 z^4 - 40\,435\,200 z^3 - 143\,292\,240 z^2 - 899\,999\,100 z + 638\,512\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a8s6.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{4\,506\,274\,080\sqrt{2}\, z^{13/4}} \left(\left(4z\left(524\,288 z^6 - 46\,563\,328 z^5 + 907\,597\,824 z^4 - 3\,714\,189\,696 z^3 + 2\,295\,135\,360 z^2 - 69\,287\,400 z + 150\,921\,225\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(262\,144 z^6 - 23\,052\,288 z^5 + 433\,814\,528 z^4 - 1\,492\,680\,000 z^3 + 58\,968\,000 z^2 - 93\,120\,300 z + 251\,535\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-2\,097\,152 z^7 + 184\,680\,448 z^6 - 3\,492\,765\,696 z^5 + 12\,310\,986\,240 z^4 - 1\,100\,736\,000 z^3 + 748\,893\,600 z^2 - 1\,061\,424\,000 z + 3\,773\,030\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8s7.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{11}{2}, \frac{5}{4}; -z\right) = \frac{1}{4\,506\,274\,080\sqrt{2}\, z^{13/4}} \left(\left(4z\left(524\,288 z^6 + 46\,563\,328 z^5 + 907\,597\,824 z^4 + 3\,714\,189\,696 z^3 + 2\,295\,135\,360 z^2 + 69\,287\,400 z + 150\,921\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(262\,144 z^6 + 23\,052\,288 z^5 + 433\,814\,528 z^4 + 1\,492\,680\,000 z^3 + 58\,968\,000 z^2 + 93\,120\,300 z + 251\,535\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(2\,097\,152 z^7 + 184\,680\,448 z^6 + 3\,492\,765\,696 z^5 + 12\,310\,986\,240 z^4 + 1\,100\,736\,000 z^3 + 748\,893\,600 z^2 + 1\,061\,424\,000 z + 3\,773\,030\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8s8.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{7}{4};z\right)=\frac{1}{2\,746\,681\,344\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536\,z^4+6\,602\,752\,z^3-150\,418\,944\,z^2+720\,757\,440\,z-213\,974\,865\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-6\,602\,752\,z^3+150\,418\,944\,z^2-720\,757\,440\,z+213\,974\,865\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}-2\left(32\,768\,z^{15/2}-8192\,z^7-3\,295\,232\,z^{13/2}+817\,664\,z^6+74\,603\,904\,z^{11/2}-18\,058\,848\,z^5-347\,547\,864\,z^{9/2}+75\,243\,870\,z^4+62\,899\,200\,z^{7/2}+11\,232\,000\,z^3-18\,532\,800\,z^{5/2}+13\,731\,120\,z^2+11\,793\,600\,z^{3/2}-50\,859\,900\,z-85\,135\,050\sqrt{z}+e^{4\sqrt{z}}\left(32\,768\,z^{15/2}+8192\,z^7-3\,295\,232\,z^{13/2}-817\,664\,z^6+74\,603\,904\,z^{11/2}+18\,058\,848\,z^5-347\,547\,864\,z^{9/2}-75\,243\,870\,z^4+62\,899\,200\,z^{7/2}-11\,232\,000\,z^3-18\,532\,800\,z^{5/2}-13\,731\,120\,z^2+11\,793\,600\,z^{3/2}+50\,859\,900\,z-85\,135\,050\sqrt{z}+42\,567\,525\right)-42\,567\,525\right)\right)\right) $$

07.22.03.a8s9.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{7}{4};-z\right)=\frac{1}{686\,670\,336\,z^{9/2}}\left(\sqrt{\pi}\left(65\,536\,z^4+6\,602\,752\,z^3+150\,418\,944\,z^2+720\,757\,440\,z+213\,974\,865\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+2\left(16\,384\,z^7+1\,647\,616\,z^6+37\,301\,952\,z^5+173\,773\,932\,z^4+31\,449\,600\,z^3+9\,266\,400\,z^2+5\,896\,800\,z+42\,567\,525\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8192\,z^7+817\,664\,z^6+18\,058\,848\,z^5+75\,243\,870\,z^4-11\,232\,000\,z^3+13\,731\,120\,z^2+50\,859\,900\,z-42\,567\,525\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a8sa.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{9}{4};z\right)=\frac{1}{8\,111\,293\,344\sqrt{2}\,z^{13/4}}\left(\left(4z\left(262\,144\,z^6-29\,884\,416\,z^5+809\,109\,504\,z^4-5\,238\,503\,424\,z^3+4\,979\,174\,004\,z^2+79\,606\,800\,z-104\,483\,925\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(131\,072\,z^6-14\,827\,520\,z^5+391\,673\,856\,z^4-2\,286\,470\,592\,z^3+706\,608\,630\,z^2+117\,198\,900\,z-174\,139\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\left(1\,048\,576\,z^7-118\,751\,232\,z^6+3\,147\,816\,960\,z^5-18\,641\,193\,984\,z^4+7\,051\,983\,120\,z^3+1\,910\,563\,200\,z^2-1\,525\,797\,000\,z+2\,612\,098\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8sb.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{9}{4};-z\right)=\frac{1}{8\,111\,293\,344\sqrt{2}\,z^{13/4}}$$
$$\left(\left(4z\left(262\,144z^6+29\,884\,416z^5+809\,109\,504z^4+5\,238\,503\,424z^3+4\,979\,174\,004z^2-79\,606\,800z-104\,483\,925\right)\right.\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(131\,072z^6+14\,827\,520z^5+391\,673\,856z^4+2\,286\,470\,592z^3+706\,608\,630z^2-\right.$$
$$\left.117\,198\,900z-174\,139\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,048\,576z^7+118\,751\,232z^6+3\,147\,816\,960z^5+\right.$$
$$\left.\left.\left.18\,641\,193\,984z^4+7\,051\,983\,120z^3-1\,910\,563\,200z^2-1\,525\,797\,000z-2\,612\,098\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a8sc.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{11}{4};z\right)=$$
$$-\frac{1}{878\,938\,030\,080\,z^{9/2}}\left(7e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-132\,055\,040z^4+4\,011\,171\,840z^3-28\,830\,297\,600z^2+\right.\right.\right.$$
$$\left.\left.\left.17\,117\,989\,200z+9\,628\,868\,925\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left(1\,048\,576z^5-132\,055\,040z^4+4\,011\,171\,840z^3-28\,830\,297\,600z^2+17\,117\,989\,200z+9\,628\,868\,925\right)$$
$$\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+4\left(262\,144z^{15/2}-65\,536z^7-32\,964\,608z^{13/2}+8\,192\,000z^6+996\,710\,400z^{11/2}-\right.$$
$$243\,202\,560z^5-7\,032\,426\,240z^{9/2}+1\,595\,168\,640z^4+3\,263\,703\,300z^{7/2}-68\,190\,525z^3+$$
$$1\,940\,889\,600z^{5/2}+256\,089\,600z^2-741\,312\,000z^{3/2}+454\,896\,000z+1\,238\,328\,000\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(262\,144z^{15/2}+65\,536z^7-32\,964\,608z^{13/2}-8\,192\,000z^6+996\,710\,400z^{11/2}+243\,202\,560z^5-\right.$$
$$\left.\left.\left.\left.7\,032\,426\,240z^{9/2}-1\,595\,168\,640z^4+3\,263\,703\,300z^{7/2}+68\,190\,525z^3+1\,940\,889\,600z^{5/2}-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.256\,089\,600z^2-741\,312\,000z^{3/2}-454\,896\,000z+1\,238\,328\,000\sqrt{z}-619\,164\,000\right)+619\,164\,000\right)\right)\right)$$

07.22.03.a8sd.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{11}{4};-z\right)=\frac{1}{219\,734\,507\,520\,z^{9/2}}$$
$$\left(7\left(\sqrt{\pi}\left(1\,048\,576z^5+132\,055\,040z^4+4\,011\,171\,840z^3+28\,830\,297\,600z^2+17\,117\,989\,200z-9\,628\,868\,925\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right.\right.$$
$$z^{11/4}+2\left(4\sqrt{z}\left(65\,536z^7+8\,241\,152z^6+249\,177\,600z^5+1\,758\,106\,560z^4+815\,925\,825z^3-485\,222\,400z^2-\right.\right.$$
$$\left.185\,328\,000z-309\,582\,000\right)\cos\left(2\sqrt{z}\right)+\left(65\,536z^7+8\,192\,000z^6+243\,202\,560z^5+\right.$$
$$\left.\left.\left.1\,595\,168\,640z^4+68\,190\,525z^3+256\,089\,600z^2-454\,896\,000z+619\,164\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a8se.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{13}{4};z\right) = \frac{1}{39\,655\,211\,904\sqrt{2}\,z^{13/4}}\left(\left(2z\left(1\,048\,576z^6-145\,948\,672z^5+5\,058\,797\,568z^4-44\,833\,485\,312z^3+56\,707\,591\,248z^2+14\,893\,363\,485z+1\,021\,620\,600\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(1\,048\,576z^6-145\,031\,168z^5+4\,932\,640\,768z^4-40\,615\,669\,248z^3+24\,067\,002\,960z^2+22\,487\,139\,675z+3\,405\,402\,000\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\left(1\,048\,576z^7-145\,162\,240z^6+4\,950\,368\,256z^5-41\,179\,894\,272z^4+27\,647\,539\,920z^3+25\,429\,028\,625z^2+8\,756\,748\,000z-6\,385\,128\,750\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8sf.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{13}{4};-z\right) = \frac{1}{39\,655\,211\,904\sqrt{2}\,z^{13/4}}\left(\left(2z\left(1\,048\,576z^6+145\,948\,672z^5+5\,058\,797\,568z^4+44\,833\,485\,312z^3+56\,707\,591\,248z^2+14\,893\,363\,485z+1\,021\,620\,600\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(1\,048\,576z^6+145\,031\,168z^5+4\,932\,640\,768z^4+40\,615\,669\,248z^3+24\,067\,002\,960z^2-22\,487\,139\,675z+3\,405\,402\,000\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(1\,048\,576z^7+145\,162\,240z^6+4\,950\,368\,256z^5+41\,179\,894\,272z^4+27\,647\,539\,920z^3+25\,429\,028\,625z^2+8\,756\,748\,000z+6\,385\,128\,750\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a8sg.01

$$ {}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{15}{4};z\right) = -\frac{1}{30\,682\,927\,595\,520\,z^{9/2}}\left(7e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-2\,535\,456\,768z^5+96\,268\,124\,160z^4-922\,569\,523\,200z^3+821\,663\,481\,600z^2+924\,371\,416\,800z+741\,422\,907\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-2\,535\,456\,768z^5+96\,268\,124\,160z^4-922\,569\,523\,200z^3+821\,663\,481\,600z^2+924\,371\,416\,800z+741\,422\,907\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+4\left(4\,194\,304z^{15/2}-1\,048\,576z^7-633\,077\,760z^{13/2}+157\,483\,008z^6+23\,949\,901\,824z^{11/2}-5\,872\,066\,560z^5-226\,379\,151\,360z^{9/2}+52\,570\,252\,800z^4+170\,562\,749\,760z^{7/2}-14\,830\,704\,720z^3+219\,100\,763\,700z^{5/2}-21\,999\,828\,825z^2+155\,271\,168\,000z^{3/2}+32\,348\,160\,000z-67\,931\,136\,000\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^{15/2}+1\,048\,576z^7-633\,077\,760z^{13/2}-157\,483\,008z^6+23\,949\,901\,824z^{11/2}+5\,872\,066\,560z^5-226\,379\,151\,360z^{9/2}-52\,570\,252\,800z^4+170\,562\,749\,760z^{7/2}+14\,830\,704\,720z^3+219\,100\,763\,700z^{5/2}+21\,999\,828\,825z^2+155\,271\,168\,000z^{3/2}-32\,348\,160\,000z-67\,931\,136\,000\sqrt{z}+33\,965\,568\,000\right)-33\,965\,568\,000\right)\right)\right) $$

07.22.03.a8sh.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{15}{4};-z\right)=$$

$$\frac{1}{7\,670\,731\,898\,880\,z^{9/2}}\left(7\left(\sqrt{\pi}\,\left(16\,777\,216\,z^6+2\,535\,456\,768\,z^5+96\,268\,124\,160\,z^4+922\,569\,523\,200\,z^3+\right.\right.\right.$$

$$\left.821\,663\,481\,600\,z^2-924\,371\,416\,800\,z+741\,422\,907\,225\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+$$

$$2\left(4\sqrt{z}\,\left(1\,048\,576\,z^7+158\,269\,440\,z^6+5\,987\,475\,456\,z^5+56\,594\,787\,840\,z^4+42\,640\,687\,440\,z^3-\right.\right.$$

$$\left.54\,775\,190\,925\,z^2+38\,817\,792\,000\,z+16\,982\,784\,000\right)\cos\left(2\sqrt{z}\right)+$$

$$\left(1\,048\,576\,z^7+157\,483\,008\,z^6+5\,872\,066\,560\,z^5+52\,570\,252\,800\,z^4+14\,830\,704\,720\,z^3-\right.$$

$$\left.\left.\left.\left.21\,999\,828\,825\,z^2-32\,348\,160\,000\,z-33\,965\,568\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a8si.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{17}{4};z\right)=$$

$$\left(\left(2\,z\left(16\,777\,216\,z^6-2\,757\,754\,880\,z^5+116\,516\,388\,864\,z^4-1\,311\,197\,184\,000\,z^3+2\,061\,400\,594\,176\,z^2+1\,261\,192\,252\,320\right.\right.\right.$$

$$\left.z+1\,249\,562\,399\,085\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\,\left(16\,777\,216\,z^6-2\,743\,074\,816\,z^5+114\,128\,125\,952\,z^4-\right.$$

$$\left.1\,213\,207\,412\,736\,z^3+1\,069\,283\,255\,040\,z^2+1\,718\,363\,687\,040\,z+1\,940\,939\,275\,275\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$

$$2\left(16\,777\,216\,z^7-2\,745\,171\,968\,z^6+114\,464\,587\,776\,z^5-1\,226\,473\,979\,904\,z^4+1\,184\,789\,548\,800\,z^3+\right.$$

$$\left.\left.\left.1\,807\,794\,948\,960\,z^2+2\,180\,010\,657\,825\,z+531\,242\,712\,000\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(1\,268\,966\,780\,928\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a8sj.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{17}{4};-z\right)=$$

$$\left(\left(2\,z\left(16\,777\,216\,z^6+2\,757\,754\,880\,z^5+116\,516\,388\,864\,z^4+1\,311\,197\,184\,000\,z^3+2\,061\,400\,594\,176\,z^2-\right.\right.\right.$$

$$\left.1\,261\,192\,252\,320\,z+1\,249\,562\,399\,085\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$

$$3\sqrt{z}\,\left(16\,777\,216\,z^6+2\,743\,074\,816\,z^5+114\,128\,125\,952\,z^4+1\,213\,207\,412\,736\,z^3+1\,069\,283\,255\,040\,z^2-\right.$$

$$1\,718\,363\,687\,040\,z+1\,940\,939\,275\,275\Big)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(16\,777\,216\,z^7+2\,745\,171\,968\,z^6+\right.$$

$$114\,464\,587\,776\,z^5+1\,226\,473\,979\,904\,z^4+1\,184\,789\,548\,800\,z^3-1\,807\,794\,948\,960\,z^2+$$

$$\left.\left.\left.2\,180\,010\,657\,825\,z-531\,242\,712\,000\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(1\,268\,966\,780\,928\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a8sk.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{19}{4};z\right)=$$
$$\frac{1}{130\,913\,824\,407\,552\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(-4\left(67\,108\,864\,z^{15/2}-16\,777\,216\,z^{7}-11\,819\,548\,672\,z^{13/2}+2\,942\,304\,256\,z^{6}+\right.\right.\right.$$
$$536\,910\,495\,744\,z^{11/2}-132\,064\,149\,504\,z^{5}-6\,361\,587\,843\,072\,z^{9/2}+1\,498\,510\,540\,800\,z^{4}+$$
$$6\,651\,150\,105\,600\,z^{7/2}-812\,365\,182\,720\,z^{3}+12\,774\,417\,102\,720\,z^{5/2}-2\,184\,055\,604\,640\,z^{2}+$$
$$20\,493\,752\,724\,900\,z^{3/2}-2\,020\,056\,272\,325\,z+10\,144\,382\,976\,000\,\sqrt{z}\;+$$
$$e^{4\sqrt{z}}\left(67\,108\,864\,z^{15/2}+16\,777\,216\,z^{7}-11\,819\,548\,672\,z^{13/2}-2\,942\,304\,256\,z^{6}+536\,910\,495\,744\,z^{11/2}+\right.$$
$$132\,064\,149\,504\,z^{5}-6\,361\,587\,843\,072\,z^{9/2}-1\,498\,510\,540\,800\,z^{4}+6\,651\,150\,105\,600\,z^{7/2}+$$
$$812\,365\,182\,720\,z^{3}+12\,774\,417\,102\,720\,z^{5/2}+2\,184\,055\,604\,640\,z^{2}+20\,493\,752\,724\,900\,z^{3/2}+$$
$$\left.\left.\left.2\,020\,056\,272\,325\,z+10\,144\,382\,976\,000\,\sqrt{z}\;-5\,072\,191\,488\,000\right)+5\,072\,191\,488\,000\right)\right)-$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\;z^{3/4}\left(268\,435\,456\,z^{7}-47\,328\,526\,336\,z^{6}+2\,156\,405\,981\,184\,z^{5}-25\,831\,946\,649\,600\,z^{4}+\right.$$
$$\left.30\,675\,436\,646\,400\,z^{3}+51\,764\,799\,340\,800\,z^{2}+83\,039\,365\,609\,200\,z+57\,089\,563\,856\,325\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\;z^{3/4}\left(268\,435\,456\,z^{7}-47\,328\,526\,336\,z^{6}+2\,156\,405\,981\,184\,z^{5}-25\,831\,946\,649\,600\,z^{4}+\right.$$
$$\left.\left.30\,675\,436\,646\,400\,z^{3}+51\,764\,799\,340\,800\,z^{2}+83\,039\,365\,609\,200\,z+57\,089\,563\,856\,325\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)$$

07.22.03.a8sl.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{19}{4};-z\right)=$$
$$\frac{1}{32\,728\,456\,101\,888\,z^{9/2}}\left(\sqrt{\pi}\;z^{3/4}\left(268\,435\,456\,z^{7}+47\,328\,526\,336\,z^{6}+2\,156\,405\,981\,184\,z^{5}+25\,831\,946\,649\,600\,z^{4}+\right.\right.$$
$$\left.30\,675\,436\,646\,400\,z^{3}-51\,764\,799\,340\,800\,z^{2}+83\,039\,365\,609\,200\,z-57\,089\,563\,856\,325\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\left(4\sqrt{z}\,\left(16\,777\,216\,z^{7}+2\,954\,887\,168\,z^{6}+134\,227\,623\,936\,z^{5}+1\,590\,396\,960\,768\,z^{4}+1\,662\,787\,526\,400\,z^{3}-\right.\right.$$
$$3\,193\,604\,275\,680\,z^{2}+5\,123\,438\,181\,225\,z-2\,536\,095\,744\,000\left.\right)\cos\left(2\sqrt{z}\right)+$$
$$\left(16\,777\,216\,z^{7}+2\,942\,304\,256\,z^{6}+132\,064\,149\,504\,z^{5}+1\,498\,510\,540\,800\,z^{4}+812\,365\,182\,720\,z^{3}-\right.$$
$$\left.\left.\left.2\,184\,055\,604\,640\,z^{2}+2\,020\,056\,272\,325\,z+5\,072\,191\,488\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8sm.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{11}{2}, \frac{21}{4}; z\right) = $$
$$ \left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 - 50\,885\,296\,128\,z^6 + 2\,536\,158\,265\,344\,z^5 - 34\,607\,631\,237\,120\,z^4 + 64\,922\,806\,333\,440\,z^3 + \right.\right.\right. $$
$$ \left.\left.\left. 66\,253\,944\,556\,800\,z^2 + 123\,838\,805\,890\,800\,z + 86\,746\,480\,145\,325\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 3\left(268\,435\,456\,z^7 - 50\,650\,415\,104\,z^6 + 2\,492\,029\,992\,960\,z^5 - 32\,461\,869\,219\,840\,z^4 + 38\,071\,807\,488\,000\,z^3 + \right. $$
$$ \left. 85\,309\,666\,041\,600\,z^2 + 171\,586\,433\,818\,800\,z + 144\,577\,466\,908\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7 - 50\,683\,969\,536\,z^6 + 2\,498\,258\,534\,400\,z^5 - 32\,754\,793\,512\,960\,z^4 + \right. $$
$$ \left. 41\,316\,687\,360\,000\,z^3 + 87\,401\,796\,768\,000\,z^2 + 177\,215\,271\,433\,200\,z + 178\,735\,898\,966\,625\right) $$
$$ \left. I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(609\,104\,054\,845\,440\,\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a8sn.01

$$ {}_1F_2\left(-\frac{13}{4}; \frac{11}{2}, \frac{21}{4}; -z\right) = $$
$$ \left(17\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 + 50\,885\,296\,128\,z^6 + 2\,536\,158\,265\,344\,z^5 + 34\,607\,631\,237\,120\,z^4 + 64\,922\,806\,333\,440\,z^3 - \right.\right.\right. $$
$$ \left.\left.\left. 66\,253\,944\,556\,800\,z^2 + 123\,838\,805\,890\,800\,z - 86\,746\,480\,145\,325\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 3\left(268\,435\,456\,z^7 + 50\,650\,415\,104\,z^6 + 2\,492\,029\,992\,960\,z^5 + 32\,461\,869\,219\,840\,z^4 + 38\,071\,807\,488\,000\,z^3 - \right. $$
$$ \left. 85\,309\,666\,041\,600\,z^2 + 171\,586\,433\,818\,800\,z - 144\,577\,466\,908\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\,\left(268\,435\,456\,z^7 + 50\,683\,969\,536\,z^6 + 2\,498\,258\,534\,400\,z^5 + 32\,754\,793\,512\,960\,z^4 + \right. $$
$$ \left. 41\,316\,687\,360\,000\,z^3 - 87\,401\,796\,768\,000\,z^2 + 177\,215\,271\,433\,200\,z - 178\,735\,898\,966\,625\right) $$
$$ \left. J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(609\,104\,054\,845\,440\,\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a8so.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{23}{4};z\right)=$$
$$\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(1\,073\,741\,824\,z^{15/2}-268\,435\,456\,z^7-216\,157\,650\,944\,z^{13/2}+53\,838\,086\,144\,z^6+11\,460\,704\,993\,280\,z^{11/2}-\right.\right.\right.$$
$$2\,825\,489\,743\,872\,z^5-163\,254\,068\,576\,256\,z^{9/2}+38\,826\,418\,176\,000\,z^4+218\,606\,421\,196\,800\,z^{7/2}-$$
$$31\,573\,134\,028\,800\,z^3+553\,527\,917\,429\,760\,z^{5/2}-112\,923\,616\,216\,320\,z^2+$$
$$1\,354\,110\,830\,654\,400\,z^{3/2}-253\,506\,395\,142\,000\,z+1\,768\,550\,252\,332\,500\,\sqrt{z}+e^{4\sqrt{z}}$$
$$\left(1\,073\,741\,824\,z^{15/2}+268\,435\,456\,z^7-216\,157\,650\,944\,z^{13/2}-53\,838\,086\,144\,z^6+11\,460\,704\,993\,280\,z^{11/2}+\right.$$
$$2\,825\,489\,743\,872\,z^5-163\,254\,068\,576\,256\,z^{9/2}-38\,826\,418\,176\,000\,z^4+218\,606\,421\,196\,800\,z^{7/2}+$$
$$31\,573\,134\,028\,800\,z^3+553\,527\,917\,429\,760\,z^{5/2}+112\,923\,616\,216\,320\,z^2+1\,354\,110\,830\,654\,400\,z^{3/2}+$$
$$\left.253\,506\,395\,142\,000\,z+1\,768\,550\,252\,332\,500\,\sqrt{z}-27\,931\,668\,321\,375\right)+27\,931\,668\,321\,375\Big)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-865\,435\,910\,144\,z^7+46\,003\,327\,598\,592\,z^6-661\,297\,834\,229\,760\,z^5+\right.$$
$$981\,613\,972\,684\,800\,z^4+2\,208\,631\,438\,540\,800\,z^3+5\,314\,519\,398\,988\,800\,z^2+$$
$$\left.7\,307\,464\,173\,609\,600\,z+2\,569\,030\,373\,534\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4\,294\,967\,296\,z^8-865\,435\,910\,144\,z^7+46\,003\,327\,598\,592\,z^6-661\,297\,834\,229\,760\,z^5+\right.$$
$$981\,613\,972\,684\,800\,z^4+2\,208\,631\,438\,540\,800\,z^3+5\,314\,519\,398\,988\,800\,z^2+$$
$$\left.\left.\left.7\,307\,464\,173\,609\,600\,z+2\,569\,030\,373\,534\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)\Big/\left(3\,527\,783\,057\,719\,296\,z^{19/4}\right)$$

07.22.03.a8sp.01

$${}_1F_2\left(-\frac{13}{4};\frac{11}{2},\frac{23}{4};-z\right)=\frac{1}{881\,945\,764\,429\,824\,z^{19/4}}$$
$$\left(\sqrt{\pi}\left(4\,294\,967\,296\,z^8+865\,435\,910\,144\,z^7+46\,003\,327\,598\,592\,z^6+661\,297\,834\,229\,760\,z^5+981\,613\,972\,684\,800\,z^4-\right.\right.$$
$$\left.2\,208\,631\,438\,540\,800\,z^3+5\,314\,519\,398\,988\,800\,z^2-7\,307\,464\,173\,609\,600\,z+2\,569\,030\,373\,534\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(268\,435\,456\,z^7+54\,039\,412\,736\,z^6+2\,865\,176\,248\,320\,z^5+40\,813\,517\,144\,064\,z^4+\right.\right.$$
$$54\,651\,605\,299\,200\,z^3-138\,381\,979\,357\,440\,z^2+338\,527\,707\,663\,600\,z-442\,137\,563\,083\,125\Big)\cos\left(2\sqrt{z}\right)+$$
$$\left(268\,435\,456\,z^7+53\,838\,086\,144\,z^6+2\,825\,489\,743\,872\,z^5+38\,826\,418\,176\,000\,z^4+31\,573\,134\,028\,800\,z^3-\right.$$
$$\left.\left.\left.112\,923\,616\,216\,320\,z^2+253\,506\,395\,142\,000\,z+27\,931\,668\,321\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1=-\frac{11}{4}$, $b_{1.}\geq-\frac{11}{2}$

For fixed z and $a_1=-\frac{11}{4}$, $b_{1.}=-\frac{11}{2}$

07.22.03.a8sq.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{23}{4};z\right)=\left(\frac{1024\,z^4}{1\,195\,425}+\frac{448\,z^3}{11\,799}+\frac{1952\,z^2}{3933}+\frac{44\,z}{23}+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\left(2048\,z^4+232\,320\,z^3+5\,377\,680\,z^2+39\,501\,000\,z+68\,139\,225\right)\sinh\left(2\sqrt{z}\right)}{68\,139\,225}$$

07.22.03.a8sr.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{23}{4};-z\right)=\left(\frac{1024\,z^4}{1\,195\,425}-\frac{448\,z^3}{11\,799}+\frac{1952\,z^2}{3933}-\frac{44\,z}{23}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\,\left(2048\,z^4-232\,320\,z^3+5\,377\,680\,z^2-39\,501\,000\,z+68\,139\,225\right)\sin\left(2\sqrt{z}\right)}{68\,139\,225}$$

07.22.03.a8ss.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(26\,624\,z^4+956\,160\,z^3+9\,528\,480\,z^2+17\,901\,000\,z+9\,398\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\right.\right.$$
$$\sqrt{z}\,\left(1024\,z^4+99\,648\,z^3+1\,890\,720\,z^2+10\,382\,580\,z+9\,398\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.36\,z\left(768\,z^3+29\,744\,z^2+318\,240\,z+1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8st.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(26\,624\,z^4-956\,160\,z^3+9\,528\,480\,z^2-17\,901\,000\,z+9\,398\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\,\left(1024\,z^4-99\,648\,z^3+1\,890\,720\,z^2-10\,382\,580\,z+9\,398\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.36\,z\left(768\,z^3-29\,744\,z^2+318\,240\,z-1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8su.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{19}{4};z\right)=$$
$$\left(\frac{1024\,z^4}{2\,962\,575}+\frac{832\,z^3}{28\,215}+\frac{1184\,z^2}{2565}+\frac{36\,z}{19}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(1280\,z^3+40\,656\,z^2+332\,640\,z+592\,515\right)\sinh\left(2\sqrt{z}\right)}{592\,515}$$

07.22.03.a8sv.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{19}{4};-z\right)=$$
$$\left(\frac{1024\,z^4}{2\,962\,575}-\frac{832\,z^3}{28\,215}+\frac{1184\,z^2}{2565}-\frac{36\,z}{19}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(-1280\,z^3+40\,656\,z^2-332\,640\,z+592\,515\right)\sin\left(2\sqrt{z}\right)}{592\,515}$$

07.22.03.a8sw.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{17}{4};z\right)=\frac{1}{447\,525\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(512\,z^4+35\,840\,z^3+434\,880\,z^2+842\,400\,z+447\,525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(3008\,z^3+79\,200\,z^2+484\,380\,z+447\,525\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(128\,z^3+9936\,z^2+126\,360\,z+447\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8sx.01

$$ {}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{17}{4};-z\right)=\frac{1}{447\,525\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(512\,z^4-35\,840\,z^3+434\,880\,z^2-842\,400\,z+447\,525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(3008\,z^3-79\,200\,z^2+484\,380\,z-447\,525\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-128\,z^3+9936\,z^2-126\,360\,z+447\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8sy.01

$$ {}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{15}{4};z\right)=$$
$$\left(\frac{64\,z^3}{3465}+\frac{608\,z^2}{1485}+\frac{28\,z}{15}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(128\,z^3+8400\,z^2+83\,160\,z+155\,925\right)\sinh\left(2\sqrt{z}\right)}{155\,925}$$

07.22.03.a8sz.01

$$ {}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{15}{4};-z\right)=$$
$$\left(-\frac{64\,z^3}{3465}+\frac{608\,z^2}{1485}-\frac{28\,z}{15}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-128\,z^3+8400\,z^2-83\,160\,z+155\,925\right)\sin\left(2\sqrt{z}\right)}{155\,925}$$

07.22.03.a8t0.01

$$ {}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(256\,z^3+4768\,z^2+9720\,z+5265\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64\,z^3+3680\,z^2+27\,540\,z+26\,325\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(368\,z^2+6480\,z+26\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8t1.01

$$ {}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(-5\left(256\,z^3-4768\,z^2+9720\,z-5265\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64\,z^3-3680\,z^2+27\,540\,z-26\,325\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(368\,z^2-6480\,z+26\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8t2.01

$$ {}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{11}{4};z\right)=\left(\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}+\frac{20\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{495}\sqrt{z}\left(16\,z^2+240\,z+495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8t3.01

$$ {}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{11}{4};-z\right)=\left(-\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}-\frac{20\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.a8t4.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{9}{4};z\right)=\frac{\sqrt[4]{z}\left(5\,(8\,z+9)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,(4\,z+45)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)\right)^2\Gamma\left(\frac{3}{4}\right)^2}{2025\sqrt{2}}$$

07.22.03.a8t5.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{9}{4};-z\right)=\frac{\sqrt[4]{z}\left(5\,(8\,z-9)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,(4\,z-45)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)\right)^2\Gamma\left(\frac{3}{4}\right)^2}{2025\sqrt{2}}$$

07.22.03.a8t6.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{7}{4};z\right)=\frac{1}{1890}$$
$$\left(e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+16\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}-32\,e^{4\sqrt{z}}\,z^{5/2}+32\,z^{5/2}+160\,e^{4\sqrt{z}}\,z^2+\right.\right.$$
$$\left.\left.160\,z^2-720\,e^{4\sqrt{z}}\,z^{3/2}+720\,z^{3/2}+1620\,e^{4\sqrt{z}}\,z+1620\,z-1890\,e^{4\sqrt{z}}\,\sqrt{z}+1890\sqrt{z}+945\,e^{4\sqrt{z}}+945\right)\right)$$

07.22.03.a8t7.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{945}\left(-32\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2\left(16\,z^2-360\,z+945\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+5\left(32\,z^2-324\,z+189\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8t8.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{5}{4};z\right)=\frac{1}{225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(16\,z^3+160\,z^2+360\,z+225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(2\,z^2+60\,z+75\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(225-4\,z^2\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8t9.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{5}{4};-z\right)=$$
$$-\frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,z^3-160\,z^2+360\,z-225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(2\,z^2-60\,z+75\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(4\,z^2-225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8ta.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{1080}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,(16\,z+165)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}-e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,(16\,z+165)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+\right.\right.$$
$$\left.\left.4\left(-4\,z^{5/2}+5\,z^2+180\,z+270\sqrt{z}+e^{4\sqrt{z}}\left(4\,z^{5/2}+5\,z^2+180\,z-270\sqrt{z}+135\right)+135\right)\right)\right)$$

07.22.03.a8tb.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{270}\left(\sqrt{\pi}\ (16z-165)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4} + 4\left(135-2z^2\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\ + 10\left(z^2-36z+27\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8tc.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, -\frac{1}{4}; z\right) = -\frac{1}{540\sqrt{2}}\left(\sqrt[4]{z}\ \left(\left(32z^3+466z^2-540\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left.\sqrt{z}\ \left(-16z^2+261z+2160\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2z\left(16z^2+261z+1080\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8td.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{540\sqrt{2}}\left(\sqrt[4]{z}\ \left(\left(32z^3-466z^2+540\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\ \left(-16z^2-261z+2160\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.2z\left(16z^2-261z+1080\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8te.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) = \frac{1}{46\,080}\left(e^{-2\sqrt{z}}\ \left(4\left(64z^{5/2}-16z^2+1460z^{3/2}+1095z+11\,520\sqrt{z}\ - \right.\right.\right.$$
$$e^{4\sqrt{z}}\ \left(64z^{5/2}+16z^2+1460z^{3/2}-1095z+11\,520\sqrt{z}\ -5760\right)+5760\Big) + e^{2\sqrt{z}}\ \sqrt{2\pi}\ z^{3/4}$$
$$\left.\left.\left(256z^2+5280z+21\,945\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) + e^{2\sqrt{z}}\ \sqrt{2\pi}\ z^{3/4}\left(256z^2+5280z+21\,945\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8tf.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) = \frac{1}{11\,520}\left(\sqrt{\pi}\ z^{3/4}\left(-256z^2+5280z-21\,945\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.$$
$$\left.2\left(\left(-16z^2-1095z+5760\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\ \left(16z^2-365z+2880\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8tg.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{86\,400\sqrt{2}}\left(\sqrt[4]{z}\ \left(2\left(256z^3+6560z^2+45\,585z+43\,200\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\ \left(256z^2+8640z+136\,755\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left.2z\left(256z^2+6624z+36\,045\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8th.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},\frac{3}{4};-z\right)=$$
$$-\frac{1}{86\,400\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(256z^3-6560z^2+45\,585z-43\,200\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-256z^2+8640z-136\,755\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(256z^2-6624z+36\,045\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8ti.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{8\,847\,360\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1024z^{5/2}+256z^2-31\,872z^{3/2}+14\,304z-192\,900\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.256z^2+31\,872z^{3/2}+14\,304z+192\,900\sqrt{z}+408\,285\right)+408\,285\right)+\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+126\,720z^2+1\,053\,360z+1\,514\,205\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+126\,720z^2+1\,053\,360z+1\,514\,205\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8tj.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},\frac{5}{4};-z\right)=\frac{1}{2\,211\,840\sqrt[4]{z}}\left(\sqrt{\pi}\left(-4096z^3+126\,720z^2-1\,053\,360z+1\,514\,205\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\sqrt[4]{z}\left(\left(-256z^2+14\,304z-408\,285\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(256z^2-7968z+48\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8tk.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},\frac{7}{4};z\right)=\frac{1}{6\,451\,200\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(4096z^3+147\,200z^2+1\,485\,360z+1\,485\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096z^3+149\,760z^2+186\,480z-5\,221\,125\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(4096z^3+148\,224z^2+1\,577\,520z+5\,221\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8tl.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},\frac{7}{4};-z\right)=\frac{1}{6\,451\,200\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(-4096z^3+147\,200z^2-1\,485\,360z+1\,485\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4096z^3-149\,760z^2+186\,480z+5\,221\,125\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-4096z^3+148\,224z^2-1\,577\,520z+5\,221\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8tm.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, \frac{9}{4}; z\right) = \frac{1}{452\,984\,832\, z^{5/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z} \left(-16\,384\, z^{7/2} + 4096\, z^3 - 678\,912\, z^{5/2} + 172\,800\, z^2 - 8\,953\,536\, z^{3/2} - 3\,323\,088\, z - 54\,511\,380\sqrt{z} + e^{4\sqrt{z}} \left(16\,384\, z^{7/2} + 4096\, z^3 + 678\,912\, z^{5/2} + 172\,800\, z^2 + 8\,953\,536\, z^{3/2} - 3\,323\,088\, z + 54\,511\,380\sqrt{z} - 40\,883\,535\right) - 40\,883\,535\right) + e^{2\sqrt{z}} \sqrt{2\pi} \left(65\,536\, z^4 + 2\,703\,360\, z^3 + 33\,707\,520\, z^2 + 96\,909\,120\, z - 40\,883\,535\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}} \sqrt{2\pi} \left(65\,536\, z^4 + 2\,703\,360\, z^3 + 33\,707\,520\, z^2 + 96\,909\,120\, z - 40\,883\,535\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8tn.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, \frac{9}{4}; -z\right) = \frac{1}{113\,246\,208\, z^{5/4}} \left(\sqrt{\pi} \left(-65\,536\, z^4 + 2\,703\,360\, z^3 - 33\,707\,520\, z^2 + 96\,909\,120\, z + 40\,883\,535\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z} \left(\left(-4096\, z^3 + 172\,800\, z^2 + 3\,323\,088\, z - 40\,883\,535\right) \cos\left(2\sqrt{z}\right) + 4\sqrt{z} \left(4096\, z^3 - 169\,728\, z^2 + 2\,238\,384\, z - 13\,627\,845\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8to.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, \frac{11}{4}; z\right) = \frac{1}{265\,420\,800\sqrt{2}\, z^{5/4}} \left(\left(2\sqrt{z} \left(65\,536\, z^4 + 3\,031\,040\, z^3 + 43\,752\,960\, z^2 + 180\,446\,400\, z + 151\,412\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(65\,536\, z^4 + 3\,072\,000\, z^3 + 53\,498\,880\, z^2 + 835\,380\,000\, z + 454\,237\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z} \left(65\,536\, z^4 + 3\,047\,424\, z^3 + 44\,536\,320\, z^2 + 133\,660\,800\, z - 454\,237\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8tp.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, \frac{11}{4}; -z\right) = \frac{1}{265\,420\,800\sqrt{2}\, z^{5/4}} \left(\left(-2\sqrt{z} \left(65\,536\, z^4 - 3\,031\,040\, z^3 + 43\,752\,960\, z^2 - 180\,446\,400\, z + 151\,412\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(65\,536\, z^4 - 3\,072\,000\, z^3 + 53\,498\,880\, z^2 - 835\,380\,000\, z + 454\,237\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z} \left(-65\,536\, z^4 + 3\,047\,424\, z^3 - 44\,536\,320\, z^2 + 133\,660\,800\, z + 454\,237\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8tq.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) = \frac{1}{16\,106\,127\,360\, z^{9/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z} \left(-262\,144\, z^{9/2} + 65\,536\, z^4 - 13\,565\,952\, z^{7/2} + 3\,440\,640\, z^3 - 227\,358\,720\, z^{5/2} + 91\,046\,400\, z^2 - 498\,389\,760\, z^{3/2} + 3\,488\,728\,320\, z + 8\,449\,263\,900\sqrt{z} + e^{4\sqrt{z}} \left(262\,144\, z^{9/2} + 65\,536\, z^4 + 13\,565\,952\, z^{7/2} + 3\,440\,640\, z^3 + 227\,358\,720\, z^{5/2} + 91\,046\,400\, z^2 + 498\,389\,760\, z^{3/2} + 3\,488\,728\,320\, z - 8\,449\,263\,900\sqrt{z} + 6\,336\,947\,925\right) + 6\,336\,947\,925\right) + e^{2\sqrt{z}} \sqrt{2\pi} \left(1\,048\,576\, z^5 + 54\,067\,200\, z^4 + 898\,867\,200\, z^3 + 3\,876\,364\,800\, z^2 - 3\,270\,682\,800\, z + 6\,336\,947\,925\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}} \sqrt{2\pi} \left(1\,048\,576\, z^5 + 54\,067\,200\, z^4 + 898\,867\,200\, z^3 + 3\,876\,364\,800\, z^2 - 3\,270\,682\,800\, z + 6\,336\,947\,925\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8tr.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) = \frac{1}{4\,026\,531\,840\, z^{9/4}} \left(\sqrt{\pi} \left(-1\,048\,576\, z^5 + 54\,067\,200\, z^4 - 898\,867\,200\, z^3 + 3\,876\,364\,800\, z^2 + 3\,270\,682\,800\, z + 6\,336\,947\,925\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z} \left(\left(-65\,536\, z^4 + 3\,440\,640\, z^3 - 91\,046\,400\, z^2 + 3\,488\,728\,320\, z - 6\,336\,947\,925\right) \cos\left(2\sqrt{z}\right) + 4\sqrt{z} \left(65\,536\, z^4 - 3\,391\,488\, z^3 + 56\,839\,680\, z^2 - 124\,597\,440\, z - 2\,112\,315\,975\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8ts.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) = \frac{1}{8\,493\,465\,600\sqrt{2}\, z^{9/4}} \left(\left(2\sqrt{z} \left(1\,048\,576\, z^5 + 59\,310\,080\, z^4 + 1\,102\,848\,000\, z^3 + 5\,239\,641\,600\, z^2 - 26\,648\,622\,000\, z - 34\,976\,316\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-1\,048\,576\, z^5 - 59\,965\,440\, z^4 - 1\,141\,678\,080\, z^3 + 5\,881\,075\,200\, z^2 + 239\,837\,598\,000\, z + 104\,928\,949\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z} \left(1\,048\,576\, z^5 + 59\,572\,224\, z^4 + 1\,118\,085\,120\, z^3 + 5\,881\,075\,200\, z^2 + 15\,989\,173\,200\, z + 104\,928\,949\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8tt.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) = \frac{1}{8\,493\,465\,600\sqrt{2}\, z^{9/4}} $$
$$ \left(\left(-2\sqrt{z}\left(1\,048\,576 z^5 - 59\,310\,080 z^4 + 1\,102\,848\,000 z^3 - 5\,239\,641\,600 z^2 - 26\,648\,622\,000 z + 34\,976\,316\,375\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1\,048\,576 z^5 - 59\,965\,440 z^4 + 1\,141\,678\,080 z^3 + 5\,881\,075\,200 z^2 - \right. $$
$$ 239\,837\,598\,000 z + 104\,928\,949\,125\Big) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-1\,048\,576 z^5 + 59\,572\,224 z^4 - \right. $$
$$ \left.\left.\left. 1\,118\,085\,120 z^3 + 5\,881\,075\,200 z^2 - 15\,989\,173\,200 z + 104\,928\,949\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8tu.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) = \frac{1}{6\,184\,752\,906\,240 z^{13/4}} $$
$$ \left(13 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 260\,308\,992 z^{9/2} + 65\,863\,680 z^4 - 5\,443\,584\,000 z^{7/2} + \right.\right.\right. $$
$$ 1\,412\,997\,120 z^3 - 35\,159\,132\,160 z^{5/2} - 48\,842\,196\,480 z^2 - 405\,564\,667\,200 z^{3/2} - 1\,520\,867\,502\,000 z - $$
$$ 2\,661\,518\,128\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 260\,308\,992 z^{9/2} + 65\,863\,680 z^4 + \right. $$
$$ \left. 5\,443\,584\,000 z^{7/2} + 1\,412\,997\,120 z^3 + 35\,159\,132\,160 z^{5/2} - 48\,842\,196\,480 z^2 + 405\,564\,667\,200 z^{3/2} - \right. $$
$$ \left. 1\,520\,867\,502\,000 z + 2\,661\,518\,128\,500\sqrt{z} - 1\,996\,138\,596\,375\right) - 1\,996\,138\,596\,375\Big) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 1\,038\,090\,240 z^5 + 21\,572\,812\,800 z^4 + 124\,043\,673\,600 z^3 - \right. $$
$$ \left. 156\,992\,774\,400 z^2 + 608\,347\,000\,800 z - 1\,996\,138\,596\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 1\,038\,090\,240 z^5 + 21\,572\,812\,800 z^4 + 124\,043\,673\,600 z^3 - \right. $$
$$ \left.\left. 156\,992\,774\,400 z^2 + 608\,347\,000\,800 z - 1\,996\,138\,596\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.a8tv.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) = $$
$$ \frac{1}{1\,546\,188\,226\,560 z^{13/4}}\left(13\left(\sqrt{\pi}\left(-16\,777\,216 z^6 + 1\,038\,090\,240 z^5 - 21\,572\,812\,800 z^4 + 124\,043\,673\,600 z^3 + \right.\right.\right. $$
$$ \left. 156\,992\,774\,400 z^2 + 608\,347\,000\,800 z + 1\,996\,138\,596\,375\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z} $$
$$ \left(4\sqrt{z}\left(1\,048\,576 z^5 - 65\,077\,248 z^4 + 1\,360\,896\,000 z^3 - 8\,789\,783\,040 z^2 + 101\,391\,166\,800 z - 665\,379\,532\,125\right)\right. $$
$$ \sin\left(2\sqrt{z}\right) - \left(1\,048\,576 z^5 - 65\,863\,680 z^4 + 1\,412\,997\,120 z^3 + \right. $$
$$ \left.\left.\left. 48\,842\,196\,480 z^2 - 1\,520\,867\,502\,000 z + 1\,996\,138\,596\,375\right)\cos\left(2\sqrt{z}\right)\right)\right)\Big) $$

07.22.03.a8tw.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) =$$
$$\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6 + 1\,121\,976\,320\,z^5 + 25\,528\,565\,760\,z^4 + 162\,041\,118\,720\,z^3 + 85\,275\,590\,400\,z^2 + \right.\right.\right.$$
$$\left.\left.\left. 12\,631\,446\,828\,000\,z + 14\,235\,360\,764\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(16\,777\,216\,z^6 + 1\,132\,462\,080\,z^5 + 26\,257\,981\,440\,z^4 + \right.\right.\right.$$
$$\left.\left.\left. 250\,925\,875\,200\,z^3 + 12\,023\,858\,246\,400\,z^2 + 102\,970\,275\,408\,000\,z + 42\,706\,082\,293\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.$$
$$2\sqrt{z}\,\left(16\,777\,216\,z^6 + 1\,126\,170\,624\,z^5 + 25\,815\,613\,440\,z^4 + 168\,892\,416\,000\,z^3 - 596\,929\,132\,800\,z^2 - \right.$$
$$\left.\left. 11\,863\,966\,514\,400\,z - 42\,706\,082\,293\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\Bigg)\Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(235\,552\,112\,640\,\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a8tx.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) =$$
$$\left(\left(-2\sqrt{z}\,\left(16\,777\,216\,z^6 - 1\,121\,976\,320\,z^5 + 25\,528\,565\,760\,z^4 - 162\,041\,118\,720\,z^3 + 85\,275\,590\,400\,z^2 - \right.\right.\right.$$
$$\left.\left.\left. 12\,631\,446\,828\,000\,z + 14\,235\,360\,764\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216\,z^6 - 1\,132\,462\,080\,z^5 + 26\,257\,981\,440\,z^4 - \right.\right.\right.$$
$$\left.\left.\left. 250\,925\,875\,200\,z^3 + 12\,023\,858\,246\,400\,z^2 - 102\,970\,275\,408\,000\,z + 42\,706\,082\,293\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.$$
$$2\sqrt{z}\,\left(-16\,777\,216\,z^6 + 1\,126\,170\,624\,z^5 - 25\,815\,613\,440\,z^4 + 168\,892\,416\,000\,z^3 + 596\,929\,132\,800\,z^2 - \right.$$
$$\left.\left. 11\,863\,966\,514\,400\,z + 42\,706\,082\,293\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\Bigg)\Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(235\,552\,112\,640\,\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a8ty.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) =$$
$$\left(221\,e^{-2\sqrt{z}}\,\left(-4\sqrt[4]{z}\,\left(-67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 - 4\,857\,004\,032\,z^{11/2} + 1\,226\,833\,920\,z^5 - 121\,743\,605\,760\,z^{9/2} + \right.\right.\right.$$
$$\left.\left.\left. 31\,399\,280\,640\,z^4 - 893\,114\,449\,920\,z^{7/2} + 588\,643\,614\,720\,z^3 + 8\,848\,683\,648\,000\,z^{5/2} + \right.\right.\right.$$
$$\left.\left.\left. 69\,757\,122\,758\,400\,z^2 + 318\,773\,828\,419\,200\,z^{3/2} + 855\,944\,230\,125\,600\,z + 1\,349\,389\,691\,149\,500\,\sqrt{z}\, + \right.\right.\right.$$
$$\left.\left.\left. e^{4\sqrt{z}}\,\left(67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 + 4\,857\,004\,032\,z^{11/2} + 1\,226\,833\,920\,z^5 + 121\,743\,605\,760\,z^{9/2} + \right.\right.\right.\right.$$
$$\left.\left.\left.\left. 31\,399\,280\,640\,z^4 + 893\,114\,449\,920\,z^{7/2} + 588\,643\,614\,720\,z^3 - 8\,848\,683\,648\,000\,z^{5/2} + \right.\right.\right.\right.$$
$$\left.\left.\left.\left. 69\,757\,122\,758\,400\,z^2 - 318\,773\,828\,419\,200\,z^{3/2} + 855\,944\,230\,125\,600\,z - \right.\right.\right.\right.$$
$$\left.\left.\left.\left. 1\,349\,389\,691\,149\,500\,\sqrt{z}\, + 1\,012\,042\,268\,362\,125\right) + 1\,012\,042\,268\,362\,125\right) + \right.$$
$$e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(268\,435\,456\,z^7 + 19\,377\,684\,480\,z^6 + 483\,231\,006\,720\,z^5 + 3\,473\,222\,860\,800\,z^4 - \right.$$
$$\left.\left. 5\,861\,063\,577\,600\,z^3 + 34\,067\,432\,044\,800\,z^2 - 223\,567\,522\,794\,000\,z + 1\,012\,042\,268\,362\,125\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(268\,435\,456\,z^7 + 19\,377\,684\,480\,z^6 + 483\,231\,006\,720\,z^5 + 3\,473\,222\,860\,800\,z^4 - \right.$$
$$5\,861\,063\,577\,600\,z^3 + 34\,067\,432\,044\,800\,z^2 - 223\,567\,522\,794\,000\,z + $$
$$\left.\left.\left. 1\,012\,042\,268\,362\,125\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) \Big/ \left(2\,770\,769\,301\,995\,520\,z^{17/4}\right)$$

07.22.03.a8tz.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},\frac{21}{4};-z\right)=$$
$$\frac{1}{692\,692\,325\,498\,880\,z^{17/4}}\left(221\left(\sqrt{\pi}\,\left(-268\,435\,456\,z^7+19\,377\,684\,480\,z^6-483\,231\,006\,720\,z^5+3\,473\,222\,860\,800\,z^4+\right.\right.\right.$$
$$\left.5\,861\,063\,577\,600\,z^3+34\,067\,432\,044\,800\,z^2+223\,567\,522\,794\,000\,z+1\,012\,042\,268\,362\,125\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\,\left(\left(-16\,777\,216\,z^6+1\,226\,833\,920\,z^5-31\,399\,280\,640\,z^4+588\,643\,614\,720\,z^3-\right.\right.$$
$$\left.69\,757\,122\,758\,400\,z^2+855\,944\,230\,125\,600\,z-1\,012\,042\,268\,362\,125\right)\cos\left(2\sqrt{z}\right)+$$
$$4\sqrt{z}\,\left(16\,777\,216\,z^6-1\,214\,251\,008\,z^5+30\,435\,901\,440\,z^4-223\,278\,612\,480\,z^3-\right.$$
$$\left.\left.\left.\left.2\,212\,170\,912\,000\,z^2+79\,693\,457\,104\,800\,z-337\,347\,422\,787\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a8u0.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},\frac{23}{4};z\right)=$$
$$\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+20\,719\,861\,760\,z^6+557\,596\,016\,640\,z^5+4\,342\,564\,454\,400\,z^4-11\,370\,078\,720\,000\,z^3-\right.\right.\right.$$
$$\left.448\,975\,983\,456\,000\,z^2-8\,297\,181\,702\,810\,000\,z-8\,754\,746\,870\,244\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(-268\,435\,456\,z^7-20\,887\,633\,920\,z^6-570\,996\,817\,920\,z^5-4\,728\,987\,648\,000\,z^4+211\,483\,464\,192\,000\,z^3+\right.$$
$$\left.11\,001\,830\,295\,456\,000\,z^2+64\,913\,245\,086\,690\,000\,z+26\,264\,240\,610\,733\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+20\,786\,970\,624\,z^6+562\,880\,839\,680\,z^5+4\,490\,551\,296\,000\,z^4-\right.$$
$$\left.\left.5\,772\,501\,504\,000\,z^3+589\,680\,707\,616\,000\,z^2+8\,882\,865\,117\,126\,000\,z+26\,264\,240\,610\,733\,125\right)$$
$$\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)\Big/\left(113\,065\,014\,067\,200\sqrt{2}\,z^{17/4}\right)$$

07.22.03.a8u1.01

$${}_1F_2\left(-\frac{11}{4};-\frac{11}{2},\frac{23}{4};-z\right)=$$
$$-\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-20\,719\,861\,760\,z^6+557\,596\,016\,640\,z^5-4\,342\,564\,454\,400\,z^4-11\,370\,078\,720\,000\,z^3+\right.\right.\right.$$
$$\left.448\,975\,983\,456\,000\,z^2-8\,297\,181\,702\,810\,000\,z+8\,754\,746\,870\,244\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(-268\,435\,456\,z^7+20\,887\,633\,920\,z^6-570\,996\,817\,920\,z^5+4\,728\,987\,648\,000\,z^4+211\,483\,464\,192\,000\,z^3-\right.$$
$$\left.11\,001\,830\,295\,456\,000\,z^2+64\,913\,245\,086\,690\,000\,z-26\,264\,240\,610\,733\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7-20\,786\,970\,624\,z^6+562\,880\,839\,680\,z^5-4\,490\,551\,296\,000\,z^4-\right.$$
$$\left.\left.5\,772\,501\,504\,000\,z^3-589\,680\,707\,616\,000\,z^2+8\,882\,865\,117\,126\,000\,z-26\,264\,240\,610\,733\,125\right)$$
$$\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)\Big/\left(113\,065\,014\,067\,200\sqrt{2}\,z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{11}{4}$, $b_1 = -\frac{9}{2}$

07.22.03.a8u2.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) = \frac{1}{6\,194\,475}\left(\left(2048 z^4 + 180\,096 z^3 + 2\,847\,600 z^2 + 11\,730\,600 z + 6\,194\,475\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(4352 z^3 + 140\,560 z^2 + 1\,157\,100 z + 2\,064\,825\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.a8u3.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, -\frac{23}{4}; -z\right) = \frac{1}{6\,194\,475}\left(\left(2048 z^4 - 180\,096 z^3 + 2\,847\,600 z^2 - 11\,730\,600 z + 6\,194\,475\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(-4352 z^3 + 140\,560 z^2 - 1\,157\,100 z + 2\,064\,825\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a8u4.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, -\frac{21}{4}; z\right) = \frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(11\,264 z^4 + 763\,200 z^3 + 9\,154\,080 z^2 + 17\,702\,100 z + 9\,398\,025\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(64\,768 z^3 + 1\,675\,440 z^2 + 10\,183\,680 z + 9\,398\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(2816 z^3 + 211\,536 z^2 + 2\,665\,260 z + 9\,398\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8u5.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(11\,264 z^4 - 763\,200 z^3 + 9\,154\,080 z^2 - 17\,702\,100 z + 9\,398\,025\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(64\,768 z^3 - 1\,675\,440 z^2 + 10\,183\,680 z - 9\,398\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-2816 z^3 + 211\,536 z^2 - 2\,665\,260 z + 9\,398\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8u6.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, -\frac{19}{4}; z\right) = \frac{1}{269\,325}\left(21\left(256 z^3 + 5360 z^2 + 24\,000 z + 12\,825\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256 z^3 + 15\,120 z^2 + 144\,900 z + 269\,325\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.a8u7.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{269\,325}\left(2\sqrt{z}\left(-256 z^3 + 15\,120 z^2 - 144\,900 z + 269\,325\right)\sin\left(2\sqrt{z}\right) - 21\left(256 z^3 - 5360 z^2 + 24\,000 z - 12\,825\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.a8u8.01

$${}_1F_2\left(-\frac{11}{4};-\frac{9}{2},-\frac{17}{4};z\right)=\frac{1}{447\,525\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(5\left(5056z^3+82\,656z^2+166\,140z+89\,505\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1408z^3+66\,960z^2+472\,680z+447\,525\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+36z\left(784z^2+12\,740z+49\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8u9.01

$${}_1F_2\left(-\frac{11}{4};-\frac{9}{2},-\frac{17}{4};-z\right)=\frac{1}{447\,525\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(-5\left(5056z^3-82\,656z^2+166\,140z-89\,505\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1408z^3-66\,960z^2+472\,680z-447\,525\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+36z\left(784z^2-12\,740z+49\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8ua.01

$${}_1F_2\left(-\frac{11}{4};-\frac{9}{2},-\frac{15}{4};z\right)=\left(\frac{128z^3}{14\,175}+\frac{16z^2}{45}+\frac{248z}{135}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{405}\sqrt{z}\left(16z^2+204z+405\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8ub.01

$${}_1F_2\left(-\frac{11}{4};-\frac{9}{2},-\frac{15}{4};-z\right)=\left(-\frac{128z^3}{14\,175}+\frac{16z^2}{45}-\frac{248z}{135}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{405}\sqrt{z}\left(16z^2-204z+405\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.a8uc.01

$${}_1F_2\left(-\frac{11}{4};-\frac{9}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(576z^3+22\,240z^2+47\,700z+26\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-20\sqrt{z}\left(560z^2+5328z+5265\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(208z^2+5580z+26\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8ud.01

$${}_1F_2\left(-\frac{11}{4};-\frac{9}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-576z^3+22\,240z^2-47\,700z+26\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+20\sqrt{z}\left(560z^2-5328z+5265\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(208z^2-5580z+26\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8ue.01

$${}_1F_2\left(-\frac{11}{4};-\frac{9}{2},-\frac{11}{4};z\right)=\left(\frac{16z^2}{63}+\frac{16z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{945}\sqrt{z}\left(16z^2+420z+945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8uf.01

$${}_1F_2\left(-\frac{11}{4};-\frac{9}{2},-\frac{11}{4};-z\right)=\left(\frac{16z^2}{63}-\frac{16z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\left(16z^2-420z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.a8ug.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, -\frac{9}{4}; z\right) =$$
$$-\frac{1}{2025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^3-1440z^2-3500z-2025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+20\sqrt{z}\left(16z^2+376z+405\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(16z^2+260z+2025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8uh.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{2025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^3+1440z^2-3500z+2025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+20\sqrt{z}\left(16z^2-376z+405\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(16z^2-260z+2025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8ui.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) = \frac{1}{1890}$$
$$\left(e^{-2\sqrt{z}}\left(32e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+32e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-32e^{4\sqrt{z}}z^{5/2}+32z^{5/2}+80e^{4\sqrt{z}}z^2+\right.\right.$$
$$\left.\left.80z^2-600e^{4\sqrt{z}}z^{3/2}+600z^{3/2}+1560e^{4\sqrt{z}}z+1560z-1890e^{4\sqrt{z}}\sqrt{z}+1890\sqrt{z}+945e^{4\sqrt{z}}+945\right)\right)$$

07.22.03.a8uj.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{945}\left(-64\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2\left(16z^2-300z+945\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+5\left(16z^2-312z+189\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8uk.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^3+160z^2+340z+225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4z^2+160z+225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(8z^2+20z-225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8ul.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, -\frac{5}{4}; -z\right) =$$
$$-\frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^3-160z^2+340z-225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4z^2-160z+225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(8z^2-20z-225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8um.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{540} e^{-2\sqrt{z}} \left(-e^{2\sqrt{z}} \sqrt{2\pi}\, (16z+121) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{7/4} - e^{2\sqrt{z}} \sqrt{2\pi}\, (16z+121) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{7/4} + \right.$$
$$\left. 2\left(-8z^{5/2} + 2z^2 - 40z^{3/2} + 160z + 270\sqrt{z} + e^{4\sqrt{z}} \left(8z^{5/2} + 2z^2 + 40z^{3/2} + 160z - 270\sqrt{z} + 135\right) + 135\right)\right)$$

07.22.03.a8un.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{135}\left(\sqrt{\pi}\, (16z-121) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} + 2\left(-4z^2 + 20z + 135\right) \sin\left(2\sqrt{z}\right) \sqrt{z} + \left(2z^2 - 160z + 135\right) \cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8uo.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) =$$
$$-\frac{1}{270\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(16z^3 + 179z^2 + 60z - 135\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-16z^2 - 57z + 1080\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left. 2z\left(16z^2 + 183z + 540\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8up.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{270\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(16z^3 - 179z^2 + 60z + 135\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-16z^2 + 57z + 1080\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 2z\left(16z^2 - 183z + 540\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8uq.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) = \frac{1}{23\,040}$$
$$\left(e^{-2\sqrt{z}}\left(-4\left(-64z^{5/2} + 16z^2 - 980z^{3/2} - 95z - 5760\sqrt{z} + e^{4\sqrt{z}}\left(64z^{5/2} + 16z^2 + 980z^{3/2} - 95z + 5760\sqrt{z} - 2880\right) - \right.\right.\right.$$
$$\left.\left.\left. 2880\right) + e^{2\sqrt{z}} \sqrt{2\pi}\, z^{3/4}\left(256z^2 + 3872z + 12\,705\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + e^{2\sqrt{z}} \sqrt{2\pi}\, z^{3/4}\left(256z^2 + 3872z + 12\,705\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8ur.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) = \frac{1}{5760}\left(\sqrt{\pi}\, z^{3/4}\left(-256z^2 + 3872z - 12\,705\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.$$
$$\left. 2\left(\left(-16z^2 - 95z + 2880\right) \cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(16z^2 - 245z + 1440\right) \sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8us.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{43\,200\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3+9600z^2+48\,670z+43\,200\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(256z^2+4960z+63\,405\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2z\left(256z^2+4864z+22\,995\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8ut.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) =$$
$$-\frac{1}{43\,200\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3-9600z^2+48\,670z-43\,200\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-256z^2+4960z-63\,405\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(256z^2-4864z+22\,995\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8uu.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) = \frac{1}{4\,423\,680\sqrt[4]{z}}$$
$$\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1024z^{5/2}+256z^2-23\,424z^{3/2}+6048z-140\,340\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2+23\,424z^{3/2}+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.6048z+140\,340\sqrt{z}+171\,225\right)+171\,225\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+92\,928z^2+609\,840z+724\,185\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+92\,928z^2+609\,840z+724\,185\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8uv.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, \frac{5}{4}; -z\right) = \frac{1}{1\,105\,920\sqrt[4]{z}}\left(\sqrt{\pi}\left(-4096z^3+92\,928z^2-609\,840z+724\,185\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\sqrt[4]{z}\left(\left(-256z^2+6048z-171\,225\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(256z^2-5856z+35\,085\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8uw.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, \frac{7}{4}; z\right) = \frac{1}{3\,225\,600\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(4096z^3+107\,776z^2+871\,600z+847\,035\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096z^3+110\,336z^2+650\,160z-2\,297\,295\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(4096z^3+108\,800z^2+900\,144z+2\,297\,295\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8ux.01

$${}_1F_2\left(-\frac{11}{4};-\frac{9}{2},\frac{7}{4};-z\right)=\frac{1}{3\,225\,600\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(-2\sqrt{z}\left(4096z^3-107\,776z^2+871\,600z-847\,035\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4096z^3-110\,336z^2+650\,160z+2\,297\,295\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-4096z^3+108\,800z^2-900\,144z+2\,297\,295\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8uy.01

$${}_1F_2\left(-\frac{11}{4};-\frac{9}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{226\,492\,416z^{5/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384z^{7/2}+4096z^3-498\,688z^{5/2}+127\,744z^2-4\,978\,368z^{3/2}+269\,616z-\right.\right.\right.$$
$$\left.\left.22\,208\,340\sqrt{z}\right)+e^{4\sqrt{z}}\left(16\,384z^{7/2}+4096z^3+498\,688z^{5/2}+127\,744z^2+\right.\right.$$
$$\left.\left.4\,978\,368z^{3/2}+269\,616z+22\,208\,340\sqrt{z}-16\,656\,255\right)-16\,656\,255\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4+1\,982\,464z^3+19\,514\,880z^2+46\,347\,840z-16\,656\,255\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4+1\,982\,464z^3+19\,514\,880z^2+46\,347\,840z-16\,656\,255\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8uz.01

$${}_1F_2\left(-\frac{11}{4};-\frac{9}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{56\,623\,104z^{5/4}}\left(\sqrt{\pi}\left(-65\,536z^4+1\,982\,464z^3-19\,514\,880z^2+46\,347\,840z+16\,656\,255\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(4096z^3-124\,672z^2+1\,244\,592z-5\,552\,085\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left(4096z^3-127\,744z^2+269\,616z+16\,656\,255\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8v0.01

$${}_1F_2\left(-\frac{11}{4};-\frac{9}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{132\,710\,400\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(65\,536z^4+2\,220\,032z^3+25\,251\,840z^2+76\,857\,120z+57\,432\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(65\,536z^4+2\,260\,992z^3+26\,749\,440z^2+294\,053\,760z+172\,297\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+2\,236\,416z^3+25\,832\,448z^2+73\,513\,440z-172\,297\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8v1.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = \frac{1}{132\,710\,400\sqrt{2}\,z^{5/4}}\left(\left(-2\sqrt{z}\left(65\,536z^4 - 2\,220\,032z^3 + 25\,251\,840z^2 - 76\,857\,120z + 57\,432\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(65\,536z^4 - 2\,260\,992z^3 + 26\,749\,440z^2 - 294\,053\,760z + 172\,297\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-65\,536z^4 + 2\,236\,416z^3 - 25\,832\,448z^2 + 73\,513\,440z + 172\,297\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8v2.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = \frac{1}{8\,053\,063\,680\,z^{9/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-262\,144z^{9/2} + 65\,536z^4 - 9\,961\,472z^{7/2} + 2\,539\,520z^3 - 132\,065\,280z^{5/2} + 35\,089\,920z^2 - 406\,095\,360z^{3/2} + 1\,066\,000\,320z + 2\,998\,125\,900\sqrt{z} + e^{4\sqrt{z}}\left(262\,144z^{9/2} + 65\,536z^4 + 9\,961\,472z^{7/2} + 2\,539\,520z^3 + 132\,065\,280z^{5/2} + 35\,089\,920z^2 + 406\,095\,360z^{3/2} + 1\,066\,000\,320z - 2\,998\,125\,900\sqrt{z} + 2\,248\,594\,425\right) + 2\,248\,594\,425\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5 + 39\,649\,280z^4 + 520\,396\,800z^3 + 1\,853\,913\,600z^2 - 1\,332\,500\,400z + 2\,248\,594\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5 + 39\,649\,280z^4 + 520\,396\,800z^3 + 1\,853\,913\,600z^2 - 1\,332\,500\,400z + 2\,248\,594\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8v3.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = \frac{1}{2\,013\,265\,920\,z^{9/4}}\left(\sqrt{\pi}\left(-1\,048\,576z^5 + 39\,649\,280z^4 - 520\,396\,800z^3 + 1\,853\,913\,600z^2 + 1\,332\,500\,400z + 2\,248\,594\,425\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(-65\,536z^4 + 2\,539\,520z^3 - 35\,089\,920z^2 + 1\,066\,000\,320z - 2\,248\,594\,425\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(65\,536z^4 - 2\,490\,368z^3 + 33\,016\,320z^2 - 101\,523\,840z - 749\,531\,475\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8v4.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, \frac{15}{4}; z\right) = \frac{1}{4\,246\,732\,800\sqrt{2}\,z^{9/4}}\left(\left(2\sqrt{z}\left(1\,048\,576z^5 + 43\,450\,368z^4 + 636\,968\,960z^3 + 2\,566\,356\,480z^2 - 8\,270\,262\,000z - 11\,658\,772\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(1\,048\,576z^5 + 44\,105\,728z^4 + 665\,886\,720z^3 + 1\,176\,215\,040z^2 - 78\,108\,030\,000z - 34\,976\,316\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(1\,048\,576z^5 + 43\,712\,512z^4 + 648\,241\,152z^3 + 2\,744\,501\,760z^2 + 3\,491\,888\,400z + 34\,976\,316\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8v5.01

$$ {}_1F_2\left(-\frac{11}{4};-\frac{9}{2},\frac{15}{4};-z\right)=\frac{1}{4\,246\,732\,800\sqrt{2}\,z^{9/4}}$$
$$\left(\left(-2\sqrt{z}\left(1\,048\,576z^5-43\,450\,368z^4+636\,968\,960z^3-2\,566\,356\,480z^2-8\,270\,262\,000z+11\,658\,772\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(1\,048\,576z^5-44\,105\,728z^4+665\,886\,720z^3-1\,176\,215\,040z^2-78\,108\,030\,000z+34\,976\,316\,375\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-1\,048\,576z^5+43\,712\,512z^4-648\,241\,152z^3+\right.$$
$$\left.\left.2\,744\,501\,760z^2-3\,491\,888\,400z+34\,976\,316\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a8v6.01

$$ {}_1F_2\left(-\frac{11}{4};-\frac{9}{2},\frac{17}{4};z\right)=$$
$$\frac{1}{3\,092\,376\,453\,120\,z^{13/4}}\left(13e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304z^{11/2}+1\,048\,576z^5-191\,102\,976z^{9/2}+48\,562\,176z^4-\right.\right.\right.$$
$$3\,159\,785\,472z^{7/2}+829\,071\,360z^3-15\,505\,459\,200z^{5/2}-3\,654\,858\,240z^2-94\,569\,456\,960z^{3/2}-$$
$$453\,316\,636\,080z-836\,477\,126\,100\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^{11/2}+1\,048\,576z^5+191\,102\,976z^{9/2}+\right.$$
$$48\,562\,176z^4+3\,159\,785\,472z^{7/2}+829\,071\,360z^3+15\,505\,459\,200z^{5/2}-3\,654\,858\,240z^2+$$
$$\left.\left.94\,569\,456\,960z^{3/2}-453\,316\,636\,080z+836\,477\,126\,100\sqrt{z}-627\,357\,844\,575\right)-627\,357\,844\,575\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6+761\,266\,176z^5+12\,489\,523\,200z^4+59\,325\,235\,200z^3-\right.$$
$$\left.63\,960\,019\,200z^2+215\,865\,064\,800z-627\,357\,844\,575\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6+761\,266\,176z^5+12\,489\,523\,200z^4+59\,325\,235\,200z^3-\right.$$
$$\left.\left.63\,960\,019\,200z^2+215\,865\,064\,800z-627\,357\,844\,575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Bigg)$$

07.22.03.a8v7.01

$$ {}_1F_2\left(-\frac{11}{4};-\frac{9}{2},\frac{17}{4};-z\right)=$$
$$\frac{1}{773\,094\,113\,280\,z^{13/4}}\left(13\left(\sqrt{\pi}\left(-16\,777\,216z^6+761\,266\,176z^5-12\,489\,523\,200z^4+59\,325\,235\,200z^3+\right.\right.\right.$$
$$\left.\left.63\,960\,019\,200z^2+215\,865\,064\,800z+627\,357\,844\,575\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576z^5-47\,775\,744z^4+789\,946\,368z^3-3\,876\,364\,800z^2+23\,642\,364\,240z-209\,119\,281\,525\right)\right.$$
$$\sin\left(2\sqrt{z}\right)-\left(1\,048\,576z^5-48\,562\,176z^4+829\,071\,360z^3+\right.$$
$$\left.\left.\left.\left.3\,654\,858\,240z^2-453\,316\,636\,080z+627\,357\,844\,575\right)\cos\left(2\sqrt{z}\right)\right)\right)\Bigg)$$

07.22.03.a8v8.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) =$$
$$\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6 + 822\,083\,584\,z^5 + 14\,751\,170\,560\,z^4 + 77\,028\,556\,800\,z^3 - 67\,632\,364\,800\,z^2 + 3\,624\,212\,592\,000\,z + 4\,232\,134\,281\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(16\,777\,216\,z^6 + 832\,569\,344\,z^5 + 15\,293\,153\,280\,z^4 + 87\,824\,056\,320\,z^3 + 2\,696\,472\,979\,200\,z^2 + 30\,219\,537\,348\,000\,z + 12\,696\,402\,844\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,777\,216\,z^6 + 826\,277\,888\,z^5 + 14\,963\,245\,056\,z^4 + 81\,068\,359\,680\,z^3 + 138\,205\,267\,200\,z^2 - 3\,133\,877\,947\,200\,z - 12\,696\,402\,844\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(117\,776\,056\,320\,\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a8v9.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) =$$
$$\left(\left(-2\sqrt{z}\,\left(16\,777\,216\,z^6 - 822\,083\,584\,z^5 + 14\,751\,170\,560\,z^4 - 77\,028\,556\,800\,z^3 - 67\,632\,364\,800\,z^2 - 3\,624\,212\,592\,000\,z + 4\,232\,134\,281\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216\,z^6 - 832\,569\,344\,z^5 + 15\,293\,153\,280\,z^4 - 87\,824\,056\,320\,z^3 + 2\,696\,472\,979\,200\,z^2 - 30\,219\,537\,348\,000\,z + 12\,696\,402\,844\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-16\,777\,216\,z^6 + 826\,277\,888\,z^5 - 14\,963\,245\,056\,z^4 + 81\,068\,359\,680\,z^3 + 138\,205\,267\,200\,z^2 - 3\,133\,877\,947\,200\,z + 12\,696\,402\,844\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(117\,776\,056\,320\,\sqrt{2}\,z^{13/4}\right)$$

07.22.03.a8va.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) =$$
$$\left(221\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 - 3\,565\,158\,400\,z^{11/2} + 903\,872\,512\,z^5 - 70\,634\,962\,944\,z^{9/2} + 18\,379\,898\,880\,z^4 - 430\,018\,068\,480\,z^{7/2} + 124\,043\,673\,600\,z^3 + 1\,409\,446\,241\,280\,z^{5/2} + 14\,467\,756\,343\,040\,z^2 + 80\,301\,804\,105\,600\,z^{3/2} + 234\,213\,595\,308\,000\,z + 380\,597\,092\,375\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 + 3\,565\,158\,400\,z^{11/2} + 903\,872\,512\,z^5 + 70\,634\,962\,944\,z^{9/2} + 18\,379\,898\,880\,z^4 + 430\,018\,068\,480\,z^{7/2} + 124\,043\,673\,600\,z^3 - 1\,409\,446\,241\,280\,z^{5/2} + 14\,467\,756\,343\,040\,z^2 - 80\,301\,804\,105\,600\,z^{3/2} + 234\,213\,595\,308\,000\,z - 380\,597\,092\,375\,500\sqrt{z} + 285\,447\,819\,281\,625\right) + 285\,447\,819\,281\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456\,z^7 + 14\,210\,301\,952\,z^6 + 279\,765\,319\,680\,z^5 + 1\,661\,106\,585\,600\,z^4 - 2\,387\,840\,716\,800\,z^3 + 12\,088\,443\,628\,800\,z^2 - 70\,264\,078\,592\,400\,z + 285\,447\,819\,281\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456\,z^7 + 14\,210\,301\,952\,z^6 + 279\,765\,319\,680\,z^5 + 1\,661\,106\,585\,600\,z^4 - 2\,387\,840\,716\,800\,z^3 + 12\,088\,443\,628\,800\,z^2 - 70\,264\,078\,592\,400\,z + 285\,447\,819\,281\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big) \Big/ \left(1\,385\,384\,650\,997\,760\,z^{17/4}\right)$$

07.22.03.a8vb.01

$${}_1F_2\left(-\frac{11}{4};-\frac{9}{2},\frac{21}{4};-z\right)=$$
$$\frac{1}{346\,346\,162\,749\,440\,z^{17/4}}\left(221\left(\sqrt{\pi}\,\left(-268\,435\,456\,z^7+14\,210\,301\,952\,z^6-279\,765\,319\,680\,z^5+1\,661\,106\,585\,600\,z^4+\right.\right.\right.$$
$$\left.\left.\left.2\,387\,840\,716\,800\,z^3+12\,088\,443\,628\,800\,z^2+70\,264\,078\,592\,400\,z+285\,447\,819\,281\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\,\left(\left(-16\,777\,216\,z^6+903\,872\,512\,z^5-18\,379\,898\,880\,z^4+124\,043\,673\,600\,z^3-\right.\right.$$
$$\left.\left.14\,467\,756\,343\,040\,z^2+234\,213\,595\,308\,000\,z-285\,447\,819\,281\,625\right)\cos\left(2\sqrt{z}\right)+$$
$$\left.4\sqrt{z}\,\left(16\,777\,216\,z^6-891\,289\,600\,z^5+17\,658\,740\,736\,z^4-107\,504\,517\,120\,z^3-\right.\right.$$
$$\left.\left.\left.352\,361\,560\,320\,z^2+20\,075\,451\,026\,400\,z-95\,149\,273\,093\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\Bigg)$$

07.22.03.a8vc.01

$${}_1F_2\left(-\frac{11}{4};-\frac{9}{2},\frac{23}{4};z\right)=$$
$$\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+15\,183\,380\,480\,z^6+322\,295\,562\,240\,z^5+2\,066\,876\,006\,400\,z^4-3\,842\,302\,464\,000\,z^3-\right.\right.\right.$$
$$\left.\left.78\,027\,165\,216\,000\,z^2-2\,176\,526\,201\,850\,000\,z-2\,348\,834\,526\,163\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(-268\,435\,456\,z^7-15\,351\,152\,640\,z^6-332\,236\,062\,720\,z^5-2\,296\,936\,857\,600\,z^4+25\,171\,001\,856\,000\,z^3+\right.$$
$$\left.2\,597\,920\,861\,536\,000\,z^2+17\,267\,107\,868\,010\,000\,z+7\,046\,503\,578\,489\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+15\,250\,489\,344\,z^6+326\,196\,264\,960\,z^5+2\,153\,875\,046\,400\,z^4-\right.$$
$$3\,166\,732\,800\,000\,z^3+121\,517\,716\,320\,000\,z^2+2\,234\,566\,900\,566\,000\,z+$$
$$\left.\left.\left.7\,046\,503\,578\,489\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(56\,532\,507\,033\,600\sqrt{2}\,z^{17/4}\right)$$

07.22.03.a8vd.01

$${}_1F_2\left(-\frac{11}{4};-\frac{9}{2},\frac{23}{4};-z\right)=$$
$$-\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-15\,183\,380\,480\,z^6+322\,295\,562\,240\,z^5-2\,066\,876\,006\,400\,z^4-3\,842\,302\,464\,000\,z^3+\right.\right.\right.$$
$$\left.\left.78\,027\,165\,216\,000\,z^2-2\,176\,526\,201\,850\,000\,z+2\,348\,834\,526\,163\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(-268\,435\,456\,z^7+15\,351\,152\,640\,z^6-332\,236\,062\,720\,z^5+2\,296\,936\,857\,600\,z^4+25\,171\,001\,856\,000\,z^3-\right.$$
$$\left.2\,597\,920\,861\,536\,000\,z^2+17\,267\,107\,868\,010\,000\,z-7\,046\,503\,578\,489\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7-15\,250\,489\,344\,z^6+326\,196\,264\,960\,z^5-2\,153\,875\,046\,400\,z^4-\right.$$
$$3\,166\,732\,800\,000\,z^3-121\,517\,716\,320\,000\,z^2+2\,234\,566\,900\,566\,000\,z-$$
$$\left.\left.\left.7\,046\,503\,578\,489\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(56\,532\,507\,033\,600\sqrt{2}\,z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{11}{4}$, $b_1 = -\frac{7}{2}$

07.22.03.a8ve.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) = \frac{1}{688\,275} \left(\left(12\,032 z^3 + 277\,680 z^2 + 1\,282\,500 z + 688\,275\right) \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(512 z^3 + 36\,000 z^2 + 364\,800 z + 688\,275\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.a8vf.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{688\,275} \left(\left(-12\,032 z^3 + 277\,680 z^2 - 1\,282\,500 z + 688\,275\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-512 z^3 + 36\,000 z^2 - 364\,800 z + 688\,275\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a8vg.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) = \frac{1}{7\,309\,575\sqrt{2}} \left(\sqrt[4]{z}\left(5\left(75\,776 z^3 + 1\,334\,736 z^2 + 2\,705\,040 z + 1\,461\,915\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(19\,712 z^3 + 1\,051\,440 z^2 + 7\,677\,540 z + 7\,309\,575\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 156 z\left(2752 z^2 + 46\,920 z + 187\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8vh.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) = \frac{1}{7\,309\,575\sqrt{2}} \left(\sqrt[4]{z}\left(-5\left(75\,776 z^3 - 1\,334\,736 z^2 + 2\,705\,040 z - 1\,461\,915\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(19\,712 z^3 - 1\,051\,440 z^2 + 7\,677\,540 z - 7\,309\,575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 156 z\left(2752 z^2 - 46\,920 z + 187\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8vi.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) = \frac{\left(256 z^3 + 10\,512 z^2 + 54\,900 z + 29\,925\right) \cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(384 z^2 + 5000 z + 9975\right) \sinh\left(2\sqrt{z}\right)}{29\,925} $$

07.22.03.a8vj.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) = \frac{\left(-256 z^3 + 10\,512 z^2 - 54\,900 z + 29\,925\right) \cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(384 z^2 - 5000 z + 9975\right) \sin\left(2\sqrt{z}\right)}{29\,925} $$

07.22.03.a8vk.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) = \frac{1}{348\,075\sqrt{2}} \left(\sqrt[4]{z}\left(5\left(1664 z^3 + 59\,184 z^2 + 126\,360 z + 69\,615\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 20\sqrt{z}\left(7600 z^2 + 70\,668 z + 69\,615\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(2848 z^2 + 74\,880 z + 348\,075\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8vl.01

$${}_1F_2\left(-\frac{11}{4};-\frac{7}{2},-\frac{17}{4};-z\right)=\frac{1}{348\,075\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(-5\left(1664z^3-59\,184z^2+126\,360z-69\,615\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+20\sqrt{z}\left(7600z^2-70\,668z+69\,615\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(2848z^2-74\,880z+348\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8vm.01

$${}_1F_2\left(-\frac{11}{4};-\frac{7}{2},-\frac{15}{4};z\right)=\frac{3\left(144z^2+940z+525\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(32z^2+720z+1575\right)\sinh\left(2\sqrt{z}\right)}{1575}$$

07.22.03.a8vn.01

$${}_1F_2\left(-\frac{11}{4};-\frac{7}{2},-\frac{15}{4};-z\right)=\frac{3\left(144z^2-940z+525\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(32z^2-720z+1575\right)\sin\left(2\sqrt{z}\right)}{1575}$$

07.22.03.a8vo.01

$${}_1F_2\left(-\frac{11}{4};-\frac{7}{2},-\frac{13}{4};z\right)=$$
$$-\frac{1}{20\,475\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^3-15\,440z^2-36\,000z-20\,475\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+60\sqrt{z}\left(80z^2+1308z+1365\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(64z^2+3240z+20\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8vp.01

$${}_1F_2\left(-\frac{11}{4};-\frac{7}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{20\,475\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^3+15\,440z^2-36\,000z+20\,475\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+60\sqrt{z}\left(80z^2-1308z+1365\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(64z^2-3240z+20\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8vq.01

$${}_1F_2\left(-\frac{11}{4};-\frac{7}{2},-\frac{11}{4};z\right)=\left(\frac{16z^2}{105}+\frac{12z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\left(8z+21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8vr.01

$${}_1F_2\left(-\frac{11}{4};-\frac{7}{2},-\frac{11}{4};-z\right)=\left(\frac{16z^2}{105}-\frac{12z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}\left(21-8z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.a8vs.01

$${}_1F_2\left(-\frac{11}{4};-\frac{7}{2},-\frac{9}{4};z\right)=$$
$$-\frac{1}{1575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^3-944z^2-2600z-1575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-16z^2+1340z+1575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(32z^2+80z+1575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8vt.01

$${}_1F_2\left(-\frac{11}{4};-\frac{7}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{1575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^3+944z^2-2600z+1575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(16z^2+1340z-1575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(32z^2-80z+1575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8vu.01

$${}_1F_2\left(-\frac{11}{4};-\frac{7}{2},-\frac{7}{4};z\right)=\frac{1}{1470}$$
$$\left(e^{-2\sqrt{z}}\left(64e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+64e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-64e^{4\sqrt{z}}z^{5/2}+64z^{5/2}-16e^{4\sqrt{z}}z^2-\right.\right.$$
$$\left.\left.16z^2-320e^{4\sqrt{z}}z^{3/2}+320z^{3/2}+1140e^{4\sqrt{z}}z+1140z-1470e^{4\sqrt{z}}\sqrt{z}+1470\sqrt{z}+735e^{4\sqrt{z}}+735\right)\right)$$

07.22.03.a8vv.01

$${}_1F_2\left(-\frac{11}{4};-\frac{7}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{735}\left(-128\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2\left(32z^2-160z+735\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-16z^2-1140z+735\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8vw.01

$${}_1F_2\left(-\frac{11}{4};-\frac{7}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^3+144z^2+240z+175\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(8z^2+100z+175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(16z^2+40z-175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8vx.01

$${}_1F_2\left(-\frac{11}{4};-\frac{7}{2},-\frac{5}{4};-z\right)=$$
$$-\frac{1}{175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^3-144z^2+240z-175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(8z^2-100z+175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(16z^2-40z-175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8vy.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{210} e^{-2\sqrt{z}} \left(16 e^{4\sqrt{z}} z^{5/2} - 16 z^{5/2} + 4 e^{4\sqrt{z}} z^2 + 4 z^2 - e^{2\sqrt{z}} \sqrt{2\pi}\, (16 z + 77) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{7/4} - e^{2\sqrt{z}} \sqrt{2\pi}\, (16 z + 77)\right.$$
$$\left. \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{7/4} + 80 e^{4\sqrt{z}} z^{3/2} - 80 z^{3/2} + 100 e^{4\sqrt{z}} z + 100 z - 210 e^{4\sqrt{z}} \sqrt{z} + 210 \sqrt{z} + 105 e^{4\sqrt{z}} + 105\right)$$

07.22.03.a8vz.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{105}\left(2\sqrt{\pi}\, (16 z - 77)\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} + 2\left(-8 z^2 + 40 z + 105\right) \sin\left(2\sqrt{z}\right) \sqrt{z} + \left(4 z^2 - 100 z + 105\right) \cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8w0.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) =$$
$$-\frac{1}{105\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32 z^3 + 226 z^2 + 120 z - 105\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-16 z^2 - 123 z + 420\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) -\right.\right.$$
$$\left.\left. 2 z \left(16 z^2 + 117 z + 210\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8w1.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{105\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32 z^3 - 226 z^2 + 120 z + 105\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-16 z^2 + 123 z + 420\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +\right.\right.$$
$$\left.\left. 2 z \left(16 z^2 - 117 z + 210\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8w2.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{8960}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}} \sqrt{2\pi}\, z^{3/4} \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) (16 z + 77)^2 + e^{2\sqrt{z}} \sqrt{2\pi}\, z^{3/4} \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) (16 z + 77)^2 - 4\left(-64 z^{5/2} + 16 z^2 -\right.\right.\right.$$
$$\left.\left.\left. 628 z^{3/2} + 169 z - 2240 \sqrt{z} + e^{4\sqrt{z}} \left(64 z^{5/2} + 16 z^2 + 628 z^{3/2} + 169 z + 2240 \sqrt{z} - 1120\right) - 1120\right)\right)\right)$$

07.22.03.a8w3.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) =$$
$$\frac{1}{2240}\left(2\left(\left(-16 z^2 + 169 z + 1120\right) \cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(16 z^2 - 157 z + 560\right) \sin\left(2\sqrt{z}\right)\right) - \sqrt{\pi}\, (77 - 16 z)^2 z^{3/4} C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.a8w4.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) = \frac{1}{16\,800\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(256z^3+3040z^2+10\,585z+8400\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(256z^2+3200z+22\,155\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2z\left(256z^2+3104z+11\,445\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8w5.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) = -\frac{1}{16\,800\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(256z^3-3040z^2+10\,585z-8400\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-256z^2+3200z-22\,155\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(256z^2-3104z+11\,445\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8w6.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) = \frac{1}{1\,720\,320\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1024z^{5/2}+256z^2-14\,976z^{3/2}+3936z-74\,340\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2+14\,976z^{3/2}+3936z+74\,340\sqrt{z}+51\,765\right)+51\,765\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+59\,136z^2+284\,592z+266\,805\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+59\,136z^2+284\,592z+266\,805\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8w7.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = \frac{1}{430\,080\sqrt[4]{z}}\left(\sqrt{\pi}\left(-4096z^3+59\,136z^2-284\,592z+266\,805\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(-256z^2+3936z-51\,765\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(256z^2-3744z+18\,585\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8w8.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) = \frac{1}{1\,254\,400\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(4096z^3+68\,352z^2+403\,440z+371\,945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096z^3+70\,912z^2+453\,040z-765\,765\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(4096z^3+69\,376z^2+422\,128z+765\,765\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8w9.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) = \frac{1}{1\,254\,400\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\sqrt{z}\left(-4096z^3 + 68\,352z^2 - 403\,440z + 371\,945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4096z^3 - 70\,912z^2 + 453\,040z + 765\,765\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-4096z^3 + 69\,376z^2 - 422\,128z + 765\,765\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8wa.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) = \frac{1}{88\,080\,384\,z^{5/4}} $$
$$ \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384z^{7/2} + 4096z^3 - 318\,464z^{5/2} + 82\,688z^2 - 2\,342\,592z^{3/2} + 658\,224z - 6\,759\,060\sqrt{z} + e^{4\sqrt{z}}\right.\right.\right. $$
$$ \left.\left.\left(16\,384z^{7/2} + 4096z^3 + 318\,464z^{5/2} + 82\,688z^2 + 2\,342\,592z^{3/2} + 658\,224z + 6\,759\,060\sqrt{z} - 5\,069\,295\right) - \right. $$
$$ \left.\left. 5\,069\,295\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 1\,261\,568z^3 + 9\,106\,944z^2 + 17\,075\,520z - 5\,069\,295\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + \right. $$
$$ \left. e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 1\,261\,568z^3 + 9\,106\,944z^2 + 17\,075\,520z - 5\,069\,295\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8wb.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{9}{4}; -z\right) = $$
$$ \frac{1}{22\,020\,096\,z^{5/4}}\left(\sqrt{\pi}\left(-65\,536z^4 + 1\,261\,568z^3 - 9\,106\,944z^2 + 17\,075\,520z + 5\,069\,295\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(4096z^3 - 79\,616z^2 + 585\,648z - 1\,689\,765\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.\left(4096z^3 - 82\,688z^2 + 658\,224z + 5\,069\,295\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8wc.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{11}{4}; z\right) = $$
$$ \frac{1}{51\,609\,600\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(65\,536z^4 + 1\,409\,024z^3 + 11\,718\,144z^2 + 25\,804\,800z + 16\,081\,065\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ \left(65\,536z^4 + 1\,449\,984z^3 + 12\,708\,864z^2 + 73\,513\,440z + 48\,243\,195\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 2\sqrt{z}\left(65\,536z^4 + 1\,425\,408z^3 + 12\,096\,000z^2 + 29\,405\,376z - 48\,243\,195\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8wd.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{11}{4}; -z\right) = \frac{1}{51\,609\,600\sqrt{2}\,z^{5/4}}\left(\left(-2\sqrt{z}\left(65\,536z^4 - 1\,409\,024z^3 + 11\,718\,144z^2 - 25\,804\,800z + 16\,081\,065\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(65\,536z^4 - 1\,449\,984z^3 + 12\,708\,864z^2 - 73\,513\,440z + 48\,243\,195\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-65\,536z^4 + 1\,425\,408z^3 - 12\,096\,000z^2 + 29\,405\,376z + 48\,243\,195\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8we.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{13}{4}; z\right) = \frac{1}{9\,395\,240\,960\,z^{9/4}}\left(3e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-262\,144z^{9/2} + 65\,536z^4 - 6\,356\,992z^{7/2} + 1\,638\,400z^3 - 62\,003\,200z^{5/2} + 16\,898\,560z^2 - 185\,391\,360z^{3/2} + 216\,289\,920z + 777\,291\,900\sqrt{z} + e^{4\sqrt{z}}\left(262\,144z^{9/2} + 65\,536z^4 + 6\,356\,992z^{7/2} + 1\,638\,400z^3 + 62\,003\,200z^{5/2} + 16\,898\,560z^2 + 185\,391\,360z^{3/2} + 216\,289\,920z - 777\,291\,900\sqrt{z} + 582\,968\,925\right) + 582\,968\,925\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5 + 25\,231\,360z^4 + 242\,851\,840z^3 + 683\,020\,800z^2 - 405\,543\,600z + 582\,968\,925\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5 + 25\,231\,360z^4 + 242\,851\,840z^3 + 683\,020\,800z^2 - 405\,543\,600z + 582\,968\,925\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8wf.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) = \frac{1}{2\,348\,810\,240\,z^{9/4}}\left(3\left(\sqrt{\pi}\left(-1\,048\,576z^5 + 25\,231\,360z^4 - 242\,851\,840z^3 + 683\,020\,800z^2 + 405\,543\,600z + 582\,968\,925\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(-65\,536z^4 + 1\,638\,400z^3 - 16\,898\,560z^2 + 216\,289\,920z - 582\,968\,925\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(65\,536z^4 - 1\,589\,248z^3 + 15\,500\,800z^2 - 46\,347\,840z - 194\,322\,975\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a8wg.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) = \frac{1}{1\,651\,507\,200\sqrt{2}\,z^{9/4}}\left(\left(2\sqrt{z}\left(1\,048\,576z^5 + 27\,590\,656z^4 + 295\,985\,152z^3 + 932\,682\,240z^2 - 1\,801\,079\,280z - 2\,814\,186\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(1\,048\,576z^5 + 28\,246\,016z^4 + 314\,990\,592z^3 + 1\,176\,215\,040z^2 - 18\,268\,089\,840z - 8\,442\,559\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(1\,048\,576z^5 + 27\,852\,800z^4 + 303\,292\,416z^3 + 1\,019\,386\,368z^2 + 257\,297\,040z + 8\,442\,559\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8wh.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{15}{4}; -z\right) = \frac{1}{1\,651\,507\,200\sqrt{2}\, z^{9/4}} $$
$$ \left(\left(2\sqrt{z}\left(-1\,048\,576 z^5 + 27\,590\,656 z^4 - 295\,985\,152 z^3 + 932\,682\,240 z^2 + 1\,801\,079\,280 z - 2\,814\,186\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(1\,048\,576 z^5 - 28\,246\,016 z^4 + 314\,990\,592 z^3 - 1\,176\,215\,040 z^2 - 18\,268\,089\,840 z + 8\,442\,559\,125\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-1\,048\,576 z^5 + 27\,852\,800 z^4 - 303\,292\,416 z^3 + \right. $$
$$ \left.\left. 1\,019\,386\,368 z^2 - 257\,297\,040 z + 8\,442\,559\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a8wi.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) = $$
$$ \frac{1}{1\,202\,590\,842\,880 z^{13/4}}\left(13 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 121\,896\,960 z^{9/2} + 31\,260\,672 z^4 - \right.\right.\right. $$
$$ 1\,481\,539\,584 z^{7/2} + 396\,533\,760 z^3 - 5\,797\,693\,440 z^{5/2} + 1\,853\,913\,600 z^2 - 11\,726\,003\,520 z^{3/2} - $$
$$ 95\,140\,528\,560 z - 188\,881\,931\,700\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 121\,896\,960 z^{9/2} + \right. $$
$$ \left. 31\,260\,672 z^4 + 1\,481\,539\,584 z^{7/2} + 396\,533\,760 z^3 + 5\,797\,693\,440 z^{5/2} + 1\,853\,913\,600 z^2 + \right. $$
$$ \left.\left. 11\,726\,003\,520 z^{3/2} - 95\,140\,528\,560 z + 188\,881\,931\,700\sqrt{z} - 141\,661\,448\,775\right) - 141\,661\,448\,775\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 484\,442\,112 z^5 + 5\,828\,444\,160 z^4 + 21\,856\,665\,600 z^3 - \right. $$
$$ \left. 19\,466\,092\,800 z^2 + 55\,965\,016\,800 z - 141\,661\,448\,775\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 484\,442\,112 z^5 + 5\,828\,444\,160 z^4 + 21\,856\,665\,600 z^3 - \right. $$
$$ \left.\left. 19\,466\,092\,800 z^2 + 55\,965\,016\,800 z - 141\,661\,448\,775\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Bigg) $$

07.22.03.a8wj.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) = $$
$$ \frac{1}{300\,647\,710\,720 z^{13/4}}\left(13\left(\sqrt{\pi}\left(-16\,777\,216 z^6 + 484\,442\,112 z^5 - 5\,828\,444\,160 z^4 + 21\,856\,665\,600 z^3 + \right.\right.\right. $$
$$ \left. 19\,466\,092\,800 z^2 + 55\,965\,016\,800 z + 141\,661\,448\,775\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\left(\left(-1\,048\,576 z^5 + 31\,260\,672 z^4 - 396\,533\,760 z^3 + 1\,853\,913\,600 z^2 + 95\,140\,528\,560 z - 141\,661\,448\,775\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(1\,048\,576 z^5 - 30\,474\,240 z^4 + 370\,384\,896 z^3 - \right. $$
$$ \left.\left.\left. 1\,449\,423\,360 z^2 + 2\,931\,500\,880 z - 47\,220\,482\,925\right) \sin\left(2\sqrt{z}\right)\right)\right)\Bigg) $$

07.22.03.a8wk.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) = \frac{1}{45\,801\,799\,680\sqrt{2}\, z^{13/4}}\left(\left(2\sqrt{z}\left(16\,777\,216 z^6 + 522\,190\,848 z^5 + 6\,860\,242\,944 z^4 + 28\,096\,839\,680 z^3 - 37\,050\,773\,760 z^2 + 733\,296\,564\,000 z + 897\,725\,453\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(16\,777\,216 z^6 + 532\,676\,608 z^5 + 7\,214\,792\,704 z^4 + 33\,456\,783\,360 z^3 + 341\,690\,469\,120 z^2 + 6\,303\,777\,480\,000 z + 2\,693\,176\,360\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(16\,777\,216 z^6 + 526\,385\,152 z^5 + 6\,997\,344\,256 z^4 + 30\,046\,765\,056 z^3 - 26\,072\,766\,720 z^2 - 558\,334\,576\,800 z - 2\,693\,176\,360\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8wl.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = \frac{1}{45\,801\,799\,680\sqrt{2}\, z^{13/4}}\left(\left(-2\sqrt{z}\left(16\,777\,216 z^6 - 522\,190\,848 z^5 + 6\,860\,242\,944 z^4 - 28\,096\,839\,680 z^3 - 37\,050\,773\,760 z^2 - 733\,296\,564\,000 z + 897\,725\,453\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216 z^6 - 532\,676\,608 z^5 + 7\,214\,792\,704 z^4 - 33\,456\,783\,360 z^3 + 341\,690\,469\,120 z^2 - 6\,303\,777\,480\,000 z + 2\,693\,176\,360\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-16\,777\,216 z^6 + 526\,385\,152 z^5 - 6\,997\,344\,256 z^4 + 30\,046\,765\,056 z^3 + 26\,072\,766\,720 z^2 - 558\,334\,576\,800 z + 2\,693\,176\,360\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8wm.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) = \frac{1}{538\,760\,697\,610\,240 z^{17/4}}\left(221 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-67\,108\,864 z^{13/2} + 16\,777\,216 z^6 - 2\,273\,312\,768 z^{11/2} + 580\,911\,104 z^5 - 33\,090\,699\,264 z^{9/2} + 8\,751\,611\,904 z^4 - 160\,214\,089\,728 z^{7/2} + 48\,538\,828\,800 z^3 + 131\,796\,403\,200 z^{5/2} + 1\,675\,752\,503\,040 z^2 + 13\,642\,672\,095\,360 z^{3/2} + 45\,029\,452\,517\,280 z + 76\,119\,418\,475\,100\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 + 2\,273\,312\,768 z^{11/2} + 580\,911\,104 z^5 + 33\,090\,699\,264 z^{9/2} + 8\,751\,611\,904 z^4 + 160\,214\,089\,728 z^{7/2} + 48\,538\,828\,800 z^3 - 131\,796\,403\,200 z^{5/2} + 1\,675\,752\,503\,040 z^2 - 13\,642\,672\,095\,360 z^{3/2} + 45\,029\,452\,517\,280 z - 76\,119\,418\,475\,100\sqrt{z} + 57\,089\,563\,856\,325\right) + 57\,089\,563\,856\,325\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 + 9\,042\,919\,424 z^6 + 130\,557\,149\,184 z^5 + 611\,986\,636\,800 z^4 - 726\,734\,131\,200 z^3 + 3\,134\,040\,940\,800 z^2 - 15\,866\,082\,262\,800 z + 57\,089\,563\,856\,325\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 + 9\,042\,919\,424 z^6 + 130\,557\,149\,184 z^5 + 611\,986\,636\,800 z^4 - 726\,734\,131\,200 z^3 + 3\,134\,040\,940\,800 z^2 - 15\,866\,082\,262\,800 z + 57\,089\,563\,856\,325\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8wn.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) = \frac{1}{134\,690\,174\,402\,560\, z^{17/4}} \left(221 \left(\sqrt{\pi}\, \left(-268\,435\,456\, z^7 + 9\,042\,919\,424\, z^6 - 130\,557\,149\,184\, z^5 + 611\,986\,636\,800\, z^4 + 726\,734\,131\,200\, z^3 + 3\,134\,040\,940\,800\, z^2 + 15\,866\,082\,262\,800\, z + 57\,089\,563\,856\,325\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\, \left(\left(-16\,777\,216\, z^6 + 580\,911\,104\, z^5 - 8\,751\,611\,904\, z^4 + 48\,538\,828\,800\, z^3 - 1\,675\,752\,503\,040\, z^2 + 45\,029\,452\,517\,280\, z - 57\,089\,563\,856\,325\right) \cos\left(2\sqrt{z}\right) + 4\sqrt{z}\, \left(16\,777\,216\, z^6 - 568\,328\,192\, z^5 + 8\,272\,674\,816\, z^4 - 40\,053\,522\,432\, z^3 - 32\,949\,100\,800\, z^2 + 3\,410\,668\,023\,840\, z - 19\,029\,854\,618\,775\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a8wo.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = \left(19 \left(2\sqrt{z}\, \left(268\,435\,456\, z^7 + 9\,646\,899\,200\, z^6 + 149\,972\,582\,400\, z^5 + 755\,530\,137\,600\, z^4 - 1\,207\,580\,774\,400\, z^3 - 5\,248\,859\,616\,000\, z^2 - 400\,129\,059\,330\,000\, z - 444\,374\,099\,544\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-268\,435\,456\, z^7 - 9\,814\,671\,360\, z^6 - 156\,452\,782\,080\, z^5 - 868\,589\,568\,000\, z^4 + 329\,340\,211\,200\, z^3 + 409\,719\,806\,496\,000\, z^2 + 3\,231\,811\,633\,050\,000\, z + 1\,333\,122\,298\,633\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\, \left(268\,435\,456\, z^7 + 9\,714\,008\,064\, z^6 + 152\,489\,164\,800\, z^5 + 797\,285\,744\,640\, z^4 - 937\,352\,908\,800\, z^3 + 15\,746\,578\,848\,000\, z^2 + 387\,817\,395\,966\,000\, z + 1\,333\,122\,298\,633\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(21\,984\,863\,846\,400\sqrt{2}\, z^{17/4}\right) $$

07.22.03.a8wp.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) = -\left(19 \left(2\sqrt{z}\, \left(268\,435\,456\, z^7 - 9\,646\,899\,200\, z^6 + 149\,972\,582\,400\, z^5 - 755\,530\,137\,600\, z^4 - 1\,207\,580\,774\,400\, z^3 + 5\,248\,859\,616\,000\, z^2 - 400\,129\,059\,330\,000\, z + 444\,374\,099\,544\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-268\,435\,456\, z^7 + 9\,814\,671\,360\, z^6 - 156\,452\,782\,080\, z^5 + 868\,589\,568\,000\, z^4 + 329\,340\,211\,200\, z^3 - 409\,719\,806\,496\,000\, z^2 + 3\,231\,811\,633\,050\,000\, z - 1\,333\,122\,298\,633\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\, \left(268\,435\,456\, z^7 - 9\,714\,008\,064\, z^6 + 152\,489\,164\,800\, z^5 - 797\,285\,744\,640\, z^4 - 937\,352\,908\,800\, z^3 - 15\,746\,578\,848\,000\, z^2 + 387\,817\,395\,966\,000\, z - 1\,333\,122\,298\,633\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(21\,984\,863\,846\,400\sqrt{2}\, z^{17/4}\right) $$

For fixed z and $a_1 = -\frac{11}{4}$, $b_1 = -\frac{5}{2}$

07.22.03.a8wq.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) = \left(\frac{512\,z^3}{98\,325} + \frac{672\,z^2}{2185} + \frac{208\,z}{115} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(192\,z^2 + 3116\,z + 6555\right)\sinh\left(2\sqrt{z}\right)}{6555} $$

07.22.03.a8wr.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{23}{4}; -z\right) = \left(-\frac{512\,z^3}{98\,325} + \frac{672\,z^2}{2185} - \frac{208\,z}{115} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(192\,z^2 - 3116\,z + 6555\right)\sin\left(2\sqrt{z}\right)}{6555} $$

07.22.03.a8ws.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{21}{4}; z\right) = $$

$$ \frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(9472\,z^3 + 845\,520\,z^2 + 1\,869\,660\,z + 1\,044\,225\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 156\sqrt{z}\,\left(2368\,z^2 + 26\,520\,z + 26\,775\right)\right.\right. $$

$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 468\,z\left(64\,z^2 + 1700\,z + 8925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8wt.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{21}{4}; -z\right) = $$

$$ \frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-9472\,z^3 + 845\,520\,z^2 - 1\,869\,660\,z + 1\,044\,225\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 156\sqrt{z}\,\left(2368\,z^2 - 26\,520\,z + 26\,775\right)\right.\right. $$

$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 468\,z\left(64\,z^2 - 1700\,z + 8925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8wu.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{19}{4}; z\right) = \frac{\left(1024\,z^2 + 7560\,z + 4275\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(64\,z^2 + 1860\,z + 4275\right)\sinh\left(2\sqrt{z}\right)}{4275} $$

07.22.03.a8wv.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{19}{4}; -z\right) = \frac{\left(1024\,z^2 - 7560\,z + 4275\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(64\,z^2 - 1860\,z + 4275\right)\sin\left(2\sqrt{z}\right)}{4275} $$

07.22.03.a8ww.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{17}{4}; z\right) = $$

$$ -\frac{1}{49\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024\,z^3 - 36\,240\,z^2 - 86\,580\,z - 49\,725\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(2336\,z^2 + 46\,800\,z + 49\,725\right)\right.\right. $$

$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(256\,z^2 + 7020\,z + 49\,725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8wx.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{49\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^3+36\,240z^2-86\,580z+49\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2336z^2-46\,800z+49\,725\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(256z^2-7020z+49\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8wy.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{15}{4}; z\right) = \frac{1}{225}\left(\left(32z^2+384z+225\right)\cosh\left(2\sqrt{z}\right)-6\sqrt{z}\,(28z+75)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.a8wz.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{15}{4}; -z\right) = \frac{1}{225}\left(\left(32z^2-384z+225\right)\cos\left(2\sqrt{z}\right)+6(75-28z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a8x0.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{13}{4}; z\right) =$$
$$\frac{1}{8775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-512z^3+5360z^2+14\,580z+8775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(64z^2-7560z-8775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^2+540z+8775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8x1.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{8775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3+5360z^2-14\,580z+8775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z^2+7560z-8775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^2-540z+8775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8x2.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{11}{4}; z\right) = \left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\,(4z+15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8x3.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{11}{4}; -z\right) = \left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}(15-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a8x4.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-256z^3+304z^2+1020z+675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(32z^2-480z-675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(64z^2-60z+675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8x5.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^3+304z^2-1020z+675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(32z^2+480z-675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(64z^2+60z+675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8x6.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{630}e^{-2\sqrt{z}}\left(128e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+128e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-128e^{4\sqrt{z}}z^{5/2}+128z^{5/2}-\right.$$
$$\left.32e^{4\sqrt{z}}z^2-32z^2-24e^{4\sqrt{z}}z^{3/2}+24z^{3/2}+432e^{4\sqrt{z}}z+432z-630e^{4\sqrt{z}}\sqrt{z}+630\sqrt{z}+315e^{4\sqrt{z}}+315\right)$$

07.22.03.a8x7.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{315}\left(-256\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2\left(64z^2-12z+315\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-32z^2-432z+315\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8x8.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{5}{4}; z\right) = \frac{1}{75\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^3+112z^2+84z+75\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.4\sqrt{z}\left(16z^2+24z+75\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(32z^2+36z-75\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8x9.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{5}{4}; -z\right) =$$
$$-\frac{1}{75\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^3-112z^2+84z-75\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(16z^2-24z+75\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(32z^2-36z-75\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8xa.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{90}e^{-2\sqrt{z}}\left(32e^{4\sqrt{z}}z^{5/2}-32z^{5/2}+8e^{4\sqrt{z}}z^2+8z^2-2e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+33)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-2e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+33)\right.$$
$$\left.\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+72e^{4\sqrt{z}}z^{3/2}-72z^{3/2}+24e^{4\sqrt{z}}z+24z-90e^{4\sqrt{z}}\sqrt{z}+90\sqrt{z}+45e^{4\sqrt{z}}+45\right)$$

07.22.03.a8xb.01

$${}_1F_2\left(-\frac{11}{4};-\frac{5}{2},-\frac{3}{4};-z\right)=$$

$$\frac{1}{45}\left(4\sqrt{\pi}\,(16z-33)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+2\left(-16z^2+36z+45\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\,+\left(8z^2-24z+45\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8xc.01

$${}_1F_2\left(-\frac{11}{4};-\frac{5}{2},-\frac{1}{4};z\right)=$$

$$\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\left(-\left(64z^3+188z^2+108z-45\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+2\sqrt{z}\left(16z^2+57z-90\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.4z\left(16z^2+51z+45\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8xd.01

$${}_1F_2\left(-\frac{11}{4};-\frac{5}{2},-\frac{1}{4};-z\right)=$$

$$\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^3-188z^2+108z+45\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+2\sqrt{z}\left(-16z^2+57z+90\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.4z\left(16z^2-51z+45\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8xe.01

$${}_1F_2\left(-\frac{11}{4};-\frac{5}{2},\frac{1}{4};z\right)=\frac{1}{1920}$$

$$\left(e^{-2\sqrt{z}}\left(-4\left(-64z^{5/2}+16z^2-276z^{3/2}+81z-480\sqrt{z}\,+e^{4\sqrt{z}}\left(64z^{5/2}+16z^2+276z^{3/2}+81z+480\sqrt{z}\,-240\right)-240\right)+\right.\right.$$

$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(256z^2+1056z+1617\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(256z^2+1056z+1617\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8xf.01

$${}_1F_2\left(-\frac{11}{4};-\frac{5}{2},\frac{1}{4};-z\right)=\frac{1}{480}\left(\sqrt{\pi}\,z^{3/4}\left(-256z^2+1056z-1617\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$

$$\left.2\left(\left(-16z^2+81z+240\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(16z^2-69z+120\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8xg.01

$${}_1F_2\left(-\frac{11}{4};-\frac{5}{2},\frac{3}{4};z\right)=$$

$$\frac{1}{3600\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3+2560z^2+5550z+3600\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(256z^2+1440z+4005\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$

$$\left.\left.2z\left(256z^2+1344z+3195\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8xh.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) = -\frac{1}{3600\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3 - 2560z^2 + 5550z - 3600\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-256z^2 + 1440z - 4005\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(256z^2 - 1344z + 3195\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8xi.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{5}{4}; z\right) = \frac{1}{368\,640\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1024z^{5/2} + 256z^2 - 6528z^{3/2} + 1824z - 21\,012\sqrt{z} + e^{4\sqrt{z}}\left(1024z^{5/2} + 256z^2 + 6528z^{3/2} + 1824z + 21\,012\sqrt{z} + 7281\right) + 7281\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3 + 25\,344z^2 + 77\,616z + 53\,361\right)\right.\right. \left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3 + 25\,344z^2 + 77\,616z + 53\,361\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8xj.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{5}{4}; -z\right) = \frac{1}{92\,160\sqrt[4]{z}}\left(\sqrt{\pi}\left(-4096z^3 + 25\,344z^2 - 77\,616z + 53\,361\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(-256z^2 + 1824z - 7281\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(256z^2 - 1632z + 5253\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8xk.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) = \frac{1}{268\,800\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(4096z^3 + 28\,928z^2 + 107\,760z + 89\,355\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4096z^3 + 31\,488z^2 + 132\,720z - 135\,135\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(4096z^3 + 29\,952z^2 + 116\,592z + 135\,135\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8xl.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{7}{4}; -z\right) = \frac{1}{268\,800\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(-4096z^3 + 28\,928z^2 - 107\,760z + 89\,355\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4096z^3 - 31\,488z^2 + 132\,720z + 135\,135\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-4096z^3 + 29\,952z^2 - 116\,592z + 135\,135\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8xm.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) = \frac{1}{18\,874\,368\, z^{5/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-16\,384\, z^{7/2} + 4096\, z^3 - 138\,240\, z^{5/2} + 37\,632\, z^2 - 652\,992\, z^{3/2} + 202\,032\, z - 1\,067\,220\sqrt{z} + e^{4\sqrt{z}}\left(16\,384\, z^{7/2} + 4096\, z^3 + 138\,240\, z^{5/2} + 37\,632\, z^2 + 652\,992\, z^{3/2} + 202\,032\, z + 1\,067\,220\sqrt{z} - 800\,415\right) - 800\,415\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\, z^4 + 540\,672\, z^3 + 2\,483\,712\, z^2 + 3\,415\,104\, z - 800\,415\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\, z^4 + 540\,672\, z^3 + 2\,483\,712\, z^2 + 3\,415\,104\, z - 800\,415\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8xn.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{9}{4}; -z\right) = \frac{1}{4\,718\,592\, z^{5/4}} \left(\sqrt{\pi}\left(-65\,536\, z^4 + 540\,672\, z^3 - 2\,483\,712\, z^2 + 3\,415\,104\, z + 800\,415\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(4096\, z^3 - 34\,560\, z^2 + 163\,248\, z - 266\,805\right)\sin\left(2\sqrt{z}\right) - \left(4096\, z^3 - 37\,632\, z^2 + 202\,032\, z + 800\,415\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8xo.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{11}{4}; z\right) = \frac{1}{11\,059\,200\sqrt{2}\, z^{5/4}} \left(\left(2\sqrt{z}\left(65\,536\, z^4 + 598\,016\, z^3 + 3\,151\,872\, z^2 + 4\,911\,840\, z + 2\,297\,295\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(65\,536\, z^4 + 638\,976\, z^3 + 3\,635\,712\, z^2 + 8\,648\,640\, z + 6\,891\,885\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(65\,536\, z^4 + 614\,400\, z^3 + 3\,326\,976\, z^2 + 6\,054\,048\, z - 6\,891\,885\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8xp.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{11}{4}; -z\right) = \frac{1}{11\,059\,200\sqrt{2}\, z^{5/4}} \left(\left(-2\sqrt{z}\left(65\,536\, z^4 - 598\,016\, z^3 + 3\,151\,872\, z^2 - 4\,911\,840\, z + 2\,297\,295\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(65\,536\, z^4 - 638\,976\, z^3 + 3\,635\,712\, z^2 - 8\,648\,640\, z + 6\,891\,885\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-65\,536\, z^4 + 614\,400\, z^3 - 3\,326\,976\, z^2 + 6\,054\,048\, z + 6\,891\,885\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8xq.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{13}{4}; z\right) = \frac{1}{671\,088\,640\, z^{9/4}} $$
$$ \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-262\,144\, z^{9/2} + 65\,536\, z^4 - 2\,752\,512\, z^{7/2} + 737\,280\, z^3 - 17\,172\,480\, z^{5/2} + 5\,015\,040\, z^2 - 39\,029\,760\, z^{3/2} + \right.\right.\right. $$
$$ \left.\left.\left. 17\,075\,520\, z + 101\,385\,900\sqrt{z} + e^{4\sqrt{z}} \left(262\,144\, z^{9/2} + 65\,536\, z^4 + 2\,752\,512\, z^{7/2} + 737\,280\, z^3 + 17\,172\,480 \right.\right.\right.\right. $$
$$ \left.\left.\left.\left. z^{5/2} + 5\,015\,040\, z^2 + 39\,029\,760\, z^{3/2} + 17\,075\,520\, z - 101\,385\,900\sqrt{z} + 76\,039\,425\right) + 76\,039\,425\right) + \right. $$
$$ e^{2\sqrt{z}} \sqrt{2\pi} \left(1\,048\,576\, z^5 + 10\,813\,440\, z^4 + 66\,232\,320\, z^3 + 136\,604\,160\, z^2 - 64\,033\,200\, z + 76\,039\,425\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}} \sqrt{2\pi} $$
$$ \left.\left(1\,048\,576\, z^5 + 10\,813\,440\, z^4 + 66\,232\,320\, z^3 + 136\,604\,160\, z^2 - 64\,033\,200\, z + 76\,039\,425\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8xr.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{13}{4}; -z\right) = \frac{1}{167\,772\,160\, z^{9/4}} $$
$$ \left(\sqrt{\pi}\left(-1\,048\,576\, z^5 + 10\,813\,440\, z^4 - 66\,232\,320\, z^3 + 136\,604\,160\, z^2 + 64\,033\,200\, z + 76\,039\,425\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ 2\sqrt[4]{z}\left(\left(-65\,536\, z^4 + 737\,280\, z^3 - 5\,015\,040\, z^2 + 17\,075\,520\, z - 76\,039\,425\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 4\sqrt{z}\left(65\,536\, z^4 - 688\,128\, z^3 + 4\,293\,120\, z^2 - 9\,757\,440\, z - 25\,346\,475\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8xs.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{15}{4}; z\right) = \frac{1}{353\,894\,400\sqrt{2}\, z^{9/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576\, z^5 + 11\,730\,944\, z^4 + 79\,896\,576\, z^3 + 181\,080\,576\, z^2 - 183\,783\,600\, z - 337\,702\,365\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ \left(1\,048\,576\, z^5 + 12\,386\,304\, z^4 + 88\,989\,696\, z^3 + 262\,918\,656\, z^2 - 2\,095\,133\,040\, z - 1\,013\,107\,095\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ 2\sqrt{z}\left(1\,048\,576\, z^5 + 11\,993\,088\, z^4 + 83\,238\,912\, z^3 + 207\,567\,360\, z^2 - 66\,162\,096\, z + 1\,013\,107\,095\right) $$
$$ \left. I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a8xt.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{15}{4}; -z\right) = \frac{1}{353\,894\,400\sqrt{2}\, z^{9/4}} $$
$$ \left(\left(2\sqrt{z}\left(-1\,048\,576\, z^5 + 11\,730\,944\, z^4 - 79\,896\,576\, z^3 + 181\,080\,576\, z^2 + 183\,783\,600\, z - 337\,702\,365\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(1\,048\,576\, z^5 - 12\,386\,304\, z^4 + 88\,989\,696\, z^3 - 262\,918\,656\, z^2 - 2\,095\,133\,040\, z + 1\,013\,107\,095\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\left(-1\,048\,576\, z^5 + 11\,993\,088\, z^4 - 83\,238\,912\, z^3 + 207\,567\,360\, z^2 + 66\,162\,096\, z + 1\,013\,107\,095\right) $$
$$ \left. J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a8xu.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{17}{4}; z\right) = \frac{1}{257\,698\,037\,760\, z^{13/4}} \left(13\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\, \left(-4\,194\,304\, z^{11/2} + 1\,048\,576\, z^5 - 52\,690\,944\, z^{9/2} + 13\,959\,168\, z^4 - 408\,846\,336\, z^{7/2} + 115\,384\,320\, z^3 - 1\,199\,278\,080\, z^{5/2} + 448\,842\,240\, z^2 + 139\,043\,520\, z^{3/2} - 9\,489\,720\,240\, z - 20\,986\,881\,300\sqrt{z} + e^{4\sqrt{z}} \left(4\,194\,304\, z^{11/2} + 1\,048\,576\, z^5 + 52\,690\,944\, z^{9/2} + 13\,959\,168\, z^4 + 408\,846\,336\, z^{7/2} + 115\,384\,320\, z^3 + 1\,199\,278\,080\, z^{5/2} + 448\,842\,240\, z^2 - 139\,043\,520\, z^{3/2} - 9\,489\,720\,240\, z + 20\,986\,881\,300\sqrt{z} - 15\,740\,160\,975\right) - 15\,740\,160\,975\right) + e^{2\sqrt{z}}\sqrt{2\pi}\, \left(16\,777\,216\, z^6 + 207\,618\,048\, z^5 + 1\,589\,575\,680\, z^4 + 4\,371\,333\,120\, z^3 - 3\,073\,593\,600\, z^2 + 7\,299\,784\,800\, z - 15\,740\,160\,975\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\, \left(16\,777\,216\, z^6 + 207\,618\,048\, z^5 + 1\,589\,575\,680\, z^4 + 4\,371\,333\,120\, z^3 - 3\,073\,593\,600\, z^2 + 7\,299\,784\,800\, z - 15\,740\,160\,975\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right) $$

07.22.03.a8xv.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{17}{4}; -z\right) = \frac{1}{64\,424\,509\,440\, z^{13/4}} \left(13 \left(\sqrt{\pi}\, \left(-16\,777\,216\, z^6 + 207\,618\,048\, z^5 - 1\,589\,575\,680\, z^4 + 4\,371\,333\,120\, z^3 + 3\,073\,593\,600\, z^2 + 7\,299\,784\,800\, z + 15\,740\,160\,975\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\, \left(\left(-1\,048\,576\, z^5 + 13\,959\,168\, z^4 - 115\,384\,320\, z^3 + 448\,842\,240\, z^2 + 9\,489\,720\,240\, z - 15\,740\,160\,975\right) \cos\left(2\sqrt{z}\right) + 4\sqrt{z}\, \left(1\,048\,576\, z^5 - 13\,172\,736\, z^4 + 102\,211\,584\, z^3 - 299\,819\,520\, z^2 - 34\,760\,880\, z - 5\,246\,720\,325\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a8xw.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) = \frac{1}{9\,814\,671\,360\sqrt{2}\, z^{13/4}} \left(\left(2\sqrt{z}\, \left(16\,777\,216\, z^6 + 222\,298\,112\, z^5 + 1\,855\,782\,912\, z^4 + 5\,504\,139\,264\, z^3 - 6\,469\,182\,720\, z^2 + 71\,013\,983\,040\, z + 92\,868\,150\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(16\,777\,216\, z^6 + 232\,783\,872\, z^5 + 2\,022\,899\,712\, z^4 + 7\,232\,569\,344\, z^3 + 5\,292\,967\,680\, z^2 + 637\,582\,065\,120\, z + 278\,604\,451\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\, \left(16\,777\,216\, z^6 + 226\,492\,416\, z^5 + 1\,917\,911\,040\, z^4 + 6\,085\,804\,032\, z^3 - 3\,646\,266\,624\, z^2 - 43\,225\,902\,720\, z - 278\,604\,451\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8xx.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) = \frac{1}{9\,814\,671\,360\sqrt{2}\, z^{13/4}}\left(\left(-2\sqrt{z}\left(16\,777\,216 z^6 - 222\,298\,112 z^5 + 1\,855\,782\,912 z^4 - 5\,504\,139\,264 z^3 - 6\,469\,182\,720 z^2 - 71\,013\,983\,040 z + 92\,868\,150\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216 z^6 - 232\,783\,872 z^5 + 2\,022\,899\,712 z^4 - 7\,232\,569\,344 z^3 + 5\,292\,967\,680 z^2 - 637\,582\,065\,120 z + 278\,604\,451\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-16\,777\,216 z^6 + 226\,492\,416 z^5 - 1\,917\,911\,040 z^4 + 6\,085\,804\,032 z^3 + 3\,646\,266\,624 z^2 - 43\,225\,902\,720 z + 278\,604\,451\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8xy.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) = \frac{1}{115\,448\,720\,916\,480 z^{17/4}}\left(221 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-67\,108\,864 z^{13/2} + 16\,777\,216 z^6 - 981\,467\,136 z^{11/2} + 257\,949\,696 z^5 - 9\,110\,814\,720 z^{9/2} + 2\,514\,419\,712 z^4 - 32\,836\,091\,904 z^{7/2} + 11\,183\,800\,320 z^3 + 14\,763\,893\,760 z^{5/2} + 25\,027\,833\,600 z^2 + 1\,016\,964\,305\,280 z^{3/2} + 4\,130\,218\,239\,840 z + 7\,366\,395\,336\,300\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 + 981\,467\,136 z^{11/2} + 257\,949\,696 z^5 + 9\,110\,814\,720 z^{9/2} + 2\,514\,419\,712 z^4 + 32\,836\,091\,904 z^{7/2} + 11\,183\,800\,320 z^3 - 14\,763\,893\,760 z^{5/2} + 25\,027\,833\,600 z^2 - 1\,016\,964\,305\,280 z^{3/2} + 4\,130\,218\,239\,840 z - 7\,366\,395\,336\,300\sqrt{z} + 5\,524\,796\,502\,225\right) + 5\,524\,796\,502\,225\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 + 3\,875\,536\,896 z^6 + 35\,606\,495\,232 z^5 + 122\,397\,327\,360 z^4 - 114\,747\,494\,400 z^3 + 408\,787\,948\,800 z^2 - 1\,762\,898\,029\,200 z + 5\,524\,796\,502\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 + 3\,875\,536\,896 z^6 + 35\,606\,495\,232 z^5 + 122\,397\,327\,360 z^4 - 114\,747\,494\,400 z^3 + 408\,787\,948\,800 z^2 - 1\,762\,898\,029\,200 z + 5\,524\,796\,502\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8xz.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) = \frac{1}{28\,862\,180\,229\,120 z^{17/4}}\left(221\left(\sqrt{\pi}\left(-268\,435\,456 z^7 + 3\,875\,536\,896 z^6 - 35\,606\,495\,232 z^5 + 122\,397\,327\,360 z^4 - 114\,747\,494\,400 z^3 + 408\,787\,948\,800 z^2 + 1\,762\,898\,029\,200 z + 5\,524\,796\,502\,225\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(-16\,777\,216 z^6 + 257\,949\,696 z^5 - 2\,514\,419\,712 z^4 + 11\,183\,800\,320 z^3 - 25\,027\,833\,600 z^2 + 4\,130\,218\,239\,840 z - 5\,524\,796\,502\,225\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(16\,777\,216 z^6 - 245\,366\,784 z^5 + 2\,277\,703\,680 z^4 - 8\,209\,022\,976 z^3 - 3\,690\,973\,440 z^2 + 254\,241\,076\,320 z - 1\,841\,598\,834\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a8y0.01

$${}_1F_2\left(-\frac{11}{4};-\frac{5}{2},\frac{23}{4};z\right)=$$

$$\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+4\,110\,417\,920\,z^6+40\,627\,077\,120\,z^5+148\,744\,765\,440\,z^4-203\,877\,273\,600\,z^3+\right.\right.\right.$$

$$\left.\left.\left.555\,761\,606\,400\,z^2-35\,024\,559\,570\,000\,z-40\,397\,645\,413\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$

$$\left(268\,435\,456\,z^7+4\,278\,190\,080\,z^6+43\,646\,976\,000\,z^5+184\,163\,696\,640\,z^4+47\,048\,601\,600\,z^3-\right.$$

$$\left.\left.27\,973\,334\,188\,800\,z^2-289\,748\,629\,170\,000\,z-121\,192\,936\,239\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\right.$$

$$\left(268\,435\,456\,z^7+4\,177\,526\,784\,z^6+41\,759\,539\,200\,z^5+161\,001\,308\,160\,z^4-138\,250\,506\,240\,z^3+802\,766\,764\,800\right.$$

$$\left.\left.z^2+31\,203\,698\,526\,000\,z+121\,192\,936\,239\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(4\,711\,042\,252\,800\sqrt{2}\;z^{17/4}\right)$$

07.22.03.a8y1.01

$${}_1F_2\left(-\frac{11}{4};-\frac{5}{2},\frac{23}{4};-z\right)=$$

$$-\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-4\,110\,417\,920\,z^6+40\,627\,077\,120\,z^5-148\,744\,765\,440\,z^4-203\,877\,273\,600\,z^3-\right.\right.\right.$$

$$\left.\left.\left.555\,761\,606\,400\,z^2-35\,024\,559\,570\,000\,z+40\,397\,645\,413\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$

$$\left(268\,435\,456\,z^7-4\,278\,190\,080\,z^6+43\,646\,976\,000\,z^5-184\,163\,696\,640\,z^4+47\,048\,601\,600\,z^3+\right.$$

$$\left.\left.27\,973\,334\,188\,800\,z^2-289\,748\,629\,170\,000\,z+121\,192\,936\,239\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.$$

$$2\sqrt{z}\,\left(268\,435\,456\,z^7-4\,177\,526\,784\,z^6+41\,759\,539\,200\,z^5-161\,001\,308\,160\,z^4-\right.$$

$$138\,250\,506\,240\,z^3-802\,766\,764\,800\,z^2+31\,203\,698\,526\,000\,z-$$

$$\left.\left.121\,192\,936\,239\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(4\,711\,042\,252\,800\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1=-\frac{11}{4}$, $b_{1.}=-\frac{3}{2}$

07.22.03.a8y2.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},-\frac{23}{4};z\right)=\left(\frac{64\,z^2}{437}+\frac{116\,z}{69}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(128\,z^2+6840\,z+19\,665\right)\sinh\left(2\sqrt{z}\right)}{19\,665}$$

07.22.03.a8y3.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},-\frac{23}{4};-z\right)=\left(\frac{64\,z^2}{437}-\frac{116\,z}{69}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(128\,z^2-6840\,z+19\,665\right)\sin\left(2\sqrt{z}\right)}{19\,665}$$

07.22.03.a8y4.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},-\frac{21}{4};z\right)=\frac{1}{208\,845\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(20\,480z^3+134\,784z^2+344\,760z+208\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-156\sqrt{z}\left(192z^2+4556z+5355\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(-5120z^2+10\,608z+208\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8y5.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},-\frac{21}{4};-z\right)=$$
$$-\frac{1}{208\,845\sqrt{2}}\left(\sqrt[4]{z}\left(\left(20\,480z^3-134\,784z^2+344\,760z-208\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-156\sqrt{z}\left(192z^2-4556z+5355\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(5120z^2+10\,608z-208\,845\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8y6.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},-\frac{19}{4};z\right)=\left(\frac{64z^2}{855}+\frac{92z}{57}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{57}\sqrt{z}\,(16z+57)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8y7.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},-\frac{19}{4};-z\right)=\left(\frac{64z^2}{855}-\frac{92z}{57}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{57}(57-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a8y8.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^3+5664z^2+15\,600z+9945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^2+7644z+9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(512z^2+312z-9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8y9.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},-\frac{17}{4};-z\right)=$$
$$-\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^3-5664z^2+15\,600z-9945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^2-7644z+9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(512z^2-312z-9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8ya.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},-\frac{15}{4};z\right)=\left(\frac{68z}{45}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{45}\sqrt{z}\,(8z+45)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8yb.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},-\frac{15}{4};-z\right)=\left(1-\frac{68z}{45}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{45}(45-8z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a8yc.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, -\frac{13}{4}; z\right) =$$
$$\frac{1}{1755\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^3+896z^2+2520z+1755\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(128z^2+1116z+1755\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(256z^2+288z-1755\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8yd.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, -\frac{13}{4}; -z\right) =$$
$$-\frac{1}{1755\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^3-896z^2+2520z-1755\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(128z^2-1116z+1755\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(256z^2-288z-1755\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8ye.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, -\frac{11}{4}; z\right) = \left(\frac{4z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8yf.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, -\frac{11}{4}; -z\right) = \left(1-\frac{4z}{3}\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a8yg.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{135\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3+96z^2+160z+135\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z^2+52z+135\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(128z^2+56z-135\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8yh.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, -\frac{9}{4}; -z\right) =$$
$$-\frac{1}{135\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3-96z^2+160z-135\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z^2-52z+135\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^2-56z-135\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8yi.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{126}e^{-2\sqrt{z}}\left(-256e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-256e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+256e^{4\sqrt{z}}z^{5/2}-256z^{5/2}+\right.$$
$$\left.64e^{4\sqrt{z}}z^2+64z^2+48e^{4\sqrt{z}}z^{3/2}-48z^{3/2}+60e^{4\sqrt{z}}z+60z-126e^{4\sqrt{z}}\sqrt{z}+126\sqrt{z}+63e^{4\sqrt{z}}+63\right)$$

07.22.03.a8yj.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, -\frac{7}{4}; -z\right) =$$

$$\frac{1}{63}\left(512\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{11/4} + 2\left(-128z^2 + 24z + 63\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(64z^2 - 60z + 63\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8yk.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, -\frac{5}{4}; z\right) = -\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^3 - 128z^2 - 8z - 15\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$

$$\left.\left. 4\sqrt{z}\left(32z^2 + 4z - 15\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(64z^2 - 16z + 15\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8yl.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, -\frac{5}{4}; -z\right) =$$

$$\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^3 + 128z^2 - 8z + 15\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-32z^2 + 4z + 15\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$

$$\left.\left. 4z\left(64z^2 + 16z + 15\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8ym.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, -\frac{3}{4}; z\right) =$$

$$\frac{1}{18} e^{-2\sqrt{z}}\left(-64e^{4\sqrt{z}} z^{5/2} + 64z^{5/2} - 16e^{4\sqrt{z}} z^2 - 16z^2 + 4e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 11)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} + 4e^{2\sqrt{z}}\sqrt{2\pi}\right.$$

$$\left.(16z - 11)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} + 32e^{4\sqrt{z}} z^{3/2} - 32z^{3/2} - 4e^{4\sqrt{z}} z - 4z - 18e^{4\sqrt{z}}\sqrt{z} + 18\sqrt{z} + 9e^{4\sqrt{z}} + 9\right)$$

07.22.03.a8yn.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, -\frac{3}{4}; -z\right) =$$

$$\frac{1}{9}\left(-8\sqrt{\pi}\,(16z + 11) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} + 2\left(32z^2 + 16z + 9\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-16z^2 + 4z + 9\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8yo.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, -\frac{1}{4}; z\right) = \frac{1}{9\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(128z^3 - 152z^2 - 48z + 9\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16z^2 - 9z + 9\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-32z^2 + 30z + 9\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$

$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8yp.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},-\frac{1}{4};-z\right)=-\frac{1}{9\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^3+152z^2-48z-9\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.4\sqrt{z}\left(16z^2+9z+9\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(32z^2+30z-9\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8yq.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{192}e^{-2\sqrt{z}}\left(4\left(-64z^{5/2}+16z^2+76z^{3/2}-7z+48\sqrt{z}+e^{4\sqrt{z}}\left(64z^{5/2}+16z^2-76z^{3/2}-7z-48\sqrt{z}+24\right)+24\right)-\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(256z^2-352z-231\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(256z^2-352z-231\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)$$

07.22.03.a8yr.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{48}\left(\sqrt{\pi}\,z^{3/4}\left(256z^2+352z-231\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\left(\left(16z^2+7z+24\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(16z^2+19z-12\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8ys.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},\frac{3}{4};z\right)=$$
$$-\frac{1}{360\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3-960z^2-830z-360\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-256z^2+320z+285\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(-256z^2+416z+435\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8yt.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},\frac{3}{4};-z\right)=$$
$$\frac{1}{360\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3+960z^2-830z+360\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-256z^2-320z+285\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(256z^2+416z-435\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8yu.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{36\,864\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1024z^{5/2}+256z^2+1920z^{3/2}-288z+2748\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2-1920z^{3/2}-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.288z-2748\sqrt{z}-243\right)-243\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-8448z^2-11\,088z-4851\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-8448z^2-11\,088z-4851\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8yv.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},\frac{5}{4};-z\right)=\frac{1}{9216\sqrt[4]{z}}\left(\sqrt{\pi}\left(4096z^3+8448z^2-11088z+4851\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\sqrt[4]{z}\left(\left(256z^2+288z-243\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2+480z-687\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a8yw.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},\frac{7}{4};z\right)=\frac{1}{26880\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(-4096z^3+10496z^2+15440z+9975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4096z^3-7936z^2-15120z+10395\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(4096z^3-9472z^2-16464z-10395\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8yx.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},\frac{7}{4};-z\right)=\frac{1}{26880\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(4096z^3+10496z^2-15440z+9975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4096z^3-7936z^2+15120z+10395\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(4096z^3+9472z^2-16464z+10395\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8yy.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},\frac{9}{4};z\right)=-\frac{1}{9437184z^{5/4}}$$
$$\left(5e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16384z^{7/2}+4096z^3+41984z^{5/2}-7424z^2+90432z^{3/2}-17616z+71148\sqrt{z}+e^{4\sqrt{z}}\right.\right.\right.$$
$$\left.\left.\left.\left(16384z^{7/2}+4096z^3-41984z^{5/2}-7424z^2-90432z^{3/2}-17616z-71148\sqrt{z}+53361\right)+53361\right)+\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(65536z^4-180224z^3-354816z^2-310464z+53361\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65536z^4-180224z^3-354816z^2-310464z+53361\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8yz.01

$${}_1F_2\left(-\frac{11}{4};-\frac{3}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{2359296z^{5/4}}\left(5\left(\sqrt{\pi}\left(65536z^4+180224z^3-354816z^2+310464z+53361\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(\left(-4096z^3-7424z^2+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.17616z+53361\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(4096z^3+10496z^2-22608z+17787\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a8z0.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) = \frac{1}{1\,105\,920\sqrt{2}\, z^{5/4}}\left(\left(2\sqrt{z}\left(-65\,536 z^4 + 212\,992 z^3 + 446\,976 z^2 + 457\,920 z + 135\,135\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.$$
$$\left(65\,536 z^4 - 172\,032 z^3 - 470\,016 z^2 - 332\,640 z - 405\,405\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left. 2\sqrt{z}\left(65\,536 z^4 - 196\,608 z^3 - 474\,624 z^2 - 532\,224 z + 405\,405\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a8z1.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) = \frac{1}{1\,105\,920\sqrt{2}\, z^{5/4}}\left(\left(2\sqrt{z}\left(65\,536 z^4 + 212\,992 z^3 - 446\,976 z^2 + 457\,920 z - 135\,135\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.$$
$$\left(-65\,536 z^4 - 172\,032 z^3 + 470\,016 z^2 - 332\,640 z + 405\,405\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left. 2\sqrt{z}\left(65\,536 z^4 + 196\,608 z^3 - 474\,624 z^2 + 532\,224 z + 405\,405\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a8z2.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) =$$
$$\frac{1}{67\,108\,864 z^{9/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-262\,144 z^{9/2} + 65\,536 z^4 + 851\,968 z^{7/2} - 163\,840 z^3 + 2\,426\,880 z^{5/2} - 560\,640 z^2 + \right.\right.\right.$$
$$\left.\left.\left. 3\,252\,480 z^{3/2} - 5\,336\,100\sqrt{z}\right) + e^{4\sqrt{z}}\left(262\,144 z^{9/2} + 65\,536 z^4 - 851\,968 z^{7/2} - 163\,840 z^3 - \right.\right.\right.$$
$$\left.\left.\left. 2\,426\,880 z^{5/2} - 560\,640 z^2 - 3\,252\,480 z^{3/2} + 5\,336\,100\sqrt{z} - 4\,002\,075\right) - 4\,002\,075\right) -$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576 z^5 - 3\,604\,480 z^4 - 9\,461\,760 z^3 - 12\,418\,560 z^2 + 4\,268\,880 z - 4\,002\,075\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) -$$
$$\left. e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576 z^5 - 3\,604\,480 z^4 - 9\,461\,760 z^3 - 12\,418\,560 z^2 + 4\,268\,880 z - 4\,002\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.a8z3.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) =$$
$$\frac{1}{16\,777\,216 z^{9/4}}\left(\sqrt{\pi}\left(1\,048\,576 z^5 + 3\,604\,480 z^4 - 9\,461\,760 z^3 + 12\,418\,560 z^2 + 4\,268\,880 z + 4\,002\,075\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right.$$
$$2\sqrt[4]{z}\left(\left(-65\,536 z^4 - 163\,840 z^3 + 560\,640 z^2 + 4\,002\,075\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\left. 4\sqrt{z}\left(65\,536 z^4 + 212\,992 z^3 - 606\,720 z^2 + 813\,120 z + 1\,334\,025\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a8z4.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) = -\frac{1}{35\,389\,440\sqrt{2}\, z^{9/4}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576 z^5 - 4\,128\,768 z^4 - 11\,296\,768 z^3 - 16\,298\,496 z^2 + 6\,486\,480 z + 16\,081\,065\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(-1\,048\,576 z^5 + 3\,473\,408 z^4 + 12\,115\,968 z^3 + 18\,095\,616 z^2 - 92\,972\,880 z - 48\,243\,195\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left. 2\sqrt{z}\left(-1\,048\,576 z^5 + 3\,866\,624 z^4 + 11\,919\,360 z^3 + 18\,805\,248 z^2 - 9\,945\,936 z + 48\,243\,195\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8z5.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, \frac{15}{4}; -z\right) = \frac{1}{35\,389\,440\sqrt{2}\,z^{9/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576 z^5 + 4\,128\,768 z^4 - 11\,296\,768 z^3 + 16\,298\,496 z^2 + 6\,486\,480 z - 16\,081\,065\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ \left(1\,048\,576 z^5 + 3\,473\,408 z^4 - 12\,115\,968 z^3 + 18\,095\,616 z^2 + 92\,972\,880 z - 48\,243\,195\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(1\,048\,576 z^5 + 3\,866\,624 z^4 - 11\,919\,360 z^3 + 18\,805\,248 z^2 + 9\,945\,936 z + 48\,243\,195\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8z6.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) = $$
$$ -\frac{1}{25\,769\,803\,776 z^{13/4}}\left(13 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 16\,515\,072 z^{9/2} - 3\,342\,336 z^4 + 58\,294\,272 z^{7/2} - \right.\right.\right. $$
$$ 14\,376\,960 z^3 + 106\,444\,800 z^{5/2} - 19\,514\,880 z^2 - 95\,135\,040 z^{3/2} + 345\,779\,280 z + 912\,473\,100\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 16\,515\,072 z^{9/2} - 3\,342\,336 z^4 - 58\,294\,272 z^{7/2} - 14\,376\,960 z^3 - \right. $$
$$ \left.\left. 106\,444\,800 z^{5/2} - 19\,514\,880 z^2 + 95\,135\,040 z^{3/2} + 345\,779\,280 z - 912\,473\,100\sqrt{z} + 684\,354\,825\right) + $$
$$ \left.\left. 684\,354\,825\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 69\,206\,016 z^5 - 227\,082\,240 z^4 - \right.\right. $$
$$ \left. 397\,393\,920 z^3 + 204\,906\,240 z^2 - 384\,199\,200 z + 684\,354\,825\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 69\,206\,016 z^5 - 227\,082\,240 z^4 - 397\,393\,920 z^3 + \right. $$
$$ \left.\left. 204\,906\,240 z^2 - 384\,199\,200 z + 684\,354\,825\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a8z7.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) = $$
$$ \frac{1}{6\,442\,450\,944 z^{13/4}}\left(13\left(\sqrt{\pi}\left(16\,777\,216 z^6 + 69\,206\,016 z^5 - 227\,082\,240 z^4 + 397\,393\,920 z^3 + 204\,906\,240 z^2 + \right.\right.\right. $$
$$ \left.\left. 384\,199\,200 z + 684\,354\,825\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576 z^5 + 4\,128\,768 z^4 - 14\,573\,568 z^3 + 26\,611\,200 z^2 + 23\,783\,760 z + 228\,118\,275\right) \sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.\left. \left(1\,048\,576 z^5 + 3\,342\,336 z^4 - 14\,376\,960 z^3 + 19\,514\,880 z^2 + 345\,779\,280 z - 684\,354\,825\right) \cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a8z8.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) =$$
$$\frac{1}{981\,467\,136\sqrt{2}\, z^{13/4}}\left(\left(2\sqrt{z}\left(-16\,777\,216 z^6 + 77\,594\,624 z^5 + 262\,209\,536 z^4 + 491\,372\,544 z^3 - 366\,702\,336 z^2 + 2\,572\,970\,400 z + 3\,714\,726\,015\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216 z^6 - 67\,108\,864 z^5 - 282\,525\,696 z^4 - 590\,413\,824 z^3 + 1\,335\,350\,016 z^2 - 24\,700\,515\,840 z - 11\,144\,178\,045\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216 z^6 - 73\,400\,320 z^5 - 275\,054\,592 z^4 - 556\,351\,488 z^3 + 311\,351\,040 z^2 + 926\,269\,344 z + 11\,144\,178\,045\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8z9.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, \frac{19}{4}; -z\right) = \frac{1}{981\,467\,136\sqrt{2}\, z^{13/4}}$$
$$\left(\left(2\sqrt{z}\left(16\,777\,216 z^6 + 77\,594\,624 z^5 - 262\,209\,536 z^4 + 491\,372\,544 z^3 + 366\,702\,336 z^2 + 2\,572\,970\,400 z - 3\,714\,726\,015\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(16\,777\,216 z^6 + 67\,108\,864 z^5 - 282\,525\,696 z^4 + 590\,413\,824 z^3 + 1\,335\,350\,016 z^2 + 24\,700\,515\,840 z - 11\,144\,178\,045\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216 z^6 + 73\,400\,320 z^5 - 275\,054\,592 z^4 + 556\,351\,488 z^3 + 311\,351\,040 z^2 - 926\,269\,344 z + 11\,144\,178\,045\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8za.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) =$$
$$-\frac{1}{11\,544\,872\,091\,648 z^{17/4}}\left(221 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-67\,108\,864 z^{13/2} + 16\,777\,216 z^6 + 310\,378\,496 z^{11/2} - 65\,011\,712 z^5 + 1\,304\,690\,688 z^{9/2} - 331\,677\,696 z^4 + 2\,982\,346\,752 z^{7/2} - 738\,017\,280 z^3 - 2\,125\,347\,840 z^{5/2} + 4\,810\,417\,920 z^2 - 22\,525\,050\,240 z^{3/2} - 141\,615\,825\,120 z - 272\,829\,456\,900\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} + 16\,777\,216 z^6 - 310\,378\,496 z^{11/2} - 65\,011\,712 z^5 - 1\,304\,690\,688 z^{9/2} - 331\,677\,696 z^4 - 2\,982\,346\,752 z^{7/2} - 738\,017\,280 z^3 + 2\,125\,347\,840 z^{5/2} + 4\,810\,417\,920 z^2 + 22\,525\,050\,240 z^{3/2} - 141\,615\,825\,120 z + 272\,829\,456\,900\sqrt{z} - 204\,622\,092\,675\right) - 204\,622\,092\,675\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 1\,291\,845\,632 z^6 - 5\,086\,642\,176 z^5 - 11\,127\,029\,760 z^4 + 7\,649\,832\,960 z^3 - 21\,515\,155\,200 z^2 + 76\,647\,740\,400 z - 204\,622\,092\,675\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456 z^7 - 1\,291\,845\,632 z^6 - 5\,086\,642\,176 z^5 - 11\,127\,029\,760 z^4 + 7\,649\,832\,960 z^3 - 21\,515\,155\,200 z^2 + 76\,647\,740\,400 z - 204\,622\,092\,675\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a8zb.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) =$$
$$\frac{1}{2\,886\,218\,022\,912\, z^{17/4}}\left(221\left(\sqrt{\pi}\,\left(268\,435\,456\, z^7 + 1\,291\,845\,632\, z^6 - 5\,086\,642\,176\, z^5 + 11\,127\,029\,760\, z^4 + 7\,649\,832\,960\, z^3 + 21\,515\,155\,200\, z^2 + 76\,647\,740\,400\, z + 204\,622\,092\,675\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(\left(16\,777\,216\, z^6 + 65\,011\,712\, z^5 - 331\,677\,696\, z^4 + 738\,017\,280\, z^3 + 4\,810\,417\,920\, z^2 + 141\,615\,825\,120\, z - 204\,622\,092\,675\right)\cos\left(2\sqrt{z}\right) - 4\sqrt{z}\,\left(16\,777\,216\, z^6 + 77\,594\,624\, z^5 - 326\,172\,672\, z^4 + 745\,586\,688\, z^3 + 531\,336\,960\, z^2 - 5\,631\,262\,560\, z + 68\,207\,364\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a8zc.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) =$$
$$-\left(19\left(2\sqrt{z}\,\left(268\,435\,456\, z^7 - 1\,426\,063\,360\, z^6 - 5\,740\,953\,600\, z^5 - 13\,262\,192\,640\, z^4 + 13\,099\,806\,720\, z^3 - 61\,751\,289\,600\, z^2 + 1\,146\,258\,313\,200\, z + 1\,393\,022\,255\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(268\,435\,456\, z^7 - 1\,258\,291\,200\, z^6 - 6\,181\,355\,520\, z^5 - 16\,122\,839\,040\, z^4 + 20\,479\,979\,520\, z^3 + 555\,761\,606\,400\, z^2 + 9\,806\,876\,679\,600\, z + 4\,179\,066\,766\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-268\,435\,456\, z^7 + 1\,358\,954\,496\, z^6 + 5\,992\,611\,840\, z^5 + 14\,760\,345\,600\, z^4 - 9\,920\,655\,360\, z^3 + 12\,350\,257\,920\, z^2 + 891\,534\,243\,600\, z + 4\,179\,066\,766\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(471\,104\,225\,280\sqrt{2}\, z^{17/4}\right)$$

07.22.03.a8zd.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) =$$
$$\left(19\left(2\sqrt{z}\,\left(268\,435\,456\, z^7 + 1\,426\,063\,360\, z^6 - 5\,740\,953\,600\, z^5 + 13\,262\,192\,640\, z^4 + 13\,099\,806\,720\, z^3 + 61\,751\,289\,600\, z^2 + 1\,146\,258\,313\,200\, z - 1\,393\,022\,255\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(268\,435\,456\, z^7 + 1\,258\,291\,200\, z^6 - 6\,181\,355\,520\, z^5 + 16\,122\,839\,040\, z^4 + 20\,479\,979\,520\, z^3 - 555\,761\,606\,400\, z^2 + 9\,806\,876\,679\,600\, z - 4\,179\,066\,766\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(268\,435\,456\, z^7 + 1\,358\,954\,496\, z^6 - 5\,992\,611\,840\, z^5 + 14\,760\,345\,600\, z^4 + 9\,920\,655\,360\, z^3 + 12\,350\,257\,920\, z^2 - 891\,534\,243\,600\, z + 4\,179\,066\,766\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(471\,104\,225\,280\sqrt{2}\, z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{11}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.a8ze.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},-\frac{23}{4};z\right)=\left(\frac{128\,z^2}{6555}+\frac{24\,z}{23}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,(752\,z+6555)\sinh\left(2\sqrt{z}\right)}{6555}$$

07.22.03.a8zf.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},-\frac{23}{4};-z\right)=\left(\frac{128\,z^2}{6555}-\frac{24\,z}{23}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\,(6555-752\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)}{6555}$$

07.22.03.a8zg.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},-\frac{21}{4};z\right)=$$

$$-\frac{1}{69\,615\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192\,z^3+92\,352\,z^2-66\,300\,z-69\,615\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(-1024\,z^2+10\,608\,z+69\,615\right)\right.\right.$$

$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-4\,z\left(2048\,z^2+26\,064\,z+69\,615\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8zh.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},-\frac{21}{4};-z\right)=\frac{1}{69\,615\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(8192\,z^3-92\,352\,z^2-66\,300\,z+69\,615\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(1024\,z^2+10\,608\,z-69\,615\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.4\,z\left(2048\,z^2-26\,064\,z+69\,615\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8zi.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},-\frac{19}{4};z\right)=\left(\frac{16\,z}{19}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{285}\sqrt{z}\,(16\,z+285)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a8zj.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},-\frac{19}{4};-z\right)=\left(1-\frac{16\,z}{19}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{285}\,(285-16\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a8zk.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},-\frac{17}{4};z\right)=$$

$$-\frac{1}{16\,575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096\,z^3+34\,560\,z^2-11\,700\,z-16\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(512\,z^2+1560\,z-16\,575\right)\right.\right.$$

$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-4\,z\left(1024\,z^2+8896\,z+16\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8zl.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) = \frac{1}{16\,575\sqrt{2}} \left(\sqrt[4]{z}\left(\left(4096 z^3 - 34\,560 z^2 - 11\,700 z + 16\,575\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-512 z^2 + 1560 z + 16\,575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1024 z^2 - 8896 z + 16\,575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8zm.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) = \left(\frac{8z}{15} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right) $$

07.22.03.a8zn.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) = \left(1 - \frac{8z}{15}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.a8zo.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) = \frac{1}{2925\sqrt{2}} \left(\sqrt[4]{z}\left(\left(-2048 z^3 - 10\,240 z^2 + 900 z + 2925\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(256 z^2 + 1440 z - 2925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(512 z^2 + 2688 z + 2925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8zp.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) = \frac{1}{2925\sqrt{2}} \left(\sqrt[4]{z}\left(\left(2048 z^3 - 10\,240 z^2 - 900 z + 2925\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-256 z^2 + 1440 z + 2925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(512 z^2 - 2688 z + 2925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8zq.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right) $$

07.22.03.a8zr.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, -\frac{11}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.a8zs.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, -\frac{9}{4}; z\right) = \frac{1}{225\sqrt{2}} \left(\sqrt[4]{z}\left(-\left(1024 z^3 + 1600 z^2 + 100 z - 225\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(128 z^2 + 280 z - 225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(256 z^2 + 464 z + 225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a8zt.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^3-1600z^2+100z+225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-128z^2+280z+225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(256z^2-464z+225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8zu.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{210}e^{-2\sqrt{z}}\left(512e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+512e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-512e^{4\sqrt{z}}z^{5/2}+512z^{5/2}-\right.$$
$$\left.128e^{4\sqrt{z}}z^2-128z^2-96e^{4\sqrt{z}}z^{3/2}+96z^{3/2}-120e^{4\sqrt{z}}z-120z-210e^{4\sqrt{z}}\sqrt{z}+210\sqrt{z}+105e^{4\sqrt{z}}+105\right)$$

07.22.03.a8zv.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{105}\left(-1024\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2\left(256z^2-48z+105\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-128z^2+120z+105\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a8zw.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},-\frac{5}{4};z\right)=\frac{1}{25\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(-4\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)(5-8z)^2+\left(512z^3-960z^2-60z+25\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4z\left(-128z^2+208z+25\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8zx.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},-\frac{5}{4};-z\right)=-\frac{1}{25\sqrt{2}}\left(\sqrt[4]{z}\left(-4\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)(8z+5)^2+\right.\right.$$
$$\left.\left.\left(512z^3+960z^2-60z-25\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4z\left(128z^2+208z-25\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a8zy.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{30}e^{-2\sqrt{z}}\left(128e^{4\sqrt{z}}z^{5/2}-128z^{5/2}+32e^{4\sqrt{z}}z^2+32z^2-8e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-55)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-8e^{2\sqrt{z}}\sqrt{2\pi}\right.$$
$$\left.(16z-55)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-416e^{4\sqrt{z}}z^{3/2}+416z^{3/2}-80e^{4\sqrt{z}}z-80z-30e^{4\sqrt{z}}\sqrt{z}+30\sqrt{z}+15e^{4\sqrt{z}}+15\right)$$

07.22.03.a8zz.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, -\frac{3}{4}; -z\right) =$$

$$\frac{1}{15}\left(16\sqrt{\pi}\,(16z+55)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4} - 2\left(64z^2+208z-15\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(32z^2+80z+15\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a900.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) =$$

$$-\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^3-1360z^2+300z-15\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-32z^2+150z+15\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(64z^2-324z+15\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a901.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) =$$

$$\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^3+1360z^2+300z+15\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(32z^2+150z-15\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(64z^2+324z+15\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a902.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) =$$

$$\frac{1}{160}e^{-2\sqrt{z}}\left(-4\left(-64z^{5/2}+16z^2+428z^{3/2}-95z-40\sqrt{z}+e^{4\sqrt{z}}\left(64z^{5/2}+16z^2-428z^{3/2}-95z+40\sqrt{z}-20\right)-20\right)+ e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(256z^2-1760z+385\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(256z^2-1760z+385\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)$$

07.22.03.a903.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, \frac{1}{4}; -z\right) =$$

$$\frac{1}{40}\left(2\left(\left(-16z^2-95z+20\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(16z^2+107z+10\right)\sin\left(2\sqrt{z}\right)\right)-\sqrt{\pi}\,z^{3/4}\left(256z^2+1760z+385\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.a904.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, \frac{3}{4}; z\right) =$$

$$\frac{1}{300\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3-4480z^2+2030z+300\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-256z^2+2080z-45\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- 2z\left(256z^2-2176z+555\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a905.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},\frac{3}{4};-z\right)=$$
$$-\frac{1}{300\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3+4480z^2+2030z-300\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(256z^2+2080z+45\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(256z^2+2176z+555\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a906.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{30720\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1024z^{5/2}+256z^2+10368z^{3/2}-2400z-3060\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2-10368z^{3/2}-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.2400z+3060\sqrt{z}-375\right)-375\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-42240z^2+18480z+3465\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-42240z^2+18480z+3465\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a907.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},\frac{5}{4};-z\right)=\frac{1}{7680\sqrt[4]{z}}\left(2\sqrt[4]{z}\left(\left(-256z^2-2400z+375\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(256z^2+2592z+765\right)\sin\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.\sqrt{\pi}\left(4096z^3+42240z^2+18480z-3465\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.a908.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},\frac{7}{4};z\right)=\frac{1}{22400\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(4096z^3-49920z^2+33840z+9275\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4096z^3+47360z^2-9520z+5775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\left(4096z^3-48896z^2+22960z+5775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a909.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},\frac{7}{4};-z\right)=\frac{1}{22400\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(-2\sqrt{z}\left(4096z^3+49920z^2+33840z-9275\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4096z^3+47360z^2+9520z+5775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\left(4096z^3+48896z^2+22960z-5775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a90a.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, \frac{9}{4}; z\right) = \frac{1}{1\,572\,864\, z^{5/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-16\,384\, z^{7/2} + 4096\, z^3 + 222\,208\, z^{5/2} - 52\,480\, z^2 - 112\,320\, z^{3/2} - 720\, z - 32\,340\sqrt{z} + e^{4\sqrt{z}}\right.\right.\right. $$
$$ \left.\left.\left.\left(16\,384\, z^{7/2} + 4096\, z^3 - 222\,208\, z^{5/2} - 52\,480\, z^2 + 112\,320\, z^{3/2} - 720\, z + 32\,340\sqrt{z} - 24\,255\right) - 24\,255\right) + \right.\right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\, z^4 - 901\,120\, z^3 + 591\,360\, z^2 + 221\,760\, z - 24\,255\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ \left. e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\, z^4 - 901\,120\, z^3 + 591\,360\, z^2 + 221\,760\, z - 24\,255\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a90b.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, \frac{9}{4}; -z\right) = \frac{1}{393\,216\, z^{5/4}} \left(\sqrt{\pi}\left(-65\,536\, z^4 - 901\,120\, z^3 - 591\,360\, z^2 + 221\,760\, z + 24\,255\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ \left. 2\sqrt[4]{z}\left(4\sqrt{z}\left(4096\, z^3 + 55\,552\, z^2 + 28\,080\, z - 8085\right)\sin\left(2\sqrt{z}\right) - \left(4096\, z^3 + 52\,480\, z^2 - 720\, z + 24\,255\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a90c.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) = \frac{1}{921\,600\sqrt{2}\, z^{5/4}} \left(\left(2\sqrt{z}\left(65\,536\, z^4 - 1\,024\,000\, z^3 + 921\,600\, z^2 + 381\,600\, z + 51\,975\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ \left(65\,536\, z^4 - 983\,040\, z^3 + 391\,680\, z^2 + 155\,925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left. \left. 2\sqrt{z}\left(65\,536\, z^4 - 1\,007\,616\, z^3 + 691\,200\, z^2 + 332\,640\, z - 155\,925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a90d.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = \frac{1}{921\,600\sqrt{2}\, z^{5/4}} \left(\left(-2\sqrt{z}\left(65\,536\, z^4 + 1\,024\,000\, z^3 + 921\,600\, z^2 - 381\,600\, z + 51\,975\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(65\,536\, z^4 + 983\,040\, z^3 + 391\,680\, z^2 + 155\,925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left. \left. 2\sqrt{z}\left(65\,536\, z^4 + 1\,007\,616\, z^3 + 691\,200\, z^2 - 332\,640\, z - 155\,925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a90e.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) = \frac{1}{167\,772\,160\, z^{9/4}} \left(3\, e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-262\,144\, z^{9/2} + 65\,536\, z^4 + 4\,456\,448\, z^{7/2} - 1\,064\,960\, z^3 - 3\,205\,120\, z^{5/2} + 171\,520\, z^2 - \right.\right.\right. $$
$$ 1\,774\,080\, z^{3/2} - 517\,440\, z + 1\,778\,700\sqrt{z} + e^{4\sqrt{z}}\left(262\,144\, z^{9/2} + 65\,536\, z^4 - 4\,456\,448\, z^{7/2} - 1\,064\,960\, z^3 + \right. $$
$$ \left.\left.\left. 3\,205\,120\, z^{5/2} + 171\,520\, z^2 + 1\,774\,080\, z^{3/2} - 517\,440\, z - 1\,778\,700\sqrt{z} + 1\,334\,025\right) + 1\,334\,025\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 - 18\,022\,400\, z^4 + 15\,769\,600\, z^3 + 8\,870\,400\, z^2 - 1\,940\,400\, z + 1\,334\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ \left. e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 - 18\,022\,400\, z^4 + 15\,769\,600\, z^3 + 8\,870\,400\, z^2 - 1\,940\,400\, z + 1\,334\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a90f.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) = $$
$$ -\frac{1}{41\,943\,040\, z^{9/4}}\left(3\left(\sqrt{\pi}\,\left(1\,048\,576\, z^5 + 18\,022\,400\, z^4 + 15\,769\,600\, z^3 - 8\,870\,400\, z^2 - 1\,940\,400\, z - 1\,334\,025\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right. $$
$$ 2\sqrt[4]{z}\,\left(\left(65\,536\, z^4 + 1\,064\,960\, z^3 + 171\,520\, z^2 + 517\,440\, z + 1\,334\,025\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.\left. 4\sqrt{z}\,\left(65\,536\, z^4 + 1\,114\,112\, z^3 + 801\,280\, z^2 - 443\,520\, z - 444\,675\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a90g.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) = $$
$$ \frac{1}{29\,491\,200\sqrt{2}\, z^{9/4}}\left(\left(2\sqrt{z}\,\left(1\,048\,576\, z^5 - 19\,988\,480\, z^4 + 22\,405\,120\, z^3 + 12\,695\,040\, z^2 - 831\,600\, z - 4\,729\,725\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(-1\,048\,576\, z^5 + 19\,333\,120\, z^4 - 11\,673\,600\, z^3 - 5\,322\,240\, z^2 + 24\,116\,400\, z + 14\,189\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 2\sqrt{z}\,\left(1\,048\,576\, z^5 - 19\,726\,336\, z^4 + 17\,817\,600\, z^3 - 12\,418\,560\, z^2 - 6\,153\,840\, z + 14\,189\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a90h.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) = \frac{1}{29\,491\,200\sqrt{2}\, z^{9/4}} $$
$$ \left(\left(-2\sqrt{z}\,\left(1\,048\,576\, z^5 + 19\,988\,480\, z^4 + 22\,405\,120\, z^3 - 12\,695\,040\, z^2 - 831\,600\, z + 4\,729\,725\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(1\,048\,576\, z^5 + 19\,333\,120\, z^4 + 11\,673\,600\, z^3 - 5\,322\,240\, z^2 - 24\,116\,400\, z + 14\,189\,175\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\,\left(-1\,048\,576\, z^5 - 19\,726\,336\, z^4 - 17\,817\,600\, z^3 + 12\,418\,560\, z^2 + 6\,153\,840\, z + 14\,189\,175\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a90i.01

$$ {}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) = $$
$$ \frac{1}{21\,474\,836\,480\, z^{13/4}}\left(13\, e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-4\,194\,304\, z^{11/2} + 1\,048\,576\, z^5 - 85\,721\,088\, z^{9/2} - 20\,643\,840\, z^4 - 80\,117\,760\, z^{7/2} + \right.\right.\right. $$
$$ 7\,249\,920\, z^3 - 63\,866\,880\, z^{5/2} - 5\,322\,240\, z^2 + 60\,984\,000\, z^{3/2} - 64\,033\,200\, z - 240\,124\,500\sqrt{z} + e^{4\sqrt{z}} $$
$$ \left(4\,194\,304\, z^{11/2} + 1\,048\,576\, z^5 - 85\,721\,088\, z^{9/2} - 20\,643\,840\, z^4 + 80\,117\,760\, z^{7/2} + 7\,249\,920\, z^3 + 63\,866\,880\right. $$
$$ \left.\left.\left. z^{5/2} - 5\,322\,240\, z^2 - 60\,984\,000\, z^{3/2} - 64\,033\,200\, z + 240\,124\,500\sqrt{z} - 180\,093\,375\right) - 180\,093\,375\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\,\left(16\,777\,216\, z^6 - 346\,030\,080\, z^5 + 378\,470\,400\, z^4 + 283\,852\,800\, z^3 - 93\,139\,200\, z^2 + \right. $$
$$ 128\,066\,400\, z - 180\,093\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(16\,777\,216\, z^6 - 346\,030\,080\, z^5 + \right. $$
$$ \left.\left. 378\,470\,400\, z^4 + 283\,852\,800\, z^3 - 93\,139\,200\, z^2 + 128\,066\,400\, z - 180\,093\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a90j.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},\frac{17}{4};-z\right)=$$
$$-\frac{1}{5\,368\,709\,120\,z^{13/4}}\left(13\left(\sqrt{\pi}\,\left(16\,777\,216\,z^6+346\,030\,080\,z^5+378\,470\,400\,z^4-283\,852\,800\,z^3-93\,139\,200\,z^2-\right.\right.\right.$$
$$\left.\left.128\,066\,400\,z-180\,093\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\,\left(\left(1\,048\,576\,z^5+20\,643\,840\,z^4+7\,249\,920\,z^3+5\,322\,240\,z^2-64\,033\,200\,z+180\,093\,375\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\right.$$
$$\left.\left.\left.\left(-1\,048\,576\,z^5-21\,430\,272\,z^4-20\,029\,440\,z^3+15\,966\,720\,z^2+15\,246\,000\,z+60\,031\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a90k.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},\frac{19}{4};z\right)=\frac{1}{817\,889\,280\sqrt{2}\,z^{13/4}}$$
$$\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-377\,487\,360\,z^5+506\,265\,600\,z^4+368\,476\,160\,z^3-103\,783\,680\,z^2+518\,918\,400\,z+884\,458\,575\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,777\,216\,z^6-367\,001\,600\,z^5+298\,516\,480\,z^4+246\,005\,760\,z^3-795\,674\,880\,z^2+\right.$$
$$\left.5\,599\,994\,400\,z+2\,653\,375\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(16\,777\,216\,z^6-373\,293\,056\,z^5+$$
$$\left.\left.418\,447\,360\,z^4+378\,470\,400\,z^3-196\,035\,840\,z^2+60\,540\,480\,z-2\,653\,375\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a90l.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},\frac{19}{4};-z\right)=\frac{1}{817\,889\,280\sqrt{2}\,z^{13/4}}$$
$$\left(\left(-2\sqrt{z}\,\left(16\,777\,216\,z^6+377\,487\,360\,z^5+506\,265\,600\,z^4-368\,476\,160\,z^3-103\,783\,680\,z^2-518\,918\,400\,z+884\,458\,575\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(16\,777\,216\,z^6+367\,001\,600\,z^5+298\,516\,480\,z^4-246\,005\,760\,z^3-795\,674\,880\,z^2-\right.$$
$$\left.5\,599\,994\,400\,z+2\,653\,375\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-16\,777\,216\,z^6-373\,293\,056\,z^5-$$
$$\left.\left.418\,447\,360\,z^4+378\,470\,400\,z^3+196\,035\,840\,z^2+60\,540\,480\,z+2\,653\,375\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a90m.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},\frac{21}{4};z\right)=$$
$$\frac{1}{9\,620\,726\,743\,040\,z^{17/4}}\left(221\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-67\,108\,864\,z^{13/2}+16\,777\,216\,z^6+1\,602\,224\,128\,z^{11/2}-387\,973\,120\,z^5-\right.\right.\right.$$
$$1\,844\,183\,040\,z^{9/2}+213\,319\,680\,z^4-1\,892\,352\,000\,z^{7/2}+56\,770\,560\,z^3+1\,649\,894\,400\,z^{5/2}-$$
$$2\,292\,998\,400\,z^2+219\,542\,400\,z^{3/2}+27\,278\,143\,200\,z+59\,310\,751\,500\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^6-1\,602\,224\,128\,z^{11/2}-387\,973\,120\,z^5+1\,844\,183\,040\,z^{9/2}+\right.$$
$$\left.213\,319\,680\,z^4+1\,892\,352\,000\,z^{7/2}+56\,770\,560\,z^3-1\,649\,894\,400\,z^{5/2}-2\,292\,998\,400\,z^2-\right.$$
$$\left.219\,542\,400\,z^{3/2}+27\,278\,143\,200\,z-59\,310\,751\,500\sqrt{z}+44\,483\,063\,625\right)+44\,483\,063\,625\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-6\,459\,228\,160\,z^6+8\,477\,736\,960\,z^5+7\,947\,878\,400\,z^4-\right.$$
$$\left.3\,477\,196\,800\,z^3+7\,171\,718\,400\,z^2-20\,170\,458\,000\,z+44\,483\,063\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7-6\,459\,228\,160\,z^6+8\,477\,736\,960\,z^5+7\,947\,878\,400\,z^4-\right.$$
$$\left.\left.3\,477\,196\,800\,z^3+7\,171\,718\,400\,z^2-20\,170\,458\,000\,z+44\,483\,063\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a90n.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},\frac{21}{4};-z\right)=$$
$$\frac{1}{2\,405\,181\,685\,760\,z^{17/4}}\left(221\left(\sqrt{\pi}\left(-268\,435\,456\,z^7-6\,459\,228\,160\,z^6-8\,477\,736\,960\,z^5+7\,947\,878\,400\,z^4+\right.\right.\right.$$
$$\left.\left.3\,477\,196\,800\,z^3+7\,171\,718\,400\,z^2+20\,170\,458\,000\,z+44\,483\,063\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(\left(-16\,777\,216\,z^6-387\,973\,120\,z^5-213\,319\,680\,z^4+56\,770\,560\,z^3+2\,292\,998\,400\,z^2+\right.\right.$$
$$\left.\left.27\,278\,143\,200\,z-44\,483\,063\,625\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(16\,777\,216\,z^6+400\,556\,032\,z^5+\right.\right.$$
$$\left.\left.\left.\left.461\,045\,760\,z^4-473\,088\,000\,z^3-412\,473\,600\,z^2+54\,885\,600\,z-14\,827\,687\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a90o.01

$${}_1F_2\left(-\frac{11}{4};-\frac{1}{2},\frac{23}{4};z\right)=$$
$$\left(19\left(2\sqrt{z}\left(268\,435\,456\,z^7-6\,962\,544\,640\,z^6+10\,868\,490\,240\,z^5+9\,727\,180\,800\,z^4-4\,612\,608\,000\,z^3+\right.\right.\right.$$
$$\left.22\,313\,491\,200\,z^2-212\,270\,058\,000\,z-278\,604\,451\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(-268\,435\,456\,z^7+6\,794\,772\,480\,z^6-6\,967\,787\,520\,z^5-7\,947\,878\,400\,z^4+19\,372\,953\,600\,z^3+\right.$$
$$\left.3\,632\,428\,800\,z^2+1\,910\,430\,522\,000\,z+835\,813\,353\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\left(268\,435\,456\,z^7-6\,895\,435\,776\,z^6+9\,232\,711\,680\,z^5+10\,218\,700\,800\,z^4-5\,748\,019\,200\,z^3+\right.$$
$$\left.\left.\left.3\,632\,428\,800\,z^2+127\,362\,034\,800\,z+835\,813\,353\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(392\,586\,854\,400\sqrt{2}\,z^{17/4}\right)$$

07.22.03.a90p.01

$${}_1F_2\left(-\frac{11}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) =$$
$$-\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 + 6\,962\,544\,640\,z^6 + 10\,868\,490\,240\,z^5 - 9\,727\,180\,800\,z^4 - 4\,612\,608\,000\,z^3 - \right.\right.\right.$$
$$\left.\left.\left. 22\,313\,491\,200\,z^2 - 212\,270\,058\,000\,z + 278\,604\,451\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 -\right.$$
$$\left(268\,435\,456\,z^7 + 6\,794\,772\,480\,z^6 + 6\,967\,787\,520\,z^5 - 7\,947\,878\,400\,z^4 - 19\,372\,953\,600\,z^3 + \right.$$
$$\left. 3\,632\,428\,800\,z^2 - 1\,910\,430\,522\,000\,z + 835\,813\,353\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7 + 6\,895\,435\,776\,z^6 + 9\,232\,711\,680\,z^5 - 10\,218\,700\,800\,z^4 - 5\,748\,019\,200\,z^3 - \right.$$
$$\left.\left. 3\,632\,428\,800\,z^2 + 127\,362\,034\,800\,z - 835\,813\,353\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) \Big/ \left(392\,586\,854\,400\,\sqrt{2}\; z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{11}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.a90q.01

$${}_1F_2\left(-\frac{11}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) = \frac{(816\,z + 6555)\cosh\left(2\sqrt{z}\right) - 4\sqrt{z}\;(16\,z + 957)\sinh\left(2\sqrt{z}\right)}{6555}$$

07.22.03.a90r.01

$${}_1F_2\left(-\frac{11}{4}; \frac{1}{2}, -\frac{23}{4}; -z\right) = \frac{(6555 - 816\,z)\cos\left(2\sqrt{z}\right) + 4\,(957 - 16\,z)\sqrt{z}\;\sin\left(2\sqrt{z}\right)}{6555}$$

07.22.03.a90s.01

$${}_1F_2\left(-\frac{11}{4}; \frac{1}{2}, -\frac{21}{4}; z\right) = \frac{1}{626\,535\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(\left(16\,384\,z^3 + 352\,256\,z^2 + 1\,909\,440\,z + 626\,535\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(2048\,z^2 + 56\,400\,z + 626\,535\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.$$
$$\left.\left. 16\,z\left(1024\,z^2 + 22\,272\,z + 96\,831\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a90t.01

$${}_1F_2\left(-\frac{11}{4}; \frac{1}{2}, -\frac{21}{4}; -z\right) =$$
$$-\frac{1}{626\,535\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(16\,384\,z^3 - 352\,256\,z^2 + 1\,909\,440\,z - 626\,535\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(2048\,z^2 - 56\,400\,z + 626\,535\right)\right.\right.$$
$$\left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 16\,z\left(1024\,z^2 - 22\,272\,z + 96\,831\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a90u.01

$${}_1F_2\left(-\frac{11}{4}; \frac{1}{2}, -\frac{19}{4}; z\right) = \left(\frac{16\,z}{285} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{128}{285}\sqrt{z}\;\sinh\left(2\sqrt{z}\right)$$

07.22.03.a90v.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{19}{4};-z\right)=\left(1-\frac{16\,z}{285}\right)\cos\left(2\sqrt{z}\right)+\frac{128}{285}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a90w.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{17}{4};z\right)=\frac{1}{149\,175\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(8192\,z^3+125\,440\,z^2+491\,400\,z+149\,175\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1024\,z^2+16\,320\,z+149\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.8\,z\left(1024\,z^2+15\,936\,z+58\,815\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a90x.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{17}{4};-z\right)=$$
$$-\frac{1}{149\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192\,z^3-125\,440\,z^2+491\,400\,z-149\,175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1024\,z^2-16\,320\,z+149\,175\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+8\,z\left(1024\,z^2-15\,936\,z+58\,815\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a90y.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{15}{4};z\right)=\cosh\left(2\sqrt{z}\right)-\frac{4}{15}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.a90z.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{15}{4};-z\right)=\cos\left(2\sqrt{z}\right)+\frac{4}{15}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a910.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096\,z^3+37\,376\,z^2+97\,200\,z+26\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512\,z^2+4992\,z+26\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.16\,z\left(256\,z^2+2400\,z+6759\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a911.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{13}{4};-z\right)=$$
$$-\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096\,z^3-37\,376\,z^2+97\,200\,z-26\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512\,z^2-4992\,z+26\,325\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+16\,z\left(256\,z^2-2400\,z+6759\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a912.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{11}{4};z\right)=\cosh\left(2\sqrt{z}\right)$$

07.22.03.a913.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{11}{4};-z\right)=\cos\left(2\sqrt{z}\right)$$

07.22.03.a914.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{2025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^3+6016z^2+9000z+2025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^2+912z+2025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.8z\left(256z^2+816z+1413\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a915.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{9}{4};-z\right)=$$
$$-\frac{1}{2025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^3-6016z^2+9000z-2025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^2-912z+2025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.8z\left(256z^2-816z+1413\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a916.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{7}{4};z\right)=\frac{1}{1890}$$
$$\left(e^{-2\sqrt{z}}\left(-1024e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-1024e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+1024e^{4\sqrt{z}}z^{5/2}-1024z^{5/2}+256\right.\right.$$
$$\left.\left.e^{4\sqrt{z}}z^2+256z^2+192e^{4\sqrt{z}}z^{3/2}-192z^{3/2}+240e^{4\sqrt{z}}z+240z+420e^{4\sqrt{z}}\sqrt{z}-420\sqrt{z}+945e^{4\sqrt{z}}+945\right)\right)$$

07.22.03.a917.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{945}\left(2048\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}-4\left(256z^2-48z+105\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(256z^2-240z+945\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a918.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{5}{4};z\right)=$$
$$-\frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^3-3328z^2-1440z-225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-128z^2+336z+225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.16z\left(-64z^2+192z+117\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a919.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^3+3328z^2-1440z+225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(128z^2+336z-225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.16z\left(64z^2+192z-117\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a91a.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{270}e^{-2\sqrt{z}}\left(-256e^{4\sqrt{z}}z^{5/2}+256z^{5/2}-64e^{4\sqrt{z}}z^2-64z^2+16e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-99)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+\right.$$
$$16e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-99)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+1536e^{4\sqrt{z}}z^{3/2}-1536z^{3/2}+$$
$$\left.336e^{4\sqrt{z}}z+336z+192e^{4\sqrt{z}}\sqrt{z}-192\sqrt{z}+135e^{4\sqrt{z}}+135\right)$$

07.22.03.a91b.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{3}{4};-z\right)=$$
$$\frac{1}{135}\left(-32\sqrt{\pi}\,(16z+99)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+64\left(4z^2+24z-3\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-64z^2-336z+135\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a91c.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{135\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3-4832z^2+3240z+135\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z^2-564z+135\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.8z\left(64z^2-588z+279\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a91d.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},-\frac{1}{4};-z\right)=$$
$$-\frac{1}{135\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3+4832z^2+3240z-135\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z^2+564z+135\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.8z\left(64z^2+588z+279\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a91e.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{720}e^{-2\sqrt{z}}\left(4\left(-64z^{5/2}+16z^2+780z^{3/2}-183z-744\sqrt{z}+e^{4\sqrt{z}}\left(64z^{5/2}+16z^2-780z^{3/2}-183z+744\sqrt{z}+90\right)+90\right)-\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(256z^2-3168z+3465\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(256z^2-3168z+3465\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)$$

07.22.03.a91f.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{1}{4};-z\right)=\frac{1}{180}$$
$$\left(\sqrt{\pi}\,z^{3/4}\left(256z^2+3168z+3465\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\left(\left(16z^2+183z+90\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\,\left(16z^2+195z+186\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a91g.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{3}{4};z\right)=$$
$$-\frac{1}{1350\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(256z^3-4000z^2+7065z-675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-256z^2+3840z-4995\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2z\left(256z^2-3936z+6165\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a91h.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{3}{4};-z\right)=$$
$$\frac{1}{1350\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(256z^3+4000z^2+7065z+675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(256z^2+3840z+4995\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(256z^2+3936z+6165\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a91i.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{5}{4};z\right)=\frac{1}{138240\sqrt[4]{z}}$$
$$\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1024z^{5/2}+256z^2+18816z^{3/2}-4512z-38436\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2-18816z^{3/2}-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.4512z+38436\sqrt{z}+6885\right)+6885\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-76032z^2+166320z-10395\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-76032z^2+166320z-10395\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a91j.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{5}{4};-z\right)=\frac{1}{34560\sqrt[4]{z}}\left(\sqrt{\pi}\left(4096z^3+76032z^2+166320z+10395\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\sqrt[4]{z}\left(\left(256z^2+4512z+6885\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2+4704z+9609\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a91k.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{100800\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(-4096z^3+89344z^2-255600z+46935\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4096z^3-86784z^2+206640z+10395\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3-88320z^2+234864z-10395\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a91l.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{7}{4};-z\right)=$$
$$\frac{1}{100\,800\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(4096z^3+89\,344z^2+255\,600z+46\,935\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096z^3+86\,784z^2+206\,640z-10\,395\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3+88\,320z^2+234\,864z+10\,395\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a91m.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{7\,077\,888z^{5/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-16\,384z^{7/2}+4096z^3+402\,432z^{5/2}-97\,536z^2-1\,261\,248z^{3/2}+252\,720z+41\,580\sqrt{z}+\right.\right.\right.$$
$$\left.e^{4\sqrt{z}}\left(16\,384z^{7/2}+4096z^3-402\,432z^{5/2}-97\,536z^2+1\,261\,248z^{3/2}+252\,720z-41\,580\sqrt{z}+31\,185\right)+$$
$$\left.31\,185\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-1\,622\,016z^3+5\,322\,240z^2-665\,280z+31\,185\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-1\,622\,016z^3+5\,322\,240z^2-665\,280z+31\,185\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a91n.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{9}{4};-z\right)=\frac{1}{1\,769\,472z^{5/4}}\left(\sqrt{\pi}\left(65\,536z^4+1\,622\,016z^3+5\,322\,240z^2+665\,280z+31\,185\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\right.$$
$$\left.\left(4\sqrt{z}\left(4096z^3+100\,608z^2+315\,312z+10\,395\right)\sin\left(2\sqrt{z}\right)-\left(4096z^3+97\,536z^2+252\,720z-31\,185\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a91o.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{11}{4};z\right)=\frac{1}{4\,147\,200\sqrt{2}\,z^{5/4}}\left(\left(-2\sqrt{z}\left(65\,536z^4-1\,835\,008z^3+7\,257\,600z^2-1\,883\,520z-51\,975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(65\,536z^4-1\,794\,048z^3+6\,220\,800z^2+332\,640z-155\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-1\,818\,624z^3+6\,824\,448z^2-665\,280z+155\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a91p.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{4\,147\,200\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(65\,536z^4+1\,835\,008z^3+7\,257\,600z^2+1\,883\,520z-51\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-65\,536z^4-1\,794\,048z^3-6\,220\,800z^2+332\,640z+155\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+1\,818\,624z^3+6\,824\,448z^2+665\,280z+155\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a91q.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{13}{4};z\right)= \frac{1}{251\,658\,240\,z^{9/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-262\,144\,z^{9/2}+65\,536\,z^4+8\,060\,928\,z^{7/2}-1\,966\,080\,z^3-34\,068\,480\,z^{5/2}+7\,211\,520\,z^2+2\,661\,120\,z^{3/2}+1\,330\,560\,z-1\,455\,300\sqrt{z}\right)+e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-8\,060\,928\,z^{7/2}-1\,966\,080\,z^3+34\,068\,480\,z^{5/2}+7\,211\,520\,z^2-2\,661\,120\,z^{3/2}+1\,330\,560\,z+1\,455\,300\sqrt{z}-1\,091\,475\right)-1\,091\,475\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-32\,440\,320\,z^4+141\,926\,400\,z^3-26\,611\,200\,z^2+2\,494\,800\,z-1\,091\,475\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-32\,440\,320\,z^4+141\,926\,400\,z^3-26\,611\,200\,z^2+2\,494\,800\,z-1\,091\,475\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a91r.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{13}{4};-z\right)= \frac{1}{62\,914\,560\,z^{9/4}}\left(\sqrt{\pi}\left(1\,048\,576\,z^5+32\,440\,320\,z^4+141\,926\,400\,z^3+26\,611\,200\,z^2+2\,494\,800\,z+1\,091\,475\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(\left(-65\,536\,z^4-1\,966\,080\,z^3-7\,211\,520\,z^2+1\,330\,560\,z+1\,091\,475\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(65\,536\,z^4+2\,015\,232\,z^3+8\,517\,120\,z^2+665\,280\,z+363\,825\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a91s.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{15}{4};z\right)= \frac{1}{132\,710\,400\sqrt{2}\,z^{9/4}}\left(\left(-2\sqrt{z}\left(1\,048\,576\,z^5-35\,848\,192\,z^4+181\,002\,240\,z^3-59\,788\,800\,z^2-831\,600\,z+3\,274\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1\,048\,576\,z^5-35\,192\,832\,z^4+160\,358\,400\,z^3+5\,322\,240\,z^2+12\,474\,000\,z+9\,823\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576\,z^5-35\,586\,048\,z^4+172\,449\,792\,z^3-26\,611\,200\,z^2+8\,482\,320\,z-9\,823\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a91t.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{15}{4};-z\right)= \frac{1}{132\,710\,400\sqrt{2}\,z^{9/4}}\left(\left(2\sqrt{z}\left(1\,048\,576\,z^5+35\,848\,192\,z^4+181\,002\,240\,z^3+59\,788\,800\,z^2-831\,600\,z-3\,274\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(1\,048\,576\,z^5+35\,192\,832\,z^4+160\,358\,400\,z^3-5\,322\,240\,z^2+12\,474\,000\,z-9\,823\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576\,z^5+35\,586\,048\,z^4+172\,449\,792\,z^3+26\,611\,200\,z^2+8\,482\,320\,z+9\,823\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a91u.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{17}{4};z\right) = -\frac{1}{96\,636\,764\,160\,z^{13/4}} \left(13\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304\,z^{11/2}+1\,048\,576\,z^5+154\,927\,104\,z^{9/2}-37\,945\,344\,z^4-824\,082\,432\,z^{7/2}+180\,264\,960\,z^3+106\,444\,800\,z^{5/2}+37\,255\,680\,z^2-73\,846\,080\,z^{3/2}+10\,478\,160\,z+144\,074\,700\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-154\,927\,104\,z^{9/2}-37\,945\,344\,z^4+824\,082\,432\,z^{7/2}+180\,264\,960\,z^3-106\,444\,800\,z^{5/2}+37\,255\,680\,z^2+73\,846\,080\,z^{3/2}+10\,478\,160\,z-144\,074\,700\sqrt{z}+108\,056\,025\right)+108\,056\,025\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-622\,854\,144\,z^5+3\,406\,233\,600\,z^4-851\,558\,400\,z^3+119\,750\,400\,z^2-104\,781\,600\,z+108\,056\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-622\,854\,144\,z^5+3\,406\,233\,600\,z^4-851\,558\,400\,z^3+119\,750\,400\,z^2-104\,781\,600\,z+108\,056\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a91v.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{17}{4};-z\right) = \frac{1}{24\,159\,191\,040\,z^{13/4}}\left(13\left(\sqrt{\pi}\left(16\,777\,216\,z^6+622\,854\,144\,z^5+3\,406\,233\,600\,z^4+851\,558\,400\,z^3+119\,750\,400\,z^2+104\,781\,600\,z+108\,056\,025\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576\,z^5+38\,731\,776\,z^4+206\,020\,608\,z^3+26\,611\,200\,z^2+18\,461\,520\,z+36\,018\,675\right)\sin\left(2\sqrt{z}\right)-\left(1\,048\,576\,z^5+37\,945\,344\,z^4+180\,264\,960\,z^3-37\,255\,680\,z^2+10\,478\,160\,z-108\,056\,025\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a91w.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{19}{4};z\right) = \frac{1}{3\,680\,501\,760\sqrt{2}\,z^{13/4}}\left(\left(2\sqrt{z}\left(-16\,777\,216\,z^6+677\,380\,096\,z^5-4\,161\,208\,320\,z^4+1\,658\,142\,720\,z^3-34\,594\,560\,z^2+194\,594\,400\,z+468\,242\,775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(16\,777\,216\,z^6-666\,894\,336\,z^5+3\,766\,026\,240\,z^4+726\,485\,760\,z^2-2\,724\,321\,600\,z-1\,404\,728\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(16\,777\,216\,z^6-673\,185\,792\,z^5+3\,998\,416\,896\,z^4-851\,558\,400\,z^3+311\,351\,040\,z^2-272\,432\,160\,z+1\,404\,728\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a91x.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{19}{4};-z\right)=\frac{1}{3\,680\,501\,760\sqrt{2}\,z^{13/4}}$$
$$\left(\left(2\sqrt{z}\left(16\,777\,216z^6+677\,380\,096z^5+4\,161\,208\,320z^4+1\,658\,142\,720z^3+34\,594\,560z^2+194\,594\,400z-468\,242\,775\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,777\,216z^6+666\,894\,336z^5+3\,766\,026\,240z^4+726\,485\,760z^2+2\,724\,321\,600z-1\,404\,728\,325\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(16\,777\,216z^6+673\,185\,792z^5+3\,998\,416\,896z^4+\right.$$
$$\left.\left.851\,558\,400z^3+311\,351\,040z^2+272\,432\,160z+1\,404\,728\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a91y.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{21}{4};z\right)=$$
$$-\frac{1}{43\,293\,270\,343\,680z^{17/4}}\left(221e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-67\,108\,864z^{13/2}+16\,777\,216z^6+2\,894\,069\,760z^{11/2}-\right.\right.\right.$$
$$710\,934\,528z^5-18\,557\,435\,904z^{9/2}+4\,149\,411\,840z^4+3\,406\,233\,600z^{7/2}+851\,558\,400z^3-$$
$$2\,522\,741\,760z^{5/2}+1\,333\,221\,120z^2+3\,293\,136\,000z^{3/2}-10\,373\,378\,400z-28\,094\,566\,500\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(67\,108\,864z^{13/2}+16\,777\,216z^6-2\,894\,069\,760z^{11/2}-710\,934\,528z^5+18\,557\,435\,904z^{9/2}+\right.$$
$$\left.4\,149\,411\,840z^4-3\,406\,233\,600z^{7/2}+851\,558\,400z^3+2\,522\,741\,760z^{5/2}+1\,333\,221\,120z^2-\right.$$
$$\left.3\,293\,136\,000z^{3/2}-10\,373\,378\,400z+28\,094\,566\,500\sqrt{z}-21\,070\,924\,875\right)-21\,070\,924\,875\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7-11\,626\,610\,688z^6+76\,299\,632\,640z^5-23\,843\,635\,200z^4+\right.$$
$$\left.4\,470\,681\,600z^3-5\,867\,769\,600z^2+12\,102\,274\,800z-21\,070\,924\,875\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7-11\,626\,610\,688z^6+76\,299\,632\,640z^5-23\,843\,635\,200z^4+\right.$$
$$\left.\left.4\,470\,681\,600z^3-5\,867\,769\,600z^2+12\,102\,274\,800z-21\,070\,924\,875\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a91z.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{21}{4};-z\right)=$$
$$\frac{1}{10\,823\,317\,585\,920z^{17/4}}\left(221\left(\sqrt{\pi}\left(268\,435\,456z^7+11\,626\,610\,688z^6+76\,299\,632\,640z^5+23\,843\,635\,200z^4+\right.\right.\right.$$
$$\left.4\,470\,681\,600z^3+5\,867\,769\,600z^2+12\,102\,274\,800z+21\,070\,924\,875\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216z^6+723\,517\,440z^5+4\,639\,358\,976z^4+851\,558\,400z^3+630\,685\,440z^2+\right.\right.$$
$$\left.\left.\left.823\,284\,000z+7\,023\,641\,625\right)\sin\left(2\sqrt{z}\right)-\left(16\,777\,216z^6+710\,934\,528z^5+4\,149\,411\,840z^4-\right.\right.\right.$$
$$\left.\left.\left.851\,558\,400z^3+1\,333\,221\,120z^2+10\,373\,378\,400z-21\,070\,924\,875\right)\cos\left(2\sqrt{z}\right)\right)\right)\Bigg)$$

07.22.03.a920.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{23}{4};z\right)=$$
$$-\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-12\,499\,025\,920\,z^6+90\,455\,408\,640\,z^5-42\,069\,196\,800\,z^4+2\,767\,564\,800\,z^3-\right.\right.\right.$$
$$\left.\left.14\,010\,796\,800\,z^2+80\,270\,190\,000\,z+119\,401\,907\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(268\,435\,456\,z^7-12\,331\,253\,760\,z^6+83\,094\,405\,120\,z^5-3\,406\,233\,600\,z^4+24\,908\,083\,200\,z^3-\right.$$
$$\left.60\,713\,452\,800\,z^2+786\,647\,862\,000\,z+358\,205\,722\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-268\,435\,456\,z^7+12\,431\,917\,056\,z^6-87\,435\,509\,760\,z^5+23\,843\,635\,200\,z^4-9\,580\,032\,000\,z^3+\right.$$
$$\left.\left.\left.7\,783\,776\,000\,z^2+22\,475\,653\,200\,z+358\,205\,722\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(1\,766\,640\,844\,800\sqrt{2}\;z^{17/4}\right)$$

07.22.03.a921.01

$${}_1F_2\left(-\frac{11}{4};\frac{1}{2},\frac{23}{4};-z\right)=$$
$$\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+12\,499\,025\,920\,z^6+90\,455\,408\,640\,z^5+42\,069\,196\,800\,z^4+2\,767\,564\,800\,z^3+\right.\right.\right.$$
$$\left.\left.14\,010\,796\,800\,z^2+80\,270\,190\,000\,z-119\,401\,907\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(268\,435\,456\,z^7+12\,331\,253\,760\,z^6+83\,094\,405\,120\,z^5+3\,406\,233\,600\,z^4+24\,908\,083\,200\,z^3+\right.$$
$$\left.60\,713\,452\,800\,z^2+786\,647\,862\,000\,z-358\,205\,722\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+12\,431\,917\,056\,z^6+87\,435\,509\,760\,z^5+23\,843\,635\,200\,z^4+9\,580\,032\,000\,z^3+\right.$$
$$\left.\left.\left.7\,783\,776\,000\,z^2-22\,475\,653\,200\,z+358\,205\,722\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(1\,766\,640\,844\,800\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{11}{4}$, $b_{1.} = \frac{3}{2}$

07.22.03.a922.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{23}{4};z\right)=\frac{3\,(304\,z+2975)\sinh\left(2\sqrt{z}\right)-4\sqrt{z}\;(16\,z+1185)\cosh\left(2\sqrt{z}\right)}{13\,110\sqrt{z}}$$

07.22.03.a923.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{23}{4};-z\right)=\frac{4\sqrt{z}\;(16\,z-1185)\cos\left(2\sqrt{z}\right)+3\,(2975-304\,z)\sin\left(2\sqrt{z}\right)}{13\,110\sqrt{z}}$$

07.22.03.a924.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{8\,144\,955\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(32\,768\,z^3+1\,019\,904\,z^2+8\,770\,288\,z+8\,144\,955\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-16\sqrt{z}\,\left(1024\,z^2+32\,512\,z+93\,009\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(32\,768\,z^3+1\,028\,096\,z^2+9\,326\,352\,z+23\,318\,757\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a925.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{21}{4};-z\right)=$$
$$-\frac{1}{8\,144\,955\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768z^3-1\,019\,904z^2+8\,770\,288z-8\,144\,955\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-16\sqrt{z}\left(1024z^2-32\,512z+93\,009\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(32\,768z^3-1\,028\,096z^2+9\,326\,352z-23\,318\,757\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a926.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{19}{4};z\right)=\frac{(16z+357)\sinh\left(2\sqrt{z}\right)-144\sqrt{z}\cosh\left(2\sqrt{z}\right)}{570\sqrt{z}}$$

07.22.03.a927.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{19}{4};-z\right)=\frac{(357-16z)\sin\left(2\sqrt{z}\right)-144\sqrt{z}\cos\left(2\sqrt{z}\right)}{570\sqrt{z}}$$

07.22.03.a928.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{1\,939\,275\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384z^3+363\,520z^2+2\,462\,080z+1\,939\,275\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\left(1024z^2+23\,360z+124\,755\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(16\,384z^3+367\,616z^2+2\,559\,360z+5\,069\,295\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a929.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{17}{4};-z\right)=$$
$$-\frac{1}{1\,939\,275\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384z^3-363\,520z^2+2\,462\,080z-1\,939\,275\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\left(1024z^2-23\,360z+124\,755\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,384z^3-367\,616z^2+2\,559\,360z-5\,069\,295\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a92a.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{15}{4};z\right)=\frac{1}{30}\left(\frac{17\sinh\left(2\sqrt{z}\right)}{\sqrt{z}}-4\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.a92b.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{15}{4};-z\right)=\frac{1}{30}\left(\frac{17\sin\left(2\sqrt{z}\right)}{\sqrt{z}}-4\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a92c.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{13}{4};z\right)=\frac{1}{342\,225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(8192z^3+108\,544z^2+521\,760z+342\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-16\sqrt{z}\left(256z^2+3552z+18\,855\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(8192z^3+110\,592z^2+552\,096z+800\,415\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a92d.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{13}{4};-z\right)=$$
$$-\frac{1}{342\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192z^3-108\,544z^2+521\,760z-342\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-16\sqrt{z}\left(256z^2-3552z+18\,855\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(8192z^3-110\,592z^2+552\,096z-800\,415\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a92e.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{11}{4};z\right)=\frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.a92f.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{11}{4};-z\right)=\frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.a92g.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096z^3+17\,664z^2+50\,384z+26\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\left(256z^2+1264z+4269\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(4096z^3+18\,688z^2+56\,400z+53\,361\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a92h.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{9}{4};-z\right)=$$
$$-\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096z^3-17\,664z^2+50\,384z-26\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\left(256z^2-1264z+4269\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^3-18\,688z^2+56\,400z-53\,361\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a92i.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{49\,140\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-4096\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-4096\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+4096\,e^{4\sqrt{z}}z^3-\right.\right.$$
$$4096\,z^3+1024\,e^{4\sqrt{z}}z^{5/2}+1024\,z^{5/2}+768\,e^{4\sqrt{z}}z^2-768\,z^2+960\,e^{4\sqrt{z}}z^{3/2}+$$
$$\left.\left.960\,z^{3/2}+1680\,e^{4\sqrt{z}}z-1680\,z+3780\,e^{4\sqrt{z}}\sqrt{z}+3780\sqrt{z}+10\,395\,e^{4\sqrt{z}}-10\,395\right)\right)$$

07.22.03.a92j.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{7}{4};-z\right)=\frac{1}{24\,570\sqrt{z}}$$
$$\left(8192\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}+4\left(256z^2-240z+945\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-4096z^3+768z^2-1680z+10\,395\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a92k.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{5}{4};z\right)=$$
$$-\frac{1}{2925\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^3-9472z^2-7984z-2925\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-16\sqrt{z}\left(64z^2-256z-327\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-2048z^3+8960z^2+9552z+4851\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a92l.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{2925\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^3+9472z^2-7984z+2925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-16\sqrt{z}\left(64z^2+256z-327\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(2048z^3+8960z^2-9552z+4851\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a92m.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{7020\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-1024\,e^{4\sqrt{z}}z^3+1024z^3-256\,e^{4\sqrt{z}}z^{5/2}-256z^{5/2}+64\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-143)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+\right.\right.$$
$$64\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-143)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+8960\,e^{4\sqrt{z}}z^2-8960z^2+2048\,e^{4\sqrt{z}}z^{3/2}+$$
$$\left.\left.2048z^{3/2}+1296\,e^{4\sqrt{z}}z-1296z+1200\,e^{4\sqrt{z}}\sqrt{z}+1200\sqrt{z}+1155\,e^{4\sqrt{z}}-1155\right)\right)$$

07.22.03.a92n.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{3}{4};-z\right)=\frac{1}{3510\sqrt{z}}\left(-128\sqrt{\pi}\,(16z+143)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}-\right.$$
$$\left.16\left(16z^2+128z-75\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(1024z^3+8960z^2-1296z+1155\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a92o.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{1755\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^3-13888z^2+15456z+1755\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\left(64z^2-828z+531\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(1024z^3-13632z^2+12384z+2079\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a92p.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},-\frac{1}{4};-z\right)=$$
$$-\frac{1}{1755\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^3+13888z^2+15456z-1755\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\left(64z^2+828z+531\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(1024z^3+13632z^2+12384z-2079\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a92q.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{4680\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-4576z+9009\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-4576z+9009\right)\right.\right.$$
$$\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+2\left(-128z^3+32z^{5/2}+2264z^2-542z^{3/2}-4128z+708\sqrt{z}+\right.$$
$$\left.\left.\left.e^{4\sqrt{z}}\left(128z^3+32z^{5/2}-2264z^2-542z^{3/2}+4128z+708\sqrt{z}+231\right)-231\right)\right)\right)$$

07.22.03.a92r.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{1}{4};-z\right)=\frac{1}{1170\sqrt{z}}\left(\sqrt{\pi}\left(256z^2+4576z+9009\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+\right.$$
$$\left.2\left(16z^2+271z+354\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(128z^3+2264z^2+4128z-231\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a92s.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{3}{4};z\right)=$$
$$-\frac{1}{8775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3-11520z^2+35470z-8775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-256z^2+5600z-14565\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-512z^3+11392z^2-32790z+3465\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a92t.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{3}{4};-z\right)=$$
$$\frac{1}{8775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3+11\,520z^2+35\,470z+8775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(256z^2+5600z+14\,565\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(512z^3+11\,392z^2+32\,790z+3465\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a92u.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{898\,560\sqrt{z}}\left(e^{-2\sqrt{z}}\left(4\left(-1024z^3+256z^{5/2}+27\,264z^2-6624z^{3/2}-103\,380z+21\,537\sqrt{z}\right.\right.\right.+e^{4\sqrt{z}}\left(1024z^3+\right.$$
$$\left.256z^{5/2}-27\,264z^2-6624z^{3/2}+103\,380z+21\,537\sqrt{z}-22\,176\right)+22\,176\Big)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(4096z^3-109\,824z^2+432\,432z-135\,135\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(4096z^3-109\,824z^2+432\,432z-135\,135\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a92v.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{5}{4};-z\right)=\frac{1}{224\,640\sqrt{z}}\left(2\sqrt{z}\left(256z^2+6624z+21\,537\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\sqrt{\pi}\sqrt[4]{z}\left(4096z^3+109\,824z^2+432\,432z+135\,135\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-8\left(256z^3+6816z^2+25\,845z+5544\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a92w.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{7}{4};z\right)=\frac{1}{655\,200\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(-4096z^3+128\,768z^2-649\,840z+372\,645\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4096z^3-126\,208z^2+576\,240z-135\,135\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3-127\,744z^2+619\,248z-252\,945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a92x.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{7}{4};-z\right)=\frac{1}{655\,200\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(4096z^3+128\,768z^2+649\,840z+372\,645\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096z^3+126\,208z^2+576\,240z+135\,135\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3+127\,744z^2+619\,248z+252\,945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a92y.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{9}{4};z\right)=\frac{1}{46\,006\,272\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-16\,384\,z^{7/2}+4096\,z^3+582\,656\,z^{5/2}-142\,592\,z^2-3\,356\,352\,z^{3/2}+742\,704\,z+1\,712\,172\sqrt{z}+e^{4\sqrt{z}}\left(16\,384\,z^{7/2}+4096\,z^3-582\,656\,z^{5/2}-142\,592\,z^2+3\,356\,352\,z^{3/2}+742\,704\,z-1\,712\,172\sqrt{z}-135\,135\right)-135\,135\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-2\,342\,912\,z^3+13\,837\,824\,z^2-8\,648\,640\,z-135\,135\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-2\,342\,912\,z^3+13\,837\,824\,z^2-8\,648\,640\,z-135\,135\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a92z.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{9}{4};-z\right)=\frac{1}{11\,501\,568\,z^{5/4}}\left(\sqrt{\pi}\left(65\,536\,z^4+2\,342\,912\,z^3+13\,837\,824\,z^2+8\,648\,640\,z-135\,135\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(4096\,z^3+142\,592\,z^2+742\,704\,z+135\,135\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(4096\,z^3+145\,664\,z^2+839\,088\,z+428\,043\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a930.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{11}{4};z\right)=\frac{1}{26\,956\,800\sqrt{2}\,z^{5/4}}\left(\left(-2\sqrt{z}\left(65\,536\,z^4-2\,646\,016\,z^3+18\,561\,024\,z^2-16\,567\,200\,z+135\,135\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(65\,536\,z^4-2\,605\,056\,z^3+17\,017\,344\,z^2-8\,648\,640\,z+405\,405\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(65\,536\,z^4-2\,629\,632\,z^3+17\,925\,120\,z^2-12\,839\,904\,z-405\,405\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a931.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{11}{4};-z\right)=\frac{1}{26\,956\,800\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(65\,536\,z^4+2\,646\,016\,z^3+18\,561\,024\,z^2+16\,567\,200\,z+135\,135\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(65\,536\,z^4+2\,605\,056\,z^3+17\,017\,344\,z^2+8\,648\,640\,z+405\,405\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(65\,536\,z^4+2\,629\,632\,z^3+17\,925\,120\,z^2+12\,839\,904\,z-405\,405\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a932.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{1\,635\,778\,560\,z^{9/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-262\,144\,z^{9/2}+65\,536\,z^4+11\,665\,408\,z^{7/2}-2\,867\,200\,z^3-90\,163\,200\,z^{5/2}+\right.\right.\right.$$
$$20\,559\,360\,z^2+73\,328\,640\,z^{3/2}-8\,648\,640\,z+2\,702\,700\sqrt{z}\,+$$
$$e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-11\,665\,408\,z^{7/2}-2\,867\,200\,z^3+90\,163\,200\,z^{5/2}+20\,559\,360\,z^2-\right.$$
$$\left.73\,328\,640\,z^{3/2}-8\,648\,640\,z-2\,702\,700\sqrt{z}\,+2\,027\,025\right)+2\,027\,025\Big)-e^{2\sqrt{z}}\,\sqrt{2\pi}$$
$$\left(1\,048\,576\,z^5-46\,858\,240\,z^4+369\,008\,640\,z^3-345\,945\,600\,z^2-10\,810\,800\,z+2\,027\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}$$
$$\left.\left.\sqrt{2\pi}\,\left(1\,048\,576\,z^5-46\,858\,240\,z^4+369\,008\,640\,z^3-345\,945\,600\,z^2-10\,810\,800\,z+2\,027\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a933.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{408\,944\,640\,z^{9/4}}\left(\sqrt{\pi}\,\left(1\,048\,576\,z^5+46\,858\,240\,z^4+369\,008\,640\,z^3+345\,945\,600\,z^2-10\,810\,800\,z-2\,027\,025\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$2\sqrt[4]{z}\left(\left(65\,536\,z^4+2\,867\,200\,z^3+20\,559\,360\,z^2+8\,648\,640\,z+2\,027\,025\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.4\sqrt{z}\,\left(65\,536\,z^4+2\,916\,352\,z^3+22\,540\,800\,z^2+18\,332\,160\,z-675\,675\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a934.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{15}{4};z\right)=-\frac{1}{862\,617\,600\sqrt{2}\,z^{9/4}}$$
$$\left(\left(2\sqrt{z}\,\left(1\,048\,576\,z^5-51\,707\,904\,z^4+464\,494\,592\,z^3-561\,600\,000\,z^2+6\,486\,480\,z-4\,729\,725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-1\,048\,576\,z^5+51\,052\,544\,z^4-433\,938\,432\,z^3+345\,945\,600\,z^2+2\,162\,160\,z+14\,189\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-1\,048\,576\,z^5+51\,445\,760\,z^4-451\,977\,216\,z^3+463\,744\,512\,z^2+28\,108\,080\,z-14\,189\,175\right)$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a935.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{15}{4};-z\right)=\frac{1}{862\,617\,600\sqrt{2}\,z^{9/4}}$$
$$\left(\left(2\sqrt{z}\,\left(1\,048\,576\,z^5+51\,707\,904\,z^4+464\,494\,592\,z^3+561\,600\,000\,z^2+6\,486\,480\,z+4\,729\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(1\,048\,576\,z^5+51\,052\,544\,z^4+433\,938\,432\,z^3+345\,945\,600\,z^2-2\,162\,160\,z+14\,189\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\,\left(1\,048\,576\,z^5+51\,445\,760\,z^4+451\,977\,216\,z^3+463\,744\,512\,z^2-28\,108\,080\,z-14\,189\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a936.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{17}{4};z\right) = \frac{1}{48\,318\,382\,080\,z^{13/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-4\,194\,304\,z^{11/2}+1\,048\,576\,z^5+224\,133\,120\,z^{9/2}-55\,246\,848\,z^4-2\,173\,599\,744\,z^{7/2}+504\,668\,160\,z^3+2\,434\,037\,760\,z^{5/2}-345\,945\,600\,z^2+181\,621\,440\,z^{3/2}+58\,378\,320\,z-170\,270\,100\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-224\,133\,120\,z^{9/2}-55\,246\,848\,z^4+2\,173\,599\,744\,z^{7/2}+504\,668\,160\,z^3-2\,434\,037\,760\,z^{5/2}-345\,945\,600\,z^2-181\,621\,440\,z^{3/2}+58\,378\,320\,z+170\,270\,100\sqrt{z}-127\,702\,575\right)-127\,702\,575\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-899\,678\,208\,z^5+8\,856\,207\,360\,z^4-11\,070\,259\,200\,z^3-518\,918\,400\,z^2+194\,594\,400\,z-127\,702\,575\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-899\,678\,208\,z^5+8\,856\,207\,360\,z^4-11\,070\,259\,200\,z^3-518\,918\,400\,z^2+194\,594\,400\,z-127\,702\,575\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a937.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{17}{4};-z\right) = \frac{1}{12\,079\,595\,520\,z^{13/4}}\left(\sqrt{\pi}\left(16\,777\,216\,z^6+899\,678\,208\,z^5+8\,856\,207\,360\,z^4+11\,070\,259\,200\,z^3-518\,918\,400\,z^2-194\,594\,400\,z-127\,702\,575\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(1\,048\,576\,z^5+55\,246\,848\,z^4+504\,668\,160\,z^3+345\,945\,600\,z^2+58\,378\,320\,z+127\,702\,575\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(1\,048\,576\,z^5+56\,033\,280\,z^4+543\,399\,936\,z^3+608\,509\,440\,z^2-45\,405\,360\,z-42\,567\,525\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a938.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{19}{4};z\right) = -\frac{1}{23\,923\,261\,440\sqrt{2}\,z^{13/4}}\left(\left(2\sqrt{z}\left(16\,777\,216\,z^6-977\,272\,832\,z^5+10\,702\,618\,624\,z^4-16\,313\,057\,280\,z^3+172\,972\,800\,z^2+43\,243\,200\,z+468\,242\,775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-16\,777\,216\,z^6+966\,787\,072\,z^5-10\,120\,003\,584\,z^4+11\,070\,259\,200\,z^3+795\,674\,880\,z^2-2\,270\,268\,000\,z-1\,404\,728\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-16\,777\,216\,z^6+973\,078\,528\,z^5-10\,464\,854\,016\,z^4+13\,988\,265\,984\,z^3+1\,210\,809\,600\,z^2-726\,485\,760\,z+1\,404\,728\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a939.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{19}{4};-z\right)=\frac{1}{23\,923\,261\,440\sqrt{2}\,z^{13/4}}\left(\left(2\sqrt{z}\left(16\,777\,216z^6+977\,272\,832z^5+10\,702\,618\,624z^4+16\,313\,057\,280z^3+172\,972\,800z^2-43\,243\,200z+468\,242\,775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,777\,216z^6+966\,787\,072z^5+10\,120\,003\,584z^4+11\,070\,259\,200z^3-795\,674\,880z^2-2\,270\,268\,000z+1\,404\,728\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(16\,777\,216z^6+973\,078\,528z^5+10\,464\,854\,016z^4+13\,988\,265\,984z^3-1\,210\,809\,600z^2-726\,485\,760z-1\,404\,728\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a93a.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{21}{4};z\right)=-\frac{1}{21\,646\,635\,171\,840\,z^{17/4}}\left(17e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-67\,108\,864z^{13/2}+16\,777\,216z^6+4\,185\,915\,392z^{11/2}-1\,033\,895\,936z^5-48\,835\,067\,904z^{9/2}+11\,476\,598\,784z^4+69\,744\,525\,312z^{7/2}-11\,070\,259\,200z^3+7\,610\,803\,200z^{5/2}+588\,107\,520z^2-7\,939\,451\,520z^{3/2}+5\,176\,211\,040z+24\,348\,624\,300\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864z^{13/2}+16\,777\,216z^6-4\,185\,915\,392z^{11/2}-1\,033\,895\,936z^5+48\,835\,067\,904z^{9/2}+11\,476\,598\,784z^4-69\,744\,525\,312z^{7/2}-11\,070\,259\,200z^3-7\,610\,803\,200z^{5/2}+588\,107\,520z^2+7\,939\,451\,520z^{3/2}+5\,176\,211\,040z-24\,348\,624\,300\sqrt{z}+18\,261\,468\,225\right)+18\,261\,468\,225\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7-16\,793\,993\,216z^6+198\,379\,044\,864z^5-309\,967\,257\,600z^4-19\,372\,953\,600z^3+10\,897\,286\,400z^2-14\,302\,688\,400z+18\,261\,468\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7-16\,793\,993\,216z^6+198\,379\,044\,864z^5-309\,967\,257\,600z^4-19\,372\,953\,600z^3+10\,897\,286\,400z^2-14\,302\,688\,400z+18\,261\,468\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a93b.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{21}{4};-z\right)=\frac{1}{5\,411\,658\,792\,960\,z^{17/4}}\left(17\left(\sqrt{\pi}\left(268\,435\,456z^7+16\,793\,993\,216z^6+198\,379\,044\,864z^5+309\,967\,257\,600z^4-19\,372\,953\,600z^3-10\,897\,286\,400z^2-14\,302\,688\,400z-18\,261\,468\,225\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(16\,777\,216z^6+1\,033\,895\,936z^5+11\,476\,598\,784z^4+11\,070\,259\,200z^3+588\,107\,520z^2-5\,176\,211\,040z+18\,261\,468\,225\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(16\,777\,216z^6+1\,046\,478\,848z^5+12\,208\,766\,976z^4+17\,436\,131\,328z^3-1\,902\,700\,800z^2-1\,984\,862\,880z-6\,087\,156\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a93c.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{23}{4};z\right)=$$
$$-\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-18\,035\,507\,200\,z^6+233\,019\,801\,600\,z^5-428\,433\,408\,000\,z^4+2\,767\,564\,800\,z^3+\right.\right.\right.$$
$$\left.\left.\left.11\,935\,123\,200\,z^2-48\,162\,114\,000\,z-91\,307\,341\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-268\,435\,456\,z^7+17\,867\,735\,040\,z^6-222\,198\,497\,280\,z^5+309\,967\,257\,600\,z^4+41\,513\,472\,000\,z^3-\right.$$
$$\left.110\,529\,619\,200\,z^2+561\,891\,330\,000\,z+273\,922\,023\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-268\,435\,456\,z^7+17\,968\,398\,336\,z^6-228\,615\,782\,400\,z^5+376\,729\,436\,160\,z^4+41\,513\,472\,000\,z^3-\right.$$
$$\left.\left.26\,464\,838\,400\,z^2+22\,475\,653\,200\,z-273\,922\,023\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(11\,483\,165\,491\,200\sqrt{2}\;z^{17/4}\right)$$

07.22.03.a93d.01

$${}_1F_2\left(-\frac{11}{4};\frac{3}{2},\frac{23}{4};-z\right)=$$
$$\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+18\,035\,507\,200\,z^6+233\,019\,801\,600\,z^5+428\,433\,408\,000\,z^4+2\,767\,564\,800\,z^3-\right.\right.\right.$$
$$\left.\left.\left.11\,935\,123\,200\,z^2-48\,162\,114\,000\,z+91\,307\,341\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$\left(268\,435\,456\,z^7+17\,867\,735\,040\,z^6+222\,198\,497\,280\,z^5+309\,967\,257\,600\,z^4-41\,513\,472\,000\,z^3-\right.$$
$$\left.110\,529\,619\,200\,z^2-561\,891\,330\,000\,z+273\,922\,023\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+17\,968\,398\,336\,z^6+228\,615\,782\,400\,z^5+376\,729\,436\,160\,z^4-41\,513\,472\,000\,z^3-\right.$$
$$\left.\left.26\,464\,838\,400\,z^2-22\,475\,653\,200\,z-273\,922\,023\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(11\,483\,165\,491\,200\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{11}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.a93e.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},-\frac{23}{4};z\right)=\frac{10\sqrt{z}\,(208z+3045)\cosh\left(2\sqrt{z}\right)-\left(128z^2+12\,600z+15\,225\right)\sinh\left(2\sqrt{z}\right)}{17\,480\,z^{3/2}}$$

07.22.03.a93f.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},-\frac{23}{4};-z\right)=\frac{10\sqrt{z}\,(208z-3045)\cos\left(2\sqrt{z}\right)+\left(128z^2-12\,600z+15\,225\right)\sin\left(2\sqrt{z}\right)}{17\,480\,z^{3/2}}$$

07.22.03.a93g.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},-\frac{21}{4};z\right)=\frac{1}{184\,618\,980\sqrt{2}\;z^{3/4}}\left(\left(32z\left(8192z^3+333\,824z^2+4\,234\,304z+14\,513\,877\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\,\left(32\,768z^3+1\,355\,776z^2+20\,277\,264z+209\,868\,813\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(262\,144z^4+10\,747\,904z^3+138\,270\,720z^2+373\,100\,112z-629\,606\,439\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a93h.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},-\frac{21}{4};-z\right)=\frac{1}{184\,618\,980\sqrt{2}\,z^{3/4}}\left(\left(-32z\left(8192z^3-333\,824z^2+4\,234\,304z-14\,513\,877\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(32\,768z^3-1\,355\,776z^2+20\,277\,264z-209\,868\,813\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-262\,144z^4+10\,747\,904z^3-138\,270\,720z^2+373\,100\,112z+629\,606\,439\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a93i.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},-\frac{19}{4};z\right)=\frac{2\sqrt{z}\,(16z+525)\cosh\left(2\sqrt{z}\right)-21\,(16z+25)\sinh\left(2\sqrt{z}\right)}{760\,z^{3/2}}$$

07.22.03.a93j.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},-\frac{19}{4};-z\right)=\frac{2\sqrt{z}\,(16z-525)\cos\left(2\sqrt{z}\right)+21\,(25-16z)\sin\left(2\sqrt{z}\right)}{760\,z^{3/2}}$$

07.22.03.a93k.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},-\frac{17}{4};z\right)=\frac{1}{43\,956\,900\sqrt{2}\,z^{3/4}}\left(\left(8z\left(16\,384z^3+476\,160z^2+4\,686\,720z+11\,972\,045\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(16\,384z^3+486\,400z^2+5\,011\,840z+38\,864\,595\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(131\,072z^4+3\,842\,048z^3+38\,497\,280z^2+94\,626\,840z-116\,593\,785\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a93l.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},-\frac{17}{4};-z\right)=\frac{1}{43\,956\,900\sqrt{2}\,z^{3/4}}\left(\left(-8z\left(16\,384z^3-476\,160z^2+4\,686\,720z-11\,972\,045\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(16\,384z^3-486\,400z^2+5\,011\,840z-38\,864\,595\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-131\,072z^4+3\,842\,048z^3-38\,497\,280z^2+94\,626\,840z+116\,593\,785\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a93m.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},-\frac{15}{4};z\right)=\frac{42\sqrt{z}\,\cosh\left(2\sqrt{z}\right)-(8z+21)\sinh\left(2\sqrt{z}\right)}{40\,z^{3/2}}$$

07.22.03.a93n.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},-\frac{15}{4};-z\right)=\frac{(21-8z)\sin\left(2\sqrt{z}\right)-42\sqrt{z}\,\cos\left(2\sqrt{z}\right)}{40\,z^{3/2}}$$

07.22.03.a93o.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},-\frac{13}{4};z\right)=\frac{1}{7\,757\,100\sqrt{2}\,z^{3/4}}$$

$$\left(\left(64z\left(1024z^3+17\,792z^2+124\,620z+226\,815\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(8192z^3+147\,456z^2+1\,099\,680z+5\,069\,295\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(65\,536z^4+1\,155\,072z^3+8\,285\,952z^2+17\,075\,520z-15\,207\,885\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a93p.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{5}{2}, -\frac{13}{4}; -z\right) = \frac{1}{7\,757\,100\sqrt{2}\, z^{3/4}} \left(\left(-64 z \left(1024 z^3 - 17\,792 z^2 + 124\,620 z - 226\,815\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8192 z^3 - 147\,456 z^2 + 1\,099\,680 z - 5\,069\,295\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-65\,536 z^4 + 1\,155\,072 z^3 - 8\,285\,952 z^2 + 17\,075\,520 z + 15\,207\,885\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a93q.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{5}{2}, -\frac{11}{4}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8 z^{3/2}} $$

07.22.03.a93r.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{5}{2}, -\frac{11}{4}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\cos\left(2\sqrt{z}\right)\right)}{8 z^{3/2}} $$

07.22.03.a93s.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{5}{2}, -\frac{9}{4}; z\right) = \frac{1}{596\,700\sqrt{2}\, z^{3/4}} \left(\left(8 z \left(4096 z^3 + 23\,296 z^2 + 97\,552 z + 119\,055\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4096 z^3 + 25\,856 z^2 + 118\,992 z + 266\,805\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(32\,768 z^4 + 194\,560 z^3 + 839\,808 z^2 + 1\,280\,664 z - 800\,415\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a93t.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{5}{2}, -\frac{9}{4}; -z\right) = \frac{1}{596\,700\sqrt{2}\, z^{3/4}} \left(\left(-8 z \left(4096 z^3 - 23\,296 z^2 + 97\,552 z - 119\,055\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096 z^3 - 25\,856 z^2 + 118\,992 z - 266\,805\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-32\,768 z^4 + 194\,560 z^3 - 839\,808 z^2 + 1\,280\,664 z + 800\,415\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a93u.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{5}{2}, -\frac{7}{4}; z\right) = \frac{1}{1\,113\,840 z^{3/2}} \left(e^{-2\sqrt{z}} \left(-32\,768 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} - 32\,768 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{17/4} + 32\,768 e^{4\sqrt{z}} z^4 - 32\,768 z^4 + 8192 e^{4\sqrt{z}} z^{7/2} + 8192 z^{7/2} + 6144 e^{4\sqrt{z}} z^3 - 6144 z^3 + 7680 e^{4\sqrt{z}} z^{5/2} + 7680 z^{5/2} + 13\,440 e^{4\sqrt{z}} z^2 - 13\,440 z^2 + 30\,240 e^{4\sqrt{z}} z^{3/2} + 30\,240 z^{3/2} + 83\,160 e^{4\sqrt{z}} z - 83\,160 z + 270\,270 e^{4\sqrt{z}}\sqrt{z} + 270\,270\sqrt{z} - 135\,135 e^{4\sqrt{z}} + 135\,135\right)\right) $$

07.22.03.a93v.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{556\,920\,z^{3/2}}\left(65\,536\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}+2\left(4096\,z^3-3840\,z^2+15\,120\,z-135\,135\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+\right.$$
$$\left.\left(-32\,768\,z^4+6144\,z^3-13\,440\,z^2+83\,160\,z+135\,135\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a93w.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},-\frac{5}{4};z\right)=$$
$$-\frac{1}{66\,300\sqrt{2}\;z^{3/4}}\left(\left(32\,z\left(512\,z^3-3072\,z^2-3888\,z-2813\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\;\left(-2048\,z^3+11\,008\,z^2+19\,792\,z+17\,787\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-16\,384\,z^4+94\,208\,z^3+142\,592\,z^2+129\,360\,z-53\,361\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a93x.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},-\frac{5}{4};-z\right)=\frac{1}{66\,300\sqrt{2}\;z^{3/4}}$$
$$\left(\left(32\,z\left(512\,z^3+3072\,z^2-3888\,z+2813\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\;\left(2048\,z^3+11\,008\,z^2-19\,792\,z+17\,787\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(16\,384\,z^4+94\,208\,z^3-142\,592\,z^2+129\,360\,z+53\,361\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a93y.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},-\frac{3}{4};z\right)=\frac{1}{159\,120\,z^{3/2}}$$
$$\left(e^{-2\sqrt{z}}\left(-8192\,e^{4\sqrt{z}}\;z^4+8192\,z^4-2048\,e^{4\sqrt{z}}\;z^{7/2}-2048\,z^{7/2}+512\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;(16\,z-187)\,\mathrm{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{13/4}+\right.\right.$$
$$512\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;(16\,z-187)\,\mathrm{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{13/4}+94\,208\,e^{4\sqrt{z}}\;z^3-94\,208\,z^3+$$
$$22\,016\,e^{4\sqrt{z}}\;z^{5/2}+22\,016\,z^{5/2}+14\,592\,e^{4\sqrt{z}}\;z^2-14\,592\,z^2+14\,880\,e^{4\sqrt{z}}\;z^{3/2}+14\,880\,z^{3/2}+$$
$$\left.\left.18\,480\,e^{4\sqrt{z}}\;z-18\,480\,z+20\,790\,e^{4\sqrt{z}}\;\sqrt{z}\;+20\,790\sqrt{z}\;-10\,395\,e^{4\sqrt{z}}\;+10\,395\right)\right)$$

07.22.03.a93z.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},-\frac{3}{4};-z\right)=$$
$$\frac{1}{79\,560\,z^{3/2}}\left(-1024\sqrt{\pi}\;(16\,z+187)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}-2\left(1024\,z^3+11\,008\,z^2-7440\,z+10\,395\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+\right.$$
$$\left.\left(8192\,z^4+94\,208\,z^3-14\,592\,z^2+18\,480\,z+10\,395\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a940.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},-\frac{1}{4};z\right)=\frac{1}{39\,780\sqrt{2}\,z^{3/4}}$$
$$\left(\left(8z\left(1024z^3-18\,112z^2+28\,128z+5781\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1024z^3-17\,472z^2+18\,528z+4851\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-8192z^4+142\,848z^3-192\,000z^2-60\,984z+14\,553\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a941.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},-\frac{1}{4};-z\right)=$$
$$\frac{1}{39\,780\sqrt{2}\,z^{3/4}}\left(\left(-8z\left(1024z^3+18\,112z^2+28\,128z-5781\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024z^3+17\,472z^2+18\,528z-4851\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-8192z^4-142\,848z^3-192\,000z^2+60\,984z+14\,553\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a942.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{53\,040z^{3/2}}\left(e^{-2\sqrt{z}}\left(1024e^{4\sqrt{z}}z^4-1024z^4+256e^{4\sqrt{z}}z^{7/2}+256z^{7/2}-23\,744e^{4\sqrt{z}}z^3+23\,744z^3-5744e^{4\sqrt{z}}z^{5/2}-\right.\right.$$
$$5744z^{5/2}-4e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-5984z+17\,017\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-$$
$$4e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-5984z+17\,017\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+64\,000e^{4\sqrt{z}}z^2-64\,000z^2+$$
$$\left.\left.12\,352e^{4\sqrt{z}}z^{3/2}+12\,352z^{3/2}+5544e^{4\sqrt{z}}z-5544z+2310e^{4\sqrt{z}}\sqrt{z}+2310\sqrt{z}-1155e^{4\sqrt{z}}+1155\right)\right)$$

07.22.03.a943.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{26\,520z^{3/2}}\left(8\sqrt{\pi}\left(256z^2+5984z+17\,017\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+2\left(128z^3+2872z^2+6176z-1155\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(-1024z^4-23\,744z^3-64\,000z^2+5544z+1155\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a944.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{3}{4};z\right)=\frac{1}{198\,900\sqrt{2}\,z^{3/4}}$$
$$\left(\left(-16z\left(256z^3-7520z^2+33\,025z-12\,720\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(512z^3-14\,720z^2+57\,510z-3465\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^4-119\,296z^3+499\,920z^2-110\,880z+10\,395\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a945.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{3}{4};-z\right)=\frac{1}{198\,900\sqrt{2}\,z^{3/4}}$$
$$\left(\left(16z\left(256z^3+7520z^2+33\,025z+12\,720\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^3+14\,720z^2+57\,510z+3465\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^4+119\,296z^3+499\,920z^2+110\,880z+10\,395\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a946.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{2\,545\,920\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-143\,616z^2+816\,816z-459\,459\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-e^{2\sqrt{z}}\right.\right.$$
$$\sqrt{2\pi}\left(4096z^3-143\,616z^2+816\,816z-459\,459\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+$$
$$4\left(-1024z^4+256z^{7/2}+35\,712z^3-8736z^{5/2}-197\,892z^2+43\,581z^{3/2}+88\,704z-5544\sqrt{z}+e^{4\sqrt{z}}\right.$$
$$\left.\left.\left.\left(1024z^4+256z^{7/2}-35\,712z^3-8736z^{5/2}+197\,892z^2+43\,581z^{3/2}-88\,704z-5544\sqrt{z}+2772\right)-2772\right)\right)\right)$$

07.22.03.a947.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{5}{4};-z\right)=\frac{1}{636\,480\,z^{3/2}}\left(\sqrt{\pi}\,z^{5/4}\left(4096z^3+143\,616z^2+816\,816z+459\,459\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.$$
$$\left.2\left(4\left(256z^4+8928z^3+49\,473z^2+22\,176z+693\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(256z^3+8736z^2+43\,581z+5544\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a948.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{7}{4};z\right)=\frac{1}{1\,856\,400\sqrt{2}\,z^{3/4}}$$
$$\left(\left(2z\left(-4096z^3+168\,192z^2-1\,216\,560z+1\,161\,895\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(4096z^3-165\,632z^2+1\,118\,320z-636\,405\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(4096z^4-167\,168z^3+1\,176\,112z^2-915\,915z-48\,510\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a949.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{7}{4};-z\right)=\frac{1}{1\,856\,400\sqrt{2}\,z^{3/4}}$$
$$\left(\left(2z\left(4096z^3+168\,192z^2+1\,216\,560z+1\,161\,895\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(4096z^3+165\,632z^2+1\,118\,320z+636\,405\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(4096z^4+167\,168z^3+1\,176\,112z^2+915\,915z-48\,510\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a94a.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{130\,351\,104\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(4\left(-16\,384\,z^4+4096\,z^{7/2}+762\,880\,z^3-187\,648\,z^{5/2}-6\,397\,632\,z^2+1\,469\,232\,z^{3/2}+\right.\right.\right.$$
$$\left.6\,398\,700\,z-878\,031\sqrt{z}\right)+e^{4\sqrt{z}}\left(16\,384\,z^4+4096\,z^{7/2}-762\,880\,z^3-187\,648\,z^{5/2}+\right.$$
$$\left.6\,397\,632\,z^2+1\,469\,232\,z^{3/2}-6\,398\,700\,z-878\,031\sqrt{z}-709\,632\right)+709\,632\Big)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(65\,536\,z^4-3\,063\,808\,z^3+26\,138\,112\,z^2-29\,405\,376\,z-2\,297\,295\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(65\,536\,z^4-3\,063\,808\,z^3+26\,138\,112\,z^2-29\,405\,376\,z-2\,297\,295\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a94b.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{32\,587\,776\,z^{3/2}}\left(\sqrt{\pi}\,\sqrt[4]{z}\left(65\,536\,z^4+3\,063\,808\,z^3+26\,138\,112\,z^2+29\,405\,376\,z-2\,297\,295\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.$$
$$2\left(4\left(4096\,z^4+190\,720\,z^3+1\,599\,408\,z^2+1\,599\,675\,z-177\,408\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\sqrt{z}\left(4096\,z^3+187\,648\,z^2+1\,469\,232\,z+878\,031\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a94c.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{76\,377\,600\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(-65\,536\,z^4+3\,457\,024\,z^3-34\,831\,872\,z^2+52\,983\,360\,z+2\,297\,295\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(65\,536\,z^4-3\,416\,064\,z^3+32\,781\,312\,z^2-36\,257\,760\,z-6\,891\,885\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536\,z^4-3\,440\,640\,z^3+33\,993\,216\,z^2-45\,505\,152\,z-7\,078\,995\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a94d.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{76\,377\,600\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(65\,536\,z^4+3\,457\,024\,z^3+34\,831\,872\,z^2+52\,983\,360\,z-2\,297\,295\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(65\,536\,z^4+3\,416\,064\,z^3+32\,781\,312\,z^2+36\,257\,760\,z-6\,891\,885\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536\,z^4+3\,440\,640\,z^3+33\,993\,216\,z^2+45\,505\,152\,z-7\,078\,995\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a94e.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{13}{4};z\right)=$$

$$\frac{1}{4\,634\,705\,920\,z^{9/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-262\,144\,z^{9/2}+65\,536\,z^4+15\,269\,888\,z^{7/2}-3\,768\,320\,z^3-171\,489\,280\,z^{5/2}+\right.\right.\right.$$
$$40\,215\,040\,z^2+266\,999\,040\,z^{3/2}-44\,647\,680\,z+60\,378\,780\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-15\,269\,888\,z^{7/2}-3\,768\,320\,z^3+171\,489\,280\,z^{5/2}+40\,215\,040\,z^2-\right.$$
$$\left.266\,999\,040\,z^{3/2}-44\,647\,680\,z-60\,378\,780\sqrt{z}-11\,486\,475\right)-11\,486\,475\Big)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-61\,276\,160\,z^4+697\,016\,320\,z^3-1\,176\,215\,040\,z^2-183\,783\,600\,z-11\,486\,475\right)$$
$$\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left.\left.\left(1\,048\,576\,z^5-61\,276\,160\,z^4+697\,016\,320\,z^3-1\,176\,215\,040\,z^2-183\,783\,600\,z-11\,486\,475\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a94f.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{13}{4};-z\right)=\frac{1}{1\,158\,676\,480\,z^{9/4}}$$
$$\left(\sqrt{\pi}\left(1\,048\,576\,z^5+61\,276\,160\,z^4+697\,016\,320\,z^3+1\,176\,215\,040\,z^2-183\,783\,600\,z+11\,486\,475\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$2\sqrt[4]{z}\left(\left(65\,536\,z^4+3\,768\,320\,z^3+40\,215\,040\,z^2+44\,647\,680\,z-11\,486\,475\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.4\sqrt{z}\left(65\,536\,z^4+3\,817\,472\,z^3+42\,872\,320\,z^2+66\,749\,760\,z-15\,094\,695\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a94g.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{15}{4};z\right)=-\frac{1}{2\,444\,083\,200\sqrt{2}\,z^{9/4}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576\,z^5-67\,567\,616\,z^4+872\,882\,176\,z^3-1\,820\,588\,544\,z^2-183\,783\,600\,z+16\,081\,065\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-1\,048\,576\,z^5+66\,912\,256\,z^4-832\,413\,696\,z^3+1\,376\,331\,264\,z^2+477\,837\,360\,z-48\,243\,195\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-1\,048\,576\,z^5+67\,305\,472\,z^4-856\,399\,872\,z^3+\right.$$
$$\left.\left.\left.1\,626\,831\,360\,z^2+402\,793\,776\,z+48\,243\,195\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a94h.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{15}{4};-z\right)=\frac{1}{2\,444\,083\,200\sqrt{2}\,z^{9/4}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576\,z^5+67\,567\,616\,z^4+872\,882\,176\,z^3+1\,820\,588\,544\,z^2-183\,783\,600\,z-16\,081\,065\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(1\,048\,576\,z^5+66\,912\,256\,z^4+832\,413\,696\,z^3+1\,376\,331\,264\,z^2-477\,837\,360\,z-48\,243\,195\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(1\,048\,576\,z^5+67\,305\,472\,z^4+856\,399\,872\,z^3+1\,626\,831\,360\,z^2-402\,793\,776\,z+48\,243\,195\right)$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a94i.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{17}{4};z\right)=$$
$$\frac{1}{136\,902\,082\,560\,z^{13/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-4\,194\,304\,z^{11/2}+1\,048\,576\,z^5+293\,339\,136\,z^{9/2}-72\,548\,352\,z^4-\right.\right.\right.$$
$$4\,128\,669\,696\,z^{7/2}+980\,459\,520\,z^3+8\,735\,569\,920\,z^{5/2}-1\,609\,090\,560\,z^2+2\,871\,126\,720\,z^{3/2}-$$
$$771\,891\,120\,z+413\,513\,100\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-293\,339\,136\,z^{9/2}-\right.$$
$$72\,548\,352\,z^4+4\,128\,669\,696\,z^{7/2}+980\,459\,520\,z^3-8\,735\,569\,920\,z^{5/2}-1\,609\,090\,560\,z^2-$$
$$\left.2\,871\,126\,720\,z^{3/2}-771\,891\,120\,z-413\,513\,100\sqrt{z}+310\,134\,825\right)+310\,134\,825\Big)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-1\,176\,502\,272\,z^5+16\,728\,391\,680\,z^4-37\,638\,881\,280\,z^3-\right.$$
$$\left.8\,821\,612\,800\,z^2-1\,102\,701\,600\,z+310\,134\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-1\,176\,502\,272\,z^5+16\,728\,391\,680\,z^4-37\,638\,881\,280\,z^3-\right.$$
$$\left.\left.8\,821\,612\,800\,z^2-1\,102\,701\,600\,z+310\,134\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a94j.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{17}{4};-z\right)=$$
$$\frac{1}{34\,225\,520\,640\,z^{13/4}}\left(\sqrt{\pi}\left(16\,777\,216\,z^6+1\,176\,502\,272\,z^5+16\,728\,391\,680\,z^4+37\,638\,881\,280\,z^3-8\,821\,612\,800\,z^2+\right.\right.$$
$$\left.1\,102\,701\,600\,z+310\,134\,825\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}$$
$$\left(4\sqrt{z}\left(1\,048\,576\,z^5+73\,334\,784\,z^4+1\,032\,167\,424\,z^3+2\,183\,892\,480\,z^2-717\,781\,680\,z+103\,378\,275\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left(1\,048\,576\,z^5+72\,548\,352\,z^4+980\,459\,520\,z^3+1\,609\,090\,560\,z^2-771\,891\,120\,z-310\,134\,825\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a94k.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{19}{4};z\right)=$$
$$-\frac{1}{67\,782\,574\,080\sqrt{2}\,z^{13/4}}\left(\left(2\sqrt{z}\left(16\,777\,216\,z^6-1\,277\,165\,568\,z^5+20\,130\,496\,512\,z^4-53\,338\,095\,616\,z^3-\right.\right.\right.$$
$$\left.8\,821\,612\,800\,z^2+661\,620\,960\,z-884\,458\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(-16\,777\,216\,z^6+1\,266\,679\,808\,z^5-19\,360\,448\,512\,z^4+42\,706\,599\,936\,z^3+20\,583\,763\,200\,z^2+2\,058\,376\,320\,z+\right.$$
$$\left.2\,653\,375\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-16\,777\,216\,z^6+1\,272\,971\,264\,z^5-19\,817\,758\,720\,z^4+\right.$$
$$\left.\left.\left.48\,773\,480\,448\,z^3+16\,330\,938\,624\,z^2+3\,602\,158\,560\,z-2\,653\,375\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a94l.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{19}{4};-z\right)= \frac{1}{67\,782\,574\,080\sqrt{2}\,z^{13/4}}\left(\left(2\sqrt{z}\left(16\,777\,216z^6+1\,277\,165\,568z^5+20\,130\,496\,512z^4+53\,338\,095\,616z^3-8\,821\,612\,800z^2-661\,620\,960z-884\,458\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,777\,216z^6+1\,266\,679\,808z^5+19\,360\,448\,512z^4+42\,706\,599\,936z^3-20\,583\,763\,200z^2+2\,058\,376\,320z-2\,653\,375\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(16\,777\,216z^6+1\,272\,971\,264z^5+19\,817\,758\,720z^4+48\,773\,480\,448z^3-16\,330\,938\,624z^2+3\,602\,158\,560z+2\,653\,375\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a94m.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{21}{4};z\right)= \frac{1}{3\,607\,772\,528\,640\,z^{17/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-67\,108\,864z^{13/2}+16\,777\,216z^6+5\,477\,761\,024z^{11/2}-1\,356\,857\,344z^5-92\,677\,079\,040z^{9/2}+22\,194\,880\,512z^4+247\,988\,944\,896z^{7/2}-48\,425\,287\,680z^3+105\,171\,010\,560z^{5/2}-32\,345\,913\,600z^2+29\,111\,322\,240z^{3/2}+4\,631\,346\,720z-37\,629\,692\,100\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864z^{13/2}+16\,777\,216z^6-5\,477\,761\,024z^{11/2}-1\,356\,857\,344z^5+92\,677\,079\,040z^{9/2}+22\,194\,880\,512z^4-247\,988\,944\,896z^{7/2}-48\,425\,287\,680z^3-105\,171\,010\,560z^{5/2}-32\,345\,913\,600z^2-29\,111\,322\,240z^{3/2}+4\,631\,346\,720z+37\,629\,692\,100\sqrt{z}-28\,222\,269\,075\right)-28\,222\,269\,075\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7-21\,961\,375\,744z^6+374\,715\,973\,632z^5-1\,053\,888\,675\,840z^4-329\,340\,211\,200z^3-61\,751\,289\,600z^2+34\,735\,100\,400z-28\,222\,269\,075\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7-21\,961\,375\,744z^6+374\,715\,973\,632z^5-1\,053\,888\,675\,840z^4-329\,340\,211\,200z^3-61\,751\,289\,600z^2+34\,735\,100\,400z-28\,222\,269\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a94n.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{21}{4};-z\right)= \frac{1}{901\,943\,132\,160\,z^{17/4}}\left(\sqrt{\pi}\left(268\,435\,456z^7+21\,961\,375\,744z^6+374\,715\,973\,632z^5+1\,053\,888\,675\,840z^4-329\,340\,211\,200z^3+61\,751\,289\,600z^2+34\,735\,100\,400z+28\,222\,269\,075\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(\left(-16\,777\,216z^6-1\,356\,857\,344z^5-22\,194\,880\,512z^4-48\,425\,287\,680z^3+32\,345\,913\,600z^2+4\,631\,346\,720z+28\,222\,269\,075\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(16\,777\,216z^6+1\,369\,440\,256z^5+23\,169\,269\,760z^4+61\,997\,236\,224z^3-26\,292\,752\,640z^2+7\,277\,830\,560z+9\,407\,423\,025\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a94o.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{23}{4};z\right)=$$
$$-\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-23\,571\,988\,480\,z^6+438\,561\,669\,120\,z^5-1\,409\,147\,535\,360\,z^4-329\,340\,211\,200\,z^3+\right.\right.\right.$$
$$\left.\left.\left.8\,821\,612\,800\,z^2+30\,324\,294\,000\,z+119\,401\,907\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-268\,435\,456\,z^7+23\,404\,216\,320\,z^6-424\,280\,064\,000\,z^5+1\,171\,517\,276\,160\,z^4+705\,729\,024\,000\,z^3+\right.$$
$$\left.220\,540\,320\,000\,z^2-636\,810\,174\,000\,z-358\,205\,722\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-268\,435\,456\,z^7+23\,504\,879\,616\,z^6-432\,773\,529\,600\,z^5+1\,308\,220\,784\,640\,z^4+548\,701\,655\,040\,z^3+\right.$$
$$\left.\left.\left.167\,610\,643\,200\,z^2-127\,362\,034\,800\,z+358\,205\,722\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(32\,535\,635\,558\,400\sqrt{2}\,z^{17/4}\right)$$

07.22.03.a94p.01

$${}_1F_2\left(-\frac{11}{4};\frac{5}{2},\frac{23}{4};-z\right)=$$
$$\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+23\,571\,988\,480\,z^6+438\,561\,669\,120\,z^5+1\,409\,147\,535\,360\,z^4-329\,340\,211\,200\,z^3-\right.\right.\right.$$
$$\left.\left.\left.8\,821\,612\,800\,z^2+30\,324\,294\,000\,z-119\,401\,907\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$\left(268\,435\,456\,z^7+23\,404\,216\,320\,z^6+424\,280\,064\,000\,z^5+1\,171\,517\,276\,160\,z^4-705\,729\,024\,000\,z^3+\right.$$
$$\left.220\,540\,320\,000\,z^2+636\,810\,174\,000\,z-358\,205\,722\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+23\,504\,879\,616\,z^6+432\,773\,529\,600\,z^5+1\,308\,220\,784\,640\,z^4-548\,701\,655\,040\,z^3+\right.$$
$$\left.\left.\left.167\,610\,643\,200\,z^2+127\,362\,034\,800\,z+358\,205\,722\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(32\,535\,635\,558\,400\sqrt{2}\,z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{11}{4}$, $b_{1.} = \frac{7}{2}$

07.22.03.a94q.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},-\frac{23}{4};z\right)=\frac{75\left(64z^2+1508z+957\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(128z^2+17\,400z+71\,775\right)\cosh\left(2\sqrt{z}\right)}{13\,984\,z^{5/2}}$$

07.22.03.a94r.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},-\frac{23}{4};-z\right)=\frac{75\left(64z^2-1508z+957\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(128z^2-17\,400z+71\,775\right)\cos\left(2\sqrt{z}\right)}{13\,984\,z^{5/2}}$$

07.22.03.a94s.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{3\,101\,598\,864\sqrt{2}\,z^{7/4}}\left(\left(4z\left(524\,288z^4+26\,411\,008z^3+439\,099\,392z^2+1\,854\,725\,040z-6\,505\,933\,203\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(262\,144z^4+13\,369\,344z^3+228\,243\,456z^2-479\,700\,144z-19\,517\,799\,609\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(2\,097\,152z^5+\right.$$
$$\left.\left.\left.106\,168\,320z^4+1\,783\,627\,776z^3+8\,314\,802\,496z^2+12\,592\,128\,780z+58\,553\,398\,827\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a94t.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{3\,101\,598\,864\sqrt{2}\,z^{7/4}}\left(\left(-4z\left(524\,288z^4-26\,411\,008z^3+439\,099\,392z^2-1\,854\,725\,040z-6\,505\,933\,203\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(262\,144z^4-13\,369\,344z^3+228\,243\,456z^2+479\,700\,144z-19\,517\,799\,609\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-2\,097\,152z^5+106\,168\,320z^4-1\,783\,627\,776z^3+8\,314\,802\,496z^2-12\,592\,128\,780z+58\,553\,398\,827\right)$$
$$\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a94u.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},-\frac{19}{4};z\right)=\frac{\left(64z^2+3300z+2175\right)\sinh\left(2\sqrt{z}\right)-50\sqrt{z}\,(16z+87)\cosh\left(2\sqrt{z}\right)}{608\,z^{5/2}}$$

07.22.03.a94v.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},-\frac{19}{4};-z\right)=\frac{50\sqrt{z}\,(16z-87)\cos\left(2\sqrt{z}\right)+\left(64z^2-3300z+2175\right)\sin\left(2\sqrt{z}\right)}{608\,z^{5/2}}$$

07.22.03.a94w.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{738\,475\,920\sqrt{2}\,z^{7/4}}\left(\left(4z\left(262\,144z^4+9\,420\,800z^3+121\,620\,480z^2+428\,910\,720z-1\,049\,344\,065\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(131\,072z^4+4\,792\,320z^3+63\,974\,400z^2+133\,250\,040z-3\,148\,032\,195\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left(1\,048\,576z^5+37\,945\,344z^4+496\,312\,320z^3+1\,853\,913\,600z^2+1\,399\,125\,420z+9\,444\,096\,585\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a94x.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{7}{2}, -\frac{17}{4}; -z\right) = \frac{1}{738\,475\,920\sqrt{2}\, z^{7/4}}\left(\left(-4z\left(262\,144z^4 - 9\,420\,800z^3 + 121\,620\,480z^2 - 428\,910\,720z - 1\,049\,344\,065\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072z^4 - 4\,792\,320z^3 + 63\,974\,400z^2 - 133\,250\,040z - 3\,148\,032\,195\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-1\,048\,576z^5 + 37\,945\,344z^4 - 496\,312\,320z^3 + 1\,853\,913\,600z^2 - 1\,399\,125\,420z + 9\,444\,096\,585\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a94y.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{7}{2}, -\frac{15}{4}; z\right) = \frac{3(36z+25)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,(8z+75)\cosh\left(2\sqrt{z}\right)}{32z^{5/2}} $$

07.22.03.a94z.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{7}{2}, -\frac{15}{4}; -z\right) = \frac{2\sqrt{z}\,(8z-75)\cos\left(2\sqrt{z}\right) + 3(25-36z)\sin\left(2\sqrt{z}\right)}{32z^{5/2}} $$

07.22.03.a950.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{7}{2}, -\frac{13}{4}; z\right) = \frac{1}{130\,319\,280\sqrt{2}\, z^{7/4}}\left(\left(4z\left(131\,072z^4 + 2\,818\,048z^3 + 25\,920\,000z^2 + 70\,237\,440z - 116\,593\,785\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(65\,536z^4 + 1\,449\,984z^3 + 13\,950\,720z^2 + 46\,347\,840z - 349\,781\,355\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(524\,288z^5 + 11\,403\,264z^4 + 106\,702\,848z^3 + 312\,238\,080z^2 + 60\,831\,540z + 1\,049\,344\,065\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a951.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{7}{2}, -\frac{13}{4}; -z\right) = \frac{1}{130\,319\,280\sqrt{2}\, z^{7/4}}\left(\left(-4z\left(131\,072z^4 - 2\,818\,048z^3 + 25\,920\,000z^2 - 70\,237\,440z - 116\,593\,785\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(65\,536z^4 - 1\,449\,984z^3 + 13\,950\,720z^2 - 46\,347\,840z - 349\,781\,355\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-524\,288z^5 + 11\,403\,264z^4 - 106\,702\,848z^3 + 312\,238\,080z^2 - 60\,831\,540z + 1\,049\,344\,065\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a952.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{7}{2}, -\frac{11}{4}; z\right) = \frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32z^{5/2}} $$

07.22.03.a953.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{7}{2}, -\frac{11}{4}; -z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4z-3)\sin\left(2\sqrt{z}\right)\right)}{32z^{5/2}} $$

07.22.03.a954.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{10\,024\,560\sqrt{2}\,z^{7/4}}\left(\left(4z\left(65\,536z^4+462\,848z^3+2\,552\,064z^2+4\,793\,040z-5\,069\,295\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(32\,768z^4+251\,904z^3+1\,475\,712z^2+3\,963\,960z-15\,207\,885\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(262\,144z^5+1\,916\,928z^4+10\,773\,504z^3+22\,929\,984z^2-3\,201\,660z+45\,623\,655\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a955.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{10\,024\,560\sqrt{2}\,z^{7/4}}\left(\left(-4z\left(65\,536z^4-462\,848z^3+2\,552\,064z^2-4\,793\,040z-5\,069\,295\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(32\,768z^4-251\,904z^3+1\,475\,712z^2-3\,963\,960z-15\,207\,885\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-262\,144z^5+1\,916\,928z^4-10\,773\,504z^3+22\,929\,984z^2+3\,201\,660z+45\,623\,655\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a956.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{18\,712\,512z^{5/2}}\left(e^{-2\sqrt{z}}\left(-262\,144e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}-262\,144e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+\right.\right.$$
$$262\,144e^{4\sqrt{z}}z^5-262\,144z^5+65\,536e^{4\sqrt{z}}z^{9/2}+65\,536z^{9/2}+49\,152e^{4\sqrt{z}}z^4-49\,152z^4+$$
$$61\,440e^{4\sqrt{z}}z^{7/2}+61\,440z^{7/2}+107\,520e^{4\sqrt{z}}z^3-107\,520z^3+241\,920e^{4\sqrt{z}}z^{5/2}+241\,920z^{5/2}+$$
$$665\,280e^{4\sqrt{z}}z^2-665\,280z^2+2\,162\,160e^{4\sqrt{z}}z^{3/2}+2\,162\,160z^{3/2}+8\,108\,100e^{4\sqrt{z}}z-$$
$$\left.\left.8\,108\,100z-13\,783\,770e^{4\sqrt{z}}\sqrt{z}-13\,783\,770\sqrt{z}+6\,891\,885e^{4\sqrt{z}}-6\,891\,885\right)\right)$$

07.22.03.a957.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},-\frac{7}{4};-z\right)=\frac{1}{9\,356\,256z^{5/2}}$$
$$\left(524\,288\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4}+2\left(32\,768z^4-30\,720z^3+120\,960z^2-1\,081\,080z-6\,891\,885\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(-262\,144z^5+49\,152z^4-107\,520z^3+665\,280z^2-8\,108\,100z+6\,891\,885\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a958.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},-\frac{5}{4};z\right)=$$
$$-\frac{1}{1\,113\,840\sqrt{2}\,z^{7/4}}\left(\left(4z\left(32\,768z^4-241\,664z^3-409\,344z^2-451\,248z+266\,805\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(16\,384z^4-110\,592z^3-252\,672z^2-365\,904z+800\,415\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-131\,072z^5+933\,888z^4+1\,827\,840z^3+2\,350\,656z^2-640\,332z+2\,401\,245\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a959.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{1\,113\,840\sqrt{2}\,z^{7/4}}\left(\left(4z\left(32\,768z^4+241\,664z^3-409\,344z^2+451\,248z+266\,805\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(16\,384z^4+110\,592z^3-252\,672z^2+365\,904z+800\,415\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(131\,072z^5+933\,888z^4-1\,827\,840z^3+2\,350\,656z^2+640\,332z+2\,401\,245\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a95a.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},-\frac{3}{4};z\right)=\frac{1}{2\,673\,216z^{5/2}}$$
$$\left(e^{-2\sqrt{z}}\left(-65\,536e^{4\sqrt{z}}z^5+65\,536z^5-16\,384e^{4\sqrt{z}}z^{9/2}-16\,384z^{9/2}+4096e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-231)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+\right.\right.$$
$$4096e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-231)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+933\,888e^{4\sqrt{z}}z^4-933\,888z^4+$$
$$221\,184e^{4\sqrt{z}}z^{7/2}+221\,184z^{7/2}+150\,528e^{4\sqrt{z}}z^3-150\,528z^3+161\,280e^{4\sqrt{z}}z^{5/2}+$$
$$\left.\left.161\,280z^{5/2}+221\,760e^{4\sqrt{z}}z^2-221\,760z^2+332\,640e^{4\sqrt{z}}z^{3/2}+332\,640z^{3/2}+\right.\right.$$
$$\left.\left.374\,220e^{4\sqrt{z}}z-374\,220z-810\,810e^{4\sqrt{z}}\sqrt{z}-810\,810\sqrt{z}+405\,405e^{4\sqrt{z}}-405\,405\right)\right)$$

07.22.03.a95b.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},-\frac{3}{4};-z\right)=\frac{1}{1\,336\,608z^{5/2}}$$
$$\left(-8192\sqrt{\pi}\,(16z+231)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}-2\left(8192z^4+110\,592z^3-80\,640z^2+166\,320z+405\,405\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(65\,536z^5+933\,888z^4-150\,528z^3+221\,760z^2-374\,220z+405\,405\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a95c.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},-\frac{1}{4};z\right)=\frac{1}{668\,304\sqrt{2}\,z^{7/4}}\left(\left(4z\left(16\,384z^4-357\,376z^3+711\,936z^2+219\,744z-53\,361\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(8192z^4-173\,568z^3+258\,048z^2+127\,512z-160\,083\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(65\,536z^5-1\,413\,120z^4+2\,515\,968z^3+1\,153\,152z^2-291\,060z+480\,249\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a95d.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{7}{2},-\frac{1}{4};-z\right)=\frac{1}{668\,304\sqrt{2}\,z^{7/4}}\left(\left(-4z\left(16\,384z^4+357\,376z^3+711\,936z^2-219\,744z-53\,361\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(8192z^4+173\,568z^3+258\,048z^2-127\,512z-160\,083\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-65\,536z^5-1\,413\,120z^4-2\,515\,968z^3+1\,153\,152z^2+291\,060z+480\,249\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a95e.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{1}{4};z\right)= \frac{1}{891\,072z^{5/2}}\left(e^{-2\sqrt{z}}\left(8192e^{4\sqrt{z}}z^5-8192z^5+2048e^{4\sqrt{z}}z^{9/2}+2048z^{9/2}-235\,008e^{4\sqrt{z}}z^4+235\,008z^4-57\,216e^{4\sqrt{z}}z^{7/2}-57\,216z^{7/2}-32e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-7392z+27\,489\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-32e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-7392z+27\,489\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+838\,656e^{4\sqrt{z}}z^3-838\,656z^3+172\,032e^{4\sqrt{z}}z^{5/2}+172\,032z^{5/2}+88\,704e^{4\sqrt{z}}z^2-88\,704z^2+55\,440e^{4\sqrt{z}}z^{3/2}+55\,440z^{3/2}+13\,860e^{4\sqrt{z}}z-13\,860z-62\,370e^{4\sqrt{z}}\sqrt{z}-62\,370\sqrt{z}+31\,185e^{4\sqrt{z}}-31\,185\right)\right) $$

07.22.03.a95f.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{1}{4};-z\right)= \frac{1}{445\,536z^{5/2}}\left(64\sqrt{\pi}\left(256z^2+7392z+27\,489\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}+2\left(1024z^4+28\,608z^3+86\,016z^2-27\,720z-31\,185\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(8192z^5+235\,008z^4+838\,656z^3-88\,704z^2+13\,860z-31\,185\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a95g.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{3}{4};z\right)=\frac{1}{3\,341\,520\sqrt{2}\,z^{7/4}}\left(\left(-4z\left(8192z^4-296\,960z^3+1\,693\,920z^2-876\,960z+24\,255\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4096z^4-145\,920z^3+761\,040z^2-110\,880z+72\,765\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(32\,768z^5-1\,179\,648z^4+6\,491\,520z^3-2\,217\,600z^2+291\,060z-218\,295\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a95h.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{3}{4};-z\right)=\frac{1}{3\,341\,520\sqrt{2}\,z^{7/4}}\left(\left(4z\left(8192z^4+296\,960z^3+1\,693\,920z^2+876\,960z+24\,255\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4096z^4+145\,920z^3+761\,040z^2+110\,880z+72\,765\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(32\,768z^5+1\,179\,648z^4+6\,491\,520z^3+2\,217\,600z^2+291\,060z+218\,295\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a95i.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{5}{4};z\right)= $$
$$ \frac{1}{5\,346\,432\,z^{5/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-4096z^3+177\,408z^2-1\,319\,472z+1\,072\,071\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+e^{2\sqrt{z}}\right.\right. $$
$$ \sqrt{2\pi}\left(-4096z^3+177\,408z^2-1\,319\,472z+1\,072\,071\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+ $$
$$ 2\left(-2048z^5+512z^{9/2}+88\,320z^4-21\,696z^{7/2}-643\,944z^3+146\,034z^{5/2}+443\,520z^2-44\,352z^{3/2}-\right. $$
$$ \left.\left.\left.8316z+20\,790\sqrt{z}+e^{4\sqrt{z}}\left(2048z^5+512z^{9/2}-88\,320z^4-21\,696z^{7/2}+643\,944z^3+\right.\right.\right. $$
$$ \left.\left.\left.\left.146\,034z^{5/2}-443\,520z^2-44\,352z^{3/2}+8316z+20\,790\sqrt{z}-10\,395\right)+10\,395\right)\right)\right) $$

07.22.03.a95j.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{5}{4};-z\right)=\frac{1}{1\,336\,608\,z^{5/2}} $$
$$ \left(\sqrt{\pi}\left(4096z^3+177\,408z^2+1\,319\,472z+1\,072\,071\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+2\left(256z^4+10\,848z^3+73\,017z^2+22\,176z+10\,395\right)\right. $$
$$ \left.\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(2048z^5+88\,320z^4+643\,944z^3+443\,520z^2+8316z+10\,395\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a95k.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{7}{4};z\right)=\frac{1}{7\,796\,880\sqrt{2}\,z^{7/4}}\left(\left(4z\left(-4096z^4+207\,616z^3-1\,955\,760z^2+2\,608\,725z+24\,255\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right. $$
$$ 2\sqrt{z}\left(4096z^4-205\,056z^3+1\,832\,880z^2-1\,687\,455z-145\,530\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left(16\,384z^5-826\,368z^4+7\,621\,824z^3-8\,773\,380z^2-873\,180z+218\,295\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a95l.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{7}{4};-z\right)=\frac{1}{7\,796\,880\sqrt{2}\,z^{7/4}}\left(\left(4z\left(4096z^4+207\,616z^3+1\,955\,760z^2+2\,608\,725z-24\,255\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right. $$
$$ 2\sqrt{z}\left(4096z^4+205\,056z^3+1\,832\,880z^2+1\,687\,455z-145\,530\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left(16\,384z^5+826\,368z^4+7\,621\,824z^3+8\,773\,380z^2-873\,180z-218\,295\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a95m.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{9}{4};z\right)=\frac{1}{1\,368\,686\,592\,z^{5/2}} $$
$$ \left(5e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536z^4+3\,784\,704z^3-42\,223\,104z^2+68\,612\,544z+9\,648\,639\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+\right.\right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536z^4+3\,784\,704z^3-42\,223\,104z^2+68\,612\,544z+9\,648\,639\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+ $$
$$ 4\left(-16\,384z^5+4096z^{9/2}+943\,104z^4-232\,704z^{7/2}-10\,385\,088z^3+2\,432\,304z^{5/2}+15\,520\,428z^2-2\,552\,319\right. $$
$$ z^{3/2}+3\,193\,344z-532\,224\sqrt{z}+e^{4\sqrt{z}}\left(16\,384z^5+4096z^{9/2}-943\,104z^4-232\,704z^{7/2}+10\,385\,088z^3+\right. $$
$$ \left.\left.\left.\left.2\,432\,304z^{5/2}-15\,520\,428z^2-2\,552\,319z^{3/2}-3\,193\,344z-532\,224\sqrt{z}+266\,112\right)-266\,112\right)\right)\right) $$

07.22.03.a95n.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{9}{4};-z\right)= \frac{1}{342\,171\,648\,z^{5/2}}\left(5\left(\sqrt{\pi}\left(65\,536\,z^4+3\,784\,704\,z^3+42\,223\,104\,z^2+68\,612\,544\,z-9\,648\,639\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+ 2\left(4096\,z^4+232\,704\,z^3+2\,432\,304\,z^2+2\,552\,319\,z-532\,224\right)\cos\left(2\sqrt{z}\right)\sqrt{z}- 8\left(4096\,z^5+235\,776\,z^4+2\,596\,272\,z^3+3\,880\,107\,z^2-798\,336\,z-66\,528\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a95o.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{11}{4};z\right)= -\frac{1}{160\,392\,960\sqrt{2}\,z^{7/4}}\left(\left(2\,z\left(65\,536\,z^4-4\,268\,032\,z^3+56\,070\,144\,z^2-120\,445\,920\,z-13\,752\,585\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ \sqrt{z}\left(-65\,536\,z^4+4\,227\,072\,z^3-53\,512\,704\,z^2+91\,808\,640\,z+34\,272\,315\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ 2\left(-65\,536\,z^5+4\,251\,648\,z^4-55\,028\,736\,z^3+107\,974\,944\,z^2+28\,596\,645\,z+5\,239\,080\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a95p.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{11}{4};-z\right)= \frac{1}{160\,392\,960\sqrt{2}\,z^{7/4}}\left(\left(2\,z\left(65\,536\,z^4+4\,268\,032\,z^3+56\,070\,144\,z^2+120\,445\,920\,z-13\,752\,585\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- \sqrt{z}\left(65\,536\,z^4+4\,227\,072\,z^3+53\,512\,704\,z^2+91\,808\,640\,z-34\,272\,315\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ 2\left(65\,536\,z^5+4\,251\,648\,z^4+55\,028\,736\,z^3+107\,974\,944\,z^2-28\,596\,645\,z+5\,239\,080\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a95q.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{13}{4};z\right)= \frac{1}{9\,732\,882\,432\,z^{5/2}}\left(e^{-2\sqrt{z}}\left(4\left(-262\,144\,z^5+65\,536\,z^{9/2}+18\,874\,368\,z^4-4\,669\,440\,z^{7/2}-278\,046\,720\,z^3+ 66\,178\,560\,z^{5/2}+640\,442\,880\,z^2-120\,859\,200\,z^{3/2}+246\,084\,300\,z-70\,904\,295\sqrt{z}+ e^{4\sqrt{z}}\left(262\,144\,z^5+65\,536\,z^{9/2}-18\,874\,368\,z^4-4\,669\,440\,z^{7/2}+278\,046\,720\,z^3+66\,178\,560\,z^{5/2}- 640\,442\,880\,z^2-120\,859\,200\,z^{3/2}-246\,084\,300\,z-70\,904\,295\sqrt{z}-85\,155\,840\right)+85\,155\,840\right)+ e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(-1\,048\,576\,z^5+75\,694\,080\,z^4-1\,125\,949\,440\,z^3+2\,744\,501\,760\,z^2+771\,891\,120\,z+241\,215\,975\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z} \left(-1\,048\,576\,z^5+75\,694\,080\,z^4-1\,125\,949\,440\,z^3+2\,744\,501\,760\,z^2+771\,891\,120\,z+241\,215\,975\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a95r.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{7}{2}, \frac{13}{4}; -z\right) = \frac{1}{2\,433\,220\,608\, z^{5/2}} $$
$$ \left(\sqrt{\pi}\ \sqrt[4]{z}\ \left(1\,048\,576\, z^5 + 75\,694\,080\, z^4 + 1\,125\,949\,440\, z^3 + 2\,744\,501\,760\, z^2 - 771\,891\,120\, z + 241\,215\,975\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$
$$ 2\left(4\left(65\,536\, z^5 + 4\,718\,592\, z^4 + 69\,511\,680\, z^3 + 160\,110\,720\, z^2 - 61\,521\,075\, z + 21\,288\,960\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left. \sqrt{z}\ \left(65\,536\, z^4 + 4\,669\,440\, z^3 + 66\,178\,560\, z^2 + 120\,859\,200\, z - 70\,904\,295\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a95s.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{7}{2}, \frac{15}{4}; z\right) = -\frac{1}{5\,132\,574\,720\sqrt{2}\ z^{9/4}} $$
$$ \left(\left(2\sqrt{z}\ \left(1\,048\,576\, z^5 - 83\,427\,328\, z^4 + 1\,406\,164\,992\, z^3 - 4\,164\,604\,416\, z^2 - 981\,454\,320\, z - 337\,702\,365\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. \right. $$
$$ \left(-1\,048\,576\, z^5 + 82\,771\,968\, z^4 - 1\,355\,784\,192\, z^3 + 3\,413\,684\,736\, z^2 + 2\,029\,270\,320\, z + 1\,013\,107\,095\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\ \left(-1\,048\,576\, z^5 + 83\,165\,184\, z^4 - 1\,385\,717\,760\, z^3 + \right. $$
$$ \left.\left. \left. 3\,843\,721\,728\, z^2 + 1\,607\,349\,744\, z + 831\,049\,065\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a95t.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{7}{2}, \frac{15}{4}; -z\right) = \frac{1}{5\,132\,574\,720\sqrt{2}\ z^{9/4}} $$
$$ \left(\left(2\sqrt{z}\ \left(1\,048\,576\, z^5 + 83\,427\,328\, z^4 + 1\,406\,164\,992\, z^3 + 4\,164\,604\,416\, z^2 - 981\,454\,320\, z + 337\,702\,365\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ \left(1\,048\,576\, z^5 + 82\,771\,968\, z^4 + 1\,355\,784\,192\, z^3 + 3\,413\,684\,736\, z^2 - 2\,029\,270\,320\, z + 1\,013\,107\,095\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\ \left(1\,048\,576\, z^5 + 83\,165\,184\, z^4 + 1\,385\,717\,760\, z^3 + \right. $$
$$ \left.\left. \left. 3\,843\,721\,728\, z^2 - 1\,607\,349\,744\, z + 831\,049\,065\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a95u.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{17}{4};z\right) = \frac{1}{287\,494\,373\,376\,z^{13/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-4\,194\,304\,z^{11/2}+1\,048\,576\,z^5+362\,545\,152\,z^{9/2}-89\,849\,856\,z^4-6\,689\,292\,288\,z^{7/2}+1\,607\,639\,040\,z^3+20\,827\,699\,200\,z^{5/2}-4\,206\,343\,680\,z^2+11\,400\,903\,360\,z^{3/2}-3\,672\,511\,920\,z+8\,005\,355\,820\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-362\,545\,152\,z^{9/2}-89\,849\,856\,z^4+6\,689\,292\,288\,z^{7/2}+1\,607\,639\,040\,z^3-20\,827\,699\,200\,z^{5/2}-4\,206\,343\,680\,z^2-11\,400\,903\,360\,z^{3/2}-3\,672\,511\,920\,z-8\,005\,355\,820\sqrt{z}-2\,170\,943\,775\right)-2\,170\,943\,775\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-1\,453\,326\,336\,z^5+27\,022\,786\,560\,z^4-87\,824\,056\,320\,z^3-37\,050\,773\,760\,z^2-23\,156\,733\,600\,z-2\,170\,943\,775\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-1\,453\,326\,336\,z^5+27\,022\,786\,560\,z^4-87\,824\,056\,320\,z^3-37\,050\,773\,760\,z^2-23\,156\,733\,600\,z-2\,170\,943\,775\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a95v.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{17}{4};-z\right) = \frac{1}{71\,873\,593\,344\,z^{13/4}}\left(\sqrt{\pi}\left(16\,777\,216\,z^6+1\,453\,326\,336\,z^5+27\,022\,786\,560\,z^4+87\,824\,056\,320\,z^3-37\,050\,773\,760\,z^2+23\,156\,733\,600\,z-2\,170\,943\,775\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(1\,048\,576\,z^5+89\,849\,856\,z^4+1\,607\,639\,040\,z^3+4\,206\,343\,680\,z^2-3\,672\,511\,920\,z+2\,170\,943\,775\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(1\,048\,576\,z^5+90\,636\,288\,z^4+1\,672\,323\,072\,z^3+5\,206\,924\,800\,z^2-2\,850\,225\,840\,z+2\,001\,338\,955\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a95w.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{19}{4};z\right) = -\left(\left(2\sqrt{z}\left(16\,777\,216\,z^6-1\,577\,058\,304\,z^5+32\,444\,841\,984\,z^4-122\,475\,085\,824\,z^3-44\,606\,225\,664\,z^2-30\,875\,644\,800\,z+3\,714\,726\,015\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-16\,777\,216\,z^6+1\,566\,572\,544\,z^5-31\,487\,361\,024\,z^4+104\,650\,850\,304\,z^3+82\,383\,485\,184\,z^2+75\,645\,329\,760\,z-11\,144\,178\,045\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-16\,777\,216\,z^6+1\,572\,864\,000\,z^5-32\,057\,131\,008\,z^4+114\,949\,029\,888\,z^3+65\,141\,556\,480\,z^2+54\,014\,216\,256\,z+11\,144\,178\,045\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(142\,343\,405\,568\sqrt{2}\,z^{13/4}\right) $$

07.22.03.a95x.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{19}{4};-z\right)=$$

$$\left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,577\,058\,304\,z^5+32\,444\,841\,984\,z^4+122\,475\,085\,824\,z^3-44\,606\,225\,664\,z^2+\right.\right.\right.$$

$$\left.30\,875\,644\,800\,z+3\,714\,726\,015\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,777\,216\,z^6+1\,566\,572\,544\,z^5+31\,487\,361\,024\,z^4+\right.$$

$$\left.104\,650\,850\,304\,z^3-82\,383\,485\,184\,z^2+75\,645\,329\,760\,z+11\,144\,178\,045\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,572\,864\,000\,z^5+32\,057\,131\,008\,z^4+114\,949\,029\,888\,z^3-65\,141\,556\,480\,z^2+\right.$$

$$\left.\left.\left.54\,014\,216\,256\,z-11\,144\,178\,045\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(142\,343\,405\,568\,\sqrt{2}\;z^{13/4}\right)$$

07.22.03.a95y.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{21}{4};z\right)=\frac{1}{7\,576\,322\,310\,144\,z^{17/4}}$$

$$\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-67\,108\,864\,z^{13/2}+16\,777\,216\,z^6+6\,769\,606\,656\,z^{11/2}-1\,679\,818\,752\,z^5-150\,083\,469\,312\,z^{9/2}+\right.\right.\right.$$

$$36\,304\,257\,024\,z^4+589\,005\,914\,112\,z^{7/2}-123\,930\,132\,480\,z^3+414\,144\,783\,360\,z^{5/2}-138\,003\,022\,080\,z^2+$$

$$425\,008\,805\,760\,z^{3/2}-152\,834\,441\,760\,z+112\,889\,076\,300\,\sqrt{z}+e^{4\sqrt{z}}\,\left(67\,108\,864\,z^{13/2}+\right.$$

$$16\,777\,216\,z^6-6\,769\,606\,656\,z^{11/2}-1\,679\,818\,752\,z^5+150\,083\,469\,312\,z^{9/2}+36\,304\,257\,024\,z^4-$$

$$589\,005\,914\,112\,z^{7/2}-123\,930\,132\,480\,z^3-414\,144\,783\,360\,z^{5/2}-138\,003\,022\,080\,z^2-$$

$$\left.425\,008\,805\,760\,z^{3/2}-152\,834\,441\,760\,z-112\,889\,076\,300\,\sqrt{z}+84\,666\,807\,225\right)+84\,666\,807\,225\Big)-$$

$$e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(268\,435\,456\,z^7-27\,128\,758\,272\,z^6+605\,310\,418\,944\,z^5-2\,459\,073\,576\,960\,z^4-\right.$$

$$\left.1\,383\,228\,887\,040\,z^3-1\,296\,777\,081\,600\,z^2-243\,145\,702\,800\,z+84\,666\,807\,225\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-$$

$$e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(268\,435\,456\,z^7-27\,128\,758\,272\,z^6+605\,310\,418\,944\,z^5-2\,459\,073\,576\,960\,z^4-\right.$$

$$\left.\left.\left.1\,383\,228\,887\,040\,z^3-1\,296\,777\,081\,600\,z^2-243\,145\,702\,800\,z+84\,666\,807\,225\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a95z.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{21}{4};-z\right)=$$

$$\frac{1}{1\,894\,080\,577\,536\,z^{17/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+27\,128\,758\,272\,z^6+605\,310\,418\,944\,z^5+2\,459\,073\,576\,960\,z^4-\right.\right.$$

$$\left.1\,383\,228\,887\,040\,z^3+1\,296\,777\,081\,600\,z^2-243\,145\,702\,800\,z-84\,666\,807\,225\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$

$$2\sqrt[4]{z}\,\left(\left(16\,777\,216\,z^6+1\,679\,818\,752\,z^5+36\,304\,257\,024\,z^4+123\,930\,132\,480\,z^3-138\,003\,022\,080\,z^2+\right.\right.$$

$$\left.152\,834\,441\,760\,z+84\,666\,807\,225\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\,\left(16\,777\,216\,z^6+1\,692\,401\,664\,z^5+37\,520\,867\,328\right.$$

$$\left.\left.\left.z^4+147\,251\,478\,528\,z^3-103\,536\,195\,840\,z^2+106\,252\,201\,440\,z-28\,222\,269\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a960.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{23}{4};z\right)=$$
$$-\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-29\,108\,469\,760\,z^6+707\,081\,011\,200\,z^5-3\,243\,993\,661\,440\,z^4-1\,610\,538\,209\,280\,z^3-\right.\right.\right.$$
$$\left.1\,667\,284\,819\,200\,z^2+127\,362\,034\,800\,z-278\,604\,451\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(-268\,435\,456\,z^7+28\,940\,697\,600\,z^6-689\,339\,105\,280\,z^5+2\,847\,838\,371\,840\,z^4+2\,747\,084\,820\,480\,z^3+\right.$$
$$3\,519\,823\,507\,200\,z^2+891\,534\,243\,600\,z+835\,813\,353\,375\Big)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-268\,435\,456\,z^7+$$
$$29\,041\,360\,896\,z^6-699\,908\,751\,360\,z^5+3\,078\,099\,763\,200\,z^4+2\,193\,912\,483\,840\,z^3+2\,489\,666\,699\,520\,z^2+$$
$$\left.\left.\left.891\,534\,243\,600\,z-835\,813\,353\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(68\,324\,834\,672\,640\,\sqrt{2}\;z^{17/4}\right)$$

07.22.03.a961.01

$${}_1F_2\left(-\frac{11}{4};\frac{7}{2},\frac{23}{4};-z\right)=$$
$$\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+29\,108\,469\,760\,z^6+707\,081\,011\,200\,z^5+3\,243\,993\,661\,440\,z^4-1\,610\,538\,209\,280\,z^3+\right.\right.\right.$$
$$\left.1\,667\,284\,819\,200\,z^2+127\,362\,034\,800\,z+278\,604\,451\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(268\,435\,456\,z^7+28\,940\,697\,600\,z^6+689\,339\,105\,280\,z^5+2\,847\,838\,371\,840\,z^4-2\,747\,084\,820\,480\,z^3+\right.$$
$$3\,519\,823\,507\,200\,z^2-891\,534\,243\,600\,z+835\,813\,353\,375\Big)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+29\,041\,360\,896\,z^6+699\,908\,751\,360\,z^5+3\,078\,099\,763\,200\,z^4-2\,193\,912\,483\,840\,z^3+\right.$$
$$\left.\left.\left.2\,489\,666\,699\,520\,z^2-891\,534\,243\,600\,z-835\,813\,353\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(68\,324\,834\,672\,640\,\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{11}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.a962.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{23}{4};z\right)=$$
$$-\frac{1}{55\,936\,z^{7/2}}\left(7\left(\left(512\,z^3+97\,440\,z^2+918\,720\,z+531\,135\right)\sinh\left(2\sqrt{z}\right)-174\sqrt{z}\,\left(64\,z^2+2420\,z+6105\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a963.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{23}{4};-z\right)=$$
$$-\frac{1}{55\,936\,z^{7/2}}\left(7\left(174\sqrt{z}\,\left(64\,z^2-2420\,z+6105\right)\cos\left(2\sqrt{z}\right)+\left(512\,z^3-97\,440\,z^2+918\,720\,z-531\,135\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a964.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{9}{2}, -\frac{21}{4}; z\right) = \frac{1}{44\,308\,555\,200\sqrt{2}\, z^{11/4}} $$
$$ \left(\left(4z\left(4\,194\,304 z^5 + 251\,658\,240 z^4 + 5\,175\,541\,760 z^3 + 29\,611\,008\,000 z^2 + 1\,138\,538\,310\,525\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z}\left(2\,097\,152 z^5 + 127\,139\,840 z^4 + 2\,669\,936\,640 z^3 + 21\,804\,552\,000 z^2 + 650\,593\,320\,300 z + 3\,415\,614\,931\,575\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-16\,777\,216 z^6 - 1\,010\,827\,264 z^5 - 20\,960\,378\,880 z^4 - 124\,043\,673\,600 z^3 + \right. $$
$$ \left.\left. 335\,790\,100\,800 z^2 + 3\,903\,559\,921\,800 z + 10\,246\,844\,794\,725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a965.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{1}{44\,308\,555\,200\sqrt{2}\, z^{11/4}} $$
$$ \left(\left(-4z\left(4\,194\,304 z^5 - 251\,658\,240 z^4 + 5\,175\,541\,760 z^3 - 29\,611\,008\,000 z^2 - 1\,138\,538\,310\,525\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(2\,097\,152 z^5 - 127\,139\,840 z^4 + 2\,669\,936\,640 z^3 - 21\,804\,552\,000 z^2 + 650\,593\,320\,300 z - 3\,415\,614\,931\,575\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-16\,777\,216 z^6 + 1\,010\,827\,264 z^5 - 20\,960\,378\,880 z^4 + 124\,043\,673\,600 z^3 + \right. $$
$$ \left.\left. 335\,790\,100\,800 z^2 - 3\,903\,559\,921\,800 z + 10\,246\,844\,794\,725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a966.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{9}{2}, -\frac{19}{4}; z\right) = \frac{7\left(2\sqrt{z}\left(64 z^2 + 5220 z + 14\,355\right)\cosh\left(2\sqrt{z}\right) - 15\left(128 z^2 + 1624 z + 957\right)\sinh\left(2\sqrt{z}\right)\right)}{2432 z^{7/2}} $$

07.22.03.a967.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{9}{2}, -\frac{19}{4}; -z\right) = -\frac{7\left(2\sqrt{z}\left(64 z^2 - 5220 z + 14\,355\right)\cos\left(2\sqrt{z}\right) - 15\left(128 z^2 - 1624 z + 957\right)\sin\left(2\sqrt{z}\right)\right)}{2432 z^{7/2}} $$

07.22.03.a968.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{9}{2}, -\frac{17}{4}; z\right) = \frac{1}{10\,549\,656\,000\sqrt{2}\, z^{11/4}} $$
$$ \left(\left(4z\left(2\,097\,152 z^5 + 89\,784\,320 z^4 + 1\,434\,337\,280 z^3 + 6\,681\,062\,400 z^2 - 5\,996\,251\,800 z + 162\,648\,330\,075\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z}\left(1\,048\,576 z^5 + 45\,547\,520 z^4 + 746\,987\,520 z^3 + 3\,876\,364\,800 z^2 + 74\,953\,147\,500 z + 487\,944\,990\,225\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-8\,388\,608 z^6 - 361\,234\,432 z^5 - 5\,830\,410\,240 z^4 - 28\,314\,316\,800 z^3 + \right. $$
$$ \left.\left. 39\,975\,012\,000 z^2 + 503\,685\,151\,200 z + 1\,463\,834\,970\,675\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a969.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{17}{4};-z\right)=\frac{1}{10\,549\,656\,000\sqrt{2}\,z^{11/4}}$$
$$\left(\left(4z\left(-2\,097\,152z^5+89\,784\,320z^4-1\,434\,337\,280z^3+6\,681\,062\,400z^2+5\,996\,251\,800z+162\,648\,330\,075\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(1\,048\,576z^5-45\,547\,520z^4+746\,987\,520z^3-3\,876\,364\,800z^2+74\,953\,147\,500z-487\,944\,990\,225\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-8\,388\,608z^6+361\,234\,432z^5-5\,830\,410\,240z^4+28\,314\,316\,800z^3+\right.$$
$$\left.\left.\left.39\,975\,012\,000z^2-503\,685\,151\,200z+1\,463\,834\,970\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a96a.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{15}{4};z\right)=-\frac{7\left(\left(32z^2+720z+435\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,(28z+87)\cosh\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.a96b.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{15}{4};-z\right)=\frac{7\left(10\sqrt{z}\,(28z-87)\cos\left(2\sqrt{z}\right)+\left(32z^2-720z+435\right)\sin\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.a96c.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{13}{4};z\right)=\frac{1}{1\,861\,704\,000\sqrt{2}\,z^{11/4}}$$
$$\left(\left(4z\left(1\,048\,576z^5+26\,869\,760z^4+306\,032\,640z^3+1\,099\,699\,200z^2-1\,332\,500\,400z+15\,740\,160\,975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(524\,288z^5+13\,762\,560z^4+162\,293\,760z^3+674\,150\,400z^2+4\,996\,876\,500z+47\,220\,482\,925\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-4\,194\,304z^6-108\,527\,616z^5-1\,252\,638\,720z^4-4\,754\,534\,400z^3+\right.$$
$$\left.\left.\left.3\,476\,088\,000z^2+41\,973\,762\,600z+141\,661\,448\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a96d.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{13}{4};-z\right)=\frac{1}{1\,861\,704\,000\sqrt{2}\,z^{11/4}}$$
$$\left(\left(4z\left(-1\,048\,576z^5+26\,869\,760z^4-306\,032\,640z^3+1\,099\,699\,200z^2+1\,332\,500\,400z+15\,740\,160\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(524\,288z^5-13\,762\,560z^4+162\,293\,760z^3-674\,150\,400z^2+4\,996\,876\,500z-47\,220\,482\,925\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-4\,194\,304z^6+108\,527\,616z^5-1\,252\,638\,720z^4+4\,754\,534\,400z^3+\right.$$
$$\left.\left.\left.3\,476\,088\,000z^2-41\,973\,762\,600z+141\,661\,448\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a96e.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{11}{4};z\right)=\frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right)-3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.a96f.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{11}{4};-z\right)=\frac{105\left(2\sqrt{z}\ (4z-15)\cos\left(2\sqrt{z}\right)+3\,(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.a96g.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{9}{4};z\right)=\frac{1}{143\,208\,000\sqrt{2}\ z^{11/4}}$$
$$\left(\left(4z\left(524\,288z^5+4\,423\,680z^4+30\,238\,720z^3+76\,233\,600z^2-86\,902\,200z+582\,968\,925\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\ \left(262\,144z^5+2\,375\,680z^4+16\,942\,080z^3+54\,331\,200z^2+72\,418\,500z+1\,748\,906\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-2\,097\,152z^6-18\,219\,008z^5-126\,197\,760z^4-345\,945\,600z^3+152\,460\,000z^2+1\,216\,630\,800z+5\,246\,720\,325\right)$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a96h.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{9}{4};-z\right)=\frac{1}{143\,208\,000\sqrt{2}\ z^{11/4}}$$
$$\left(\left(-4z\left(524\,288z^5-4\,423\,680z^4+30\,238\,720z^3-76\,233\,600z^2-86\,902\,200z-582\,968\,925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\ \left(262\,144z^5-2\,375\,680z^4+16\,942\,080z^3-54\,331\,200z^2+72\,418\,500z-1\,748\,906\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-2\,097\,152z^6+18\,219\,008z^5-126\,197\,760z^4+345\,945\,600z^3+152\,460\,000z^2-1\,216\,630\,800z+5\,246\,720\,325\right)$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a96i.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{267\,321\,600\,z^{7/2}}\left(e^{-2\sqrt{z}}\left(-2\,097\,152\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ \mathrm{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{25/4}-2\,097\,152\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ \mathrm{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{25/4}+\right.\right.$$
$$2\,097\,152\,e^{4\sqrt{z}}\ z^6-2\,097\,152z^6+524\,288\,e^{4\sqrt{z}}\ z^{11/2}+524\,288z^{11/2}+393\,216\,e^{4\sqrt{z}}\ z^5-$$
$$393\,216z^5+491\,520\,e^{4\sqrt{z}}\ z^{9/2}+491\,520z^{9/2}+860\,160\,e^{4\sqrt{z}}\ z^4-860\,160z^4+1\,935\,360\,e^{4\sqrt{z}}\ z^{7/2}+$$
$$1\,935\,360z^{7/2}+5\,322\,240\,e^{4\sqrt{z}}\ z^3-5\,322\,240z^3+17\,297\,280\,e^{4\sqrt{z}}\ z^{5/2}+17\,297\,280z^{5/2}+$$
$$64\,864\,800\,e^{4\sqrt{z}}\ z^2-64\,864\,800z^2+275\,675\,400\,e^{4\sqrt{z}}\ z^{3/2}+275\,675\,400z^{3/2}-1\,102\,701\,600\,e^{4\sqrt{z}}\ z+$$
$$\left.\left.1\,102\,701\,600z+1\,447\,295\,850\,e^{4\sqrt{z}}\ \sqrt{z}\ +1\,447\,295\,850\sqrt{z}\ -723\,647\,925\,e^{4\sqrt{z}}\ +723\,647\,925\right)\right)$$

07.22.03.a96j.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{7}{4};-z\right)=\frac{1}{133\,660\,800\,z^{7/2}}\left(4\,194\,304\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{25/4}+\right.$$
$$2\left(262\,144z^5-245\,760z^4+967\,680z^3-8\,648\,640z^2+137\,837\,700z-723\,647\,925\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\ +$$
$$\left.\left(-2\,097\,152z^6+393\,216z^5-860\,160z^4+5\,322\,240z^3-64\,864\,800z^2-1\,102\,701\,600z+723\,647\,925\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a96k.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{15\,912\,000\sqrt{2}\,z^{11/4}}\left(\left(-4z\left(262\,144z^5-2\,293\,760z^4-4\,874\,240z^3-7\,238\,400z^2+6\,098\,400z-25\,346\,475\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(131\,072z^5-1\,064\,960z^4-2\,933\,760z^3-5\,544\,000z^2+3\,811\,500z-76\,039\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(1\,048\,576z^6-8\,912\,896z^5-21\,381\,120z^4-35\,481\,600z^3+12\,196\,800z^2+32\,016\,600z+228\,118\,275\right)$$
$$\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a96l.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{15\,912\,000\sqrt{2}\,z^{11/4}}\left(\left(4z\left(262\,144z^5+2\,293\,760z^4-4\,874\,240z^3+7\,238\,400z^2+6\,098\,400z+25\,346\,475\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(131\,072z^5+1\,064\,960z^4-2\,933\,760z^3+5\,544\,000z^2+3\,811\,500z+76\,039\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(1\,048\,576z^6+8\,912\,896z^5-21\,381\,120z^4+35\,481\,600z^3+12\,196\,800z^2-32\,016\,600z+228\,118\,275\right)$$
$$\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a96m.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{38\,188\,800z^{7/2}}\left(e^{-2\sqrt{z}}\left(-524\,288e^{4\sqrt{z}}z^6+524\,288z^6-131\,072e^{4\sqrt{z}}z^{11/2}-131\,072z^{11/2}+32\,768e^{2\sqrt{z}}\right.\right.$$
$$\sqrt{2\pi}\,(16z-275)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+32\,768e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-275)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+$$
$$8\,912\,896e^{4\sqrt{z}}z^5-8\,912\,896z^5+2\,129\,920e^{4\sqrt{z}}z^{9/2}+2\,129\,920z^{9/2}+1\,474\,560e^{4\sqrt{z}}z^4-$$
$$1\,474\,560z^4+1\,628\,160e^{4\sqrt{z}}z^{7/2}+1\,628\,160z^{7/2}+2\,365\,440e^{4\sqrt{z}}z^3-2\,365\,440z^3+3\,991\,680e^{4\sqrt{z}}z^{5/2}+$$
$$3\,991\,680z^{5/2}+6\,652\,800e^{4\sqrt{z}}z^2-6\,652\,800z^2+5\,405\,400e^{4\sqrt{z}}z^{3/2}+5\,405\,400z^{3/2}-$$
$$\left.48\,648\,600e^{4\sqrt{z}}z+48\,648\,600z+68\,918\,850e^{4\sqrt{z}}\sqrt{z}+68\,918\,850\sqrt{z}-34\,459\,425e^{4\sqrt{z}}+34\,459\,425\right)\Bigg)$$

07.22.03.a96n.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{3}{4};-z\right)=\frac{1}{19\,094\,400z^{7/2}}\left(-65\,536\sqrt{\pi}\,(16z+275)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4}-\right.$$
$$2\left(65\,536z^5+1\,064\,960z^4-814\,080z^3+1\,995\,840z^2-2\,702\,700z+34\,459\,425\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+$$
$$\left.\left(524\,288z^6+8\,912\,896z^5-1\,474\,560z^4+2\,365\,440z^3-6\,652\,800z^2-48\,648\,600z+34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a96o.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{9\,547\,200\sqrt{2}\,z^{11/4}}\left(\left(4z\left(131\,072z^5-3\,399\,680z^4+8\,263\,680z^3+3\,456\,000z^2-1\,524\,600z+4\,002\,075\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(65\,536z^5-1\,658\,880z^4+3\,179\,520z^3+2\,217\,600z^2-2\,286\,900z+12\,006\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-524\,288z^6+13\,467\,648z^5-29\,859\,840z^4+17\,740\,800z^3+4\,989\,600z^2+36\,018\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a96p.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},-\frac{1}{4};-z\right)=$$
$$\frac{1}{9\,547\,200\sqrt{2}\,z^{11/4}}\left(\left(-4z\left(131\,072z^5+3\,399\,680z^4+8\,263\,680z^3-3\,456\,000z^2-1\,524\,600z-4\,002\,075\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(65\,536z^5+1\,658\,880z^4+3\,179\,520z^3-2\,217\,600z^2-2\,286\,900z-12\,006\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-524\,288z^6-13\,467\,648z^5-29\,859\,840z^4+17\,740\,800z^3+4\,989\,600z^2+36\,018\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a96q.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{12\,729\,600z^{7/2}}\left(e^{-2\sqrt{z}}\left(65\,536e^{4\sqrt{z}}z^6-65\,536z^6+16\,384e^{4\sqrt{z}}z^{11/2}+16\,384z^{11/2}-2\,240\,512e^{4\sqrt{z}}z^5+2\,240\,512z^5-\right.\right.$$
$$547\,840e^{4\sqrt{z}}z^{9/2}-547\,840z^{9/2}-256e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-8800z+40\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}-$$
$$256e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-8800z+40\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+9\,953\,280e^{4\sqrt{z}}z^4-9\,953\,280z^4+$$
$$2\,119\,680e^{4\sqrt{z}}z^{7/2}+2\,119\,680z^{7/2}+1\,182\,720e^{4\sqrt{z}}z^3-1\,182\,720z^3+887\,040e^{4\sqrt{z}}z^{5/2}+$$
$$887\,040z^{5/2}+554\,400e^{4\sqrt{z}}z^2-554\,400z^2-415\,800e^{4\sqrt{z}}z^{3/2}-415\,800z^{3/2}-2\,494\,800e^{4\sqrt{z}}z+$$
$$\left.\left.2\,494\,800z+4\,054\,050e^{4\sqrt{z}}\sqrt{z}+4\,054\,050\sqrt{z}-2\,027\,025e^{4\sqrt{z}}+2\,027\,025\right)\right)$$

07.22.03.a96r.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},\frac{1}{4};-z\right)=\frac{1}{6\,364\,800z^{7/2}}\left(512\sqrt{\pi}\left(256z^2+8800z+40\,425\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}+\right.$$
$$2\left(8192z^5+273\,920z^4+1\,059\,840z^3-443\,520z^2-207\,900z-2\,027\,025\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-$$
$$\left.\left(65\,536z^6+2\,240\,512z^5+9\,953\,280z^4-1\,182\,720z^3+554\,400z^2+2\,494\,800z-2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a96s.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{9}{2}, \frac{3}{4}; z\right) = \frac{1}{47\,736\,000\sqrt{2}\, z^{11/4}}\left(\left(-4z\left(65\,536z^5 - 2\,826\,240z^4 + 19\,831\,040z^3 - 12\,844\,800z^2 + 831\,600z - 1\,334\,025\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,768z^5 - 1\,392\,640z^4 + 9\,087\,360z^3 - 2\,217\,600z^2 + 1\,732\,500z - 4\,002\,075\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(262\,144z^6 - 11\,239\,424z^5 + 76\,600\,320z^4 - 35\,481\,600z^3 + 5\,544\,000z^2 - 2\,910\,600z + 12\,006\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a96t.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{9}{2}, \frac{3}{4}; -z\right) = \frac{1}{47\,736\,000\sqrt{2}\, z^{11/4}}\left(\left(4z\left(65\,536z^5 + 2\,826\,240z^4 + 19\,831\,040z^3 + 12\,844\,800z^2 + 831\,600z + 1\,334\,025\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(32\,768z^5 + 1\,392\,640z^4 + 9\,087\,360z^3 + 2\,217\,600z^2 + 1\,732\,500z + 4\,002\,075\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(262\,144z^6 + 11\,239\,424z^5 + 76\,600\,320z^4 + 35\,481\,600z^3 + 5\,544\,000z^2 + 2\,910\,600z + 12\,006\,225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a96u.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{9}{2}, \frac{5}{4}; z\right) = \frac{1}{38\,188\,800 z^{7/2}}\left(e^{-2\sqrt{z}}\left(16\,384 e^{4\sqrt{z}} z^6 - 16\,384z^6 + 4096 e^{4\sqrt{z}} z^{11/2} + 4096 z^{11/2} - 841\,728 e^{4\sqrt{z}} z^5 + 841\,728z^5 - 207\,360 e^{4\sqrt{z}} z^{9/2} - 207\,360 z^{9/2} + 7\,609\,920 e^{4\sqrt{z}} z^4 - 7\,609\,920z^4 + 1\,757\,520 e^{4\sqrt{z}} z^{7/2} + 1\,757\,520 z^{7/2} + 4 e^{2\sqrt{z}}\sqrt{2\pi}\left(-4096z^3 + 211\,200z^2 - 1\,940\,400z + 2\,061\,675\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} + 4 e^{2\sqrt{z}}\sqrt{2\pi}\left(-4096z^3 + 211\,200z^2 - 1\,940\,400z + 2\,061\,675\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} - 7\,096\,320 e^{4\sqrt{z}} z^3 + 7\,096\,320 z^3 - 887\,040 e^{4\sqrt{z}} z^{5/2} - 887\,040 z^{5/2} + 415\,800 e^{4\sqrt{z}} z^{3/2} + 415\,800 z^{3/2} + 415\,800 e^{4\sqrt{z}} z - 415\,800z - 935\,550 e^{4\sqrt{z}}\sqrt{z} - 935\,550\sqrt{z} + 467\,775 e^{4\sqrt{z}} - 467\,775\right)\right) $$

07.22.03.a96v.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{9}{2}, \frac{5}{4}; -z\right) = \frac{1}{19\,094\,400 z^{7/2}}\left(8\sqrt{\pi}\left(4096z^3 + 211\,200z^2 + 1\,940\,400z + 2\,061\,675\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{13/4} + 2\left(2048z^5 + 103\,680z^4 + 878\,760z^3 + 443\,520z^2 + 207\,900z + 467\,775\right)\cos\left(2\sqrt{z}\right)\sqrt{z} - \left(16\,384z^6 + 841\,728z^5 + 7\,609\,920z^4 + 7\,096\,320z^3 - 415\,800z + 467\,775\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a96w.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{111\,384\,000\sqrt{2}\,z^{11/4}}\left(\left(-4z\left(32\,768z^5-1\,976\,320z^4+22\,939\,520z^3-39\,257\,400z^2-970\,200z+848\,925\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(16\,384z^5-977\,920z^4+10\,879\,680z^3-13\,929\,300z^2-2\,425\,500z+2\,546\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(131\,072z^6-7\,872\,512z^5+89\,832\,960z^4-136\,936\,800z^3-19\,404\,000z^2+5\,821\,200z-7\,640\,325\right)$$
$$\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a96x.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},\frac{7}{4};-z\right)=$$
$$\frac{1}{111\,384\,000\sqrt{2}\,z^{11/4}}\left(\left(4z\left(32\,768z^5+1\,976\,320z^4+22\,939\,520z^3+39\,257\,400z^2-970\,200z-848\,925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(16\,384z^5+977\,920z^4+10\,879\,680z^3+13\,929\,300z^2-2\,425\,500z-2\,546\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(131\,072z^6+7\,872\,512z^5+89\,832\,960z^4+136\,936\,800z^3-19\,404\,000z^2-5\,821\,200z-7\,640\,325\right)$$
$$\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a96y.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},\frac{9}{4};z\right)=\frac{1}{488\,816\,640\,z^{7/2}}$$
$$\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536z^4+4\,505\,600z^3-62\,092\,800z^2+131\,947\,200z+26\,801\,775\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+\right.\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536z^4+4\,505\,600z^3-62\,092\,800z^2+131\,947\,200z+26\,801\,775\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+$$
$$4\left(-16\,384z^6+4096z^{11/2}+1\,123\,328z^5-277\,760z^{9/2}-15\,318\,720z^4+3\,631\,920z^{7/2}+\right.$$
$$30\,496\,620z^3-5\,512\,815z^{5/2}+8\,870\,400z^2-2\,217\,600z^{3/2}+1\,663\,200\sqrt{z}+$$
$$\left.\left.e^{4\sqrt{z}}\left(16\,384z^6+4096z^{11/2}-1\,123\,328z^5-277\,760z^{9/2}+15\,318\,720z^4+3\,631\,920z^{7/2}-30\,496\,620z^3-\right.\right.\right.$$
$$\left.\left.\left.5\,512\,815z^{5/2}-8\,870\,400z^2-2\,217\,600z^{3/2}+1\,663\,200\sqrt{z}-831\,600\right)+831\,600\right)\right)\Big)$$

07.22.03.a96z.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{122\,204\,160\,z^{7/2}}\left(\sqrt{\pi}\left(65\,536z^4+4\,505\,600z^3+62\,092\,800z^2+131\,947\,200z-26\,801\,775\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+\right.$$
$$2\left(\sqrt{z}\left(4096z^5+277\,760z^4+3\,631\,920z^3+5\,512\,815z^2-2\,217\,600z-1\,663\,200\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.4\left(4096z^6+280\,832z^5+3\,829\,680z^4+7\,624\,155z^3-2\,217\,600z^2-207\,900\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a970.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{9}{2},\frac{11}{4};z\right)=\frac{1}{286\,416\,000\sqrt{2}\,z^{11/4}}\left(\left(2z\left(-65\,536z^5+5\,079\,040z^4-82\,275\,840z^3+228\,268\,800z^2+44\,126\,775z+4\,365\,900\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(65\,536z^5-5\,038\,080z^4+79\,211\,520z^3-184\,615\,200z^2-97\,453\,125z-26\,195\,400\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(65\,536z^6-5\,062\,656z^5+81\,031\,680z^4-209\,563\,200z^3-77\,182\,875z^2-26\,195\,400z+9\,823\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a971.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{9}{2},\frac{11}{4};-z\right)=\frac{1}{286\,416\,000\sqrt{2}\,z^{11/4}}\left(\left(2z\left(65\,536z^5+5\,079\,040z^4+82\,275\,840z^3+228\,268\,800z^2-44\,126\,775z+4\,365\,900\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(65\,536z^5+5\,038\,080z^4+79\,211\,520z^3+184\,615\,200z^2-97\,453\,125z+26\,195\,400\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(65\,536z^6+5\,062\,656z^5+81\,031\,680z^4+209\,563\,200z^3-77\,182\,875z^2+26\,195\,400z+9\,823\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a972.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{9}{2},\frac{13}{4};z\right)=\frac{1}{17\,380\,147\,200z^{7/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-1\,048\,576z^5+90\,112\,000z^4-1\,655\,808\,000z^3+5\,277\,888\,000z^2+2\,144\,142\,000z+1\,206\,079\,875\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(-1\,048\,576z^5+90\,112\,000z^4-1\,655\,808\,000z^3+5\,277\,888\,000z^2+2\,144\,142\,000z+1\,206\,079\,875\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+4\left(-262\,144z^6+65\,536z^{11/2}+22\,478\,848z^5-5\,570\,560z^{9/2}-409\,835\,520z^4+98\,449\,920z^{7/2}+1\,250\,430\,720z^3-251\,475\,840z^{5/2}+662\,715\,900z^2-212\,595\,075z^{3/2}+425\,779\,200z-106\,444\,800\sqrt{z}+e^{4\sqrt{z}}\left(262\,144z^6+65\,536z^{11/2}-22\,478\,848z^5-5\,570\,560z^{9/2}+409\,835\,520z^4+98\,449\,920z^{7/2}-1\,250\,430\,720z^3-251\,475\,840z^{5/2}-662\,715\,900z^2-212\,595\,075z^{3/2}-425\,779\,200z-106\,444\,800\sqrt{z}+53\,222\,400\right)-53\,222\,400\right)\right)\right) $$

07.22.03.a973.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{9}{2}, \frac{13}{4}; -z\right) = \frac{1}{4\,345\,036\,800\, z^{7/2}} $$
$$ \left(\sqrt{\pi}\, z^{5/4}\left(1\,048\,576\, z^5 + 90\,112\,000\, z^4 + 1\,655\,808\,000\, z^3 + 5\,277\,888\,000\, z^2 - 2\,144\,142\,000\, z + 1\,206\,079\,875\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$
$$ 2\left(4\left(65\,536\, z^6 + 5\,619\,712\, z^5 + 102\,458\,880\, z^4 + 312\,607\,680\, z^3 - 165\,678\,975\, z^2 + 106\,444\,800\, z + 13\,305\,600\right)\right. $$
$$ \sin\left(2\sqrt{z}\right) - $$
$$ \left.\left. \sqrt{z}\left(65\,536\, z^5 + 5\,570\,560\, z^4 + 98\,449\,920\, z^3 + 251\,475\,840\, z^2 - 212\,595\,075\, z + 106\,444\,800\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a974.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{9}{2}, \frac{15}{4}; z\right) = -\frac{1}{9\,165\,312\,000\sqrt{2}\, z^{11/4}} $$
$$ \left(\left(2z\left(1\,048\,576\, z^5 - 99\,287\,040\, z^4 + 2\,064\,343\,040\, z^3 - 7\,921\,497\,600\, z^2 - 3\,001\,244\,400\, z - 2\,301\,920\,775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. \right. $$
$$ \sqrt{z}\left(-1\,048\,576\, z^5 + 98\,631\,680\, z^4 - 2\,004\,049\,920\, z^3 + 6\,785\,856\,000\, z^2 + 5\,476\,086\,000\, z + 5\,368\,965\,525\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\left(-1\,048\,576\, z^6 + 99\,024\,896\, z^5 - 2\,039\,930\,880\, z^4 + \right. $$
$$ \left.\left. 7\,442\,265\,600\, z^3 + 4\,338\,457\,200\, z^2 + 3\,851\,815\,275\, z + 1\,152\,597\,600\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a975.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{9}{2}, \frac{15}{4}; -z\right) = \frac{1}{9\,165\,312\,000\sqrt{2}\, z^{11/4}} $$
$$ \left(\left(2z\left(1\,048\,576\, z^5 + 99\,287\,040\, z^4 + 2\,064\,343\,040\, z^3 + 7\,921\,497\,600\, z^2 - 3\,001\,244\,400\, z + 2\,301\,920\,775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ \sqrt{z}\left(1\,048\,576\, z^5 + 98\,631\,680\, z^4 + 2\,004\,049\,920\, z^3 + 6\,785\,856\,000\, z^2 - 5\,476\,086\,000\, z + 5\,368\,965\,525\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\left(1\,048\,576\, z^6 + 99\,024\,896\, z^5 + 2\,039\,930\,880\, z^4 + \right. $$
$$ \left.\left. 7\,442\,265\,600\, z^3 - 4\,338\,457\,200\, z^2 + 3\,851\,815\,275\, z - 1\,152\,597\,600\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a976.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{9}{2},\frac{17}{4};z\right)=\frac{1}{513\,382\,809\,600\,z^{7/2}}\left(e^{-2\sqrt{z}}\left(4\left(-4\,194\,304\,z^6+1\,048\,576\,z^{11/2}+431\,751\,168\,z^5-107\,151\,360\,z^{9/2}-9\,855\,467\,520\,z^4+2\,386\,206\,720\,z^{7/2}+40\,527\,083\,520\,z^3-8\,591\,869\,440\,z^{5/2}+30\,539\,678\,400\,z^2-10\,176\,289\,200\,z^{3/2}+36\,634\,682\,700\,z-13\,398\,791\,175\sqrt{z}\right)+e^{4\sqrt{z}}\left(4\,194\,304\,z^6+1\,048\,576\,z^{11/2}-431\,751\,168\,z^5-107\,151\,360\,z^{9/2}+9\,855\,467\,520\,z^4+2\,386\,206\,720\,z^{7/2}-40\,527\,083\,520\,z^3-8\,591\,869\,440\,z^{5/2}-30\,539\,678\,400\,z^2-10\,176\,289\,200\,z^{3/2}-36\,634\,682\,700\,z-13\,398\,791\,175\sqrt{z}-20\,437\,401\,600\right)+20\,437\,401\,600\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(-16\,777\,216\,z^6+1\,730\,150\,400\,z^5-39\,739\,392\,000\,z^4+168\,892\,416\,000\,z^3+102\,918\,816\,000\,z^2+115\,783\,668\,000\,z+54\,273\,594\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(-16\,777\,216\,z^6+1\,730\,150\,400\,z^5-39\,739\,392\,000\,z^4+168\,892\,416\,000\,z^3+102\,918\,816\,000\,z^2+115\,783\,668\,000\,z+54\,273\,594\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a977.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{9}{2},\frac{17}{4};-z\right)=\frac{1}{128\,345\,702\,400\,z^{7/2}}\left(2\sqrt{z}\left(1\,048\,576\,z^5+107\,151\,360\,z^4+2\,386\,206\,720\,z^3+8\,591\,869\,440\,z^2-10\,176\,289\,200\,z+13\,398\,791\,175\right)\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\,\sqrt[4]{z}\left(16\,777\,216\,z^6+1\,730\,150\,400\,z^5+39\,739\,392\,000\,z^4+168\,892\,416\,000\,z^3-102\,918\,816\,000\,z^2+115\,783\,668\,000\,z-54\,273\,594\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-8\left(1\,048\,576\,z^6+107\,937\,792\,z^5+2\,463\,866\,880\,z^4+10\,131\,770\,880\,z^3-7\,634\,919\,600\,z^2+9\,158\,670\,675\,z-5\,109\,350\,400\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a978.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{9}{2},\frac{19}{4};z\right)=-\left(\left(2\sqrt{z}\left(16\,777\,216\,z^6-1\,876\,951\,040\,z^5+47\,645\,655\,040\,z^4-233\,465\,856\,000\,z^3-133\,362\,028\,800\,z^2-185\,707\,922\,400\,z-92\,868\,150\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-16\,777\,216\,z^6+1\,866\,465\,280\,z^5-46\,500\,741\,120\,z^4+206\,644\,838\,400\,z^3+218\,464\,646\,400\,z^2+342\,356\,414\,400\,z+278\,604\,451\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-16\,777\,216\,z^6+1\,872\,756\,736\,z^5-47\,182\,970\,880\,z^4+222\,256\,742\,400\,z^3+176\,259\,283\,200\,z^2+251\,999\,748\,000\,z+200\,876\,150\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(254\,184\,652\,800\sqrt{2}\,z^{13/4}\right) $$

07.22.03.a979.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{9}{2},\frac{19}{4};-z\right)= $$

$$ \left(\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,876\,951\,040\,z^5+47\,645\,655\,040\,z^4+233\,465\,856\,000\,z^3-133\,362\,028\,800\,z^2+\right.\right.\right. $$

$$ \left.\left.\left.185\,707\,922\,400\,z-92\,868\,150\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,777\,216\,z^6+1\,866\,465\,280\,z^5+46\,500\,741\,120\,z^4+\right.\right.\right. $$

$$ \left.\left.\left.206\,644\,838\,400\,z^3-218\,464\,646\,400\,z^2+342\,356\,414\,400\,z-278\,604\,451\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right. $$

$$ \left.2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,872\,756\,736\,z^5+47\,182\,970\,880\,z^4+222\,256\,742\,400\,z^3-176\,259\,283\,200\,z^2+\right.\right. $$

$$ \left.\left.251\,999\,748\,000\,z-200\,876\,150\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(254\,184\,652\,800\,\sqrt{2}\;z^{13/4}\right) $$

07.22.03.a97a.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{9}{2},\frac{21}{4};z\right)= $$

$$ \frac{1}{13\,529\,146\,982\,400\,z^{17/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-67\,108\,864\,z^{13/2}+16\,777\,216\,z^6+8\,061\,452\,288\,z^{11/2}-2\,002\,780\,160\,z^5-\right.\right.\right. $$

$$ 221\,054\,238\,720\,z^{9/2}+53\,804\,728\,320\,z^4+1\,143\,661\,854\,720\,z^{7/2}-250\,301\,399\,040\,z^3+ $$

$$ 1\,109\,385\,446\,400\,z^{5/2}-369\,634\,003\,200\,z^2+1\,929\,039\,235\,200\,z^{3/2}-727\,265\,800\,800\,z+ $$

$$ 2\,111\,243\,003\,100\,\sqrt{z}\,+e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^6-8\,061\,452\,288\,z^{11/2}-\right. $$

$$ 2\,002\,780\,160\,z^5+221\,054\,238\,720\,z^{9/2}+53\,804\,728\,320\,z^4-1\,143\,661\,854\,720\,z^{7/2}- $$

$$ 250\,301\,399\,040\,z^3-1\,109\,385\,446\,400\,z^{5/2}-369\,634\,003\,200\,z^2-1\,929\,039\,235\,200\,z^{3/2}- $$

$$ \left.727\,265\,800\,800\,z-2\,111\,243\,003\,100\,\sqrt{z}\,-705\,556\,726\,875\right)-705\,556\,726\,875\Big)- $$

$$ e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7-32\,296\,140\,800\,z^6+890\,162\,380\,800\,z^5-4\,728\,987\,648\,000\,z^4-\right. $$

$$ \left.3\,842\,302\,464\,000\,z^3-6\,483\,885\,408\,000\,z^2-6\,078\,642\,570\,000\,z-705\,556\,726\,875\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)- $$

$$ e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7-32\,296\,140\,800\,z^6+890\,162\,380\,800\,z^5-4\,728\,987\,648\,000\,z^4-\right. $$

$$ \left.\left.3\,842\,302\,464\,000\,z^3-6\,483\,885\,408\,000\,z^2-6\,078\,642\,570\,000\,z-705\,556\,726\,875\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.a97b.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{9}{2},\frac{21}{4};-z\right)= $$

$$ \frac{1}{3\,382\,286\,745\,600\,z^{17/4}}\Bigg(\sqrt{\pi}\,\left(268\,435\,456\,z^7+32\,296\,140\,800\,z^6+890\,162\,380\,800\,z^5+4\,728\,987\,648\,000\,z^4-\right. $$

$$ \left.3\,842\,302\,464\,000\,z^3+6\,483\,885\,408\,000\,z^2-6\,078\,642\,570\,000\,z+705\,556\,726\,875\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)- $$

$$ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+2\,015\,363\,072\,z^5+55\,263\,559\,680\,z^4+285\,915\,463\,680\,z^3-277\,346\,361\,600\,z^2+\right.\right. $$

$$ \left.482\,259\,808\,800\,z-527\,810\,750\,775\right)\sin\left(2\sqrt{z}\right)-\left(16\,777\,216\,z^6+2\,002\,780\,160\,z^5+53\,804\,728\,320\,z^4+\right. $$

$$ \left.\left.250\,301\,399\,040\,z^3-369\,634\,003\,200\,z^2+727\,265\,800\,800\,z-705\,556\,726\,875\right)\cos\left(2\sqrt{z}\right)\right)\Bigg) $$

07.22.03.a97c.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},\frac{23}{4};z\right)=$$
$$-\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-34\,644\,951\,040\,z^6+1\,038\,577\,827\,840\,z^5-6\,192\,753\,868\,800\,z^4-4\,750\,063\,718\,400\,z^3-\right.\right.\right.$$
$$\left.9\,491\,536\,454\,400\,z^2-9\,552\,152\,610\,000\,z+1\,393\,022\,255\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(-268\,435\,456\,z^7+34\,477\,178\,880\,z^6-1\,017\,375\,621\,120\,z^5+5\,598\,712\,627\,200\,z^4+7\,237\,181\,952\,000\,z^3+\right.$$
$$\left.15\,267\,098\,246\,400\,z^2+22\,288\,356\,090\,000\,z-4\,179\,066\,766\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-268\,435\,456\,z^7+34\,577\,842\,176\,z^6-1\,030\,021\,447\,680\,z^5+5\,946\,148\,454\,400\,z^4+\right.$$
$$\left.\left.\left.5\,951\,328\,768\,000\,z^3+11\,743\,642\,310\,400\,z^2+14\,826\,439\,227\,600\,z+4\,179\,066\,766\,875\right)\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(122\,008\,633\,344\,000\,\sqrt{2}\,z^{17/4}\right)$$

07.22.03.a97d.01

$${}_1F_2\left(-\frac{11}{4};\frac{9}{2},\frac{23}{4};-z\right)=$$
$$\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+34\,644\,951\,040\,z^6+1\,038\,577\,827\,840\,z^5+6\,192\,753\,868\,800\,z^4-4\,750\,063\,718\,400\,z^3+\right.\right.\right.$$
$$\left.9\,491\,536\,454\,400\,z^2-9\,552\,152\,610\,000\,z-1\,393\,022\,255\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(268\,435\,456\,z^7+34\,477\,178\,880\,z^6+1\,017\,375\,621\,120\,z^5+5\,598\,712\,627\,200\,z^4-7\,237\,181\,952\,000\,z^3+\right.$$
$$\left.15\,267\,098\,246\,400\,z^2-22\,288\,356\,090\,000\,z-4\,179\,066\,766\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+34\,577\,842\,176\,z^6+1\,030\,021\,447\,680\,z^5+5\,946\,148\,454\,400\,z^4-\right.$$
$$\left.\left.\left.5\,951\,328\,768\,000\,z^3+11\,743\,642\,310\,400\,z^2-14\,826\,439\,227\,600\,z+4\,179\,066\,766\,875\right)\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(122\,008\,633\,344\,000\,\sqrt{2}\,z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{11}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.a97e.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{23}{4};z\right)=-\frac{1}{223\,744\,z^{9/2}}\left(63\left(2\sqrt{z}\,\left(512\,z^3+136\,224\,z^2+2\,442\,000\,z+5\,256\,405\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(25\,856\,z^3+1\,523\,280\,z^2+9\,450\,540\,z+5\,256\,405\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a97f.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{23}{4};-z\right)=\frac{1}{223\,744\,z^{9/2}}\left(63\left(2\sqrt{z}\,\left(512\,z^3-136\,224\,z^2+2\,442\,000\,z-5\,256\,405\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-25\,856\,z^3+1\,523\,280\,z^2-9\,450\,540\,z+5\,256\,405\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a97g.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{21}{4};z\right)=$$
$$\left(\left(4z\left(33\,554\,432z^6+2\,336\,227\,328z^5+57\,249\,628\,160z^4+406\,461\,726\,720z^3-946\,317\,556\,800z^2-\right.\right.\right.$$
$$\left.\left.\left.22\,770\,766\,210\,500z-310\,820\,958\,773\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(16\,777\,216z^6+1\,178\,599\,424z^5+29\,383\,065\,600z^4+223\,278\,612\,480z^3-6\,624\,222\,897\,600z^2-\right.$$
$$245\,924\,275\,073\,400z-932\,462\,876\,319\,975\Big)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(134\,217\,728z^7+9\,378\,463\,744z^6+\right.$$
$$231\,387\,168\,768z^5+1\,686\,993\,960\,960z^4-2\,075\,793\,350\,400z^3+132\,721\,037\,341\,200z^2+$$
$$\left.\left.1\,270\,608\,754\,545\,900z+2\,797\,388\,628\,959\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(571\,088\,044\,800\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a97h.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{21}{4};-z\right)=$$
$$\left(\left(-4z\left(33\,554\,432z^6-2\,336\,227\,328z^5+57\,249\,628\,160z^4-406\,461\,726\,720z^3-946\,317\,556\,800z^2+\right.\right.\right.$$
$$\left.\left.\left.22\,770\,766\,210\,500z-310\,820\,958\,773\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(16\,777\,216z^6-1\,178\,599\,424z^5+29\,383\,065\,600z^4-223\,278\,612\,480z^3-6\,624\,222\,897\,600z^2+\right.$$
$$245\,924\,275\,073\,400z-932\,462\,876\,319\,975\Big)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-134\,217\,728z^7+9\,378\,463\,744z^6-\right.$$
$$231\,387\,168\,768z^5+1\,686\,993\,960\,960z^4+2\,075\,793\,350\,400z^3+132\,721\,037\,341\,200z^2-$$
$$\left.\left.1\,270\,608\,754\,545\,900z+2\,797\,388\,628\,959\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(571\,088\,044\,800\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a97i.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{9728\,z^{9/2}}\left(63\left(\left(256z^3+32\,400z^2+227\,700z+128\,205\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\left(768z^2+18\,920z+42\,735\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a97j.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{19}{4};-z\right)=$$
$$-\frac{1}{9728\,z^{9/2}}\left(63\left(6\sqrt{z}\left(768z^2-18\,920z+42\,735\right)\cos\left(2\sqrt{z}\right)+\left(256z^3-32\,400z^2+227\,700z-128\,205\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a97k.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{17}{4};z\right)=$$
$$\left(\left(4z\left(16\,777\,216z^6+833\,617\,920z^5+15\,872\,163\,840z^4+91\,854\,233\,600z^3-156\,992\,774\,400z^2-1\,951\,779\,960\,900z-\right.\right.\right.$$
$$\left.39\,848\,840\,868\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(8\,388\,608z^6+422\,051\,840z^5+8\,210\,677\,760z^4+\right.$$
$$\left.51\,684\,864\,000z^3-403\,384\,212\,000z^2-28\,626\,106\,093\,200z-119\,546\,522\,605\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left(67\,108\,864z^7+3\,351\,248\,896z^6+64\,348\,487\,680z^5+384\,715\,161\,600z^4-503\,927\,424\,000z^3+14\,019\,236\,708\,400\right.$$
$$\left.\left.z^2+154\,190\,616\,911\,100z+358\,639\,567\,815\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(135\,973\,344\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a97l.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{17}{4};-z\right)=$$
$$\left(\left(-4z\left(16\,777\,216z^6-833\,617\,920z^5+15\,872\,163\,840z^4-91\,854\,233\,600z^3-156\,992\,774\,400z^2+1\,951\,779\,960\,900z-\right.\right.\right.$$
$$\left.39\,848\,840\,868\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(8\,388\,608z^6-422\,051\,840z^5+8\,210\,677\,760z^4-51\,684\,864\,000z^3-\right.$$
$$\left.403\,384\,212\,000z^2+28\,626\,106\,093\,200z-119\,546\,522\,605\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-67\,108\,864z^7+\right.$$
$$3\,351\,248\,896z^6-64\,348\,487\,680z^5+384\,715\,161\,600z^4+503\,927\,424\,000z^3+14\,019\,236\,708\,400z^2-$$
$$\left.\left.154\,190\,616\,911\,100z+358\,639\,567\,815\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(135\,973\,344\,000\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a97m.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{15}{4};z\right)=-\frac{63\left(2\sqrt{z}\left(32z^2+1440z+3465\right)\cosh\left(2\sqrt{z}\right)-15\left(48z^2+404z+231\right)\sinh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.a97n.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{15}{4};-z\right)=-\frac{63\left(2\sqrt{z}\left(32z^2-1440z+3465\right)\cos\left(2\sqrt{z}\right)-15\left(48z^2-404z+231\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.a97o.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{23\,995\,296\,000\sqrt{2}\,z^{15/4}}\left(\left(4z\left(8\,388\,608z^6+249\,561\,088z^5+3\,389\,030\,400z^4+15\,162\,654\,720z^3-22\,289\,097\,600z^2-\right.\right.\right.$$
$$\left.62\,960\,643\,900z-3\,415\,614\,931\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4\,194\,304z^6+127\,401\,984z^5+1\,779\,548\,160z^4+\right.$$
$$\left.8\,898\,785\,280z^3-1\,453\,636\,800z^2-2\,140\,661\,892\,600z-10\,246\,844\,794\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left(33\,554\,432z^7+1\,006\,632\,960z^6+13\,818\,789\,888z^5+64\,491\,356\,160z^4-66\,235\,276\,800z^3+\right.$$
$$\left.\left.923\,422\,777\,200z^2+12\,277\,325\,560\,500z+30\,740\,534\,384\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a97p.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{23\,995\,296\,000\sqrt{2}\,z^{15/4}}\left(\left(-4z\left(8\,388\,608z^6-249\,561\,088z^5+3\,389\,030\,400z^4-15\,162\,654\,720z^3-22\,289\,097\,600z^2+\right.\right.\right.$$
$$\left.62\,960\,643\,900z-3\,415\,614\,931\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4\,194\,304z^6-127\,401\,984z^5+1\,779\,548\,160z^4-\right.$$
$$\left.8\,898\,785\,280z^3-1\,453\,636\,800z^2+2\,140\,661\,892\,600z-10\,246\,844\,794\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-33\,554\,432z^7+1\,006\,632\,960z^6-13\,818\,789\,888z^5+64\,491\,356\,160z^4+66\,235\,276\,800z^3+\right.$$
$$\left.\left.\left.923\,422\,777\,200z^2-12\,277\,325\,560\,500z+30\,740\,534\,384\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a97q.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{11}{4};z\right)=\frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,\left(8z+21\right)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.a97r.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{11}{4};-z\right)=\frac{945\left(10\sqrt{z}\,\left(8z-21\right)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.a97s.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{1\,845\,792\,000\sqrt{2}\,z^{15/4}}\left(\left(4z\left(4\,194\,304z^6+41\,156\,608z^5+335\,626\,240z^4+1\,059\,640\,320z^3-1\,369\,368\,000z^2+\right.\right.\right.$$
$$\left.2\,331\,875\,700z-110\,181\,126\,825\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2\,097\,152z^6+21\,889\,024z^5+184\,197\,120z^4+\right.$$
$$\left.693\,665\,280z^3+495\,079\,200z^2-55\,965\,016\,800z-330\,543\,380\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left(16\,777\,216z^7+168\,820\,736z^6+1\,390\,215\,168z^5+4\,669\,378\,560z^4-3\,277\,612\,800z^3+\right.$$
$$\left.\left.\left.20\,682\,723\,600z^2+356\,776\,982\,100z+991\,630\,141\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a97t.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{1\,845\,792\,000\sqrt{2}\,z^{15/4}}\left(\left(4z\left(-4\,194\,304z^6+41\,156\,608z^5-335\,626\,240z^4+1\,059\,640\,320z^3+1\,369\,368\,000z^2+\right.\right.\right.$$
$$\left.2\,331\,875\,700z+110\,181\,126\,825\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2\,097\,152z^6-21\,889\,024z^5+184\,197\,120z^4-\right.$$
$$\left.693\,665\,280z^3+495\,079\,200z^2+55\,965\,016\,800z-330\,543\,380\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-16\,777\,216z^7+168\,820\,736z^6-1\,390\,215\,168z^5+4\,669\,378\,560z^4+3\,277\,612\,800z^3+\right.$$
$$\left.\left.\left.20\,682\,723\,600z^2-356\,776\,982\,100z+991\,630\,141\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a97u.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{3\,445\,478\,400\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(-16\,777\,216\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{29/4}-16\,777\,216\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{29/4}+\right.\right.$$
$$16\,777\,216\,e^{4\sqrt{z}}z^7-16\,777\,216\,z^7+4\,194\,304\,e^{4\sqrt{z}}z^{13/2}+4\,194\,304\,z^{13/2}+3\,145\,728\,e^{4\sqrt{z}}z^6-3\,145\,728\,z^6+$$
$$3\,932\,160\,e^{4\sqrt{z}}z^{11/2}+3\,932\,160\,z^{11/2}+6\,881\,280\,e^{4\sqrt{z}}z^5-6\,881\,280\,z^5+15\,482\,880\,e^{4\sqrt{z}}z^{9/2}+15\,482\,880\,z^{9/2}+$$
$$42\,577\,920\,e^{4\sqrt{z}}z^4-42\,577\,920\,z^4+138\,378\,240\,e^{4\sqrt{z}}z^{7/2}+138\,378\,240\,z^{7/2}+518\,918\,400\,e^{4\sqrt{z}}z^3-$$
$$518\,918\,400\,z^3+2\,205\,403\,200\,e^{4\sqrt{z}}z^{5/2}+2\,205\,403\,200\,z^{5/2}+10\,475\,665\,200\,e^{4\sqrt{z}}z^2-10\,475\,665\,200\,z^2-$$
$$84\,908\,023\,200\,e^{4\sqrt{z}}z^{3/2}-84\,908\,023\,200\,z^{3/2}+211\,305\,194\,100\,e^{4\sqrt{z}}z-211\,305\,194\,100\,z-$$
$$\left.\left.253\,276\,773\,750\,e^{4\sqrt{z}}\sqrt{z}-253\,276\,773\,750\sqrt{z}+126\,638\,386\,875\,e^{4\sqrt{z}}-126\,638\,386\,875\right)\right)$$

07.22.03.a97v.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{7}{4};-z\right)=\frac{1}{1\,722\,739\,200\,z^{9/2}}\left(33\,554\,432\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{29/4}+\right.$$
$$2\left(2\,097\,152\,z^6-1\,966\,080\,z^5+7\,741\,440\,z^4-69\,189\,120\,z^3+1\,102\,701\,600\,z^2+42\,454\,011\,600\,z-126\,638\,386\,875\right)$$
$$\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-16\,777\,216\,z^7+3\,145\,728\,z^6-6\,881\,280\,z^5+42\,577\,920\,z^4-\right.$$
$$\left.\left.518\,918\,400\,z^3+10\,475\,665\,200\,z^2-211\,305\,194\,100\,z+126\,638\,386\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a97w.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{5}{4};z\right)=-\frac{1}{205\,088\,000\sqrt{2}\,z^{15/4}}$$
$$\left(\left(4z\left(2\,097\,152\,z^6-21\,233\,664\,z^5-54\,312\,960\,z^4-101\,442\,560\,z^3+103\,118\,400\,z^2-304\,157\,700\,z+4\,080\,782\,475\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1\,048\,576\,z^6-9\,961\,472\,z^5-32\,030\,720\,z^4-73\,328\,640\,z^3+14\,414\,400\,z^2+\right.$$
$$\left.1\,419\,402\,600\,z+12\,242\,347\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-8\,388\,608\,z^7+82\,837\,504\,z^6+235\,208\,704\,z^5+\right.$$
$$\left.\left.\left.477\,818\,880\,z^4-226\,195\,200\,z^3+490\,921\,200\,z^2+11\,253\,834\,900\,z+36\,727\,042\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a97x.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},-\frac{5}{4};-z\right)=\frac{1}{205\,088\,000\sqrt{2}\,z^{15/4}}$$
$$\left(\left(4z\left(2\,097\,152\,z^6+21\,233\,664\,z^5-54\,312\,960\,z^4+101\,442\,560\,z^3+103\,118\,400\,z^2+304\,157\,700\,z+4\,080\,782\,475\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1\,048\,576\,z^6+9\,961\,472\,z^5-32\,030\,720\,z^4+73\,328\,640\,z^3+14\,414\,400\,z^2-\right.$$
$$\left.1\,419\,402\,600\,z+12\,242\,347\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(8\,388\,608\,z^7+82\,837\,504\,z^6-235\,208\,704\,z^5+\right.$$
$$\left.\left.\left.477\,818\,880\,z^4+226\,195\,200\,z^3+490\,921\,200\,z^2-11\,253\,834\,900\,z+36\,727\,042\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a97y.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{11}{2}, -\frac{3}{4}; z\right) = \frac{1}{492\,211\,200\, z^{9/2}} \left(e^{-2\sqrt{z}} \left(-4\,194\,304\, e^{4\sqrt{z}}\, z^7 + 4\,194\,304\, z^7 - 1\,048\,576\, e^{4\sqrt{z}}\, z^{13/2} - 1\,048\,576\, z^{13/2} + 262\,144\, e^{2\sqrt{z}}\, \sqrt{2\pi}\right.\right. $$
$$ (16z - 319)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{25/4} + 262\,144\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16z - 319)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{25/4} + 82\,837\,504\, e^{4\sqrt{z}}\, z^6 - $$
$$ 82\,837\,504\, z^6 + 19\,922\,944\, e^{4\sqrt{z}}\, z^{11/2} + 19\,922\,944\, z^{11/2} + 13\,959\,168\, e^{4\sqrt{z}}\, z^5 - 13\,959\,168\, z^5 + $$
$$ 15\,728\,640\, e^{4\sqrt{z}}\, z^{9/2} + 15\,728\,640\, z^{9/2} + 23\,654\,400\, e^{4\sqrt{z}}\, z^4 - 23\,654\,400\, z^4 + 42\,577\,920\, e^{4\sqrt{z}}\, z^{7/2} + $$
$$ 42\,577\,920\, z^{7/2} + 82\,494\,720\, e^{4\sqrt{z}}\, z^3 - 82\,494\,720\, z^3 + 138\,378\,240\, e^{4\sqrt{z}}\, z^{5/2} + 138\,378\,240\, z^{5/2} - $$
$$ 32\,432\,400\, e^{4\sqrt{z}}\, z^2 + 32\,432\,400\, z^2 - 2\,756\,754\,000\, e^{4\sqrt{z}}\, z^{3/2} - 2\,756\,754\,000\, z^{3/2} + 8\,132\,424\,300\, e^{4\sqrt{z}}\, z - $$
$$ \left.\left. 8\,132\,424\,300\, z - 10\,131\,070\,950\, e^{4\sqrt{z}}\, \sqrt{z} - 10\,131\,070\,950\, \sqrt{z} + 5\,065\,535\,475\, e^{4\sqrt{z}} - 5\,065\,535\,475\right)\right) $$

07.22.03.a97z.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{11}{2}, -\frac{3}{4}; -z\right) = \frac{1}{246\,105\,600\, z^{9/2}} \left(-524\,288\, \sqrt{\pi}\, (16z + 319)\, C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{25/4} - \right. $$
$$ 2\left(524\,288\, z^6 + 9\,961\,472\, z^5 - 7\,864\,320\, z^4 + 21\,288\,960\, z^3 - 69\,189\,120\, z^2 - 1\,378\,377\,000\, z + 5\,065\,535\,475\right) $$
$$ \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(4\,194\,304\, z^7 + 82\,837\,504\, z^6 - 13\,959\,168\, z^5 + 23\,654\,400\, z^4 - \right. $$
$$ \left.\left. 82\,494\,720\, z^3 - 32\,432\,400\, z^2 - 8\,132\,424\,300\, z + 5\,065\,535\,475\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a980.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{11}{2}, -\frac{1}{4}; z\right) = \frac{1}{123\,052\,800\, \sqrt{2}\, z^{15/4}} $$
$$ \left(\left(4z\left(1\,048\,576\, z^6 - 31\,522\,816\, z^5 + 90\,439\,680\, z^4 + 48\,092\,160\, z^3 - 28\,828\,800\, z^2 + 80\,041\,500\, z - 532\,275\,975\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 4\sqrt{z}\, \left(524\,288\, z^6 - 15\,433\,728\, z^5 + 36\,249\,600\, z^4 + 31\,933\,440\, z^3 - 24\,948\,000\, z^2 - 64\,033\,200\, z - 1\,596\,827\,925\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(4\,194\,304\, z^7 - 125\,042\,688\, z^6 + 331\,874\,304\, z^5 + 241\,274\,880\, z^4 - \right. $$
$$ \left.\left. \left. 79\,833\,600\, z^3 + 64\,033\,200\, z^2 + 1\,104\,572\,700\, z + 4\,790\,483\,775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a981.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{11}{2}, -\frac{1}{4}; -z\right) = \frac{1}{123\,052\,800\, \sqrt{2}\, z^{15/4}} $$
$$ \left(\left(-4z\left(1\,048\,576\, z^6 + 31\,522\,816\, z^5 + 90\,439\,680\, z^4 - 48\,092\,160\, z^3 - 28\,828\,800\, z^2 - 80\,041\,500\, z - 532\,275\,975\right)\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\, \left(524\,288\, z^6 + 15\,433\,728\, z^5 + 36\,249\,600\, z^4 - 31\,933\,440\, z^3 - 24\,948\,000\, z^2 + \right. $$
$$ 64\,033\,200\, z - 1\,596\,827\,925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-4\,194\,304\, z^7 - 125\,042\,688\, z^6 - 331\,874\,304\, z^5 + \right. $$
$$ \left.\left. \left. 241\,274\,880\, z^4 + 79\,833\,600\, z^3 + 64\,033\,200\, z^2 - 1\,104\,572\,700\, z + 4\,790\,483\,775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a982.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{11}{2}, \frac{1}{4}; z\right) = \frac{1}{164\,070\,400\, z^{9/2}} $$
$$ \left(e^{-2\sqrt{z}} \left(524\,288\, e^{4\sqrt{z}}\, z^7 - 524\,288\, z^7 + 131\,072\, e^{4\sqrt{z}}\, z^{13/2} + 131\,072\, z^{13/2} - 20\,807\,680\, e^{4\sqrt{z}}\, z^6 + 20\,807\,680\, z^6 - \right.\right. $$
$$ 5\,103\,616\, e^{4\sqrt{z}}\, z^{11/2} - 5\,103\,616\, z^{11/2} - 2048\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(256 z^2 - 10\,208 z + 55\,825\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{21/4} - $$
$$ 2048\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(256 z^2 - 10\,208 z + 55\,825\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{21/4} + 110\,624\,768\, e^{4\sqrt{z}}\, z^5 - 110\,624\,768\, z^5 + $$
$$ 24\,166\,400\, e^{4\sqrt{z}}\, z^{9/2} + 24\,166\,400\, z^{9/2} + 14\,192\,640\, e^{4\sqrt{z}}\, z^4 - 14\,192\,640\, z^4 + 11\,827\,200\, e^{4\sqrt{z}}\, z^{7/2} + $$
$$ 11\,827\,200\, z^{7/2} + 10\,053\,120\, e^{4\sqrt{z}}\, z^3 - 10\,053\,120\, z^3 + 1\,995\,840\, e^{4\sqrt{z}}\, z^{5/2} + 1\,995\,840\, z^{5/2} - $$
$$ 29\,106\,000\, e^{4\sqrt{z}}\, z^2 + 29\,106\,000\, z^2 - 86\,486\,400\, e^{4\sqrt{z}}\, z^{3/2} - 86\,486\,400\, z^{3/2} + 364\,864\,500\, e^{4\sqrt{z}}\, z - $$
$$ \left.\left. 364\,864\,500 z - 482\,431\,950\, e^{4\sqrt{z}}\, \sqrt{z} - 482\,431\,950\, \sqrt{z} + 241\,215\,975\, e^{4\sqrt{z}} - 241\,215\,975\right)\right) $$

07.22.03.a983.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{11}{2}, \frac{1}{4}; -z\right) = \frac{1}{82\,035\,200\, z^{9/2}} \left(4096 \sqrt{\pi} \left(256 z^2 + 10\,208 z + 55\,825\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{21/4} + \right. $$
$$ 2\left(65\,536 z^6 + 2\,551\,808 z^5 + 12\,083\,200 z^4 - 5\,913\,600 z^3 + 997\,920 z^2 + 43\,243\,200 z - 241\,215\,975\right) \cos\left(2\sqrt{z}\right) \sqrt{z} - $$
$$ \left(524\,288 z^7 + 20\,807\,680 z^6 + 110\,624\,768 z^5 - 14\,192\,640 z^4 + \right. $$
$$ \left.\left. 10\,053\,120 z^3 + 29\,106\,000 z^2 + 364\,864\,500 z - 241\,215\,975\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a984.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{11}{2}, \frac{3}{4}; z\right) = -\frac{1}{615\,264\,000\, \sqrt{2}\, z^{15/4}} $$
$$ \left(\left(4 z \left(524\,288 z^6 - 26\,214\,400 z^5 + 218\,347\,520 z^4 - 169\,497\,600 z^3 + 17\,740\,800 z^2 - 37\,352\,700 z + 140\,072\,625\right) \right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z} \left(262\,144 z^6 - 12\,943\,360 z^5 + 101\,422\,080 z^4 - 35\,481\,600 z^3 + 27\,720\,000 z^2 - \right. $$
$$ 32\,016\,600 z + 420\,217\,875\left) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-2\,097\,152 z^7 + 104\,333\,312 z^6 - 847\,994\,880 z^5 + \right.\right. $$
$$ \left.\left.\left. 496\,742\,400 z^4 - 88\,704\,000 z^3 + 52\,390\,800 z^2 + 144\,074\,700 z + 1\,260\,653\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a985.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{11}{2}, \frac{3}{4}; -z\right) = \frac{1}{615\,264\,000\, \sqrt{2}\, z^{15/4}} $$
$$ \left(\left(4 z \left(524\,288 z^6 + 26\,214\,400 z^5 + 218\,347\,520 z^4 + 169\,497\,600 z^3 + 17\,740\,800 z^2 + 37\,352\,700 z + 140\,072\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z} \left(262\,144 z^6 + 12\,943\,360 z^5 + 101\,422\,080 z^4 + 35\,481\,600 z^3 + 27\,720\,000 z^2 + 32\,016\,600 z + 420\,217\,875\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(2\,097\,152 z^7 + 104\,333\,312 z^6 + 847\,994\,880 z^5 + 496\,742\,400 z^4 + \right. $$
$$ \left.\left.\left. 88\,704\,000 z^3 + 52\,390\,800 z^2 - 144\,074\,700 z + 1\,260\,653\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a986.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{11}{2},\frac{5}{4};z\right)= \frac{1}{492\,211\,200\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(131\,072\,e^{4\sqrt{z}}\,z^7-131\,072\,z^7+32\,768\,e^{4\sqrt{z}}\,z^{13/2}+32\,768\,z^{13/2}-7\,815\,168\,e^{4\sqrt{z}}\,z^6+ 7\,815\,168\,z^6-1\,929\,216\,e^{4\sqrt{z}}\,z^{11/2}-1\,929\,216\,z^{11/2}+84\,331\,008\,e^{4\sqrt{z}}\,z^5-84\,331\,008\,z^5+19\,720\,320\,e^{4\sqrt{z}}\,z^{9/2}+ 19\,720\,320\,z^{9/2}-32\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3-244\,992\,z^2+2\,679\,600\,z-3\,516\,975\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}- 32\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3-244\,992\,z^2+2\,679\,600\,z-3\,516\,975\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}-99\,348\,480\,e^{4\sqrt{z}}\,z^4+ 99\,348\,480\,z^4-14\,192\,640\,e^{4\sqrt{z}}\,z^{7/2}-14\,192\,640\,z^{7/2}-1\,774\,080\,e^{4\sqrt{z}}\,z^3+1\,774\,080\,z^3+5\,322\,240\,e^{4\sqrt{z}}\,z^{5/2}+ 5\,322\,240\,z^{5/2}+10\,810\,800\,e^{4\sqrt{z}}\,z^2-10\,810\,800\,z^2+2\,494\,800\,e^{4\sqrt{z}}\,z^{3/2}+2\,494\,800\,z^{3/2}- 58\,004\,100\,e^{4\sqrt{z}}\,z+58\,004\,100\,z+85\,135\,050\,e^{4\sqrt{z}}\,\sqrt{z}+85\,135\,050\,\sqrt{z}-42\,567\,525\,e^{4\sqrt{z}}+42\,567\,525\right)\right) $$

07.22.03.a987.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{11}{2},\frac{5}{4};-z\right)= \frac{1}{246\,105\,600\,z^{9/2}}\left(64\sqrt{\pi}\,\left(4096\,z^3+244\,992\,z^2+2\,679\,600\,z+3\,516\,975\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}+ 2\left(16\,384\,z^6+964\,608\,z^5+9\,860\,160\,z^4+7\,096\,320\,z^3+2\,661\,120\,z^2-1\,247\,400\,z+42\,567\,525\right)\cos\left(2\sqrt{z}\right)\sqrt{z}- \left(131\,072\,z^7+7\,815\,168\,z^6+84\,331\,008\,z^5+99\,348\,480\,z^4-1\,774\,080\,z^3-10\,810\,800\,z^2-58\,004\,100\,z+42\,567\,525\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a988.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{11}{2},\frac{7}{4};z\right)= \frac{1}{1\,435\,616\,000\sqrt{2}\,z^{15/4}} \left(\left(-4\,z\left(262\,144\,z^6-18\,333\,696\,z^5+252\,902\,400\,z^4-528\,082\,240\,z^3-23\,284\,800\,z^2+30\,561\,300\,z-65\,367\,225\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(131\,072\,z^6-9\,084\,928\,z^5+120\,942\,080\,z^4-198\,881\,760\,z^3-50\,450\,400\,z^2+ 54\,331\,200\,z-196\,101\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,048\,576\,z^7-73\,072\,640\,z^6+993\,685\,504\,z^5- 1\,886\,142\,720\,z^4-341\,510\,400\,z^3+114\,483\,600\,z^2-50\,935\,500\,z+588\,305\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a989.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{11}{2},\frac{7}{4};-z\right)= \frac{1}{1\,435\,616\,000\sqrt{2}\,z^{15/4}} \left(\left(4\,z\left(262\,144\,z^6+18\,333\,696\,z^5+252\,902\,400\,z^4+528\,082\,240\,z^3-23\,284\,800\,z^2-30\,561\,300\,z-65\,367\,225\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- 4\sqrt{z}\,\left(131\,072\,z^6+9\,084\,928\,z^5+120\,942\,080\,z^4+198\,881\,760\,z^3-50\,450\,400\,z^2-54\,331\,200\,z-196\,101\,675\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,048\,576\,z^7+73\,072\,640\,z^6+993\,685\,504\,z^5+1\,886\,142\,720\,z^4- 341\,510\,400\,z^3-114\,483\,600\,z^2-50\,935\,500\,z-588\,305\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a98a.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{11}{2},\frac{9}{4};z\right)=\frac{1}{787\,537\,920\,z^{9/2}}$$
$$\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536\,z^4+5\,226\,496\,z^3-85\,747\,200\,z^2+225\,086\,400\,z+59\,788\,575\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+\right.\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536\,z^4+5\,226\,496\,z^3-85\,747\,200\,z^2+225\,086\,400\,z+59\,788\,575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+$$
$$4\left(-16\,384\,z^7+4096\,z^{13/2}+1\,303\,552\,z^6-322\,816\,z^{11/2}-21\,198\,528\,z^5+5\,068\,080\,z^{9/2}+52\,746\,540\,z^4-\right.$$
$$10\,114\,335\,z^{7/2}+19\,514\,880\,z^3-5\,765\,760\,z^{5/2}+1\,663\,200\,z^2+3\,326\,400\,z^{3/2}-7\,068\,600\,z-$$
$$13\,097\,700\sqrt{z}+e^{4\sqrt{z}}\left(16\,384\,z^7+4096\,z^{13/2}-1\,303\,552\,z^6-322\,816\,z^{11/2}+21\,198\,528\,z^5+\right.$$
$$\left.\left.\left.5\,068\,080\,z^{9/2}-52\,746\,540\,z^4-10\,114\,335\,z^{7/2}-19\,514\,880\,z^3-5\,765\,760\,z^{5/2}-\right.\right.\right.$$
$$\left.\left.\left.1\,663\,200\,z^2+3\,326\,400\,z^{3/2}+7\,068\,600\,z-13\,097\,700\sqrt{z}+6\,548\,850\right)-6\,548\,850\right)\Big)\Big)$$

07.22.03.a98b.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{11}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{196\,884\,480\,z^{9/2}}\left(\sqrt{\pi}\,z^{13/4}\left(65\,536\,z^4+5\,226\,496\,z^3+85\,747\,200\,z^2+225\,086\,400\,z-59\,788\,575\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.$$
$$2\left(2\left(8192\,z^7+651\,776\,z^6+10\,599\,264\,z^5+26\,373\,270\,z^4-9\,757\,440\,z^3+831\,600\,z^2+3\,534\,300\,z-3\,274\,425\right)\right.$$
$$\sin\left(2\sqrt{z}\right)-\sqrt{z}$$
$$\left.\left.\left(4096\,z^6+322\,816\,z^5+5\,068\,080\,z^4+10\,114\,335\,z^3-5\,765\,760\,z^2-3\,326\,400\,z-13\,097\,700\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a98c.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{11}{2},\frac{11}{4};z\right)=-\frac{1}{1\,845\,792\,000\sqrt{2}\,z^{15/4}}$$
$$\left(\left(4z\left(131\,072\,z^6-11\,780\,096\,z^5+226\,897\,920\,z^4-771\,531\,840\,z^3-213\,617\,250\,z^2-48\,024\,900\,z+53\,482\,275\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(65\,536\,z^6-5\,849\,088\,z^5+109\,877\,760\,z^4-323\,991\,360\,z^3-215\,644\,275\,z^2-\right.$$
$$113\,513\,400\,z+160\,446\,825\Big)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-524\,288\,z^7+46\,989\,312\,z^6-896\,016\,384\,z^5+\right.$$
$$\left.\left.\left.2\,876\,670\,720\,z^4+1\,348\,439\,400\,z^3+646\,153\,200\,z^2-248\,856\,300\,z+481\,340\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a98d.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{11}{2},\frac{11}{4};-z\right)=\frac{1}{1\,845\,792\,000\sqrt{2}\,z^{15/4}}$$
$$\left(\left(4z\left(131\,072z^6+11\,780\,096z^5+226\,897\,920z^4+771\,531\,840z^3-213\,617\,250z^2+48\,024\,900z+53\,482\,275\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(65\,536z^6+5\,849\,088z^5+109\,877\,760z^4+323\,991\,360z^3-215\,644\,275z^2+113\,513\,400z+160\,446\,825\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(524\,288z^7+46\,989\,312z^6+896\,016\,384z^5+2\,876\,670\,720z^4-\right.$$
$$\left.\left.1\,348\,439\,400z^3+646\,153\,200z^2+248\,856\,300z+481\,340\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a98e.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{11}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{84\,004\,044\,800z^{9/2}}\left(3e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-1\,048\,576z^5+104\,529\,920z^4-2\,286\,592\,000z^3+9\,003\,456\,000z^2+\right.\right.\right.$$
$$\left.\left.4\,783\,086\,000z+3\,886\,257\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(-1\,048\,576z^5+104\,529\,920z^4-2\,286\,592\,000z^3+9\,003\,456\,000z^2+4\,783\,086\,000z+3\,886\,257\,375\right)$$
$$\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+4\left(-262\,144z^7+65\,536z^{13/2}+26\,083\,328z^6-6\,471\,680z^{11/2}-\right.$$
$$566\,855\,680z^5+137\,029\,120z^{9/2}+2\,153\,733\,120z^4-450\,690\,240z^{7/2}+1\,441\,555\,500z^3-$$
$$480\,023\,775z^{5/2}+1\,312\,819\,200z^2-461\,260\,800z^{3/2}+79\,833\,600z+465\,696\,000\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(262\,144z^7+65\,536z^{13/2}-26\,083\,328z^6-6\,471\,680z^{11/2}+566\,855\,680z^5+137\,029\,120z^{9/2}-\right.$$
$$\left.\left.\left.\left.2\,153\,733\,120z^4-450\,690\,240z^{7/2}-1\,441\,555\,500z^3-480\,023\,775z^{5/2}-1\,312\,819\,200z^2-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.461\,260\,800z^{3/2}-79\,833\,600z+465\,696\,000\sqrt{z}-232\,848\,000\right)+232\,848\,000\right)\right)\Bigg)$$

07.22.03.a98f.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{11}{2},\frac{13}{4};-z\right)=\frac{1}{21\,001\,011\,200z^{9/2}}$$
$$\left(3\left(\sqrt{\pi}\left(1\,048\,576z^5+104\,529\,920z^4+2\,286\,592\,000z^3+9\,003\,456\,000z^2-4\,783\,086\,000z+3\,886\,257\,375\right)\right.\right.$$
$$C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+2\left(\sqrt{z}\left(65\,536z^6+6\,471\,680z^5+137\,029\,120z^4+450\,690\,240z^3-480\,023\,775z^2+\right.\right.$$
$$\left.461\,260\,800z+465\,696\,000\right)\cos\left(2\sqrt{z}\right)-4\left(65\,536z^7+6\,520\,832z^6+141\,713\,920z^5+\right.$$
$$\left.\left.\left.538\,433\,280z^4-360\,388\,875z^3+328\,204\,800z^2-19\,958\,400z+58\,212\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)\Bigg)$$

07.22.03.a98g.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{11}{2},\frac{15}{4};z\right)= $$
$$ -\frac{1}{14\,766\,336\,000\sqrt{2}\,z^{15/4}}\left(\left(2z\left(1\,048\,576z^6-115\,146\,752z^5+2\,847\,416\,320z^4-13\,419\,118\,080z^3-7\,062\,778\,800z^2-\right.\right.\right. $$
$$ \left.8\,329\,045\,725z-1\,344\,697\,200\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-1\,048\,576z^6+114\,491\,392z^5-2\,777\,210\,880z^4+\right. $$
$$ \left.11\,820\,695\,040z^3+11\,842\,815\,600z^2+16\,534\,754\,775z+8\,068\,183\,200\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ 2\left(-1\,048\,576z^7+114\,884\,608z^6-2\,819\,039\,232z^5+12\,750\,312\,960z^4+9\,497\,703\,600z^3+\right. $$
$$ \left.\left.\left.11\,895\,986\,025z^2+6\,339\,286\,800z-3\,025\,568\,700\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a98h.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{11}{2},\frac{15}{4};-z\right)= $$
$$ \frac{1}{14\,766\,336\,000\sqrt{2}\,z^{15/4}}\left(\left(2z\left(1\,048\,576z^6+115\,146\,752z^5+2\,847\,416\,320z^4+13\,419\,118\,080z^3-7\,062\,778\,800z^2+\right.\right.\right. $$
$$ \left.8\,329\,045\,725z-1\,344\,697\,200\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(1\,048\,576z^6+114\,491\,392z^5+2\,777\,210\,880z^4+\right. $$
$$ \left.11\,820\,695\,040z^3-11\,842\,815\,600z^2+16\,534\,754\,775z-8\,068\,183\,200\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ 2\left(1\,048\,576z^7+114\,884\,608z^6+2\,819\,039\,232z^5+12\,750\,312\,960z^4-9\,497\,703\,600z^3+\right. $$
$$ \left.\left.\left.11\,895\,986\,025z^2-6\,339\,286\,800z-3\,025\,568\,700\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a98i.01

$$ {}_1F_2\left(-\frac{11}{4};\frac{11}{2},\frac{17}{4};z\right)= $$
$$ \frac{1}{827\,116\,748\,800z^{9/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-16\,777\,216z^6+2\,006\,974\,464z^5-54\,878\,208\,000z^4+288\,110\,592\,000z^3+\right.\right.\right. $$
$$ \left.229\,588\,128\,000z^2+373\,080\,708\,000z+314\,786\,847\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+ $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(-16\,777\,216z^6+2\,006\,974\,464z^5-54\,878\,208\,000z^4+288\,110\,592\,000z^3+\right. $$
$$ \left.229\,588\,128\,000z^2+373\,080\,708\,000z+314\,786\,847\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+ $$
$$ 4\left(-4\,194\,304z^7+1\,048\,576z^{13/2}+500\,957\,184z^6-124\,452\,864z^{11/2}-13\,627\,195\,392z^5+\right. $$
$$ 3\,316\,162\,560z^{9/2}+69\,650\,380\,800z^4-15\,219\,832\,320z^{7/2}+66\,418\,672\,320z^3-22\,156\,651\,440z^{5/2}+ $$
$$ 111\,656\,645\,100z^2-42\,288\,159\,375z^{3/2}+112\,405\,708\,800z-35\,765\,452\,800\sqrt{z}+e^{4\sqrt{z}} $$
$$ \left.\left.\left.\left(4\,194\,304z^7+1\,048\,576z^{13/2}-500\,957\,184z^6-124\,452\,864z^{11/2}+13\,627\,195\,392z^5+3\,316\,162\,560z^{9/2}-\right.\right.\right. $$
$$ \left.\left.\left.69\,650\,380\,800z^4-15\,219\,832\,320z^{7/2}-66\,418\,672\,320z^3-22\,156\,651\,440z^{5/2}-111\,656\,645\,100z^2-\right.\right.\right. $$
$$ \left.\left.\left.42\,288\,159\,375z^{3/2}-112\,405\,708\,800z-35\,765\,452\,800\sqrt{z}+17\,882\,726\,400\right)-17\,882\,726\,400\right)\right)\right) $$

07.22.03.a98j.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},\frac{17}{4};-z\right)=$$
$$\frac{1}{206\,779\,187\,200\,z^{9/2}}\left(\sqrt{\pi}\,\left(16\,777\,216\,z^6+2\,006\,974\,464\,z^5+54\,878\,208\,000\,z^4+288\,110\,592\,000\,z^3-\right.\right.$$
$$\left.229\,588\,128\,000\,z^2+373\,080\,708\,000\,z-314\,786\,847\,375\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+$$
$$2\left(\sqrt{z}\,\left(1\,048\,576\,z^6+124\,452\,864\,z^5+3\,316\,162\,560\,z^4+15\,219\,832\,320\,z^3-22\,156\,651\,440\,z^2+\right.\right.$$
$$42\,288\,159\,375\,z-35\,765\,452\,800\big)\cos\big(2\sqrt{z}\big)-4\left(1\,048\,576\,z^7+125\,239\,296\,z^6+3\,406\,798\,848\,z^5+\right.$$
$$\left.\left.\left.17\,412\,595\,200\,z^4-16\,604\,668\,080\,z^3+27\,914\,161\,275\,z^2-28\,101\,427\,200\,z-4\,470\,681\,600\right)\sin\big(2\sqrt{z}\big)\right)\right)$$

07.22.03.a98k.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},\frac{19}{4};z\right)=$$
$$-\left(\left(2\,z\left(16\,777\,216\,z^6-2\,176\,843\,776\,z^5+65\,732\,935\,680\,z^4-396\,052\,234\,240\,z^3-309\,794\,284\,800\,z^2-640\,215\,576\,000\,z-\right.\right.\right.$$
$$711\,260\,775\,225\big)I_{-\frac{1}{4}}\big(\sqrt{z}\big)^2+\sqrt{z}\,\left(-16\,777\,216\,z^6+2\,166\,358\,016\,z^5-64\,400\,588\,800\,z^4+\right.$$
$$\left.358\,430\,392\,320\,z^3+469\,621\,152\,000\,z^2+1\,016\,626\,010\,400\,z+1\,574\,388\,290\,475\right)I_{\frac{3}{4}}\big(\sqrt{z}\big)I_{-\frac{1}{4}}\big(\sqrt{z}\big)+$$
$$2\left(-16\,777\,216\,z^7+2\,172\,649\,472\,z^6-65\,195\,278\,336\,z^5+380\,438\,446\,080\,z^4+386\,824\,838\,400\,z^3+\right.$$
$$\left.\left.\left.786\,420\,835\,200\,z^2+1\,062\,755\,018\,325\,z+419\,545\,526\,400\right)I_{\frac{3}{4}}\big(\sqrt{z}\big)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(409\,519\,718\,400\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a98l.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},\frac{19}{4};-z\right)=$$
$$\left(\left(2\,z\left(16\,777\,216\,z^6+2\,176\,843\,776\,z^5+65\,732\,935\,680\,z^4+396\,052\,234\,240\,z^3-309\,794\,284\,800\,z^2+640\,215\,576\,000\,z-\right.\right.\right.$$
$$711\,260\,775\,225\big)J_{-\frac{1}{4}}\big(\sqrt{z}\big)^2-\sqrt{z}\,\left(16\,777\,216\,z^6+2\,166\,358\,016\,z^5+64\,400\,588\,800\,z^4+\right.$$
$$\left.358\,430\,392\,320\,z^3-469\,621\,152\,000\,z^2+1\,016\,626\,010\,400\,z-1\,574\,388\,290\,475\right)J_{\frac{3}{4}}\big(\sqrt{z}\big)J_{-\frac{1}{4}}\big(\sqrt{z}\big)+$$
$$2\left(16\,777\,216\,z^7+2\,172\,649\,472\,z^6+65\,195\,278\,336\,z^5+380\,438\,446\,080\,z^4-386\,824\,838\,400\,z^3+\right.$$
$$\left.\left.\left.786\,420\,835\,200\,z^2-1\,062\,755\,018\,325\,z+419\,545\,526\,400\right)J_{\frac{3}{4}}\big(\sqrt{z}\big)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(409\,519\,718\,400\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a98m.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{11}{2}, \frac{21}{4}; z\right) = \frac{1}{21\,796\,959\,027\,200\, z^{9/2}} \left(e^{-2\sqrt{z}} \left(4\left(-67\,108\,864\, z^7 + 16\,777\,216\, z^{13/2} + 9\,353\,297\,920\, z^6 - 2\,325\,741\,568\, z^{11/2} - 305\,589\,387\,264\, z^5 + 74\,696\,294\,400\, z^{9/2} + 1\,962\,823\,188\,480\, z^4 - 440\,255\,692\,800\, z^{7/2} + 2\,416\,612\,746\,240\, z^3 - 793\,206\,247\,680\, z^{5/2} + 5\,919\,960\,816\,000\, z^2 - 2\,145\,612\,823\,200\, z^{3/2} + 10\,868\,289\,547\,500\, z - 4\,438\,222\,224\,975\sqrt{z} + e^{4\sqrt{z}} \left(67\,108\,864\, z^7 + 16\,777\,216\, z^{13/2} - 9\,353\,297\,920\, z^6 - 2\,325\,741\,568\, z^{11/2} + 305\,589\,387\,264\, z^5 + 74\,696\,294\,400\, z^{9/2} - 1\,962\,823\,188\,480\, z^4 - 440\,255\,692\,800\, z^{7/2} - 2\,416\,612\,746\,240\, z^3 - 793\,206\,247\,680\, z^{5/2} - 5\,919\,960\,816\,000\, z^2 - 2\,145\,612\,823\,200\, z^{3/2} - 10\,868\,289\,547\,500\, z - 4\,438\,222\,224\,975\sqrt{z} - 8\,011\,461\,427\,200\right) + 8\,011\,461\,427\,200\right) + e^{2\sqrt{z}} \sqrt{2\pi}\, \sqrt[4]{z} \left(-268\,435\,456\, z^7 + 37\,463\,523\,328\, z^6 - 1\,229\,271\,859\,200\, z^5 + 8\,067\,096\,576\,000\, z^4 + 8\,571\,290\,112\,000\, z^3 + 20\,892\,519\,648\,000\, z^2 + 35\,256\,126\,906\,000\, z + 20\,461\,145\,079\,375\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + e^{2\sqrt{z}} \sqrt{2\pi}\, \sqrt[4]{z} \left(-268\,435\,456\, z^7 + 37\,463\,523\,328\, z^6 - 1\,229\,271\,859\,200\, z^5 + 8\,067\,096\,576\,000\, z^4 + 8\,571\,290\,112\,000\, z^3 + 20\,892\,519\,648\,000\, z^2 + 35\,256\,126\,906\,000\, z + 20\,461\,145\,079\,375\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right) $$

07.22.03.a98n.01

$$ {}_1F_2\left(-\frac{11}{4}; \frac{11}{2}, \frac{21}{4}; -z\right) = \frac{1}{5\,449\,239\,756\,800\, z^{9/2}} \left(\sqrt{\pi}\, \sqrt[4]{z} \left(268\,435\,456\, z^7 + 37\,463\,523\,328\, z^6 + 1\,229\,271\,859\,200\, z^5 + 8\,067\,096\,576\,000\, z^4 + 8\,571\,290\,112\,000\, z^3 + 20\,892\,519\,648\,000\, z^2 - 35\,256\,126\,906\,000\, z + 20\,461\,145\,079\,375\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\left(4\left(16\,777\,216\, z^7 + 2\,338\,324\,480\, z^6 + 76\,397\,346\,816\, z^5 + 490\,705\,797\,120\, z^4 - 604\,153\,186\,560\, z^3 + 1\,479\,990\,204\,000\, z^2 - 2\,717\,072\,386\,875\, z + 2\,002\,865\,356\,800\right) \sin\left(2\sqrt{z}\right) - \sqrt{z} \left(16\,777\,216\, z^6 + 2\,325\,741\,568\, z^5 + 74\,696\,294\,400\, z^4 + 440\,255\,692\,800\, z^3 - 793\,206\,247\,680\, z^2 + 2\,145\,612\,823\,200\, z - 4\,438\,222\,224\,975\right) \cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a98o.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},\frac{23}{4};z\right)=$$
$$-\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7-40\,181\,432\,320\,z^6+1\,433\,052\,119\,040\,z^5-10\,515\,210\,240\,000\,z^4-10\,949\,408\,870\,400\,z^3-\right.\right.\right.$$
$$\left.\left.\left.32\,048\,919\,302\,400\,z^2-64\,392\,746\,418\,000\,z-40\,397\,645\,413\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-268\,435\,456\,z^7+40\,013\,660\,160\,z^6-1\,408\,389\,611\,520\,z^5+9\,683\,922\,124\,800\,z^4+15\,539\,876\,352\,000\,z^3+\right.$$
$$\left.45\,234\,635\,846\,400\,z^2+109\,344\,052\,818\,000\,z+121\,192\,936\,239\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-268\,435\,456\,z^7+40\,114\,323\,456\,z^6-1\,423\,111\,618\,560\,z^5+10\,172\,148\,940\,800\,z^4+\right.$$
$$\left.\left.13\,087\,388\,160\,000\,z^3+36\,916\,373\,894\,400\,z^2+80\,155\,671\,195\,600\,z+80\,188\,916\,432\,625\right)\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(196\,569\,464\,832\,000\sqrt{2}\,z^{17/4}\right)$$

07.22.03.a98p.01

$${}_1F_2\left(-\frac{11}{4};\frac{11}{2},\frac{23}{4};-z\right)=$$
$$\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7+40\,181\,432\,320\,z^6+1\,433\,052\,119\,040\,z^5+10\,515\,210\,240\,000\,z^4-10\,949\,408\,870\,400\,z^3+\right.\right.\right.$$
$$\left.\left.\left.32\,048\,919\,302\,400\,z^2-64\,392\,746\,418\,000\,z+40\,397\,645\,413\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$\left(268\,435\,456\,z^7+40\,013\,660\,160\,z^6+1\,408\,389\,611\,520\,z^5+9\,683\,922\,124\,800\,z^4-15\,539\,876\,352\,000\,z^3+\right.$$
$$\left.45\,234\,635\,846\,400\,z^2-109\,344\,052\,818\,000\,z+121\,192\,936\,239\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(268\,435\,456\,z^7+40\,114\,323\,456\,z^6+1\,423\,111\,618\,560\,z^5+10\,172\,148\,940\,800\,z^4-\right.$$
$$\left.\left.13\,087\,388\,160\,000\,z^3+36\,916\,373\,894\,400\,z^2-80\,155\,671\,195\,600\,z+80\,188\,916\,432\,625\right)\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(196\,569\,464\,832\,000\sqrt{2}\,z^{17/4}\right)$$

For fixed z and $a_1=-\frac{9}{4}$, $b_{1.}\geq -\frac{11}{2}$

For fixed z and $a_1=-\frac{9}{4}$, $b_{1.}=-\frac{11}{2}$

07.22.03.a98q.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{349\,781\,355\sqrt[4]{z}}\left(\sqrt{2}\,\left(7\left(28\,672\,z^5+1\,105\,152\,z^4+13\,284\,480\,z^3+40\,526\,640\,z^2-103\,492\,620\,z+49\,968\,765\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\,\left(8192\,z^5+813\,568\,z^4+18\,923\,520\,z^3+149\,244\,480\,z^2+258\,073\,200\,z-349\,781\,355\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.220\,z\left(1024\,z^4+47\,040\,z^3+721\,056\,z^2+3\,787\,308\,z+6\,359\,661\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)$$

07.22.03.a98r.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{349\,781\,355\sqrt[4]{z}}\left(\sqrt{2}\left(7\left(-28\,672\,z^5+1\,105\,152\,z^4-13\,284\,480\,z^3+40\,526\,640\,z^2+103\,492\,620\,z+49\,968\,765\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(8192\,z^5-813\,568\,z^4+18\,923\,520\,z^3-149\,244\,480\,z^2+258\,073\,200\,z+349\,781\,355\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.220\,z\left(1024\,z^4-47\,040\,z^3+721\,056\,z^2-3\,787\,308\,z+6\,359\,661\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a98s.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},-\frac{21}{4};z\right)=\left(\frac{1024\,z^4}{945\,945}+\frac{1472\,z^3}{35\,035}+\frac{96\,z^2}{187}+\frac{148\,z}{77}+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\left(2048\,z^4+192\,384\,z^3+4\,049\,136\,z^2+28\,402\,920\,z+48\,243\,195\right)\sinh\left(2\sqrt{z}\right)}{48\,243\,195}$$

07.22.03.a98t.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},-\frac{21}{4};-z\right)=\left(\frac{1024\,z^4}{945\,945}-\frac{1472\,z^3}{35\,035}+\frac{96\,z^2}{187}-\frac{148\,z}{77}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\left(2048\,z^4-192\,384\,z^3+4\,049\,136\,z^2-28\,402\,920\,z+48\,243\,195\right)\sin\left(2\sqrt{z}\right)}{48\,243\,195}$$

07.22.03.a98u.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{15\,207\,885\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096\,z^5+275\,712\,z^4+3\,857\,280\,z^3+12\,806\,640\,z^2-31\,725\,540\,z+15\,207\,885\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(23\,552\,z^4+725\,760\,z^3+6\,320\,160\,z^2+11\,448\,360\,z-15\,207\,885\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(1024\,z^4+87\,360\,z^3+1\,589\,280\,z^2+8\,828\,820\,z+15\,207\,885\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a98v.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{15\,207\,885\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096\,z^5+275\,712\,z^4-3\,857\,280\,z^3+12\,806\,640\,z^2+31\,725\,540\,z+15\,207\,885\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(23\,552\,z^4-725\,760\,z^3+6\,320\,160\,z^2-11\,448\,360\,z-15\,207\,885\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(1024\,z^4-87\,360\,z^3+1\,589\,280\,z^2-8\,828\,820\,z+15\,207\,885\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a98w.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},-\frac{17}{4};z\right)=\frac{1}{2\,297\,295}\left(\left(1024\,z^4+75\,584\,z^3+1\,098\,720\,z^2+4\,373\,460\,z+2\,297\,295\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(5888\,z^3+168\,336\,z^2+1\,310\,400\,z+2\,297\,295\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.a98x.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},-\frac{17}{4};-z\right)=\frac{1}{2\,297\,295}\left(\left(1024\,z^4-75\,584\,z^3+1\,098\,720\,z^2-4\,373\,460\,z+2\,297\,295\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(-5888\,z^3+168\,336\,z^2-1\,310\,400\,z+2\,297\,295\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a98y.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},-\frac{15}{4};z\right)=\frac{1}{800\,415\,\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(3328\,z^4+62\,336\,z^3+237\,552\,z^2-562\,716\,z+266\,805\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512\,z^4+30\,720\,z^3+318\,528\,z^2+620\,928\,z-800\,415\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(960\,z^3+24\,416\,z^2+148\,764\,z+266\,805\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a98z.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},-\frac{15}{4};-z\right)=\frac{1}{800\,415\,\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(3328\,z^4-62\,336\,z^3+237\,552\,z^2+562\,716\,z+266\,805\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(512\,z^4-30\,720\,z^3+318\,528\,z^2-620\,928\,z-800\,415\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-12\,z\left(960\,z^3-24\,416\,z^2+148\,764\,z-266\,805\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a990.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},-\frac{13}{4};z\right)=\frac{1}{135\,135}\left(\left(2752\,z^3+57\,120\,z^2+253\,260\,z+135\,135\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(128\,z^3+7728\,z^2+73\,080\,z+135\,135\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.a991.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},-\frac{13}{4};-z\right)=\frac{1}{135\,135}\left(\left(-2752\,z^3+57\,120\,z^2-253\,260\,z+135\,135\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(-128\,z^3+7728\,z^2-73\,080\,z+135\,135\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a992.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},-\frac{11}{4};z\right)=\frac{1}{53\,361\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256\,z^4+10\,368\,z^3+52\,080\,z^2-114\,660\,z+53\,361\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1280\,z^3+19\,488\,z^2+43\,512\,z-53\,361\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(64\,z^3+3808\,z^2+27\,636\,z+53\,361\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a993.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) = \frac{1}{53\,361\sqrt[4]{z}} \left(\sqrt{2}\left(\left(256z^4 - 10\,368z^3 + 52\,080z^2 + 114\,660z + 53\,361\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1280z^3 - 19\,488z^2 + 43\,512z + 53\,361\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(64z^3 - 3808z^2 + 27\,636z - 53\,361\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a994.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{11}{2}, -\frac{9}{4}; z\right) = \left(\frac{64z^3}{10\,395} + \frac{32z^2}{99} + \frac{20z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16z^2 + 240z + 495\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.a995.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{11}{2}, -\frac{9}{4}; -z\right) = \left(-\frac{64z^3}{10\,395} + \frac{32z^2}{99} - \frac{20z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(16z^2 - 240z + 495\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.a996.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{11}{2}, -\frac{7}{4}; z\right) = \frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(128z^3 + 1904z^2 - 3612z + 1617\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(32z^3 + 1344z^2 + 4368z - 4851\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 28z\left(32z^2 + 300z + 693\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a997.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{11}{2}, -\frac{7}{4}; -z\right) = \frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-384z^3 + 5712z^2 + 10\,836z + 4851\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(32z^3 - 1344z^2 + 4368z + 4851\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 28z\left(32z^2 - 300z + 693\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a998.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{11}{2}, -\frac{5}{4}; z\right) = \frac{1}{2310}\left(e^{-2\sqrt{z}}\left(-16e^{4\sqrt{z}}z^{5/2} + 16z^{5/2} + 52e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4} - 52e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4} + 224e^{4\sqrt{z}}z^2 + 224z^2 - 784e^{4\sqrt{z}}z^{3/2} + 784z^{3/2} + 1932e^{4\sqrt{z}}z + 1932z - 2310e^{4\sqrt{z}}\sqrt{z} + 2310\sqrt{z} + 1155e^{4\sqrt{z}} + 1155\right)\right) $$

07.22.03.a999.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{11}{2}, -\frac{5}{4}; -z\right) = \frac{1}{1155}\left(104\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4} + 2\left(8z^2 - 392z + 1155\right)\sin\left(2\sqrt{z}\right)\sqrt{z} + 7\left(32z^2 - 276z + 165\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.a99a.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(40z^3+336z^2-588z+231\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(41z^2+280z-231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(-22z^2+84z+693\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a99b.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},-\frac{3}{4};-z\right)=$$
$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(-40z^3+336z^2+588z+231\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(41z^2-280z-231\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(22z^2+84z-693\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a99c.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{7392}\left(e^{-2\sqrt{z}}\left(-13e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+153)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+13e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+153)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-\right.\right.$$
$$\left.\left.4\left(36z^2-197z^{3/2}-336z-1848\sqrt{z}+e^{4\sqrt{z}}\left(36z^2+197z^{3/2}-336z+1848\sqrt{z}-924\right)-924\right)\right)\right)$$

07.22.03.a99d.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},-\frac{1}{4};-z\right)=$$
$$\frac{1}{1848}\left(13\sqrt{\pi}\,(153-16z)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+2(1848-197z)\sin\left(2\sqrt{z}\right)\sqrt{z}-24\left(3z^2+28z-77\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a99e.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{2772\sqrt{2}\sqrt[4]{z}}\left(\left(-2\left(208z^3+2331z^2+1008z-2772\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+9\sqrt{z}\left(48z^2-49z+2464\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(208z^2+3591z+11\,088\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a99f.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{2772\sqrt{2}\sqrt[4]{z}}\left(\left(\left(416z^3-4662z^2+2016z+5544\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-9\sqrt{z}\left(48z^2+49z+2464\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(208z^2-3591z+11\,088\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a99g.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) = \frac{1}{946\,176}\left(e^{-2\sqrt{z}}\right.$$
$$\left(4\left(832\,z^2 + 304\,z^{3/2} + 22\,596\,z + 27\,699\,\sqrt{z} + e^{4\sqrt{z}}\left(832\,z^2 - 304\,z^{3/2} + 22\,596\,z - 27\,699\,\sqrt{z} + 118\,272\right) + 118\,272\right) + \right.$$
$$13\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\,\left(256\,z^2 + 4896\,z + 16\,065\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) -$$
$$\left.\left.13\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\,\left(256\,z^2 + 4896\,z + 16\,065\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a99h.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{11}{2}, \frac{3}{4}; -z\right) = \frac{1}{236\,544}\left(8\left(208\,z^2 - 5649\,z + 29\,568\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.13\sqrt{\pi}\,\sqrt[4]{z}\,\left(256\,z^2 - 4896\,z + 16\,065\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\,(27\,699 - 304\,z)\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a99i.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{443\,520\,\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(-2\left(3328\,z^3 + 79\,296\,z^2 + 439\,047\,z - 443\,520\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\,\left(3328\,z^2 + 113\,568\,z + 677\,985\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.2\,z\left(3328\,z^2 + 77\,952\,z + 259\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a99j.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) = \frac{1}{443\,520\,\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\left(3328\,z^3 - 79\,296\,z^2 + 439\,047\,z + 443\,520\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\,\left(3328\,z^2 - 113\,568\,z + 677\,985\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.2\,z\left(3328\,z^2 - 77\,952\,z + 259\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a99k.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{11}{2}, \frac{7}{4}; z\right) =$$
$$\frac{1}{60\,555\,264\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(13\,312\,z^{5/2} - 3328\,z^2 + 359\,808\,z^{3/2} - 454\,944\,z + 607\,908\,\sqrt{z} + e^{4\sqrt{z}}\left(13\,312\,z^{5/2} + \right.\right.\right.\right.$$
$$\left.\left.\left.\left.3328\,z^2 + 359\,808\,z^{3/2} + 454\,944\,z + 607\,908\,\sqrt{z} + 5\,221\,125\right) - 5\,221\,125\right) + \right.$$
$$13\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3 + 117\,504\,z^2 + 771\,120\,z + 401\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) -$$
$$\left.13\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3 + 117\,504\,z^2 + 771\,120\,z + 401\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a99l.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},\frac{7}{4};-z\right)=\frac{1}{15\,138\,816\,z^{3/4}}\left(13\sqrt{\pi}\left(4096\,z^3-117\,504\,z^2+771\,120\,z-401\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\sqrt[4]{z}\left(4\sqrt{z}\left(3328\,z^2-89\,952\,z+151\,977\right)\cos\left(2\sqrt{z}\right)+\left(3328\,z^2-454\,944\,z+5\,221\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a99m.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},\frac{9}{4};z\right)=\frac{1}{19\,869\,696\sqrt{2}\,z^{3/4}}$$
$$\left(\left(-2\sqrt{z}\left(53\,248\,z^3+1\,747\,200\,z^2+11\,899\,440\,z-11\,692\,989\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(53\,248\,z^3+1\,650\,432\,z^2+2\,916\,144\,z+\right.\right.\right.$$
$$\left.\left.\left.13\,627\,845\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(53\,248\,z^3+1\,787\,136\,z^2+16\,487\,856\,z+40\,883\,535\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a99n.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},\frac{9}{4};-z\right)=\frac{1}{19\,869\,696\sqrt{2}\,z^{3/4}}$$
$$\left(\left(2\sqrt{z}\left(53\,248\,z^3-1\,747\,200\,z^2+11\,899\,440\,z+11\,692\,989\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-53\,248\,z^3+1\,650\,432\,z^2-2\,916\,144\,z+\right.\right.\right.$$
$$\left.\left.\left.13\,627\,845\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(53\,248\,z^3-1\,787\,136\,z^2+16\,487\,856\,z-40\,883\,535\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a99o.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{2\,214\,592\,512\,z^{7/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(212\,992\,z^{7/2}-53\,248\,z^3+8\,186\,880\,z^{5/2}-513\,792\,z^2+108\,156\,864\,z^{3/2}+\right.\right.\right.$$
$$\left.\left.\left.150\,368\,400\,z+605\,650\,500\sqrt{z}+e^{4\sqrt{z}}\left(212\,992\,z^{7/2}+53\,248\,z^3+8\,186\,880\,z^{5/2}+513\,792\,z^2+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.108\,156\,864\,z^{3/2}-150\,368\,400\,z+605\,650\,500\sqrt{z}-454\,237\,875\right)+454\,237\,875\right)+$$
$$13\,e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4+2\,506\,752\,z^3+24\,675\,840\,z^2+25\,704\,000\,z-34\,941\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.13\,e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4+2\,506\,752\,z^3+24\,675\,840\,z^2+25\,704\,000\,z-34\,941\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a99p.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{553\,648\,128\,z^{7/4}}\left(13\sqrt{\pi}\left(65\,536\,z^4-2\,506\,752\,z^3+24\,675\,840\,z^2-25\,704\,000\,z-34\,941\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(53\,248\,z^3-2\,046\,720\,z^2+27\,039\,216\,z-151\,412\,625\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(53\,248\,z^3-513\,792\,z^2-150\,368\,400\,z+454\,237\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a99q.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) = \frac{1}{635\,830\,272\sqrt{2}\, z^{7/4}} \left(\left(-2\sqrt{z}\left(851\,968 z^4 + 36\,102\,144 z^3 + 404\,425\,728 z^2 + 1\,079\,461\,152 z - 1\,267\,389\,585\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(851\,968 z^4 + 36\,847\,616 z^3 + 610\,165\,248 z^2 + 4\,360\,910\,400 z - 2\,112\,315\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(851\,968 z^4 + 36\,741\,120 z^3 + 416\,858\,112 z^2 - 436\,091\,040 z - 6\,336\,947\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a99r.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) = \frac{1}{635\,830\,272\sqrt{2}\, z^{7/4}} \left(\left(2\sqrt{z}\left(851\,968 z^4 - 36\,102\,144 z^3 + 404\,425\,728 z^2 - 1\,079\,461\,152 z - 1\,267\,389\,585\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(851\,968 z^4 - 36\,847\,616 z^3 + 610\,165\,248 z^2 - 4\,360\,910\,400 z - 2\,112\,315\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(851\,968 z^4 - 36\,741\,120 z^3 + 416\,858\,112 z^2 + 436\,091\,040 z - 6\,336\,947\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a99s.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) = \frac{1}{64\,424\,509\,440 z^{11/4}} \left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(3\,407\,872 z^{9/2} - 851\,968 z^4 + 163\,577\,856 z^{7/2} - 41\,533\,440 z^3 + 2\,044\,692\,480 z^{5/2} - 3\,029\,644\,800 z^2 - 15\,504\,652\,800 z^{3/2} - 75\,585\,182\,400 z - 139\,905\,265\,500\sqrt{z} + e^{4\sqrt{z}}\left(3\,407\,872 z^{9/2} + 851\,968 z^4 + 163\,577\,856 z^{7/2} + 41\,533\,440 z^3 + 2\,044\,692\,480 z^{5/2} + 3\,029\,644\,800 z^2 - 15\,504\,652\,800 z^{3/2} + 75\,585\,182\,400 z - 139\,905\,265\,500\sqrt{z} + 104\,928\,949\,125\right) - 104\,928\,949\,125\right) + 13 e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576 z^5 + 50\,135\,040 z^4 + 658\,022\,400 z^3 + 1\,028\,160\,000 z^2 - 2\,795\,310\,000 z + 8\,071\,457\,625\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 13 e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576 z^5 + 50\,135\,040 z^4 + 658\,022\,400 z^3 + 1\,028\,160\,000 z^2 - 2\,795\,310\,000 z + 8\,071\,457\,625\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a99t.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) = \frac{1}{16\,106\,127\,360 z^{11/4}} \left(13\sqrt{\pi}\left(1\,048\,576 z^5 - 50\,135\,040 z^4 + 658\,022\,400 z^3 - 1\,028\,160\,000 z^2 - 2\,795\,310\,000 z - 8\,071\,457\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(851\,968 z^4 - 40\,894\,464 z^3 + 511\,173\,120 z^2 + 3\,876\,163\,200 z - 34\,976\,316\,375\right)\cos\left(2\sqrt{z}\right) + 13\left(65\,536 z^4 - 3\,194\,880 z^3 + 233\,049\,600 z^2 - 5\,814\,244\,800 z + 8\,071\,457\,625\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a99u.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},\frac{17}{4};z\right)=$$

$$-\left(13\left(2\sqrt{z}\,\left(13\,631\,488\,z^5+707\,985\,408\,z^4+10\,110\,836\,736\,z^3-1\,364\,977\,152\,z^2-466\,399\,367\,280\,z+399\,227\,719\,275\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(13\,631\,488\,z^5+719\,912\,960\,z^4+9\,842\,122\,752\,z^3-132\,571\,676\,160\,z^2-1\,250\,491\,057\,200\,z+\right.$$
$$\left.665\,379\,532\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(13\,631\,488\,z^5+718\,209\,024\,z^4+10\,655\,244\,288\,z^3+\right.$$
$$\left.\left.\left.34\,887\,283\,200\,z^2+506\,955\,834\,000\,z+1\,996\,138\,596\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(223\,812\,255\,744\sqrt{2}\;z^{11/4}\right)$$

07.22.03.a99v.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},\frac{17}{4};-z\right)=$$

$$\left(13\left(2\sqrt{z}\,\left(13\,631\,488\,z^5-707\,985\,408\,z^4+10\,110\,836\,736\,z^3+1\,364\,977\,152\,z^2-466\,399\,367\,280\,z-399\,227\,719\,275\right)\right.\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(13\,631\,488\,z^5-719\,912\,960\,z^4+9\,842\,122\,752\,z^3+132\,571\,676\,160\,z^2-1\,250\,491\,057\,200\,z-\right.$$
$$\left.665\,379\,532\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(13\,631\,488\,z^5-718\,209\,024\,z^4+10\,655\,244\,288\,z^3-\right.$$
$$\left.\left.\left.34\,887\,283\,200\,z^2+506\,955\,834\,000\,z-1\,996\,138\,596\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(223\,812\,255\,744\sqrt{2}\;z^{11/4}\right)$$

07.22.03.a99w.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},\frac{19}{4};z\right)=$$

$$\frac{1}{1\,649\,267\,441\,664\,z^{15/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(54\,525\,952\,z^{11/2}-13\,631\,488\,z^5+3\,138\,650\,112\,z^{9/2}-794\,886\,144\,z^4+\right.\right.\right.$$
$$51\,934\,691\,328\,z^{7/2}-1\,535\,385\,600\,z^3+392\,784\,537\,600\,z^{5/2}+2\,568\,604\,147\,200\,z^2+$$
$$12\,599\,468\,481\,600\,z^{3/2}+35\,479\,975\,330\,800\,z+56\,941\,443\,058\,500\sqrt{z}\;+$$
$$e^{4\sqrt{z}}\left(54\,525\,952\,z^{11/2}+13\,631\,488\,z^5+3\,138\,650\,112\,z^{9/2}+794\,886\,144\,z^4+51\,934\,691\,328\,z^{7/2}+\right.$$
$$\left.1\,535\,385\,600\,z^3+392\,784\,537\,600\,z^{5/2}-2\,568\,604\,147\,200\,z^2+12\,599\,468\,481\,600\,z^{3/2}-\right.$$
$$\left.35\,479\,975\,330\,800\,z+56\,941\,443\,058\,500\sqrt{z}\;-42\,706\,082\,293\,875\right)+42\,706\,082\,293\,875\Big)+$$
$$13\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;\left(16\,777\,216\,z^6+962\,592\,768\,z^5+15\,792\,537\,600\,z^4+32\,901\,120\,000\,z^3-\right.$$
$$\left.134\,174\,880\,000\,z^2+774\,859\,932\,000\,z-3\,285\,083\,253\,375\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-$$
$$13\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;\left(16\,777\,216\,z^6+962\,592\,768\,z^5+15\,792\,537\,600\,z^4+32\,901\,120\,000\,z^3-\right.$$
$$\left.\left.134\,174\,880\,000\,z^2+774\,859\,932\,000\,z-3\,285\,083\,253\,375\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a99x.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},\frac{19}{4};-z\right)=$$
$$\frac{1}{412\,316\,860\,416\,z^{15/4}}\left(13\sqrt{\pi}\left(16\,777\,216\,z^6-962\,592\,768\,z^5+15\,792\,537\,600\,z^4-32\,901\,120\,000\,z^3-\right.\right.$$
$$\left.134\,174\,880\,000\,z^2-774\,859\,932\,000\,z-3\,285\,083\,253\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(52\sqrt{z}\left(1\,048\,576\,z^5-60\,358\,656\,z^4+998\,744\,064\,z^3-7\,553\,548\,800\,z^2+242\,297\,470\,800\,z-1\,095\,027\,751\,125\right)\right.$$
$$\cos\left(2\sqrt{z}\right)+\left(13\,631\,488\,z^5-794\,886\,144\,z^4+1\,535\,385\,600\,z^3+\right.$$
$$\left.\left.\left.2\,568\,604\,147\,200\,z^2-35\,479\,975\,330\,800\,z+42\,706\,082\,293\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a99y.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},\frac{21}{4};z\right)=$$
$$-\left(221\left(2\sqrt{z}\left(16\,777\,216\,z^6+1\,031\,798\,784\,z^5+18\,129\,420\,288\,z^4+36\,832\,739\,328\,z^3+973\,355\,201\,280\,z^2+\right.\right.\right.$$
$$\left.17\,033\,716\,022\,400\,z-15\,569\,881\,051\,725\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\left(16\,777\,216\,z^6+1\,046\,478\,848\,z^5+19\,057\,016\,832\,z^4+223\,278\,612\,480\,z^3+9\,192\,799\,123\,200\,z^2+\right.$$
$$\left.46\,842\,719\,061\,600\,z-25\,949\,801\,752\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\left(16\,777\,216\,z^6+1\,044\,381\,696\,z^5+18\,919\,784\,448\,z^4+40\,596\,111\,360\,z^3-1\,622\,258\,668\,800\,z^2-\right.$$
$$\left.\left.\left.25\,550\,574\,033\,600\,z-77\,849\,405\,258\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(7\,161\,992\,183\,808\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a99z.01

$${}_1F_2\left(-\frac{9}{4};-\frac{11}{2},\frac{21}{4};-z\right)=$$
$$\left(221\left(2\sqrt{z}\left(16\,777\,216\,z^6-1\,031\,798\,784\,z^5+18\,129\,420\,288\,z^4-36\,832\,739\,328\,z^3+973\,355\,201\,280\,z^2-\right.\right.\right.$$
$$\left.17\,033\,716\,022\,400\,z-15\,569\,881\,051\,725\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$3\left(-16\,777\,216\,z^6+1\,046\,478\,848\,z^5-19\,057\,016\,832\,z^4+223\,278\,612\,480\,z^3-9\,192\,799\,123\,200\,z^2+\right.$$
$$\left.46\,842\,719\,061\,600\,z+25\,949\,801\,752\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(16\,777\,216\,z^6-1\,044\,381\,696\,z^5+18\,919\,784\,448\,z^4-40\,596\,111\,360\,z^3-1\,622\,258\,668\,800\,z^2+\right.$$
$$\left.\left.\left.25\,550\,574\,033\,600\,z-77\,849\,405\,258\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(7\,161\,992\,183\,808\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a9a0.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) = \frac{1}{738\,871\,813\,865\,472\, z^{19/4}} \left(19\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(872\,415\,232\, z^{13/2} - 218\,103\,808\, z^6 + 58\,560\,872\,448\, z^{11/2} - 14\,803\,795\,968\, z^5 + 1\,161\,004\,056\,576\, z^{9/2} - 301\,916\,160\,000\, z^4 + 1\,882\,821\,427\,200\, z^{7/2} - 36\,931\,287\,859\,200\, z^3 - 423\,990\,235\,468\,800\, z^{5/2} - 2\,577\,113\,617\,478\,400\, z^2 - 9\,631\,238\,368\,752\,000\, z^{3/2} - 23\,232\,108\,767\,868\,000\, z - 35\,018\,987\,480\,977\,500\sqrt{z} + e^{4\sqrt{z}} \left(872\,415\,232\, z^{13/2} + 218\,103\,808\, z^6 + 58\,560\,872\,448\, z^{11/2} + 14\,803\,795\,968\, z^5 + 1\,161\,004\,056\,576\, z^{9/2} + 301\,916\,160\,000\, z^4 + 1\,882\,821\,427\,200\, z^{7/2} + 36\,931\,287\,859\,200\, z^3 - 423\,990\,235\,468\,800\, z^{5/2} + 2\,577\,113\,617\,478\,400\, z^2 - 9\,631\,238\,368\,752\,000\, z^{3/2} + 23\,232\,108\,767\,868\,000\, z - 35\,018\,987\,480\,977\,500\sqrt{z} + 26\,264\,240\,610\,733\,125\right) - 26\,264\,240\,610\,733\,125\right) + 13\, e^{2\sqrt{z}} \sqrt{2\pi}\, \left(268\,435\,456\, z^7 + 17\,968\,398\,336\, z^6 + 353\,752\,842\,240\, z^5 + 921\,231\,360\,000\, z^4 - 5\,009\,195\,520\,000\, z^3 + 43\,392\,156\,192\,000\, z^2 - 367\,929\,324\,378\,000\, z + 2\,020\,326\,200\,825\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - 13\, e^{2\sqrt{z}} \sqrt{2\pi}\, \left(268\,435\,456\, z^7 + 17\,968\,398\,336\, z^6 + 353\,752\,842\,240\, z^5 + 921\,231\,360\,000\, z^4 - 5\,009\,195\,520\,000\, z^3 + 43\,392\,156\,192\,000\, z^2 - 367\,929\,324\,378\,000\, z + 2\,020\,326\,200\,825\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right) $$

07.22.03.a9a1.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) = \frac{1}{184\,717\,953\,466\,368\, z^{19/4}} \left(19 \left(13\sqrt{\pi}\, \left(268\,435\,456\, z^7 - 17\,968\,398\,336\, z^6 + 353\,752\,842\,240\, z^5 - 921\,231\,360\,000\, z^4 - 5\,009\,195\,520\,000\, z^3 - 43\,392\,156\,192\,000\, z^2 - 367\,929\,324\,378\,000\, z - 2\,020\,326\,200\,825\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\, \left(4\sqrt{z}\, \left(218\,103\,808\, z^6 - 14\,640\,218\,112\, z^5 + 290\,251\,014\,144\, z^4 - 470\,705\,356\,800\, z^3 - 105\,997\,558\,867\,200\, z^2 + 2\,407\,809\,592\,188\,000\, z - 8\,754\,746\,870\,244\,375\right) \cos\left(2\sqrt{z}\right) + \left(218\,103\,808\, z^6 - 14\,803\,795\,968\, z^5 + 301\,916\,160\,000\, z^4 - 36\,931\,287\,859\,200\, z^3 + 2\,577\,113\,617\,478\,400\, z^2 - 23\,232\,108\,767\,868\,000\, z + 26\,264\,240\,610\,733\,125\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{9}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.a9a2.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{31\,798\,305\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192z^5+569\,856z^4+8\,042\,496z^3+26\,832\,960z^2-66\,361\,680z+31\,798\,305\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(48\,128z^4+1\,506\,624z^3+13\,194\,720z^2+23\,963\,940z-31\,798\,305\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(2048z^4+180\,096z^3+3\,307\,920z^2+18\,433\,800z+31\,798\,305\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9a3.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{31\,798\,305\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-8192z^5+569\,856z^4-8\,042\,496z^3+26\,832\,960z^2+66\,361\,680z+31\,798\,305\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(48\,128z^4-1\,506\,624z^3+13\,194\,720z^2-23\,963\,940z-31\,798\,305\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(2048z^4-180\,096z^3+3\,307\,920z^2-18\,433\,800z+31\,798\,305\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9a4.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},-\frac{21}{4};z\right)=$$
$$\left(\frac{2048z^4}{4\,385\,745}+\frac{16\,256z^3}{487\,305}+\frac{400z^2}{833}+\frac{40z}{21}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(1280z^3+35\,984z^2+278\,460z+487\,305\right)\sinh\left(2\sqrt{z}\right)}{487\,305}$$

07.22.03.a9a5.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},-\frac{21}{4};-z\right)=$$
$$\left(\frac{2048z^4}{4\,385\,745}-\frac{16\,256z^3}{487\,305}+\frac{400z^2}{833}-\frac{40z}{21}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-1280z^3+35\,984z^2-278\,460z+487\,305\right)\sin\left(2\sqrt{z}\right)}{487\,305}$$

07.22.03.a9a6.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},-\frac{19}{4};z\right)=\frac{1}{1\,382\,535\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(3\left(6144z^4+109\,312z^3+406\,560z^2-970\,200z+460\,845\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1024z^4+55\,104z^3+554\,400z^2+\right.\right.\right.$$
$$\left.\left.\left.1\,067\,220z-1\,382\,535\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+84z\left(256z^3+6160z^2+36\,960z+65\,835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9a7.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{1\,382\,535\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(3\left(6144\,z^4 - 109\,312\,z^3 + 406\,560\,z^2 + 970\,200\,z + 460\,845\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1024\,z^4 - 55\,104\,z^3 + 554\,400\,z^2 - 1\,067\,220\,z - 1\,382\,535\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 84\,z\left(256\,z^3 - 6160\,z^2 + 36\,960\,z - 65\,835\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9a8.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{9}{2}, -\frac{17}{4}; z\right) = \frac{1}{208\,845}$$
$$\left(\left(4864\,z^3 + 91\,440\,z^2 + 393\,120\,z + 208\,845\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256\,z^3 + 12\,816\,z^2 + 114\,660\,z + 208\,845\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.a9a9.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{9}{2}, -\frac{17}{4}; -z\right) = \frac{1}{208\,845}$$
$$\left(\left(-4864\,z^3 + 91\,440\,z^2 - 393\,120\,z + 208\,845\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-256\,z^3 + 12\,816\,z^2 - 114\,660\,z + 208\,845\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9aa.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{9}{2}, -\frac{15}{4}; z\right) = \frac{1}{72\,765\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(512\,z^4 + 15\,360\,z^3 + 68\,544\,z^2 - 155\,232\,z + 72\,765\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(704\,z^3 + 9184\,z^2 + 19\,404\,z - 24\,255\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(128\,z^3 + 5712\,z^2 + 38\,808\,z + 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ab.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{72\,765\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(512\,z^4 - 15\,360\,z^3 + 68\,544\,z^2 + 155\,232\,z + 72\,765\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(704\,z^3 - 9184\,z^2 + 19\,404\,z + 24\,255\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-128\,z^3 + 5712\,z^2 - 38\,808\,z + 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ac.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{9}{2}, -\frac{13}{4}; z\right) = \left(\frac{128\,z^3}{12\,285} + \frac{304\,z^2}{819} + \frac{24\,z}{13} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(176\,z^2 + 2100\,z + 4095\right)\sinh\left(2\sqrt{z}\right)}{4095}$$

07.22.03.a9ad.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{9}{2}, -\frac{13}{4}; -z\right) = \left(-\frac{128\,z^3}{12\,285} + \frac{304\,z^2}{819} - \frac{24\,z}{13} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(176\,z^2 - 2100\,z + 4095\right)\sin\left(2\sqrt{z}\right)}{4095}$$

07.22.03.a9ae.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(256z^3+1696z^2-3528z+1617\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z^3+1632z^2+4116z-4851\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(272z^2+2352z+4851\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9af.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-768z^3+5088z^2+10584z+4851\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z^3-1632z^2+4116z+4851\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(272z^2-2352z+4851\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ag.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},-\frac{9}{4};z\right)=\left(\frac{16z^2}{63}+\frac{16z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{945}\sqrt{z}\left(16z^2+420z+945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9ah.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},-\frac{9}{4};-z\right)=\left(\frac{16z^2}{63}-\frac{16z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\left(16z^2-420z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.a9ai.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},-\frac{7}{4};z\right)=\frac{\sqrt{2}\left(3\left(8z-7\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(4z+21\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)\right)^2\Gamma\left(\frac{5}{4}\right)^2}{441\sqrt[4]{z}}$$

07.22.03.a9aj.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},-\frac{7}{4};-z\right)=\frac{\sqrt{2}\left(3\left(8z+7\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4z-21\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)\right)^2\Gamma\left(\frac{5}{4}\right)^2}{441\sqrt[4]{z}}$$

07.22.03.a9ak.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{210}e^{-2\sqrt{z}}\left(8e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-8e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+16e^{4\sqrt{z}}z^2+16z^2-\right.$$
$$\left.56e^{4\sqrt{z}}z^{3/2}+56z^{3/2}+168e^{4\sqrt{z}}z+168z-210e^{4\sqrt{z}}\sqrt{z}+210\sqrt{z}+105e^{4\sqrt{z}}+105\right)$$

07.22.03.a9al.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},-\frac{5}{4};-z\right)=\frac{16}{105}\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+\frac{2}{15}(15-4z)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(\frac{16z^2}{105}-\frac{8z}{5}+1\right)\cos\left(2\sqrt{z}\right)$$

07.22.03.a9am.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},-\frac{3}{4};z\right)=\frac{1}{63\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(16z^3+96z^2-168z+63\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(10z^2+84z-63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(63-4z^2\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9an.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},-\frac{3}{4};-z\right)=\frac{1}{63\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-16z^3+96z^2+168z+63\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(10z^2-84z-63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(63-4z^2\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ao.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{336}e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+117)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+117)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-\right.$$
$$\left.4\left(4z^2-5z^{3/2}-84\sqrt{z}+e^{4\sqrt{z}}\left(4z^2+5z^{3/2}+84\sqrt{z}-42\right)-42\right)\right)$$

07.22.03.a9ap.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},-\frac{1}{4};-z\right)=-\frac{1}{84}\sqrt{\pi}\,(16z-117)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+\frac{1}{42}(84-5z)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(1-\frac{2z^2}{21}\right)\cos\left(2\sqrt{z}\right)$$

07.22.03.a9aq.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},\frac{1}{4};z\right)=\frac{1}{126\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(\left(-32z^3-306z^2+252\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\left(16z^2+63z+336\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(16z^2+189z+504\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ar.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},\frac{1}{4};-z\right)=\frac{1}{126\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(\left(32z^3-306z^2+252\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(16z^2-63z+336\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(16z^2-189z+504\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9as.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{43\,008}\left(e^{-2\sqrt{z}}\left(4\left(64z^2-16z^{3/2}+1076z+807\sqrt{z}+e^{4\sqrt{z}}\left(64z^2+16z^{3/2}+1076z-807\sqrt{z}+5376\right)+5376\right)+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(256z^2+3744z+9945\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(256z^2+3744z+9945\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9at.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},\frac{3}{4};-z\right)=$$
$$\frac{1}{10\,752}\left(\sqrt{\pi}\,\sqrt[4]{z}\,\left(256\,z^2-3744\,z+9945\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\left(4\left(16\,z^2-269\,z+1344\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\,\left(16\,z+807\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9au.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{20\,160\sqrt{2}\,\sqrt[4]{z}}\left(\left(-2\left(256\,z^3+4512\,z^2+19\,089\,z-20\,160\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\,\left(256\,z^2+5376\,z+31\,815\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\,z\left(256\,z^2+4704\,z+14\,805\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9av.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},\frac{5}{4};-z\right)=$$
$$\frac{1}{20\,160\sqrt{2}\,\sqrt[4]{z}}\left(\left(\left(512\,z^3-9024\,z^2+38\,178\,z+40\,320\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\,\left(256\,z^2-5376\,z+31\,815\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\,z\left(256\,z^2-4704\,z+14\,805\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9aw.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},\frac{7}{4};z\right)=\frac{1}{2\,752\,512\,z^{3/4}}$$
$$\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024\,z^{5/2}-256\,z^2+22\,656\,z^{3/2}-12\,000\,z+65\,604\sqrt{z}\right)+e^{4\sqrt{z}}\left(1024\,z^{5/2}+256\,z^2+22\,656\,z^{3/2}+12\,000\,z+\right.\right.\right.$$
$$\left.\left.65\,604\sqrt{z}+208\,845\right)-208\,845\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\,z^3+89\,856\,z^2+477\,360\,z+208\,845\right)$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\,z^3+89\,856\,z^2+477\,360\,z+208\,845\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9ax.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},\frac{7}{4};-z\right)=\frac{1}{688\,128\,z^{3/4}}\left(\sqrt{\pi}\,\left(4096\,z^3-89\,856\,z^2+477\,360\,z-208\,845\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\sqrt[4]{z}\left(4\sqrt{z}\,\left(256\,z^2-5664\,z+16\,401\right)\cos\left(2\sqrt{z}\right)+\left(256\,z^2-12\,000\,z+208\,845\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9ay.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},\frac{9}{4};z\right)=\frac{1}{903\,168\sqrt{2}\,z^{3/4}}$$
$$\left(\left(-2\sqrt{z}\,\left(4096\,z^3+102\,144\,z^2+599\,088\,z-600\,327\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(4096\,z^3+105\,728\,z^2+371\,952\,z+504\,735\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4096\,z^3+105\,216\,z^2+733\,488\,z+1\,514\,205\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9az.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = \frac{1}{903\,168\sqrt{2}\,z^{3/4}}$$
$$\left(\left(2\sqrt{z}\left(4096z^3 - 102\,144z^2 + 599\,088z + 600\,327\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4096z^3 - 105\,728z^2 + 371\,952z - 504\,735\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4096z^3 - 105\,216z^2 + 733\,488z - 1\,514\,205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9b0.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) =$$
$$\frac{1}{100\,663\,296z^{7/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384z^{7/2} - 4096z^3 + 482\,304z^{5/2} - 123\,648z^2 + 4\,308\,672z^{3/2} + 3\,341\,520z + \right.\right.\right.$$
$$\left.\left.20\,884\,500\sqrt{z} + e^{4\sqrt{z}}\left(16\,384z^{7/2} + 4096z^3 + 482\,304z^{5/2} + 123\,648z^2 + \right.\right.\right.$$
$$\left.\left.\left.4\,308\,672z^{3/2} - 3\,341\,520z + 20\,884\,500\sqrt{z} - 15\,663\,375\right) + 15\,663\,375\right) +$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 1\,916\,928z^3 + 15\,275\,520z^2 + 13\,366\,080z - 15\,663\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) -$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 1\,916\,928z^3 + 15\,275\,520z^2 + 13\,366\,080z - 15\,663\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9b1.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) =$$
$$\frac{1}{25\,165\,824z^{7/4}}\left(\sqrt{\pi}\left(65\,536z^4 - 1\,916\,928z^3 + 15\,275\,520z^2 - 13\,366\,080z - 15\,663\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(4096z^3 - 120\,576z^2 + 1\,077\,168z - 5\,221\,125\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\left.\left(4096z^3 - 123\,648z^2 - 3\,341\,520z + 15\,663\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9b2.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) =$$
$$\frac{1}{28\,901\,376\sqrt{2}\,z^{7/4}}\left(\left(-2\sqrt{z}\left(65\,536z^4 + 2\,113\,536z^3 + 18\,611\,712z^2 + 29\,244\,096z - 40\,883\,535\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$3\left(65\,536z^4 + 2\,170\,880z^3 + 23\,138\,304z^2 + 145\,363\,680z - 68\,139\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4 + 2\,162\,688z^3 + 20\,261\,376z^2 - 204\,417\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9b3.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{28\,901\,376\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(65\,536z^4-2\,113\,536z^3+18\,611\,712z^2-29\,244\,096z-40\,883\,535\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$3\left(-65\,536z^4+2\,170\,880z^3-23\,138\,304z^2+145\,363\,680z+68\,139\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\left(65\,536z^4-2\,162\,688z^3+20\,261\,376z^2-204\,417\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9b4.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{32\,212\,254\,720\,z^{11/4}}\left(11e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144z^{9/2}-65\,536z^4+9\,633\,792z^{7/2}-2\,457\,600z^3+103\,741\,440z^{5/2}-\right.\right.\right.$$
$$59\,404\,800z^2-267\,321\,600z^{3/2}-2\,138\,572\,800z-4\,239\,553\,500\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4+9\,633\,792z^{7/2}+2\,457\,600z^3+103\,741\,440z^{5/2}+59\,404\,800z^2-\right.$$
$$\left.267\,321\,600z^{3/2}+2\,138\,572\,800z-4\,239\,553\,500\sqrt{z}+3\,179\,665\,125\right)-3\,179\,665\,125\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5+38\,338\,560z^4+407\,347\,200z^3+534\,643\,200z^2-1\,253\,070\,000z+3\,179\,665\,125\right)$$
$$\left.\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.\right.$$
$$\left.\left.\left.\left(1\,048\,576z^5+38\,338\,560z^4+407\,347\,200z^3+534\,643\,200z^2-1\,253\,070\,000z+3\,179\,665\,125\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)\right)$$

07.22.03.a9b5.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},\frac{15}{4};-z\right)=\frac{1}{8\,053\,063\,680\,z^{11/4}}$$
$$\left(11\left(\sqrt{\pi}\left(1\,048\,576z^5-38\,338\,560z^4+407\,347\,200z^3-534\,643\,200z^2-1\,253\,070\,000z-3\,179\,665\,125\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4-2\,408\,448z^3+25\,935\,360z^2+66\,830\,400z-1\,059\,888\,375\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(65\,536z^4-2\,457\,600z^3+59\,404\,800z^2-2\,138\,572\,800z+3\,179\,665\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a9b6.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},\frac{17}{4};z\right)=-\frac{1}{10\,173\,284\,352\sqrt{2}\,z^{11/4}}$$
$$\left(13\left(2\sqrt{z}\left(1\,048\,576z^5+41\,484\,288z^4+476\,061\,696z^3+255\,112\,704z^2-13\,736\,867\,760z+11\,406\,506\,265\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(1\,048\,576z^5+42\,401\,792z^4+513\,908\,736z^3-2\,325\,818\,880z^2-36\,413\,601\,840z+19\,010\,843\,775\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(1\,048\,576z^5+42\,270\,720z^4+508\,207\,104z^3+\right.$$
$$\left.\left.\left.996\,779\,520z^2+12\,428\,594\,640z+57\,032\,531\,325\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9b7.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = \frac{1}{10\,173\,284\,352\,\sqrt{2}\; z^{11/4}}$$
$$\left(13\left(2\sqrt{z}\,\left(1\,048\,576\,z^5 - 41\,484\,288\,z^4 + 476\,061\,696\,z^3 - 255\,112\,704\,z^2 - 13\,736\,867\,760\,z - 11\,406\,506\,265\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$3\left(1\,048\,576\,z^5 - 42\,401\,792\,z^4 + 513\,908\,736\,z^3 + 2\,325\,818\,880\,z^2 - 36\,413\,601\,840\,z - 19\,010\,843\,775\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(1\,048\,576\,z^5 - 42\,270\,720\,z^4 + 508\,207\,104\,z^3 - \right.$$
$$\left.\left.\left.996\,779\,520\,z^2 + 12\,428\,594\,640\,z - 57\,032\,531\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9b8.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) =$$
$$\frac{1}{824\,633\,720\,832\,z^{15/4}}\left(11\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(4\,194\,304\,z^{11/2} - 1\,048\,576\,z^5 + 184\,811\,520\,z^{9/2} - 46\,989\,312\,z^4 + 2\,480\,308\,224\,z^{7/2} - \right.\right.\right.$$
$$658\,022\,400\,z^3 + 7\,841\,433\,600\,z^{5/2} + 47\,226\,816\,000\,z^2 + 296\,526\,484\,800\,z^{3/2} + 925\,918\,484\,400\,z +$$
$$1\,538\,957\,920\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2} + 1\,048\,576\,z^5 + 184\,811\,520\,z^{9/2} + 46\,989\,312\,z^4 + \right.$$
$$\left.2\,480\,308\,224\,z^{7/2} + 658\,022\,400\,z^3 + 7\,841\,433\,600\,z^{5/2} - 47\,226\,816\,000\,z^2 + 296\,526\,484\,800\,z^{3/2} - \right.$$
$$\left.925\,918\,484\,400\,z + 1\,538\,957\,920\,500\sqrt{z} - 1\,154\,218\,440\,375\right) + 1\,154\,218\,440\,375\Big) +$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(16\,777\,216\,z^6 + 736\,100\,352\,z^5 + 9\,776\,332\,800\,z^4 + 17\,108\,582\,400\,z^3 - \right.$$
$$\left.60\,147\,360\,000\,z^2 + 305\,247\,852\,000\,z - 1\,154\,218\,440\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) -$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(16\,777\,216\,z^6 + 736\,100\,352\,z^5 + 9\,776\,332\,800\,z^4 + 17\,108\,582\,400\,z^3 - \right.$$
$$\left.\left.60\,147\,360\,000\,z^2 + 305\,247\,852\,000\,z - 1\,154\,218\,440\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a9b9.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) =$$
$$\frac{1}{206\,158\,430\,208\,z^{15/4}}\left(11\left(\sqrt{\pi}\,\left(16\,777\,216\,z^6 - 736\,100\,352\,z^5 + 9\,776\,332\,800\,z^4 - 17\,108\,582\,400\,z^3 - \right.\right.\right.$$
$$\left.\left.60\,147\,360\,000\,z^2 - 305\,247\,852\,000\,z - 1\,154\,218\,440\,375\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) +$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(1\,048\,576\,z^5 - 46\,202\,880\,z^4 + 620\,077\,056\,z^3 - 1\,960\,358\,400\,z^2 + 74\,131\,621\,200\,z - 384\,739\,480\,125\right)\right.$$
$$\cos\left(2\sqrt{z}\right) + \left(1\,048\,576\,z^5 - 46\,989\,312\,z^4 + 658\,022\,400\,z^3 + \right.$$
$$\left.\left.\left.47\,226\,816\,000\,z^2 - 925\,918\,484\,400\,z + 1\,154\,218\,440\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big)$$

07.22.03.a9ba.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},\frac{21}{4};z\right)=$$

$$-\left(17\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+786\,432\,000\,z^5+11\,121\,131\,520\,z^4+14\,998\,781\,952\,z^3+177\,925\,144\,320\,z^2+\right.\right.\right.$$

$$\left.\left.\left.5\,799\,574\,740\,960\,z-5\,189\,960\,350\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216\,z^6+801\,112\,064\,z^5+11\,834\,032\,128\,z^4+\right.\right.\right.$$

$$\left.\left.\left.49\,617\,469\,440\,z^3+2\,675\,854\,621\,440\,z^2+15\,817\,022\,020\,800\,z-8\,649\,933\,917\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(16\,777\,216\,z^6+799\,014\,912\,z^5+11\,727\,470\,592\,z^4+24\,164\,352\,000\,z^3-408\,181\,213\,440\,z^2-\right.\right.\right.$$

$$\left.\left.\left.7\,908\,511\,010\,400\,z-25\,949\,801\,752\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(325\,545\,099\,264\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a9bb.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},\frac{21}{4};-z\right)=$$

$$\left(17\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-786\,432\,000\,z^5+11\,121\,131\,520\,z^4-14\,998\,781\,952\,z^3+177\,925\,144\,320\,z^2-\right.\right.\right.$$

$$\left.\left.\left.5\,799\,574\,740\,960\,z-5\,189\,960\,350\,575\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216\,z^6-801\,112\,064\,z^5+11\,834\,032\,128\,z^4-\right.\right.\right.$$

$$\left.\left.\left.49\,617\,469\,440\,z^3+2\,675\,854\,621\,440\,z^2-15\,817\,022\,020\,800\,z-8\,649\,933\,917\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(16\,777\,216\,z^6-799\,014\,912\,z^5+11\,727\,470\,592\,z^4-24\,164\,352\,000\,z^3-408\,181\,213\,440\,z^2+\right.\right.\right.$$

$$\left.\left.\left.7\,908\,511\,010\,400\,z-25\,949\,801\,752\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(325\,545\,099\,264\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a9bc.01

$${}_1F_2\left(-\frac{9}{4};-\frac{9}{2},\frac{23}{4};z\right)=$$

$$\frac{1}{369\,435\,906\,932\,736\,z^{19/4}}\left(209\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(67\,108\,864\,z^{13/2}-16\,777\,216\,z^6+3\,447\,717\,888\,z^{11/2}-874\,512\,384\,z^5+\right.\right.\right.$$

$$55\,419\,076\,608\,z^{9/2}-14\,553\,907\,200\,z^4+131\,604\,480\,000\,z^{7/2}-384\,723\,763\,200\,z^3-$$

$$7\,101\,130\,982\,400\,z^{5/2}-52\,739\,076\,499\,200\,z^2-218\,092\,322\,448\,000\,z^{3/2}-554\,024\,851\,380\,000\,z-$$

$$854\,121\,645\,877\,500\sqrt{z}+e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^6+3\,447\,717\,888\,z^{11/2}+\right.$$

$$874\,512\,384\,z^5+55\,419\,076\,608\,z^{9/2}+14\,553\,907\,200\,z^4+131\,604\,480\,000\,z^{7/2}+$$

$$384\,723\,763\,200\,z^3-7\,101\,130\,982\,400\,z^{5/2}+52\,739\,076\,499\,200\,z^2-218\,092\,322\,448\,000\,z^{3/2}+$$

$$\left.554\,024\,851\,380\,000\,z-854\,121\,645\,877\,500\sqrt{z}+640\,591\,234\,408\,125\right)-640\,591\,234\,408\,125\Big)+$$

$$e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456\,z^7+13\,740\,539\,904\,z^6+218\,989\,854\,720\,z^5+479\,040\,307\,200\,z^4-\right.$$

$$\left.2\,245\,501\,440\,000\,z^3+17\,093\,879\,712\,000\,z^2-129\,272\,465\,322\,000\,z+640\,591\,234\,408\,125\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$

$$e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456\,z^7+13\,740\,539\,904\,z^6+218\,989\,854\,720\,z^5+479\,040\,307\,200\,z^4-\right.$$

$$\left.\left.2\,245\,501\,440\,000\,z^3+17\,093\,879\,712\,000\,z^2-129\,272\,465\,322\,000\,z+640\,591\,234\,408\,125\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a9bd.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{92\,358\,976\,733\,184\,z^{19/4}}\left(209\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7 - 13\,740\,539\,904\,z^6 + 218\,989\,854\,720\,z^5 - 479\,040\,307\,200\,z^4 - \right.\right.\right.$$
$$\left.\left.\left.2\,245\,501\,440\,000\,z^3 - 17\,093\,879\,712\,000\,z^2 - 129\,272\,465\,322\,000\,z - 640\,591\,234\,408\,125\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right.$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6 - 861\,929\,472\,z^5 + 13\,854\,769\,152\,z^4 - 32\,901\,120\,000\,z^3 - \right.\right.$$
$$\left.\left.1\,775\,282\,745\,600\,z^2 + 54\,523\,080\,612\,000\,z - 213\,530\,411\,469\,375\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\left(16\,777\,216\,z^6 - 874\,512\,384\,z^5 + 14\,553\,907\,200\,z^4 - 384\,723\,763\,200\,z^3 + 52\,739\,076\,499\,200\,z^2 - \right.\right.$$
$$\left.\left.554\,024\,851\,380\,000\,z + 640\,591\,234\,408\,125\right)\sin\left(2\sqrt{z}\right)\right)\Bigg)\Bigg)$$

For fixed z and $a_1 = -\frac{9}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.a9be.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{10\,599\,435\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(125\,952\,z^4 + 2\,449\,216\,z^3 + 9\,498\,720\,z^2 - 22\,383\,900\,z + 10\,599\,435\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.$$
$$12\sqrt{z}\,\left(2048\,z^4 + 131\,968\,z^3 + 1\,398\,320\,z^2 + 2\,750\,440\,z - 3\,533\,145\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.4\,z\left(36\,096\,z^3 + 954\,800\,z^2 + 5\,881\,260\,z + 10\,599\,435\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9bf.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{10\,599\,435\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(125\,952\,z^4 - 2\,449\,216\,z^3 + 9\,498\,720\,z^2 + 22\,383\,900\,z + 10\,599\,435\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.$$
$$12\sqrt{z}\,\left(2048\,z^4 - 131\,968\,z^3 + 1\,398\,320\,z^2 - 2\,750\,440\,z - 3\,533\,145\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.4\,z\left(-36\,096\,z^3 + 954\,800\,z^2 - 5\,881\,260\,z + 10\,599\,435\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9bg.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) = \frac{1}{487\,305}$$
$$\left(\left(10\,496\,z^3 + 209\,040\,z^2 + 914\,940\,z + 487\,305\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(512\,z^3 + 28\,704\,z^2 + 265\,200\,z + 487\,305\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.a9bh.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) = \frac{1}{487\,305}$$
$$\left(\left(-10\,496\,z^3 + 209\,040\,z^2 - 914\,940\,z + 487\,305\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-512\,z^3 + 28\,704\,z^2 - 265\,200\,z + 487\,305\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9bi.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{460\,845\sqrt[4]{z}}\left(\sqrt{2}\left(\left(3072\,z^4 + 96\,320\,z^3 + 436\,128\,z^2 - 984\,060\,z + 460\,845\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(4352\,z^3 + 57\,904\,z^2 + 123\,200\,z - 153\,615\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(768\,z^3 + 35\,728\,z^2 + 244\,860\,z + 460\,845\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9bj.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{460\,845\sqrt[4]{z}}\left(\sqrt{2}\left(\left(3072\,z^4 - 96\,320\,z^3 + 436\,128\,z^2 + 984\,060\,z + 460\,845\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(4352\,z^3 - 57\,904\,z^2 + 123\,200\,z + 153\,615\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-768\,z^3 + 35\,728\,z^2 - 244\,860\,z + 460\,845\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9bk.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) =$$
$$\frac{1}{23\,205}\left(\left(256\,z^3 + 8720\,z^2 + 42\,900\,z + 23\,205\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(1024\,z^2 + 11\,960\,z + 23\,205\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.a9bl.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{23\,205}\left(\left(-256\,z^3 + 8720\,z^2 - 42\,900\,z + 23\,205\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1024\,z^2 - 11\,960\,z + 23\,205\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9bm.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, -\frac{15}{4}; z\right) = \frac{1}{24\,255\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(4160\,z^3 + 24\,864\,z^2 - 52\,668\,z + 24\,255\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(128\,z^3 + 2800\,z^2 + 6776\,z - 8085\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 28\,z\left(208\,z^2 + 1716\,z + 3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9bn.01

$${}_1F_2\left(-\frac{9}{4};-\frac{7}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{24\,255\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4160\,z^3+24\,864\,z^2+52\,668\,z+24\,255\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(128\,z^3-2800\,z^2+6776\,z+8085\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+28\,z\left(208\,z^2-1716\,z+3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9bo.01

$${}_1F_2\left(-\frac{9}{4};-\frac{7}{2},-\frac{13}{4};z\right)=\frac{5\left(80\,z^2+492\,z+273\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(32\,z^2+640\,z+1365\right)\sinh\left(2\sqrt{z}\right)}{1365}$$

07.22.03.a9bp.01

$${}_1F_2\left(-\frac{9}{4};-\frac{7}{2},-\frac{13}{4};-z\right)=\frac{5\left(80\,z^2-492\,z+273\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(32\,z^2-640\,z+1365\right)\sin\left(2\sqrt{z}\right)}{1365}$$

07.22.03.a9bq.01

$${}_1F_2\left(-\frac{9}{4};-\frac{7}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(\left(448\,z^3+5664\,z^2-10\,836\,z+4851\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(464\,z^2+1456\,z-1617\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(176\,z^2+2100\,z+4851\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9br.01

$${}_1F_2\left(-\frac{9}{4};-\frac{7}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-448\,z^3+5664\,z^2+10\,836\,z+4851\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(464\,z^2-1456\,z-1617\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(176\,z^2-2100\,z+4851\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9bs.01

$${}_1F_2\left(-\frac{9}{4};-\frac{7}{2},-\frac{9}{4};z\right)=\left(\frac{16\,z^2}{105}+\frac{12\,z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\left(8\,z+21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9bt.01

$${}_1F_2\left(-\frac{9}{4};-\frac{7}{2},-\frac{9}{4};-z\right)=\left(\frac{16\,z^2}{105}-\frac{12\,z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}\left(21-8\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a9bu.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{441\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-64z^3+672z^2-1044z+441\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(16z^2+152z-147\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(16z^2+132z+441\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9bv.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{441\sqrt[4]{z}}\left(\sqrt{2}\left(\left(64z^3+672z^2+1044z+441\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(16z^2-152z-147\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(16z^2-132z+441\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9bw.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{210}e^{-2\sqrt{z}}\left(16e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-16e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+16e^{4\sqrt{z}}z^2+16z^2-\right.$$
$$\left.32e^{4\sqrt{z}}z^{3/2}+32z^{3/2}+156e^{4\sqrt{z}}z+156z-210e^{4\sqrt{z}}\sqrt{z}+210\sqrt{z}+105e^{4\sqrt{z}}+105\right)$$

07.22.03.a9bx.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, -\frac{5}{4}; -z\right) = \frac{1}{105}\left(32\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+2\left(105-16z\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(16z^2-156z+105\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a9by.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, -\frac{3}{4}; z\right) = \frac{1}{63\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(32z^3+96z^2-180z+63\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(4z^2+32z-21\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(8z^2+12z-63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9bz.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) = \frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32z^3+96z^2+180z+63\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.12\sqrt{z}\left(4z^2-32z-21\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-8z^2+12z+63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9c0.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) = \frac{1}{168} e^{-2\sqrt{z}} \left(-e^{2\sqrt{z}} \sqrt{2\pi}\, (16z+81) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{5/4} + e^{2\sqrt{z}} \sqrt{2\pi}\, (16z+81) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{5/4} - 4\left(4z^2 - z^{3/2} + 12z - 42\sqrt{z} + e^{4\sqrt{z}} \left(4z^2 + z^{3/2} + 12z + 42\sqrt{z} - 21\right) - 21\right)\right)$$

07.22.03.a9c1.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) = \frac{1}{42}\left(\sqrt{\pi}\, (81-16z) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{5/4} - 2(z-42)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-8z^2+24z+42\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a9c2.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) = \frac{1}{63\sqrt{2}\, \sqrt[4]{z}}$$
$$\left(\left(\left(-32z^3 - 222z^2 + 72z + 126\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\, \left(16z^2 + 89z + 168\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(16z^2 + 123z + 252\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9c3.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) = \frac{1}{63\sqrt{2}\, \sqrt[4]{z}}$$
$$\left(\left(2\left(16z^3 - 111z^2 - 36z + 63\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\, \left(16z^2 - 89z + 168\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(16z^2 - 123z + 252\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9c4.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{21\,504}\left(e^{-2\sqrt{z}} \left(4\left(64z^2 - 16z^{3/2} + 660z + 111\sqrt{z} + e^{4\sqrt{z}} \left(64z^2 + 16z^{3/2} + 660z - 111\sqrt{z} + 2688\right) + 2688\right) + e^{2\sqrt{z}} \sqrt{2\pi}\, \sqrt[4]{z}\, \left(256z^2 + 2592z + 5265\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - e^{2\sqrt{z}} \sqrt{2\pi}\, \sqrt[4]{z}\, \left(256z^2 + 2592z + 5265\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9c5.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) =$$
$$\frac{1}{5376}\left(\sqrt{\pi}\, \sqrt[4]{z}\, \left(256z^2 - 2592z + 5265\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\left(4\left(16z^2 - 165z + 672\right)\cos\left(2\sqrt{z}\right) + \sqrt{z}\, (16z + 111)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9c6.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) = \frac{1}{10\,080\sqrt{2}\,\sqrt[4]{z}}\left(\left(-2\left(256z^3+3072z^2+8739z-10\,080\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\left(256z^2+3296z+16\,485\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(256z^2+3264z+9135\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9c7.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = \frac{1}{10\,080\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(256z^3-3072z^2+8739z+10\,080\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(256z^2-3296z+16\,485\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(256z^2-3264z+9135\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9c8.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) = \frac{1}{1\,376\,256\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024z^{5/2}-256z^2+15\,744z^{3/2}-4128z+52\,692\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2+15\,744z^{3/2}+4128z+52\,692\sqrt{z}+89\,505\right)-89\,505\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+62\,208z^2+252\,720z+89\,505\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+62\,208z^2+252\,720z+89\,505\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9c9.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) = \frac{1}{344\,064\,z^{3/4}}\left(\sqrt{\pi}\left(4096z^3-62\,208z^2+252\,720z-89\,505\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(256z^2-3936z+13\,173\right)\cos\left(2\sqrt{z}\right)+\left(256z^2-4128z+89\,505\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a9ca.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) = \frac{1}{451\,584\sqrt{2}\,z^{3/4}}\left(\left(-2\sqrt{z}\left(4096z^3+69\,888z^2+319\,536z-333\,081\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(4096z^3+73\,472z^2+306\,096z+197\,505\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3+72\,960z^2+375\,984z+592\,515\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9cb.01

$${}_1F_2\left(-\frac{9}{4};-\frac{7}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{451\,584\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(4096z^3-69\,888z^2+319\,536z+333\,081\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3-73\,472z^2+306\,096z-197\,505\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3-72\,960z^2+375\,984z-592\,515\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9cc.01

$${}_1F_2\left(-\frac{9}{4};-\frac{7}{2},\frac{11}{4};z\right)=\frac{1}{50\,331\,648z^{7/4}}$$
$$\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384z^{7/2}-4096z^3+334\,848z^{5/2}-86\,784z^2+2\,090\,688z^{3/2}+286\,416z+7\,518\,420\sqrt{z}+e^{4\sqrt{z}}\right.\right.\right.$$
$$\left(16\,384z^{7/2}+4096z^3+334\,848z^{5/2}+86\,784z^2+2\,090\,688z^{3/2}-286\,416z+7\,518\,420\sqrt{z}-5\,638\,815\right)+$$
$$\left.5\,638\,815\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4+1\,327\,104z^3+8\,087\,040z^2+5\,728\,320z-5\,638\,815\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4+1\,327\,104z^3+8\,087\,040z^2+5\,728\,320z-5\,638\,815\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9cd.01

$${}_1F_2\left(-\frac{9}{4};-\frac{7}{2},\frac{11}{4};-z\right)=\frac{1}{12\,582\,912z^{7/4}}\left(\sqrt{\pi}\left(65\,536z^4-1\,327\,104z^3+8\,087\,040z^2-5\,728\,320z-5\,638\,815\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(4096z^3-83\,712z^2+522\,672z-1\,879\,605\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(4096z^3-86\,784z^2-286\,416z+5\,638\,815\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9ce.01

$${}_1F_2\left(-\frac{9}{4};-\frac{7}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{14\,450\,688\sqrt{2}\,z^{7/4}}\left(\left(-2\sqrt{z}\left(65\,536z^4+1\,449\,984z^3+9\,612\,288z^2+6\,195\,168z-13\,627\,845\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$3\left(65\,536z^4+1\,507\,328z^3+10\,977\,792z^2+50\,561\,280z-22\,713\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+1\,499\,136z^3+10\,764\,288z^2+6\,320\,160z-68\,139\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9cf.01

$${}_1F_2\left(-\frac{9}{4};-\frac{7}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{14\,450\,688\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(65\,536z^4-1\,449\,984z^3+9\,612\,288z^2-6\,195\,168z-13\,627\,845\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$3\left(-65\,536z^4+1\,507\,328z^3-10\,977\,792z^2+50\,561\,280z+22\,713\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-1\,499\,136z^3+10\,764\,288z^2-6\,320\,160z-68\,139\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9cg.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) = \frac{1}{16\,106\,127\,360\, z^{11/4}} $$
$$ \left(11\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(262\,144\, z^{9/2} - 65\,536\, z^4 + 6\,684\,672\, z^{7/2} - 1\,720\,320\, z^3 + 55\,265\,280\, z^{5/2} - 15\,275\,520\, z^2 - 601\,473\,600\, z - \right.\right.\right. $$
$$ \left.\left.\left. 1\,315\,723\,500\sqrt{z} + e^{4\sqrt{z}}\left(262\,144\, z^{9/2} + 65\,536\, z^4 + 6\,684\,672\, z^{7/2} + 1\,720\,320\, z^3 + 55\,265\,280\, z^{5/2} + \right.\right.\right.\right. $$
$$ \left.\left.\left.\left. 15\,275\,520\, z^2 + 601\,473\,600\, z - 1\,315\,723\,500\sqrt{z} + 986\,792\,625\right) - 986\,792\,625\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 + 26\,542\,080\, z^4 + 215\,654\,400\, z^3 + 229\,132\,800\, z^2 - 451\,105\,200\, z + 986\,792\,625\right) $$
$$ \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi} $$
$$ \left.\left(1\,048\,576\, z^5 + 26\,542\,080\, z^4 + 215\,654\,400\, z^3 + 229\,132\,800\, z^2 - 451\,105\,200\, z + 986\,792\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9ch.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{15}{4}; -z\right) = \frac{1}{4\,026\,531\,840\, z^{11/4}} $$
$$ \left(11\left(\sqrt{\pi}\left(1\,048\,576\, z^5 - 26\,542\,080\, z^4 + 215\,654\,400\, z^3 - 229\,132\,800\, z^2 - 451\,105\,200\, z - 986\,792\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right. $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536\, z^4 - 1\,671\,168\, z^3 + 13\,816\,320\, z^2 - 328\,930\,875\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left.\left(65\,536\, z^4 - 1\,720\,320\, z^3 + 15\,275\,520\, z^2 - 601\,473\,600\, z + 986\,792\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9ci.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) = -\frac{1}{5\,086\,642\,176\sqrt{2}\, z^{11/4}} $$
$$ \left(13\left(2\sqrt{z}\left(1\,048\,576\, z^5 + 28\,508\,160\, z^4 + 247\,357\,440\, z^3 + 144\,410\,112\, z^2 - 4\,142\,864\,880\, z + 3\,311\,566\,335\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\left(1\,048\,576\, z^5 + 29\,425\,664\, z^4 + 273\,850\,368\, z^3 - 101\,122\,560\, z^2 - 10\,829\,594\,160\, z + 5\,519\,277\,225\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(1\,048\,576\, z^5 + 29\,294\,592\, z^4 + 269\,770\,752\, z^3 + \right. $$
$$ \left.\left. 361\,152\,000\, z^2 + 2\,834\,591\,760\, z + 16\,557\,831\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.a9cj.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) = \frac{1}{5\,086\,642\,176\sqrt{2}\, z^{11/4}} $$
$$ \left(13\left(2\sqrt{z}\left(1\,048\,576\, z^5 - 28\,508\,160\, z^4 + 247\,357\,440\, z^3 - 144\,410\,112\, z^2 - 4\,142\,864\,880\, z - 3\,311\,566\,335\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 3\left(-1\,048\,576\, z^5 + 29\,425\,664\, z^4 - 273\,850\,368\, z^3 - 101\,122\,560\, z^2 + 10\,829\,594\,160\, z + 5\,519\,277\,225\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576\, z^5 - 29\,294\,592\, z^4 + 269\,770\,752\, z^3 - \right. $$
$$ \left.\left. 361\,152\,000\, z^2 + 2\,834\,591\,760\, z - 16\,557\,831\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.a9ck.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) = \frac{1}{412\,316\,860\,416\,z^{15/4}} \left(11\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(4\,194\,304\,z^{11/2} - 1\,048\,576\,z^5 + 128\,188\,416\,z^{9/2} - 32\,833\,536\,z^4 + 1\,319\,534\,592\,z^{7/2} - 357\,212\,160\,z^3 + 2\,138\,572\,800\,z^{5/2} + 5\,881\,075\,200\,z^2 + 65\,560\,622\,400\,z^{3/2} + 241\,040\,545\,200\,z + 419\,715\,796\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2} + 1\,048\,576\,z^5 + 128\,188\,416\,z^{9/2} + 32\,833\,536\,z^4 + 1\,319\,534\,592\,z^{7/2} + 357\,212\,160\,z^3 + 2\,138\,572\,800\,z^{5/2} - 5\,881\,075\,200\,z^2 + 65\,560\,622\,400\,z^{3/2} - 241\,040\,545\,200\,z + 419\,715\,796\,500\sqrt{z} - 314\,786\,847\,375\right) + 314\,786\,847\,375\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6 + 509\,607\,936\,z^5 + 5\,175\,705\,600\,z^4 + 7\,332\,249\,600\,z^3 - 21\,653\,049\,600\,z^2 + 94\,732\,092\,000\,z - 314\,786\,847\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6 + 509\,607\,936\,z^5 + 5\,175\,705\,600\,z^4 + 7\,332\,249\,600\,z^3 - 21\,653\,049\,600\,z^2 + 94\,732\,092\,000\,z - 314\,786\,847\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9cl.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = \frac{1}{103\,079\,215\,104\,z^{15/4}} \left(11\left(\sqrt{\pi}\left(16\,777\,216\,z^6 - 509\,607\,936\,z^5 + 5\,175\,705\,600\,z^4 - 7\,332\,249\,600\,z^3 - 21\,653\,049\,600\,z^2 - 94\,732\,092\,000\,z - 314\,786\,847\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576\,z^5 - 32\,047\,104\,z^4 + 329\,883\,648\,z^3 - 534\,643\,200\,z^2 + 16\,390\,155\,600\,z - 104\,928\,949\,125\right)\cos\left(2\sqrt{z}\right) + \left(1\,048\,576\,z^5 - 32\,833\,536\,z^4 + 357\,212\,160\,z^3 + 5\,881\,075\,200\,z^2 - 241\,040\,545\,200\,z + 314\,786\,847\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9cm.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) = -\left(17\left(2\sqrt{z}\left(16\,777\,216\,z^6 + 541\,065\,216\,z^5 + 5\,799\,739\,392\,z^4 + 5\,573\,246\,976\,z^3 - 3\,488\,728\,320\,z^2 + 1\,530\,679\,550\,400\,z - 1\,334\,561\,233\,005\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,777\,216\,z^6 + 555\,745\,280\,z^5 + 6\,297\,944\,064\,z^4 + 11\,556\,864\,000\,z^3 + 559\,359\,440\,640\,z^2 + 4\,132\,834\,786\,080\,z - 2\,224\,268\,721\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(16\,777\,216\,z^6 + 553\,648\,128\,z^5 + 6\,222\,053\,376\,z^4 + 10\,506\,240\,000\,z^3 - 71\,269\,735\,680\,z^2 - 1\,836\,815\,460\,480\,z - 6\,672\,806\,165\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(162\,772\,549\,632\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a9cn.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) = \left(17\left(2\sqrt{z}\,\left(16\,777\,216\,z^6 - 541\,065\,216\,z^5 + 5\,799\,739\,392\,z^4 - 5\,573\,246\,976\,z^3 - 3\,488\,728\,320\,z^2 - 1\,530\,679\,550\,400\,z - 1\,334\,561\,233\,005\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,777\,216\,z^6 - 555\,745\,280\,z^5 + 6\,297\,944\,064\,z^4 - 11\,556\,864\,000\,z^3 + 559\,359\,440\,640\,z^2 - 4\,132\,834\,786\,080\,z - 2\,224\,268\,721\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216\,z^6 - 553\,648\,128\,z^5 + 6\,222\,053\,376\,z^4 - 10\,506\,240\,000\,z^3 - 71\,269\,735\,680\,z^2 + 1\,836\,815\,460\,480\,z - 6\,672\,806\,165\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(162\,772\,549\,632\,\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a9co.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = \frac{1}{184\,717\,953\,466\,368\,z^{19/4}}\left(209\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(67\,108\,864\,z^{13/2} - 16\,777\,216\,z^6 + 2\,390\,753\,280\,z^{11/2} - 610\,271\,232\,z^5 + 29\,457\,383\,424\,z^{9/2} - 7\,865\,303\,040\,z^4 + 57\,905\,971\,200\,z^{7/2} - 22\,372\,761\,600\,z^3 - 933\,487\,027\,200\,z^{5/2} - 9\,909\,879\,033\,600\,z^2 - 47\,967\,519\,600\,000\,z^{3/2} - 130\,951\,328\,508\,000\,z - 207\,759\,319\,267\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 + 2\,390\,753\,280\,z^{11/2} + 610\,271\,232\,z^5 + 29\,457\,383\,424\,z^{9/2} + 7\,865\,303\,040\,z^4 + 57\,905\,971\,200\,z^{7/2} + 22\,372\,761\,600\,z^3 - 933\,487\,027\,200\,z^{5/2} + 9\,909\,879\,033\,600\,z^2 - 47\,967\,519\,600\,000\,z^{3/2} + 130\,951\,328\,508\,000\,z - 207\,759\,319\,267\,500\sqrt{z} + 155\,819\,489\,450\,625\right) - 155\,819\,489\,450\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456\,z^7 + 9\,512\,681\,472\,z^6 + 115\,935\,805\,440\,z^5 + 205\,302\,988\,800\,z^4 - 808\,380\,518\,400\,z^3 + 5\,304\,997\,152\,000\,z^2 - 35\,256\,126\,906\,000\,z + 155\,819\,489\,450\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\,\left(268\,435\,456\,z^7 + 9\,512\,681\,472\,z^6 + 115\,935\,805\,440\,z^5 + 205\,302\,988\,800\,z^4 - 808\,380\,518\,400\,z^3 + 5\,304\,997\,152\,000\,z^2 - 35\,256\,126\,906\,000\,z + 155\,819\,489\,450\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9cp.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) = \frac{1}{46\,179\,488\,366\,592\,z^{19/4}}\left(209\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7 - 9\,512\,681\,472\,z^6 + 115\,935\,805\,440\,z^5 - 205\,302\,988\,800\,z^4 - 808\,380\,518\,400\,z^3 - 5\,304\,997\,152\,000\,z^2 - 35\,256\,126\,906\,000\,z - 155\,819\,489\,450\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6 - 597\,688\,320\,z^5 + 7\,364\,345\,856\,z^4 - 14\,476\,492\,800\,z^3 - 233\,371\,756\,800\,z^2 + 11\,991\,879\,900\,000\,z - 51\,939\,829\,816\,875\right)\cos\left(2\sqrt{z}\right) + \left(16\,777\,216\,z^6 - 610\,271\,232\,z^5 + 7\,865\,303\,040\,z^4 - 22\,372\,761\,600\,z^3 + 9\,909\,879\,033\,600\,z^2 - 130\,951\,328\,508\,000\,z + 155\,819\,489\,450\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = -\frac{9}{4}$, $b_1 = -\frac{5}{2}$

07.22.03.a9cq.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,514\,205\sqrt[4]{z}} \left(\sqrt{2}\left(\left(6144 z^4 + 280\,192 z^3 + 1\,504\,272 z^2 - 3\,265\,416 z + 1\,514\,205\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(11\,008 z^3 + 180\,752 z^2 + 415\,492 z - 504\,735\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1536 z^3 + 103\,136 z^2 + 772\,464 z + 1\,514\,205\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9cr.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, -\frac{23}{4}; -z\right) = \frac{1}{1\,514\,205\sqrt[4]{z}} \left(\sqrt{2}\left(\left(6144 z^4 - 280\,192 z^3 + 1\,504\,272 z^2 + 3\,265\,416 z + 1\,514\,205\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(11\,008 z^3 - 180\,752 z^2 + 415\,492 z + 504\,735\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-1536 z^3 + 103\,136 z^2 - 772\,464 z + 1\,514\,205\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9cs.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, -\frac{21}{4}; z\right) = \left(\frac{512 z^3}{69\,615} + \frac{608 z^2}{1785} + \frac{64 z}{35} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(64 z^2 + 884 z + 1785\right)\sinh\left(2\sqrt{z}\right)}{1785} $$

07.22.03.a9ct.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, -\frac{21}{4}; -z\right) = \left(-\frac{512 z^3}{69\,615} + \frac{608 z^2}{1785} - \frac{64 z}{35} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(64 z^2 - 884 z + 1785\right)\sin\left(2\sqrt{z}\right)}{1785} $$

07.22.03.a9cu.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, -\frac{19}{4}; z\right) = \frac{1}{65\,835\sqrt[4]{z}} \left(\sqrt{2}\left(\left(9728 z^3 + 70\,224 z^2 - 144\,144 z + 65\,835\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(256 z^3 + 7216 z^2 + 18\,788 z - 21\,945\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 44 z\left(320 z^2 + 2856 z + 5985\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9cv.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, -\frac{19}{4}; -z\right) = \frac{1}{65\,835\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-9728 z^3 + 70\,224 z^2 + 144\,144 z + 65\,835\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(256 z^3 - 7216 z^2 + 18\,788 z + 21\,945\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 44 z\left(320 z^2 - 2856 z + 5985\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9cw.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},-\frac{17}{4};z\right)=\frac{\left(896\,z^2+5928\,z+3315\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(64\,z^2+1508\,z+3315\right)\sinh\left(2\sqrt{z}\right)}{3315}$$

07.22.03.a9cx.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},-\frac{17}{4};-z\right)=\frac{\left(896\,z^2-5928\,z+3315\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(64\,z^2-1508\,z+3315\right)\sin\left(2\sqrt{z}\right)}{3315}$$

07.22.03.a9cy.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{17\,325\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(1408\,z^3+20\,496\,z^2-38\,808\,z+17\,325\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(1616\,z^2+5236\,z-5775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(608\,z^2+7392\,z+17\,325\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9cz.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{17\,325\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-1408\,z^3+20\,496\,z^2+38\,808\,z+17\,325\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,\left(1616\,z^2-5236\,z-5775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(608\,z^2-7392\,z+17\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9d0.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},-\frac{13}{4};z\right)=\frac{1}{195}\left(\left(32\,z^2+336\,z+195\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(76\,z+195\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.a9d1.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},-\frac{13}{4};-z\right)=\frac{1}{195}\left(\left(32\,z^2-336\,z+195\right)\cos\left(2\sqrt{z}\right)+2\left(195-76\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9d2.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{3465\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-256\,z^3+4848\,z^2-8064\,z+3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(208\,z^2+1148\,z-1155\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(64\,z^2+1176\,z+3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9d3.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256z^3+4848z^2+8064z+3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(208z^2-1148z-1155\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(64z^2-1176z+3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9d4.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},-\frac{9}{4};z\right)=\left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\,(4z+15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9d5.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},-\frac{9}{4};-z\right)=\left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}(15-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a9d6.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{315\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-128z^3+624z^2-792z+315\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(16z^2-124z+105\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(32z^2+48z+315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9d7.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{315\sqrt[4]{z}}\left(\sqrt{2}\left(\left(128z^3+624z^2+792z+315\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(16z^2+124z+105\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(32z^2-48z+315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9d8.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{150}e^{-2\sqrt{z}}\left(32e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-32e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+32e^{4\sqrt{z}}z^2+32z^2+\right.$$
$$\left.8e^{4\sqrt{z}}z^{3/2}-8z^{3/2}+96e^{4\sqrt{z}}z+96z-150e^{4\sqrt{z}}\sqrt{z}+150\sqrt{z}+75e^{4\sqrt{z}}+75\right)$$

07.22.03.a9d9.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},-\frac{5}{4};-z\right)=\frac{1}{75}\left(64\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+2(4z+75)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(32z^2-96z+75\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a9da.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, -\frac{3}{4}; z\right) = \frac{1}{45\sqrt[4]{z}} \left(\sqrt{2}\left(\left(64z^3+48z^2-144z+45\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(8z^2+28z-15\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(16z^2+24z-45\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9db.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, -\frac{3}{4}; -z\right) = \frac{1}{45\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-64z^3+48z^2+144z+45\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(8z^2-28z-15\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-16z^2+24z+45\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9dc.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, -\frac{1}{4}; z\right) = \frac{1}{60} e^{-2\sqrt{z}} \left(-e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+45)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{5/4} + e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+45)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{5/4} - 2\left(8z^2-2z^{3/2}+24z-30\sqrt{z}+e^{4\sqrt{z}}\left(8z^2+2z^{3/2}+24z+30\sqrt{z}-15\right)-15\right)\right) $$

07.22.03.a9dd.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, -\frac{1}{4}; -z\right) = \frac{1}{15}\left(\sqrt{\pi}\,(45-16z) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{5/4} - 2(z-15)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(-8z^2+24z+15\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.a9de.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, \frac{1}{4}; z\right) = \frac{1}{45\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-32z^3-114z^2+72z+45\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(16z^2+71z+60\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(16z^2+69z+90\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9df.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) = \frac{1}{45\sqrt[4]{z}} \left(\sqrt{2}\left(\left(32z^3-114z^2-72z+45\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(16z^2-71z+60\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(16z^2-69z+90\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9dg.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{7680}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)(16z+45)^2-e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)(16z+45)^2+\right.\right.$$
$$\left.\left.4\left(64z^2-16z^{3/2}+372z-105\sqrt{z}+e^{4\sqrt{z}}\left(64z^2+16z^{3/2}+372z+105\sqrt{z}+960\right)+960\right)\right)\right)$$

07.22.03.a9dh.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},\frac{3}{4};-z\right)=$$
$$\frac{1}{1920}\left(\sqrt{\pi}\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)(45-16z)^2+2\left(4\left(16z^2-93z+240\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\,(16z-105)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9di.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{3600\sqrt{2}\sqrt[4]{z}}\left(\left(-2\left(256z^3+1632z^2+2529z-3600\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\left(256z^2+1856z+6135\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(256z^2+1824z+4005\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9dj.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},\frac{5}{4};-z\right)=$$
$$\frac{1}{3600\sqrt{2}\sqrt[4]{z}}\left(\left(\left(512z^3-3264z^2+5058z+7200\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(256z^2-1856z+6135\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(256z^2-1824z+4005\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9dk.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{491520z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024z^{5/2}-256z^2+8832z^{3/2}-2400z+26340\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2+8832z^{3/2}+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.2400z+26340\sqrt{z}+26325\right)-26325\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+34560z^2+97200z+26325\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+34560z^2+97200z+26325\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9dl.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},\frac{7}{4};-z\right)=\frac{1}{122880z^{3/4}}\left(\sqrt{\pi}\left(4096z^3-34560z^2+97200z-26325\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\sqrt[4]{z}\left(4\sqrt{z}\left(256z^2-2208z+6585\right)\cos\left(2\sqrt{z}\right)+\left(256z^2-2400z+26325\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9dm.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) = \frac{1}{161\,280\sqrt{2}\,z^{3/4}} \left(\left(-2\sqrt{z}\left(4096z^3+37\,632z^2+113\,904z-130\,095\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(4096z^3+41\,216z^2+152\,880z+51\,975\right)\right.\right. $$
$$ \left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3+40\,704z^2+146\,160z+155\,925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9dn.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, \frac{9}{4}; -z\right) = \frac{1}{161\,280\sqrt{2}\,z^{3/4}} \left(\left(2\sqrt{z}\left(4096z^3-37\,632z^2+113\,904z+130\,095\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3-41\,216z^2+152\,880z-51\,975\right)\right.\right. $$
$$ \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3-40\,704z^2+146\,160z-155\,925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9do.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, \frac{11}{4}; z\right) = \frac{1}{125\,829\,120\,z^{7/4}} \left(7e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384z^{7/2}-4096z^3+187\,392z^{5/2}-49\,920z^2+818\,880z^{3/2}-252\,720z+1\,790\,100\sqrt{z}+e^{4\sqrt{z}}\right.\right.\right. $$
$$ \left(16\,384z^{7/2}+4096z^3+187\,392z^{5/2}+49\,920z^2+818\,880z^{3/2}+252\,720z+1\,790\,100\sqrt{z}-1\,342\,575\right)+ $$
$$ \left.\left.\left.1\,342\,575\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4+737\,280z^3+3\,110\,400z^2+1\,684\,800z-1\,342\,575\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)- \right.\right. $$
$$ \left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4+737\,280z^3+3\,110\,400z^2+1\,684\,800z-1\,342\,575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9dp.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, \frac{11}{4}; -z\right) = \frac{1}{31\,457\,280\,z^{7/4}} \left(7\left(\sqrt{\pi}\left(65\,536z^4-737\,280z^3+3\,110\,400z^2-1\,684\,800z-1\,342\,575\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\right.\right. $$
$$ \sqrt[4]{z}\left(4\sqrt{z}\left(4096z^3-46\,848z^2+204\,720z-447\,525\right)\cos\left(2\sqrt{z}\right)+\right. $$
$$ \left.\left.\left.\left(4096z^3-49\,920z^2+252\,720z+1\,342\,575\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9dq.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{5\,160\,960\sqrt{2}\,z^{7/4}}\left(\left(-2\sqrt{z}\left(65\,536z^4+786\,432z^3+3\,515\,904z^2-282\,240z-2\,962\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\right.\right.$$
$$\left(65\,536z^4+843\,776z^3+4\,300\,800z^2+11\,642\,400z-4\,937\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+835\,584z^3+4\,170\,240z^2+3\,326\,400z-14\,812\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9dr.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{5\,160\,960\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(65\,536z^4-786\,432z^3+3\,515\,904z^2+282\,240z-2\,962\,575\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\right.\right.$$
$$\left(65\,536z^4-843\,776z^3+4\,300\,800z^2-11\,642\,400z-4\,937\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-835\,584z^3+4\,170\,240z^2-3\,326\,400z-14\,812\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ds.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},\frac{15}{4};z\right)=\frac{1}{40\,265\,318\,400\,z^{11/4}}$$
$$\left(77e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144z^{9/2}-65\,536z^4+3\,735\,552z^{7/2}-983\,040z^3+21\,534\,720z^{5/2}-6\,289\,920z^2+22\,913\,280z^{3/2}-\right.\right.\right.$$
$$\left.\left.103\,109\,760z-263\,144\,700\sqrt{z}\right)+e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4+3\,735\,552z^{7/2}+983\,040z^3+21\,534\,720\right.\right.$$
$$\left.\left.z^{5/2}+6\,289\,920z^2+22\,913\,280z^{3/2}+103\,109\,760z-263\,144\,700\sqrt{z}+197\,358\,525\right)-197\,358\,525\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5+14\,745\,600z^4+82\,944\,000z^3+67\,392\,000z^2-107\,406\,000z+197\,358\,525\right)$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left.\left.\left(1\,048\,576z^5+14\,745\,600z^4+82\,944\,000z^3+67\,392\,000z^2-107\,406\,000z+197\,358\,525\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9dt.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},\frac{15}{4};-z\right)=\frac{1}{10\,066\,329\,600\,z^{11/4}}$$
$$\left(77\left(\sqrt{\pi}\left(1\,048\,576z^5-14\,745\,600z^4+82\,944\,000z^3-67\,392\,000z^2-107\,406\,000z-197\,358\,525\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4-933\,888z^3+5\,383\,680z^2-5\,728\,320z-65\,786\,175\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(65\,536z^4-983\,040z^3+6\,289\,920z^2-103\,109\,760z+197\,358\,525\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a9du.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, \frac{17}{4}; z\right) = -\frac{1}{1\,816\,657\,920\sqrt{2}\, z^{11/4}} $$
$$ \left(13\left(2\sqrt{z}\left(1\,048\,576 z^5 + 15\,532\,032 z^4 + 91\,643\,904 z^3 + 23\,063\,040 z^2 - 805\,820\,400 z + 613\,253\,025\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\left(1\,048\,576 z^5 + 16\,449\,536 z^4 + 106\,782\,720 z^3 + 133\,056\,000 z^2 - 2\,069\,852\,400 z + 1\,022\,088\,375\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(1\,048\,576 z^5 + 16\,318\,464 z^4 + 104\,325\,120 z^3 + \right. $$
$$ \left.\left. 110\,246\,400 z^2 + 331\,808\,400 z + 3\,066\,265\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2 \Bigg) $$

07.22.03.a9dv.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, \frac{17}{4}; -z\right) = \frac{1}{1\,816\,657\,920\sqrt{2}\, z^{11/4}} $$
$$ \left(13\left(2\sqrt{z}\left(1\,048\,576 z^5 - 15\,532\,032 z^4 + 91\,643\,904 z^3 - 23\,063\,040 z^2 - 805\,820\,400 z - 613\,253\,025\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 3\left(-1\,048\,576 z^5 + 16\,449\,536 z^4 - 106\,782\,720 z^3 + 133\,056\,000 z^2 + 2\,069\,852\,400 z + 1\,022\,088\,375\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z} $$
$$ \left.\left.\left(1\,048\,576 z^5 - 16\,318\,464 z^4 + 104\,325\,120 z^3 - 110\,246\,400 z^2 + 331\,808\,400 z - 3\,066\,265\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2 \right) $$

07.22.03.a9dw.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{1\,030\,792\,151\,040 z^{15/4}} \left(77 e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(4\,194\,304 z^{11/2} - 1\,048\,576 z^5 + 71\,565\,312 z^{9/2} - 18\,677\,760 z^4 + \right.\right. $$
$$ 512\,655\,360 z^{7/2} - 144\,875\,520 z^3 + 672\,122\,880 z^{5/2} - 351\,336\,960 z^2 + 7\,819\,156\,800 z^{3/2} + $$
$$ 38\,945\,415\,600 z + 72\,364\,792\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 71\,565\,312 z^{9/2} + \right. $$
$$ 18\,677\,760 z^4 + 512\,655\,360 z^{7/2} + 144\,875\,520 z^3 + 672\,122\,880 z^{5/2} + 351\,336\,960 z^2 + $$
$$ \left.\left.\left. 7\,819\,156\,800 z^{3/2} - 38\,945\,415\,600 z + 72\,364\,792\,500\sqrt{z} - 54\,273\,594\,375\right) + 54\,273\,594\,375\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 283\,115\,520 z^5 + 1\,990\,656\,000 z^4 + 2\,156\,544\,000 z^3 - \right. $$
$$ 5\,155\,488\,000 z^2 + 18\,946\,418\,400 z - 54\,273\,594\,375\Big) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 283\,115\,520 z^5 + 1\,990\,656\,000 z^4 + 2\,156\,544\,000 z^3 - \right. $$
$$ \left.\left. 5\,155\,488\,000 z^2 + 18\,946\,418\,400 z - 54\,273\,594\,375\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.a9dx.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) =$$

$$\frac{1}{257\,698\,037\,760\, z^{15/4}}\left(77\left(\sqrt{\pi}\,\left(16\,777\,216\, z^6 - 283\,115\,520\, z^5 + 1\,990\,656\,000\, z^4 - 2\,156\,544\,000\, z^3 - 5\,155\,488\,000\, z^2 - 18\,946\,418\,400\, z - 54\,273\,594\,375\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(1\,048\,576\, z^5 - 17\,891\,328\, z^4 + 128\,163\,840\, z^3 - 168\,030\,720\, z^2 + 1\,954\,789\,200\, z - 18\,091\,198\,125\right)\cos\left(2\sqrt{z}\right) + \left(1\,048\,576\, z^5 - 18\,677\,760\, z^4 + 144\,875\,520\, z^3 - 351\,336\,960\, z^2 - 38\,945\,415\,600\, z + 54\,273\,594\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a9dy.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) =$$

$$-\frac{1}{58\,133\,053\,440\sqrt{2}\, z^{15/4}}\left(17\left(2\sqrt{z}\,\left(16\,777\,216\, z^6 + 295\,698\,432\, z^5 + 2\,165\,243\,904\, z^4 + 1\,208\,401\,920\, z^3 - 11\,376\,288\,000\, z^2 + 255\,113\,258\,400\, z - 215\,251\,811\,775\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,777\,216\, z^6 + 310\,378\,496\, z^5 + 2\,448\,752\,640\, z^4 + 3\,649\,536\,000\, z^3 + 62\,443\,180\,800\, z^2 + 680\,302\,022\,400\, z - 358\,753\,019\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,777\,216\, z^6 + 308\,281\,344\, z^5 + 2\,403\,532\,800\, z^4 + 3\,173\,990\,400\, z^3 - 7\,042\,464\,000\, z^2 - 255\,113\,258\,400\, z - 1\,076\,259\,058\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9dz.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) =$$

$$\frac{1}{58\,133\,053\,440\sqrt{2}\, z^{15/4}}\left(17\left(2\sqrt{z}\,\left(16\,777\,216\, z^6 - 295\,698\,432\, z^5 + 2\,165\,243\,904\, z^4 - 1\,208\,401\,920\, z^3 - 11\,376\,288\,000\, z^2 - 255\,113\,258\,400\, z - 215\,251\,811\,775\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,777\,216\, z^6 - 310\,378\,496\, z^5 + 2\,448\,752\,640\, z^4 - 3\,649\,536\,000\, z^3 + 62\,443\,180\,800\, z^2 - 680\,302\,022\,400\, z - 358\,753\,019\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216\, z^6 - 308\,281\,344\, z^5 + 2\,403\,532\,800\, z^4 - 3\,173\,990\,400\, z^3 - 7\,042\,464\,000\, z^2 + 255\,113\,258\,400\, z - 1\,076\,259\,058\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9e0.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},\frac{23}{4};z\right)=$$
$$\frac{1}{65\,970\,697\,666\,560\,z^{19/4}}\left(209\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(67\,108\,864\,z^{13/2}-16\,777\,216\,z^6+1\,333\,788\,672\,z^{11/2}-346\,030\,080\,z^5+\right.\right.\right.$$
$$11\,422\,924\,800\,z^{9/2}-3\,158\,507\,520\,z^4+17\,898\,209\,280\,z^{7/2}-8\,159\,477\,760\,z^3-35\,286\,451\,200\,z^{5/2}-$$
$$972\,783\,302\,400\,z^2-6\,285\,399\,120\,000\,z^{3/2}-19\,104\,305\,220\,000\,z-31\,478\,684\,737\,500\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^6+1\,333\,788\,672\,z^{11/2}+346\,030\,080\,z^5+11\,422\,924\,800\,z^{9/2}+\right.$$
$$\left.3\,158\,507\,520\,z^4+17\,898\,209\,280\,z^{7/2}+8\,159\,477\,760\,z^3-35\,286\,451\,200\,z^{5/2}+972\,783\,302\,400\,z^2-\right.$$
$$\left.6\,285\,399\,120\,000\,z^{3/2}+19\,104\,305\,220\,000\,z-31\,478\,684\,737\,500\sqrt{z}+23\,609\,013\,553\,125\right)-$$
$$\left.23\,609\,013\,553\,125\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7+5\,284\,823\,040\,z^6+44\,590\,694\,400\,z^5+60\,383\,232\,000\,z^4-\right.$$
$$\left.192\,471\,552\,000\,z^3+1\,060\,999\,430\,400\,z^2-6\,078\,642\,570\,000\,z+23\,609\,013\,553\,125\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7+5\,284\,823\,040\,z^6+44\,590\,694\,400\,z^5+60\,383\,232\,000\,z^4-\right.$$
$$\left.\left.192\,471\,552\,000\,z^3+1\,060\,999\,430\,400\,z^2-6\,078\,642\,570\,000\,z+23\,609\,013\,553\,125\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9e1.01

$${}_1F_2\left(-\frac{9}{4};-\frac{5}{2},\frac{23}{4};-z\right)=$$
$$\frac{1}{16\,492\,674\,416\,640\,z^{19/4}}\left(209\left(\sqrt{\pi}\left(268\,435\,456\,z^7-5\,284\,823\,040\,z^6+44\,590\,694\,400\,z^5-60\,383\,232\,000\,z^4-\right.\right.\right.$$
$$\left.\left.192\,471\,552\,000\,z^3-1\,060\,999\,430\,400\,z^2-6\,078\,642\,570\,000\,z-23\,609\,013\,553\,125\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216\,z^6-333\,447\,168\,z^5+2\,855\,731\,200\,z^4-4\,474\,552\,320\,z^3-8\,821\,612\,800\,z^2+\right.\right.$$
$$\left.1\,571\,349\,780\,000\,z-7\,869\,671\,184\,375\right)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6-346\,030\,080\,z^5+3\,158\,507\,520\right.$$
$$\left.\left.\left.z^4-8\,159\,477\,760\,z^3+972\,783\,302\,400\,z^2-19\,104\,305\,220\,000\,z+23\,609\,013\,553\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = -\frac{9}{4}$, $b_{1.} = -\frac{3}{2}$

07.22.03.a9e2.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{302\,841\,\sqrt[4]{z}}\left(\sqrt{2}\left(11\left(256\,z^3+34\,608\,z^2-62\,244\,z+27\,531\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(512\,z^3+23\,584\,z^2+93\,632\,z-100\,947\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+44\,z\left(1472\,z^2+11\,172\,z+27\,531\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9e3.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{302\,841\sqrt[4]{z}}\left(\sqrt{2}\left(11\left(-256z^3+34\,608z^2+62\,244z+27\,531\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(512z^3-23\,584z^2+93\,632z+100\,947\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+44z\left(1472z^2-11\,172z+27\,531\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9e4.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},-\frac{21}{4};z\right)=\left(\frac{64z^2}{357}+\frac{12z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(128z^2+5304z+13\,923\right)\sinh\left(2\sqrt{z}\right)}{13\,923}$$

07.22.03.a9e5.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},-\frac{21}{4};-z\right)=\left(\frac{64z^2}{357}-\frac{12z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(128z^2-5304z+13\,923\right)\sin\left(2\sqrt{z}\right)}{13\,923}$$

07.22.03.a9e6.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{13\,167\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1280z^3+18\,480z^2-30\,492z+13\,167\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-132\sqrt{z}\left(64z^2+392z-399\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.44z\left(64z^2+420z+1197\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9e7.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{13\,167\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1280z^3+18\,480z^2+30\,492z+13\,167\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+132\sqrt{z}\left(64z^2-392z-399\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.44z\left(64z^2-420z+1197\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9e8.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},-\frac{17}{4};z\right)=\left(\frac{64z^2}{663}+\frac{28z}{17}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{51}\sqrt{z}\left(16z+51\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9e9.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},-\frac{17}{4};-z\right)=\left(\frac{64z^2}{663}-\frac{28z}{17}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{51}\left(51-16z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.a9ea.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1024z^3+5712z^2-8316z+3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(32z^2+1232z-1155\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(256z^2+924z+3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9eb.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024z^3+5712z^2+8316z+3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(32z^2-1232z-1155\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(256z^2-924z+3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ec.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, -\frac{13}{4}; z\right) = \left(\frac{20z}{13}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{39}\sqrt{z}\,(8z+39)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9ed.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, -\frac{13}{4}; -z\right) = \left(1-\frac{20z}{13}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{39}(39-8z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a9ee.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-512z^3+1488z^2-1764z+693\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(64z^2-280z+231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^2+84z+693\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ef.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512z^3+1488z^2+1764z+693\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(64z^2+280z+231\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^2-84z+693\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9eg.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) = \left(\frac{4z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9eh.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},-\frac{9}{4};-z\right)=\left(1-\frac{4z}{3}\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a9ei.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},-\frac{7}{4};z\right)=\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-256z^3+240z^2-180z+63\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.12\sqrt{z}\left(32z^2-32z+21\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(64z^2-12z+63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ej.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256z^3+240z^2+180z+63\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(32z^2+32z+21\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(64z^2+12z+63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ek.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{30}e^{-2\sqrt{z}}\left(64e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-64e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+64e^{4\sqrt{z}}z^2+64z^2+\right.$$
$$\left.16e^{4\sqrt{z}}z^{3/2}-16z^{3/2}+12e^{4\sqrt{z}}z+12z-30e^{4\sqrt{z}}\sqrt{z}+30\sqrt{z}+15e^{4\sqrt{z}}+15\right)$$

07.22.03.a9el.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},-\frac{5}{4};-z\right)=\frac{1}{15}\left(128\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+2\left(8z+15\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(64z^2-12z+15\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a9em.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},-\frac{3}{4};z\right)=\frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left.\left(\left(128z^3-48z^2-36z+9\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(16z^2+8z-3\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(32z^2+12z-9\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9en.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},-\frac{3}{4};-z\right)=\frac{1}{9\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-128z^3-48z^2+36z+9\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(16z^2-8z-3\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-32z^2+12z+9\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9eo.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},-\frac{1}{4};z\right)=\frac{1}{6}e^{-2\sqrt{z}}\left(-16e^{4\sqrt{z}}z^2-16z^2-4e^{4\sqrt{z}}z^{3/2}+4z^{3/2}-e^{2\sqrt{z}}\sqrt{2\pi}(16z+9)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\sqrt{2\pi}(16z+9)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-12e^{4\sqrt{z}}z-12z-6e^{4\sqrt{z}}\sqrt{z}+6\sqrt{z}+3e^{4\sqrt{z}}+3\right)$$

07.22.03.a9ep.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},-\frac{1}{4};-z\right)=-\frac{2}{3}\sqrt{\pi}(16z-9)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+\frac{2}{3}(3-2z)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-\frac{16z^2}{3}+4z+1\right)\cos\left(2\sqrt{z}\right)$$

07.22.03.a9eq.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},\frac{1}{4};z\right)=\frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-64z^3-12z^2+36z+9\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+6\sqrt{z}\left(16z^2+17z+6\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(16z^2+15z+9\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9er.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},\frac{1}{4};-z\right)=\frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\left(\left(64z^3-12z^2-36z+9\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-6\sqrt{z}\left(16z^2-17z+6\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(16z^2-15z+9\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9es.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},\frac{3}{4};z\right)=\frac{1}{768}e^{-2\sqrt{z}}\left(4\left(64z^2-16z^{3/2}+84z-33\sqrt{z}+e^{4\sqrt{z}}\left(64z^2+16z^{3/2}+84z+33\sqrt{z}+96\right)+96\right)+e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(256z^2+288z+225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(256z^2+288z+225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)$$

07.22.03.a9et.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},\frac{3}{4};-z\right)=\frac{1}{192}\left(\sqrt{\pi}\sqrt[4]{z}\left(256z^2-288z+225\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\left(\left(64z^2-84z+96\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}(16z-33)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9eu.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},\frac{5}{4};z\right)=\frac{1}{360\sqrt{2}\sqrt[4]{z}}\left(\left(-2\left(256z^3+192z^2+99z-360\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\left(256z^2+416z+645\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(256z^2+384z+495\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ev.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, \frac{5}{4}; -z\right) = \frac{1}{360\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(256z^3 - 192z^2 + 99z + 360\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(256z^2 - 416z + 645\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(256z^2 - 384z + 495\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9ew.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, \frac{7}{4}; z\right) = \frac{1}{49\,152 z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024z^{5/2} - 256z^2 + 1920z^{3/2} - 672z + 3444\sqrt{z} + e^{4\sqrt{z}}\left(1024z^{5/2} + 256z^2 + 1920z^{3/2} + 672z + 3444\sqrt{z} + 2025\right) - 2025\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3 + 6912z^2 + 10\,800z + 2025\right)\right.\right. \left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3 + 6912z^2 + 10\,800z + 2025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9ex.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, \frac{7}{4}; -z\right) = \frac{1}{12\,288 z^{3/4}}\left(\sqrt{\pi}\left(4096z^3 - 6912z^2 + 10\,800z - 2025\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(256z^2 - 480z + 861\right)\cos\left(2\sqrt{z}\right) + \left(256z^2 - 672z + 2025\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a9ey.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, \frac{9}{4}; z\right) = \frac{1}{16\,128\sqrt{2}\,z^{3/4}}\left(\left(-2\sqrt{z}\left(4096z^3 + 5376z^2 + 9072z - 14\,049\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(4096z^3 + 8960z^2 + 19\,824z + 3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4096z^3 + 8448z^2 + 17\,136z + 10\,395\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9ez.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) = \frac{1}{16\,128\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(4096z^3 - 5376z^2 + 9072z + 14\,049\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4096z^3 - 8960z^2 + 19\,824z - 3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4096z^3 - 8448z^2 + 17\,136z - 10\,395\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9f0.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) = \frac{1}{12\,582\,912\, z^{7/4}} \left(7\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(16\,384\, z^{7/2} - 4096\, z^3 + 39\,936\, z^{5/2} - 13\,056\, z^2 + 100\,032\, z^{3/2} - 45\,360\, z + 105\,300\, \sqrt{z} + e^{4\sqrt{z}} \left(16\,384\, z^{7/2} + 4096\, z^3 + 39\,936\, z^{5/2} + 13\,056\, z^2 + 100\,032\, z^{3/2} + 45\,360\, z + 105\,300\, \sqrt{z} - 78\,975\right) + 78\,975\right) + e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(65\,536\, z^4 + 147\,456\, z^3 + 345\,600\, z^2 + 129\,600\, z - 78\,975\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(65\,536\, z^4 + 147\,456\, z^3 + 345\,600\, z^2 + 129\,600\, z - 78\,975\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9f1.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) = \frac{1}{3\,145\,728\, z^{7/4}} \left(7 \left(\sqrt{\pi}\, \left(65\,536\, z^4 - 147\,456\, z^3 + 345\,600\, z^2 - 129\,600\, z - 78\,975\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\, \left(4\sqrt{z}\, \left(4096\, z^3 - 9984\, z^2 + 25\,008\, z - 26\,325\right) \cos\left(2\sqrt{z}\right) + \left(4096\, z^3 - 13\,056\, z^2 + 45\,360\, z + 78\,975\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9f2.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) = \frac{1}{516\,096\, \sqrt{2}\, z^{7/4}} \left(\left(-2\sqrt{z}\, \left(65\,536\, z^4 + 122\,880\, z^3 + 322\,560\, z^2 - 227\,808\, z - 155\,925\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(65\,536\, z^4 + 180\,224\, z^3 + 526\,848\, z^2 + 665\,280\, z - 259\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\, \left(65\,536\, z^4 + 172\,032\, z^3 + 479\,232\, z^2 + 332\,640\, z - 779\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9f3.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) = \frac{1}{516\,096\, \sqrt{2}\, z^{7/4}} \left(\left(2\sqrt{z}\, \left(65\,536\, z^4 - 122\,880\, z^3 + 322\,560\, z^2 + 227\,808\, z - 155\,925\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(65\,536\, z^4 - 180\,224\, z^3 + 526\,848\, z^2 - 665\,280\, z - 259\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\, \left(65\,536\, z^4 - 172\,032\, z^3 + 479\,232\, z^2 - 332\,640\, z - 779\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9f4.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) = \frac{1}{4\,026\,531\,840\, z^{11/4}} \left(77\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(262\,144\, z^{9/2} - 65\,536\, z^4 + 786\,432\, z^{7/2} - 245\,760\, z^3 + 2\,549\,760\, z^{5/2} - 990\,720\, z^2 + 2\,695\,680\, z^{3/2} - 3\,706\,560\, z - 12\,530\,700\, \sqrt{z} + e^{4\sqrt{z}} \left(262\,144\, z^{9/2} + 65\,536\, z^4 + 786\,432\, z^{7/2} + 245\,760\, z^3 + 2\,549\,760\, z^{5/2} + 990\,720\, z^2 + 2\,695\,680\, z^{3/2} + 3\,706\,560\, z - 12\,530\,700\, \sqrt{z} + 9\,398\,025\right) - 9\,398\,025\right) + e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(1\,048\,576\, z^5 + 2\,949\,120\, z^4 + 9\,216\,000\, z^3 + 5\,184\,000\, z^2 - 6\,318\,000\, z + 9\,398\,025\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(1\,048\,576\, z^5 + 2\,949\,120\, z^4 + 9\,216\,000\, z^3 + 5\,184\,000\, z^2 - 6\,318\,000\, z + 9\,398\,025\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9f5.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, \frac{15}{4}; -z\right) = \frac{1}{1\,006\,632\,960\, z^{11/4}}\left(77\left(\sqrt{\pi}\,\left(1\,048\,576\, z^5 - 2\,949\,120\, z^4 + 9\,216\,000\, z^3 - 5\,184\,000\, z^2 - 6\,318\,000\, z - 9\,398\,025\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(65\,536\, z^4 - 196\,608\, z^3 + 637\,440\, z^2 - 673\,920\, z - 3\,132\,675\right)\cos\left(2\sqrt{z}\right) + \left(65\,536\, z^4 - 245\,760\, z^3 + 990\,720\, z^2 - 3\,706\,560\, z + 9\,398\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9f6.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) = -\frac{1}{181\,665\,792\sqrt{2}\, z^{11/4}}\left(13\left(2\sqrt{z}\,\left(1\,048\,576\, z^5 + 2\,555\,904\, z^4 + 8\,921\,088\, z^3 - 2\,483\,712\, z^2 - 37\,422\,000\, z + 26\,663\,175\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(1\,048\,576\, z^5 + 3\,473\,408\, z^4 + 12\,705\,792\, z^3 + 15\,966\,720\, z^2 - 93\,970\,800\, z + 44\,438\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(1\,048\,576\, z^5 + 3\,342\,336\, z^4 + 11\,870\,208\, z^3 + 9\,884\,160\, z^2 + 2\,494\,800\, z + 133\,315\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9f7.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) = \frac{1}{181\,665\,792\sqrt{2}\, z^{11/4}}\left(13\left(2\sqrt{z}\,\left(1\,048\,576\, z^5 - 2\,555\,904\, z^4 + 8\,921\,088\, z^3 + 2\,483\,712\, z^2 - 37\,422\,000\, z - 26\,663\,175\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-1\,048\,576\, z^5 + 3\,473\,408\, z^4 - 12\,705\,792\, z^3 + 15\,966\,720\, z^2 + 93\,970\,800\, z + 44\,438\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(1\,048\,576\, z^5 - 3\,342\,336\, z^4 + 11\,870\,208\, z^3 - 9\,884\,160\, z^2 + 2\,494\,800\, z - 133\,315\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9f8.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) = \frac{1}{103\,079\,215\,104\, z^{15/4}}\left(77\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(4\,194\,304\, z^{11/2} - 1\,048\,576\, z^5 + 14\,942\,208\, z^{9/2} - 4\,521\,984\, z^4 + 59\,670\,528\, z^{7/2} - 21\,012\,480\, z^3 + 68\,290\,560\, z^{5/2} - 70\,986\,240\, z^2 + 120\,294\,720\, z^{3/2} + 1\,413\,462\,960\, z + 2\,894\,591\,700\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304\, z^{11/2} + 1\,048\,576\, z^5 + 14\,942\,208\, z^{9/2} + 4\,521\,984\, z^4 + 59\,670\,528\, z^{7/2} + 21\,012\,480\, z^3 + 68\,290\,560\, z^{5/2} + 70\,986\,240\, z^2 + 120\,294\,720\, z^{3/2} - 1\,413\,462\,960\, z + 2\,894\,591\,700\sqrt{z} - 2\,170\,943\,775\right) + 2\,170\,943\,775\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(16\,777\,216\, z^6 + 56\,623\,104\, z^5 + 221\,184\,000\, z^4 + 165\,888\,000\, z^3 - 303\,264\,000\, z^2 + 902\,210\,400\, z - 2\,170\,943\,775\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\,\left(16\,777\,216\, z^6 + 56\,623\,104\, z^5 + 221\,184\,000\, z^4 + 165\,888\,000\, z^3 - 303\,264\,000\, z^2 + 902\,210\,400\, z - 2\,170\,943\,775\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9f9.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},\frac{19}{4};-z\right)=$$
$$\frac{1}{25\,769\,803\,776\,z^{15/4}}\left(77\left(\sqrt{\pi}\,\left(16\,777\,216\,z^6-56\,623\,104\,z^5+221\,184\,000\,z^4-165\,888\,000\,z^3-303\,264\,000\,z^2-\right.\right.\right.$$
$$\left.\left.902\,210\,400\,z-2\,170\,943\,775\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(1\,048\,576\,z^5-3\,735\,552\,z^4+14\,917\,632\,z^3-17\,072\,640\,z^2+30\,073\,680\,z-723\,647\,925\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(1\,048\,576\,z^5-4\,521\,984\,z^4+21\,012\,480\,z^3-70\,986\,240\,z^2-1\,413\,462\,960\,z+2\,170\,943\,775\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a9fa.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},\frac{21}{4};z\right)=$$
$$-\frac{1}{5\,813\,305\,344\sqrt{2}\,z^{15/4}}\left(17\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+50\,331\,648\,z^5+217\,645\,056\,z^4+6\,488\,064\,z^3-997\,920\,000\,z^2+\right.\right.\right.$$
$$\left.9\,859\,449\,600\,z-7\,972\,289\,325\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216\,z^6+65\,011\,712\,z^5+286\,457\,856\,z^4+\right.$$
$$\left.381\,173\,760\,z^3+864\,864\,000\,z^2+25\,881\,055\,200\,z-13\,287\,148\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(16\,777\,216\,z^6+62\,914\,560\,z^5+271\,908\,864\,z^4+269\,844\,480\,z^3-222\,393\,600\,z^2-\right.$$
$$\left.\left.7\,394\,587\,200\,z-39\,861\,446\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9fb.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},\frac{21}{4};-z\right)=\frac{1}{5\,813\,305\,344\sqrt{2}\,z^{15/4}}$$
$$\left(17\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-50\,331\,648\,z^5+217\,645\,056\,z^4-6\,488\,064\,z^3-997\,920\,000\,z^2-9\,859\,449\,600\,z-7\,972\,289\,325\right)\right.\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216\,z^6-65\,011\,712\,z^5+286\,457\,856\,z^4-381\,173\,760\,z^3+864\,864\,000\,z^2-\right.$$
$$\left.25\,881\,055\,200\,z-13\,287\,148\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(16\,777\,216\,z^6-62\,914\,560\,z^5+\right.$$
$$\left.\left.\left.271\,908\,864\,z^4-269\,844\,480\,z^3-222\,393\,600\,z^2+7\,394\,587\,200\,z-39\,861\,446\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9fc.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},\frac{23}{4};z\right)=$$
$$\frac{1}{6\,597\,069\,766\,656\,z^{19/4}}\left(209\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(67\,108\,864\,z^{13/2}-16\,777\,216\,z^6+276\,824\,064\,z^{11/2}-81\,788\,928\,z^5+\right.\right.\right.$$
$$1\,315\,700\,736\,z^{9/2}-433\,520\,640\,z^4+1\,672\,151\,040\,z^{7/2}-1\,377\,976\,320\,z^3+641\,571\,840\,z^{5/2}-$$
$$11\,708\,686\,080\,z^2-172\,021\,449\,600\,z^{3/2}-625\,231\,807\,200\,z-1\,085\,471\,887\,500\sqrt{z}+e^{4\sqrt{z}}$$
$$\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^6+276\,824\,064\,z^{11/2}+81\,788\,928\,z^5+1\,315\,700\,736\,z^{9/2}+433\,520\,640\,z^4+\right.$$
$$1\,672\,151\,040\,z^{7/2}+1\,377\,976\,320\,z^3+641\,571\,840\,z^{5/2}+11\,708\,686\,080\,z^2-172\,021\,449\,600\,z^{3/2}+$$
$$\left.625\,231\,807\,200\,z-1\,085\,471\,887\,500\sqrt{z}+814\,103\,915\,625\right)-814\,103\,915\,625\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7+1\,056\,964\,608\,z^6+4\,954\,521\,600\,z^5+4\,644\,864\,000\,z^4-11\,321\,856\,000\,z^3+\right.$$
$$\left.50\,523\,782\,400\,z^2-243\,145\,702\,800\,z+814\,103\,915\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456\,z^7+1\,056\,964\,608\,z^6+4\,954\,521\,600\,z^5+4\,644\,864\,000\,z^4-\right.$$
$$\left.\left.\left.11\,321\,856\,000\,z^3+50\,523\,782\,400\,z^2-243\,145\,702\,800\,z+814\,103\,915\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9fd.01

$${}_1F_2\left(-\frac{9}{4};-\frac{3}{2},\frac{23}{4};-z\right)=$$
$$\frac{1}{1\,649\,267\,441\,664\,z^{19/4}}\left(209\left(\sqrt{\pi}\left(268\,435\,456\,z^7-1\,056\,964\,608\,z^6+4\,954\,521\,600\,z^5-4\,644\,864\,000\,z^4-\right.\right.\right.$$
$$\left.\left.11\,321\,856\,000\,z^3-50\,523\,782\,400\,z^2-243\,145\,702\,800\,z-814\,103\,915\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216\,z^6-69\,206\,016\,z^5+328\,925\,184\,z^4-418\,037\,760\,z^3+160\,392\,960\,z^2+\right.\right.$$
$$\left.\left.43\,005\,362\,400\,z-271\,367\,971\,875\right)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6-81\,788\,928\,z^5+433\,520\,640\,z^4-\right.\right.$$
$$\left.\left.\left.\left.1\,377\,976\,320\,z^3+11\,708\,686\,080\,z^2-625\,231\,807\,200\,z+814\,103\,915\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = -\frac{9}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.a9fe.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},-\frac{23}{4};z\right)=\frac{1}{302\,841\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(11\left(5632\,z^3+55\,776\,z^2-76\,608\,z+27\,531\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-132\sqrt{z}\left(1472\,z^2+13\,300\,z-9177\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4\,z\left(13\,184\,z^2+35\,112\,z-302\,841\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ff.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) = \frac{1}{302\,841\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(11\left(-5632z^3 + 55\,776z^2 + 76\,608z + 27\,531\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 132\sqrt{z}\left(1472z^2 - 13\,300z - 9177\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-13\,184z^2 + 35\,112z + 302\,841\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9fg.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) = \left(\frac{128z^2}{4641} + \frac{8z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,(656z + 4641)\sinh\left(2\sqrt{z}\right)}{4641}$$

07.22.03.a9fh.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, -\frac{21}{4}; -z\right) = \left(\frac{128z^2}{4641} - \frac{8z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\,(4641 - 656z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)}{4641}$$

07.22.03.a9fi.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{13\,167\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^3 + 29\,568z^2 - 38\,808z + 13\,167\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 132\sqrt{z}\left(64z^2 + 644z - 399\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(1024z^2 + 3696z - 13\,167\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9fj.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{13\,167\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096z^3 + 29\,568z^2 + 38\,808z + 13\,167\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 132\sqrt{z}\left(64z^2 - 644z - 399\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-1024z^2 + 3696z + 13\,167\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9fk.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, -\frac{17}{4}; z\right) = \left(\frac{16z}{17} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{221}\sqrt{z}\,(16z + 221)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9fl.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) = \left(1 - \frac{16z}{17}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{221}(221 - 16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a9fm.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2048z^3+8736z^2-11\,088z+3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(256z^2+2156z-1155\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(512z^2+1848z-3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9fn.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-2048z^3+8736z^2+11\,088z+3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(256z^2-2156z-1155\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(-512z^2+1848z+3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9fo.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) = \left(\frac{8z}{13}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9fp.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) = \left(1-\frac{8z}{13}\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a9fq.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024z^3+1920z^2-2520z+693\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(128z^2+532z-231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(256z^2+672z-693\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9fr.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1024z^3+1920z^2+2520z+693\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(128z^2-532z-231\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(-256z^2+672z+693\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9fs.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, -\frac{9}{4}; z\right) = \cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9ft.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},-\frac{9}{4};-z\right)=\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a9fu.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},-\frac{7}{4};z\right)=\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512z^3+96z^2-288z+63\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.12\sqrt{z}\left(64z^2+68z-21\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(128z^2+120z-63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9fv.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-512z^3+96z^2+288z+63\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(64z^2-68z-21\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(-128z^2+120z+63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9fw.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},-\frac{5}{4};z\right)=$$
$$-\frac{1}{30}e^{-2\sqrt{z}}\left(128e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-128e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+128e^{4\sqrt{z}}z^2+128z^2+\right.$$
$$\left.32e^{4\sqrt{z}}z^{3/2}-32z^{3/2}+24e^{4\sqrt{z}}z+24z+30e^{4\sqrt{z}}\sqrt{z}-30\sqrt{z}-15e^{4\sqrt{z}}-15\right)$$

07.22.03.a9fx.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},-\frac{5}{4};-z\right)=\frac{1}{15}\left(-256\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+2(15-16z)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-128z^2+24z+15\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a9fy.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},-\frac{3}{4};z\right)=\frac{1}{9\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-256z^3+384z^2-72z+9\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(32z^2-20z+3\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4(3-8z)^2zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9fz.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},-\frac{3}{4};-z\right)=\frac{1}{9\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(256z^3+384z^2+72z+9\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(32z^2+20z+3\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z(8z+3)^2J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9g0.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},-\frac{1}{4};z\right)=\frac{1}{6}e^{-2\sqrt{z}}\left(32e^{4\sqrt{z}}z^2+32z^2+8e^{4\sqrt{z}}z^{3/2}-8z^{3/2}+2e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-27)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-\right.$$
$$\left.2e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-27)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-48e^{4\sqrt{z}}z-48z-6e^{4\sqrt{z}}\sqrt{z}+6\sqrt{z}+3e^{4\sqrt{z}}+3\right)$$

07.22.03.a9g1.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) = \frac{4}{3}\sqrt{\pi}\,(16z+27)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4} + \frac{2}{3}(4z+3)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(\frac{32z^2}{3}+16z+1\right)\cos\left(2\sqrt{z}\right)$$

07.22.03.a9g2.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) = \frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\left(\left(128z^3-408z^2+144z+9\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(-16z^2+37z+3\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-32z^2+78z+9\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9g3.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, \frac{1}{4}; -z\right) = -\frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\left(\left(128z^3+408z^2+144z-9\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(16z^2+37z-3\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(32z^2+78z-9\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9g4.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, \frac{3}{4}; z\right) = \frac{1}{384}e^{-2\sqrt{z}}\left(-4\left(64z^2-16z^{3/2}-204z+39\sqrt{z}+e^{4\sqrt{z}}\left(64z^2+16z^{3/2}-204z-39\sqrt{z}-48\right)-48\right)-e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(256z^2-864z-135\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(256z^2-864z-135\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)$$

07.22.03.a9g5.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, \frac{3}{4}; -z\right) = \frac{1}{96}\left(\sqrt{\pi}\sqrt[4]{z}\left(-256z^2-864z+135\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\left(4\left(16z^2+51z-12\right)\cos\left(2\sqrt{z}\right)+\sqrt{z}\,(16z+39)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9g6.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, \frac{5}{4}; z\right) = \frac{1}{180\sqrt{2}\sqrt[4]{z}}\left(\left(\left(512z^3-2496z^2+738z+360\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(-256z^2+1024z+345\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(-256z^2+1056z+315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9g7.01

$${}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, \frac{5}{4}; -z\right) = -\frac{1}{180\sqrt{2}\sqrt[4]{z}}\left(\left(\left(512z^3+2496z^2+738z-360\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(256z^2+1024z-345\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(256z^2+1056z-315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9g8.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{24\,576\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(1024\,z^{5/2}-256\,z^2-4992\,z^{3/2}+1056\,z-2172\sqrt{z}+e^{4\sqrt{z}}\left(1024\,z^{5/2}+256\,z^2-4992\,z^{3/2}-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.1056\,z-2172\sqrt{z}-675\right)+675\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\,z^3-20\,736\,z^2-6480\,z-675\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\,z^3-20\,736\,z^2-6480\,z-675\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9g9.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},\frac{7}{4};-z\right)=\frac{1}{6144\,z^{3/4}}\left(-\sqrt{\pi}\left(4096\,z^3+20\,736\,z^2-6480\,z+675\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.$$
$$\left.2\sqrt[4]{z}\left(4\sqrt{z}\left(256\,z^2+1248\,z-543\right)\cos\left(2\sqrt{z}\right)+\left(256\,z^2+1056\,z-675\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9ga.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},\frac{9}{4};z\right)=\frac{1}{8064\sqrt{2}\,z^{3/4}}$$
$$\left(\left(2\sqrt{z}\left(4096\,z^3-26\,880\,z^2+5040\,z+7497\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-4096\,z^3+23\,296\,z^2+12\,432\,z+945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(-4096\,z^3+23\,808\,z^2+11\,088\,z+2835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9gb.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},\frac{9}{4};-z\right)=$$
$$-\frac{1}{8064\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(4096\,z^3+26\,880\,z^2+5040\,z-7497\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096\,z^3+23\,296\,z^2-12\,432\,z+945\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096\,z^3+23\,808\,z^2-11\,088\,z+2835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9gc.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},\frac{11}{4};z\right)=-\frac{1}{6\,291\,456\,z^{7/4}}$$
$$\left(7\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384\,z^{7/2}-4096\,z^3-107\,520\,z^{5/2}+23\,808\,z^2-65\,856\,z^{3/2}+23\,760\,z-24\,300\sqrt{z}+e^{4\sqrt{z}}\right.\right.\right.$$
$$\left.\left.\left.\left(16\,384\,z^{7/2}+4096\,z^3-107\,520\,z^{5/2}-23\,808\,z^2-65\,856\,z^{3/2}-23\,760\,z-24\,300\sqrt{z}+18\,225\right)-18\,225\right)+\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-442\,368\,z^3-207\,360\,z^2-43\,200\,z+18\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-442\,368\,z^3-207\,360\,z^2-43\,200\,z+18\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9gd.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},\frac{11}{4};-z\right)=$$
$$-\frac{1}{1\,572\,864\,z^{7/4}}\left(7\left(\sqrt{\pi}\,\left(65\,536\,z^4+442\,368\,z^3-207\,360\,z^2+43\,200\,z+18\,225\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(4\sqrt{z}\right.\right.\right.$$
$$\left.\left.\left.\left(4096\,z^3+26\,880\,z^2-16\,464\,z+6075\right)\cos\left(2\sqrt{z}\right)+\left(4096\,z^3+23\,808\,z^2-23\,760\,z-18\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a9ge.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},\frac{13}{4};z\right)=\frac{1}{258\,048\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\,\left(65\,536\,z^4-540\,672\,z^3+32\,256\,z^2+189\,504\,z+31\,185\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$3\left(65\,536\,z^4-483\,328\,z^3-344\,064\,z^2-151\,200\,z+51\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\,\left(-65\,536\,z^4+491\,520\,z^3+308\,736\,z^2+120\,960\,z-155\,925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9gf.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},\frac{13}{4};-z\right)=-\frac{1}{258\,048\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\,\left(65\,536\,z^4+540\,672\,z^3+32\,256\,z^2-189\,504\,z+31\,185\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$3\left(65\,536\,z^4+483\,328\,z^3-344\,064\,z^2+151\,200\,z+51\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\,\left(65\,536\,z^4+491\,520\,z^3-308\,736\,z^2+120\,960\,z+155\,925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9gg.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},\frac{15}{4};z\right)=$$
$$-\frac{1}{2\,013\,265\,920\,z^{11/4}}\left(77\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(262\,144\,z^{9/2}-65\,536\,z^4-2\,162\,688\,z^{7/2}+491\,520\,z^3-1\,689\,600\,z^{5/2}+622\,080\,z^2-\right.\right.\right.$$
$$\left.933\,120\,z^{3/2}+311\,040\,z+2\,211\,300\sqrt{z}\right)+e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-2\,162\,688\,z^{7/2}-491\,520\,z^3-\right.$$
$$\left.\left.1\,689\,600\,z^{5/2}-622\,080\,z^2-933\,120\,z^{3/2}-311\,040\,z+2\,211\,300\sqrt{z}-1\,658\,475\right)+1\,658\,475\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\,\left(1\,048\,576\,z^5-8\,847\,360\,z^4-5\,529\,600\,z^3-1\,728\,000\,z^2+1\,458\,000\,z-1\,658\,475\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\,\left(1\,048\,576\,z^5-8\,847\,360\,z^4-5\,529\,600\,z^3-1\,728\,000\,z^2+1\,458\,000\,z-1\,658\,475\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Bigg)$$

07.22.03.a9gh.01

$${}_1F_2\left(-\frac{9}{4};-\frac{1}{2},\frac{15}{4};-z\right)=$$
$$-\frac{1}{503\,316\,480\,z^{11/4}}\left(77\left(\sqrt{\pi}\,\left(1\,048\,576\,z^5+8\,847\,360\,z^4-5\,529\,600\,z^3+1\,728\,000\,z^2+1\,458\,000\,z+1\,658\,475\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(65\,536\,z^4+540\,672\,z^3-422\,400\,z^2+233\,280\,z+552\,825\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(65\,536\,z^4+491\,520\,z^3-622\,080\,z^2+311\,040\,z-1\,658\,475\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a9gi.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) = \frac{1}{90\,832\,896\sqrt{2}\, z^{11/4}}\left(13\left(2\sqrt{z}\left(1\,048\,576 z^5 - 10\,420\,224 z^4 - 811\,008 z^3 + 3\,902\,976 z^2 + 6\,486\,480 z - 4\,209\,975\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(1\,048\,576 z^5 - 9\,502\,720 z^4 - 8\,380\,416 z^3 - 5\,322\,240 z^2 + 15\,800\,400 z - 7\,016\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-1\,048\,576 z^5 + 9\,633\,792 z^4 + 7\,593\,984 z^3 + 3\,801\,600 z^2 - 2\,494\,800 z + 21\,049\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9gj.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) = -\frac{1}{90\,832\,896\sqrt{2}\, z^{11/4}}\left(13\left(2\sqrt{z}\left(1\,048\,576 z^5 + 10\,420\,224 z^4 - 811\,008 z^3 - 3\,902\,976 z^2 + 6\,486\,480 z + 4\,209\,975\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(1\,048\,576 z^5 + 9\,502\,720 z^4 - 8\,380\,416 z^3 + 5\,322\,240 z^2 + 15\,800\,400 z + 7\,016\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 + 9\,633\,792 z^4 - 7\,593\,984 z^3 + 3\,801\,600 z^2 + 2\,494\,800 z + 21\,049\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9gk.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) = -\frac{1}{51\,539\,607\,552 z^{15/4}}\left(77 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304 z^{11/2} - 1\,048\,576 z^5 - 41\,680\,896 z^{9/2} + 9\,633\,792 z^4 - 39\,419\,904 z^{7/2} + 14\,376\,960 z^3 - 26\,818\,560 z^{5/2} + 15\,828\,480 z^2 + 23\,250\,240 z^{3/2} - 171\,596\,880 z - 413\,513\,100\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 41\,680\,896 z^{9/2} - 9\,633\,792 z^4 - 39\,419\,904 z^{7/2} - 14\,376\,960 z^3 - 26\,818\,560 z^{5/2} - 15\,828\,480 z^2 + 23\,250\,240 z^{3/2} + 171\,596\,880 z - 413\,513\,100\sqrt{z} + 310\,134\,825\right) - 310\,134\,825\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 169\,869\,312 z^5 - 132\,710\,400 z^4 - 55\,296\,000 z^3 + 69\,984\,000 z^2 - 159\,213\,600 z + 310\,134\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 169\,869\,312 z^5 - 132\,710\,400 z^4 - 55\,296\,000 z^3 + 69\,984\,000 z^2 - 159\,213\,600 z + 310\,134\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9gl.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) = -\frac{1}{12\,884\,901\,888\, z^{15/4}}\left(77\left(\sqrt{\pi}\left(16\,777\,216\, z^6 + 169\,869\,312\, z^5 - 132\,710\,400\, z^4 + 55\,296\,000\, z^3 + 69\,984\,000\, z^2 + 159\,213\,600\, z + 310\,134\,825\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576\, z^5 + 10\,420\,224\, z^4 - 9\,854\,976\, z^3 + 6\,704\,640\, z^2 + 5\,812\,560\, z + 103\,378\,275\right)\cos\left(2\sqrt{z}\right) + \left(1\,048\,576\, z^5 + 9\,633\,792\, z^4 - 14\,376\,960\, z^3 + 15\,828\,480\, z^2 + 171\,596\,880\, z - 310\,134\,825\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9gm.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) = \frac{1}{2\,906\,652\,672\sqrt{2}\, z^{15/4}}\left(17\left(2\sqrt{z}\left(16\,777\,216\, z^6 - 195\,035\,136\, z^5 - 43\,057\,152\, z^4 + 69\,746\,688\, z^3 + 247\,484\,160\, z^2 - 1\,362\,160\,800\, z + 1\,039\,863\,825\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-16\,777\,216\, z^6 + 180\,355\,072\, z^5 + 188\,940\,288\, z^4 + 145\,981\,440\, z^3 - 172\,972\,800\, z^2 + 3\,502\,699\,200\, z - 1\,733\,106\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(16\,777\,216\, z^6 - 182\,452\,224\, z^5 - 172\,818\,432\, z^4 - 103\,956\,480\, z^3 + 74\,131\,200\, z^2 + 583\,783\,200\, z + 5\,199\,319\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9gn.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) = -\frac{1}{2\,906\,652\,672\sqrt{2}\, z^{15/4}}\left(17\left(2\sqrt{z}\left(16\,777\,216\, z^6 + 195\,035\,136\, z^5 - 43\,057\,152\, z^4 - 69\,746\,688\, z^3 + 247\,484\,160\, z^2 + 1\,362\,160\,800\, z + 1\,039\,863\,825\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,777\,216\, z^6 + 180\,355\,072\, z^5 - 188\,940\,288\, z^4 + 145\,981\,440\, z^3 + 172\,972\,800\, z^2 + 3\,502\,699\,200\, z + 1\,733\,106\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216\, z^6 + 182\,452\,224\, z^5 - 172\,818\,432\, z^4 + 103\,956\,480\, z^3 + 74\,131\,200\, z^2 - 583\,783\,200\, z + 5\,199\,319\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9go.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) = -\frac{1}{3\,298\,534\,883\,328\, z^{19/4}} \left(209\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(67\,108\,864\, z^{13/2} - 16\,777\,216\, z^6 - 780\,140\,544\, z^{11/2} + 182\,452\,224\, z^5 - 864\,288\,768\, z^{9/2} + 309\,657\,600\, z^4 - 681\,246\,720\, z^{7/2} + 449\,003\,520\, z^3 + 339\,655\,680\, z^{5/2} - 1\,669\,973\,760\, z^2 + 13\,232\,419\,200\, z^{3/2} + 69\,470\,200\,800\, z + 130\,256\,626\,500\sqrt{z} + e^{4\sqrt{z}} \left(67\,108\,864\, z^{13/2} + 16\,777\,216\, z^6 - 780\,140\,544\, z^{11/2} - 182\,452\,224\, z^5 - 864\,288\,768\, z^{9/2} - 309\,657\,600\, z^4 - 681\,246\,720\, z^{7/2} - 449\,003\,520\, z^3 + 339\,655\,680\, z^{5/2} + 1\,669\,973\,760\, z^2 + 13\,232\,419\,200\, z^{3/2} - 69\,470\,200\,800\, z + 130\,256\,626\,500\sqrt{z} - 97\,692\,469\,875\right) + 97\,692\,469\,875\right) + e^{2\sqrt{z}} \sqrt{2\pi}\, \left(268\,435\,456\, z^7 - 3\,170\,893\,824\, z^6 - 2\,972\,712\,960\, z^5 - 1\,548\,288\,000\, z^4 + 2\,612\,736\,000\, z^3 - 8\,915\,961\,600\, z^2 + 34\,735\,100\,400\, z - 97\,692\,469\,875\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - e^{2\sqrt{z}} \sqrt{2\pi}\, \left(268\,435\,456\, z^7 - 3\,170\,893\,824\, z^6 - 2\,972\,712\,960\, z^5 - 1\,548\,288\,000\, z^4 + 2\,612\,736\,000\, z^3 - 8\,915\,961\,600\, z^2 + 34\,735\,100\,400\, z - 97\,692\,469\,875\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right) $$

07.22.03.a9gp.01

$$ {}_1F_2\left(-\frac{9}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) = -\frac{1}{824\,633\,720\,832\, z^{19/4}} \left(209 \left(\sqrt{\pi}\, \left(268\,435\,456\, z^7 + 3\,170\,893\,824\, z^6 - 2\,972\,712\,960\, z^5 + 1\,548\,288\,000\, z^4 + 2\,612\,736\,000\, z^3 + 8\,915\,961\,600\, z^2 + 34\,735\,100\,400\, z + 97\,692\,469\,875\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\, \left(4\sqrt{z}\, \left(16\,777\,216\, z^6 + 195\,035\,136\, z^5 - 216\,072\,192\, z^4 + 170\,311\,680\, z^3 + 84\,913\,920\, z^2 - 3\,308\,104\,800\, z + 32\,564\,156\,625\right) \cos\left(2\sqrt{z}\right) + \left(16\,777\,216\, z^6 + 182\,452\,224\, z^5 - 309\,657\,600\, z^4 + 449\,003\,520\, z^3 + 1\,669\,973\,760\, z^2 + 69\,470\,200\,800\, z - 97\,692\,469\,875\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{9}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.a9gq.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) = \frac{1}{302\,841\, \sqrt[4]{z}} \left(\sqrt{2}\, \left(-\left(16\,384\, z^3 + 251\,328\, z^2 + 368\,676\, z - 302\,841\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\, \left(1664\, z^2 + 11\,704\, z + 100\,947\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\, z \left(4096\, z^2 + 80\,880\, z + 302\,841\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2 \right) $$

07.22.03.a9gr.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{1}{2}, -\frac{23}{4}; -z\right) = \frac{1}{302\,841\sqrt[4]{z}} \left(\sqrt{2}\left(\left(16\,384 z^3 - 251\,328 z^2 + 368\,676 z + 302\,841\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1664 z^2 - 11\,704 z + 100\,947\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^2 - 80\,880 z + 302\,841\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9gs.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{1}{2}, -\frac{21}{4}; z\right) = \frac{(720 z + 4641)\cosh\left(2\sqrt{z}\right) - 4\sqrt{z}\,(16 z + 753)\sinh\left(2\sqrt{z}\right)}{4641} $$

07.22.03.a9gt.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{1}{2}, -\frac{21}{4}; -z\right) = \frac{(4641 - 720 z)\cos\left(2\sqrt{z}\right) + 4(753 - 16 z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)}{4641} $$

07.22.03.a9gu.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{1}{2}, -\frac{19}{4}; z\right) = \frac{1}{92\,169\sqrt[4]{z}} \left(\sqrt{2}\left(-\left(8192 z^3 + 103\,488 z^2 + 97\,020 z - 92\,169\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(1024 z^2 + 8624 z + 30\,723\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(2048 z^2 + 29\,424 z + 92\,169\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9gv.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{1}{2}, -\frac{19}{4}; -z\right) = \frac{1}{92\,169\sqrt[4]{z}} \left(\sqrt{2}\left(\left(8192 z^3 - 103\,488 z^2 + 97\,020 z + 92\,169\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1024 z^2 - 8624 z + 30\,723\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(2048 z^2 - 29\,424 z + 92\,169\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9gw.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{1}{2}, -\frac{17}{4}; z\right) = \left(\frac{16 z}{221} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{112}{221}\sqrt{z}\,\sinh\left(2\sqrt{z}\right) $$

07.22.03.a9gx.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{1}{2}, -\frac{17}{4}; -z\right) = \left(1 - \frac{16 z}{221}\right)\cos\left(2\sqrt{z}\right) + \frac{112}{221}\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.a9gy.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{24\,255\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(4096z^3+37\,632z^2+19\,404z-24\,255\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(512z^2+4312z+8085\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(1024z^2+10\,176z+24\,255\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9gz.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{24\,255\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^3-37\,632z^2+19\,404z+24\,255\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(512z^2-4312z+8085\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(1024z^2-10\,176z+24\,255\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9h0.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},-\frac{13}{4};z\right)=\cosh\left(2\sqrt{z}\right)-\frac{4}{13}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9h1.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},-\frac{13}{4};-z\right)=\cos\left(2\sqrt{z}\right)+\frac{4}{13}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a9h2.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(2048z^3+10\,752z^2+1764z-4851\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(256z^2+1568z+1617\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(512z^2+3072z+4851\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9h3.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2048z^3-10\,752z^2+1764z+4851\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(256z^2-1568z+1617\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(512z^2-3072z+4851\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9h4.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},-\frac{9}{4};z\right)=\cosh\left(2\sqrt{z}\right)$$

07.22.03.a9h5.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},-\frac{9}{4};-z\right)=\cos\left(2\sqrt{z}\right)$$

07.22.03.a9h6.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{441\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1024z^3-1344z^2+252z+441\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(128z^2+280z+147\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(256z^2+528z+441\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9h7.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{441\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024z^3-1344z^2-252z+441\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(128z^2-280z+147\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(256z^2-528z+441\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9h8.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{210}e^{-2\sqrt{z}}\left(256e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-256e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+256e^{4\sqrt{z}}z^2+256z^2+\right.$$
$$\left.64e^{4\sqrt{z}}z^{3/2}-64z^{3/2}+48e^{4\sqrt{z}}z+48z+60e^{4\sqrt{z}}\sqrt{z}-60\sqrt{z}+105e^{4\sqrt{z}}+105\right)$$

07.22.03.a9h9.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},-\frac{5}{4};-z\right)=\frac{1}{105}\left(512\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+4\left(16z-15\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(256z^2-48z+105\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a9ha.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512z^3-1344z^2+252z+63\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(-64z^2+112z+21\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(-128z^2+240z+63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9hb.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},-\frac{3}{4};-z\right)=$$
$$-\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512z^3+1344z^2+252z-63\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(64z^2+112z-21\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^2+240z-63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9hc.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},-\frac{1}{4};z\right)=\frac{1}{42}e^{-2\sqrt{z}}\left(-64e^{4\sqrt{z}}z^2-64z^2-16e^{4\sqrt{z}}z^{3/2}+16z^{3/2}-4e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-63)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+\right.$$
$$\left.4e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-63)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+240e^{4\sqrt{z}}z+240z+48e^{4\sqrt{z}}\sqrt{z}-48\sqrt{z}+21e^{4\sqrt{z}}+21\right)$$

07.22.03.a9hd.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},-\frac{1}{4};-z\right)=\frac{1}{21}\left(-8\sqrt{\pi}\,(16z+63)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}-16(z+3)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(-64z^2-240z+21\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a9he.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{1}{4};z\right)=\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-256z^3+1680z^2-1260z+63\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.12\sqrt{z}\left(32z^2-182z+21\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(64z^2-372z+63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9hf.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256z^3+1680z^2+1260z+63\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(32z^2+182z+21\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(64z^2+372z+63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9hg.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{1344}\left(e^{-2\sqrt{z}}\left(4\left(64z^2-16z^{3/2}-492z+111\sqrt{z}+e^{4\sqrt{z}}\left(64z^2+16z^{3/2}-492z-111\sqrt{z}+168\right)+168\right)+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(256z^2-2016z+945\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(256z^2-2016z+945\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9hh.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{3}{4};-z\right)=$$
$$\frac{1}{336}\left(8\left(16z^2+123z+42\right)\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\sqrt[4]{z}\left(256z^2+2016z+945\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt{z}\,(16z+111)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9hi.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{630\sqrt{2}\,\sqrt[4]{z}}\left(\left(\left(-512z^3+5376z^2-6678z+1260\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\left(256z^2-2464z+1365\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(256z^2-2496z+1575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9hj.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{5}{4};-z\right)=$$
$$\frac{1}{630\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(256z^3+2688z^2+3339z+630\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(256z^2+2464z+1365\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(256z^2+2496z+1575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9hk.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{86\,016z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024z^{5/2}-256z^2-11\,904z^{3/2}+2784z+9492\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2-11\,904z^{3/2}-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.2784z+9492\sqrt{z}+945\right)-945\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-48\,384z^2+45\,360z+945\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-48\,384z^2+45\,360z+945\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9hl.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{7}{4};-z\right)=\frac{1}{21\,504z^{3/4}}\left(\sqrt{\pi}\left(4096z^3+48\,384z^2+45\,360z-945\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\sqrt[4]{z}\left(4\sqrt{z}\left(256z^2+2976z+2373\right)\cos\left(2\sqrt{z}\right)+\left(256z^2+2784z+945\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9hm.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{9}{4};z\right)=\frac{1}{28\,224\sqrt{2}\,z^{3/4}}$$
$$\left(\left(2\sqrt{z}\left(-4096z^3+59\,136z^2-101\,808z+27\,657\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(4096z^3-55\,552z^2+56\,112z+945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(4096z^3-56\,064z^2+61\,488z+2835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9hn.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{9}{4};-z\right)=\frac{1}{28\,224\sqrt{2}\,z^{3/4}}$$
$$\left(\left(2\sqrt{z}\left(4096z^3+59\,136z^2+101\,808z+27\,657\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3+55\,552z^2+56\,112z-945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(4096z^3+56\,064z^2+61\,488z-2835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ho.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{3\,145\,728z^{7/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384z^{7/2}-4096z^3-254\,976z^{5/2}+60\,672z^2+321\,216z^{3/2}-45\,360z+18\,900\sqrt{z}+e^{4\sqrt{z}}\right.\right.\right.$$
$$\left.\left.\left.\left(16\,384z^{7/2}+4096z^3-254\,976z^{5/2}-60\,672z^2+321\,216z^{3/2}+45\,360z+18\,900\sqrt{z}-14\,175\right)+14\,175\right)+\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-1\,032\,192z^3+1\,451\,520z^2+60\,480z-14\,175\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-1\,032\,192z^3+1\,451\,520z^2+60\,480z-14\,175\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9hp.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{11}{4};-z\right)=\frac{1}{786\,432z^{7/4}}\left(\sqrt{\pi}\left(65\,536z^4+1\,032\,192z^3+1\,451\,520z^2-60\,480z-14\,175\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\sqrt[4]{z}\left(4\sqrt{z}\left(4096z^3+63\,744z^2+80\,304z-4725\right)\cos\left(2\sqrt{z}\right)+\left(4096z^3+60\,672z^2+45\,360z+14\,175\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9hq.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{13}{4};z\right)=\frac{1}{903\,168\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(-65\,536z^4+1\,204\,224z^3-2\,644\,992z^2+844\,704z+19\,845\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$3\left(65\,536z^4-1\,146\,880z^3+1\,688\,064z^2+120\,960z-33\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-1\,155\,072z^3+1\,806\,336z^2+151\,200z-99\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9hr.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{13}{4};-z\right)=\frac{1}{903\,168\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(65\,536z^4+1\,204\,224z^3+2\,644\,992z^2+844\,704z-19\,845\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(65\,536z^4+1\,146\,880z^3+1\,688\,064z^2-120\,960z-33\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+1\,155\,072z^3+1\,806\,336z^2-151\,200z-99\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9hs.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{15}{4};z\right)= \frac{1}{1\,006\,632\,960\,z^{11/4}}\left(11\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144\,z^{9/2}-65\,536\,z^4-5\,111\,808\,z^{7/2}+1\,228\,800\,z^3+8\,816\,640\,z^{5/2}-1\,451\,520\,z^2+967\,680\,z^{3/2}+181\,440\,z-1\,190\,700\sqrt{z}\right)+e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-5\,111\,808\,z^{7/2}-1\,228\,800\,z^3+8\,816\,640\,z^{5/2}+1\,451\,520\,z^2+967\,680\,z^{3/2}-181\,440\,z-1\,190\,700\sqrt{z}+893\,025\right)-893\,025\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-20\,643\,840\,z^4+38\,707\,200\,z^3+2\,419\,200\,z^2-1\,134\,000\,z+893\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-20\,643\,840\,z^4+38\,707\,200\,z^3+2\,419\,200\,z^2-1\,134\,000\,z+893\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9ht.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{15}{4};-z\right)= \frac{1}{251\,658\,240\,z^{11/4}}\left(11\left(\sqrt{\pi}\left(1\,048\,576\,z^5+20\,643\,840\,z^4+38\,707\,200\,z^3-2\,419\,200\,z^2-1\,134\,000\,z-893\,025\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536\,z^4+1\,277\,952\,z^3+2\,204\,160\,z^2-241\,920\,z-297\,675\right)\cos\left(2\sqrt{z}\right)+\left(65\,536\,z^4+1\,228\,800\,z^3+1\,451\,520\,z^2+181\,440\,z+893\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9hu.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{17}{4};z\right)=-\frac{1}{317\,915\,136\sqrt{2}\,z^{11/4}} \left(13\left(2\sqrt{z}\left(1\,048\,576\,z^5-23\,396\,352\,z^4+62\,447\,616\,z^3-21\,643\,776\,z^2-3\,492\,720\,z+1\,964\,655\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(1\,048\,576\,z^5-22\,478\,848\,z^4+43\,524\,096\,z^3+5\,322\,240\,z^2-8\,149\,680\,z+3\,274\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(1\,048\,576\,z^5-22\,609\,920\,z^4+45\,932\,544\,z^3+5\,322\,240\,z^2-3\,492\,720\,z+9\,823\,275\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9hv.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{17}{4};-z\right)=\frac{1}{317\,915\,136\sqrt{2}\,z^{11/4}} \left(13\left(2\sqrt{z}\left(1\,048\,576\,z^5+23\,396\,352\,z^4+62\,447\,616\,z^3+21\,643\,776\,z^2-3\,492\,720\,z-1\,964\,655\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(1\,048\,576\,z^5+22\,478\,848\,z^4+43\,524\,096\,z^3-5\,322\,240\,z^2-8\,149\,680\,z-3\,274\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576\,z^5+22\,609\,920\,z^4+45\,932\,544\,z^3-5\,322\,240\,z^2-3\,492\,720\,z-9\,823\,275\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9hw.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{1}{2}, \frac{19}{4}; z\right) = \frac{1}{25\,769\,803\,776\, z^{15/4}} \left(11\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(4\,194\,304\, z^{11/2} - 1\,048\,576\, z^5 - 98\,304\,000\, z^{9/2} + 23\,789\,568\, z^4 + 215\,384\,064\, z^{7/2} - 38\,707\,200\, z^3 + 32\,901\,120\, z^{5/2} - 2\,419\,200\, z^2 - 36\,469\,440\, z^{3/2} + 50\,485\,680\, z + 170\,270\,100\sqrt{z} + e^{4\sqrt{z}} \left(4\,194\,304\, z^{11/2} + 1\,048\,576\, z^5 - 98\,304\,000\, z^{9/2} - 23\,789\,568\, z^4 + 215\,384\,064\, z^{7/2} + 38\,707\,200\, z^3 + 32\,901\,120\, z^{5/2} + 2\,419\,200\, z^2 - 36\,469\,440\, z^{3/2} - 50\,485\,680\, z + 170\,270\,100\sqrt{z} - 127\,702\,575\right) + 127\,702\,575\right) + e^{2\sqrt{z}} \sqrt{2\pi}\, \left(16\,777\,216\, z^6 - 396\,361\,728\, z^5 + 928\,972\,800\, z^4 + 77\,414\,400\, z^3 - 54\,432\,000\, z^2 + 85\,730\,400\, z - 127\,702\,575\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - e^{2\sqrt{z}} \sqrt{2\pi}\, \left(16\,777\,216\, z^6 - 396\,361\,728\, z^5 + 928\,972\,800\, z^4 + 77\,414\,400\, z^3 - 54\,432\,000\, z^2 + 85\,730\,400\, z - 127\,702\,575\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9hx.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{1}{2}, \frac{19}{4}; -z\right) = \frac{1}{6\,442\,450\,944\, z^{15/4}} \left(11 \left(\sqrt{\pi}\, \left(16\,777\,216\, z^6 + 396\,361\,728\, z^5 + 928\,972\,800\, z^4 - 77\,414\,400\, z^3 - 54\,432\,000\, z^2 - 85\,730\,400\, z - 127\,702\,575\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\, \left(4\sqrt{z}\, \left(1\,048\,576\, z^5 + 24\,576\,000\, z^4 + 53\,846\,016\, z^3 - 8\,225\,280\, z^2 - 9\,117\,360\, z - 42\,567\,525\right) \cos\left(2\sqrt{z}\right) + \left(1\,048\,576\, z^5 + 23\,789\,568\, z^4 + 38\,707\,200\, z^3 - 2\,419\,200\, z^2 - 50\,485\,680\, z + 127\,702\,575\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9hy.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{1}{2}, \frac{21}{4}; z\right) = -\frac{1}{10\,173\,284\,352\sqrt{2}\, z^{15/4}} \left(17 \left(2\sqrt{z}\, \left(16\,777\,216\, z^6 - 440\,401\,920\, z^5 + 1\,383\,137\,280\, z^4 - 499\,580\,928\, z^3 - 167\,650\,560\, z^2 + 544\,864\,320\, z - 383\,107\,725\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,777\,216\, z^6 - 425\,721\,856\, z^5 + 1\,022\,558\,208\, z^4 + 170\,311\,680\, z^3 - 242\,161\,920\, z^2 + 1\,362\,160\,800\, z - 638\,512\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\, \left(-16\,777\,216\, z^6 + 427\,819\,008\, z^5 - 1\,069\,350\,912\, z^4 - 154\,828\,800\, z^3 + 103\,783\,680\, z^2 + 1\,915\,538\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9hz.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{21}{4};-z\right)=$$
$$\frac{1}{10\,173\,284\,352\sqrt{2}\,z^{15/4}}\left(17\left(2\sqrt{z}\left(16\,777\,216z^6+440\,401\,920z^5+1\,383\,137\,280z^4+499\,580\,928z^3-167\,650\,560z^2-\right.\right.\right.$$
$$\left.544\,864\,320z-383\,107\,725\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-16\,777\,216z^6-425\,721\,856z^5-1\,022\,558\,208z^4+\right.$$
$$\left.170\,311\,680z^3+242\,161\,920z^2+1\,362\,160\,800z+638\,512\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(16\,777\,216z^6+$$
$$\left.\left.\left.427\,819\,008z^5+1\,069\,350\,912z^4-154\,828\,800z^3-103\,783\,680z^2-1\,915\,538\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9i0.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{23}{4};z\right)=$$
$$\frac{1}{11\,544\,872\,091\,648\,z^{19/4}}\left(209\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(67\,108\,864z^{13/2}-16\,777\,216z^6-1\,837\,105\,152z^{11/2}+446\,693\,376z^5+\right.\right.\right.$$
$$4\,882\,956\,288z^{9/2}-928\,972\,800z^4+928\,972\,800z^{7/2}-201\,277\,440z^3-891\,233\,280z^{5/2}+$$
$$1\,633\,685\,760z^2-778\,377\,600z^{3/2}-20\,432\,412\,000z-43\,418\,875\,500\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(67\,108\,864z^{13/2}+16\,777\,216z^6-1\,837\,105\,152z^{11/2}-446\,693\,376z^5+4\,882\,956\,288z^{9/2}+\right.$$
$$\left.928\,972\,800z^4+928\,972\,800z^{7/2}+201\,277\,440z^3-891\,233\,280z^{5/2}-1\,633\,685\,760z^2-\right.$$
$$\left.778\,377\,600z^{3/2}+20\,432\,412\,000z-43\,418\,875\,500\sqrt{z}+32\,564\,156\,625\right)-32\,564\,156\,625\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7-7\,398\,752\,256z^6+20\,808\,990\,720z^5+2\,167\,603\,200z^4-\right.$$
$$\left.2\,032\,128\,000z^3+4\,800\,902\,400z^2-14\,302\,688\,400z+32\,564\,156\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(268\,435\,456z^7-7\,398\,752\,256z^6+20\,808\,990\,720z^5+2\,167\,603\,200z^4-\right.$$
$$\left.\left.2\,032\,128\,000z^3+4\,800\,902\,400z^2-14\,302\,688\,400z+32\,564\,156\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a9i1.01

$${}_1F_2\left(-\frac{9}{4};\frac{1}{2},\frac{23}{4};-z\right)=$$
$$\frac{1}{2\,886\,218\,022\,912\,z^{19/4}}\left(209\left(\sqrt{\pi}\left(268\,435\,456z^7+7\,398\,752\,256z^6+20\,808\,990\,720z^5-2\,167\,603\,200z^4-\right.\right.\right.$$
$$\left.2\,032\,128\,000z^3-4\,800\,902\,400z^2-14\,302\,688\,400z-32\,564\,156\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216z^6+459\,276\,288z^5+1\,220\,739\,072z^4-232\,243\,200z^3-222\,808\,320z^2+\right.\right.$$
$$\left.194\,594\,400z-10\,854\,718\,875\right)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216z^6+446\,693\,376z^5+928\,972\,800z^4-\right.$$
$$\left.\left.\left.201\,277\,440z^3-1\,633\,685\,760z^2-20\,432\,412\,000z+32\,564\,156\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big)$$

For fixed z and $a_1 = -\frac{9}{4}$, $b_{1.} = \frac{3}{2}$

07.22.03.a9i2.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{3\,331\,251\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(32\,768z^3+903\,552z^2+5\,793\,480z-3\,331\,251\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(4096z^2+146\,096z+1\,110\,417\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(4096z^2+112\,848z+546\,813\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9i3.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{3\,331\,251\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768z^3-903\,552z^2+5\,793\,480z+3\,331\,251\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(4096z^2-146\,096z+1\,110\,417\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(4096z^2-112\,848z+546\,813\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9i4.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{21}{4};z\right)=\frac{3\left(272z+2185\right)\sinh\left(2\sqrt{z}\right)-4\sqrt{z}\left(16z+957\right)\cosh\left(2\sqrt{z}\right)}{9282\sqrt{z}}$$

07.22.03.a9i5.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{21}{4};-z\right)=\frac{4\sqrt{z}\left(16z-957\right)\cos\left(2\sqrt{z}\right)+3\left(2185-272z\right)\sin\left(2\sqrt{z}\right)}{9282\sqrt{z}}$$

07.22.03.a9i6.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{1\,013\,859\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(16\,384z^3+344\,064z^2+1\,707\,552z-1\,013\,859\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(2048z^2+48\,496z+337\,953\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+16z\left(1024z^2+22\,272z+96\,831\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9i7.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{1\,013\,859\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384z^3-344\,064z^2+1\,707\,552z+1\,013\,859\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(2048z^2-48\,496z+337\,953\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+16z\left(1024z^2-22\,272z+96\,831\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9i8.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{17}{4};z\right)=\frac{\left(16z+285\right)\sinh\left(2\sqrt{z}\right)-128\sqrt{z}\cosh\left(2\sqrt{z}\right)}{442\sqrt{z}}$$

07.22.03.a9i9.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{17}{4};-z\right)=\frac{(285-16z)\sin\left(2\sqrt{z}\right)-128\sqrt{z}\cos\left(2\sqrt{z}\right)}{442\sqrt{z}}$$

07.22.03.a9ia.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{15}{4};z\right)=\frac{1}{266\,805\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(-\left(8192z^3+121\,344z^2+426\,888z-266\,805\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(1024z^2+16\,064z+88\,935\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.8z\left(1024z^2+15\,936z+58\,815\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ib.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{15}{4};-z\right)=\frac{1}{266\,805\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(8192z^3-121\,344z^2+426\,888z+266\,805\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(1024z^2-16\,064z+88\,935\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.8z\left(1024z^2-15\,936z+58\,815\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ic.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{13}{4};z\right)=\frac{1}{26}\left(\frac{15\sinh\left(2\sqrt{z}\right)}{\sqrt{z}}-4\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.a9id.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{13}{4};-z\right)=\frac{1}{26}\left(\frac{15\sin\left(2\sqrt{z}\right)}{\sqrt{z}}-4\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a9ie.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{53\,361\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(4096z^3+35\,328z^2+77\,616z-53\,361\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(512z^2+4864z+17\,787\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.16z\left(256z^2+2400z+6759\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9if.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{53\,361\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^3-35\,328z^2+77\,616z+53\,361\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(512z^2-4864z+17\,787\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.16z\left(256z^2-2400z+6759\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ig.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{9}{4};z\right)=\frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.a9ih.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{9}{4};-z\right)=\frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.a9ii.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(2048z^3+4992z^2+5544z-4851\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(256z^2+848z+1617\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.8z\left(256z^2+816z+1413\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ij.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2048z^3-4992z^2+5544z+4851\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(256z^2-848z+1617\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.8z\left(256z^2-816z+1413\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ik.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{5}{4};z\right)=\frac{1}{4620\sqrt{z}}$$
$$\left(e^{-2\sqrt{z}}\left(1024e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-1024e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+1024e^{4\sqrt{z}}z^{5/2}+1024z^{5/2}+256\right.\right.$$
$$\left.\left.e^{4\sqrt{z}}z^2-256z^2+192e^{4\sqrt{z}}z^{3/2}+192z^{3/2}+240e^{4\sqrt{z}}z-240z+420e^{4\sqrt{z}}\sqrt{z}+420\sqrt{z}+945e^{4\sqrt{z}}-945\right)\right)$$

07.22.03.a9il.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{2310\sqrt{z}}\left(2048\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+4\left(256z^2-48z+105\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(256z^2-240z+945\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9im.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{3}{4};z\right)=\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024z^3-3840z^2+693\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.12\sqrt{z}\left(-128z^2+368z+231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+16z\left(-64z^2+192z+117\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9in.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{3}{4};-z\right)=$$
$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1024z^3-3840z^2+693\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(128z^2+368z-231\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.16z\left(64z^2+192z-117\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9io.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{924\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-256e^{4\sqrt{z}}z^{5/2}-256z^{5/2}-64e^{4\sqrt{z}}z^2+64z^2-16e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-99)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+\right.\right.$$
$$16e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-99)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+1536e^{4\sqrt{z}}z^{3/2}+1536z^{3/2}+$$
$$\left.\left.336e^{4\sqrt{z}}z-336z+192e^{4\sqrt{z}}\sqrt{z}+192\sqrt{z}+135e^{4\sqrt{z}}-135\right)\right)$$

07.22.03.a9ip.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},-\frac{1}{4};-z\right)=$$
$$\frac{1}{462\sqrt{z}}\left(-32\sqrt{\pi}\,(16z+99)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}-64\left(4z^2+24z-3\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-64z^2-336z+135\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9iq.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-512z^3+5088z^2-5544z+693\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(64z^2-580z+231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.8z\left(64z^2-588z+279\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ir.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512z^3+5088z^2+5544z+693\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(64z^2+580z+231\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.8z\left(64z^2+588z+279\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9is.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},\frac{3}{4};z\right)=\frac{1}{7392\sqrt{z}}$$
$$\left(e^{-2\sqrt{z}}\left(4\left(64z^{5/2}-16z^2-780z^{3/2}+183z+744\sqrt{z}+e^{4\sqrt{z}}\left(64z^{5/2}+16z^2-780z^{3/2}-183z+744\sqrt{z}+90\right)-90\right)+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(256z^2-3168z+3465\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(256z^2-3168z+3465\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9it.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{3}{2}, \frac{3}{4}; -z\right) = \frac{1}{1848\sqrt{z}} $$
$$ \left(\sqrt{\pi}\, z^{3/4}\left(256 z^2 + 3168 z + 3465\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\left(4\sqrt{z}\left(16 z^2 + 195 z + 186\right)\cos\left(2\sqrt{z}\right) + \left(16 z^2 + 183 z + 90\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a9iu.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{3}{2}, \frac{5}{4}; z\right) = $$
$$ \frac{1}{3465\sqrt{2}\,\sqrt[4]{z}}\left(\left(\left(-512 z^3 + 8256 z^2 - 18\,018 z + 6930\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(256 z^2 - 3904 z + 5775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. 2 z\left(256 z^2 - 3936 z + 6165\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9iv.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{3}{2}, \frac{5}{4}; -z\right) = $$
$$ \frac{1}{3465\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(256 z^3 + 4128 z^2 + 9009 z + 3465\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(256 z^2 + 3904 z + 5775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. 2 z\left(256 z^2 + 3936 z + 6165\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9iw.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{3}{2}, \frac{7}{4}; z\right) = $$
$$ \frac{1}{473\,088 z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024 z^{5/2} - 256 z^2 - 18\,816 z^{3/2} + 4512 z + 38\,436\sqrt{z} + e^{4\sqrt{z}}\left(1024 z^{5/2} + 256 z^2 - 18\,816 z^{3/2} - \right.\right.\right.\right. $$
$$ \left.\left.\left.\left. 4512 z + 38\,436\sqrt{z} + 6885\right) - 6885\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 - 76\,032 z^2 + 166\,320 z - 10\,395\right) \right.\right. $$
$$ \left.\left. \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 - 76\,032 z^2 + 166\,320 z - 10\,395\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9ix.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{3}{2}, \frac{7}{4}; -z\right) = \frac{1}{118\,272 z^{3/4}}\left(\sqrt{\pi}\left(4096 z^3 + 76\,032 z^2 + 166\,320 z + 10\,395\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ \left. 2\sqrt[4]{z}\left(4\sqrt{z}\left(256 z^2 + 4704 z + 9609\right)\cos\left(2\sqrt{z}\right) + \left(256 z^2 + 4512 z + 6885\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a9iy.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{155\,232\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(-4096z^3+91\,392z^2-299\,376z+157\,311\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(4096z^3-87\,808z^2+225\,456z-3465\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3-88\,320z^2+234\,864z-10\,395\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9iz.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{155\,232\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(4096z^3+91\,392z^2+299\,376z+157\,311\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3+87\,808z^2+225\,456z+3465\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3+88\,320z^2+234\,864z+10\,395\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9j0.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{17\,301\,504z^{7/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384z^{7/2}-4096z^3-402\,432z^{5/2}+97\,536z^2+1\,261\,248z^{3/2}-252\,720z-41\,580\sqrt{z}+\right.\right.\right.$$
$$\left.\left.e^{4\sqrt{z}}\left(16\,384z^{7/2}+4096z^3-402\,432z^{5/2}-97\,536z^2+1\,261\,248z^{3/2}+252\,720z-41\,580\sqrt{z}+31\,185\right)-\right.\right.$$
$$\left.\left.31\,185\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-1\,622\,016z^3+5\,322\,240z^2-665\,280z+31\,185\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-1\,622\,016z^3+5\,322\,240z^2-665\,280z+31\,185\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a9j1.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},\frac{11}{4};-z\right)=\frac{1}{4\,325\,376z^{7/4}}\left(\sqrt{\pi}\left(65\,536z^4+1\,622\,016z^3+5\,322\,240z^2+665\,280z+31\,185\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\right.$$
$$\left.\left(4\sqrt{z}\left(4096z^3+100\,608z^2+315\,312z+10\,395\right)\cos\left(2\sqrt{z}\right)+\left(4096z^3+97\,536z^2+252\,720z-31\,185\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9j2.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},\frac{13}{4};z\right)=\frac{1}{4\,967\,424\sqrt{2}\,z^{7/4}}\left(\left(-2\sqrt{z}\left(65\,536z^4-1\,867\,776z^3+8\,160\,768z^2-5\,144\,832z+31\,185\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$3\left(65\,536z^4-1\,810\,432z^3+6\,623\,232z^2-332\,640z+51\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-1\,818\,624z^3+6\,824\,448z^2-665\,280z+155\,925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9j3.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},\frac{13}{4};-z\right)=\frac{1}{4\,967\,424\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(65\,536z^4+1\,867\,776z^3+8\,160\,768z^2+5\,144\,832z+31\,185\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(65\,536z^4+1\,810\,432z^3+6\,623\,232z^2+332\,640z+51\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+1\,818\,624z^3+6\,824\,448z^2+665\,280z+155\,925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9j4.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{503\,316\,480z^{11/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144z^{9/2}-65\,536z^4-8\,060\,928z^{7/2}+1\,966\,080z^3+34\,068\,480z^{5/2}-7\,211\,520z^2-\right.\right.\right.$$
$$\left.2\,661\,120z^{3/2}-1\,330\,560z+1\,455\,300\sqrt{z}\right)+e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4-8\,060\,928z^{7/2}-1\,966\,080z^3+\right.$$
$$\left.\left.34\,068\,480z^{5/2}+7\,211\,520z^2-2\,661\,120z^{3/2}+1\,330\,560z+1\,455\,300\sqrt{z}-1\,091\,475\right)+1\,091\,475\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-32\,440\,320z^4+141\,926\,400z^3-26\,611\,200z^2+2\,494\,800z-1\,091\,475\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-32\,440\,320z^4+141\,926\,400z^3-26\,611\,200z^2+2\,494\,800z-1\,091\,475\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9j5.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{125\,829\,120z^{11/4}}\left(\sqrt{\pi}\left(1\,048\,576z^5+32\,440\,320z^4+141\,926\,400z^3+26\,611\,200z^2+2\,494\,800z+1\,091\,475\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4+2\,015\,232z^3+8\,517\,120z^2+665\,280z+363\,825\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(65\,536z^4+1\,966\,080z^3+7\,211\,520z^2-1\,330\,560z-1\,091\,475\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9j6.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},\frac{17}{4};z\right)=-\frac{1}{1\,748\,533\,248\sqrt{2}\,z^{11/4}}$$
$$\left(13\left(2\sqrt{z}\left(1\,048\,576z^5-36\,372\,480z^4+198\,696\,960z^3-142\,990\,848z^2+4\,490\,640z-1\,964\,655\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(1\,048\,576z^5-35\,454\,976z^4+168\,419\,328z^3-15\,966\,720z^2+9\,812\,880z-3\,274\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(-1\,048\,576z^5+35\,586\,048z^4-172\,449\,792z^3+26\,611\,200z^2-8\,482\,320z+9\,823\,275\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9j7.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{3}{2}, \frac{17}{4}; -z\right) = \frac{1}{1\,748\,533\,248\sqrt{2}\, z^{11/4}} $$
$$ \left(13\left(2\sqrt{z}\left(1\,048\,576 z^5 + 36\,372\,480 z^4 + 198\,696\,960 z^3 + 142\,990\,848 z^2 + 4\,490\,640 z + 1\,964\,655\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\left(1\,048\,576 z^5 + 35\,454\,976 z^4 + 168\,419\,328 z^3 + 15\,966\,720 z^2 + 9\,812\,880 z + 3\,274\,425\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(1\,048\,576 z^5 + 35\,586\,048 z^4 + 172\,449\,792 z^3 + 26\,611\,200 z^2 + 8\,482\,320 z + 9\,823\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9j8.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{3}{2}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{12\,884\,901\,888 z^{15/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304 z^{11/2} - 1\,048\,576 z^5 - 154\,927\,104 z^{9/2} + 37\,945\,344 z^4 + 824\,082\,432 z^{7/2} - \right.\right.\right. $$
$$ 180\,264\,960 z^3 - 106\,444\,800 z^{5/2} - 37\,255\,680 z^2 + 73\,846\,080 z^{3/2} - 10\,478\,160 z - 144\,074\,700\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 154\,927\,104 z^{9/2} - 37\,945\,344 z^4 + 824\,082\,432 z^{7/2} + 180\,264\,960 z^3 - \right. $$
$$ \left.\left. 106\,444\,800 z^{5/2} + 37\,255\,680 z^2 + 73\,846\,080 z^{3/2} + 10\,478\,160 z - 144\,074\,700\sqrt{z} + 108\,056\,025\right) - $$
$$ \left.\left. 108\,056\,025\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 622\,854\,144 z^5 + 3\,406\,233\,600 z^4 - \right.\right. $$
$$ \left.\left. 851\,558\,400 z^3 + 119\,750\,400 z^2 - 104\,781\,600 z + 108\,056\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 622\,854\,144 z^5 + 3\,406\,233\,600 z^4 - 851\,558\,400 z^3 + \right. $$
$$ \left.\left.\left. 119\,750\,400 z^2 - 104\,781\,600 z + 108\,056\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9j9.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{3}{2}, \frac{19}{4}; -z\right) = \frac{1}{3\,221\,225\,472 z^{15/4}} $$
$$ \left(\sqrt{\pi}\left(16\,777\,216 z^6 + 622\,854\,144 z^5 + 3\,406\,233\,600 z^4 + 851\,558\,400 z^3 + 119\,750\,400 z^2 + 104\,781\,600 z + 108\,056\,025\right)\right. $$
$$ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576 z^5 + 38\,731\,776 z^4 + 206\,020\,608 z^3 + 26\,611\,200 z^2 + 18\,461\,520 z + 36\,018\,675\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left(1\,048\,576 z^5 + 37\,945\,344 z^4 + 180\,264\,960 z^3 - 37\,255\,680 z^2 + 10\,478\,160 z - 108\,056\,025\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a9ja.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},\frac{21}{4};z\right)=$$
$$-\frac{1}{55\,953\,063\,936\sqrt{2}\,z^{15/4}}\left(17\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-685\,768\,704\,z^5+4\,496\,228\,352\,z^4-3\,599\,253\,504\,z^3+\right.\right.\right.$$
$$\left.247\,484\,160\,z^2-454\,053\,600\,z+280\,945\,665\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$3\left(16\,777\,216\,z^6-671\,088\,640\,z^5+3\,920\,953\,344\,z^4-567\,705\,600\,z^3+449\,729\,280\,z^2-1\,089\,728\,640\,z+\right.$$
$$\left.468\,242\,775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(16\,777\,216\,z^6-673\,185\,792\,z^5+3\,998\,416\,896\,z^4-$$
$$\left.\left.851\,558\,400\,z^3+311\,351\,040\,z^2-272\,432\,160\,z+1\,404\,728\,325\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9jb.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},\frac{21}{4};-z\right)=\frac{1}{55\,953\,063\,936\sqrt{2}\,z^{15/4}}$$
$$\left(17\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+685\,768\,704\,z^5+4\,496\,228\,352\,z^4+3\,599\,253\,504\,z^3+247\,484\,160\,z^2+454\,053\,600\,z+\right.\right.\right.$$
$$280\,945\,665\Big)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216\,z^6+671\,088\,640\,z^5+3\,920\,953\,344\,z^4+567\,705\,600\,z^3+\right.$$
$$449\,729\,280\,z^2+1\,089\,728\,640\,z+468\,242\,775\Big)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(16\,777\,216\,z^6+673\,185\,792\,z^5+\right.$$
$$\left.\left.\left.3\,998\,416\,896\,z^4+851\,558\,400\,z^3+311\,351\,040\,z^2+272\,432\,160\,z+1\,404\,728\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9jc.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},\frac{23}{4};z\right)=$$
$$\frac{1}{5\,772\,436\,045\,824\,z^{19/4}}\left(19\,e^{-2\sqrt{z}}\,\left(4\sqrt[4]{z}\,\left(67\,108\,864\,z^{13/2}-16\,777\,216\,z^6-2\,894\,069\,760\,z^{11/2}+710\,934\,528\,z^5+\right.\right.\right.$$
$$18\,557\,435\,904\,z^{9/2}-4\,149\,411\,840\,z^4-3\,406\,233\,600\,z^{7/2}-851\,558\,400\,z^3+2\,522\,741\,760\,z^{5/2}-$$
$$1\,333\,221\,120\,z^2-3\,293\,136\,000\,z^{3/2}+10\,373\,378\,400\,z+28\,094\,566\,500\sqrt{z}\,+$$
$$e^{4\sqrt{z}}\,\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^6-2\,894\,069\,760\,z^{11/2}-710\,934\,528\,z^5+18\,557\,435\,904\,z^{9/2}+\right.$$
$$4\,149\,411\,840\,z^4-3\,406\,233\,600\,z^{7/2}+851\,558\,400\,z^3+2\,522\,741\,760\,z^{5/2}+1\,333\,221\,120\,z^2-$$
$$\left.3\,293\,136\,000\,z^{3/2}-10\,373\,378\,400\,z+28\,094\,566\,500\sqrt{z}\,-21\,070\,924\,875\right)+21\,070\,924\,875\Big)+$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7-11\,626\,610\,688\,z^6+76\,299\,632\,640\,z^5-23\,843\,635\,200\,z^4+\right.$$
$$4\,470\,681\,600\,z^3-5\,867\,769\,600\,z^2+12\,102\,274\,800\,z-21\,070\,924\,875\Big)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7-11\,626\,610\,688\,z^6+76\,299\,632\,640\,z^5-23\,843\,635\,200\,z^4+\right.$$
$$\left.\left.4\,470\,681\,600\,z^3-5\,867\,769\,600\,z^2+12\,102\,274\,800\,z-21\,070\,924\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Bigg)$$

07.22.03.a9jd.01

$${}_1F_2\left(-\frac{9}{4};\frac{3}{2},\frac{23}{4};-z\right)=$$
$$\frac{1}{1\,443\,109\,011\,456\,z^{19/4}}\left(19\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+11\,626\,610\,688\,z^6+76\,299\,632\,640\,z^5+23\,843\,635\,200\,z^4+\right.\right.\right.$$
$$\left.\left.\left.4\,470\,681\,600\,z^3+5\,867\,769\,600\,z^2+12\,102\,274\,800\,z+21\,070\,924\,875\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+723\,517\,440\,z^5+4\,639\,358\,976\,z^4+851\,558\,400\,z^3+630\,685\,440\,z^2+\right.\right.$$
$$\left.\left.823\,284\,000\,z+7\,023\,641\,625\right)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6+710\,934\,528\,z^5+4\,149\,411\,840\,z^4-\right.\right.$$
$$\left.\left.\left.\left.851\,558\,400\,z^3+1\,333\,221\,120\,z^2+10\,373\,378\,400\,z-21\,070\,924\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = -\frac{9}{4}$, $b_1 = \frac{5}{2}$

07.22.03.a9je.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{23}{4};z\right)=\frac{1}{16\,656\,255\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(-\left(65\,536\,z^3+2\,445\,312\,z^2+20\,322\,864\,z-16\,656\,255\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+24\sqrt{z}\,\left(4096\,z^2+148\,496\,z+613\,005\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(65\,536\,z^3+2\,494\,464\,z^2+25\,452\,720\,z+64\,891\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9jf.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{23}{4};-z\right)=\frac{1}{16\,656\,255\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(\left(65\,536\,z^3-2\,445\,312\,z^2+20\,322\,864\,z+16\,656\,255\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-24\sqrt{z}\,\left(4096\,z^2-148\,496\,z+613\,005\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(65\,536\,z^3-2\,494\,464\,z^2+25\,452\,720\,z-64\,891\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9jg.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{21}{4};z\right)=\frac{2\sqrt{z}\,(944\,z+11\,799)\cosh\left(2\sqrt{z}\right)-\left(128\,z^2+10\,488\,z+11\,799\right)\sinh\left(2\sqrt{z}\right)}{12\,376\,z^{3/2}}$$

07.22.03.a9jh.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{21}{4};-z\right)=\frac{2\sqrt{z}\,(944\,z-11\,799)\cos\left(2\sqrt{z}\right)+\left(128\,z^2-10\,488\,z+11\,799\right)\sin\left(2\sqrt{z}\right)}{12\,376\,z^{3/2}}$$

07.22.03.a9ji.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{5\,069\,295\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(32\,768z^3+946\,176z^2+6\,671\,952z-5\,069\,295\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+48\sqrt{z}\left(1024z^2+30\,464z+161\,385\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(32\,768z^3+970\,752z^2+7\,746\,480z+15\,663\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9jj.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{5\,069\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768z^3-946\,176z^2+6\,671\,952z+5\,069\,295\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-48\sqrt{z}\left(1024z^2-30\,464z+161\,385\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(32\,768z^3-970\,752z^2+7\,746\,480z-15\,663\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9jk.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{17}{4};z\right)=\frac{3\left(2\sqrt{z}\,(16z+437)\cosh\left(2\sqrt{z}\right)-19\,(16z+23)\sinh\left(2\sqrt{z}\right)\right)}{1768z^{3/2}}$$

07.22.03.a9jl.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{17}{4};-z\right)=\frac{3\left(2\sqrt{z}\,(16z-437)\cos\left(2\sqrt{z}\right)+19\,(23-16z)\sin\left(2\sqrt{z}\right)\right)}{1768z^{3/2}}$$

07.22.03.a9jm.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{1\,334\,025\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(16\,384z^3+334\,848z^2+1\,846\,656z-1\,334\,025\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+24\sqrt{z}\left(1024z^2+21\,824z+117\,915\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,384z^3+347\,136z^2+2\,113\,920z+3\,132\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9jn.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{1\,334\,025\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384z^3-334\,848z^2+1\,846\,656z+1\,334\,025\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-24\sqrt{z}\left(1024z^2-21\,824z+117\,915\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,384z^3-347\,136z^2+2\,113\,920z-3\,132\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9jo.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{13}{4};z\right)=-\frac{3\left((8z+19)\sinh\left(2\sqrt{z}\right)-38\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{104z^{3/2}}$$

07.22.03.a9jp.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{13}{4};-z\right)=-\frac{3\left(38\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(8z-19)\sin\left(2\sqrt{z}\right)\right)}{104\,z^{3/2}}$$

07.22.03.a9jq.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{11}{4};z\right)=\frac{1}{266\,805\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(-\left(8192z^3+98\,304z^2+374\,688z-266\,805\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+48\sqrt{z}\left(256z^2+3296z+14\,775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(8192z^3+104\,448z^2+456\,480z+447\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9jr.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{11}{4};-z\right)=\frac{1}{266\,805\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(8192z^3-98\,304z^2+374\,688z+266\,805\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-48\sqrt{z}\left(256z^2-3296z+14\,775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(8192z^3-104\,448z^2+456\,480z-447\,525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9js.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{9}{4};z\right)=\frac{3\cosh\left(2\sqrt{z}\right)}{4z}-\frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.a9jt.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{9}{4};-z\right)=\frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}}$$

07.22.03.a9ju.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{24\,255\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(4096z^3+14\,592z^2+31\,824z-24\,255\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+24\sqrt{z}\left(256z^2+1136z+3165\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^3+17\,664z^2+46\,800z+26\,325\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9jv.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{24\,255\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^3-14\,592z^2+31\,824z+24\,255\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-24\sqrt{z}\left(256z^2-1136z+3165\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^3-17\,664z^2+46\,800z-26\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9jw.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{92\,400\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(8192\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}-8192\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+8192\,e^{4\sqrt{z}}\,z^{7/2}+\right.\right.$$
$$8192\,z^{7/2}+2048\,e^{4\sqrt{z}}\,z^3-2048\,z^3+1536\,e^{4\sqrt{z}}\,z^{5/2}+1536\,z^{5/2}+1920\,e^{4\sqrt{z}}\,z^2-1920\,z^2+3360\,e^{4\sqrt{z}}\,z^{3/2}+$$
$$\left.\left.3360\,z^{3/2}+7560\,e^{4\sqrt{z}}\,z-7560\,z+20\,790\,e^{4\sqrt{z}}\,\sqrt{z}+20\,790\,\sqrt{z}-10\,395\,e^{4\sqrt{z}}+10\,395\right)\right)$$

07.22.03.a9jx.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{5}{4};-z\right)=\frac{1}{46\,200\,z^{3/2}}\left(16\,384\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+\right.$$
$$\left.2\left(4096\,z^3-768\,z^2+1680\,z-10\,395\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(2048\,z^3-1920\,z^2+7560\,z+10\,395\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9jy.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{3465\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2048\,z^3-9984\,z^2-2448\,z+3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-48\,\sqrt{z}\left(64\,z^2-256\,z-255\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-2048\,z^3+8448\,z^2+7920\,z+2025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9jz.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{3}{4};-z\right)=$$
$$\frac{1}{3465\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-2048\,z^3-9984\,z^2+2448\,z+3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+48\,\sqrt{z}\left(64\,z^2+256\,z-255\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(2048\,z^3+8448\,z^2-7920\,z+2025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9k0.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{18\,480\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(-2048\,e^{4\sqrt{z}}\,z^{7/2}-2048\,z^{7/2}-512\,e^{4\sqrt{z}}\,z^3+512\,z^3-128\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z-135)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+\right.\right.$$
$$128\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z-135)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+16\,896\,e^{4\sqrt{z}}\,z^{5/2}+16\,896\,z^{5/2}+3840\,e^{4\sqrt{z}}\,z^2-3840\,z^2+$$
$$\left.\left.2400\,e^{4\sqrt{z}}\,z^{3/2}+2400\,z^{3/2}+2160\,e^{4\sqrt{z}}\,z-2160\,z+1890\,e^{4\sqrt{z}}\,\sqrt{z}+1890\,\sqrt{z}-945\,e^{4\sqrt{z}}+945\right)\right)$$

07.22.03.a9k1.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},-\frac{1}{4};-z\right)=\frac{1}{9240\,z^{3/2}}\left(-256\sqrt{\pi}\,(16z+135)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}-\right.$$

$$\left.2\left(1024z^3+8448z^2-1200z+945\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-512z^3-3840z^2+2160z+945\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9k2.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},\frac{1}{4};z\right)=$$

$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1024z^3+13\,632z^2-19\,296z+3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+24\sqrt{z}\left(64z^2-796z+555\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.\left(1024z^3-12\,864z^2+10\,080z+675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9k3.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},\frac{1}{4};-z\right)=$$

$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024z^3+13\,632z^2+19\,296z+3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-24\sqrt{z}\left(64z^2+796z+555\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.\left(1024z^3+12\,864z^2+10\,080z-675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9k4.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},\frac{3}{4};z\right)=$$

$$\frac{1}{18\,480\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(256\,e^{4\sqrt{z}}\,z^{7/2}+256z^{7/2}+64\,e^{4\sqrt{z}}\,z^3-64z^3-4272\,e^{4\sqrt{z}}\,z^{5/2}-4272z^{5/2}-1020\,e^{4\sqrt{z}}\,z^2+1020z^2+\right.\right.$$

$$e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-4320z+7425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-4320z+7425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+$$

$$\left.\left.6720\,e^{4\sqrt{z}}\,z^{3/2}+6720z^{3/2}+1080\,e^{4\sqrt{z}}\,z-1080z+270\,e^{4\sqrt{z}}\sqrt{z}+270\sqrt{z}-135\,e^{4\sqrt{z}}+135\right)\right)$$

07.22.03.a9k5.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},\frac{3}{4};-z\right)=\frac{1}{9240\,z^{3/2}}\left(2\sqrt{\pi}\left(256z^2+4320z+7425\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+\right.$$

$$\left.2\left(128z^3+2136z^2+3360z-135\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(64z^3+1020z^2+1080z+135\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9k6.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{5}{2}, \frac{5}{4}; z\right) = \frac{1}{17\,325\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-512z^3+11\,136z^2-34\,758z+17\,325\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\left(256z^2-5344z+12\,885\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(512z^3-10\,752z^2+26\,910z-675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9k7.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{5}{2}, \frac{5}{4}; -z\right) = \frac{1}{17\,325\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512z^3+11\,136z^2+34\,758z+17\,325\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(256z^2+5344z+12\,885\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(512z^3+10\,752z^2+26\,910z+675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9k8.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{5}{2}, \frac{7}{4}; z\right) = \frac{1}{1\,182\,720 z^{3/2}}\left(e^{-2\sqrt{z}}\left(4\left(1024z^{7/2}-256z^3-25\,728z^{5/2}+6240z^2+84\,660z^{3/2}-17\,145z-4320\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{7/2}+256z^3-25\,728z^{5/2}-6240z^2+84\,660z^{3/2}+17\,145z-4320\sqrt{z}+2160\right)-2160\right)+e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(4096z^3-103\,680z^2+356\,400z-51\,975\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(4096z^3-103\,680z^2+356\,400z-51\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9k9.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{5}{2}, \frac{7}{4}; -z\right) = \frac{1}{295\,680 z^{3/2}}\left(\sqrt{\pi}\, z^{3/4}\left(4096z^3+103\,680z^2+356\,400z+51\,975\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\left(4\sqrt{z}\left(256z^3+6432z^2+21\,165z+1080\right)\cos\left(2\sqrt{z}\right)+\left(256z^3+6240z^2+17\,145z-2160\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a9ka.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{5}{2}, \frac{9}{4}; z\right) = \frac{1}{388\,080\sqrt{2}\, z^{3/4}}\left(\left(2\sqrt{z}\left(-4096z^3+123\,648z^2-597\,744z+419\,265\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(4096z^3-120\,064z^2+495\,600z-51\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3-120\,576z^2+509\,040z-80\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9kb.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},\frac{9}{4};-z\right)=\frac{1}{388\,080\sqrt{2}\,z^{3/4}}$$
$$\left(\left(2\sqrt{z}\left(4096z^3+123\,648z^2+597\,744z+419\,265\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3+120\,064z^2+495\,600z+51\,975\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3+120\,576z^2+509\,040z+80\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9kc.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{43\,253\,760z^{7/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384z^{7/2}-4096z^3-549\,888z^{5/2}+134\,400z^2+2\,754\,240z^{3/2}-598\,320z-482\,220\sqrt{z}+\right.\right.\right.$$
$$\left.\left.e^{4\sqrt{z}}\left(16\,384z^{7/2}+4096z^3-549\,888z^{5/2}-134\,400z^2+2\,754\,240z^{3/2}+598\,320z-482\,220\sqrt{z}+85\,185\right)-\right.\right.$$
$$\left.\left.85\,185\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-2\,211\,840z^3+11\,404\,800z^2-3\,326\,400z-467\,775\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-2\,211\,840z^3+11\,404\,800z^2-3\,326\,400z-467\,775\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9kd.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},\frac{11}{4};-z\right)=\frac{1}{10\,813\,440z^{7/4}}\left(\sqrt{\pi}\left(65\,536z^4+2\,211\,840z^3+11\,404\,800z^2+3\,326\,400z-467\,775\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(4096z^3+137\,472z^2+688\,560z+120\,555\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(4096z^3+134\,400z^2+598\,320z-85\,185\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9ke.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{12\,418\,560\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(-65\,536z^4+2\,531\,328z^3-16\,579\,584z^2+14\,525\,280z+155\,925\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$3\left(65\,536z^4-2\,473\,984z^3+14\,461\,440z^2-3\,326\,400z-259\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-2\,482\,176z^3+14\,745\,600z^2-4\,384\,800z-779\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9kf.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{5}{2},\frac{13}{4};-z\right)= \frac{1}{12\,418\,560\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(65\,536z^4+2\,531\,328z^3+16\,579\,584z^2+14\,525\,280z-155\,925\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 3\left(65\,536z^4+2\,473\,984z^3+14\,461\,440z^2+3\,326\,400z-259\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ 2\sqrt{z}\left(65\,536z^4+2\,482\,176z^3+14\,745\,600z^2+4\,384\,800z-779\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9kg.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{5}{2},\frac{15}{4};z\right)= \frac{1}{1\,258\,291\,200\,z^{11/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144z^{9/2}-65\,536z^4-11\,010\,048z^{7/2}+2\,703\,360z^3+74\,065\,920z^{5/2}-16\,657\,920z^2-22\,878\,720z^{3/2}- 1\,460\,160z-4\,365\,900\sqrt{z}\right)+e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4-11\,010\,048z^{7/2}-2\,703\,360z^3+74\,065\,920 z^{5/2}+16\,657\,920z^2-22\,878\,720z^{3/2}+1\,460\,160z-4\,365\,900\sqrt{z}+3\,274\,425\right)-3\,274\,425\right)+ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-44\,236\,800z^4+304\,128\,000z^3-133\,056\,000z^2-37\,422\,000z+3\,274\,425\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi} \left(1\,048\,576z^5-44\,236\,800z^4+304\,128\,000z^3-133\,056\,000z^2-37\,422\,000z+3\,274\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9kh.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{5}{2},\frac{15}{4};-z\right)= \frac{1}{314\,572\,800\,z^{11/4}}\left(\sqrt{\pi}\left(1\,048\,576z^5+44\,236\,800z^4+304\,128\,000z^3+133\,056\,000z^2-37\,422\,000z-3\,274\,425\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4+2\,752\,512z^3+18\,516\,480z^2+5\,719\,680z-1\,091\,475\right)\cos\left(2\sqrt{z}\right)+ \left(65\,536z^4+2\,703\,360z^3+16\,657\,920z^2-1\,460\,160z+3\,274\,425\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a9ki.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{5}{2},\frac{17}{4};z\right)= -\frac{1}{4\,371\,333\,120\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(1\,048\,576z^5-49\,348\,608z^4+407\,937\,024z^3-424\,005\,120z^2-17\,463\,600z+4\,209\,975\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 3\left(1\,048\,576z^5-48\,431\,104z^4+366\,305\,280z^3-133\,056\,000z^2-34\,095\,600z+7\,016\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ 2\sqrt{z}\left(-1\,048\,576z^5+48\,562\,176z^4-371\,957\,760z^3+163\,468\,800z^2+57\,380\,400z-21\,049\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9kj.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{5}{2}, \frac{17}{4}; -z\right) = \frac{1}{4\,371\,333\,120\sqrt{2}\, z^{11/4}} $$
$$ \left(13\left(2\sqrt{z}\left(1\,048\,576 z^5 + 49\,348\,608 z^4 + 407\,937\,024 z^3 + 424\,005\,120 z^2 - 17\,463\,600 z - 4\,209\,975\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\left(1\,048\,576 z^5 + 48\,431\,104 z^4 + 366\,305\,280 z^3 + 133\,056\,000 z^2 - 34\,095\,600 z - 7\,016\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(1\,048\,576 z^5 + 48\,562\,176 z^4 + 371\,957\,760 z^3 + 163\,468\,800 z^2 - 57\,380\,400 z - 21\,049\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9kk.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{5}{2}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{32\,212\,254\,720 z^{15/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304 z^{11/2} - 1\,048\,576 z^5 - 211\,550\,208 z^{9/2} + 52\,101\,120 z^4 + 1\,786\,675\,200 z^{7/2} - \right.\right.\right. $$
$$ 410\,296\,320 z^3 - 798\,750\,720 z^{5/2} - 207\,360 z^2 - 309\,355\,200 z^{3/2} - 122\,245\,200 z + 240\,124\,500\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 211\,550\,208 z^{9/2} - 52\,101\,120 z^4 + 1\,786\,675\,200 z^{7/2} + 410\,296\,320 z^3 - \right. $$
$$ \left.\left. 798\,750\,720 z^{5/2} + 207\,360 z^2 - 309\,355\,200 z^{3/2} + 122\,245\,200 z + 240\,124\,500\sqrt{z} - 180\,093\,375\right) + $$
$$ \left.\left. 180\,093\,375\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 849\,346\,560 z^5 + 7\,299\,072\,000 z^4 - \right.\right. $$
$$ \left.\left. 4\,257\,792\,000 z^3 - 1\,796\,256\,000 z^2 + 314\,344\,800 z - 180\,093\,375\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ \left. e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 849\,346\,560 z^5 + 7\,299\,072\,000 z^4 - 4\,257\,792\,000 z^3 - \right.\right. $$
$$ \left.\left.\left. 1\,796\,256\,000 z^2 + 314\,344\,800 z - 180\,093\,375\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9kl.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{5}{2}, \frac{19}{4}; -z\right) = \frac{1}{8\,053\,063\,680 z^{15/4}} $$
$$ \left(\sqrt{\pi}\left(16\,777\,216 z^6 + 849\,346\,560 z^5 + 7\,299\,072\,000 z^4 + 4\,257\,792\,000 z^3 - 1\,796\,256\,000 z^2 - 314\,344\,800 z - 180\,093\,375\right)\right. $$
$$ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576 z^5 + 52\,887\,552 z^4 + 446\,668\,800 z^3 + 199\,687\,680 z^2 - 77\,338\,800 z - 60\,031\,125\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left. \left(1\,048\,576 z^5 + 52\,101\,120 z^4 + 410\,296\,320 z^3 - 207\,360 z^2 + 122\,245\,200 z + 180\,093\,375\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a9km.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},\frac{21}{4};z\right)=$$

$$-\left(17\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-931\,135\,488\,z^5+9\,296\,216\,064\,z^4-11\,127\,029\,760\,z^3-997\,920\,000\,z^2+778\,377\,600\,z-\right.\right.\right.$$
$$\left.\left.383\,107\,725\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216\,z^6-916\,455\,424\,z^5+8\,506\,245\,120\,z^4-\right.\right.$$
$$\left.\left.4\,257\,792\,000\,z^3-1\,902\,700\,800\,z^2+1\,751\,349\,600\,z-638\,512\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-16\,777\,216\,z^6+918\,552\,576\,z^5-8\,614\,379\,520\,z^4+5\,020\,876\,800\,z^3+2\,594\,592\,000\,z^2-\right.$$
$$\left.\left.\left.1\,167\,566\,400\,z+1\,915\,538\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(139\,882\,659\,840\,\sqrt{2}\;z^{15/4}\right)$$

07.22.03.a9kn.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},\frac{21}{4};-z\right)=$$

$$\left(17\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+931\,135\,488\,z^5+9\,296\,216\,064\,z^4+11\,127\,029\,760\,z^3-997\,920\,000\,z^2-778\,377\,600\,z-\right.\right.\right.$$
$$\left.\left.383\,107\,725\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216\,z^6+916\,455\,424\,z^5+8\,506\,245\,120\,z^4+\right.\right.$$
$$\left.\left.4\,257\,792\,000\,z^3-1\,902\,700\,800\,z^2-1\,751\,349\,600\,z-638\,512\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(16\,777\,216\,z^6+918\,552\,576\,z^5+8\,614\,379\,520\,z^4+5\,020\,876\,800\,z^3-2\,594\,592\,000\,z^2-\right.$$
$$\left.\left.\left.1\,167\,566\,400\,z-1\,915\,538\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(139\,882\,659\,840\,\sqrt{2}\;z^{15/4}\right)$$

07.22.03.a9ko.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},\frac{23}{4};z\right)=$$

$$\frac{1}{14\,431\,090\,114\,560\,z^{19/4}}\left(19\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(67\,108\,864\,z^{13/2}-16\,777\,216\,z^6-3\,951\,034\,368\,z^{11/2}+975\,175\,680\,z^5+\right.\right.\right.$$
$$40\,159\,150\,080\,z^{9/2}-9\,351\,659\,520\,z^4-23\,595\,909\,120\,z^{7/2}+975\,421\,440\,z^3-13\,571\,712\,000\,z^{5/2}-$$
$$2\,674\,425\,600\,z^2+12\,074\,832\,000\,z^{3/2}-5\,762\,988\,000\,z-32\,416\,807\,500\,\sqrt{z}\;+$$
$$e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^6-3\,951\,034\,368\,z^{11/2}-975\,175\,680\,z^5+40\,159\,150\,080\,z^{9/2}+\right.$$
$$\left.9\,351\,659\,520\,z^4-23\,595\,909\,120\,z^{7/2}-975\,421\,440\,z^3-13\,571\,712\,000\,z^{5/2}+2\,674\,425\,600\,z^2+\right.$$
$$\left.12\,074\,832\,000\,z^{3/2}+5\,762\,988\,000\,z-32\,416\,807\,500\,\sqrt{z}\;+24\,312\,605\,625\right)-24\,312\,605\,625\Big)+$$
$$e^{2\sqrt{z}}\;\sqrt{2\,\pi}\;\left(268\,435\,456\,z^7-15\,854\,469\,120\,z^6+163\,499\,212\,800\,z^5-119\,218\,176\,000\,z^4-\right.$$
$$\left.67\,060\,224\,000\,z^3+17\,603\,308\,800\,z^2-20\,170\,458\,000\,z+24\,312\,605\,625\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\;\sqrt{2\,\pi}\;\left(268\,435\,456\,z^7-15\,854\,469\,120\,z^6+163\,499\,212\,800\,z^5-119\,218\,176\,000\,z^4-\right.$$
$$\left.\left.67\,060\,224\,000\,z^3+17\,603\,308\,800\,z^2-20\,170\,458\,000\,z+24\,312\,605\,625\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a9kp.01

$${}_1F_2\left(-\frac{9}{4};\frac{5}{2},\frac{23}{4};-z\right)=$$
$$\frac{1}{3\,607\,772\,528\,640\,z^{19/4}}\left(19\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+15\,854\,469\,120\,z^6+163\,499\,212\,800\,z^5+119\,218\,176\,000\,z^4-\right.\right.\right.$$
$$\left.\left.67\,060\,224\,000\,z^3-17\,603\,308\,800\,z^2-20\,170\,458\,000\,z-24\,312\,605\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+987\,758\,592\,z^5+10\,039\,787\,520\,z^4+5\,898\,977\,280\,z^3-3\,392\,928\,000\,z^2-\right.\right.$$
$$\left.3\,018\,708\,000\,z-8\,104\,201\,875\right)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6+975\,175\,680\,z^5+9\,351\,659\,520\,z^4+\right.$$
$$\left.\left.\left.975\,421\,440\,z^3+2\,674\,425\,600\,z^2-5\,762\,988\,000\,z+24\,312\,605\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = -\frac{9}{4}$, $b_{1.} = \frac{7}{2}$

07.22.03.a9kq.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{23}{4};z\right)=\frac{1}{126\,587\,538\sqrt{2}\,z^{5/4}}\left(\left(-8\,z\left(65\,536\,z^3+3\,108\,864\,z^2+38\,990\,448\,z+96\,837\,543\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$12\sqrt{z}\,\left(65\,536\,z^3+3\,166\,208\,z^2+53\,243\,952\,z+428\,281\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left(524\,288\,z^4+25\,264\,128\,z^3+323\,869\,824\,z^2-103\,825\,800\,z-6\,424\,221\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9kr.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{23}{4};-z\right)=\frac{1}{126\,587\,538\sqrt{2}\,z^{5/4}}\left(\left(8\,z\left(65\,536\,z^3-3\,108\,864\,z^2+38\,990\,448\,z-96\,837\,543\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$12\sqrt{z}\,\left(65\,536\,z^3-3\,166\,208\,z^2+53\,243\,952\,z-428\,281\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left(524\,288\,z^4-25\,264\,128\,z^3+323\,869\,824\,z^2+103\,825\,800\,z-6\,424\,221\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9ks.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{21}{4};z\right)=-\frac{5\left(2\sqrt{z}\,\left(128\,z^2+14\,904\,z+57\,753\right)\cosh\left(2\sqrt{z}\right)-69\left(64\,z^2+1332\,z+837\right)\sinh\left(2\sqrt{z}\right)\right)}{49\,504\,z^{5/2}}$$

07.22.03.a9kt.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{21}{4};-z\right)=-\frac{5\left(2\sqrt{z}\,\left(128\,z^2-14\,904\,z+57\,753\right)\cos\left(2\sqrt{z}\right)-69\left(64\,z^2-1332\,z+837\right)\sin\left(2\sqrt{z}\right)\right)}{49\,504\,z^{5/2}}$$

07.22.03.a9ku.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{19}{4};z\right)=\frac{1}{38\,526\,642\sqrt{2}\,z^{5/4}}\left(\left(-32z\left(8192z^3+301\,056z^2+3\,028\,032z+4\,405\,653\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(32\,768z^3+1\,232\,896z^2+14\,267\,568z+90\,847\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(262\,144z^4+9\,830\,400z^3+104\,380\,416z^2+50\,122\,800z-1\,362\,713\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9kv.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{19}{4};-z\right)=\frac{1}{38\,526\,642\sqrt{2}\,z^{5/4}}\left(\left(32z\left(8192z^3-301\,056z^2+3\,028\,032z-4\,405\,653\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(32\,768z^3-1\,232\,896z^2+14\,267\,568z-90\,847\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(262\,144z^4-9\,830\,400z^3+104\,380\,416z^2-50\,122\,800z-1\,362\,713\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9kw.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{17}{4};z\right)=\frac{15\left(\left(64z^2+2852z+1863\right)\sinh\left(2\sqrt{z}\right)-46\sqrt{z}\,\left(16z+81\right)\cosh\left(2\sqrt{z}\right)\right)}{7072\,z^{5/2}}$$

07.22.03.a9kx.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{17}{4};-z\right)=\frac{15\left(46\sqrt{z}\,\left(16z-81\right)\cos\left(2\sqrt{z}\right)+\left(64z^2-2852z+1863\right)\sin\left(2\sqrt{z}\right)\right)}{7072\,z^{5/2}}$$

07.22.03.a9ky.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{15}{4};z\right)=\frac{1}{10\,138\,590\sqrt{2}\,z^{5/4}}\left(\left(-8z\left(16\,384z^3+427\,008z^2+3\,298\,176z+2\,164\,365\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(16\,384z^3+441\,344z^2+3\,696\,000z+15\,663\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(131\,072z^4+3\,514\,368z^3+29\,076\,480z^2+25\,061\,400z-234\,950\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9kz.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{15}{4};-z\right)=\frac{1}{10\,138\,590\sqrt{2}\,z^{5/4}}\left(\left(8z\left(16\,384z^3-427\,008z^2+3\,298\,176z-2\,164\,365\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(16\,384z^3-441\,344z^2+3\,696\,000z-15\,663\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(131\,072z^4-3\,514\,368z^3+29\,076\,480z^2-25\,061\,400z-234\,950\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9l0.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{13}{4};z\right)=-\frac{15\left(2\sqrt{z}\,\left(8z+69\right)\cosh\left(2\sqrt{z}\right)-\left(100z+69\right)\sinh\left(2\sqrt{z}\right)\right)}{416\,z^{5/2}}$$

07.22.03.a9l1.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{13}{4};-z\right)=\frac{15\left(2\sqrt{z}\ (8z-69)\cos\left(2\sqrt{z}\right)+(69-100z)\sin\left(2\sqrt{z}\right)\right)}{416\,z^{5/2}}$$

07.22.03.a9l2.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{11}{4};z\right)=\frac{1}{2\,027\,718\sqrt{2}\ z^{5/4}}$$
$$\left(\left(-64z\left(1024z^3+15\,744z^2+85\,068z+7119\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\ \left(8192z^3+133\,120z^2+802\,848z+1\,879\,605\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(65\,536z^4+1\,056\,768z^3+6\,264\,576z^2+5\,728\,320z-28\,194\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9l3.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{11}{4};-z\right)=\frac{1}{2\,027\,718\sqrt{2}\ z^{5/4}}$$
$$\left(\left(64z\left(1024z^3-15\,744z^2+85\,068z-7119\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\ \left(8192z^3-133\,120z^2+802\,848z-1\,879\,605\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(65\,536z^4-1\,056\,768z^3+6\,264\,576z^2-5\,728\,320z-28\,194\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9l4.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{9}{4};z\right)=\frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\ \cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.a9l5.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{9}{4};-z\right)=-\frac{15\left(6\sqrt{z}\ \cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.a9l6.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{184\,338\sqrt{2}\ z^{5/4}}\left(\left(-8z\left(4096z^3+19\,200z^2+61\,200z-19\,233\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\ \left(4096z^3+22\,784z^2+84\,048z+89\,505\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(32\,768z^4+178\,176z^3+637\,056z^2+463\,320z-1\,342\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9l7.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{184\,338\sqrt{2}\ z^{5/4}}\left(\left(8z\left(4096z^3-19\,200z^2+61\,200z+19\,233\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\ \left(4096z^3-22\,784z^2+84\,048z-89\,505\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(32\,768z^4-178\,176z^3+637\,056z^2-463\,320z-1\,342\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9l8.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{1\,404\,480\,z^{5/2}}\left(e^{-2\sqrt{z}}\left(65\,536\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}-65\,536\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+65\,536\,e^{4\sqrt{z}}\,z^{9/2}+\right.\right.$$
$$65\,536\,z^{9/2}+16\,384\,e^{4\sqrt{z}}\,z^4-16\,384\,z^4+12\,288\,e^{4\sqrt{z}}\,z^{7/2}+12\,288\,z^{7/2}+15\,360\,e^{4\sqrt{z}}\,z^3-15\,360\,z^3+$$
$$26\,880\,e^{4\sqrt{z}}\,z^{5/2}+26\,880\,z^{5/2}+60\,480\,e^{4\sqrt{z}}\,z^2-60\,480\,z^2+166\,320\,e^{4\sqrt{z}}\,z^{3/2}+166\,320\,z^{3/2}+$$
$$\left.\left.540\,540\,e^{4\sqrt{z}}\,z-540\,540\,z-935\,550\,e^{4\sqrt{z}}\,\sqrt{z}-935\,550\sqrt{z}+467\,775\,e^{4\sqrt{z}}-467\,775\right)\right)$$

07.22.03.a9l9.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{702\,240\,z^{5/2}}\left(131\,072\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}+2\left(32\,768\,z^4-6144\,z^3+13\,440\,z^2-83\,160\,z-467\,775\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(16\,384\,z^4-15\,360\,z^3+60\,480\,z^2-540\,540\,z+467\,775\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9la.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{3}{4};z\right)=\frac{1}{26\,334\sqrt{2}\,z^{5/4}}$$
$$\left(\left(32\,z\left(512\,z^3-3072\,z^2-1584\,z+1251\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(-2048\,z^3+10\,496\,z^2+14\,064\,z+5265\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-16\,384\,z^4+86\,016\,z^3+108\,288\,z^2+45\,360\,z-78\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9lb.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{3}{4};-z\right)=$$
$$-\frac{1}{26\,334\sqrt{2}\,z^{5/4}}\left(\left(32\,z\left(512\,z^3+3072\,z^2-1584\,z-1251\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(2048\,z^3+10\,496\,z^2-14\,064\,z+5265\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,384\,z^4+86\,016\,z^3-108\,288\,z^2+45\,360\,z+78\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9lc.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},-\frac{1}{4};z\right)=\frac{1}{280\,896\,z^{5/2}}$$
$$\left(e^{-2\sqrt{z}}\left(-16\,384\,e^{4\sqrt{z}}\,z^{9/2}-16\,384\,z^{9/2}-4096\,e^{4\sqrt{z}}\,z^4+4096\,z^4-1024\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z-171)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+\right.\right.$$
$$1024\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z-171)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{15/4}+172\,032\,e^{4\sqrt{z}}\,z^{7/2}+172\,032\,z^{7/2}+39\,936\,e^{4\sqrt{z}}\,z^3-$$
$$39\,936\,z^3+26\,112\,e^{4\sqrt{z}}\,z^{5/2}+26\,112\,z^{5/2}+25\,920\,e^{4\sqrt{z}}\,z^2-25\,920\,z^2+30\,240\,e^{4\sqrt{z}}\,z^{3/2}+$$
$$\left.\left.30\,240\,z^{3/2}+26\,460\,e^{4\sqrt{z}}\,z-26\,460\,z-62\,370\,e^{4\sqrt{z}}\,\sqrt{z}-62\,370\sqrt{z}+31\,185\,e^{4\sqrt{z}}-31\,185\right)\right)$$

07.22.03.a9ld.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{7}{2}, -\frac{1}{4}; -z\right) = \frac{1}{140\,448\, z^{5/2}} $$
$$ \left(-2048\sqrt{\pi}\,(16z+171)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{15/4} - 2\left(8192z^4 + 86\,016z^3 - 13\,056z^2 + 15\,120z + 31\,185\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \right. $$
$$ \left. \left(-4096z^4 - 39\,936z^3 + 25\,920z^2 - 26\,460z + 31\,185\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a9le.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{7}{2}, \frac{1}{4}; z\right) = \frac{1}{26\,334\sqrt{2}\, z^{5/4}} $$
$$ \left(\left(-8z\left(1024z^3 - 17\,088z^2 + 29\,664z - 6219\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(1024z^3 - 16\,192z^2 + 16\,224z + 1215\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left.\left(8192z^4 - 130\,560z^3 + 142\,848z^2 + 18\,360z - 18\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9lf.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{7}{2}, \frac{1}{4}; -z\right) = \frac{1}{26\,334\sqrt{2}\, z^{5/4}} $$
$$ \left(\left(8z\left(1024z^3 + 17\,088z^2 + 29\,664z + 6219\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1024z^3 + 16\,192z^2 + 16\,224z - 1215\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left.\left(8192z^4 + 130\,560z^3 + 142\,848z^2 - 18\,360z - 18\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9lg.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{7}{2}, \frac{3}{4}; z\right) = $$
$$ \frac{1}{280\,896\, z^{5/2}}\left(e^{-2\sqrt{z}}\left(2048e^{4\sqrt{z}}\, z^{9/2} + 2048z^{9/2} + 512e^{4\sqrt{z}}\, z^4 - 512z^4 - 43\,392e^{4\sqrt{z}}\, z^{7/2} - 43\,392z^{7/2} - 10\,464e^{4\sqrt{z}}\, z^3 + \right.\right. $$
$$ 10\,464z^3 + 8e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 - 5472z + 12\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{11/4} - $$
$$ 8e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 - 5472z + 12\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{11/4} + 95\,232e^{4\sqrt{z}}\, z^{5/2} + 95\,232z^{5/2} + 17\,280e^{4\sqrt{z}}\, z^2 - $$
$$ \left.\left. 17\,280z^2 + 6480e^{4\sqrt{z}}\, z^{3/2} + 6480z^{3/2} + 540e^{4\sqrt{z}}\, z - 540z - 5670e^{4\sqrt{z}}\sqrt{z} - 5670\sqrt{z} + 2835e^{4\sqrt{z}} - 2835\right)\right) $$

07.22.03.a9lh.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{7}{2}, \frac{3}{4}; -z\right) = \frac{1}{140\,448\, z^{5/2}} $$
$$ \left(16\sqrt{\pi}\left(256z^2 + 5472z + 12\,825\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{11/4} + 2\left(1024z^4 + 21\,696z^3 + 47\,616z^2 - 3240z - 2835\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \right. $$
$$ \left. \left(512z^4 + 10\,464z^3 + 17\,280z^2 - 540z + 2835\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a9li.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{7}{2}, \frac{5}{4}; z\right) = \frac{1}{131\,670\sqrt{2}\, z^{5/4}} \left(\left(-16 z \left(256 z^3 - 7008 z^2 + 28\,449 z - 16\,560\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(512 z^3 - 13\,568 z^2 + 45\,390 z - 675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(4096 z^4 - 109\,056 z^3 + 375\,120 z^2 - 21\,600 z + 10\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9lj.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{7}{2}, \frac{5}{4}; -z\right) = \frac{1}{131\,670\sqrt{2}\, z^{5/4}} \left(\left(16 z \left(256 z^3 + 7008 z^2 + 28\,449 z + 16\,560\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(512 z^3 + 13\,568 z^2 + 45\,390 z + 675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(4096 z^4 + 109\,056 z^3 + 375\,120 z^2 + 21\,600 z + 10\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9lk.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{7}{2}, \frac{7}{4}; z\right) = \frac{1}{2\,247\,168 z^{5/2}} \left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 - 131\,328 z^2 + 615\,600 z - 141\,075\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} - e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 - 131\,328 z^2 + 615\,600 z - 141\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{7/4} + 4\left(1024 z^{9/2} - 256 z^4 - 32\,640 z^{7/2} + 7968 z^3 + 148\,164 z^{5/2} - 31\,725 z^2 - 17\,280 z^{3/2} - 5400 z + 4860\sqrt{z} + e^{4\sqrt{z}}\left(1024 z^{9/2} + 256 z^4 - 32\,640 z^{7/2} - 7968 z^3 + 148\,164 z^{5/2} + 31\,725 z^2 - 17\,280 z^{3/2} + 5400 z + 4860\sqrt{z} - 2430\right) + 2430\right)\right)\right) $$

07.22.03.a9ll.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{7}{2}, \frac{7}{4}; -z\right) = \frac{1}{561\,792 z^{5/2}} \left(\sqrt{\pi}\left(4096 z^3 + 131\,328 z^2 + 615\,600 z + 141\,075\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} + 2\left(4\sqrt{z}\left(256 z^4 + 8160 z^3 + 37\,041 z^2 + 4320 z + 1215\right)\cos\left(2\sqrt{z}\right) + \left(256 z^4 + 7968 z^3 + 31\,725 z^2 - 5400 z - 2430\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a9lm.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{7}{2}, \frac{9}{4}; z\right) = \frac{1}{737\,352\sqrt{2}\, z^{5/4}} \left(\left(-2 z \left(4096 z^3 - 155\,904 z^2 + 996\,912 z - 851\,319\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\left(4096 z^3 - 152\,320 z^2 + 866\,544 z - 182\,385\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\left(4096 z^4 - 152\,832 z^3 + 884\,016 z^2 - 244\,755 z - 28\,350\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9ln.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{7}{2},\frac{9}{4};-z\right)=\frac{1}{737\,352\sqrt{2}\,z^{5/4}}$$
$$\left(\left(2z\left(4096z^3+155\,904z^2+996\,912z+851\,319\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(4096z^3+152\,320z^2+866\,544z+182\,385\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(4096z^4+152\,832z^3+884\,016z^2+244\,755z-28\,350\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9lo.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{7}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{82\,182\,144z^{5/2}}\left(e^{-2\sqrt{z}}\left(4\left(16\,384z^{9/2}-4096z^4-697\,344z^{7/2}+171\,264z^3+4\,800\,192z^{5/2}-1\,082\,160z^2-\right.\right.\right.$$
$$\left.\left.1\,579\,500z^{3/2}-78\,705z-414\,720\sqrt{z}\right)+e^{4\sqrt{z}}\left(16\,384z^{9/2}+4096z^4-697\,344z^{7/2}-171\,264z^3+\right.\right.$$
$$\left.\left.4\,800\,192z^{5/2}+1\,082\,160z^2-1\,579\,500z^{3/2}+78\,705z-414\,720\sqrt{z}+207\,360\right)-207\,360\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(65\,536z^4-2\,801\,664z^3+19\,699\,200z^2-9\,028\,800z-2\,962\,575\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(65\,536z^4-2\,801\,664z^3+19\,699\,200z^2-9\,028\,800z-2\,962\,575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9lp.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{7}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{20\,545\,536z^{5/2}}\left(\sqrt{\pi}\,z^{3/4}\left(65\,536z^4+2\,801\,664z^3+19\,699\,200z^2+9\,028\,800z-2\,962\,575\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$2\left(4\sqrt{z}\left(4096z^4+174\,336z^3+1\,200\,048z^2+394\,875z-103\,680\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(4096z^4+171\,264z^3+1\,082\,160z^2-78\,705z+207\,360\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9lq.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{7}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{23\,595\,264\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(-65\,536z^4+3\,194\,880z^3-27\,901\,440z^2+30\,800\,448z+2\,962\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$3\left(65\,536z^4-3\,137\,536z^3+25\,202\,688z^2-10\,674\,720z-4\,937\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-3\,145\,728z^3+25\,569\,792z^2-12\,821\,760z-6\,648\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9lr.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{7}{2},\frac{13}{4};-z\right)= \frac{1}{23\,595\,264\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(65\,536z^4+3\,194\,880z^3+27\,901\,440z^2+30\,800\,448z-2\,962\,575\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 3\left(65\,536z^4+3\,137\,536z^3+25\,202\,688z^2+10\,674\,720z-4\,937\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ 2\sqrt{z}\left(65\,536z^4+3\,145\,728z^3+25\,569\,792z^2+12\,821\,760z-6\,648\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9ls.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{7}{2},\frac{15}{4};z\right)= \frac{1}{2\,390\,753\,280z^{11/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144z^{9/2}-65\,536z^4-13\,959\,168z^{7/2}+3\,440\,640z^3+128\,808\,960z^{5/2}- 29\,790\,720z^2-70\,744\,320z^{3/2}+2\,557\,440z-49\,758\,300\sqrt{z}+ e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4-13\,959\,168z^{7/2}-3\,440\,640z^3+128\,808\,960z^{5/2}+ 29\,790\,720z^2-70\,744\,320z^{3/2}-2\,557\,440z-49\,758\,300\sqrt{z}+4\,141\,125\right)-4\,141\,125\right)+ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-56\,033\,280z^4+525\,312\,000z^3-361\,152\,000z^2-237\,006\,000z-62\,214\,075\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi} \left(1\,048\,576z^5-56\,033\,280z^4+525\,312\,000z^3-361\,152\,000z^2-237\,006\,000z-62\,214\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9lt.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{7}{2},\frac{15}{4};-z\right)= \frac{1}{597\,688\,320z^{11/4}} \left(\sqrt{\pi}\left(1\,048\,576z^5+56\,033\,280z^4+525\,312\,000z^3+361\,152\,000z^2-237\,006\,000z+62\,214\,075\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4+3\,489\,792z^3+32\,202\,240z^2+17\,686\,080z-12\,439\,575\right)\cos\left(2\sqrt{z}\right)+ \left(65\,536z^4+3\,440\,640z^3+29\,790\,720z^2+2\,557\,440z+4\,141\,125\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a9lu.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{7}{2},\frac{17}{4};z\right)= -\frac{1}{8\,305\,532\,928\sqrt{2}\,z^{11/4}} \left(13\left(2\sqrt{z}\left(1\,048\,576z^5-62\,324\,736z^4+690\,167\,808z^3-928\,553\,472z^2-237\,006\,000z-26\,663\,175\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 3\left(1\,048\,576z^5-61\,407\,232z^4+637\,181\,952z^3-409\,812\,480z^2-363\,409\,200z-44\,438\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ 2\sqrt{z}\left(-1\,048\,576z^5+61\,538\,304z^4-644\,456\,448z^3+469\,117\,440z^2+416\,631\,600z+133\,315\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9lv.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{7}{2},\frac{17}{4};-z\right)=\frac{1}{8\,305\,532\,928\sqrt{2}\,z^{11/4}}$$
$$\left(13\left(2\sqrt{z}\left(1\,048\,576z^5+62\,324\,736z^4+690\,167\,808z^3+928\,553\,472z^2-237\,006\,000z+26\,663\,175\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(1\,048\,576z^5+61\,407\,232z^4+637\,181\,952z^3+409\,812\,480z^2-363\,409\,200z+44\,438\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(1\,048\,576z^5+61\,538\,304z^4+644\,456\,448z^3+469\,117\,440z^2-416\,631\,600z+133\,315\,875\right)$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9lw.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{7}{2},\frac{19}{4};z\right)=$$
$$\frac{1}{61\,203\,283\,968\,z^{15/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304z^{11/2}-1\,048\,576z^5-268\,173\,312z^{9/2}+66\,256\,896z^4+3\,103\,162\,368z^{7/2}-\right.\right.\right.$$
$$728\,801\,280z^3-2\,397\,911\,040z^{5/2}+197\,199\,360z^2-2\,645\,887\,680z^{3/2}+146\,493\,360z-$$
$$912\,473\,100\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^{11/2}+1\,048\,576z^5-268\,173\,312z^{9/2}-66\,256\,896z^4+\right.$$
$$\left.3\,103\,162\,368z^{7/2}+728\,801\,280z^3-2\,397\,911\,040z^{5/2}-197\,199\,360z^2-\right.$$
$$\left.2\,645\,887\,680z^{3/2}-146\,493\,360z-912\,473\,100\sqrt{z}+684\,354\,825\right)-684\,354\,825\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-1\,075\,838\,976z^5+12\,607\,488\,000z^4-11\,556\,864\,000z^3-\right.$$
$$\left.11\,376\,288\,000z^2-5\,972\,551\,200z+684\,354\,825\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-1\,075\,838\,976z^5+12\,607\,488\,000z^4-11\,556\,864\,000z^3-\right.$$
$$\left.\left.\left.11\,376\,288\,000z^2-5\,972\,551\,200z+684\,354\,825\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9lx.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{7}{2},\frac{19}{4};-z\right)=$$
$$\frac{1}{15\,300\,820\,992\,z^{15/4}}\left(\sqrt{\pi}\left(16\,777\,216z^6+1\,075\,838\,976z^5+12\,607\,488\,000z^4+11\,556\,864\,000z^3-11\,376\,288\,000z^2+\right.\right.$$
$$\left.5\,972\,551\,200z+684\,354\,825\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576z^5+67\,043\,328z^4+775\,790\,592z^3+599\,477\,760z^2-661\,471\,920z+228\,118\,275\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left(1\,048\,576z^5+66\,256\,896z^4+728\,801\,280z^3+197\,199\,360z^2-146\,493\,360z-684\,354\,825\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9ly.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},\frac{21}{4};z\right)=$$

$$-\left(17\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-1\,176\,502\,272\,z^5+15\,783\,100\,416\,z^4-24\,980\,668\,416\,z^3-11\,376\,288\,000\,z^2-3\,697\,293\,600\,z+\right.\right.\right.$$
$$\left.1\,039\,863\,825\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-16\,777\,216\,z^6+1\,161\,822\,208\,z^5-14\,778\,433\,536\,z^4+\right.$$
$$\left.12\,797\,706\,240\,z^3+16\,432\,416\,000\,z^2+7\,394\,587\,200\,z-1\,733\,106\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-16\,777\,216\,z^6+1\,163\,919\,360\,z^5-14\,917\,238\,784\,z^4+14\,250\,885\,120\,z^3+17\,717\,356\,800\,z^2+\right.$$
$$\left.\left.\left.11\,091\,880\,800\,z-5\,199\,319\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(265\,777\,053\,696\,\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a9lz.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},\frac{21}{4};-z\right)=$$

$$\left(17\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,176\,502\,272\,z^5+15\,783\,100\,416\,z^4+24\,980\,668\,416\,z^3-11\,376\,288\,000\,z^2+\right.\right.\right.$$
$$\left.3\,697\,293\,600\,z+1\,039\,863\,825\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216\,z^6+1\,161\,822\,208\,z^5+14\,778\,433\,536\,z^4+\right.$$
$$\left.12\,797\,706\,240\,z^3-16\,432\,416\,000\,z^2+7\,394\,587\,200\,z+1\,733\,106\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,163\,919\,360\,z^5+14\,917\,238\,784\,z^4+14\,250\,885\,120\,z^3-17\,717\,356\,800\,z^2+\right.$$
$$\left.\left.\left.11\,091\,880\,800\,z+5\,199\,319\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(265\,777\,053\,696\,\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a9m0.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},\frac{23}{4};z\right)=$$

$$\frac{1}{1\,443\,109\,011\,456\,z^{19/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(67\,108\,864\,z^{13/2}-16\,777\,216\,z^6-5\,007\,998\,976\,z^{11/2}+1\,239\,416\,832\,z^5+\right.\right.\right.$$
$$69\,688\,098\,816\,z^{9/2}-16\,535\,715\,840\,z^4-69\,549\,096\,960\,z^{7/2}+7\,756\,922\,880\,z^3-103\,055\,016\,960\,z^{5/2}+$$
$$12\,938\,123\,520\,z^2-70\,912\,195\,200\,z^{3/2}-21\,899\,354\,400\,z+68\,435\,482\,500\,\sqrt{z}\,+$$
$$e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^6-5\,007\,998\,976\,z^{11/2}-1\,239\,416\,832\,z^5+69\,688\,098\,816\,z^{9/2}+\right.$$
$$\left.16\,535\,715\,840\,z^4-69\,549\,096\,960\,z^{7/2}-7\,756\,922\,880\,z^3-103\,055\,016\,960\,z^{5/2}-12\,938\,123\,520\,z^2-\right.$$
$$\left.70\,912\,195\,200\,z^{3/2}+21\,899\,354\,400\,z+68\,435\,482\,500\,\sqrt{z}\,-51\,326\,611\,875\right)+51\,326\,611\,875\Big)+$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7-20\,082\,327\,552\,z^6+282\,407\,731\,200\,z^5-323\,592\,192\,000\,z^4-\right.$$
$$\left.424\,714\,752\,000\,z^3-334\,462\,867\,200\,z^2+76\,647\,740\,400\,z-51\,326\,611\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7-20\,082\,327\,552\,z^6+282\,407\,731\,200\,z^5-323\,592\,192\,000\,z^4-\right.$$
$$\left.\left.424\,714\,752\,000\,z^3-334\,462\,867\,200\,z^2+76\,647\,740\,400\,z-51\,326\,611\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a9m1.01

$${}_1F_2\left(-\frac{9}{4};\frac{7}{2},\frac{23}{4};-z\right)=$$
$$\frac{1}{360\,777\,252\,864\,z^{19/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+20\,082\,327\,552\,z^6+282\,407\,731\,200\,z^5+323\,592\,192\,000\,z^4-\right.\right.$$
$$\left.424\,714\,752\,000\,z^3+334\,462\,867\,200\,z^2+76\,647\,740\,400\,z+51\,326\,611\,875\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+1\,251\,999\,744\,z^5+17\,422\,024\,704\,z^4+17\,387\,274\,240\,z^3-25\,763\,754\,240\,z^2+\right.\right.$$
$$17\,728\,048\,800\,z+17\,108\,870\,625\big)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6+1\,239\,416\,832\,z^5+16\,535\,715\,840\,z^4+\right.$$
$$\left.\left.\left.7\,756\,922\,880\,z^3-12\,938\,123\,520\,z^2-21\,899\,354\,400\,z-51\,326\,611\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1=-\frac{9}{4}$, $b_{1.}=\frac{9}{2}$

07.22.03.a9m2.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{1\,663\,721\,928\sqrt{2}\,z^{9/4}}\left(\left(-4\,z\left(1\,048\,576\,z^4+60\,358\,656\,z^3+956\,362\,752\,z^2+424\,431\,216\,z-47\,539\,238\,175\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$12\sqrt{z}\,\left(524\,288\,z^4+30\,638\,080\,z^3+477\,674\,112\,z^2-4\,949\,029\,800\,z-79\,232\,063\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(4\,194\,304\,z^5+244\,580\,352\,z^4+4\,010\,655\,744\,z^3+12\,459\,096\,000\,z^2+179\,878\,198\,500\,z+1\,188\,480\,954\,375\right)$$
$$\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9m3.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{1\,663\,721\,928\sqrt{2}\,z^{9/4}}\left(\left(4\,z\left(1\,048\,576\,z^4-60\,358\,656\,z^3+956\,362\,752\,z^2-424\,431\,216\,z-47\,539\,238\,175\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$12\sqrt{z}\,\left(524\,288\,z^4-30\,638\,080\,z^3+477\,674\,112\,z^2+4\,949\,029\,800\,z-79\,232\,063\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(4\,194\,304\,z^5-244\,580\,352\,z^4+4\,010\,655\,744\,z^3-12\,459\,096\,000\,z^2+179\,878\,198\,500\,z-1\,188\,480\,954\,375\right)$$
$$\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9m4.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{21}{4};z\right)=$$
$$-\frac{1}{28\,288\,z^{7/2}}\left(5\left(\left(512\,z^3+85\,536\,z^2+763\,344\,z+439\,425\right)\sinh\left(2\sqrt{z}\right)-54\sqrt{z}\,\left(192\,z^2+6572\,z+16\,275\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9m5.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{21}{4};-z\right)=$$
$$-\frac{1}{28\,288\,z^{7/2}}\left(5\left(54\sqrt{z}\,\left(192\,z^2-6572\,z+16\,275\right)\cos\left(2\sqrt{z}\right)+\left(512\,z^3-85\,536\,z^2+763\,344\,z-439\,425\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9m6.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{506\,350\,152\sqrt{2}\,z^{9/4}}\left(\left(-4\,z\left(524\,288\,z^4+23\,396\,352\,z^3+301\,400\,064\,z^2+255\,571\,344\,z-8\,993\,909\,925\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\right.$$
$$\left(262\,144\,z^4+11\,927\,552\,z^3+161\,323\,008\,z^2-484\,520\,400\,z-14\,989\,849\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(2\,097\,152\,z^5+\right.$$
$$\left.\left.95\,158\,272\,z^4+1\,277\,853\,696\,z^3+2\,606\,385\,600\,z^2+27\,254\,272\,500\,z+224\,847\,748\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9m7.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{506\,350\,152\sqrt{2}\,z^{9/4}}\left(\left(4\,z\left(524\,288\,z^4-23\,396\,352\,z^3+301\,400\,064\,z^2-255\,571\,344\,z-8\,993\,909\,925\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\right.$$
$$\left(262\,144\,z^4-11\,927\,552\,z^3+161\,323\,008\,z^2+484\,520\,400\,z-14\,989\,849\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(2\,097\,152\,z^5-\right.$$
$$\left.\left.95\,158\,272\,z^4+1\,277\,853\,696\,z^3-2\,606\,385\,600\,z^2+27\,254\,272\,500\,z-224\,847\,748\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9m8.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{17}{4};z\right)=\frac{105\left(2\sqrt{z}\,\left(64\,z^2+4644\,z+12\,555\right)\cosh\left(2\sqrt{z}\right)-\left(1792\,z^2+21\,384\,z+12\,555\right)\sinh\left(2\sqrt{z}\right)\right)}{28\,288\,z^{7/2}}$$

07.22.03.a9m9.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{17}{4};-z\right)=-\frac{105\left(2\sqrt{z}\,\left(64\,z^2-4644\,z+12\,555\right)\cos\left(2\sqrt{z}\right)+\left(-1792\,z^2+21\,384\,z-12\,555\right)\sin\left(2\sqrt{z}\right)\right)}{28\,288\,z^{7/2}}$$

07.22.03.a9ma.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{133\,250\,040\sqrt{2}\,z^{9/4}}\left(\left(-4\,z\left(262\,144\,z^4+8\,306\,688\,z^3+82\,446\,336\,z^2+62\,858\,880\,z-1\,362\,713\,625\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$12\sqrt{z}\,\left(131\,072\,z^4+4\,268\,032\,z^3+45\,050\,880\,z^2+13\,923\,000\,z-2\,271\,189\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left(1\,048\,576\,z^5+34\,013\,184\,z^4+355\,737\,600\,z^3+534\,643\,200\,z^2+2\,819\,407\,500\,z+34\,067\,840\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9mb.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{15}{4};-z\right)= \frac{1}{133\,250\,040\sqrt{2}\,z^{9/4}}\left(\left(4z\left(262\,144z^4-8\,306\,688z^3+82\,446\,336z^2-62\,858\,880z-1\,362\,713\,625\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 12\sqrt{z}\left(131\,072z^4-4\,268\,032z^3+45\,050\,880z^2-13\,923\,000z-2\,271\,189\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ \left(1\,048\,576z^5-34\,013\,184z^4+355\,737\,600z^3-534\,643\,200z^2+2\,819\,407\,500z-34\,067\,840\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9mc.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{13}{4};z\right)=-\frac{105\left(\left(32z^2+672z+405\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,(44z+135)\cosh\left(2\sqrt{z}\right)\right)}{1664\,z^{7/2}} $$

07.22.03.a9md.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{13}{4};-z\right)=\frac{105\left(6\sqrt{z}\,(44z-135)\cos\left(2\sqrt{z}\right)+\left(32z^2-672z+405\right)\sin\left(2\sqrt{z}\right)\right)}{1664\,z^{7/2}} $$

07.22.03.a9me.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{11}{4};z\right)= \frac{1}{26\,650\,008\sqrt{2}\,z^{9/4}}\left(\left(-4z\left(131\,072z^4+2\,457\,600z^3+17\,164\,800z^2+7\,225\,344z-140\,970\,375\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+ 12\sqrt{z}\left(65\,536z^4+1\,286\,144z^3+9\,754\,368z^2+13\,366\,080z-234\,950\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ \left(524\,288z^5+10\,223\,616z^4+76\,548\,096z^3+91\,653\,120z^2+112\,776\,300z+3\,524\,259\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9mf.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{11}{4};-z\right)= \frac{1}{26\,650\,008\sqrt{2}\,z^{9/4}}\left(\left(4z\left(131\,072z^4-2\,457\,600z^3+17\,164\,800z^2-7\,225\,344z-140\,970\,375\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 12\sqrt{z}\left(65\,536z^4-1\,286\,144z^3+9\,754\,368z^2-13\,366\,080z-234\,950\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ \left(524\,288z^5-10\,223\,616z^4+76\,548\,096z^3-91\,653\,120z^2+112\,776\,300z-3\,524\,259\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9mg.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{9}{4};z\right)=\frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right)-3\,(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}} $$

07.22.03.a9mh.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{9}{4};-z\right)=\frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right)+3\,(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}} $$

07.22.03.a9mi.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{7}{4};z\right)=\frac{1}{2\,422\,728\sqrt{2}\,z^{9/4}}\left(\left(-4z\left(65\,536z^4+380\,928z^3+1\,587\,456z^2+5904z-5\,638\,815\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ 12\sqrt{z}\left(32\,768z^4+219\,136z^3+1\,008\,768z^2+1\,193\,400z-9\,398\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.\left(262\,144z^5+1\,720\,320z^4+7\,750\,656z^3+7\,076\,160z^2-5\,370\,300z+140\,970\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9mj.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{7}{4};-z\right)=\frac{1}{2\,422\,728\sqrt{2}\,z^{9/4}}\left(\left(4z\left(65\,536z^4-380\,928z^3+1\,587\,456z^2-5904z-5\,638\,815\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 12\sqrt{z}\left(32\,768z^4-219\,136z^3+1\,008\,768z^2-1\,193\,400z-9\,398\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.\left(262\,144z^5-1\,720\,320z^4+7\,750\,656z^3-7\,076\,160z^2-5\,370\,300z-140\,970\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9mk.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{5}{4};z\right)= $$
$$ \frac{1}{18\,458\,880\,z^{7/2}}\left(e^{-2\sqrt{z}}\left(524\,288\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{23/4}-524\,288\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{23/4}+\right.\right. $$
$$ 524\,288\,e^{4\sqrt{z}}z^{11/2}+524\,288\,z^{11/2}+131\,072\,e^{4\sqrt{z}}z^5-131\,072\,z^5+98\,304\,e^{4\sqrt{z}}z^{9/2}+98\,304\,z^{9/2}+ $$
$$ 122\,880\,e^{4\sqrt{z}}z^4-122\,880\,z^4+215\,040\,e^{4\sqrt{z}}z^{7/2}+215\,040\,z^{7/2}+483\,840\,e^{4\sqrt{z}}z^3-483\,840\,z^3+ $$
$$ 1\,330\,560\,e^{4\sqrt{z}}z^{5/2}+1\,330\,560\,z^{5/2}+4\,324\,320\,e^{4\sqrt{z}}z^2-4\,324\,320\,z^2+16\,216\,200\,e^{4\sqrt{z}}z^{3/2}+16\,216\,200\,z^{3/2}- $$
$$ \left.\left.67\,359\,600\,e^{4\sqrt{z}}z+67\,359\,600\,z+88\,877\,250\,e^{4\sqrt{z}}\sqrt{z}+88\,877\,250\sqrt{z}-44\,438\,625\,e^{4\sqrt{z}}+44\,438\,625\right)\right) $$

07.22.03.a9ml.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{5}{4};-z\right)= $$
$$ \frac{1}{9\,229\,440\,z^{7/2}}\left(1\,048\,576\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{23/4}+2\left(262\,144z^5-49\,152z^4+107\,520z^3-665\,280z^2+8\,108\,100z-44\,438\,625\right)\right. $$
$$ \left.\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(131\,072z^5-122\,880z^4+483\,840z^3-4\,324\,320z^2-67\,359\,600z+44\,438\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a9mm.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{9}{2},-\frac{3}{4};z\right)=\frac{1}{346\,104\sqrt{2}\,z^{9/4}}\left(\left(4z\left(32\,768z^4-233\,472z^3-186\,624z^2+87\,408z+268\,515\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 12\sqrt{z}\left(16\,384z^4-102\,400z^3-171\,264z^2-102\,960z+447\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.\left(-131\,072z^5+835\,584z^4+1\,317\,888z^3+734\,400z^2-947\,700z+6\,712\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9mn.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{9}{2}, -\frac{3}{4}; -z\right) = -\frac{1}{346\,104\sqrt{2}\, z^{9/4}}\left(\left(4z\left(32\,768z^4+233\,472z^3-186\,624z^2-87\,408z+268\,515\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 12\sqrt{z}\left(16\,384z^4+102\,400z^3-171\,264z^2+102\,960z+447\,525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.\left(131\,072z^5+835\,584z^4-1\,317\,888z^3+734\,400z^2+947\,700z+6\,712\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9mo.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{9}{2}, -\frac{1}{4}; z\right) = $$
$$ \frac{1}{3\,691\,776\, z^{7/2}}\left(e^{-2\sqrt{z}}\left(-131\,072\, e^{4\sqrt{z}}\, z^{11/2}-131\,072\, z^{11/2}-32\,768\, e^{4\sqrt{z}}\, z^5+32\,768\, z^5-8192\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-207)\right.\right. $$
$$ \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+8192\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-207)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+1\,671\,168\, e^{4\sqrt{z}}\, z^{9/2}+1\,671\,168\, z^{9/2}+ $$
$$ 393\,216\, e^{4\sqrt{z}}\, z^4-393\,216\, z^4+264\,192\, e^{4\sqrt{z}}\, z^{7/2}+264\,192\, z^{7/2}+276\,480\, e^{4\sqrt{z}}\, z^3-276\,480\, z^3+ $$
$$ 362\,880\, e^{4\sqrt{z}}\, z^{5/2}+362\,880\, z^{5/2}+483\,840\, e^{4\sqrt{z}}\, z^2-483\,840\, z^2+249\,480\, e^{4\sqrt{z}}\, z^{3/2}+249\,480\, z^{3/2}- $$
$$ \left.\left.3\,243\,240\, e^{4\sqrt{z}}\, z+3\,243\,240\, z+4\,677\,750\, e^{4\sqrt{z}}\,\sqrt{z}+4\,677\,750\,\sqrt{z}-2\,338\,875\, e^{4\sqrt{z}}+2\,338\,875\right)\right) $$

07.22.03.a9mp.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{9}{2}, -\frac{1}{4}; -z\right) = \frac{1}{1\,845\,888\, z^{7/2}} $$
$$ \left(-16\,384\sqrt{\pi}\,(16z+207)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}-2\left(65\,536z^5+835\,584z^4-132\,096z^3+181\,440z^2-124\,740z+2\,338\,875\right)\right. $$
$$ \left.\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(32\,768z^5+393\,216z^4-276\,480z^3+483\,840z^2+3\,243\,240z-2\,338\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a9mq.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{9}{2}, \frac{1}{4}; z\right) = \frac{1}{346\,104\sqrt{2}\, z^{9/4}}\left(\left(-4z\left(16\,384z^4-328\,704z^3+675\,072z^2-150\,048z-47\,385\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ 12\sqrt{z}\left(8192z^4-157\,184z^3+205\,824z^2+31\,320z-78\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.\left(65\,536z^5-1\,265\,664z^4+1\,778\,688z^3+328\,320z^2-364\,500z+1\,184\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9mr.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{9}{2}, \frac{1}{4}; -z\right) = \frac{1}{346\,104\sqrt{2}\, z^{9/4}}\left(\left(4z\left(16\,384z^4+328\,704z^3+675\,072z^2+150\,048z-47\,385\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 12\sqrt{z}\left(8192z^4+157\,184z^3+205\,824z^2-31\,320z-78\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.\left(65\,536z^5+1\,265\,664z^4+1\,778\,688z^3-328\,320z^2-364\,500z-1\,184\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9ms.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{9}{2}, \frac{3}{4}; z\right) = \frac{1}{3\,691\,776\, z^{7/2}} \left(e^{-2\sqrt{z}} \left(16\,384\, e^{4\sqrt{z}}\, z^{11/2} + 16\,384\, z^{11/2} + 4096\, e^{4\sqrt{z}}\, z^5 - 4096\, z^5 - 420\,864\, e^{4\sqrt{z}}\, z^{9/2} - 420\,864\, z^{9/2} - 102\,144\, e^{4\sqrt{z}}\, z^4 + 102\,144\, z^4 + 64\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(256\, z^2 - 6624\, z + 19\,665\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{15/4} - 64\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(256\, z^2 - 6624\, z + 19\,665\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{15/4} + 1\,185\,792\, e^{4\sqrt{z}}\, z^{7/2} + 1\,185\,792\, z^{7/2} + 230\,400\, e^{4\sqrt{z}}\, z^3 - 230\,400\, z^3 + 103\,680\, e^{4\sqrt{z}}\, z^{5/2} + 103\,680\, z^{5/2} + 38\,880\, e^{4\sqrt{z}}\, z^2 - 38\,880\, z^2 - 52\,920\, e^{4\sqrt{z}}\, z^{3/2} - 52\,920\, z^{3/2} - 181\,440\, e^{4\sqrt{z}}\, z + 181\,440\, z + 311\,850\, e^{4\sqrt{z}}\, \sqrt{z} + 311\,850\, \sqrt{z} - 155\,925\, e^{4\sqrt{z}} + 155\,925\right)\right) $$

07.22.03.a9mt.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{9}{2}, \frac{3}{4}; -z\right) = \frac{1}{1\,845\,888\, z^{7/2}} \left(128\, \sqrt{\pi}\, \left(256\, z^2 + 6624\, z + 19\,665\right) S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) z^{15/4} + 2\left(8192\, z^5 + 210\,432\, z^4 + 592\,896\, z^3 - 51\,840\, z^2 - 26\,460\, z - 155\,925\right) \cos\left(2\, \sqrt{z}\right) \sqrt{z} + \left(4096\, z^5 + 102\,144\, z^4 + 230\,400\, z^3 - 38\,880\, z^2 - 181\,440\, z + 155\,925\right) \sin\left(2\, \sqrt{z}\right)\right) $$

07.22.03.a9mu.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{9}{2}, \frac{5}{4}; z\right) = \frac{1}{1\,730\,520\, \sqrt{2}\, z^{9/4}} \left(\left(-4\, z\left(8192\, z^4 - 270\,336\, z^3 + 1\,351\,008\, z^2 - 879\,840\, z + 18\,225\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\, \sqrt{z}\, \left(4096\, z^4 - 131\,584\, z^3 + 563\,280\, z^2 - 21\,600\, z + 30\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(32\,768\, z^5 - 1\,056\,768\, z^4 + 4\,625\,280\, z^3 - 432\,000\, z^2 + 283\,500\, z - 455\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9mv.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{9}{2}, \frac{5}{4}; -z\right) = \frac{1}{1\,730\,520\, \sqrt{2}\, z^{9/4}} \left(\left(4\, z\left(8192\, z^4 + 270\,336\, z^3 + 1\,351\,008\, z^2 + 879\,840\, z + 18\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\, \sqrt{z}\, \left(4096\, z^4 + 131\,584\, z^3 + 563\,280\, z^2 + 21\,600\, z + 30\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(32\,768\, z^5 + 1\,056\,768\, z^4 + 4\,625\,280\, z^3 + 432\,000\, z^2 + 283\,500\, z + 455\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9mw.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{3\,691\,776\,z^{7/2}}\left(e^{-2\sqrt{z}}\left(4096\,e^{4\sqrt{z}}\,z^{11/2}+4096\,z^{11/2}+1024\,e^{4\sqrt{z}}\,z^5-1024\,z^5-158\,208\,e^{4\sqrt{z}}\,z^{9/2}-158\,208\,z^{9/2}-\right.\right.$$
$$38\,784\,e^{4\sqrt{z}}\,z^4+38\,784\,z^4+915\,792\,e^{4\sqrt{z}}\,z^{7/2}+915\,792\,z^{7/2}+202\,500\,e^{4\sqrt{z}}\,z^3-$$
$$202\,500\,z^3+e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3-158\,976\,z^2+943\,920\,z-294\,975\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(-4096\,z^3+158\,976\,z^2-943\,920\,z+294\,975\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}-$$
$$172\,800\,e^{4\sqrt{z}}\,z^{5/2}-172\,800\,z^{5/2}+34\,560\,e^{4\sqrt{z}}\,z^2-34\,560\,z^2+55\,080\,e^{4\sqrt{z}}\,z^{3/2}+55\,080\,z^{3/2}+$$
$$\left.\left.29\,160\,e^{4\sqrt{z}}\,z-29\,160\,z-85\,050\,e^{4\sqrt{z}}\,\sqrt{z}-85\,050\,\sqrt{z}+42\,525\,e^{4\sqrt{z}}-42\,525\right)\right)$$

07.22.03.a9mx.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},\frac{7}{4};-z\right)=\frac{1}{1\,845\,888\,z^{7/2}}\left(2\sqrt{\pi}\,\left(4096\,z^3+158\,976\,z^2+943\,920\,z+294\,975\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+\right.$$
$$2\left(2048\,z^5+79\,104\,z^4+457\,896\,z^3+86\,400\,z^2+27\,540\,z+42\,525\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,+$$
$$\left.\left(1024\,z^5+38\,784\,z^4+202\,500\,z^3-34\,560\,z^2+29\,160\,z-42\,525\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9my.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},\frac{9}{4};z\right)=\frac{1}{2\,422\,728\sqrt{2}\,z^{9/4}}\left(\left(4\,z\left(-4096\,z^4+188\,160\,z^3-1\,496\,880\,z^2+1\,491\,273\,z+14\,175\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$6\sqrt{z}\,\left(4096\,z^4-184\,576\,z^3+1\,338\,288\,z^2-432\,495\,z-47\,250\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(16\,384\,z^5-740\,352\,z^4+5\,439\,168\,z^3-2\,165\,940\,z^2-510\,300\,z+354\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9mz.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},\frac{9}{4};-z\right)=\frac{1}{2\,422\,728\sqrt{2}\,z^{9/4}}\left(\left(4\,z\left(4096\,z^4+188\,160\,z^3+1\,496\,880\,z^2+1\,491\,273\,z-14\,175\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$6\sqrt{z}\,\left(4096\,z^4+184\,576\,z^3+1\,338\,288\,z^2+432\,495\,z-47\,250\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(16\,384\,z^5+740\,352\,z^4+5\,439\,168\,z^3+2\,165\,940\,z^2-510\,300\,z-354\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9n0.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{9}{2},\frac{11}{4};z\right)=\frac{1}{945\,094\,656\,z^{7/2}}\left(7\,e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-3\,391\,488\,z^3+30\,205\,440\,z^2-18\,878\,400\,z-9\,734\,175\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536\,z^4+3\,391\,488\,z^3-30\,205\,440\,z^2+18\,878\,400\,z+9\,734\,175\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+4\left(16\,384\,z^{11/2}-4096\,z^5-844\,800\,z^{9/2}+208\,128\,z^4+7\,399\,104\,z^{7/2}-1\,704\,240\,z^3-3\,609\,900\,z^{5/2}+57\,375\,z^2-1\,866\,240\,z^{3/2}-414\,720\,z+777\,600\sqrt{z}+e^{4\sqrt{z}}\left(16\,384\,z^{11/2}+4096\,z^5-844\,800\,z^{9/2}-208\,128\,z^4+7\,399\,104\,z^{7/2}+1\,704\,240\,z^3-3\,609\,900\,z^{5/2}-57\,375\,z^2-1\,866\,240\,z^{3/2}+414\,720\,z+777\,600\sqrt{z}-388\,800\right)+388\,800\right)\right)\right) $$

07.22.03.a9n1.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{9}{2},\frac{11}{4};-z\right)=\frac{1}{236\,273\,664\,z^{7/2}}\left(7\left(\sqrt{\pi}\left(65\,536\,z^4+3\,391\,488\,z^3+30\,205\,440\,z^2+18\,878\,400\,z-9\,734\,175\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+2\left(4\sqrt{z}\left(4096\,z^5+211\,200\,z^4+1\,849\,776\,z^3+902\,475\,z^2-466\,560\,z-194\,400\right)\cos\left(2\sqrt{z}\right)+\left(4096\,z^5+208\,128\,z^4+1\,704\,240\,z^3+57\,375\,z^2+414\,720\,z+388\,800\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9n2.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{9}{2},\frac{13}{4};z\right)=-\frac{1}{38\,763\,648\sqrt{2}\,z^{9/4}}\left(\left(2z\left(65\,536\,z^4-3\,858\,432\,z^3+42\,126\,336\,z^2-55\,784\,736\,z-12\,811\,365\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(65\,536\,z^4-3\,801\,088\,z^3+38\,846\,976\,z^2-24\,192\,000\,z-19\,991\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(-65\,536\,z^5+3\,809\,280\,z^4-39\,297\,024\,z^3+27\,790\,560\,z^2+23\,232\,825\,z+5\,103\,000\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9n3.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{9}{2},\frac{13}{4};-z\right)=\frac{1}{38\,763\,648\sqrt{2}\,z^{9/4}}\left(\left(2z\left(65\,536\,z^4+3\,858\,432\,z^3+42\,126\,336\,z^2+55\,784\,736\,z-12\,811\,365\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(65\,536\,z^4+3\,801\,088\,z^3+38\,846\,976\,z^2+24\,192\,000\,z-19\,991\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(65\,536\,z^5+3\,809\,280\,z^4+39\,297\,024\,z^3+27\,790\,560\,z^2-23\,232\,825\,z+5\,103\,000\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9n4.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{27\,493\,662\,720\,z^{7/2}}\left(7\,e^{-2\sqrt{z}}\left(4\left(262\,144\,z^{11/2}-65\,536\,z^5-16\,908\,288\,z^{9/2}+4\,177\,920\,z^4+198\,297\,600\,z^{7/2}-46\,609\,920\,z^3-\right.\right.\right.$$
$$157\,317\,120\,z^{5/2}+13\,487\,040\,z^2-182\,414\,700\,z^{3/2}+12\,488\,175\,z-82\,944\,000\sqrt{z}+e^{4\sqrt{z}}$$
$$\left(262\,144\,z^{11/2}+65\,536\,z^5-16\,908\,288\,z^{9/2}-4\,177\,920\,z^4+198\,297\,600\,z^{7/2}+46\,609\,920\,z^3-157\,317\,120\right.$$
$$\left.z^{5/2}-13\,487\,040\,z^2-182\,414\,700\,z^{3/2}-12\,488\,175\,z-82\,944\,000\sqrt{z}+41\,472\,000\right)-41\,472\,000\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(1\,048\,576\,z^5-67\,829\,760\,z^4+805\,478\,400\,z^3-755\,136\,000\,z^2-778\,734\,000\,z-476\,974\,575\right)$$
$$\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}$$
$$\left.\left.\left(-1\,048\,576\,z^5+67\,829\,760\,z^4-805\,478\,400\,z^3+755\,136\,000\,z^2+778\,734\,000\,z+476\,974\,575\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9n5.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},\frac{15}{4};-z\right)=\frac{1}{6\,873\,415\,680\,z^{7/2}}$$
$$\left(7\left(\sqrt{\pi}\,z^{3/4}\left(1\,048\,576\,z^5+67\,829\,760\,z^4+805\,478\,400\,z^3+755\,136\,000\,z^2-778\,734\,000\,z+476\,974\,575\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\left(4\sqrt{z}\left(65\,536\,z^5+4\,227\,072\,z^4+49\,574\,400\,z^3+39\,329\,280\,z^2-45\,603\,675\,z+20\,736\,000\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(65\,536\,z^5+4\,177\,920\,z^4+46\,609\,920\,z^3+13\,487\,040\,z^2-12\,488\,175\,z-41\,472\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a9n6.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},\frac{17}{4};z\right)=-\frac{1}{13\,644\,804\,096\sqrt{2}\,z^{11/4}}$$
$$\left(13\left(2\sqrt{z}\left(1\,048\,576\,z^5-75\,300\,864\,z^4+1\,045\,389\,312\,z^3-1\,720\,502\,784\,z^2-941\,537\,520\,z-613\,253\,025\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$3\left(-1\,048\,576\,z^5+74\,383\,360\,z^4-981\,049\,344\,z^3+910\,103\,040\,z^2+1\,321\,412\,400\,z+1\,022\,088\,375\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-1\,048\,576\,z^5+74\,514\,432\,z^4-989\,945\,856\,z^3+\right.$$
$$\left.\left.\left.1\,007\,424\,000\,z^2+1\,404\,572\,400\,z+1\,270\,009\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9n7.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},\frac{17}{4};-z\right)=\frac{1}{13\,644\,804\,096\sqrt{2}\,z^{11/4}}$$
$$\left(13\left(2\sqrt{z}\left(1\,048\,576\,z^5+75\,300\,864\,z^4+1\,045\,389\,312\,z^3+1\,720\,502\,784\,z^2-941\,537\,520\,z+613\,253\,025\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(1\,048\,576\,z^5+74\,383\,360\,z^4+981\,049\,344\,z^3+910\,103\,040\,z^2-1\,321\,412\,400\,z+1\,022\,088\,375\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576\,z^5+74\,514\,432\,z^4+989\,945\,856\,z^3+\right.$$
$$\left.\left.\left.1\,007\,424\,000\,z^2-1\,404\,572\,400\,z+1\,270\,009\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9n8.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},\frac{19}{4};z\right)=$$
$$\frac{1}{703\,837\,765\,632\,z^{15/4}}\left(7\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304\,z^{11/2}-1\,048\,576\,z^5-324\,796\,416\,z^{9/2}+80\,412\,672\,z^4+4\,773\,543\,936\,z^{7/2}-\right.\right.\right.$$
$$1\,135\,779\,840\,z^3-5\,257\,820\,160\,z^{5/2}+643\,438\,080\,z^2-9\,191\,828\,160\,z^{3/2}+1\,426\,111\,920\,z-$$
$$10\,863\,614\,700\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-324\,796\,416\,z^{9/2}-80\,412\,672\,z^4+\right.$$
$$4\,773\,543\,936\,z^{7/2}+1\,135\,779\,840\,z^3-5\,257\,820\,160\,z^{5/2}-643\,438\,080\,z^2-$$
$$\left.9\,191\,828\,160\,z^{3/2}-1\,426\,111\,920\,z-10\,863\,614\,700\sqrt{z}+185\,087\,025\right)-185\,087\,025\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-1\,302\,331\,392\,z^5+19\,331\,481\,600\,z^4-24\,164\,352\,000\,z^3-\right.$$
$$\left.37\,379\,232\,000\,z^2-45\,789\,559\,200\,z-15\,740\,160\,975\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-1\,302\,331\,392\,z^5+19\,331\,481\,600\,z^4-24\,164\,352\,000\,z^3-\right.$$
$$\left.\left.\left.37\,379\,232\,000\,z^2-45\,789\,559\,200\,z-15\,740\,160\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9n9.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},\frac{19}{4};-z\right)=$$
$$\frac{1}{175\,959\,441\,408\,z^{15/4}}\left(7\left(\sqrt{\pi}\left(16\,777\,216\,z^6+1\,302\,331\,392\,z^5+19\,331\,481\,600\,z^4+24\,164\,352\,000\,z^3-37\,379\,232\,000\,z^2+\right.\right.\right.$$
$$\left.45\,789\,559\,200\,z-15\,740\,160\,975\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576\,z^5+81\,199\,104\,z^4+\right.\right.$$
$$\left.1\,193\,385\,984\,z^3+1\,314\,455\,040\,z^2-2\,297\,957\,040\,z+2\,715\,903\,675\right)\cos\left(2\sqrt{z}\right)+$$
$$\left.\left.\left.\left(1\,048\,576\,z^5+80\,412\,672\,z^4+1\,135\,779\,840\,z^3+643\,438\,080\,z^2-1\,426\,111\,920\,z-185\,087\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a9na.01

$${}_1F_2\left(-\frac{9}{4};\frac{9}{2},\frac{21}{4};z\right)=$$
$$-\left(17\left(2\sqrt{z}\left(16\,777\,216\,z^6-1\,421\,869\,056\,z^5+23\,956\,881\,408\,z^4-47\,057\,928\,192\,z^3-43\,341\,661\,440\,z^2-56\,691\,835\,200\,z-\right.\right.\right.$$
$$\left.7\,972\,289\,325\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-16\,777\,216\,z^6+1\,407\,188\,992\,z^5-22\,737\,518\,592\,z^4+\right.$$
$$\left.28\,085\,207\,040\,z^3+57\,253\,996\,800\,z^2+85\,037\,752\,800\,z+13\,287\,148\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(-16\,777\,216\,z^6+1\,409\,286\,144\,z^5-22\,906\,994\,688\,z^4+30\,439\,342\,080\,z^3+58\,934\,304\,000\,z^2+\right.$$
$$\left.\left.\left.91\,070\,179\,200\,z+39\,861\,446\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(436\,633\,731\,072\sqrt{2}\,z^{15/4}\right)$$

07.22.03.a9nb.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{9}{2}, \frac{21}{4}; -z\right) = \left(17\left(2\sqrt{z}\,\left(16\,777\,216\,z^6 + 1\,421\,869\,056\,z^5 + 23\,956\,881\,408\,z^4 + 47\,057\,928\,192\,z^3 - 43\,341\,661\,440\,z^2 + 56\,691\,835\,200\,z - 7\,972\,289\,325\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,777\,216\,z^6 + 1\,407\,188\,992\,z^5 + 22\,737\,518\,592\,z^4 + 28\,085\,207\,040\,z^3 - 57\,253\,996\,800\,z^2 + 85\,037\,752\,800\,z - 13\,287\,148\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216\,z^6 + 1\,409\,286\,144\,z^5 + 22\,906\,994\,688\,z^4 + 30\,439\,342\,080\,z^3 - 58\,934\,304\,000\,z^2 + 91\,070\,179\,200\,z - 39\,861\,446\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(436\,633\,731\,072\,\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a9nc.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{9}{2}, \frac{23}{4}; z\right) = \frac{1}{2\,370\,821\,947\,392\,z^{19/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(67\,108\,864\,z^{13/2} - 16\,777\,216\,z^6 - 6\,064\,963\,584\,z^{11/2} + 1\,503\,657\,984\,z^5 + 107\,144\,282\,112\,z^{9/2} - 25\,701\,580\,800\,z^4 - 151\,174\,840\,320\,z^{7/2} + 21\,970\,206\,720\,z^3 - 349\,534\,725\,120\,z^{5/2} + 68\,264\,259\,840\,z^2 - 647\,183\,779\,200\,z^{3/2} + 84\,153\,232\,800\,z - 314\,803\,219\,500\,\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2} + 16\,777\,216\,z^6 - 6\,064\,963\,584\,z^{11/2} - 1\,503\,657\,984\,z^5 + 107\,144\,282\,112\,z^{9/2} + 25\,701\,580\,800\,z^4 - 151\,174\,840\,320\,z^{7/2} - 21\,970\,206\,720\,z^3 - 349\,534\,725\,120\,z^{5/2} - 68\,264\,259\,840\,z^2 - 647\,183\,779\,200\,z^{3/2} - 84\,153\,232\,800\,z - 314\,803\,219\,500\,\sqrt{z} + 236\,102\,414\,625\right) - 236\,102\,414\,625\right) + e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7 - 24\,310\,185\,984\,z^6 + 433\,025\,187\,840\,z^5 - 676\,601\,856\,000\,z^4 - 1\,395\,491\,328\,000\,z^3 - 2\,564\,215\,315\,200\,z^2 - 1\,762\,898\,029\,200\,z + 236\,102\,414\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7 - 24\,310\,185\,984\,z^6 + 433\,025\,187\,840\,z^5 - 676\,601\,856\,000\,z^4 - 1\,395\,491\,328\,000\,z^3 - 2\,564\,215\,315\,200\,z^2 - 1\,762\,898\,029\,200\,z + 236\,102\,414\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9nd.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) = \frac{1}{592\,705\,486\,848\,z^{19/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7 + 24\,310\,185\,984\,z^6 + 433\,025\,187\,840\,z^5 + 676\,601\,856\,000\,z^4 - 1\,395\,491\,328\,000\,z^3 + 2\,564\,215\,315\,200\,z^2 - 1\,762\,898\,029\,200\,z - 236\,102\,414\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6 + 1\,516\,240\,896\,z^5 + 26\,786\,070\,528\,z^4 + 37\,793\,710\,080\,z^3 - 87\,383\,681\,280\,z^2 + 161\,795\,944\,800\,z - 78\,700\,804\,875\right)\cos\left(2\sqrt{z}\right) + \left(16\,777\,216\,z^6 + 1\,503\,657\,984\,z^5 + 25\,701\,580\,800\,z^4 + 21\,970\,206\,720\,z^3 - 68\,264\,259\,840\,z^2 + 84\,153\,232\,800\,z + 236\,102\,414\,625\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{9}{4}$, $b_1 = \frac{11}{2}$

07.22.03.a9ne.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{19\,964\,663\,136\sqrt{2}\,z^{13/4}} \left(\left(-4z\left(8\,388\,608z^5 + 567\,803\,904z^4 + 10\,952\,736\,768z^3 + 23\,756\,971\,392z^2 + 464\,828\,106\,600z + 13\,643\,761\,356\,225\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(4\,194\,304z^5 + 287\,571\,968z^4 + 5\,730\,975\,744z^3 + 55\,991\,390\,400z^2 + 2\,796\,011\,489\,700z + 22\,739\,602\,260\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(33\,554\,432z^6 + 2\,296\,381\,440z^5 + 45\,547\,388\,928z^4 + 112\,280\,947\,200z^3 - 3\,531\,323\,109\,600z^2 - 72\,259\,642\,026\,000z - 341\,094\,033\,905\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9nf.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{19\,964\,663\,136\sqrt{2}\,z^{13/4}} \left(\left(4z\left(8\,388\,608z^5 - 567\,803\,904z^4 + 10\,952\,736\,768z^3 - 23\,756\,971\,392z^2 + 464\,828\,106\,600z - 13\,643\,761\,356\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(4\,194\,304z^5 - 287\,571\,968z^4 + 5\,730\,975\,744z^3 - 55\,991\,390\,400z^2 + 2\,796\,011\,489\,700z - 22\,739\,602\,260\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(33\,554\,432z^6 - 2\,296\,381\,440z^5 + 45\,547\,388\,928z^4 - 112\,280\,947\,200z^3 + 3\,531\,323\,109\,600z^2 - 72\,259\,642\,026\,000z + 341\,094\,033\,905\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9ng.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{11}{2}, -\frac{21}{4}; z\right) = -\frac{1}{113\,152\,z^{9/2}}\left(45\left(2\sqrt{z}\left(512z^3 + 122\,016z^2 + 2\,083\,200z + 4\,443\,075\right)\cosh\left(2\sqrt{z}\right) - \left(24\,320z^3 + 1\,319\,856z^2 + 8\,007\,300z + 4\,443\,075\right)\sinh\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a9nh.01

$$ {}_1F_2\left(-\frac{9}{4}; \frac{11}{2}, -\frac{21}{4}; -z\right) = \frac{1}{113\,152\,z^{9/2}}\left(45\left(2\sqrt{z}\left(512z^3 - 122\,016z^2 + 2\,083\,200z - 4\,443\,075\right)\cos\left(2\sqrt{z}\right) + \left(-24\,320z^3 + 1\,319\,856z^2 - 8\,007\,300z + 4\,443\,075\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a9ni.01

$${}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{19}{4};z\right)=\frac{1}{6\,076\,201\,824\sqrt{2}\,z^{13/4}}$$
$$\left(\left(-4z\left(4\,194\,304z^5+220\,200\,960z^4+3\,457\,843\,200z^3+5\,402\,492\,928z^2+31\,978\,346\,400z+2\,329\,422\,670\,575\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(2\,097\,152z^5+111\,935\,488z^4+1\,828\,356\,096z^3+7\,006\,910\,400z^2+398\,396\,898\,900z+\right.$$
$$3\,882\,371\,117\,625\left)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,777\,216z^6+893\,386\,752z^5+14\,508\,490\,752z^4+\right.\right.$$
$$\left.\left.\left.32\,901\,120\,000z^3-459\,325\,339\,200z^2-11\,152\,448\,307\,000z-58\,235\,566\,764\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9nj.01

$${}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{19}{4};-z\right)=\frac{1}{6\,076\,201\,824\sqrt{2}\,z^{13/4}}$$
$$\left(\left(4z\left(4\,194\,304z^5-220\,200\,960z^4+3\,457\,843\,200z^3-5\,402\,492\,928z^2+31\,978\,346\,400z-2\,329\,422\,670\,575\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(2\,097\,152z^5-111\,935\,488z^4+1\,828\,356\,096z^3-7\,006\,910\,400z^2+398\,396\,898\,900z-3\,882\,371\,117\,625\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,777\,216z^6-893\,386\,752z^5+14\,508\,490\,752z^4-32\,901\,120\,000z^3-\right.$$
$$\left.\left.\left.459\,325\,339\,200z^2+11\,152\,448\,307\,000z-58\,235\,566\,764\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9nk.01

$${}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{113\,152z^{9/2}}\left(945\left(\left(256z^3+29\,456z^2+202\,740z+113\,925\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(2176z^2+50\,840z+113\,925\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9nl.01

$${}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{17}{4};-z\right)=$$
$$-\frac{1}{113\,152z^{9/2}}\left(945\left(2\sqrt{z}\left(2176z^2-50\,840z+113\,925\right)\cos\left(2\sqrt{z}\right)+\left(256z^3-29\,456z^2+202\,740z-113\,925\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9nm.01

$${}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{15}{4};z\right)=\frac{1}{1\,599\,000\,480\sqrt{2}\,z^{13/4}}$$
$$\left(\left(-4z\left(2\,097\,152z^5+78\,249\,984z^4+948\,584\,448z^3+1\,097\,026\,560z^2-3\,633\,903\,000z+314\,786\,847\,375\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(1\,048\,576z^5+40\,042\,496z^4+510\,074\,880z^3+1\,028\,160\,000z^2+40\,578\,583\,500z+524\,644\,745\,625\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(8\,388\,608z^6+319\,291\,392z^5+4\,037\,345\,280z^4+7\,567\,257\,600z^3-\right.$$
$$\left.\left.\left.45\,611\,748\,000z^2-1\,308\,205\,080\,000z-7\,869\,671\,184\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9nn.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{15}{4};-z\right)=\frac{1}{1\,599\,000\,480\sqrt{2}\,z^{13/4}}$$
$$\left(\left(4z\left(2\,097\,152z^5-78\,249\,984z^4+948\,584\,448z^3-1\,097\,026\,560z^2-3\,633\,903\,000z-314\,786\,847\,375\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(1\,048\,576z^5-40\,042\,496z^4+510\,074\,880z^3-1\,028\,160\,000z^2+40\,578\,583\,500z-524\,644\,745\,625\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(8\,388\,608z^6-319\,291\,392z^5+4\,037\,345\,280z^4-7\,567\,257\,600z^3-\right.$$
$$\left.\left.\left.45\,611\,748\,000z^2+1\,308\,205\,080\,000z-7\,869\,671\,184\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9no.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{13}{4};z\right)=-\frac{945\left(2\sqrt{z}\left(32z^2+1360z+3255\right)\cosh\left(2\sqrt{z}\right)-\left(688z^2+5700z+3255\right)\sinh\left(2\sqrt{z}\right)\right)}{6656z^{9/2}}$$

07.22.03.a9np.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{13}{4};-z\right)=-\frac{945\left(2\sqrt{z}\left(32z^2-1360z+3255\right)\cos\left(2\sqrt{z}\right)+\left(-688z^2+5700z-3255\right)\sin\left(2\sqrt{z}\right)\right)}{6656z^{9/2}}$$

07.22.03.a9nq.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{11}{4};z\right)=\frac{1}{319\,800\,096\sqrt{2}\,z^{13/4}}$$
$$\left(\left(-4z\left(1\,048\,576z^5+23\,199\,744z^4+198\,586\,368z^3+147\,022\,848z^2-1\,253\,070\,000z+28\,616\,986\,125\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(524\,288z^5+12\,058\,624z^4+110\,217\,216z^3+180\,956\,160z^2+2\,151\,103\,500z+47\,694\,976\,875\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(4\,194\,304z^6+95\,944\,704z^5+868\,073\,472z^4+1\,287\,843\,840z^3-\right.$$
$$\left.\left.\left.3\,408\,350\,400z^2-95\,859\,855\,000z-715\,424\,653\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9nr.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{11}{4};-z\right)=\frac{1}{319\,800\,096\sqrt{2}\,z^{13/4}}$$
$$\left(\left(4z\left(1\,048\,576z^5-23\,199\,744z^4+198\,586\,368z^3-147\,022\,848z^2-1\,253\,070\,000z-28\,616\,986\,125\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(524\,288z^5-12\,058\,624z^4+110\,217\,216z^3-180\,956\,160z^2+2\,151\,103\,500z-47\,694\,976\,875\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(4\,194\,304z^6-95\,944\,704z^5+868\,073\,472z^4-1\,287\,843\,840z^3-\right.$$
$$\left.\left.\left.3\,408\,350\,400z^2+95\,859\,855\,000z-715\,424\,653\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9ns.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{9}{4};z\right)=\frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\left(8z+21\right)\cosh\left(2\sqrt{z}\right)\right)}{512z^{9/2}}$$

07.22.03.a9nt.01

$${}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{9}{4};-z\right)=\frac{945\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.a9nu.01

$${}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{29\,072\,736\sqrt{2}\,z^{13/4}}\left(\left(-4z\left(524\,288z^5+3\,637\,248z^4+18\,671\,616z^3+5\,113\,728z^2-85\,208\,760z+986\,792\,625\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$12\sqrt{z}\,\left(262\,144z^5+2\,048\,000z^4+11\,314\,176z^3+15\,128\,640z^2+4\,176\,900z+1\,644\,654\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(2\,097\,152z^6+16\,121\,856z^5+87\,662\,592z^4+97\,113\,600z^3-157\,528\,800z^2-2\,255\,526\,000z-24\,669\,815\,625\right)$$
$$\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9nv.01

$${}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{29\,072\,736\sqrt{2}\,z^{13/4}}\left(\left(4z\left(524\,288z^5-3\,637\,248z^4+18\,671\,616z^3-5\,113\,728z^2-85\,208\,760z-986\,792\,625\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$12\sqrt{z}\,\left(262\,144z^5-2\,048\,000z^4+11\,314\,176z^3-15\,128\,640z^2+4\,176\,900z-1\,644\,654\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(2\,097\,152z^6-16\,121\,856z^5+87\,662\,592z^4-97\,113\,600z^3-157\,528\,800z^2+2\,255\,526\,000z-24\,669\,815\,625\right)$$
$$\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9nw.01

$${}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{5}{4};z\right)=\frac{1}{221\,506\,560\,z^{9/2}}$$
$$\left(e^{-2\sqrt{z}}\left(4\,194\,304\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{27/4}-4\,194\,304\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{27/4}+4\,194\,304\,e^{4\sqrt{z}}\,z^{13/2}+\right.\right.$$
$$4\,194\,304\,z^{13/2}+1\,048\,576\,e^{4\sqrt{z}}\,z^6-1\,048\,576\,z^6+786\,432\,e^{4\sqrt{z}}\,z^{11/2}+786\,432\,z^{11/2}+983\,040\,e^{4\sqrt{z}}\,z^5-$$
$$983\,040\,z^5+1\,720\,320\,e^{4\sqrt{z}}\,z^{9/2}+1\,720\,320\,z^{9/2}+3\,870\,720\,e^{4\sqrt{z}}\,z^4-3\,870\,720\,z^4+10\,644\,480\,e^{4\sqrt{z}}\,z^{7/2}+$$
$$10\,644\,480\,z^{7/2}+34\,594\,560\,e^{4\sqrt{z}}\,z^3-34\,594\,560\,z^3+129\,729\,600\,e^{4\sqrt{z}}\,z^{5/2}+129\,729\,600\,z^{5/2}+$$
$$551\,350\,800\,e^{4\sqrt{z}}\,z^2-551\,350\,800\,z^2-4\,740\,120\,000\,e^{4\sqrt{z}}\,z^{3/2}-4\,740\,120\,000\,z^{3/2}+11\,909\,551\,500\,e^{4\sqrt{z}}\,z-$$
$$\left.\left.11\,909\,551\,500\,z-14\,309\,237\,250\,e^{4\sqrt{z}}\,\sqrt{z}\,-14\,309\,237\,250\,\sqrt{z}\,+7\,154\,618\,625\,e^{4\sqrt{z}}\,-7\,154\,618\,625\right)\right)$$

07.22.03.a9nx.01

$${}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{110\,753\,280\,z^{9/2}}\left(8\,388\,608\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{27/4}+2\left(2\,097\,152\,z^6-393\,216\,z^5+860\,160\,z^4-5\,322\,240\,z^3+\right.\right.$$
$$64\,864\,800\,z^2+2\,370\,060\,000\,z-7\,154\,618\,625\Big)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+$$
$$\left.\left(1\,048\,576\,z^6-983\,040\,z^5+3\,870\,720\,z^4-34\,594\,560\,z^3+551\,350\,800\,z^2-11\,909\,551\,500\,z+7\,154\,618\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9ny.01

$${}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{4\,153\,248\sqrt{2}\,z^{13/4}}\left(\left(4z\left(262\,144\,z^5-2\,162\,688\,z^4-2\,359\,296\,z^3+550\,656\,z^2+5\,728\,320\,z-39\,471\,705\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(131\,072\,z^5-966\,656\,z^4-1\,932\,288\,z^3-1\,494\,720\,z^2+3\,699\,540\,z-65\,786\,175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-1\,048\,576\,z^6+7\,864\,320\,z^5+14\,893\,056\,z^4+10\,229\,760\,z^3-14\,489\,280\,z^2-32\,221\,800\,z-986\,792\,625\right)$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9nz.01

$${}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{3}{4};-z\right)=$$
$$-\frac{1}{4\,153\,248\sqrt{2}\,z^{13/4}}\left(\left(4z\left(262\,144\,z^5+2\,162\,688\,z^4-2\,359\,296\,z^3-550\,656\,z^2+5\,728\,320\,z+39\,471\,705\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(131\,072\,z^5+966\,656\,z^4-1\,932\,288\,z^3+1\,494\,720\,z^2+3\,699\,540\,z+65\,786\,175\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(1\,048\,576\,z^6+7\,864\,320\,z^5-14\,893\,056\,z^4+10\,229\,760\,z^3+14\,489\,280\,z^2-32\,221\,800\,z+986\,792\,625\right)$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9o0.01

$${}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{44\,301\,312\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(-1\,048\,576\,e^{4\sqrt{z}}\,z^{13/2}-1\,048\,576\,z^{13/2}-262\,144\,e^{4\sqrt{z}}\,z^6+262\,144\,z^6-65\,536\,e^{2\sqrt{z}}\,\sqrt{2\pi}\right.\right.$$
$$(16z-243)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4}+65\,536\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-243)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{23/4}+15\,728\,640\,e^{4\sqrt{z}}\,z^{11/2}+$$
$$15\,728\,640\,z^{11/2}+3\,735\,552\,e^{4\sqrt{z}}\,z^5-3\,735\,552\,z^5+2\,555\,904\,e^{4\sqrt{z}}\,z^{9/2}+2\,555\,904\,z^{9/2}+2\,764\,800\,e^{4\sqrt{z}}\,z^4-$$
$$2\,764\,800\,z^4+3\,870\,720\,e^{4\sqrt{z}}\,z^{7/2}+3\,870\,720\,z^{7/2}+6\,048\,000\,e^{4\sqrt{z}}\,z^3-6\,048\,000\,z^3+7\,983\,360\,e^{4\sqrt{z}}\,z^{5/2}+$$
$$7\,983\,360\,z^{5/2}-6\,486\,480\,e^{4\sqrt{z}}\,z^2+6\,486\,480\,z^2-162\,162\,000\,e^{4\sqrt{z}}\,z^{3/2}-162\,162\,000\,z^{3/2}+495\,841\,500\,e^{4\sqrt{z}}\,z-$$
$$\left.\left.495\,841\,500\,z-622\,140\,750\,e^{4\sqrt{z}}\,\sqrt{z}-622\,140\,750\sqrt{z}+311\,070\,375\,e^{4\sqrt{z}}-311\,070\,375\right)\right)$$

07.22.03.a9o1.01

$${}_1F_2\left(-\frac{9}{4};\frac{11}{2},-\frac{1}{4};-z\right)=\frac{1}{22\,150\,656\,z^{9/2}}\left(-131\,072\sqrt{\pi}\,(16z+243)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{23/4}-\right.$$
$$2\left(524\,288z^6+7\,864\,320z^5-1\,277\,952z^4+1\,935\,360z^3-3\,991\,680z^2-81\,081\,000z+311\,070\,375\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-$$
$$\left.\left(262\,144z^6+3\,735\,552z^5-2\,764\,800z^4+6\,048\,000z^3+6\,486\,480z^2+495\,841\,500z-311\,070\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9o2.01

$${}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{4\,153\,248\sqrt{2}\,z^{13/4}}\left(\left(-4z\left(131\,072z^5-3\,072\,000z^4+7\,280\,640z^3-1\,622\,016z^2-1\,305\,720z+5\,638\,815\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$12\sqrt{z}\left(65\,536z^5-1\,478\,656z^4+2\,393\,088z^3+535\,680z^2-1\,340\,820z+9\,398\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(524\,288z^6-11\,894\,784z^5+20\,422\,656z^4+4\,838\,400z^3-5\,819\,040z^2+7\,581\,600z-140\,970\,375\right)$$
$$\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9o3.01

$${}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{4\,153\,248\sqrt{2}\,z^{13/4}}\left(\left(4z\left(131\,072z^5+3\,072\,000z^4+7\,280\,640z^3+1\,622\,016z^2-1\,305\,720z-5\,638\,815\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\right.\right.$$
$$\left(65\,536z^5+1\,478\,656z^4+2\,393\,088z^3-535\,680z^2-1\,340\,820z-9\,398\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(524\,288z^6+\right.$$
$$\left.\left.\left.11\,894\,784z^5+20\,422\,656z^4-4\,838\,400z^3-5\,819\,040z^2-7\,581\,600z-140\,970\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.a9o4.01

$${}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{44\,301\,312\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(131\,072\,e^{4\sqrt{z}}\,z^{13/2}+131\,072\,z^{13/2}+32\,768\,e^{4\sqrt{z}}\,z^6-32\,768z^6-3\,956\,736\,e^{4\sqrt{z}}\,z^{11/2}-\right.\right.$$
$$3\,956\,736z^{11/2}-964\,608\,e^{4\sqrt{z}}\,z^5+964\,608z^5+512\,e^{2\sqrt{z}}\,\sqrt{2\pi}\left(256z^2-7776z+27\,945\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}-$$
$$512\,e^{2\sqrt{z}}\,\sqrt{2\pi}\left(256z^2-7776z+27\,945\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{19/4}+13\,615\,104\,e^{4\sqrt{z}}\,z^{9/2}+13\,615\,104z^{9/2}+$$
$$2\,764\,800\,e^{4\sqrt{z}}\,z^4-2\,764\,800z^4+1\,382\,400\,e^{4\sqrt{z}}\,z^{7/2}+1\,382\,400z^{7/2}+760\,320\,e^{4\sqrt{z}}\,z^3-760\,320z^3-$$
$$181\,440\,e^{4\sqrt{z}}\,z^{5/2}-181\,440z^{5/2}-2\,404\,080\,e^{4\sqrt{z}}\,z^2+2\,404\,080z^2-4\,989\,600\,e^{4\sqrt{z}}\,z^{3/2}-4\,989\,600z^{3/2}+$$
$$\left.24\,324\,300\,e^{4\sqrt{z}}\,z-24\,324\,300z-32\,744\,250\,e^{4\sqrt{z}}\,\sqrt{z}-32\,744\,250\sqrt{z}+16\,372\,125\,e^{4\sqrt{z}}-16\,372\,125\right)\Bigg)$$

07.22.03.a9o5.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{3}{4};-z\right)=\frac{1}{22\,150\,656\,z^{9/2}}\left(1024\sqrt{\pi}\left(256z^2+7776z+27\,945\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}+\right.$$
$$2\left(65\,536z^6+1\,978\,368z^5+6\,807\,552z^4-691\,200z^3-90\,720z^2+2\,494\,800z-16\,372\,125\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+$$
$$\left.\left(32\,768z^6+964\,608z^5+2\,764\,800z^4-760\,320z^3-2\,404\,080z^2-24\,324\,300z+16\,372\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9o6.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{20\,766\,240\sqrt{2}\,z^{13/4}}\left(\left(-4z\left(65\,536z^5-2\,531\,328z^4+15\,024\,384z^3-10\,702\,080z^2+615\,600z-1\,658\,475\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$12\sqrt{z}\left(32\,768z^5-1\,236\,992z^4+6\,453\,120z^3-432\,000z^2+780\,300z-2\,764\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left(262\,144z^6-9\,928\,704z^5+52\,761\,600z^4-6\,912\,000z^3+5\,313\,600z^2-8\,019\,000z+41\,461\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9o7.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{5}{4};-z\right)=$$
$$\frac{1}{20\,766\,240\sqrt{2}\,z^{13/4}}\left(\left(4z\left(65\,536z^5+2\,531\,328z^4+15\,024\,384z^3+10\,702\,080z^2+615\,600z+1\,658\,475\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$12\sqrt{z}\left(32\,768z^5+1\,236\,992z^4+6\,453\,120z^3+432\,000z^2+780\,300z+2\,764\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left(262\,144z^6+9\,928\,704z^5+52\,761\,600z^4+6\,912\,000z^3+5\,313\,600z^2+8\,019\,000z+41\,461\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9o8.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{44\,301\,312z^{9/2}}\left(e^{-2\sqrt{z}}\left(32\,768e^{4\sqrt{z}}z^{13/2}+32\,768z^{13/2}+8192e^{4\sqrt{z}}z^6-8192z^6-1\,486\,848e^{4\sqrt{z}}z^{11/2}-1\,486\,848z^{11/2}-\right.\right.$$
$$365\,568e^{4\sqrt{z}}z^5+365\,568z^5+10\,464\,384e^{4\sqrt{z}}z^{9/2}+10\,464\,384z^{9/2}+2\,363\,040e^{4\sqrt{z}}z^4-$$
$$2\,363\,040z^4+8e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-186\,624z^2+1\,341\,360z-530\,955\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}-$$
$$8e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-186\,624z^2+1\,341\,360z-530\,955\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}-$$
$$2\,764\,800e^{4\sqrt{z}}z^{7/2}-2\,764\,800z^{7/2}+345\,600e^{4\sqrt{z}}z^3-345\,600z^3+829\,440e^{4\sqrt{z}}z^{5/2}+$$
$$829\,440z^{5/2}+900\,720e^{4\sqrt{z}}z^2-900\,720z^2-226\,800e^{4\sqrt{z}}z^{3/2}-226\,800z^{3/2}-4\,252\,500e^{4\sqrt{z}}z+$$
$$\left.\left.4\,252\,500z+6\,548\,850e^{4\sqrt{z}}\sqrt{z}+6\,548\,850\sqrt{z}-3\,274\,425e^{4\sqrt{z}}+3\,274\,425\right)\right)$$

07.22.03.a9o9.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{7}{4};-z\right)=\frac{1}{22\,150\,656\,z^{9/2}}\left(16\sqrt{\pi}\left(4096z^3+186\,624z^2+1\,341\,360z+530\,955\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+\right.$$
$$2\left(16\,384z^6+743\,424z^5+5\,232\,192z^4+1\,382\,400z^3+414\,720z^2+113\,400z+3\,274\,425\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+$$
$$\left.\left(8192z^6+365\,568z^5+2\,363\,040z^4-345\,600z^3+900\,720z^2+4\,252\,500z-3\,274\,425\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9oa.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{29\,072\,736\sqrt{2}\,z^{13/4}}\left(\left(-4z\left(32\,768z^5-1\,763\,328z^4+16\,781\,184z^3-19\,015\,416z^2-567\,000z+893\,025\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$12\sqrt{z}\left(16\,384z^5-867\,328z^4+7\,643\,328z^3-3\,360\,420z^2-812\,700z+1\,488\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(131\,072z^6-\right.$$
$$\left.\left.6\,955\,008z^5+61\,963\,776z^4-32\,266\,080z^3-11\,340\,000z^2+10\,206\,000z-22\,325\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9ob.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{29\,072\,736\sqrt{2}\,z^{13/4}}\left(\left(4z\left(32\,768z^5+1\,763\,328z^4+16\,781\,184z^3+19\,015\,416z^2-567\,000z-893\,025\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\right.\right.$$
$$\left(16\,384z^5+867\,328z^4+7\,643\,328z^3+3\,360\,420z^2-812\,700z-1\,488\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(131\,072z^6+$$
$$\left.\left.6\,955\,008z^5+61\,963\,776z^4+32\,266\,080z^3-11\,340\,000z^2-10\,206\,000z-22\,325\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.a9oc.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{11}{4};z\right)=\frac{1}{1\,417\,641\,984\,z^{9/2}}$$
$$\left(7e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-3\,981\,312z^3+42\,923\,520z^2-33\,981\,120z-23\,892\,975\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+\right.\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536z^4+3\,981\,312z^3-42\,923\,520z^2+33\,981\,120z+23\,892\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+$$
$$4\left(16\,384z^{13/2}-4096z^6-992\,256z^{11/2}+244\,992z^5+10\,550\,976z^{9/2}-2\,464\,560z^4-6\,849\,900z^{7/2}+392\,175z^3-\right.$$
$$5\,184\,000z^{5/2}-362\,880z^2+2\,073\,600z^{3/2}-2\,138\,400z-4\,762\,800\sqrt{z}+e^{4\sqrt{z}}\left(16\,384z^{13/2}+$$
$$4096z^6-992\,256z^{11/2}-244\,992z^5+10\,550\,976z^{9/2}+2\,464\,560z^4-6\,849\,900z^{7/2}-392\,175z^3-$$
$$\left.\left.\left.5\,184\,000z^{5/2}+362\,880z^2+2\,073\,600z^{3/2}+2\,138\,400z-4\,762\,800\sqrt{z}+2\,381\,400\right)-2\,381\,400\right)\right)\Bigg)$$

07.22.03.a9od.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{11}{4};-z\right)= \frac{1}{354\,410\,496\,z^{9/2}}\left(7\left(\sqrt{\pi}\left(65\,536\,z^4+3\,981\,312\,z^3+42\,923\,520\,z^2+33\,981\,120\,z-23\,892\,975\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+ 2\left(4\sqrt{z}\left(4096\,z^6+248\,064\,z^5+2\,637\,744\,z^4+1\,712\,475\,z^3-1\,296\,000\,z^2-518\,400\,z-1\,190\,700\right)\cos\left(2\sqrt{z}\right)+ \left(4096\,z^6+244\,992\,z^5+2\,464\,560\,z^4+392\,175\,z^3+362\,880\,z^2-2\,138\,400\,z+2\,381\,400\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9oe.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{13}{4};z\right)= \frac{1}{58\,145\,472\sqrt{2}\,z^{13/4}}\left(\left(2z\left(-65\,536\,z^5+4\,521\,984\,z^4-59\,254\,272\,z^3+91\,292\,544\,z^2+36\,166\,095\,z+3\,572\,100\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+ 3\sqrt{z}\left(65\,536\,z^5-4\,464\,640\,z^4+55\,394\,304\,z^3-45\,692\,640\,z^2-53\,472\,825\,z-11\,907\,000\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ 2\left(65\,536\,z^6-4\,472\,832\,z^5+55\,927\,296\,z^4-51\,105\,600\,z^3-58\,358\,475\,z^2-25\,515\,000\,z+22\,325\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9of.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{13}{4};-z\right)= \frac{1}{58\,145\,472\sqrt{2}\,z^{13/4}}\left(\left(2z\left(65\,536\,z^5+4\,521\,984\,z^4+59\,254\,272\,z^3+91\,292\,544\,z^2-36\,166\,095\,z+3\,572\,100\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 3\sqrt{z}\left(65\,536\,z^5+4\,464\,640\,z^4+55\,394\,304\,z^3+45\,692\,640\,z^2-53\,472\,825\,z+11\,907\,000\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ 2\left(65\,536\,z^6+4\,472\,832\,z^5+55\,927\,296\,z^4+51\,105\,600\,z^3-58\,358\,475\,z^2+25\,515\,000\,z+22\,325\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9og.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{15}{4};z\right)= \frac{1}{41\,240\,494\,080\,z^{9/2}}\left(7e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-79\,626\,240\,z^4+1\,144\,627\,200\,z^3-1\,359\,244\,800\,z^2-1\,911\,438\,000\,z-1\,839\,759\,075\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(-1\,048\,576\,z^5+79\,626\,240\,z^4-1\,144\,627\,200\,z^3+ 1\,359\,244\,800\,z^2+1\,911\,438\,000\,z+1\,839\,759\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+ 4\left(262\,144\,z^{13/2}-65\,536\,z^6-19\,857\,408\,z^{11/2}+4\,915\,200\,z^5+282\,531\,840\,z^{9/2}-67\,115\,520\,z^4- 293\,656\,320\,z^{7/2}+34\,093\,440\,z^3-466\,616\,700\,z^{5/2}+64\,757\,475\,z^2-414\,720\,000\,z^{3/2}-62\,208\,000\,z+ 217\,728\,000\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^{13/2}+65\,536\,z^6-19\,857\,408\,z^{11/2}-4\,915\,200\,z^5+282\,531\,840\,z^{9/2}+ 67\,115\,520\,z^4-293\,656\,320\,z^{7/2}-34\,093\,440\,z^3-466\,616\,700\,z^{5/2}-64\,757\,475\,z^2- 414\,720\,000\,z^{3/2}+62\,208\,000\,z+217\,728\,000\sqrt{z}-108\,864\,000\right)+108\,864\,000\right)\right)\right) $$

07.22.03.a9oh.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{15}{4};-z\right)=\frac{1}{10\,310\,123\,520\,z^{9/2}}\left(7\left(\sqrt{\pi}\left(1\,048\,576\,z^5+79\,626\,240\,z^4+1\,144\,627\,200\,z^3+1\,359\,244\,800\,z^2-1\,911\,438\,000\,z+1\,839\,759\,075\right)\right.\right. $$

$$ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+2\left(4\sqrt{z}\left(65\,536\,z^6+4\,964\,352\,z^5+70\,632\,960\,z^4+73\,414\,080\,z^3-\right.\right. $$

$$ \left.\left.116\,654\,175\,z^2+103\,680\,000\,z+54\,432\,000\right)\cos\left(2\sqrt{z}\right)+\left(65\,536\,z^6+4\,915\,200\,z^5+\right.\right. $$

$$ \left.\left.\left.\left.67\,115\,520\,z^4+34\,093\,440\,z^3-64\,757\,475\,z^2-62\,208\,000\,z-108\,864\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9oi.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{17}{4};z\right)=-\frac{1}{20\,467\,206\,144\sqrt{2}\,z^{13/4}}\left(13\left(2z\left(1\,048\,576\,z^5-88\,276\,992\,z^4+1\,473\,601\,536\,z^3-2\,863\,719\,936\,z^2-2\,538\,209\,520\,z-3\,060\,090\,495\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$

$$ 3\sqrt{z}\left(-1\,048\,576\,z^5+87\,359\,488\,z^4-1\,397\,907\,456\,z^3+1\,697\,794\,560\,z^2+3\,371\,140\,080\,z+4\,681\,024\,425\right) $$

$$ I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(-1\,048\,576\,z^6+87\,490\,560\,z^5-1\,408\,425\,984\,z^4+\right. $$

$$ \left.\left.\left.1\,842\,255\,360\,z^3+3\,476\,254\,320\,z^2+5\,061\,793\,275\,z+1\,571\,724\,000\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9oj.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{17}{4};-z\right)=\frac{1}{20\,467\,206\,144\sqrt{2}\,z^{13/4}}\left(13\left(2z\left(1\,048\,576\,z^5+88\,276\,992\,z^4+1\,473\,601\,536\,z^3+2\,863\,719\,936\,z^2-2\,538\,209\,520\,z+3\,060\,090\,495\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$

$$ 3\sqrt{z}\left(1\,048\,576\,z^5+87\,359\,488\,z^4+1\,397\,907\,456\,z^3+1\,697\,794\,560\,z^2-3\,371\,140\,080\,z+4\,681\,024\,425\right) $$

$$ J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(1\,048\,576\,z^6+87\,490\,560\,z^5+1\,408\,425\,984\,z^4+1\,842\,255\,360\,z^3-\right. $$

$$ \left.\left.\left.3\,476\,254\,320\,z^2+5\,061\,793\,275\,z-1\,571\,724\,000\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.a9ok.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{19}{4};z\right) = \frac{1}{1\,055\,756\,648\,448\,z^{9/2}}\left(7\,e^{-2\sqrt{z}}\left(4\left(4\,194\,304\,z^{13/2}-1\,048\,576\,z^6-381\,419\,520\,z^{11/2}+94\,568\,448\,z^5+6\,797\,819\,904\,z^{9/2}-1\,631\,232\,000\,z^4-9\,732\,372\,480\,z^{7/2}+1\,426\,982\,400\,z^3-22\,999\,515\,840\,z^{5/2}+4\,546\,050\,480\,z^2-44\,688\,372\,300\,z^{3/2}+6\,296\,840\,775\,z-27\,869\,184\,000\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{13/2}+1\,048\,576\,z^6-381\,419\,520\,z^{11/2}-94\,568\,448\,z^5+6\,797\,819\,904\,z^{9/2}+1\,631\,232\,000\,z^4-9\,732\,372\,480\,z^{7/2}-1\,426\,982\,400\,z^3-22\,999\,515\,840\,z^{5/2}-4\,546\,050\,480\,z^2-44\,688\,372\,300\,z^{3/2}-6\,296\,840\,775\,z-27\,869\,184\,000\sqrt{z}+13\,934\,592\,000\right)-13\,934\,592\,000\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(16\,777\,216\,z^6-1\,528\,823\,808\,z^5+27\,471\,052\,800\,z^4-43\,495\,833\,600\,z^3-91\,749\,024\,000\,z^2-176\,616\,871\,200\,z-141\,661\,448\,775\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(-16\,777\,216\,z^6+1\,528\,823\,808\,z^5-27\,471\,052\,800\,z^4+43\,495\,833\,600\,z^3+91\,749\,024\,000\,z^2+176\,616\,871\,200\,z+141\,661\,448\,775\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9ol.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{19}{4};-z\right) = \frac{1}{263\,939\,162\,112\,z^{9/2}}\left(7\left(\sqrt{\pi}\,z^{3/4}\left(16\,777\,216\,z^6+1\,528\,823\,808\,z^5+27\,471\,052\,800\,z^4+43\,495\,833\,600\,z^3-91\,749\,024\,000\,z^2+176\,616\,871\,200\,z-141\,661\,448\,775\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\left(4\sqrt{z}\left(1\,048\,576\,z^6+95\,354\,880\,z^5+1\,699\,454\,976\,z^4+2\,433\,093\,120\,z^3-5\,749\,878\,960\,z^2+11\,172\,093\,075\,z-6\,967\,296\,000\right)\cos\left(2\sqrt{z}\right)+\left(1\,048\,576\,z^6+94\,568\,448\,z^5+1\,631\,232\,000\,z^4+1\,426\,982\,400\,z^3-4\,546\,050\,480\,z^2+6\,296\,840\,775\,z+13\,934\,592\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9om.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{21}{4};z\right) = -\left(17\left(2\sqrt{z}\left(16\,777\,216\,z^6-1\,667\,235\,840\,z^5+33\,817\,559\,040\,z^4-79\,256\,567\,808\,z^3-114\,329\,698\,560\,z^2-257\,681\,904\,480\,z-215\,251\,811\,775\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-16\,777\,216\,z^6+1\,652\,555\,776\,z^5-32\,383\,500\,288\,z^4+52\,018\,053\,120\,z^3+143\,463\,640\,320\,z^2+348\,713\,164\,800\,z+358\,753\,019\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-16\,777\,216\,z^6+1\,654\,652\,928\,z^5-32\,583\,647\,232\,z^4+55\,484\,006\,400\,z^3+145\,104\,410\,880\,z^2+353\,188\,836\,000\,z+422\,421\,874\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(654\,950\,596\,608\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a9on.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{21}{4};-z\right)= \left(17\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,667\,235\,840\,z^5+33\,817\,559\,040\,z^4+79\,256\,567\,808\,z^3-114\,329\,698\,560\,z^2+257\,681\,904\,480\,z-215\,251\,811\,775\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(16\,777\,216\,z^6+1\,652\,555\,776\,z^5+32\,383\,500\,288\,z^4+52\,018\,053\,120\,z^3-143\,463\,640\,320\,z^2+348\,713\,164\,800\,z-358\,753\,019\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,654\,652\,928\,z^5+32\,583\,647\,232\,z^4+55\,484\,006\,400\,z^3-145\,104\,410\,880\,z^2+353\,188\,836\,000\,z-422\,421\,874\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(654\,950\,596\,608\,\sqrt{2}\,z^{15/4}\right) $$

07.22.03.a9oo.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{23}{4};z\right)=\frac{1}{3\,556\,232\,921\,088\,z^{19/4}} \left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(67\,108\,864\,z^{13/2}-16\,777\,216\,z^6-7\,121\,928\,192\,z^{11/2}+1\,767\,899\,136\,z^5+152\,527\,699\,968\,z^{9/2}-36\,849\,254\,400\,z^4-278\,382\,182\,400\,z^{7/2}+46\,092\,533\,760\,z^3-866\,345\,518\,080\,z^{5/2}+193\,495\,599\,360\,z^2-2\,546\,428\,752\,000\,z^{3/2}+548\,847\,381\,600\,z-3\,985\,707\,505\,500\,\sqrt{z}\,+e^{4\sqrt{z}}\left(67\,108\,864\,z^{13/2}+16\,777\,216\,z^6-7\,121\,928\,192\,z^{11/2}-1\,767\,899\,136\,z^5+152\,527\,699\,968\,z^{9/2}+36\,849\,254\,400\,z^4-278\,382\,182\,400\,z^{7/2}-46\,092\,533\,760\,z^3-866\,345\,518\,080\,z^{5/2}-193\,495\,599\,360\,z^2-2\,546\,428\,752\,000\,z^{3/2}-548\,847\,381\,600\,z-3\,985\,707\,505\,500\,\sqrt{z}\,-132\,067\,978\,875\right)+132\,067\,978\,875\right)+e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7-28\,538\,044\,416\,z^6+615\,351\,582\,720\,z^5-1\,217\,883\,340\,800\,z^4-3\,425\,296\,896\,000\,z^3-9\,890\,544\,787\,200\,z^2-15\,866\,082\,262\,800\,z-6\,374\,765\,194\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(268\,435\,456\,z^7-28\,538\,044\,416\,z^6+615\,351\,582\,720\,z^5-1\,217\,883\,340\,800\,z^4-3\,425\,296\,896\,000\,z^3-9\,890\,544\,787\,200\,z^2-15\,866\,082\,262\,800\,z-6\,374\,765\,194\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9op.01

$$ {}_1F_2\left(-\frac{9}{4};\frac{11}{2},\frac{23}{4};-z\right)= \frac{1}{889\,058\,230\,272\,z^{19/4}}\left(\sqrt{\pi}\,\left(268\,435\,456\,z^7+28\,538\,044\,416\,z^6+615\,351\,582\,720\,z^5+1\,217\,883\,340\,800\,z^4-3\,425\,296\,896\,000\,z^3+9\,890\,544\,787\,200\,z^2-15\,866\,082\,262\,800\,z+6\,374\,765\,194\,875\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,777\,216\,z^6+1\,780\,482\,048\,z^5+38\,131\,924\,992\,z^4+69\,595\,545\,600\,z^3-216\,586\,379\,520\,z^2+636\,607\,188\,000\,z-996\,426\,876\,375\right)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216\,z^6+1\,767\,899\,136\,z^5+36\,849\,254\,400\,z^4+46\,092\,533\,760\,z^3-193\,495\,599\,360\,z^2+548\,847\,381\,600\,z-132\,067\,978\,875\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{7}{4}$, $b_1 \geq -\frac{11}{2}$

For fixed z and $a_1 = -\frac{7}{4}$, $b_1 = -\frac{11}{2}$

07.22.03.a9oq.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{749\,531\,475}\left(\left(16\,384\,z^5 + 1\,566\,720\,z^4 + 40\,434\,240\,z^3 + 417\,463\,200\,z^2 + 1\,457\,586\,900\,z + 749\,531\,475\right)\cosh\left(2\sqrt{z}\right) - 10\sqrt{z}\left(20\,480\,z^4 + 895\,488\,z^3 + 14\,602\,896\,z^2 + 91\,642\,320\,z + 149\,906\,295\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.a9or.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{749\,531\,475}\left(\left(-16\,384\,z^5 + 1\,566\,720\,z^4 - 40\,434\,240\,z^3 + 417\,463\,200\,z^2 - 1\,457\,586\,900\,z + 749\,531\,475\right)\cos\left(2\sqrt{z}\right) + 10\sqrt{z}\left(20\,480\,z^4 - 895\,488\,z^3 + 14\,602\,896\,z^2 - 91\,642\,320\,z + 149\,906\,295\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a9os.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, -\frac{21}{4}; z\right) = \frac{1}{103\,378\,275\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192\,z^5 + 664\,064\,z^4 + 14\,169\,600\,z^3 + 111\,646\,080\,z^2 + 200\,491\,200\,z + 103\,378\,275\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(48\,128\,z^4 + 1\,827\,648\,z^3 + 24\,766\,560\,z^2 + 117\,788\,580\,z + 103\,378\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(2048\,z^4 + 178\,560\,z^3 + 4\,049\,136\,z^2 + 35\,085\,960\,z + 103\,378\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9ot.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, -\frac{21}{4}; -z\right) = \frac{1}{103\,378\,275\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-8192\,z^5 + 664\,064\,z^4 - 14\,169\,600\,z^3 + 111\,646\,080\,z^2 - 200\,491\,200\,z + 103\,378\,275\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(48\,128\,z^4 - 1\,827\,648\,z^3 + 24\,766\,560\,z^2 - 117\,788\,580\,z + 103\,378\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(2048\,z^4 - 178\,560\,z^3 + 4\,049\,136\,z^2 - 35\,085\,960\,z + 103\,378\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9ou.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, -\frac{19}{4}; z\right) = \frac{1}{32\,588\,325}\left(15\left(3072\,z^4 + 102\,592\,z^3 + 1\,160\,544\,z^2 + 4\,199\,580\,z + 2\,172\,555\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(2048\,z^4 + 155\,520\,z^3 + 2\,938\,320\,z^2 + 19\,542\,600\,z + 32\,588\,325\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.a9ov.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, -\frac{19}{4}; -z\right) = \frac{1}{32\,588\,325}\left(15\left(3072\,z^4 - 102\,592\,z^3 + 1\,160\,544\,z^2 - 4\,199\,580\,z + 2\,172\,555\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(2048\,z^4 - 155\,520\,z^3 + 2\,938\,320\,z^2 - 19\,542\,600\,z + 32\,588\,325\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.a9ow.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{4\,922\,775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(21\,504\,z^4+597\,760\,z^3+5\,179\,680\,z^2+9\,477\,000\,z+4\,922\,775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(1024\,z^4+69\,568\,z^3+1\,098\,720\,z^2+5\,538\,780\,z+4\,922\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(5632\,z^3+168\,336\,z^2+1\,600\,560\,z+4\,922\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9ox.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{4\,922\,775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(21\,504\,z^4-597\,760\,z^3+5\,179\,680\,z^2-9\,477\,000\,z+4\,922\,775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\right.\right.$$
$$\sqrt{z}\left(1024\,z^4-69\,568\,z^3+1\,098\,720\,z^2-5\,538\,780\,z+4\,922\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(-5632\,z^3+168\,336\,z^2-1\,600\,560\,z+4\,922\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9oy.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{1\,715\,175}\left((16\,z+165)\left(\left(64\,z^3+3360\,z^2+18\,900\,z+10\,395\right)\cosh\left(2\sqrt{z}\right)-42\sqrt{z}\left(16\,z^2+240\,z+495\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9oz.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{1\,715\,175}\left((16\,z-165)\left(\left(64\,z^3-3360\,z^2+18\,900\,z-10\,395\right)\cos\left(2\sqrt{z}\right)-42\sqrt{z}\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9p0.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},-\frac{13}{4};z\right)=\frac{1}{289\,575\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(512\,z^4+28\,160\,z^3+291\,840\,z^2+550\,800\,z+289\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2624\,z^3+57\,120\,z^2+319\,140\,z+289\,575\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(128\,z^3+7728\,z^2+87\,480\,z+289\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9p1.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},-\frac{13}{4};-z\right)=\frac{1}{289\,575\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(512z^4-28\,160z^3+291\,840z^2-550\,800z+289\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2624z^3-57\,120z^2+319\,140z-289\,575\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-128z^3+7728z^2-87\,480z+289\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9p2.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{114\,345}\left(\left(2624z^3+50\,400z^2+215\,460z+114\,345\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(128z^3+7056z^2+63\,000z+114\,345\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.a9p3.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},-\frac{11}{4};-z\right)=\frac{1}{114\,345}$$
$$\left(\left(-2624z^3+50\,400z^2-215\,460z+114\,345\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(-128z^3+7056z^2-63\,000z+114\,345\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9p4.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{22\,275\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(256z^3+4128z^2+8280z+4455\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z^3+3360z^2+23\,580z+22\,275\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+12z\left(112z^2+1920z+7425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9p5.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{22\,275\sqrt{2}}\left(\sqrt[4]{z}\left(-5\left(256z^3-4128z^2+8280z-4455\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z^3-3360z^2+23\,580z-22\,275\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+12z\left(112z^2-1920z+7425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9p6.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},-\frac{7}{4};z\right)=\left(\frac{64z^3}{10\,395}+\frac{32z^2}{99}+\frac{20z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{495}\sqrt{z}\left(16z^2+240z+495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9p7.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},-\frac{7}{4};-z\right)=\left(-\frac{64z^3}{10\,395}+\frac{32z^2}{99}-\frac{20z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\left(16z^2-240z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.a9p8.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{2475\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^3+1920z^2+4320z+2475\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(172z^2+2340z+2475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(8z^2+360z+2475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9p9.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},-\frac{5}{4};-z\right)=$$
$$-\frac{1}{2475\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^3-1920z^2+4320z-2475\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(172z^2-2340z+2475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(8z^2-360z+2475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9pa.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},-\frac{3}{4};z\right)=\frac{1}{2970}\left(e^{-2\sqrt{z}}\right.$$
$$\left(-16e^{4\sqrt{z}}z^{5/2}+16z^{5/2}+180e^{4\sqrt{z}}z^2+180z^2-165e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-165e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right.$$
$$\left.\left.z^{7/4}-720e^{4\sqrt{z}}z^{3/2}+720z^{3/2}+2340e^{4\sqrt{z}}z+2340z-2970e^{4\sqrt{z}}\sqrt{z}+2970\sqrt{z}+1485e^{4\sqrt{z}}+1485\right)\right)$$

07.22.03.a9pb.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},-\frac{3}{4};-z\right)=-\frac{2}{9}\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+\frac{2\left(8z^2-360z+1485\right)\sin\left(2\sqrt{z}\right)\sqrt{z}}{1485}+\frac{1}{33}\left(4z^2-52z+33\right)\cos\left(2\sqrt{z}\right)$$

07.22.03.a9pc.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},-\frac{1}{4};z\right)=-\frac{1}{990\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(73z^2-360z-495\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.\sqrt{z}\left(32z^2+1701z+3960\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-18z\left(29z+220\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9pd.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},-\frac{1}{4};-z\right)=\frac{1}{990\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(-2\left(73z^2+360z-495\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(32z^2-1701z+3960\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+18\left(220-29z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9pe.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{63\,360}\left(e^{-2\sqrt{z}}\left(4\left(64z^2+1460z^{3/2}+3975z+15\,840\sqrt{z}+e^{4\sqrt{z}}\left(64z^2-1460z^{3/2}+3975z-15\,840\sqrt{z}+7920\right)+7920\right)+\right.\right.$$
$$\left.\left.165e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}(16z+133)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+165e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}(16z+133)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9pf.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) =$$
$$\left(\frac{4z^2}{495}-\frac{265z}{528}+1\right)\cos\left(2\sqrt{z}\right)+\frac{1}{96}\sqrt{\pi}\,z^{3/4}(16z-133)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\frac{1}{396}(792-73z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a9pg.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) = \frac{1}{31\,680\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(2\left(944z^2+15\,195z+15\,840\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\,(1424z+19\,035)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-6z(272z+2085)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9ph.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{3}{4}; -z\right) = \frac{1}{31\,680\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(2\left(944z^2-15\,195z+15\,840\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+3(19\,035-1424z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+6z(272z-2085)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9pi.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{8\,110\,080\sqrt[4]{z}}$$
$$\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-8512z^{3/2}+31\,824z-8580\sqrt{z}+e^{4\sqrt{z}}\left(8512z^{3/2}+31\,824z+8580\sqrt{z}+500\,445\right)+500\,445\right)+\right.\right.$$
$$\left.\left.165e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+4256z+9177\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+165e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+4256z+9177\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9pj.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) = \frac{1}{2\,027\,520\sqrt[4]{z}}$$
$$\left(165\sqrt{\pi}\left(256z^2-4256z+9177\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(9(3536z-55\,605)\cos\left(2\sqrt{z}\right)+4(2145-2128z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9pk.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{7}{4}; z\right) = \frac{1}{337\,920\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(2816z^2+50\,400z+52\,935\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-256z^2+44\,480z+116\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(2816z^2+66\,720z+348\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9pl.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{7}{4}; -z\right) = \frac{1}{337\,920\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(2816z^2-50\,400z+52\,935\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(256z^2+44\,480z-116\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(2816z^2-66\,720z+348\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9pm.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{9}{4}; z\right) = \frac{1}{103\,809\,024\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-56\,320z^{5/2}-18\,688z^2-1\,955\,712z^{3/2}-3\,285\,216z-18\,170\,460\sqrt{z}+e^{4\sqrt{z}}\left(56\,320z^{5/2}-18\,688z^2+1\,955\,712z^{3/2}-3\,285\,216z+18\,170\,460\sqrt{z}-13\,627\,845\right)-13\,627\,845\right)+55e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+102\,144z^2+440\,496z-247\,779\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+55e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+102\,144z^2+440\,496z-247\,779\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9pn.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{9}{4}; -z\right) = \frac{1}{25\,952\,256\,z^{5/4}}\left(55\sqrt{\pi}\left(4096z^3-102\,144z^2+440\,496z+247\,779\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(\left(18\,688z^2-3\,285\,216z+13\,627\,845\right)\cos\left(2\sqrt{z}\right)+44\sqrt{z}\left(1280z^2-44\,448z+412\,965\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a9po.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{11}{4}; z\right) = \frac{1}{10\,813\,440\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(45\,056z^3+1\,332\,480z^2+10\,445\,520z+10\,094\,175\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(45\,056z^3+3\,367\,680z^2+61\,261\,200z+30\,282\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(45\,056z^3+1\,286\,400z^2+3\,341\,520z-30\,282\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9pp.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},\frac{11}{4};-z\right)=\frac{1}{10\,813\,440\sqrt{2}\,z^{5/4}}$$
$$\left(\left(2\sqrt{z}\left(45\,056z^3-1\,332\,480z^2+10\,445\,520z-10\,094\,175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-45\,056z^3+3\,367\,680z^2-61\,261\,200z+\right.\right.\right.$$
$$\left.\left.\left.30\,282\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(45\,056z^3-1\,286\,400z^2+3\,341\,520z+30\,282\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9pq.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{2\,952\,790\,016z^{9/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-901\,120z^{7/2}+225\,280z^3-28\,034\,048z^{5/2}+48\,071\,936z^2+124\,597\,440z^{3/2}+\right.\right.\right.$$
$$\left.\left.\left.1\,380\,954\,960z+2\,816\,421\,300\sqrt{z}\right)+e^{4\sqrt{z}}\left(901\,120z^{7/2}+225\,280z^3+28\,034\,048z^{5/2}+48\,071\,936z^2-\right.\right.\right.$$
$$\left.\left.\left.124\,597\,440z^{3/2}+1\,380\,954\,960z-2\,816\,421\,300\sqrt{z}+2\,112\,315\,975\right)+2\,112\,315\,975\right)+$$
$$55e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4+2\,179\,072z^3+14\,095\,872z^2-15\,857\,856z+38\,405\,745\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.55e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4+2\,179\,072z^3+14\,095\,872z^2-15\,857\,856z+38\,405\,745\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.a9pr.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{738\,197\,504z^{9/4}}\left(55\sqrt{\pi}\left(65\,536z^4-2\,179\,072z^3+14\,095\,872z^2+15\,857\,856z+38\,405\,745\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$2\sqrt[4]{z}\left(11\left(20\,480z^3-4\,370\,176z^2+125\,541\,360z-192\,028\,725\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.4\sqrt{z}\left(-225\,280z^3+7\,008\,512z^2+31\,149\,360z-704\,105\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9ps.01

$${}_1F_2\left(-\frac{7}{4};-\frac{11}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{283\,115\,520\sqrt{2}\,z^{9/4}}\left(\left(2\sqrt{z}\left(720\,896z^4+26\,853\,376z^3+156\,833\,280z^2-1\,938\,081\,600z-2\,331\,754\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-720\,896z^4-19\,046\,400z^3+1\,283\,143\,680z^2+16\,473\,693\,600z+6\,995\,263\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.2\sqrt{z}\left(720\,896z^4+27\,033\,600z^3+249\,500\,160z^2+1\,550\,465\,280z+6\,995\,263\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big)$$

07.22.03.a9pt.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) = \frac{1}{283\,115\,520\sqrt{2}\, z^{9/4}} \left(\left(2\sqrt{z}\left(720\,896 z^4 - 26\,853\,376 z^3 + 156\,833\,280 z^2 + 1\,938\,081\,600 z - 2\,331\,754\,425\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-720\,896 z^4 + 19\,046\,400 z^3 + 1\,283\,143\,680 z^2 - 16\,473\,693\,600 z + 6\,995\,263\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(720\,896 z^4 - 27\,033\,600 z^3 + 249\,500\,160 z^2 - 1\,550\,465\,280 z + 6\,995\,263\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9pu.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) = \frac{1}{188\,978\,561\,024 z^{13/4}} \left(13 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-2\,883\,584 z^{9/2} + 720\,896 z^4 - 120\,389\,632 z^{7/2} - 2\,916\,352 z^3 - 1\,812\,326\,400 z^{5/2} - 6\,977\,456\,640 z^2 - 36\,050\,192\,640 z^{3/2} - 108\,150\,577\,920 z - 177\,434\,541\,900\sqrt{z} + e^{4\sqrt{z}}\left(2\,883\,584 z^{9/2} + 720\,896 z^4 + 120\,389\,632 z^{7/2} - 2\,916\,352 z^3 + 1\,812\,326\,400 z^{5/2} - 6\,977\,456\,640 z^2 + 36\,050\,192\,640 z^{3/2} - 108\,150\,577\,920 z + 177\,434\,541\,900\sqrt{z} - 133\,075\,906\,425\right) - 133\,075\,906\,425\right) + 11 e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576 z^5 + 43\,581\,440 z^4 + 375\,889\,920 z^3 + 634\,314\,240 z^2 + 3\,072\,459\,600 z - 12\,097\,809\,675\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 11 e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576 z^5 + 43\,581\,440 z^4 + 375\,889\,920 z^3 + 634\,314\,240 z^2 + 3\,072\,459\,600 z - 12\,097\,809\,675\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9pv.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) = \frac{1}{47\,244\,640\,256 z^{13/4}} \left(13\left(11\sqrt{\pi}\left(1\,048\,576 z^5 - 43\,581\,440 z^4 + 375\,889\,920 z^3 + 634\,314\,240 z^2 + 3\,072\,459\,600 z + 12\,097\,809\,675\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(720\,896 z^4 + 2\,916\,352 z^3 - 6\,977\,456\,640 z^2 + 108\,150\,577\,920 z - 133\,075\,906\,425\right)\cos\left(2\sqrt{z}\right) - 4\sqrt{z}\left(720\,896 z^4 - 30\,097\,408 z^3 + 453\,081\,600 z^2 - 9\,012\,548\,160 z + 44\,358\,635\,475\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9pw.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) = \frac{1}{603\,979\,776\sqrt{2}\, z^{13/4}} \left(\left(2\sqrt{z}\left(1\,048\,576 z^5 + 47\,775\,744 z^4 + 473\,980\,928 z^3 + 3\,100\,930\,560 z^2 + 79\,945\,866\,000 z + 86\,274\,913\,725\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(1\,048\,576 z^5 + 48\,431\,104 z^4 + 2\,091\,048\,960 z^3 + 96\,128\,847\,360 z^2 + 634\,237\,203\,600 z + 258\,824\,741\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-1\,048\,576 z^5 - 48\,037\,888 z^4 - 453\,304\,320 z^3 + 5\,168\,217\,600 z^2 + 82\,077\,755\,760 z + 258\,824\,741\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9px.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) = \frac{1}{603\,979\,776\sqrt{2}\, z^{13/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576 z^5 - 47\,775\,744 z^4 + 473\,980\,928 z^3 - 3\,100\,930\,560 z^2 + 79\,945\,866\,000 z - 86\,274\,913\,725\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. \right. $$
$$ \left(-1\,048\,576 z^5 + 48\,431\,104 z^4 - 2\,091\,048\,960 z^3 + 96\,128\,847\,360 z^2 - 634\,237\,203\,600 z + 258\,824\,741\,175\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 - 48\,037\,888 z^4 + 453\,304\,320 z^3 + \right. $$
$$ \left. \left. 5\,168\,217\,600 z^2 - 82\,077\,755\,760 z + 258\,824\,741\,175\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a9py.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) = $$
$$ \frac{1}{72\,567\,767\,433\,216 z^{17/4}}\left(221 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-46\,137\,344 z^{11/2} + 11\,534\,336 z^5 - 2\,309\,750\,784 z^{9/2} + 586\,088\,448 z^4 - \right.\right.\right. $$
$$ 22\,037\,889\,024 z^{7/2} + 91\,341\,250\,560 z^3 + 1\,022\,514\,554\,880 z^{5/2} + 6\,272\,733\,519\,360 z^2 + $$
$$ 24\,090\,541\,231\,680 z^{3/2} + 59\,192\,163\,177\,840 z + 89\,959\,312\,743\,300\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(46\,137\,344 z^{11/2} + 11\,534\,336 z^5 + 2\,309\,750\,784 z^{9/2} + 586\,088\,448 z^4 + 22\,037\,889\,024 z^{7/2} + \right. $$
$$ \left. 91\,341\,250\,560 z^3 - 1\,022\,514\,554\,880 z^{5/2} + 6\,272\,733\,519\,360 z^2 - 24\,090\,541\,231\,680 z^{3/2} + \right. $$
$$ \left. 59\,192\,163\,177\,840 z - 89\,959\,312\,743\,300\sqrt{z} + 67\,469\,484\,557\,475\right) + 67\,469\,484\,557\,475\Big) + $$
$$ 11 e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 836\,763\,648 z^5 + 9\,021\,358\,080 z^4 - 20\,298\,055\,680 z^3 + \right. $$
$$ \left. 147\,478\,060\,800 z^2 - 1\,161\,389\,728\,800 z + 6\,133\,589\,505\,225\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ 11 e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 836\,763\,648 z^5 + 9\,021\,358\,080 z^4 - 20\,298\,055\,680 z^3 + \right. $$
$$ \left. \left. 147\,478\,060\,800 z^2 - 1\,161\,389\,728\,800 z + 6\,133\,589\,505\,225\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.a9pz.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) = $$
$$ \frac{1}{18\,141\,941\,858\,304 z^{17/4}}\left(221\left(11\sqrt{\pi}\left(16\,777\,216 z^6 - 836\,763\,648 z^5 + 9\,021\,358\,080 z^4 + 20\,298\,055\,680 z^3 + \right.\right.\right. $$
$$ \left. 147\,478\,060\,800 z^2 + 1\,161\,389\,728\,800 z + 6\,133\,589\,505\,225\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - $$
$$ 2\sqrt[4]{z}\left(\left(-11\,534\,336 z^5 + 586\,088\,448 z^4 - 91\,341\,250\,560 z^3 + 6\,272\,733\,519\,360 z^2 - 59\,192\,163\,177\,840 z + \right.\right. $$
$$ \left. 67\,469\,484\,557\,475\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(11\,534\,336 z^5 - 577\,437\,696 z^4 + 5\,509\,472\,256 z^3 + \right. $$
$$ \left. \left. \left. 255\,628\,638\,720 z^2 - 6\,022\,635\,307\,920 z + 22\,489\,828\,185\,825\right)\sin\left(2\sqrt{z}\right)\right)\right)\Bigg) $$

07.22.03.a9q0.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) = \left(19\left(2\sqrt{z}\,\left(16\,777\,216 z^6 + 903\,872\,512 z^5 + 10\,605\,494\,272 z^4 - 77\,178\,716\,160 z^3 - 3\,945\,934\,137\,600 z^2 - 51\,666\,348\,333\,600 z - 53\,059\,071\,940\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,777\,216 z^6 - 914\,358\,272 z^5 - 4\,328\,325\,120 z^4 + 2\,447\,667\,855\,360 z^3 + 76\,662\,755\,769\,600 z^2 + 397\,554\,802\,444\,800 z + 159\,177\,215\,822\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(16\,777\,216 z^6 + 908\,066\,816 z^5 + 10\,838\,016\,000 z^4 + 22\,899\,179\,520 z^3 + 4\,724\,267\,708\,160 z^2 + 57\,976\,742\,023\,200 z + 159\,177\,215\,822\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(251\,255\,586\,816\sqrt{2}\, z^{17/4}\right) $$

07.22.03.a9q1.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) = \left(19\left(2\sqrt{z}\,\left(16\,777\,216 z^6 - 903\,872\,512 z^5 + 10\,605\,494\,272 z^4 + 77\,178\,716\,160 z^3 - 3\,945\,934\,137\,600 z^2 + 51\,666\,348\,333\,600 z - 53\,059\,071\,940\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,777\,216 z^6 + 914\,358\,272 z^5 - 4\,328\,325\,120 z^4 - 2\,447\,667\,855\,360 z^3 + 76\,662\,755\,769\,600 z^2 - 397\,554\,802\,444\,800 z + 159\,177\,215\,822\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216 z^6 - 908\,066\,816 z^5 + 10\,838\,016\,000 z^4 - 22\,899\,179\,520 z^3 + 4\,724\,267\,708\,160 z^2 - 57\,976\,742\,023\,200 z + 159\,177\,215\,822\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(251\,255\,586\,816\sqrt{2}\, z^{17/4}\right) $$

For fixed z and $a_1 = -\frac{7}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.a9q2.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) = \left(\frac{4096 z^4}{2\,962\,575} + \frac{512 z^3}{10\,925} + \frac{2096 z^2}{3933} + \frac{400 z}{207} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(4096 z^4 + 321\,024 z^3 + 6\,116\,880 z^2 + 40\,817\,700 z + 68\,139\,225\right)\sinh\left(2\sqrt{z}\right)}{68\,139\,225} $$

07.22.03.a9q3.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, -\frac{23}{4}; -z\right) = \left(\frac{4096 z^4}{2\,962\,575} - \frac{512 z^3}{10\,925} + \frac{2096 z^2}{3933} - \frac{400 z}{207} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(4096 z^4 - 321\,024 z^3 + 6\,116\,880 z^2 - 40\,817\,700 z + 68\,139\,225\right)\sin\left(2\sqrt{z}\right)}{68\,139\,225} $$

07.22.03.a9q4.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, -\frac{21}{4}; z\right) = \frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(41\,984 z^4 + 1\,149\,120 z^3 + 9\,902\,880 z^2 + 18\,099\,900 z + 9\,398\,025\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048 z^4 + 134\,528 z^3 + 2\,106\,000 z^2 + 10\,581\,480 z + 9\,398\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(11\,008 z^3 + 323\,856 z^2 + 3\,063\,060 z + 9\,398\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9q5.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(41\,984 z^4 - 1\,149\,120 z^3 + 9\,902\,880 z^2 - 18\,099\,900 z + 9\,398\,025\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048 z^4 - 134\,528 z^3 + 2\,106\,000 z^2 - 10\,581\,480 z + 9\,398\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-11\,008 z^3 + 323\,856 z^2 - 3\,063\,060 z + 9\,398\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9q6.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, -\frac{19}{4}; z\right) = \left(\frac{2048 z^4}{2\,962\,575} + \frac{5504 z^3}{141\,075} + \frac{48 z^2}{95} + \frac{328 z}{171} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(3328 z^3 + 80\,080 z^2 + 577\,500 z + 987\,525\right)\sinh\left(2\sqrt{z}\right)}{987\,525} $$

07.22.03.a9q7.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, -\frac{19}{4}; -z\right) = \left(\frac{2048 z^4}{2\,962\,575} - \frac{5504 z^3}{141\,075} + \frac{48 z^2}{95} - \frac{328 z}{171} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-3328 z^3 + 80\,080 z^2 - 577\,500 z + 987\,525\right)\sin\left(2\sqrt{z}\right)}{987\,525} $$

07.22.03.a9q8.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, -\frac{17}{4}; z\right) = \frac{1}{447\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024 z^4 + 46\,400 z^3 + 456\,480 z^2 + 854\,100 z + 447\,525\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 36\sqrt{z}\left(512 z^3 + 10\,160 z^2 + 55\,120 z + 49\,725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(256 z^3 + 12\,816 z^2 + 138\,060 z + 447\,525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9q9.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},-\frac{17}{4};-z\right)=\frac{1}{447\,525\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(1024z^4-46\,400z^3+456\,480z^2-854\,100z+447\,525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-36\sqrt{z}\left(512z^3-10\,160z^2+55\,120z-49\,725\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-256z^3+12\,816z^2-138\,060z+447\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9qa.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},-\frac{15}{4};z\right)=\frac{1}{155\,925}$$
$$\left(\left(4352z^3+72\,240z^2+295\,680z+155\,925\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(256z^3+10\,640z^2+87\,780z+155\,925\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.a9qb.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},-\frac{15}{4};-z\right)=\frac{1}{155\,925}$$
$$\left(\left(-4352z^3+72\,240z^2-295\,680z+155\,925\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(-256z^3+10\,640z^2-87\,780z+155\,925\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9qc.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1984z^3+25\,440z^2+49\,500z+26\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(128z^3+4560z^2+28\,440z+26\,325\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+12z\left(176z^2+2460z+8775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9qd.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},-\frac{13}{4};-z\right)=$$
$$-\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1984z^3-25\,440z^2+49\,500z-26\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(128z^3-4560z^2+28\,440z-26\,325\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-12z\left(176z^2-2460z+8775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9qe.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},-\frac{11}{4};z\right)=\left(\frac{128z^3}{10\,395}+\frac{272z^2}{693}+\frac{184z}{99}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(496z^2+5460z+10\,395\right)\sinh\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.a9qf.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},-\frac{11}{4};-z\right)=\left(-\frac{128z^3}{10\,395}+\frac{272z^2}{693}-\frac{184z}{99}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(496z^2-5460z+10\,395\right)\sin\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.a9qg.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{2025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^3+1760z^2+3700z+2025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-20\sqrt{z}\left(48z^2+416z+405\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(16z^2+460z+2025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9qh.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},-\frac{9}{4};-z\right)=$$
$$-\frac{1}{2025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^3-1760z^2+3700z-2025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-20\sqrt{z}\left(48z^2-416z+405\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(16z^2-460z+2025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9qi.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},-\frac{7}{4};z\right)=\left(\frac{16z^2}{63}+\frac{16z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{945}\sqrt{z}\left(16z^2+420z+945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9qj.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},-\frac{7}{4};-z\right)=\left(\frac{16z^2}{63}-\frac{16z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\left(16z^2-420z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.a9qk.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},-\frac{5}{4};z\right)=\frac{1}{225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(5\left(32z^2+76z+45\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(8z^2+200z+225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+20z\left(4z+45\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9ql.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},-\frac{5}{4};-z\right)=\frac{1}{225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(5\left(32z^2-76z+45\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(8z^2-200z+225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+20\left(45-4z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9qm.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{270}e^{-2\sqrt{z}}\left(8e^{4\sqrt{z}}z^2+8z^2-22e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-22e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-\right.$$
$$\left.40e^{4\sqrt{z}}z^{3/2}+40z^{3/2}+200e^{4\sqrt{z}}z+200z-270e^{4\sqrt{z}}\sqrt{z}+270\sqrt{z}+135e^{4\sqrt{z}}+135\right)$$

07.22.03.a9qn.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},-\frac{3}{4};-z\right)=\frac{1}{135}\left(-44\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+10\left(27-4z\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(8z^2-200z+135\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a9qo.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) =$$

$$-\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\left(\left(18z^2-20z-45\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,(53z+180)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2z(13z+90)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9qp.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) =$$

$$-\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\left(\left(18z^2+20z-45\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,(53z-180)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2z(13z-90)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9qq.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) =$$

$$\frac{1}{2880}\left(e^{-2\sqrt{z}}\left(-20\left(-12z^{3/2}-25z-144\sqrt{z}+e^{4\sqrt{z}}\left(12z^{3/2}-25z+144\sqrt{z}-72\right)-72\right)+11e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left.\left.z^{3/4}(16z+105)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+11e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}(16z+105)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9qr.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) = \left(1-\frac{25z}{72}\right)\cos\left(2\sqrt{z}\right)+\frac{11}{720}\sqrt{\pi}\,z^{3/4}(16z-105)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\frac{1}{6}(z-12)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a9qs.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) = \frac{1}{4320\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(352z^2+4250z+4320\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\,(368z+7335)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2z(176z+1305)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9qt.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) = \frac{1}{4320\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(352z^2-4250z+4320\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(7335-368z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2z(176z-1305)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9qu.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) =$$

$$\frac{1}{368\,640\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-704z^{3/2}+688z-4380\sqrt{z}+e^{4\sqrt{z}}\left(704z^{3/2}+688z+4380\sqrt{z}+19\,755\right)+19\,755\right)+\right.\right.$$
$$\left.\left.11e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+3360z+5985\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+11e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+3360z+5985\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9qv.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},\frac{5}{4};-z\right)=\frac{1}{92\,160\sqrt[4]{z}}$$
$$\left(11\sqrt{\pi}\left(256z^2-3360z+5985\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(688z-19\,755\right)\cos\left(2\sqrt{z}\right)+4\left(1095-176z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9qw.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{230\,400\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(2816z^2+43\,840z+45\,585\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-2816z^2+33\,120z+208\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\left(2816z^2+48\,384z+208\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9qx.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},\frac{7}{4};-z\right)=$$
$$\frac{1}{230\,400\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(2816z^2-43\,840z+45\,585\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-2816z^2-33\,120z+208\,845\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(2816z^2-48\,384z+208\,845\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9qy.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{14\,155\,776z^{5/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-11\,264z^{5/2}+2816z^2-248\,448z^{3/2}-224\,544z-2\,018\,940\sqrt{z}+e^{4\sqrt{z}}\right.\right.\right.$$
$$\left.\left.\left(11\,264z^{5/2}+2816z^2+248\,448z^{3/2}-224\,544z+2\,018\,940\sqrt{z}-1\,514\,205\right)-1\,514\,205\right)+$$
$$11e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+80\,640z^2+287\,280z-137\,655\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.\left.11e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+80\,640z^2+287\,280z-137\,655\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9qz.01

$${}_1F_2\left(-\frac{7}{4};-\frac{9}{2},\frac{9}{4};-z\right)=\frac{1}{3\,538\,944z^{5/4}}\left(11\sqrt{\pi}\left(4096z^3-80\,640z^2+287\,280z+137\,655\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\sqrt[4]{z}\left(\left(2816z^2+224\,544z-1\,514\,205\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(2816z^2-62\,112z+504\,735\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9r0.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = \frac{1}{7\,372\,800\sqrt{2}\,z^{5/4}} \left(\left(2\sqrt{z}\left(45\,056z^3 + 1\,027\,840z^2 + 5\,754\,960z + 5\,221\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(45\,056z^3 + 1\,486\,080z^2 + 30\,073\,680z + 15\,663\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(45\,056z^3 + 1\,039\,104z^2 + 3\,341\,520z - 15\,663\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9r1.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = \frac{1}{7\,372\,800\sqrt{2}\,z^{5/4}} \left(\left(2\sqrt{z}\left(45\,056z^3 - 1\,027\,840z^2 + 5\,754\,960z - 5\,221\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-45\,056z^3 + 1\,486\,080z^2 - 30\,073\,680z + 15\,663\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(45\,056z^3 - 1\,039\,104z^2 + 3\,341\,520z + 15\,663\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9r2.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = \frac{1}{402\,653\,184\,z^{9/4}} \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-180\,224z^{7/2} + 45\,056z^3 - 4\,764\,672z^{5/2} + 2\,797\,824z^2 - 4\,614\,720z^{3/2} + 121\,136\,400z + 272\,556\,900\sqrt{z} + e^{4\sqrt{z}}\left(180\,224z^{7/2} + 45\,056z^3 + 4\,764\,672z^{5/2} + 2\,797\,824z^2 + 4\,614\,720z^{3/2} + 121\,136\,400z - 272\,556\,900\sqrt{z} + 204\,417\,675\right) + 204\,417\,675\right) + 11e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 1\,720\,320z^3 + 9\,192\,960z^2 - 8\,809\,920z + 18\,583\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 11e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 1\,720\,320z^3 + 9\,192\,960z^2 - 8\,809\,920z + 18\,583\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9r3.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = \frac{1}{100\,663\,296\,z^{9/4}} \left(11\sqrt{\pi}\left(65\,536z^4 - 1\,720\,320z^3 + 9\,192\,960z^2 + 8\,809\,920z + 18\,583\,425\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(-45\,056z^3 + 2\,797\,824z^2 - 121\,136\,400z + 204\,417\,675\right)\cos\left(2\sqrt{z}\right) + 44\sqrt{z}\left(4096z^3 - 108\,288z^2 + 104\,880z + 6\,194\,475\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a9r4.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{15}{4}; z\right) = \frac{1}{2\,123\,366\,400\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\left(720\,896z^4+21\,176\,320z^3+121\,512\,960z^2-835\,380\,000z-1\,059\,888\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-720\,896z^4-21\,626\,880z^3+320\,785\,920z^2+7\,351\,344\,000z+3\,179\,665\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(720\,896z^4+21\,356\,544z^3+142\,571\,520z^2+568\,058\,400z+3\,179\,665\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9r5.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{15}{4}; -z\right) = \frac{1}{2\,123\,366\,400\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\left(720\,896z^4-21\,176\,320z^3+121\,512\,960z^2+835\,380\,000z-1\,059\,888\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-720\,896z^4+21\,626\,880z^3+320\,785\,920z^2-7\,351\,344\,000z+3\,179\,665\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(720\,896z^4-21\,356\,544z^3+142\,571\,520z^2-568\,058\,400z+3\,179\,665\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9r6.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{17}{4}; z\right) = \frac{1}{128\,849\,018\,880\,z^{13/4}}\left(13e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-2\,883\,584z^{9/2}+720\,896z^4-95\,158\,272z^{7/2}+24\,330\,240z^3-818\,903\,040z^{5/2}-1\,882\,805\,760z^2-12\,958\,133\,760z^{3/2}-44\,481\,286\,080z-76\,043\,375\,100\sqrt{z}+e^{4\sqrt{z}}\left(2\,883\,584z^{9/2}+720\,896z^4+95\,158\,272z^{7/2}+24\,330\,240z^3+818\,903\,040z^{5/2}-1\,882\,805\,760z^2+12\,958\,133\,760z^{3/2}-44\,481\,286\,080z+76\,043\,375\,100\sqrt{z}-57\,032\,531\,325\right)-57\,032\,531\,325\right)+11e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5+34\,406\,400z^4+245\,145\,600z^3-352\,396\,800z^2+1\,486\,674\,000z-5\,184\,775\,575\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+11e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5+34\,406\,400z^4+245\,145\,600z^3-352\,396\,800z^2+1\,486\,674\,000z-5\,184\,775\,575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9r7.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = \frac{1}{32\,212\,254\,720\,z^{13/4}}\left(13\left(11\sqrt{\pi}\left(1\,048\,576z^5-34\,406\,400z^4+245\,145\,600z^3+352\,396\,800z^2+1\,486\,674\,000z+5\,184\,775\,575\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(4\sqrt{z}\left(720\,896z^4-23\,789\,568z^3+204\,725\,760z^2-3\,239\,533\,440z+19\,010\,843\,775\right)\sin\left(2\sqrt{z}\right)-11\left(65\,536z^4-2\,211\,840z^3-171\,164\,160z^2+4\,043\,753\,280z-5\,184\,775\,575\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9r8.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) = \frac{1}{4\,529\,848\,320\sqrt{2}\, z^{13/4}} $$
$$ \left(11\left(2\sqrt{z}\left(1\,048\,576 z^5 + 37\,683\,200 z^4 + 297\,246\,720 z^3 + 534\,643\,200 z^2 + 31\,493\,826\,000 z + 34\,976\,316\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ \left(1\,048\,576 z^5 + 38\,338\,560 z^4 + 570\,286\,080 z^3 + 32\,613\,235\,200 z^2 + 254\,373\,210\,000 z + 104\,928\,949\,125\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-1\,048\,576 z^5 - 37\,945\,344 z^4 - 307\,077\,120 z^3 + \right. $$
$$ \left. \left. 1\,603\,929\,600 z^2 + 30\,524\,785\,200 z + 104\,928\,949\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a9r9.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) = \frac{1}{4\,529\,848\,320\sqrt{2}\, z^{13/4}} $$
$$ \left(11\left(2\sqrt{z}\left(1\,048\,576 z^5 - 37\,683\,200 z^4 + 297\,246\,720 z^3 - 534\,643\,200 z^2 + 31\,493\,826\,000 z - 34\,976\,316\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. \right. $$
$$ \left(-1\,048\,576 z^5 + 38\,338\,560 z^4 - 570\,286\,080 z^3 + 32\,613\,235\,200 z^2 - 254\,373\,210\,000 z + 104\,928\,949\,125\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 - 37\,945\,344 z^4 + 307\,077\,120 z^3 + \right. $$
$$ \left. \left. 1\,603\,929\,600 z^2 - 30\,524\,785\,200 z + 104\,928\,949\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.a9ra.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) = $$
$$ \frac{1}{49\,478\,023\,249\,920 z^{17/4}}\left(221 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-46\,137\,344 z^{11/2} + 11\,534\,336 z^5 - 1\,825\,308\,672 z^{9/2} + 464\,977\,920 z^4 - \right. \right. \right. $$
$$ 16\,539\,156\,480 z^{7/2} + 16\,592\,855\,040 z^3 + 265\,687\,050\,240 z^{5/2} + 1\,974\,620\,229\,120 z^2 + $$
$$ 8\,516\,858\,011\,200 z^{3/2} + 22\,204\,665\,529\,200 z + 34\,599\,735\,670\,500\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(46\,137\,344 z^{11/2} + 11\,534\,336 z^5 + 1\,825\,308\,672 z^{9/2} + 464\,977\,920 z^4 + 16\,539\,156\,480 z^{7/2} + \right. $$
$$ \left. 16\,592\,855\,040 z^3 - 265\,687\,050\,240 z^{5/2} + 1\,974\,620\,229\,120 z^2 - 8\,516\,858\,011\,200 z^{3/2} + \right. $$
$$ \left. 22\,204\,665\,529\,200 z - 34\,599\,735\,670\,500\sqrt{z} + 25\,949\,801\,752\,875\right) + 25\,949\,801\,752\,875\Big) + $$
$$ 11 e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 660\,602\,880 z^5 + 5\,883\,494\,400 z^4 - 11\,276\,697\,600 z^3 + \right. $$
$$ \left. 71\,360\,352\,000 z^2 - 497\,738\,455\,200 z + 2\,359\,072\,886\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ 11 e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 660\,602\,880 z^5 + 5\,883\,494\,400 z^4 - 11\,276\,697\,600 z^3 + \right. $$
$$ \left. \left. 71\,360\,352\,000 z^2 - 497\,738\,455\,200 z + 2\,359\,072\,886\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.a9rb.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) =$$
$$\frac{1}{12\,369\,505\,812\,480\,z^{17/4}}\left(221\left(11\sqrt{\pi}\left(16\,777\,216\,z^6 - 660\,602\,880\,z^5 + 5\,883\,494\,400\,z^4 + 11\,276\,697\,600\,z^3 + 71\,360\,352\,000\,z^2 + 497\,738\,455\,200\,z + 2\,359\,072\,886\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(-11\,534\,336\,z^5 + 464\,977\,920\,z^4 - 16\,592\,855\,040\,z^3 + 1\,974\,620\,229\,120\,z^2 - 22\,204\,665\,529\,200\,z + 25\,949\,801\,752\,875\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(11\,534\,336\,z^5 - 456\,327\,168\,z^4 + 4\,134\,789\,120\,z^3 + 66\,421\,762\,560\,z^2 - 2\,129\,214\,502\,800\,z + 8\,649\,933\,917\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a9rc.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) =$$
$$\left(209\left(2\sqrt{z}\left(16\,777\,216\,z^6 + 713\,031\,680\,z^5 + 6\,896\,025\,600\,z^4 - 22\,811\,443\,200\,z^3 - 1\,124\,087\,328\,000\,z^2 - 18\,547\,440\,912\,000\,z - 19\,411\,855\,588\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,777\,216\,z^6 - 723\,517\,440\,z^5 - 7\,369\,850\,880\,z^4 + 564\,583\,219\,200\,z^3 + 25\,466\,392\,224\,000\,z^2 + 144\,382\,233\,996\,000\,z + 58\,235\,566\,764\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(16\,777\,216\,z^6 + 717\,225\,984\,z^5 + 7\,080\,837\,120\,z^4 - 7\,896\,268\,800\,z^3 + 1\,418\,675\,731\,200\,z^2 + 20\,146\,358\,232\,000\,z + 58\,235\,566\,764\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(1\,884\,416\,901\,120\sqrt{2}\,z^{17/4}\right)$$

07.22.03.a9rd.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) =$$
$$\left(209\left(2\sqrt{z}\left(16\,777\,216\,z^6 - 713\,031\,680\,z^5 + 6\,896\,025\,600\,z^4 + 22\,811\,443\,200\,z^3 - 1\,124\,087\,328\,000\,z^2 + 18\,547\,440\,912\,000\,z - 19\,411\,855\,588\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,777\,216\,z^6 + 723\,517\,440\,z^5 - 7\,369\,850\,880\,z^4 - 564\,583\,219\,200\,z^3 + 25\,466\,392\,224\,000\,z^2 - 144\,382\,233\,996\,000\,z + 58\,235\,566\,764\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216\,z^6 - 717\,225\,984\,z^5 + 7\,080\,837\,120\,z^4 + 7\,896\,268\,800\,z^3 + 1\,418\,675\,731\,200\,z^2 - 20\,146\,358\,232\,000\,z + 58\,235\,566\,764\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(1\,884\,416\,901\,120\sqrt{2}\,z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{7}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.a9re.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{23}{4};z\right)=$$

$$\left(\frac{4096\,z^4}{7\,571\,025}+\frac{3584\,z^3}{98\,325}+\frac{3248\,z^2}{6555}+\frac{44\,z}{23}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(2048\,z^3+53\,760\,z^2+399\,000\,z+688\,275\right)\sinh\left(2\sqrt{z}\right)}{688\,275}$$

07.22.03.a9rf.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{23}{4};-z\right)=$$

$$\left(\frac{4096\,z^4}{7\,571\,025}-\frac{3584\,z^3}{98\,325}+\frac{3248\,z^2}{6555}-\frac{44\,z}{23}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-2048\,z^3+53\,760\,z^2-399\,000\,z+688\,275\right)\sin\left(2\sqrt{z}\right)}{688\,275}$$

07.22.03.a9rg.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{21}{4};z\right)=$$

$$\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048\,z^4+104\,320\,z^3+1\,057\,680\,z^2+1\,989\,000\,z+1\,044\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-156\sqrt{z}\left(256\,z^3+5360\,z^2+29\,580\,z+26\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(512\,z^3+28\,704\,z^2+318\,240\,z+1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9rh.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{21}{4};-z\right)=$$

$$\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048\,z^4-104\,320\,z^3+1\,057\,680\,z^2-1\,989\,000\,z+1\,044\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-156\sqrt{z}\left(256\,z^3-5360\,z^2+29\,580\,z-26\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-512\,z^3+28\,704\,z^2-318\,240\,z+1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9ri.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{19}{4};z\right)=$$

$$\left(\frac{256\,z^3}{9405}+\frac{656\,z^2}{1425}+\frac{36\,z}{19}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(512\,z^3+22\,176\,z^2+184\,800\,z+329\,175\right)\sinh\left(2\sqrt{z}\right)}{329\,175}$$

07.22.03.a9rj.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{19}{4};-z\right)=$$

$$\left(-\frac{256\,z^3}{9405}+\frac{656\,z^2}{1425}-\frac{36\,z}{19}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-512\,z^3+22\,176\,z^2-184\,800\,z+329\,175\right)\sin\left(2\sqrt{z}\right)}{329\,175}$$

07.22.03.a9rk.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{17}{4};z\right)=\frac{1}{49\,725\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(15\left(256z^3+3216z^2+6240z+3315\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^3+8720z^2+53\,820z+49\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(1024z^2+14\,040z+49\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9rl.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{17}{4};-z\right)=\frac{1}{49\,725\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(-15\left(256z^3-3216z^2+6240z-3315\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^3-8720z^2+53\,820z-49\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(1024z^2-14\,040z+49\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9rm.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{15}{4};z\right)=\left(\frac{256z^3}{17\,325}+\frac{112z^2}{275}+\frac{28z}{15}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(128z^2+1320z+2475\right)\sinh\left(2\sqrt{z}\right)}{2475}$$

07.22.03.a9rn.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{15}{4};-z\right)=\left(-\frac{256z^3}{17\,325}+\frac{112z^2}{275}-\frac{28z}{15}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(128z^2-1320z+2475\right)\sin\left(2\sqrt{z}\right)}{2475}$$

07.22.03.a9ro.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{2925\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^3+2640z^2+5400z+2925\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-20\sqrt{z}\left(80z^2+612z+585\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(32z^2+720z+2925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9rp.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{2925\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-128z^3+2640z^2-5400z+2925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+20\sqrt{z}\left(80z^2-612z+585\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(32z^2-720z+2925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9rq.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{11}{4};z\right)=\left(\frac{368z^2}{1155}+\frac{20z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(32z^2+560z+1155\right)\sinh\left(2\sqrt{z}\right)}{1155}$$

07.22.03.a9rr.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{11}{4};-z\right)=\left(\frac{368\,z^2}{1155}-\frac{20\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(32\,z^2-560\,z+1155\right)\sin\left(2\sqrt{z}\right)}{1155}$$

07.22.03.a9rs.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{9}{4};z\right)=\frac{1}{225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(176\,z^2+400\,z+225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(16\,z^2+220\,z+225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+20\,z\,(8\,z+45)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9rt.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{9}{4};-z\right)=\frac{1}{225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(176\,z^2-400\,z+225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(16\,z^2-220\,z+225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+20\,(45-8\,z)\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9ru.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{7}{4};z\right)=\left(\frac{16\,z^2}{105}+\frac{12\,z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\,(8\,z+21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9rv.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{7}{4};-z\right)=\left(\frac{16\,z^2}{105}-\frac{12\,z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}\,(21-8\,z)\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a9rw.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{5}{4};z\right)=\frac{\sqrt[4]{z}\left((4\,z+5)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)-10\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)\right)^2\Gamma\left(\frac{3}{4}\right)^2}{25\sqrt{2}}$$

07.22.03.a9rx.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{5}{4};-z\right)=\frac{\sqrt[4]{z}\left((4\,z-5)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)-10\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)\right)^2\Gamma\left(\frac{3}{4}\right)^2}{25\sqrt{2}}$$

07.22.03.a9ry.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{3}{4};z\right)=\frac{1}{30}e^{-2\sqrt{z}}$$
$$\left(-4\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}-4\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+5\left(4\,z+6\sqrt{z}\,+e^{4\sqrt{z}}\,\left(4\,z-6\sqrt{z}\,+3\right)+3\right)\right)$$

07.22.03.a9rz.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{3}{4};-z\right)=-\frac{8}{15}\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+2\sin\left(2\sqrt{z}\right)\sqrt{z}\,+\left(1-\frac{4\,z}{3}\right)\cos\left(2\sqrt{z}\right)$$

07.22.03.a9s0.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},-\frac{1}{4};z\right)=-\frac{\sqrt[4]{z}\left(\left(4\,z^2-5\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+2\sqrt{z}\,(z+10)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-4\,z\,(z+5)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.a9s1.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) = -\frac{\sqrt[4]{z}\left(\left(4z^2-5\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2(z-10)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4(z-5)\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.a9s2.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) = \frac{1}{160}e^{-2\sqrt{z}}\left(4\left(4z^{3/2}+3z+40\sqrt{z}+e^{4\sqrt{z}}\left(-4z^{3/2}+3z-40\sqrt{z}+20\right)+20\right)+\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}(16z+77)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}(16z+77)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)$$

07.22.03.a9s3.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) = \frac{1}{40}\left((40-6z)\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\,z^{3/4}(16z-77)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-8(z-10)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9s4.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{240\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2+250z+240\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\,(16z+375)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2z(16z+105)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9s5.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) =$$
$$\frac{1}{240\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2-250z+240\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(375-16z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2z(16z-105)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9s6.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) =$$
$$\frac{1}{20\,480\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-64z^{3/2}+16z-500\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}+16z+500\sqrt{z}+905\right)+905\right)+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+2464z+3465\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+2464z+3465\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9s7.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) =$$
$$\frac{1}{5120\sqrt[4]{z}}\left(\sqrt{\pi}\left(256z^2-2464z+3465\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left((16z-905)\cos\left(2\sqrt{z}\right)+4(125-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9s8.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) =$$
$$\frac{1}{12\,800\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(256z^2+3040z+3085\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-256z^2-1280z+9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\left(256z^2+3104z+9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9s9.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},\frac{7}{4};-z\right)=$$
$$\frac{1}{12\,800\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\,\left(256z^2-3040z+3085\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-256z^2+1280z+9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(256z^2-3104z+9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9sa.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},\frac{9}{4};z\right)=\frac{1}{786\,432\,z^{5/4}}$$
$$\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1024z^{5/2}+256z^2-14\,976z^{3/2}-2208z-87\,780\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2+14\,976z^{3/2}-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.2208z+87\,780\sqrt{z}-65\,835\right)-65\,835\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+59\,136z^2+166\,320z-65\,835\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+59\,136z^2+166\,320z-65\,835\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9sb.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},\frac{9}{4};-z\right)=\frac{1}{196\,608\,z^{5/4}}\left(\sqrt{\pi}\left(4096z^3-59\,136z^2+166\,320z+65\,835\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\sqrt[4]{z}\left(\left(256z^2+2208z-65\,835\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2-3744z+21\,945\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9sc.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},\frac{11}{4};z\right)=\frac{1}{409\,600\sqrt{2}\,z^{5/4}}$$
$$\left(\left(2\sqrt{z}\,\left(4096z^3+68\,352z^2+257\,840z+208\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096z^3+70\,912z^2+1\,113\,840z+626\,535\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(4096z^3+69\,376z^2+222\,768z-626\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9sd.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},\frac{11}{4};-z\right)=\frac{1}{409\,600\sqrt{2}\,z^{5/4}}$$
$$\left(\left(2\sqrt{z}\,\left(4096z^3-68\,352z^2+257\,840z-208\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4096z^3+70\,912z^2-1\,113\,840z+626\,535\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4096z^3-69\,376z^2+222\,768z+626\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9se.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, \frac{13}{4}; z\right) = \frac{1}{67\,108\,864\, z^{9/4}} \left(3\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-16\,384\, z^{7/2} + 4096\, z^3 - 318\,464\, z^{5/2} + 82\,688\, z^2 - 1\,003\,200\, z^{3/2} + 3\,862\,320\, z + 10\,094\,700\sqrt{z} + e^{4\sqrt{z}}\left(16\,384\, z^{7/2} + 4096\, z^3 + 318\,464\, z^{5/2} + 82\,688\, z^2 + 1\,003\,200\, z^{3/2} + 3\,862\,320\, z - 10\,094\,700\sqrt{z} + 7\,571\,025\right) + 7\,571\,025\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\, z^4 + 1\,261\,568\, z^3 + 5\,322\,240\, z^2 - 4\,213\,440\, z + 7\,571\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\, z^4 + 1\,261\,568\, z^3 + 5\,322\,240\, z^2 - 4\,213\,440\, z + 7\,571\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9sf.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) = \frac{1}{16\,777\,216\, z^{9/4}} \left(3\left(\sqrt{\pi}\left(65\,536\, z^4 - 1\,261\,568\, z^3 + 5\,322\,240\, z^2 + 4\,213\,440\, z + 7\,571\,025\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(-4096\, z^3 + 82\,688\, z^2 - 3\,862\,320\, z + 7\,571\,025\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(4096\, z^3 - 79\,616\, z^2 + 250\,800\, z + 2\,523\,675\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9sg.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) = \frac{1}{117\,964\,800\sqrt{2}\, z^{9/4}} \left(11\left(2\sqrt{z}\left(65\,536\, z^4 + 1\,409\,024\, z^3 + 6\,750\,720\, z^2 - 26\,732\,160\, z - 36\,547\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-65\,536\, z^4 - 1\,449\,984\, z^3 + 247\,272\,480\, z + 109\,643\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(65\,536\, z^4 + 1\,425\,408\, z^3 + 7\,128\,576\, z^2 + 13\,366\,080\, z + 109\,643\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9sh.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, \frac{15}{4}; -z\right) = \frac{1}{117\,964\,800\sqrt{2}\, z^{9/4}} \left(11\left(2\sqrt{z}\left(65\,536\, z^4 - 1\,409\,024\, z^3 + 6\,750\,720\, z^2 + 26\,732\,160\, z - 36\,547\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-65\,536\, z^4 + 1\,449\,984\, z^3 - 247\,272\,480\, z + 109\,643\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(65\,536\, z^4 - 1\,425\,408\, z^3 + 7\,128\,576\, z^2 - 13\,366\,080\, z + 109\,643\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9si.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) = \frac{1}{21\,474\,836\,480\, z^{13/4}} \left(39\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-262\,144\, z^{9/2} + 65\,536\, z^4 - 6\,356\,992\, z^{7/2} + 1\,638\,400\, z^3 - 36\,771\,840\, z^{5/2} - 20\,866\,560\, z^2 - 313\,800\,960\, z^{3/2} - 1\,356\,727\,680\, z - 2\,453\,012\,100\sqrt{z} + e^{4\sqrt{z}}\left(262\,144\, z^{9/2} + 65\,536\, z^4 + 6\,356\,992\, z^{7/2} + 1\,638\,400\, z^3 + 36\,771\,840\, z^{5/2} - 20\,866\,560\, z^2 + 313\,800\,960\, z^{3/2} - 1\,356\,727\,680\, z + 2\,453\,012\,100\sqrt{z} - 1\,839\,759\,075\right) - 1\,839\,759\,075\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 + 25\,231\,360\, z^4 + 141\,926\,400\, z^3 - 168\,537\,600\, z^2 + 605\,682\,000\, z - 1\,839\,759\,075\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 + 25\,231\,360\, z^4 + 141\,926\,400\, z^3 - 168\,537\,600\, z^2 + 605\,682\,000\, z - 1\,839\,759\,075\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9sj.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) = \frac{1}{5\,368\,709\,120\, z^{13/4}} \left(39\left(\sqrt{\pi}\left(1\,048\,576\, z^5 - 25\,231\,360\, z^4 + 141\,926\,400\, z^3 + 168\,537\,600\, z^2 + 605\,682\,000\, z + 1\,839\,759\,075\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(-65\,536\, z^4 + 1\,638\,400\, z^3 + 20\,866\,560\, z^2 - 1\,356\,727\,680\, z + 1\,839\,759\,075\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(65\,536\, z^4 - 1\,589\,248\, z^3 + 9\,192\,960\, z^2 - 78\,450\,240\, z + 613\,253\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9sk.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) = \frac{1}{251\,658\,240\sqrt{2}\, z^{13/4}} \left(\left(2\sqrt{z}\left(1\,048\,576\, z^5 + 27\,590\,656\, z^4 + 171\,089\,920\, z^3 - 106\,928\,640\, z^2 + 10\,108\,098\,000\, z + 11\,658\,772\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(1\,048\,576\, z^5 + 28\,246\,016\, z^4 + 190\,095\,360\, z^3 + 8\,233\,505\,280\, z^2 + 83\,621\,538\,000\, z + 34\,976\,316\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-1\,048\,576\, z^5 - 27\,852\,800\, z^4 - 178\,397\,184\, z^3 + 392\,071\,680\, z^2 + 9\,005\,396\,400\, z + 34\,976\,316\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9sl.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = \frac{1}{251\,658\,240\sqrt{2}\, z^{13/4}} \left(\left(2\sqrt{z}\left(1\,048\,576\, z^5 - 27\,590\,656\, z^4 + 171\,089\,920\, z^3 + 106\,928\,640\, z^2 + 10\,108\,098\,000\, z - 11\,658\,772\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-1\,048\,576\, z^5 + 28\,246\,016\, z^4 - 190\,095\,360\, z^3 + 8\,233\,505\,280\, z^2 - 83\,621\,538\,000\, z + 34\,976\,316\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576\, z^5 - 27\,852\,800\, z^4 + 178\,397\,184\, z^3 + 392\,071\,680\, z^2 - 9\,005\,396\,400\, z + 34\,976\,316\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9sm.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) = \frac{1}{2\,748\,779\,069\,440\, z^{17/4}} \left(221\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\, \left(-4\,194\,304\, z^{11/2} + 1\,048\,576\, z^5 - 121\,896\,960\, z^{9/2} + 31\,260\,672\, z^4 - 875\,986\,944\, z^{7/2} + 245\,145\,600\, z^3 + 4\,148\,213\,760\, z^{5/2} + 41\,532\,480\,000\, z^2 + 216\,425\,753\,280\, z^{3/2} + 614\,234\,229\,840\, z + 988\,563\,876\,300\, \sqrt{z} + e^{4\sqrt{z}} \left(4\,194\,304\, z^{11/2} + 1\,048\,576\, z^5 + 121\,896\,960\, z^{9/2} + 31\,260\,672\, z^4 + 875\,986\,944\, z^{7/2} + 245\,145\,600\, z^3 - 4\,148\,213\,760\, z^{5/2} + 41\,532\,480\,000\, z^2 - 216\,425\,753\,280\, z^{3/2} + 614\,234\,229\,840\, z - 988\,563\,876\,300\, \sqrt{z} + 741\,422\,907\,225\right) + 741\,422\,907\,225\right) + e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(16\,777\,216\, z^6 + 484\,442\,112\, z^5 + 3\,406\,233\,600\, z^4 - 5\,393\,203\,200\, z^3 + 29\,072\,736\,000\, z^2 - 176\,616\,871\,200\, z + 741\,422\,907\,225\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(16\,777\,216\, z^6 + 484\,442\,112\, z^5 + 3\,406\,233\,600\, z^4 - 5\,393\,203\,200\, z^3 + 29\,072\,736\,000\, z^2 - 176\,616\,871\,200\, z + 741\,422\,907\,225\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9sn.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) = \frac{1}{687\,194\,767\,360\, z^{17/4}} \left(221 \left(\sqrt{\pi}\, \left(16\,777\,216\, z^6 - 484\,442\,112\, z^5 + 3\,406\,233\,600\, z^4 + 5\,393\,203\,200\, z^3 + 29\,072\,736\,000\, z^2 + 176\,616\,871\,200\, z + 741\,422\,907\,225\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\, \left(\left(-1\,048\,576\, z^5 + 31\,260\,672\, z^4 - 245\,145\,600\, z^3 + 41\,532\,480\,000\, z^2 - 614\,234\,229\,840\, z + 741\,422\,907\,225\right) \cos\left(2\sqrt{z}\right) + 4\sqrt{z}\, \left(1\,048\,576\, z^5 - 30\,474\,240\, z^4 + 218\,996\,736\, z^3 + 1\,037\,053\,440\, z^2 - 54\,106\,438\,320\, z + 247\,140\,969\,075\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9so.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = \left(19 \left(2\sqrt{z}\, \left(16\,777\,216\, z^6 + 522\,190\,848\, z^5 + 3\,973\,775\,360\, z^4 - 7\,984\,005\,120\, z^3 - 220\,540\,320\,000\, z^2 - 5\,383\,021\,644\,000\, z - 5\,771\,092\,201\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,777\,216\, z^6 - 532\,676\,608\, z^5 - 4\,328\,325\,120\, z^4 + 75\,277\,762\,560\, z^3 + 6\,630\,912\,288\,000\, z^2 + 42\,531\,200\,712\,000\, z + 17\,313\,276\,605\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\, \left(16\,777\,216\, z^6 + 526\,385\,152\, z^5 + 4\,110\,876\,672\, z^4 - 6\,755\,696\,640\, z^3 + 320\,518\,598\,400\, z^2 + 5\,596\,210\,620\,000\, z + 17\,313\,276\,605\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(104\,689\,827\,840\, \sqrt{2}\, z^{17/4}\right) $$

07.22.03.a9sp.01

$${}_1F_2\left(-\frac{7}{4};-\frac{7}{2},\frac{23}{4};-z\right)=$$

$$\left(19\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-522\,190\,848\,z^5+3\,973\,775\,360\,z^4+7\,984\,005\,120\,z^3-220\,540\,320\,000\,z^2+5\,383\,021\,644\,000\,z-\right.\right.\right.$$

$$\left.\left.\left.5\,771\,092\,201\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-16\,777\,216\,z^6+532\,676\,608\,z^5-4\,328\,325\,120\,z^4-75\,277\,762\,560\,z^3+\right.\right.\right.$$

$$\left.\left.\left.6\,630\,912\,288\,000\,z^2-42\,531\,200\,712\,000\,z+17\,313\,276\,605\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(16\,777\,216\,z^6-526\,385\,152\,z^5+4\,110\,876\,672\,z^4+6\,755\,696\,640\,z^3+320\,518\,598\,400\,z^2-\right.\right.\right.$$

$$\left.\left.\left.5\,596\,210\,620\,000\,z+17\,313\,276\,605\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(104\,689\,827\,840\,\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1=-\frac{7}{4}$, $b_{1.}=-\frac{5}{2}$

07.22.03.a9sq.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},-\frac{23}{4};z\right)=\frac{1}{1\,081\,575}$$

$$\left(11\left(2048\,z^3+42\,240\,z^2+184\,680\,z+98\,325\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(1024\,z^3+63\,360\,z^2+589\,380\,z+1\,081\,575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.a9sr.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},-\frac{23}{4};-z\right)=$$

$$\left(-\frac{2048\,z^3}{98\,325}+\frac{2816\,z^2}{6555}-\frac{216\,z}{115}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(-1024\,z^3+63\,360\,z^2-589\,380\,z+1\,081\,575\right)\sin\left(2\sqrt{z}\right)}{1\,081\,575}$$

07.22.03.a9ss.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},-\frac{21}{4};z\right)=$$

$$\frac{1}{149\,175\,\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(9472\,z^3+140\,400\,z^2+278\,460\,z+149\,175\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(512\,z^3+23\,712\,z^2+159\,120\,z+149\,175\right)\right.\right.$$

$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+156\,z\left(64\,z^2+1020\,z+3825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9st.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},-\frac{21}{4};-z\right)=-\frac{1}{149\,175\,\sqrt{2}}$$

$$\left(\sqrt[4]{z}\,\left(\left(9472\,z^3-140\,400\,z^2+278\,460\,z-149\,175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(512\,z^3-23\,712\,z^2+159\,120\,z-149\,175\right)\right.\right.$$

$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-156\,z\left(64\,z^2-1020\,z+3825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9su.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},-\frac{19}{4};z\right)=\left(\frac{512\,z^3}{47\,025}+\frac{544\,z^2}{1425}+\frac{176\,z}{95}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(64\,z^2+740\,z+1425\right)\sinh\left(2\sqrt{z}\right)}{1425}$$

07.22.03.a9sv.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},-\frac{19}{4};-z\right)=\left(-\frac{512\,z^3}{47\,025}+\frac{544\,z^2}{1425}-\frac{176\,z}{95}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(64\,z^2-740\,z+1425\right)\sin\left(2\sqrt{z}\right)}{1425}$$

07.22.03.a9sw.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},-\frac{17}{4};z\right)=\frac{1}{49\,725\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(1792\,z^3+43\,920\,z^2+91\,260\,z+49\,725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(6272\,z^2+51\,480\,z+49\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(448\,z^2+11\,700\,z+49\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9sx.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},-\frac{17}{4};-z\right)=\frac{1}{49\,725\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(-1792\,z^3+43\,920\,z^2-91\,260\,z+49\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(6272\,z^2-51\,480\,z+49\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(448\,z^2-11\,700\,z+49\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9sy.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},-\frac{15}{4};z\right)=\left(\frac{256\,z^2}{825}+\frac{136\,z}{75}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(64\,z^2+1188\,z+2475\right)\sinh\left(2\sqrt{z}\right)}{2475}$$

07.22.03.a9sz.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},-\frac{15}{4};-z\right)=\left(\frac{256\,z^2}{825}-\frac{136\,z}{75}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(64\,z^2-1188\,z+2475\right)\sin\left(2\sqrt{z}\right)}{2475}$$

07.22.03.a9t0.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},-\frac{13}{4};z\right)=\frac{1}{2925\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(5\left(464\,z^2+1044\,z+585\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(224\,z^2+2880\,z+2925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+180\,z\,(12\,z+65)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9t1.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, -\frac{13}{4}; -z\right) = \frac{1}{2925\sqrt{2}} \left(\sqrt[4]{z}\left(5\left(464z^2-1044z+585\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(224z^2-2880z+2925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+180\left(65-12z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9t2.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, -\frac{11}{4}; z\right) = \left(\frac{32z^2}{165}+\frac{96z}{55}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{165}\sqrt{z}\left(68z+165\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.a9t3.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, -\frac{11}{4}; -z\right) = \left(\frac{32z^2}{165}-\frac{96z}{55}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{165}\left(165-68z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.a9t4.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) = \frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(144z^2+380z+225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-100\sqrt{z}\left(8z+9\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+20z\left(4z+45\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9t5.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) = \frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(144z^2-380z+225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-100\sqrt{z}\left(8z-9\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+20\left(45-4z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9t6.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, -\frac{7}{4}; z\right) = \left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\left(4z+15\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.a9t7.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, -\frac{7}{4}; -z\right) = \left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}\left(15-4z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.a9t8.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, -\frac{5}{4}; z\right) = \frac{1}{25\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16z^2+36z+25\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(16z+25\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\left(25-4z\right)zI_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9t9.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, -\frac{5}{4}; -z\right) = \frac{1}{25\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16z^2-36z+25\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\left(25-16z\right)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(4z+25\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9ta.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{30} e^{-2\sqrt{z}} \left(-8 e^{2\sqrt{z}} \sqrt{2\pi}\, \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{7/4} - 8 e^{2\sqrt{z}} \sqrt{2\pi}\, \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{7/4} + 8 e^{4\sqrt{z}}\, z^{3/2} - 8 z^{3/2} + 16 e^{4\sqrt{z}}\, z + 16 z - 30 e^{4\sqrt{z}} \sqrt{z} + 30 \sqrt{z} + 15 e^{4\sqrt{z}} + 15\right)$$

07.22.03.a9tb.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, -\frac{3}{4}; -z\right) = \frac{1}{15}\left(-16\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} + 2(4z+15)\sin\left(2\sqrt{z}\right)\sqrt{z} + (15-16z)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a9tc.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, -\frac{1}{4}; z\right) =$$
$$-\frac{1}{5\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8z^2+4z-5\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4(z-5)\sqrt{z}\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4z(2z+5) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9td.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, -\frac{1}{4}; -z\right) =$$
$$-\frac{1}{5\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8z^2-4z-5\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(z+5) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z(2z-5) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9te.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, \frac{1}{4}; z\right) = \frac{1}{80} e^{-2\sqrt{z}} \left(-4\left(-4z^{3/2} + z - 20\sqrt{z} + e^{4\sqrt{z}}\left(4z^{3/2} + z + 20\sqrt{z} - 10\right) - 10\right) + e^{2\sqrt{z}} \sqrt{2\pi}\, z^{3/4} (16z+49) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + e^{2\sqrt{z}} \sqrt{2\pi}\, z^{3/4} (16z+49) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)$$

07.22.03.a9tf.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) = \frac{1}{20}\left(2(z+10)\cos\left(2\sqrt{z}\right) + \sqrt{\pi}\, z^{3/4}(16z-49) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 8(z-5)\sqrt{z}\, \sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9tg.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{120\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(16z^2+71z+60\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\,(16z+165) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2z(16z+75) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9th.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) =$$
$$\frac{1}{120\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(16z^2-71z+60\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (165-16z)\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2z(16z-75) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9ti.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{10\,240\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-64z^{3/2}+16z-404\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}+16z+404\sqrt{z}+337\right)+337\right)+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+1568z+1617\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+1568z+1617\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9tj.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},\frac{5}{4};-z\right)=$$
$$\frac{1}{2560\sqrt[4]{z}}\left(\sqrt{\pi}\left(256z^2-1568z+1617\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(16z-337\right)\cos\left(2\sqrt{z}\right)+4\left(101-16z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9tk.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{6400\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(256z^2+1920z+1835\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-256z^2-2080z+4095\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\left(256z^2+1984z+4095\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9tl.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},\frac{7}{4};-z\right)=$$
$$\frac{1}{6400\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(256z^2-1920z+1835\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-256z^2+2080z+4095\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(256z^2-1984z+4095\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9tm.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{393\,216z^{5/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1024z^{5/2}+256z^2-9600z^{3/2}+2592z-32\,340\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2+9600z^{3/2}+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.2592z+32\,340\sqrt{z}-24\,255\right)-24\,255\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+37\,632z^2+77\,616z-24\,255\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+37\,632z^2+77\,616z-24\,255\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9tn.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},\frac{9}{4};-z\right)=\frac{1}{98\,304z^{5/4}}\left(\sqrt{\pi}\left(4096z^3-37\,632z^2+77\,616z+24\,255\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.$$
$$\left.2\sqrt[4]{z}\left(\left(-256z^2+2592z+24\,255\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(256z^2-2400z+8085\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9to.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, \frac{11}{4}; z\right) = \frac{1}{204\,800\sqrt{2}\, z^{5/4}}\left(\left(2\sqrt{z}\left(4096 z^3 + 43\,264 z^2 + 105\,520 z + 69\,615\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4096 z^3 + 45\,824 z^2 + 327\,600 z + 208\,845\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(4096 z^3 + 44\,288 z^2 + 117\,936 z - 208\,845\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9tp.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, \frac{11}{4}; -z\right) = \frac{1}{204\,800\sqrt{2}\, z^{5/4}}\left(\left(2\sqrt{z}\left(4096 z^3 - 43\,264 z^2 + 105\,520 z - 69\,615\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4096 z^3 + 45\,824 z^2 - 327\,600 z + 208\,845\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4096 z^3 - 44\,288 z^2 + 117\,936 z + 208\,845\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9tq.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, \frac{13}{4}; z\right) = \frac{1}{33\,554\,432 z^{9/4}}\left(3 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384 z^{7/2} + 4096 z^3 - 203\,776 z^{5/2} + 54\,016 z^2 - 665\,280 z^{3/2} + 905\,520 z + 3\,072\,300\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^{7/2} + 4096 z^3 + 203\,776 z^{5/2} + 54\,016 z^2 + 665\,280 z^{3/2} + 905\,520 z - 3\,072\,300\sqrt{z} + 2\,304\,225\right) + 2\,304\,225\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 + 802\,816 z^3 + 2\,483\,712 z^2 - 1\,552\,320 z + 2\,304\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 + 802\,816 z^3 + 2\,483\,712 z^2 - 1\,552\,320 z + 2\,304\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9tr.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, \frac{13}{4}; -z\right) = \frac{1}{8\,388\,608 z^{9/4}}\left(3\left(\sqrt{\pi}\left(65\,536 z^4 - 802\,816 z^3 + 2\,483\,712 z^2 + 1\,552\,320 z + 2\,304\,225\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(-4096 z^3 + 54\,016 z^2 - 905\,520 z + 2\,304\,225\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(4096 z^3 - 50\,944 z^2 + 166\,320 z + 768\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9ts.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, \frac{15}{4}; z\right) = \frac{1}{58\,982\,400\sqrt{2}\, z^{9/4}}\left(11\left(2\sqrt{z}\left(65\,536 z^4 + 892\,928 z^3 + 3\,105\,792 z^2 - 6\,683\,040 z - 10\,233\,405\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-65\,536 z^4 - 933\,888 z^3 - 3\,773\,952 z^2 + 66\,830\,400 z + 30\,700\,215\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(65\,536 z^4 + 909\,312 z^3 + 3\,354\,624 z^2 + 1\,336\,608 z + 30\,700\,215\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9tt.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{58\,982\,400\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\left(65\,536z^4-892\,928z^3+3\,105\,792z^2+6\,683\,040z-10\,233\,405\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-65\,536z^4+933\,888z^3-3\,773\,952z^2-66\,830\,400z+30\,700\,215\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-909\,312z^3+3\,354\,624z^2-1\,336\,608z+30\,700\,215\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9tu.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},\frac{17}{4};z\right)=$$
$$\frac{1}{10\,737\,418\,240\,z^{13/4}}\left(39e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-262\,144z^{9/2}+65\,536z^4-4\,063\,232z^{7/2}+1\,064\,960z^3-17\,418\,240z^{5/2}+\right.\right.\right.$$
$$5\,322\,240z^2-44\,943\,360z^{3/2}-324\,434\,880z-635\,966\,100\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4+4\,063\,232z^{7/2}+1\,064\,960z^3+17\,418\,240z^{5/2}+5\,322\,240z^2+\right.$$
$$\left.\left.\left.44\,943\,360z^{3/2}-324\,434\,880z+635\,966\,100\sqrt{z}-476\,974\,575\right)-476\,974\,575\right)+e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left(1\,048\,576z^5+16\,056\,320z^4+66\,232\,320z^3-62\,092\,800z^2+184\,338\,000z-476\,974\,575\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}$$
$$\left.\left.\sqrt{2\pi}\left(1\,048\,576z^5+16\,056\,320z^4+66\,232\,320z^3-62\,092\,800z^2+184\,338\,000z-476\,974\,575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9tv.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},\frac{17}{4};-z\right)=\frac{1}{2\,684\,354\,560\,z^{13/4}}$$
$$\left(39\left(\sqrt{\pi}\left(1\,048\,576z^5-16\,056\,320z^4+66\,232\,320z^3+62\,092\,800z^2+184\,338\,000z+476\,974\,575\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\left(\left(65\,536z^4-1\,064\,960z^3+5\,322\,240z^2+324\,434\,880z-476\,974\,575\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left.4\sqrt{z}\left(65\,536z^4-1\,015\,808z^3+4\,354\,560z^2-11\,235\,840z+158\,991\,525\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a9tw.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},\frac{19}{4};z\right)=\frac{1}{125\,829\,120\sqrt{2}\,z^{13/4}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576z^5+17\,498\,112z^4+78\,995\,456z^3-106\,928\,640z^2+2\,315\,673\,360z+2\,814\,186\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(1\,048\,576z^5+18\,153\,472z^4+91\,693\,056z^3+1\,176\,215\,040z^2+19\,811\,872\,080z+8\,442\,559\,125\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}$$
$$\left.\left.\left(-1\,048\,576z^5-17\,760\,256z^4-83\,779\,584z^3+78\,414\,336z^2+1\,801\,079\,280z+8\,442\,559\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9tx.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) = \frac{1}{125\,829\,120\sqrt{2}\, z^{13/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576 z^5 - 17\,498\,112 z^4 + 78\,995\,456 z^3 + 106\,928\,640 z^2 + 2\,315\,673\,360 z - 2\,814\,186\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(-1\,048\,576 z^5 + 18\,153\,472 z^4 - 91\,693\,056 z^3 + 1\,176\,215\,040 z^2 - 19\,811\,872\,080 z + 8\,442\,559\,125\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z} $$
$$ \left.\left.\left(1\,048\,576 z^5 - 17\,760\,256 z^4 + 83\,779\,584 z^3 + 78\,414\,336 z^2 - 1\,801\,079\,280 z + 8\,442\,559\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9ty.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) = $$
$$ \frac{1}{1\,374\,389\,534\,720 z^{17/4}}\left(221 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 77\,856\,768 z^{9/2} + 20\,250\,624 z^4 - \right.\right.\right. $$
$$ 413\,564\,928 z^{7/2} + 121\,282\,560 z^3 + 379\,975\,680 z^{5/2} + 5\,359\,495\,680 z^2 + 40\,992\,557\,760 z^{3/2} + $$
$$ 132\,789\,721\,680 z + 223\,224\,101\,100\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 77\,856\,768 z^{9/2} + \right. $$
$$ 20\,250\,624 z^4 + 413\,564\,928 z^{7/2} + 121\,282\,560 z^3 - 379\,975\,680 z^{5/2} + 5\,359\,495\,680 z^2 - $$
$$ \left.\left.\left.\left.40\,992\,557\,760 z^{3/2} + 132\,789\,721\,680 z - 223\,224\,101\,100\sqrt{z} + 167\,418\,075\,825\right) + 167\,418\,075\,825\right) + \right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 308\,281\,344 z^5 + 1\,589\,575\,680 z^4 - 1\,986\,969\,600 z^3 + \right. $$
$$ \left.8\,848\,224\,000 z^2 - 45\,789\,559\,200 z + 167\,418\,075\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 308\,281\,344 z^5 + 1\,589\,575\,680 z^4 - 1\,986\,969\,600 z^3 + \right. $$
$$ \left.\left.8\,848\,224\,000 z^2 - 45\,789\,559\,200 z + 167\,418\,075\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9tz.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) = $$
$$ \frac{1}{343\,597\,383\,680 z^{17/4}}\left(221\left(\sqrt{\pi}\left(16\,777\,216 z^6 - 308\,281\,344 z^5 + 1\,589\,575\,680 z^4 + 1\,986\,969\,600 z^3 + \right.\right.\right. $$
$$ \left.8\,848\,224\,000 z^2 + 45\,789\,559\,200 z + 167\,418\,075\,825\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - $$
$$ 2\sqrt[4]{z}\left(\left(-1\,048\,576 z^5 + 20\,250\,624 z^4 - 121\,282\,560 z^3 + 5\,359\,495\,680 z^2 - 132\,789\,721\,680 z + 167\,418\,075\,825\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(1\,048\,576 z^5 - 19\,464\,192 z^4 + 103\,391\,232 z^3 + \right. $$
$$ \left.\left.\left.\left.94\,993\,920 z^2 - 10\,248\,139\,440 z + 55\,806\,025\,275\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9u0.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},\frac{23}{4};z\right)=$$
$$\frac{1}{52\,344\,913\,920\sqrt{2}\,z^{17/4}}\left(19\left(2\sqrt{z}\left(16\,777\,216z^6+331\,350\,016z^5+1\,838\,743\,552z^4-3\,041\,525\,760z^3-\right.\right.\right.$$
$$\left.\left.\left.17\,589\,761\,280z^2-1\,106\,377\,272\,000z-1\,224\,171\,073\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left(-16\,777\,216z^6-341\,835\,776z^5-2\,074\,017\,792z^4+1\,140\,572\,160z^3+1\,156\,807\,491\,840z^2+8\,915\,342\,436\,000z+\right.\right.$$
$$\left.\left.3\,672\,513\,219\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(16\,777\,216z^6+335\,544\,320z^5+1\,928\,134\,656z^4-\right.\right.$$
$$\left.\left.\left.2\,421\,522\,432z^3+45\,284\,279\,040z^2+1\,080\,647\,568\,000z+3\,672\,513\,219\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9u1.01

$${}_1F_2\left(-\frac{7}{4};-\frac{5}{2},\frac{23}{4};-z\right)=$$
$$\frac{1}{52\,344\,913\,920\sqrt{2}\,z^{17/4}}\left(19\left(2\sqrt{z}\left(16\,777\,216z^6-331\,350\,016z^5+1\,838\,743\,552z^4+3\,041\,525\,760z^3-\right.\right.\right.$$
$$\left.\left.\left.17\,589\,761\,280z^2+1\,106\,377\,272\,000z-1\,224\,171\,073\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left(-16\,777\,216z^6+341\,835\,776z^5-2\,074\,017\,792z^4-1\,140\,572\,160z^3+1\,156\,807\,491\,840z^2-8\,915\,342\,436\,000z+\right.\right.$$
$$\left.\left.3\,672\,513\,219\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(16\,777\,216z^6-335\,544\,320z^5+1\,928\,134\,656z^4+\right.\right.$$
$$\left.\left.\left.2\,421\,522\,432z^3+45\,284\,279\,040z^2-1\,080\,647\,568\,000z+3\,672\,513\,219\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1=-\frac{7}{4}$, $b_{1.}=-\frac{3}{2}$

07.22.03.a9u2.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},-\frac{23}{4};z\right)=\left(\frac{1024z^3}{216\,315}+\frac{128z^2}{437}+\frac{124z}{69}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(5888z^2+100\,320z+216\,315\right)\sinh\left(2\sqrt{z}\right)}{216\,315}$$

07.22.03.a9u3.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},-\frac{23}{4};-z\right)=\left(-\frac{1024z^3}{216\,315}+\frac{128z^2}{437}-\frac{124z}{69}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(5888z^2-100\,320z+216\,315\right)\sin\left(2\sqrt{z}\right)}{216\,315}$$

07.22.03.a9u4.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{29\,835\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3+23\,712z^2+53\,040z+29\,835\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-156\sqrt{z}\left(64z^2+748z+765\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^2+5304z+29\,835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9u5.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{29\,835\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-512z^3+23\,712z^2-53\,040z+29\,835\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+156\sqrt{z}\left(64z^2-748z+765\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^2-5304z+29\,835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9u6.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},-\frac{19}{4};z\right)=\frac{33\left(64z^2+500z+285\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(128z^2+3960z+9405\right)\sinh\left(2\sqrt{z}\right)}{9405}$$

07.22.03.a9u7.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},-\frac{19}{4};-z\right)=\frac{33\left(64z^2-500z+285\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(128z^2-3960z+9405\right)\sin\left(2\sqrt{z}\right)}{9405}$$

07.22.03.a9u8.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(3\left(2368z^2+5720z+3315\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(448z^2+9204z+9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.156z\left(32z+255\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9u9.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(3\left(2368z^2-5720z+3315\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(448z^2-9204z+9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.156\left(255-32z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9ua.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},-\frac{15}{4};z\right)=\left(\frac{64z^2}{495}+\frac{76z}{45}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{45}\sqrt{z}\left(16z+45\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9ub.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},-\frac{15}{4};-z\right)=\left(\frac{64z^2}{495}-\frac{76z}{45}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{45}\left(45-16z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.a9uc.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\left(\left(352z^2+960z+585\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(164z+195\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+12z\left(8z+195\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9ud.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{3}{2}, -\frac{13}{4}; -z\right) = \frac{1}{585\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(352z^2 - 960z + 585\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\left(195 - 164z\right)\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12\left(195 - 8z\right) z\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9ue.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{3}{2}, -\frac{11}{4}; z\right) = \left(\frac{52z}{33} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{33}\sqrt{z}\,(8z + 33)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9uf.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{3}{2}, -\frac{11}{4}; -z\right) = \left(1 - \frac{52z}{33}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{33}(33 - 8z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a9ug.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{135\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^2 + 200z + 135\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(92z + 135) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\left(135 - 16z\right) z\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9uh.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{3}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{135\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^2 - 200z + 135\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\left(135 - 92z\right)\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(16z + 135\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9ui.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{3}{2}, -\frac{7}{4}; z\right) = \left(\frac{4z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9uj.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{3}{2}, -\frac{7}{4}; -z\right) = \left(1 - \frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a9uk.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{3}{2}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2 + 16z + 15\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(4z + 15) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\left(15 - 8z\right) z\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9ul.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{3}{2}, -\frac{5}{4}; -z\right) =$$
$$\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2 - 16z + 15\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\left(15 - 4z\right)\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8z + 15\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9um.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{3}{2}, -\frac{3}{4}; z\right) = \frac{1}{18}e^{-2\sqrt{z}}\left(-16e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4} - 16e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4} +$$
$$16e^{4\sqrt{z}}z^{3/2} - 16z^{3/2} + 4e^{4\sqrt{z}}z + 4z - 18e^{4\sqrt{z}}\sqrt{z} + 18\sqrt{z} + 9e^{4\sqrt{z}} + 9\right)$$

07.22.03.a9un.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},-\frac{3}{4};-z\right)=-\frac{32}{9}\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+\frac{2}{9}(8z+9)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(1-\frac{4z}{9}\right)\cos\left(2\sqrt{z}\right)$$

07.22.03.a9uo.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},-\frac{1}{4};z\right)=$$

$$-\frac{1}{3\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16z^2+8z-3\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4(3-2z)\sqrt{z}\;I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-4z(4z+3)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9up.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},-\frac{1}{4};-z\right)=$$

$$-\frac{1}{3\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16z^2-8z-3\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\;(2z+3)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z(4z-3)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9uq.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},\frac{1}{4};z\right)=\frac{1}{24}e^{-2\sqrt{z}}\left(-4\left(-4z^{3/2}+z-6\sqrt{z}+e^{4\sqrt{z}}\left(4z^{3/2}+z+6\sqrt{z}-3\right)-3\right)+\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\;z^{3/4}(16z+21)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\;z^{3/4}(16z+21)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)$$

07.22.03.a9ur.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},\frac{1}{4};-z\right)=\frac{1}{6}\left(\sqrt{\pi}\;z^{3/4}(16z-21)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\left((z+3)\cos\left(2\sqrt{z}\right)+2(3-2z)\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9us.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},\frac{3}{4};z\right)=$$

$$\frac{1}{36\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2+58z+36\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\;(16z+39)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2z(16z+33)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9ut.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},\frac{3}{4};-z\right)=$$

$$\frac{1}{36\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2-58z+36\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(39-16z)\sqrt{z}\;J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2z(16z-33)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9uu.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},\frac{5}{4};z\right)=$$

$$\frac{1}{3072\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)(16z+21)^2+e^{2\sqrt{z}}\sqrt{2\pi}\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)(16z+21)^2-4\sqrt[4]{z}\right.\right.$$
$$\left.\left.\left(-64z^{3/2}+16z-180\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}+16z+180\sqrt{z}+57\right)+57\right)\right)\right)$$

07.22.03.a9uv.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},\frac{5}{4};-z\right)=\frac{\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)(21-16z)^2+2\sqrt[4]{z}\left((16z-57)\cos\left(2\sqrt{z}\right)+4(45-16z)\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)}{768\sqrt[4]{z}}$$

07.22.03.a9uw.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},\frac{7}{4};z\right)=\frac{1}{1920\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(256z^2+800z+645\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.\left(-256z^2-960z+945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(256z^2+864z+945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9ux.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},\frac{7}{4};-z\right)=\frac{1}{1920\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(256z^2-800z+645\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.\left(-256z^2+960z+945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(256z^2-864z+945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9uy.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{589\,824z^{5/4}}\left(5e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1024z^{5/2}+256z^2-4224z^{3/2}+1248z-6468\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2+4224z^{3/2}+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.1248z+6468\sqrt{z}-4851\right)-4851\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+16\,128z^2+21\,168z-4851\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+16\,128z^2+21\,168z-4851\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9uz.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},\frac{9}{4};-z\right)=\frac{1}{147\,456z^{5/4}}\left(5\left(\sqrt{\pi}\left(4096z^3-16\,128z^2+21\,168z+4851\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\left(\left(-256z^2+1248z+4851\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(256z^2-1056z+1617\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a9v0.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},\frac{11}{4};z\right)=\frac{1}{61\,440\sqrt{2}z^{5/4}}$$
$$\left(\left(2\sqrt{z}\left(4096z^3+18\,176z^2+27\,120z+12\,285\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096z^3+20\,736z^2+45\,360z+36\,855\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\left(4096z^3+19\,200z^2+33\,264z-36\,855\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9v1.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{61\,440\sqrt{2}z^{5/4}}\left(\left(2\sqrt{z}\left(4096z^3-18\,176z^2+27\,120z-12\,285\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4096z^3+20\,736z^2-45\,360z+36\,855\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3-19\,200z^2+33\,264z+36\,855\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9v2.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{16\,777\,216\,z^{9/4}}\left(5\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384\,z^{7/2}+4096\,z^3-89\,088\,z^{5/2}+25\,344\,z^2-192\,192\,z^{3/2}+77\,616\,z+485\,100\sqrt{z}+\right.\right.\right.$$
$$\left.\left.\left.e^{4\sqrt{z}}\left(16\,384\,z^{7/2}+4096\,z^3+89\,088\,z^{5/2}+25\,344\,z^2+192\,192\,z^{3/2}+77\,616\,z-485\,100\sqrt{z}+363\,825\right)+\right.\right.\right.$$
$$\left.\left.\left.363\,825\right)+e^{2\sqrt{z}}\sqrt{2\,\pi}\left(65\,536\,z^4+344\,064\,z^3+677\,376\,z^2-310\,464\,z+363\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\,\pi}\left(65\,536\,z^4+344\,064\,z^3+677\,376\,z^2-310\,464\,z+363\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9v3.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{4\,194\,304\,z^{9/4}}\left(5\left(\sqrt{\pi}\left(65\,536\,z^4-344\,064\,z^3+677\,376\,z^2+310\,464\,z+363\,825\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(\left(-4096\,z^3+25\,344\,z^2-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.77\,616\,z+363\,825\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(4096\,z^3-22\,272\,z^2+48\,048\,z+121\,275\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a9v4.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{17\,694\,720\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\left(65\,536\,z^4+376\,832\,z^3+815\,616\,z^2-786\,240\,z-1\,461\,915\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-65\,536\,z^4-417\,792\,z^3-1\,161\,216\,z^2+9\,041\,760\,z+4\,385\,745\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.2\sqrt{z}\left(65\,536\,z^4+393\,216\,z^3+935\,424\,z^2-314\,496\,z+4\,385\,745\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a9v5.01

$${}_1F_2\left(-\frac{7}{4};-\frac{3}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{17\,694\,720\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\left(65\,536\,z^4-376\,832\,z^3+815\,616\,z^2+786\,240\,z-1\,461\,915\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-65\,536\,z^4+417\,792\,z^3-1\,161\,216\,z^2-9\,041\,760\,z+4\,385\,745\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\left(65\,536\,z^4-393\,216\,z^3+935\,424\,z^2+314\,496\,z+4\,385\,745\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a9v6.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) = \frac{1}{1\,073\,741\,824\, z^{13/4}} $$
$$ \left(13\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-262\,144\, z^{9/2} + 65\,536\, z^4 - 1\,769\,472\, z^{7/2} + 491\,520\, z^3 - 4\,945\,920\, z^{5/2} + 1\,774\,080\, z^2 + 887\,040\, z^{3/2} - \right.\right.\right. $$
$$ \left.\left.\left. 37\,255\,680\, z - 82\,952\,100\sqrt{z} + e^{4\sqrt{z}}\left(262\,144\, z^{9/2} + 65\,536\, z^4 + 1\,769\,472\, z^{7/2} + 491\,520\, z^3 + 4\,945\,920\, z^{5/2} + \right.\right.\right.\right. $$
$$ \left.\left.\left.\left. 1\,774\,080\, z^2 - 887\,040\, z^{3/2} - 37\,255\,680\, z + 82\,952\,100\sqrt{z} - 62\,214\,075\right) - 62\,214\,075\right) + \right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 + 6\,881\,280\, z^4 + 18\,063\,360\, z^3 - 12\,418\,560\, z^2 + 29\,106\,000\, z - 62\,214\,075\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ \left. e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 + 6\,881\,280\, z^4 + 18\,063\,360\, z^3 - 12\,418\,560\, z^2 + 29\,106\,000\, z - 62\,214\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9v7.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) = \frac{1}{268\,435\,456\, z^{13/4}} $$
$$ \left(13\left(\sqrt{\pi}\left(1\,048\,576\, z^5 - 6\,881\,280\, z^4 + 18\,063\,360\, z^3 + 12\,418\,560\, z^2 + 29\,106\,000\, z + 62\,214\,075\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right.\right. $$
$$ 2\sqrt[4]{z}\left(\left(-65\,536\, z^4 + 491\,520\, z^3 - 1\,774\,080\, z^2 - 37\,255\,680\, z + 62\,214\,075\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. \left. 4\sqrt{z}\left(65\,536\, z^4 - 442\,368\, z^3 + 1\,236\,480\, z^2 + 221\,760\, z + 20\,738\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9v8.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) = \frac{1}{37\,748\,736\sqrt{2}\, z^{13/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576\, z^5 + 7\,405\,568\, z^4 + 20\,963\,328\, z^3 - 23\,901\,696\, z^2 + 257\,297\,040\, z + 337\,702\,365\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ \left(1\,048\,576\, z^5 + 8\,060\,928\, z^4 + 27\,353\,088\, z^3 + 13\,837\,824\, z^2 + 2\,315\,673\,360\, z + 1\,013\,107\,095\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\left(-1\,048\,576\, z^5 - 7\,667\,712\, z^4 - 23\,224\,320\, z^3 + 13\,837\,824\, z^2 + 154\,378\,224\, z + 1\,013\,107\,095\right) $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9v9.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{3}{2}, \frac{19}{4}; -z\right) = \frac{1}{37\,748\,736\sqrt{2}\, z^{13/4}} $$
$$ \left(\left(2\sqrt{z}\left(1\,048\,576\, z^5 - 7\,405\,568\, z^4 + 20\,963\,328\, z^3 + 23\,901\,696\, z^2 + 257\,297\,040\, z - 337\,702\,365\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(-1\,048\,576\, z^5 + 8\,060\,928\, z^4 - 27\,353\,088\, z^3 + 13\,837\,824\, z^2 - 2\,315\,673\,360\, z + 1\,013\,107\,095\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(1\,048\,576\, z^5 - 7\,667\,712\, z^4 + 23\,224\,320\, z^3 + 13\,837\,824\, z^2 - 154\,378\,224\, z + 1\,013\,107\,095\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9va.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) = \frac{1}{412\,316\,860\,416\,z^{17/4}} \left(221\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-4\,194\,304\,z^{11/2} + 1\,048\,576\,z^5 - 33\,816\,576\,z^{9/2} + 9\,240\,576\,z^4 - 116\,293\,632\,z^{7/2} + 38\,707\,200\,z^3 + 54\,835\,200\,z^{5/2} + 65\,640\,960\,z^2 + 3\,374\,965\,440\,z^{3/2} + 13\,869\,591\,120\,z + 24\,802\,677\,900\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2} + 1\,048\,576\,z^5 + 33\,816\,576\,z^{9/2} + 9\,240\,576\,z^4 + 116\,293\,632\,z^{7/2} + 38\,707\,200\,z^3 - 54\,835\,200\,z^{5/2} + 65\,640\,960\,z^2 - 3\,374\,965\,440\,z^{3/2} + 13\,869\,591\,120\,z - 24\,802\,677\,900\sqrt{z} + 18\,602\,008\,425\right) + 18\,602\,008\,425\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6 + 132\,120\,576\,z^5 + 433\,520\,640\,z^4 - 397\,393\,920\,z^3 + 1\,397\,088\,000\,z^2 - 5\,972\,551\,200\,z + 18\,602\,008\,425\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6 + 132\,120\,576\,z^5 + 433\,520\,640\,z^4 - 397\,393\,920\,z^3 + 1\,397\,088\,000\,z^2 - 5\,972\,551\,200\,z + 18\,602\,008\,425\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9vb.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) = \frac{1}{103\,079\,215\,104\,z^{17/4}} \left(221\left(\sqrt{\pi}\left(16\,777\,216\,z^6 - 132\,120\,576\,z^5 + 433\,520\,640\,z^4 + 397\,393\,920\,z^3 + 1\,397\,088\,000\,z^2 + 5\,972\,551\,200\,z + 18\,602\,008\,425\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(-1\,048\,576\,z^5 + 9\,240\,576\,z^4 - 38\,707\,200\,z^3 + 65\,640\,960\,z^2 - 13\,869\,591\,120\,z + 18\,602\,008\,425\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(1\,048\,576\,z^5 - 8\,454\,144\,z^4 + 29\,073\,408\,z^3 + 13\,708\,800\,z^2 - 843\,741\,360\,z + 6\,200\,669\,475\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9vc.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) = \frac{1}{15\,703\,474\,176\sqrt{2}\,z^{17/4}} \left(19\left(2\sqrt{z}\left(16\,777\,216\,z^6 + 140\,509\,184\,z^5 + 490\,930\,176\,z^4 - 657\,506\,304\,z^3 + 1\,871\,251\,200\,z^2 - 109\,608\,539\,040\,z - 126\,638\,386\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,777\,216\,z^6 - 150\,994\,944\,z^5 - 606\,928\,896\,z^4 - 80\,510\,976\,z^3 + 86\,451\,805\,440\,z^2 + 907\,743\,957\,120\,z + 379\,915\,160\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(16\,777\,216\,z^6 + 144\,703\,488\,z^5 + 532\,611\,072\,z^4 - 449\,003\,520\,z^3 + 2\,470\,051\,584\,z^2 + 97\,258\,281\,120\,z + 379\,915\,160\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9vd.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{15\,703\,474\,176\sqrt{2}\,z^{17/4}}\left(19\left(2\sqrt{z}\left(16\,777\,216z^6 - 140\,509\,184z^5 + 490\,930\,176z^4 + 657\,506\,304z^3 + 1\,871\,251\,200z^2 + 109\,608\,539\,040z - 126\,638\,386\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,777\,216z^6 + 150\,994\,944z^5 - 606\,928\,896z^4 + 80\,510\,976z^3 + 86\,451\,805\,440z^2 - 907\,743\,957\,120z + 379\,915\,160\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216z^6 - 144\,703\,488z^5 + 532\,611\,072z^4 + 449\,003\,520z^3 + 2\,470\,051\,584z^2 - 97\,258\,281\,120z + 379\,915\,160\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = -\frac{7}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.a9ve.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) = \left(\frac{1280z^2}{14\,421} + \frac{32z}{23} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256z^2 + 17\,440z + 72\,105\right)\sinh\left(2\sqrt{z}\right)}{72\,105}$$

07.22.03.a9vf.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) = \left(\frac{1280z^2}{14\,421} - \frac{32z}{23} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(256z^2 - 17\,440z + 72\,105\right)\sin\left(2\sqrt{z}\right)}{72\,105}$$

07.22.03.a9vg.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(-39\left(64z^2 - 340z - 255\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(128z^2 + 5304z + 9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12z\left(656z + 3315\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9vh.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, -\frac{21}{4}; -z\right) =$$
$$\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(-39\left(64z^2 + 340z - 255\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(128z^2 - 5304z + 9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12\left(3315 - 656z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9vi.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, -\frac{19}{4}; z\right) = \left(\frac{128z^2}{3135} + \frac{24z}{19} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{627}\sqrt{z}\left(112z + 627\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9vj.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, -\frac{19}{4}; -z\right) = \left(\frac{128z^2}{3135} - \frac{24z}{19} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{627}\left(627 - 112z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a9vk.01

$${}_1F_2\left(-\frac{7}{4};-\frac{1}{2},-\frac{17}{4};z\right)=-\frac{1}{3315\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(3\left(704z^2-1300z-1105\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+156\sqrt{z}\,(32z+85)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-4z\,(752z+3315)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9vl.01

$${}_1F_2\left(-\frac{7}{4};-\frac{1}{2},-\frac{17}{4};-z\right)=-\frac{1}{3315\sqrt{2}}\left(\sqrt[4]{z}\right.$$
$$\left.\left(3\left(704z^2+1300z-1105\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+156\sqrt{z}\,(32z-85)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\,(752z-3315)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9vm.01

$${}_1F_2\left(-\frac{7}{4};-\frac{1}{2},-\frac{15}{4};z\right)=\left(\frac{16z}{15}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{165}\sqrt{z}\,(16z+165)\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9vn.01

$${}_1F_2\left(-\frac{7}{4};-\frac{1}{2},-\frac{15}{4};-z\right)=\left(1-\frac{16z}{15}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{165}(165-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a9vo.01

$${}_1F_2\left(-\frac{7}{4};-\frac{1}{2},-\frac{13}{4};z\right)=$$
$$-\frac{1}{195\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^2-180z-195\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,(8z+65)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-4z\,(64z+195)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9vp.01

$${}_1F_2\left(-\frac{7}{4};-\frac{1}{2},-\frac{13}{4};-z\right)=$$
$$-\frac{1}{195\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^2+180z-195\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,(8z-65)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\,(64z-195)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9vq.01

$${}_1F_2\left(-\frac{7}{4};-\frac{1}{2},-\frac{11}{4};z\right)=\left(\frac{8z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9vr.01

$${}_1F_2\left(-\frac{7}{4};-\frac{1}{2},-\frac{11}{4};-z\right)=\left(1-\frac{8z}{11}\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a9vs.01

$${}_1F_2\left(-\frac{7}{4};-\frac{1}{2},-\frac{9}{4};z\right)=$$
$$-\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^2-20z-45\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4(45-16z)\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-4z\,(32z+45)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9vt.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, -\frac{9}{4}; -z\right) =$$
$$-\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^2+20z-45\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(16z+45)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z(32z-45)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9vu.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, -\frac{7}{4}; z\right) = \cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9vv.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) = \cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a9vw.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) =$$
$$-\frac{1}{5\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^2+4z-5\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(8z-5)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-4z(16z+5)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9vx.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, -\frac{5}{4}; -z\right) =$$
$$-\frac{1}{5\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^2-4z-5\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(8z+5)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z(16z-5)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9vy.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, -\frac{3}{4}; z\right) = \frac{1}{6}e^{-2\sqrt{z}}\left(32e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+\right.$$
$$\left.32e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-32e^{4\sqrt{z}}z^{3/2}+32z^{3/2}-8e^{4\sqrt{z}}z-8z-6e^{4\sqrt{z}}\sqrt{z}+6\sqrt{z}+3e^{4\sqrt{z}}+3\right)$$

07.22.03.a9vz.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, -\frac{3}{4}; -z\right) = \frac{1}{3}\left(64\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+2(3-16z)\sin\left(2\sqrt{z}\right)\sqrt{z}+(8z+3)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a9w0.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) =$$
$$\frac{1}{\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2-12z+1\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(4z+1)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4(1-8z)\,z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9w1.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2+12z+1\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4(1-4z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z(8z+1)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9w2.01

$${}_1F_2\left(-\frac{7}{4};-\frac{1}{2},\frac{1}{4};z\right)=\frac{1}{4}e^{-2\sqrt{z}}\left(2\left(-8z^{3/2}+2z+2\sqrt{z}+e^{4\sqrt{z}}\left(8z^{3/2}+2z-2\sqrt{z}+1\right)+1\right)-\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}(16z-7)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}(16z-7)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)$$

07.22.03.a9w3.01

$${}_1F_2\left(-\frac{7}{4};-\frac{1}{2},\frac{1}{4};-z\right)=(1-2z)\cos\left(2\sqrt{z}\right)-\sqrt{\pi}\,z^{3/4}(16z+7)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt{z}\,(4z+1)\sin\left(2\sqrt{z}\right)$$

07.22.03.a9w4.01

$${}_1F_2\left(-\frac{7}{4};-\frac{1}{2},\frac{3}{4};z\right)=$$
$$-\frac{1}{6\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2-26z-6\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(3-16z)\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2(9-16z)\,z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9w5.01

$${}_1F_2\left(-\frac{7}{4};-\frac{1}{2},\frac{3}{4};-z\right)=$$
$$-\frac{1}{6\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2+26z-6\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\,(16z+3)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2z(16z+9)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9w6.01

$${}_1F_2\left(-\frac{7}{4};-\frac{1}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{512\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-64z^{3/2}+16z+44\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}+16z-44\sqrt{z}+1\right)+1\right)-e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left.\left.(256z^2-224z-63)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,(256z^2-224z-63)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9w7.01

$${}_1F_2\left(-\frac{7}{4};-\frac{1}{2},\frac{5}{4};-z\right)=$$
$$\frac{1}{128\sqrt[4]{z}}\left(\sqrt{\pi}\left(-256z^2-224z+63\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left((1-16z)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,(16z+11)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9w8.01

$${}_1F_2\left(-\frac{7}{4};-\frac{1}{2},\frac{7}{4};z\right)=\frac{1}{320\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(-256z^2+320z+125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.(256z^2-160z+105)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(256z^2-256z-105\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9w9.01

$${}_1F_2\left(-\frac{7}{4};-\frac{1}{2},\frac{7}{4};-z\right)=\frac{1}{320\sqrt{2}\sqrt[4]{z}}\left(\left(-2\sqrt{z}\left(256z^2+320z-125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.(256z^2+160z+105)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(256z^2+256z-105\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9wa.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, \frac{9}{4}; z\right) = \frac{1}{98\,304\, z^{5/4}} \left(5\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(-1024\, z^{5/2} + 256\, z^2 + 1152\, z^{3/2} - 96\, z + 588\sqrt{z} + e^{4\sqrt{z}}\left(1024\, z^{5/2} + 256\, z^2 - 1152\, z^{3/2} - 96\, z - 588\sqrt{z} + 441\right) + 441\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\, z^3 - 5376\, z^2 - 3024\, z + 441\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\, z^3 - 5376\, z^2 - 3024\, z + 441\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9wb.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, \frac{9}{4}; -z\right) = -\frac{1}{24\,576\, z^{5/4}} \left(5\left(\sqrt{\pi}\left(4096\, z^3 + 5376\, z^2 - 3024\, z - 441\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(256\, z^2 + 96\, z + 441\right)\cos\left(2\sqrt{z}\right) - 4\sqrt{z}\left(256\, z^2 + 288\, z - 147\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9wc.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) = \frac{1}{10\,240\sqrt{2}\, z^{5/4}} \left(\left(2\sqrt{z}\left(-4096\, z^3 + 6912\, z^2 + 4240\, z + 945\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4096\, z^3 - 4352\, z^2 - 1680\, z - 2835\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4096\, z^3 - 5888\, z^2 - 4368\, z + 2835\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9wd.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = \frac{1}{10\,240\sqrt{2}\, z^{5/4}} \left(\left(-2\sqrt{z}\left(4096\, z^3 + 6912\, z^2 - 4240\, z + 945\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4096\, z^3 + 4352\, z^2 - 1680\, z + 2835\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-4096\, z^3 - 5888\, z^2 + 4368\, z + 2835\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9we.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) = -\frac{1}{8\,388\,608\, z^{9/4}} \left(15\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-16\,384\, z^{7/2} + 4096\, z^3 + 25\,600\, z^{5/2} - 3328\, z^2 + 22\,848\, z^{3/2} + 2352\, z - 32\,340\sqrt{z} + e^{4\sqrt{z}}\left(16\,384\, z^{7/2} + 4096\, z^3 - 25\,600\, z^{5/2} - 3328\, z^2 - 22\,848\, z^{3/2} + 2352\, z + 32\,340\sqrt{z} - 24\,255\right) - 24\,255\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\, z^4 - 114\,688\, z^3 - 96\,768\, z^2 + 28\,224\, z - 24\,255\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\, z^4 - 114\,688\, z^3 - 96\,768\, z^2 + 28\,224\, z - 24\,255\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9wf.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) = -\frac{1}{2\,097\,152\,z^{9/4}}\left(15\left(\sqrt{\pi}\,\left(65\,536\,z^4+114\,688\,z^3-96\,768\,z^2-28\,224\,z-24\,255\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ 2\sqrt[4]{z}\,\left(\left(4096\,z^3+3328\,z^2+2352\,z+24\,255\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\,\left(4096\,z^3+6400\,z^2-5712\,z-8085\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9wg.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) = -\frac{1}{2\,949\,120\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\,\left(65\,536\,z^4-139\,264\,z^3-119\,808\,z^2+30\,240\,z+85\,995\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ \left(-65\,536\,z^4+98\,304\,z^3+96\,768\,z^2-483\,840\,z-257\,985\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ 2\sqrt{z}\,\left(-65\,536\,z^4+122\,880\,z^3+129\,024\,z^2-66\,528\,z+257\,985\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9wh.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) = -\frac{1}{2\,949\,120\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\,\left(65\,536\,z^4+139\,264\,z^3-119\,808\,z^2-30\,240\,z+85\,995\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ \left(-65\,536\,z^4-98\,304\,z^3+96\,768\,z^2+483\,840\,z-257\,985\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ 2\sqrt{z}\,\left(65\,536\,z^4+122\,880\,z^3-129\,024\,z^2-66\,528\,z-257\,985\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9wi.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) = -\frac{1}{536\,870\,912\,z^{13/4}}\left(39\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-262\,144\,z^{9/2}+65\,536\,z^4+524\,288\,z^{7/2}-81\,920\,z^3+645\,120\,z^{5/2}-53\,760\,z^2-591\,360\,z^{3/2}+1\,552\,320\,z+4\,365\,900\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-524\,288\,z^{7/2}-81\,920\,z^3-645\,120\,z^{5/2}-53\,760\,z^2+591\,360\,z^{3/2}+1\,552\,320\,z-4\,365\,900\sqrt{z}+3\,274\,425\right)+3\,274\,425\right)+ e^{2\sqrt{z}}\sqrt{2\pi}\,\left(1\,048\,576\,z^5-2\,293\,760\,z^4-2\,580\,480\,z^3+1\,128\,960\,z^2-1\,940\,400\,z+3\,274\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+ e^{2\sqrt{z}}\sqrt{2\pi}\,\left(1\,048\,576\,z^5-2\,293\,760\,z^4-2\,580\,480\,z^3+1\,128\,960\,z^2-1\,940\,400\,z+3\,274\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9wj.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) = \frac{1}{134\,217\,728\,z^{13/4}}\left(39\left(\sqrt{\pi}\,\left(-1\,048\,576\,z^5-2\,293\,760\,z^4+2\,580\,480\,z^3+1\,128\,960\,z^2+1\,940\,400\,z+3\,274\,425\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ 2\sqrt[4]{z}\,\left(\left(-65\,536\,z^4-81\,920\,z^3+53\,760\,z^2+1\,552\,320\,z-3\,274\,425\right)\cos\left(2\sqrt{z}\right)+ 4\sqrt{z}\,\left(65\,536\,z^4+131\,072\,z^3-161\,280\,z^2-147\,840\,z-1\,091\,475\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9wk.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) = \frac{1}{6\,291\,456\sqrt{2}\, z^{13/4}} $$
$$ \left(\left(2\sqrt{z}\left(-1\,048\,576 z^5 + 2\,686\,976 z^4 + 3\,006\,464 z^3 - 1\,645\,056 z^2 + 10\,810\,800 z + 16\,081\,065\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(1\,048\,576 z^5 - 2\,031\,616 z^4 - 2\,924\,544 z^3 + 7\,451\,136 z^2 - 105\,945\,840 z - 48\,243\,195\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(1\,048\,576 z^5 - 2\,424\,832 z^4 - 3\,268\,608 z^3 + 1\,774\,080 z^2 + 3\,027\,024 z + 48\,243\,195\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9wl.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) = \frac{1}{6\,291\,456\sqrt{2}\, z^{13/4}} $$
$$ \left(\left(2\sqrt{z}\left(-1\,048\,576 z^5 - 2\,686\,976 z^4 + 3\,006\,464 z^3 + 1\,645\,056 z^2 + 10\,810\,800 z - 16\,081\,065\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(1\,048\,576 z^5 + 2\,031\,616 z^4 - 2\,924\,544 z^3 - 7\,451\,136 z^2 - 105\,945\,840 z + 48\,243\,195\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(-1\,048\,576 z^5 - 2\,424\,832 z^4 + 3\,268\,608 z^3 + 1\,774\,080 z^2 - 3\,027\,024 z + 48\,243\,195\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9wm.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) = $$
$$ -\frac{1}{68\,719\,476\,736 z^{17/4}}\left(221 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 10\,223\,616 z^{9/2} - 1\,769\,472 z^4 + 15\,826\,944 z^{7/2} - \right.\right.\right. $$
$$ 2\,580\,480 z^3 - 12\,257\,280 z^{5/2} + 23\,063\,040 z^2 - 73\,846\,080 z^{3/2} - 548\,357\,040 z - 1\,078\,377\,300\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 10\,223\,616 z^{9/2} - 1\,769\,472 z^4 - 15\,826\,944 z^{7/2} - 2\,580\,480 z^3 + \right. $$
$$ \left.\left. 12\,257\,280 z^{5/2} + 23\,063\,040 z^2 + 73\,846\,080 z^{3/2} - 548\,357\,040 z + 1\,078\,377\,300\sqrt{z} - 808\,782\,975\right) - $$
$$ \left.\left.\left. 808\,782\,975\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 44\,040\,192 z^5 - 61\,931\,520 z^4 + 36\,126\,720 z^3 - \right.\right.\right. $$
$$ \left.\left.\left. 93\,139\,200 z^2 + 314\,344\,800 z - 808\,782\,975\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 44\,040\,192 z^5 - \right.\right. $$
$$ \left.\left. 61\,931\,520 z^4 + 36\,126\,720 z^3 - 93\,139\,200 z^2 + 314\,344\,800 z - 808\,782\,975\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9wn.01

$$ {}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) = \frac{1}{17\,179\,869\,184 z^{17/4}} $$
$$ \left(221\left(\sqrt{\pi}\left(-16\,777\,216 z^6 - 44\,040\,192 z^5 + 61\,931\,520 z^4 + 36\,126\,720 z^3 + 93\,139\,200 z^2 + 314\,344\,800 z + 808\,782\,975\right)\right.\right. $$
$$ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\left(\left(-1\,048\,576 z^5 - 1\,769\,472 z^4 + 2\,580\,480 z^3 + 23\,063\,040 z^2 + 548\,357\,040 z - 808\,782\,975\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left. 4\sqrt{z}\left(1\,048\,576 z^5 + 2\,555\,904 z^4 - 3\,956\,736 z^3 - 3\,064\,320 z^2 + 18\,461\,520 z - 269\,594\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9wo.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) =$$
$$-\frac{1}{2\,617\,245\,696\sqrt{2}\,z^{17/4}}\left(19\left(2\sqrt{z}\,\left(16\,777\,216\,z^6 - 50\,331\,648\,z^5 - 69\,664\,768\,z^4 + 53\,673\,984\,z^3 - 254\,741\,760\,z^2 + 4\,116\,752\,640\,z + 5\,065\,535\,475\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(16\,777\,216\,z^6 - 39\,845\,888\,z^5 - 72\,941\,568\,z^4 + 120\,766\,464\,z^3 + 1\,695\,133\,440\,z^2 + 35\,506\,991\,520\,z + 15\,196\,606\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-16\,777\,216\,z^6 + 46\,137\,344\,z^5 + 75\,694\,080\,z^4 - 47\,480\,832\,z^3 + 48\,432\,384\,z^2 + 3\,087\,564\,480\,z + 15\,196\,606\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9wp.01

$${}_1F_2\left(-\frac{7}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) =$$
$$-\frac{1}{2\,617\,245\,696\sqrt{2}\,z^{17/4}}\left(19\left(2\sqrt{z}\,\left(16\,777\,216\,z^6 + 50\,331\,648\,z^5 - 69\,664\,768\,z^4 - 53\,673\,984\,z^3 - 254\,741\,760\,z^2 - 4\,116\,752\,640\,z + 5\,065\,535\,475\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,777\,216\,z^6 - 39\,845\,888\,z^5 + 72\,941\,568\,z^4 + 120\,766\,464\,z^3 - 1\,695\,133\,440\,z^2 + 35\,506\,991\,520\,z - 15\,196\,606\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,777\,216\,z^6 + 46\,137\,344\,z^5 - 75\,694\,080\,z^4 - 47\,480\,832\,z^3 - 48\,432\,384\,z^2 + 3\,087\,564\,480\,z - 15\,196\,606\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = -\frac{7}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.a9wq.01

$${}_1F_2\left(-\frac{7}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) = \frac{\left(256\,z^2 + 21\,024\,z + 72\,105\right)\cosh\left(2\sqrt{z}\right) - 256\sqrt{z}\,\left(14\,z + 237\right)\sinh\left(2\sqrt{z}\right)}{72\,105}$$

07.22.03.a9wr.01

$${}_1F_2\left(-\frac{7}{4}; \frac{1}{2}, -\frac{23}{4}; -z\right) = \frac{\left(256\,z^2 - 21\,024\,z + 72\,105\right)\cos\left(2\sqrt{z}\right) + 256\left(237 - 14\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)}{72\,105}$$

07.22.03.a9ws.01

$${}_1F_2\left(-\frac{7}{4}; \frac{1}{2}, -\frac{21}{4}; z\right) = \frac{1}{9945\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(17\left(128\,z^2 + 1560\,z + 585\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 36\sqrt{z}\,\left(112\,z + 1105\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 24\,z\left(80\,z + 537\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9wt.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{21}{4};-z\right)=\frac{1}{9945\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(17\left(128z^2-1560z+585\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+36\left(1105-112z\right)\sqrt{z}\;J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+24z\left(80z-537\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9wu.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{19}{4};z\right)=\frac{\left(624z+3135\right)\cosh\left(2\sqrt{z}\right)-4\sqrt{z}\;\left(16z+573\right)\sinh\left(2\sqrt{z}\right)}{3135}$$

07.22.03.a9wv.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{19}{4};-z\right)=\frac{\left(3135-624z\right)\cos\left(2\sqrt{z}\right)+4\left(573-16z\right)\sqrt{z}\;\sin\left(2\sqrt{z}\right)}{3135}$$

07.22.03.a9ww.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{17}{4};z\right)=\frac{1}{3315\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(1024z^2+9360z+3315\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-60\sqrt{z}\;\left(16z+221\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-1024z\left(z+6\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9wx.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{17}{4};-z\right)=\frac{1}{3315\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(1024z^2-9360z+3315\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-60\sqrt{z}\;\left(16z-221\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+1024\left(z-6\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9wy.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{15}{4};z\right)=\left(\frac{16z}{165}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{32}{55}\sqrt{z}\;\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9wz.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{15}{4};-z\right)=\left(1-\frac{16z}{165}\right)\cos\left(2\sqrt{z}\right)+\frac{32}{55}\sqrt{z}\;\sin\left(2\sqrt{z}\right)$$

07.22.03.a9x0.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{975\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^2+3000z+975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\;\left(64z+975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-8z\left(64z+321\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9x1.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{975\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^2-3000z+975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\;\left(64z-975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(64z-321\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9x2.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{11}{4};z\right)=\cosh\left(2\sqrt{z}\right)-\frac{4}{11}\sqrt{z}\;\sinh\left(2\sqrt{z}\right)$$

07.22.03.a9x3.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{11}{4};-z\right)=\cos\left(2\sqrt{z}\right)+\frac{4}{11}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.a9x4.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{9}{4};z\right)=$$

$$\frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^2+800z+225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(32z+225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-32z\left(8z+27\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9x5.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{9}{4};-z\right)=$$

$$\frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^2-800z+225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\left(225-32z\right)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+32z\left(8z-27\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9x6.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{7}{4};z\right)=\cosh\left(2\sqrt{z}\right)$$

07.22.03.a9x7.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{7}{4};-z\right)=\cos\left(2\sqrt{z}\right)$$

07.22.03.a9x8.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{5}{4};z\right)=$$

$$\frac{1}{25\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^2+120z+25\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(16z+25\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-8z\left(16z+19\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9x9.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{5}{4};-z\right)=$$

$$\frac{1}{25\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^2-120z+25\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\left(25-16z\right)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(16z-19\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9xa.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{3}{4};z\right)=\frac{1}{30}e^{-2\sqrt{z}}\left(-64e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}-64e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+\right.$$
$$\left.64e^{4\sqrt{z}}\,z^{3/2}-64z^{3/2}+16e^{4\sqrt{z}}\,z+16z+12e^{4\sqrt{z}}\,\sqrt{z}\,-12\sqrt{z}\,+15e^{4\sqrt{z}}\,+15\right)$$

07.22.03.a9xb.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{3}{4};-z\right)=\frac{1}{15}\left(-128\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+4\left(16z-3\right)\sin\left(2\sqrt{z}\right)\sqrt{z}\,+\left(15-16z\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a9xc.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{1}{4};z\right)=$$

$$-\frac{1}{5\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^2-80z-5\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(8z-5\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-64\left(z-1\right)zI_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9xd.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},-\frac{1}{4};-z\right)=$$
$$-\frac{1}{5\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^2+80z-5\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(8z+5)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+64z(z+1)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9xe.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{1}{4};z\right)=\frac{1}{10}e^{-2\sqrt{z}}\left(-16e^{4\sqrt{z}}z^{3/2}+16z^{3/2}-4e^{4\sqrt{z}}z-4z+e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-35)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{3/4}+\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-35)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{3/4}+32e^{4\sqrt{z}}\sqrt{z}-32\sqrt{z}+5e^{4\sqrt{z}}+5\right)$$

07.22.03.a9xf.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{1}{4};-z\right)=\frac{1}{5}\left((4z+5)\cos\left(2\sqrt{z}\right)+2\sqrt{\pi}\,z^{3/4}(16z+35)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-16\sqrt{z}\,(z+2)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9xg.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2-110z+15\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(45-16z)\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2(51-16z)\,zI_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9xh.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{3}{4};-z\right)=$$
$$\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2+110z+15\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\,(16z+45)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2z(16z+51)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9xi.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{1280\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-64z^{3/2}+16z+268\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}+16z-268\sqrt{z}-55\right)-55\right)+e^{2\sqrt{z}}\right.\right.$$
$$\left.\left.\sqrt{2\pi}\left(256z^2-1120z+105\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-1120z+105\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9xj.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{5}{4};-z\right)=$$
$$\frac{1}{320\sqrt[4]{z}}\left(\sqrt{\pi}\left(256z^2+1120z+105\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left((16z+55)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\,(16z+67)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9xk.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{7}{4};z\right)=\frac{1}{800\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(256z^2-1440z+365\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.\left(-256z^2+1280z+105\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(256z^2-1376z+105\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9xl.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{7}{4};-z\right)=\frac{1}{800\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\,\left(256z^2+1440z+365\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.\left(-256z^2-1280z+105\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(256z^2+1376z+105\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9xm.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{49\,152z^{5/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1024z^{5/2}+256z^2+6528z^{3/2}-1440z-420\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2-6528z^{3/2}-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.1440z+420\sqrt{z}-315\right)-315\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-26\,880z^2+5040z-315\right)\right.$$
$$\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-26\,880z^2+5040z-315\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.a9xn.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{9}{4};-z\right)=\frac{1}{12\,288z^{5/4}}\left(\sqrt{\pi}\,\left(4096z^3+26\,880z^2+5040z+315\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.$$
$$\left.2\sqrt[4]{z}\,\left(\left(-256z^2-1440z+315\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(256z^2+1632z+105\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9xo.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{11}{4};z\right)=\frac{1}{25\,600\sqrt{2}\,z^{5/4}}$$
$$\left(\left(2\sqrt{z}\,\left(4096z^3-32\,000z^2+11\,440z+525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4096z^3+29\,440z^2+1680z-1575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(-4096z^3+30\,976z^2-5040z+1575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9xp.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{11}{4};-z\right)=\frac{1}{25\,600\sqrt{2}\,z^{5/4}}$$
$$\left(\left(2\sqrt{z}\,\left(4096z^3+32\,000z^2+11\,440z-525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4096z^3-29\,440z^2+1680z+1575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(4096z^3+30\,976z^2+5040z+1575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9xq.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{1}{2}, \frac{13}{4}; z\right) = \frac{1}{4\,194\,304\,z^{9/4}} \left(3\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384\,z^{7/2}+4096\,z^3+140\,288\,z^{5/2}-32\,000\,z^2-20\,160\,z^{3/2}-8400\,z+14\,700\sqrt{z}+e^{4\sqrt{z}}\right.\right.\right. \left.\left.\left.\left(16\,384\,z^{7/2}+4096\,z^3-140\,288\,z^{5/2}-32\,000\,z^2+20\,160\,z^{3/2}-8400\,z-14\,700\sqrt{z}+11\,025\right)+11\,025\right)+ e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-573\,440\,z^3+161\,280\,z^2-20\,160\,z+11\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+ e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-573\,440\,z^3+161\,280\,z^2-20\,160\,z+11\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9xr.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{1}{2}, \frac{13}{4}; -z\right) = \frac{1}{1\,048\,576\,z^{9/4}} \left(3\left(\sqrt{\pi}\left(65\,536\,z^4+573\,440\,z^3+161\,280\,z^2+20\,160\,z+11\,025\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(\left(-4096\,z^3-32\,000\,z^2+8400\,z+11\,025\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(4096\,z^3+35\,072\,z^2+5040\,z+3675\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9xs.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{1}{2}, \frac{15}{4}; z\right) = \frac{1}{7\,372\,800\sqrt{2}\,z^{9/4}} \left(11\left(2\sqrt{z}\left(65\,536\,z^4-655\,360\,z^3+299\,520\,z^2-33\,075\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-65\,536\,z^4+614\,400\,z^3+151\,200\,z+99\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(65\,536\,z^4-638\,976\,z^3+161\,280\,z^2-60\,480\,z+99\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9xt.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{1}{2}, \frac{15}{4}; -z\right) = \frac{1}{7\,372\,800\sqrt{2}\,z^{9/4}} \left(11\left(2\sqrt{z}\left(65\,536\,z^4+655\,360\,z^3+299\,520\,z^2-33\,075\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(65\,536\,z^4+614\,400\,z^3+151\,200\,z-99\,225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(65\,536\,z^4+638\,976\,z^3+161\,280\,z^2+60\,480\,z+99\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9xu.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{1}{2}, \frac{17}{4}; z\right) = \frac{1}{1\,342\,177\,280\,z^{13/4}} \left(39\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-262\,144\,z^{9/2}+65\,536\,z^4+2\,818\,048\,z^{7/2}-655\,360\,z^3-645\,120\,z^{5/2}-161\,280\,z^2+510\,720\,z^{3/2}-282\,240\,z-1\,455\,300\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-2\,818\,048\,z^{7/2}-655\,360\,z^3+645\,120\,z^{5/2}-161\,280\,z^2-510\,720\,z^{3/2}-282\,240\,z+1\,455\,300\sqrt{z}-1\,091\,475\right)-1\,091\,475\right)+ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-11\,468\,800\,z^4+4\,300\,800\,z^3-806\,400\,z^2+882\,000\,z-1\,091\,475\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-11\,468\,800\,z^4+4\,300\,800\,z^3-806\,400\,z^2+882\,000\,z-1\,091\,475\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9xv.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{17}{4};-z\right)= \frac{1}{335\,544\,320\,z^{13/4}}\left(39\left(\sqrt{\pi}\left(1\,048\,576\,z^5+11\,468\,800\,z^4+4\,300\,800\,z^3+806\,400\,z^2+882\,000\,z+1\,091\,475\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(\left(-65\,536\,z^4-655\,360\,z^3+161\,280\,z^2-282\,240\,z+1\,091\,475\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(65\,536\,z^4+704\,512\,z^3+161\,280\,z^2+127\,680\,z+363\,825\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9xw.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{19}{4};z\right)= \frac{1}{15\,728\,640\sqrt{2}\,z^{13/4}}\left(\left(2\sqrt{z}\left(1\,048\,576\,z^5-12\,779\,520\,z^4+7\,086\,080\,z^3-483\,840\,z^2+2\,494\,800\,z+4\,729\,725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(1\,048\,576\,z^5-12\,124\,160\,z^4+860\,160\,z^3-5\,322\,240\,z^2+29\,106\,000\,z+14\,189\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-1\,048\,576\,z^5+12\,517\,376\,z^4-4\,300\,800\,z^3+1\,774\,080\,z^2-1\,164\,240\,z+14\,189\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9xx.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{19}{4};-z\right)= \frac{1}{15\,728\,640\sqrt{2}\,z^{13/4}}\left(\left(2\sqrt{z}\left(1\,048\,576\,z^5+12\,779\,520\,z^4+7\,086\,080\,z^3+483\,840\,z^2+2\,494\,800\,z-4\,729\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(1\,048\,576\,z^5+12\,124\,160\,z^4+860\,160\,z^3+5\,322\,240\,z^2+29\,106\,000\,z-14\,189\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576\,z^5+12\,517\,376\,z^4+4\,300\,800\,z^3+1\,774\,080\,z^2+1\,164\,240\,z+14\,189\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9xy.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{21}{4};z\right)= \frac{1}{171\,798\,691\,840\,z^{17/4}}\left(221\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304\,z^{11/2}+1\,048\,576\,z^5+54\,263\,808\,z^{9/2}-12\,779\,520\,z^4-17\,203\,200\,z^{7/2}-2\,580\,480\,z^3+13\,547\,520\,z^{5/2}-11\,773\,440\,z^2-9\,979\,200\,z^{3/2}+122\,245\,200\,z+283\,783\,500\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-54\,263\,808\,z^{9/2}-12\,779\,520\,z^4+17\,203\,200\,z^{7/2}-2\,580\,480\,z^3-13\,547\,520\,z^{5/2}-11\,773\,440\,z^2+9\,979\,200\,z^{3/2}+122\,245\,200\,z-283\,783\,500\sqrt{z}+212\,837\,625\right)+212\,837\,625\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-220\,200\,960\,z^5+103\,219\,200\,z^4-25\,804\,800\,z^3+42\,336\,000\,z^2-104\,781\,600\,z+212\,837\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6-220\,200\,960\,z^5+103\,219\,200\,z^4-25\,804\,800\,z^3+42\,336\,000\,z^2-104\,781\,600\,z+212\,837\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9xz.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{21}{4};-z\right)=\frac{1}{42\,949\,672\,960\,z^{17/4}}$$
$$\left(221\left(\sqrt{\pi}\,\left(16\,777\,216\,z^6+220\,200\,960\,z^5+103\,219\,200\,z^4+25\,804\,800\,z^3+42\,336\,000\,z^2+104\,781\,600\,z+212\,837\,625\right)\right.\right.$$
$$C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(1\,048\,576\,z^5+13\,565\,952\,z^4+4\,300\,800\,z^3+3\,386\,880\,z^2+2\,494\,800\,z+70\,945\,875\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left.\left(1\,048\,576\,z^5+12\,779\,520\,z^4-2\,580\,480\,z^3+11\,773\,440\,z^2+122\,245\,200\,z-212\,837\,625\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a9y0.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{23}{4};z\right)=$$
$$\frac{1}{6\,543\,114\,240\sqrt{2}\,z^{17/4}}\left(19\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-241\,172\,480\,z^5+156\,958\,720\,z^4-22\,364\,160\,z^3+110\,073\,600\,z^2-\right.\right.\right.$$
$$\left.886\,485\,600\,z-1\,206\,079\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-16\,777\,216\,z^6+230\,686\,720\,z^5-34\,406\,400\,z^4+134\,184\,960\,z^3-\right.$$
$$\left.172\,972\,800\,z^2+8\,172\,964\,800\,z+3\,618\,239\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(16\,777\,216\,z^6-236\,978\,176\,z^5+$$
$$\left.\left.103\,219\,200\,z^4-46\,448\,640\,z^3+34\,594\,560\,z^2+454\,053\,600\,z+3\,618\,239\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a9y1.01

$${}_1F_2\left(-\frac{7}{4};\frac{1}{2},\frac{23}{4};-z\right)=$$
$$\frac{1}{6\,543\,114\,240\sqrt{2}\,z^{17/4}}\left(19\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+241\,172\,480\,z^5+156\,958\,720\,z^4+22\,364\,160\,z^3+110\,073\,600\,z^2+\right.\right.\right.$$
$$\left.886\,485\,600\,z-1\,206\,079\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(16\,777\,216\,z^6+230\,686\,720\,z^5+34\,406\,400\,z^4+134\,184\,960\,z^3+172\,972\,800\,z^2+8\,172\,964\,800\,z-3\,618\,239\,625\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(16\,777\,216\,z^6+236\,978\,176\,z^5+103\,219\,200\,z^4+\right.$$
$$\left.\left.\left.46\,448\,640\,z^3+34\,594\,560\,z^2-454\,053\,600\,z+3\,618\,239\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

For fixed z and $a_1 = -\frac{7}{4}$, $b_{1.} = \frac{3}{2}$

07.22.03.a9y2.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{23}{4};z\right)=\frac{\left(256\,z^2+27\,168\,z+116\,025\right)\sinh\left(2\sqrt{z}\right)-32\sqrt{z}\,\left(128\,z+2745\right)\cosh\left(2\sqrt{z}\right)}{144\,210\sqrt{z}}$$

07.22.03.a9y3.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{23}{4};-z\right)=\frac{32\sqrt{z}\ (128z-2745)\cos\left(2\sqrt{z}\right)+\left(256z^2-27\,168z+116\,025\right)\sin\left(2\sqrt{z}\right)}{144\,210\sqrt{z}}$$

07.22.03.a9y4.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{21}{4};z\right)=\frac{1}{89\,505\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096z^2+64\,304z+89\,505\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.8\left(5721-112z\right)\sqrt{z}\ I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(4096z^2+80\,880z+302\,841\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9y5.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{89\,505\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096z^2-64\,304z+89\,505\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\ \left(112z+5721\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^2-80\,880z+302\,841\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9y6.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{19}{4};z\right)=\frac{3\left(240z+1547\right)\sinh\left(2\sqrt{z}\right)-4\sqrt{z}\ \left(16z+753\right)\cosh\left(2\sqrt{z}\right)}{6270\sqrt{z}}$$

07.22.03.a9y7.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{19}{4};-z\right)=\frac{4\sqrt{z}\ \left(16z-753\right)\cos\left(2\sqrt{z}\right)+3\left(1547-240z\right)\sin\left(2\sqrt{z}\right)}{6270\sqrt{z}}$$

07.22.03.a9y8.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{17}{4};z\right)=\frac{1}{29\,835\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^2+26\,896z+29\,835\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.32\sqrt{z}\ \left(32z-111\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(2048z^2+29\,424z+92\,169\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9y9.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{17}{4};-z\right)=\frac{1}{29\,835\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^2-26\,896z+29\,835\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.32\sqrt{z}\ \left(32z+111\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(2048z^2-29\,424z+92\,169\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9ya.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{15}{4};z\right)=\frac{\left(16z+221\right)\sinh\left(2\sqrt{z}\right)-112\sqrt{z}\ \cosh\left(2\sqrt{z}\right)}{330\sqrt{z}}$$

07.22.03.a9yb.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{15}{4};-z\right)=\frac{\left(221-16z\right)\sin\left(2\sqrt{z}\right)-112\sqrt{z}\ \cos\left(2\sqrt{z}\right)}{330\sqrt{z}}$$

07.22.03.a9yc.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{13}{4};z\right)=\frac{1}{8775\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(1024z^2+9920z+8775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\,\left(64z+345\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(1024z^2+10\,176z+24\,255\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9yd.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{13}{4};-z\right)=\frac{1}{8775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^2-9920z+8775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.8\sqrt{z}\,\left(64z-345\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(1024z^2-10\,176z+24\,255\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9ye.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{11}{4};z\right)=\frac{1}{22}\left(\frac{13\sinh\left(2\sqrt{z}\right)}{\sqrt{z}}-4\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.a9yf.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{11}{4};-z\right)=\frac{1}{22}\left(\frac{13\sin\left(2\sqrt{z}\right)}{\sqrt{z}}-4\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.a9yg.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{9}{4};z\right)=\frac{1}{2025\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(512z^2+2944z+2025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-32\sqrt{z}\,\left(8z+51\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(512z^2+3072z+4851\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9yh.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{9}{4};-z\right)=\frac{1}{2025\sqrt{2}}\left(\sqrt[4]{z}\right.$$
$$\left.\left(\left(512z^2-2944z+2025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-32\sqrt{z}\,\left(8z-51\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(512z^2-3072z+4851\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9yi.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{7}{4};z\right)=\frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.a9yj.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{7}{4};-z\right)=\frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.a9yk.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{5}{4};z\right)=\frac{1}{225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(256z^2+464z+225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\,(16z+39)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(256z^2+528z+441\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9yl.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{5}{4};-z\right)=\frac{1}{225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(256z^2-464z+225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\,(16z-39)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(256z^2-528z+441\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9ym.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{540\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-256\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}-256\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}+256\,e^{4\sqrt{z}}\,z^2-\right.\right.$$
$$\left.\left.256z^2+64\,e^{4\sqrt{z}}\,z^{3/2}+64z^{3/2}+48\,e^{4\sqrt{z}}\,z-48z+60\,e^{4\sqrt{z}}\,\sqrt{z}+60\sqrt{z}+105\,e^{4\sqrt{z}}-105\right)\right)$$

07.22.03.a9yn.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{3}{4};-z\right)=\frac{-512\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}-4\,(16z-15)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(256z^2-48z+105\right)\sin\left(2\sqrt{z}\right)}{270\sqrt{z}}$$

07.22.03.a9yo.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{1}{4};z\right)=-\frac{1}{45\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(128z^2-272z-45\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+32\,(3-2z)\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-128z^2+240z+63\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9yp.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},-\frac{1}{4};-z\right)=-\frac{1}{45\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(128z^2+272z-45\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-32\sqrt{z}\,(2z+3)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(128z^2+240z-63\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9yq.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{180\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-64\,e^{4\sqrt{z}}\,z^2+64z^2-16\,e^{4\sqrt{z}}\,z^{3/2}-16z^{3/2}+4\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-63)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+\right.\right.$$
$$\left.\left.4\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-63)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+240\,e^{4\sqrt{z}}\,z-240z+48\,e^{4\sqrt{z}}\,\sqrt{z}+48\sqrt{z}+21\,e^{4\sqrt{z}}-21\right)\right)$$

07.22.03.a9yr.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},\frac{1}{4};-z\right)=\frac{8\sqrt{\pi}\,(16z+63)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+16\,(z+3)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-64z^2-240z+21\right)\sin\left(2\sqrt{z}\right)}{90\sqrt{z}}$$

07.22.03.a9ys.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},\frac{3}{4};z\right)=\frac{1}{135\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(64z^2-388z+135\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+2\left(87-16z\right)\sqrt{z}\;I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-64z^2+372z-63\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9yt.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},\frac{3}{4};-z\right)=$$
$$\frac{1}{135\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^2+388z+135\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-2\sqrt{z}\;\left(16z+87\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(64z^2+372z+63\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9yu.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{5760\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-4\left(-64z^2+16z^{3/2}+492z-111\sqrt{z}+e^{4\sqrt{z}}\left(64z^2+16z^{3/2}-492z-111\sqrt{z}+168\right)-168\right)+\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\;\sqrt[4]{z}\left(256z^2-2016z+945\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\;\sqrt[4]{z}\left(256z^2-2016z+945\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)$$

07.22.03.a9yv.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},\frac{5}{4};-z\right)=$$
$$\frac{1}{1440\sqrt{z}}\left(2\sqrt{z}\;\left(16z+111\right)\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\;\sqrt[4]{z}\left(256z^2+2016z+945\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-8\left(16z^2+123z+42\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.a9yw.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},\frac{7}{4};z\right)=\frac{1}{3600\sqrt{2}\;\sqrt[4]{z}}\left(\left(2\sqrt{z}\;\left(256z^2-2560z+2115\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.\left(-256z^2+2400z-945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\;\left(256z^2-2496z+1575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9yx.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},\frac{7}{4};-z\right)=$$
$$\frac{1}{3600\sqrt{2}\;\sqrt[4]{z}}\left(\left(2\sqrt{z}\;\left(256z^2+2560z+2115\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(256z^2+2400z+945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\;\left(256z^2+2496z+1575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9yy.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{3}{2}, \frac{9}{4}; z\right) = \frac{1}{221\,184\, z^{5/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z} \left(-1024\, z^{5/2} + 256\, z^2 + 11\,904\, z^{3/2} - 2784\, z - 9492\sqrt{z} + e^{4\sqrt{z}} \left(1024\, z^{5/2} + 256\, z^2 - 11\,904\, z^{3/2} - 2784\, z + 9492\sqrt{z} + 945\right) + 945\right) + e^{2\sqrt{z}} \sqrt{2\pi} \left(4096\, z^3 - 48\,384\, z^2 + 45\,360\, z + 945\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}} \sqrt{2\pi} \left(4096\, z^3 - 48\,384\, z^2 + 45\,360\, z + 945\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9yz.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{3}{2}, \frac{9}{4}; -z\right) = \frac{1}{55\,296\, z^{5/4}} \left(\sqrt{\pi} \left(4096\, z^3 + 48\,384\, z^2 + 45\,360\, z - 945\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z} \left(\left(256\, z^2 + 2784\, z + 945\right) \cos\left(2\sqrt{z}\right) - 4\sqrt{z} \left(256\, z^2 + 2976\, z + 2373\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.a9z0.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{3}{2}, \frac{11}{4}; z\right) = \frac{1}{115\,200\sqrt{2}\, z^{5/4}} \left(\left(2\sqrt{z} \left(4096\, z^3 - 57\,088\, z^2 + 74\,160\, z - 945\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4096\, z^3 + 54\,528\, z^2 - 45\,360\, z + 2835\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z} \left(4096\, z^3 - 56\,064\, z^2 + 61\,488\, z + 2835\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9z1.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{3}{2}, \frac{11}{4}; -z\right) = \frac{1}{115\,200\sqrt{2}\, z^{5/4}} \left(\left(2\sqrt{z} \left(4096\, z^3 + 57\,088\, z^2 + 74\,160\, z + 945\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4096\, z^3 + 54\,528\, z^2 + 45\,360\, z + 2835\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z} \left(4096\, z^3 + 56\,064\, z^2 + 61\,488\, z - 2835\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9z2.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{3}{2}, \frac{13}{4}; z\right) = \frac{1}{6\,291\,456\, z^{9/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z} \left(-16\,384\, z^{7/2} + 4096\, z^3 + 254\,976\, z^{5/2} - 60\,672\, z^2 - 321\,216\, z^{3/2} + 45\,360\, z - 18\,900\sqrt{z} + e^{4\sqrt{z}} \left(16\,384\, z^{7/2} + 4096\, z^3 - 254\,976\, z^{5/2} - 60\,672\, z^2 + 321\,216\, z^{3/2} + 45\,360\, z + 18\,900\sqrt{z} - 14\,175\right) - 14\,175\right) + e^{2\sqrt{z}} \sqrt{2\pi} \left(65\,536\, z^4 - 1\,032\,192\, z^3 + 1\,451\,520\, z^2 + 60\,480\, z - 14\,175\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}} \sqrt{2\pi} \left(65\,536\, z^4 - 1\,032\,192\, z^3 + 1\,451\,520\, z^2 + 60\,480\, z - 14\,175\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9z3.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},\frac{13}{4};-z\right)=\frac{1}{1\,572\,864\,z^{9/4}}\left(\sqrt{\pi}\,\left(65\,536\,z^4+1\,032\,192\,z^3+1\,451\,520\,z^2-60\,480\,z-14\,175\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\sqrt[4]{z}\,\left(\left(4096\,z^3+60\,672\,z^2+45\,360\,z+14\,175\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\,\left(4096\,z^3+63\,744\,z^2+80\,304\,z-4725\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.a9z4.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},\frac{15}{4};z\right)=\frac{1}{33\,177\,600\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\,\left(65\,536\,z^4-1\,171\,456\,z^3+2\,073\,600\,z^2-30\,240\,z+33\,075\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$\left(65\,536\,z^4-1\,130\,496\,z^3+1\,451\,520\,z^2+60\,480\,z+99\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.2\sqrt{z}\,\left(65\,536\,z^4-1\,155\,072\,z^3+1\,806\,336\,z^2+151\,200\,z-99\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a9z5.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{33\,177\,600\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\,\left(65\,536\,z^4+1\,171\,456\,z^3+2\,073\,600\,z^2+30\,240\,z+33\,075\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$\left(65\,536\,z^4+1\,130\,496\,z^3+1\,451\,520\,z^2-60\,480\,z+99\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\,\left(65\,536\,z^4+1\,155\,072\,z^3+1\,806\,336\,z^2-151\,200\,z-99\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.a9z6.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},\frac{17}{4};z\right)=\frac{1}{2\,013\,265\,920\,z^{13/4}}$$
$$\left(13\,e^{-2\sqrt{z}}\,\left(-4\sqrt[4]{z}\,\left(-262\,144\,z^{9/2}+65\,536\,z^4+5\,111\,808\,z^{7/2}-1\,228\,800\,z^3-8\,816\,640\,z^{5/2}+1\,451\,520\,z^2-967\,680\,z^{3/2}-\right.\right.\right.$$
$$\left.\left.181\,440\,z+1\,190\,700\sqrt{z}\,\right)+e^{4\sqrt{z}}\,\left(262\,144\,z^{9/2}+65\,536\,z^4-5\,111\,808\,z^{7/2}-1\,228\,800\,z^3+\right.\right.$$
$$\left.\left.8\,816\,640\,z^{5/2}+1\,451\,520\,z^2+967\,680\,z^{3/2}-181\,440\,z-1\,190\,700\sqrt{z}\,+893\,025\right)+893\,025\right)+$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(1\,048\,576\,z^5-20\,643\,840\,z^4+38\,707\,200\,z^3+2\,419\,200\,z^2-1\,134\,000\,z+893\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(1\,048\,576\,z^5-20\,643\,840\,z^4+38\,707\,200\,z^3+2\,419\,200\,z^2-1\,134\,000\,z+893\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Bigg)$$

07.22.03.a9z7.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},\frac{17}{4};-z\right)=$$
$$\frac{1}{503\,316\,480\,z^{13/4}}\left(13\left(\sqrt{\pi}\,\left(1\,048\,576\,z^5+20\,643\,840\,z^4+38\,707\,200\,z^3-2\,419\,200\,z^2-1\,134\,000\,z-893\,025\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\,\left(\left(65\,536\,z^4+1\,228\,800\,z^3+1\,451\,520\,z^2+181\,440\,z+893\,025\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left.4\sqrt{z}\,\left(65\,536\,z^4+1\,277\,952\,z^3+2\,204\,160\,z^2-241\,920\,z-297\,675\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.a9z8.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{3}{2}, \frac{19}{4}; z\right) = \frac{1}{70\,778\,880\sqrt{2}\, z^{13/4}}\left(\left(2\sqrt{z}\left(1\,048\,576 z^5 - 22\,872\,064 z^4 + 51\,240\,960 z^3 - 483\,840 z^2 - 831\,600 z - 3\,274\,425\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-1\,048\,576 z^5 + 22\,216\,704 z^4 - 38\,707\,200 z^3 - 5\,322\,240 z^2 + 17\,463\,600 z + 9\,823\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(1\,048\,576 z^5 - 22\,609\,920 z^4 + 45\,932\,544 z^3 + 5\,322\,240 z^2 - 3\,492\,720 z + 9\,823\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9z9.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{3}{2}, \frac{19}{4}; -z\right) = \frac{1}{70\,778\,880\sqrt{2}\, z^{13/4}}\left(\left(2\sqrt{z}\left(1\,048\,576 z^5 + 22\,872\,064 z^4 + 51\,240\,960 z^3 + 483\,840 z^2 - 831\,600 z + 3\,274\,425\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(1\,048\,576 z^5 + 22\,216\,704 z^4 + 38\,707\,200 z^3 - 5\,322\,240 z^2 - 17\,463\,600 z + 9\,823\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 + 22\,609\,920 z^4 + 45\,932\,544 z^3 - 5\,322\,240 z^2 - 3\,492\,720 z - 9\,823\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.a9za.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{3}{2}, \frac{21}{4}; z\right) = \frac{1}{773\,094\,113\,280\, z^{17/4}}\left(221 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 98\,304\,000 z^{9/2} - 23\,789\,568 z^4 - 215\,384\,064 z^{7/2} + 38\,707\,200 z^3 - 32\,901\,120 z^{5/2} + 2\,419\,200 z^2 + 36\,469\,440 z^{3/2} - 50\,485\,680 z - 170\,270\,100\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 98\,304\,000 z^{9/2} - 23\,789\,568 z^4 + 215\,384\,064 z^{7/2} + 38\,707\,200 z^3 + 32\,901\,120 z^{5/2} + 2\,419\,200 z^2 - 36\,469\,440 z^{3/2} - 50\,485\,680 z + 170\,270\,100\sqrt{z} - 127\,702\,575\right) - 127\,702\,575\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 396\,361\,728 z^5 + 928\,972\,800 z^4 + 77\,414\,400 z^3 - 54\,432\,000 z^2 + 85\,730\,400 z - 127\,702\,575\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 396\,361\,728 z^5 + 928\,972\,800 z^4 + 77\,414\,400 z^3 - 54\,432\,000 z^2 + 85\,730\,400 z - 127\,702\,575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.a9zb.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{3}{2}, \frac{21}{4}; -z\right) = \frac{1}{193\,273\,528\,320\, z^{17/4}}\left(221\left(\sqrt{\pi}\left(16\,777\,216 z^6 + 396\,361\,728 z^5 + 928\,972\,800 z^4 - 77\,414\,400 z^3 - 54\,432\,000 z^2 - 85\,730\,400 z - 127\,702\,575\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(1\,048\,576 z^5 + 23\,789\,568 z^4 + 38\,707\,200 z^3 - 2\,419\,200 z^2 - 50\,485\,680 z + 127\,702\,575\right)\cos\left(2\sqrt{z}\right) - 4\sqrt{z}\left(1\,048\,576 z^5 + 24\,576\,000 z^4 + 53\,846\,016 z^3 - 8\,225\,280 z^2 - 9\,117\,360 z - 42\,567\,525\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.a9zc.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},\frac{23}{4};z\right)=\frac{1}{29\,444\,014\,080\sqrt{2}\,z^{17/4}}$$
$$\left(19\left(2\sqrt{z}\left(16\,777\,216z^6-432\,013\,312z^5+1\,170\,800\,640z^4-78\,624\,000z^2+389\,188\,800z+638\,512\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(16\,777\,216z^6-421\,527\,552z^5+928\,972\,800z^4+201\,277\,440z^3-518\,918\,400z^2+4\,086\,482\,400z+1\,915\,538\,625\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-16\,777\,216z^6+427\,819\,008z^5-1\,069\,350\,912z^4-\right.$$
$$\left.\left.\left.154\,828\,800z^3+103\,783\,680z^2+1\,915\,538\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9zd.01

$${}_1F_2\left(-\frac{7}{4};\frac{3}{2},\frac{23}{4};-z\right)=\frac{1}{29\,444\,014\,080\sqrt{2}\,z^{17/4}}$$
$$\left(19\left(2\sqrt{z}\left(16\,777\,216z^6+432\,013\,312z^5+1\,170\,800\,640z^4-78\,624\,000z^2-389\,188\,800z+638\,512\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-16\,777\,216z^6-421\,527\,552z^5-928\,972\,800z^4+201\,277\,440z^3+518\,918\,400z^2+\right.$$
$$4\,086\,482\,400z-1\,915\,538\,625\left.\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(16\,777\,216z^6+427\,819\,008z^5+\right.$$
$$\left.\left.\left.1\,069\,350\,912z^4-154\,828\,800z^3-103\,783\,680z^2-1\,915\,538\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1=-\frac{7}{4}$, $b_{1.}=\frac{5}{2}$

07.22.03.a9ze.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{23}{4};z\right)=\frac{2\sqrt{z}\left(256z^2+36\,640z+258\,825\right)\cosh\left(2\sqrt{z}\right)-\left(9472z^2+285\,600z+258\,825\right)\sinh\left(2\sqrt{z}\right)}{192\,280z^{3/2}}$$

07.22.03.a9zf.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{23}{4};-z\right)=\frac{\left(9472z^2-285\,600z+258\,825\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(256z^2-36\,640z+258\,825\right)\cos\left(2\sqrt{z}\right)}{192\,280z^{3/2}}$$

07.22.03.a9zg.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{21}{4};z\right)=\frac{1}{1\,551\,420\sqrt{2}\,z^{3/4}}$$
$$\left(\left(8z\left(4096z^2+106\,064z+648\,189\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4096z^2+224\,688z+2\,725\,569\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(32\,768z^3+826\,752z^2+2\,422\,728z-8\,176\,707\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9zh.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{21}{4};-z\right)=\frac{1}{1\,551\,420\sqrt{2}\,z^{3/4}}$$
$$\left(\left(8z\left(4096z^2-106\,064z+648\,189\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(4096z^2-224\,688z+2\,725\,569\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(32\,768z^3-826\,752z^2+2\,422\,728z+8\,176\,707\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9zi.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{19}{4};z\right)=\frac{2\sqrt{z}\,(848z+8925)\cosh\left(2\sqrt{z}\right)-\left(128z^2+8568z+8925\right)\sinh\left(2\sqrt{z}\right)}{8360z^{3/2}}$$

07.22.03.a9zj.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{19}{4};-z\right)=\frac{2\sqrt{z}\,(848z-8925)\cos\left(2\sqrt{z}\right)+\left(128z^2-8568z+8925\right)\sin\left(2\sqrt{z}\right)}{8360z^{3/2}}$$

07.22.03.a9zk.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{517\,140\sqrt{2}\,z^{3/4}}\left(\left(16z\left(1024z^2+20\,224z+91\,207\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(2048z^2+54\,832z+706\,629\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(16\,384z^3+327\,680z^2+983\,136z-2\,119\,887\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9zl.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{517\,140\sqrt{2}\,z^{3/4}}\left(\left(16z\left(1024z^2-20\,224z+91\,207\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(2048z^2-54\,832z+706\,629\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(16\,384z^3-327\,680z^2+983\,136z+2\,119\,887\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9zm.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{15}{4};z\right)=\frac{2\sqrt{z}\,(16z+357)\cosh\left(2\sqrt{z}\right)-17\,(16z+21)\sinh\left(2\sqrt{z}\right)}{440z^{3/2}}$$

07.22.03.a9zn.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{15}{4};-z\right)=\frac{2\sqrt{z}\,(16z-357)\cos\left(2\sqrt{z}\right)+17\,(21-16z)\sin\left(2\sqrt{z}\right)}{440z^{3/2}}$$

07.22.03.a9zo.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{152\,100\sqrt{2}\,z^{3/4}}\left(\left(8z\left(1024z^2+14\,400z+44\,615\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1024z^2+15\,040z+153\,615\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(8192z^3+117\,248z^2+323\,400z-460\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9zp.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{152\,100\sqrt{2}\,z^{3/4}}\left(\left(8z\left(1024z^2-14\,400z+44\,615\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1024z^2-15\,040z+153\,615\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(8192z^3-117\,248z^2+323\,400z+460\,845\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9zq.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{11}{4};z\right)=-\frac{3\left((8z+17)\sinh\left(2\sqrt{z}\right)-34\sqrt{z}\cosh\left(2\sqrt{z}\right)\right)}{88z^{3/2}}$$

07.22.03.a9zr.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{11}{4};-z\right)=-\frac{3\left(34\sqrt{z}\cos\left(2\sqrt{z}\right)+(8z-17)\sin\left(2\sqrt{z}\right)\right)}{88z^{3/2}}$$

07.22.03.a9zs.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{35\,100\sqrt{2}\,z^{3/4}}\left(\left(16z\left(256z^2+2144z+4215\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^2+4608z+24\,255\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(4096z^3+35\,328z^2+77\,616z-72\,765\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9zt.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{35\,100\sqrt{2}\,z^{3/4}}\left(\left(16z\left(256z^2-2144z+4215\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^2-4608z+24\,255\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^3-35\,328z^2+77\,616z+72\,765\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9zu.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{7}{4};z\right)=\frac{3\cosh\left(2\sqrt{z}\right)}{4z}-\frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.a9zv.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{7}{4};-z\right)=\frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}}$$

07.22.03.a9zw.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{5}{4};z\right)=\frac{1}{3900\sqrt{2}\,z^{3/4}}\left(\left(8z\left(256z^2+688z+757\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.4\sqrt{z}\left(256z^2+848z+1617\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(2048z^3+6016z^2+8232z-4851\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9zx.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{3900\sqrt{2}\,z^{3/4}}\left(\left(8z\left(256z^2-688z+757\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^2-848z+1617\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(2048z^3-6016z^2+8232z+4851\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.a9zy.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{9360z^{3/2}}\left(e^{-2\sqrt{z}}\left(-2048e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-2048e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+2048e^{4\sqrt{z}}z^3-\right.\right.$$
$$2048z^3+512e^{4\sqrt{z}}z^{5/2}+512z^{5/2}+384e^{4\sqrt{z}}z^2-384z^2+480e^{4\sqrt{z}}z^{3/2}+$$
$$\left.\left.480z^{3/2}+840e^{4\sqrt{z}}z-840z+1890e^{4\sqrt{z}}\sqrt{z}+1890\sqrt{z}-945e^{4\sqrt{z}}+945\right)\right)$$

07.22.03.a9zz.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{3}{4};-z\right)=$$
$$\frac{1}{4680z^{3/2}}\left(-4096\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}-2\left(256z^2-240z+945\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(2048z^3-384z^2+840z+945\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aa00.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{1}{4};z\right)=-\frac{1}{780\sqrt{2}\,z^{3/4}}\left(\left(16z\left(64z^2-192z-61\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\left(-128z^2+304z+147\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1024z^3+2816z^2+1344z-441\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa01.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},-\frac{1}{4};-z\right)=\frac{1}{780\sqrt{2}\,z^{3/4}}\left(\left(-16z\left(64z^2+192z-61\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\left(128z^2+304z-147\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1024z^3-2816z^2+1344z+441\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa02.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{1}{4};z\right)= $$
$$ \frac{1}{3120\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(-512\,e^{4\sqrt{z}}\,z^3+512\,z^3-128\,e^{4\sqrt{z}}\,z^{5/2}-128\,z^{5/2}+32\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-91)\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}+\right.\right. $$
$$ 32\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-91)\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}+2816\,e^{4\sqrt{z}}\,z^2-2816\,z^2+608\,e^{4\sqrt{z}}\,z^{3/2}+ $$
$$ \left.\left.608\,z^{3/2}+336\,e^{4\sqrt{z}}\,z-336z+210\,e^{4\sqrt{z}}\,\sqrt{z}+210\sqrt{z}-105\,e^{4\sqrt{z}}+105\right)\right) $$

07.22.03.aa03.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{1}{4};-z\right)=\frac{1}{1560\,z^{3/2}} $$
$$ \left(64\sqrt{\pi}\,(16z+91)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+2\left(64z^2+304z-105\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-512z^3-2816z^2+336z+105\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aa04.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{3}{4};z\right)=\frac{1}{2340\sqrt{2}\,z^{3/4}}\left(\left(8z\left(64z^2-556z+303\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ \left.\left.4\sqrt{z}\left(64z^2-516z+63\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-512z^3+4320z^2-1512z+189\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa05.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{3}{4};-z\right)=\frac{1}{2340\sqrt{2}\,z^{3/4}}\left(\left(8z\left(64z^2+556z+303\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ \left.\left.4\sqrt{z}\left(64z^2+516z+63\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(512z^3+4320z^2+1512z+189\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa06.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{5}{4};z\right)= $$
$$ \frac{1}{12\,480\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2-2912z+2457\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2-2912z+2457\right)\right.\right. $$
$$ \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}-4\left(-64z^3+16z^{5/2}+716z^2-167z^{3/2}-504z+42\sqrt{z}+\right. $$
$$ \left.\left.\left.e^{4\sqrt{z}}\left(64z^3+16z^{5/2}-716z^2-167z^{3/2}+504z+42\sqrt{z}-21\right)+21\right)\right)\right) $$

07.22.03.aa07.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{5}{4};-z\right)=\frac{1}{3120\,z^{3/2}}\left(\sqrt{\pi}\,z^{5/4}\left(256z^2+2912z+2457\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right. $$
$$ \left.2\left(\left(64z^3+716z^2+504z+21\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(16z^2+167z+42\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.aa08.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{7800\sqrt{2}\,z^{3/4}}\left(\left(2z\left(256z^2-3680z+5125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-256z^2+3520z-3255\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\left(256z^3-3616z^2+4305z+315\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa09.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{7}{4};-z\right)=$$
$$\frac{1}{7800\sqrt{2}\,z^{3/4}}\left(\left(2z\left(256z^2+3680z+5125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(256z^2+3520z+3255\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\left(256z^3+3616z^2+4305z-315\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa0a.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{9}{4};z\right)=\frac{1}{479\,232\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(-4\left(-1024z^3+256z^{5/2}+17\,280z^2-4128z^{3/2}-26\,628z+4221\sqrt{z}+\right.\right.\right.$$
$$\left.e^{4\sqrt{z}}\left(1024z^3+256z^{5/2}-17\,280z^2-4128z^{3/2}+26\,628z+4221\sqrt{z}+4032\right)-4032\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(4096z^3-69\,888z^2+117\,936z+12\,285\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(4096z^3-69\,888z^2+117\,936z+12\,285\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aa0b.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{9}{4};-z\right)=\frac{1}{119\,808\,z^{3/2}}\left(2\sqrt{z}\left(256z^2+4128z+4221\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\sqrt{\pi}\sqrt[4]{z}\left(4096z^3+69\,888z^2+117\,936z-12\,285\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-8\left(256z^3+4320z^2+6657z-1008\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aa0c.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{249\,600\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(4096z^3-82\,176z^2+183\,920z+12\,285\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096z^3-79\,616z^2+139\,440z+36\,855\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(4096z^3-81\,152z^2+164\,976z+33\,705\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa0d.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{11}{4};-z\right)=$$

$$\frac{1}{249\,600\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(4096z^3+82\,176z^2+183\,920z-12\,285\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096z^3+79\,616z^2+139\,440z-36\,855\right)\right.\right.$$

$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3+81\,152z^2+164\,976z-33\,705\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa0e.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{13}{4};z\right)=$$

$$\frac{1}{13\,631\,488z^{9/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384z^{7/2}+4096z^3+369\,664z^{5/2}-89\,344z^2-880\,320z^{3/2}+163\,632z-262\,164\sqrt{z}+\right.\right.\right.$$

$$\left.e^{4\sqrt{z}}\left(16\,384z^{7/2}+4096z^3-369\,664z^{5/2}-89\,344z^2+880\,320z^{3/2}+163\,632z+262\,164\sqrt{z}+61\,425\right)+$$

$$\left.61\,425\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-1\,490\,944z^3+3\,773\,952z^2+786\,240z+61\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$

$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-1\,490\,944z^3+3\,773\,952z^2+786\,240z+61\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aa0f.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{13}{4};-z\right)=\frac{1}{3\,407\,872z^{9/4}}\left(\sqrt{\pi}\left(65\,536z^4+1\,490\,944z^3+3\,773\,952z^2-786\,240z+61\,425\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\right.$$

$$\left.\left(\left(4096z^3+89\,344z^2+163\,632z-61\,425\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(4096z^3+92\,416z^2+220\,080z-65\,541\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aa0g.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{15}{4};z\right)=\frac{1}{71\,884\,800\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\left(65\,536z^4-1\,687\,552z^3+5\,202\,432z^2+786\,240z-85\,995\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$

$$\left(-65\,536z^4+1\,646\,592z^3-4\,257\,792z^2-1\,965\,600z+257\,985\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$

$$\left.\left.2\sqrt{z}\left(65\,536z^4-1\,671\,168z^3+4\,806\,144z^2+1\,548\,288z+257\,985\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa0h.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{15}{4};-z\right)=$$

$$\frac{1}{71\,884\,800\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\left(65\,536z^4+1\,687\,552z^3+5\,202\,432z^2-786\,240z-85\,995\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$

$$\left(-65\,536z^4-1\,646\,592z^3-4\,257\,792z^2+1\,965\,600z+257\,985\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$\left.\left.2\sqrt{z}\left(65\,536z^4+1\,671\,168z^3+4\,806\,144z^2-1\,548\,288z+257\,985\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa0i.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{5}{2}, \frac{17}{4}; z\right) = $$

$$ \frac{1}{335\,544\,320\, z^{13/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-262\,144\, z^{9/2} + 65\,536\, z^4 + 7\,405\,568\, z^{7/2} - 1\,802\,240\, z^3 - 23\,869\,440\, z^{5/2} + 4\,784\,640\, z^2 - \right.\right.\right. $$

$$ \left. 10\,187\,520\, z^{3/2} + 3\,144\,960\, z - 2\,211\,300\sqrt{z}\right) + e^{4\sqrt{z}}\left(262\,144\, z^{9/2} + 65\,536\, z^4 - 7\,405\,568\, z^{7/2} - 1\,802\,240\, z^3 + \right. $$

$$ \left. 23\,869\,440\, z^{5/2} + 4\,784\,640\, z^2 + 10\,187\,520\, z^{3/2} + 3\,144\,960\, z + 2\,211\,300\sqrt{z} - 1\,658\,475\right) - 1\,658\,475\Big) + $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 - 29\,818\,880\, z^4 + 100\,638\,720\, z^3 + 31\,449\,600\, z^2 + 4\,914\,000\, z - 1\,658\,475\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$

$$ \left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 - 29\,818\,880\, z^4 + 100\,638\,720\, z^3 + 31\,449\,600\, z^2 + 4\,914\,000\, z - 1\,658\,475\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aa0j.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{5}{2}, \frac{17}{4}; -z\right) = $$

$$ \frac{1}{83\,886\,080\, z^{13/4}} \left(\sqrt{\pi}\left(1\,048\,576\, z^5 + 29\,818\,880\, z^4 + 100\,638\,720\, z^3 - 31\,449\,600\, z^2 + 4\,914\,000\, z + 1\,658\,475\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$

$$ 2\sqrt[4]{z}\left(\left(-65\,536\, z^4 - 1\,802\,240\, z^3 - 4\,784\,640\, z^2 + 3\,144\,960\, z + 1\,658\,475\right)\cos\left(2\sqrt{z}\right) + \right. $$

$$ \left.\left. 4\sqrt{z}\left(65\,536\, z^4 + 1\,851\,392\, z^3 + 5\,967\,360\, z^2 - 2\,546\,880\, z + 552\,825\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.aa0k.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{5}{2}, \frac{19}{4}; z\right) = \frac{1}{153\,354\,240\sqrt{2}\, z^{13/4}} $$

$$ \left(\left(2\sqrt{z}\left(1\,048\,576\, z^5 - 32\,964\,608\, z^4 + 129\,458\,176\, z^3 + 31\,449\,600\, z^2 - 2\,162\,160\, z + 4\,729\,725\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$

$$ \left(1\,048\,576\, z^5 - 32\,309\,248\, z^4 + 110\,616\,576\, z^3 + 69\,189\,120\, z^2 + 15\,135\,120\, z + 14\,189\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$

$$ \left.\left. 2\sqrt{z}\left(1\,048\,576\, z^5 - 32\,702\,464\, z^4 + 121\,626\,624\, z^3 + 52\,867\,584\, z^2 + 15\,135\,120\, z - 14\,189\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa0l.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{5}{2}, \frac{19}{4}; -z\right) = \frac{1}{153\,354\,240\sqrt{2}\, z^{13/4}} $$

$$ \left(\left(2\sqrt{z}\left(1\,048\,576\, z^5 + 32\,964\,608\, z^4 + 129\,458\,176\, z^3 - 31\,449\,600\, z^2 - 2\,162\,160\, z - 4\,729\,725\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$

$$ \left(1\,048\,576\, z^5 + 32\,309\,248\, z^4 + 110\,616\,576\, z^3 - 69\,189\,120\, z^2 + 15\,135\,120\, z - 14\,189\,175\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ \left.\left. 2\sqrt{z}\left(1\,048\,576\, z^5 + 32\,702\,464\, z^4 + 121\,626\,624\, z^3 - 52\,867\,584\, z^2 + 15\,135\,120\, z + 14\,189\,175\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa0m.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{21}{4};z\right)=\frac{1}{128\,849\,018\,880\,z^{17/4}}$$
$$\left(17\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304\,z^{11/2}+1\,048\,576\,z^5+142\,344\,192\,z^{9/2}-34\,799\,616\,z^4-578\,715\,648\,z^{7/2}+\right.\right.\right.$$
$$121\,282\,560\,z^3-316\,753\,920\,z^{5/2}+106\,928\,640\,z^2-120\,294\,720\,z^{3/2}+1\,769\,040\,z+201\,228\,300\sqrt{z}\,+$$
$$e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-142\,344\,192\,z^{9/2}-34\,799\,616\,z^4+578\,715\,648\,z^{7/2}+121\,282\,560\,z^3+\right.$$
$$\left.316\,753\,920\,z^{5/2}+106\,928\,640\,z^2+120\,294\,720\,z^{3/2}+1\,769\,040\,z-201\,228\,300\sqrt{z}\,+150\,921\,225\right)+$$
$$\left.150\,921\,225\right)+e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(16\,777\,216\,z^6-572\,522\,496\,z^5+2\,415\,329\,280\,z^4+\right.$$
$$\left.1\,006\,387\,200\,z^3+235\,872\,000\,z^2-159\,213\,600\,z+150\,921\,225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(16\,777\,216\,z^6-572\,522\,496\,z^5+2\,415\,329\,280\,z^4+1\,006\,387\,200\,z^3+\right.$$
$$\left.\left.235\,872\,000\,z^2-159\,213\,600\,z+150\,921\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aa0n.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{21}{4};-z\right)=$$
$$\frac{1}{32\,212\,254\,720\,z^{17/4}}\left(17\left(\sqrt{\pi}\,\left(16\,777\,216\,z^6+572\,522\,496\,z^5+2\,415\,329\,280\,z^4-1\,006\,387\,200\,z^3+235\,872\,000\,z^2+\right.\right.\right.$$
$$\left.159\,213\,600\,z+150\,921\,225\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\,\left(1\,048\,576\,z^5+35\,586\,048\,z^4+144\,678\,912\,z^3-79\,188\,480\,z^2+30\,073\,680\,z+50\,307\,075\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left.\left(1\,048\,576\,z^5+34\,799\,616\,z^4+121\,282\,560\,z^3-106\,928\,640\,z^2+1\,769\,040\,z-150\,921\,225\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aa0o.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{23}{4};z\right)=\frac{1}{63\,795\,363\,840\,\sqrt{2}\,z^{17/4}}$$
$$\left(19\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-622\,854\,144\,z^5+2\,971\,860\,992\,z^4+1\,006\,387\,200\,z^3+9\,434\,880\,z^2-237\,837\,600\,z-\right.\right.\right.$$
$$638\,512\,875\left)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-16\,777\,216\,z^6+612\,368\,384\,z^5-2\,610\,757\,632\,z^4-2\,012\,774\,400\,z^3-\right.\right.$$
$$1\,003\,242\,240\,z^2+3\,632\,428\,800\,z+1\,915\,538\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(16\,777\,216\,z^6-618\,659\,840\,z^5+\right.$$
$$\left.\left.\left.2\,822\,701\,056\,z^4+1\,536\,933\,888\,z^3+588\,107\,520\,z^2-454\,053\,600\,z+1\,915\,538\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa0p.01

$${}_1F_2\left(-\frac{7}{4};\frac{5}{2},\frac{23}{4};-z\right)=\frac{1}{63\,795\,363\,840\sqrt{2}\,z^{17/4}}$$
$$\left(19\left(2\sqrt{z}\,\left(16\,777\,216z^6+622\,854\,144z^5+2\,971\,860\,992z^4-1\,006\,387\,200z^3+9\,434\,880z^2+237\,837\,600z-\right.\right.\right.$$
$$\left.\left.638\,512\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,777\,216z^6+612\,368\,384z^5+2\,610\,757\,632z^4-2\,012\,774\,400z^3+\right.\right.$$
$$\left.\left.1\,003\,242\,240z^2+3\,632\,428\,800z-1\,915\,538\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(16\,777\,216z^6+618\,659\,840z^5+\right.\right.$$
$$\left.\left.\left.2\,822\,701\,056z^4-1\,536\,933\,888z^3+588\,107\,520z^2+454\,053\,600z+1\,915\,538\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1=-\frac{7}{4}$, $b_{1.}=\frac{7}{2}$

07.22.03.aa0q.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{23}{4};z\right)=\frac{1}{153\,824z^{5/2}}$$
$$\left(\left(1024z^3+201\,600z^2+2\,496\,900z+1\,507\,275\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(11\,008z^2+487\,200z+1\,507\,275\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aa0r.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{23}{4};-z\right)=\frac{1}{153\,824z^{5/2}}$$
$$\left(\left(-1024z^3+201\,600z^2-2\,496\,900z+1\,507\,275\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(11\,008z^2-487\,200z+1\,507\,275\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aa0s.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{21}{4};z\right)=\frac{1}{21\,099\,312\sqrt{2}\,z^{7/4}}\left(\left(4z\left(65\,536z^3+2\,183\,168z^2+12\,023\,856z-84\,492\,639\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\,\left(32\,768z^3+857\,472z^2-28\,034\,424z-253\,477\,917\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(262\,144z^4+8\,798\,208z^3+69\,220\,800z^2+228\,947\,796z+760\,433\,751\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa0t.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{21}{4};-z\right)=\frac{1}{21\,099\,312\sqrt{2}\,z^{7/4}}\left(\left(4z\left(65\,536z^3-2\,183\,168z^2+12\,023\,856z+84\,492\,639\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\,\left(32\,768z^3-857\,472z^2-28\,034\,424z+253\,477\,917\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(262\,144z^4-8\,798\,208z^3+69\,220\,800z^2-228\,947\,796z+760\,433\,751\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa0u.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{19}{4};z\right)=\frac{21\left(192z^2+3500z+2175\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(128z^2+12\,600z+45\,675\right)\cosh\left(2\sqrt{z}\right)}{6688z^{5/2}}$$

07.22.03.aa0v.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{19}{4};-z\right)=\frac{21\left(192z^2-3500z+2175\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(128z^2-12600z+45675\right)\cos\left(2\sqrt{z}\right)}{6688z^{5/2}}$$

07.22.03.aa0w.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{17}{4};z\right)=\frac{1}{7033104\sqrt{2}\,z^{7/4}}\left(\left(4z\left(32768z^3+847872z^2+4315600z-19078983\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(16384z^3+434176z^2-3230304z-57236949\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(131072z^4+3424256z^3+19943616z^2+42397740z+171710847\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa0x.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{17}{4};-z\right)=\frac{1}{7033104\sqrt{2}\,z^{7/4}}\left(\left(4z\left(32768z^3-847872z^2+4315600z+19078983\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(16384z^3-434176z^2-3230304z+57236949\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(131072z^4-3424256z^3+19943616z^2-42397740z+171710847\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa0y.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{15}{4};z\right)=\frac{\left(64z^2+2436z+1575\right)\sinh\left(2\sqrt{z}\right)-42\sqrt{z}\left(16z+75\right)\cosh\left(2\sqrt{z}\right)}{352z^{5/2}}$$

07.22.03.aa0z.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{15}{4};-z\right)=\frac{42\sqrt{z}\left(16z-75\right)\cos\left(2\sqrt{z}\right)+\left(64z^2-2436z+1575\right)\sin\left(2\sqrt{z}\right)}{352z^{5/2}}$$

07.22.03.aa10.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{13}{4};z\right)=\frac{1}{2068560\sqrt{2}\,z^{7/4}}$$
$$\left(\left(4z\left(16384z^3+302080z^2+1248640z-3533145\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(8192z^3+156160z^2+175560z-10599435\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(65536z^4+1224704z^3+5322240z^2+5530140z+31798305\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa11.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{13}{4};-z\right)=\frac{1}{2068560\sqrt{2}\,z^{7/4}}$$
$$\left(\left(4z\left(16384z^3-302080z^2+1248640z+3533145\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(8192z^3-156160z^2+175560z+10599435\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(65536z^4-1224704z^3+5322240z^2-5530140z+31798305\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa12.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{11}{4};z\right)=-\frac{15\left(2\sqrt{z}\ (8z+63)\cosh\left(2\sqrt{z}\right)-(92z+63)\sinh\left(2\sqrt{z}\right)\right)}{352\,z^{5/2}}$$

07.22.03.aa13.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{11}{4};-z\right)=\frac{15\left(2\sqrt{z}\ (8z-63)\cos\left(2\sqrt{z}\right)+(63-92z)\sin\left(2\sqrt{z}\right)\right)}{352\,z^{5/2}}$$

07.22.03.aa14.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{9}{4};z\right)=\frac{1}{477\,360\sqrt{2}\ z^{7/4}}$$
$$\left(\left(4z\left(8192z^3+90\,112z^2+262\,560z-460\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\ \left(4096z^3+47\,616z^2+166\,320z-1\,382\,535\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(32\,768z^4+368\,640z^3+1\,153\,152z^2+291\,060z+4\,147\,605\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa15.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{9}{4};-z\right)=\frac{1}{477\,360\sqrt{2}\ z^{7/4}}$$
$$\left(\left(4z\left(8192z^3-90\,112z^2+262\,560z+460\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\ \left(4096z^3-47\,616z^2+166\,320z+1\,382\,535\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(32\,768z^4-368\,640z^3+1\,153\,152z^2-291\,060z+4\,147\,605\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa16.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{7}{4};z\right)=\frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\ \cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.aa17.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{7}{4};-z\right)=-\frac{15\left(6\sqrt{z}\ \cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.aa18.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{5}{4};z\right)=\frac{1}{53\,040\sqrt{2}\ z^{7/4}}$$
$$\left(\left(4z\left(4096z^3+14\,592z^2+24\,656z-24\,255\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\ \left(2048z^3+8576z^2+20\,328z-72\,765\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(16\,384z^4+62\,464z^3+119\,616z^2-19\,404z+218\,295\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa19.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{5}{4};-z\right)=$$

$$\frac{1}{53\,040\sqrt{2}\,z^{7/4}}\left(\left(4z\left(4096z^3-14\,592z^2+24\,656z+24\,255\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2048z^3-8576z^2+20\,328z+72\,765\right)\right.\right.$$

$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,384z^4-62\,464z^3+119\,616z^2+19\,404z+218\,295\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa1a.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{3}{4};z\right)=$$

$$\frac{1}{127\,296z^{5/2}}\left(e^{-2\sqrt{z}}\left(-16\,384e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}-16\,384e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+\right.\right.$$

$$16\,384e^{4\sqrt{z}}z^4-16\,384z^4+4096e^{4\sqrt{z}}z^{7/2}+4096z^{7/2}+3072e^{4\sqrt{z}}z^3-3072z^3+$$

$$3840e^{4\sqrt{z}}z^{5/2}+3840z^{5/2}+6720e^{4\sqrt{z}}z^2-6720z^2+15\,120e^{4\sqrt{z}}z^{3/2}+15\,120z^{3/2}+$$

$$\left.\left.41\,580e^{4\sqrt{z}}z-41\,580z-73\,710e^{4\sqrt{z}}\sqrt{z}-73\,710\sqrt{z}+36\,855e^{4\sqrt{z}}-36\,855\right)\right)$$

07.22.03.aa1b.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{3}{4};-z\right)=\frac{1}{63\,648z^{5/2}}\left(-32\,768\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}-\right.$$

$$\left.2\left(2048z^3-1920z^2+7560z+36\,855\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(16\,384z^4-3072z^3+6720z^2-41\,580z+36\,855\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aa1c.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{1}{4};z\right)=\frac{1}{10\,608\sqrt{2}\,z^{7/4}}$$

$$\left(\left(-4z\left(2048z^3-7936z^2-3856z+1617\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024z^3-3328z^2-2688z+4851\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.\left(8192z^4-29\,696z^3-20\,160z^2+5292z-14\,553\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa1d.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},-\frac{1}{4};-z\right)=\frac{1}{10\,608\sqrt{2}\,z^{7/4}}$$

$$\left(\left(-4z\left(2048z^3+7936z^2-3856z-1617\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024z^3+3328z^2-2688z-4851\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.\left(-8192z^4-29\,696z^3+20\,160z^2+5292z+14\,553\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa1e.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{7}{2}, \frac{1}{4}; z\right) = \frac{1}{42\,432\, z^{5/2}} $$
$$ \left(e^{-2\sqrt{z}} \left(-4096\, e^{4\sqrt{z}}\, z^4 + 4096\, z^4 - 1024\, e^{4\sqrt{z}}\, z^{7/2} - 1024\, z^{7/2} + 256\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16\, z - 119)\, \mathrm{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{13/4} + \right.\right. $$
$$ 256\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16\, z - 119)\, \mathrm{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{13/4} + 29\,696\, e^{4\sqrt{z}}\, z^3 - 29\,696\, z^3 + $$
$$ \left.\left. 6656\, e^{4\sqrt{z}}\, z^{5/2} + 6656\, z^{5/2} + 4032\, e^{4\sqrt{z}}\, z^2 - 4032\, z^2 + 3360\, e^{4\sqrt{z}}\, z^{3/2} + 3360\, z^{3/2} + \right.\right. $$
$$ \left.\left. 2100\, e^{4\sqrt{z}}\, z - 2100\, z - 5670\, e^{4\sqrt{z}}\, \sqrt{z} - 5670\, \sqrt{z} + 2835\, e^{4\sqrt{z}} - 2835\right)\right) $$

07.22.03.aa1f.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{7}{2}, \frac{1}{4}; -z\right) = $$
$$ \frac{1}{21\,216\, z^{5/2}} \left(512\, \sqrt{\pi}\, (16\, z + 119)\, C\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) z^{13/4} + 2\left(512\, z^3 + 3328\, z^2 - 1680\, z - 2835\right) \cos\left(2\, \sqrt{z}\right) \sqrt{z} + \right. $$
$$ \left. \left(-4096\, z^4 - 29\,696\, z^3 + 4032\, z^2 - 2100\, z + 2835\right) \sin\left(2\, \sqrt{z}\right)\right) $$

07.22.03.aa1g.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{7}{2}, \frac{3}{4}; z\right) = \frac{1}{31\,824\, \sqrt{2}\, z^{7/4}} $$
$$ \left(\left(4\, z \left(1024\, z^3 - 11\,584\, z^2 + 8544\, z - 441\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\, \sqrt{z}\, \left(512\, z^3 - 5472\, z^2 + 1512\, z - 1323\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. \left(-4096\, z^4 + 45\,312\, z^3 - 24\,192\, z^2 + 3780\, z - 3969\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa1h.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{7}{2}, \frac{3}{4}; -z\right) = \frac{1}{31\,824\, \sqrt{2}\, z^{7/4}} $$
$$ \left(\left(4\, z \left(1024\, z^3 + 11\,584\, z^2 + 8544\, z + 441\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\, \sqrt{z}\, \left(512\, z^3 + 5472\, z^2 + 1512\, z + 1323\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. \left(4096\, z^4 + 45\,312\, z^3 + 24\,192\, z^2 + 3780\, z + 3969\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa1i.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{7}{2}, \frac{5}{4}; z\right) = $$
$$ \frac{1}{42\,432\, z^{5/2}} \left(e^{-2\sqrt{z}} \left(-512\, e^{4\sqrt{z}}\, z^4 + 512\, z^4 - 128\, e^{4\sqrt{z}}\, z^{7/2} - 128\, z^{7/2} + 7520\, e^{4\sqrt{z}}\, z^3 - 7520\, z^3 + 1784\, e^{4\sqrt{z}}\, z^{5/2} + \right.\right. $$
$$ 1784\, z^{5/2} + 2\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(256\, z^2 - 3808\, z + 4641\right) \mathrm{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{9/4} + $$
$$ 2\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(256\, z^2 - 3808\, z + 4641\right) \mathrm{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{9/4} - 8064\, e^{4\sqrt{z}}\, z^2 + 8064\, z^2 - $$
$$ \left.\left. 1008\, e^{4\sqrt{z}}\, z^{3/2} - 1008\, z^{3/2} + 84\, e^{4\sqrt{z}}\, z - 84\, z + 630\, e^{4\sqrt{z}}\, \sqrt{z} + 630\, \sqrt{z} - 315\, e^{4\sqrt{z}} + 315\right)\right) $$

07.22.03.aa1j.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{7}{2},\frac{5}{4};-z\right)=\frac{1}{21\,216\,z^{5/2}}\left(4\sqrt{\pi}\,\left(256\,z^2+3808\,z+4641\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+\right.$$

$$\left.2\left(64\,z^3+892\,z^2+504\,z+315\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(512\,z^4+7520\,z^3+8064\,z^2+84\,z+315\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aa1k.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{7}{2},\frac{7}{4};z\right)=\frac{1}{53\,040\,\sqrt{2}\,z^{7/4}}$$

$$\left(\left(4\,z\left(512\,z^3-9600\,z^2+18\,790\,z+315\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(256\,z^3-4640\,z^2+6825\,z+945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.\left(-2048\,z^4+37\,888\,z^3-66\,360\,z^2-8820\,z+2835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa1l.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{7}{2},\frac{7}{4};-z\right)=\frac{1}{53\,040\,\sqrt{2}\,z^{7/4}}$$

$$\left(\left(4\,z\left(512\,z^3+9600\,z^2+18\,790\,z-315\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(256\,z^3+4640\,z^2+6825\,z-945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.\left(2048\,z^4+37\,888\,z^3+66\,360\,z^2-8820\,z-2835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa1m.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{7}{2},\frac{9}{4};z\right)=$$

$$\frac{1}{4\,073\,472\,z^{5/2}}\left(5\,e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(4096\,z^3-91\,392\,z^2+222\,768\,z+41\,769\right)\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\,\sqrt{2\,\pi}\right.\right.$$

$$\left(4096\,z^3-91\,392\,z^2+222\,768\,z+41\,769\right)\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}-$$

$$4\left(-1024\,z^4+256\,z^{7/2}+22\,656\,z^3-5472\,z^{5/2}-51\,828\,z^2+9513\,z^{3/2}-14\,112\,z+3024\sqrt{z}+e^{4\sqrt{z}}\right.$$

$$\left.\left.\left.\left(1024\,z^4+256\,z^{7/2}-22\,656\,z^3-5472\,z^{5/2}+51\,828\,z^2+9513\,z^{3/2}+14\,112\,z+3024\sqrt{z}-1512\right)+1512\right)\right)\right)$$

07.22.03.aa1n.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{7}{2},\frac{9}{4};-z\right)=\frac{1}{1\,018\,368\,z^{5/2}}\left(5\left(\sqrt{\pi}\,\left(4096\,z^3+91\,392\,z^2+222\,768\,z-41\,769\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+\right.\right.$$

$$\left.\left.2\left(\sqrt{z}\,\left(256\,z^3+5472\,z^2+9513\,z-3024\right)\cos\left(2\sqrt{z}\right)-4\left(256\,z^4+5664\,z^3+12\,957\,z^2-3528\,z-378\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aa1o.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{7}{2}, \frac{11}{4}; z\right) = \frac{1}{424\,320\sqrt{2}\, z^{7/4}} $$
$$ \left(\left(2z\left(4096z^3 - 107\,264z^2 + 340\,720z + 57\,855\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(4096z^3 - 104\,704z^2 + 280\,560z + 138\,285\right)\right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\left(4096z^4 - 106\,240z^3 + 315\,504z^2 + 108\,675z + 26\,460\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa1p.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{7}{2}, \frac{11}{4}; -z\right) = \frac{1}{424\,320\sqrt{2}\, z^{7/4}} $$
$$ \left(\left(2z\left(4096z^3 + 107\,264z^2 + 340\,720z - 57\,855\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(4096z^3 + 104\,704z^2 + 280\,560z - 138\,285\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\left(4096z^4 + 106\,240z^3 + 315\,504z^2 - 108\,675z + 26\,460\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa1q.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{7}{2}, \frac{13}{4}; z\right) = $$
$$ \frac{1}{115\,867\,648\, z^{5/2}}\left(5e^{-2\sqrt{z}}\left(-4\left(-16\,384z^4 + 4096z^{7/2} + 484\,352z^3 - 118\,016z^{5/2} - 1\,697\,472z^2 + 346\,416z^{3/2} - \right.\right.\right. $$
$$ \left. 844\,116z + 270\,081\sqrt{z} + e^{4\sqrt{z}}\left(16\,384z^4 + 4096z^{7/2} - 484\,352z^3 - 118\,016z^{5/2} + \right.\right. $$
$$ \left.\left. 1\,697\,472z^2 + 346\,416z^{3/2} + 844\,116z + 270\,081\sqrt{z} + 387\,072\right) - 387\,072\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(65\,536z^4 - 1\,949\,696z^3 + 7\,128\,576z^2 + 2\,673\,216z + 1\,044\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ \left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(65\,536z^4 - 1\,949\,696z^3 + 7\,128\,576z^2 + 2\,673\,216z + 1\,044\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aa1r.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{7}{2}, \frac{13}{4}; -z\right) = \frac{1}{28\,966\,912\, z^{5/2}} $$
$$ \left(5\left(2\sqrt{z}\left(4096z^3 + 118\,016z^2 + 346\,416z - 270\,081\right)\cos\left(2\sqrt{z}\right) + \sqrt{\pi}\sqrt[4]{z}\left(65\,536z^4 + 1\,949\,696z^3 + 7\,128\,576z^2 - \right.\right.\right. $$
$$ \left.\left.\left. 2\,673\,216z + 1\,044\,225\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 8\left(4096z^4 + 121\,088z^3 + 424\,368z^2 - 211\,029z + 96\,768\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.aa1s.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{7}{2}, \frac{15}{4}; z\right) = $$
$$ \frac{1}{122\,204\,160\sqrt{2}\, z^{9/4}}\left(11\left(2\sqrt{z}\left(65\,536z^4 - 2\,203\,648z^3 + 9\,686\,016z^2 + 3\,296\,160z + 1\,461\,915\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ \left(65\,536z^4 - 2\,162\,688z^3 + 8\,418\,816z^2 + 6\,410\,880z + 4\,385\,745\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 2\sqrt{z}\left(65\,536z^4 - 2\,187\,264z^3 + 9\,160\,704z^2 + 4\,977\,504z + 3\,234\,735\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa1t.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{7}{2}, \frac{15}{4}; -z\right) = \frac{1}{122\,204\,160\sqrt{2}\, z^{9/4}}\left(11\left(2\sqrt{z}\left(65\,536 z^4 + 2\,203\,648 z^3 + 9\,686\,016 z^2 - 3\,296\,160 z + 1\,461\,915\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(65\,536 z^4 + 2\,162\,688 z^3 + 8\,418\,816 z^2 - 6\,410\,880 z + 4\,385\,745\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(65\,536 z^4 + 2\,187\,264 z^3 + 9\,160\,704 z^2 - 4\,977\,504 z + 3\,234\,735\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa1u.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{7}{2}, \frac{17}{4}; z\right) = \frac{1}{570\,425\,344 z^{13/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-262\,144 z^{9/2} + 65\,536 z^4 + 9\,699\,328 z^{7/2} - 2\,375\,680 z^3 - 45\,803\,520 z^{5/2} + 9\,838\,080 z^2 - 32\,309\,760 z^{3/2} + 10\,987\,200 z - 28\,756\,980\sqrt{z} + e^{4\sqrt{z}}\left(262\,144 z^{9/2} + 65\,536 z^4 - 9\,699\,328 z^{7/2} - 2\,375\,680 z^3 + 45\,803\,520 z^{5/2} + 9\,838\,080 z^2 + 32\,309\,760 z^{3/2} + 10\,987\,200 z + 28\,756\,980\sqrt{z} + 9\,398\,025\right) + 9\,398\,025\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576 z^5 - 38\,993\,920 z^4 + 190\,095\,360 z^3 + 106\,928\,640 z^2 + 83\,538\,000 z + 9\,398\,025\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576 z^5 - 38\,993\,920 z^4 + 190\,095\,360 z^3 + 106\,928\,640 z^2 + 83\,538\,000 z + 9\,398\,025\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aa1v.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{7}{2}, \frac{17}{4}; -z\right) = \frac{1}{142\,606\,336 z^{13/4}}\left(\sqrt{\pi}\left(1\,048\,576 z^5 + 38\,993\,920 z^4 + 190\,095\,360 z^3 - 106\,928\,640 z^2 + 83\,538\,000 z - 9\,398\,025\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536 z^4 + 2\,424\,832 z^3 + 11\,450\,880 z^2 - 8\,077\,440 z + 7\,189\,245\right)\sin\left(2\sqrt{z}\right) - \left(65\,536 z^4 + 2\,375\,680 z^3 + 9\,838\,080 z^2 - 10\,987\,200 z + 9\,398\,025\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.aa1w.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{7}{2}, \frac{19}{4}; z\right) = \frac{1}{260\,702\,208\sqrt{2}\, z^{13/4}}\left(\left(2\sqrt{z}\left(1\,048\,576 z^5 - 43\,057\,152 z^4 + 241\,737\,728 z^3 + 125\,121\,024 z^2 + 110\,270\,160 z - 16\,081\,065\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(1\,048\,576 z^5 - 42\,401\,792 z^4 + 216\,588\,288 z^3 + 216\,082\,944 z^2 + 257\,297\,040 z - 48\,243\,195\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(1\,048\,576 z^5 - 42\,795\,008 z^4 + 231\,383\,040 z^3 + 170\,666\,496 z^2 + 176\,265\,936 z + 48\,243\,195\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa1x.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{7}{2},\frac{19}{4};-z\right)=\frac{1}{260\,702\,208\sqrt{2}\,z^{13/4}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576z^5+43\,057\,152z^4+241\,737\,728z^3-125\,121\,024z^2+110\,270\,160z+16\,081\,065\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(1\,048\,576z^5+42\,401\,792z^4+216\,588\,288z^3-216\,082\,944z^2+257\,297\,040z+48\,243\,195\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(1\,048\,576z^5+42\,795\,008z^4+231\,383\,040z^3-170\,666\,496z^2+176\,265\,936z-48\,243\,195\right)$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa1y.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{7}{2},\frac{21}{4};z\right)=$$
$$\frac{1}{12\,884\,901\,888\,z^{17/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304z^{11/2}+1\,048\,576z^5+186\,384\,384z^{9/2}-45\,809\,664z^4-1\,107\,197\,952z^{7/2}+\right.\right.\right.$$
$$245\,145\,600z^3-1\,003\,161\,600z^{5/2}+343\,042\,560z^2-1\,285\,381\,440z^{3/2}+511\,252\,560z-$$
$$\left.488\,697\,300\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^{11/2}+1\,048\,576z^5-186\,384\,384z^{9/2}-45\,809\,664z^4+\right.\right.$$
$$1\,107\,197\,952z^{7/2}+245\,145\,600z^3+1\,003\,161\,600z^{5/2}+343\,042\,560z^2+$$
$$\left.\left.1\,285\,381\,440z^{3/2}+511\,252\,560z+488\,697\,300\sqrt{z}-366\,522\,975\right)-366\,522\,975\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-748\,683\,264z^5+4\,562\,288\,640z^4+3\,421\,716\,480z^3+\right.$$
$$4\,009\,824\,000z^2+902\,210\,400z-366\,522\,975\left.\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-748\,683\,264z^5+4\,562\,288\,640z^4+3\,421\,716\,480z^3+\right.$$
$$\left.\left.4\,009\,824\,000z^2+902\,210\,400z-366\,522\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.aa1z.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{7}{2},\frac{21}{4};-z\right)=\frac{1}{3\,221\,225\,472\,z^{17/4}}$$
$$\left(\sqrt{\pi}\left(16\,777\,216z^6+748\,683\,264z^5+4\,562\,288\,640z^4-3\,421\,716\,480z^3+4\,009\,824\,000z^2-902\,210\,400z-366\,522\,975\right)\right.$$
$$C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(\left(1\,048\,576z^5+45\,809\,664z^4+245\,145\,600z^3-343\,042\,560z^2+511\,252\,560z+366\,522\,975\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.4\sqrt{z}\left(1\,048\,576z^5+46\,596\,096z^4+276\,799\,488z^3-250\,790\,400z^2+321\,345\,360z-122\,174\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aa20.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},\frac{23}{4};z\right)=$$
$$\left(19\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-813\,694\,976\,z^5+5\,560\,139\,776\,z^4+3\,882\,418\,176\,z^3+5\,079\,110\,400\,z^2-294\,053\,760\,z+\right.\right.\right.$$
$$\left.\left.\left.1\,206\,079\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,777\,216\,z^6-803\,209\,216\,z^5+5\,079\,760\,896\,z^4+\right.\right.\right.$$
$$\left.\left.\left.6\,185\,926\,656\,z^3+9\,997\,827\,840\,z^2+4\,631\,346\,720\,z+3\,618\,239\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(16\,777\,216\,z^6-809\,500\,672\,z^5+5\,363\,269\,632\,z^4+4\,985\,487\,360\,z^3+7\,036\,533\,504\,z^2+\right.\right.\right.$$
$$\left.\left.\left.3\,087\,564\,480\,z-3\,618\,239\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(108\,452\,118\,528\sqrt{2}\,z^{17/4}\right)$$

07.22.03.aa21.01

$${}_1F_2\left(-\frac{7}{4};\frac{7}{2},\frac{23}{4};-z\right)=$$
$$\left(19\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+813\,694\,976\,z^5+5\,560\,139\,776\,z^4-3\,882\,418\,176\,z^3+5\,079\,110\,400\,z^2+294\,053\,760\,z+\right.\right.\right.$$
$$\left.\left.\left.1\,206\,079\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,777\,216\,z^6+803\,209\,216\,z^5+5\,079\,760\,896\,z^4-\right.\right.\right.$$
$$\left.\left.\left.6\,185\,926\,656\,z^3+9\,997\,827\,840\,z^2-4\,631\,346\,720\,z+3\,618\,239\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(16\,777\,216\,z^6+809\,500\,672\,z^5+5\,363\,269\,632\,z^4-4\,985\,487\,360\,z^3+7\,036\,533\,504\,z^2-\right.\right.\right.$$
$$\left.\left.\left.3\,087\,564\,480\,z-3\,618\,239\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(108\,452\,118\,528\sqrt{2}\,z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{7}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.aa22.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{23}{4};z\right)=\frac{1}{615\,296\,z^{7/2}}\left(7\left(2\sqrt{z}\,\left(1024\,z^3+278\,400\,z^2+5\,837\,700\,z+13\,278\,375\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.25\left(2048\,z^3+133\,632\,z^2+941\,688\,z+531\,135\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aa23.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{23}{4};-z\right)=\frac{1}{615\,296\,z^{7/2}}\left(7\left(2\sqrt{z}\,\left(1024\,z^3-278\,400\,z^2+5\,837\,700\,z-13\,278\,375\right)\cos\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.25\left(2048\,z^3-133\,632\,z^2+941\,688\,z-531\,135\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aa24.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{253\,191\,744\sqrt{2}\,z^{11/4}}\left(\left(4z\left(524\,288z^4+21\,594\,112z^3+191\,859\,840z^2+675\,941\,112z+14\,786\,211\,825\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(262\,144z^4+10\,960\,896z^3+333\,014\,976z^2+10\,477\,087\,236z+44\,358\,635\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-2\,097\,152z^5-86\,900\,736z^4-747\,081\,216z^3+5\,669\,183\,520z^2+56\,779\,053\,408z+133\,075\,906\,425\right)$$
$$\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.aa25.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{253\,191\,744\sqrt{2}\,z^{11/4}}\left(\left(4z\left(524\,288z^4-21\,594\,112z^3+191\,859\,840z^2-675\,941\,112z+14\,786\,211\,825\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(262\,144z^4-10\,960\,896z^3+333\,014\,976z^2-10\,477\,087\,236z+44\,358\,635\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(2\,097\,152z^5-86\,900\,736z^4+747\,081\,216z^3+5\,669\,183\,520z^2-56\,779\,053\,408z+133\,075\,906\,425\right)$$
$$\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.aa26.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{19}{4};z\right)=$$
$$-\frac{1}{26\,752\,z^{7/2}}\left(7\left(\left(512z^3+74\,400z^2+626\,400z+358\,875\right)\sinh\left(2\sqrt{z}\right)-150\sqrt{z}\left(64z^2+1972z+4785\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aa27.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{19}{4};-z\right)=$$
$$-\frac{1}{26\,752\,z^{7/2}}\left(7\left(150\sqrt{z}\left(64z^2-1972z+4785\right)\cos\left(2\sqrt{z}\right)+\left(512z^3-74\,400z^2+626\,400z-358\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aa28.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{84\,397\,248\sqrt{2}\,z^{11/4}}\left(\left(4z\left(262\,144z^4+8\,388\,608z^3+59\,086\,848z^2+43\,609\,104z+2\,957\,242\,365\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(131\,072z^4+4\,276\,224z^3+51\,097\,536z^2+1\,820\,680\,092z+8\,871\,727\,095\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1\,048\,576\right.$$
$$\left.\left.z^5-33\,816\,576z^4-245\,145\,600z^3+930\,327\,552z^2+10\,531\,598\,616z+26\,615\,181\,285\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.aa29.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{84\,397\,248\sqrt{2}\,z^{11/4}}\left(\left(4z\left(262\,144z^4-8\,388\,608z^3+59\,086\,848z^2-43\,609\,104z+2\,957\,242\,365\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(131\,072z^4-4\,276\,224z^3+51\,097\,536z^2-1\,820\,680\,092z+8\,871\,727\,095\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,048\,576\right.$$
$$\left.\left.z^5-33\,816\,576z^4+245\,145\,600z^3+930\,327\,552z^2-10\,531\,598\,616z+26\,615\,181\,285\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.aa2a.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{15}{4};z\right)=\frac{7\left(2\sqrt{z}\left(64z^2+4100z+10\,875\right)\cosh\left(2\sqrt{z}\right)-\left(1664z^2+18\,600z+10\,875\right)\sinh\left(2\sqrt{z}\right)\right)}{1408z^{7/2}}$$

07.22.03.aa2b.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{15}{4};-z\right)=-\frac{7\left(2\sqrt{z}\left(64z^2-4100z+10\,875\right)\cos\left(2\sqrt{z}\right)+\left(-1664z^2+18\,600z-10\,875\right)\sin\left(2\sqrt{z}\right)\right)}{1408z^{7/2}}$$

07.22.03.aa2c.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{24\,822\,720\sqrt{2}\,z^{11/4}}\left(\left(4z\left(131\,072z^4+2\,990\,080z^3+16\,296\,960z^2-12\,113\,640z+476\,974\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(65\,536z^4+1\,536\,000z^3+9\,192\,960z^2+236\,215\,980z+1\,430\,923\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left(-524\,288z^5-12\,091\,392z^4-68\,382\,720z^3+120\,083\,040z^2+1\,526\,318\,640z+4\,292\,771\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.aa2d.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{24\,822\,720\sqrt{2}\,z^{11/4}}\left(\left(4z\left(131\,072z^4-2\,990\,080z^3+16\,296\,960z^2+12\,113\,640z+476\,974\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(65\,536z^4-1\,536\,000z^3+9\,192\,960z^2-236\,215\,980z+1\,430\,923\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left(524\,288z^5-12\,091\,392z^4+68\,382\,720z^3+120\,083\,040z^2-1\,526\,318\,640z+4\,292\,771\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.aa2e.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{11}{4};z\right)=-\frac{105\left(\left(32z^2+624z+375\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(124z+375\right)\cosh\left(2\sqrt{z}\right)\right)}{1408z^{7/2}}$$

07.22.03.aa2f.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{11}{4};-z\right)=\frac{105\left(2\sqrt{z}\left(124z-375\right)\cos\left(2\sqrt{z}\right)+\left(32z^2-624z+375\right)\sin\left(2\sqrt{z}\right)\right)}{1408z^{7/2}}$$

07.22.03.aa2g.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{5\,728\,320\sqrt{2}\,z^{11/4}}\left(\left(4z\left(65\,536z^4+892\,928z^3+3\,444\,480z^2-4\,213\,440z+52\,997\,175\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(32\,768z^4+466\,944z^3+2\,056\,320z^2+17\,643\,780z+158\,991\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-262\,144z^5-3\,637\,248z^4-14\,773\,248z^3+11\,531\,520z^2+143\,783\,640z+476\,974\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa2h.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{5\,728\,320\sqrt{2}\,z^{11/4}}\left(\left(4z\left(65\,536z^4-892\,928z^3+3\,444\,480z^2+4\,213\,440z+52\,997\,175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\right.\right.$$
$$\sqrt{z}\left(32\,768z^4-466\,944z^3+2\,056\,320z^2-17\,643\,780z+158\,991\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(262\,144z^5-3\,637\,248z^4+14\,773\,248z^3+11\,531\,520z^2-143\,783\,640z+476\,974\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa2i.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{7}{4};z\right)=\frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right)-3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.aa2j.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{7}{4};-z\right)=\frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right)+3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.aa2k.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{5}{4};z\right)=\frac{1}{636\,480\sqrt{2}\,z^{11/4}}\left(\left(4z\left(32\,768z^4+145\,408z^3+329\,856z^2-360\,360z+2\,304\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(16\,384z^4+82\,944z^3+237\,888z^2+235\,620z+6\,912\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-131\,072z^5-614\,400z^4-1\,516\,032z^3+643\,104z^2+4\,656\,960z+20\,738\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa2l.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{636\,480\sqrt{2}\,z^{11/4}}\left(\left(4z\left(32\,768z^4-145\,408z^3+329\,856z^2+360\,360z+2\,304\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(16\,384z^4-82\,944z^3+237\,888z^2-235\,620z+6\,912\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(131\,072z^5-614\,400z^4+1\,516\,032z^3+643\,104z^2-4\,656\,960z+20\,738\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa2m.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{1\,527\,552\,z^{7/2}}\left(e^{-2\sqrt{z}}\left(-131\,072\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{21/4}-131\,072\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{21/4}+\right.\right.$$
$$131\,072\,e^{4\sqrt{z}}\,z^5-131\,072\,z^5+32\,768\,e^{4\sqrt{z}}\,z^{9/2}+32\,768\,z^{9/2}+24\,576\,e^{4\sqrt{z}}\,z^4-24\,576\,z^4+$$
$$30\,720\,e^{4\sqrt{z}}\,z^{7/2}+30\,720\,z^{7/2}+53\,760\,e^{4\sqrt{z}}\,z^3-53\,760\,z^3+120\,960\,e^{4\sqrt{z}}\,z^{5/2}+120\,960\,z^{5/2}+$$
$$332\,640\,e^{4\sqrt{z}}\,z^2-332\,640\,z^2+1\,081\,080\,e^{4\sqrt{z}}\,z^{3/2}+1\,081\,080\,z^{3/2}-4\,717\,440\,e^{4\sqrt{z}}\,z+$$
$$\left.\left.4\,717\,440\,z+6\,265\,350\,e^{4\sqrt{z}}\,\sqrt{z}+6\,265\,350\,\sqrt{z}-3\,132\,675\,e^{4\sqrt{z}}+3\,132\,675\right)\right)$$

07.22.03.aa2n.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{3}{4};-z\right)=$$
$$\frac{1}{763\,776\,z^{7/2}}\left(-262\,144\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4}-2\left(16\,384\,z^4-15\,360\,z^3+60\,480\,z^2-540\,540\,z+3\,132\,675\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(131\,072\,z^5-24\,576\,z^4+53\,760\,z^3-332\,640\,z^2-4\,717\,440\,z+3\,132\,675\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aa2o.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{1}{4};z\right)=\frac{1}{127\,296\,\sqrt{2}\,z^{11/4}}\left(\left(-4\,z\left(16\,384\,z^4-77\,824\,z^3-51\,456\,z^2+33\,264\,z-121\,275\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\,\left(8192\,z^4-33\,792\,z^3-36\,288\,z^2+30\,492\,z-363\,825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left(65\,536\,z^5-294\,912\,z^4-258\,048\,z^3+80\,640\,z^2+116\,424\,z+1\,091\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.aa2p.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},-\frac{1}{4};-z\right)=\frac{1}{127\,296\,\sqrt{2}\,z^{11/4}}\left(\left(-4\,z\left(16\,384\,z^4+77\,824\,z^3-51\,456\,z^2-33\,264\,z-121\,275\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\,\left(8192\,z^4+33\,792\,z^3-36\,288\,z^2-30\,492\,z-363\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left(-65\,536\,z^5-294\,912\,z^4+258\,048\,z^3+80\,640\,z^2-116\,424\,z+1\,091\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.aa2q.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{1}{4};z\right)=\frac{1}{509\,184\,z^{7/2}}$$
$$\left(e^{-2\sqrt{z}}\left(-32\,768\,e^{4\sqrt{z}}\,z^5+32\,768\,z^5-8192\,e^{4\sqrt{z}}\,z^{9/2}-8192\,z^{9/2}+2048\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z-147)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}+\right.\right.$$
$$2048\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z-147)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}+294\,912\,e^{4\sqrt{z}}\,z^4-294\,912\,z^4+67\,584\,e^{4\sqrt{z}}\,z^{7/2}+67\,584\,z^{7/2}+$$
$$43\,008\,e^{4\sqrt{z}}\,z^3-43\,008\,z^3+40\,320\,e^{4\sqrt{z}}\,z^{5/2}+40\,320\,z^{5/2}+40\,320\,e^{4\sqrt{z}}\,z^2-40\,320\,z^2+7560\,e^{4\sqrt{z}}\,z^{3/2}+$$
$$\left.\left.7560\,z^{3/2}-249\,480\,e^{4\sqrt{z}}\,z+249\,480\,z+368\,550\,e^{4\sqrt{z}}\,\sqrt{z}+368\,550\,\sqrt{z}-184\,275\,e^{4\sqrt{z}}+184\,275\right)\right)$$

07.22.03.aa2r.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{254\,592\,z^{7/2}}\left(4096\sqrt{\pi}\,(16z+147)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}+2\left(4096z^4+33\,792z^3-20\,160z^2+3780z-184\,275\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-\right.$$
$$\left.\left(32\,768z^5+294\,912z^4-43\,008z^3+40\,320z^2+249\,480z-184\,275\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aa2s.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{3}{4};z\right)=\frac{1}{381\,888\sqrt{2}\,z^{11/4}}\left(\left(4z\left(8192z^4-114\,176z^3+105\,984z^2-11\,592z+24\,255\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(4096z^4-54\,528z^3+24\,192z^2-20\,916z+72\,765\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-32\,768z^5+448\,512z^4-322\,560z^3+58\,464z^2-21\,168z+218\,295\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa2t.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{3}{4};-z\right)=\frac{1}{381\,888\sqrt{2}\,z^{11/4}}\left(\left(4z\left(8192z^4+114\,176z^3+105\,984z^2+11\,592z+24\,255\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(4096z^4+54\,528z^3+24\,192z^2+20\,916z+72\,765\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(32\,768z^5+448\,512z^4+322\,560z^3+58\,464z^2+21\,168z+218\,295\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa2u.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{509\,184\,z^{7/2}}\left(e^{-2\sqrt{z}}\left(-4096e^{4\sqrt{z}}z^5+4096z^5-1024e^{4\sqrt{z}}z^{9/2}-1024z^{9/2}+74\,496e^{4\sqrt{z}}z^4-74\,496z^4+\right.\right.$$
$$17\,856e^{4\sqrt{z}}z^{7/2}+17\,856z^{7/2}+16e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-4704z+7497\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+$$
$$16e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-4704z+7497\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-107\,520e^{4\sqrt{z}}z^3+107\,520z^3-$$
$$16\,128e^{4\sqrt{z}}z^{5/2}-16\,128z^{5/2}-2016e^{4\sqrt{z}}z^2+2016z^2+7560e^{4\sqrt{z}}z^{3/2}+7560z^{3/2}+$$
$$\left.\left.15\,120e^{4\sqrt{z}}z-15\,120z-28\,350e^{4\sqrt{z}}\sqrt{z}-28\,350\sqrt{z}+14\,175e^{4\sqrt{z}}-14\,175\right)\right)$$

07.22.03.aa2v.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{5}{4};-z\right)=\frac{1}{254\,592\,z^{7/2}}$$
$$\left(32\sqrt{\pi}\left(256z^2+4704z+7497\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}+2\left(512z^4+8928z^3+8064z^2+3780z+14\,175\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-\right.$$
$$\left.\left(4096z^5+74\,496z^4+107\,520z^3-2016z^2-15\,120z+14\,175\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aa2w.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{7}{4};z\right)=\frac{1}{636\,480\sqrt{2}\,z^{11/4}}\left(\left(4z\left(4096z^4-94\,720z^3+238\,800z^2+10\,080z-11\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(2048z^4-46\,080z^3+93\,240z^2+23\,940z-33\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(16\,384z^5-374\,784z^4+866\,880z^3+161\,280z^2-52\,920z+99\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa2x.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{7}{4};-z\right)=\frac{1}{636\,480\sqrt{2}\,z^{11/4}}\left(\left(4z\left(4096z^4+94\,720z^3+238\,800z^2-10\,080z-11\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(2048z^4+46\,080z^3+93\,240z^2-23\,940z-33\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(16\,384z^5+374\,784z^4+866\,880z^3-161\,280z^2-52\,920z-99\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa2y.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{6\,110\,208z^{7/2}}\left(5e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-112\,896z^2+359\,856z+97\,461\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+e^{2\sqrt{z}}\right.\right.$$
$$\sqrt{2\pi}\left(4096z^3-112\,896z^2+359\,856z+97\,461\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-$$
$$4\left(-1024z^5+256z^{9/2}+28\,032z^4-6816z^{7/2}-85\,092z^3+16\,821z^{5/2}-32\,256z^2+9576z^{3/2}-\right.$$
$$\left.\left.\left.1512z-9450\sqrt{z}+e^{4\sqrt{z}}\left(1024z^5+256z^{9/2}-28\,032z^4-6816z^{7/2}+85\,092z^3+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.16\,821z^{5/2}+32\,256z^2+9576z^{3/2}+1512z-9450\sqrt{z}+4725\right)-4725\right)\right)\right)$$

07.22.03.aa2z.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{1\,527\,552z^{7/2}}\left(5\left(\sqrt{\pi}\,z^{9/4}\left(4096z^3+112\,896z^2+359\,856z-97\,461\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\left(\left(1024z^5+28\,032z^4+85\,092z^3-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.32\,256z^2+1512z-4725\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(256z^4+6816z^3+16\,821z^2-9576z-9450\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aa30.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{11}{4};z\right)=\frac{1}{636\,480\sqrt{2}\,z^{11/4}}\left(\left(2z\left(4096z^4-132\,352z^3+544\,560z^2+153\,405z+22\,050\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\sqrt{z}\left(4096z^4-129\,792z^3+468\,720z^2+319\,095z+132\,300\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(8192z^5-262\,656z^4+1\,026\,144z^3+490\,770z^2+211\,680z-99\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa31.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{11}{4};-z\right)=\frac{1}{636\,480\sqrt{2}\,z^{11/4}}\left(\left(2z\left(4096z^4+132\,352z^3+544\,560z^2-153\,405z+22\,050\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ \sqrt{z}\left(4096z^4+129\,792z^3+468\,720z^2-319\,095z+132\,300\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.\left(8192z^5+262\,656z^4+1\,026\,144z^3-490\,770z^2+211\,680z+99\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa32.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{13}{4};z\right)=\frac{1}{173\,801\,472\,z^{7/2}} $$
$$ \left(5e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-2\,408\,448z^3+11\,515\,392z^2+6\,237\,504z+4\,385\,745\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+\right.\right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-2\,408\,448z^3+11\,515\,392z^2+6\,237\,504z+4\,385\,745\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}- $$
$$ 4\left(-16\,384z^5+4096z^{9/2}+599\,040z^4-146\,688z^{7/2}-2\,772\,672z^3+593\,712z^{5/2}-1\,893\,780z^2+644\,049z^{3/2}-\right. $$
$$ 1\,548\,288z+483\,840\sqrt{z}+e^{4\sqrt{z}}\left(16\,384z^5+4096z^{9/2}-599\,040z^4-146\,688z^{7/2}+2\,772\,672z^3+\right. $$
$$ \left.\left.\left.\left.593\,712z^{5/2}+1\,893\,780z^2+644\,049z^{3/2}+1\,548\,288z+483\,840\sqrt{z}-241\,920\right)+241\,920\right)\right)\right) $$

07.22.03.aa33.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{13}{4};-z\right)= $$
$$ \frac{1}{43\,450\,368\,z^{7/2}}\left(5\left(\sqrt{\pi}\,z^{5/4}\left(65\,536z^4+2\,408\,448z^3+11\,515\,392z^2-6\,237\,504z+4\,385\,745\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.\right. $$
$$ 2\left(4\left(4096z^5+149\,760z^4+693\,168z^3-473\,445z^2+387\,072z+60\,480\right)\sin\left(2\sqrt{z}\right)-\right. $$
$$ \left.\left.\left.\sqrt{z}\left(4096z^4+146\,688z^3+593\,712z^2-644\,049z+483\,840\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aa34.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{15}{4};z\right)= $$
$$ \frac{1}{183\,306\,240\sqrt{2}\,z^{11/4}}\left(11\left(2z\left(65\,536z^4-2\,719\,744z^3+15\,524\,352z^2+8\,346\,240z+8\,116\,605\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ \sqrt{z}\left(65\,536z^4-2\,678\,784z^3+13\,934\,592z^2+14\,243\,040z+17\,999\,415\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- $$
$$ \left.\left.2\left(65\,536z^5-2\,703\,360z^4+14\,870\,016z^3+11\,285\,568z^2+12\,482\,505z+4\,762\,800\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa35.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{9}{2}, \frac{15}{4}; -z\right) = \frac{1}{183\,306\,240\sqrt{2}\, z^{11/4}}\left(11\left(2z\left(65\,536z^4 + 2\,719\,744z^3 + 15\,524\,352z^2 - 8\,346\,240z + 8\,116\,605\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(65\,536z^4 + 2\,678\,784z^3 + 13\,934\,592z^2 - 14\,243\,040z + 17\,999\,415\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\left(65\,536z^5 + 2\,703\,360z^4 + 14\,870\,016z^3 - 11\,285\,568z^2 + 12\,482\,505z - 4\,762\,800\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa36.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{9}{2}, \frac{17}{4}; z\right) = \frac{1}{855\,638\,016 z^{7/2}}\left(e^{-2\sqrt{z}}\left(-4\left(-262\,144z^5 + 65\,536z^{9/2} + 11\,993\,088z^4 - 2\,949\,120z^{7/2} - 74\,618\,880z^3 + 16\,611\,840z^{5/2} - 72\,495\,360z^2 + 24\,635\,520z^{3/2} - 108\,444\,420z + 42\,529\,725\sqrt{z} + e^{4\sqrt{z}}\left(262\,144z^5 + 65\,536z^{9/2} - 11\,993\,088z^4 - 2\,949\,120z^{7/2} + 74\,618\,880z^3 + 16\,611\,840z^{5/2} + 72\,495\,360z^2 + 24\,635\,520z^{3/2} + 108\,444\,420z + 42\,529\,725\sqrt{z} + 77\,414\,400\right) - 77\,414\,400\right) + e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(1\,048\,576z^5 - 48\,168\,960z^4 + 307\,077\,120z^3 + 249\,500\,160z^2 + 350\,859\,600z + 197\,358\,525\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z} \left(1\,048\,576z^5 - 48\,168\,960z^4 + 307\,077\,120z^3 + 249\,500\,160z^2 + 350\,859\,600z + 197\,358\,525\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aa37.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{9}{2}, \frac{17}{4}; -z\right) = \frac{1}{213\,909\,504 z^{7/2}}\left(\sqrt{\pi}\sqrt[4]{z}\left(1\,048\,576z^5 + 48\,168\,960z^4 + 307\,077\,120z^3 - 249\,500\,160z^2 + 350\,859\,600z - 197\,358\,525\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\left(\sqrt{z}\left(65\,536z^4 + 2\,949\,120z^3 + 16\,611\,840z^2 - 24\,635\,520z + 42\,529\,725\right)\cos\left(2\sqrt{z}\right) - 4\left(65\,536z^5 + 2\,998\,272z^4 + 18\,654\,720z^3 - 18\,123\,840z^2 + 27\,111\,105z - 19\,353\,600\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.aa38.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{9}{2}, \frac{19}{4}; z\right) = \frac{1}{391\,053\,312\sqrt{2}\, z^{13/4}}\left(\left(2\sqrt{z}\left(1\,048\,576z^5 - 53\,149\,696z^4 + 388\,079\,616z^3 + 310\,334\,976z^2 + 541\,371\,600z + 337\,702\,365\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(1\,048\,576z^5 - 52\,494\,336z^4 + 356\,622\,336z^3 + 475\,808\,256z^2 + 932\,556\,240z + 1\,013\,107\,095\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(1\,048\,576z^5 - 52\,887\,552z^4 + 375\,201\,792z^3 + 388\,523\,520z^2 + 692\,257\,104z + 663\,398\,505\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa39.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{19}{4};-z\right)=\frac{1}{391\,053\,312\sqrt{2}\,z^{13/4}}$$
$$\left(\left(2\sqrt{z}\left(1\,048\,576z^5+53\,149\,696z^4+388\,079\,616z^3-310\,334\,976z^2+541\,371\,600z-337\,702\,365\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(1\,048\,576z^5+52\,494\,336z^4+356\,622\,336z^3-475\,808\,256z^2+932\,556\,240z-1\,013\,107\,095\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(1\,048\,576z^5+52\,887\,552z^4+375\,201\,792z^3-388\,523\,520z^2+692\,257\,104z-663\,398\,505\right)$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa3a.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{21}{4};z\right)=$$
$$\frac{1}{19\,327\,352\,832\,z^{17/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304\,z^{11/2}+1\,048\,576\,z^5+230\,424\,576\,z^{9/2}-56\,819\,712\,z^4-1\,800\,830\,976\,z^{7/2}+\right.\right.\right.$$
$$410\,296\,320\,z^3-2\,257\,274\,880\,z^{5/2}+752\,048\,640\,z^2-4\,883\,215\,680\,z^{3/2}+1\,865\,036\,880\,z-$$
$$6\,488\,162\,100\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-230\,424\,576\,z^{9/2}-56\,819\,712\,z^4+\right.$$
$$1\,800\,830\,976\,z^{7/2}+410\,296\,320\,z^3+2\,257\,274\,880\,z^{5/2}+752\,048\,640\,z^2+$$
$$\left.4\,883\,215\,680\,z^{3/2}+1\,865\,036\,880\,z+6\,488\,162\,100\sqrt{z}+2\,565\,660\,825\right)+2\,565\,660\,825\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-924\,844\,032z^5+7\,369\,850\,880z^4+7\,984\,005\,120z^3+\right.$$
$$16\,841\,260\,800z^2+18\,946\,418\,400z+2\,565\,660\,825\Big)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-924\,844\,032z^5+7\,369\,850\,880z^4+7\,984\,005\,120z^3+\right.$$
$$\left.\left.16\,841\,260\,800z^2+18\,946\,418\,400z+2\,565\,660\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.aa3b.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{21}{4};-z\right)=$$
$$\frac{1}{4\,831\,838\,208\,z^{17/4}}\left(\sqrt{\pi}\left(16\,777\,216z^6+924\,844\,032z^5+7\,369\,850\,880z^4-7\,984\,005\,120z^3+16\,841\,260\,800z^2-\right.\right.$$
$$18\,946\,418\,400z+2\,565\,660\,825\Big)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}$$
$$\left(\left(1\,048\,576z^5+56\,819\,712z^4+410\,296\,320z^3-752\,048\,640z^2+1\,865\,036\,880z-2\,565\,660\,825\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\right.$$
$$\left.\left.\left(1\,048\,576z^5+57\,606\,144z^4+450\,207\,744z^3-564\,318\,720z^2+1\,220\,803\,920z-1\,622\,040\,525\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aa3c.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{23}{4};z\right)=$$

$$\left(19\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-1\,004\,535\,808\,z^5+8\,935\,636\,992\,z^4+9\,513\,713\,664\,z^3+23\,709\,853\,440\,z^2+29\,331\,862\,560\,z-\right.\right.\right.$$
$$\left.\left.\left.5\,065\,535\,475\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,777\,216\,z^6-994\,050\,048\,z^5+8\,335\,982\,592\,z^4+\right.\right.\right.$$
$$\left.\left.\left.13\,606\,354\,944\,z^3+35\,597\,802\,240\,z^2+64\,838\,854\,080\,z-15\,196\,606\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\,\left(16\,777\,216\,z^6-1\,000\,341\,504\,z^5+8\,691\,056\,640\,z^4+11\,386\,109\,952\,z^3+28\,042\,350\,336\,z^2+\right.\right.$$
$$\left.\left.42\,226\,984\,800\,z+15\,196\,606\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(162\,678\,177\,792\,\sqrt{2}\;z^{17/4}\right)$$

07.22.03.aa3d.01

$${}_1F_2\left(-\frac{7}{4};\frac{9}{2},\frac{23}{4};-z\right)=$$

$$\left(19\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,004\,535\,808\,z^5+8\,935\,636\,992\,z^4-9\,513\,713\,664\,z^3+23\,709\,853\,440\,z^2-29\,331\,862\,560\,z-\right.\right.\right.$$
$$\left.\left.\left.5\,065\,535\,475\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-16\,777\,216\,z^6-994\,050\,048\,z^5-8\,335\,982\,592\,z^4+\right.\right.\right.$$
$$\left.\left.\left.13\,606\,354\,944\,z^3-35\,597\,802\,240\,z^2+64\,838\,854\,080\,z+15\,196\,606\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,000\,341\,504\,z^5+8\,691\,056\,640\,z^4-11\,386\,109\,952\,z^3+28\,042\,350\,336\,z^2-\right.\right.$$
$$\left.\left.42\,226\,984\,800\,z+15\,196\,606\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)\Big/\left(162\,678\,177\,792\,\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1 = -\frac{7}{4}$, $b_1 = \frac{11}{2}$

07.22.03.aa3e.01

$${}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{2\,461\,184\,z^{9/2}}\left(63\left(\left(4096\,z^4+1\,529\,344\,z^3+51\,524\,880\,z^2+278\,314\,740\,z+152\,435\,745\right)\sinh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.58\sqrt{z}\,\left(2048\,z^3+194\,304\,z^2+2\,588\,520\,z+5\,256\,405\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aa3f.01

$${}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{23}{4};-z\right)=\frac{1}{2\,461\,184\,z^{9/2}}\left(63\left(58\sqrt{z}\,\left(2048\,z^3-194\,304\,z^2+2\,588\,520\,z-5\,256\,405\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096\,z^4-1\,529\,344\,z^3+51\,524\,880\,z^2-278\,314\,740\,z+152\,435\,745\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aa3g.01

$${}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{21}{4};z\right)=\frac{1}{2\,813\,241\,600\sqrt{2}\,z^{15/4}}$$
$$\left(\left(4z\left(4\,194\,304z^5+205\,783\,040z^4+2\,202\,255\,360z^3-12\,289\,838\,400z^2-414\,013\,931\,100z-4\,036\,635\,828\,225\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2\,097\,152z^5+104\,202\,240z^4+634\,314\,240z^3-153\,622\,980\,000z^2-3\,548\,690\,838\,000z-\right.$$
$$12\,109\,907\,484\,675\left)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(16\,777\,216z^6+827\,326\,464z^5+9\,021\,358\,080z^4+\right.\right.$$
$$\left.\left.\left.7\,928\,928\,000z^3+2\,129\,214\,502\,800z^2+17\,566\,019\,648\,100z+36\,329\,722\,454\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa3h.01

$${}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{21}{4};-z\right)=\frac{1}{2\,813\,241\,600\sqrt{2}\,z^{15/4}}$$
$$\left(\left(4z\left(4\,194\,304z^5-205\,783\,040z^4+2\,202\,255\,360z^3+12\,289\,838\,400z^2-414\,013\,931\,100z+4\,036\,635\,828\,225\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2\,097\,152z^5-104\,202\,240z^4+634\,314\,240z^3+153\,622\,980\,000z^2-3\,548\,690\,838\,000z+\right.$$
$$12\,109\,907\,484\,675\left)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,777\,216z^6-827\,326\,464z^5+9\,021\,358\,080z^4-\right.\right.$$
$$\left.\left.\left.7\,928\,928\,000z^3+2\,129\,214\,502\,800z^2-17\,566\,019\,648\,100z+36\,329\,722\,454\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa3i.01

$${}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{19}{4};z\right)=-\frac{1}{107\,008\,z^{9/2}}\left(63\left(2\sqrt{z}\left(512z^3+108\,576z^2+1\,760\,880z+3\,717\,945\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(22\,784z^3+1\,134\,480z^2+6\,718\,140z+3\,717\,945\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aa3j.01

$${}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{19}{4};-z\right)=\frac{1}{107\,008\,z^{9/2}}\left(63\left(2\sqrt{z}\left(512z^3-108\,576z^2+1\,760\,880z-3\,717\,945\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-22\,784z^3+1\,134\,480z^2-6\,718\,140z+3\,717\,945\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aa3k.01

$${}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{17}{4};z\right)=\frac{1}{937\,747\,200\sqrt{2}\,z^{15/4}}$$
$$\left(\left(4z\left(2\,097\,152z^5+79\,953\,920z^4+698\,286\,080z^3-1\,982\,232\,000z^2-59\,144\,847\,300z-724\,524\,379\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(1\,048\,576z^5+40\,632\,320z^4+375\,889\,920z^3-18\,236\,534\,400z^2-591\,448\,473\,000z-2\,173\,573\,138\,275\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(8\,388\,608z^6+321\,912\,832z^5+2\,876\,375\,040z^4-3\,347\,769\,600z^3+\right.$$
$$\left.\left.\left.328\,158\,507\,600z^2+3\,016\,387\,212\,300z+6\,520\,719\,414\,825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa3l.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{17}{4};-z\right)=\frac{1}{937\,747\,200\sqrt{2}\,z^{15/4}}$$
$$\left(\left(4z\left(2\,097\,152z^5-79\,953\,920z^4+698\,286\,080z^3+1\,982\,232\,000z^2-59\,144\,847\,300z+724\,524\,379\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(1\,048\,576z^5-40\,632\,320z^4+375\,889\,920z^3+18\,236\,534\,400z^2-591\,448\,473\,000z+2\,173\,573\,138\,275\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(8\,388\,608z^6-321\,912\,832z^5+2\,876\,375\,040z^4+3\,347\,769\,600z^3+\right.$$
$$\left.\left.\left.328\,158\,507\,600z^2-3\,016\,387\,212\,300z+6\,520\,719\,414\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa3m.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{5632\,z^{9/2}}\left(63\left(\left(256z^3+26\,640z^2+179\,220z+100\,485\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(2048z^2+45\,240z+100\,485\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aa3n.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{15}{4};-z\right)=$$
$$-\frac{1}{5632\,z^{9/2}}\left(63\left(2\sqrt{z}\left(2048z^2-45\,240z+100\,485\right)\cos\left(2\sqrt{z}\right)+\left(256z^3-26\,640z^2+179\,220z-100\,485\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aa3o.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{13}{4};z\right)=\frac{1}{275\,808\,000\sqrt{2}\,z^{15/4}}$$
$$\left(\left(4z\left(1\,048\,576z^5+28\,508\,160z^4+192\,880\,640z^3-352\,396\,800z^2-5\,723\,694\,900z-103\,503\,482\,775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(524\,288z^5+14\,581\,760z^4+106\,229\,760z^3-1\,255\,413\,600z^2-76\,315\,932\,000z-310\,510\,448\,325\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(4\,194\,304z^6+115\,081\,216z^5+801\,669\,120z^4-1\,164\,441\,600z^3+\right.$$
$$\left.\left.\left.38\,157\,966\,000z^2+406\,382\,337\,900z+931\,531\,344\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa3p.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{13}{4};-z\right)=\frac{1}{275\,808\,000\sqrt{2}\,z^{15/4}}$$
$$\left(\left(4z\left(1\,048\,576z^5-28\,508\,160z^4+192\,880\,640z^3+352\,396\,800z^2-5\,723\,694\,900z+103\,503\,482\,775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(524\,288z^5-14\,581\,760z^4+106\,229\,760z^3+1\,255\,413\,600z^2-76\,315\,932\,000z+310\,510\,448\,325\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(4\,194\,304z^6-115\,081\,216z^5+801\,669\,120z^4+1\,164\,441\,600z^3+\right.$$
$$\left.\left.\left.38\,157\,966\,000z^2-406\,382\,337\,900z+931\,531\,344\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa3q.01

$${}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{11}{4};z\right)=-\frac{945\left(2\sqrt{z}\,\left(32z^2+1280z+3045\right)\cosh\left(2\sqrt{z}\right)-\left(656z^2+5340z+3045\right)\sinh\left(2\sqrt{z}\right)\right)}{5632\,z^{9/2}}$$

07.22.03.aa3r.01

$${}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{11}{4};-z\right)=-\frac{945\left(2\sqrt{z}\,\left(32z^2-1280z+3045\right)\cos\left(2\sqrt{z}\right)+\left(-656z^2+5340z-3045\right)\sin\left(2\sqrt{z}\right)\right)}{5632\,z^{9/2}}$$

07.22.03.aa3s.01

$${}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{9}{4};z\right)=\frac{1}{63\,648\,000\sqrt{2}\,z^{15/4}}$$
$$\left(\left(4z\left(524\,288z^5+8\,519\,680z^4+40\,888\,320z^3-61\,286\,400z^2-211\,988\,700z-10\,016\,466\,075\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\,\left(262\,144z^5+4\,423\,680z^4+23\,546\,880z^3-7\,660\,800z^2-6\,359\,661\,000z-30\,049\,398\,225\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(2\,097\,152z^6+34\,603\,008z^5+172\,892\,160z^4-187\,084\,800z^3+\right.$$
$$\left.\left.2\,765\,070\,000z^2+36\,250\,067\,700z+90\,148\,194\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.aa3t.01

$${}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{9}{4};-z\right)=\frac{1}{63\,648\,000\sqrt{2}\,z^{15/4}}$$
$$\left(\left(4z\left(524\,288z^5-8\,519\,680z^4+40\,888\,320z^3+61\,286\,400z^2-211\,988\,700z+10\,016\,466\,075\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\,\left(262\,144z^5-4\,423\,680z^4+23\,546\,880z^3+7\,660\,800z^2-6\,359\,661\,000z+30\,049\,398\,225\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(2\,097\,152z^6-34\,603\,008z^5+172\,892\,160z^4+187\,084\,800z^3+\right.$$
$$\left.\left.2\,765\,070\,000z^2-36\,250\,067\,700z+90\,148\,194\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.aa3u.01

$${}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{7}{4};z\right)=\frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,\left(8z+21\right)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.aa3v.01

$${}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{7}{4};-z\right)=\frac{945\left(10\sqrt{z}\,\left(8z-21\right)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.aa3w.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{5}{4};z\right)= \frac{1}{7\,072\,000\sqrt{2}\,z^{15/4}}\left(\left(4z\left(262\,144z^5+1\,392\,640z^4+3\,957\,760z^3-4\,939\,200z^2+9\,216\,900z-370\,980\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- 4\sqrt{z}\left(131\,072z^5+778\,240z^4+2\,634\,240z^3+1\,461\,600z^2-184\,338\,000z-1\,112\,940\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- \left(1\,048\,576z^6+5\,832\,704z^5+17\,633\,280z^4-11\,692\,800z^3+67\,914\,000z^2+1\,188\,980\,100z+3\,338\,822\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa3x.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{5}{4};-z\right)= \frac{1}{7\,072\,000\sqrt{2}\,z^{15/4}}\left(\left(4z\left(262\,144z^5-1\,392\,640z^4+3\,957\,760z^3+4\,939\,200z^2+9\,216\,900z+370\,980\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- 4\sqrt{z}\left(131\,072z^5-778\,240z^4+2\,634\,240z^3-1\,461\,600z^2-184\,338\,000z+1\,112\,940\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ \left(1\,048\,576z^6-5\,832\,704z^5+17\,633\,280z^4+11\,692\,800z^3+67\,914\,000z^2-1\,188\,980\,100z+3\,338\,822\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa3y.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{3}{4};z\right)= \frac{1}{16\,972\,800z^{9/2}}\left(e^{-2\sqrt{z}}\left(-1\,048\,576e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{25/4}-1\,048\,576e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{25/4}+ 1\,048\,576e^{4\sqrt{z}}z^6-1\,048\,576z^6+262\,144e^{4\sqrt{z}}z^{11/2}+262\,144z^{11/2}+196\,608e^{4\sqrt{z}}z^5- 196\,608z^5+245\,760e^{4\sqrt{z}}z^{9/2}+245\,760z^{9/2}+430\,080e^{4\sqrt{z}}z^4-430\,080z^4+967\,680e^{4\sqrt{z}}z^{7/2}+ 967\,680z^{7/2}+2\,661\,120e^{4\sqrt{z}}z^3-2\,661\,120z^3+8\,648\,640e^{4\sqrt{z}}z^{5/2}+8\,648\,640z^{5/2}+ 32\,432\,400e^{4\sqrt{z}}z^2-32\,432\,400z^2-300\,736\,800e^{4\sqrt{z}}z^{3/2}-300\,736\,800z^{3/2}+764\,372\,700e^{4\sqrt{z}}z- 764\,372\,700z-921\,006\,450e^{4\sqrt{z}}\sqrt{z}-921\,006\,450\sqrt{z}+460\,503\,225e^{4\sqrt{z}}-460\,503\,225\right)\right) $$

07.22.03.aa3z.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{3}{4};-z\right)= \frac{1}{8\,486\,400z^{9/2}}\left(-2\,097\,152\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{25/4}- 2\left(131\,072z^5-122\,880z^4+483\,840z^3-4\,324\,320z^2-150\,368\,400z+460\,503\,225\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+ \left(1\,048\,576z^6-196\,608z^5+430\,080z^4-2\,661\,120z^3+32\,432\,400z^2-764\,372\,700z+460\,503\,225\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aa40.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{1}{4};z\right)= -\frac{1}{1\,414\,400\sqrt{2}\,z^{15/4}}\left(\left(4z\left(131\,072z^5-737\,280z^4-619\,520z^3+504\,000z^2-1\,455\,300z+16\,129\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(65\,536z^5-327\,680z^4-430\,080z^3+201\,600z^2+4\,851\,000z+48\,388\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-524\,288z^6+2\,818\,048z^5+3\,010\,560z^4-1\,209\,600z^3+1\,940\,400z^2+42\,203\,700z+145\,166\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa41.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},-\frac{1}{4};-z\right)= \frac{1}{1\,414\,400\sqrt{2}\,z^{15/4}}\left(\left(4z\left(-131\,072z^5-737\,280z^4+619\,520z^3+504\,000z^2+1\,455\,300z+16\,129\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(65\,536z^5+327\,680z^4-430\,080z^3-201\,600z^2+4\,851\,000z-48\,388\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-524\,288z^6-2\,818\,048z^5+3\,010\,560z^4+1\,209\,600z^3+1\,940\,400z^2-42\,203\,700z+145\,166\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa42.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},\frac{1}{4};z\right)= \frac{1}{5\,657\,600\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(-262\,144\,e^{4\sqrt{z}}\,z^6+262\,144z^6-65\,536\,e^{4\sqrt{z}}\,z^{11/2}-65\,536z^{11/2}+16\,384\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-175)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{21/4}+16\,384\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-175)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{21/4}+2\,818\,048\,e^{4\sqrt{z}}\,z^5-2\,818\,048z^5+655\,360\,e^{4\sqrt{z}}\,z^{9/2}+655\,360z^{9/2}+430\,080\,e^{4\sqrt{z}}\,z^4-430\,080z^4+430\,080\,e^{4\sqrt{z}}\,z^{7/2}+430\,080z^{7/2}+510\,720\,e^{4\sqrt{z}}\,z^3-510\,720z^3+483\,840\,e^{4\sqrt{z}}\,z^{5/2}+483\,840z^{5/2}-831\,600\,e^{4\sqrt{z}}\,z^2+831\,600z^2-10\,810\,800\,e^{4\sqrt{z}}\,z^{3/2}-10\,810\,800z^{3/2}+34\,643\,700\,e^{4\sqrt{z}}\,z-34\,643\,700z-43\,857\,450\,e^{4\sqrt{z}}\,\sqrt{z}-43\,857\,450\sqrt{z}+21\,928\,725\,e^{4\sqrt{z}}-21\,928\,725\right)\right) $$

07.22.03.aa43.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},\frac{1}{4};-z\right)= \frac{1}{2\,828\,800\,z^{9/2}}\left(32\,768\sqrt{\pi}\,(16z+175)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4}+2\left(32\,768z^5+327\,680z^4-215\,040z^3+241\,920z^2+5\,405\,400z-21\,928\,725\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(262\,144z^6+2\,818\,048z^5-430\,080z^4+510\,720z^3+831\,600z^2+34\,643\,700z-21\,928\,725\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aa44.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{11}{2}, \frac{3}{4}; z\right) = \frac{1}{4\,243\,200\sqrt{2}\, z^{15/4}}\left(\left(4z\left(65\,536z^5 - 1\,085\,440z^4 + 1\,213\,440z^3 - 201\,600z^2 + 485\,100z - 2\,546\,775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(32\,768z^5 - 522\,240z^4 + 322\,560z^3 - 252\,000z^2 - 7\,640\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(262\,144z^6 - 4\,276\,224z^5 + 3\,870\,720z^4 - 806\,400z^3 + 529\,200z^2 + 4\,365\,900z + 22\,920\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa45.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{11}{2}, \frac{3}{4}; -z\right) = \frac{1}{4\,243\,200\sqrt{2}\, z^{15/4}}\left(\left(4z\left(65\,536z^5 + 1\,085\,440z^4 + 1\,213\,440z^3 + 201\,600z^2 + 485\,100z + 2\,546\,775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(32\,768z^5 + 522\,240z^4 + 322\,560z^3 + 252\,000z^2 + 7\,640\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(262\,144z^6 + 4\,276\,224z^5 + 3\,870\,720z^4 + 806\,400z^3 + 529\,200z^2 - 4\,365\,900z + 22\,920\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa46.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{5\,657\,600\, z^{9/2}}\left(e^{-2\sqrt{z}}\left(-32\,768\, e^{4\sqrt{z}}\, z^6 + 32\,768z^6 - 8192\, e^{4\sqrt{z}}\, z^{11/2} - 8192z^{11/2} + 710\,656\, e^{4\sqrt{z}}\, z^5 - 710\,656z^5 + 171\,520\, e^{4\sqrt{z}}\, z^{9/2} + 171\,520z^{9/2} + 128\, e^{2\sqrt{z}}\,\sqrt{2\pi}\left(256z^2 - 5600z + 11\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{17/4} + 128\, e^{2\sqrt{z}}\,\sqrt{2\pi}\left(256z^2 - 5600z + 11\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{17/4} - 1\,290\,240\, e^{4\sqrt{z}}\, z^4 + 1\,290\,240z^4 - 215\,040\, e^{4\sqrt{z}}\, z^{7/2} - 215\,040z^{7/2} - 53\,760\, e^{4\sqrt{z}}\, z^3 + 53\,760z^3 + 60\,480\, e^{4\sqrt{z}}\, z^{5/2} + 60\,480z^{5/2} + 226\,800\, e^{4\sqrt{z}}\, z^2 - 226\,800z^2 + 302\,400\, e^{4\sqrt{z}}\, z^{3/2} + 302\,400z^{3/2} - 1\,871\,100\, e^{4\sqrt{z}}\, z + 1\,871\,100z + 2\,579\,850\, e^{4\sqrt{z}}\,\sqrt{z} + 2\,579\,850\sqrt{z} - 1\,289\,925\, e^{4\sqrt{z}} + 1\,289\,925\right)\right) $$

07.22.03.aa47.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{11}{2}, \frac{5}{4}; -z\right) = \frac{1}{2\,828\,800\, z^{9/2}}\left(256\sqrt{\pi}\left(256z^2 + 5600z + 11\,025\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{17/4} + 2\left(4096z^5 + 85\,760z^4 + 107\,520z^3 + 30\,240z^2 - 151\,200z + 1\,289\,925\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(-32\,768z^6 - 710\,656z^5 - 1\,290\,240z^4 + 53\,760z^3 + 226\,800z^2 + 1\,871\,100z - 1\,289\,925\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aa48.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{11}{2}, \frac{7}{4}; z\right) = \frac{1}{7\,072\,000\sqrt{2}\, z^{15/4}}\left(\left(4z\left(32\,768z^5 - 901\,120z^4 + 2\,779\,520z^3 + 201\,600z^2 - 308\,700z + 848\,925\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384z^5 - 440\,320z^4 + 1\,135\,680z^3 + 403\,200z^2 - 441\,000z + 2\,546\,775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-131\,072z^6 + 3\,571\,712z^5 - 10\,268\,160z^4 - 2\,419\,200z^3 + 882\,000z^2 + 132\,300z + 7\,640\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa49.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{11}{2}, \frac{7}{4}; -z\right) = \frac{1}{7\,072\,000\sqrt{2}\, z^{15/4}}\left(\left(4z\left(32\,768z^5 + 901\,120z^4 + 2\,779\,520z^3 - 201\,600z^2 - 308\,700z - 848\,925\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384z^5 + 440\,320z^4 + 1\,135\,680z^3 - 403\,200z^2 - 441\,000z - 2\,546\,775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(131\,072z^6 + 3\,571\,712z^5 + 10\,268\,160z^4 - 2\,419\,200z^3 - 882\,000z^2 + 132\,300z - 7\,640\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa4a.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{11}{2}, \frac{9}{4}; z\right) = \frac{1}{3\,394\,560 z^{9/2}}\left(e^{-2\sqrt{z}}\left(-8192e^{4\sqrt{z}}z^6 + 8192z^6 - 2048e^{4\sqrt{z}}z^{11/2} - 2048z^{11/2} + 267\,264e^{4\sqrt{z}}z^5 - 267\,264z^5 + 65\,280e^{4\sqrt{z}}z^{9/2} + 65\,280z^{9/2} - 1\,011\,360e^{4\sqrt{z}}z^4 + 1\,011\,360z^4 - 209\,160e^{4\sqrt{z}}z^{7/2} - 209\,160z^{7/2} + 2e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3 - 134\,400z^2 + 529\,200z + 187\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4} + 2e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3 - 134\,400z^2 + 529\,200z + 187\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4} - 483\,840e^{4\sqrt{z}}z^3 + 483\,840z^3 - 161\,280e^{4\sqrt{z}}z^{5/2} - 161\,280z^{5/2} - 75\,600e^{4\sqrt{z}}z^2 + 75\,600z^2 + 75\,600e^{4\sqrt{z}}z^{3/2} + 75\,600z^{3/2} + 359\,100e^{4\sqrt{z}}z - 359\,100z - 595\,350e^{4\sqrt{z}}\sqrt{z} - 595\,350\sqrt{z} + 297\,675e^{4\sqrt{z}} - 297\,675\right)\right) $$

07.22.03.aa4b.01

$$ {}_1F_2\left(-\frac{7}{4}; \frac{11}{2}, \frac{9}{4}; -z\right) = \frac{1}{1\,697\,280 z^{9/2}}\left(4\sqrt{\pi}\left(4096z^3 + 134\,400z^2 + 529\,200z - 187\,425\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4} + 2\left(1024z^5 + 32\,640z^4 + 104\,580z^3 - 80\,640z^2 - 37\,800z - 297\,675\right)\cos\left(2\sqrt{z}\right)\sqrt{z} - \left(8192z^6 + 267\,264z^5 + 1\,011\,360z^4 - 483\,840z^3 + 75\,600z^2 + 359\,100z - 297\,675\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aa4c.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},\frac{11}{4};z\right)= \frac{1}{7\,072\,000\sqrt{2}\,z^{15/4}}\left(\left(4z\left(16\,384z^5-629\,760z^4+3\,181\,760z^3+1\,266\,300z^2+396\,900z-540\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- 4\sqrt{z}\left(8192z^5-309\,760z^4+1\,407\,840z^3+1\,193\,850z^2+882\,000z-1\,620\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- \left(65\,536z^6-2\,502\,656z^5+12\,122\,880z^4+7\,383\,600z^3+4\,410\,000z^2-1\,719\,900z+4\,862\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa4d.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},\frac{11}{4};-z\right)= \frac{1}{7\,072\,000\sqrt{2}\,z^{15/4}}\left(\left(4z\left(16\,384z^5+629\,760z^4+3\,181\,760z^3-1\,266\,300z^2+396\,900z+540\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- 4\sqrt{z}\left(8192z^5+309\,760z^4+1\,407\,840z^3-1\,193\,850z^2+882\,000z+1\,620\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ \left(65\,536z^6+2\,502\,656z^5+12\,122\,880z^4-7\,383\,600z^3+4\,410\,000z^2+1\,719\,900z+4\,862\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aa4e.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},\frac{13}{4};z\right)= \frac{1}{144\,834\,560z^{9/2}}\left(3e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-2\,867\,200z^3+16\,934\,400z^2+11\,995\,200z+12\,182\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+ e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-2\,867\,200z^3+16\,934\,400z^2+11\,995\,200z+12\,182\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}- 4\left(-16\,384z^6+4096z^{11/2}+713\,728z^5-175\,360z^{9/2}-4\,105\,920z^4+905\,520z^{7/2}- 3\,540\,180z^3+1\,215\,585z^{5/2}-4\,032\,000z^2+1\,612\,800z^{3/2}-604\,800z-2\,116\,800\sqrt{z}+ e^{4\sqrt{z}}\left(16\,384z^6+4096z^{11/2}-713\,728z^5-175\,360z^{9/2}+4\,105\,920z^4+905\,520z^{7/2}+3\,540\,180z^3+ 1\,215\,585z^{5/2}+4\,032\,000z^2+1\,612\,800z^{3/2}+604\,800z-2\,116\,800\sqrt{z}+1\,058\,400\right)-1\,058\,400\right)\right)\right) $$

07.22.03.aa4f.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},\frac{13}{4};-z\right)= \frac{1}{36\,208\,640z^{9/2}}\left(3\left(\sqrt{\pi}\left(65\,536z^4+2\,867\,200z^3+16\,934\,400z^2-11\,995\,200z+12\,182\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+ 2\left(\sqrt{z}\left(4096z^5+175\,360z^4+905\,520z^3-1\,215\,585z^2+1\,612\,800z+2\,116\,800\right)\cos\left(2\sqrt{z}\right)- 4\left(4096z^6+178\,432z^5+1\,026\,480z^4-885\,045z^3+1\,008\,000z^2-151\,200z+264\,600\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aa4g.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},\frac{15}{4};z\right)=\frac{1}{254\,592\,000\sqrt{2}\,z^{15/4}}$$
$$\left(11\left(2z\left(65\,536z^5-3\,235\,840z^4+22\,717\,440z^3+16\,783\,200z^2+24\,905\,475z+5\,556\,600\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\sqrt{z}\left(65\,536z^5-3\,194\,880z^4+20\,805\,120z^3+26\,308\,800z^2+46\,139\,625z+33\,339\,600\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\left(65\,536z^6-3\,219\,456z^5+21\,934\,080z^4+21\,319\,200z^3+33\,240\,375z^2+21\,432\,600z-12\,502\,350\right)$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa4h.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},\frac{15}{4};-z\right)=\frac{1}{254\,592\,000\sqrt{2}\,z^{15/4}}$$
$$\left(11\left(2z\left(65\,536z^5+3\,235\,840z^4+22\,717\,440z^3-16\,783\,200z^2+24\,905\,475z-5\,556\,600\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\sqrt{z}\left(65\,536z^5+3\,194\,880z^4+20\,805\,120z^3-26\,308\,800z^2+46\,139\,625z-33\,339\,600\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\left(65\,536z^6+3\,219\,456z^5+21\,934\,080z^4-21\,319\,200z^3+33\,240\,375z^2-21\,432\,600z-12\,502\,350\right)$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa4i.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},\frac{17}{4};z\right)=\frac{1}{3\,565\,158\,400\,z^{9/2}}$$
$$\left(3e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-57\,344\,000z^4+451\,584\,000z^3+479\,808\,000z^2+974\,610\,000z+986\,792\,625\right)\right.\right.$$
$$\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left(1\,048\,576z^5-57\,344\,000z^4+451\,584\,000z^3+479\,808\,000z^2+974\,610\,000z+986\,792\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-$$
$$4\left(-262\,144z^6+65\,536z^{11/2}+14\,286\,848z^5-3\,522\,560z^{9/2}-110\,315\,520z^4+25\,105\,920z^{7/2}-\right.$$
$$135\,905\,280z^3+45\,380\,160z^{5/2}-284\,174\,100z^2+109\,429\,425z^{3/2}-348\,364\,800z+$$
$$135\,475\,200\sqrt{z}+e^{4\sqrt{z}}\left(262\,144z^6+65\,536z^{11/2}-14\,286\,848z^5-3\,522\,560z^{9/2}+\right.$$
$$110\,315\,520z^4+25\,105\,920z^{7/2}+135\,905\,280z^3+45\,380\,160z^{5/2}+284\,174\,100z^2+$$
$$\left.\left.\left.\left.109\,429\,425z^{3/2}+348\,364\,800z+135\,475\,200\sqrt{z}-67\,737\,600\right)+67\,737\,600\right)\right)\right)$$

07.22.03.aa4j.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},\frac{17}{4};-z\right)=\frac{1}{891\,289\,600\,z^{9/2}}$$
$$\left(3\left(\sqrt{\pi}\left(1\,048\,576z^5+57\,344\,000z^4+451\,584\,000z^3-479\,808\,000z^2+974\,610\,000z-986\,792\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+\right.\right.$$
$$2\left(65\,536z^5+3\,522\,560z^4+25\,105\,920z^3-45\,380\,160z^2+109\,429\,425z-135\,475\,200\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-$$
$$\left.\left.8\left(65\,536z^6+3\,571\,712z^5+27\,578\,880z^4-33\,976\,320z^3+71\,043\,525z^2-87\,091\,200z-16\,934\,400\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aa4k.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},\frac{19}{4};z\right)=\frac{1}{543\,129\,600\sqrt{2}\,z^{15/4}}$$
$$\left(\left(2z\left(1\,048\,576z^5-63\,242\,240z^4+568\,483\,840z^3+616\,896\,000z^2+1\,589\,187\,600z+2\,162\,211\,975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\sqrt{z}\left(1\,048\,576z^5-62\,586\,880z^4+530\,718\,720z^3+878\,169\,600z^2+2\,357\,586\,000z+4\,530\,712\,725\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\left(1\,048\,576z^6-62\,980\,096z^5+553\,082\,880z^4+736\,243\,200z^3+\right.$$
$$\left.\left.\left.1\,868\,605\,200z^2+3\,013\,562\,475z+1\,466\,942\,400\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa4l.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},\frac{19}{4};-z\right)=\frac{1}{543\,129\,600\sqrt{2}\,z^{15/4}}$$
$$\left(\left(2z\left(1\,048\,576z^5+63\,242\,240z^4+568\,483\,840z^3-616\,896\,000z^2+1\,589\,187\,600z-2\,162\,211\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\sqrt{z}\left(1\,048\,576z^5+62\,586\,880z^4+530\,718\,720z^3-878\,169\,600z^2+2\,357\,586\,000z-4\,530\,712\,725\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(1\,048\,576z^6+62\,980\,096z^5+553\,082\,880z^4-736\,243\,200z^3+\right.$$
$$\left.\left.\left.1\,868\,605\,200z^2-3\,013\,562\,475z+1\,466\,942\,400\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aa4m.01

$$ {}_1F_2\left(-\frac{7}{4};\frac{11}{2},\frac{21}{4};z\right)=\frac{1}{26\,843\,545\,600z^{9/2}}$$
$$\left(e^{-2\sqrt{z}}\left(-4\left(-4\,194\,304z^6+1\,048\,576z^{11/2}+274\,464\,768z^5-67\,829\,760z^{9/2}-2\,659\,614\,720z^4+616\,734\,720z^{7/2}-\right.\right.\right.$$
$$4\,244\,244\,480z^3+1\,375\,234\,560z^{5/2}-12\,957\,537\,600z^2+4\,605\,022\,800z^{3/2}-28\,431\,969\,300z+$$
$$12\,119\,043\,825\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^6+1\,048\,576z^{11/2}-274\,464\,768z^5-67\,829\,760z^{9/2}+\right.$$
$$2\,659\,614\,720z^4+616\,734\,720z^{7/2}+4\,244\,244\,480z^3+1\,375\,234\,560z^{5/2}+12\,957\,537\,600z^2+$$
$$\left.4\,605\,022\,800z^{3/2}+28\,431\,969\,300z+12\,119\,043\,825\sqrt{z}+26\,011\,238\,400\right)-26\,011\,238\,400\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(16\,777\,216z^6-1\,101\,004\,800z^5+10\,838\,016\,000z^4+15\,353\,856\,000z^3+\right.$$
$$\left.46\,781\,280\,000z^2+94\,732\,092\,000z+64\,141\,520\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(16\,777\,216z^6-1\,101\,004\,800z^5+10\,838\,016\,000z^4+15\,353\,856\,000z^3+\right.$$
$$\left.\left.46\,781\,280\,000z^2+94\,732\,092\,000z+64\,141\,520\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.aa4n.01

$${}_1F_2\left(-\frac{7}{4};\frac{11}{2},\frac{21}{4};-z\right)=$$
$$\frac{1}{6\,710\,886\,400\,z^{9/2}}\left(\sqrt{\pi}\,\sqrt[4]{z}\,\left(16\,777\,216\,z^6+1\,101\,004\,800\,z^5+10\,838\,016\,000\,z^4-15\,353\,856\,000\,z^3+46\,781\,280\,000\,z^2-\right.\right.$$
$$\left.94\,732\,092\,000\,z+64\,141\,520\,625\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\left(4\left(1\,048\,576\,z^6+68\,616\,192\,z^5+664\,903\,680\,z^4-\right.\right.$$
$$\left.1\,061\,061\,120\,z^3+3\,239\,384\,400\,z^2-7\,107\,992\,325\,z+6\,502\,809\,600\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}$$
$$\left.\left.\left(1\,048\,576\,z^5+67\,829\,760\,z^4+616\,734\,720\,z^3-1\,375\,234\,560\,z^2+4\,605\,022\,800\,z-12\,119\,043\,825\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aa4o.01

$${}_1F_2\left(-\frac{7}{4};\frac{11}{2},\frac{23}{4};z\right)=$$
$$\left(19\left(2\sqrt{z}\,\left(16\,777\,216\,z^6-1\,195\,376\,640\,z^5+13\,098\,352\,640\,z^4+18\,785\,894\,400\,z^3+68\,355\,705\,600\,z^2+166\,183\,617\,600\,z+\right.\right.\right.$$
$$\left.126\,638\,386\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,777\,216\,z^6-1\,184\,890\,880\,z^5+12\,379\,422\,720\,z^4+\right.$$
$$\left.25\,159\,680\,000\,z^3+90\,810\,720\,000\,z^2+263\,805\,141\,600\,z+379\,915\,160\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(16\,777\,216\,z^6-1\,191\,182\,336\,z^5+12\,806\,062\,080\,z^4+21\,624\,422\,400\,z^3+76\,281\,004\,800\,z^2+\right.$$
$$\left.\left.\left.197\,967\,369\,600\,z+230\,332\,877\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(225\,941\,913\,600\sqrt{2}\;z^{17/4}\right)$$

07.22.03.aa4p.01

$${}_1F_2\left(-\frac{7}{4};\frac{11}{2},\frac{23}{4};-z\right)=$$
$$\left(19\left(2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,195\,376\,640\,z^5+13\,098\,352\,640\,z^4-18\,785\,894\,400\,z^3+68\,355\,705\,600\,z^2-166\,183\,617\,600\,z+\right.\right.\right.$$
$$\left.126\,638\,386\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,777\,216\,z^6+1\,184\,890\,880\,z^5+12\,379\,422\,720\,z^4-\right.$$
$$\left.25\,159\,680\,000\,z^3+90\,810\,720\,000\,z^2-263\,805\,141\,600\,z+379\,915\,160\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(16\,777\,216\,z^6+1\,191\,182\,336\,z^5+12\,806\,062\,080\,z^4-21\,624\,422\,400\,z^3+76\,281\,004\,800\,z^2-\right.$$
$$\left.\left.\left.197\,967\,369\,600\,z+230\,332\,877\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)\Big/\left(225\,941\,913\,600\sqrt{2}\;z^{17/4}\right)$$

For fixed z and $a_1=-\frac{5}{4}$, $b_{1.}\geq -\frac{11}{2}$

For fixed z and $a_1=-\frac{5}{4}$, $b_{1.}=-\frac{11}{2}$

07.22.03.aa4q.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{3\,148\,032\,195\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536 z^6 + 4\,300\,800 z^5 + 97\,235\,712 z^4 + 914\,981\,760 z^3 + 2\,348\,272\,080 z^2 - 6\,420\,492\,540 z + 3\,148\,032\,195\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 84\sqrt{z}\left(16\,384 z^5 + 628\,736 z^4 + 10\,179\,840 z^3 + 67\,399\,200 z^2 + 105\,862\,680 z - 149\,906\,295\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(16\,384 z^5 + 1\,345\,536 z^4 + 35\,259\,840 z^3 + 417\,463\,200 z^2 + 1\,974\,259\,980 z + 3\,148\,032\,195\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa4r.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{3\,148\,032\,195\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536 z^6 - 4\,300\,800 z^5 + 97\,235\,712 z^4 - 914\,981\,760 z^3 + 2\,348\,272\,080 z^2 + 6\,420\,492\,540 z + 3\,148\,032\,195\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 84\sqrt{z}\left(16\,384 z^5 - 628\,736 z^4 + 10\,179\,840 z^3 - 67\,399\,200 z^2 + 105\,862\,680 z + 149\,906\,295\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-16\,384 z^5 + 1\,345\,536 z^4 - 35\,259\,840 z^3 + 417\,463\,200 z^2 - 1\,974\,259\,980 z + 3\,148\,032\,195\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa4s.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, -\frac{21}{4}; z\right) = \frac{1}{434\,188\,755}\left(\left(16\,384 z^5 + 1\,173\,504 z^4 + 26\,312\,256 z^3 + 251\,989\,920 z^2 + 849\,581\,460 z + 434\,188\,755\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(28\,672 z^4 + 1\,030\,656 z^3 + 15\,161\,328 z^2 + 90\,221\,040 z + 144\,729\,585\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aa4t.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, -\frac{21}{4}; -z\right) = \frac{1}{434\,188\,755}\left(\left(-16\,384 z^5 + 1\,173\,504 z^4 - 26\,312\,256 z^3 + 251\,989\,920 z^2 - 849\,581\,460 z + 434\,188\,755\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(28\,672 z^4 - 1\,030\,656 z^3 + 15\,161\,328 z^2 - 90\,221\,040 z + 144\,729\,585\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aa4u.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{136\,870\,965\sqrt[4]{z}}\left(\sqrt{2}\left(7\left(20\,480\,z^5+553\,728\,z^4+5\,569\,920\,z^3+14\,913\,360\,z^2-40\,041\,540\,z+19\,552\,995\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(8192\,z^5+483\,840\,z^4+8\,762\,880\,z^3+60\,762\,240\,z^2+97\,796\,160\,z-136\,870\,965\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(41\,984\,z^4+1\,364\,160\,z^3+17\,408\,160\,z^2+84\,698\,460\,z+136\,870\,965\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa4v.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{136\,870\,965\sqrt[4]{z}}\left(\sqrt{2}\left(-7\left(20\,480\,z^5-553\,728\,z^4+5\,569\,920\,z^3-14\,913\,360\,z^2-40\,041\,540\,z-19\,552\,995\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(8192\,z^5-483\,840\,z^4+8\,762\,880\,z^3-60\,762\,240\,z^2+97\,796\,160\,z+136\,870\,965\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(41\,984\,z^4-1\,364\,160\,z^3+17\,408\,160\,z^2-84\,698\,460\,z+136\,870\,965\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa4w.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},-\frac{17}{4};z\right)=\frac{1}{20\,675\,655}\left(3\left(13\,312\,z^4+373\,312\,z^3+3\,860\,640\,z^2+13\,415\,220\,z+6\,891\,885\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(2048\,z^4+121\,728\,z^3+2\,029\,104\,z^2+12\,678\,120\,z+20\,675\,655\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aa4x.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},-\frac{17}{4};-z\right)=\frac{1}{20\,675\,655}\left(3\left(13\,312\,z^4-373\,312\,z^3+3\,860\,640\,z^2-13\,415\,220\,z+6\,891\,885\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(2048\,z^4-121\,728\,z^3+2\,029\,104\,z^2-12\,678\,120\,z+20\,675\,655\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aa4y.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{7\,203\,735\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096\,z^5+175\,872\,z^4+1\,987\,200\,z^3+5\,680\,080\,z^2-14\,844\,060\,z+7\,203\,735\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(6144\,z^4+139\,520\,z^3+1\,044\,960\,z^2+1\,746\,360\,z-2\,401\,245\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(1024\,z^4+58\,560\,z^3+856\,800\,z^2+4\,365\,900\,z+7\,203\,735\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa4z.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{7\,203\,735\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096z^5+175\,872z^4-1\,987\,200z^3+5\,680\,080z^2+14\,844\,060z+7\,203\,735\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(6144z^4-139\,520z^3+1\,044\,960z^2-1\,746\,360z-2\,401\,245\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(1024z^4-58\,560z^3+856\,800z^2-4\,365\,900z+7\,203\,735\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa50.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},-\frac{13}{4};z\right)=\frac{1}{1\,216\,215}\left(\left(1024z^4+53\,568z^3+641\,760z^2+2\,347\,380z+1\,216\,215\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(4864z^3+106\,512z^2+725\,760z+1\,216\,215\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aa51.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},-\frac{13}{4};-z\right)=\frac{1}{1\,216\,215}\left(\left(1024z^4-53\,568z^3+641\,760z^2-2\,347\,380z+1\,216\,215\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(-4864z^3+106\,512z^2-725\,760z+1\,216\,215\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aa52.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},-\frac{11}{4};z\right)=\frac{1}{480\,249\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(3\left(2816z^4+41\,600z^3+133\,392z^2-333\,396z+160\,083\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^4+23\,040z^3+201\,600z^2+\right.\right.\right.$$
$$\left.\left.\left.359\,856z-480\,249\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+12z\left(832z^3+16\,800z^2+93\,492z+160\,083\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa53.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},-\frac{11}{4};-z\right)=\frac{1}{480\,249\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(3\left(2816z^4-41\,600z^3+133\,392z^2+333\,396z+160\,083\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(512z^4-23\,040z^3+201\,600z^2-\right.\right.\right.$$
$$\left.\left.\left.359\,856z-480\,249\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-12z\left(832z^3-16\,800z^2+93\,492z-160\,083\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa54.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},-\frac{9}{4};z\right)=$$
$$\left(\frac{832z^3}{31\,185}+\frac{416z^2}{891}+\frac{188z}{99}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(128z^3+6384z^2+52\,920z+93\,555\right)\sinh\left(2\sqrt{z}\right)}{93\,555}$$

07.22.03.aa55.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},-\frac{9}{4};-z\right)=$$

$$\left(-\frac{832\,z^3}{31\,185}+\frac{416\,z^2}{891}-\frac{188\,z}{99}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-128\,z^3+6384\,z^2-52\,920\,z+93\,555\right)\sin\left(2\sqrt{z}\right)}{93\,555}$$

07.22.03.aa56.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},-\frac{7}{4};z\right)=\frac{1}{43\,659\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(256\,z^4+9600\,z^3+40\,656\,z^2-92\,988\,z+43\,659\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1216\,z^3+16\,800\,z^2+34\,776\,z-43\,659\right)\right.\right.$$

$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(64\,z^3+3360\,z^2+23\,436\,z+43\,659\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa57.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},-\frac{7}{4};-z\right)=\frac{1}{43\,659\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(256\,z^4-9600\,z^3+40\,656\,z^2+92\,988\,z+43\,659\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1216\,z^3-16\,800\,z^2+34\,776\,z+43\,659\right)\right.\right.$$

$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-64\,z^3+3360\,z^2-23\,436\,z+43\,659\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa58.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},-\frac{5}{4};z\right)=\left(\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}+\frac{20\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{495}\sqrt{z}\left(16\,z^2+240\,z+495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aa59.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},-\frac{5}{4};-z\right)=\left(-\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}-\frac{20\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aa5a.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},-\frac{3}{4};z\right)=$$

$$\frac{1}{6237\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(208\,z^3+2576\,z^2-4788\,z+2079\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(32\,z^3+1590\,z^2+6048\,z-6237\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.36\,z\left(20\,z^2+252\,z+693\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa5b.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, -\frac{3}{4}; -z\right) =$$

$$\frac{1}{6237\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-624z^3+7728z^2+14\,364z+6237\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(32z^3-1590z^2+6048z+6237\right)\right.\right.$$

$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+36z\left(20z^2-252z+693\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa5c.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, -\frac{1}{4}; z\right) =$$

$$\frac{1}{16\,632}\left(e^{-2\sqrt{z}}\left(-1989e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+1989e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+4\left(16z^{5/2}+188z^2+981z^{3/2}+\right.\right.\right.$$

$$\left.\left.\left.2268z+4158\sqrt{z}+e^{4\sqrt{z}}\left(-16z^{5/2}+188z^2-981z^{3/2}+2268z-4158\sqrt{z}+2079\right)+2079\right)\right)\right)$$

07.22.03.aa5d.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) =$$

$$\frac{1}{4158}\left(1989\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+2\left(16z^2-981z+4158\right)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(376z^2-4536z+4158\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aa5e.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) =$$

$$\frac{1}{4158\sqrt{2}\sqrt[4]{z}}\left(\left(\left(64z^3-630z^2-9072z+8316\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(512z^2+4627z-11\,088\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.2z\left(32z^2+4263z+16\,632\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa5f.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) =$$

$$\frac{1}{4158\sqrt{2}\sqrt[4]{z}}\left(\left(\left(-64z^3-630z^2+9072z+8316\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\left(512z^2-4627z-11\,088\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.2z\left(32z^2-4263z+16\,632\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa5g.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) = \frac{1}{1\,064\,448} \left(e^{-2\sqrt{z}} \left(4\left(256 z^2 + 3456 z^{3/2} + 27\,972 z + 57\,267 \sqrt{z} + e^{4\sqrt{z}} \left(256 z^2 - 3456 z^{3/2} + 27\,972 z - 57\,267 \sqrt{z} + 133\,056\right) + 133\,056\right) + 1989\, e^{2\sqrt{z}} \sqrt{2\pi}\, \sqrt[4]{z} \right.\right. \left.\left. (16 z + 105) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - 1989\, e^{2\sqrt{z}} \sqrt{2\pi}\, \sqrt[4]{z}\, (16 z + 105) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.aa5h.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, \frac{3}{4}; -z\right) = \left(\frac{4 z^2}{2079} - \frac{37 z}{176} + 1\right) \cos\left(2\sqrt{z}\right) - \frac{221 \sqrt{\pi}\, \sqrt[4]{z}\, (16 z - 105)\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)}{29\,568} + \frac{(2121 - 128 z) \sqrt{z}\, \sin\left(2\sqrt{z}\right)}{4928} $$

07.22.03.aa5i.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{133\,056 \sqrt{2}\, \sqrt[4]{z}} \left(\left(-14\left(2000 z^2 + 20\,139 z - 19\,008\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\, \left(1024 z^2 + 115\,920 z + 559\,713\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 14 z (976 z + 3927)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa5j.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) = \frac{1}{133\,056 \sqrt{2}\, \sqrt[4]{z}} \left(\left(\left(-28\,000 z^2 + 281\,946 z + 266\,112\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\, \left(-1024 z^2 + 115\,920 z - 559\,713\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 14 (3927 - 976 z)\, z\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa5k.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, \frac{7}{4}; z\right) = \frac{1}{45\,416\,448 z^{3/4}} \left(e^{-2\sqrt{z}} \left(4 \sqrt[4]{z} \left(-8192 z^2 - 1728 z^{3/2} - 898\,128 z - 1\,284\,444 \sqrt{z} + e^{4\sqrt{z}} \left(8192 z^2 - 1728 z^{3/2} + 898\,128 z - 1\,284\,444 \sqrt{z} + 5\,221\,125\right) - 5\,221\,125\right) + 1989\, e^{2\sqrt{z}} \sqrt{2\pi}\, \left(256 z^2 + 3360 z + 2625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - 1989\, e^{2\sqrt{z}} \sqrt{2\pi}\, \left(256 z^2 + 3360 z + 2625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.aa5l.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},\frac{7}{4};-z\right)=$$
$$\frac{1}{11\,354\,112\,z^{3/4}}\left(2\sqrt[4]{z}\left(108\sqrt{z}\,(16z-11\,893)\cos\left(2\sqrt{z}\right)+\left(8192z^2-898\,128z+5\,221\,125\right)\sin\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.1989\sqrt{\pi}\left(256z^2-3360z+2625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.aa5m.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},\frac{9}{4};z\right)=\frac{1}{4\,257\,792\sqrt{2}\,z^{3/4}}$$
$$\left(\left(-14\sqrt{z}\left(22\,784z^2+232\,128z-218\,889\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-21\left(7936z^2+377\,696z-648\,945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(179\,968z^2+4\,109\,952z+13\,627\,845\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa5n.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},\frac{9}{4};-z\right)=\frac{1}{4\,257\,792\sqrt{2}\,z^{3/4}}$$
$$\left(\left(14\sqrt{z}\left(-22\,784z^2+232\,128z+218\,889\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-21\left(7936z^2-377\,696z-648\,945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\left(179\,968z^2-4\,109\,952z+13\,627\,845\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa5o.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{415\,236\,096\,z^{7/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(809\,984z^{5/2}+2\,255\,104z^2+32\,810\,112z^{3/2}+77\,968\,800z+201\,883\,500\sqrt{z}+\right.\right.\right.$$
$$\left.e^{4\sqrt{z}}\left(809\,984z^{5/2}-2\,255\,104z^2+32\,810\,112z^{3/2}-77\,968\,800z+201\,883\,500\sqrt{z}-151\,412\,625\right)+\right.$$
$$\left.\left.151\,412\,625\right)+663e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+80\,640z^2+126\,000z-228\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\right.$$
$$\left.663e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+80\,640z^2+126\,000z-228\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aa5p.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},\frac{11}{4};-z\right)=\frac{1}{103\,809\,024\,z^{7/4}}$$
$$\left(2\sqrt[4]{z}\left(\left(2\,255\,104z^2-77\,968\,800z+151\,412\,625\right)\sin\left(2\sqrt{z}\right)-4\sqrt{z}\left(202\,496z^2-8\,202\,528z+50\,470\,875\right)\cos\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.663\sqrt{\pi}\left(4096z^3-80\,640z^2+126\,000z+228\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.aa5q.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) = \frac{1}{105\,971\,712\sqrt{2}\,z^{7/4}}\left(\left(-6\sqrt{z}\left(905\,216\,z^3 + 23\,781\,632\,z^2 + 140\,727\,664\,z - 140\,821\,065\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(10\,440\,704\,z^3 + 563\,506\,944\,z^2 + 4\,142\,864\,880\,z - 2\,112\,315\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 6\sqrt{z}\left(905\,216\,z^3 + 17\,005\,824\,z^2 - 121\,136\,400\,z - 704\,105\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa5r.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) = $$
$$ \frac{1}{105\,971\,712\sqrt{2}\,z^{7/4}}\left(\left(-6\sqrt{z}\left(905\,216\,z^3 - 23\,781\,632\,z^2 + 140\,727\,664\,z + 140\,821\,065\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(10\,440\,704\,z^3 - 563\,506\,944\,z^2 + 4\,142\,864\,880\,z + 2\,112\,315\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 6\sqrt{z}\left(-905\,216\,z^3 + 17\,005\,824\,z^2 + 121\,136\,400\,z - 704\,105\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa5s.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) = \frac{1}{9\,663\,676\,416\,z^{11/4}} $$
$$ \left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(10\,862\,592\,z^{7/2} - 11\,104\,256\,z^3 + 104\,727\,552\,z^{5/2} - 1\,811\,846\,400\,z^2 - 8\,398\,353\,600\,z^{3/2} - 27\,617\,662\,800\,z - \right.\right.\right. $$
$$ \left.\left. 46\,635\,088\,500\sqrt{z} + e^{4\sqrt{z}}\left(10\,862\,592\,z^{7/2} + 11\,104\,256\,z^3 + 104\,727\,552\,z^{5/2} + 1\,811\,846\,400\,z^2 - \right.\right.\right. $$
$$ \left.\left.\left. 8\,398\,353\,600\,z^{3/2} + 27\,617\,662\,800\,z - 46\,635\,088\,500\sqrt{z} + 34\,976\,316\,375\right) - 34\,976\,316\,375\right) + $$
$$ 663\,e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4 + 1\,720\,320\,z^3 + 4\,032\,000\,z^2 - 14\,616\,000\,z + 52\,754\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ \left.\left. 663\,e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4 + 1\,720\,320\,z^3 + 4\,032\,000\,z^2 - 14\,616\,000\,z + 52\,754\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aa5t.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) = $$
$$ \frac{1}{2\,415\,919\,104\,z^{11/4}}\left(2\sqrt[4]{z}\left(\left(-11\,104\,256\,z^3 + 1\,811\,846\,400\,z^2 - 27\,617\,662\,800\,z + 34\,976\,316\,375\right)\sin\left(2\sqrt{z}\right) - \right.\right. $$
$$ \left.\left. 12\sqrt{z}\left(905\,216\,z^3 - 8\,727\,296\,z^2 - 699\,862\,800\,z + 3\,886\,257\,375\right)\cos\left(2\sqrt{z}\right)\right) - \right. $$
$$ \left. 663\sqrt{\pi}\left(65\,536\,z^4 - 1\,720\,320\,z^3 + 4\,032\,000\,z^2 + 14\,616\,000\,z + 52\,754\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.aa5u.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) = -\frac{1}{10\,173\,284\,352\sqrt{2}\,z^{11/4}} $$
$$ \left(13\left(2\sqrt{z}\left(14\,483\,456z^4 + 404\,447\,232z^3 - 2\,070\,706\,176z^2 - 49\,569\,014\,880z + 44\,358\,635\,475\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\left(14\,483\,456z^4 + 8\,830\,976z^3 - 22\,482\,915\,840z^2 - 135\,188\,222\,400z + 73\,931\,059\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 2\sqrt{z}\left(14\,483\,456z^4 + 442\,834\,944z^3 + 4\,651\,637\,760z^2 + 67\,594\,111\,200z + 221\,793\,177\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa5v.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) = -\frac{1}{10\,173\,284\,352\sqrt{2}\,z^{11/4}} $$
$$ \left(13\left(2\sqrt{z}\left(14\,483\,456z^4 - 404\,447\,232z^3 - 2\,070\,706\,176z^2 + 49\,569\,014\,880z + 44\,358\,635\,475\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\left(14\,483\,456z^4 - 8\,830\,976z^3 - 22\,482\,915\,840z^2 + 135\,188\,222\,400z + 73\,931\,059\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(14\,483\,456z^4 - 442\,834\,944z^3 + 4\,651\,637\,760z^2 - 67\,594\,111\,200z + 221\,793\,177\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa5w.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{206\,158\,430\,208\,z^{15/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(173\,801\,472z^{9/2} - 43\,450\,368z^4 + 6\,406\,537\,216z^{7/2} + 15\,646\,310\,400z^3 + \right.\right.\right. $$
$$ 213\,619\,660\,800z^{5/2} + 1\,259\,322\,355\,200z^2 + 4\,945\,984\,243\,200z^{3/2} + 12\,386\,279\,505\,600z + $$
$$ 18\,980\,481\,019\,500\sqrt{z} + e^{4\sqrt{z}}\left(173\,801\,472z^{9/2} + 43\,450\,368z^4 + 6\,406\,537\,216z^{7/2} - \right. $$
$$ 15\,646\,310\,400z^3 + 213\,619\,660\,800z^{5/2} - 1\,259\,322\,355\,200z^2 + 4\,945\,984\,243\,200z^{3/2} - $$
$$ \left.\left.\left. 12\,386\,279\,505\,600z + 18\,980\,481\,019\,500\sqrt{z} - 14\,235\,360\,764\,625\right) + 14\,235\,360\,764\,625\right) + $$
$$ 663\,e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5 + 34\,406\,400z^4 + 107\,520\,000z^3 - 584\,640\,000z^2 + 4\,220\,370\,000z - 21\,471\,132\,375\right) $$
$$ \left.\left. \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 663\,e^{2\sqrt{z}}\sqrt{2\pi}\right.\right. $$
$$ \left.\left.\left(1\,048\,576z^5 + 34\,406\,400z^4 + 107\,520\,000z^3 - 584\,640\,000z^2 + 4\,220\,370\,000z - 21\,471\,132\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aa5x.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) = \frac{1}{51\,539\,607\,552\,z^{15/4}}\left(-663\sqrt{\pi}\right. $$
$$ \left(1\,048\,576z^5 - 34\,406\,400z^4 + 107\,520\,000z^3 + 584\,640\,000z^2 + 4\,220\,370\,000z + 21\,471\,132\,375\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z} $$
$$ \left(4\sqrt{z}\left(43\,450\,368z^4 - 1\,601\,634\,304z^3 + 53\,404\,915\,200z^2 - 1\,236\,496\,060\,800z + 4\,745\,120\,254\,875\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. 51\left(851\,968z^4 + 306\,790\,400z^3 - 24\,692\,595\,200z^2 + 242\,868\,225\,600z - 279\,124\,720\,875\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.aa5y.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},\frac{21}{4};z\right)=$$

$$-\left(221\left(2\sqrt{z}\,\left(231\,735\,296\,z^5+8\,212\,119\,552\,z^4+55\,629\,471\,744\,z^3+2\,235\,111\,943\,680\,z^2+23\,894\,518\,309\,200\,z-\right.\right.\right.$$
$$\left.22\,489\,828\,185\,825\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(231\,735\,296\,z^5+10\,029\,694\,976\,z^4+558\,196\,531\,200\,z^3+\right.$$
$$\left.15\,501\,582\,835\,200\,z^2+66\,478\,808\,365\,200\,z-37\,483\,046\,976\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-231\,735\,296\,z^5-8\,385\,921\,024\,z^4+3\,383\,009\,280\,z^3+3\,244\,517\,337\,600\,z^2+\right.$$
$$\left.\left.\left.40\,455\,075\,553\,200\,z+112\,449\,140\,929\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(3\,580\,996\,091\,904\,\sqrt{2}\;z^{15/4}\right)$$

07.22.03.aa5z.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},\frac{21}{4};-z\right)=$$

$$-\left(221\left(2\sqrt{z}\,\left(231\,735\,296\,z^5-8\,212\,119\,552\,z^4+55\,629\,471\,744\,z^3-2\,235\,111\,943\,680\,z^2+23\,894\,518\,309\,200\,z+\right.\right.\right.$$
$$\left.22\,489\,828\,185\,825\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(231\,735\,296\,z^5-10\,029\,694\,976\,z^4+558\,196\,531\,200\,z^3-\right.$$
$$\left.15\,501\,582\,835\,200\,z^2+66\,478\,808\,365\,200\,z+37\,483\,046\,976\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(231\,735\,296\,z^5-8\,385\,921\,024\,z^4-3\,383\,009\,280\,z^3+3\,244\,517\,337\,600\,z^2-\right.$$
$$\left.\left.\left.40\,455\,075\,553\,200\,z+112\,449\,140\,929\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(3\,580\,996\,091\,904\,\sqrt{2}\;z^{15/4}\right)$$

07.22.03.aa60.01

$${}_1F_2\left(-\frac{5}{4};-\frac{11}{2},\frac{23}{4};z\right)=$$

$$\frac{1}{26\,388\,279\,066\,624\,z^{19/4}}\left(19\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(926\,941\,184\,z^{11/2}-231\,735\,296\,z^5+36\,672\,110\,592\,z^{9/2}-30\,816\,665\,600\,z^4-\right.\right.\right.$$
$$489\,081\,241\,600\,z^{7/2}-8\,669\,883\,801\,600\,z^3-69\,509\,081\,241\,600\,z^{5/2}-349\,421\,469\,196\,800\,z^2-$$
$$1\,171\,366\,828\,632\,000\,z^{3/2}-2\,657\,267\,342\,730\,000\,z-3\,890\,998\,608\,997\,500\,\sqrt{z}\,+$$
$$e^{4\sqrt{z}}\left(926\,941\,184\,z^{11/2}+231\,735\,296\,z^5+36\,672\,110\,592\,z^{9/2}+30\,816\,665\,600\,z^4-489\,081\,241\,600\,z^{7/2}+\right.$$
$$\left.8\,669\,883\,801\,600\,z^3-69\,509\,081\,241\,600\,z^{5/2}+349\,421\,469\,196\,800\,z^2-1\,171\,366\,828\,632\,000\,z^{3/2}+\right.$$
$$\left.2\,657\,267\,342\,730\,000\,z-3\,890\,998\,608\,997\,500\,\sqrt{z}\,+2\,918\,248\,956\,748\,125\right)-2\,918\,248\,956\,748\,125\Big)+$$
$$221\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(16\,777\,216\,z^6+660\,602\,880\,z^5+2\,580\,480\,000\,z^4-18\,708\,480\,000\,z^3+\right.$$
$$\left.202\,577\,760\,000\,z^2-2\,061\,228\,708\,000\,z+13\,204\,746\,410\,625\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$221\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(16\,777\,216\,z^6+660\,602\,880\,z^5+2\,580\,480\,000\,z^4-18\,708\,480\,000\,z^3+\right.$$
$$\left.\left.202\,577\,760\,000\,z^2-2\,061\,228\,708\,000\,z+13\,204\,746\,410\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.aa61.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) =$$
$$-\frac{1}{6\,597\,069\,766\,656\,z^{19/4}}\left(19\left(221\sqrt{\pi}\left(16\,777\,216\,z^6 - 660\,602\,880\,z^5 + 2\,580\,480\,000\,z^4 + 18\,708\,480\,000\,z^3 + 202\,577\,760\,000\,z^2 + 2\,061\,228\,708\,000\,z + 13\,204\,746\,410\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(68\sqrt{z}\left(13\,631\,488\,z^5 - 539\,295\,744\,z^4 - 7\,192\,371\,200\,z^3 + 1\,022\,192\,371\,200\,z^2 - 17\,225\,982\,774\,000\,z + 57\,220\,567\,779\,375\right)\cos\left(2\sqrt{z}\right) + \left(231\,735\,296\,z^5 - 30\,816\,665\,600\,z^4 + 8\,669\,883\,801\,600\,z^3 - 349\,421\,469\,196\,800\,z^2 + 2\,657\,267\,342\,730\,000\,z - 2\,918\,248\,956\,748\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = -\frac{5}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.aa62.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{286\,184\,745\sqrt[4]{z}}\left(\sqrt{2}\left(9\left(32\,768\,z^5 + 896\,000\,z^4 + 9\,047\,808\,z^3 + 24\,282\,720\,z^2 - 65\,132\,760\,z + 31\,798\,305\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384\,z^5 + 1\,001\,472\,z^4 + 18\,260\,928\,z^3 + 126\,957\,600\,z^2 + 204\,615\,180\,z - 286\,184\,745\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 84\,z\left(4096\,z^4 + 134\,912\,z^3 + 1\,729\,200\,z^2 + 8\,426\,880\,z + 13\,627\,845\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa63.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{286\,184\,745\sqrt[4]{z}}\left(\sqrt{2}\left(-9\left(32\,768\,z^5 - 896\,000\,z^4 + 9\,047\,808\,z^3 - 24\,282\,720\,z^2 - 65\,132\,760\,z - 31\,798\,305\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384\,z^5 - 1\,001\,472\,z^4 + 18\,260\,928\,z^3 - 126\,957\,600\,z^2 + 204\,615\,180\,z + 286\,184\,745\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 84\,z\left(4096\,z^4 - 134\,912\,z^3 + 1\,729\,200\,z^2 - 8\,426\,880\,z + 13\,627\,845\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa64.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, -\frac{21}{4}; z\right) = \frac{1}{39\,471\,705}\left(\left(77\,824\,z^4 + 2\,151\,936\,z^3 + 22\,155\,120\,z^2 + 76\,854\,960\,z + 39\,471\,705\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4096\,z^4 + 235\,008\,z^3 + 3\,888\,144\,z^2 + 24\,226\,020\,z + 39\,471\,705\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aa65.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{1}{39\,471\,705}\left(\left(77\,824\,z^4 - 2\,151\,936\,z^3 + 22\,155\,120\,z^2 - 76\,854\,960\,z + 39\,471\,705\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(4096\,z^4 - 235\,008\,z^3 + 3\,888\,144\,z^2 - 24\,226\,020\,z + 39\,471\,705\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aa66.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, -\frac{19}{4}; z\right) = \frac{1}{12\,442\,815\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192\,z^5 + 311\,808\,z^4 + 3\,451\,392\,z^3 + 9\,757\,440\,z^2 - 25\,613\,280\,z + 12\,442\,815\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(11\,264\,z^4 + 245\,056\,z^3 + 1\,811\,040\,z^2 + 3\,007\,620\,z - 4\,147\,605\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2048\,z^4 + 104\,832\,z^3 + 1\,496\,880\,z^2 + 7\,567\,560\,z + 12\,442\,815\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa67.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{12\,442\,815\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-8192\,z^5 + 311\,808\,z^4 - 3\,451\,392\,z^3 + 9\,757\,440\,z^2 + 25\,613\,280\,z + 12\,442\,815\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(11\,264\,z^4 - 245\,056\,z^3 + 1\,811\,040\,z^2 - 3\,007\,620\,z - 4\,147\,605\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2048\,z^4 - 104\,832\,z^3 + 1\,496\,880\,z^2 - 7\,567\,560\,z + 12\,442\,815\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa68.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, -\frac{17}{4}; z\right) = \frac{1}{1\,879\,605}\left(\left(2048\,z^4 + 87\,936\,z^3 + 1\,008\,720\,z^2 + 3\,636\,360\,z + 1\,879\,605\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(2816\,z^3 + 56\,688\,z^2 + 376\,740\,z + 626\,535\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aa69.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, -\frac{17}{4}; -z\right) = \frac{1}{1\,879\,605}\left(\left(2048\,z^4 - 87\,936\,z^3 + 1\,008\,720\,z^2 - 3\,636\,360\,z + 1\,879\,605\right)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\left(2816\,z^3 - 56\,688\,z^2 + 376\,740\,z - 626\,535\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aa6a.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, -\frac{15}{4}; z\right) = \frac{1}{654\,885\sqrt[4]{z}}\left(\sqrt{2}\left(\left(13\,312\,z^4 + 174\,336\,z^3 + 534\,240\,z^2 - 1\,358\,280\,z + 654\,885\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024\,z^4 + 33\,984\,z^3 + 278\,880\,z^2 + 485\,100\,z - 654\,885\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(4096\,z^3 + 72\,240\,z^2 + 388\,080\,z + 654\,885\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa6b.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{654\,885\sqrt[4]{z}} \left(\sqrt{2}\left(\left(13\,312 z^4 - 174\,336 z^3 + 534\,240 z^2 + 1\,358\,280 z + 654\,885\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1024 z^4 - 33\,984 z^3 + 278\,880 z^2 - 485\,100 z - 654\,885\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(4096 z^3 - 72\,240 z^2 + 388\,080 z - 654\,885\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa6c.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, -\frac{13}{4}; z\right) = -\frac{(16 z + 117)\left(2\sqrt{z}\left(16 z^2 + 420 z + 945\right)\sinh\left(2\sqrt{z}\right) - 15\left(16 z^2 + 112 z + 63\right)\cosh\left(2\sqrt{z}\right)\right)}{110\,565} $$

07.22.03.aa6d.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, -\frac{13}{4}; -z\right) = -\frac{(16 z - 117)\left(15\left(16 z^2 - 112 z + 63\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(16 z^2 - 420 z + 945\right)\sin\left(2\sqrt{z}\right)\right)}{110\,565} $$

07.22.03.aa6e.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, -\frac{11}{4}; z\right) = \frac{1}{43\,659\sqrt[4]{z}} \left(\sqrt{2}\left(\left(512 z^4 + 10\,752 z^3 + 38\,016 z^2 - 91\,728 z + 43\,659\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(576 z^3 + 5920 z^2 + 11\,172 z - 14\,553\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(128 z^3 + 4080 z^2 + 24\,696 z + 43\,659\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa6f.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, -\frac{11}{4}; -z\right) = \frac{1}{43\,659\sqrt[4]{z}} \left(\sqrt{2}\left(\left(512 z^4 - 10\,752 z^3 + 38\,016 z^2 + 91\,728 z + 43\,659\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(576 z^3 - 5920 z^2 + 11\,172 z + 14\,553\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-128 z^3 + 4080 z^2 - 24\,696 z + 43\,659\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa6g.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, -\frac{9}{4}; z\right) = \left(\frac{128 z^3}{8505} + \frac{80 z^2}{189} + \frac{152 z}{81} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(464 z^2 + 4620 z + 8505\right)\sinh\left(2\sqrt{z}\right)}{8505} $$

07.22.03.aa6h.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) = \left(-\frac{128 z^3}{8505} + \frac{80 z^2}{189} - \frac{152 z}{81} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(464 z^2 - 4620 z + 8505\right)\sin\left(2\sqrt{z}\right)}{8505} $$

07.22.03.aa6i.01

$${}_1F_2\left(-\frac{5}{4};-\frac{9}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{3969\sqrt[4]{z}}\left(\sqrt{2}\left(\left(768z^3+3936z^2-8568z+3969\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z^3+1440z^2+3276z-3969\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.12z\left(80z^2+672z+1323\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa6j.01

$${}_1F_2\left(-\frac{5}{4};-\frac{9}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{3969\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-768z^3+3936z^2+8568z+3969\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z^3-1440z^2+3276z+3969\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.12z\left(80z^2-672z+1323\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa6k.01

$${}_1F_2\left(-\frac{5}{4};-\frac{9}{2},-\frac{5}{4};z\right)=\left(\frac{16z^2}{63}+\frac{16z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{945}\sqrt{z}\left(16z^2+420z+945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aa6l.01

$${}_1F_2\left(-\frac{5}{4};-\frac{9}{2},-\frac{5}{4};-z\right)=\left(\frac{16z^2}{63}-\frac{16z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\left(16z^2-420z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aa6m.01

$${}_1F_2\left(-\frac{5}{4};-\frac{9}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{567\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32z^3+768z^2-1344z+567\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(116z^2+588z-567\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(8z^2+168z+567\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa6n.01

$${}_1F_2\left(-\frac{5}{4};-\frac{9}{2},-\frac{3}{4};-z\right)=$$
$$\frac{1}{567\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32z^3+768z^2+1344z+567\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(116z^2-588z-567\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(8z^2-168z+567\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa6o.01

$${}_1F_2\left(-\frac{5}{4};-\frac{9}{2},-\frac{1}{4};z\right)=\frac{1}{756}e^{-2\sqrt{z}}\left(-117e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+117e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+\right.$$
$$\left.2\left(8z^2+66z^{3/2}+168z+378\sqrt{z}+e^{4\sqrt{z}}\left(8z^2-66z^{3/2}+168z-378\sqrt{z}+189\right)+189\right)\right)$$

07.22.03.aa6p.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) = \frac{13}{21}\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{5/4} + \frac{2}{63}(63 - 11z)\sin\left(2\sqrt{z}\right)\sqrt{z} + \left(\frac{8z^2}{189} - \frac{8z}{9} + 1\right)\cos\left(2\sqrt{z}\right)$$

07.22.03.aa6q.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) = \frac{1}{189\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(-6\left(19z^2 + 56z - 63\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-32z^2 - 483z + 1512\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 378z(z+4) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa6r.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) = \frac{1}{189\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(-6\left(19z^2 - 56z - 63\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(32z^2 - 483z - 1512\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 378(z-4) z J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa6s.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{48\,384}\left(e^{-2\sqrt{z}}\left(4\left(64z^{3/2} + 1076z + 2151\sqrt{z} + e^{4\sqrt{z}}\left(-64z^{3/2} + 1076z - 2151\sqrt{z} + 6048\right) + 6048\right) + 117\right.\right.$$
$$\left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\,(16z + 85)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 117\, e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\,(16z + 85)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aa6t.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) = \frac{-8(269z - 1512)\cos\left(2\sqrt{z}\right) - 117\sqrt{\pi}\,\sqrt[4]{z}\,(16z - 85) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2(2151 - 64z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)}{12\,096}$$

07.22.03.aa6u.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) = \frac{1}{6048\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(-2\left(688z^2 + 6363z - 6048\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 21\sqrt{z}\,(208z + 1259) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 14z(80z + 321) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa6v.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{5}{4}; -z\right) = \frac{1}{6048\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(-2\left(688z^2 - 6363z - 6048\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 21\sqrt{z}\,(208z - 1259) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 14(321 - 80z) z J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa6w.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{7}{4}; z\right) = \frac{1}{2\,064\,384\, z^{3/4}}$$
$$\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(5440z^{3/2} - 24\,912z - 20\,412\sqrt{z} + e^{4\sqrt{z}}\left(5440z^{3/2} + 24\,912z - 20\,412\sqrt{z} + 208\,845\right) - 208\,845\right) + \right.$$
$$\left. 117\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 + 2720z + 1785\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 117\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 + 2720z + 1785\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aa6x.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{7}{4}; -z\right) = \frac{1}{516\,096\, z^{3/4}} $$
$$ \left(-117\sqrt{\pi}\,\left(256 z^2 - 2720 z + 1785\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\,\left(4\sqrt{z}\,(1360 z + 5103)\cos\left(2\sqrt{z}\right) + 9\,(2768 z - 23\,205)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.aa6y.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{9}{4}; z\right) = $$
$$ \frac{1}{193\,536\sqrt{2}\, z^{3/4}}\left(\left(-2\sqrt{z}\,\left(9984 z^2 + 97\,888 z - 92\,589\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 7\left(2816 z^2 - 19\,584 z + 72\,105\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. 2\sqrt{z}\,\left(9984 z^2 + 165\,536 z + 504\,735\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa6z.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = $$
$$ \frac{1}{193\,536\sqrt{2}\, z^{3/4}}\left(\left(-2\sqrt{z}\,\left(9984 z^2 - 97\,888 z - 92\,589\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 7\left(2816 z^2 + 19\,584 z + 72\,105\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right. $$
$$ \left.\left. 2\sqrt{z}\,\left(9984 z^2 - 165\,536 z + 504\,735\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa70.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = $$
$$ \frac{1}{18\,874\,368\, z^{7/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(39\,936 z^{5/2} + 22\,784 z^2 + 1\,086\,336 z^{3/2} + 2\,227\,680 z + 6\,961\,500\sqrt{z} + e^{4\sqrt{z}}\right.\right.\right. $$
$$ \left.\left.\left.\left(39\,936 z^{5/2} - 22\,784 z^2 + 1\,086\,336 z^{3/2} - 2\,227\,680 z + 6\,961\,500\sqrt{z} - 5\,221\,125\right) + 5\,221\,125\right) + \right. $$
$$ 39\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096 z^3 + 65\,280 z^2 + 85\,680 z - 133\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$
$$ \left. 39\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096 z^3 + 65\,280 z^2 + 85\,680 z - 133\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.aa71.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = $$
$$ \frac{1}{4\,718\,592\, z^{7/4}}\left(2\sqrt[4]{z}\,\left(\left(22\,784 z^2 - 2\,227\,680 z + 5\,221\,125\right)\sin\left(2\sqrt{z}\right) - 12\sqrt{z}\,\left(3328 z^2 - 90\,528 z + 580\,125\right)\cos\left(2\sqrt{z}\right)\right) - \right. $$
$$ \left. 39\sqrt{\pi}\,\left(4096 z^3 - 65\,280 z^2 + 85\,680 z + 133\,875\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.aa72.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = \frac{1}{4\,816\,896\sqrt{2}\,z^{7/4}} \left(\left(-2\sqrt{z}\,\left(159\,744 z^3 + 3\,008\,768 z^2 + 12\,949\,776 z - 13\,627\,845\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(159\,744 z^3 + 5\,729\,024 z^2 + 45\,762\,640 z - 22\,713\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(159\,744 z^3 + 2\,841\,856 z^2 - 8\,075\,760 z - 68\,139\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa73.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = \frac{1}{4\,816\,896\sqrt{2}\,z^{7/4}} \left(\left(-2\sqrt{z}\,\left(159\,744 z^3 - 3\,008\,768 z^2 + 12\,949\,776 z + 13\,627\,845\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(159\,744 z^3 - 5\,729\,024 z^2 + 45\,762\,640 z + 22\,713\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-159\,744 z^3 + 2\,841\,856 z^2 + 8\,075\,760 z - 68\,139\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa74.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{15}{4}; z\right) = \frac{1}{4\,831\,838\,208 z^{11/4}} \left(11 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(638\,976 z^{7/2} - 159\,744 z^3 + 11\,600\,896 z^{5/2} - 37\,623\,040 z^2 - 200\,491\,200 z^{3/2} - 796\,395\,600 z - 1\,413\,184\,500\sqrt{z}\right) + e^{4\sqrt{z}}\left(638\,976 z^{7/2} + 159\,744 z^3 + 11\,600\,896 z^{5/2} + 37\,623\,040 z^2 - 200\,491\,200 z^{3/2} + 796\,395\,600 z - 1\,413\,184\,500\sqrt{z} + 1\,059\,888\,375\right) - 1\,059\,888\,375\right) + 39 e^{2\sqrt{z}}\sqrt{2\pi}\,\left(65\,536 z^4 + 1\,392\,640 z^3 + 2\,741\,760 z^2 - 8\,568\,000 z + 27\,176\,625\right) \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 39 e^{2\sqrt{z}}\sqrt{2\pi}\,\left(65\,536 z^4 + 1\,392\,640 z^3 + 2\,741\,760 z^2 - 8\,568\,000 z + 27\,176\,625\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right) $$

07.22.03.aa75.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{15}{4}; -z\right) = -\frac{1}{1\,207\,959\,552 z^{11/4}} \left(11\left(39\sqrt{\pi}\,\left(65\,536 z^4 - 1\,392\,640 z^3 + 2\,741\,760 z^2 + 8\,568\,000 z + 27\,176\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(159\,744 z^3 - 2\,900\,224 z^2 - 50\,122\,800 z + 353\,296\,125\right)\cos\left(2\sqrt{z}\right) + 13\left(12\,288 z^3 - 2\,894\,080 z^2 + 61\,261\,200 z - 81\,529\,875\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.aa76.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{17}{4}; z\right) = $$
$$ -\frac{1}{462\,422\,016\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(851\,968z^4+19\,808\,256z^3-23\,643\,648z^2-1\,453\,636\,800z+1\,267\,389\,585\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 3\left(851\,968z^4+15\,966\,208z^3-516\,848\,640z^2-3\,924\,819\,360z+2\,112\,315\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)- $$
$$ \left.\left.2\sqrt{z}\left(851\,968z^4+20\,447\,232z^3+110\,753\,280z^2+1\,744\,364\,160z+6\,336\,947\,925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa77.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = $$
$$ -\frac{1}{462\,422\,016\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(851\,968z^4-19\,808\,256z^3-23\,643\,648z^2+1\,453\,636\,800z+1\,267\,389\,585\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 3\left(851\,968z^4-15\,966\,208z^3-516\,848\,640z^2+3\,924\,819\,360z+2\,112\,315\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.2\sqrt{z}\left(851\,968z^4-20\,447\,232z^3+110\,753\,280z^2-1\,744\,364\,160z+6\,336\,947\,925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa78.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) = \frac{1}{103\,079\,215\,104\,z^{15/4}} $$
$$ \left(11e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(10\,223\,616z^{9/2}-2\,555\,904z^4+273\,481\,728z^{7/2}+97\,484\,800z^3+4\,039\,526\,400z^{5/2}+\right.\right.\right. $$
$$ 27\,147\,993\,600z^2+121\,453\,113\,600z^{3/2}+325\,597\,708\,800z+512\,985\,973\,500\sqrt{z}+e^{4\sqrt{z}} $$
$$ \left(10\,223\,616z^{9/2}+2\,555\,904z^4+273\,481\,728z^{7/2}-97\,484\,800z^3+4\,039\,526\,400z^{5/2}-27\,147\,993\,600z^2+\right. $$
$$ \left.\left.\left.121\,453\,113\,600z^{3/2}-325\,597\,708\,800z+512\,985\,973\,500\sqrt{z}-384\,739\,480\,125\right)+384\,739\,480\,125\right)+ $$
$$ 39e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5+27\,852\,800z^4+73\,113\,600z^3-342\,720\,000z^2+2\,174\,130\,000z-9\,865\,114\,875\right) $$
$$ \left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-39e^{2\sqrt{z}}\sqrt{2\pi}\right.\right. $$
$$ \left.\left.\left(1\,048\,576z^5+27\,852\,800z^4+73\,113\,600z^3-342\,720\,000z^2+2\,174\,130\,000z-9\,865\,114\,875\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aa79.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) = -\frac{1}{25\,769\,803\,776\,z^{15/4}} $$
$$ \left(11\left(39\sqrt{\pi}\left(1\,048\,576z^5-27\,852\,800z^4+73\,113\,600z^3+342\,720\,000z^2+2\,174\,130\,000z+9\,865\,114\,875\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right. $$
$$ 2\sqrt[4]{z}\left(156\sqrt{z}\left(65\,536z^4-1\,753\,088z^3+25\,894\,400z^2-778\,545\,600z+3\,288\,371\,625\right)\cos\left(2\sqrt{z}\right)+\right. $$
$$ \left.\left.\left.\left(2\,555\,904z^4+97\,484\,800z^3-27\,147\,993\,600z^2+325\,597\,708\,800z-384\,739\,480\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aa7a.01

$${}_1F_2\left(-\frac{5}{4};-\frac{9}{2},\frac{21}{4};z\right)=$$

$$-\left(221\left(2\sqrt{z}\,\left(13\,631\,488\,z^5+389\,349\,376\,z^4+1\,212\,997\,632\,z^3+44\,190\,558\,720\,z^2+624\,118\,960\,080\,z-576\,662\,261\,175\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(13\,631\,488\,z^5+401\,276\,928\,z^4+9\,647\,841\,280\,z^3+362\,052\,472\,320\,z^2+1\,723\,649\,835\,600\,z-\right.$$
$$\left.961\,103\,768\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-13\,631\,488\,z^5-399\,572\,992\,z^4-912\,875\,520\,z^3+\right.$$
$$\left.\left.\left.67\,448\,747\,520\,z^2+980\,114\,612\,400\,z+2\,883\,311\,305\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(162\,772\,549\,632\sqrt{2}\;z^{15/4}\right)$$

07.22.03.aa7b.01

$${}_1F_2\left(-\frac{5}{4};-\frac{9}{2},\frac{21}{4};-z\right)=$$

$$-\left(221\left(2\sqrt{z}\,\left(13\,631\,488\,z^5-389\,349\,376\,z^4+1\,212\,997\,632\,z^3-44\,190\,558\,720\,z^2+624\,118\,960\,080\,z+576\,662\,261\,175\right)\right.\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(13\,631\,488\,z^5-401\,276\,928\,z^4+9\,647\,841\,280\,z^3-362\,052\,472\,320\,z^2+1\,723\,649\,835\,600\,z+\right.$$
$$\left.961\,103\,768\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(13\,631\,488\,z^5-399\,572\,992\,z^4+912\,875\,520\,z^3+\right.$$
$$\left.\left.\left.67\,448\,747\,520\,z^2-980\,114\,612\,400\,z+2\,883\,311\,305\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(162\,772\,549\,632\sqrt{2}\;z^{15/4}\right)$$

07.22.03.aa7c.01

$${}_1F_2\left(-\frac{5}{4};-\frac{9}{2},\frac{23}{4};z\right)=$$

$$\frac{1}{13\,194\,139\,533\,312\,z^{19/4}}\left(209\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(54\,525\,952\,z^{11/2}-13\,631\,488\,z^5+1\,748\,238\,336\,z^{9/2}-447\,283\,200\,z^4+\right.\right.\right.$$
$$682\,393\,600\,z^{7/2}-126\,705\,868\,800\,z^3-1\,316\,172\,748\,800\,z^{5/2}-7\,505\,974\,694\,400\,z^2-$$
$$26\,968\,405\,464\,000\,z^{3/2}-63\,610\,260\,714\,000\,z-94\,902\,405\,097\,500\sqrt{z}\;+$$
$$e^{4\sqrt{z}}\left(54\,525\,952\,z^{11/2}+13\,631\,488\,z^5+1\,748\,238\,336\,z^{9/2}+447\,283\,200\,z^4+682\,393\,600\,z^{7/2}+\right.$$
$$\left.126\,705\,868\,800\,z^3-1\,316\,172\,748\,800\,z^{5/2}+7\,505\,974\,694\,400\,z^2-26\,968\,405\,464\,000\,z^{3/2}+\right.$$
$$\left.63\,610\,260\,714\,000\,z-94\,902\,405\,097\,500\sqrt{z}\;+71\,176\,803\,823\,125\right)-71\,176\,803\,823\,125\Big)+$$
$$13\,e^{2\sqrt{z}}\;\sqrt{2\,\pi}\,\left(16\,777\,216\,z^6+534\,773\,760\,z^5+1\,754\,726\,400\,z^4-10\,967\,040\,000\,z^3+\right.$$
$$\left.104\,358\,240\,000\,z^2-947\,051\,028\,000\,z+5\,475\,138\,755\,625\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-$$
$$13\,e^{2\sqrt{z}}\;\sqrt{2\,\pi}\,\left(16\,777\,216\,z^6+534\,773\,760\,z^5+1\,754\,726\,400\,z^4-10\,967\,040\,000\,z^3+\right.$$
$$\left.\left.104\,358\,240\,000\,z^2-947\,051\,028\,000\,z+5\,475\,138\,755\,625\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.aa7d.01

$${}_1F_2\left(-\frac{5}{4};-\frac{9}{2},\frac{23}{4};-z\right)=$$
$$-\frac{1}{3\,298\,534\,883\,328\,z^{19/4}}\left(209\left(13\sqrt{\pi}\left(16\,777\,216\,z^6-534\,773\,760\,z^5+1\,754\,726\,400\,z^4+10\,967\,040\,000\,z^3+\right.\right.\right.$$
$$\left.\left.\left.104\,358\,240\,000\,z^2+947\,051\,028\,000\,z+5\,475\,138\,755\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(13\,631\,488\,z^5-437\,059\,584\,z^4+170\,598\,400\,z^3+329\,043\,187\,200\,z^2-6\,742\,101\,366\,000\,z+\right.\right.$$
$$\left.\left.23\,725\,601\,274\,375\right)\cos\left(2\sqrt{z}\right)+\left(13\,631\,488\,z^5-447\,283\,200\,z^4+126\,705\,868\,800\,z^3-\right.\right.$$
$$\left.\left.\left.\left.7\,505\,974\,694\,400\,z^2+63\,610\,260\,714\,000\,z-71\,176\,803\,823\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1=-\frac{5}{4}$, $b_{1.}=-\frac{7}{2}$

07.22.03.aa7e.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{31\,798\,305\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384\,z^5+761\,856\,z^4+8\,737\,344\,z^3+25\,169\,760\,z^2-65\,571\,660\,z+31\,798\,305\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(77\,824\,z^4+1\,825\,536\,z^3+13\,804\,560\,z^2+23\,173\,920\,z-31\,798\,305\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(4096\,z^4+251\,904\,z^3+3\,751\,440\,z^2+19\,223\,820\,z+31\,798\,305\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa7f.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{31\,798\,305\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,384\,z^5+761\,856\,z^4-8\,737\,344\,z^3+25\,169\,760\,z^2+65\,571\,660\,z+31\,798\,305\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(77\,824\,z^4-1\,825\,536\,z^3+13\,804\,560\,z^2-23\,173\,920\,z-31\,798\,305\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(4096\,z^4-251\,904\,z^3+3\,751\,440\,z^2-19\,223\,820\,z+31\,798\,305\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa7g.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},-\frac{21}{4};z\right)=\frac{1}{4\,385\,745}\left(\left(4096\,z^4+198\,144\,z^3+2\,330\,640\,z^2+8\,473\,140\,z+4\,385\,745\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.18\sqrt{z}\left(2048\,z^3+43\,264\,z^2+291\,720\,z+487\,305\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aa7h.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) = \frac{1}{4\,385\,745}\left(\left(4096\,z^4 - 198\,144\,z^3 + 2\,330\,640\,z^2 - 8\,473\,140\,z + 4\,385\,745\right)\cos\left(2\sqrt{z}\right) + 18\sqrt{z}\left(-2048\,z^3 + 43\,264\,z^2 - 291\,720\,z + 487\,305\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aa7i.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) = \frac{1}{1\,382\,535\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(9\left(3072\,z^4 + 40\,768\,z^3 + 125\,664\,z^2 - 318\,780\,z + 153\,615\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048\,z^4 + 71\,040\,z^3 + 587\,664\,z^2 + 1\,025\,640\,z - 1\,382\,535\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 132\,z\left(256\,z^3 + 4592\,z^2 + 24\,780\,z + 41\,895\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa7j.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) = \frac{1}{1\,382\,535\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(9\left(3072\,z^4 - 40\,768\,z^3 + 125\,664\,z^2 + 318\,780\,z + 153\,615\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048\,z^4 - 71\,040\,z^3 + 587\,664\,z^2 - 1\,025\,640\,z - 1\,382\,535\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 132\,z\left(256\,z^3 - 4592\,z^2 + 24\,780\,z - 41\,895\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa7k.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) = \frac{1}{208\,845}$$
$$\left(\left(7424\,z^3 + 104\,400\,z^2 + 400\,140\,z + 208\,845\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(512\,z^3 + 16\,416\,z^2 + 121\,680\,z + 208\,845\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aa7l.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, -\frac{17}{4}; -z\right) = \frac{1}{208\,845}$$
$$\left(\left(-7424\,z^3 + 104\,400\,z^2 - 400\,140\,z + 208\,845\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-512\,z^3 + 16\,416\,z^2 - 121\,680\,z + 208\,845\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aa7m.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, -\frac{15}{4}; z\right) = \frac{1}{72\,765\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(1024\,z^4 + 18\,240\,z^3 + 62\,496\,z^2 - 152\,460\,z + 72\,765\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1024\,z^3 + 9968\,z^2 + 18\,480\,z - 24\,255\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(256\,z^3 + 7056\,z^2 + 41\,580\,z + 72\,765\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa7n.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, -\frac{15}{4}; -z\right) = \frac{1}{72\,765\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(1024z^4 - 18\,240z^3 + 62\,496z^2 + 152\,460z + 72\,765\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1024z^3 - 9968z^2 + 18\,480z + 24\,255\right)\right.\right. $$
$$ \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(256z^3 - 7056z^2 + 41\,580z - 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa7o.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, -\frac{13}{4}; z\right) = \left(\frac{256z^3}{12\,285} + \frac{368z^2}{819} + \frac{172z}{91} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256z^2 + 2280z + 4095\right)\sinh\left(2\sqrt{z}\right)}{4095} $$

07.22.03.aa7p.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, -\frac{13}{4}; -z\right) = \left(-\frac{256z^3}{12\,285} + \frac{368z^2}{819} - \frac{172z}{91} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(256z^2 - 2280z + 4095\right)\sin\left(2\sqrt{z}\right)}{4095} $$

07.22.03.aa7q.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, -\frac{11}{4}; z\right) = $$
$$ \frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1088z^3 + 4512z^2 - 10\,332z + 4851\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(128z^3 + 1872z^2 + 3864z - 4851\right)\right.\right. $$
$$ \left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(368z^2 + 2604z + 4851\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa7r.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, -\frac{11}{4}; -z\right) = $$
$$ \frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1088z^3 + 4512z^2 + 10\,332z + 4851\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(128z^3 - 1872z^2 + 3864z + 4851\right)\right.\right. $$
$$ \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(368z^2 - 2604z + 4851\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa7s.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, -\frac{9}{4}; z\right) = \left(\frac{16z^2}{45} + \frac{116z}{63} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(32z^2 + 480z + 945\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.aa7t.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, -\frac{9}{4}; -z\right) = \left(\frac{16z^2}{45} - \frac{116z}{63} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(32z^2 - 480z + 945\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.aa7u.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{441\sqrt[4]{z}}\left(\sqrt{2}\left(\left(64z^3+480z^2-972z+441\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(48z^2+128z-147\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(16z^2+204z+441\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa7v.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{441\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-64z^3+480z^2+972z+441\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(48z^2-128z-147\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(16z^2-204z+441\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa7w.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},-\frac{5}{4};z\right)=\left(\frac{16z^2}{105}+\frac{12z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\,(8z+21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aa7x.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},-\frac{5}{4};-z\right)=\left(\frac{16z^2}{105}-\frac{12z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}(21-8z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aa7y.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(32z^2-52z+21\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(8z^2+72z-63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+12z(4z+21)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa7z.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},-\frac{3}{4};-z\right)=$$
$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(32z^2+52z+21\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(8z^2-72z-63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+12(21-4z)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa80.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},-\frac{1}{4};z\right)=\frac{1}{42}e^{-2\sqrt{z}}\left(-4e^{4\sqrt{z}}z^{3/2}+4z^{3/2}-9e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+\right.$$
$$\left.9e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+12e^{4\sqrt{z}}z+12z-42e^{4\sqrt{z}}\sqrt{z}+42\sqrt{z}+21e^{4\sqrt{z}}+21\right)$$

07.22.03.aa81.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},-\frac{1}{4};-z\right)=\frac{6}{7}\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+\frac{2}{21}(21-2z)\sin\left(2\sqrt{z}\right)\sqrt{z}+\left(1-\frac{4z}{7}\right)\cos\left(2\sqrt{z}\right)$$

07.22.03.aa82.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},\frac{1}{4};z\right)=$$

$$\frac{1}{21\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-14z^2-12z+21\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+(84-13z)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2z(11z+42)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa83.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},\frac{1}{4};-z\right)=$$

$$\frac{1}{21\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-14z^2+12z+21\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\,(13z+84)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2(42-11z)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa84.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},\frac{3}{4};z\right)=$$

$$\frac{1}{2688}\left(e^{-2\sqrt{z}}\left(4\left(52z+87\sqrt{z}+e^{4\sqrt{z}}\left(52z-87\sqrt{z}+336\right)+336\right)+9e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\,(16z+65)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.9e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\,(16z+65)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aa85.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},\frac{3}{4};-z\right)=\frac{1}{672}\left(-8(13z-84)\cos\left(2\sqrt{z}\right)-9\sqrt{\pi}\,\sqrt[4]{z}\,(16z-65)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+174\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aa86.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},\frac{5}{4};z\right)=$$

$$\frac{1}{336\sqrt{2}\,\sqrt[4]{z}}\left(\left(\left(-96z^2-690z+672\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,(208z+1533)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+6z(16z+63)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa87.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},\frac{5}{4};-z\right)=$$

$$\frac{1}{336\sqrt{2}\,\sqrt[4]{z}}\left(\left(\left(-96z^2+690z+672\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,(208z-1533)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+6(63-16z)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa88.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},\frac{7}{4};z\right)=$$

$$\frac{1}{114\,688z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(576z^{3/2}-656z+1076\sqrt{z}+e^{4\sqrt{z}}\left(576z^{3/2}+656z+1076\sqrt{z}+9945\right)-9945\right)+\right.\right.$$
$$\left.\left.9e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+2080z+1105\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-9e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+2080z+1105\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aa89.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},\frac{7}{4};-z\right)=$$

$$\frac{1}{28\,672\,z^{3/4}}\left(2\sqrt[4]{z}\,\left((9945-656\,z)\sin\left(2\sqrt{z}\right)-4\sqrt{z}\,(144\,z-269)\cos\left(2\sqrt{z}\right)\right)-9\sqrt{\pi}\,\left(256\,z^2-2080\,z+1105\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.aa8a.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},\frac{9}{4};z\right)=$$

$$\frac{1}{10\,752\sqrt{2}\,z^{3/4}}\left(\left(-2\sqrt{z}\,\left(768\,z^2+6656\,z-6363\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(768\,z^2+1568\,z+7315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(768\,z^2+8512\,z+21\,945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa8b.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},\frac{9}{4};-z\right)=$$

$$\frac{1}{10\,752\sqrt{2}\,z^{3/4}}\left(\left(-2\sqrt{z}\,\left(768\,z^2-6656\,z-6363\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(768\,z^2-1568\,z+7315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(768\,z^2-8512\,z+21\,945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa8c.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},\frac{11}{4};z\right)=\frac{1}{1\,048\,576\,z^{7/4}}$$

$$\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(3072\,z^{5/2}-768\,z^2+46\,208\,z^{3/2}+63\,648\,z+278\,460\sqrt{z}\right)+e^{4\sqrt{z}}\left(3072\,z^{5/2}+768\,z^2+46\,208\,z^{3/2}-\right.\right.\right.$$

$$\left.63\,648\,z+278\,460\sqrt{z}\right)-208\,845\Big)+208\,845\Big)+3\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3+49\,920\,z^2+53\,040\,z-69\,615\right)$$

$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-3\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3+49\,920\,z^2+53\,040\,z-69\,615\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aa8d.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},\frac{11}{4};-z\right)=\frac{1}{262\,144\,z^{7/4}}\left(-3\sqrt{\pi}\,\left(4096\,z^3-49\,920\,z^2+53\,040\,z+69\,615\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.$$

$$\left.2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(768\,z^2-11\,552\,z+69\,615\right)\cos\left(2\sqrt{z}\right)+3\left(256\,z^2+21\,216\,z-69\,615\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aa8e.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},\frac{13}{4};z\right)=-\frac{1}{802\,816\sqrt{2}\,z^{7/4}}$$

$$\left(3\left(2\sqrt{z}\,\left(12\,288\,z^3+166\,656\,z^2+426\,832\,z-504\,735\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(36\,864\,z^3+675\,584\,z^2+5\,266\,800\,z-2\,523\,675\right)\right.\right.$$

$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-12\,288\,z^3-175\,872\,z^2+117\,040\,z+2\,523\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa8f.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) = -\frac{1}{802\,816\sqrt{2}\,z^{7/4}} $$
$$ \left(3\left(2\sqrt{z}\left(12\,288z^3 - 166\,656z^2 + 426\,832z + 504\,735\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(36\,864z^3 - 675\,584z^2 + 5\,266\,800z + 2\,523\,675\right)\right.\right. $$
$$ \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(12\,288z^3 - 175\,872z^2 - 117\,040z + 2\,523\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa8g.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) = $$
$$ \frac{1}{268\,435\,456\,z^{11/4}}\left(11e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(49\,152z^{7/2} - 12\,288z^3 + 807\,936z^{5/2} - 735\,488z^2 - 4\,455\,360z^{3/2} - \right.\right.\right. $$
$$ \left.\left. 25\,618\,320z - 48\,730\,500\sqrt{z}\right) + e^{4\sqrt{z}}\left(49\,152z^{7/2} + 12\,288z^3 + 807\,936z^{5/2} + 735\,488z^2 - \right.\right. $$
$$ \left.\left. 4\,455\,360z^{3/2} + 25\,618\,320z - 48\,730\,500\sqrt{z} + 36\,547\,875\right) - 36\,547\,875\right) + $$
$$ 3e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 1\,064\,960z^3 + 1\,697\,280z^2 - 4\,455\,360z + 12\,182\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ \left.\left. 3e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 1\,064\,960z^3 + 1\,697\,280z^2 - 4\,455\,360z + 12\,182\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aa8h.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, \frac{15}{4}; -z\right) = $$
$$ -\frac{1}{67\,108\,864\,z^{11/4}}\left(11\left(3\sqrt{\pi}\left(65\,536z^4 - 1\,064\,960z^3 + 1\,697\,280z^2 + 4\,455\,360z + 12\,182\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right. $$
$$ 2\sqrt[4]{z}\left(12\sqrt{z}\left(4096z^3 - 67\,328z^2 - 371\,280z + 4\,060\,875\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left.\left(12\,288z^3 - 735\,488z^2 + 25\,618\,320z - 36\,547\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aa8i.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) = $$
$$ -\frac{1}{25\,690\,112\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(65\,536z^4 + 1\,155\,072z^3 + 559\,104z^2 - 48\,454\,560z + 40\,883\,535\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 3\left(65\,536z^4 + 1\,212\,416z^3 - 11\,235\,840z^2 - 129\,212\,160z + 68\,139\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 2\sqrt{z}\left(65\,536z^4 + 1\,204\,224z^3 + 3\,210\,240z^2 + 48\,454\,560z + 204\,417\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa8j.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},\frac{17}{4};-z\right)=$$
$$-\frac{1}{25\,690\,112\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(65\,536z^4-1\,155\,072z^3+559\,104z^2+48\,454\,560z+40\,883\,535\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(65\,536z^4-1\,212\,416z^3-11\,235\,840z^2+129\,212\,160z+68\,139\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-1\,204\,224z^3+3\,210\,240z^2-48\,454\,560z+204\,417\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa8k.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},\frac{19}{4};z\right)=$$
$$\frac{1}{17\,179\,869\,184\,z^{15/4}}\left(33e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(786\,432z^{9/2}-196\,608z^4+16\,121\,856z^{7/2}-4\,177\,920z^3+79\,206\,400z^{5/2}+\right.\right.\right.$$
$$574\,246\,400z^2+3\,207\,859\,200z^{3/2}+9\,512\,193\,600z+15\,545\,029\,500\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(786\,432z^{9/2}+196\,608z^4+16\,121\,856z^{7/2}+4\,177\,920z^3+79\,206\,400z^{5/2}-574\,246\,400z^2+\right.$$
$$\left.\left.3\,207\,859\,200z^{3/2}-9\,512\,193\,600z+15\,545\,029\,500\sqrt{z}-11\,658\,772\,125\right)+11\,658\,772\,125\right)+$$
$$3e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5+21\,299\,200z^4+45\,260\,800z^3-178\,214\,400z^2+974\,610\,000z-3\,886\,257\,375\right)$$
$$\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-3e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left.\left.\left(1\,048\,576z^5+21\,299\,200z^4+45\,260\,800z^3-178\,214\,400z^2+974\,610\,000z-3\,886\,257\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aa8l.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},\frac{19}{4};-z\right)=-\frac{1}{4\,294\,967\,296\,z^{15/4}}$$
$$\left(33\left(3\sqrt{\pi}\left(1\,048\,576z^5-21\,299\,200z^4+45\,260\,800z^3+178\,214\,400z^2+974\,610\,000z+3\,886\,257\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(196\,608z^4-4\,030\,464z^3+19\,801\,600z^2-801\,964\,800z+3\,886\,257\,375\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(196\,608z^4-4\,177\,920z^3-574\,246\,400z^2+9\,512\,193\,600z-11\,658\,772\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aa8m.01

$${}_1F_2\left(-\frac{5}{4};-\frac{7}{2},\frac{21}{4};z\right)=-\frac{1}{9\,042\,919\,424\sqrt{2}\,z^{15/4}}$$
$$\left(221\left(2\sqrt{z}\left(1\,048\,576z^5+22\,740\,992z^4+40\,280\,064z^3+775\,272\,960z^2+18\,243\,141\,840z-16\,476\,064\,605\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(1\,048\,576z^5+23\,658\,496z^4+162\,652\,160z^3+9\,044\,851\,200z^2+49\,932\,424\,080z-27\,460\,107\,675\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-1\,048\,576z^5-23\,527\,424z^4-58\,368\,000z^3+\right.$$
$$\left.\left.1\,439\,792\,640z^2+25\,947\,416\,880z+82\,380\,323\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa8n.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) = -\frac{1}{9\,042\,919\,424\sqrt{2}\, z^{15/4}} $$
$$ \left(221\left(2\sqrt{z}\left(1\,048\,576 z^5 - 22\,740\,992 z^4 + 40\,280\,064 z^3 - 775\,272\,960 z^2 + 18\,243\,141\,840 z + 16\,476\,064\,605\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 3\left(1\,048\,576 z^5 - 23\,658\,496 z^4 + 162\,652\,160 z^3 - 9\,044\,851\,200 z^2 + 49\,932\,424\,080 z + 27\,460\,107\,675\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 - 23\,527\,424 z^4 + 58\,368\,000 z^3 + \right. $$
$$ \left.\left. 1\,439\,792\,640 z^2 - 25\,947\,416\,880 z + 82\,380\,323\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2 \Bigg) $$

07.22.03.aa8o.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = \frac{1}{2\,199\,023\,255\,552 z^{19/4}} $$
$$ \left(627 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304 z^{11/2} - 1\,048\,576 z^5 + 103\,022\,592 z^{9/2} - 26\,542\,080 z^4 + 292\,454\,400 z^{7/2} - 1\,437\,900\,800 z^3 - \right.\right. $$
$$ 24\,474\,777\,600 z^{5/2} - 169\,957\,132\,800 z^2 - 675\,098\,424\,000 z^{3/2} - 1\,678\,863\,186\,000 z - $$
$$ 2\,564\,929\,867\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 103\,022\,592 z^{9/2} + 26\,542\,080 z^4 + \right. $$
$$ \left.\left. 292\,454\,400 z^{7/2} + 1\,437\,900\,800 z^3 - 24\,474\,777\,600 z^{5/2} + 169\,957\,132\,800 z^2 - 675\,098\,424\,000 z^{3/2} + \right.\right. $$
$$ \left.\left. 1\,678\,863\,186\,000 z - 2\,564\,929\,867\,500\sqrt{z} + 1\,923\,697\,400\,625\right) - 1\,923\,697\,400\,625\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 408\,944\,640 z^5 + 1\,086\,259\,200 z^4 - 5\,702\,860\,800 z^3 + \right. $$
$$ \left. 46\,781\,280\,000 z^2 - 373\,080\,708\,000 z + 1\,923\,697\,400\,625\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 408\,944\,640 z^5 + 1\,086\,259\,200 z^4 - 5\,702\,860\,800 z^3 + \right. $$
$$ \left.\left. 46\,781\,280\,000 z^2 - 373\,080\,708\,000 z + 1\,923\,697\,400\,625\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Bigg) $$

07.22.03.aa8p.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) = $$
$$ -\frac{1}{549\,755\,813\,888 z^{19/4}}\left(627\left(\sqrt{\pi}\left(16\,777\,216 z^6 - 408\,944\,640 z^5 + 1\,086\,259\,200 z^4 + 5\,702\,860\,800 z^3 + \right.\right. $$
$$ \left. 46\,781\,280\,000 z^2 + 373\,080\,708\,000 z + 1\,923\,697\,400\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z} $$
$$ \left(4\sqrt{z}\left(1\,048\,576 z^5 - 25\,755\,648 z^4 + 73\,113\,600 z^3 + 6\,118\,694\,400 z^2 - 168\,774\,606\,000 z + 641\,232\,466\,875\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + \left(1\,048\,576 z^5 - 26\,542\,080 z^4 + 1\,437\,900\,800 z^3 - \right. $$
$$ \left.\left.\left. 169\,957\,132\,800 z^2 + 1\,678\,863\,186\,000 z - 1\,923\,697\,400\,625\right) \sin\left(2\sqrt{z}\right)\right)\right)\Bigg) $$

For fixed z and $a_1 = -\frac{5}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.aa8q.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},-\frac{23}{4};z\right)=\frac{1}{4\,542\,615\sqrt[4]{z}}\left(\sqrt{2}\left(9\left(8192z^4+129\,536z^3+425\,040z^2-1\,053\,360z+504\,735\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(4096z^4+208\,896z^3+1\,892\,880z^2+3\,423\,420z-4\,542\,615\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.12z\left(7168z^3+154\,880z^2+877\,800z+1\,514\,205\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa8r.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{4\,542\,615\sqrt[4]{z}}\left(\sqrt{2}\left(9\left(8192z^4-129\,536z^3+425\,040z^2+1\,053\,360z+504\,735\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(4096z^4-208\,896z^3+1\,892\,880z^2-3\,423\,420z-4\,542\,615\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.12z\left(7168z^3-154\,880z^2+877\,800z-1\,514\,205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa8s.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},-\frac{21}{4};z\right)=$$
$$\left(\frac{2048z^3}{69\,615}+\frac{512z^2}{1071}+\frac{40z}{21}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(1024z^3+44\,928z^2+358\,020z+626\,535\right)\sinh\left(2\sqrt{z}\right)}{626\,535}$$

07.22.03.aa8t.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},-\frac{21}{4};-z\right)=$$
$$\left(-\frac{2048z^3}{69\,615}+\frac{512z^2}{1071}-\frac{40z}{21}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-1024z^3+44\,928z^2-358\,020z+626\,535\right)\sin\left(2\sqrt{z}\right)}{626\,535}$$

07.22.03.aa8u.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},-\frac{19}{4};z\right)=\frac{1}{197\,505\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(2048z^4+48\,000z^3+173\,712z^2-415\,800z+197\,505\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(7424z^3+79\,728z^2+152\,460z-197\,505\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(512z^3+17\,952z^2+110\,880z+197\,505\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa8v.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{197\,505\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2048z^4-48\,000z^3+173\,712z^2+415\,800z+197\,505\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(7424z^3-79\,728z^2+\right.\right.\right.$$
$$\left.\left.\left.152\,460z+197\,505\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-512z^3+17\,952z^2-110\,880z+197\,505\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa8w.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},-\frac{17}{4};z\right)=\left(\frac{512z^3}{29\,835}+\frac{96z^2}{221}+\frac{32z}{17}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(192z^2+1820z+3315\right)\sinh\left(2\sqrt{z}\right)}{3315}$$

07.22.03.aa8x.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},-\frac{17}{4};-z\right)=\left(-\frac{512z^3}{29\,835}+\frac{96z^2}{221}-\frac{32z}{17}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(192z^2-1820z+3315\right)\sin\left(2\sqrt{z}\right)}{3315}$$

07.22.03.aa8y.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},-\frac{15}{4};z\right)=\frac{1}{10\,395\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(3\left(768z^3+3248z^2-7392z+3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^3+3984z^2+8316z-10\,395\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.12z\left(256z^2+1848z+3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa8z.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{10\,395\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(-768z^3+3248z^2+7392z+3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^3-3984z^2+8316z+10\,395\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+12z\left(256z^2-1848z+3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa90.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},-\frac{13}{4};z\right)=\left(\frac{128z^2}{351}+\frac{24z}{13}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(64z^2+900z+1755\right)\sinh\left(2\sqrt{z}\right)}{1755}$$

07.22.03.aa91.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},-\frac{13}{4};-z\right)=\left(\frac{128z^2}{351}-\frac{24z}{13}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(64z^2-900z+1755\right)\sin\left(2\sqrt{z}\right)}{1755}$$

07.22.03.aa92.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(128z^3+720z^2-1512z+693\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(80z^2+196z-231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(32z^2+336z+693\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa93.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-128z^3+720z^2+1512z+693\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(80z^2-196z-231\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(32z^2-336z+693\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa94.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) = \left(\frac{32z^2}{135}+\frac{16z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{9}\sqrt{z}\,(4z+9)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aa95.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) = \left(\frac{32z^2}{135}-\frac{16z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{9}(9-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aa96.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(80z^2-144z+63\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(16z^2+60z-63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+12z(8z+21)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa97.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(80z^2+144z+63\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(16z^2-60z-63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+12(21-8z)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa98.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, -\frac{5}{4}; z\right) = \left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\,(4z+15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aa99.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, -\frac{5}{4}; -z\right) = \left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}(15-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aa9a.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, -\frac{3}{4}; z\right) = \frac{\sqrt{2}\left((4z-3)\,I_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)\right)^2 \Gamma\left(\frac{5}{4}\right)^2}{9\sqrt[4]{z}}$$

07.22.03.aa9b.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, -\frac{3}{4}; -z\right) = \frac{\sqrt{2}\left((4z+3)\,J_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)\right)^2 \Gamma\left(\frac{5}{4}\right)^2}{9\sqrt[4]{z}}$$

07.22.03.aa9c.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, -\frac{1}{4}; z\right) =$$

$$\frac{1}{6}\left(e^{-2\sqrt{z}}\left(2\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4} + 6\sqrt{z} + e^{4\sqrt{z}}\left(3-6\sqrt{z}\right)+3\right) - 2\sqrt{2\pi}\,z^{5/4}\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)$$

07.22.03.aa9d.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, -\frac{1}{4}; -z\right) = \frac{4}{3}\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4} + 2\sin\left(2\sqrt{z}\right)\sqrt{z} + \cos\left(2\sqrt{z}\right)$$

07.22.03.aa9e.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, \frac{1}{4}; z\right) = \frac{\sqrt{2}\left(\left(3-4z^2\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\sqrt{z}\,(z+6)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\,(z+3)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.aa9f.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) = \frac{\sqrt{2}\left(\left(3-4z^2\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\,(z-6)\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,(z-3)\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.aa9g.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, \frac{3}{4}; z\right) = \frac{1}{192}e^{-2\sqrt{z}}\left(4\left(4z+3\sqrt{z}+e^{4\sqrt{z}}\left(4z-3\sqrt{z}+24\right)+24\right)+\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\,(16z+45)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\,(16z+45)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)$$

07.22.03.aa9h.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) = \frac{1}{48}\left(-8\,(z-6)\cos\left(2\sqrt{z}\right) + \sqrt{\pi}\,(45-16z)\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 6\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aa9i.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, \frac{5}{4}; z\right) =$$

$$\frac{1}{72\sqrt{2}\,\sqrt[4]{z}}\left(\left(-2\left(16z^2+69z-72\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\,(16z+115)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\,(16z+57)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa9j.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},\frac{5}{4};-z\right)=$$

$$\frac{1}{72\sqrt{2}\,\sqrt[4]{z}}\left(\left(\left(-32z^2+138z+144\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\,\left(16z-115\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(57-16z\right)z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa9k.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},\frac{7}{4};z\right)=$$

$$\frac{1}{8192\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(64z^{3/2}-16z+244\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}+16z+244\sqrt{z}+585\right)-585\right)+e^{2\sqrt{z}}\right.\right.$$
$$\left.\left.\sqrt{2\pi}\left(256z^2+1440z+585\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\,\sqrt{2\pi}\left(256z^2+1440z+585\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aa9l.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},\frac{7}{4};-z\right)=$$

$$\frac{1}{2048\,z^{3/4}}\left(\sqrt{\pi}\,\left(-256z^2+1440z-585\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(\left(585-16z\right)\sin\left(2\sqrt{z}\right)-4\sqrt{z}\,\left(16z-61\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aa9m.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},\frac{9}{4};z\right)=$$

$$\frac{1}{2304\sqrt{2}\,z^{3/4}}\left(\left(-2\sqrt{z}\,\left(256z^2+1632z-1611\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(256z^2+1216z+1155\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(256z^2+1824z+3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa9n.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},\frac{9}{4};-z\right)=$$

$$\frac{1}{2304\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\,\left(-256z^2+1632z+1611\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(256z^2-1216z+1155\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(256z^2-1824z+3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aa9o.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},\frac{11}{4};z\right)=$$

$$\frac{1}{1\,572\,864\,z^{7/4}}\left(7e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024z^{5/2}-256z^2+8832z^{3/2}+3744z+39\,780\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2+8832z^{3/2}-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.3744z+39\,780\sqrt{z}-29\,835\right)+29\,835\right)+e^{2\sqrt{z}}\,\sqrt{2\pi}\left(4096z^3+34\,560z^2+28\,080z-29\,835\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\,\sqrt{2\pi}\left(4096z^3+34\,560z^2+28\,080z-29\,835\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aa9p.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, \frac{11}{4}; -z\right) = -\frac{1}{393\,216\, z^{7/4}}\left(7\left(\sqrt{\pi}\,\left(4096 z^3 - 34\,560 z^2 + 28\,080 z + 29\,835\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(256 z^2 - 2208 z + 9945\right)\cos\left(2\sqrt{z}\right) + \left(256 z^2 + 3744 z - 29\,835\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aa9q.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, \frac{13}{4}; z\right) = \frac{1}{57\,344\sqrt{2}\, z^{7/4}}\left(\left(-2\sqrt{z}\,\left(4096 z^3 + 37\,632 z^2 + 39\,984 z - 65\,835\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(4096 z^3 + 41\,216 z^2 + 240\,240 z - 109\,725\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4096 z^3 + 40\,704 z^2 + 18\,480 z - 329\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa9r.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, \frac{13}{4}; -z\right) = -\frac{1}{57\,344\sqrt{2}\, z^{7/4}}\left(\left(2\sqrt{z}\,\left(4096 z^3 - 37\,632 z^2 + 39\,984 z + 65\,835\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4096 z^3 - 41\,216 z^2 + 240\,240 z + 109\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4096 z^3 - 40\,704 z^2 + 18\,480 z + 329\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa9s.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, \frac{15}{4}; z\right) = \frac{1}{402\,653\,184\, z^{11/4}}\left(77\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(16\,384 z^{7/2} - 4096 z^3 + 187\,392 z^{5/2} - 49\,920 z^2 - 127\,296 z^{3/2} - 2\,768\,688 z - 5\,847\,660\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^{7/2} + 4096 z^3 + 187\,392 z^{5/2} + 49\,920 z^2 - 127\,296 z^{3/2} + 2\,768\,688 z - 5\,847\,660\sqrt{z} + 4\,385\,745\right) - 4\,385\,745\right) + e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536 z^4 + 737\,280 z^3 + 898\,560 z^2 - 1\,909\,440 z + 4\,385\,745\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536 z^4 + 737\,280 z^3 + 898\,560 z^2 - 1\,909\,440 z + 4\,385\,745\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aa9t.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, \frac{15}{4}; -z\right) = -\frac{1}{100\,663\,296\, z^{11/4}}\left(77\left(\sqrt{\pi}\,\left(65\,536 z^4 - 737\,280 z^3 + 898\,560 z^2 + 1\,909\,440 z + 4\,385\,745\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(4096 z^3 - 46\,848 z^2 - 31\,824 z + 1\,461\,915\right)\cos\left(2\sqrt{z}\right) + \left(4096 z^3 - 49\,920 z^2 + 2\,768\,688 z - 4\,385\,745\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aa9u.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, \frac{17}{4}; z\right) = -\frac{1}{16\,515\,072\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(65\,536z^4+786\,432z^3+612\,864z^2-16\,853\,760z+13\,627\,845\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(65\,536z^4+843\,776z^3-1\,182\,720z^2-44\,241\,120z+22\,713\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(65\,536z^4+835\,584z^3+1\,267\,200z^2+12\,640\,320z+68\,139\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa9v.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, \frac{17}{4}; -z\right) = -\frac{1}{16\,515\,072\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(65\,536z^4-786\,432z^3+612\,864z^2+16\,853\,760z+13\,627\,845\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(65\,536z^4-843\,776z^3-1\,182\,720z^2+44\,241\,120z+22\,713\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(65\,536z^4-835\,584z^3+1\,267\,200z^2-12\,640\,320z+68\,139\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aa9w.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) = \frac{1}{8\,589\,934\,592\,z^{15/4}}\left(77e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144z^{9/2}-65\,536z^4+3\,735\,552z^{7/2}-983\,040z^3+6\,789\,120z^{5/2}+28\,853\,760z^2+267\,321\,600z^{3/2}+935\,625\,600z+1\,608\,106\,500\sqrt{z}+e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4+3\,735\,552z^{7/2}+983\,040z^3+6\,789\,120z^{5/2}-28\,853\,760z^2+267\,321\,600z^{3/2}-935\,625\,600z+1\,608\,106\,500\sqrt{z}-1\,206\,079\,875\right)+1\,206\,079\,875\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5+14\,745\,600z^4+23\,961\,600z^3-76\,377\,600z^2+350\,859\,600z-1\,206\,079\,875\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5+14\,745\,600z^4+23\,961\,600z^3-76\,377\,600z^2+350\,859\,600z-1\,206\,079\,875\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aa9x.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) = -\frac{1}{2\,147\,483\,648\,z^{15/4}}\left(77\left(\sqrt{\pi}\left(1\,048\,576z^5-14\,745\,600z^4+23\,961\,600z^3+76\,377\,600z^2+350\,859\,600z+1\,206\,079\,875\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4-933\,888z^3+1\,697\,280z^2-66\,830\,400z+402\,026\,625\right)\cos\left(2\sqrt{z}\right)+\left(65\,536z^4-983\,040z^3-28\,853\,760z^2+935\,625\,600z-1\,206\,079\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aa9y.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) = -\frac{1}{5\,813\,305\,344\sqrt{2}\, z^{15/4}} $$
$$ \left(221\left(2\sqrt{z}\left(1\,048\,576 z^5 + 15\,532\,032 z^4 + 18\,653\,184 z^3 + 33\,707\,520 z^2 + 5\,451\,138\,000 z - 4\,783\,373\,595\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\left(1\,048\,576 z^5 + 16\,449\,536 z^4 + 33\,792\,000 z^3 + 2\,123\,573\,760 z^2 + 14\,754\,413\,520 z - 7\,972\,289\,325\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-1\,048\,576 z^5 - 16\,318\,464 z^4 - 31\,334\,400 z^3 + \right. $$
$$ \left.\left. 274\,475\,520 z^2 + 6\,759\,411\,120 z + 23\,916\,867\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2 \Bigg) $$

07.22.03.aa9z.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) = -\frac{1}{5\,813\,305\,344\sqrt{2}\, z^{15/4}} $$
$$ \left(221\left(2\sqrt{z}\left(1\,048\,576 z^5 - 15\,532\,032 z^4 + 18\,653\,184 z^3 - 33\,707\,520 z^2 + 5\,451\,138\,000 z + 4\,783\,373\,595\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\left(1\,048\,576 z^5 - 16\,449\,536 z^4 + 33\,792\,000 z^3 - 2\,123\,573\,760 z^2 + 14\,754\,413\,520 z + 7\,972\,289\,325\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 - 16\,318\,464 z^4 + 31\,334\,400 z^3 + \right. $$
$$ \left.\left. 274\,475\,520 z^2 - 6\,759\,411\,120 z + 23\,916\,867\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2 \Bigg) $$

07.22.03.aaa0.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{5}{2}, \frac{23}{4}; z\right) = $$
$$ \frac{1}{3\,298\,534\,883\,328 z^{19/4}}\left(1463 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304 z^{11/2} - 1\,048\,576 z^5 + 71\,565\,312 z^{9/2} - 18\,677\,760 z^4 + \right.\right.\right. $$
$$ 158\,760\,960 z^{7/2} - 56\,401\,920 z^3 - 3\,564\,288\,000 z^{5/2} - 35\,464\,665\,600 z^2 - 165\,405\,240\,000 z^{3/2} - $$
$$ 443\,837\,394\,000 z - 699\,526\,327\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 71\,565\,312 z^{9/2} + \right. $$
$$ \left. 18\,677\,760 z^4 + 158\,760\,960 z^{7/2} + 56\,401\,920 z^3 - 3\,564\,288\,000 z^{5/2} + 35\,464\,665\,600 z^2 - \right. $$
$$ \left. 165\,405\,240\,000 z^{3/2} + 443\,837\,394\,000 z - 699\,526\,327\,500\sqrt{z} + 524\,644\,745\,625\right) - 524\,644\,745\,625\Big) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 283\,115\,520 z^5 + 575\,078\,400 z^4 - 2\,444\,083\,200 z^3 + 16\,841\,260\,800 z^2 - \right. $$
$$ \left. 115\,783\,668\,000 z + 524\,644\,745\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 283\,115\,520 z^5 + 575\,078\,400 z^4 - 2\,444\,083\,200 z^3 + \right. $$
$$ \left.\left.\left. 16\,841\,260\,800 z^2 - 115\,783\,668\,000 z + 524\,644\,745\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aaa1.01

$${}_1F_2\left(-\frac{5}{4};-\frac{5}{2},\frac{23}{4};-z\right)=$$
$$-\frac{1}{824\,633\,720\,832\,z^{19/4}}\left(1463\left(\sqrt{\pi}\left(16\,777\,216\,z^6-283\,115\,520\,z^5+575\,078\,400\,z^4+2\,444\,083\,200\,z^3+\right.\right.\right.$$
$$\left.16\,841\,260\,800\,z^2+115\,783\,668\,000\,z+524\,644\,745\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576\,z^5-17\,891\,328\,z^4+39\,690\,240\,z^3+891\,072\,000\,z^2-41\,351\,310\,000\,z+174\,881\,581\,875\right)\right.$$
$$\cos\left(2\sqrt{z}\right)+\left(1\,048\,576\,z^5-18\,677\,760\,z^4+56\,401\,920\,z^3-\right.$$
$$\left.\left.\left.35\,464\,665\,600\,z^2+443\,837\,394\,000\,z-524\,644\,745\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\Bigg)$$

For fixed z and $a_1=-\frac{5}{4}$, $b_{1.}=-\frac{3}{2}$

07.22.03.aaa2.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{908\,523\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096\,z^4+185\,856\,z^3+875\,952\,z^2-1\,948\,716\,z+908\,523\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(7168\,z^3+112\,640\,z^2+\right.\right.\right.$$
$$\left.\left.\left.245\,784\,z-302\,841\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(1024\,z^3+63\,360\,z^2+474\,012\,z+908\,523\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaa3.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{908\,523\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096\,z^4-185\,856\,z^3+875\,952\,z^2+1\,948\,716\,z+908\,523\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(7168\,z^3-112\,640\,z^2+\right.\right.\right.$$
$$\left.\left.\left.245\,784\,z+302\,841\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-1024\,z^3+63\,360\,z^2-474\,012\,z+908\,523\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaa4.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},-\frac{21}{4};z\right)=\left(\frac{1024\,z^3}{125\,307}+\frac{128\,z^2}{357}+\frac{116\,z}{63}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(4864\,z^2+63\,648\,z+125\,307\right)\sinh\left(2\sqrt{z}\right)}{125\,307}$$

07.22.03.aaa5.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},-\frac{21}{4};-z\right)=\left(-\frac{1024\,z^3}{125\,307}+\frac{128\,z^2}{357}-\frac{116\,z}{63}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(4864\,z^2-63\,648\,z+125\,307\right)\sin\left(2\sqrt{z}\right)}{125\,307}$$

07.22.03.aaa6.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, -\frac{19}{4}; z\right) = \frac{1}{39\,501\sqrt[4]{z}}\left(\sqrt{2}\left(\left(6912 z^3 + 40\,656 z^2 - 85\,932 z + 39\,501\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512 z^3 + 13\,728 z^2 + 33\,264 z - 39\,501\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 132 z\left(64 z^2 + 588 z + 1197\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaa7.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, -\frac{19}{4}; -z\right) = \frac{1}{39\,501\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-6912 z^3 + 40\,656 z^2 + 85\,932 z + 39\,501\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512 z^3 - 13\,728 z^2 + 33\,264 z + 39\,501\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 132 z\left(64 z^2 - 588 z + 1197\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaa8.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, -\frac{17}{4}; z\right) = \left(\frac{64 z^2}{221} + \frac{92 z}{51} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(128 z^2 + 2808 z + 5967\right)\sinh\left(2\sqrt{z}\right)}{5967} $$

07.22.03.aaa9.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, -\frac{17}{4}; -z\right) = \left(\frac{64 z^2}{221} - \frac{92 z}{51} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(128 z^2 - 2808 z + 5967\right)\sin\left(2\sqrt{z}\right)}{5967} $$

07.22.03.aaaa.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, -\frac{15}{4}; z\right) = \frac{1}{2079\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256 z^3 + 2352 z^2 - 4620 z + 2079\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(640 z^2 + 1848 z - 2079\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(64 z^2 + 924 z + 2079\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaab.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, -\frac{15}{4}; -z\right) = \frac{1}{2079\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-256 z^3 + 2352 z^2 + 4620 z + 2079\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(640 z^2 - 1848 z - 2079\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(64 z^2 - 924 z + 2079\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaac.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, -\frac{13}{4}; z\right) = \left(\frac{64 z^2}{351} + \frac{68 z}{39} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{39}\sqrt{z}\,(16 z + 39)\sinh\left(2\sqrt{z}\right) $$

07.22.03.aaad.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},-\frac{13}{4};-z\right)=\left(\frac{64\,z^2}{351}-\frac{68\,z}{39}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{39}\,(39-16\,z)\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aaae.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},-\frac{11}{4};z\right)=\frac{1}{693\,\sqrt[4]{z}}$$

$$\left(\sqrt{2}\,\left(3\left(304\,z^2-532\,z+231\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\,\sqrt{z}\,\left(160\,z^2+672\,z-693\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+252\,z\,(4\,z+11)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaaf.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},-\frac{11}{4};-z\right)=\frac{1}{693\,\sqrt[4]{z}}$$

$$\left(\sqrt{2}\,\left(3\left(304\,z^2+532\,z+231\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\,\sqrt{z}\,\left(160\,z^2-672\,z-693\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+252\,(11-4\,z)\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaag.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},-\frac{9}{4};z\right)=\left(\frac{44\,z}{27}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{27}\,\sqrt{z}\,(8\,z+27)\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aaah.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},-\frac{9}{4};-z\right)=\left(1-\frac{44\,z}{27}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{27}\,(27-8\,z)\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aaai.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},-\frac{7}{4};z\right)=$$

$$\frac{1}{63\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(112\,z^2-156\,z+63\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-36\,\sqrt{z}\,(8\,z-7)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\,(4\,z+21)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaaj.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},-\frac{7}{4};-z\right)=$$

$$\frac{1}{63\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(112\,z^2+156\,z+63\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-36\,\sqrt{z}\,(8\,z+7)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+12\,(21-4\,z)\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaak.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},-\frac{5}{4};z\right)=\left(\frac{4\,z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-2\,\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aaal.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},-\frac{5}{4};-z\right)=\left(1-\frac{4\,z}{3}\right)\cos\left(2\sqrt{z}\right)+2\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aaam.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},-\frac{3}{4};z\right)=$$

$$\frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16z^2-28z+9\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\left(9-16z\right)\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\left(9-4z\right)zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaan.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},-\frac{3}{4};-z\right)=$$

$$\frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16z^2+28z+9\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\;\left(16z+9\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(4z+9\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaao.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},-\frac{1}{4};z\right)=\frac{1}{6}e^{-2\sqrt{z}}$$
$$\left(-4e^{2\sqrt{z}}\sqrt{2\pi}\;\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{5/4}+4e^{2\sqrt{z}}\sqrt{2\pi}\;\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{5/4}-4e^{4\sqrt{z}}\;z-4z-6e^{4\sqrt{z}}\;\sqrt{z}\;+6\sqrt{z}\;+3e^{4\sqrt{z}}\;+3\right)$$

07.22.03.aaap.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},-\frac{1}{4};-z\right)=\frac{8}{3}\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+2\sin\left(2\sqrt{z}\right)\sqrt{z}\;+\left(\frac{4z}{3}+1\right)\cos\left(2\sqrt{z}\right)$$

07.22.03.aaaq.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},\frac{1}{4};z\right)=\frac{1}{3\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-8z^2+4z+3\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\;\left(z+1\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(2z+3\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaar.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},\frac{1}{4};-z\right)=$$

$$\frac{1}{3\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-8z^2-4z+3\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\left(z-1\right)\sqrt{z}\;J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\left(3-2z\right)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaas.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},\frac{3}{4};z\right)=\frac{1}{96}e^{-2\sqrt{z}}\left(4\left(4z-\sqrt{z}\;+e^{4\sqrt{z}}\;\left(4z+\sqrt{z}\;+12\right)+12\right)+\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\;\sqrt[4]{z}\;\left(16z+25\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-e^{2\sqrt{z}}\;\sqrt{2\pi}\;\sqrt[4]{z}\;\left(16z+25\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)$$

07.22.03.aaat.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},\frac{3}{4};-z\right)=\frac{1}{24}\left(-8\left(z-3\right)\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\;\left(25-16z\right)\sqrt[4]{z}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aaau.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},\frac{5}{4};z\right)=$$

$$\frac{1}{36\sqrt{2}\;\sqrt[4]{z}}\left(\left(\left(-32z^2-54z+72\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\;\left(16z+61\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(16z+39\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaav.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},\frac{5}{4};-z\right)=$$

$$\frac{1}{36\sqrt{2}\,\sqrt[4]{z}}\left(\left(\left(-32z^2+54z+72\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\,\left(16z-61\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(39-16z\right)z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaaw.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},\frac{7}{4};z\right)=$$

$$\frac{1}{4096\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(64z^{3/2}-16z+212\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}+16z+212\sqrt{z}+225\right)-225\right)+e^{2\sqrt{z}}\right.\right.$$
$$\left.\left.\sqrt{2\pi}\left(256z^2+800z+225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\,\sqrt{2\pi}\left(256z^2+800z+225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aaax.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},\frac{7}{4};-z\right)=$$

$$\frac{1}{1024\,z^{3/4}}\left(\sqrt{\pi}\,\left(-256z^2+800z-225\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(\left(225-16z\right)\sin\left(2\sqrt{z}\right)-4\sqrt{z}\,\left(16z-53\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aaay.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},\frac{9}{4};z\right)=\frac{1}{1152\sqrt{2}\,z^{3/4}}\left(\left(-2\sqrt{z}\,\left(256z^2+832z-921\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.3\left(256z^2+1056z+385\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(256z^2+1024z+1155\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaaz.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},\frac{9}{4};-z\right)=\frac{1}{1152\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\,\left(-256z^2+832z+921\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.3\left(256z^2-1056z+385\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(256z^2-1024z+1155\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aab0.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},\frac{11}{4};z\right)=$$

$$\frac{1}{786\,432\,z^{7/4}}\left(7e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024z^{5/2}-256z^2+4992z^{3/2}-1440z+11\,700\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2+4992z^{3/2}+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.1440z+11\,700\sqrt{z}-8775\right)+8775\right)+e^{2\sqrt{z}}\,\sqrt{2\pi}\left(4096z^3+19\,200z^2+10\,800z-8775\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\,\sqrt{2\pi}\left(4096z^3+19\,200z^2+10\,800z-8775\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aab1.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) = -\frac{1}{196\,608\, z^{7/4}}\left(7\left(\sqrt{\pi}\,\left(4096 z^3 - 19\,200 z^2 + 10\,800 z + 8775\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(256 z^2 - 1248 z + 2925\right)\cos\left(2\sqrt{z}\right) + \left(256 z^2 - 1440 z - 8775\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aab2.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) = \frac{1}{28\,672\sqrt{2}\, z^{7/4}} \left(\left(2\sqrt{z}\,\left(-4096 z^3 - 19\,712 z^2 + 336 z + 17\,325\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(4096 z^3 + 23\,296 z^2 + 67\,760 z - 28\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4096 z^3 + 22\,784 z^2 + 18\,480 z - 86\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aab3.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) = \frac{1}{28\,672\sqrt{2}\, z^{7/4}} \left(\left(2\sqrt{z}\,\left(-4096 z^3 + 19\,712 z^2 + 336 z - 17\,325\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(4096 z^3 - 23\,296 z^2 + 67\,760 z + 28\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(4096 z^3 - 22\,784 z^2 + 18\,480 z + 86\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aab4.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) = \frac{1}{201\,326\,592\, z^{11/4}} \left(77\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(16\,384 z^{7/2} - 4096 z^3 + 105\,472 z^{5/2} - 29\,440 z^2 + 112\,320 z^{3/2} - 552\,240 z - 1\,392\,300\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^{7/2} + 4096 z^3 + 105\,472 z^{5/2} + 29\,440 z^2 + 112\,320 z^{3/2} + 552\,240 z - 1\,392\,300\sqrt{z} + 1\,044\,225\right) - 1\,044\,225\right) + e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536 z^4 + 409\,600 z^3 + 345\,600 z^2 - 561\,600 z + 1\,044\,225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536 z^4 + 409\,600 z^3 + 345\,600 z^2 - 561\,600 z + 1\,044\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aab5.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, \frac{15}{4}; -z\right) = -\frac{1}{50\,331\,648\, z^{11/4}}\left(77\left(\sqrt{\pi}\,\left(65\,536 z^4 - 409\,600 z^3 + 345\,600 z^2 + 561\,600 z + 1\,044\,225\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(4096 z^3 - 26\,368 z^2 + 28\,080 z + 348\,075\right)\cos\left(2\sqrt{z}\right) + \left(4096 z^3 - 29\,440 z^2 + 552\,240 z - 1\,044\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aab6.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) = $$
$$ -\frac{1}{8\,257\,536\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\,\left(65\,536z^4+417\,792z^3+129\,024z^2-3\,880\,800z+2\,962\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 3\left(65\,536z^4+475\,136z^3+591\,360z^2-9\,979\,200z+4\,937\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)- $$
$$ \left.\left.2\sqrt{z}\,\left(65\,536z^4+466\,944z^3+506\,880z^2+1\,663\,200z+14\,812\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aab7.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) = $$
$$ -\frac{1}{8\,257\,536\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\,\left(65\,536z^4-417\,792z^3+129\,024z^2+3\,880\,800z+2\,962\,575\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 3\left(65\,536z^4-475\,136z^3+591\,360z^2+9\,979\,200z+4\,937\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.2\sqrt{z}\,\left(65\,536z^4-466\,944z^3+506\,880z^2-1\,663\,200z+14\,812\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aab8.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) = \frac{1}{4\,294\,967\,296\,z^{15/4}} $$
$$ \left(77e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(262\,144z^{9/2}-65\,536z^4+2\,097\,152z^{7/2}-573\,440z^3+2\,795\,520z^{5/2}-1\,297\,920z^2+35\,642\,880z^{3/2}+\right.\right.\right. $$
$$ 173\,759\,040z+321\,621\,300\sqrt{z}+e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4+2\,097\,152z^{7/2}+573\,440z^3+2\,795\,520\right. $$
$$ \left.z^{5/2}+1\,297\,920z^2+35\,642\,880z^{3/2}-173\,759\,040z+321\,621\,300\sqrt{z}-241\,215\,975\right)+241\,215\,975\Big)+ $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\,\left(1\,048\,576z^5+8\,192\,000z^4+9\,216\,000z^3-22\,464\,000z^2+83\,538\,000z-241\,215\,975\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)- $$
$$ \left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\,\left(1\,048\,576z^5+8\,192\,000z^4+9\,216\,000z^3-22\,464\,000z^2+83\,538\,000z-241\,215\,975\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aab9.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, \frac{19}{4}; -z\right) = $$
$$ -\frac{1}{1\,073\,741\,824\,z^{15/4}}\left(77\left(\sqrt{\pi}\,\left(1\,048\,576z^5-8\,192\,000z^4+9\,216\,000z^3+22\,464\,000z^2+83\,538\,000z+241\,215\,975\right)\right.\right. $$
$$ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(65\,536z^4-524\,288z^3+698\,880z^2-8\,910\,720z+80\,405\,325\right)\cos\left(2\sqrt{z}\right)+ $$
$$ \left.\left.\left(65\,536z^4-573\,440z^3+1\,297\,920z^2+173\,759\,040z-241\,215\,975\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.aaba.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) = -\frac{1}{2\,906\,652\,672\sqrt{2}\, z^{15/4}} $$
$$ \left(221\left(2\sqrt{z}\left(1\,048\,576 z^5 + 8\,323\,072 z^4 + 5\,136\,384 z^3 - 44\,352\,000 z^2 + 1\,048\,093\,200 z - 885\,809\,925\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 3\left(1\,048\,576 z^5 + 9\,240\,576 z^4 + 13\,967\,360 z^3 + 263\,155\,200 z^2 + 2\,796\,670\,800 z - 1\,476\,349\,875\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-1\,048\,576 z^5 - 9\,109\,504 z^4 - 12\,410\,880 z^3 + \right. $$
$$ \left. \left. \left. 29\,145\,600 z^2 + 1\,058\,626\,800 z + 4\,429\,049\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aabb.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) = -\frac{1}{2\,906\,652\,672\sqrt{2}\, z^{15/4}} $$
$$ \left(221\left(2\sqrt{z}\left(1\,048\,576 z^5 - 8\,323\,072 z^4 + 5\,136\,384 z^3 + 44\,352\,000 z^2 + 1\,048\,093\,200 z + 885\,809\,925\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 3\left(1\,048\,576 z^5 - 9\,240\,576 z^4 + 13\,967\,360 z^3 - 263\,155\,200 z^2 + 2\,796\,670\,800 z + 1\,476\,349\,875\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z} $$
$$ \left. \left. \left(1\,048\,576 z^5 - 9\,109\,504 z^4 + 12\,410\,880 z^3 + 29\,145\,600 z^2 - 1\,058\,626\,800 z + 4\,429\,049\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aabc.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) = $$
$$ \frac{1}{1\,649\,267\,441\,664 z^{19/4}}\left(1463 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304 z^{11/2} - 1\,048\,576 z^5 + 40\,108\,032 z^{9/2} - 10\,813\,440 z^4 + 64\,389\,120 z^{7/2} - \right. \right. \right. $$
$$ 26\,910\,720 z^3 - 142\,571\,520 z^{5/2} - 3\,813\,788\,160 z^2 - 24\,259\,435\,200 z^{3/2} - 73\,329\,656\,400 z - $$
$$ 120\,607\,987\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 40\,108\,032 z^{9/2} + 10\,813\,440 z^4 + \right. $$
$$ \left. \left. 64\,389\,120 z^{7/2} + 26\,910\,720 z^3 - 142\,571\,520 z^{5/2} + 3\,813\,788\,160 z^2 - 24\,259\,435\,200 z^{3/2} + \right. \right. $$
$$ \left. \left. 73\,329\,656\,400 z - 120\,607\,987\,500\sqrt{z} + 90\,455\,990\,625\right) - 90\,455\,990\,625\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 157\,286\,400 z^5 + 221\,184\,000 z^4 - 718\,848\,000 z^3 + 4\,009\,824\,000 z^2 - \right. $$
$$ \left. 23\,156\,733\,600 z + 90\,455\,990\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 157\,286\,400 z^5 + 221\,184\,000 z^4 - 718\,848\,000 z^3 + \right. $$
$$ \left. \left. 4\,009\,824\,000 z^2 - 23\,156\,733\,600 z + 90\,455\,990\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aabd.01

$${}_1F_2\left(-\frac{5}{4};-\frac{3}{2},\frac{23}{4};-z\right)=$$

$$-\frac{1}{412\,316\,860\,416\,z^{19/4}}\left(1463\left(\sqrt{\pi}\,\left(16\,777\,216\,z^6-157\,286\,400\,z^5+221\,184\,000\,z^4+718\,848\,000\,z^3+\right.\right.\right.$$

$$\left.4\,009\,824\,000\,z^2+23\,156\,733\,600\,z+90\,455\,990\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$

$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(1\,048\,576\,z^5-10\,027\,008\,z^4+16\,097\,280\,z^3+35\,642\,880\,z^2-6\,064\,858\,800\,z+30\,151\,996\,875\right)\right.$$

$$\cos\left(2\sqrt{z}\right)+\left(1\,048\,576\,z^5-10\,813\,440\,z^4+26\,910\,720\,z^3-\right.$$

$$\left.\left.\left.3\,813\,788\,160\,z^2+73\,329\,656\,400\,z-90\,455\,990\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1=-\frac{5}{4}$, $b_{1.}=-\frac{1}{2}$

07.22.03.aabe.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},-\frac{23}{4};z\right)=$$

$$\frac{1}{302\,841\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(11\left(2048\,z^3+41\,664\,z^2-67\,032\,z+27\,531\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(1024\,z^3+63\,360\,z^2+333\,564\,z-302\,841\right)\right.\right.$$

$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(6400\,z^2+70\,224\,z+302\,841\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aabf.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},-\frac{23}{4};-z\right)=\frac{1}{302\,841\,\sqrt[4]{z}}$$

$$\left(\sqrt{2}\,\left(11\left(-2048\,z^3+41\,664\,z^2+67\,032\,z+27\,531\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(1024\,z^3-63\,360\,z^2+333\,564\,z+302\,841\right)\right.\right.$$

$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(6400\,z^2-70\,224\,z+302\,841\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aabg.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},-\frac{21}{4};z\right)=\left(\frac{256\,z^2}{1989}+\frac{32\,z}{21}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(256\,z^2+12\,576\,z+41\,769\right)\sinh\left(2\sqrt{z}\right)}{41\,769}$$

07.22.03.aabh.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},-\frac{21}{4};-z\right)=\left(\frac{256\,z^2}{1989}-\frac{32\,z}{21}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(256\,z^2-12\,576\,z+41\,769\right)\sin\left(2\sqrt{z}\right)}{41\,769}$$

07.22.03.aabi.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{13\,167\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512z^3+22\,176z^2-33\,264z+13\,167\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-132\sqrt{z}\left(64z^2+476z-399\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^2+1848z+13\,167\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aabj.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{13\,167\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-512z^3+22\,176z^2+33\,264z+13\,167\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+132\sqrt{z}\left(64z^2-476z-399\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^2-1848z+13\,167\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aabk.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},-\frac{17}{4};z\right)=\left(\frac{128z^2}{1989}+\frac{24z}{17}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,(464z+1989)\sinh\left(2\sqrt{z}\right)}{1989}$$

07.22.03.aabl.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},-\frac{17}{4};-z\right)=\left(\frac{128z^2}{1989}-\frac{24z}{17}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\,(1989-464z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)}{1989}$$

07.22.03.aabm.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(21\left(64z^2-88z+33\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z^2+924z-693\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2772zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aabn.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(21\left(64z^2+88z+33\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(64z^2-924z-693\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2772zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aabo.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},-\frac{13}{4};z\right)=\left(\frac{16z}{13}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{117}\sqrt{z}\,(16z+117)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aabp.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},-\frac{13}{4};-z\right)=\left(1-\frac{16z}{13}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{117}(117-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aabq.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) =$$

$$\frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(544z^2-672z+231\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-28\sqrt{z}\,(52z-33)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+28\,(33-8z)\,z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aabr.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, -\frac{11}{4}; -z\right) =$$

$$\frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(544z^2+672z+231\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-28\sqrt{z}\,(52z+33)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+28z\,(8z+33)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aabs.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, -\frac{9}{4}; z\right) = \left(\frac{8z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aabt.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, -\frac{9}{4}; -z\right) = \left(1-\frac{8z}{9}\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aabu.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, -\frac{7}{4}; z\right) =$$

$$\frac{1}{21\sqrt[4]{z}}\left(\sqrt{2}\left(\left(64z^2-72z+21\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\,(21-44z)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,(21-16z)\,z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aabv.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) =$$

$$\frac{1}{21\sqrt[4]{z}}\left(\sqrt{2}\left(\left(64z^2+72z+21\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(44z+21)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\,(16z+21)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aabw.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) = \cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aabx.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, -\frac{5}{4}; -z\right) = \cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aaby.01

$${}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, -\frac{3}{4}; z\right) =$$

$$\frac{1}{3\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32z^2-16z+3\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\,(1-4z)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,(3-8z)\,z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aabz.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},-\frac{3}{4};-z\right)=$$

$$\frac{1}{3\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32z^2+16z+3\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,(4z+1)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z(8z+3)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aac0.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},-\frac{1}{4};z\right)=\frac{1}{2}e^{-2\sqrt{z}}$$
$$\left(-8e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+8e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-8e^{4\sqrt{z}}z-8z-2e^{4\sqrt{z}}\sqrt{z}+2\sqrt{z}+e^{4\sqrt{z}}+1\right)$$

07.22.03.aac1.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},-\frac{1}{4};-z\right)=16\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+2\sin\left(2\sqrt{z}\right)\sqrt{z}+(8z+1)\cos\left(2\sqrt{z}\right)$$

07.22.03.aac2.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},\frac{1}{4};z\right)=\frac{1}{\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16z^2+8z+1\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(6z+1)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z(4z+1)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aac3.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},\frac{1}{4};-z\right)=$$

$$\frac{1}{\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16z^2-8z+1\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(6z-1)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4(1-4z)\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aac4.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},\frac{3}{4};z\right)=\frac{1}{16}e^{-2\sqrt{z}}\left(4\left(4z-\sqrt{z}+e^{4\sqrt{z}}\left(4z+\sqrt{z}+2\right)+2\right)+\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\,(16z+5)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\,(16z+5)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)$$

07.22.03.aac5.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},\frac{3}{4};-z\right)=(1-2z)\cos\left(2\sqrt{z}\right)-\frac{1}{4}\sqrt{\pi}\sqrt[4]{z}\,(16z-5)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\frac{1}{2}\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.aac6.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},\frac{5}{4};z\right)=$$

$$\frac{1}{6\sqrt{2}\sqrt[4]{z}}\left(\left(\left(-32z^2+6z+12\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\,(16z+11)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2z(16z+9)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aac7.01

$${}_1F_2\left(-\frac{5}{4};-\frac{1}{2},\frac{5}{4};-z\right)=$$

$$\frac{1}{6\sqrt{2}\sqrt[4]{z}}\left(\left(-2\left(16z^2+3z-6\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\,(16z-11)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2(9-16z)\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aac8.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, \frac{7}{4}; z\right) = \frac{1}{2048\, z^{3/4}} \left(3\, e^{-2\sqrt{z}} \left(e^{2\sqrt{z}}\ \sqrt{2\pi}\ \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)(16z+5)^2 - e^{2\sqrt{z}}\ \sqrt{2\pi}\ \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)(16z+5)^2 + 4\sqrt[4]{z}\right.\right.$$
$$\left.\left.\left(64 z^{3/2} - 16z + 52\sqrt{z} + e^{4\sqrt{z}}\left(64 z^{3/2} + 16z + 52\sqrt{z} + 25\right) - 25\right)\right)\right)$$

07.22.03.aac9.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, \frac{7}{4}; -z\right) = \frac{6\sqrt[4]{z}\left((25-16z)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\ (16z-13)\cos\left(2\sqrt{z}\right)\right) - 3\sqrt{\pi}\ (5-16z)^2\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)}{512\, z^{3/4}} $$

07.22.03.aaca.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, \frac{9}{4}; z\right) = \frac{1}{192\sqrt{2}\ z^{3/4}} \left(\left(-2\sqrt{z}\left(256z^2+32z-171\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(256z^2+256z+35\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(256z^2+224z+105\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aacb.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, \frac{9}{4}; -z\right) = \frac{1}{192\sqrt{2}\ z^{3/4}} \left(\left(2\sqrt{z}\left(-256z^2+32z+171\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(256z^2-256z+35\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(256z^2-224z+105\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aacc.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) = \frac{1}{131\,072\, z^{7/4}} \left(7\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(1024 z^{5/2} - 256 z^2 + 1152 z^{3/2} - 480 z + 900\sqrt{z} + e^{4\sqrt{z}}\left(1024 z^{5/2} + 256 z^2 + 1152 z^{3/2} + 480 z + 900\sqrt{z} - 675\right) + 675\right) + e^{2\sqrt{z}}\ \sqrt{2\pi}\left(4096 z^3 + 3840 z^2 + 1200 z - 675\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) - e^{2\sqrt{z}}\ \sqrt{2\pi}\left(4096 z^3 + 3840 z^2 + 1200 z - 675\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.aacd.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = -\frac{1}{32\,768\, z^{7/4}} \left(7\left(\sqrt{\pi}\left(4096 z^3 - 3840 z^2 + 1200 z + 675\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(256 z^2 - 288 z + 225\right)\cos\left(2\sqrt{z}\right) + \left(256 z^2 - 480 z - 675\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aace.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) = $$

$$ -\frac{1}{14\,336\sqrt{2}\,z^{7/4}}\left(3\left(2\sqrt{z}\left(4096z^3+1792z^2-2576z-1155\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3+5376z^2+5040z-1925\right)\right.\right. $$

$$ \left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(4096z^3+4864z^2+2800z-5775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aacf.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) = $$

$$ -\frac{1}{14\,336\sqrt{2}\,z^{7/4}}\left(3\left(2\sqrt{z}\left(4096z^3-1792z^2-2576z+1155\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3-5376z^2+5040z+1925\right)\right.\right. $$

$$ \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3-4864z^2+2800z+5775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aacg.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) = $$

$$ \frac{1}{33\,554\,432\,z^{11/4}}\left(77e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384z^{7/2}-4096z^3+23\,552z^{5/2}-8960z^2+20\,160z^{3/2}-22\,320z-81\,900\sqrt{z}+\right.\right.\right. $$

$$ \left.\left. e^{4\sqrt{z}}\left(16\,384z^{7/2}+4096z^3+23\,552z^{5/2}+8960z^2+20\,160z^{3/2}+22\,320z-81\,900\sqrt{z}+61\,425\right)-61\,425\right)+ $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4+81\,920z^3+38\,400z^2-43\,200z+61\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)- $$

$$ \left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4+81\,920z^3+38\,400z^2-43\,200z+61\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aach.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) = -\frac{1}{8\,388\,608\,z^{11/4}}\left(77\left(\sqrt{\pi}\left(65\,536z^4-81\,920z^3+38\,400z^2+43\,200z+61\,425\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\right.\right. $$

$$ \left.\left.\left(4\sqrt{z}\left(4096z^3-5888z^2+5040z+20\,475\right)\cos\left(2\sqrt{z}\right)+\left(4096z^3-8960z^2+22\,320z-61\,425\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aaci.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) = -\frac{1}{1\,376\,256\sqrt{2}\,z^{11/4}} $$

$$ \left(13\left(2\sqrt{z}\left(65\,536z^4+49\,152z^3-32\,256z^2-221\,760z+155\,925\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(65\,536z^4+106\,496z^3+107\,520z^2-\right.\right.\right. $$

$$ \left.\left. 554\,400z+259\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(65\,536z^4+98\,304z^3+69\,120z^2+779\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aacj.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) = -\frac{1}{1\,376\,256\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(65\,536z^4 - 49\,152z^3 - 32\,256z^2 + 221\,760z + 155\,925\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(65\,536z^4 - 106\,496z^3 + 107\,520z^2 + 554\,400z + 259\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(65\,536z^4 - 98\,304z^3 + 69\,120z^2 + 779\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aack.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) = \frac{1}{2\,147\,483\,648\,z^{15/4}}\left(231e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144z^{9/2} - 65\,536z^4 + 458\,752z^{7/2} - 163\,840z^3 + 440\,320z^{5/2} - 401\,920z^2 + 449\,280z^{3/2} + 7\,338\,240z + 15\,315\,300\sqrt{z} + e^{4\sqrt{z}}\left(262\,144z^{9/2} + 65\,536z^4 + 458\,752z^{7/2} + 163\,840z^3 + 440\,320z^{5/2} + 401\,920z^2 + 449\,280z^{3/2} - 7\,338\,240z + 15\,315\,300\sqrt{z} - 11\,486\,475\right) + 11\,486\,475\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5 + 1\,638\,400z^4 + 1\,024\,000z^3 - 1\,728\,000z^2 + 4\,914\,000z - 11\,486\,475\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5 + 1\,638\,400z^4 + 1\,024\,000z^3 - 1\,728\,000z^2 + 4\,914\,000z - 11\,486\,475\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aacl.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) = -\frac{1}{536\,870\,912\,z^{15/4}}\left(231\left(\sqrt{\pi}\left(1\,048\,576z^5 - 1\,638\,400z^4 + 1\,024\,000z^3 + 1\,728\,000z^2 + 4\,914\,000z + 11\,486\,475\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4 - 114\,688z^3 + 110\,080z^2 - 112\,320z + 3\,828\,825\right)\cos\left(2\sqrt{z}\right) + \left(65\,536z^4 - 163\,840z^3 + 401\,920z^2 + 7\,338\,240z - 11\,486\,475\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aacm.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) = -\frac{1}{484\,442\,112\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(1\,048\,576z^5 + 1\,114\,112z^4 - 270\,336z^3 - 5\,322\,240z^2 + 47\,955\,600z - 38\,513\,475\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(1\,048\,576z^5 + 2\,031\,616z^4 + 2\,252\,800z^3 + 2\,956\,800z^2 + 125\,571\,600z - 64\,189\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-1\,048\,576z^5 - 1\,900\,544z^4 - 1\,597\,440z^3 + 1\,267\,200z^2 + 34\,095\,600z + 192\,567\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aacn.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) = -\frac{1}{484\,442\,112\sqrt{2}\, z^{15/4}} $$
$$ \left(221\left(2\sqrt{z}\left(1\,048\,576 z^5 - 1\,114\,112 z^4 - 270\,336 z^3 + 5\,322\,240 z^2 + 47\,955\,600 z + 38\,513\,475\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\left(1\,048\,576 z^5 - 2\,031\,616 z^4 + 2\,252\,800 z^3 - 2\,956\,800 z^2 + 125\,571\,600 z + 64\,189\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(1\,048\,576 z^5 - 1\,900\,544 z^4 + 1\,597\,440 z^3 + 1\,267\,200 z^2 - 34\,095\,600 z + 192\,567\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaco.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) = $$
$$ \frac{1}{274\,877\,906\,944 z^{19/4}}\left(1463 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304 z^{11/2} - 1\,048\,576 z^5 + 8\,650\,752 z^{9/2} - 2\,949\,120 z^4 + 9\,338\,880 z^{7/2} - \right.\right.\right. $$
$$ 7\,249\,920 z^3 + 1\,198\,080 z^{5/2} - 39\,836\,160 z^2 - 735\,134\,400 z^{3/2} - 2\,756\,754\,000 z - 4\,824\,319\,500\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 + 8\,650\,752 z^{9/2} + 2\,949\,120 z^4 + 9\,338\,880 z^{7/2} + 7\,249\,920 z^3 + \right. $$
$$ \left. 1\,198\,080 z^{5/2} + 39\,836\,160 z^2 - 735\,134\,400 z^{3/2} + 2\,756\,754\,000 z - 4\,824\,319\,500\sqrt{z} + 3\,618\,239\,625\right) - $$
$$ \left. 3\,618\,239\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 31\,457\,280 z^5 + 24\,576\,000 z^4 - 55\,296\,000 z^3 + \right. $$
$$ \left. 235\,872\,000 z^2 - 1\,102\,701\,600 z + 3\,618\,239\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ \left. e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 + 31\,457\,280 z^5 + 24\,576\,000 z^4 - 55\,296\,000 z^3 + 235\,872\,000 z^2 - \right.\right. $$
$$ \left.\left. 1\,102\,701\,600 z + 3\,618\,239\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aacp.01

$$ {}_1F_2\left(-\frac{5}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) = $$
$$ -\frac{1}{68\,719\,476\,736 z^{19/4}}\left(1463\left(\sqrt{\pi}\left(16\,777\,216 z^6 - 31\,457\,280 z^5 + 24\,576\,000 z^4 + 55\,296\,000 z^3 + 235\,872\,000 z^2 + \right.\right.\right. $$
$$ \left. 1\,102\,701\,600 z + 3\,618\,239\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576 z^5 - 2\,162\,688 z^4 + 2\,334\,720 z^3 - 299\,520 z^2 - 183\,783\,600 z + 1\,206\,079\,875\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left. \left(1\,048\,576 z^5 - 2\,949\,120 z^4 + 7\,249\,920 z^3 - 39\,836\,160 z^2 + 2\,756\,754\,000 z - 3\,618\,239\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = -\frac{5}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.aacq.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{23}{4};z\right)=\frac{1}{302\,841\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024z^3-59\,136z^2-474\,012z+302\,841\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(2304z^2+23\,408z-100\,947\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(256z^2+55\,104z+302\,841\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aacr.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{23}{4};-z\right)=\frac{1}{302\,841\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1024z^3-59\,136z^2+474\,012z+302\,841\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(2304z^2-23\,408z-100\,947\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(256z^2-55\,104z+302\,841\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aacs.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{21}{4};z\right)=\frac{\left(256z^2+15\,648z+41\,769\right)\cosh\left(2\sqrt{z}\right)-96\sqrt{z}\,(32z+413)\sinh\left(2\sqrt{z}\right)}{41\,769} $$

07.22.03.aact.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{21}{4};-z\right)=\frac{\left(256z^2-15\,648z+41\,769\right)\cos\left(2\sqrt{z}\right)+96\,(413-32z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)}{41\,769} $$

07.22.03.aacu.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{19}{4};z\right)=\frac{1}{13\,167\sqrt[4]{z}}\left(\sqrt{2}\left(-77\left(64z^2+252z-171\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(128z^2+1848z-13\,167\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+36z\,(272z+1463)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aacv.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{19}{4};-z\right)=\frac{1}{13\,167\sqrt[4]{z}}\left(\sqrt{2}\left(-77\left(64z^2-252z-171\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(128z^2-1848z-13\,167\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+36\,(1463-272z)\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aacw.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{17}{4};z\right)=\frac{3\,(176z+663)\cosh\left(2\sqrt{z}\right)-4\sqrt{z}\,(16z+417)\sinh\left(2\sqrt{z}\right)}{1989} $$

07.22.03.aacx.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{17}{4};-z\right)=\frac{(1989-528\,z)\cos\left(2\sqrt{z}\right)+4\,(417-16\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)}{1989}$$

07.22.03.aacy.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{15}{4};z\right)=$$

$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(-7\left(64\,z^2+132\,z-99\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+2772\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+36\,z\,(16\,z+77)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aacz.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{15}{4};-z\right)=$$

$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-448\,z^2+924\,z+693\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-2772\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+36\,(77-16\,z)\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aad0.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{13}{4};z\right)=\left(\frac{16\,z}{117}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{80}{117}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aad1.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{13}{4};-z\right)=\left(1-\frac{16\,z}{117}\right)\cos\left(2\sqrt{z}\right)+\frac{80}{117}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aad2.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{11}{4};z\right)=$$

$$\frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-256\,z^2-252\,z+231\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+28\sqrt{z}\,(8\,z+33)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\,(64\,z+231)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aad3.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{11}{4};-z\right)=$$

$$\frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-256\,z^2+252\,z+231\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+28\sqrt{z}\,(8\,z-33)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,(231-64\,z)\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aad4.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{9}{4};z\right)=\cosh\left(2\sqrt{z}\right)-\frac{4}{9}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aad5.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{9}{4};-z\right)=\cos\left(2\sqrt{z}\right)+\frac{4}{9}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aad6.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{7}{4};z\right)=$$

$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-128z^2-36z+63\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,(16z+21)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z(32z+63)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aad7.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{7}{4};-z\right)=$$

$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-128z^2+36z+63\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,(16z-21)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4(63-32z)\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aad8.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{5}{4};z\right)=\cosh\left(2\sqrt{z}\right)$$

07.22.03.aad9.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{5}{4};-z\right)=\cos\left(2\sqrt{z}\right)$$

07.22.03.aada.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{3}{4};z\right)=$$

$$\frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-64z^2+12z+9\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,(8z+3)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z(16z+9)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aadb.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{3}{4};-z\right)=$$

$$\frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-64z^2-12z+9\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,(8z-3)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4(9-16z)\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aadc.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{1}{4};z\right)=\frac{1}{6}e^{-2\sqrt{z}}\left(16e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-\right.$$
$$\left.16e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+16e^{4\sqrt{z}}z+16z+4e^{4\sqrt{z}}\sqrt{z}-4\sqrt{z}+3e^{4\sqrt{z}}+3\right)$$

07.22.03.aadd.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},-\frac{1}{4};-z\right)=\frac{1}{3}\left(-32\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}-4\sin\left(2\sqrt{z}\right)\sqrt{z}+(3-16z)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aade.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{1}{4};z\right)=$$

$$\frac{1}{3\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32z^2-36z+3\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12(1-4z)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4(3-8z)\,z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aadf.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{1}{4};-z\right)=$$

$$\frac{1}{3\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32z^2+36z+3\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,(4z+1)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\,(8z+3)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aadg.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{3}{4};z\right)=\frac{1}{24}e^{-2\sqrt{z}}\left(-4\left(4z-\sqrt{z}+e^{4\sqrt{z}}\left(4z+\sqrt{z}-3\right)-3\right)-\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\,(16z-15)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\,(16z-15)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)$$

07.22.03.aadh.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{3}{4};-z\right)=\frac{1}{6}\left((8z+6)\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\,\sqrt[4]{z}\,(16z+15)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aadi.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{5}{4};z\right)=$$

$$\frac{1}{9\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(16z^2-33z+9\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\,(19-16z)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\,(21-16z)\,z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aadj.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{5}{4};-z\right)=$$

$$\frac{1}{9\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(16z^2+33z+9\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\,(16z+19)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\,(16z+21)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aadk.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{7}{4};z\right)=$$

$$\frac{1}{1024z^{3/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(64z^{3/2}-16z-108\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}+16z-108\sqrt{z}-15\right)+15\right)-e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left.\left.\left(256z^2-480z-15\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-480z-15\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aadl.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{7}{4};-z\right)=\frac{\sqrt{\pi}\left(256z^2+480z-15\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\,(16z+27)\cos\left(2\sqrt{z}\right)+(16z+15)\sin\left(2\sqrt{z}\right)\right)}{256z^{3/4}}$$

07.22.03.aadm.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{9}{4};z\right)=\frac{1}{288\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(256z^2-768z+279\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.3\left(-256z^2+544z+15\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-256z^2+576z+45\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aadn.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{9}{4};-z\right)=\frac{1}{288\sqrt{2}\,z^{3/4}}$$
$$\left(\left(2\sqrt{z}\,\left(256z^2+768z+279\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(256z^2+544z-15\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(256z^2+576z-45\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aado.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{11}{4};z\right)=$$
$$-\frac{1}{196\,608\,z^{7/4}}\left(7e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024z^{5/2}-256z^2-2688z^{3/2}+480z-300\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2-2688z^{3/2}-\right.\right.\right.\right.$$
$$\left.\left.\left.480z-300\sqrt{z}+225\right)-225\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-11\,520z^2-720z+225\right)$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-11\,520z^2-720z+225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aadp.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{11}{4};-z\right)=\frac{1}{49\,152\,z^{7/4}}\left(7\left(\sqrt{\pi}\left(4096z^3+11\,520z^2-720z-225\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\left(\sin\left(2\sqrt{z}\right)\left(16z+15\right)^2+4\sqrt{z}\left(256z^2+672z-75\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aadq.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{13}{4};z\right)=\frac{1}{7168\sqrt{2}\,z^{7/4}}$$
$$\left(\left(2\sqrt{z}\,\left(4096z^3-16\,128z^2+6384z+315\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3-12\,544z^2-1680z+525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(-4096z^3+13\,056z^2+1680z-1575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aadr.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{13}{4};-z\right)=\frac{1}{7168\sqrt{2}\,z^{7/4}}$$
$$\left(\left(2\sqrt{z}\,\left(4096z^3+16\,128z^2+6384z-315\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3+12\,544z^2-1680z-525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(4096z^3+13\,056z^2-1680z-1575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aads.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{15}{4};z\right)= $$
$$ -\frac{1}{50\,331\,648\,z^{11/4}}\left(77\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384\,z^{7/2}-4096\,z^3-58\,368\,z^{5/2}+11\,520\,z^2-10\,560\,z^{3/2}+720\,z+18\,900\sqrt{z}+\right.\right.\right. $$
$$ \left.\left.\left.e^{4\sqrt{z}}\left(16\,384\,z^{7/2}+4096\,z^3-58\,368\,z^{5/2}-11\,520\,z^2-10\,560\,z^{3/2}-720\,z+18\,900\sqrt{z}-14\,175\right)+14\,175\right)+\right. $$
$$ \left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-245\,760\,z^3-23\,040\,z^2+14\,400\,z-14\,175\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\right. $$
$$ \left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-245\,760\,z^3-23\,040\,z^2+14\,400\,z-14\,175\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aadt.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{15}{4};-z\right)=\frac{1}{12\,582\,912\,z^{11/4}}\left(77\left(\sqrt{\pi}\left(65\,536\,z^4+245\,760\,z^3-23\,040\,z^2-14\,400\,z-14\,175\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right. $$
$$ \left.\left.2\sqrt[4]{z}\left(4\sqrt{z}\left(4096\,z^3+14\,592\,z^2-2640\,z-4725\right)\cos\left(2\sqrt{z}\right)+\left(4096\,z^3+11\,520\,z^2-720\,z+14\,175\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aadu.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{17}{4};z\right)=\frac{1}{2\,064\,384\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(65\,536\,z^4-319\,488\,z^3+129\,024\,z^2+50\,400\,z-31\,185\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 3\left(65\,536\,z^4-262\,144\,z^3-53\,760\,z^2+120\,960\,z-51\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.2\sqrt{z}\left(-65\,536\,z^4+270\,336\,z^3+46\,080\,z^2-30\,240\,z+155\,925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aadv.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{17}{4};-z\right)=\frac{1}{2\,064\,384\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(65\,536\,z^4+319\,488\,z^3+129\,024\,z^2-50\,400\,z-31\,185\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 3\left(65\,536\,z^4+262\,144\,z^3-53\,760\,z^2-120\,960\,z-51\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.2\sqrt{z}\left(65\,536\,z^4+270\,336\,z^3-46\,080\,z^2-30\,240\,z-155\,925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aadw.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{19}{4};z\right)= $$
$$ -\frac{1}{1\,073\,741\,824\,z^{15/4}}\left(77\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144\,z^{9/2}-65\,536\,z^4-1\,179\,648\,z^{7/2}+245\,760\,z^3-276\,480\,z^{5/2}+84\,480\,z^2+\right.\right.\right. $$
$$ 276\,480\,z^{3/2}-1\,028\,160\,z-2\,702\,700\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-1\,179\,648\,z^{7/2}-245\,760\,z^3-\right. $$
$$ \left.\left.\left.276\,480\,z^{5/2}-84\,480\,z^2+276\,480\,z^{3/2}+1\,028\,160\,z-2\,702\,700\sqrt{z}+2\,027\,025\right)-2\,027\,025\right)+ $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-4\,915\,200\,z^4-614\,400\,z^3+576\,000\,z^2-1\,134\,000\,z+2\,027\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)- $$
$$ \left.e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-4\,915\,200\,z^4-614\,400\,z^3+576\,000\,z^2-1\,134\,000\,z+2\,027\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aadx.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{19}{4};-z\right)= \frac{1}{268\,435\,456\,z^{15/4}}\left(77\left(\sqrt{\pi}\,\left(1\,048\,576\,z^5+4\,915\,200\,z^4-614\,400\,z^3-576\,000\,z^2-1\,134\,000\,z-2\,027\,025\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(65\,536\,z^4+294\,912\,z^3-69\,120\,z^2-69\,120\,z-675\,675\right)\cos\left(2\sqrt{z}\right)+ \left(65\,536\,z^4+245\,760\,z^3-84\,480\,z^2-1\,028\,160\,z+2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aady.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{21}{4};z\right)= \frac{1}{726\,663\,168\sqrt{2}\,z^{15/4}} \left(221\left(2\sqrt{z}\,\left(1\,048\,576\,z^5-6\,094\,848\,z^4+2\,433\,024\,z^3+1\,774\,080\,z^2-8\,149\,680\,z+6\,081\,075\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+ 3\left(-1\,048\,576\,z^5+5\,177\,344\,z^4+1\,351\,680\,z^3-1\,774\,080\,z^2+20\,790\,000\,z-10\,135\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)- 2\sqrt{z}\,\left(1\,048\,576\,z^5-5\,308\,416\,z^4-1\,105\,920\,z^3+760\,320\,z^2+2\,494\,800\,z+30\,405\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aadz.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{21}{4};-z\right)= \frac{1}{726\,663\,168\sqrt{2}\,z^{15/4}} \left(221\left(2\sqrt{z}\,\left(1\,048\,576\,z^5+6\,094\,848\,z^4+2\,433\,024\,z^3-1\,774\,080\,z^2-8\,149\,680\,z-6\,081\,075\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+ 3\left(-1\,048\,576\,z^5-5\,177\,344\,z^4+1\,351\,680\,z^3+1\,774\,080\,z^2+20\,790\,000\,z+10\,135\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ 2\sqrt{z}\,\left(1\,048\,576\,z^5+5\,308\,416\,z^4-1\,105\,920\,z^3-760\,320\,z^2+2\,494\,800\,z-30\,405\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aae0.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{23}{4};z\right)= -\frac{1}{412\,316\,860\,416\,z^{19/4}}\left(1463\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(4\,194\,304\,z^{11/2}-1\,048\,576\,z^5-22\,806\,528\,z^{9/2}+4\,915\,200\,z^4-6\,389\,760\,z^{7/2}+ 2\,580\,480\,z^3+4\,884\,480\,z^{5/2}-13\,109\,760\,z^2+55\,598\,400\,z^{3/2}+356\,756\,400\,z+689\,188\,500\sqrt{z}+ e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-22\,806\,528\,z^{9/2}-4\,915\,200\,z^4-6\,389\,760\,z^{7/2}-2\,580\,480\,z^3+ 4\,884\,480\,z^{5/2}+13\,109\,760\,z^2+55\,598\,400\,z^{3/2}-356\,756\,400\,z+689\,188\,500\sqrt{z}-516\,891\,375\right)+ 516\,891\,375\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,\left(16\,777\,216\,z^6-94\,371\,840\,z^5-14\,745\,600\,z^4+18\,432\,000\,z^3- 54\,432\,000\,z^2+194\,594\,400\,z-516\,891\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,\left(16\,777\,216\,z^6-94\,371\,840\,z^5- 14\,745\,600\,z^4+18\,432\,000\,z^3-54\,432\,000\,z^2+194\,594\,400\,z-516\,891\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aae1.01

$${}_1F_2\left(-\frac{5}{4};\frac{1}{2},\frac{23}{4};-z\right)=\frac{1}{103\,079\,215\,104\,z^{19/4}}$$
$$\left(1463\left(\sqrt{\pi}\,\left(16\,777\,216\,z^6+94\,371\,840\,z^5-14\,745\,600\,z^4-18\,432\,000\,z^3-54\,432\,000\,z^2-194\,594\,400\,z-516\,891\,375\right)\right.\right.$$
$$S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(1\,048\,576\,z^5+5\,701\,632\,z^4-1\,597\,440\,z^3-1\,221\,120\,z^2+13\,899\,600\,z-172\,297\,125\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(1\,048\,576\,z^5+4\,915\,200\,z^4-2\,580\,480\,z^3-13\,109\,760\,z^2-356\,756\,400\,z+516\,891\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1=-\frac{5}{4}$, $b_{1.}=\frac{3}{2}$

07.22.03.aae2.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{302\,841\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-44\,544\,z^2-561\,792\,z+302\,841\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(256\,z^2+40\,896\,z+302\,841\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.96\,z\,(296\,z+2259)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aae3.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{302\,841\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-44\,544\,z^2+561\,792\,z+302\,841\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(256\,z^2-40\,896\,z+302\,841\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.96\,(2259-296\,z)\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aae4.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},-\frac{21}{4};z\right)=\frac{\left(256\,z^2+21\,024\,z+72\,105\right)\sinh\left(2\sqrt{z}\right)-256\sqrt{z}\,\left(14\,z+237\right)\cosh\left(2\sqrt{z}\right)}{83\,538\sqrt{z}}$$

07.22.03.aae5.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},-\frac{21}{4};-z\right)=\frac{256\sqrt{z}\,\left(14\,z-237\right)\cos\left(2\sqrt{z}\right)+\left(256\,z^2-21\,024\,z+72\,105\right)\sin\left(2\sqrt{z}\right)}{83\,538\sqrt{z}}$$

07.22.03.aae6.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{3}{2},-\frac{19}{4};z\right)=\frac{1}{13\,167\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left.\left(\left(-2176\,z^2-24\,024\,z+13\,167\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,\left(496\,z+4389\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+24\,z\left(80\,z+537\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aae7.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{3}{2},-\frac{19}{4};-z\right)=\frac{1}{13\,167\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left.\left(\left(-2176\,z^2+24\,024\,z+13\,167\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,\left(496\,z-4389\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+24\left(537-80\,z\right)z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aae8.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{3}{2},-\frac{17}{4};z\right)=\frac{3\left(208\,z+1045\right)\sinh\left(2\sqrt{z}\right)-4\sqrt{z}\,\left(16\,z+573\right)\cosh\left(2\sqrt{z}\right)}{3978\sqrt{z}}$$

07.22.03.aae9.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{3}{2},-\frac{17}{4};-z\right)=\frac{4\sqrt{z}\,\left(16\,z-573\right)\cos\left(2\sqrt{z}\right)+3\left(1045-208\,z\right)\sin\left(2\sqrt{z}\right)}{3978\sqrt{z}}$$

07.22.03.aaea.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{3}{2},-\frac{15}{4};z\right)=\frac{1}{4851\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(\left(-1024\,z^2-8624\,z+4851\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(496\,z+4851\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+1024\,z\left(z+6\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaeb.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{3}{2},-\frac{15}{4};-z\right)=\frac{1}{4851\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(\left(-1024\,z^2+8624\,z+4851\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(496\,z-4851\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-1024\left(z-6\right)z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaec.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{3}{2},-\frac{13}{4};z\right)=\frac{\left(16\,z+165\right)\sinh\left(2\sqrt{z}\right)-96\sqrt{z}\,\cosh\left(2\sqrt{z}\right)}{234\sqrt{z}}$$

07.22.03.aaed.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{3}{2},-\frac{13}{4};-z\right)=\frac{\left(165-16\,z\right)\sin\left(2\sqrt{z}\right)-96\sqrt{z}\,\cos\left(2\sqrt{z}\right)}{234\sqrt{z}}$$

07.22.03.aaee.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{3}{2}, -\frac{11}{4}; z\right) = \frac{1}{1617\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-512z^2-2744z+1617\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,(64z+539)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 8z(64z+321)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaef.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{3}{2}, -\frac{11}{4}; -z\right) = \frac{1}{1617\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-512z^2+2744z+1617\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,(64z-539)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 8(321-64z)z\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaeg.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{3}{2}, -\frac{9}{4}; z\right) = \frac{11\sinh\left(2\sqrt{z}\right)}{18\sqrt{z}} - \frac{2}{9}\cosh\left(2\sqrt{z}\right) $$

07.22.03.aaeh.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{3}{2}, -\frac{9}{4}; -z\right) = \frac{11\sin\left(2\sqrt{z}\right)}{18\sqrt{z}} - \frac{2}{9}\cos\left(2\sqrt{z}\right) $$

07.22.03.aaei.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{3}{2}, -\frac{7}{4}; z\right) = \frac{1}{441\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-256z^2-672z+441\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,(32z+147)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 32z(8z+27)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaej.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{3}{2}, -\frac{7}{4}; -z\right) = \frac{1}{441\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-256z^2+672z+441\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,(32z-147)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 32(27-8z)z\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaek.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{3}{2}, -\frac{5}{4}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}} $$

07.22.03.aael.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{3}{2}, -\frac{5}{4}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}} $$

07.22.03.aaem.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{3}{2}, -\frac{3}{4}; z\right) = \frac{1}{63\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-128z^2-56z+63\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,(16z+21)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 8z(16z+19)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaen.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},-\frac{3}{4};-z\right)=$$

$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-128z^2+56z+63\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,(16z-21)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+8\,(19-16z)\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaeo.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},-\frac{1}{4};z\right)=$$

$$\frac{1}{84\sqrt{z}}\left(e^{-2\sqrt{z}}\left(64\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}-64\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+64\,e^{4\sqrt{z}}\,z^{3/2}+64\,z^{3/2}+\right.\right.$$
$$\left.\left.16\,e^{4\sqrt{z}}\,z-16z+12\,e^{4\sqrt{z}}\,\sqrt{z}+12\sqrt{z}+15\,e^{4\sqrt{z}}-15\right)\right)$$

07.22.03.aaep.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},-\frac{1}{4};-z\right)=\frac{-128\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}-4\,(16z-3)\cos\left(2\sqrt{z}\right)\sqrt{z}+(15-16z)\sin\left(2\sqrt{z}\right)}{42\sqrt{z}}$$

07.22.03.aaeq.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{1}{4};z\right)=$$

$$\frac{1}{21\sqrt[4]{z}}\left(\sqrt{2}\left(\left(64z^2-112z+21\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\,(7-8z)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-64\,(z-1)\,z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaer.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{1}{4};-z\right)=$$

$$\frac{1}{21\sqrt[4]{z}}\left(\sqrt{2}\left(\left(64z^2+112z+21\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,(8z+7)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+64\,z\,(z+1)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaes.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{3}{4};z\right)=$$

$$\frac{1}{84\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-16\,e^{4\sqrt{z}}\,z^{3/2}-16z^{3/2}-4\,e^{4\sqrt{z}}\,z+4z-e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-35)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{3/4}+e^{2\sqrt{z}}\right.\right.$$
$$\left.\left.\sqrt{2\pi}\,(16z-35)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{3/4}+32\,e^{4\sqrt{z}}\,\sqrt{z}+32\sqrt{z}+5\,e^{4\sqrt{z}}-5\right)\right)$$

07.22.03.aaet.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{3}{4};-z\right)=\frac{16\sqrt{z}\,(z+2)\cos\left(2\sqrt{z}\right)+2\sqrt{\pi}\,z^{3/4}\,(16z+35)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+(4z+5)\sin\left(2\sqrt{z}\right)}{42\sqrt{z}}$$

07.22.03.aaeu.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{5}{4};z\right)=$$

$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32z^2-126z+63\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(49-16z\right)\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(51-16z\right)zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaev.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{5}{4};-z\right)=$$

$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32z^2+126z+63\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\;\left(16z+49\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(16z+51\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaew.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{7}{4};z\right)=$$

$$\frac{1}{3584z^{3/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(64z^{3/2}-16z-268\sqrt{z}\;+e^{4\sqrt{z}}\left(64z^{3/2}+16z-268\sqrt{z}\;-55\right)+55\right)-e^{2\sqrt{z}}\;\sqrt{2\pi}\right.\right.$$
$$\left.\left.\left(256z^2-1120z+105\right)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+e^{2\sqrt{z}}\;\sqrt{2\pi}\;\left(256z^2-1120z+105\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aaex.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{7}{4};-z\right)=$$

$$\frac{1}{896z^{3/4}}\left(\sqrt{\pi}\;\left(256z^2+1120z+105\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\;\left(16z+67\right)\cos\left(2\sqrt{z}\right)+\left(16z+55\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aaey.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{9}{4};z\right)=\frac{1}{1008\sqrt{2}\;z^{3/4}}\left(\left(2\sqrt{z}\;\left(256z^2-1568z+1029\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.3\left(256z^2-1344z+35\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\;\left(256z^2-1376z+105\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaez.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{9}{4};-z\right)=\frac{1}{1008\sqrt{2}\;z^{3/4}}\left(\left(2\sqrt{z}\;\left(256z^2+1568z+1029\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.3\left(256z^2+1344z+35\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\;\left(256z^2+1376z+105\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaf0.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{11}{4};z\right)=$$

$$\frac{1}{98304z^{7/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(1024z^{5/2}-256z^2-6528z^{3/2}+1440z+420\sqrt{z}\;+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2-6528z^{3/2}-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.1440z+420\sqrt{z}\;-315\right)+315\right)-e^{2\sqrt{z}}\;\sqrt{2\pi}\;\left(4096z^3-26880z^2+5040z-315\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+e^{2\sqrt{z}}\;\sqrt{2\pi}\;\left(4096z^3-26880z^2+5040z-315\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aaf1.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{3}{2}, \frac{11}{4}; -z\right) = \frac{1}{24\,576\, z^{7/4}} \left(\sqrt{\pi}\, \left(4096\, z^3 + 26\,880\, z^2 + 5040\, z + 315\right) S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.$$

$$ \left. 2\, \sqrt[4]{z}\, \left(4\, \sqrt{z}\, \left(256\, z^2 + 1632\, z + 105\right) \cos\left(2\, \sqrt{z}\right) + \left(256\, z^2 + 1440\, z - 315\right) \sin\left(2\, \sqrt{z}\right)\right)\right) $$

07.22.03.aaf2.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{3}{2}, \frac{13}{4}; z\right) = \frac{1}{25\,088\, \sqrt{2}\, z^{7/4}} $$

$$ \left(\left(2\, \sqrt{z}\, \left(4096\, z^3 - 34\,048\, z^2 + 26\,544\, z - 315\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4096\, z^3 - 30\,464\, z^2 + 2800\, z - 525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$

$$ \left.\left. 2\, \sqrt{z}\, \left(-4096\, z^3 + 30\,976\, z^2 - 5040\, z + 1575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaf3.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{3}{2}, \frac{13}{4}; -z\right) = \frac{1}{25\,088\, \sqrt{2}\, z^{7/4}} $$

$$ \left(\left(2\, \sqrt{z}\, \left(4096\, z^3 + 34\,048\, z^2 + 26\,544\, z + 315\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4096\, z^3 + 30\,464\, z^2 + 2800\, z + 525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$

$$ \left.\left. 2\, \sqrt{z}\, \left(4096\, z^3 + 30\,976\, z^2 + 5040\, z + 1575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaf4.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{3}{2}, \frac{15}{4}; z\right) = -\frac{1}{25\,165\,824\, z^{11/4}} $$

$$ \left(11\, e^{-2\, \sqrt{z}}\, \left(4\, \sqrt[4]{z}\, \left(16\,384\, z^{7/2} - 4096\, z^3 - 140\,288\, z^{5/2} + 32\,000\, z^2 + 20\,160\, z^{3/2} + 8400\, z - 14\,700\, \sqrt{z} + e^{4\, \sqrt{z}} \right.\right.\right. $$

$$ \left.\left. \left(16\,384\, z^{7/2} + 4096\, z^3 - 140\,288\, z^{5/2} - 32\,000\, z^2 + 20\,160\, z^{3/2} - 8400\, z - 14\,700\, \sqrt{z} + 11\,025\right) - 11\,025\right) + $$

$$ e^{2\, \sqrt{z}}\, \sqrt{2\, \pi}\, \left(65\,536\, z^4 - 573\,440\, z^3 + 161\,280\, z^2 - 20\,160\, z + 11\,025\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - $$

$$ \left. e^{2\, \sqrt{z}}\, \sqrt{2\, \pi}\, \left(65\,536\, z^4 - 573\,440\, z^3 + 161\,280\, z^2 - 20\,160\, z + 11\,025\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.aaf5.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{3}{2}, \frac{15}{4}; -z\right) = \frac{1}{6\,291\,456\, z^{11/4}} \left(11\, \left(\sqrt{\pi}\, \left(65\,536\, z^4 + 573\,440\, z^3 + 161\,280\, z^2 + 20\,160\, z + 11\,025\right) S\left(\frac{2\, \sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\, \sqrt[4]{z}\right.\right. $$

$$ \left.\left. \left(4\, \sqrt{z}\, \left(4096\, z^3 + 35\,072\, z^2 + 5040\, z + 3675\right) \cos\left(2\, \sqrt{z}\right) + \left(4096\, z^3 + 32\,000\, z^2 - 8400\, z - 11\,025\right) \sin\left(2\, \sqrt{z}\right)\right)\right)\right) $$

07.22.03.aaf6.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{17}{4};z\right)=\frac{1}{7\,225\,344\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(65\,536z^4-688\,128z^3+612\,864z^2-40\,320z+19\,845\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(65\,536z^4-630\,784z^3+107\,520z^2-90\,720z+33\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-638\,976z^3+161\,280z^2-60\,480z+99\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaf7.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{17}{4};-z\right)=\frac{1}{7\,225\,344\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(65\,536z^4+688\,128z^3+612\,864z^2+40\,320z+19\,845\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(65\,536z^4+630\,784z^3+107\,520z^2+90\,720z+33\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+638\,976z^3+161\,280z^2+60\,480z+99\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaf8.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{19}{4};z\right)=$$
$$-\frac{1}{536\,870\,912z^{15/4}}\left(11e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144z^{9/2}-65\,536z^4-2\,818\,048z^{7/2}+655\,360z^3+645\,120z^{5/2}+161\,280z^2-\right.\right.\right.$$
$$\left.510\,720z^{3/2}+282\,240z+1\,455\,300\sqrt{z}\right)+e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4-2\,818\,048z^{7/2}-655\,360z^3+\right.$$
$$\left.\left.645\,120z^{5/2}-161\,280z^2-510\,720z^{3/2}-282\,240z+1\,455\,300\sqrt{z}-1\,091\,475\right)+1\,091\,475\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-11\,468\,800z^4+4\,300\,800z^3-806\,400z^2+882\,000z-1\,091\,475\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-11\,468\,800z^4+4\,300\,800z^3-806\,400z^2+882\,000z-1\,091\,475\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aaf9.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{19}{4};-z\right)=$$
$$\frac{1}{134\,217\,728z^{15/4}}\left(11\left(\sqrt{\pi}\left(1\,048\,576z^5+11\,468\,800z^4+4\,300\,800z^3+806\,400z^2+882\,000z+1\,091\,475\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4+704\,512z^3+161\,280z^2+127\,680z+363\,825\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(65\,536z^4+655\,360z^3-161\,280z^2+282\,240z-1\,091\,475\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aafa.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{21}{4};z\right)=\frac{1}{2\,543\,321\,088\sqrt{2}\,z^{15/4}}$$
$$\left(221\left(2\sqrt{z}\left(1\,048\,576z^5-13\,303\,808z^4+13\,246\,464z^3-1\,774\,080z^2+4\,268\,880z-2\,837\,835\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$3\left(-1\,048\,576z^5+12\,386\,304z^4-3\,153\,920z^3+2\,956\,800z^2-10\,478\,160z+4\,729\,725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(-1\,048\,576z^5+12\,517\,376z^4-4\,300\,800z^3+1\,774\,080z^2-1\,164\,240z+14\,189\,175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aafb.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{21}{4};-z\right)=\frac{1}{2\,543\,321\,088\sqrt{2}\,z^{15/4}}$$
$$\left(221\left(2\sqrt{z}\left(1\,048\,576z^5+13\,303\,808z^4+13\,246\,464z^3+1\,774\,080z^2+4\,268\,880z+2\,837\,835\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(1\,048\,576z^5+12\,386\,304z^4+3\,153\,920z^3+2\,956\,800z^2+10\,478\,160z+4\,729\,725\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(1\,048\,576z^5+12\,517\,376z^4+4\,300\,800z^3+1\,774\,080z^2+1\,164\,240z+14\,189\,175\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aafc.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{23}{4};z\right)=$$
$$-\frac{1}{206\,158\,430\,208\,z^{19/4}}\left(209\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304z^{11/2}-1\,048\,576z^5-54\,263\,808z^{9/2}+12\,779\,520z^4+17\,203\,200z^{7/2}+\right.\right.\right.$$
$$2\,580\,480z^3-13\,547\,520z^{5/2}+11\,773\,440z^2+9\,979\,200z^{3/2}-122\,245\,200z-283\,783\,500\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(4\,194\,304z^{11/2}+1\,048\,576z^5-54\,263\,808z^{9/2}-12\,779\,520z^4+17\,203\,200z^{7/2}-2\,580\,480z^3-\right.$$
$$\left.13\,547\,520z^{5/2}-11\,773\,440z^2+9\,979\,200z^{3/2}+122\,245\,200z-283\,783\,500\sqrt{z}+212\,837\,625\right)-$$
$$212\,837\,625\Big)+e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-220\,200\,960z^5+103\,219\,200z^4-\right.$$
$$25\,804\,800z^3+42\,336\,000z^2-104\,781\,600z+212\,837\,625\Big)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-220\,200\,960z^5+103\,219\,200z^4-25\,804\,800z^3+\right.$$
$$\left.\left.\left.42\,336\,000z^2-104\,781\,600z+212\,837\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aafd.01

$${}_1F_2\left(-\frac{5}{4};\frac{3}{2},\frac{23}{4};-z\right)=\frac{1}{51\,539\,607\,552\,z^{19/4}}$$
$$\left(209\left(\sqrt{\pi}\,\left(16\,777\,216\,z^6+220\,200\,960\,z^5+103\,219\,200\,z^4+25\,804\,800\,z^3+42\,336\,000\,z^2+104\,781\,600\,z+212\,837\,625\right)\right.\right.$$
$$S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(1\,048\,576\,z^5+13\,565\,952\,z^4+4\,300\,800\,z^3+3\,386\,880\,z^2+2\,494\,800\,z+70\,945\,875\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(1\,048\,576\,z^5+12\,779\,520\,z^4-2\,580\,480\,z^3+11\,773\,440\,z^2+122\,245\,200\,z-212\,837\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1=-\frac{5}{4}$, $b_{1.}=\frac{5}{2}$

07.22.03.aafe.01

$${}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{1\,110\,417\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-70\,912\,z^2-970\,656\,z+1\,110\,417\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+32\sqrt{z}\,\left(200\,z-41\,451\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(76\,544\,z^2+1\,855\,968\,z+7\,210\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaff.01

$${}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{1\,110\,417\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-70\,912\,z^2+970\,656\,z+1\,110\,417\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+32\sqrt{z}\,\left(200\,z+41\,451\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-76\,544\,z^2+1\,855\,968\,z-7\,210\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aafg.01

$${}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{21}{4};z\right)=\frac{2\sqrt{z}\,\left(256\,z^2+29\,472\,z+176\,985\right)\cosh\left(2\sqrt{z}\right)-3\left(2816\,z^2+69\,920\,z+58\,995\right)\sinh\left(2\sqrt{z}\right)}{111\,384\,z^{3/2}}$$

07.22.03.aafh.01

$${}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{21}{4};-z\right)=\frac{3\left(2816\,z^2-69\,920\,z+58\,995\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(256\,z^2-29\,472\,z+176\,985\right)\cos\left(2\sqrt{z}\right)}{111\,384\,z^{3/2}}$$

07.22.03.aafi.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{19}{4};z\right)=\frac{1}{48\,279\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096\,z^2-51\,696\,z+48\,279\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$

$$\left.\left.8\sqrt{z}\,\left(592\,z-723\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(4096\,z^2+73\,776\,z+248\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aafj.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{19}{4};-z\right)=\frac{1}{48\,279\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096\,z^2+51\,696\,z+48\,279\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$

$$\left.\left.8\sqrt{z}\,\left(592\,z+723\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-4096\,z^2+73\,776\,z-248\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aafk.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{17}{4};z\right)=\frac{2\sqrt{z}\,\left(752\,z+6555\right)\cosh\left(2\sqrt{z}\right)-\left(128\,z^2+6840\,z+6555\right)\sinh\left(2\sqrt{z}\right)}{5304\,z^{3/2}}$$

07.22.03.aafl.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{17}{4};-z\right)=\frac{2\sqrt{z}\,\left(752\,z-6555\right)\cos\left(2\sqrt{z}\right)+\left(128\,z^2-6840\,z+6555\right)\sin\left(2\sqrt{z}\right)}{5304\,z^{3/2}}$$

07.22.03.aafm.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{15}{4};z\right)=\frac{1}{17\,787\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-2048\,z^2-22\,064\,z+17\,787\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$

$$\left.\left.96\sqrt{z}\,\left(32\,z+161\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(2048\,z^2+26\,064\,z+69\,615\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aafn.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{15}{4};-z\right)=\frac{1}{17\,787\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-2048\,z^2+22\,064\,z+17\,787\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$

$$\left.\left.96\sqrt{z}\,\left(32\,z-161\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-2048\,z^2+26\,064\,z-69\,615\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aafo.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{13}{4};z\right)=\frac{2\sqrt{z}\,\left(16\,z+285\right)\cosh\left(2\sqrt{z}\right)-15\left(16\,z+19\right)\sinh\left(2\sqrt{z}\right)}{312\,z^{3/2}}$$

07.22.03.aafp.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{13}{4};-z\right)=\frac{2\sqrt{z}\,\left(16\,z-285\right)\cos\left(2\sqrt{z}\right)+15\left(19-16\,z\right)\sin\left(2\sqrt{z}\right)}{312\,z^{3/2}}$$

07.22.03.aafq.01

$${}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{11}{4};z\right)=\frac{1}{5929\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-1024z^2-8128z+5929\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\,\left(192z+1307\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(1024z^2+8896z+16\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aafr.01

$${}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{11}{4};-z\right)=\frac{1}{5929\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1024z^2+8128z+5929\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.8\sqrt{z}\,\left(192z-1307\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1024z^2+8896z-16\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aafs.01

$${}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{9}{4};z\right)=\frac{30\sqrt{z}\,\cosh\left(2\sqrt{z}\right)-(8z+15)\sinh\left(2\sqrt{z}\right)}{24z^{3/2}}$$

07.22.03.aaft.01

$${}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{9}{4};-z\right)=\frac{(15-8z)\sin\left(2\sqrt{z}\right)-30\sqrt{z}\,\cos\left(2\sqrt{z}\right)}{24z^{3/2}}$$

07.22.03.aafu.01

$${}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{7}{4};z\right)=\frac{1}{1617\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-512z^2-2304z+1617\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+96\sqrt{z}\,\left(8z+43\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(512z^2+2688z+2925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aafv.01

$${}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{7}{4};-z\right)=\frac{1}{1617\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-512z^2+2304z+1617\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+96\sqrt{z}\,\left(8z-43\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-512z^2+2688z-2925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aafw.01

$${}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{5}{4};z\right)=\frac{3\cosh\left(2\sqrt{z}\right)}{4z}-\frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.aafx.01

$${}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{5}{4};-z\right)=\frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}}$$

07.22.03.aafy.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{3}{4};z\right)=\frac{1}{231\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-256z^2-272z+231\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+24\sqrt{z}\,(16z+31)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(256z^2+464z+225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aafz.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{3}{4};-z\right)=\frac{1}{231\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-256z^2+272z+231\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+24\sqrt{z}\,(16z-31)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-256z^2+464z-225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aag0.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{1232z^{3/2}}\left(e^{-2\sqrt{z}}\left(512e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-512e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+512e^{4\sqrt{z}}z^{5/2}+512z^{5/2}+\right.\right.$$
$$\left.\left.128e^{4\sqrt{z}}z^2-128z^2+96e^{4\sqrt{z}}z^{3/2}+96z^{3/2}+120e^{4\sqrt{z}}z-120z+210e^{4\sqrt{z}}\sqrt{z}+210\sqrt{z}-105e^{4\sqrt{z}}+105\right)\right)$$

07.22.03.aag1.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},-\frac{1}{4};-z\right)=$$
$$\frac{1}{616z^{3/2}}\left(-1024\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}-2\left(256z^2-48z+105\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-128z^2+120z+105\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aag2.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{77\sqrt[4]{z}}\left(\sqrt{2}\left(\left(128z^2-304z+77\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-96\sqrt{z}\,(2z-3)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-128z^2+208z+25\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aag3.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{77\sqrt[4]{z}}\left(\sqrt{2}\left(\left(128z^2+304z+77\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-96\sqrt{z}\,(2z+3)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(128z^2+208z-25\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aag4.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{1232z^{3/2}}\left(e^{-2\sqrt{z}}\left(-128e^{4\sqrt{z}}z^{5/2}-128z^{5/2}-32e^{4\sqrt{z}}z^2+32z^2-8e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-55)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+\right.\right.$$
$$8e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-55)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+416e^{4\sqrt{z}}z^{3/2}+$$
$$\left.\left.416z^{3/2}+80e^{4\sqrt{z}}z-80z+30e^{4\sqrt{z}}\sqrt{z}+30\sqrt{z}-15e^{4\sqrt{z}}+15\right)\right)$$

07.22.03.aag5.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{5}{2}, \frac{3}{4}; -z\right) = \frac{1}{616\, z^{3/2}}\left(16\sqrt{\pi}\,(16z+55)\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} + 2\left(64z^2+208z-15\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(32z^2+80z+15\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aag6.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{5}{2}, \frac{5}{4}; z\right) = \frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(64z^2-372z+231\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 6\,(79-16z)\sqrt{z}\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-64z^2+324z-15\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aag7.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{5}{2}, \frac{5}{4}; -z\right) = \frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(64z^2+372z+231\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 6\sqrt{z}\,(16z+79)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(64z^2+324z+15\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aag8.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{5}{2}, \frac{7}{4}; z\right) = -\frac{1}{19\,712\, z^{3/2}}\left(3e^{-2\sqrt{z}}\left(4\left(64z^{5/2}-16z^2-428z^{3/2}+95z+40\sqrt{z}+e^{4\sqrt{z}}\left(64z^{5/2}+16z^2-428z^{3/2}-95z+40\sqrt{z}-20\right)+20\right)+ e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(256z^2-1760z+385\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(256z^2-1760z+385\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aag9.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{5}{2}, \frac{7}{4}; -z\right) = \frac{1}{4928\, z^{3/2}}\left(3\left(\sqrt{\pi}\, z^{3/4}\left(256z^2+1760z+385\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\left(4\sqrt{z}\left(16z^2+107z+10\right)\cos\left(2\sqrt{z}\right) + \left(16z^2+95z-20\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aaga.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{5}{2}, \frac{9}{4}; z\right) = \frac{1}{1848\sqrt{2}\, z^{3/4}}\left(\left(2\sqrt{z}\left(256z^2-2368z+2079\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(256z^2-2144z+385\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(256z^2-2176z+555\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aagb.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{5}{2}, \frac{9}{4}; -z\right) = \frac{1}{1848\sqrt{2}\, z^{3/4}}\left(\left(2\sqrt{z}\left(256z^2+2368z+2079\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(256z^2+2144z+385\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(256z^2+2176z+555\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aagc.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},\frac{11}{4};z\right)= $$

$$ \frac{1}{180\,224\,z^{7/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(1024\,z^{5/2}-256\,z^2-10\,368\,z^{3/2}+2400\,z+3060\sqrt{z}+e^{4\sqrt{z}}\left(1024\,z^{5/2}+256\,z^2-10\,368\,z^{3/2}-2400\,z+3060\sqrt{z}-375\right)+375\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\,z^3-42\,240\,z^2+18\,480\,z+3465\right)\right.\right. $$

$$ \left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\,z^3-42\,240\,z^2+18\,480\,z+3465\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aagd.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},\frac{11}{4};-z\right)=\frac{1}{45\,056\,z^{7/4}}\left(\sqrt{\pi}\left(4096\,z^3+42\,240\,z^2+18\,480\,z-3465\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right. $$

$$ \left.2\sqrt[4]{z}\left(4\sqrt{z}\left(256\,z^2+2592\,z+765\right)\cos\left(2\sqrt{z}\right)+\left(256\,z^2+2400\,z-375\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.aage.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},\frac{13}{4};z\right)=\frac{1}{137\,984\sqrt{2}\,z^{7/4}} $$

$$ \left(3\left(2\sqrt{z}\left(4096\,z^3-51\,968\,z^2+57\,904\,z+1155\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096\,z^3-48\,384\,z^2+18\,480\,z+1925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right. $$

$$ \left.\left.2\sqrt{z}\left(4096\,z^3-48\,896\,z^2+22\,960\,z+5775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aagf.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},\frac{13}{4};-z\right)=\frac{1}{137\,984\sqrt{2}\,z^{7/4}} $$

$$ \left(3\left(2\sqrt{z}\left(4096\,z^3+51\,968\,z^2+57\,904\,z-1155\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096\,z^3+48\,384\,z^2+18\,480\,z-1925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right. $$

$$ \left.\left.2\sqrt{z}\left(4096\,z^3+48\,896\,z^2+22\,960\,z-5775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aagg.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},\frac{15}{4};z\right)= $$

$$ \frac{1}{4\,194\,304\,z^{11/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(16\,384\,z^{7/2}-4096\,z^3-222\,208\,z^{5/2}+52\,480\,z^2+112\,320\,z^{3/2}+720\,z+32\,340\sqrt{z}+e^{4\sqrt{z}}\left(16\,384\,z^{7/2}+4096\,z^3-222\,208\,z^{5/2}-52\,480\,z^2+112\,320\,z^{3/2}-720\,z+32\,340\sqrt{z}-24\,255\right)+24\,255\right)-\right.\right. $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-901\,120\,z^3+591\,360\,z^2+221\,760\,z-24\,255\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+ $$

$$ \left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-901\,120\,z^3+591\,360\,z^2+221\,760\,z-24\,255\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aagh.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},\frac{15}{4};-z\right)=\frac{1}{1\,048\,576\,z^{11/4}}\left(\sqrt{\pi}\left(65\,536\,z^4+901\,120\,z^3+591\,360\,z^2-221\,760\,z-24\,255\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\sqrt[4]{z}\left(4\sqrt{z}\left(4096\,z^3+55\,552\,z^2+28\,080\,z-8085\right)\cos\left(2\sqrt{z}\right)+\left(4096\,z^3+52\,480\,z^2-720\,z+24\,255\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aagi.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},\frac{17}{4};z\right)= $$
$$\frac{1}{13\,246\,464\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(65\,536\,z^4-1\,056\,768\,z^3+1\,419\,264\,z^2+110\,880\,z-31\,185\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\right.$$
$$\left(65\,536\,z^4-999\,424\,z^3+591\,360\,z^2+221\,760\,z-51\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.2\sqrt{z}\left(65\,536\,z^4-1\,007\,616\,z^3+691\,200\,z^2+332\,640\,z-155\,925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aagj.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},\frac{17}{4};-z\right)= $$
$$\frac{1}{13\,246\,464\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(65\,536\,z^4+1\,056\,768\,z^3+1\,419\,264\,z^2-110\,880\,z-31\,185\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$3\left(65\,536\,z^4+999\,424\,z^3+591\,360\,z^2-221\,760\,z-51\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\left(65\,536\,z^4+1\,007\,616\,z^3+691\,200\,z^2-332\,640\,z-155\,925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aagk.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},\frac{19}{4};z\right)= $$
$$-\frac{1}{268\,435\,456\,z^{15/4}}\left(3e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144\,z^{9/2}-65\,536\,z^4-4\,456\,448\,z^{7/2}+1\,064\,960\,z^3+3\,205\,120\,z^{5/2}-171\,520\,z^2+\right.\right.\right.$$
$$1\,774\,080\,z^{3/2}+517\,440\,z-1\,778\,700\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-4\,456\,448\,z^{7/2}-1\,064\,960\,z^3+\right.$$
$$\left.3\,205\,120\,z^{5/2}+171\,520\,z^2+1\,774\,080\,z^{3/2}-517\,440\,z-1\,778\,700\sqrt{z}+1\,334\,025\right)-1\,334\,025\Big)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-18\,022\,400\,z^4+15\,769\,600\,z^3+8\,870\,400\,z^2-1\,940\,400\,z+1\,334\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-18\,022\,400\,z^4+15\,769\,600\,z^3+8\,870\,400\,z^2-1\,940\,400\,z+1\,334\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aagl.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},\frac{19}{4};-z\right)= $$

$$ \frac{1}{67\,108\,864\,z^{15/4}}\left(3\left(\sqrt{\pi}\,\left(1\,048\,576\,z^5+18\,022\,400\,z^4+15\,769\,600\,z^3-8\,870\,400\,z^2-1\,940\,400\,z-1\,334\,025\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right. $$

$$ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(65\,536\,z^4+1\,114\,112\,z^3+801\,280\,z^2-443\,520\,z-444\,675\right)\cos\left(2\sqrt{z}\right)+ $$

$$ \left.\left.\left(65\,536\,z^4+1\,064\,960\,z^3+171\,520\,z^2+517\,440\,z+1\,334\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aagm.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},\frac{21}{4};z\right)=\frac{1}{4\,662\,755\,328\sqrt{2}\,z^{15/4}} $$

$$ \left(221\left(2\sqrt{z}\,\left(1\,048\,576\,z^5-20\,512\,768\,z^4+32\,169\,984\,z^3+5\,322\,240\,z^2-5\,266\,800\,z+2\,837\,835\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$

$$ 3\left(1\,048\,576\,z^5-19\,595\,264\,z^4+15\,769\,600\,z^3+10\,053\,120\,z^2-12\,141\,360\,z+4\,729\,725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)- $$

$$ \left.\left.2\sqrt{z}\,\left(1\,048\,576\,z^5-19\,726\,336\,z^4+17\,817\,600\,z^3-12\,418\,560\,z^2-6\,153\,840\,z+14\,189\,175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aagn.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},\frac{21}{4};-z\right)=\frac{1}{4\,662\,755\,328\sqrt{2}\,z^{15/4}} $$

$$ \left(221\left(2\sqrt{z}\,\left(1\,048\,576\,z^5+20\,512\,768\,z^4+32\,169\,984\,z^3-5\,322\,240\,z^2-5\,266\,800\,z-2\,837\,835\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$

$$ 3\left(-1\,048\,576\,z^5-19\,595\,264\,z^4-15\,769\,600\,z^3+10\,053\,120\,z^2+12\,141\,360\,z+4\,729\,725\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ \left.\left.2\sqrt{z}\,\left(1\,048\,576\,z^5+19\,726\,336\,z^4+17\,817\,600\,z^3-12\,418\,560\,z^2-6\,153\,840\,z-14\,189\,175\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aago.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{5}{2},\frac{23}{4};z\right)= $$

$$ -\frac{1}{34\,359\,738\,368\,z^{19/4}}\left(19\,e^{-2\sqrt{z}}\,\left(4\sqrt[4]{z}\,\left(4\,194\,304\,z^{11/2}-1\,048\,576\,z^5-85\,721\,088\,z^{9/2}+20\,643\,840\,z^4+80\,117\,760\,z^{7/2}-\right.\right.\right. $$

$$ 7\,249\,920\,z^3+63\,866\,880\,z^{5/2}+5\,322\,240\,z^2-60\,984\,000\,z^{3/2}+64\,033\,200\,z+240\,124\,500\sqrt{z}\,+ $$

$$ e^{4\sqrt{z}}\,\left(4\,194\,304\,z^{11/2}+1\,048\,576\,z^5-85\,721\,088\,z^{9/2}-20\,643\,840\,z^4+80\,117\,760\,z^{7/2}+7\,249\,920\,z^3+\right. $$

$$ \left.63\,866\,880\,z^{5/2}-5\,322\,240\,z^2-60\,984\,000\,z^{3/2}-64\,033\,200\,z+240\,124\,500\sqrt{z}\,-180\,093\,375\right)+ $$

$$ \left.180\,093\,375\right)+e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(16\,777\,216\,z^6-346\,030\,080\,z^5+378\,470\,400\,z^4+\right. $$

$$ \left.283\,852\,800\,z^3-93\,139\,200\,z^2+128\,066\,400\,z-180\,093\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)- $$

$$ \left.e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(16\,777\,216\,z^6-346\,030\,080\,z^5+378\,470\,400\,z^4+283\,852\,800\,z^3-\right.\right. $$

$$ \left.\left.93\,139\,200\,z^2+128\,066\,400\,z-180\,093\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aagp.01

$${}_1F_2\left(-\frac{5}{4};\frac{5}{2},\frac{23}{4};-z\right)=$$
$$\frac{1}{8\,589\,934\,592\,z^{19/4}}\left(19\left(\sqrt{\pi}\,\left(16\,777\,216\,z^6+346\,030\,080\,z^5+378\,470\,400\,z^4-283\,852\,800\,z^3-93\,139\,200\,z^2-\right.\right.\right.$$
$$\left.\left.128\,066\,400\,z-180\,093\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\,\left(1\,048\,576\,z^5+21\,430\,272\,z^4+20\,029\,440\,z^3-15\,966\,720\,z^2-15\,246\,000\,z-60\,031\,125\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(1\,048\,576\,z^5+20\,643\,840\,z^4+7\,249\,920\,z^3+5\,322\,240\,z^2-64\,033\,200\,z+180\,093\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1=-\frac{5}{4}$, $b_{1.}=\frac{7}{2}$

07.22.03.aagq.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{23}{4};z\right)=\frac{1}{2\,220\,834\sqrt{2}\,z^{5/4}}$$
$$\left(\left(-48\,z\left(4096\,z^2+115\,232\,z+700\,579\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(87\,808\,z^2+4\,826\,208\,z+47\,586\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.3\left(65\,536\,z^3+1\,484\,544\,z^2-7\,690\,800\,z-79\,311\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aagr.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{23}{4};-z\right)=\frac{1}{2\,220\,834\sqrt{2}\,z^{5/4}}$$
$$\left(\left(-48\,z\left(4096\,z^2-115\,232\,z+700\,579\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(87\,808\,z^2-4\,826\,208\,z+47\,586\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.3\left(-65\,536\,z^3+1\,484\,544\,z^2+7\,690\,800\,z-79\,311\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aags.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{21}{4};z\right)=\frac{1}{445\,536\,z^{5/2}}$$
$$\left(5\left(\left(1024\,z^3+167\,808\,z^2+1\,840\,644\,z+1\,097\,307\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,\left(3328\,z^2+125\,856\,z+365\,769\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aagt.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{21}{4};-z\right)=-\frac{1}{445\,536\,z^{5/2}}$$
$$\left(5\left(6\sqrt{z}\,\left(3328\,z^2-125\,856\,z+365\,769\right)\cos\left(2\sqrt{z}\right)+\left(1024\,z^3-167\,808\,z^2+1\,840\,644\,z-1\,097\,307\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aagu.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{289\,674\sqrt{2}\,z^{5/4}}\left(\left(-8z\left(4096z^2+86\,352z+360\,189\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(4096z^2+144\,496z+1\,442\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(32\,768z^3+673\,152z^2-1\,193\,400z-21\,630\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aagv.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{19}{4};-z\right)=\frac{1}{289\,674\sqrt{2}\,z^{5/4}}$$
$$\left(\left(-8z\left(4096z^2-86\,352z+360\,189\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(4096z^2-144\,496z+1\,442\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-32\,768z^3+673\,152z^2+1\,193\,400z-21\,630\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aagw.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{17}{4};z\right)=-\frac{5\left(2\sqrt{z}\left(128z^2+10\,488z+35\,397\right)\cosh\left(2\sqrt{z}\right)-57\left(64z^2+1012z+621\right)\sinh\left(2\sqrt{z}\right)\right)}{21\,216z^{5/2}}$$

07.22.03.aagx.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{17}{4};-z\right)=-\frac{5\left(2\sqrt{z}\left(128z^2-10\,488z+35\,397\right)\cos\left(2\sqrt{z}\right)-57\left(64z^2-1012z+621\right)\sin\left(2\sqrt{z}\right)\right)}{21\,216z^{5/2}}$$

07.22.03.aagy.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{106\,722\sqrt{2}\,z^{5/4}}\left(\left(-16z\left(1024z^2+16\,128z+38\,871\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(2048z^2+40\,208z+348\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(16\,384z^3+270\,336z^2-5\,221\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aagz.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{106\,722\sqrt{2}\,z^{5/4}}\left(\left(-16z\left(1024z^2-16\,128z+38\,871\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(2048z^2-40\,208z+348\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-16\,384z^3+270\,336z^2-5\,221\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aah0.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{13}{4};z\right)=\frac{5\left(\left(64z^2+2052z+1311\right)\sinh\left(2\sqrt{z}\right)-38\sqrt{z}\,(16z+69)\cosh\left(2\sqrt{z}\right)\right)}{1248z^{5/2}}$$

07.22.03.aah1.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{13}{4};-z\right)=\frac{5\left(38\sqrt{z}\,(16z-69)\cos\left(2\sqrt{z}\right)+\left(64z^2-2052z+1311\right)\sin\left(2\sqrt{z}\right)\right)}{1248\,z^{5/2}}$$

07.22.03.aah2.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{11}{4};z\right)=$$

$$\frac{1}{35\,574\sqrt{2}\,z^{5/4}}\left(\left(-8z\left(1024z^2+11\,328z+11\,991\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,\left(1024z^2+12\,224z+69\,615\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.\left(8192z^3+96\,768z^2+79\,560z-1\,044\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aah3.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{11}{4};-z\right)=$$

$$-\frac{1}{35\,574\sqrt{2}\,z^{5/4}}\left(\left(8z\left(1024z^2-11\,328z+11\,991\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(1024z^2-12\,224z+69\,615\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.\left(8192z^3-96\,768z^2+79\,560z+1\,044\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aah4.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{9}{4};z\right)=\frac{15\,(28z+19)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,(8z+57)\cosh\left(2\sqrt{z}\right)}{96\,z^{5/2}}$$

07.22.03.aah5.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{9}{4};-z\right)=\frac{5\left(2\sqrt{z}\,(8z-57)\cos\left(2\sqrt{z}\right)+3\,(19-28z)\sin\left(2\sqrt{z}\right)\right)}{96\,z^{5/2}}$$

07.22.03.aah6.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{7}{4};z\right)=$$

$$\frac{1}{9702\sqrt{2}\,z^{5/4}}\left(\left(-16z\left(256z^2+1632z+279\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,\left(512z^2+3712z+9945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.\left(4096z^3+29\,184z^2+28\,080z-149\,175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aah7.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{7}{4};-z\right)=$$

$$-\frac{1}{9702\sqrt{2}\,z^{5/4}}\left(\left(16z\left(256z^2-1632z+279\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(512z^2-3712z+9945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.\left(4096z^3-29\,184z^2+28\,080z+149\,175\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aah8.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{5}{4};z\right)=\frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\cosh\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.aah9.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{5}{4};-z\right)=-\frac{15\left(6\sqrt{z}\cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.aaha.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{3}{4};z\right)=\frac{1}{1386\sqrt{2}\,z^{5/4}}\left(\left(-8z\left(256z^2+432z-171\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.12\sqrt{z}\left(256z^2+656z+585\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(2048z^3+4992z^2+3240z-8775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aahb.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{3}{4};-z\right)=$$
$$-\frac{1}{1386\sqrt{2}\,z^{5/4}}\left(\left(8z\left(256z^2-432z-171\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(256z^2-656z+585\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(2048z^3-4992z^2+3240z+8775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aahc.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{14\,784\,z^{5/2}}\left(e^{-2\sqrt{z}}\left(4096e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}-4096e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+4096e^{4\sqrt{z}}z^{7/2}+\right.\right.$$
$$4096z^{7/2}+1024e^{4\sqrt{z}}z^3-1024z^3+768e^{4\sqrt{z}}z^{5/2}+768z^{5/2}+960e^{4\sqrt{z}}z^2-960z^2+$$
$$\left.\left.1680e^{4\sqrt{z}}z^{3/2}+1680z^{3/2}+3780e^{4\sqrt{z}}z-3780z-6930e^{4\sqrt{z}}\sqrt{z}-6930\sqrt{z}+3465e^{4\sqrt{z}}-3465\right)\right)$$

07.22.03.aahd.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},-\frac{1}{4};-z\right)=\frac{1}{7392z^{5/2}}\left(-8192\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}-\right.$$
$$\left.2\left(2048z^3-384z^2+840z+3465\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-1024z^3+960z^2-3780z+3465\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aahe.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{1}{4};z\right)=\frac{1}{462\sqrt{2}\,z^{5/4}}\left(\left(16z\left(64z^2-192z+51\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.12\sqrt{z}\left(-128z^2+272z+45\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1024z^3+2304z^2+480z-675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aahf.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{1}{4};-z\right)=\frac{1}{462\sqrt{2}\,z^{5/4}}\left(\left(16z\left(64z^2+192z+51\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.12\sqrt{z}\left(128z^2+272z-45\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(1024z^3+2304z^2-480z-675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aahg.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{14\,784\,z^{5/2}}\left(e^{-2\sqrt{z}}\left(-1024e^{4\sqrt{z}}z^{7/2}-1024z^{7/2}-256e^{4\sqrt{z}}z^3+256z^3-64e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-75)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+\right.\right.$$
$$64e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-75)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+4608e^{4\sqrt{z}}z^{5/2}+4608z^{5/2}+960e^{4\sqrt{z}}z^2-960z^2+$$
$$\left.\left.480e^{4\sqrt{z}}z^{3/2}+480z^{3/2}+180e^{4\sqrt{z}}z-180z-630e^{4\sqrt{z}}\sqrt{z}-630\sqrt{z}+315e^{4\sqrt{z}}-315\right)\right)$$

07.22.03.aahh.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{3}{4};-z\right)=\frac{1}{7392z^{5/2}}\left(128\sqrt{\pi}\,(16z+75)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+\right.$$
$$\left.2\left(512z^3+2304z^2-240z-315\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(256z^3+960z^2-180z+315\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aahi.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{5}{4};z\right)=\frac{1}{1386\sqrt{2}\,z^{5/4}}\left(\left(8z\left(64z^2-492z+351\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.12\sqrt{z}\left(64z^2-436z+15\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-512z^3+3552z^2-360z+225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aahj.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{5}{4};-z\right)=\frac{1}{1386\sqrt{2}\,z^{5/4}}\left(\left(8z\left(64z^2+492z+351\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.12\sqrt{z}\left(64z^2+436z+15\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(512z^3+3552z^2+360z+225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aahk.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{7}{4};z\right)=\frac{1}{9856z^{5/2}}$$
$$\left(e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-2400z+825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-2400z+825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-\right.\right.$$
$$2\left(128z^{7/2}-32z^3-1176z^{5/2}+270z^2+240z^{3/2}+60z-90\sqrt{z}+\right.$$
$$\left.\left.\left.e^{4\sqrt{z}}\left(128z^{7/2}+32z^3-1176z^{5/2}-270z^2+240z^{3/2}-60z-90\sqrt{z}+45\right)-45\right)\right)\right)$$

07.22.03.aahl.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{7}{4};-z\right)=\frac{1}{2464\,z^{5/2}}\left(\sqrt{\pi}\,\left(256\,z^2+2400\,z+825\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+\right.$$
$$\left.2\left(64\,z^3+588\,z^2+120\,z+45\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(32\,z^3+270\,z^2-60\,z-45\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aahm.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{9}{4};z\right)=\frac{1}{2772\sqrt{2}\,z^{5/4}}\left(\left(2\,z\left(256\,z^2-3168\,z+3429\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.3\sqrt{z}\,\left(256\,z^2-2944\,z+1035\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\left(256\,z^3-2976\,z^2+1305\,z+225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aahn.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{2772\sqrt{2}\,z^{5/4}}\left(\left(2\,z\left(256\,z^2+3168\,z+3429\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\,\left(256\,z^2+2944\,z+1035\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\left(256\,z^3+2976\,z^2+1305\,z-225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaho.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{270\,336\,z^{5/2}}\left(e^{-2\sqrt{z}}\left(-4\left(1024\,z^{7/2}-256\,z^3-14\,208\,z^{5/2}+3360\,z^2+7620\,z^{3/2}-45\,z+2880\sqrt{z}+e^{4\sqrt{z}}\right.\right.\right.$$
$$\left.\left.\left.\left(1024\,z^{7/2}+256\,z^3-14\,208\,z^{5/2}-3360\,z^2+7620\,z^{3/2}+45\,z+2880\sqrt{z}-1440\right)+1440\right)-\right.$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(4096\,z^3-57\,600\,z^2+39\,600\,z+17\,325\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(4096\,z^3-57\,600\,z^2+39\,600\,z+17\,325\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aahp.01

$${}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{11}{4};-z\right)=\frac{1}{67\,584\,z^{5/2}}\left(8\sqrt{z}\,\left(256\,z^3+3552\,z^2+1905\,z-720\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\sqrt{\pi}\,z^{3/4}\left(4096\,z^3+57\,600\,z^2+39\,600\,z-17\,325\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\left(256\,z^3+3360\,z^2+45\,z+1440\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aahq.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{13}{4};z\right)=\frac{1}{68\,992\sqrt{2}\,z^{7/4}}$$
$$\left(\left(2\sqrt{z}\left(4096z^3-69\,888z^2+100\,464z+17\,325\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3-66\,304z^2+45\,360z+28\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\left(4096z^3-66\,816z^2+52\,080z+36\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aahr.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{13}{4};-z\right)=\frac{1}{68\,992\sqrt{2}\,z^{7/4}}$$
$$\left(\left(2\sqrt{z}\left(4096z^3+69\,888z^2+100\,464z-17\,325\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3+66\,304z^2+45\,360z-28\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(4096z^3+66\,816z^2+52\,080z-36\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aahs.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{15}{4};z\right)=\frac{1}{6\,291\,456\,z^{11/4}}$$
$$\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(16\,384z^{7/2}-4096z^3-304\,128z^{5/2}+72\,960z^2+265\,920z^{3/2}-22\,320z+252\,180\sqrt{z}+e^{4\sqrt{z}}\right.\right.\right.$$
$$\left.\left.\left.\left(16\,384z^{7/2}+4096z^3-304\,128z^{5/2}-72\,960z^2+265\,920z^{3/2}+22\,320z+252\,180\sqrt{z}-4815\right)+4815\right)-\right.$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-1\,228\,800z^3+1\,267\,200z^2+1\,108\,800z+363\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-1\,228\,800z^3+1\,267\,200z^2+1\,108\,800z+363\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.aaht.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{15}{4};-z\right)=\frac{1}{1\,572\,864\,z^{11/4}}\left(\sqrt{\pi}\left(65\,536z^4+1\,228\,800z^3+1\,267\,200z^2-1\,108\,800z+363\,825\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\sqrt[4]{z}\left(4\sqrt{z}\left(4096z^3+76\,032z^2+66\,480z-63\,045\right)\cos\left(2\sqrt{z}\right)+\left(4096z^3+72\,960z^2+22\,320z+4815\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aahu.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{17}{4};z\right)=$$
$$\frac{1}{19\,869\,696\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(65\,536z^4-1\,425\,408z^3+2\,548\,224z^2+1\,108\,800z+155\,925\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(65\,536z^4-1\,368\,064z^3+1\,397\,760z^2+1\,663\,200z+259\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-1\,376\,256z^3+1\,543\,680z^2+1\,814\,400z+779\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aahv.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{17}{4};-z\right)= $$

$$ \frac{1}{19\,869\,696\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(65\,536z^4+1\,425\,408z^3+2\,548\,224z^2-1\,108\,800z+155\,925\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$

$$ 3\left(65\,536z^4+1\,368\,064z^3+1\,397\,760z^2-1\,663\,200z+259\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$

$$ \left.\left.2\sqrt{z}\left(65\,536z^4+1\,376\,256z^3+1\,543\,680z^2-1\,814\,400z+779\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aahw.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{19}{4};z\right)= $$

$$ \frac{1}{134\,217\,728z^{15/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(262\,144z^{9/2}-65\,536z^4-6\,094\,848z^{7/2}+1\,474\,560z^3+7\,403\,520z^{5/2}-913\,920z^2+\right.\right.\right. $$

$$ \left.\left.10\,817\,280z^{3/2}-1\,244\,160z+5\,336\,100\sqrt{z}\right)+e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4-6\,094\,848z^{7/2}-1\,474\,560z^3+\right.\right. $$

$$ \left.\left.7\,403\,520z^{5/2}+913\,920z^2+10\,817\,280z^{3/2}+1\,244\,160z+5\,336\,100\sqrt{z}-4\,002\,075\right)+4\,002\,075\right)- $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-24\,576\,000z^4+33\,792\,000z^3+44\,352\,000z^2+29\,106\,000z-4\,002\,075\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+ $$

$$ \left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-24\,576\,000z^4+33\,792\,000z^3+44\,352\,000z^2+29\,106\,000z-4\,002\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aahx.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{19}{4};-z\right)= $$

$$ \frac{1}{33\,554\,432z^{15/4}}\left(\sqrt{\pi}\left(1\,048\,576z^5+24\,576\,000z^4+33\,792\,000z^3-44\,352\,000z^2+29\,106\,000z+4\,002\,075\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right. $$

$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4+1\,523\,712z^3+1\,850\,880z^2-2\,704\,320z+1\,334\,025\right)\cos\left(2\sqrt{z}\right)+\right. $$

$$ \left.\left.\left.\left(65\,536z^4+1\,474\,560z^3+913\,920z^2-1\,244\,160z-4\,002\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aahy.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{7}{2},\frac{21}{4};z\right)=\frac{1}{6\,994\,132\,992\sqrt{2}\,z^{15/4}} $$

$$ \left(221\left(2\sqrt{z}\left(1\,048\,576z^5-27\,721\,728z^4+59\,203\,584z^3+44\,352\,000z^2+19\,126\,800z-6\,081\,075\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$

$$ 3\left(1\,048\,576z^5-26\,804\,224z^4+36\,495\,360z^3+62\,092\,800z^2+39\,085\,200z-10\,135\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)- $$

$$ \left.\left.2\sqrt{z}\left(1\,048\,576z^5-26\,935\,296z^4+39\,444\,480z^3+64\,627\,200z^2+52\,390\,800z-30\,405\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aahz.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{7}{2}, \frac{21}{4}; -z\right) = \frac{1}{6\,994\,132\,992\sqrt{2}\, z^{15/4}} $$
$$ \left(221\left(2\sqrt{z}\left(1\,048\,576 z^5 + 27\,721\,728 z^4 + 59\,203\,584 z^3 - 44\,352\,000 z^2 + 19\,126\,800 z + 6\,081\,075\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\left(1\,048\,576 z^5 + 26\,804\,224 z^4 + 36\,495\,360 z^3 - 62\,092\,800 z^2 + 39\,085\,200 z + 10\,135\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(1\,048\,576 z^5 + 26\,935\,296 z^4 + 39\,444\,480 z^3 - 64\,627\,200 z^2 + 52\,390\,800 z + 30\,405\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aai0.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{7}{2}, \frac{23}{4}; z\right) = $$
$$ -\frac{1}{51\,539\,607\,552 z^{19/4}}\left(19 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304 z^{11/2} - 1\,048\,576 z^5 - 117\,178\,368 z^{9/2} + 28\,508\,160 z^4 + 182\,353\,920 z^{7/2} - \right.\right.\right. $$
$$ 26\,910\,720 z^3 + 355\,092\,480 z^{5/2} - 61\,954\,560 z^2 + 329\,313\,600 z^{3/2} + 64\,033\,200 z - 400\,207\,500\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} + 1\,048\,576 z^5 - 117\,178\,368 z^{9/2} - 28\,508\,160 z^4 + 182\,353\,920 z^{7/2} + 26\,910\,720 z^3 + \right. $$
$$ \left. 355\,092\,480 z^{5/2} + 61\,954\,560 z^2 + 329\,313\,600 z^{3/2} - 64\,033\,200 z - 400\,207\,500\sqrt{z} + 300\,155\,625\right) - $$
$$ \left.\left. 300\,155\,625\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 471\,859\,200 z^5 + 811\,008\,000 z^4 + \right.\right. $$
$$ \left. 1\,419\,264\,000 z^3 + 1\,397\,088\,000 z^2 - 384\,199\,200 z + 300\,155\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ \left. e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216 z^6 - 471\,859\,200 z^5 + 811\,008\,000 z^4 + 1\,419\,264\,000 z^3 + \right.\right. $$
$$ \left.\left. 1\,397\,088\,000 z^2 - 384\,199\,200 z + 300\,155\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aai1.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{7}{2}, \frac{23}{4}; -z\right) = $$
$$ \frac{1}{12\,884\,901\,888 z^{19/4}}\left(19\left(\sqrt{\pi}\left(16\,777\,216 z^6 + 471\,859\,200 z^5 + 811\,008\,000 z^4 - 1\,419\,264\,000 z^3 + 1\,397\,088\,000 z^2 + \right.\right.\right. $$
$$ \left. 384\,199\,200 z + 300\,155\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576 z^5 + 29\,294\,592 z^4 + 45\,588\,480 z^3 - 88\,773\,120 z^2 + 82\,328\,400 z + 100\,051\,875\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left. \left(1\,048\,576 z^5 + 28\,508\,160 z^4 + 26\,910\,720 z^3 - 61\,954\,560 z^2 - 64\,033\,200 z - 300\,155\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = -\frac{5}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.aai2.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, -\frac{23}{4}; z\right) = \frac{1}{24\,111\,912\sqrt{2}\, z^{9/4}}\left(\left(-4z\left(393\,216z^3 + 12\,315\,392z^2 - 41\,665\,536z - 1\,760\,712\,525\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\right.\right. $$
$$ \left(196\,608z^3 + 1\,915\,648z^2 - 310\,195\,600z - 2\,934\,520\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left.\left(1\,572\,864z^4 + 52\,581\,376z^3 + 492\,211\,200z^2 + 8\,565\,628\,500z + 44\,017\,813\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aai3.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, -\frac{23}{4}; -z\right) = \frac{1}{24\,111\,912\sqrt{2}\, z^{9/4}}\left(\left(-4z\left(393\,216z^3 - 12\,315\,392z^2 - 41\,665\,536z + 1\,760\,712\,525\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\right.\right. $$
$$ \left(196\,608z^3 - 1\,915\,648z^2 - 310\,195\,600z + 2\,934\,520\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left.\left(-1\,572\,864z^4 + 52\,581\,376z^3 - 492\,211\,200z^2 + 8\,565\,628\,500z - 44\,017\,813\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aai4.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, -\frac{21}{4}; z\right) = \frac{1}{254\,592\, z^{7/2}}\left(5\left(2\sqrt{z}\,\left(1024z^3 + 238\,464z^2 + 4\,543\,236z + 10\,106\,775\right)\cosh\left(2\sqrt{z}\right) - \right.\right. $$
$$ \left.\left.23\left(2048z^3 + 117\,504z^2 + 783\,432z + 439\,425\right)\sinh\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.aai5.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{1}{254\,592\, z^{7/2}}\left(5\left(2\sqrt{z}\,\left(1024z^3 - 238\,464z^2 + 4\,543\,236z - 10\,106\,775\right)\cos\left(2\sqrt{z}\right) - \right.\right. $$
$$ \left.\left.23\left(2048z^3 - 117\,504z^2 + 783\,432z - 439\,425\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.aai6.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, -\frac{19}{4}; z\right) = \frac{1}{3\,145\,032\sqrt{2}\, z^{9/4}}\left(\left(-4z\left(65\,536z^3 + 1\,708\,032z^2 - 418\,896z - 142\,760\,475\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 12\sqrt{z}\,\left(32\,768z^3 + 748\,928z^2 - 19\,227\,000z - 237\,934\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left.\left(262\,144z^4 + 7\,028\,736z^3 + 35\,006\,400z^2 + 605\,650\,500z + 3\,569\,011\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aai7.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{3\,145\,032\sqrt{2}\, z^{9/4}}\left(\left(-4z\left(65\,536z^3 - 1\,708\,032z^2 - 418\,896z + 142\,760\,475\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 12\sqrt{z}\,\left(32\,768z^3 - 748\,928z^2 - 19\,227\,000z + 237\,934\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left.\left(-262\,144z^4 + 7\,028\,736z^3 - 35\,006\,400z^2 + 605\,650\,500z - 3\,569\,011\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aai8.01

$${}_1F_2\left(-\frac{5}{4};\frac{9}{2},-\frac{17}{4};z\right)=$$

$$-\frac{1}{84\,864\,z^{7/2}}\left(35\left(\left(512\,z^3+64\,032\,z^2+506\,736\,z+288\,765\right)\sinh\left(2\sqrt{z}\right)-138\sqrt{z}\left(64\,z^2+1764\,z+4185\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aai9.01

$${}_1F_2\left(-\frac{5}{4};\frac{9}{2},-\frac{17}{4};-z\right)=$$

$$-\frac{1}{84\,864\,z^{7/2}}\left(35\left(138\sqrt{z}\left(64\,z^2-1764\,z+4185\right)\cos\left(2\sqrt{z}\right)+\left(512\,z^3-64\,032\,z^2+506\,736\,z-288\,765\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aaia.01

$${}_1F_2\left(-\frac{5}{4};\frac{9}{2},-\frac{15}{4};z\right)=\frac{1}{1\,158\,696\sqrt{2}\,z^{9/4}}\left(\left(-4\,z\left(32\,768\,z^3+659\,456\,z^2+627\,312\,z-30\,282\,525\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(16\,384\,z^3+344\,064\,z^2-2\,475\,200\,z-50\,470\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(131\,072\,z^4+2\,736\,128\,z^3+7\,425\,600\,z^2+104\,422\,500\,z+757\,063\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaib.01

$${}_1F_2\left(-\frac{5}{4};\frac{9}{2},-\frac{15}{4};-z\right)=-\frac{1}{1\,158\,696\sqrt{2}\,z^{9/4}}\left(\left(4\,z\left(32\,768\,z^3-659\,456\,z^2+627\,312\,z+30\,282\,525\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(16\,384\,z^3-344\,064\,z^2-2\,475\,200\,z+50\,470\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(131\,072\,z^4-2\,736\,128\,z^3+7\,425\,600\,z^2-104\,422\,500\,z+757\,063\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaic.01

$${}_1F_2\left(-\frac{5}{4};\frac{9}{2},-\frac{13}{4};z\right)=\frac{35\left(2\sqrt{z}\left(64\,z^2+3588\,z+9315\right)\cosh\left(2\sqrt{z}\right)-3\left(512\,z^2+5336\,z+3105\right)\sinh\left(2\sqrt{z}\right)\right)}{4992\,z^{7/2}}$$

07.22.03.aaid.01

$${}_1F_2\left(-\frac{5}{4};\frac{9}{2},-\frac{13}{4};-z\right)=-\frac{35\left(2\sqrt{z}\left(64\,z^2-3588\,z+9315\right)\cos\left(2\sqrt{z}\right)-3\left(512\,z^2-5336\,z+3105\right)\sin\left(2\sqrt{z}\right)\right)}{4992\,z^{7/2}}$$

07.22.03.aaie.01

$${}_1F_2\left(-\frac{5}{4};\frac{9}{2},-\frac{11}{4};z\right)=\frac{1}{386\,232\sqrt{2}\,z^{9/4}}$$
$$\left(\left(-4\,z\left(16\,384\,z^3+232\,448\,z^2+233\,856\,z-5\,221\,125\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(8192\,z^3+123\,392\,z^2-61\,880\,z-8\,701\,875\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(65\,536\,z^4+978\,944\,z^3+1\,697\,280\,z^2+12\,530\,700\,z+130\,528\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaif.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, -\frac{11}{4}; -z\right) = -\frac{1}{386\,232\sqrt{2}\, z^{9/4}} \left(\left(4z\left(16\,384z^3 - 232\,448z^2 + 233\,856z + 5\,221\,125\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(8192z^3 - 123\,392z^2 - 61\,880z + 8\,701\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(65\,536z^4 - 978\,944z^3 + 1\,697\,280z^2 - 12\,530\,700z + 130\,528\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaig.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, -\frac{9}{4}; z\right) = -\frac{35\left(\left(32z^2 + 576z + 345\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,(116z + 345)\cosh\left(2\sqrt{z}\right)\right)}{384\, z^{7/2}} $$

07.22.03.aaih.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, -\frac{9}{4}; -z\right) = \frac{35\left(2\sqrt{z}\,(116z - 345)\cos\left(2\sqrt{z}\right) + \left(32z^2 - 576z + 345\right)\sin\left(2\sqrt{z}\right)\right)}{384\, z^{7/2}} $$

07.22.03.aaii.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, -\frac{7}{4}; z\right) = \frac{1}{105\,336\sqrt{2}\, z^{9/4}} \left(\left(-4z\left(8192z^3 + 67\,584z^2 + 34\,848z - 626\,535\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(4096z^3 + 37\,376z^2 + 53\,040z - 1\,044\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(32\,768z^4 + 294\,912z^3 + 374\,400z^2 + 596\,700z + 15\,663\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaij.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, -\frac{7}{4}; -z\right) = \frac{1}{105\,336\sqrt{2}\, z^{9/4}} \left(\left(-4z\left(8192z^3 - 67\,584z^2 + 34\,848z + 626\,535\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(4096z^3 - 37\,376z^2 + 53\,040z + 1\,044\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-32\,768z^4 + 294\,912z^3 - 374\,400z^2 + 596\,700z - 15\,663\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaik.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, -\frac{5}{4}; z\right) = \frac{105\left(2\sqrt{z}\,(4z + 15)\cosh\left(2\sqrt{z}\right) - 3\,(8z + 5)\sinh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}} $$

07.22.03.aail.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, -\frac{5}{4}; -z\right) = \frac{105\left(2\sqrt{z}\,(4z - 15)\cos\left(2\sqrt{z}\right) + 3\,(5 - 8z)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}} $$

07.22.03.aaim.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{9}{2},-\frac{3}{4};z\right)=\frac{1}{15\,048\sqrt{2}\,z^{9/4}}$$
$$\left(\left(-4z\left(4096z^3+9472z^2-816z-29\,835\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(2048z^3+6528z^2+6760z-49\,725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(16\,384z^4+50\,176z^3+41\,280z^2-35\,100z+745\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aain.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{9}{2},-\frac{3}{4};-z\right)=$$
$$-\frac{1}{15\,048\sqrt{2}\,z^{9/4}}\left(\left(4z\left(4096z^3-9472z^2-816z+29\,835\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(2048z^3-6528z^2+6760z+49\,725\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,384z^4-50\,176z^3+41\,280z^2+35\,100z+745\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaio.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{9}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{160\,512z^{7/2}}\left(e^{-2\sqrt{z}}\left(32\,768e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}-32\,768e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{19/4}+32\,768e^{4\sqrt{z}}z^{9/2}+\right.\right.$$
$$32\,768z^{9/2}+8192e^{4\sqrt{z}}z^4-8192z^4+6144e^{4\sqrt{z}}z^{7/2}+6144z^{7/2}+7680e^{4\sqrt{z}}z^3-7680z^3+$$
$$13\,440e^{4\sqrt{z}}z^{5/2}+13\,440z^{5/2}+30\,240e^{4\sqrt{z}}z^2-30\,240z^2+83\,160e^{4\sqrt{z}}z^{3/2}+83\,160z^{3/2}-$$
$$\left.\left.388\,080e^{4\sqrt{z}}z+388\,080z+519\,750e^{4\sqrt{z}}\sqrt{z}+519\,750\sqrt{z}-259\,875e^{4\sqrt{z}}+259\,875\right)\right)$$

07.22.03.aaip.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{9}{2},-\frac{1}{4};-z\right)=$$
$$\frac{1}{80\,256z^{7/2}}\left(-65\,536\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}-2\left(16\,384z^4-3072z^3+6720z^2-41\,580z+259\,875\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(-8192z^4+7680z^3-30\,240z^2-388\,080z+259\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aaiq.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{9}{2},\frac{1}{4};z\right)=\frac{1}{5016\sqrt{2}\,z^{9/4}}$$
$$\left(\left(4z\left(2048z^3-7424z^2+1872z+1755\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(1024z^3-2816z^2-800z+2925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-8192z^4+23\,552z^3+6720z^2-8100z+43\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aair.01

$${}_1F_2\left(-\frac{5}{4};\frac{9}{2},\frac{1}{4};-z\right)=\frac{1}{5016\sqrt{2}\,z^{9/4}}$$
$$\left(\left(4z\left(2048z^3+7424z^2+1872z-1755\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(1024z^3+2816z^2-800z-2925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(8192z^4+23552z^3-6720z^2-8100z-43875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aais.01

$${}_1F_2\left(-\frac{5}{4};\frac{9}{2},\frac{3}{4};z\right)=\frac{1}{160512z^{7/2}}$$
$$\left(e^{-2\sqrt{z}}\left(-8192e^{4\sqrt{z}}z^{9/2}-8192z^{9/2}-2048e^{4\sqrt{z}}z^4+2048z^4-512e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-95)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+\right.\right.$$
$$512e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-95)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+47104e^{4\sqrt{z}}z^{7/2}+47104z^{7/2}+10240e^{4\sqrt{z}}z^3-$$
$$10240z^3+5760e^{4\sqrt{z}}z^{5/2}+5760z^{5/2}+3840e^{4\sqrt{z}}z^2-3840z^2-840e^{4\sqrt{z}}z^{3/2}-840z^{3/2}-$$
$$\left.\left.22680e^{4\sqrt{z}}z+22680z+34650e^{4\sqrt{z}}\sqrt{z}+34650\sqrt{z}-17325e^{4\sqrt{z}}+17325\right)\right)$$

07.22.03.aait.01

$${}_1F_2\left(-\frac{5}{4};\frac{9}{2},\frac{3}{4};-z\right)=$$
$$\frac{1}{80256z^{7/2}}\left(1024\sqrt{\pi}\,(16z+95)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+2\left(4096z^4+23552z^3-2880z^2-420z-17325\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.$$
$$\left.\left(2048z^4+10240z^3-3840z^2-22680z+17325\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aaiu.01

$${}_1F_2\left(-\frac{5}{4};\frac{9}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{15048\sqrt{2}\,z^{9/4}}\left(\left(4z\left(1024z^3-9792z^2+7776z-405\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(512z^3-4448z^2+360z-675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-4096z^4+36096z^3-5760z^2+4500z-10125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaiv.01

$${}_1F_2\left(-\frac{5}{4};\frac{9}{2},\frac{5}{4};-z\right)=\frac{1}{15048\sqrt{2}\,z^{9/4}}$$
$$\left(\left(4z\left(1024z^3+9792z^2+7776z+405\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(512z^3+4448z^2+360z+675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^4+36096z^3+5760z^2+4500z+10125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaiw.01

$${}_1F_2\left(-\frac{5}{4};\frac{9}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{53\,504\,z^{7/2}}\left(e^{-2\sqrt{z}}\left(-1024\,e^{4\sqrt{z}}\,z^{9/2}-1024\,z^{9/2}-256\,e^{4\sqrt{z}}\,z^4+256\,z^4+11\,968\,e^{4\sqrt{z}}\,z^{7/2}+11\,968\,z^{7/2}+\right.\right.$$
$$2800\,e^{4\sqrt{z}}\,z^3-2800\,z^3-4\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-3040\,z+1425\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+$$
$$4\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-3040\,z+1425\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}-3840\,e^{4\sqrt{z}}\,z^{5/2}-3840\,z^{5/2}+480\,e^{4\sqrt{z}}\,z^2-$$
$$\left.\left.480\,z^2+1320\,e^{4\sqrt{z}}\,z^{3/2}+1320\,z^{3/2}+1440\,e^{4\sqrt{z}}\,z-1440\,z-3150\,e^{4\sqrt{z}}\,\sqrt{z}-3150\,\sqrt{z}+1575\,e^{4\sqrt{z}}-1575\right)\right)$$

07.22.03.aaix.01

$${}_1F_2\left(-\frac{5}{4};\frac{9}{2},\frac{7}{4};-z\right)=\frac{1}{26\,752\,z^{7/2}}\left(8\sqrt{\pi}\,\left(256\,z^2+3040\,z+1425\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+\right.$$
$$\left.2\left(512\,z^4+5984\,z^3+1920\,z^2+660\,z+1575\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(256\,z^4+2800\,z^3-480\,z^2+1440\,z-1575\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aaiy.01

$${}_1F_2\left(-\frac{5}{4};\frac{9}{2},\frac{9}{4};z\right)=\frac{1}{15\,048\,\sqrt{2}\,z^{9/4}}$$
$$\left(\left(4\,z\left(512\,z^3-7936\,z^2+10\,158\,z+225\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\,\sqrt{z}\,\left(256\,z^3-3744\,z^2+1985\,z+375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-2048\,z^4+30\,208\,z^3-18\,840\,z^2-6300\,z+5625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaiz.01

$${}_1F_2\left(-\frac{5}{4};\frac{9}{2},\frac{9}{4};-z\right)=\frac{1}{15\,048\,\sqrt{2}\,z^{9/4}}$$
$$\left(\left(4\,z\left(512\,z^3+7936\,z^2+10\,158\,z-225\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\,\sqrt{z}\,\left(256\,z^3+3744\,z^2+1985\,z-375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(2048\,z^4+30\,208\,z^3+18\,840\,z^2-6300\,z-5625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aaj0.01

$${}_1F_2\left(-\frac{5}{4};\frac{9}{2},\frac{11}{4};z\right)=$$
$$-\frac{1}{2\,568\,192\,z^{7/2}}\left(7\,e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3-72\,960\,z^2+68\,400\,z+47\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}-e^{2\sqrt{z}}\,\sqrt{2\pi}\right.\right.$$
$$\left(4096\,z^3-72\,960\,z^2+68\,400\,z+47\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+4\left(1024\,z^{9/2}-256\,z^4-18\,048\,z^{7/2}+\right.$$
$$4320\,z^3+14\,100\,z^{5/2}-945\,z^2+10\,080\,z^{3/2}+1440\,z-5400\,\sqrt{z}+e^{4\sqrt{z}}\left(1024\,z^{9/2}+256\,z^4-\right.$$
$$\left.\left.\left.\left.18\,048\,z^{7/2}-4320\,z^3+14\,100\,z^{5/2}+945\,z^2+10\,080\,z^{3/2}-1440\,z-5400\,\sqrt{z}+2700\right)-2700\right)\right)\right)$$

07.22.03.aaj1.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, \frac{11}{4}; -z\right) = \frac{1}{642\,048\, z^{7/2}} \left(7\left(\sqrt{\pi}\,\left(4096 z^3 + 72\,960 z^2 + 68\,400 z - 47\,025\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} + 2\left(4\sqrt{z}\,\left(256 z^4 + 4512 z^3 + 3525 z^2 - 2520 z - 1350\right)\right.\right.\right. \left.\left.\left. \cos\left(2\sqrt{z}\right) + \left(256 z^4 + 4320 z^3 + 945 z^2 + 1440 z + 2700\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aaj2.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, \frac{13}{4}; z\right) = \frac{1}{93\,632\sqrt{2}\, z^{9/4}} \left(\left(2 z\left(4096 z^3 - 87\,808 z^2 + 154\,224 z + 60\,795\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\,\left(4096 z^3 - 84\,224 z^2 + 83\,440 z + 92\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right. \left.\left. 2\left(4096 z^4 - 84\,736 z^3 + 92\,400 z^2 + 102\,375 z + 31\,500\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaj3.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, \frac{13}{4}; -z\right) = \frac{1}{93\,632\sqrt{2}\, z^{9/4}} \left(\left(2 z\left(4096 z^3 + 87\,808 z^2 + 154\,224 z - 60\,795\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\,\left(4096 z^3 + 84\,224 z^2 + 83\,440 z - 92\,925\right)\right.\right. \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\left(4096 z^4 + 84\,736 z^3 + 92\,400 z^2 - 102\,375 z + 31\,500\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaj4.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, \frac{15}{4}; z\right) = -\frac{1}{59\,768\,832\, z^{7/2}} \left(7 e^{-2\sqrt{z}}\left(4\left(16\,384 z^{9/2} - 4096 z^4 - 386\,048 z^{7/2} + 93\,440 z^3 + 480\,960 z^{5/2} - 60\,720 z^2 + 736\,980 z^{3/2} - \right.\right.\right. \left.\left.\left. 92\,385 z + 460\,800\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^{9/2} + 4096 z^4 - 386\,048 z^{7/2} - 93\,440 z^3 + \right.\right.\right. \left.\left.\left. 480\,960 z^{5/2} + 60\,720 z^2 + 736\,980 z^{3/2} + 92\,385 z + 460\,800\sqrt{z} - 230\,400\right) + 230\,400\right) + \right. e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(65\,536 z^4 - 1\,556\,480 z^3 + 2\,188\,800 z^2 + 3\,009\,600 z + 2\,304\,225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - \left. e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(65\,536 z^4 - 1\,556\,480 z^3 + 2\,188\,800 z^2 + 3\,009\,600 z + 2\,304\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aaj5.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, \frac{15}{4}; -z\right) = \frac{1}{14\,942\,208\, z^{7/2}}\left(7\left(\sqrt{\pi}\; z^{3/4}\left(65\,536\, z^4 + 1\,556\,480\, z^3 + 2\,188\,800\, z^2 - 3\,009\,600\, z + 2\,304\,225\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\left(4\sqrt{z}\,\left(4096\, z^4 + 96\,512\, z^3 + 120\,240\, z^2 - 184\,245\, z + 115\,200\right)\cos\left(2\sqrt{z}\right) + \left(4096\, z^4 + 93\,440\, z^3 + 60\,720\, z^2 - 92\,385\, z - 230\,400\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aaj6.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, \frac{17}{4}; z\right) = \frac{1}{26\,966\,016\sqrt{2}\; z^{11/4}}\left(13\left(2\sqrt{z}\,\left(65\,536\, z^4 - 1\,794\,048\, z^3 + 3\,999\,744\, z^2 + 3\,558\,240\, z + 2\,962\,575\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(65\,536\, z^4 - 1\,736\,704\, z^3 + 2\,526\,720\, z^2 + 4\,838\,400\, z + 4\,937\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(65\,536\, z^4 - 1\,744\,896\, z^3 + 2\,718\,720\, z^2 + 4\,989\,600\, z + 5\,740\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaj7.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, \frac{17}{4}; -z\right) = \frac{1}{26\,966\,016\sqrt{2}\; z^{11/4}}\left(13\left(2\sqrt{z}\,\left(65\,536\, z^4 + 1\,794\,048\, z^3 + 3\,999\,744\, z^2 - 3\,558\,240\, z + 2\,962\,575\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(65\,536\, z^4 + 1\,736\,704\, z^3 + 2\,526\,720\, z^2 - 4\,838\,400\, z + 4\,937\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(65\,536\, z^4 + 1\,744\,896\, z^3 + 2\,718\,720\, z^2 - 4\,989\,600\, z + 5\,740\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aaj8.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, \frac{19}{4}; z\right) = -\frac{1}{1\,275\,068\,416\, z^{15/4}}\left(7\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(262\,144\, z^{9/2} - 65\,536\, z^4 - 7\,733\,248\, z^{7/2} + 1\,884\,160\, z^3 + 13\,240\,320\, z^{5/2} - 2\,065\,920\, z^2 + 30\,305\,280\, z^{3/2} - 5\,924\,160\, z + 46\,070\,100\sqrt{z} + e^{4\sqrt{z}}\left(262\,144\, z^{9/2} + 65\,536\, z^4 - 7\,733\,248\, z^{7/2} - 1\,884\,160\, z^3 + 13\,240\,320\, z^{5/2} + 2\,065\,920\, z^2 + 30\,305\,280\, z^{3/2} + 5\,924\,160\, z + 46\,070\,100\sqrt{z} + 2\,311\,425\right) - 2\,311\,425\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(1\,048\,576\, z^5 - 31\,129\,600\, z^4 + 58\,368\,000\, z^3 + 120\,384\,000\, z^2 + 184\,338\,000\, z + 76\,039\,425\right) \operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\,\left(1\,048\,576\, z^5 - 31\,129\,600\, z^4 + 58\,368\,000\, z^3 + 120\,384\,000\, z^2 + 184\,338\,000\, z + 76\,039\,425\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right) $$

07.22.03.aaj9.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, \frac{19}{4}; -z\right) = \frac{1}{318\,767\,104\, z^{15/4}} $$

$$ \left(7\left(\sqrt{\pi}\,\left(1\,048\,576\, z^5 + 31\,129\,600\, z^4 + 58\,368\,000\, z^3 - 120\,384\,000\, z^2 + 184\,338\,000\, z - 76\,039\,425\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right. $$

$$ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(65\,536\, z^4 + 1\,933\,312\, z^3 + 3\,310\,080\, z^2 - 7\,576\,320\, z + 11\,517\,525\right)\cos\left(2\sqrt{z}\right) + \right. $$

$$ \left.\left.\left.\left(65\,536\, z^4 + 1\,884\,160\, z^3 + 2\,065\,920\, z^2 - 5\,924\,160\, z + 2\,311\,425\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aaja.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, \frac{21}{4}; z\right) = \frac{1}{9\,492\,037\,632\,\sqrt{2}\, z^{15/4}} $$

$$ \left(221\left(2\sqrt{z}\,\left(1\,048\,576\, z^5 - 34\,930\,688\, z^4 + 94\,347\,264\, z^3 + 136\,604\,160\, z^2 + 226\,472\,400\, z + 38\,513\,475\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$

$$ 3\left(1\,048\,576\, z^5 - 34\,013\,184\, z^4 + 65\,331\,200\, z^3 + 174\,451\,200\, z^2 + 331\,808\,400\, z + 64\,189\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - $$

$$ 2\sqrt{z}\,\left(1\,048\,576\, z^5 - 34\,144\,256\, z^4 + 69\,181\,440\, z^3 + 176\,140\,800\, z^2 + 341\,787\,600\, z + 192\,567\,375\right) $$

$$ \left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aajb.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, \frac{21}{4}; -z\right) = \frac{1}{9\,492\,037\,632\,\sqrt{2}\, z^{15/4}} $$

$$ \left(221\left(2\sqrt{z}\,\left(1\,048\,576\, z^5 + 34\,930\,688\, z^4 + 94\,347\,264\, z^3 - 136\,604\,160\, z^2 + 226\,472\,400\, z - 38\,513\,475\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$

$$ 3\left(1\,048\,576\, z^5 + 34\,013\,184\, z^4 + 65\,331\,200\, z^3 - 174\,451\,200\, z^2 + 331\,808\,400\, z - 64\,189\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\,\left(1\,048\,576\, z^5 + 34\,144\,256\, z^4 + 69\,181\,440\, z^3 - 176\,140\,800\, z^2 + 341\,787\,600\, z - 192\,567\,375\right) $$

$$ \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aajc.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, \frac{23}{4}; z\right) = $$

$$ -\frac{1}{25\,769\,803\,776\,z^{19/4}}\left(7\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304\,z^{11/2} - 1\,048\,576\,z^5 - 148\,635\,648\,z^{9/2} + 36\,372\,480\,z^4 + 323\,911\,680\,z^{7/2} - \right.\right.\right. $$

$$ 56\,401\,920\,z^3 + 978\,094\,080\,z^{5/2} - 219\,548\,160\,z^2 + 2\,286\,792\,000\,z^{3/2} - 420\,843\,600\,z + $$

$$ 1\,520\,788\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304\,z^{11/2} + 1\,048\,576\,z^5 - 148\,635\,648\,z^{9/2} - \right. $$

$$ 36\,372\,480\,z^4 + 323\,911\,680\,z^{7/2} + 56\,401\,920\,z^3 + 978\,094\,080\,z^{5/2} + 219\,548\,160\,z^2 + $$

$$ \left.\left.\left.\left. 2\,286\,792\,000\,z^{3/2} + 420\,843\,600\,z + 1\,520\,788\,500\sqrt{z} - 1\,140\,591\,375\right) + 1\,140\,591\,375\right) + \right. $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6 - 597\,688\,320\,z^5 + 1\,400\,832\,000\,z^4 + 3\,852\,288\,000\,z^3 + \right. $$

$$ \left. 8\,848\,224\,000\,z^2 + 7\,299\,784\,800\,z - 1\,140\,591\,375\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$

$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216\,z^6 - 597\,688\,320\,z^5 + 1\,400\,832\,000\,z^4 + 3\,852\,288\,000\,z^3 + \right. $$

$$ \left.\left. 8\,848\,224\,000\,z^2 + 7\,299\,784\,800\,z - 1\,140\,591\,375\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Bigg) $$

07.22.03.aajd.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) = $$

$$ \frac{1}{6\,442\,450\,944\,z^{19/4}}\left(7\left(\sqrt{\pi}\left(16\,777\,216\,z^6 + 597\,688\,320\,z^5 + 1\,400\,832\,000\,z^4 - 3\,852\,288\,000\,z^3 + 8\,848\,224\,000\,z^2 - \right.\right.\right. $$

$$ \left. 7\,299\,784\,800\,z - 1\,140\,591\,375\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z} $$

$$ \left(4\sqrt{z}\left(1\,048\,576\,z^5 + 37\,158\,912\,z^4 + 80\,977\,920\,z^3 - 244\,523\,520\,z^2 + 571\,698\,000\,z - 380\,197\,125\right)\cos\left(2\sqrt{z}\right) + \right. $$

$$ \left.\left.\left. \left(1\,048\,576\,z^5 + 36\,372\,480\,z^4 + 56\,401\,920\,z^3 - 219\,548\,160\,z^2 + 420\,843\,600\,z + 1\,140\,591\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = -\frac{5}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.aaje.01

$$ {}_1F_2\left(-\frac{5}{4}; \frac{11}{2}, -\frac{23}{4}; z\right) = $$

$$ -\frac{1}{739\,431\,968\sqrt{2}\,z^{13/4}}\left(3\left(4\,z\left(3\,145\,728\,z^4 + 122\,290\,176\,z^3 + 754\,130\,432\,z^2 + 31\,301\,556\,000\,z + 505\,324\,494\,675\right)\right.\right. $$

$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4\,718\,592\,z^4 + 212\,175\,872\,z^3 + 10\,620\,403\,200\,z^2 + 381\,096\,444\,300\,z + 2\,526\,622\,473\,375\right) $$

$$ I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-12\,582\,912\,z^5 - 498\,597\,888\,z^4 - 466\,969\,600\,z^3 + \right. $$

$$ \left.\left. 184\,086\,988\,800\,z^2 + 3\,028\,425\,543\,000\,z + 12\,633\,112\,366\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.aajf.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{23}{4};-z\right)=$$
$$-\frac{1}{739\,431\,968\sqrt{2}\,z^{13/4}}\left(3\left(4z\left(3\,145\,728z^4-122\,290\,176z^3+754\,130\,432z^2-31\,301\,556\,000z+505\,324\,494\,675\right)\right.\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4\,718\,592z^4-212\,175\,872z^3+10\,620\,403\,200z^2-381\,096\,444\,300z+2\,526\,622\,473\,375\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(12\,582\,912z^5-498\,597\,888z^4+466\,969\,600z^3+\right.$$
$$\left.\left.\left.184\,086\,988\,800z^2-3\,028\,425\,543\,000z+12\,633\,112\,366\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aajg.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{113\,152\,z^{9/2}}\left(5\left(\left(4096z^4+1\,340\,928z^3+41\,742\,864z^2+219\,712\,500z+119\,963\,025\right)\sinh\left(2\sqrt{z}\right)-54\right.\right.$$
$$\left.\left.\sqrt{z}\left(2048z^3+174\,592z^2+2\,213\,400z+4\,443\,075\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aajh.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{21}{4};-z\right)=\frac{1}{113\,152\,z^{9/2}}\left(5\left(54\sqrt{z}\left(2048z^3-174\,592z^2+2\,213\,400z-4\,443\,075\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^4-1\,340\,928z^3+41\,742\,864z^2-219\,712\,500z+119\,963\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aaji.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{32\,149\,216\sqrt{2}\,z^{13/4}}\left(\left(-4z\left(524\,288z^4+16\,613\,376z^3+53\,300\,352z^2+1\,649\,676\,600z+36\,974\,963\,025\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\right.\right.$$
$$\left(262\,144z^4+8\,536\,064z^3+172\,747\,200z^2+8\,227\,233\,300z+61\,624\,938\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(2\,097\,152z^5+$$
$$\left.\left.68\,026\,368z^4+191\,270\,400z^3-10\,751\,738\,400z^2-205\,575\,084\,000z-924\,374\,075\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aajj.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{19}{4};-z\right)=$$
$$-\frac{1}{32\,149\,216\sqrt{2}\,z^{13/4}}\left(\left(4z\left(524\,288z^4-16\,613\,376z^3+53\,300\,352z^2-1\,649\,676\,600z+36\,974\,963\,025\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(262\,144z^4-8\,536\,064z^3+172\,747\,200z^2-8\,227\,233\,300z+61\,624\,938\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(2\,097\,152z^5-68\,026\,368z^4+191\,270\,400z^3+10\,751\,738\,400z^2-205\,575\,084\,000z+924\,374\,075\,625\right)$$
$$\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aajk.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{17}{4};z\right)=-\frac{1}{113\,152\,z^{9/2}}\left(105\left(2\sqrt{z}\,\left(512\,z^3+95\,904\,z^2+1\,473\,120\,z+3\,075\,975\right)\cosh\left(2\sqrt{z}\right)-\left(21\,248\,z^3+966\,384\,z^2+5\,574\,420\,z+3\,075\,975\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aajl.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{17}{4};-z\right)=\frac{1}{113\,152\,z^{9/2}}\left(105\left(2\sqrt{z}\,\left(512\,z^3-95\,904\,z^2+1\,473\,120\,z-3\,075\,975\right)\cos\left(2\sqrt{z}\right)+\left(-21\,248\,z^3+966\,384\,z^2-5\,574\,420\,z+3\,075\,975\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aajm.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{15}{4};z\right)=\frac{1}{11\,844\,448\sqrt{2}\,z^{13/4}}\left(\left(-4\,z\left(262\,144\,z^4+6\,422\,528\,z^3+13\,203\,456\,z^2+161\,506\,800\,z+6\,995\,263\,275\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(131\,072\,z^4+3\,325\,952\,z^3+20\,372\,800\,z^2+1\,305\,513\,300\,z+11\,658\,772\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,048\,576\,z^5+26\,476\,544\,z^4+73\,113\,600\,z^3-1\,514\,822\,400\,z^2-35\,127\,729\,000\,z-174\,881\,581\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aajn.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{15}{4};-z\right)=-\frac{1}{11\,844\,448\sqrt{2}\,z^{13/4}}\left(\left(4\,z\left(262\,144\,z^4-6\,422\,528\,z^3+13\,203\,456\,z^2-161\,506\,800\,z+6\,995\,263\,275\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(131\,072\,z^4-3\,325\,952\,z^3+20\,372\,800\,z^2-1\,305\,513\,300\,z+11\,658\,772\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,048\,576\,z^5-26\,476\,544\,z^4+73\,113\,600\,z^3+1\,514\,822\,400\,z^2-35\,127\,729\,000\,z+174\,881\,581\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aajo.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{13}{4};z\right)=\frac{1}{6656\,z^{9/2}}\left(105\left(\left(256\,z^3+23\,952\,z^2+157\,140\,z+87\,885\right)\sinh\left(2\sqrt{z}\right)-30\sqrt{z}\,\left(128\,z^2+2664\,z+5859\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aajp.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{13}{4};-z\right)=-\frac{1}{6656\,z^{9/2}}\left(105\left(30\sqrt{z}\,\left(128\,z^2-2664\,z+5859\right)\cos\left(2\sqrt{z}\right)+\left(256\,z^3-23\,952\,z^2+157\,140\,z-87\,885\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aajq.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{11}{4};z\right)=$$
$$-\frac{1}{11\,844\,448\sqrt{2}\,z^{13/4}}\left(3\left(4z\left(131\,072z^4+2\,269\,184z^3+3\,304\,448z^2-4\,641\,000z+1\,059\,888\,375\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(65\,536z^4+1\,191\,936z^3+2\,741\,760z^2+149\,285\,500z+1\,766\,480\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-524\,288z^5-9\,469\,952z^4-20\,541\,440z^3+159\,650\,400z^2+4\,594\,590\,000z+26\,497\,209\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aajr.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{11}{4};-z\right)=$$
$$-\frac{1}{11\,844\,448\sqrt{2}\,z^{13/4}}\left(3\left(4z\left(131\,072z^4-2\,269\,184z^3+3\,304\,448z^2+4\,641\,000z+1\,059\,888\,375\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(65\,536z^4-1\,191\,936z^3+2\,741\,760z^2-149\,285\,500z+1\,766\,480\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(524\,288z^5-9\,469\,952z^4+20\,541\,440z^3+159\,650\,400z^2-4\,594\,590\,000z+26\,497\,209\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aajs.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{9}{4};z\right)=-\frac{105\left(2\sqrt{z}\left(32z^2+1200z+2835\right)\cosh\left(2\sqrt{z}\right)-3\left(208z^2+1660z+945\right)\sinh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.aajt.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{9}{4};-z\right)=-\frac{105\left(2\sqrt{z}\left(32z^2-1200z+2835\right)\cos\left(2\sqrt{z}\right)-3\left(208z^2-1660z+945\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.aaju.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{1\,076\,768\sqrt{2}\,z^{13/4}}\left(\left(-4z\left(65\,536z^4+663\,552z^3+562\,944z^2-4\,455\,360z+109\,643\,625\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\right.\right.$$
$$\sqrt{z}\left(32\,768z^4+360\,448z^3+620\,160z^2+8\,817\,900z+182\,739\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(262\,144z^5+2\,850\,816z^4+4\,500\,480z^3-12\,729\,600z^2-375\,921\,000z-2\,741\,090\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aajv.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{7}{4};-z\right)= $$
$$ -\frac{1}{1\,076\,768\sqrt{2}\,z^{13/4}}\left(\left(4z\left(65\,536z^4-663\,552z^3+562\,944z^2+4\,455\,360z+109\,643\,625\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 12\sqrt{z}\left(32\,768z^4-360\,448z^3+620\,160z^2-8\,817\,900z+182\,739\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.\left(262\,144z^5-2\,850\,816z^4+4\,500\,480z^3+12\,729\,600z^2-375\,921\,000z+2\,741\,090\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aajw.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{5}{4};z\right)=\frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.aajx.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{5}{4};-z\right)=\frac{945\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.aajy.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{3}{4};z\right)=\frac{1}{153\,824\sqrt{2}\,z^{13/4}}\left(\left(-4z\left(32\,768z^4+96\,256z^3+16\,512z^2-397\,800z+4\,385\,745\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right. $$
$$ 12\sqrt{z}\left(16\,384z^4+62\,464z^3+74\,560z^2-13\,260z+7\,309\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.\left(131\,072z^5+483\,328z^4+483\,840z^3-767\,520z^2-9\,547\,200z-109\,643\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aajz.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{3}{4};-z\right)= $$
$$ -\frac{1}{153\,824\sqrt{2}\,z^{13/4}}\left(\left(4z\left(32\,768z^4-96\,256z^3+16\,512z^2+397\,800z+4\,385\,745\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\right.\right. $$
$$ \left(16\,384z^4-62\,464z^3+74\,560z^2+13\,260z+7\,309\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.\left(131\,072z^5-483\,328z^4+483\,840z^3+767\,520z^2-9\,547\,200z+109\,643\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aak0.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{1}{4};z\right)= $$
$$ \frac{1}{4\,922\,368\,z^{9/2}}\left(3e^{-2\sqrt{z}}\left(262\,144e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{23/4}-262\,144e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{23/4}+\right.\right. $$
$$ 262\,144e^{4\sqrt{z}}z^{11/2}+262\,144z^{11/2}+65\,536e^{4\sqrt{z}}z^5-65\,536z^5+49\,152e^{4\sqrt{z}}z^{9/2}+49\,152z^{9/2}+ $$
$$ 61\,440e^{4\sqrt{z}}z^4-61\,440z^4+107\,520e^{4\sqrt{z}}z^{7/2}+107\,520z^{7/2}+241\,920e^{4\sqrt{z}}z^3-241\,920z^3+ $$
$$ 665\,280e^{4\sqrt{z}}z^{5/2}+665\,280z^{5/2}+2\,162\,160e^{4\sqrt{z}}z^2-2\,162\,160z^2-22\,176\,000e^{4\sqrt{z}}z^{3/2}-22\,176\,000z^{3/2}+ $$
$$ \left.57\,172\,500e^{4\sqrt{z}}z-57\,172\,500z-69\,126\,750e^{4\sqrt{z}}\sqrt{z}-69\,126\,750\sqrt{z}+34\,563\,375e^{4\sqrt{z}}-34\,563\,375\right)\Big) $$

07.22.03.aak1.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},-\frac{1}{4};-z\right)=-\frac{1}{2\,461\,184\,z^{9/2}}$$
$$\left(3\left(524\,288\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{23/4}+2\left(131\,072\,z^5-24\,576\,z^4+53\,760\,z^3-332\,640\,z^2-11\,088\,000\,z+34\,563\,375\right)\right.\right.$$
$$\left.\left.\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(65\,536\,z^5-61\,440\,z^4+241\,920\,z^3-2\,162\,160\,z^2+57\,172\,500\,z-34\,563\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aak2.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{1}{4};z\right)=\frac{1}{153\,824\sqrt{2}\;z^{13/4}}\left(3\left(4\,z\left(16\,384\,z^4-69\,632\,z^3+15\,616\,z^2+34\,320\,z-208\,845\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(8192\,z^4-27\,648\,z^3-10\,560\,z^2+26\,260\,z-348\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(65\,536\,z^5-229\,376\,z^4-81\,920\,z^3+107\,520\,z^2+70\,200\,z+5\,221\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aak3.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{1}{4};-z\right)=\frac{1}{153\,824\sqrt{2}\;z^{13/4}}\left(3\left(4\,z\left(16\,384\,z^4+69\,632\,z^3+15\,616\,z^2-34\,320\,z-208\,845\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(8192\,z^4+27\,648\,z^3-10\,560\,z^2-26\,260\,z-348\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(65\,536\,z^5+229\,376\,z^4-81\,920\,z^3-107\,520\,z^2+70\,200\,z-5\,221\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aak4.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{3}{4};z\right)=$$
$$-\frac{1}{4\,922\,368\,z^{9/2}}\left(3\,e^{-2\sqrt{z}}\left(65\,536\,e^{4\sqrt{z}}\;z^{11/2}+65\,536\,z^{11/2}+16\,384\,e^{4\sqrt{z}}\;z^5-16\,384\,z^5+4096\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;(16\,z-115)\right.\right.$$
$$\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{19/4}-4096\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;(16\,z-115)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{19/4}-458\,752\,e^{4\sqrt{z}}\;z^{9/2}-$$
$$458\,752\,z^{9/2}-102\,400\,e^{4\sqrt{z}}\;z^4+102\,400\,z^4-61\,440\,e^{4\sqrt{z}}\;z^{7/2}-61\,440\,z^{7/2}-49\,920\,e^{4\sqrt{z}}\;z^3+$$
$$49\,920\,z^3-26\,880\,e^{4\sqrt{z}}\;z^{5/2}-26\,880\,z^{5/2}+105\,840\,e^{4\sqrt{z}}\;z^2-105\,840\,z^2+831\,600\,e^{4\sqrt{z}}\;z^{3/2}+831\,600\,z^{3/2}-$$
$$\left.\left.2\,841\,300\,e^{4\sqrt{z}}\;z+2\,841\,300\,z+3\,638\,250\,e^{4\sqrt{z}}\;\sqrt{z}+3\,638\,250\sqrt{z}-1\,819\,125\,e^{4\sqrt{z}}+1\,819\,125\right)\right)$$

07.22.03.aak5.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{3}{4};-z\right)=\frac{1}{2\,461\,184\,z^{9/2}}$$
$$\left(3\left(8192\sqrt{\pi}\;(16\,z+115)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}+2\left(32\,768\,z^5+229\,376\,z^4-30\,720\,z^3+13\,440\,z^2+415\,800\,z-1\,819\,125\right)\right.\right.$$
$$\left.\left.\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(16\,384\,z^5+102\,400\,z^4-49\,920\,z^3-105\,840\,z^2-2\,841\,300\,z+1\,819\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aak6.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{5}{4};z\right)=\frac{1}{153\,824\sqrt{2}\,z^{13/4}}\left(\left(4z\left(8192z^4-93\,696z^3+81\,408z^2-10\,440z+36\,855\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(4096z^4-43\,264z^3+5760z^2-11\,940z+61\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-32\,768z^5+350\,208z^4-76\,800z^3+67\,680z^2-97\,200z+921\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aak7.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{5}{4};-z\right)=\frac{1}{153\,824\sqrt{2}\,z^{13/4}}\left(\left(4z\left(8192z^4+93\,696z^3+81\,408z^2+10\,440z+36\,855\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(4096z^4+43\,264z^3+5760z^2+11\,940z+61\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(32\,768z^5+350\,208z^4+76\,800z^3+67\,680z^2+97\,200z+921\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aak8.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{7}{4};z\right)=$$
$$-\frac{1}{4\,922\,368z^{9/2}}\left(9e^{-2\sqrt{z}}\left(8192e^{4\sqrt{z}}z^{11/2}+8192z^{11/2}+2048e^{4\sqrt{z}}z^5-2048z^5-116\,224e^{4\sqrt{z}}z^{9/2}-116\,224z^{9/2}-\right.\right.$$
$$27\,520e^{4\sqrt{z}}z^4+27\,520z^4+32e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-3680z+2185\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}-$$
$$32e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-3680z+2185\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+51\,200e^{4\sqrt{z}}z^{7/2}+51\,200z^{7/2}-$$
$$2560e^{4\sqrt{z}}z^3+2560z^3-14\,400e^{4\sqrt{z}}z^{5/2}-14\,400z^{5/2}-24\,720e^{4\sqrt{z}}z^2+24\,720z^2-16\,800e^{4\sqrt{z}}z^{3/2}-$$
$$\left.\left.16\,800z^{3/2}+170\,100e^{4\sqrt{z}}z-170\,100z-242\,550e^{4\sqrt{z}}\sqrt{z}-242\,550\sqrt{z}+121\,275e^{4\sqrt{z}}-121\,275\right)\right)$$

07.22.03.aak9.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{7}{4};-z\right)=\frac{1}{2\,461\,184z^{9/2}}$$
$$\left(9\left(64\sqrt{\pi}\left(256z^2+3680z+2185\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+2\left(4096z^5+58\,112z^4+25\,600z^3+7200z^2-8400z+121\,275\right)\right.\right.$$
$$\left.\left.\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(2048z^5+27\,520z^4-2560z^3+24\,720z^2+170\,100z-121\,275\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aaka.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{9}{4};z\right)=\frac{1}{153\,824\sqrt{2}\,z^{13/4}}\left(\left(4z\left(4096z^4-76\,288z^3+112\,464z^2+7200z-14\,175\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(2048z^4-36\,352z^3+25\,880z^2+9900z-23\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(16\,384z^5-292\,864z^4+237\,120z^3+115\,200z^2-117\,000z+354\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aakb.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{9}{4};-z\right)=\frac{1}{153\,824\sqrt{2}\,z^{13/4}}\left(\left(4z\left(4096z^4+76\,288z^3+112\,464z^2-7200z-14\,175\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(2048z^4+36\,352z^3+25\,880z^2-9900z-23\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(16\,384z^5+292\,864z^4+237\,120z^3-115\,200z^2-117\,000z-354\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aakc.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{11}{4};z\right)=$$
$$-\frac{1}{9\,844\,736z^{9/2}}\left(21e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-88\,320z^2+104\,880z+98\,325\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-e^{2\sqrt{z}}\right.\right.$$
$$\sqrt{2\pi}\left(4096z^3-88\,320z^2+104\,880z+98\,325\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}+$$
$$2\left(2048z^{11/2}-512z^5-43\,776z^{9/2}+10\,560z^4+45\,000z^{7/2}-4650z^3+46\,080z^{5/2}-720z^2-18\,000z^{3/2}+\right.$$
$$35\,100z+66\,150\sqrt{z}+e^{4\sqrt{z}}\left(2048z^{11/2}+512z^5-43\,776z^{9/2}-10\,560z^4+45\,000z^{7/2}+\right.$$
$$\left.\left.\left.\left.4650z^3+46\,080z^{5/2}+720z^2-18\,000z^{3/2}-35\,100z+66\,150\sqrt{z}-33\,075\right)+33\,075\right)\right)\right)$$

07.22.03.aakd.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{11}{4};-z\right)=\frac{1}{2\,461\,184z^{9/2}}$$
$$\left(21\left(\sqrt{\pi}\left(4096z^3+88\,320z^2+104\,880z-98\,325\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2\left(1024z^5+21\,888z^4+22\,500z^3-23\,040z^2-\right.\right.\right.$$
$$\left.\left.\left.9000z-33\,075\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(512z^5+10\,560z^4+4650z^3-720z^2-35\,100z+33\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aake.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{13}{4};z\right)=\frac{1}{1\,076\,768\sqrt{2}\,z^{13/4}}\left(9\left(2z\left(4096z^4-105\,728z^3+219\,184z^2+144\,165z+22\,050\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\sqrt{z}\left(4096z^4-102\,144z^3+132\,720z^2+206\,675z+73\,500\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(8192z^5-205\,312z^4+287\,840z^3+433\,650z^2+252\,000z-275\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aakf.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{13}{4};-z\right)=\frac{1}{1\,076\,768\sqrt{2}\,z^{13/4}}\left(9\left(2z\left(4096z^4+105\,728z^3+219\,184z^2-144\,165z+22\,050\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\sqrt{z}\left(4096z^4+102\,144z^3+132\,720z^2-206\,675z+73\,500\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(8192z^5+205\,312z^4+287\,840z^3-433\,650z^2+252\,000z+275\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aakg.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{15}{4};z\right) = -\frac{1}{229\,113\,856\,z^{9/2}}\left(21\,e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-1\,884\,160\,z^3+3\,356\,160\,z^2+6\,292\,800\,z+7\,571\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)\right.\right. $$
$$ z^{7/4}-e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-1\,884\,160\,z^3+3\,356\,160\,z^2+6\,292\,800\,z+7\,571\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+ $$
$$ 4\left(16\,384\,z^{11/2}-4096\,z^5-467\,968\,z^{9/2}+113\,920\,z^4+757\,440\,z^{7/2}-114\,480\,z^3+\right. $$
$$ 1\,578\,900\,z^{5/2}-290\,385\,z^2+1\,843\,200\,z^{3/2}+115\,200\,z-1\,209\,600\sqrt{z}+ $$
$$ e^{4\sqrt{z}}\left(16\,384\,z^{11/2}+4096\,z^5-467\,968\,z^{9/2}-113\,920\,z^4+757\,440\,z^{7/2}+114\,480\,z^3+1\,578\,900\,z^{5/2}+\right. $$
$$ \left.\left.\left.\left.290\,385\,z^2+1\,843\,200\,z^{3/2}-115\,200\,z-1\,209\,600\sqrt{z}+604\,800\right)-604\,800\right)\right)\right) $$

07.22.03.aakh.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{15}{4};-z\right) = \frac{1}{57\,278\,464\,z^{9/2}}\left(21\left(\sqrt{\pi}\left(65\,536\,z^4+1\,884\,160\,z^3+3\,356\,160\,z^2-6\,292\,800\,z+7\,571\,025\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+\right.\right. $$
$$ 2\left(4\sqrt{z}\left(4096\,z^5+116\,992\,z^4+189\,360\,z^3-394\,725\,z^2+460\,800\,z+302\,400\right)\cos\left(2\sqrt{z}\right)+\right. $$
$$ \left.\left.\left.\left(4096\,z^5+113\,920\,z^4+114\,480\,z^3-290\,385\,z^2-115\,200\,z-604\,800\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aaki.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{17}{4};z\right) = \frac{1}{34\,456\,576\sqrt{2}\,z^{13/4}}\left(13\left(2z\left(65\,536\,z^4-2\,162\,688\,z^3+5\,773\,824\,z^2+8\,064\,000\,z+12\,357\,765\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right. $$
$$ 3\sqrt{z}\left(65\,536\,z^4-2\,105\,344\,z^3+3\,978\,240\,z^2+10\,352\,160\,z+18\,479\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)- $$
$$ \left.\left.2\left(65\,536\,z^5-2\,113\,536\,z^4+4\,216\,320\,z^3+10\,463\,040\,z^2+19\,150\,425\,z+7\,938\,000\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aakj.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{17}{4};-z\right) = \frac{1}{34\,456\,576\sqrt{2}\,z^{13/4}}\left(13\left(2z\left(65\,536\,z^4+2\,162\,688\,z^3+5\,773\,824\,z^2-8\,064\,000\,z+12\,357\,765\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right. $$
$$ 3\sqrt{z}\left(65\,536\,z^4+2\,105\,344\,z^3+3\,978\,240\,z^2-10\,352\,160\,z+18\,479\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.2\left(65\,536\,z^5+2\,113\,536\,z^4+4\,216\,320\,z^3-10\,463\,040\,z^2+19\,150\,425\,z-7\,938\,000\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aakk.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{19}{4};z\right)=$$

$$-\frac{1}{14\,663\,286\,784\,z^{9/2}}\left(63\,e^{-2\sqrt{z}}\left(4\left(262\,144\,z^{11/2}-65\,536\,z^5-9\,371\,648\,z^{9/2}+2\,293\,760\,z^4+20\,715\,520\,z^{7/2}-3\,627\,520\,z^3+\right.\right.\right.$$
$$63\,924\,480\,z^{5/2}-14\,444\,160\,z^2+156\,596\,100\,z^{3/2}-30\,008\,925\,z+129\,024\,000\sqrt{z}+e^{4\sqrt{z}}$$
$$\left(262\,144\,z^{11/2}+65\,536\,z^5-9\,371\,648\,z^{9/2}-2\,293\,760\,z^4+20\,715\,520\,z^{7/2}+3\,627\,520\,z^3+63\,924\,480\,z^{5/2}+\right.$$
$$\left.\left.14\,444\,160\,z^2+156\,596\,100\,z^{3/2}+30\,008\,925\,z+129\,024\,000\sqrt{z}-64\,512\,000\right)+64\,512\,000\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(1\,048\,576\,z^5-37\,683\,200\,z^4+89\,497\,600\,z^3+251\,712\,000\,z^2+605\,682\,000\,z+582\,968\,925\right)$$
$$\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}$$
$$\left.\left.\left(1\,048\,576\,z^5-37\,683\,200\,z^4+89\,497\,600\,z^3+251\,712\,000\,z^2+605\,682\,000\,z+582\,968\,925\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aakl.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{19}{4};-z\right)=\frac{1}{3\,665\,821\,696\,z^{9/2}}$$
$$\left(63\left(\sqrt{\pi}\,z^{3/4}\left(1\,048\,576\,z^5+37\,683\,200\,z^4+89\,497\,600\,z^3-251\,712\,000\,z^2+605\,682\,000\,z-582\,968\,925\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\left(4\sqrt{z}\left(65\,536\,z^5+2\,342\,912\,z^4+5\,178\,880\,z^3-15\,981\,120\,z^2+39\,149\,025\,z-32\,256\,000\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(65\,536\,z^5+2\,293\,760\,z^4+3\,627\,520\,z^3-14\,444\,160\,z^2+30\,008\,925\,z+64\,512\,000\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aakm.01

$${}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{21}{4};z\right)=\frac{1}{12\,128\,714\,752\sqrt{2}\,z^{15/4}}$$
$$\left(221\left(2\sqrt{z}\left(1\,048\,576\,z^5-42\,139\,648\,z^4+137\,601\,024\,z^3+303\,367\,680\,z^2+858\,931\,920\,z+885\,809\,925\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(1\,048\,576\,z^5-41\,222\,144\,z^4+102\,277\,120\,z^3+368\,417\,280\,z^2+1\,126\,818\,000\,z+1\,476\,349\,875\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(1\,048\,576\,z^5-41\,353\,216\,z^4+107\,028\,480\,z^3+\right.$$
$$\left.\left.\left.368\,248\,320\,z^2+1\,120\,165\,200\,z+1\,634\,873\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aakn.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{21}{4};-z\right)=\frac{1}{12\,128\,714\,752\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(1\,048\,576z^5+42\,139\,648z^4+137\,601\,024z^3-303\,367\,680z^2+858\,931\,920z-885\,809\,925\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(1\,048\,576z^5+41\,222\,144z^4+102\,277\,120z^3-368\,417\,280z^2+1\,126\,818\,000z-1\,476\,349\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576z^5+41\,353\,216z^4+107\,028\,480z^3-368\,248\,320z^2+1\,120\,165\,200z-1\,634\,873\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aako.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{23}{4};z\right)=-\frac{1}{98\,784\,247\,808\,z^{19/4}}\left(21e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304z^{11/2}-1\,048\,576z^5-180\,092\,928z^{9/2}+44\,236\,800z^4+504\,791\,040z^{7/2}-95\,723\,520z^3+2\,050\,836\,480z^{5/2}-496\,949\,760z^2+7\,536\,686\,400z^{3/2}-1\,844\,024\,400z+14\,567\,080\,500\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304z^{11/2}+1\,048\,576z^5-180\,092\,928z^{9/2}-44\,236\,800z^4+504\,791\,040z^{7/2}+95\,723\,520z^3+2\,050\,836\,480z^{5/2}+496\,949\,760z^2+7\,536\,686\,400z^{3/2}+1\,844\,024\,400z+14\,567\,080\,500\sqrt{z}+1\,460\,993\,625\right)-1\,460\,993\,625\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-723\,517\,440z^5+2\,147\,942\,400z^4+8\,054\,784\,000z^3+29\,072\,736\,000z^2+55\,965\,016\,800z+26\,233\,601\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(16\,777\,216z^6-723\,517\,440z^5+2\,147\,942\,400z^4+8\,054\,784\,000z^3+29\,072\,736\,000z^2+55\,965\,016\,800z+26\,233\,601\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aakp.01

$$ {}_1F_2\left(-\frac{5}{4};\frac{11}{2},\frac{23}{4};-z\right)=\frac{1}{24\,696\,061\,952\,z^{19/4}}\left(21\left(\sqrt{\pi}\left(16\,777\,216z^6+723\,517\,440z^5+2\,147\,942\,400z^4-8\,054\,784\,000z^3+29\,072\,736\,000z^2-55\,965\,016\,800z+26\,233\,601\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576z^5+45\,023\,232z^4+126\,197\,760z^3-512\,709\,120z^2+1\,884\,171\,600z-3\,641\,770\,125\right)\cos\left(2\sqrt{z}\right)+\left(1\,048\,576z^5+44\,236\,800z^4+95\,723\,520z^3-496\,949\,760z^2+1\,844\,024\,400z-1\,460\,993\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1=-\frac{3}{4}$, $b_{1.}\geq-\frac{11}{2}$

For fixed z and $a_1=-\frac{3}{4}$, $b_{1.}=-\frac{11}{2}$

07.22.03.aakq.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{5\,246\,720\,325} \left(\left(606\,208\,z^5 + 21\,719\,040\,z^4 + 381\,944\,640\,z^3 + 3\,248\,229\,600\,z^2 + 10\,369\,012\,500\,z + 5\,246\,720\,325\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(32\,768\,z^5 + 2\,007\,040\,z^4 + 49\,526\,400\,z^3 + 615\,882\,960\,z^2 + 3\,373\,385\,400\,z + 5\,246\,720\,325\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aakr.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{5\,246\,720\,325} \left(\left(-606\,208\,z^5 + 21\,719\,040\,z^4 - 381\,944\,640\,z^3 + 3\,248\,229\,600\,z^2 - 10\,369\,012\,500\,z + 5\,246\,720\,325\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-32\,768\,z^5 + 2\,007\,040\,z^4 - 49\,526\,400\,z^3 + 615\,882\,960\,z^2 - 3\,373\,385\,400\,z + 5\,246\,720\,325\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aaks.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{11}{2}, -\frac{21}{4}; z\right) = \frac{1}{723\,647\,925\sqrt{2}} \left(\sqrt[4]{z}\left(\left(278\,528\,z^5 + 8\,644\,608\,z^4 + 127\,284\,480\,z^3 + 830\,662\,560\,z^2 + 1\,428\,499\,800\,z + 723\,647\,925\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384\,z^5 + 897\,024\,z^4 + 19\,400\,256\,z^3 + 202\,456\,800\,z^2 + 849\,581\,460\,z + 723\,647\,925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36\,z\left(8192\,z^4 + 267\,264\,z^3 + 4\,153\,968\,z^2 + 30\,073\,680\,z + 80\,405\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aakt.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{11}{2}, -\frac{21}{4}; -z\right) = -\frac{1}{723\,647\,925\sqrt{2}} \left(\sqrt[4]{z}\left(\left(278\,528\,z^5 - 8\,644\,608\,z^4 + 127\,284\,480\,z^3 - 830\,662\,560\,z^2 + 1\,428\,499\,800\,z - 723\,647\,925\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,384\,z^5 - 897\,024\,z^4 + 19\,400\,256\,z^3 - 202\,456\,800\,z^2 + 849\,581\,460\,z - 723\,647\,925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 36\,z\left(8192\,z^4 - 267\,264\,z^3 + 4\,153\,968\,z^2 - 30\,073\,680\,z + 80\,405\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaku.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{11}{2}, -\frac{19}{4}; z\right) = \frac{1}{228\,118\,275} \left(\left(16\,384\,z^5 + 829\,440\,z^4 + 15\,812\,160\,z^3 + 138\,932\,640\,z^2 + 449\,687\,700\,z + 228\,118\,275\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(69\,632\,z^4 + 1\,989\,120\,z^3 + 26\,001\,360\,z^2 + 145\,530\,000\,z + 228\,118\,275\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aakv.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{11}{2}, -\frac{19}{4}; -z\right) = \frac{1}{228\,118\,275} \left(\left(-16\,384\,z^5 + 829\,440\,z^4 - 15\,812\,160\,z^3 + 138\,932\,640\,z^2 - 449\,687\,700\,z + 228\,118\,275\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(69\,632\,z^4 - 1\,989\,120\,z^3 + 26\,001\,360\,z^2 - 145\,530\,000\,z + 228\,118\,275\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aakw.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{34\,459\,425\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192z^5+363\,008z^4+5\,800\,960z^3+39\,130\,560z^2+67\,813\,200z+34\,459\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(33\,792z^4+853\,696z^3+9\,384\,480z^2+40\,245\,660z+34\,459\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(2048z^4+99\,712z^3+1\,692\,432z^2+12\,678\,120z+34\,459\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aakx.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{34\,459\,425\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-8192z^5+363\,008z^4-5\,800\,960z^3+39\,130\,560z^2-67\,813\,200z+34\,459\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(33\,792z^4-853\,696z^3+9\,384\,480z^2-40\,245\,660z+34\,459\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(2048z^4-99\,712z^3+1\,692\,432z^2-12\,678\,120z+34\,459\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaky.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},-\frac{15}{4};z\right)=\frac{1}{12\,006\,225}\left(3\left(11\,264z^4+255\,680z^3+2\,375\,520z^2+7\,858\,620z+4\,002\,075\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(2048z^4+91\,008z^3+1\,305\,360z^2+7\,567\,560z+12\,006\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aakz.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},-\frac{15}{4};-z\right)=\frac{1}{12\,006\,225}\left(3\left(11\,264z^4-255\,680z^3+2\,375\,520z^2-7\,858\,620z+4\,002\,075\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(2048z^4-91\,008z^3+1\,305\,360z^2-7\,567\,560z+12\,006\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aal0.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{2\,027\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384z^4+316\,160z^3+2\,261\,280z^2+3\,969\,000z+2\,027\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(1024z^4+43\,328z^3+527\,520z^2+2\,347\,380z+2\,027\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(4352z^3+91\,056z^2+725\,760z+2\,027\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aal1.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{2\,027\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384z^4-316\,160z^3+2\,261\,280z^2-3\,969\,000z+2\,027\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\right.\right.$$
$$\sqrt{z}\left(1024z^4-43\,328z^3+527\,520z^2-2\,347\,380z+2\,027\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(-4352z^3+91\,056z^2-725\,760z+2\,027\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aal2.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},-\frac{11}{4};z\right)=\frac{1}{800\,415}\left(\left(1024z^4+43\,328z^3+453\,600z^2+1\,561\,140z+800\,415\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(4352z^3+79\,632z^2+493\,920z+800\,415\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aal3.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},-\frac{11}{4};-z\right)=\frac{1}{800\,415}\left(\left(1024z^4-43\,328z^3+453\,600z^2-1\,561\,140z+800\,415\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(-4352z^3+79\,632z^2-493\,920z+800\,415\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aal4.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},-\frac{9}{4};z\right)=\frac{1}{155\,925\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(512z^4+20\,480z^3+168\,000z^2+302\,400z+155\,925\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-140\sqrt{z}\left(64z^3+1056z^2+5076z+4455\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(128z^3+5712z^2+52\,920z+155\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aal5.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},-\frac{9}{4};-z\right)=\frac{1}{155\,925\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(512z^4-20\,480z^3+168\,000z^2-302\,400z+155\,925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-140\sqrt{z}\left(64z^3-1056z^2+5076z-4455\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-128z^3+5712z^2-52\,920z+155\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aal6.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},-\frac{7}{4};z\right)=$$
$$\left(\frac{2368z^3}{72\,765}+\frac{32z^2}{63}+\frac{148z}{77}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(128z^3+5712z^2+42\,840z+72\,765\right)\sinh\left(2\sqrt{z}\right)}{72\,765}$$

07.22.03.aal7.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},-\frac{7}{4};-z\right)=$$

$$\left(-\frac{2368\,z^3}{72\,765}+\frac{32\,z^2}{63}-\frac{148\,z}{77}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-128\,z^3+5712\,z^2-42\,840\,z+72\,765\right)\sin\left(2\sqrt{z}\right)}{72\,765}$$

07.22.03.aal8.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},-\frac{5}{4};z\right)=$$

$$\frac{1}{17\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1216\,z^3+16\,800\,z^2+32\,760\,z+17\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64\,z^3+3016\,z^2+18\,900\,z+17\,325\right)\right.\right.$$

$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+20\,z\left(64\,z^2+1008\,z+3465\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aal9.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},-\frac{5}{4};-z\right)=$$

$$-\frac{1}{17\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1216\,z^3-16\,800\,z^2+32\,760\,z-17\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(64\,z^3-3016\,z^2+18\,900\,z-17\,325\right)\right.\right.$$

$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-20\,z\left(64\,z^2-1008\,z+3465\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aala.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},-\frac{3}{4};z\right)=\left(\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}+\frac{20\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{495}\sqrt{z}\left(16\,z^2+240\,z+495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aalb.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},-\frac{3}{4};-z\right)=\left(-\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}-\frac{20\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aalc.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},-\frac{1}{4};z\right)=$$

$$\frac{1}{3465\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,z^3+1774\,z^2+5040\,z+3465\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-9\sqrt{z}\left(80\,z^2+1229\,z+1540\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.2\,z\left(16\,z^2+981\,z+6930\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aald.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},-\frac{1}{4};-z\right)=$$

$$-\frac{1}{3465\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,z^3-1774\,z^2+5040\,z-3465\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-9\sqrt{z}\left(80\,z^2-1229\,z+1540\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$

$$\left.\left.2\,z\left(16\,z^2-981\,z+6930\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aale.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) = \frac{1}{110\,880}\left(e^{-2\sqrt{z}}\left(4\left(64 z^{5/2} + 784 z^2 + 4340 z^{3/2} + 13\,335 z + 27\,720\sqrt{z} + e^{4\sqrt{z}}\left(-64 z^{5/2} + 784 z^2 - 4340 z^{3/2} + 13\,335 z - 27\,720\sqrt{z} + 13\,860\right) + 13\,860\right) + 21\,945\, e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 21\,945\, e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aalf.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) = \left(\frac{28 z^2}{495} - \frac{127 z}{132} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{19}{24}\sqrt{\pi}\, z^{3/4} C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \frac{\sqrt{z}\left(16 z^2 - 1085 z + 6930\right)\sin\left(2\sqrt{z}\right)}{3465} $$

07.22.03.aalg.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) = \frac{1}{110\,880\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(1664 z^2 + 51\,345 z + 55\,440\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(512 z^2 + 40\,032 z + 234\,675\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 18 z\left(192 z + 1435\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aalh.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{11}{2}, \frac{3}{4}; -z\right) = \frac{1}{110\,880\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(1664 z^2 - 51\,345 z + 55\,440\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(512 z^2 - 40\,032 z + 234\,675\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 18\left(1435 - 192 z\right) z\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aali.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{7\,096\,320\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(1024 z^2 + 14\,848 z^{3/2} + 95\,424 z + 244\,860\sqrt{z} + e^{4\sqrt{z}}\left(1024 z^2 - 14\,848 z^{3/2} + 95\,424 z - 244\,860\sqrt{z} + 627\,165\right) + 627\,165\right) + 21\,945\, e^{2\sqrt{z}}\sqrt{2\pi}\left(16 z + 69\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 21\,945\, e^{2\sqrt{z}}\sqrt{2\pi}\left(16 z + 69\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aalj.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) = \frac{1}{1\,774\,080\sqrt[4]{z}}\left(-21\,945\sqrt{\pi}\left(16 z - 69\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(1024 z^2 - 95\,424 z + 627\,165\right)\cos\left(2\sqrt{z}\right) + 4\left(61\,215 - 3712 z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.aalk.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{1\,182\,720\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\,\left(-1024z^2+8880z+11\,235\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+21\left(3072z^2+75\,280z+82\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1024z^2+233\,520z+1\,740\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aall.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},\frac{7}{4};-z\right)=$$
$$\frac{1}{1\,182\,720\sqrt{2}\,\sqrt[4]{z}}\left(\left(-2\sqrt{z}\,\left(1024z^2+8880z-11\,235\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+21\left(3072z^2-75\,280z+82\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1024z^2-233\,520z+1\,740\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aalm.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{181\,665\,792\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-32\,768z^{5/2}-565\,248z^2-5\,729\,856z^{3/2}-17\,862\,768z-54\,511\,380\sqrt{z}+\right.\right.\right.$$
$$\left.\left.\left.e^{4\sqrt{z}}\left(32\,768z^{5/2}-565\,248z^2+5\,729\,856z^{3/2}-17\,862\,768z+54\,511\,380\sqrt{z}-40\,883\,535\right)-40\,883\,535\right)+\right.$$
$$21\,945\,e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+2208z-1863\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.21\,945\,e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+2208z-1863\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.aaln.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},\frac{9}{4};-z\right)=\frac{1}{45\,416\,448\,z^{5/4}}\left(-21\,945\sqrt{\pi}\left(256z^2-2208z-1863\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.$$
$$\left.2\sqrt[4]{z}\left(3\left(188\,416z^2-5\,954\,256z+13\,627\,845\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(8192z^2-1\,432\,464z+13\,627\,845\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aalo.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},\frac{11}{4};z\right)=-\frac{1}{5\,406\,720\sqrt{2}\,z^{5/4}}$$
$$\left(\left(-30\sqrt{z}\,\left(35\,072z^2+639\,904z+672\,945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(32\,768z^3+5\,502\,720z^2+66\,830\,400z+30\,282\,525\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+90\sqrt{z}\,\left(4864z^2-49\,504z-672\,945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aalp.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},\frac{11}{4};-z\right)=-\frac{1}{5\,406\,720\sqrt{2}\,z^{5/4}}$$
$$\left(\left(30\sqrt{z}\left(35\,072z^2-639\,904z+672\,945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(32\,768z^3-5\,502\,720z^2+66\,830\,400z-30\,282\,525\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+90\sqrt{z}\left(4864z^2+49\,504z-672\,945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aalq.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{1\,291\,845\,632\,z^{9/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(524\,288z^3+3\,257\,344z^{5/2}+100\,635\,392z^2+415\,324\,800z^{3/2}+1\,599\,000\,480z+\right.\right.\right.$$
$$\left.\left.2\,816\,421\,300\sqrt{z}+e^{4\sqrt{z}}\left(524\,288z^3-3\,257\,344z^{5/2}+100\,635\,392z^2-415\,324\,800z^{3/2}+\right.\right.\right.$$
$$\left.\left.\left.1\,599\,000\,480z-2\,816\,421\,300\sqrt{z}+2\,112\,315\,975\right)+2\,112\,315\,975\right)+$$
$$7315e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+52\,992z^2-89\,424z+288\,765\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.7315e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+52\,992z^2-89\,424z+288\,765\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aalr.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{322\,961\,408\,z^{9/4}}\left(2\sqrt[4]{z}\left(\left(524\,288z^3-100\,635\,392z^2+1\,599\,000\,480z-2\,112\,315\,975\right)\cos\left(2\sqrt{z}\right)-4\right.\right.$$
$$\left.\sqrt{z}\left(814\,336z^2-103\,831\,200z+704\,105\,325\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\left.7315\sqrt{\pi}\left(4096z^3-52\,992z^2-89\,424z-288\,765\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.aals.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},\frac{15}{4};z\right)=\frac{1}{15\,728\,640\sqrt{2}\,z^{9/4}}$$
$$\left(\left(2\sqrt{z}\left(790\,528z^3-1\,470\,720z^2-299\,941\,200z-333\,107\,775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+45\left(110\,592z^3+7\,185\,152z^2+53\,835\,600z+\right.\right.\right.$$
$$\left.\left.\left.22\,207\,185\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-90\sqrt{z}\left(20\,480z^3+622\,336z^2+6\,460\,272z+22\,207\,185\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aalt.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},\frac{15}{4};-z\right)=$$
$$-\frac{1}{15\,728\,640\sqrt{2}\,z^{9/4}}\left(\left(2\sqrt{z}\left(790\,528z^3+1\,470\,720z^2-299\,941\,200z+333\,107\,775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+45\right.\right.$$
$$\left(110\,592z^3-7\,185\,152z^2+53\,835\,600z-22\,207\,185\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.90\sqrt{z}\left(20\,480z^3-622\,336z^2+6\,460\,272z-22\,207\,185\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aalu.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},\frac{17}{4};z\right)=$$
$$\frac{1}{330\,712\,481\,792\,z^{13/4}}\left(13e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-153\,403\,392z^{7/2}-783\,732\,736z^3-11\,055\,191\,040z^{5/2}-56\,982\,562\,560z^2-\right.\right.\right.$$
$$225\,313\,704\,000z^{3/2}-574\,549\,945\,200z-887\,172\,709\,500\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(153\,403\,392z^{7/2}-783\,732\,736z^3+11\,055\,191\,040z^{5/2}-56\,982\,562\,560z^2+225\,313\,704\,000z^{3/2}-\right.$$
$$\left.\left.574\,549\,945\,200z+887\,172\,709\,500\sqrt{z}-665\,379\,532\,125\right)-665\,379\,532\,125\right)+$$
$$7315e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4+1\,130\,496z^3-2\,861\,568z^2+18\,480\,960z-90\,960\,975\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.7315e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4+1\,130\,496z^3-2\,861\,568z^2+18\,480\,960z-90\,960\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aalv.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},\frac{17}{4};-z\right)=$$
$$\frac{1}{82\,678\,120\,448\,z^{13/4}}\left(13\left(2\sqrt[4]{z}\left(\left(783\,732\,736z^3-56\,982\,562\,560z^2+574\,549\,945\,200z-665\,379\,532\,125\right)\cos\left(2\sqrt{z}\right)+\right.\right.\right.$$
$$\left.12\sqrt{z}\left(12\,783\,616z^3-921\,265\,920z^2+18\,776\,142\,000z-73\,931\,059\,125\right)\sin\left(2\sqrt{z}\right)\right)-$$
$$\left.\left.7315\sqrt{\pi}\left(65\,536z^4-1\,130\,496z^3-2\,861\,568z^2-18\,480\,960z-90\,960\,975\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)$$

07.22.03.aalw.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},\frac{19}{4};z\right)=\frac{1}{301\,989\,888\sqrt{2}\,z^{13/4}}$$
$$\left(\left(2\sqrt{z}\left(13\,697\,024z^4+386\,351\,104z^3+9\,302\,791\,680z^2+130\,958\,942\,400z+135\,574\,864\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(32\,571\,392z^4+6\,218\,833\,920z^3+188\,713\,774\,080z^2+1\,012\,647\,636\,000z+406\,724\,593\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(-13\,697\,024z^4-142\,049\,280z^3+11\,665\,405\,440z^2+144\,968\,503\,680z+406\,724\,593\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aalx.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) = \frac{1}{301\,989\,888\sqrt{2}\, z^{13/4}} $$

$$ \left(\left(-2\sqrt{z}\left(13\,697\,024 z^4 - 386\,351\,104 z^3 + 9\,302\,791\,680 z^2 - 130\,958\,942\,400 z + 135\,574\,864\,425\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. \right. $$

$$ \left(32\,571\,392 z^4 - 6\,218\,833\,920 z^3 + 188\,713\,774\,080 z^2 - 1\,012\,647\,636\,000 z + 406\,724\,593\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ 2\sqrt{z}\left(-13\,697\,024 z^4 + 142\,049\,280 z^3 + 11\,665\,405\,440 z^2 - 144\,968\,503\,680 z + 406\,724\,593\,275\right) $$

$$ \left. \left. J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaly.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) = $$

$$ \frac{1}{21\,165\,598\,834\,688 z^{17/4}}\left(221 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-383\,516\,672 z^{9/2} + 632\,750\,080 z^4 + 6\,959\,333\,376 z^{7/2} + 202\,980\,556\,800 z^3 + \right.\right.\right. $$

$$ 1\,599\,317\,637\,120 z^{5/2} + 8\,003\,142\,766\,080 z^2 + 26\,929\,493\,902\,080 z^{3/2} + 61\,321\,377\,680\,640 z + $$

$$ 89\,959\,312\,743\,300\sqrt{z} + e^{4\sqrt{z}}\left(383\,516\,672 z^{9/2} + 632\,750\,080 z^4 - 6\,959\,333\,376 z^{7/2} + \right. $$

$$ \left. 202\,980\,556\,800 z^3 - 1\,599\,317\,637\,120 z^{5/2} + 8\,003\,142\,766\,080 z^2 - 26\,929\,493\,902\,080 z^{3/2} + \right. $$

$$ \left. 61\,321\,377\,680\,640 z - 89\,959\,312\,743\,300\sqrt{z} + 67\,469\,484\,557\,475\right) + 67\,469\,484\,557\,475\Big) + $$

$$ 1463 e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576 z^5 + 22\,609\,920 z^4 - 76\,308\,480 z^3 + 739\,238\,400 z^2 - 7\,276\,878\,000 z + 46\,117\,214\,325\right) $$

$$ \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 1463 e^{2\sqrt{z}}\sqrt{2\pi} $$

$$ \left.\left.\left.\left(1\,048\,576 z^5 + 22\,609\,920 z^4 - 76\,308\,480 z^3 + 739\,238\,400 z^2 - 7\,276\,878\,000 z + 46\,117\,214\,325\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)\right) $$

07.22.03.aalz.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) = \frac{1}{5\,291\,399\,708\,672 z^{17/4}} $$

$$ \left(221\left(2\sqrt[4]{z}\left(76\sqrt{z}\left(5\,046\,272 z^4 + 91\,570\,176 z^3 - 21\,043\,653\,120 z^2 + 354\,335\,446\,080 z - 1\,183\,675\,167\,675\right)\sin\left(2\sqrt{z}\right) - \right.\right.\right. $$

$$ \left. 5\left(126\,550\,016 z^4 - 40\,596\,111\,360 z^3 + 1\,600\,628\,553\,216 z^2 - 12\,264\,275\,536\,128 z + 13\,493\,896\,911\,495\right) \right. $$

$$ \left.\left.\cos\left(2\sqrt{z}\right)\right) - 1463\sqrt{\pi}\right. $$

$$ \left.\left.\left.\left(1\,048\,576 z^5 - 22\,609\,920 z^4 - 76\,308\,480 z^3 - 739\,238\,400 z^2 - 7\,276\,878\,000 z - 46\,117\,214\,325\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)\right) $$

07.22.03.aam0.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},\frac{23}{4};z\right)=$$
$$\frac{1}{9\,663\,676\,416\sqrt{2}\,z^{17/4}}\left(19\left(2\sqrt{z}\,\left(19\,922\,944\,z^5+431\,685\,632\,z^4-18\,113\,372\,160\,z^3-746\,438\,284\,800\,z^2-\right.\right.\right.$$
$$\left.\left.7\,578\,106\,707\,600\,z-7\,579\,867\,420\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(-19\,922\,944\,z^5+4\,161\,208\,320\,z^4+569\,389\,916\,160\,z^3+12\,401\,507\,289\,600\,z^2+57\,385\,142\,614\,800\,z+\right.$$
$$\left.22\,739\,602\,260\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(19\,922\,944\,z^5+512\,163\,840\,z^4+15\,084\,380\,160\,z^3+\right.$$
$$\left.\left.\left.862\,501\,685\,760\,z^2+8\,873\,991\,126\,000\,z+22\,739\,602\,260\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aam1.01

$${}_1F_2\left(-\frac{3}{4};-\frac{11}{2},\frac{23}{4};-z\right)=$$
$$-\frac{1}{9\,663\,676\,416\sqrt{2}\,z^{17/4}}\left(19\left(2\sqrt{z}\,\left(19\,922\,944\,z^5-431\,685\,632\,z^4-18\,113\,372\,160\,z^3+746\,438\,284\,800\,z^2-\right.\right.\right.$$
$$\left.\left.7\,578\,106\,707\,600\,z+7\,579\,867\,420\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$\left(19\,922\,944\,z^5+4\,161\,208\,320\,z^4-569\,389\,916\,160\,z^3+12\,401\,507\,289\,600\,z^2-57\,385\,142\,614\,800\,z+\right.$$
$$\left.22\,739\,602\,260\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(19\,922\,944\,z^5-512\,163\,840\,z^4+15\,084\,380\,160\,z^3-\right.$$
$$\left.\left.\left.862\,501\,685\,760\,z^2+8\,873\,991\,126\,000\,z-22\,739\,602\,260\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = -\frac{3}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.aam2.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{23}{4};z\right)=\left(\frac{32\,768\,z^5}{476\,974\,575}+\frac{16\,384\,z^4}{4\,542\,615}+\frac{28\,544\,z^3}{412\,965}+\frac{5584\,z^2}{9177}+\frac{136\,z}{69}+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\,\left(4096\,z^4+118\,272\,z^3+1\,550\,736\,z^2+8\,690\,220\,z+13\,627\,845\right)\sinh\left(2\sqrt{z}\right)}{13\,627\,845}$$

07.22.03.aam3.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{23}{4};-z\right)=\left(-\frac{32\,768\,z^5}{476\,974\,575}+\frac{16\,384\,z^4}{4\,542\,615}-\frac{28\,544\,z^3}{412\,965}+\frac{5584\,z^2}{9177}-\frac{136\,z}{69}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\,\left(4096\,z^4-118\,272\,z^3+1\,550\,736\,z^2-8\,690\,220\,z+13\,627\,845\right)\sin\left(2\sqrt{z}\right)}{13\,627\,845}$$

07.22.03.aam4.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{65\,786\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^5+698\,368\,z^4+11\,102\,400\,z^3+74\,748\,960\,z^2+129\,483\,900\,z+65\,786\,175\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(65\,536\,z^4+1\,637\,376\,z^3+17\,943\,120\,z^2+76\,854\,960\,z+65\,786\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(4096\,z^4+192\,000\,z^3+3\,240\,432\,z^2+24\,226\,020\,z+65\,786\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aam5.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{65\,786\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-16\,384\,z^5+698\,368\,z^4-11\,102\,400\,z^3+74\,748\,960\,z^2-129\,483\,900\,z+65\,786\,175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(65\,536\,z^4-1\,637\,376\,z^3+17\,943\,120\,z^2-76\,854\,960\,z+65\,786\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(4096\,z^4-192\,000\,z^3+3\,240\,432\,z^2-24\,226\,020\,z+65\,786\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aam6.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{19}{4};z\right)=\frac{1}{20\,738\,025}\left(15\left(4096\,z^4+89\,600\,z^3+824\,208\,z^2+2\,716\,560\,z+1\,382\,535\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(4096\,z^4+161\,280\,z^3+2\,273\,040\,z^2+13\,097\,700\,z+20\,738\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aam7.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{19}{4};-z\right)=\frac{1}{20\,738\,025}\left(15\left(4096\,z^4-89\,600\,z^3+824\,208\,z^2-2\,716\,560\,z+1\,382\,535\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(4096\,z^4-161\,280\,z^3+2\,273\,040\,z^2-13\,097\,700\,z+20\,738\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aam8.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{3\,132\,675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(27\,648\,z^4+499\,520\,z^3+3\,512\,160\,z^2+6\,142\,500\,z+3\,132\,675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(2048\,z^4+70\,016\,z^3+825\,840\,z^2+3\,636\,360\,z+3\,132\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(7424\,z^3+144\,432\,z^2+1\,130\,220\,z+3\,132\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aam9.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{3\,132\,675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(27\,648z^4-499\,520z^3+3\,512\,160z^2-6\,142\,500z+3\,132\,675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\right.\right.$$
$$\sqrt{z}\left(2048z^4-70\,016z^3+825\,840z^2-3\,636\,360z+3\,132\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(-7424z^3+144\,432z^2-1\,130\,220z+3\,132\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aama.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{15}{4};z\right)=$$
$$\left(\frac{2048z^4}{1\,091\,475}+\frac{128z^3}{2205}+\frac{400z^2}{693}+\frac{88z}{45}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(2304z^3+37\,520z^2+226\,380z+363\,825\right)\sinh\left(2\sqrt{z}\right)}{363\,825}$$

07.22.03.aamb.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{15}{4};-z\right)=$$
$$\left(\frac{2048z^4}{1\,091\,475}-\frac{128z^3}{2205}+\frac{400z^2}{693}-\frac{88z}{45}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-2304z^3+37\,520z^2-226\,380z+363\,825\right)\sin\left(2\sqrt{z}\right)}{363\,825}$$

07.22.03.aamc.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{184\,275\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^4+26\,560z^3+202\,080z^2+359\,100z+184\,275\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(3328z^3+45\,840z^2+\right.\right.\right.$$
$$\left.\left.\left.211\,680z+184\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(256z^3+7536z^2+64\,260z+184\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aamd.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{184\,275\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^4-26\,560z^3+202\,080z^2-359\,100z+184\,275\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(3328z^3-45\,840z^2+\right.\right.\right.$$
$$\left.\left.\left.211\,680z-184\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-256z^3+7536z^2-64\,260z+184\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aame.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{11}{4};z\right)=\left(\frac{3328z^3}{72\,765}+\frac{80z^2}{147}+\frac{64z}{33}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(256z^3+6672z^2+44\,100z+72\,765\right)\sinh\left(2\sqrt{z}\right)}{72\,765}$$

07.22.03.aamf.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{11}{4};-z\right)=$$

$$\left(-\frac{3328\,z^3}{72\,765}+\frac{80\,z^2}{147}-\frac{64\,z}{33}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(-256\,z^3+6672\,z^2-44\,100\,z+72\,765\right)\sin\left(2\sqrt{z}\right)}{72\,765}$$

07.22.03.aamg.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{9}{4};z\right)=\frac{1}{14\,175\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(5\left(320\,z^3+2976\,z^2+5460\,z+2835\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(128\,z^3+3120\,z^2+15\,960\,z+14\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.12\,z\left(144\,z^2+1540\,z+4725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aamh.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{9}{4};-z\right)=$$

$$\frac{1}{14\,175\sqrt{2}}\left(\sqrt[4]{z}\left(-5\left(320\,z^3-2976\,z^2+5460\,z-2835\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(-128\,z^3+3120\,z^2-15\,960\,z+14\,175\right)\right.\right.$$

$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(144\,z^2-1540\,z+4725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aami.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{7}{4};z\right)=\left(\frac{128\,z^3}{6615}+\frac{208\,z^2}{441}+\frac{40\,z}{21}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{245}\sqrt{z}\,\left(16\,z^2+140\,z+245\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aamj.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{7}{4};-z\right)=\left(-\frac{128\,z^3}{6615}+\frac{208\,z^2}{441}-\frac{40\,z}{21}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{245}\sqrt{z}\,\left(16\,z^2-140\,z+245\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aamk.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{5}{4};z\right)=$$

$$\frac{1}{1575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64\,z^3+1440\,z^2+2940\,z+1575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-28\sqrt{z}\,\left(32\,z^2+240\,z+225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.4\,z\left(16\,z^2+420\,z+1575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaml.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},-\frac{5}{4};-z\right)=$$

$$\frac{1}{1575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-64\,z^3+1440\,z^2-2940\,z+1575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+28\sqrt{z}\,\left(32\,z^2-240\,z+225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.4\,z\left(16\,z^2-420\,z+1575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aamm.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) = \left(\frac{16\,z^2}{63} + \frac{16\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\,\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aamn.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) = \left(\frac{16\,z^2}{63} - \frac{16\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\,\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aamo.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) = \frac{1}{315\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(\left(124\,z^2 + 420\,z + 315\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 2\sqrt{z}\,\left(16\,z^2 + 453\,z + 630\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\,(11\,z + 105)\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aamp.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) = \frac{1}{315\sqrt{2}}\left(\sqrt[4]{z}\right.$$
$$\left.\left(\left(124\,z^2 - 420\,z + 315\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\sqrt{z}\,\left(16\,z^2 - 453\,z + 630\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12\,(105 - 11\,z)\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aamq.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{5040}\left(e^{-2\sqrt{z}}\,\left(4\left(16\,z^2 + 140\,z^{3/2} + 525\,z + 1260\sqrt{z} + e^{4\sqrt{z}}\,\left(16\,z^2 - 140\,z^{3/2} + 525\,z - 1260\sqrt{z} + 630\right) + 630\right) + \right.$$
$$\left.1155\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,z^{3/4}\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + 1155\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,z^{3/4}\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aamr.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) = \left(\frac{8\,z^2}{315} - \frac{5\,z}{6} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{11}{12}\sqrt{\pi}\,z^{3/4}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \frac{2}{9}(z - 9)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aams.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) = \frac{1}{5040\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(\left(64\,z^2 + 4570\,z + 5040\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\,\left(1216\,z + 10\,215\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\,z\,(32\,z + 135)\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aamt.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) = \frac{1}{5040\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(\left(64\,z^2 - 4570\,z + 5040\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (10\,215 - 1216\,z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\,(135 - 32\,z)\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aamu.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},\frac{5}{4};z\right)=$$

$$\frac{1}{322\,560\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-256\,z^{3/2}-2688\,z-7140\sqrt{z}+e^{4\sqrt{z}}\left(256\,z^{3/2}-2688\,z+7140\sqrt{z}-25\,515\right)-25\,515\right)+\right.\right.$$
$$\left.\left.1155\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16\,z+57)\,\mathrm{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+1155\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16\,z+57)\,\mathrm{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aamv.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},\frac{5}{4};-z\right)=$$

$$\frac{1}{80\,640\sqrt[4]{z}}\left(2\sqrt[4]{z}\left(21\,(128\,z-1215)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,(64\,z-1785)\sin\left(2\sqrt{z}\right)\right)-1155\sqrt{\pi}\,(16\,z-57)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.aamw.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},\frac{7}{4};z\right)=\frac{1}{53\,760\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(10\sqrt{z}\,(656\,z+735)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1024\,z^2+50\,160\,z+69\,615\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-6\sqrt{z}\,(3056\,z+23\,205)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aamx.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},\frac{7}{4};-z\right)=\frac{1}{53\,760\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(10\,(735-656\,z)\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1024\,z^2-50\,160\,z+69\,615\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+6\,(23\,205-3056\,z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aamy.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},\frac{9}{4};z\right)=$$

$$\frac{1}{8\,257\,536\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(8192\,z^2+178\,368\,z^{3/2}+540\,624\,z+2\,018\,940\sqrt{z}+e^{4\sqrt{z}}\left(8192\,z^2-178\,368\,z^{3/2}+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.540\,624\,z-2\,018\,940\sqrt{z}+1\,514\,205\right)+1\,514\,205\right)+1155\,e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left.\left.\left(256\,z^2+1824\,z-1311\right)\mathrm{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+1155\,e^{2\sqrt{z}}\sqrt{2\pi}\left(256\,z^2+1824\,z-1311\right)\mathrm{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aamz.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},\frac{9}{4};-z\right)=\frac{1}{2\,064\,384\,z^{5/4}}\left(-1155\sqrt{\pi}\left(256\,z^2-1824\,z-1311\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.$$
$$\left.2\sqrt[4]{z}\left(\left(8192\,z^2-540\,624\,z+1\,514\,205\right)\cos\left(2\sqrt{z}\right)+12\,(168\,245-14\,864\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aan0.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{245\,760\sqrt{2}\,z^{5/4}}\left(\left(10\sqrt{z}\left(4352z^2+67\,008z+69\,615\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-105\left(1280z^2+21\,216z+9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.6\sqrt{z}\left(348\,075-5888z^2\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aan1.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{245\,760\sqrt{2}\,z^{5/4}}\left(\left(-10\sqrt{z}\left(4352z^2-67\,008z+69\,615\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+105\left(1280z^2-21\,216z+9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.6\sqrt{z}\left(348\,075-5888z^2\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aan2.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{58\,720\,256\,z^{9/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-263\,168z^{5/2}+2\,130\,176z^2+9\,229\,440z^{3/2}+48\,454\,560z+90\,852\,300\sqrt{z}+e^{4\sqrt{z}}\right.\right.\right.$$
$$\left.\left.\left.\left(263\,168z^{5/2}+2\,130\,176z^2-9\,229\,440z^{3/2}+48\,454\,560z-90\,852\,300\sqrt{z}+68\,139\,225\right)+68\,139\,225\right)+\right.$$
$$385e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+43\,776z^2-62\,928z+176\,985\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.385e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+43\,776z^2-62\,928z+176\,985\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.aan3.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},\frac{13}{4};-z\right)=\frac{1}{14\,680\,064\,z^{9/4}}$$
$$\left(2\sqrt[4]{z}\left(\left(-2\,130\,176z^2+48\,454\,560z-68\,139\,225\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(65\,792z^2+2\,307\,360z-22\,713\,075\right)\sin\left(2\sqrt{z}\right)\right)-\right.$$
$$\left.385\sqrt{\pi}\left(4096z^3-43\,776z^2-62\,928z-176\,985\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.aan4.01

$${}_1F_2\left(-\frac{3}{4};-\frac{9}{2},\frac{15}{4};z\right)=\frac{1}{7\,864\,320\sqrt{2}\,z^{9/4}}$$
$$\left(11\left(2\sqrt{z}\left(45\,056z^3+280\,320z^2-8\,751\,600z-10\,094\,175\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+5\left(4096z^3+1\,527\,552z^2+14\,479\,920z+\right.\right.\right.$$
$$\left.\left.\left.6\,056\,505\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(45\,056z^3+848\,640z^2+7\,796\,880z+30\,282\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aan5.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{9}{2}, \frac{15}{4}; -z\right) = -\frac{1}{7\,864\,320\sqrt{2}\, z^{9/4}} $$
$$ \left(11\left(2\sqrt{z}\left(45\,056 z^3 - 280\,320 z^2 - 8\,751\,600 z + 10\,094\,175\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 5\left(4096 z^3 - 1\,527\,552 z^2 + 14\,479\,920 z - \right.\right.\right. $$
$$ \left.\left.\left. 6\,056\,505\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(45\,056 z^3 - 848\,640 z^2 + 7\,796\,880 z - 30\,282\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aan6.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{9}{2}, \frac{17}{4}; z\right) = \frac{1}{15\,032\,385\,536 z^{13/4}} $$
$$ \left(13 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-6\,307\,840 z^{7/2} - 6\,811\,648 z^3 - 248\,355\,840 z^{5/2} - 1\,273\,662\,720 z^2 - 5\,773\,014\,720 z^{3/2} - \right.\right.\right. $$
$$ 15\,917\,322\,960 z - 25\,347\,791\,700\sqrt{z} + e^{4\sqrt{z}}\left(6\,307\,840 z^{7/2} - 6\,811\,648 z^3 + 248\,355\,840 z^{5/2} - 1\,273\,662\,720\right. $$
$$ \left.\left. z^2 + 5\,773\,014\,720 z^{3/2} - 15\,917\,322\,960 z + 25\,347\,791\,700\sqrt{z} - 19\,010\,843\,775\right) - 19\,010\,843\,775\right) + $$
$$ 385 e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 + 933\,888 z^3 - 2\,013\,696 z^2 + 11\,327\,040 z - 49\,378\,815\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ \left.\left. 385 e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 + 933\,888 z^3 - 2\,013\,696 z^2 + 11\,327\,040 z - 49\,378\,815\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aan7.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = $$
$$ \frac{1}{3\,758\,096\,384 z^{13/4}}\left(13\left(2\sqrt[4]{z}\left(\left(6\,811\,648 z^3 - 1\,273\,662\,720 z^2 + 15\,917\,322\,960 z - 19\,010\,843\,775\right)\cos\left(2\sqrt{z}\right) + \right.\right.\right. $$
$$ \left.\left. 20\sqrt{z}\left(315\,392 z^3 - 12\,417\,792 z^2 + 288\,650\,736 z - 1\,267\,389\,585\right)\sin\left(2\sqrt{z}\right)\right) - \right. $$
$$ \left.\left. 385\sqrt{\pi}\left(65\,536 z^4 - 933\,888 z^3 - 2\,013\,696 z^2 - 11\,327\,040 z - 49\,378\,815\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right) $$

07.22.03.aan8.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{150\,994\,944\sqrt{2}\, z^{13/4}}\left(11\left(2\sqrt{z}\left(720\,896 z^4 + 12\,623\,872 z^3 + 183\,306\,240 z^2 + 3\,460\,860\,000 z + 3\,664\,185\,525\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ \left(720\,896 z^4 + 108\,625\,920 z^3 + 4\,536\,829\,440 z^2 + 27\,133\,142\,400 z + 10\,992\,556\,575\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(-720\,896 z^4 - 10\,444\,800 z^3 + 254\,592\,000 z^2 + 3\,682\,355\,040 z + 10\,992\,556\,575\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aan9.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) = -\frac{1}{150\,994\,944\sqrt{2}\, z^{13/4}} $$
$$ \left(11\left(2\sqrt{z}\left(720\,896 z^4 - 12\,623\,872 z^3 + 183\,306\,240 z^2 - 3\,460\,860\,000 z + 3\,664\,185\,525\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(-720\,896 z^4 + 108\,625\,920 z^3 - 4\,536\,829\,440 z^2 + 27\,133\,142\,400 z - 10\,992\,556\,575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(720\,896 z^4 - 10\,444\,800 z^3 - 254\,592\,000 z^2 + 3\,682\,355\,040 z - 10\,992\,556\,575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aana.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) = $$
$$ \frac{1}{962\,072\,674\,304 z^{17/4}}\left(221 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-20\,185\,088 z^{9/2} + 5\,046\,272 z^4 - 229\,113\,856 z^{7/2} + 3\,114\,516\,480 z^3 + \right.\right.\right. $$
$$ 31\,534\,479\,360 z^{5/2} + 179\,088\,053\,760 z^2 + 648\,903\,467\,520 z^{3/2} + 1\,541\,145\,735\,360 z + $$
$$ 2\,306\,649\,044\,700\sqrt{z} + e^{4\sqrt{z}}\left(20\,185\,088 z^{9/2} + 5\,046\,272 z^4 + 229\,113\,856 z^{7/2} + \right. $$
$$ \left.\left.\left. 3\,114\,516\,480 z^3 - 31\,534\,479\,360 z^{5/2} + 179\,088\,053\,760 z^2 - 648\,903\,467\,520 z^{3/2} + \right.\right.\right. $$
$$ \left.\left.\left. 1\,541\,145\,735\,360 z - 2\,306\,649\,044\,700\sqrt{z} + 1\,729\,986\,783\,525\right) + 1\,729\,986\,783\,525\right) + $$
$$ 77 e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576 z^5 + 18\,677\,760 z^4 - 53\,698\,560 z^3 + 453\,081\,600 z^2 - 3\,950\,305\,200 z + 22\,467\,360\,825\right) $$
$$ \left.\left.\left. \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 77 e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.\right. $$
$$ \left.\left.\left.\left(1\,048\,576 z^5 + 18\,677\,760 z^4 - 53\,698\,560 z^3 + 453\,081\,600 z^2 - 3\,950\,305\,200 z + 22\,467\,360\,825\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aanb.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) = \frac{1}{240\,518\,168\,576 z^{17/4}} $$
$$ \left(221\left(2\sqrt[4]{z}\left(\left(-5\,046\,272 z^4 + 3\,114\,516\,480 z^3 - 179\,088\,053\,760 z^2 + 1\,541\,145\,735\,360 z - 1\,729\,986\,783\,525\right)\cos\left(2\sqrt{z}\right) + \right.\right.\right. $$
$$ \left.\left.\left. 4\sqrt{z}\left(5\,046\,272 z^4 - 57\,278\,464 z^3 - 7\,883\,619\,840 z^2 + 162\,225\,866\,880 z - 576\,662\,261\,175\right)\sin\left(2\sqrt{z}\right)\right) - 77 \right.\right. $$
$$ \left.\left.\left.\sqrt{\pi}\left(1\,048\,576 z^5 - 18\,677\,760 z^4 - 53\,698\,560 z^3 - 453\,081\,600 z^2 - 3\,950\,305\,200 z - 22\,467\,360\,825\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right) $$

07.22.03.aanc.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) = \frac{1}{4\,831\,838\,208\sqrt{2}\, z^{17/4}} $$
$$ \left(209\left(2\sqrt{z}\left(1\,048\,576 z^5 + 20\,381\,696 z^4 - 298\,721\,280 z^3 - 15\,504\,652\,800 z^2 - 181\,972\,018\,800 z - 184\,874\,815\,125\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-1\,048\,576 z^5 + 16\,711\,680 z^4 + 10\,346\,618\,880 z^3 + 281\,298\,700\,800 z^2 + \right. $$
$$ \left. 1\,391\,058\,068\,400 z + 554\,624\,445\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(1\,048\,576 z^5 + 20\,643\,840 z^4 + \right. $$
$$ \left.\left. 169\,205\,760 z^3 + 18\,162\,593\,280 z^2 + 207\,859\,251\,600 z + 554\,624\,445\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aand.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) = -\frac{1}{4\,831\,838\,208\sqrt{2}\, z^{17/4}}$$
$$\left(209\left(2\sqrt{z}\left(1\,048\,576 z^5 - 20\,381\,696 z^4 - 298\,721\,280 z^3 + 15\,504\,652\,800 z^2 - 181\,972\,018\,800 z + 184\,874\,815\,125\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(1\,048\,576 z^5 + 16\,711\,680 z^4 - 10\,346\,618\,880 z^3 + 281\,298\,700\,800 z^2 -\right.$$
$$\left.1\,391\,058\,068\,400 z + 554\,624\,445\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 - 20\,643\,840 z^4 +$$
$$\left.\left.169\,205\,760 z^3 - 18\,162\,593\,280 z^2 + 207\,859\,251\,600 z - 554\,624\,445\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

For fixed z and $a_1 = -\frac{3}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.aane.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) = \frac{1}{52\,997\,175}\left(35\left(4096 z^4 + 95\,744 z^3 + 896\,016 z^2 + 2\,971\,980 z + 1\,514\,205\right)\cosh\left(2\sqrt{z}\right) -\right.$$
$$\left.2\sqrt{z}\left(8192 z^4 + 394\,240 z^3 + 5\,728\,800 z^2 + 33\,356\,400 z + 52\,997\,175\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aanf.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{52\,997\,175}\left(35\left(4096 z^4 - 95\,744 z^3 + 896\,016 z^2 - 2\,971\,980 z + 1\,514\,205\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.2\sqrt{z}\left(8192 z^4 - 394\,240 z^3 + 5\,728\,800 z^2 - 33\,356\,400 z + 52\,997\,175\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aang.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{7\,309\,575\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(12\,288 z^4 + 230\,144 z^3 + 1\,634\,256 z^2 + 2\,864\,160 z + 1\,461\,915\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\right.\right.$$
$$\left(4096 z^4 + 159\,232 z^3 + 1\,912\,560 z^2 + 8\,473\,140 z + 7\,309\,575\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(16\,384 z^3 + 331\,968 z^2 + 2\,625\,480 z + 7\,309\,575\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aanh.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) =$$
$$\frac{1}{7\,309\,575\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(12\,288 z^4 - 230\,144 z^3 + 1\,634\,256 z^2 - 2\,864\,160 z + 1\,461\,915\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\right.\right.$$
$$\sqrt{z}\left(4096 z^4 - 159\,232 z^3 + 1\,912\,560 z^2 - 8\,473\,140 z + 7\,309\,575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(-16\,384 z^3 + 331\,968 z^2 - 2\,625\,480 z + 7\,309\,575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aani.01

$${}_1F_2\left(-\frac{3}{4};-\frac{7}{2},-\frac{19}{4};z\right)=\frac{1}{2\,304\,225}\left(\left(4096\,z^4+132\,608\,z^3+1\,326\,864\,z^2+4\,504\,500\,z+2\,304\,225\right)\cosh\left(2\sqrt{z}\right)-14\sqrt{z}\left(2048\,z^3+33\,792\,z^2+204\,600\,z+329\,175\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aanj.01

$${}_1F_2\left(-\frac{3}{4};-\frac{7}{2},-\frac{19}{4};-z\right)=\frac{1}{2\,304\,225}\left(\left(4096\,z^4-132\,608\,z^3+1\,326\,864\,z^2-4\,504\,500\,z+2\,304\,225\right)\cos\left(2\sqrt{z}\right)+14\sqrt{z}\left(-2048\,z^3+33\,792\,z^2-204\,600\,z+329\,175\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aank.01

$${}_1F_2\left(-\frac{3}{4};-\frac{7}{2},-\frac{17}{4};z\right)=\frac{1}{348\,075\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048\,z^4+50\,560\,z^3+382\,320\,z^2+678\,600\,z+348\,075\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-20\sqrt{z}\left(1280\,z^3+17\,392\,z^2+80\,028\,z+69\,615\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(512\,z^3+14\,368\,z^2+121\,680\,z+348\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aanl.01

$${}_1F_2\left(-\frac{3}{4};-\frac{7}{2},-\frac{17}{4};-z\right)=\frac{1}{348\,075\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048\,z^4-50\,560\,z^3+382\,320\,z^2-678\,600\,z+348\,075\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-20\sqrt{z}\left(1280\,z^3-17\,392\,z^2+80\,028\,z-69\,615\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-512\,z^3+14\,368\,z^2-121\,680\,z+348\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aanm.01

$${}_1F_2\left(-\frac{3}{4};-\frac{7}{2},-\frac{15}{4};z\right)=\frac{1}{121\,275}\left(\left(5888\,z^3+66\,864\,z^2+235\,620\,z+121\,275\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(512\,z^3+11\,424\,z^2+73\,920\,z+121\,275\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aann.01

$${}_1F_2\left(-\frac{3}{4};-\frac{7}{2},-\frac{15}{4};-z\right)=\frac{1}{121\,275}\left(\left(-5888\,z^3+66\,864\,z^2-235\,620\,z+121\,275\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(-512\,z^3+11\,424\,z^2-73\,920\,z+121\,275\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aano.01

$${}_1F_2\left(-\frac{3}{4};-\frac{7}{2},-\frac{13}{4};z\right)=\frac{1}{20\,475\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(512\,z^3+4368\,z^2+7920\,z+4095\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256\,z^3+4720\,z^2+23\,220\,z+20\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(704\,z^2+6840\,z+20\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aanp.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, -\frac{13}{4}; -z\right) = \frac{1}{20\,475\sqrt{2}}\left(\sqrt[4]{z}\left(-5\left(512z^3 - 4368z^2 + 7920z - 4095\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(256z^3 - 4720z^2 + 23\,220z - 20\,475\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(704z^2 - 6840z + 20\,475\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aanq.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, -\frac{11}{4}; z\right) = \frac{(16z+77)\left(\left(16z^2 + 180z + 105\right)\cosh\left(2\sqrt{z}\right) - 10\sqrt{z}\,(8z+21)\sinh\left(2\sqrt{z}\right)\right)}{8085} $$

07.22.03.aanr.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, -\frac{11}{4}; -z\right) = -\frac{(16z-77)\left(\left(16z^2 - 180z + 105\right)\cos\left(2\sqrt{z}\right) + 10\,(21-8z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)}{8085} $$

07.22.03.aans.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, -\frac{9}{4}; z\right) = \frac{1}{1575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^3 + 1584z^2 + 3000z + 1575\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(304z^2 + 1740z + 1575\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(32z^2 + 480z + 1575\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aant.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, -\frac{9}{4}; -z\right) = \frac{1}{1575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-128z^3 + 1584z^2 - 3000z + 1575\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(304z^2 - 1740z + 1575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(32z^2 - 480z + 1575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aanu.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, -\frac{7}{4}; z\right) = \frac{1}{735}\left(\left(304z^2 + 1380z + 735\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(32z^2 + 400z + 735\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aanv.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{1}{735}\left(\left(304z^2 - 1380z + 735\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(32z^2 - 400z + 735\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aanw.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, -\frac{5}{4}; z\right) = \frac{1}{175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(144z^2 + 320z + 175\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16z^2 + 180z + 175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 20z\,(8z+35)\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aanx.01

$${}_1F_2\left(-\frac{3}{4};-\frac{7}{2},-\frac{5}{4};-z\right)=\frac{1}{175\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(144z^2-320z+175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(16z^2-180z+175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+20\left(35-8z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aany.01

$${}_1F_2\left(-\frac{3}{4};-\frac{7}{2},-\frac{3}{4};z\right)=\left(\frac{16z^2}{105}+\frac{12z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\left(8z+21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aanz.01

$${}_1F_2\left(-\frac{3}{4};-\frac{7}{2},-\frac{3}{4};-z\right)=\left(\frac{16z^2}{105}-\frac{12z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}\left(21-8z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.aao0.01

$${}_1F_2\left(-\frac{3}{4};-\frac{7}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{35\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8z^2+40z+35\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-28\sqrt{z}\left(3z+5\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(2z+35\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aao1.01

$${}_1F_2\left(-\frac{3}{4};-\frac{7}{2},-\frac{1}{4};-z\right)=$$
$$\frac{1}{35\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8z^2-40z+35\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-28\sqrt{z}\left(3z-5\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\left(35-2z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aao2.01

$${}_1F_2\left(-\frac{3}{4};-\frac{7}{2},\frac{1}{4};z\right)=\frac{1}{280}e^{-2\sqrt{z}}\left(4\left(4z^{3/2}+23z+70\sqrt{z}+e^{4\sqrt{z}}\left(-4z^{3/2}+23z-70\sqrt{z}+35\right)+35\right)+\right.$$
$$\left.77e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+77e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)$$

07.22.03.aao3.01

$${}_1F_2\left(-\frac{3}{4};-\frac{7}{2},\frac{1}{4};-z\right)=\left(1-\frac{23z}{35}\right)\cos\left(2\sqrt{z}\right)-\frac{11}{10}\sqrt{\pi}\,z^{3/4}C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\frac{2}{35}\left(35-2z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.aao4.01

$${}_1F_2\left(-\frac{3}{4};-\frac{7}{2},\frac{3}{4};z\right)=-\frac{\sqrt[4]{z}\left(-10\left(25z+28\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(32z+535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+50zI_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{280\sqrt{2}}$$

07.22.03.aao5.01

$${}_1F_2\left(-\frac{3}{4};-\frac{7}{2},\frac{3}{4};-z\right)=-\frac{\sqrt[4]{z}\left(10\left(25z-28\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(32z-535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+50zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{280\sqrt{2}}$$

07.22.03.aao6.01

$${}_1F_2\left(-\frac{3}{4};-\frac{7}{2},\frac{5}{4};z\right)=\frac{1}{17\,920\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(64z+140\sqrt{z}+e^{4\sqrt{z}}\left(64z-140\sqrt{z}+1225\right)+1225\right)+\right.\right.$$
$$\left.\left.77e^{2\sqrt{z}}\sqrt{2\pi}\left(16z+45\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+77e^{2\sqrt{z}}\sqrt{2\pi}\left(16z+45\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aao7.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = \frac{2\sqrt[4]{z}\left((64z-1225)\cos\left(2\sqrt{z}\right)-140\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)-77\sqrt{\pi}\,(16z-45)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)}{4480\sqrt[4]{z}} $$

07.22.03.aao8.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) = \frac{1}{8960\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(10\sqrt{z}\,(208z+233)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+5(944z+1989)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,(1424z+9945)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aao9.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) = \frac{1}{8960\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(10(233-208z)\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+5(1989-944z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2(9945-1424z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaoa.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) = \frac{1}{458\,752\,z^{5/4}} $$
$$ \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-6976z^{3/2}-16\,688z-87\,780\sqrt{z}+e^{4\sqrt{z}}\left(6976z^{3/2}-16\,688z+87\,780\sqrt{z}-65\,835\right)-65\,835\right)+\right.\right. $$
$$ \left.\left.77e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+1440z-855\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+77e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+1440z-855\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aaob.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{9}{4}; -z\right) = \frac{1}{114\,688\,z^{5/4}} $$
$$ \left(2\sqrt[4]{z}\left(7(2384z-9405)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,(1744z-21\,945)\sin\left(2\sqrt{z}\right)\right)-77\sqrt{\pi}\left(256z^2-1440z-855\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.aaoc.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{11}{4}; z\right) = \frac{1}{204\,800\sqrt{2}\,z^{5/4}} $$
$$ \left(\left(2\sqrt{z}\left(19\,712z^2+208\,480z+208\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(50\,432z^2+1\,272\,960z+626\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right. $$
$$ \left.\left.2\sqrt{z}\left(19\,712z^2+63\,648z-626\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaod.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{11}{4}; -z\right) = \frac{1}{204\,800\sqrt{2}\,z^{5/4}} $$
$$ \left(\left(-2\sqrt{z}\left(19\,712z^2-208\,480z+208\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(50\,432z^2-1\,272\,960z+626\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right. $$
$$ \left.\left.2\sqrt{z}\left(-19\,712z^2+63\,648z+626\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaoe.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{13}{4}; z\right) = -\frac{1}{29\,360\,128\,z^{9/4}}\left(3\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-78\,848\,z^{5/2}+118\,016\,z^2+401\,280\,z^{3/2}+4\,915\,680\,z+10\,094\,700\sqrt{z}+\right.\right.\right.$$
$$\left.\left.\left.e^{4\sqrt{z}}\left(78\,848\,z^{5/2}+118\,016\,z^2-401\,280\,z^{3/2}+4\,915\,680\,z-10\,094\,700\sqrt{z}+7\,571\,025\right)+7\,571\,025\right)-\right.$$
$$77\,e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\,z^3+34\,560\,z^2-41\,040\,z+98\,325\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.77\,e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\,z^3+34\,560\,z^2-41\,040\,z+98\,325\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.aaof.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) = \frac{1}{7\,340\,032\,z^{9/4}}$$
$$\left(3\left(2\sqrt[4]{z}\left(\left(-118\,016\,z^2+4\,915\,680\,z-7\,571\,025\right)\cos\left(2\sqrt{z}\right)+44\sqrt{z}\left(1792\,z^2+9120\,z-229\,425\right)\sin\left(2\sqrt{z}\right)\right)-\right.\right.$$
$$\left.\left.77\sqrt{\pi}\left(4096\,z^3-34\,560\,z^2-41\,040\,z-98\,325\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)$$

07.22.03.aaog.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) = \frac{1}{6\,553\,600\sqrt{2}\,z^{9/4}}$$
$$\left(11\left(2\sqrt{z}\left(45\,056\,z^3+375\,040\,z^2-4\,296\,240\,z-5\,221\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-45\,056\,z^3+2\,545\,920\,z^2+36\,756\,720\,z+\right.\right.\right.$$
$$\left.\left.\left.15\,663\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(45\,056\,z^3+509\,184\,z^2+3\,341\,520\,z+15\,663\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaoh.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{15}{4}; -z\right) = -\frac{1}{6\,553\,600\sqrt{2}\,z^{9/4}}$$
$$\left(11\left(2\sqrt{z}\left(45\,056\,z^3-375\,040\,z^2-4\,296\,240\,z+5\,221\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(45\,056\,z^3+2\,545\,920\,z^2-36\,756\,720\,z+\right.\right.\right.$$
$$\left.\left.\left.15\,663\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(45\,056\,z^3-509\,184\,z^2+3\,341\,520\,z-15\,663\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaoi.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) =$$
$$\frac{1}{7\,516\,192\,768\,z^{13/4}}\left(39\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,261\,568\,z^{7/2}+315\,392\,z^3-20\,720\,640\,z^{5/2}-82\,663\,680\,z^2-475\,316\,160\,z^{3/2}-\right.\right.\right.$$
$$\left.\left.\left.1\,477\,864\,080\,z-2\,453\,012\,100\sqrt{z}+e^{4\sqrt{z}}\left(1\,261\,568\,z^{7/2}+315\,392\,z^3+20\,720\,640\,z^{5/2}-82\,663\,680\,z^2+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.475\,316\,160\,z^{3/2}-1\,477\,864\,080\,z+2\,453\,012\,100\sqrt{z}-1\,839\,759\,075\right)-1\,839\,759\,075\right)+\right.$$
$$77\,e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4+737\,280\,z^3-1\,313\,280\,z^2+6\,292\,800\,z-23\,892\,975\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$\left.77\,e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4+737\,280\,z^3-1\,313\,280\,z^2+6\,292\,800\,z-23\,892\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.aaoj.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) = \frac{1}{1\,879\,048\,192\, z^{13/4}}\left(39\left(2\sqrt[4]{z}\left(4\sqrt{z}\left(315\,392\, z^3 - 5\,180\,160\, z^2 + 118\,829\,040\, z - 613\,253\,025\right)\sin\left(2\sqrt{z}\right) - 11\left(28\,672\, z^3 + 7\,514\,880\, z^2 - 134\,351\,280\, z + 167\,250\,825\right)\cos\left(2\sqrt{z}\right)\right) - 77\sqrt{\pi}\left(65\,536\, z^4 - 737\,280\, z^3 - 1\,313\,280\, z^2 - 6\,292\,800\, z - 23\,892\,975\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right) $$

07.22.03.aaok.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) = \frac{1}{125\,829\,120\sqrt{2}\, z^{13/4}}\left(11\left(2\sqrt{z}\left(720\,896\, z^4 + 9\,011\,200\, z^3 + 45\,826\,560\, z^2 + 1\,527\,552\,000\, z + 1\,665\,538\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(720\,896\, z^4 + 27\,156\,480\, z^3 + 1\,741\,409\,280\, z^2 + 12\,196\,548\,000\, z + 4\,996\,616\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-720\,896\, z^4 - 9\,191\,424\, z^3 + 86\,561\,280\, z^2 + 1\,537\,099\,200\, z + 4\,996\,616\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaol.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = -\frac{1}{125\,829\,120\sqrt{2}\, z^{13/4}}\left(11\left(2\sqrt{z}\left(720\,896\, z^4 - 9\,011\,200\, z^3 + 45\,826\,560\, z^2 - 1\,527\,552\,000\, z + 1\,665\,538\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-720\,896\, z^4 + 27\,156\,480\, z^3 - 1\,741\,409\,280\, z^2 + 12\,196\,548\,000\, z - 4\,996\,616\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(720\,896\, z^4 - 9\,191\,424\, z^3 - 86\,561\,280\, z^2 + 1\,537\,099\,200\, z - 4\,996\,616\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaom.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) = \frac{1}{2\,405\,181\,685\,760\, z^{17/4}}\left(663\, e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-20\,185\,088\, z^{9/2} + 5\,046\,272\, z^4 - 287\,637\,504\, z^{7/2} + 579\,010\,560\, z^3 + 9\,169\,029\,120\, z^{5/2} + 63\,240\,122\,880\, z^2 + 255\,673\,946\,880\, z^{3/2} + 643\,670\,375\,040\, z + 988\,563\,876\,300\sqrt{z} + e^{4\sqrt{z}}\left(20\,185\,088\, z^{9/2} + 5\,046\,272\, z^4 + 287\,637\,504\, z^{7/2} + 579\,010\,560\, z^3 - 9\,169\,029\,120\, z^{5/2} + 63\,240\,122\,880\, z^2 - 255\,673\,946\,880\, z^{3/2} + 643\,670\,375\,040\, z - 988\,563\,876\,300\sqrt{z} + 741\,422\,907\,225\right) + 741\,422\,907\,225\right) + 77\, e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 + 14\,745\,600\, z^4 - 35\,020\,800\, z^3 + 251\,712\,000\, z^2 - 1\,911\,438\,000\, z + 9\,628\,868\,925\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 77\, e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\, z^5 + 14\,745\,600\, z^4 - 35\,020\,800\, z^3 + 251\,712\,000\, z^2 - 1\,911\,438\,000\, z + 9\,628\,868\,925\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right) $$

07.22.03.aaon.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) = \frac{1}{601\,295\,421\,440\,z^{17/4}} $$
$$ \left(663\left(2\sqrt[4]{z}\left(\left(-5\,046\,272\,z^4 + 579\,010\,560\,z^3 - 63\,240\,122\,880\,z^2 + 643\,670\,375\,040\,z - 741\,422\,907\,225\right)\cos\left(2\sqrt{z}\right) + \right.\right.\right. $$
$$ 4\sqrt{z}\left(5\,046\,272\,z^4 - 71\,909\,376\,z^3 - 2\,292\,257\,280\,z^2 + 63\,918\,486\,720\,z - 247\,140\,969\,075\right)\sin\left(2\sqrt{z}\right)\Big) - $$
$$ \left.\left.\left. 77\sqrt{\pi}\left(1\,048\,576\,z^5 - 14\,745\,600\,z^4 - 35\,020\,800\,z^3 - 251\,712\,000\,z^2 - 1\,911\,438\,000\,z - 9\,628\,868\,925\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)\right) $$

07.22.03.aaoo.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = \frac{1}{4\,026\,531\,840\sqrt{2}\,z^{17/4}}\left(209\right. $$
$$ \left(2\sqrt{z}\left(1\,048\,576\,z^5 + 16\,056\,320\,z^4 - 81\,469\,440\,z^3 - 4\,964\,544\,000\,z^2 - 72\,331\,974\,000\,z - 74\,949\,249\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(-1\,048\,576\,z^5 - 16\,711\,680\,z^4 + 2\,688\,491\,520\,z^3 + 103\,491\,648\,000\,z^2 + 559\,621\,062\,000\,z + 224\,847\,748\,125\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(1\,048\,576\,z^5 + 16\,318\,464\,z^4 - 6\,266\,880\,z^3 + \right. $$
$$ \left.\left.\left. 6\,033\,830\,400\,z^2 + 79\,945\,866\,000\,z + 224\,847\,748\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaop.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) = -\frac{1}{4\,026\,531\,840\sqrt{2}\,z^{17/4}} $$
$$ \left(209\left(2\sqrt{z}\left(1\,048\,576\,z^5 - 16\,056\,320\,z^4 - 81\,469\,440\,z^3 + 4\,964\,544\,000\,z^2 - 72\,331\,974\,000\,z + 74\,949\,249\,375\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-1\,048\,576\,z^5 + 16\,711\,680\,z^4 + 2\,688\,491\,520\,z^3 - 103\,491\,648\,000\,z^2 + \right. $$
$$ 559\,621\,062\,000\,z - 224\,847\,748\,125\Big)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576\,z^5 - 16\,318\,464\,z^4 - \right. $$
$$ \left.\left.\left. 6\,266\,880\,z^3 - 6\,033\,830\,400\,z^2 + 79\,945\,866\,000\,z - 224\,847\,748\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = -\frac{3}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.aaoq.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) = \left(\frac{8192\,z^4}{7\,571\,025} + \frac{1024\,z^3}{19\,665} + \frac{32\,z^2}{57} + \frac{224\,z}{115} + 1\right)\cosh\left(2\sqrt{z}\right) - $$
$$ \frac{2\sqrt{z}\left(37\,888\,z^3 + 739\,200\,z^2 + 4\,652\,340\,z + 7\,571\,025\right)\sinh\left(2\sqrt{z}\right)}{7\,571\,025} $$

07.22.03.aaor.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{23}{4};-z\right)=$$

$$\left(\frac{8192\,z^4}{7\,571\,025}-\frac{1024\,z^3}{19\,665}+\frac{32\,z^2}{57}-\frac{224\,z}{115}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-37\,888\,z^3+739\,200\,z^2-4\,652\,340\,z+7\,571\,025\right)\sin\left(2\sqrt{z}\right)}{7\,571\,025}$$

07.22.03.aaos.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{21}{4};z\right)=\frac{1}{1\,044\,225\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(4096\,z^4+142\,336\,z^3+1\,132\,560\,z^2+2\,028\,780\,z+1\,044\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(16\,384\,z^3+252\,096\,z^2+\right.\right.\right.$$

$$\left.\left.\left.1\,193\,400\,z+1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(1024\,z^3+39\,936\,z^2+358\,020\,z+1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaot.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{21}{4};-z\right)=$$

$$\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096\,z^4-142\,336\,z^3+1\,132\,560\,z^2-2\,028\,780\,z+1\,044\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$

$$\left(-16\,384\,z^3+252\,096\,z^2-1\,193\,400\,z+1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$\left.\left.4\,z\left(-1024\,z^3+39\,936\,z^2-358\,020\,z+1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaou.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{19}{4};z\right)=$$

$$\left(\frac{2048\,z^3}{47\,025}+\frac{256\,z^2}{475}+\frac{184\,z}{95}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(1024\,z^3+29\,568\,z^2+198\,660\,z+329\,175\right)\sinh\left(2\sqrt{z}\right)}{329\,175}$$

07.22.03.aaov.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{19}{4};-z\right)=$$

$$\left(-\frac{2048\,z^3}{47\,025}+\frac{256\,z^2}{475}-\frac{184\,z}{95}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-1024\,z^3+29\,568\,z^2-198\,660\,z+329\,175\right)\sin\left(2\sqrt{z}\right)}{329\,175}$$

07.22.03.aaow.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{17}{4};z\right)=$$

$$\frac{1}{49\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(5888\,z^3+52\,560\,z^2+95\,940\,z+49\,725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512\,z^3+11\,168\,z^2+56\,160\,z+49\,725\right)\right.\right.$$

$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+20\,z\left(320\,z^2+3276\,z+9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaox.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{17}{4};-z\right)=$$
$$-\frac{1}{49\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(5888z^3-52\,560z^2+95\,940z-49\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(512z^3-11\,168z^2+56\,160z-49\,725\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-20z\left(320z^2-3276z+9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaoy.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{15}{4};z\right)=\left(\frac{512z^3}{17\,325}+\frac{416z^2}{825}+\frac{48z}{25}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{825}\sqrt{z}\left(64z^2+484z+825\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aaoz.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{15}{4};-z\right)=\left(-\frac{512z^3}{17\,325}+\frac{416z^2}{825}-\frac{48z}{25}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{825}\sqrt{z}\left(64z^2-484z+825\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aap0.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{2925\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^3+2960z^2+5580z+2925\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-36\sqrt{z}\left(64z^2+360z+325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(64z^2+900z+2925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aap1.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{2925\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-256z^3+2960z^2-5580z+2925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+36\sqrt{z}\left(64z^2-360z+325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(64z^2-900z+2925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aap2.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{11}{4};z\right)=\frac{\left(512z^2+2184z+1155\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(64z^2+644z+1155\right)\sinh\left(2\sqrt{z}\right)}{1155}$$

07.22.03.aap3.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{11}{4};-z\right)=\frac{\left(512z^2-2184z+1155\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(64z^2-644z+1155\right)\sin\left(2\sqrt{z}\right)}{1155}$$

07.22.03.aap4.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{9}{4};z\right)=\frac{1}{225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(208z^2+420z+225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(32z^2+240z+225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+60z\left(4z+15\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aap5.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{9}{4};-z\right)=\frac{1}{225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(208z^2-420z+225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(32z^2-240z+225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+60\left(15-4z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aap6.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{7}{4};z\right)=\left(\frac{32z^2}{105}+\frac{64z}{35}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{105}\sqrt{z}\left(52z+105\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aap7.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{7}{4};-z\right)=\left(\frac{32z^2}{105}-\frac{64z}{35}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{105}\left(105-52z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.aap8.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{25\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16z^2+44z+25\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(24z+25\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(4z+25\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aap9.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{25\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16z^2-44z+25\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\left(25-24z\right)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\left(25-4z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aapa.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{3}{4};z\right)=\left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\left(4z+15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aapb.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{3}{4};-z\right)=\left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}\left(15-4z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.aapc.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{1}{4};z\right)=-\frac{\sqrt[4]{z}\left(-\left(4z+5\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2z+5\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-20zI_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.aapd.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},-\frac{1}{4};-z\right)=-\frac{\sqrt[4]{z}\left(\left(4z-5\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2z-5\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-20zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.aape.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},\frac{1}{4};z\right)=\frac{1}{20}e^{-2\sqrt{z}}\left(4e^{4\sqrt{z}}z+4z+7e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{3/4}+\right.$$
$$\left.7e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{3/4}-20e^{4\sqrt{z}}\sqrt{z}+20\sqrt{z}+10e^{4\sqrt{z}}+10\right)$$

07.22.03.aapf.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) = \left(1 - \frac{2z}{5}\right)\cos\left(2\sqrt{z}\right) - \frac{7}{5}\sqrt{\pi}\, z^{3/4}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt{z}\, \sin\left(2\sqrt{z}\right)$$

07.22.03.aapg.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{5}{2}, \frac{3}{4}; z\right) = \frac{\sqrt[4]{z}\left(2(9z+10) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 35\sqrt{z}\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 10z I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}}$$

07.22.03.aaph.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) = \frac{\sqrt[4]{z}\left((20-18z) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 35\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 10z J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}}$$

07.22.03.aapi.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{5}{2}, \frac{5}{4}; z\right) =$$

$$\frac{1}{1280\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(12\sqrt{z}+71\right) - 12\sqrt{z}+71\right) + 7e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+33)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 7e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+33)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aapj.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{5}{2}, \frac{5}{4}; -z\right) = \frac{-142\sqrt[4]{z}\cos\left(2\sqrt{z}\right) - 7\sqrt{\pi}\,(16z-33)\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 24z^{3/4}\sin\left(2\sqrt{z}\right)}{320\sqrt[4]{z}}$$

07.22.03.aapk.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) =$$

$$\frac{1}{640\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\,(112z+125) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 5(16z+117) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,(112z+585) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aapl.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{5}{2}, \frac{7}{4}; -z\right) =$$

$$\frac{1}{640\sqrt{2}\sqrt[4]{z}}\left(\left(2(125-112z)\sqrt{z}\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 5(117-16z) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2(585-112z)\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aapm.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) =$$

$$\frac{1}{32\,768 z^{5/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-448z^{3/2} - 400z - 4620\sqrt{z} + e^{4\sqrt{z}}\left(448z^{3/2} - 400z + 4620\sqrt{z} - 3465\right) - 3465\right) + 7e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 + 1056z - 495\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 7e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 + 1056z - 495\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aapn.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},\frac{9}{4};-z\right)=$$

$$\frac{1}{8192\,z^{5/4}}\left(7\sqrt{\pi}\,\left(-256\,z^2+1056\,z+495\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(5\,(80\,z-693)\cos\left(2\sqrt{z}\right)+28\sqrt{z}\,(16\,z-165)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aapo.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},\frac{11}{4};z\right)=$$

$$\frac{1}{102\,400\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\,\left(1792\,z^2+10\,880\,z+9945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(1792\,z^2+56\,160\,z+29\,835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(1792\,z^2+7488\,z-29\,835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aapp.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},\frac{11}{4};-z\right)=$$

$$-\frac{1}{102\,400\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\,\left(1792\,z^2-10\,880\,z+9945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-1792\,z^2+56\,160\,z-29\,835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(1792\,z^2-7488\,z-29\,835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aapq.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},\frac{13}{4};z\right)=$$

$$-\frac{1}{2\,097\,152\,z^{9/4}}\left(3\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-7168\,z^{5/2}+1792\,z^2-21\,120\,z^{3/2}+184\,800\,z+438\,900\sqrt{z}\,+e^{4\sqrt{z}}\,\left(7168\,z^{5/2}+\right.\right.\right.\right.$$

$$\left.\left.\left.\left.1792\,z^2+21\,120\,z^{3/2}+184\,800\,z-438\,900\sqrt{z}\,+329\,175\right)+329\,175\right)-\right.$$

$$7\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3+25\,344\,z^2-23\,760\,z+47\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-7\,e^{2\sqrt{z}}\,\sqrt{2\pi}$$

$$\left.\left.\left(4096\,z^3+25\,344\,z^2-23\,760\,z+47\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aapr.01

$${}_1F_2\left(-\frac{3}{4};-\frac{5}{2},\frac{13}{4};-z\right)=$$

$$\frac{1}{524\,288\,z^{9/4}}\left(3\left(2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(1792\,z^2-5280\,z-109\,725\right)\sin\left(2\sqrt{z}\right)-7\left(256\,z^2-26\,400\,z+47\,025\right)\cos\left(2\sqrt{z}\right)\right)-\right.\right.$$

$$\left.\left.7\sqrt{\pi}\,\left(4096\,z^3-25\,344\,z^2-23\,760\,z-47\,025\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)$$

07.22.03.aaps.01

$$ {}_1F_2\left(-\frac{3}{4};-\frac{5}{2},\frac{15}{4};z\right)=\frac{1}{3\,276\,800\sqrt{2}\,z^{9/4}}$$
$$\left(77\left(2\sqrt{z}\,\left(4096z^3+28\,928z^2-159\,120z-208\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4096z^3+29\,952z^2+1\,432\,080z+626\,535\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(4096z^3+29\,952z^2+95\,472z+626\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aapt.01

$$ {}_1F_2\left(-\frac{3}{4};-\frac{5}{2},\frac{15}{4};-z\right)=-\frac{1}{3\,276\,800\sqrt{2}\,z^{9/4}}$$
$$\left(77\left(2\sqrt{z}\,\left(4096z^3-28\,928z^2-159\,120z+208\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096z^3+29\,952z^2-1\,432\,080z+626\,535\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4096z^3-29\,952z^2+95\,472z-626\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aapu.01

$$ {}_1F_2\left(-\frac{3}{4};-\frac{5}{2},\frac{17}{4};z\right)=$$
$$\frac{1}{536\,870\,912z^{13/4}}\left(39e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-114\,688z^{7/2}+28\,672z^3-967\,680z^{5/2}-1\,309\,440z^2-13\,442\,880z^{3/2}-\right.\right.\right.$$
$$\left.\left.51\,614\,640z-90\,852\,300\sqrt{z}\,+e^{4\sqrt{z}}\left(114\,688z^{7/2}+28\,672z^3+967\,680z^{5/2}-1\,309\,440z^2+\right.\right.\right.$$
$$\left.\left.\left.13\,442\,880z^{3/2}-51\,614\,640z+90\,852\,300\sqrt{z}\,-68\,139\,225\right)-68\,139\,225\right)+$$
$$7e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536z^4+540\,672z^3-760\,320z^2+3\,009\,600z-9\,734\,175\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.7e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536z^4+540\,672z^3-760\,320z^2+3\,009\,600z-9\,734\,175\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aapv.01

$$ {}_1F_2\left(-\frac{3}{4};-\frac{5}{2},\frac{17}{4};-z\right)=$$
$$\frac{1}{134\,217\,728z^{13/4}}\left(39\left(2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(28\,672z^3-241\,920z^2+3\,360\,720z-22\,713\,075\right)\sin\left(2\sqrt{z}\right)-\left(28\,672z^3+\right.\right.\right.\right.$$
$$\left.\left.\left.1\,309\,440z^2-51\,614\,640z+68\,139\,225\right)\cos\left(2\sqrt{z}\right)\right)-$$
$$\left.\left.7\sqrt{\pi}\,\left(65\,536z^4-540\,672z^3-760\,320z^2-3\,009\,600z-9\,734\,175\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)$$

07.22.03.aapw.01

$$ {}_1F_2\left(-\frac{3}{4};-\frac{5}{2},\frac{19}{4};z\right)=\frac{1}{62\,914\,560\sqrt{2}\,z^{13/4}}\left(77\left(2\sqrt{z}\,\left(65\,536z^4+598\,016z^3+50\,600\,160z+57\,432\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(65\,536z^4+638\,976z^3+45\,826\,560z^2+414\,348\,480z+172\,297\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\,\left(-65\,536z^4-614\,400z^3+2\,036\,736z^2+46\,781\,280z+172\,297\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aapx.01

$$ {}_1F_2\left(-\frac{3}{4};-\frac{5}{2},\frac{19}{4};-z\right)=-\frac{1}{62\,914\,560\sqrt{2}\,z^{13/4}}\left(77\left(2\sqrt{z}\left(65\,536z^4-598\,016z^3-50\,600\,160z+57\,432\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-65\,536z^4+638\,976z^3-45\,826\,560z^2+414\,348\,480z-172\,297\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(65\,536z^4-614\,400z^3-2\,036\,736z^2+46\,781\,280z-172\,297\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aapy.01

$$ {}_1F_2\left(-\frac{3}{4};-\frac{5}{2},\frac{21}{4};z\right)= \frac{1}{171\,798\,691\,840\,z^{17/4}}\left(663\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,835\,008z^{9/2}+458\,752z^4-19\,267\,584z^{7/2}+5\,160\,960z^3+157\,009\,920z^{5/2}+1\,507\,207\,680z^2+7\,309\,716\,480z^{3/2}+20\,060\,187\,840z+31\,889\,157\,300\sqrt{z}+e^{4\sqrt{z}}\left(1\,835\,008z^{9/2}+458\,752z^4+19\,267\,584z^{7/2}+5\,160\,960z^3-157\,009\,920z^{5/2}+1\,507\,207\,680z^2-7\,309\,716\,480z^{3/2}+20\,060\,187\,840z-31\,889\,157\,300\sqrt{z}+23\,916\,867\,975\right)+23\,916\,867\,975\right)+7e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5+10\,813\,440z^4-20\,275\,200z^3+120\,384\,000z^2-778\,734\,000z+3\,416\,695\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+7e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5+10\,813\,440z^4-20\,275\,200z^3+120\,384\,000z^2-778\,734\,000z+3\,416\,695\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aapz.01

$$ {}_1F_2\left(-\frac{3}{4};-\frac{5}{2},\frac{21}{4};-z\right)=\frac{1}{42\,949\,672\,960\,z^{17/4}}\left(663\left(7\sqrt{\pi}\left(-1\,048\,576z^5+10\,813\,440z^4+20\,275\,200z^3+120\,384\,000z^2+778\,734\,000z+3\,416\,695\,425\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(-458\,752z^4+5\,160\,960z^3-1\,507\,207\,680z^2+20\,060\,187\,840z-23\,916\,867\,975\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(458\,752z^4-4\,816\,896z^3-39\,252\,480z^2+1\,827\,429\,120z-7\,972\,289\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aaq0.01

$$ {}_1F_2\left(-\frac{3}{4};-\frac{5}{2},\frac{23}{4};z\right)=\frac{1}{2\,013\,265\,920\sqrt{2}\,z^{17/4}}\left(133\left(2\sqrt{z}\left(1\,048\,576z^5+11\,730\,944z^4-27\,156\,480z^3-1\,115\,112\,960z^2-23\,498\,046\,000z-24\,983\,083\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-1\,048\,576z^5-12\,386\,304z^4+407\,347\,200z^3+30\,077\,498\,880z^2+184\,702\,518\,000z+74\,949\,249\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(1\,048\,576z^5+11\,993\,088z^4-23\,814\,144z^3+1\,512\,276\,480z^2+24\,810\,786\,000z+74\,949\,249\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaq1.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{5}{2}, \frac{23}{4}; -z\right) = -\frac{1}{2\,013\,265\,920\sqrt{2}\,z^{17/4}}$$
$$\left(133\left(2\sqrt{z}\left(1\,048\,576 z^5 - 11\,730\,944 z^4 - 27\,156\,480 z^3 + 1\,115\,112\,960 z^2 - 23\,498\,046\,000 z + 24\,983\,083\,125\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-1\,048\,576 z^5 + 12\,386\,304 z^4 + 407\,347\,200 z^3 - 30\,077\,498\,880 z^2 +\right.$$
$$184\,702\,518\,000 z - 74\,949\,249\,375\Big) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 - 11\,993\,088 z^4 -\right.$$
$$\left.\left.\left.23\,814\,144 z^3 - 1\,512\,276\,480 z^2 + 24\,810\,786\,000 z - 74\,949\,249\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = -\frac{3}{4}$, $b_{1.} = -\frac{3}{2}$

07.22.03.aaq2.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, -\frac{23}{4}; z\right) =$$
$$\left(\frac{41\,984 z^3}{1\,514\,205} + \frac{640 z^2}{1311} + \frac{44 z}{23} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(2048 z^3 + 109\,056 z^2 + 877\,800 z + 1\,514\,205\right)\sinh\left(2\sqrt{z}\right)}{1\,514\,205}$$

07.22.03.aaq3.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, -\frac{23}{4}; -z\right) =$$
$$\left(-\frac{41\,984 z^3}{1\,514\,205} + \frac{640 z^2}{1311} - \frac{44 z}{23} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-2048 z^3 + 109\,056 z^2 - 877\,800 z + 1\,514\,205\right)\sin\left(2\sqrt{z}\right)}{1\,514\,205}$$

07.22.03.aaq4.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, -\frac{21}{4}; z\right) = \frac{1}{208\,845\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(17\,408 z^3 + 209\,664 z^2 + 397\,800 z + 208\,845\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024 z^3 + 39\,936 z^2 + 230\,724 z + 208\,845\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36 z\left(512 z^2 + 7072 z + 23\,205\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaq5.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, -\frac{21}{4}; -z\right) = -\frac{1}{208\,845\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(17\,408 z^3 - 209\,664 z^2 + 397\,800 z - 208\,845\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1024 z^3 - 39\,936 z^2 + 230\,724 z - 208\,845\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 36 z\left(512 z^2 - 7072 z + 23\,205\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaq6.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{19}{4};z\right)=\left(\frac{1024\,z^3}{65\,835}+\frac{128\,z^2}{285}+\frac{36\,z}{19}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(256\,z^2+2464\,z+4389\right)\sinh\left(2\sqrt{z}\right)}{4389}$$

07.22.03.aaq7.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{19}{4};-z\right)=\left(-\frac{1024\,z^3}{65\,835}+\frac{128\,z^2}{285}-\frac{36\,z}{19}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(256\,z^2-2464\,z+4389\right)\sin\left(2\sqrt{z}\right)}{4389}$$

07.22.03.aaq8.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512\,z^3+9504\,z^2+18\,720\,z+9945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(1600\,z^2+10\,764\,z+9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(128\,z^2+2808\,z+9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaq9.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-512\,z^3+9504\,z^2-18\,720\,z+9945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(1600\,z^2-10\,764\,z+9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(128\,z^2-2808\,z+9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaqa.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{15}{4};z\right)=\left(\frac{64\,z^2}{165}+\frac{28\,z}{15}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(128\,z^2+1848\,z+3465\right)\sinh\left(2\sqrt{z}\right)}{3465}$$

07.22.03.aaqb.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{15}{4};-z\right)=\left(\frac{64\,z^2}{165}-\frac{28\,z}{15}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(128\,z^2-1848\,z+3465\right)\sin\left(2\sqrt{z}\right)}{3465}$$

07.22.03.aaqc.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{13}{4};z\right)=\frac{1}{585\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(512\,z^2+1080\,z+585\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(64\,z^2+612\,z+585\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+36\,z\,(16\,z+65)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaqd.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{13}{4};-z\right)=\frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\right.$$
$$\left.\left(\left(512\,z^2-1080\,z+585\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(64\,z^2-612\,z+585\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+36\,(65-16\,z)\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaqe.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{11}{4};z\right)=\left(\frac{64\,z^2}{231}+\frac{20\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{33}\sqrt{z}\,(16\,z+33)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aaqf.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{11}{4};-z\right)=\left(\frac{64\,z^2}{231}-\frac{20\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{33}(33-16\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aaqg.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{9}{4};z\right)=$$

$$\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,z^2+80\,z+45\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(44\,z+45)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\,(8\,z+45)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaqh.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{9}{4};-z\right)=$$

$$\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,z^2-80\,z+45\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(44\,z-45)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,(45-8\,z)\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaqi.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{7}{4};z\right)=\left(\frac{12\,z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\,(8\,z+21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aaqj.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{7}{4};-z\right)=\left(1-\frac{12\,z}{7}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}(21-8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aaqk.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{5}{4};z\right)=-\frac{\sqrt[4]{z}\left(-(8\,z+5)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(4\,z+5)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-20\,z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.aaql.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{5}{4};-z\right)=-\frac{\sqrt[4]{z}\left((8\,z-5)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(4\,z-5)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-20\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.aaqm.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{3}{4};z\right)=\left(\frac{4\,z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aaqn.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{3}{4};-z\right)=\left(1-\frac{4\,z}{3}\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aaqo.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},-\frac{1}{4};z\right)=\frac{\sqrt[4]{z}\left(I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)\right)^2\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.aaqp.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, -\frac{1}{4}; -z\right) = \frac{\sqrt[4]{z}\left(J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right)\right)^2 \Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.aaqq.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{1}{4}; z\right) = \frac{1}{2}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\left(1-2\sqrt{z}\right)+2\sqrt{z}+1\right)+\sqrt{2\pi}\, z^{3/4}\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\sqrt{2\pi}\, z^{3/4}\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)$$

07.22.03.aaqr.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{1}{4}; -z\right) = \cos\left(2\sqrt{z}\right) - 2\sqrt{\pi}\, z^{3/4} C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.aaqs.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{3}{4}; z\right) = \frac{\sqrt[4]{z}\left(2(z+1) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2z\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{2\sqrt{2}}$$

07.22.03.aaqt.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{3}{4}; -z\right) = -\frac{\sqrt[4]{z}\left(2(z-1) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2z\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{2\sqrt{2}}$$

07.22.03.aaqu.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{5}{4}; z\right) = \frac{1}{128\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}+5\right)-4\sqrt{z}+5\right)+\right.\right.$$
$$\left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+21)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+21)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aaqv.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{5}{4}; -z\right) = \frac{-10\sqrt[4]{z}\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\,(21-16z)\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+8z^{3/4}\sin\left(2\sqrt{z}\right)}{32\sqrt[4]{z}}$$

07.22.03.aaqw.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{7}{4}; z\right) =$$
$$\frac{1}{64\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\,(16z+17) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (45-16z) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,(16z+45) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaqx.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{7}{4}; -z\right) =$$
$$\frac{1}{64\sqrt{2}\sqrt[4]{z}}\left(\left(2(17-16z)\sqrt{z}\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (16z+45) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2(45-16z)\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaqy.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{9}{4}; z\right) = \frac{1}{16\,384\, z^{5/4}} \left(5\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-64\, z^{3/2} + 16\, z - 308\sqrt{z} + e^{4\sqrt{z}}\left(64\, z^{3/2} + 16\, z + 308\sqrt{z} - 231\right) - 231\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 + 672\, z - 231\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 + 672\, z - 231\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aaqz.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) = \frac{1}{4096\, z^{5/4}} \left(5\left(\sqrt{\pi}\left(-256\, z^2 + 672\, z + 231\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\,(16\, z - 77)\sin\left(2\sqrt{z}\right) - (16\, z + 231)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aar0.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) = \frac{1}{10\,240\sqrt{2}\, z^{5/4}} \left(7\left(2\sqrt{z}\left(256\, z^2 + 800\, z + 585\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(256\, z^2 + 2880\, z + 1755\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(256\, z^2 + 864\, z - 1755\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aar1.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) = -\frac{1}{10\,240\sqrt{2}\, z^{5/4}} \left(7\left(2\sqrt{z}\left(256\, z^2 - 800\, z + 585\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-256\, z^2 + 2880\, z - 1755\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(256\, z^2 - 864\, z - 1755\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aar2.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) = -\frac{1}{1\,048\,576\, z^{9/4}} \left(15\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1024\, z^{5/2} + 256\, z^2 - 4224\, z^{3/2} + 7392\, z + 23\,100\sqrt{z} + e^{4\sqrt{z}}\left(1024\, z^{5/2} + 256\, z^2 + 4224\, z^{3/2} + 7392\, z - 23\,100\sqrt{z} + 17\,325\right) + 17\,325\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\, z^3 + 16\,128\, z^2 - 11\,088\, z + 17\,325\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\, z^3 + 16\,128\, z^2 - 11\,088\, z + 17\,325\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aar3.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) = \frac{1}{262\,144\, z^{9/4}} \left(15\left(\sqrt{\pi}\left(-4096\, z^3 + 16\,128\, z^2 + 11\,088\, z + 17\,325\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(-256\, z^2 + 7392\, z - 17\,325\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(256\, z^2 - 1056\, z - 5775\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aar4.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) = \frac{1}{327\,680\sqrt{2}\, z^{9/4}} $$
$$ \left(11\left(2\sqrt{z}\left(4096z^3 + 18\,176z^2 - 46\,800z - 69\,615\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4096z^3 - 20\,736z^2 + 458\,640z + 208\,845\right)\right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(4096z^3 + 19\,200z^2 + 13\,104z + 208\,845\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aar5.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{15}{4}; -z\right) = -\frac{1}{327\,680\sqrt{2}\, z^{9/4}} $$
$$ \left(11\left(2\sqrt{z}\left(4096z^3 - 18\,176z^2 - 46\,800z + 69\,615\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4096z^3 + 20\,736z^2 + 458\,640z - 208\,845\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4096z^3 - 19\,200z^2 + 13\,104z - 208\,845\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aar6.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) = \frac{1}{268\,435\,456\, z^{13/4}} $$
$$ \left(195\, e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384z^{7/2} + 4096z^3 - 89\,088z^{5/2} + 25\,344z^2 - 327\,360z^{3/2} - 2\,051\,280z - 3\,950\,100\sqrt{z} + e^{4\sqrt{z}}\right.\right.\right. $$
$$ \left.\left.\left(16\,384z^{7/2} + 4096z^3 + 89\,088z^{5/2} + 25\,344z^2 + 327\,360z^{3/2} - 2\,051\,280z + 3\,950\,100\sqrt{z} - 2\,962\,575\right) - \right.\right. $$
$$ \left.\left. 2\,962\,575\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 344\,064z^3 - 354\,816z^2 + 1\,108\,800z - 2\,962\,575\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + \right. $$
$$ \left. e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 344\,064z^3 - 354\,816z^2 + 1\,108\,800z - 2\,962\,575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aar7.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) = $$
$$ \frac{1}{67\,108\,864\, z^{13/4}}\left(195\left(\sqrt{\pi}\left(-65\,536z^4 + 344\,064z^3 + 354\,816z^2 + 1\,108\,800z + 2\,962\,575\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right. $$
$$ 2\sqrt[4]{z}\left(\left(-4096z^3 + 25\,344z^2 + 2\,051\,280z - 2\,962\,575\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left. 4\sqrt{z}\left(4096z^3 - 22\,272z^2 + 81\,840z - 987\,525\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aar8.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{6\,291\,456\sqrt{2}\, z^{13/4}}\left(11\left(2\sqrt{z}\left(65\,536z^4 + 376\,832z^3 - 539\,136z^2 + 13\,366\,080z + 16\,081\,065\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ \left(65\,536z^4 + 417\,792z^3 + 7\,547\,904z^2 + 113\,611\,680z + 48\,243\,195\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(-65\,536z^4 - 393\,216z^3 + 419\,328z^2 + 10\,692\,864z + 48\,243\,195\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aar9.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},\frac{19}{4};-z\right)=$$
$$-\frac{1}{6\,291\,456\sqrt{2}\,z^{13/4}}\left(11\left(2\sqrt{z}\left(65\,536z^4-376\,832z^3-539\,136z^2-13\,366\,080z+16\,081\,065\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-65\,536z^4+417\,792z^3-7\,547\,904z^2+113\,611\,680z-48\,243\,195\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-393\,216z^3-419\,328z^2+10\,692\,864z-48\,243\,195\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aara.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},\frac{21}{4};z\right)=$$
$$\frac{1}{17\,179\,869\,184\,z^{17/4}}\left(663\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-262\,144z^{9/2}+65\,536z^4-1\,769\,472z^{7/2}+491\,520z^3+1\,935\,360z^{5/2}+\right.\right.\right.$$
$$31\,511\,040z^2+223\,914\,240z^{3/2}+707\,857\,920z+1\,181\,079\,900\sqrt{z}\,+$$
$$e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4+1\,769\,472z^{7/2}+491\,520z^3-1\,935\,360z^{5/2}+31\,511\,040z^2-\right.$$
$$\left.223\,914\,240z^{3/2}+707\,857\,920z-1\,181\,079\,900\sqrt{z}+885\,809\,925\right)+885\,809\,925\Big)+e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left(1\,048\,576z^5+6\,881\,280z^4-9\,461\,760z^3+44\,352\,000z^2-237\,006\,000z+885\,809\,925\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}$$
$$\left.\left.\sqrt{2\pi}\left(1\,048\,576z^5+6\,881\,280z^4-9\,461\,760z^3+44\,352\,000z^2-237\,006\,000z+885\,809\,925\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aarb.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},\frac{21}{4};-z\right)=\frac{1}{4\,294\,967\,296\,z^{17/4}}$$
$$\left(663\left(\sqrt{\pi}\left(-1\,048\,576z^5+6\,881\,280z^4+9\,461\,760z^3+44\,352\,000z^2+237\,006\,000z+885\,809\,925\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\left(\left(-65\,536z^4+491\,520z^3-31\,511\,040z^2+707\,857\,920z-885\,809\,925\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.4\sqrt{z}\left(65\,536z^4-442\,368z^3-483\,840z^2+55\,978\,560z-295\,269\,975\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aarc.01

$${}_1F_2\left(-\frac{3}{4};-\frac{3}{2},\frac{23}{4};z\right)=\frac{1}{201\,326\,592\sqrt{2}\,z^{17/4}}$$
$$\left(19\left(2\sqrt{z}\left(1\,048\,576z^5+7\,405\,568z^4-13\,099\,008z^3-106\,928\,640z^2-5\,476\,751\,280z-6\,030\,399\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-1\,048\,576z^5-8\,060\,928z^4+6\,709\,248z^3+5\,881\,075\,200z^2+43\,997\,793\,840z+18\,091\,198\,125\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}$$
$$\left.\left.\left(1\,048\,576z^5+7\,667\,712z^4-10\,838\,016z^3+235\,243\,008z^2+5\,403\,237\,840z+18\,091\,198\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aard.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) = -\frac{1}{201\,326\,592\sqrt{2}\, z^{17/4}}$$
$$\left(19\left(2\sqrt{z}\left(1\,048\,576 z^5 - 7\,405\,568 z^4 - 13\,099\,008 z^3 + 106\,928\,640 z^2 - 5\,476\,751\,280 z + 6\,030\,399\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(-1\,048\,576 z^5 + 8\,060\,928 z^4 + 6\,709\,248 z^3 - 5\,881\,075\,200 z^2 + 43\,997\,793\,840 z - 18\,091\,198\,125\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 - 7\,667\,712 z^4 - 10\,838\,016 z^3 - \right.$$
$$\left.\left.\left.235\,243\,008 z^2 + 5\,403\,237\,840 z - 18\,091\,198\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = -\frac{3}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.aare.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{504\,735}\left(\left(2048 z^3 + 133\,120 z^2 + 877\,800 z + 504\,735\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(12\,032 z^2 + 218\,080 z + 504\,735\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aarf.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{504\,735}\left(\left(-2048 z^3 + 133\,120 z^2 - 877\,800 z + 504\,735\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(12\,032 z^2 - 218\,080 z + 504\,735\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aarg.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) = \frac{1}{69\,615\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(1024 z^3 + 44\,928 z^2 + 119\,340 z + 69\,615\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(5120 z^2 + 63\,648 z + 69\,615\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.4 z\left(256 z^2 + 12\,576 z + 69\,615\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aarh.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, -\frac{21}{4}; -z\right) = \frac{1}{69\,615\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(-1024 z^3 + 44\,928 z^2 - 119\,340 z + 69\,615\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(5120 z^2 - 63\,648 z + 69\,615\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.4 z\left(256 z^2 - 12\,576 z + 69\,615\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aari.01

$${}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, -\frac{19}{4}; z\right) = \left(\frac{4352 z^2}{21\,945} + \frac{32 z}{19} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256 z^2 + 8480 z + 21\,945\right)\sinh\left(2\sqrt{z}\right)}{21\,945}$$

07.22.03.aarj.01

$${}_1F_2\left(-\frac{3}{4};-\frac{1}{2},-\frac{19}{4};-z\right)=\left(\frac{4352\,z^2}{21\,945}-\frac{32\,z}{19}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(256\,z^2-8480\,z+21\,945\right)\sin\left(2\sqrt{z}\right)}{21\,945}$$

07.22.03.aark.01

$${}_1F_2\left(-\frac{3}{4};-\frac{1}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{3315\sqrt{2}}\left(\sqrt[4]{z}\left(3\left(576\,z^2+1820\,z+1105\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(128\,z^2+2808\,z+3315\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\,(464\,z+3315)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aarl.01

$${}_1F_2\left(-\frac{3}{4};-\frac{1}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{3315\sqrt{2}}\left(\sqrt[4]{z}\left(3\left(576\,z^2-1820\,z+1105\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(128\,z^2-2808\,z+3315\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,(3315-464\,z)\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aarm.01

$${}_1F_2\left(-\frac{3}{4};-\frac{1}{2},-\frac{15}{4};z\right)=\left(\frac{128\,z^2}{1155}+\frac{8\,z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,(368\,z+1155)\sinh\left(2\sqrt{z}\right)}{1155}$$

07.22.03.aarn.01

$${}_1F_2\left(-\frac{3}{4};-\frac{1}{2},-\frac{15}{4};-z\right)=\left(\frac{128\,z^2}{1155}-\frac{8\,z}{5}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\,(1155-368\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)}{1155}$$

07.22.03.aaro.01

$${}_1F_2\left(-\frac{3}{4};-\frac{1}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{195\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64\,z^2+300\,z+195\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,(48\,z+65)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\,(16\,z+195)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aarp.01

$${}_1F_2\left(-\frac{3}{4};-\frac{1}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{195\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64\,z^2-300\,z+195\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+12\,(65-48\,z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,(195-16\,z)\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aarq.01

$${}_1F_2\left(-\frac{3}{4};-\frac{1}{2},-\frac{11}{4};z\right)=\left(\frac{16\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{77}\sqrt{z}\,(16\,z+77)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aarr.01

$${}_1F_2\left(-\frac{3}{4};-\frac{1}{2},-\frac{11}{4};-z\right)=\left(1-\frac{16\,z}{11}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{77}\,(77-16\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aars.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, -\frac{9}{4}; z\right) = -\frac{\sqrt[4]{z}\left(-5\,(4z+3)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(8z+15)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 60\,z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{15\sqrt{2}} $$

07.22.03.aart.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, -\frac{9}{4}; -z\right) = -\frac{\sqrt[4]{z}\left(5\,(4z-3)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(8z-15)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 60\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{15\sqrt{2}} $$

07.22.03.aaru.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, -\frac{7}{4}; z\right) = \left(\frac{8z}{7}+1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right) $$

07.22.03.aarv.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) = \left(1-\frac{8z}{7}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.aarw.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) = \frac{\sqrt[4]{z}\left((4z+5)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 20\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 20\,z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}} $$

07.22.03.aarx.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, -\frac{5}{4}; -z\right) = -\frac{\sqrt[4]{z}\left((4z-5)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 20\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 20\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}} $$

07.22.03.aary.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, -\frac{3}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right) $$

07.22.03.aarz.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, -\frac{3}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.aas0.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) = -\frac{\sqrt[4]{z}\left((4z-1)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}} $$

07.22.03.aas1.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) = \frac{\sqrt[4]{z}\left((4z+1)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}} $$

07.22.03.aas2.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) = \frac{1}{2}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\left(1-2\sqrt{z}\right)+2\sqrt{z}+1\right) + 2\sqrt{2\pi}\,z^{3/4}\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + 2\sqrt{2\pi}\,z^{3/4}\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right) $$

07.22.03.aas3.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, \frac{1}{4}; -z\right) = \cos\left(2\sqrt{z}\right) - 4\sqrt{\pi}\,z^{3/4}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.aas4.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, \frac{3}{4}; z\right) = \frac{\sqrt[4]{z}\left((2z+1)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\;I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}} $$

07.22.03.aas5.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, \frac{3}{4}; -z\right) = -\frac{\sqrt[4]{z}\left((2z-1)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\;J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}} $$

07.22.03.aas6.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, \frac{5}{4}; z\right) = \frac{1}{64\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\right. $$
$$ \left.\left(-4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}+1\right) - 4\sqrt{z}+1\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+9)\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+9)\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aas7.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, \frac{5}{4}; -z\right) = \frac{-2\sqrt[4]{z}\cos\left(2\sqrt{z}\right) + \sqrt{\pi}\,(9-16z)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 8z^{3/4}\sin\left(2\sqrt{z}\right)}{16\sqrt[4]{z}} $$

07.22.03.aas8.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, \frac{7}{4}; z\right) = $$
$$ \frac{1}{32\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\,(16z+11)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (15-16z)\,I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,(16z+15)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aas9.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, \frac{7}{4}; -z\right) = $$
$$ \frac{1}{32\sqrt{2}\sqrt[4]{z}}\left(\left(2(11-16z)\sqrt{z}\;J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (16z+15)\,J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2(15-16z)\sqrt{z}\;J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aasa.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, \frac{9}{4}; z\right) = $$
$$ \frac{1}{8192\,z^{5/4}}\left(5e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-64z^{3/2}+16z-84\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}+16z+84\sqrt{z}-63\right)-63\right)+e^{2\sqrt{z}}\right.\right. $$
$$ \left.\left.\sqrt{2\pi}\left(256z^2+288z-63\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+288z-63\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aasb.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, \frac{9}{4}; -z\right) = $$
$$ \frac{1}{2048\,z^{5/4}}\left(5\left(\sqrt{\pi}\left(-256z^2+288z+63\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\,(16z-21)\sin\left(2\sqrt{z}\right) - (16z+63)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aasc.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) = \frac{1}{5120\sqrt{2}\, z^{5/4}}\left(7\left(2\sqrt{z}\left(256z^2+320z+135\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(256z^2+480z+405\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(256z^2+384z-405\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aasd.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = -\frac{1}{5120\sqrt{2}\, z^{5/4}}\left(7\left(2\sqrt{z}\left(256z^2-320z+135\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-256z^2+480z-405\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(256z^2-384z-405\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aase.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) = -\frac{1}{524\,288\, z^{9/4}}\left(15\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1024z^{5/2}+256z^2-1920z^{3/2}+672z+4620\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2+1920z^{3/2}+672z-4620\sqrt{z}+3465\right)+3465\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+6912z^2-3024z+3465\right)\right.\right. \left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+6912z^2-3024z+3465\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aasf.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) = \frac{1}{131\,072\, z^{9/4}}\left(15\left(\sqrt{\pi}\left(-4096z^3+6912z^2+3024z+3465\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(-256z^2+672z-3465\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(256z^2-480z-1155\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aasg.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) = \frac{1}{163\,840\sqrt{2}\, z^{9/4}}\left(11\left(2\sqrt{z}\left(4096z^3+7424z^2-6480z-12\,285\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4096z^3-9984z^2+75\,600z+36\,855\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(4096z^3+8448z^2-3024z+36\,855\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aash.01

$$ {}_1F_2\left(-\frac{3}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) = -\frac{1}{163\,840\sqrt{2}\, z^{9/4}}\left(11\left(2\sqrt{z}\left(4096z^3-7424z^2-6480z+12\,285\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4096z^3+9984z^2+75\,600z-36\,855\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4096z^3-8448z^2-3024z-36\,855\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aasi.01

$$ {}_1F_2\left(-\frac{3}{4};-\frac{1}{2},\frac{17}{4};z\right)=\frac{1}{134\,217\,728\,z^{13/4}}\left(195\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384\,z^{7/2}+4096\,z^3-39\,936\,z^{5/2}+13\,056\,z^2+10\,560\,z^{3/2}-277\,200\,z-623\,700\sqrt{z}+e^{4\sqrt{z}}\left(16\,384\,z^{7/2}+4096\,z^3+39\,936\,z^{5/2}+13\,056\,z^2-10\,560\,z^{3/2}-277\,200\,z+623\,700\sqrt{z}-467\,775\right)-467\,775\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4+147\,456\,z^3-96\,768\,z^2+221\,760\,z-467\,775\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4+147\,456\,z^3-96\,768\,z^2+221\,760\,z-467\,775\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aasj.01

$$ {}_1F_2\left(-\frac{3}{4};-\frac{1}{2},\frac{17}{4};-z\right)=\frac{1}{33\,554\,432\,z^{13/4}}\left(195\left(\sqrt{\pi}\left(-65\,536\,z^4+147\,456\,z^3+96\,768\,z^2+221\,760\,z+467\,775\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(-4096\,z^3+13\,056\,z^2+277\,200\,z-467\,775\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(4096\,z^3-9984\,z^2-2640\,z-155\,925\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aask.01

$$ {}_1F_2\left(-\frac{3}{4};-\frac{1}{2},\frac{19}{4};z\right)=\frac{1}{3\,145\,728\sqrt{2}\,z^{13/4}}\left(11\left(2\sqrt{z}\left(65\,536\,z^4+155\,648\,z^3-165\,888\,z^2+1\,740\,960\,z+2\,297\,295\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(65\,536\,z^4+196\,608\,z^3+41\,472\,z^2+15\,724\,800\,z+6\,891\,885\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-65\,536\,z^4-172\,032\,z^3+101\,376\,z^2+1\,022\,112\,z+6\,891\,885\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aasl.01

$$ {}_1F_2\left(-\frac{3}{4};-\frac{1}{2},\frac{19}{4};-z\right)=-\frac{1}{3\,145\,728\sqrt{2}\,z^{13/4}}\left(11\left(2\sqrt{z}\left(65\,536\,z^4-155\,648\,z^3-165\,888\,z^2-1\,740\,960\,z+2\,297\,295\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-65\,536\,z^4+196\,608\,z^3-41\,472\,z^2+15\,724\,800\,z-6\,891\,885\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(65\,536\,z^4-172\,032\,z^3-101\,376\,z^2+1\,022\,112\,z-6\,891\,885\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aasm.01

$${}_1F_2\left(-\frac{3}{4};-\frac{1}{2},\frac{21}{4};z\right)=\frac{1}{8\,589\,934\,592\,z^{17/4}}$$
$$\left(663\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-262\,144\,z^{9/2}+65\,536\,z^4-786\,432\,z^{7/2}+245\,760\,z^3+399\,360\,z^{5/2}+253\,440\,z^2+20\,528\,640\,z^{3/2}+\right.\right.\right.$$
$$\left.\left.\left.85\,821\,120\,z+154\,053\,900\sqrt{z}\right)+e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4+786\,432\,z^{7/2}+245\,760\,z^3-399\,360\,z^{5/2}+\right.\right.\right.$$
$$\left.\left.\left.253\,440\,z^2-20\,528\,640\,z^{3/2}+85\,821\,120\,z-154\,053\,900\sqrt{z}+115\,540\,425\right)+115\,540\,425\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5+2\,949\,120\,z^4-2\,580\,480\,z^3+8\,870\,400\,z^2-37\,422\,000\,z+115\,540\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5+2\,949\,120\,z^4-2\,580\,480\,z^3+8\,870\,400\,z^2-37\,422\,000\,z+115\,540\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\Big)\Big)$$

07.22.03.aasn.01

$${}_1F_2\left(-\frac{3}{4};-\frac{1}{2},\frac{21}{4};-z\right)=\frac{1}{2\,147\,483\,648\,z^{17/4}}$$
$$\left(663\left(\sqrt{\pi}\left(-1\,048\,576\,z^5+2\,949\,120\,z^4+2\,580\,480\,z^3+8\,870\,400\,z^2+37\,422\,000\,z+115\,540\,425\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\left(\left(-65\,536\,z^4+245\,760\,z^3-253\,440\,z^2+85\,821\,120\,z-115\,540\,425\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.4\sqrt{z}\left(65\,536\,z^4-196\,608\,z^3-99\,840\,z^2+5\,132\,160\,z-38\,513\,475\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aaso.01

$${}_1F_2\left(-\frac{3}{4};-\frac{1}{2},\frac{23}{4};z\right)=\frac{1}{100\,663\,296\sqrt{2}\,z^{17/4}}$$
$$\left(19\left(2\sqrt{z}\left(1\,048\,576\,z^5+3\,080\,192\,z^4-3\,907\,584\,z^3+11\,681\,280\,z^2-624\,864\,240\,z-723\,647\,925\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-1\,048\,576\,z^5-3\,735\,552\,z^4+221\,184\,z^3+484\,323\,840\,z^2+5\,182\,697\,520\,z+2\,170\,943\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(1\,048\,576\,z^5+3\,342\,336\,z^4-2\,727\,936\,z^3+13\,837\,824\,z^2+551\,350\,800\,z+2\,170\,943\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aasp.01

$${}_1F_2\left(-\frac{3}{4};-\frac{1}{2},\frac{23}{4};-z\right)=-\frac{1}{100\,663\,296\sqrt{2}\,z^{17/4}}$$
$$\left(19\left(2\sqrt{z}\left(1\,048\,576\,z^5-3\,080\,192\,z^4-3\,907\,584\,z^3-11\,681\,280\,z^2-624\,864\,240\,z+723\,647\,925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-1\,048\,576\,z^5+3\,735\,552\,z^4+221\,184\,z^3-484\,323\,840\,z^2+5\,182\,697\,520\,z-2\,170\,943\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\left(1\,048\,576\,z^5-3\,342\,336\,z^4-2\,727\,936\,z^3-13\,837\,824\,z^2+551\,350\,800\,z-2\,170\,943\,775\right)$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = -\frac{3}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.aasq.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{23}{4};z\right)=\frac{5\left(2816z^2+61\,152z+100\,947\right)\cosh\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2+21\,920z+147\,945\right)\sinh\left(2\sqrt{z}\right)}{504\,735}$$

07.22.03.aasr.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{23}{4};-z\right)=\frac{5\left(2816z^2-61\,152z+100\,947\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(256z^2-21\,920z+147\,945\right)\sin\left(2\sqrt{z}\right)}{504\,735}$$

07.22.03.aass.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{69\,615\sqrt{2}}\left(\sqrt[4]{z}\left(\left(5888z^2+159\,120z+69\,615\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^2+15\,648z+69\,615\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.48z\left(128z+315\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aast.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{69\,615\sqrt{2}}\left(\sqrt[4]{z}\left(\left(5888z^2-159\,120z+69\,615\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(256z^2-15\,648z+69\,615\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.48\left(315-128z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aasu.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{19}{4};z\right)=\frac{\left(256z^2+11\,040z+21\,945\right)\cosh\left(2\sqrt{z}\right)-320\sqrt{z}\left(8z+75\right)\sinh\left(2\sqrt{z}\right)}{21\,945}$$

07.22.03.aasv.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{19}{4};-z\right)=\frac{\left(256z^2-11\,040z+21\,945\right)\cos\left(2\sqrt{z}\right)-320\sqrt{z}\left(8z-75\right)\sin\left(2\sqrt{z}\right)}{21\,945}$$

07.22.03.aasw.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{17}{4};z\right)=\frac{1}{3315\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(128z^2+7800z+3315\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(176z+1105\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(16z-75\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aasx.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{17}{4};-z\right)=\frac{1}{3315\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(128z^2-7800z+3315\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+12\left(1105-176z\right)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-8z\left(16z+75\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aasy.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{15}{4};z\right)=\left(\frac{144z}{385}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{4\sqrt{z}\left(16z+285\right)\sinh\left(2\sqrt{z}\right)}{1155}$$

07.22.03.aasz.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{15}{4};-z\right)=\left(1-\frac{144\,z}{385}\right)\cos\left(2\sqrt{z}\right)+\frac{4\,(285-16\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)}{1155}$$

07.22.03.aat0.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{13}{4};z\right)=$$

$$-\frac{1}{195\sqrt{2}}\left(\sqrt[4]{z}\left(-15\,(32\,z+13)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(16\,z+195)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+144\,z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aat1.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{13}{4};-z\right)=$$

$$-\frac{1}{195\sqrt{2}}\left(\sqrt[4]{z}\left(15\,(32\,z-13)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(16\,z-195)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+144\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aat2.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{11}{4};z\right)=\left(\frac{16\,z}{77}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{64}{77}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aat3.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{11}{4};-z\right)=\left(1-\frac{16\,z}{77}\right)\cos\left(2\sqrt{z}\right)+\frac{64}{77}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aat4.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{9}{4};z\right)=\frac{\sqrt[4]{z}\left(5\,(8\,z+3)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-60\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-24\,z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{15\sqrt{2}}$$

07.22.03.aat5.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{9}{4};-z\right)=-\frac{\sqrt[4]{z}\left(5\,(8\,z-3)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-60\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+24\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{15\sqrt{2}}$$

07.22.03.aat6.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{7}{4};z\right)=\cosh\left(2\sqrt{z}\right)-\frac{4}{7}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aat7.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{7}{4};-z\right)=\cos\left(2\sqrt{z}\right)+\frac{4}{7}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aat8.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{5}{4};z\right)=\frac{\sqrt[4]{z}\left((16\,z+5)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-20\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-16\,z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.aat9.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{5}{4};-z\right)=-\frac{\sqrt[4]{z}\left((16\,z-5)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-20\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+16\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.aata.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{3}{4};z\right)=\cosh\left(2\sqrt{z}\right)$$

07.22.03.aatb.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{3}{4};-z\right)=\cos\left(2\sqrt{z}\right)$$

07.22.03.aatc.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{1}{4};z\right)=\frac{\sqrt[4]{z}\left((8z+1)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-8zI_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.aatd.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},-\frac{1}{4};-z\right)=-\frac{\sqrt[4]{z}\left((8z-1)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+8zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.aate.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{1}{4};z\right)=\frac{1}{2}\left(e^{-2\sqrt{z}}\left(e^{4\sqrt{z}}\left(4\sqrt{z}+1\right)-4\sqrt{z}+1\right)-4\sqrt{2\pi}\,z^{3/4}\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-4\sqrt{2\pi}\,z^{3/4}\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)$$

07.22.03.aatf.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{1}{4};-z\right)=\cos\left(2\sqrt{z}\right)+8\sqrt{\pi}\,z^{3/4}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-4\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aatg.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{3}{4};z\right)=-\frac{\sqrt[4]{z}\left((4z-1)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-2\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-4zI_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.aath.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{3}{4};-z\right)=\frac{\sqrt[4]{z}\left((4z+1)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-2\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.aati.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{5}{4};z\right)=\frac{1}{32\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\right.$$
$$\left.\left(4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}+1\right)-4\sqrt{z}+1\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-3)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-3)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aatj.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{5}{4};-z\right)=\frac{1}{8}\left(2\cos\left(2\sqrt{z}\right)+\frac{\sqrt{\pi}\,(16z+3)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)}{\sqrt[4]{z}}-8\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aatk.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{7}{4};z\right)=\frac{\left(2(7-16z)\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(16z+3)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,(16z-3)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{16\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.aatl.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{7}{4};-z\right)=\frac{\left(2\sqrt{z}\ (16z+7)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(3-16z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\ (16z+3)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{16\sqrt{2}\ \sqrt[4]{z}}$$

07.22.03.aatm.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{4096\,z^{5/4}}\left(5\,e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\ \sqrt{2\pi}\ \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)(3-16z)^2-e^{2\sqrt{z}}\ \sqrt{2\pi}\ \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)(3-16z)^2+4\sqrt[4]{z}\right.\right.$$
$$\left.\left.\left(-64z^{3/2}+16z+12\sqrt{z}\ +e^{4\sqrt{z}}\left(64z^{3/2}+16z-12\sqrt{z}\ +9\right)+9\right)\right)\right)$$

07.22.03.aatn.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{9}{4};-z\right)=\frac{5\left(\sqrt{\pi}\ (16z+3)^2\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left((9-16z)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\ (16z+3)\sin\left(2\sqrt{z}\right)\right)\right)}{1024\,z^{5/4}}$$

07.22.03.aato.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{11}{4};z\right)=-\frac{1}{2560\sqrt{2}\ z^{5/4}}$$
$$\left(7\left(2\sqrt{z}\ \left(256z^2-160z-15\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(45-256z^2\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\ \left(256z^2-96z+45\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aatp.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{11}{4};-z\right)=\frac{1}{2560\sqrt{2}\ z^{5/4}}$$
$$\left(7\left(2\sqrt{z}\ \left(256z^2+160z-15\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(45-256z^2\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\ \left(256z^2+96z+45\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aatq.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{13}{4};z\right)=\frac{1}{262\,144\,z^{9/4}}\left(15\,e^{-2\sqrt{z}}\right.$$
$$\left(4\sqrt[4]{z}\ \left(-1024z^{5/2}+256z^2+384z^{3/2}+96z-420\sqrt{z}\ +e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2-384z^{3/2}+96z+420\sqrt{z}\ -315\right)-\right.\right.$$
$$\left.\left.315\right)-e^{2\sqrt{z}}\ \sqrt{2\pi}\ \left(4096z^3-2304z^2+432z-315\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)-\right.$$
$$\left.\left.e^{2\sqrt{z}}\ \sqrt{2\pi}\ \left(4096z^3-2304z^2+432z-315\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.aatr.01

$${}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{13}{4};-z\right)=\frac{1}{65\,536\,z^{9/4}}\left(15\left(\sqrt{\pi}\ \left(4096z^3+2304z^2+432z+315\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\ \left(\left(-256z^2+96z+315\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\ \left(256z^2+96z+105\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aats.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{15}{4};z\right)= $$
$$ -\frac{1}{81\,920\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\left(4096z^3-3328z^2+240z+945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096z^3-768z^2+5040z+2835\right)\right.\right. $$
$$ \left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-4096z^3+2304z^2-1008z+2835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aatt.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{15}{4};-z\right)=\frac{1}{81\,920\sqrt{2}\,z^{9/4}} $$
$$ \left(11\left(2\sqrt{z}\left(4096z^3+3328z^2+240z-945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096z^3+768z^2+5040z-2835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right. $$
$$ \left.\left.2\sqrt{z}\left(4096z^3+2304z^2+1008z+2835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aatu.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{17}{4};z\right)= $$
$$ -\frac{1}{67\,108\,864\,z^{13/4}}\left(195e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384z^{7/2}+4096z^3+9216z^{5/2}+768z^2-7872z^{3/2}+13\,104z+41\,580\sqrt{z}+\right.\right.\right. $$
$$ \left.\left.e^{4\sqrt{z}}\left(16\,384z^{7/2}+4096z^3-9216z^{5/2}+768z^2+7872z^{3/2}+13\,104z-41\,580\sqrt{z}+31\,185\right)+31\,185\right)+ $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-49\,152z^3+13\,824z^2-20\,160z+31\,185\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+ $$
$$ \left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-49\,152z^3+13\,824z^2-20\,160z+31\,185\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aatv.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{17}{4};-z\right)=\frac{1}{16\,777\,216\,z^{13/4}}\left(195\left(\sqrt{\pi}\left(65\,536z^4+49\,152z^3+13\,824z^2+20\,160z+31\,185\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\right.\right. $$
$$ \left.\left.\left(\left(-4096z^3+768z^2-13\,104z+31\,185\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(4096z^3+2304z^2+1968z+10\,395\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aatw.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{19}{4};z\right)=-\frac{1}{1\,572\,864\sqrt{2}\,z^{13/4}}\left(11\left(2\sqrt{z}\left(65\,536z^4-65\,536z^3+13\,824z^2-86\,400z-135\,135\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ \left(-65\,536z^4+24\,576z^3-82\,944z^2+876\,960z+405\,405\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- $$
$$ \left.\left.2\sqrt{z}\left(65\,536z^4-49\,152z^3+23\,040z^2+12\,096z+405\,405\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aatx.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{19}{4};-z\right)=\frac{1}{1\,572\,864\sqrt{2}\,z^{13/4}}\left(11\left(2\sqrt{z}\,\left(65\,536z^4+65\,536z^3+13\,824z^2+86\,400z-135\,135\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(65\,536z^4+24\,576z^3+82\,944z^2+876\,960z-405\,405\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\,\left(65\,536z^4+49\,152z^3+23\,040z^2-12\,096z+405\,405\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaty.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{21}{4};z\right)=$$
$$-\frac{1}{4\,294\,967\,296z^{17/4}}\left(663e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-262\,144z^{9/2}+65\,536z^4+196\,608z^{7/2}-153\,600z^{5/2}+207\,360z^2-380\,160z^{3/2}-\right.\right.\right.$$
$$3\,991\,680z-8\,108\,100\sqrt{z}+e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4-196\,608z^{7/2}+153\,600z^{5/2}+\right.$$
$$\left.\left.207\,360z^2+380\,160z^{3/2}-3\,991\,680z+8\,108\,100\sqrt{z}-6\,081\,075\right)-6\,081\,075\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\,\left(1\,048\,576z^5-983\,040z^4+368\,640z^3-806\,400z^2+2\,494\,800z-6\,081\,075\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\,\left(1\,048\,576z^5-983\,040z^4+368\,640z^3-806\,400z^2+2\,494\,800z-6\,081\,075\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aatz.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{21}{4};-z\right)=$$
$$\frac{1}{1\,073\,741\,824z^{17/4}}\left(663\left(\sqrt{\pi}\,\left(1\,048\,576z^5+983\,040z^4+368\,640z^3+806\,400z^2+2\,494\,800z+6\,081\,075\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(65\,536z^4+49\,152z^3+38\,400z^2-95\,040z+2\,027\,025\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left.\left(65\,536z^4+207\,360z^2+3\,991\,680z-6\,081\,075\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aau0.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{23}{4};z\right)=-\frac{1}{50\,331\,648\sqrt{2}\,z^{17/4}}$$
$$\left(19\left(2\sqrt{z}\,\left(1\,048\,576z^5-1\,245\,184z^4+417\,792z^3-2\,004\,480z^2+27\,490\,320z+34\,459\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(1\,048\,576z^5-589\,824z^4+1\,400\,832z^3+8\,363\,520z^2+239\,999\,760z+103\,378\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\,\left(-1\,048\,576z^5+983\,040z^4-516\,096z^3+456\,192z^2+19\,459\,440z+103\,378\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aau1.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{1}{2},\frac{23}{4};-z\right)=\frac{1}{50\,331\,648\sqrt{2}\,z^{17/4}}\left(19\left(2\sqrt{z}\left(1\,048\,576z^5+1\,245\,184z^4+417\,792z^3+2\,004\,480z^2+27\,490\,320z-34\,459\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(1\,048\,576z^5+589\,824z^4+1\,400\,832z^3-8\,363\,520z^2+239\,999\,760z-103\,378\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576z^5+983\,040z^4+516\,096z^3+456\,192z^2-19\,459\,440z+103\,378\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1=-\frac{3}{4}$, $b_{1.}=\frac{3}{2}$

07.22.03.aau2.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{23}{4};z\right)=\frac{5\left(3328z^2+97\,440z+208\,845\right)\sinh\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2+30\,240z+269\,745\right)\cosh\left(2\sqrt{z}\right)}{1\,009\,470\sqrt{z}} $$

07.22.03.aau3.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{23}{4};-z\right)=\frac{5\left(3328z^2-97\,440z+208\,845\right)\sin\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2-30\,240z+269\,745\right)\cos\left(2\sqrt{z}\right)}{1\,009\,470\sqrt{z}} $$

07.22.03.aau4.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{21}{4};z\right)=-\frac{1}{69\,615\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^2-11\,264z-69\,615\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-112\sqrt{z}\left(64z+1119\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(256z^2+55\,104z+302\,841\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aau5.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{21}{4};-z\right)=-\frac{1}{69\,615\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^2+11\,264z-69\,615\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-112\sqrt{z}\left(64z-1119\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-256z^2+55\,104z-302\,841\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aau6.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{19}{4};z\right)=\frac{\left(256z^2+15\,648z+41\,769\right)\sinh\left(2\sqrt{z}\right)-96\sqrt{z}\left(32z+413\right)\cosh\left(2\sqrt{z}\right)}{43\,890\sqrt{z}} $$

07.22.03.aau7.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{19}{4};-z\right)=\frac{96\sqrt{z}\left(32z-413\right)\cos\left(2\sqrt{z}\right)+\left(256z^2-15\,648z+41\,769\right)\sin\left(2\sqrt{z}\right)}{43\,890\sqrt{z}} $$

07.22.03.aau8.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{17}{4};z\right)= \frac{1}{3315\sqrt{2}}\left(\sqrt[4]{z}\left((1168z+3315)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\,(16z+537)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-9\,(272z+1463)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aau9.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{17}{4};-z\right)= \frac{1}{3315\sqrt{2}}\left(\sqrt[4]{z}\left((3315-1168z)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\,(16z-537)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+9\,(1463-272z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaua.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{15}{4};z\right)= \frac{3\,(176z+663)\sinh\left(2\sqrt{z}\right)-4\sqrt{z}\,(16z+417)\cosh\left(2\sqrt{z}\right)}{2310\sqrt{z}} $$

07.22.03.aaub.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{15}{4};-z\right)= \frac{4\sqrt{z}\,(16z-417)\cos\left(2\sqrt{z}\right)+3\,(663-176z)\sin\left(2\sqrt{z}\right)}{2310\sqrt{z}} $$

07.22.03.aauc.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{13}{4};z\right)= \frac{\sqrt[4]{z}\left((112z+195)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+144\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-9\,(16z+77)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{195\sqrt{2}} $$

07.22.03.aaud.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{13}{4};-z\right)= -\frac{\sqrt[4]{z}\left((112z-195)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+144\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+9\,(16z-77)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{195\sqrt{2}} $$

07.22.03.aaue.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{11}{4};z\right)= \frac{(16z+117)\sinh\left(2\sqrt{z}\right)-80\sqrt{z}\,\cosh\left(2\sqrt{z}\right)}{154\sqrt{z}} $$

07.22.03.aauf.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{11}{4};-z\right)= \frac{(117-16z)\sin\left(2\sqrt{z}\right)-80\sqrt{z}\,\cos\left(2\sqrt{z}\right)}{154\sqrt{z}} $$

07.22.03.aaug.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{9}{4};z\right)= \frac{\sqrt[4]{z}\left((64z+75)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-(64z+231)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{75\sqrt{2}} $$

07.22.03.aauh.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{9}{4};-z\right)= -\frac{\sqrt[4]{z}\left((64z-75)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+(64z-231)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{75\sqrt{2}} $$

07.22.03.aaui.01

$${}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{7}{4};z\right)=\frac{9\sinh\left(2\sqrt{z}\right)}{14\sqrt{z}}-\frac{2}{7}\cosh\left(2\sqrt{z}\right)$$

07.22.03.aauj.01

$${}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{7}{4};-z\right)=\frac{9\sin\left(2\sqrt{z}\right)}{14\sqrt{z}}-\frac{2}{7}\cos\left(2\sqrt{z}\right)$$

07.22.03.aauk.01

$${}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{5}{4};z\right)=\frac{\sqrt[4]{z}\left((32z+25)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-16\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-(32z+63)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{25\sqrt{2}}$$

07.22.03.aaul.01

$${}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{5}{4};-z\right)=-\frac{\sqrt[4]{z}\left((32z-25)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-16\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+(32z-63)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{25\sqrt{2}}$$

07.22.03.aaum.01

$${}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{3}{4};z\right)=\frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.aaun.01

$${}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{3}{4};-z\right)=\frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.aauo.01

$${}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{1}{4};z\right)=\frac{\sqrt[4]{z}\left((16z+5)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-(16z+9)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.aaup.01

$${}_1F_2\left(-\frac{3}{4};\frac{3}{2},-\frac{1}{4};-z\right)=-\frac{\sqrt[4]{z}\left((16z-5)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+(16z-9)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.aauq.01

$${}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{1}{4};z\right)=$$

$$\frac{1}{20\sqrt{z}}\left(e^{-2\sqrt{z}}\left(-16e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-16e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+16e^{4\sqrt{z}}z-16z+\right.\right.$$

$$\left.\left.4e^{4\sqrt{z}}\sqrt{z}+4\sqrt{z}+3e^{4\sqrt{z}}-3\right)\right)$$

07.22.03.aaur.01

$${}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{1}{4};-z\right)=\frac{32\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+4\cos\left(2\sqrt{z}\right)\sqrt{z}+(3-16z)\sin\left(2\sqrt{z}\right)}{10\sqrt{z}}$$

07.22.03.aaus.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{3}{4};z\right)=-\frac{\sqrt[4]{z}\left((8z-5)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\;I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+(3-8z)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}} $$

07.22.03.aaut.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{3}{4};-z\right)=\frac{\sqrt[4]{z}\left((8z+5)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\;J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+(8z+3)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}} $$

07.22.03.aauu.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{5}{4};z\right)=\frac{1}{80\sqrt{z}}\left(e^{-2\sqrt{z}}\left(4\left(-4z+\sqrt{z}+e^{4\sqrt{z}}\left(4z+\sqrt{z}-3\right)+3\right)-\right.\right. $$
$$ \left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\;\sqrt[4]{z}\,(16z-15)\,\mathrm{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\;\sqrt[4]{z}\,(16z-15)\,\mathrm{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aauv.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{5}{4};-z\right)=\frac{2\sqrt{z}\,\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\;\sqrt[4]{z}\,(16z+15)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\,(4z+3)\sin\left(2\sqrt{z}\right)}{20\sqrt{z}} $$

07.22.03.aauw.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{7}{4};z\right)= $$
$$ \frac{1}{40\sqrt{2}\;\sqrt[4]{z}}\left(\left(2\,(25-16z)\sqrt{z}\;I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(16z-15)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\;(16z-21)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaux.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{7}{4};-z\right)= $$
$$ \frac{1}{40\sqrt{2}\;\sqrt[4]{z}}\left(\left(2\sqrt{z}\;(16z+25)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-(16z+15)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\;(16z+21)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aauy.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{9}{4};z\right)= $$
$$ \frac{1}{2048\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-64z^{3/2}+16z+108\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}+16z-108\sqrt{z}-15\right)-15\right)-e^{2\sqrt{z}}\sqrt{2\pi}\right.\right. $$
$$ \left.\left.\left(256z^2-480z-15\right)\mathrm{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-480z-15\right)\mathrm{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aauz.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{9}{4};-z\right)=\frac{\sqrt{\pi}\left(256z^2+480z-15\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left((16z+15)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\;(16z+27)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{5/4}} $$

07.22.03.aav0.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{11}{4};z\right)=-\frac{1}{6400\sqrt{2}\;z^{5/4}}\left(7\left(2\sqrt{z}\;\left(256z^2-640z+15\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ \left.\left.\left(-256z^2+480z-45\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\;\left(-256z^2+576z+45\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aav1.01

$${}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{11}{4};-z\right)=\frac{1}{6400\sqrt{2}\,z^{5/4}}$$
$$\left(7\left(2\sqrt{z}\,\left(256z^2+640z+15\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(256z^2+480z+45\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(256z^2+576z-45\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aav2.01

$${}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{131\,072\,z^{9/4}}\left(3e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1024z^{5/2}+256z^2+2688z^{3/2}-480z+300\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.2688z^{3/2}-480z-300\sqrt{z}+225\right)+225\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-11\,520z^2-720z+225\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-11\,520z^2-720z+225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aav3.01

$${}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{13}{4};-z\right)=\frac{1}{32\,768\,z^{9/4}}\left(3\left(\sqrt{\pi}\left(4096z^3+11\,520z^2-720z-225\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\left((16z+15)^2\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2+672z-75\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aav4.01

$${}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{15}{4};z\right)=$$
$$-\frac{1}{204\,800\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\,\left(4096z^3-14\,080z^2+240z-525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4096z^3+11\,520z^2+1680z+1575\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-4096z^3+13\,056z^2+1680z-1575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aav5.01

$${}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{15}{4};-z\right)=\frac{1}{204\,800\sqrt{2}\,z^{9/4}}$$
$$\left(11\left(2\sqrt{z}\,\left(4096z^3+14\,080z^2+240z+525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096z^3+11\,520z^2-1680z+1575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(4096z^3+13\,056z^2-1680z-1575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aav6.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{17}{4};z\right)= $$
$$ -\frac{1}{33\,554\,432\,z^{13/4}}\left(39\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384\,z^{7/2}+4096\,z^3+58\,368\,z^{5/2}-11\,520\,z^2+10\,560\,z^{3/2}-720\,z-18\,900\sqrt{z}+\right.\right.\right. $$
$$ \left.\left.\left.e^{4\sqrt{z}}\left(16\,384\,z^{7/2}+4096\,z^3-58\,368\,z^{5/2}-11\,520\,z^2-10\,560\,z^{3/2}-720\,z+18\,900\sqrt{z}-14\,175\right)-14\,175\right)+\right. $$
$$ \left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-245\,760\,z^3-23\,040\,z^2+14\,400\,z-14\,175\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\right. $$
$$ \left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-245\,760\,z^3-23\,040\,z^2+14\,400\,z-14\,175\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aav7.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{17}{4};-z\right)=\frac{1}{8\,388\,608\,z^{13/4}}\left(39\left(\sqrt{\pi}\left(65\,536\,z^4+245\,760\,z^3-23\,040\,z^2-14\,400\,z-14\,175\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\right.\right. $$
$$ \left.\left.\left(\left(4096\,z^3+11\,520\,z^2-720\,z+14\,175\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(-4096\,z^3-14\,592\,z^2+2640\,z+4725\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aav8.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{19}{4};z\right)=-\frac{1}{3\,932\,160\sqrt{2}\,z^{13/4}}\left(11\left(2\sqrt{z}\left(65\,536\,z^4-286\,720\,z^3+21\,600\,z+51\,975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ \left(-65\,536\,z^4+245\,760\,z^3+69\,120\,z^2-302\,400\,z-155\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.2\sqrt{z}\left(-65\,536\,z^4+270\,336\,z^3+46\,080\,z^2-30\,240\,z+155\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aav9.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{19}{4};-z\right)=\frac{1}{3\,932\,160\sqrt{2}\,z^{13/4}} $$
$$ \left(11\left(2\sqrt{z}\left(65\,536\,z^4+286\,720\,z^3-21\,600\,z+51\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-65\,536\,z^4-245\,760\,z^3+69\,120\,z^2+302\,400\,z-\right.\right.\right. $$
$$ \left.\left.\left.155\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(65\,536\,z^4+270\,336\,z^3-46\,080\,z^2-30\,240\,z-155\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aava.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{21}{4};z\right)=-\frac{1}{10\,737\,418\,240\,z^{17/4}} $$
$$ \left(663\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-262\,144\,z^{9/2}+65\,536\,z^4+1\,179\,648\,z^{7/2}-245\,760\,z^3+276\,480\,z^{5/2}-84\,480\,z^2-276\,480\,z^{3/2}+\right.\right.\right. $$
$$ \left.\left.\left.1\,028\,160\,z+2\,702\,700\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-1\,179\,648\,z^{7/2}-245\,760\,z^3-\right.\right.\right.\right. $$
$$ \left.\left.\left.\left.276\,480\,z^{5/2}-84\,480\,z^2+276\,480\,z^{3/2}+1\,028\,160\,z-2\,702\,700\sqrt{z}+2\,027\,025\right)+2\,027\,025\right)+\right. $$
$$ \left.e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-4\,915\,200\,z^4-614\,400\,z^3+576\,000\,z^2-1\,134\,000\,z+2\,027\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\right. $$
$$ \left.e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-4\,915\,200\,z^4-614\,400\,z^3+576\,000\,z^2-1\,134\,000\,z+2\,027\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aavb.01

$${}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{21}{4};-z\right)=$$
$$\frac{1}{2\,684\,354\,560\,z^{17/4}}\left(663\left(\sqrt{\pi}\,\left(1\,048\,576\,z^5+4\,915\,200\,z^4-614\,400\,z^3-576\,000\,z^2-1\,134\,000\,z-2\,027\,025\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\,\left(\left(65\,536\,z^4+245\,760\,z^3-84\,480\,z^2-1\,028\,160\,z+2\,027\,025\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left.4\sqrt{z}\,\left(65\,536\,z^4+294\,912\,z^3-69\,120\,z^2-69\,120\,z-675\,675\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aavc.01

$${}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{23}{4};z\right)=-\frac{1}{125\,829\,120\sqrt{2}\,z^{17/4}}$$
$$\left(19\left(2\sqrt{z}\,\left(1\,048\,576\,z^5-5\,570\,560\,z^4-122\,880\,z^3+1\,036\,800\,z^2-7\,009\,200\,z-10\,135\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-1\,048\,576\,z^5+4\,915\,200\,z^4+1\,843\,200\,z^3-3\,801\,600\,z^2+67\,359\,600\,z+30\,405\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\,\left(1\,048\,576\,z^5-5\,308\,416\,z^4-1\,105\,920\,z^3+760\,320\,z^2+2\,494\,800\,z+30\,405\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aavd.01

$${}_1F_2\left(-\frac{3}{4};\frac{3}{2},\frac{23}{4};-z\right)=\frac{1}{125\,829\,120\sqrt{2}\,z^{17/4}}$$
$$\left(19\left(2\sqrt{z}\,\left(1\,048\,576\,z^5+5\,570\,560\,z^4-122\,880\,z^3-1\,036\,800\,z^2-7\,009\,200\,z+10\,135\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-1\,048\,576\,z^5-4\,915\,200\,z^4+1\,843\,200\,z^3+3\,801\,600\,z^2+67\,359\,600\,z-30\,405\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\,\left(1\,048\,576\,z^5+5\,308\,416\,z^4-1\,105\,920\,z^3-760\,320\,z^2+2\,494\,800\,z-30\,405\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = -\frac{3}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.aave.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{23}{4};z\right)=\frac{1}{1\,345\,960\,z^{3/2}}$$
$$\left(14\sqrt{z}\,\left(2816\,z^2+118\,240\,z+480\,675\right)\cosh\left(2\sqrt{z}\right)-\left(2048\,z^3+340\,480\,z^2+4\,641\,000\,z+3\,364\,725\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aavf.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{23}{4};-z\right)=\frac{1}{1\,345\,960\,z^{3/2}}$$
$$\left(\left(-2048\,z^3+340\,480\,z^2-4\,641\,000\,z+3\,364\,725\right)\sin\left(2\sqrt{z}\right)-14\sqrt{z}\,\left(2816\,z^2-118\,240\,z+480\,675\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aavg.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{21}{4};z\right)=\frac{1}{92\,820\sqrt{2}\,z^{3/4}}$$
$$\left(\left(32z(1160z+15\,519)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^2+35\,136z+302\,841\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+3\left(302\,841-6656z^2\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aavh.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{92\,820\sqrt{2}\,z^{3/4}}\left(\left(32(15\,519-1160z)zJ_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^2-35\,136z+302\,841\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.3\left(302\,841-6656z^2\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aavi.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{19}{4};z\right)=\frac{2\sqrt{z}\left(256z^2+23\,072z+116\,025\right)\cosh\left(2\sqrt{z}\right)-\left(7424z^2+148\,512z+116\,025\right)\sinh\left(2\sqrt{z}\right)}{58\,520z^{3/2}}$$

07.22.03.aavj.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{19}{4};-z\right)=\frac{\left(7424z^2-148\,512z+116\,025\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(256z^2-23\,072z+116\,025\right)\cos\left(2\sqrt{z}\right)}{58\,520z^{3/2}}$$

07.22.03.aavk.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{17}{4};z\right)=\frac{1}{39\,780\sqrt{2}\,z^{3/4}}\left(\left(8z(1936z+21\,797)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.28\sqrt{z}\,(1264z+14\,421)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-13\,184z^2-35\,112z+302\,841\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aavl.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{17}{4};-z\right)=\frac{1}{39\,780\sqrt{2}\,z^{3/4}}\left(\left(-8z(1936z-21\,797)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.28\sqrt{z}\,(1264z-14\,421)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-13\,184z^2+35\,112z+302\,841\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aavm.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{15}{4};z\right)=\frac{2\sqrt{z}\,(656z+4641)\cosh\left(2\sqrt{z}\right)-\left(128z^2+5304z+4641\right)\sinh\left(2\sqrt{z}\right)}{3080z^{3/2}}$$

07.22.03.aavn.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{15}{4};-z\right)=\frac{2\sqrt{z}\,(656z-4641)\cos\left(2\sqrt{z}\right)+\left(128z^2-5304z+4641\right)\sin\left(2\sqrt{z}\right)}{3080z^{3/2}}$$

07.22.03.aavo.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{13}{4};z\right)=\frac{1}{2340\sqrt{2}\,z^{3/4}}$$
$$\left(\left(1024\,z\,(z+8)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(272\,z+4389)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1024\,z^2-3696\,z+13\,167\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aavp.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{13}{4};-z\right)=\frac{1}{2340\sqrt{2}\,z^{3/4}}$$
$$\left(\left(-1024\,(z-8)\,z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(272\,z-4389)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1024\,z^2+3696\,z+13\,167\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aavq.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{11}{4};z\right)=\frac{6\sqrt{z}\,(16\,z+221)\cosh\left(2\sqrt{z}\right)-39\,(16\,z+17)\sinh\left(2\sqrt{z}\right)}{616\,z^{3/2}}$$

07.22.03.aavr.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{11}{4};-z\right)=\frac{6\sqrt{z}\,(16\,z-221)\cos\left(2\sqrt{z}\right)+39\,(17-16\,z)\sin\left(2\sqrt{z}\right)}{616\,z^{3/2}}$$

07.22.03.aavs.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{9}{4};z\right)=\frac{1}{900\sqrt{2}\,z^{3/4}}$$
$$\left(\left(8\,z\,(64\,z+305)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(64\,z+1155)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-512\,z^2-1848\,z+3465\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aavt.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{9}{4};-z\right)=\frac{1}{900\sqrt{2}\,z^{3/4}}$$
$$\left(\left(-8\,z\,(64\,z-305)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(64\,z-1155)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-512\,z^2+1848\,z+3465\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aavu.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{7}{4};z\right)=\frac{78\sqrt{z}\,\cosh\left(2\sqrt{z}\right)-3\,(8\,z+13)\sinh\left(2\sqrt{z}\right)}{56\,z^{3/2}}$$

07.22.03.aavv.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{7}{4};-z\right)=\frac{3\,(13-8\,z)\sin\left(2\sqrt{z}\right)-78\sqrt{z}\,\cos\left(2\sqrt{z}\right)}{56\,z^{3/2}}$$

07.22.03.aavw.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{300\sqrt{2}\,z^{3/4}}\left(\left(32\,z\,(8\,z+19)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(32\,z+231)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-256\,z^2-672\,z+693\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aavx.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{5}{4};-z\right)=$$

$$\frac{1}{300\sqrt{2}\,z^{3/4}}\left(\left(-32z(8z-19)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(32z-231)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-256z^2+672z+693\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aavy.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{3}{4};z\right)=\frac{3\cosh\left(2\sqrt{z}\right)}{4z}-\frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.aavz.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{3}{4};-z\right)=\frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}}$$

07.22.03.aaw0.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{1}{4};z\right)=$$

$$\frac{1}{60\sqrt{2}\,z^{3/4}}\left(\left(8z(16z+11)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(16z+21)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-128z^2-120z+63\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaw1.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},-\frac{1}{4};-z\right)=$$

$$\frac{1}{60\sqrt{2}\,z^{3/4}}\left(\left(8(11-16z)zJ_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(16z-21)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-128z^2+120z+63\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaw2.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{1}{4};z\right)=$$

$$\frac{1}{240z^{3/2}}\left(e^{-2\sqrt{z}}\left(-128e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-128e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+128e^{4\sqrt{z}}z^2-\right.\right.$$

$$\left.\left.128z^2+32e^{4\sqrt{z}}z^{3/2}+32z^{3/2}+24e^{4\sqrt{z}}z-24z+30e^{4\sqrt{z}}\sqrt{z}+30\sqrt{z}-15e^{4\sqrt{z}}+15\right)\right)$$

07.22.03.aaw3.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{1}{4};-z\right)=\frac{256\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+2(16z-15)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-128z^2+24z+15\right)\sin\left(2\sqrt{z}\right)}{120z^{3/2}}$$

07.22.03.aaw4.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{3}{4};z\right)=\frac{\left(-64(z-1)zI_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(8z-3)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+(3-8z)^2I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{60\sqrt{2}\,z^{3/4}}$$

07.22.03.aaw5.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{3}{4};-z\right)=\frac{\left(64z(z+1)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(8z+3)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+(8z+3)^2J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{60\sqrt{2}\,z^{3/4}}$$

07.22.03.aaw6.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{5}{4};z\right)= $$

$$ \frac{1}{240\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(32\,e^{4\sqrt{z}}\,z^2-32\,z^2+8\,e^{4\sqrt{z}}\,z^{3/2}+8\,z^{3/2}-2\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z-27)\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}-2\right.\right. $$

$$ \left.\left.e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z-27)\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}-48\,e^{4\sqrt{z}}\,z+48\,z-6\,e^{4\sqrt{z}}\,\sqrt{z}-6\sqrt{z}+3\,e^{4\sqrt{z}}-3\right)\right) $$

07.22.03.aaw7.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{5}{4};-z\right)=\frac{4\sqrt{\pi}\,(16\,z+27)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+2\,(4\,z+3)\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(32\,z^2+48\,z+3\right)\sin\left(2\sqrt{z}\right)}{120\,z^{3/2}} $$

07.22.03.aaw8.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{7}{4};z\right)= $$

$$ \frac{1}{60\sqrt{2}\,z^{3/4}}\left(\left(2\,(43-16\,z)\,z\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,(16\,z-33)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(32\,z^2-78\,z-9\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaw9.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{7}{4};-z\right)= $$

$$ \frac{1}{60\sqrt{2}\,z^{3/4}}\left(\left(2\,z\,(16\,z+43)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\,(16\,z+33)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(32\,z^2+78\,z-9\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aawa.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{9}{4};z\right)= $$

$$ \frac{1}{3072\,z^{3/2}}\left(e^{-2\sqrt{z}}\left(4\left(-64\,z^2+16\,z^{3/2}+204\,z-39\sqrt{z}+e^{4\sqrt{z}}\left(64\,z^2+16\,z^{3/2}-204\,z-39\sqrt{z}-48\right)+48\right)-\right.\right. $$

$$ \left.\left.e^{2\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\,\left(256\,z^2-864\,z-135\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\,\left(256\,z^2-864\,z-135\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aawb.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{9}{4};-z\right)= $$

$$ \frac{1}{768\,z^{3/2}}\left(2\sqrt{z}\,(16\,z+39)\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\,\sqrt[4]{z}\,\left(256\,z^2+864\,z-135\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-8\left(16\,z^2+51\,z-12\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aawc.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{11}{4};z\right)= $$

$$ -\frac{1}{9600\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\,\left(256\,z^2-1120\,z-135\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-256\,z^2+960\,z+405\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right. $$

$$ \left.\left.2\sqrt{z}\,\left(-256\,z^2+1056\,z+315\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aawd.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{9600\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\,\left(256z^2+1120z-135\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-256z^2-960z+405\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(256z^2+1056z-315\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aawe.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{65\,536\,z^{9/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-1024z^{5/2}+256z^2+4992z^{3/2}-1056z+2172\sqrt{z}\,+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2-4992z^{3/2}-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.1056z-2172\sqrt{z}\,-675\right)-675\right)-e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096z^3-20\,736z^2-6480z-675\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096z^3-20\,736z^2-6480z-675\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aawf.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{13}{4};-z\right)=\frac{1}{16\,384\,z^{9/4}}\left(\sqrt{\pi}\,\left(4096z^3+20\,736z^2-6480z+675\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\sqrt[4]{z}\,\left(\left(256z^2+1056z-675\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\,\left(256z^2+1248z-543\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aawg.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{15}{4};z\right)=$$
$$-\frac{1}{307\,200\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\,\left(4096z^3-24\,832z^2-6480z+945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4096z^3+22\,272z^2+15\,120z-2835\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-4096z^3+23\,808z^2+11\,088z+2835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aawh.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{15}{4};-z\right)=\frac{1}{307\,200\sqrt{2}\,z^{9/4}}$$
$$\left(11\left(2\sqrt{z}\,\left(4096z^3+24\,832z^2-6480z-945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4096z^3-22\,272z^2+15\,120z+2835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(4096z^3+23\,808z^2-11\,088z+2835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aawi.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{17}{4};z\right)=-\frac{1}{16\,777\,216\,z^{13/4}}$$
$$\left(13\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384\,z^{7/2}+4096\,z^3+107\,520\,z^{5/2}-23\,808\,z^2+65\,856\,z^{3/2}-23\,760\,z+24\,300\sqrt{z}+e^{4\sqrt{z}}\right.\right.\right.$$
$$\left.\left.\left.\left(16\,384\,z^{7/2}+4096\,z^3-107\,520\,z^{5/2}-23\,808\,z^2-65\,856\,z^{3/2}-23\,760\,z-24\,300\sqrt{z}+18\,225\right)+18\,225\right)+\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-442\,368\,z^3-207\,360\,z^2-43\,200\,z+18\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-442\,368\,z^3-207\,360\,z^2-43\,200\,z+18\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aawj.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{17}{4};-z\right)=$$
$$\frac{1}{4\,194\,304\,z^{13/4}}\left(13\left(\sqrt{\pi}\left(65\,536\,z^4+442\,368\,z^3-207\,360\,z^2+43\,200\,z+18\,225\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(\left(-4096\,z^3-23\,808\,z^2+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.23\,760\,z+18\,225\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(4096\,z^3+26\,880\,z^2-16\,464\,z+6075\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aawk.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{19}{4};z\right)=-\frac{1}{5\,898\,240\sqrt{2}\,z^{13/4}}\left(11\left(2\sqrt{z}\left(65\,536\,z^4-507\,904\,z^3-207\,360\,z^2+8640\,z-51\,975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-65\,536\,z^4+466\,944\,z^3+414\,720\,z^2+211\,680\,z+155\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(-65\,536\,z^4+491\,520\,z^3+308\,736\,z^2+120\,960\,z-155\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aawl.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{19}{4};-z\right)=\frac{1}{5\,898\,240\sqrt{2}\,z^{13/4}}\left(11\left(2\sqrt{z}\left(65\,536\,z^4+507\,904\,z^3-207\,360\,z^2-8640\,z-51\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-65\,536\,z^4-466\,944\,z^3+414\,720\,z^2-211\,680\,z+155\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536\,z^4+491\,520\,z^3-308\,736\,z^2+120\,960\,z+155\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aawm.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{21}{4};z\right)=-\frac{1}{5\,368\,709\,120\,z^{17/4}}$$
$$\left(221\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-262\,144\,z^{9/2}+65\,536\,z^4+2\,162\,688\,z^{7/2}-491\,520\,z^3+1\,689\,600\,z^{5/2}-622\,080\,z^2+933\,120\,z^{3/2}-\right.\right.\right.$$
$$\left.\left.\left.311\,040\,z-2\,211\,300\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-2\,162\,688\,z^{7/2}-491\,520\,z^3-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.1\,689\,600\,z^{5/2}-622\,080\,z^2-933\,120\,z^{3/2}-311\,040\,z+2\,211\,300\sqrt{z}-1\,658\,475\right)-1\,658\,475\right)+\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-8\,847\,360\,z^4-5\,529\,600\,z^3-1\,728\,000\,z^2+1\,458\,000\,z-1\,658\,475\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-8\,847\,360\,z^4-5\,529\,600\,z^3-1\,728\,000\,z^2+1\,458\,000\,z-1\,658\,475\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aawn.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{21}{4};-z\right)=$$
$$\frac{1}{1\,342\,177\,280\,z^{17/4}}\left(221\left(\sqrt{\pi}\,\left(1\,048\,576\,z^5+8\,847\,360\,z^4-5\,529\,600\,z^3+1\,728\,000\,z^2+1\,458\,000\,z+1\,658\,475\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.\right.$$
$$2\sqrt[4]{z}\,\left(\left(-65\,536\,z^4-491\,520\,z^3+622\,080\,z^2-311\,040\,z+1\,658\,475\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.4\sqrt{z}\,\left(65\,536\,z^4+540\,672\,z^3-422\,400\,z^2+233\,280\,z+552\,825\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aawo.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{23}{4};z\right)=-\frac{1}{188\,743\,680\sqrt{2}\,z^{17/4}}$$
$$\left(19\left(2\sqrt{z}\,\left(1\,048\,576\,z^5-9\,895\,936\,z^4-5\,529\,600\,z^3-483\,840\,z^2+3\,445\,200\,z+7\,016\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-1\,048\,576\,z^5+9\,240\,576\,z^4+9\,953\,280\,z^3+8\,363\,520\,z^2-42\,411\,600\,z-21\,049\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\,\left(-1\,048\,576\,z^5+9\,633\,792\,z^4+7\,593\,984\,z^3+3\,801\,600\,z^2-2\,494\,800\,z+21\,049\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aawp.01

$${}_1F_2\left(-\frac{3}{4};\frac{5}{2},\frac{23}{4};-z\right)=\frac{1}{188\,743\,680\sqrt{2}\,z^{17/4}}$$
$$\left(19\left(2\sqrt{z}\,\left(1\,048\,576\,z^5+9\,895\,936\,z^4-5\,529\,600\,z^3+483\,840\,z^2+3\,445\,200\,z-7\,016\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(1\,048\,576\,z^5+9\,240\,576\,z^4-9\,953\,280\,z^3+8\,363\,520\,z^2+42\,411\,600\,z-21\,049\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\,\left(1\,048\,576\,z^5+9\,633\,792\,z^4-7\,593\,984\,z^3+3\,801\,600\,z^2+2\,494\,800\,z+21\,049\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = -\frac{3}{4}$, $b_1 = \frac{7}{2}$

07.22.03.aawq.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},-\frac{23}{4};z\right)=\frac{1}{1\,076\,768\,z^{5/2}}\left(7\left(13\,312\,z^3+816\,000\,z^2+6\,359\,700\,z+3\,660\,525\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\,\left(2048\,z^3+480\,256\,z^2+10\,353\,000\,z+25\,623\,675\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aawr.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},-\frac{23}{4};-z\right)=\frac{1}{1\,076\,768\,z^{5/2}}\left(2\sqrt{z}\,\left(2048\,z^3-480\,256\,z^2+10\,353\,000\,z-25\,623\,675\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.7\left(-13\,312\,z^3+816\,000\,z^2-6\,359\,700\,z+3\,660\,525\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aaws.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},-\frac{21}{4};z\right)=\frac{1}{965\,328\sqrt{2}\,z^{7/4}}$$
$$\left(\left(4z\left(54\,016z^2+183\,648z-9\,388\,071\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(34\,816z^2+1\,845\,888z+9\,388\,071\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.3\left(80\,896z^3+1\,845\,888z^2+10\,902\,276z+28\,164\,213\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aawt.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},-\frac{21}{4};-z\right)=\frac{1}{965\,328\sqrt{2}\,z^{7/4}}$$
$$\left(\left(4z\left(-54\,016z^2+183\,648z+9\,388\,071\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(34\,816z^2-1\,845\,888z+9\,388\,071\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.3\left(-80\,896z^3+1\,845\,888z^2-10\,902\,276z+28\,164\,213\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aawu.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{46\,816z^{5/2}}\left(\left(1024z^3+137\,088z^2+1\,320\,900z+776\,475\right)\sinh\left(2\sqrt{z}\right)-70\sqrt{z}\left(256z^2+8160z+22\,185\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aawv.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{46\,816z^{5/2}}\left(\left(-1024z^3+137\,088z^2-1\,320\,900z+776\,475\right)\sin\left(2\sqrt{z}\right)-70\sqrt{z}\left(256z^2-8160z+22\,185\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aaww.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},-\frac{17}{4};z\right)=\frac{1}{413\,712\sqrt{2}\,z^{7/4}}$$
$$\left(\left(4z\left(28\,672z^2+199\,568z-2\,725\,569\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(640z^2+1\,269\,048z+8\,176\,707\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(114\,688z^3+1\,725\,504z^2+8\,479\,548z+24\,530\,121\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aawx.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},-\frac{17}{4};-z\right)=\frac{1}{413\,712\sqrt{2}\,z^{7/4}}$$
$$\left(\left(4z\left(-28\,672z^2+199\,568z+2\,725\,569\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(640z^2-1\,269\,048z+8\,176\,707\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-114\,688z^3+1\,725\,504z^2-8\,479\,548z+24\,530\,121\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aawy.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},-\frac{15}{4};z\right)=\frac{51\left(64z^2+868z+525\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(128z^2+8568z+26\,775\right)\cosh\left(2\sqrt{z}\right)}{2464z^{5/2}}$$

07.22.03.aawz.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},-\frac{15}{4};-z\right)=\frac{51\left(64z^2-868z+525\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(128z^2-8568z+26\,775\right)\cos\left(2\sqrt{z}\right)}{2464z^{5/2}}$$

07.22.03.aax0.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{24\,336\sqrt{2}\,z^{7/4}}\left(\left(4z\left(2048z^2+15\,280z-100\,947\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-1024z^2+30\,096z+302\,841\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(8192z^3+78\,144z^2+263\,340z+908\,523\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aax1.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{24\,336\sqrt{2}\,z^{7/4}}\left(\left(4z\left(-2048z^2+15\,280z+100\,947\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024z^2+30\,096z-302\,841\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-8192z^3+78\,144z^2-263\,340z+908\,523\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aax2.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},-\frac{11}{4};z\right)=\frac{15\left(\left(64z^2+1700z+1071\right)\sinh\left(2\sqrt{z}\right)-34\sqrt{z}\left(16z+63\right)\cosh\left(2\sqrt{z}\right)\right)}{2464z^{5/2}}$$

07.22.03.aax3.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},-\frac{11}{4};-z\right)=\frac{15\left(34\sqrt{z}\left(16z-63\right)\cos\left(2\sqrt{z}\right)+\left(64z^2-1700z+1071\right)\sin\left(2\sqrt{z}\right)\right)}{2464z^{5/2}}$$

07.22.03.aax4.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{9360\sqrt{2}\,z^{7/4}}\left(\left(4z\left(1024z^2+6080z-21\,945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-512z^2+1320z+65\,835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(4096z^3+25\,344z^2+41\,580z+197\,505\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aax5.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{7}{2}, -\frac{9}{4}; -z\right) = \frac{1}{9360\sqrt{2}\, z^{7/4}}\left(\left(4z\left(-1024z^2+6080z+21\,945\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(512z^2+1320z-65\,835\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-4096z^3+25\,344z^2-41\,580z+197\,505\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aax6.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{7}{2}, -\frac{7}{4}; z\right) = -\frac{15\left(2\sqrt{z}\,(8z+51)\cosh\left(2\sqrt{z}\right) - (76z+51)\sinh\left(2\sqrt{z}\right)\right)}{224\, z^{5/2}} $$

07.22.03.aax7.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{15\left(2\sqrt{z}\,(8z-51)\cos\left(2\sqrt{z}\right) + (51-76z)\sin\left(2\sqrt{z}\right)\right)}{224\, z^{5/2}} $$

07.22.03.aax8.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{7}{2}, -\frac{5}{4}; z\right) = \frac{1}{3120\sqrt{2}\, z^{7/4}}\left(\left(4z\left(512z^2+1792z-3465\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(256z^2+1056z-10\,395\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(2048z^3+7680z^2+2772z+31\,185\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aax9.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{7}{2}, -\frac{5}{4}; -z\right) = \frac{1}{3120\sqrt{2}\, z^{7/4}}\left(\left(4z\left(-512z^2+1792z+3465\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(256z^2-1056z-10\,395\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-2048z^3+7680z^2-2772z+31\,185\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaxa.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{7}{2}, -\frac{3}{4}; z\right) = \frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\, z^{5/2}} $$

07.22.03.aaxb.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{7}{2}, -\frac{3}{4}; -z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4z-3)\sin\left(2\sqrt{z}\right)\right)}{32\, z^{5/2}} $$

07.22.03.aaxc.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{7}{2}, -\frac{1}{4}; z\right) = \frac{1}{624\sqrt{2}\, z^{7/4}}\left(\left(4z\left(256z^2+272z-231\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(128z^2+216z-693\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(1024z^3+1344z^2-252z+2079\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaxd.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},-\frac{1}{4};-z\right)=$$
$$\frac{1}{624\sqrt{2}\,z^{7/4}}\left(\left(4z\left(-256z^2+272z+231\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(128z^2-216z-693\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-1024z^3+1344z^2+252z+2079\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaxe.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{2496z^{5/2}}\left(e^{-2\sqrt{z}}\left(-1024e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}-1024e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4}+1024e^{4\sqrt{z}}z^3-\right.\right.$$
$$1024z^3+256e^{4\sqrt{z}}z^{5/2}+256z^{5/2}+192e^{4\sqrt{z}}z^2-192z^2+240e^{4\sqrt{z}}z^{3/2}+$$
$$\left.\left.240z^{3/2}+420e^{4\sqrt{z}}z-420z-810e^{4\sqrt{z}}\sqrt{z}-810\sqrt{z}+405e^{4\sqrt{z}}-405\right)\right)$$

07.22.03.aaxf.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{1248z^{5/2}}\left(2048\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}+2\left(128z^2-120z-405\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-1024z^3+192z^2-420z+405\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aaxg.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{3}{4};z\right)=\frac{1}{624\sqrt{2}\,z^{7/4}}\left(\left(-4z\left(128z^2-176z+21\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\,\left(64z^2-48z+63\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(512z^3-576z^2+108z-189\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaxh.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{3}{4};-z\right)=\frac{1}{624\sqrt{2}\,z^{7/4}}\left(\left(4z\left(128z^2+176z+21\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.4\sqrt{z}\,\left(64z^2+48z+63\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(512z^3+576z^2+108z+189\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaxi.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{2496z^{5/2}}\left(e^{-2\sqrt{z}}\left(256e^{4\sqrt{z}}z^3-256z^3+64e^{4\sqrt{z}}z^{5/2}+64z^{5/2}-16e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-39)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-\right.\right.$$
$$16e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-39)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}-576e^{4\sqrt{z}}z^2+576z^2-$$
$$\left.\left.96e^{4\sqrt{z}}z^{3/2}-96z^{3/2}-12e^{4\sqrt{z}}z+12z+90e^{4\sqrt{z}}\sqrt{z}+90\sqrt{z}-45e^{4\sqrt{z}}+45\right)\right)$$

07.22.03.aaxj.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{5}{4};-z\right)=$$

$$\frac{1}{1248\,z^{5/2}}\left(32\sqrt{\pi}\,(16z+39)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+2\left(32z^2+48z+45\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-\left(256z^3+576z^2-12z+45\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aaxk.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{7}{4};z\right)=\frac{1}{624\sqrt{2}\,z^{7/4}}\left(\left(4z\left(-64z^2+244z+9\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$

$$\left.\left.4\sqrt{z}\,\left(32z^2-102z-27\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(256z^3-912z^2-180z+81\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaxl.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{7}{4};-z\right)=\frac{1}{624\sqrt{2}\,z^{7/4}}$$

$$\left(\left(4z\left(64z^2+244z-9\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(32z^2+102z-27\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(256z^3+912z^2-180z-81\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$

$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaxm.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{9}{4};z\right)=$$

$$\frac{1}{19\,968\,z^{5/2}}\left(5e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\,\left(256z^2-1248z-351\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}-e^{2\sqrt{z}}\sqrt{2\pi}\,\left(256z^2-1248z-351\right)\right.\right.$$

$$\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+4\left(-64z^3+16z^{5/2}+300z^2-63z^{3/2}+120z-36\sqrt{z}+\right.$$

$$\left.\left.\left.e^{4\sqrt{z}}\left(64z^3+16z^{5/2}-300z^2-63z^{3/2}-120z-36\sqrt{z}+18\right)-18\right)\right)\right)$$

07.22.03.aaxn.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{9}{4};-z\right)=\frac{1}{4992\,z^{5/2}}\left(5\left(\sqrt{\pi}\,\left(256z^2+1248z-351\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+\right.\right.$$

$$\left.\left.2\left(16z^2+63z-36\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+4\left(-32z^3-150z^2+60z+9\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aaxo.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{11}{4};z\right)=$$

$$-\frac{1}{12\,480\sqrt{2}\,z^{7/4}}\left(7\left(2z\left(256z^2-1600z-465\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,\left(-256z^2+1440z+1035\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.2\left(-256z^3+1536z^2+765z+270\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaxp.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{12\,480\sqrt{2}\,z^{7/4}}\left(7\left(2z\left(256z^2+1600z-465\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-256z^2-1440z+1035\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\left(256z^3+1536z^2-765z+270\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaxq.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{13}{4};z\right)=\frac{1}{425\,984\,z^{5/2}}\left(5e^{-2\sqrt{z}}\left(4\left(-1024z^3+256z^{5/2}+7296z^2-1632z^{3/2}+5196z-1863\sqrt{z}+\right.\right.\right.$$
$$\left.\left.e^{4\sqrt{z}}\left(1024z^3+256z^{5/2}-7296z^2-1632z^{3/2}-5196z-1863\sqrt{z}-3456\right)+3456\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(4096z^3-29\,952z^2-16\,848z-8775\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(4096z^3-29\,952z^2-16\,848z-8775\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aaxr.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{13}{4};-z\right)=\frac{1}{106\,496\,z^{5/2}}\left(5\left(\sqrt{\pi}\sqrt[4]{z}\left(4096z^3+29\,952z^2-16\,848z+8775\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.\right.$$
$$\left.\left.2\left(4\left(256z^3+1824z^2-1299z+864\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(256z^2+1632z-1863\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aaxs.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{15}{4};z\right)=-\frac{1}{399\,360\sqrt{2}\,z^{9/4}}$$
$$\left(11\left(2\sqrt{z}\left(4096z^3-35\,584z^2-19\,920z-12\,285\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4096z^3+33\,024z^2+35\,280z+36\,855\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-4096z^3+34\,560z^2+27\,216z+23\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaxt.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{399\,360\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\left(4096z^3+35\,584z^2-19\,920z+12\,285\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096z^3+33\,024z^2-35\,280z+36\,855\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3+34\,560z^2-27\,216z+23\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaxu.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{17}{4};z\right)=-\frac{1}{8\,388\,608\,z^{13/4}}\left(5\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384\,z^{7/2}+4096\,z^3+156\,672\,z^{5/2}-36\,096\,z^2+158\,016\,z^{3/2}-56\,016\,z+189\,612\sqrt{z}+e^{4\sqrt{z}}\left(16\,384\,z^{7/2}+4096\,z^3-156\,672\,z^{5/2}-36\,096\,z^2-158\,016\,z^{3/2}-56\,016\,z-189\,612\sqrt{z}-78\,975\right)-78\,975\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-638\,976\,z^3-539\,136\,z^2-561\,600\,z-78\,975\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-638\,976\,z^3-539\,136\,z^2-561\,600\,z-78\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aaxv.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{17}{4};-z\right)=\frac{1}{2\,097\,152\,z^{13/4}}\left(5\left(\sqrt{\pi}\left(65\,536\,z^4+638\,976\,z^3-539\,136\,z^2+561\,600\,z-78\,975\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(4096\,z^3+36\,096\,z^2-56\,016\,z+78\,975\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(4096\,z^3+39\,168\,z^2-39\,504\,z+47\,403\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aaxw.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{19}{4};z\right)=-\frac{1}{7\,667\,712\sqrt{2}\,z^{13/4}}\left(11\left(2\sqrt{z}\left(65\,536\,z^4-729\,088\,z^3-608\,256\,z^2-730\,080\,z+135\,135\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-65\,536\,z^4+688\,128\,z^3+953\,856\,z^2+1\,572\,480\,z-405\,405\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-65\,536\,z^4+712\,704\,z^3+764\,928\,z^2+1\,046\,304\,z+405\,405\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaxx.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{19}{4};-z\right)=\frac{1}{7\,667\,712\sqrt{2}\,z^{13/4}}\left(11\left(2\sqrt{z}\left(65\,536\,z^4+729\,088\,z^3-608\,256\,z^2+730\,080\,z+135\,135\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(65\,536\,z^4+688\,128\,z^3-953\,856\,z^2+1\,572\,480\,z+405\,405\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(65\,536\,z^4+712\,704\,z^3-764\,928\,z^2+1\,046\,304\,z-405\,405\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaxy.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{21}{4};z\right)=-\frac{1}{536\,870\,912\,z^{17/4}}\left(17\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-262\,144\,z^{9/2}+65\,536\,z^4+3\,145\,728\,z^{7/2}-737\,280\,z^3+4\,085\,760\,z^{5/2}-1\,405\,440\,z^2+6\,935\,040\,z^{3/2}-3\,032\,640\,z+4\,106\,700\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-3\,145\,728\,z^{7/2}-737\,280\,z^3-4\,085\,760\,z^{5/2}-1\,405\,440\,z^2-6\,935\,040\,z^{3/2}-3\,032\,640\,z-4\,106\,700\sqrt{z}+3\,080\,025\right)+3\,080\,025\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-12\,779\,520\,z^4-14\,376\,960\,z^3-22\,464\,000\,z^2-6\,318\,000\,z+3\,080\,025\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-12\,779\,520\,z^4-14\,376\,960\,z^3-22\,464\,000\,z^2-6\,318\,000\,z+3\,080\,025\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aaxz.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{21}{4};-z\right)=\frac{1}{134\,217\,728\,z^{17/4}}$$
$$\left(17\left(\sqrt{\pi}\,\left(1\,048\,576\,z^5+12\,779\,520\,z^4-14\,376\,960\,z^3+22\,464\,000\,z^2-6\,318\,000\,z-3\,080\,025\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\,\left(\left(65\,536\,z^4+737\,280\,z^3-1\,405\,440\,z^2+3\,032\,640\,z+3\,080\,025\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left.4\sqrt{z}\,\left(65\,536\,z^4+786\,432\,z^3-1\,021\,440\,z^2+1\,733\,760\,z-1\,026\,675\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aay0.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{23}{4};z\right)=-\frac{1}{245\,366\,784\sqrt{2}\,z^{17/4}}$$
$$\left(19\left(2\sqrt{z}\,\left(1\,048\,576\,z^5-14\,221\,312\,z^4-15\,802\,368\,z^3-27\,855\,360\,z^2+308\,880\,z-10\,135\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-1\,048\,576\,z^5+13\,565\,952\,z^4+22\,929\,408\,z^3+49\,420\,800\,z^2+45\,405\,360\,z+30\,405\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(-1\,048\,576\,z^5+13\,959\,168\,z^4+18\,948\,096\,z^3+35\,430\,912\,z^2+19\,459\,440\,z-30\,405\,375\right)$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aay1.01

$${}_1F_2\left(-\frac{3}{4};\frac{7}{2},\frac{23}{4};-z\right)=\frac{1}{245\,366\,784\sqrt{2}\,z^{17/4}}$$
$$\left(19\left(2\sqrt{z}\,\left(1\,048\,576\,z^5+14\,221\,312\,z^4-15\,802\,368\,z^3+27\,855\,360\,z^2+308\,880\,z+10\,135\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(1\,048\,576\,z^5+13\,565\,952\,z^4-22\,929\,408\,z^3+49\,420\,800\,z^2-45\,405\,360\,z+30\,405\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\,\left(1\,048\,576\,z^5+13\,959\,168\,z^4-18\,948\,096\,z^3+35\,430\,912\,z^2-19\,459\,440\,z-30\,405\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = -\frac{3}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.aay2.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},-\frac{23}{4};z\right)=\frac{1}{615\,296\,z^{7/2}}\left(2\sqrt{z}\,\left(109\,568\,z^3+9\,744\,000\,z^2+134\,649\,900\,z+278\,845\,875\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(8192\,z^4+2\,688\,000\,z^3+90\,132\,000\,z^2+506\,444\,400\,z+278\,845\,875\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aay3.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},-\frac{23}{4};-z\right)=\frac{1}{615\,296\,z^{7/2}}\left(2\sqrt{z}\,\left(109\,568\,z^3-9\,744\,000\,z^2+134\,649\,900\,z-278\,845\,875\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(8192\,z^4-2\,688\,000\,z^3+90\,132\,000\,z^2-506\,444\,400\,z+278\,845\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aay4.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{9\,377\,472\sqrt{2}\,z^{11/4}}\left(\left(4z\left(458\,752z^3+10\,629\,888z^2+150\,209\,136z+1\,642\,912\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(455\,680z^3+61\,921\,152z^2+1\,389\,434\,508z+4\,928\,737\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-1\,835\,008z^4-21\,479\,424z^3+833\,418\,432z^2+6\,984\,724\,824z+14\,786\,211\,825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aay5.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{9\,377\,472\sqrt{2}\,z^{11/4}}\left(\left(4z\left(-458\,752z^3+10\,629\,888z^2-150\,209\,136z+1\,642\,912\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(455\,680z^3-61\,921\,152z^2+1\,389\,434\,508z-4\,928\,737\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-1\,835\,008z^4+21\,479\,424z^3+833\,418\,432z^2-6\,984\,724\,824z+14\,786\,211\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aay6.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},-\frac{19}{4};z\right)=\frac{1}{26\,752\,z^{7/2}}\left(2\sqrt{z}\left(1024z^3+201\,600z^2+3\,471\,300z+7\,536\,375\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.21\left(2048z^3+102\,400z^2+643\,800z+358\,875\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aay7.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},-\frac{19}{4};-z\right)=\frac{1}{26\,752\,z^{7/2}}\left(2\sqrt{z}\left(1024z^3-201\,600z^2+3\,471\,300z-7\,536\,375\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.21\left(2048z^3-102\,400z^2+643\,800z-358\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aay8.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},-\frac{17}{4};z\right)=\frac{1}{28\,132\,416\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(229\,376z^3+3\,508\,864z^2+28\,034\,424z+422\,463\,195\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(114\,688z^3+10\,991\,424z^2+325\,510\,812z+1\,267\,389\,585\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-917\,504z^4-12\,228\,096z^3+181\,358\,496z^2+1\,700\,755\,056z+3\,802\,168\,755\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aay9.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},-\frac{17}{4};-z\right)=$$
$$-\frac{1}{28\,132\,416\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(229\,376z^3-3\,508\,864z^2+28\,034\,424z-422\,463\,195\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(-114\,688z^3+10\,991\,424z^2-325\,510\,812z+1\,267\,389\,585\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(917\,504z^4-12\,228\,096z^3-181\,358\,496z^2+1\,700\,755\,056z-3\,802\,168\,755\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaya.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},-\frac{15}{4};z\right)=$$

$$\frac{1}{1408\,z^{7/2}}\left(42\sqrt{z}\,\left(192\,z^2+4700\,z+10\,875\right)\cosh\left(2\sqrt{z}\right)-\left(512\,z^3+54\,432\,z^2+403\,200\,z+228\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aayb.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},-\frac{15}{4};-z\right)=$$

$$\frac{1}{1408\,z^{7/2}}\left(\left(-512\,z^3+54\,432\,z^2-403\,200\,z+228\,375\right)\sin\left(2\sqrt{z}\right)-42\sqrt{z}\,\left(192\,z^2-4700\,z+10\,875\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aayc.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},-\frac{13}{4};z\right)=\frac{1}{1\,654\,848\sqrt{2}\,z^{11/4}}$$

$$\left(7\left(4\,z\left(16\,384\,z^3+180\,224\,z^2+461\,472\,z+13\,627\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(8192\,z^3+222\,528\,z^2+9\,171\,756\,z+40\,883\,535\right)\right.\right.$$

$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-65\,536\,z^4-737\,280\,z^3+4\,694\,976\,z^2+50\,877\,288\,z+122\,650\,605\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aayd.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},-\frac{13}{4};-z\right)=-\frac{1}{1\,654\,848\sqrt{2}\,z^{11/4}}\left(7\left(4\,z\left(16\,384\,z^3-180\,224\,z^2+461\,472\,z-13\,627\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$

$$4\sqrt{z}\,\left(8192\,z^3-222\,528\,z^2+9\,171\,756\,z-40\,883\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$\left.\left.\left(65\,536\,z^4-737\,280\,z^3-4\,694\,976\,z^2+50\,877\,288\,z-122\,650\,605\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaye.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},-\frac{11}{4};z\right)=\frac{15\left(2\sqrt{z}\,\left(64\,z^2+3108\,z+7875\right)\cosh\left(2\sqrt{z}\right)-\left(1408\,z^2+13\,608\,z+7875\right)\sinh\left(2\sqrt{z}\right)\right)}{1408\,z^{7/2}}$$

07.22.03.aayf.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},-\frac{11}{4};-z\right)=-\frac{15\left(2\sqrt{z}\,\left(64\,z^2-3108\,z+7875\right)\cos\left(2\sqrt{z}\right)+\left(-1408\,z^2+13\,608\,z-7875\right)\sin\left(2\sqrt{z}\right)\right)}{1408\,z^{7/2}}$$

07.22.03.aayg.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},-\frac{9}{4};z\right)=\frac{1}{636\,480\sqrt{2}\,z^{11/4}}$$

$$\left(7\left(4\,z\left(8192\,z^3+64\,000\,z^2-25\,080\,z+2\,523\,675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(4096\,z^3+34\,560\,z^2+1\,366\,860\,z+7\,571\,025\right)\right.\right.$$

$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-32\,768\,z^4-264\,192\,z^3+660\,000\,z^2+8\,426\,880\,z+22\,713\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aayh.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{9}{2}, -\frac{9}{4}; -z\right) = -\frac{1}{636\,480\sqrt{2}\, z^{11/4}} $$
$$ \left(7\left(4z\left(8192z^3 - 64\,000z^2 - 25\,080z - 2\,523\,675\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(4096z^3 - 34\,560z^2 + 1\,366\,860z - 7\,571\,025\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(32\,768z^4 - 264\,192z^3 - 660\,000z^2 + 8\,426\,880z - 22\,713\,075\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aayi.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{9}{2}, -\frac{7}{4}; z\right) = -\frac{15\left(\left(32z^2 + 528z + 315\right)\sinh\left(2\sqrt{z}\right) - 18\sqrt{z}\,\left(12z + 35\right)\cosh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}} $$

07.22.03.aayj.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{9}{2}, -\frac{7}{4}; -z\right) = \frac{15\left(18\sqrt{z}\,\left(12z - 35\right)\cos\left(2\sqrt{z}\right) + \left(32z^2 - 528z + 315\right)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}} $$

07.22.03.aayk.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{9}{2}, -\frac{5}{4}; z\right) = \frac{1}{212\,160\sqrt{2}\, z^{11/4}} $$
$$ \left(7\left(4z\left(4096z^3 + 18\,944z^2 - 23\,760z + 329\,175\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(2048z^3 + 10\,752z^2 + 116\,820z + 987\,525\right)\right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-16\,384z^4 - 79\,872z^3 + 69\,696z^2 + 914\,760z + 2\,962\,575\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aayl.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{9}{2}, -\frac{5}{4}; -z\right) = -\frac{1}{212\,160\sqrt{2}\, z^{11/4}} $$
$$ \left(7\left(4z\left(4096z^3 - 18\,944z^2 - 23\,760z - 329\,175\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(-2048z^3 + 10\,752z^2 - 116\,820z + 987\,525\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(16\,384z^4 - 79\,872z^3 - 69\,696z^2 + 914\,760z - 2\,962\,575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaym.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{9}{2}, -\frac{3}{4}; z\right) = \frac{105\left(2\sqrt{z}\,\left(4z + 15\right)\cosh\left(2\sqrt{z}\right) - 3\left(8z + 5\right)\sinh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}} $$

07.22.03.aayn.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{105\left(2\sqrt{z}\,\left(4z - 15\right)\cos\left(2\sqrt{z}\right) + 3\left(5 - 8z\right)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}} $$

07.22.03.aayo.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{9}{2},-\frac{1}{4};z\right)=\frac{1}{42\,432\sqrt{2}\,z^{11/4}}$$
$$\left(7\left(4z\left(2048z^3+2944z^2-2904z+17\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1024z^3+2112z^2+1188z+51\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-8192z^4-13\,824z^3+5472z^2+33\,264z+155\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aayp.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{9}{2},-\frac{1}{4};-z\right)=$$
$$-\frac{1}{42\,432\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(2048z^3-2944z^2-2904z-17\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-1024z^3+2112z^2-1188z+51\,975\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(8192z^4-13\,824z^3-5472z^2+33\,264z-155\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aayq.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{9}{2},\frac{1}{4};z\right)=\frac{1}{169\,728z^{7/2}}$$
$$\left(7e^{-2\sqrt{z}}\left(-8192e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}-8192e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{17/4}+8192e^{4\sqrt{z}}z^4-8192z^4+\right.\right.$$
$$2048e^{4\sqrt{z}}z^{7/2}+2048z^{7/2}+1536e^{4\sqrt{z}}z^3-1536z^3+1920e^{4\sqrt{z}}z^{5/2}+1920z^{5/2}+3360e^{4\sqrt{z}}z^2-3360z^2+$$
$$\left.\left.7560e^{4\sqrt{z}}z^{3/2}+7560z^{3/2}-38\,880e^{4\sqrt{z}}z+38\,880z+52\,650e^{4\sqrt{z}}\sqrt{z}+52\,650\sqrt{z}-26\,325e^{4\sqrt{z}}+26\,325\right)\right)$$

07.22.03.aayr.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{9}{2},\frac{1}{4};-z\right)=\frac{1}{84\,864z^{7/2}}\left(7\left(16\,384\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}+2\left(1024z^3-960z^2+3780z-26\,325\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.\right.$$
$$\left.\left.\left(-8192z^4+1536z^3-3360z^2-38\,880z+26\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aays.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{9}{2},\frac{3}{4};z\right)=$$
$$-\frac{1}{42\,432\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(1024z^3-1792z^2+384z-1155\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^3-576z^2+492z-3465\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(4096z^4-6144z^3+1344z^2+504z+10\,395\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aayt.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{9}{2}, \frac{3}{4}; -z\right) = \frac{1}{42\,432\sqrt{2}\,z^{11/4}} $$
$$ \left(7\left(4z\left(1024z^3+1792z^2+384z+1155\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512z^3+576z^2+492z+3465\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left.\left(4096z^4+6144z^3+1344z^2-504z+10\,395\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aayu.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{9}{2}, \frac{5}{4}; z\right) = \frac{1}{169\,728\,z^{7/2}} $$
$$ \left(7e^{-2\sqrt{z}}\left(2048e^{4\sqrt{z}}z^4 - 2048z^4 + 512e^{4\sqrt{z}}z^{7/2} + 512z^{7/2} - 128e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-51)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4} - 128e^{2\sqrt{z}}\right.\right. $$
$$ \sqrt{2\pi}\,(16z-51)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{13/4} - 6144e^{4\sqrt{z}}z^3 + 6144z^3 - 1152e^{4\sqrt{z}}z^{5/2} - 1152z^{5/2} - 384e^{4\sqrt{z}}z^2 + $$
$$ \left.\left.384z^2 + 360e^{4\sqrt{z}}z^{3/2} + 360z^{3/2} + 2520e^{4\sqrt{z}}z - 2520z - 4050e^{4\sqrt{z}}\sqrt{z} - 4050\sqrt{z} + 2025e^{4\sqrt{z}} - 2025\right)\right) $$

07.22.03.aayv.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{9}{2}, \frac{5}{4}; -z\right) = \frac{1}{84\,864\,z^{7/2}}\left(7\left(256\sqrt{\pi}\,(16z+51)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4} + \right.\right. $$
$$ \left.\left.2\left(256z^3+576z^2+180z+2025\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(-2048z^4-6144z^3+384z^2+2520z-2025\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.aayw.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{9}{2}, \frac{7}{4}; z\right) = $$
$$ -\frac{1}{42\,432\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(512z^3-2528z^2-216z+315\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(256z^3-1104z^2-468z+945\right)\right.\right. $$
$$ \left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-2048z^4+9600z^3+2592z^2-864z+2835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aayx.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{9}{2}, \frac{7}{4}; -z\right) = \frac{1}{42\,432\sqrt{2}\,z^{11/4}} $$
$$ \left(7\left(4z\left(512z^3+2528z^2-216z-315\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(256z^3+1104z^2-468z-945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left.\left(2048z^4+9600z^3-2592z^2-864z-2835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aayy.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{169\,728\,z^{7/2}}\left(35\,e^{-2\sqrt{z}}\left(256\,e^{4\sqrt{z}}\,z^4-256\,z^4+64\,e^{4\sqrt{z}}\,z^{7/2}+64\,z^{7/2}-1584\,e^{4\sqrt{z}}\,z^3+1584\,z^3-348\,e^{4\sqrt{z}}\,z^{5/2}-\right.\right.$$
$$348\,z^{5/2}-e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(256\,z^2-1632\,z-663\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}-$$
$$e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(256\,z^2-1632\,z-663\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}-864\,e^{4\sqrt{z}}\,z^2+864\,z^2-$$
$$\left.\left.312\,e^{4\sqrt{z}}\,z^{3/2}-312\,z^{3/2}-144\,e^{4\sqrt{z}}\,z+144\,z+450\,e^{4\sqrt{z}}\,\sqrt{z}+450\,\sqrt{z}-225\,e^{4\sqrt{z}}+225\right)\right)$$

07.22.03.aayz.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{84\,864\,z^{7/2}}\left(35\left(2\,\sqrt{\pi}\,\left(256\,z^2+1632\,z-663\right)C\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+2\left(32\,z^3+174\,z^2-156\,z-225\right)\cos\left(2\,\sqrt{z}\right)\sqrt{z}+\right.\right.$$
$$\left.\left.\left(-256\,z^4-1584\,z^3+864\,z^2-144\,z+225\right)\sin\left(2\,\sqrt{z}\right)\right)\right)$$

07.22.03.aaz0.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},\frac{11}{4};z\right)=$$
$$-\frac{1}{212\,160\,\sqrt{2}\,z^{11/4}}\left(49\left(4\,z\left(256\,z^3-2080\,z^2-975\,z-225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+2\,\sqrt{z}\,\left(-256\,z^3+1920\,z^2+1845\,z+1350\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1024\,z^4+8064\,z^3+5580\,z^2+3240\,z-2025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaz1.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},\frac{11}{4};-z\right)=\frac{1}{212\,160\,\sqrt{2}\,z^{11/4}}$$
$$\left(49\left(4\,z\left(256\,z^3+2080\,z^2-975\,z+225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-2\,\sqrt{z}\,\left(256\,z^3+1920\,z^2-1845\,z+1350\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(1024\,z^4+8064\,z^3-5580\,z^2+3240\,z+2025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaz2.01

$${}_1F_2\left(-\frac{3}{4};\frac{9}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{3\,620\,864\,z^{7/2}}\left(35\,e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\left(4096\,z^3-39\,168\,z^2-31\,824\,z-29\,835\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}-e^{2\sqrt{z}}\right.\right.$$
$$\sqrt{2\,\pi}\,\left(4096\,z^3-39\,168\,z^2-31\,824\,z-29\,835\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+$$
$$4\left(-1024\,z^4+256\,z^{7/2}+9600\,z^3-2208\,z^{5/2}+9372\,z^2-3339\,z^{3/2}+10\,368\,z-4320\,\sqrt{z}+\right.$$
$$\left.\left.\left.e^{4\sqrt{z}}\,\left(1024\,z^4+256\,z^{7/2}-9600\,z^3-2208\,z^{5/2}-9372\,z^2-3339\,z^{3/2}-10\,368\,z-4320\,\sqrt{z}+2160\right)-2160\right)\right)\right)$$

07.22.03.aaz3.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{9}{2},\frac{13}{4};-z\right)=\frac{1}{905\,216\,z^{7/2}}\left(35\left(\sqrt{\pi}\,z^{5/4}\left(4096z^3+39\,168z^2-31\,824z+29\,835\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.\right.$$
$$\left.\left.2\left(4\left(256z^4+2400z^3-2343z^2+2592z+540\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(256z^3+2208z^2-3339z+4320\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aaz4.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{9}{2},\frac{15}{4};z\right)=-\frac{1}{3\,394\,560\sqrt{2}\,z^{11/4}}$$
$$\left(77\left(2z\left(4096z^3-46\,336z^2-40\,080z-52\,815\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-4096z^3+43\,776z^2+62\,160z+108\,045\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(-4096z^4+45\,312z^3+50\,064z^2+73\,395z+37\,800\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaz5.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{9}{2},\frac{15}{4};-z\right)=\frac{1}{3\,394\,560\sqrt{2}\,z^{11/4}}$$
$$\left(77\left(2z\left(4096z^3+46\,336z^2-40\,080z+52\,815\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(4096z^3+43\,776z^2-62\,160z+108\,045\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(4096z^4+45\,312z^3-50\,064z^2+73\,395z-37\,800\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aaz6.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{9}{2},\frac{17}{4};z\right)=$$
$$\frac{1}{71\,303\,168\,z^{7/2}}\left(35\,e^{-2\sqrt{z}}\left(4\left(-16\,384z^4+4096z^{7/2}+205\,824z^3-48\,384z^{5/2}+287\,040z^2-97\,488z^{3/2}+\right.\right.\right.$$
$$\left.\left.569\,196z-236\,655\sqrt{z}\right)+e^{4\sqrt{z}}\left(16\,384z^4+4096z^{7/2}-205\,824z^3-48\,384z^{5/2}-\right.\right.$$
$$\left.\left.287\,040z^2-97\,488z^{3/2}-569\,196z-236\,655\sqrt{z}-552\,960\right)+552\,960\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(65\,536z^4-835\,584z^3-1\,018\,368z^2-1\,909\,440z-1\,342\,575\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(65\,536z^4-835\,584z^3-1\,018\,368z^2-1\,909\,440z-1\,342\,575\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aaz7.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{9}{2},\frac{17}{4};-z\right)=$$
$$\frac{1}{17\,825\,792\,z^{7/2}}\left(35\left(\sqrt{\pi}\,\sqrt[4]{z}\left(65\,536z^4+835\,584z^3-1\,018\,368z^2+1\,909\,440z-1\,342\,575\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\left(\sqrt{z}\left(4096z^3+48\,384z^2-97\,488z+236\,655\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left.4\left(4096z^4+51\,456z^3-71\,760z^2+142\,299z-138\,240\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aaz8.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{9}{2},\frac{19}{4};z\right)= $$
$$ -\frac{1}{65\,175\,552\sqrt{2}\,z^{13/4}}\left(77\left(2\sqrt{z}\left(65\,536z^4-950\,272z^3-1\,202\,688z^2-2\,799\,360z-2\,297\,295\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ \left(-65\,536z^4+909\,312z^3+1\,686\,528z^2+4\,384\,800z+6\,891\,885\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.2\sqrt{z}\left(-65\,536z^4+933\,888z^3+1\,414\,656z^2+3\,350\,592z+3\,994\,515\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaz9.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{9}{2},\frac{19}{4};-z\right)= $$
$$ \frac{1}{65\,175\,552\sqrt{2}\,z^{13/4}}\left(77\left(2\sqrt{z}\left(65\,536z^4+950\,272z^3-1\,202\,688z^2+2\,799\,360z-2\,297\,295\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ \left(-65\,536z^4-909\,312z^3+1\,686\,528z^2-4\,384\,800z+6\,891\,885\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.2\sqrt{z}\left(65\,536z^4+933\,888z^3-1\,414\,656z^2+3\,350\,592z-3\,994\,515\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aaza.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{9}{2},\frac{21}{4};z\right)= $$
$$ -\frac{1}{268\,435\,456z^{17/4}}\left(7e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-262\,144z^{9/2}+65\,536z^4+4\,128\,768z^{7/2}-983\,040z^3+7\,464\,960z^{5/2}-\right.\right.\right. $$
$$ 2\,434\,560z^2+21\,415\,680z^{3/2}-8\,058\,240z+35\,711\,100\sqrt{z}+ $$
$$ e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4-4\,128\,768z^{7/2}-983\,040z^3-7\,464\,960z^{5/2}-2\,434\,560z^2-\right. $$
$$ \left.\left.\left.21\,415\,680z^{3/2}-8\,058\,240z-35\,711\,100\sqrt{z}-17\,453\,475\right)-17\,453\,475\right)+e^{2\sqrt{z}}\sqrt{2\pi} $$
$$ \left(1\,048\,576z^5-16\,711\,680z^4-27\,156\,480z^3-76\,377\,600z^2-107\,406\,000z-17\,453\,475\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}} $$
$$ \left.\sqrt{2\pi}\left(1\,048\,576z^5-16\,711\,680z^4-27\,156\,480z^3-76\,377\,600z^2-107\,406\,000z-17\,453\,475\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aazb.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{9}{2},\frac{21}{4};-z\right)=\frac{1}{67\,108\,864z^{17/4}} $$
$$ \left(7\left(\sqrt{\pi}\left(1\,048\,576z^5+16\,711\,680z^4-27\,156\,480z^3+76\,377\,600z^2-107\,406\,000z+17\,453\,475\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.\right. $$
$$ 2\sqrt[4]{z}\left(\left(-65\,536z^4-983\,040z^3+2\,434\,560z^2-8\,058\,240z+17\,453\,475\right)\cos\left(2\sqrt{z}\right)+\right. $$
$$ \left.\left.\left.4\sqrt{z}\left(65\,536z^4+1\,032\,192z^3-1\,866\,240z^2+5\,353\,920z-8\,927\,775\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aazc.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{9}{2}, \frac{23}{4}; z\right) = -\frac{1}{2\,085\,617\,664\sqrt{2}\, z^{17/4}} $$
$$ \left(133\left(2\sqrt{z}\left(1\,048\,576 z^5 - 18\,546\,688 z^4 - 30\,941\,184 z^3 - 102\,366\,720 z^2 - 162\,779\,760 z + 34\,459\,425\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. \right. $$
$$ \left(-1\,048\,576 z^5 + 17\,891\,328 z^4 + 40\,771\,584 z^3 + 140\,659\,200 z^2 + 330\,810\,480 z - 103\,378\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\left(-1\,048\,576 z^5 + 18\,284\,544 z^4 + 35\,168\,256 z^3 + 115\,416\,576 z^2 + 215\,051\,760 z + 103\,378\,275\right) $$
$$ \left. \left. I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aazd.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) = \frac{1}{2\,085\,617\,664\sqrt{2}\, z^{17/4}} $$
$$ \left(133\left(2\sqrt{z}\left(1\,048\,576 z^5 + 18\,546\,688 z^4 - 30\,941\,184 z^3 + 102\,366\,720 z^2 - 162\,779\,760 z - 34\,459\,425\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. \right. $$
$$ \left(-1\,048\,576 z^5 - 17\,891\,328 z^4 + 40\,771\,584 z^3 - 140\,659\,200 z^2 + 330\,810\,480 z + 103\,378\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\left(1\,048\,576 z^5 + 18\,284\,544 z^4 - 35\,168\,256 z^3 + 115\,416\,576 z^2 - 215\,051\,760 z + 103\,378\,275\right) $$
$$ \left. \left. J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = -\frac{3}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.aaze.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{11}{2}, -\frac{23}{4}; z\right) = $$
$$ -\frac{1}{2\,461\,184 z^{9/2}}\left(9\left(2\sqrt{z}\left(8192 z^4 + 3\,712\,000 z^3 + 187\,572\,000 z^2 + 1\,982\,904\,000 z + 3\,810\,893\,625\right)\cosh\left(2\sqrt{z}\right) - \right. \right. $$
$$ \left. \left. 25\left(20\,480 z^4 + 2\,598\,400 z^3 + 59\,058\,384 z^2 + 282\,563\,820 z + 152\,435\,745\right)\sinh\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.aazf.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{11}{2}, -\frac{23}{4}; -z\right) = $$
$$ -\frac{1}{2\,461\,184 z^{9/2}}\left(9\left(2\sqrt{z}\left(8192 z^4 - 3\,712\,000 z^3 + 187\,572\,000 z^2 - 1\,982\,904\,000 z + 3\,810\,893\,625\right)\cos\left(2\sqrt{z}\right) - \right. \right. $$
$$ \left. \left. 25\left(20\,480 z^4 - 2\,598\,400 z^3 + 59\,058\,384 z^2 - 282\,563\,820 z + 152\,435\,745\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.aazg.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{12\,503\,296\sqrt{2}\,z^{15/4}}\left(\left(4z\left(524\,288z^4+10\,593\,280z^3-280\,910\,592z^2-8\,449\,263\,900z-64\,073\,584\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(-262\,144z^4+32\,219\,136z^3+3\,768\,883\,776z^2+61\,961\,268\,600z+192\,220\,753\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left(2\,097\,152z^5+48\,328\,704z^4+845\,752\,320z^3+41\,007\,094\,128z^2+295\,724\,236\,500z+576\,662\,261\,175\right)$$
$$\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.aazh.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{12\,503\,296\sqrt{2}\,z^{15/4}}\left(\left(-4z\left(524\,288z^4-10\,593\,280z^3-280\,910\,592z^2+8\,449\,263\,900z-64\,073\,584\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(262\,144z^4+32\,219\,136z^3-3\,768\,883\,776z^2+61\,961\,268\,600z-192\,220\,753\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-2\,097\,152z^5+48\,328\,704z^4-845\,752\,320z^3+41\,007\,094\,128z^2-295\,724\,236\,500z+576\,662\,261\,175\right)$$
$$\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.aazi.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{107\,008z^{9/2}}\left(9\left(\left(4096z^4+1\,164\,800z^3+33\,373\,200z^2+170\,824\,500z+92\,948\,625\right)\sinh\left(2\sqrt{z}\right)-50\sqrt{z}\right.\right.$$
$$\left.\left.\left(2048z^3+155\,904z^2+1\,875\,720z+3\,717\,945\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aazj.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{19}{4};-z\right)=\frac{1}{107\,008z^{9/2}}\left(9\left(50\sqrt{z}\left(2048z^3-155\,904z^2+1\,875\,720z-3\,717\,945\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^4-1\,164\,800z^3+33\,373\,200z^2-170\,824\,500z+92\,948\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aazk.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{37\,509\,888\sqrt{2}\,z^{15/4}}\left(7\left(4z\left(262\,144z^4+4\,603\,904z^3-47\,573\,568z^2-1\,689\,852\,780z-14\,786\,211\,825\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(-131\,072z^4+671\,232z^3+669\,428\,064z^2+13\,518\,822\,240z+44\,358\,635\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left(1\,048\,576z^5+18\,677\,760z^4+83\,568\,384z^3+8\,416\,557\,072z^2+65\,904\,258\,420z+133\,075\,906\,425\right)$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aazl.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{17}{4};-z\right)=$$
$$-\frac{1}{37\,509\,888\sqrt{2}\,z^{15/4}}\left(7\left(4z\left(262\,144z^4-4\,603\,904z^3-47\,573\,568z^2+1\,689\,852\,780z-14\,786\,211\,825\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(131\,072z^4+671\,232z^3-669\,428\,064z^2+13\,518\,822\,240z-44\,358\,635\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(1\,048\,576z^5-18\,677\,760z^4+83\,568\,384z^3-8\,416\,557\,072z^2+65\,904\,258\,420z-133\,075\,906\,425\right)$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aazm.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{15}{4};z\right)=-\frac{1}{5632\,z^{9/2}}\left(9\left(2\sqrt{z}\left(512z^3+84\,000z^2+1\,218\,000z+2\,512\,125\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.7\left(2816z^3+116\,400z^2+652\,500z+358\,875\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aazn.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{15}{4};-z\right)=\frac{1}{5632\,z^{9/2}}\left(9\left(2\sqrt{z}\left(512z^3-84\,000z^2+1\,218\,000z-2\,512\,125\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.7\left(-2816z^3+116\,400z^2-652\,500z+358\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aazo.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{2\,206\,464\sqrt{2}\,z^{15/4}}\left(\left(4z\left(131\,072z^4+1\,785\,856z^3-7\,299\,648z^2-272\,556\,900z-2\,957\,242\,365\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(65\,536z^4+933\,888z^3-89\,861\,184z^2-2\,507\,523\,480z-8\,871\,727\,095\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(524\,288z^5+7\,274\,496z^4-5\,822\,208z^3+1\,439\,100\,432z^2+12\,592\,128\,780z+26\,615\,181\,285\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aazp.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{2\,206\,464\sqrt{2}\,z^{15/4}}\left(\left(-4z\left(131\,072z^4-1\,785\,856z^3-7\,299\,648z^2+272\,556\,900z-2\,957\,242\,365\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(65\,536z^4-933\,888z^3-89\,861\,184z^2+2\,507\,523\,480z-8\,871\,727\,095\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-524\,288z^5+7\,274\,496z^4+5\,822\,208z^3+1\,439\,100\,432z^2-12\,592\,128\,780z+26\,615\,181\,285\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aazq.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{5632\,z^{9/2}}\left(135\left(\left(256z^3+21\,392z^2+136\,500z+76\,125\right)\sinh\left(2\sqrt{z}\right)-14\sqrt{z}\left(256z^2+5000z+10\,875\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aazr.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{11}{4};-z\right)=$$
$$-\frac{1}{5632\,z^{9/2}}\left(135\left(14\sqrt{z}\,\left(256\,z^2-5000\,z+10\,875\right)\cos\left(2\sqrt{z}\right)+\left(256\,z^3-21\,392\,z^2+136\,500\,z-76\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aazs.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{848\,640\sqrt{2}\,z^{15/4}}\left(\left(4\,z\left(65\,536\,z^4+634\,880\,z^3-1\,313\,280\,z^2-30\,284\,100\,z-476\,974\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\right.\right.$$
$$\sqrt{z}\,\left(32\,768\,z^4+337\,920\,z^3-7\,086\,240\,z^2-363\,409\,200\,z-1\,430\,923\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(262\,144\,z^5+2\,605\,056\,z^4-4\,515\,840\,z^3+186\,444\,720\,z^2+1\,907\,898\,300\,z+4\,292\,771\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aazt.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{848\,640\sqrt{2}\,z^{15/4}}\left(\left(-4\,z\left(65\,536\,z^4-634\,880\,z^3-1\,313\,280\,z^2+30\,284\,100\,z-476\,974\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\,\left(32\,768\,z^4-337\,920\,z^3-7\,086\,240\,z^2+363\,409\,200\,z-1\,430\,923\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-262\,144\,z^5+2\,605\,056\,z^4+4\,515\,840\,z^3+186\,444\,720\,z^2-1\,907\,898\,300\,z+4\,292\,771\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aazu.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{7}{4};z\right)=-\frac{135\left(2\sqrt{z}\,\left(32\,z^2+1120\,z+2625\right)\cosh\left(2\sqrt{z}\right)-\left(592\,z^2+4620\,z+2625\right)\sinh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.aazv.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{7}{4};-z\right)=-\frac{135\left(2\sqrt{z}\,\left(32\,z^2-1120\,z+2625\right)\cos\left(2\sqrt{z}\right)+\left(-592\,z^2+4620\,z-2625\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.aazw.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{282\,880\sqrt{2}\,z^{15/4}}\left(\left(4\,z\left(32\,768\,z^4+188\,416\,z^3-293\,760\,z^2-1\,316\,700\,z-52\,997\,175\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(-16\,384\,z^4-104\,448\,z^3+60\,480\,z^2+34\,234\,200\,z+158\,991\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(131\,072\,z^5+786\,432\,z^4-935\,424\,z^3+15\,024\,240\,z^2+193\,554\,900\,z+476\,974\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aazx.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{5}{4};-z\right)= \frac{1}{282\,880\sqrt{2}\,z^{15/4}}\left(\left(-4z\left(32\,768z^4-188\,416z^3-293\,760z^2+1\,316\,700z-52\,997\,175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(16\,384z^4-104\,448z^3-60\,480z^2+34\,234\,200z-158\,991\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-131\,072z^5+786\,432z^4+935\,424z^3+15\,024\,240z^2-193\,554\,900z+476\,974\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aazy.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{3}{4};z\right)= \frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.aazz.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{3}{4};-z\right)= \frac{945\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.ab00.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{1}{4};z\right)= \frac{1}{56\,576\sqrt{2}\,z^{15/4}}\left(\left(4z\left(16\,384z^4+29\,696z^3-33\,984z^2+69\,300z-2\,304\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(8192z^4+19\,968z^3+6048z^2-1\,108\,800z-6\,912\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(65\,536z^5+135\,168z^4-80\,640z^3+410\,256z^2+7\,276\,500z+20\,738\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ab01.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{11}{2},-\frac{1}{4};-z\right)= \frac{1}{56\,576\sqrt{2}\,z^{15/4}}\left(\left(4z\left(-16\,384z^4+29\,696z^3+33\,984z^2+69\,300z+2\,304\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(8192z^4-19\,968z^3+6048z^2+1\,108\,800z-6\,912\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-65\,536z^5+135\,168z^4+80\,640z^3+410\,256z^2-7\,276\,500z+20\,738\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ab02.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{1}{4};z\right)= \frac{1}{226\,304\,z^{9/2}}\left(e^{-2\sqrt{z}}\left(-65\,536e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}-65\,536e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{21/4}+65\,536e^{4\sqrt{z}}z^5-65\,536z^5+16\,384e^{4\sqrt{z}}z^{9/2}+16\,384z^{9/2}+12\,288e^{4\sqrt{z}}z^4-12\,288z^4+15\,360e^{4\sqrt{z}}z^{7/2}+15\,360z^{7/2}+26\,880e^{4\sqrt{z}}z^3-26\,880z^3+60\,480e^{4\sqrt{z}}z^{5/2}+60\,480z^{5/2}+166\,320e^{4\sqrt{z}}z^2-166\,320z^2-1\,965\,600e^{4\sqrt{z}}z^{3/2}-1\,965\,600z^{3/2}+5\,159\,700e^{4\sqrt{z}}z-5\,159\,700z-6\,265\,350e^{4\sqrt{z}}\sqrt{z}-6\,265\,350\sqrt{z}+3\,132\,675e^{4\sqrt{z}}-3\,132\,675\right)\right) $$

07.22.03.ab03.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{113\,152\,z^{9/2}}\left(131\,072\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{21/4}+2\left(8192\,z^4-7680\,z^3+30\,240\,z^2+982\,800\,z-3\,132\,675\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+\right.$$
$$\left.\left(-65\,536\,z^5+12\,288\,z^4-26\,880\,z^3+166\,320\,z^2-5\,159\,700\,z+3\,132\,675\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ab04.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{3}{4};z\right)=-\frac{1}{56\,576\sqrt{2}\;z^{15/4}}\left(\left(4\,z\left(8192\,z^4-17\,408\,z^3+5184\,z^2-13\,860\,z+121\,275\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(4096\,z^4-6144\,z^3+4032\,z^2+27\,720\,z+363\,825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-32\,768\,z^5+61\,440\,z^4-16\,128\,z^3+17\,136\,z^2+291\,060\,z+1\,091\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ab05.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{3}{4};-z\right)=\frac{1}{56\,576\sqrt{2}\;z^{15/4}}\left(\left(4\,z\left(8192\,z^4+17\,408\,z^3+5184\,z^2+13\,860\,z+121\,275\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(4096\,z^4+6144\,z^3+4032\,z^2-27\,720\,z+363\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(32\,768\,z^5+61\,440\,z^4+16\,128\,z^3+17\,136\,z^2-291\,060\,z+1\,091\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ab06.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{5}{4};z\right)=\frac{1}{226\,304\,z^{9/2}}$$
$$\left(e^{-2\sqrt{z}}\left(16\,384\,e^{4\sqrt{z}}\;z^5-16\,384\,z^5+4096\,e^{4\sqrt{z}}\;z^{9/2}+4096\,z^{9/2}-1024\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;(16\,z-63)\,\mathrm{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{17/4}-\right.\right.$$
$$1024\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;(16\,z-63)\,\mathrm{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{17/4}-61\,440\,e^{4\sqrt{z}}\;z^4+61\,440\,z^4-12\,288\,e^{4\sqrt{z}}\;z^{7/2}-$$
$$12\,288\,z^{7/2}-5376\,e^{4\sqrt{z}}\;z^3+5376\,z^3+15\,120\,e^{4\sqrt{z}}\;z^2-15\,120\,z^2+75\,600\,e^{4\sqrt{z}}\;z^{3/2}+75\,600\,z^{3/2}-$$
$$\left.\left.283\,500\,e^{4\sqrt{z}}\;z+283\,500\,z+368\,550\,e^{4\sqrt{z}}\;\sqrt{z}\;+368\,550\sqrt{z}\;-184\,275\,e^{4\sqrt{z}}\;+184\,275\right)\right)$$

07.22.03.ab07.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{5}{4};-z\right)=$$
$$\frac{1}{113\,152\,z^{9/2}}\left(2048\sqrt{\pi}\;(16\,z+63)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}+2\left(2048\,z^4+6144\,z^3-37\,800\,z+184\,275\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+\right.$$
$$\left.\left(-16\,384\,z^5-61\,440\,z^4+5376\,z^3+15\,120\,z^2+283\,500\,z-184\,275\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ab08.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{11}{2}, \frac{7}{4}; z\right) = \frac{1}{56\,576\sqrt{2}\, z^{15/4}} $$
$$ \left(\left(-4z\left(4096z^4 - 24\,832z^3 - 3456z^2 + 6300z - 24\,255\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048z^4 - 11\,136z^3 - 6048z^2 + 5040z - 72\,765\right)\right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(16\,384z^5 - 95\,232z^4 - 32\,256z^3 + 13\,104z^2 + 26\,460z + 218\,295\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ab09.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{11}{2}, \frac{7}{4}; -z\right) = \frac{1}{56\,576\sqrt{2}\, z^{15/4}} $$
$$ \left(\left(4z\left(4096z^4 + 24\,832z^3 - 3456z^2 - 6300z - 24\,255\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048z^4 + 11\,136z^3 - 6048z^2 - 5040z - 72\,765\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(16\,384z^5 + 95\,232z^4 - 32\,256z^3 - 13\,104z^2 + 26\,460z - 218\,295\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ab0a.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{11}{2}, \frac{9}{4}; z\right) = $$
$$ -\frac{1}{226\,304 z^{9/2}}\left(5e^{-2\sqrt{z}}\left(-2048e^{4\sqrt{z}} z^5 + 2048z^5 - 512e^{4\sqrt{z}} z^{9/2} - 512z^{9/2} + 15\,744e^{4\sqrt{z}} z^4 - 15\,744z^4 + \right.\right. $$
$$ 3552e^{4\sqrt{z}} z^{7/2} + 3552z^{7/2} + 8e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 - 2016z - 1071\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} + 8e^{2\sqrt{z}}\sqrt{2\pi} $$
$$ \left(256z^2 - 2016z - 1071\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{13/4} + 10\,752e^{4\sqrt{z}} z^3 - 10\,752z^3 + 4032e^{4\sqrt{z}} z^{5/2} + 4032z^{5/2} + $$
$$ \left.\left. 3024e^{4\sqrt{z}} z^2 - 3024z^2 - 18\,900e^{4\sqrt{z}} z + 18\,900z + 28\,350e^{4\sqrt{z}}\sqrt{z} + 28\,350\sqrt{z} - 14\,175e^{4\sqrt{z}} + 14\,175\right)\right) $$

07.22.03.ab0b.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{11}{2}, \frac{9}{4}; -z\right) = $$
$$ -\frac{1}{113\,152 z^{9/2}}\left(5\left(-16\sqrt{\pi}\left(256z^2 + 2016z - 1071\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{13/4} - 2\left(256z^4 + 1776z^3 - 2016z^2 - 14\,175\right)\right.\right. $$
$$ \left.\left. \cos\left(2\sqrt{z}\right)\sqrt{z} + \left(2048z^5 + 15\,744z^4 - 10\,752z^3 + 3024z^2 + 18\,900z - 14\,175\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.ab0c.01

$$ {}_1F_2\left(-\frac{3}{4}; \frac{11}{2}, \frac{11}{4}; z\right) = -\frac{1}{282\,880\sqrt{2}\, z^{15/4}}\left(7\left(4z\left(2048z^4 - 20\,480z^3 - 13\,320z^2 - 6300z + 11\,025\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(-1024z^4 + 9600z^3 + 11\,340z^2 + 12\,600z - 33\,075\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left.\left(-8192z^5 + 79\,872z^4 + 70\,560z^3 + 55\,440z^2 - 18\,900z + 99\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ab0d.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{11}{4};-z\right)=\frac{1}{282\,880\sqrt{2}\,z^{15/4}}$$
$$\left(7\left(4z\left(2048z^4+20\,480z^3-13\,320z^2+6300z+11\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1024z^4+9600z^3-11\,340z^2+12\,600z+\right.\right.\right.$$
$$\left.\left.\left.33\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(8192z^5+79\,872z^4-70\,560z^3+55\,440z^2+18\,900z+99\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ab0e.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{1\,810\,432z^{9/2}}\left(15e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-4096z^3+48\,384z^2+51\,408z+69\,615\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+e^{2\sqrt{z}}\right.\right.$$
$$\sqrt{2\pi}\left(-4096z^3+48\,384z^2+51\,408z+69\,615\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{9/4}+$$
$$4\left(-1024z^5+256z^{9/2}+11\,904z^4-2784z^{7/2}+14\,700z^3-5103z^{5/2}+22\,176z^2-10\,080z^{3/2}+\right.$$
$$7560z+18\,900\sqrt{z}+e^{4\sqrt{z}}\left(1024z^5+256z^{9/2}-11\,904z^4-2784z^{7/2}-14\,700z^3-\right.$$
$$\left.\left.\left.\left.5103z^{5/2}-22\,176z^2-10\,080z^{3/2}-7560z+18\,900\sqrt{z}-9450\right)+9450\right)\right)\right)$$

07.22.03.ab0f.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{13}{4};-z\right)=\frac{1}{452\,608z^{9/2}}$$
$$\left(15\left(\sqrt{\pi}\left(4096z^3+48\,384z^2-51\,408z+69\,615\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}+2\left(\sqrt{z}\left(256z^4+2784z^3-5103z^2+10\,080z+18\,900\right)\right.\right.\right.$$
$$\left.\left.\left.\cos\left(2\sqrt{z}\right)-2\left(512z^5+5952z^4-7350z^3+11\,088z^2-3780z+4725\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ab0g.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{15}{4};z\right)=-\frac{1}{565\,760\sqrt{2}\,z^{15/4}}\left(11\left(2z\left(4096z^4-57\,088z^3-66\,960z^2-133\,245z-44\,100\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\sqrt{z}\left(-4096z^4+54\,528z^3+95\,760z^2+223\,335z+264\,600\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\left(-4096z^5+56\,064z^4+79\,632z^3+164\,745z^2+132\,300z-99\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ab0h.01

$${}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{15}{4};-z\right)=\frac{1}{565\,760\sqrt{2}\,z^{15/4}}\left(11\left(2z\left(4096z^4+57\,088z^3-66\,960z^2+133\,245z-44\,100\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\sqrt{z}\left(-4096z^4-54\,528z^3+95\,760z^2-223\,335z+264\,600\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\left(4096z^5+56\,064z^4-79\,632z^3+164\,745z^2-132\,300z-99\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ab0i.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{17}{4};z\right)=\frac{1}{35\,651\,584\,z^{9/2}}\left(15\,e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536\,z^4+1\,032\,192\,z^3+1\,645\,056\,z^2+4\,455\,360\,z+5\,638\,815\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+e^{2\sqrt{z}}\sqrt{2\pi}\left(-65\,536\,z^4+1\,032\,192\,z^3+1\,645\,056\,z^2+4\,455\,360\,z+5\,638\,815\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+4\left(-16\,384\,z^5+4096\,z^{9/2}+254\,976\,z^4-60\,672\,z^{7/2}+452\,928\,z^3-148\,176\,z^{5/2}+1\,255\,212\,z^2-477\,855\,z^{3/2}+1\,935\,360\,z-967\,680\sqrt{z}+e^{4\sqrt{z}}\left(16\,384\,z^5+4096\,z^{9/2}-254\,976\,z^4-60\,672\,z^{7/2}-452\,928\,z^3-148\,176\,z^{5/2}-1\,255\,212\,z^2-477\,855\,z^{3/2}-1\,935\,360\,z-967\,680\sqrt{z}+483\,840\right)-483\,840\right)\right)\right) $$

07.22.03.ab0j.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{17}{4};-z\right)=\frac{1}{8\,912\,896\,z^{9/2}}\left(15\left(\sqrt{\pi}\left(65\,536\,z^4+1\,032\,192\,z^3-1\,645\,056\,z^2+4\,455\,360\,z-5\,638\,815\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+2\left(4096\,z^4+60\,672\,z^3-148\,176\,z^2+477\,855\,z-967\,680\right)\cos\left(2\sqrt{z}\right)\sqrt{z}-8\left(4096\,z^5+63\,744\,z^4-113\,232\,z^3+313\,803\,z^2-483\,840\,z-120\,960\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.ab0k.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{19}{4};z\right)=-\frac{1}{10\,862\,592\sqrt{2}\,z^{15/4}}\left(11\left(2z\left(65\,536\,z^4-1\,171\,456\,z^3-1\,990\,656\,z^2-6\,804\,000\,z-11\,847\,465\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-65\,536\,z^4+1\,130\,496\,z^3+2\,612\,736\,z^2+9\,253\,440\,z+22\,841\,595\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(-65\,536\,z^5+1\,155\,072\,z^4+2\,257\,920\,z^3+7\,638\,624\,z^2+15\,260\,805\,z+9\,525\,600\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ab0l.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{19}{4};-z\right)=\frac{1}{10\,862\,592\sqrt{2}\,z^{15/4}}\left(11\left(2z\left(65\,536\,z^4+1\,171\,456\,z^3-1\,990\,656\,z^2+6\,804\,000\,z-11\,847\,465\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-65\,536\,z^4-1\,130\,496\,z^3+2\,612\,736\,z^2-9\,253\,440\,z+22\,841\,595\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(65\,536\,z^5+1\,155\,072\,z^4-2\,257\,920\,z^3+7\,638\,624\,z^2-15\,260\,805\,z+9\,525\,600\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ab0m.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{21}{4};z\right)= \frac{1}{134\,217\,728\,z^{9/2}}\left(3\,e^{-2\sqrt{z}}\left(4\left(-262\,144\,z^5+65\,536\,z^{9/2}+5\,111\,808\,z^4-1\,228\,800\,z^{7/2}+11\,827\,200\,z^3-3\,709\,440\,z^{5/2}+48\,061\,440\,z^2-16\,309\,440\,z^{3/2}+130\,617\,900\,z-56\,865\,375\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^5+65\,536\,z^{9/2}-5\,111\,808\,z^4-1\,228\,800\,z^{7/2}-11\,827\,200\,z^3-3\,709\,440\,z^{5/2}-48\,061\,440\,z^2-16\,309\,440\,z^{3/2}-130\,617\,900\,z-56\,865\,375\sqrt{z}-154\,828\,800\right)+154\,828\,800\right)+e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(-1\,048\,576\,z^5+20\,643\,840\,z^4+43\,868\,160\,z^3+178\,214\,400\,z^2+451\,105\,200\,z+366\,522\,975\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(-1\,048\,576\,z^5+20\,643\,840\,z^4+43\,868\,160\,z^3+178\,214\,400\,z^2+451\,105\,200\,z+366\,522\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ab0n.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{21}{4};-z\right)= \frac{1}{33\,554\,432\,z^{9/2}}\left(3\left(\sqrt{\pi}\sqrt[4]{z}\left(1\,048\,576\,z^5+20\,643\,840\,z^4-43\,868\,160\,z^3+178\,214\,400\,z^2-451\,105\,200\,z+366\,522\,975\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\left(4\left(65\,536\,z^5+1\,277\,952\,z^4-2\,956\,800\,z^3+12\,015\,360\,z^2-32\,654\,475\,z+38\,707\,200\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(65\,536\,z^4+1\,228\,800\,z^3-3\,709\,440\,z^2+16\,309\,440\,z-56\,865\,375\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.ab0o.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{23}{4};z\right)= -\frac{1}{347\,602\,944\sqrt{2}\,z^{17/4}}\left(19\left(2\sqrt{z}\left(1\,048\,576\,z^5-22\,872\,064\,z^4-50\,946\,048\,z^3-245\,306\,880\,z^2-751\,932\,720\,z-723\,647\,925\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-1\,048\,576\,z^5+22\,216\,704\,z^4+63\,479\,808\,z^3+303\,367\,680\,z^2+1\,093\,221\,360\,z+2\,170\,943\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-1\,048\,576\,z^5+22\,609\,920\,z^4+56\,254\,464\,z^3+265\,047\,552\,z^2+855\,716\,400\,z+1\,182\,067\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ab0p.01

$$ {}_1F_2\left(-\frac{3}{4};\frac{11}{2},\frac{23}{4};-z\right)= \frac{1}{347\,602\,944\sqrt{2}\,z^{17/4}}\left(19\left(2\sqrt{z}\left(1\,048\,576\,z^5+22\,872\,064\,z^4-50\,946\,048\,z^3+245\,306\,880\,z^2-751\,932\,720\,z+723\,647\,925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(1\,048\,576\,z^5+22\,216\,704\,z^4-63\,479\,808\,z^3+303\,367\,680\,z^2-1\,093\,221\,360\,z+2\,170\,943\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1\,048\,576\,z^5+22\,609\,920\,z^4-56\,254\,464\,z^3+265\,047\,552\,z^2-855\,716\,400\,z+1\,182\,067\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = -\frac{1}{4}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = -\frac{1}{4}$, $b_{1.} = -\frac{11}{2}$

07.22.03.ab0q.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{15\,740\,160\,975\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,507\,328 z^6 + 41\,115\,648 z^5 + 640\,620\,288 z^4 + 4\,918\,193\,280 z^3 + 10\,740\,114\,000 z^2 - 31\,604\,750\,100 z + 15\,740\,160\,975\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(131\,072 z^6 + 4\,866\,048 z^5 + 106\,240\,512 z^4 + 1\,302\,174\,720 z^3 + 7\,414\,545\,600 z^2 + 10\,617\,868\,800 z - 15\,740\,160\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(475\,136 z^5 + 14\,297\,088 z^4 + 251\,254\,080 z^3 + 2\,413\,303\,200 z^2 + 10\,369\,012\,500 z + 15\,740\,160\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab0r.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{15\,740\,160\,975\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,507\,328 z^6 - 41\,115\,648 z^5 + 640\,620\,288 z^4 - 4\,918\,193\,280 z^3 + 10\,740\,114\,000 z^2 + 31\,604\,750\,100 z + 15\,740\,160\,975\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072 z^6 - 4\,866\,048 z^5 + 106\,240\,512 z^4 - 1\,302\,174\,720 z^3 + 7\,414\,545\,600 z^2 - 10\,617\,868\,800 z - 15\,740\,160\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-475\,136 z^5 + 14\,297\,088 z^4 - 251\,254\,080 z^3 + 2\,413\,303\,200 z^2 - 10\,369\,012\,500 z + 15\,740\,160\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab0s.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, -\frac{21}{4}; z\right) = \left(\frac{16\,384 z^5}{80\,405\,325} + \frac{2048 z^4}{375\,921} + \frac{190\,144 z^3}{2\,297\,295} + \frac{7648 z^2}{11\,781} + \frac{460 z}{231} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{2\,170\,943\,775}\left(2\sqrt{z}\left(32\,768 z^5 + 1\,228\,800 z^4 + 24\,796\,800 z^3 + 276\,559\,920 z^2 + 1\,428\,499\,800 z + 2\,170\,943\,775\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ab0t.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, -\frac{21}{4}; -z\right) = \left(-\frac{16\,384 z^5}{80\,405\,325} + \frac{2048 z^4}{375\,921} - \frac{190\,144 z^3}{2\,297\,295} + \frac{7648 z^2}{11\,781} - \frac{460 z}{231} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{2\,170\,943\,775}\left(2\sqrt{z}\left(-32\,768 z^5 + 1\,228\,800 z^4 - 24\,796\,800 z^3 + 276\,559\,920 z^2 - 1\,428\,499\,800 z + 2\,170\,943\,775\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ab0u.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, -\frac{19}{4}; z\right) = \frac{1}{684\,354\,825\,\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left(\left(65\,536\,z^6 + 1\,720\,320\,z^5 + 27\,465\,984\,z^4 + 213\,171\,840\,z^3 + 469\,188\,720\,z^2 - 1\,375\,258\,500\,z + 684\,354\,825\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 -\right.$$
$$12\sqrt{z}\left(65\,536\,z^5 + 1\,498\,112\,z^4 + 18\,681\,600\,z^3 + 107\,220\,960\,z^2 + 154\,261\,800\,z - 228\,118\,275\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(16\,384\,z^5 + 589\,824\,z^4 + 10\,704\,960\,z^3 + 104\,116\,320\,z^2 + 449\,687\,700\,z + 684\,354\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab0v.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, -\frac{19}{4}; -z\right) = \frac{1}{684\,354\,825\,\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left(\left(65\,536\,z^6 - 1\,720\,320\,z^5 + 27\,465\,984\,z^4 - 213\,171\,840\,z^3 + 469\,188\,720\,z^2 + 1\,375\,258\,500\,z + 684\,354\,825\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 -\right.$$
$$12\sqrt{z}\left(65\,536\,z^5 - 1\,498\,112\,z^4 + 18\,681\,600\,z^3 - 107\,220\,960\,z^2 + 154\,261\,800\,z + 228\,118\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(-16\,384\,z^5 + 589\,824\,z^4 - 10\,704\,960\,z^3 + 104\,116\,320\,z^2 - 449\,687\,700\,z + 684\,354\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab0w.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, -\frac{17}{4}; z\right) =$$
$$\frac{1}{103\,378\,275}\left(\left(16\,384\,z^5 + 534\,528\,z^4 + 8\,393\,280\,z^3 + 66\,679\,200\,z^2 + 205\,650\,900\,z + 103\,378\,275\right)\cosh\left(2\sqrt{z}\right) -\right.$$
$$\left.2\sqrt{z}\left(53\,248\,z^4 + 1\,144\,320\,z^3 + 13\,018\,320\,z^2 + 67\,813\,200\,z + 103\,378\,275\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ab0x.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{103\,378\,275}\left(\left(-16\,384\,z^5 + 534\,528\,z^4 - 8\,393\,280\,z^3 + 66\,679\,200\,z^2 - 205\,650\,900\,z + 103\,378\,275\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.2\sqrt{z}\left(53\,248\,z^4 - 1\,144\,320\,z^3 + 13\,018\,320\,z^2 - 67\,813\,200\,z + 103\,378\,275\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ab0y.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{36\,018\,675\,\sqrt[4]{z}}\left(\sqrt{2}\left(21\left(4096\,z^5 + 67\,328\,z^4 + 531\,840\,z^3 + 1\,184\,400\,z^2 - 3\,451\,140\,z + 1\,715\,175\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 -\right.\right.$$
$$4\sqrt{z}\left(8192\,z^5 + 225\,792\,z^4 + 2\,903\,040\,z^3 + 16\,873\,920\,z^2 + 24\,449\,040\,z - 36\,018\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.108\,z\left(1024\,z^4 + 20\,160\,z^3 + 200\,480\,z^2 + 873\,180\,z + 1\,334\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab0z.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, -\frac{15}{4}; -z\right) = \frac{1}{36\,018\,675\sqrt[4]{z}}\left(\sqrt{2}\left(-21\left(4096z^5 - 67\,328z^4 + 531\,840z^3 - 1\,184\,400z^2 - 3\,451\,140z - 1\,715\,175\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(8192z^5 - 225\,792z^4 + 2\,903\,040z^3 - 16\,873\,920z^2 + 24\,449\,040z + 36\,018\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 108z\left(1024z^4 - 20\,160z^3 + 200\,480z^2 - 873\,180z + 1\,334\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab10.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, -\frac{13}{4}; z\right) = \left(\frac{1024z^4}{225\,225} + \frac{4544z^3}{57\,915} + \frac{224z^2}{351} + \frac{284z}{143} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(2048z^4 + 63\,360z^3 + 750\,960z^2 + 3\,969\,000z + 6\,081\,075\right)\sinh\left(2\sqrt{z}\right)}{6\,081\,075} $$

07.22.03.ab11.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, -\frac{13}{4}; -z\right) = \left(\frac{1024z^4}{225\,225} - \frac{4544z^3}{57\,915} + \frac{224z^2}{351} - \frac{284z}{143} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048z^4 - 63\,360z^3 + 750\,960z^2 - 3\,969\,000z + 6\,081\,075\right)\sin\left(2\sqrt{z}\right)}{6\,081\,075} $$

07.22.03.ab12.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, -\frac{11}{4}; z\right) = \frac{1}{2\,401\,245\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^5 + 91\,392z^4 + 739\,200z^3 + 1\,678\,320z^2 - 4\,842\,180z + 2\,401\,245\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(13\,312z^4 + 188\,160z^3 + 1\,118\,880z^2 + 1\,640\,520z - 2\,401\,245\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(1024z^4 + 33\,600z^3 + 352\,800z^2 + 1\,561\,140z + 2\,401\,245\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab13.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) = \frac{1}{2\,401\,245\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096z^5 + 91\,392z^4 - 739\,200z^3 + 1\,678\,320z^2 + 4\,842\,180z + 2\,401\,245\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(13\,312z^4 - 188\,160z^3 + 1\,118\,880z^2 - 1\,640\,520z - 2\,401\,245\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(1024z^4 - 33\,600z^3 + 352\,800z^2 - 1\,561\,140z + 2\,401\,245\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab14.01

$${}_1F_2\left(-\frac{1}{4};-\frac{11}{2},-\frac{9}{4};z\right)=$$

$$\left(\frac{1024\,z^4}{467\,775}+\frac{64\,z^3}{891}+\frac{928\,z^2}{1485}+\frac{196\,z}{99}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(256\,z^3+3696\,z^2+20\,160\,z+31\,185\right)\sinh\left(2\sqrt{z}\right)}{31\,185}$$

07.22.03.ab15.01

$${}_1F_2\left(-\frac{1}{4};-\frac{11}{2},-\frac{9}{4};-z\right)=$$

$$\left(\frac{1024\,z^4}{467\,775}-\frac{64\,z^3}{891}+\frac{928\,z^2}{1485}-\frac{196\,z}{99}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(-256\,z^3+3696\,z^2-20\,160\,z+31\,185\right)\sin\left(2\sqrt{z}\right)}{31\,185}$$

07.22.03.ab16.01

$${}_1F_2\left(-\frac{1}{4};-\frac{11}{2},-\frac{7}{4};z\right)=\frac{1}{218\,295\,\sqrt[4]{z}}$$

$$\left(\sqrt{2}\,\left(3\left(2304\,z^4+22\,400\,z^3+52\,080\,z^2-147\,420\,z+72\,765\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(512\,z^4+15\,744\,z^3+100\,800\,z^2+\right.\right.\right.$$

$$\left.\left.\left.151\,200\,z-218\,295\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(704\,z^3+10\,080\,z^2+46\,620\,z+72\,765\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab17.01

$${}_1F_2\left(-\frac{1}{4};-\frac{11}{2},-\frac{7}{4};-z\right)=\frac{1}{218\,295\,\sqrt[4]{z}}$$

$$\left(\sqrt{2}\,\left(3\left(2304\,z^4-22\,400\,z^3+52\,080\,z^2+147\,420\,z+72\,765\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(512\,z^4-15\,744\,z^3+100\,800\,z^2-\right.\right.\right.$$

$$\left.\left.\left.151\,200\,z-218\,295\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(-704\,z^3+10\,080\,z^2-46\,620\,z+72\,765\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab18.01

$${}_1F_2\left(-\frac{1}{4};-\frac{11}{2},-\frac{5}{4};z\right)=$$

$$\frac{1}{51\,975}\left(35\left(64\,z^3+864\,z^2+2916\,z+1485\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(128\,z^3+5040\,z^2+32\,760\,z+51\,975\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ab19.01

$${}_1F_2\left(-\frac{1}{4};-\frac{11}{2},-\frac{5}{4};-z\right)=$$

$$\left(-\frac{64\,z^3}{1485}+\frac{32\,z^2}{55}-\frac{108\,z}{55}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(-128\,z^3+5040\,z^2-32\,760\,z+51\,975\right)\sin\left(2\sqrt{z}\right)}{51\,975}$$

07.22.03.ab1a.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{31\,185\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256z^4+8352z^3+25\,200z^2-64\,260z+31\,185\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(384z^3+4540z^2+7560z-10\,395\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(64z^3+3000z^2+18\,900z+31\,185\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab1b.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{31\,185\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256z^4-8352z^3+25\,200z^2+64\,260z+31\,185\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(384z^3-4540z^2+7560z+10\,395\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-64z^3+3000z^2-18\,900z+31\,185\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab1c.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, -\frac{1}{4}; z\right) = \left(\frac{64z^3}{10\,395}+\frac{32z^2}{99}+\frac{20z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{495}\sqrt{z}\left(16z^2+240z+495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ab1d.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) = \left(-\frac{64z^3}{10\,395}+\frac{32z^2}{99}-\frac{20z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\left(16z^2-240z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.ab1e.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) = \frac{1}{10\,395\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\left(656z^3+7413z^2-18\,900z+10\,395\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(256z^3+14\,256z^2+62\,265z-83\,160\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(752z^2+13\,335z+41\,580\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab1f.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) = \frac{1}{10\,395\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(\left(-1312z^3+14\,826z^2+37\,800z+20\,790\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(256z^3-14\,256z^2+62\,265z+83\,160\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(752z^2-13\,335z+41\,580\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab1g.01

$${}_1F_2\left(-\frac{1}{4};-\frac{11}{2},\frac{3}{4};z\right)=\frac{1}{1\,330\,560}\left(e^{-2\sqrt{z}}\left(4\left(256\,z^{5/2}+3264\,z^2+19\,152\,z^{3/2}+64\,260\,z+123\,795\,\sqrt{z}+\right.\right.\right.$$
$$\left.\left.e^{4\sqrt{z}}\left(-256\,z^{5/2}+3264\,z^2-19\,152\,z^{3/2}+64\,260\,z-123\,795\,\sqrt{z}+166\,320\right)+166\,320\right)+$$
$$\left.208\,845\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\sqrt[4]{z}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-208\,845\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\sqrt[4]{z}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab1h.01

$${}_1F_2\left(-\frac{1}{4};-\frac{11}{2},\frac{3}{4};-z\right)=$$
$$\left(\frac{68\,z^2}{3465}-\frac{17\,z}{44}+1\right)\cos\left(2\sqrt{z}\right)+\frac{221}{352}\sqrt{\pi}\,\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\frac{\sqrt{z}\left(256\,z^2-19\,152\,z+123\,795\right)\sin\left(2\sqrt{z}\right)}{166\,320}$$

07.22.03.ab1i.01

$${}_1F_2\left(-\frac{1}{4};-\frac{11}{2},\frac{5}{4};z\right)=$$
$$-\frac{1}{332\,640\,\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(512\,z^3+36\,960\,z^2+350\,343\,z-332\,640\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\,\sqrt{z}\left(9216\,z^2+189\,952\,z+382\,305\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\,z\left(512\,z^2+47\,712\,z+183\,645\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab1j.01

$${}_1F_2\left(-\frac{1}{4};-\frac{11}{2},\frac{5}{4};-z\right)=\frac{1}{332\,640\,\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\left(512\,z^3-36\,960\,z^2+350\,343\,z+332\,640\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\,\sqrt{z}\left(9216\,z^2-189\,952\,z+382\,305\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\,z\left(512\,z^2-47\,712\,z+183\,645\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab1k.01

$${}_1F_2\left(-\frac{1}{4};-\frac{11}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{28\,385\,280\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(-4\,\sqrt[4]{z}\left(4096\,z^{5/2}+63\,488\,z^2+449\,280\,z^{3/2}+1\,814\,400\,z+3\,413\,340\,\sqrt{z}+e^{4\sqrt{z}}\right.\right.\right.$$
$$\left.\left(4096\,z^{5/2}-63\,488\,z^2+449\,280\,z^{3/2}-1\,814\,400\,z+3\,413\,340\,\sqrt{z}-5\,221\,125\right)+5\,221\,125\right)+$$
$$\left.208\,845\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,(16\,z+25)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-208\,845\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,(16\,z+25)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab1l.01

$${}_1F_2\left(-\frac{1}{4};-\frac{11}{2},\frac{7}{4};-z\right)=\frac{1}{7\,096\,320\,z^{3/4}}\left(208\,845\,\sqrt{\pi}\,(16\,z-25)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\,\sqrt[4]{z}\left(\left(63\,488\,z^2-1\,814\,400\,z+5\,221\,125\right)\sin\left(2\sqrt{z}\right)-4\,\sqrt{z}\left(1024\,z^2-112\,320\,z+853\,335\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ab1m.01

$${}_1F_2\left(-\frac{1}{4};-\frac{11}{2},\frac{9}{4};z\right)=\frac{1}{2\,128\,896\sqrt{2}\,z^{3/4}}$$
$$\left(\left(42\sqrt{z}\left(3072z^2+30\,032z-28\,413\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,384z^3+2\,021\,376z^2+16\,887\,024z-13\,627\,845\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.6\sqrt{z}\left(23\,552z^2+1\,223\,376z+4\,542\,615\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab1n.01

$${}_1F_2\left(-\frac{1}{4};-\frac{11}{2},\frac{9}{4};-z\right)=\frac{1}{2\,128\,896\sqrt{2}\,z^{3/4}}$$
$$\left(\left(42\sqrt{z}\left(3072z^2-30\,032z-28\,413\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(16\,384z^3-2\,021\,376z^2+16\,887\,024z+13\,627\,845\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.6\sqrt{z}\left(23\,552z^2-1\,223\,376z+4\,542\,615\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab1o.01

$${}_1F_2\left(-\frac{1}{4};-\frac{11}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{519\,045\,120\,z^{7/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-131\,072z^3-2\,457\,600z^{5/2}-21\,135\,360z^2-118\,981\,440z^{3/2}-317\,444\,400z-\right.\right.\right.$$
$$\left.\left.605\,650\,500\sqrt{z}+e^{4\sqrt{z}}\left(131\,072z^3-2\,457\,600z^{5/2}+21\,135\,360z^2-118\,981\,440z^{3/2}+\right.\right.\right.$$
$$\left.\left.\left.317\,444\,400z-605\,650\,500\sqrt{z}+454\,237\,875\right)-454\,237\,875\right)+208\,845\,e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left.\left.\left(256z^2+800z-2175\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-208\,845\,e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+800z-2175\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab1p.01

$${}_1F_2\left(-\frac{1}{4};-\frac{11}{2},\frac{11}{4};-z\right)=\frac{1}{129\,761\,280\,z^{7/4}}$$
$$\left(208\,845\sqrt{\pi}\left(256z^2-800z-2175\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(60\sqrt{z}\left(40\,960z^2-1\,983\,024z+10\,094\,175\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(131\,072z^3-21\,135\,360z^2+317\,444\,400z-454\,237\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ab1q.01

$${}_1F_2\left(-\frac{1}{4};-\frac{11}{2},\frac{13}{4};z\right)=-\frac{1}{7\,569\,408\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(32\,768z^3+9\,069\,312z^2+89\,339\,712z-84\,492\,639\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(2\,621\,440z^3+138\,082\,560z^2+784\,963\,872z-422\,463\,195\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(32\,768z^3+2\,948\,352z^2+116\,290\,944z+422\,463\,195\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab1r.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) = \frac{1}{7\,569\,408\sqrt{2}\, z^{7/4}}\left(\left(-2\sqrt{z}\left(32\,768 z^3 - 9\,069\,312 z^2 + 89\,339\,712 z + 84\,492\,639\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(2\,621\,440 z^3 - 138\,082\,560 z^2 + 784\,963\,872 z + 422\,463\,195\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(32\,768 z^3 - 2\,948\,352 z^2 + 116\,290\,944 z - 422\,463\,195\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab1s.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) = \frac{1}{3\,019\,898\,880 z^{11/4}} \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(2\,097\,152 z^{7/2} + 47\,185\,920 z^3 + 420\,234\,240 z^{5/2} + 3\,059\,347\,200 z^2 + 11\,628\,489\,600 z^{3/2} + 30\,040\,264\,800 z + 46\,635\,088\,500\sqrt{z} + e^{4\sqrt{z}}\left(2\,097\,152 z^{7/2} - 47\,185\,920 z^3 + 420\,234\,240 z^{5/2} - 3\,059\,347\,200 z^2 + 11\,628\,489\,600 z^{3/2} - 30\,040\,264\,800 z + 46\,635\,088\,500\sqrt{z} - 34\,976\,316\,375\right) + 34\,976\,316\,375\right) + 69\,615 e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 + 19\,200 z^2 - 104\,400 z + 502\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 69\,615 e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 + 19\,200 z^2 - 104\,400 z + 502\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ab1t.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) = \frac{1}{754\,974\,720 z^{11/4}}\left(69\,615\sqrt{\pi}\left(4096 z^3 - 19\,200 z^2 - 104\,400 z - 502\,425\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(524\,288 z^3 - 105\,058\,560 z^2 + 2\,907\,122\,400 z - 11\,658\,772\,125\right)\cos\left(2\sqrt{z}\right) + 15\left(-3\,145\,728 z^3 + 203\,956\,480 z^2 - 2\,002\,684\,320 z + 2\,331\,754\,425\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.ab1u.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) = -\frac{1}{242\,221\,056\sqrt{2}\, z^{11/4}}\left(13\left(6\sqrt{z}\left(684\,032 z^3 - 123\,495\,680 z^2 - 1\,351\,882\,224 z + 1\,267\,389\,585\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1\,048\,576 z^4 + 255\,332\,352 z^3 + 7\,675\,202\,304 z^2 + 33\,797\,055\,600 z - 19\,010\,843\,775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\left(1\,626\,112 z^3 + 62\,760\,192 z^2 + 751\,045\,680 z + 2\,112\,315\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab1v.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) = -\frac{1}{242\,221\,056\sqrt{2}\, z^{11/4}}\left(13\left(6\sqrt{z}\left(-684\,032 z^3 - 123\,495\,680 z^2 + 1\,351\,882\,224 z + 1\,267\,389\,585\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1\,048\,576 z^4 - 255\,332\,352 z^3 + 7\,675\,202\,304 z^2 - 33\,797\,055\,600 z - 19\,010\,843\,775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\left(1\,626\,112 z^3 - 62\,760\,192 z^2 + 751\,045\,680 z - 2\,112\,315\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab1w.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) = \frac{1}{51\,539\,607\,552\, z^{15/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-134\,217\,728\, z^4 - 4\,730\,896\,384\, z^{7/2} - 44\,635\,852\,800\, z^3 - 347\,993\,318\,400\, z^{5/2} - 1\,701\,204\,960\,000\, z^2 - 5\,692\,145\,659\,200\, z^{3/2} - 12\,945\,900\,567\,600\, z - 18\,980\,481\,019\,500\sqrt{z} + e^{4\sqrt{z}}\left(134\,217\,728\, z^4 - 4\,730\,896\,384\, z^{7/2} + 44\,635\,852\,800\, z^3 - 347\,993\,318\,400\, z^{5/2} + 1\,701\,204\,960\,000\, z^2 - 5\,692\,145\,659\,200\, z^{3/2} + 12\,945\,900\,567\,600\, z - 18\,980\,481\,019\,500\sqrt{z} + 14\,235\,360\,764\,625\right) - 14\,235\,360\,764\,625\right) + 69\,615\, e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\, z^4 + 409\,600\, z^3 - 3\,340\,800\, z^2 + 32\,155\,200\, z - 204\,486\,975\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 69\,615\, e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\, z^4 + 409\,600\, z^3 - 3\,340\,800\, z^2 + 32\,155\,200\, z - 204\,486\,975\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ab1x.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) = \frac{1}{12\,884\,901\,888\, z^{15/4}} \left(69\,615\sqrt{\pi}\left(65\,536\, z^4 - 409\,600\, z^3 - 3\,340\,800\, z^2 - 32\,155\,200\, z - 204\,486\,975\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,182\,724\,096\, z^3 - 86\,998\,329\,600\, z^2 + 1\,423\,036\,414\,800\, z - 4\,745\,120\,254\,875\right)\cos\left(2\sqrt{z}\right) + \left(134\,217\,728\, z^4 - 44\,635\,852\,800\, z^3 + 1\,701\,204\,960\,000\, z^2 - 12\,945\,900\,567\,600\, z + 14\,235\,360\,764\,625\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.ab1y.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) = -\frac{1}{7\,751\,073\,792\sqrt{2}\, z^{15/4}} \left(221\left(22\sqrt{z}\left(1\,507\,328\, z^4 + 76\,849\,152\, z^3 + 2\,621\,832\,192\, z^2 + 20\,073\,402\,720\, z - 19\,471\,712\,715\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 9\left(31\,391\,744\, z^4 + 2\,914\,041\,856\, z^3 + 56\,078\,077\,440\, z^2 + 207\,288\,607\,680\, z - 118\,993\,799\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 18\sqrt{z}\left(-1\,376\,256\, z^4 + 82\,337\,792\, z^3 + 4\,577\,802\,240\, z^2 + 46\,564\,832\,160\, z + 118\,993\,799\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab1z.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) = \frac{1}{7\,751\,073\,792\sqrt{2}\, z^{15/4}} \left(221\left(22\sqrt{z}\left(1\,507\,328\, z^4 - 76\,849\,152\, z^3 + 2\,621\,832\,192\, z^2 - 20\,073\,402\,720\, z - 19\,471\,712\,715\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 9\left(31\,391\,744\, z^4 - 2\,914\,041\,856\, z^3 + 56\,078\,077\,440\, z^2 - 207\,288\,607\,680\, z - 118\,993\,799\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 18\sqrt{z}\left(1\,376\,256\, z^4 + 82\,337\,792\, z^3 - 4\,577\,802\,240\, z^2 + 46\,564\,832\,160\, z + 118\,993\,799\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab20.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) = \frac{1}{3\,298\,534\,883\,328\, z^{19/4}} $$
$$ \left(19\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(1\,502\,347\,264\, z^{9/2} - 68\,558\,192\,640\, z^4 - 977\,031\,659\,520\, z^{7/2} - 9\,231\,761\,817\,600\, z^3 - \right.\right.\right. $$
$$ 57\,532\,598\,323\,200\, z^{5/2} - 249\,288\,975\,936\,000\, z^2 - 763\,557\,636\,441\,600\, z^{3/2} - 1\,639\,913\,560\,084\,800\, z - $$
$$ 2\,334\,599\,165\,398\,500\,\sqrt{z} + e^{4\sqrt{z}} \left(1\,502\,347\,264\, z^{9/2} + 68\,558\,192\,640\, z^4 - 977\,031\,659\,520\, z^{7/2} + \right. $$
$$ 9\,231\,761\,817\,600\, z^3 - 57\,532\,598\,323\,200\, z^{5/2} + 249\,288\,975\,936\,000\, z^2 - 763\,557\,636\,441\,600\, z^{3/2} + $$
$$ \left.\left. 1\,639\,913\,560\,084\,800\, z - 2\,334\,599\,165\,398\,500\,\sqrt{z} + 1\,750\,949\,374\,048\,875\right) - 1\,750\,949\,374\,048\,875\right) + $$
$$ 13\,923\, e^{2\sqrt{z}}\, \sqrt{2\,\pi}\, \left(1\,048\,576\, z^5 + 8\,192\,000\, z^4 - 89\,088\,000\, z^3 + 1\,286\,208\,000\, z^2 - 16\,358\,958\,000\, z + \right. $$
$$ \left. 125\,759\,489\,625\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - 13\,923\, e^{2\sqrt{z}}\, \sqrt{2\,\pi}\, \left(1\,048\,576\, z^5 + 8\,192\,000\, z^4 - \right. $$
$$ \left. \left. 89\,088\,000\, z^3 + 1\,286\,208\,000\, z^2 - 16\,358\,958\,000\, z + 125\,759\,489\,625\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.ab21.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) = \frac{1}{824\,633\,720\,832\, z^{19/4}} $$
$$ \left(19 \left(13\,923\,\sqrt{\pi}\, \left(1\,048\,576\, z^5 - 8\,192\,000\, z^4 - 89\,088\,000\, z^3 - 1\,286\,208\,000\, z^2 - 16\,358\,958\,000\, z - 125\,759\,489\,625\right) \right.\right. $$
$$ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\, \left(4\sqrt{z}\, \left(375\,586\,816\, z^4 + 244\,257\,914\,880\, z^3 - 14\,383\,149\,580\,800\, z^2 + \right. \right. $$
$$ \left. 190\,889\,409\,110\,400\, z - 583\,649\,791\,349\,625\right) \cos\left(2\sqrt{z}\right) + 105 \left(652\,935\,168\, z^4 - \right. $$
$$ \left.\left.\left. 87\,921\,541\,120\, z^3 + 2\,374\,180\,723\,200\, z^2 - 15\,618\,224\,381\,760\, z + 16\,675\,708\,324\,275\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

For fixed z and $a_1 = -\frac{1}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.ab22.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,430\,923\,725\, \sqrt[4]{z}} $$
$$ \left(\sqrt{2}\, \left(\left(131\,072\, z^6 + 3\,588\,096\, z^5 + 57\,383\,424\, z^4 + 445\,648\,896\, z^3 + 981\,288\,000\, z^2 - 2\,875\,672\,800\, z + 1\,430\,923\,725\right) \right.\right. $$
$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\, \left(409\,600\, z^5 + 9\,381\,888\, z^4 + 117\,117\,504\, z^3 + 672\,487\,200\, z^2 + 967\,774\,500\, z - 1\,430\,923\,725\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\, z \left(32\,768\, z^5 + 1\,228\,800\, z^4 + 22\,356\,096\, z^3 + 217\,602\,000\, z^2 + 940\,123\,800\, z + 1\,430\,923\,725\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab23.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, -\frac{23}{4}; -z\right) = \frac{1}{1\,430\,923\,725\sqrt[4]{z}} \left(\sqrt{2}\left(\left(131\,072 z^6 - 3\,588\,096 z^5 + 57\,383\,424 z^4 - 445\,648\,896 z^3 + 981\,288\,000 z^2 + 2\,875\,672\,800 z + 1\,430\,923\,725\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(409\,600 z^5 - 9\,381\,888 z^4 + 117\,117\,504 z^3 - 672\,487\,200 z^2 + 967\,774\,500 z + 1\,430\,923\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-32\,768 z^5 + 1\,228\,800 z^4 - 22\,356\,096 z^3 + 217\,602\,000 z^2 - 940\,123\,800 z + 1\,430\,923\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab24.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, -\frac{21}{4}; z\right) = \frac{1}{197\,358\,525}\left(\left(32\,768 z^5 + 1\,024\,000 z^4 + 16\,041\,600 z^3 + 127\,342\,800 z^2 + 392\,628\,600 z + 197\,358\,525\right)\cosh\left(2\sqrt{z}\right) - 10\sqrt{z}\left(20\,480 z^4 + 437\,760 z^3 + 4\,973\,904 z^2 + 25\,896\,780 z + 39\,471\,705\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ab25.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{1}{197\,358\,525}\left(\left(-32\,768 z^5 + 1\,024\,000 z^4 - 16\,041\,600 z^3 + 127\,342\,800 z^2 - 392\,628\,600 z + 197\,358\,525\right)\cos\left(2\sqrt{z}\right) + 10\sqrt{z}\left(20\,480 z^4 - 437\,760 z^3 + 4\,973\,904 z^2 - 25\,896\,780 z + 39\,471\,705\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ab26.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, -\frac{19}{4}; z\right) = \frac{1}{62\,214\,075\sqrt[4]{z}}\left(\sqrt{2}\left(9\left(16\,384 z^5 + 272\,384 z^4 + 2\,145\,024 z^3 + 4\,767\,840 z^2 - 13\,906\,200 z + 6\,912\,675\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384 z^5 + 393\,216 z^4 + 5\,027\,904 z^3 + 29\,161\,440 z^2 + 42\,203\,700 z - 62\,214\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(16\,384 z^4 + 315\,392 z^3 + 3\,123\,120 z^2 + 13\,582\,800 z + 20\,738\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab27.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{62\,214\,075\sqrt[4]{z}}\left(\sqrt{2}\left(-9\left(16\,384 z^5 - 272\,384 z^4 + 2\,145\,024 z^3 - 4\,767\,840 z^2 - 13\,906\,200 z - 6\,912\,675\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384 z^5 - 393\,216 z^4 + 5\,027\,904 z^3 - 29\,161\,440 z^2 + 42\,203\,700 z + 62\,214\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(16\,384 z^4 - 315\,392 z^3 + 3\,123\,120 z^2 - 13\,582\,800 z + 20\,738\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab28.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},-\frac{17}{4};z\right)=\frac{1}{9\,398\,025}\left(\left(45\,056\,z^4+744\,960\,z^3+6\,015\,600\,z^2+18\,673\,200\,z+9\,398\,025\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(4096\,z^4+99\,840\,z^3+1\,167\,120\,z^2+6\,142\,500\,z+9\,398\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ab29.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},-\frac{17}{4};-z\right)=\frac{1}{9\,398\,025}\left(\left(45\,056\,z^4-744\,960\,z^3+6\,015\,600\,z^2-18\,673\,200\,z+9\,398\,025\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(4096\,z^4-99\,840\,z^3+1\,167\,120\,z^2-6\,142\,500\,z+9\,398\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ab2a.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},-\frac{15}{4};z\right)=\frac{1}{3\,274\,425\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192\,z^5+125\,440\,z^4+1\,010\,688\,z^3+2\,278\,080\,z^2-6\,597\,360\,z+3\,274\,425\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(19\,456\,z^4+259\,392\,z^3+1\,528\,800\,z^2+2\,231\,460\,z-3\,274\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(2048\,z^4+47\,488\,z^3+485\,520\,z^2+2\,134\,440\,z+3\,274\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab2b.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},-\frac{15}{4};-z\right)=\frac{1}{3\,274\,425\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-8192\,z^5+125\,440\,z^4-1\,010\,688\,z^3+2\,278\,080\,z^2+6\,597\,360\,z+3\,274\,425\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(19\,456\,z^4-259\,392\,z^3+1\,528\,800\,z^2-2\,231\,460\,z-3\,274\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(2048\,z^4-47\,488\,z^3+485\,520\,z^2-2\,134\,440\,z+3\,274\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab2c.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},-\frac{13}{4};z\right)=\frac{1}{552\,825}\left(\left(2048\,z^4+41\,856\,z^3+349\,200\,z^2+1\,096\,200\,z+552\,825\right)\cosh\left(2\sqrt{z}\right)-6\sqrt{z}\left(1792\,z^3+22\,320\,z^2+119\,700\,z+184\,275\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ab2d.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},-\frac{13}{4};-z\right)=\frac{1}{552\,825}\left(\left(2048\,z^4-41\,856\,z^3+349\,200\,z^2-1\,096\,200\,z+552\,825\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\left(-1792\,z^3+22\,320\,z^2-119\,700\,z+184\,275\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ab2e.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, -\frac{11}{4}; z\right) = \frac{1}{218\,295\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(8192\,z^4 + 66\,816\,z^3 + 154\,080\,z^2 - 441\,000\,z + 218\,295\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024\,z^4 + 16\,704\,z^3 + 101\,280\,z^2 + 149\,940\,z - 218\,295\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2816\,z^3 + 31\,440\,z^2 + 141\,120\,z + 218\,295\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab2f.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, -\frac{11}{4}; -z\right) = \frac{1}{218\,295\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(8192\,z^4 - 66\,816\,z^3 + 154\,080\,z^2 + 441\,000\,z + 218\,295\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1024\,z^4 - 16\,704\,z^3 + 101\,280\,z^2 - 149\,940\,z - 218\,295\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-2816\,z^3 + 31\,440\,z^2 - 141\,120\,z + 218\,295\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab2g.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{42\,525}\left(\left(2816\,z^3 + 26\,160\,z^2 + 84\,000\,z + 42\,525\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256\,z^3 + 4880\,z^2 + 27\,300\,z + 42\,525\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ab2h.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{42\,525}\left(\left(-2816\,z^3 + 26\,160\,z^2 - 84\,000\,z + 42\,525\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-256\,z^3 + 4880\,z^2 - 27\,300\,z + 42\,525\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ab2i.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{19\,845\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512\,z^4 + 6144\,z^3 + 14\,400\,z^2 - 40\,320\,z + 19\,845\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(448\,z^3 + 3040\,z^2 + 4620\,z - 6615\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(128\,z^3 + 2640\,z^2 + 12\,600\,z + 19\,845\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab2j.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{19\,845\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512\,z^4 - 6144\,z^3 + 14\,400\,z^2 + 40\,320\,z + 19\,845\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(448\,z^3 - 3040\,z^2 + 4620\,z + 6615\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-128\,z^3 + 2640\,z^2 - 12\,600\,z + 19\,845\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab2k.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},-\frac{5}{4};z\right)=\frac{\left(128\,z^3+2640\,z^2+9240\,z+4725\right)\cosh\left(2\sqrt{z}\right)-10\sqrt{z}\,\left(80\,z^2+588\,z+945\right)\sinh\left(2\sqrt{z}\right)}{4725}$$

07.22.03.ab2l.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},-\frac{5}{4};-z\right)=\left(-\frac{128\,z^3}{4725}+\frac{176\,z^2}{315}-\frac{88\,z}{45}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\,\left(80\,z^2-588\,z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.ab2m.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},-\frac{3}{4};z\right)=$$

$$\frac{1}{2835\sqrt[4]{z}}\left(\sqrt{2}\left(\left(704\,z^3+2400\,z^2-5880\,z+2835\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(64\,z^3+1208\,z^2+2100\,z-2835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.28\,z\left(32\,z^2+240\,z+405\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab2n.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},-\frac{3}{4};-z\right)=$$

$$\frac{1}{2835\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-704\,z^3+2400\,z^2+5880\,z+2835\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(64\,z^3-1208\,z^2+2100\,z+2835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.28\,z\left(32\,z^2-240\,z+405\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab2o.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},-\frac{1}{4};z\right)=\left(\frac{16\,z^2}{63}+\frac{16\,z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{945}\sqrt{z}\,\left(16\,z^2+420\,z+945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ab2p.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},-\frac{1}{4};-z\right)=\left(\frac{16\,z^2}{63}-\frac{16\,z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\,\left(16\,z^2-420\,z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.ab2q.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},\frac{1}{4};z\right)=$$

$$\frac{1}{945\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,z^3+654\,z^2-1680\,z+945\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,\left(-496\,z^2-2835\,z+3780\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.2\,z\left(16\,z^2+525\,z+1890\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab2r.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{945\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32z^3+654z^2+1680z+945\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(496z^2-2835z-3780\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(16z^2-525z+1890\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab2s.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{60\,480}\left(e^{-2\sqrt{z}}\left(4\left(64z^2+592z^{3/2}+2420z+5175\sqrt{z}+e^{4\sqrt{z}}\left(64z^2-592z^{3/2}+2420z-5175\sqrt{z}+7560\right)+7560\right)+\right.\right.$$
$$\left.\left.9945e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-9945e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab2t.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},\frac{3}{4};-z\right)=\frac{221}{336}\sqrt{\pi}\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\frac{4\left(16z^2-605z+1890\right)\cos\left(2\sqrt{z}\right)+\left(5175-592z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)}{7560}$$

07.22.03.ab2u.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},\frac{5}{4};z\right)=\frac{1}{15\,120\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(-6\left(384z^2+5467z-5040\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(512z^2+20\,832z+55\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-42z\left(64z+255\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab2v.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},\frac{5}{4};-z\right)=$$
$$-\frac{1}{15\,120\sqrt{2}\sqrt[4]{z}}\left(\left(6\left(384z^2-5467z-5040\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(512z^2-20\,832z+55\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.42\left(255-64z\right)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab2w.01

$${}_1F_2\left(-\frac{1}{4};-\frac{9}{2},\frac{7}{4};z\right)=\frac{1}{1\,290\,240z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1024z^2-11\,776z^{3/2}-59\,328z-\right.\right.\right.$$
$$\left.\left.117\,180\sqrt{z}+e^{4\sqrt{z}}\left(1024z^2-11\,776z^{3/2}+59\,328z-117\,180\sqrt{z}+208\,845\right)-208\,845\right)+$$
$$\left.9945e^{2\sqrt{z}}\sqrt{2\pi}\left(16z+21\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-9945e^{2\sqrt{z}}\sqrt{2\pi}\left(16z+21\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab2x.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, \frac{7}{4}; -z\right) = \frac{1}{322\,560\, z^{3/4}} $$
$$ \left(9945\sqrt{\pi}\,(16z-21)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(4\sqrt{z}\,(2944z-29\,295)\cos\left(2\sqrt{z}\right) + \left(1024z^2-59\,328z+208\,845\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.ab2y.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, \frac{9}{4}; z\right) = $$
$$ \frac{1}{96\,768\sqrt{2}\, z^{3/4}}\left(\left(2\sqrt{z}\,\left(1024z^2+3920z-4179\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\left(7168z^2+80\,016z-72\,105\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. 2\sqrt{z}\,\left(1024z^2+129\,584z+504\,735\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab2z.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = $$
$$ \frac{1}{96\,768\sqrt{2}\, z^{3/4}}\left(\left(2\sqrt{z}\,\left(1024z^2-3920z-4179\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\left(7168z^2-80\,016z-72\,105\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right. $$
$$ \left.\left. 2\sqrt{z}\,\left(1024z^2-129\,584z+504\,735\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab30.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = $$
$$ \frac{1}{23\,592\,960\, z^{7/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(32\,768z^{5/2}+466\,944z^2+3\,585\,600z^{3/2}+10\,024\,560z+20\,884\,500\sqrt{z}\, + \right.\right.\right. $$
$$ \left.\left. e^{4\sqrt{z}}\left(32\,768z^{5/2}-466\,944z^2+3\,585\,600z^{3/2}-10\,024\,560z+20\,884\,500\sqrt{z}\,-15\,663\,375\right)+15\,663\,375\right) + $$
$$ \left.\left. 9945\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2+672z-1575\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 9945\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2+672z-1575\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ab31.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = \frac{1}{5\,898\,240\, z^{7/4}}\left(9945\sqrt{\pi}\,\left(256z^2-672z-1575\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ \left. 2\sqrt[4]{z}\,\left(3\left(155\,648z^2-3\,341\,520z+5\,221\,125\right)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\,\left(8192z^2-896\,400z+5\,221\,125\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.ab32.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = \frac{1}{344\,064\sqrt{2}\, z^{7/4}} $$
$$ \left(\left(-14\sqrt{z}\,\left(41\,216z^2+412\,320z-389\,367\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(32\,768z^3+3\,876\,096z^2+25\,842\,432z-13\,627\,845\right)\right. \right. $$
$$ \left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(38\,656z^2-3\,230\,304z-13\,627\,845\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab33.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = \frac{1}{344\,064\sqrt{2}\, z^{7/4}}\left(\left(14\sqrt{z}\left(41\,216 z^2 - 412\,320 z - 389\,367\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(32\,768 z^3 - 3\,876\,096 z^2 + 25\,842\,432 z + 13\,627\,845\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(38\,656 z^2 + 3\,230\,304 z - 13\,627\,845\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab34.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, \frac{15}{4}; z\right) = \frac{1}{1\,509\,949\,440 z^{11/4}}\left(11 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-524\,288 z^3 - 5\,780\,480 z^{5/2} - 73\,265\,920 z^2 - 311\,875\,200 z^{3/2} - 879\,933\,600 z - 1\,413\,184\,500\sqrt{z} + e^{4\sqrt{z}}\left(524\,288 z^3 - 5\,780\,480 z^{5/2} + 73\,265\,920 z^2 - 311\,875\,200 z^{3/2} + 879\,933\,600 z - 1\,413\,184\,500\sqrt{z} + 1\,059\,888\,375\right) - 1\,059\,888\,375\right) + 3315 e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 + 16\,128 z^2 - 75\,600 z + 319\,725\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 3315 e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 + 16\,128 z^2 - 75\,600 z + 319\,725\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ab35.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, \frac{15}{4}; -z\right) = -\frac{1}{377\,487\,360 z^{11/4}}\left(11\left(2\sqrt[4]{z}\left(20\sqrt{z}\left(289\,024 z^2 - 15\,593\,760 z + 70\,659\,225\right)\cos\left(2\sqrt{z}\right) + \left(524\,288 z^3 - 73\,265\,920 z^2 + 879\,933\,600 z - 1\,059\,888\,375\right)\sin\left(2\sqrt{z}\right)\right) - 3315\sqrt{\pi}\left(4096 z^3 - 16\,128 z^2 - 75\,600 z - 319\,725\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right) $$

07.22.03.ab36.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, \frac{17}{4}; z\right) = -\frac{1}{77\,070\,336\sqrt{2}\, z^{11/4}}\left(13\left(2\sqrt{z}\left(2\,256\,896 z^3 - 55\,625\,472 z^2 - 828\,572\,976 z + 760\,433\,751\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(8\,753\,152 z^3 + 456\,549\,632 z^2 + 2\,282\,209\,776 z - 1\,267\,389\,585\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(3\,174\,400 z^3 + 92\,294\,400 z^2 + 1\,264\,664\,016 z + 3\,802\,168\,755\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab37.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = \frac{1}{77\,070\,336\sqrt{2}\, z^{11/4}}\left(13\left(2\sqrt{z}\left(2\,256\,896 z^3 + 55\,625\,472 z^2 - 828\,572\,976 z - 760\,433\,751\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(8\,753\,152 z^3 - 456\,549\,632 z^2 + 2\,282\,209\,776 z + 1\,267\,389\,585\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(3\,174\,400 z^3 - 92\,294\,400 z^2 + 1\,264\,664\,016 z - 3\,802\,168\,755\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab38.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) = \frac{1}{25\,769\,803\,776 z^{15/4}}\left(11 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(87\,867\,392 z^{7/2} + 699\,453\,440 z^3 + 7\,247\,385\,600 z^{5/2} + 39\,890\,323\,200 z^2 + 144\,064\,065\,600 z^{3/2} + 342\,555\,922\,800 z + 512\,985\,973\,500\sqrt{z} + e^{4\sqrt{z}}\left(87\,867\,392 z^{7/2} - 699\,453\,440 z^3 + 7\,247\,385\,600 z^{5/2} - 39\,890\,323\,200 z^2 + 144\,064\,065\,600 z^{3/2} - 342\,555\,922\,800 z + 512\,985\,973\,500\sqrt{z} - 384\,739\,480\,125\right) + 384\,739\,480\,125\right) + 3315 e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 + 344\,064 z^3 - 2\,419\,200 z^2 + 20\,462\,400 z - 116\,060\,175\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 3315 e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 + 344\,064 z^3 - 2\,419\,200 z^2 + 20\,462\,400 z - 116\,060\,175\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ab39.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) = \frac{1}{6\,442\,450\,944 z^{15/4}}\left(11\left(3315\sqrt{\pi}\left(65\,536 z^4 - 344\,064 z^3 - 2\,419\,200 z^2 - 20\,462\,400 z - 116\,060\,175\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(21\,966\,848 z^3 - 1\,811\,846\,400 z^2 + 36\,016\,016\,400 z - 128\,246\,493\,375\right)\cos\left(2\sqrt{z}\right) - 595\left(1\,175\,552 z^3 - 67\,042\,560 z^2 + 575\,724\,240 z - 646\,620\,975\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.ab3a.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) = -\frac{1}{7\,398\,752\,256\sqrt{2}\, z^{15/4}}\left(221\left(2\sqrt{z}\left(14\,483\,456 z^4 + 318\,259\,200 z^3 + 13\,489\,749\,504 z^2 + 120\,768\,145\,344 z - 115\,332\,452\,235\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(29\,163\,520 z^4 + 3\,583\,483\,904 z^3 + 84\,969\,916\,416 z^2 + 337\,970\,556\,000 z - 192\,220\,753\,725\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-14\,483\,456 z^4 + 171\,835\,392 z^3 + 19\,071\,714\,816 z^2 + 216\,301\,155\,840 z + 576\,662\,261\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab3b.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) = \frac{1}{7\,398\,752\,256\sqrt{2}\, z^{15/4}} $$
$$ \left(221\left(2\sqrt{z}\,\left(14\,483\,456 z^4 - 318\,259\,200 z^3 + 13\,489\,749\,504 z^2 - 120\,768\,145\,344 z - 115\,332\,452\,235\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 3\left(29\,163\,520 z^4 - 3\,583\,483\,904 z^3 + 84\,969\,916\,416 z^2 - 337\,970\,556\,000 z - 192\,220\,753\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. \left. 2\sqrt{z}\,\left(14\,483\,456 z^4 + 171\,835\,392 z^3 - 19\,071\,714\,816 z^2 + 216\,301\,155\,840 z - 576\,662\,261\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab3c.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) = $$
$$ \frac{1}{1\,649\,267\,441\,664 z^{19/4}}\left(209 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(173\,801\,472 z^{9/2} - 580\,321\,280 z^4 - 12\,517\,048\,320 z^{7/2} - 162\,897\,100\,800 z^3 - \right. \right. \right. $$
$$ 1\,178\,353\,612\,800 z^{5/2} - 5\,545\,497\,484\,800 z^2 - 17\,822\,598\,393\,600 z^{3/2} - 39\,397\,322\,764\,800 z - $$
$$ 56\,941\,443\,058\,500\sqrt{z} + e^{4\sqrt{z}}\left(173\,801\,472 z^{9/2} + 580\,321\,280 z^4 - 12\,517\,048\,320 z^{7/2} + \right. $$
$$ \left. 162\,897\,100\,800 z^3 - 1\,178\,353\,612\,800 z^{5/2} + 5\,545\,497\,484\,800 z^2 - 17\,822\,598\,393\,600 z^{3/2} + \right. $$
$$ \left. \left. 39\,397\,322\,764\,800 z - 56\,941\,443\,058\,500\sqrt{z} + 42\,706\,082\,293\,875\right) - 42\,706\,082\,293\,875\right) + $$
$$ 663 e^{2\sqrt{z}}\sqrt{2\pi}\,\left(1\,048\,576 z^5 + 6\,881\,280 z^4 - 64\,512\,000 z^3 + 818\,496\,000 z^2 - 9\,284\,814\,000 z + 64\,413\,397\,125\right) $$
$$ \left. \left. \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 663 e^{2\sqrt{z}}\sqrt{2\pi}\right.\right. $$
$$ \left. \left. \left(1\,048\,576 z^5 + 6\,881\,280 z^4 - 64\,512\,000 z^3 + 818\,496\,000 z^2 - 9\,284\,814\,000 z + 64\,413\,397\,125\right) \operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ab3d.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) = \frac{1}{412\,316\,860\,416 z^{19/4}} $$
$$ \left(209\left(663\sqrt{\pi}\,\left(1\,048\,576 z^5 - 6\,881\,280 z^4 - 64\,512\,000 z^3 - 818\,496\,000 z^2 - 9\,284\,814\,000 z - 64\,413\,397\,125\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. \right. $$
$$ 2\sqrt[4]{z}\,\left(204\sqrt{z}\,\left(851\,968 z^4 + 61\,358\,080 z^3 - 5\,776\,243\,200 z^2 + 87\,365\,678\,400 z - 279\,124\,720\,875\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. \left. 35\left(16\,580\,608 z^4 - 4\,654\,202\,880 z^3 + 158\,442\,785\,280 z^2 - 1\,125\,637\,793\,280 z + 1\,220\,173\,779\,825\right)\right.\right. $$
$$ \left. \left. \left. \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = -\frac{1}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.ab3e.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{158\,991\,525\sqrt[4]{z}}\left(\sqrt{2}\left(\left(376\,832\,z^5+6\,223\,872\,z^4+49\,275\,072\,z^3+109\,882\,080\,z^2-319\,958\,100\,z+158\,991\,525\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(32\,768\,z^5+991\,232\,z^4+12\,789\,888\,z^3+74\,455\,920\,z^2+107\,969\,400\,z-158\,991\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(118\,784\,z^4+2\,391\,552\,z^3+23\,857\,680\,z^2+104\,019\,300\,z+158\,991\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab3f.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{158\,991\,525\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-376\,832\,z^5+6\,223\,872\,z^4-49\,275\,072\,z^3+109\,882\,080\,z^2+319\,958\,100\,z+158\,991\,525\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(32\,768\,z^5-991\,232\,z^4+12\,789\,888\,z^3-74\,455\,920\,z^2+107\,969\,400\,z+158\,991\,525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(118\,784\,z^4-2\,391\,552\,z^3+23\,857\,680\,z^2-104\,019\,300\,z+158\,991\,525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab3g.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) = \left(\frac{4096\,z^4}{877\,149}+\frac{2560\,z^3}{32\,487}+\frac{7984\,z^2}{12\,495}+\frac{292\,z}{147}+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\left(8192\,z^4+230\,400\,z^3+2\,714\,400\,z^2+14\,320\,800\,z+21\,928\,725\right)\sinh\left(2\sqrt{z}\right)}{21\,928\,725}$$

07.22.03.ab3h.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) = \left(\frac{4096\,z^4}{877\,149}-\frac{2560\,z^3}{32\,487}+\frac{7984\,z^2}{12\,495}-\frac{292\,z}{147}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\left(8192\,z^4-230\,400\,z^3+2\,714\,400\,z^2-14\,320\,800\,z+21\,928\,725\right)\sin\left(2\sqrt{z}\right)}{21\,928\,725}$$

07.22.03.ab3i.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{6\,912\,675\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384\,z^5+264\,192\,z^4+2\,132\,928\,z^3+4\,812\,192\,z^2-13\,929\,300\,z+6\,912\,675\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(40\,960\,z^4+546\,816\,z^3+3\,226\,608\,z^2+4\,712\,400\,z-6\,912\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(4096\,z^4+99\,840\,z^3+1\,023\,792\,z^2+4\,504\,500\,z+6\,912\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab3j.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{6\,912\,675\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,384\,z^5+264\,192\,z^4-2\,132\,928\,z^3+4\,812\,192\,z^2+13\,929\,300\,z+6\,912\,675\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(40\,960\,z^4-546\,816\,z^3+3\,226\,608\,z^2-4\,712\,400\,z-6\,912\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(4096\,z^4-99\,840\,z^3+1\,023\,792\,z^2-4\,504\,500\,z+6\,912\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab3k.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},-\frac{17}{4};z\right)=\frac{1}{1\,044\,225}\left(\left(4096\,z^4+79\,360\,z^3+660\,240\,z^2+2\,070\,900\,z+1\,044\,225\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.10\sqrt{z}\left(2048\,z^3+25\,344\,z^2+135\,720\,z+208\,845\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ab3l.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},-\frac{17}{4};-z\right)=\frac{1}{1\,044\,225}\left(\left(4096\,z^4-79\,360\,z^3+660\,240\,z^2-2\,070\,900\,z+1\,044\,225\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.10\sqrt{z}\left(-2048\,z^3+25\,344\,z^2-135\,720\,z+208\,845\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ab3m.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},-\frac{15}{4};z\right)=\frac{1}{363\,825\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(13\,312\,z^4+111\,552\,z^3+256\,032\,z^2-734\,580\,z+363\,825\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2048\,z^4+28\,032\,z^3+169\,008\,z^2+\right.\right.\right.$$
$$\left.\left.\left.249\,480\,z-363\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(4864\,z^3+52\,752\,z^2+235\,620\,z+363\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab3n.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},-\frac{15}{4};-z\right)=\frac{1}{363\,825\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(13\,312\,z^4-111\,552\,z^3+256\,032\,z^2+734\,580\,z+363\,825\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048\,z^4-28\,032\,z^3+169\,008\,z^2-\right.\right.\right.$$
$$\left.\left.\left.249\,480\,z-363\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-4864\,z^3+52\,752\,z^2-235\,620\,z+363\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab3o.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},-\frac{13}{4};z\right)=$$
$$\left(\frac{4352\,z^3}{61\,425}+\frac{848\,z^2}{1365}+\frac{180\,z}{91}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(512\,z^3+7200\,z^2+39\,600\,z+61\,425\right)\sinh\left(2\sqrt{z}\right)}{61\,425}$$

07.22.03.ab3p.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},-\frac{13}{4};-z\right)=$$

$$\left(-\frac{4352\,z^3}{61\,425}+\frac{848\,z^2}{1365}-\frac{180\,z}{91}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-512\,z^3+7200\,z^2-39\,600\,z+61\,425\right)\sin\left(2\sqrt{z}\right)}{61\,425}$$

07.22.03.ab3q.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},-\frac{11}{4};z\right)=\frac{1}{24\,255\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(1024\,z^4+7360\,z^3+17\,376\,z^2-49\,140\,z+24\,255\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1792\,z^3+11\,184\,z^2+16\,800\,z-24\,255\right)\right.\right.$$

$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(256\,z^3+3376\,z^2+15\,540\,z+24\,255\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab3r.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},-\frac{11}{4};-z\right)=\frac{1}{24\,255\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(1024\,z^4-7360\,z^3+17\,376\,z^2+49\,140\,z+24\,255\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1792\,z^3-11\,184\,z^2+16\,800\,z+24\,255\right)\right.\right.$$

$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-256\,z^3+3376\,z^2-15\,540\,z+24\,255\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab3s.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},-\frac{9}{4};z\right)=\frac{\left(256\,z^3+2832\,z^2+9300\,z+4725\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(512\,z^2+3000\,z+4725\right)\sinh\left(2\sqrt{z}\right)}{4725}$$

07.22.03.ab3t.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},-\frac{9}{4};-z\right)=\frac{\left(-256\,z^3+2832\,z^2-9300\,z+4725\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(512\,z^2-3000\,z+4725\right)\sin\left(2\sqrt{z}\right)}{4725}$$

07.22.03.ab3u.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},-\frac{7}{4};z\right)=$$

$$\frac{1}{2205\sqrt[4]{z}}\left(\sqrt{2}\left(\left(704\,z^3+1632\,z^2-4500\,z+2205\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(128\,z^3+1008\,z^2+1560\,z-2205\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.4\,z\left(272\,z^2+1380\,z+2205\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab3v.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{2205\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-704z^3+1632z^2+4500z+2205\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(128z^3-1008z^2+1560z+2205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(272z^2-1380z+2205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab3w.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, -\frac{5}{4}; z\right) = \frac{1}{525}\left(\left(272z^2+1020z+525\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(32z^2+320z+525\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ab3x.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, -\frac{5}{4}; -z\right) = \frac{1}{525}\left(\left(272z^2-1020z+525\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(32z^2-320z+525\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ab3y.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{315\sqrt[4]{z}}\left(\sqrt{2}\left(\left(64z^3+288z^2-660z+315\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(128z^2+240z-315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(16z^2+180z+315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab3z.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{315\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-64z^3+288z^2+660z+315\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(128z^2-240z-315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(16z^2-180z+315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab40.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) = \left(\frac{16z^2}{105}+\frac{12z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\left(8z+21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ab41.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) = \left(\frac{16z^2}{105}-\frac{12z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}\left(21-8z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.ab42.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) = \frac{1}{105\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(68z^2-180z+105\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-2\sqrt{z}\left(16z^2+157z-210\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(23z+105\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab43.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},\frac{1}{4};-z\right)=\frac{1}{105\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(68z^2+180z+105\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+2\sqrt{z}\left(16z^2-157z-210\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\left(105-23z\right)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab44.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{3360}\left(e^{-2\sqrt{z}}\left(4\left(16z^{3/2}+100z+255\sqrt{z}+e^{4\sqrt{z}}\left(-16z^{3/2}+100z-255\sqrt{z}+420\right)+420\right)+585e^{2\sqrt{z}}\right.\right.$$
$$\left.\left.\sqrt{2\pi}\sqrt[4]{z}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-585e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab45.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},\frac{3}{4};-z\right)=\left(1-\frac{5z}{21}\right)\cos\left(2\sqrt{z}\right)+\frac{39}{56}\sqrt{\pi}\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\frac{1}{420}\left(255-16z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ab46.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{840\sqrt{2}\sqrt[4]{z}}\left(\left(-2\left(32z^2+939z-840\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(832z+3255\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2z\left(32z+105\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab47.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},\frac{5}{4};-z\right)=$$
$$\frac{1}{840\sqrt{2}\sqrt[4]{z}}\left(\left(\left(-64z^2+1878z+1680\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(832z-3255\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(32z-105\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab48.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{71\,680z^{3/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(256z^{3/2}+2048z+4300\sqrt{z}+e^{4\sqrt{z}}\left(256z^{3/2}-2048z+4300\sqrt{z}-9945\right)+9945\right)+\right.\right.$$
$$\left.\left.585e^{2\sqrt{z}}\sqrt{2\pi}\left(16z+17\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-585e^{2\sqrt{z}}\sqrt{2\pi}\left(16z+17\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab49.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},\frac{7}{4};-z\right)=$$
$$\frac{1}{17\,920z^{3/4}}\left(585\sqrt{\pi}\left(16z-17\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(64z-1075\right)\cos\left(2\sqrt{z}\right)+\left(9945-2048z\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ab4a.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},\frac{9}{4};z\right)=\frac{1}{5376\sqrt{2}\,z^{3/4}}$$
$$\left(\left(2\,(987-1136\,z)\sqrt{z}\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-1024\,z^2-19\,824\,z+21\,945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+14\sqrt{z}\,(784\,z+3135)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab4b.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},\frac{9}{4};-z\right)=\frac{1}{5376\sqrt{2}\,z^{3/4}}$$
$$\left(\left(2\sqrt{z}\,(1136\,z+987)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-1024\,z^2+19\,824\,z+21\,945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+14\sqrt{z}\,(784\,z-3135)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab4c.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},\frac{11}{4};z\right)=\frac{1}{1\,310\,720\,z^{7/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-8192\,z^2-121\,408\,z^{3/2}-350\,064\,z-\right.\right.\right.$$
$$\left.\left.\left.835\,380\sqrt{z}+e^{4\sqrt{z}}\left(8192\,z^2-121\,408\,z^{3/2}+350\,064\,z-835\,380\sqrt{z}+626\,535\right)-626\,535\right)+\right.\right.$$
$$\left.\left.585\,e^{2\sqrt{z}}\sqrt{2\pi}\left(256\,z^2+544\,z-1071\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-585\,e^{2\sqrt{z}}\sqrt{2\pi}\left(256\,z^2+544\,z-1071\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab4d.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},\frac{11}{4};-z\right)=\frac{1}{327\,680\,z^{7/4}}\left(585\sqrt{\pi}\left(256\,z^2-544\,z-1071\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\sqrt[4]{z}\left(28\sqrt{z}\,(4336\,z-29\,835)\cos\left(2\sqrt{z}\right)+\left(8192\,z^2-350\,064\,z+626\,535\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ab4e.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},\frac{13}{4};z\right)=$$
$$-\frac{1}{57\,344\sqrt{2}\,z^{7/4}}\left(3\left(2\sqrt{z}\left(12\,032\,z^2+105\,728\,z-100\,947\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-7\left(17\,152\,z^2+140\,448\,z-72\,105\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(-7936\,z^2+93\,632\,z+504\,735\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab4f.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{57\,344\sqrt{2}\,z^{7/4}}\left(3\left(2\sqrt{z}\left(12\,032z^2-105\,728z-100\,947\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+7\left(-17\,152z^2+140\,448z+72\,105\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(7936z^2+93\,632z-504\,735\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab4g.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{83\,886\,080\,z^{11/4}}\left(11e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(68\,608z^{5/2}-1\,753\,856z^2-8\,910\,720z^{3/2}-28\,959\,840z-48\,730\,500\sqrt{z}+\right.\right.\right.$$
$$\left.e^{4\sqrt{z}}\left(68\,608z^{5/2}+1\,753\,856z^2-8\,910\,720z^{3/2}+28\,959\,840z-48\,730\,500\sqrt{z}+36\,547\,875\right)-36\,547\,875\right)+$$
$$195e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+13\,056z^2-51\,408z+187\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.\left.195e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+13\,056z^2-51\,408z+187\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab4h.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},\frac{15}{4};-z\right)=\frac{1}{20\,971\,520\,z^{11/4}}\left(11\left(195\sqrt{\pi}\left(4096z^3-13\,056z^2-51\,408z-187\,425\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\left(4\sqrt{z}\left(17\,152z^2+2\,227\,680z-12\,182\,625\right)\cos\left(2\sqrt{z}\right)+221\left(7936z^2-131\,040z+165\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ab4i.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},\frac{17}{4};z\right)=-\frac{1}{12\,845\,056\sqrt{2}\,z^{11/4}}\left(39\left(2\sqrt{z}\left(159\,744z^3-1\,030\,400z^2-27\,457\,584z+24\,530\,121\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-20\,480z^3+37\,078\,272z^2+224\,506\,128z-122\,650\,605\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(159\,744z^3+2\,300\,672z^2+37\,148\,496z+122\,650\,605\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab4j.01

$${}_1F_2\left(-\frac{1}{4};-\frac{7}{2},\frac{17}{4};-z\right)=\frac{1}{12\,845\,056\sqrt{2}\,z^{11/4}}\left(39\left(2\sqrt{z}\left(159\,744z^3+1\,030\,400z^2-27\,457\,584z-24\,530\,121\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-20\,480z^3-37\,078\,272z^2+224\,506\,128z+122\,650\,605\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(159\,744z^3-2\,300\,672z^2+37\,148\,496z-122\,650\,605\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab4k.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) = \frac{1}{4\,294\,967\,296\, z^{15/4}} $$
$$ \left(33\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(3\,194\,880\, z^{7/2} + 7\,589\,888\, z^3 + 150\,492\,160\, z^{5/2} + 984\,139\,520\, z^2 + 3\,987\,547\,200\, z^{3/2} + 10\,096\,959\,600\, z + \right.\right.\right. $$
$$ \left.\left.\left. 15\,545\,029\,500\sqrt{z} + e^{4\sqrt{z}}\left(3\,194\,880\, z^{7/2} - 7\,589\,888\, z^3 + 150\,492\,160\, z^{5/2} - 984\,139\,520\, z^2 + \right.\right.\right. $$
$$ \left.\left.\left. 3\,987\,547\,200\, z^{3/2} - 10\,096\,959\,600\, z + 15\,545\,029\,500\sqrt{z} - 11\,658\,772\,125\right) + 11\,658\,772\,125\right) + $$
$$ 195\, e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\, z^4 + 278\,528\, z^3 - 1\,645\,056\, z^2 + 11\,995\,200\, z - 59\,788\,575\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$
$$ \left. 195\, e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\, z^4 + 278\,528\, z^3 - 1\,645\,056\, z^2 + 11\,995\,200\, z - 59\,788\,575\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ab4l.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = $$
$$ \frac{1}{1\,073\,741\,824\, z^{15/4}}\left(33\left(195\sqrt{\pi}\left(65\,536\, z^4 - 278\,528\, z^3 - 1\,645\,056\, z^2 - 11\,995\,200\, z - 59\,788\,575\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right. $$
$$ 2\sqrt[4]{z}\left(260\sqrt{z}\left(12\,288\, z^3 - 578\,816\, z^2 + 15\,336\,720\, z - 59\,788\,575\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left. 17\left(446\,464\, z^3 - 57\,890\,560\, z^2 + 593\,938\,800\, z - 685\,810\,125\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.ab4m.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) = $$
$$ -\frac{1}{411\,041\,792\sqrt{2}\, z^{15/4}}\left(221\left(2\sqrt{z}\left(851\,968\, z^4 + 6\,266\,880\, z^3 + 310\,109\,184\, z^2 + 3\,517\,801\,056\, z - 3\,295\,212\,921\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\left(851\,968\, z^4 + 68\,485\,120\, z^3 + 2\,222\,449\,152\, z^2 + 9\,768\,439\,296\, z - 5\,492\,021\,535\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(-851\,968\, z^4 - 1\,400\,832\, z^3 + 443\,013\,120\, z^2 + 5\,843\,619\,936\, z + 16\,476\,064\,605\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab4n.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) = $$
$$ \frac{1}{411\,041\,792\sqrt{2}\, z^{15/4}}\left(221\left(2\sqrt{z}\left(851\,968\, z^4 - 6\,266\,880\, z^3 + 310\,109\,184\, z^2 - 3\,517\,801\,056\, z - 3\,295\,212\,921\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\left(851\,968\, z^4 - 68\,485\,120\, z^3 + 2\,222\,449\,152\, z^2 - 9\,768\,439\,296\, z - 5\,492\,021\,535\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(851\,968\, z^4 - 1\,400\,832\, z^3 - 443\,013\,120\, z^2 + 5\,843\,619\,936\, z - 16\,476\,064\,605\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab4o.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) =$$
$$\frac{1}{274\,877\,906\,944\,z^{19/4}}\left(627\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(10\,223\,616\,z^{9/2} - 2\,555\,904\,z^4 - 77\,987\,840\,z^{7/2} - 2\,700\,328\,960\,z^3 - \right.\right.\right.$$
$$24\,950\,016\,000\,z^{5/2} - 132\,413\,299\,200\,z^2 - 454\,803\,148\,800\,z^{3/2} - 1\,044\,625\,982\,400\,z -$$
$$1\,538\,957\,920\,500\sqrt{z} + e^{4\sqrt{z}}\left(10\,223\,616\,z^{9/2} + 2\,555\,904\,z^4 - 77\,987\,840\,z^{7/2} + 2\,700\,328\,960\,z^3 - \right.$$
$$\left.24\,950\,016\,000\,z^{5/2} + 132\,413\,299\,200\,z^2 - 454\,803\,148\,800\,z^{3/2} + 1\,044\,625\,982\,400\,z - \right.$$
$$\left.1\,538\,957\,920\,500\sqrt{z} + 1\,154\,218\,440\,375\right) - 1\,154\,218\,440\,375\Big) +$$
$$39\,e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5 + 5\,570\,560\,z^4 - 43\,868\,160\,z^3 + 479\,808\,000\,z^2 - 4\,783\,086\,000\,z + 29\,595\,344\,625\right)$$
$$\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 39\,e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left.\left.\left(1\,048\,576\,z^5 + 5\,570\,560\,z^4 - 43\,868\,160\,z^3 + 479\,808\,000\,z^2 - 4\,783\,086\,000\,z + 29\,595\,344\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab4p.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) = \frac{1}{68\,719\,476\,736\,z^{19/4}}$$
$$\left(627\left(39\sqrt{\pi}\left(1\,048\,576\,z^5 - 5\,570\,560\,z^4 - 43\,868\,160\,z^3 - 479\,808\,000\,z^2 - 4\,783\,086\,000\,z - 29\,595\,344\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(2\,555\,904\,z^4 + 19\,496\,960\,z^3 - 6\,237\,504\,000\,z^2 + 113\,700\,787\,200\,z - 384\,739\,480\,125\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\left.\left.\left(2\,555\,904\,z^4 - 2\,700\,328\,960\,z^3 + 132\,413\,299\,200\,z^2 - 1\,044\,625\,982\,400\,z + 1\,154\,218\,440\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = -\frac{1}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.ab4q.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{22\,713\,075\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768\,z^5 + 860\,160\,z^4 + 6\,982\,272\,z^3 + 15\,911\,280\,z^2 - 45\,821\,160\,z + 22\,713\,075\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(118\,784\,z^4 + 1\,771\,008\,z^3 + 10\,573\,200\,z^2 + 15\,537\,060\,z - 22\,713\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(8192\,z^4 + 310\,272\,z^3 + 3\,321\,120\,z^2 + 14\,747\,040\,z + 22\,713\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab4r.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{22\,713\,075\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32\,768\,z^5+860\,160\,z^4-6\,982\,272\,z^3+15\,911\,280\,z^2+45\,821\,160\,z+22\,713\,075\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(118\,784\,z^4-1\,771\,008\,z^3+10\,573\,200\,z^2-15\,537\,060\,z-22\,713\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(8192\,z^4-310\,272\,z^3+3\,321\,120\,z^2-14\,747\,040\,z+22\,713\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab4s.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},-\frac{21}{4};z\right)=$$
$$\left(\frac{8192\,z^4}{3\,132\,675}+\frac{1024\,z^3}{13\,923}+\frac{32\,z^2}{51}+\frac{208\,z}{105}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(3072\,z^3+41\,600\,z^2+225\,420\,z+348\,075\right)\sinh\left(2\sqrt{z}\right)}{348\,075}$$

07.22.03.ab4t.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},-\frac{21}{4};-z\right)=$$
$$\left(\frac{8192\,z^4}{3\,132\,675}-\frac{1024\,z^3}{13\,923}+\frac{32\,z^2}{51}-\frac{208\,z}{105}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-3072\,z^3+41\,600\,z^2-225\,420\,z+348\,075\right)\sin\left(2\sqrt{z}\right)}{348\,075}$$

07.22.03.ab4u.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},-\frac{19}{4};z\right)=\frac{1}{987\,525\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(9\left(4096\,z^4+33\,536\,z^3+77\,616\,z^2-221\,760\,z+109\,725\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4096\,z^4+75\,264\,z^3+457\,776\,z^2+\right.\right.\right.$$
$$\left.\left.\left.679\,140\,z-987\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(4096\,z^3+47\,168\,z^2+212\,520\,z+329\,175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab4v.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},-\frac{19}{4};-z\right)=\frac{1}{987\,525\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(9\left(4096\,z^4-33\,536\,z^3+77\,616\,z^2+221\,760\,z+109\,725\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4096\,z^4-75\,264\,z^3+457\,776\,z^2-\right.\right.\right.$$
$$\left.\left.\left.679\,140\,z-987\,525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(-4096\,z^3+47\,168\,z^2-212\,520\,z+329\,175\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab4w.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},-\frac{17}{4};z\right)=\frac{1}{149\,175}$$
$$\left(5\left(2048\,z^3+18\,432\,z^2+58\,968\,z+29\,835\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(1024\,z^3+17\,280\,z^2+95\,940\,z+149\,175\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ab4x.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},-\frac{17}{4};-z\right)=$$

$$\left(-\frac{2048\,z^3}{29\,835}+\frac{2048\,z^2}{3315}-\frac{168\,z}{85}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-1024\,z^3+17\,280\,z^2-95\,940\,z+149\,175\right)\sin\left(2\sqrt{z}\right)}{149\,175}$$

07.22.03.ab4y.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},-\frac{15}{4};z\right)=\frac{1}{51\,975\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(2048\,z^4+15\,744\,z^3+37\,296\,z^2-105\,336\,z+51\,975\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(1280\,z^3+7984\,z^2+12\,012\,z-17\,325\right)\right.\right.$$

$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(512\,z^3+7200\,z^2+33\,264\,z+51\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab4z.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},-\frac{15}{4};-z\right)=\frac{1}{51\,975\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(2048\,z^4-15\,744\,z^3+37\,296\,z^2+105\,336\,z+51\,975\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(1280\,z^3-7984\,z^2+12\,012\,z+17\,325\right)\right.\right.$$

$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-4\,z\left(512\,z^3-7200\,z^2+33\,264\,z-51\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab50.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},-\frac{13}{4};z\right)=\frac{\left(512\,z^3+5280\,z^2+17\,280\,z+8775\right)\cosh\left(2\sqrt{z}\right)-30\sqrt{z}\left(64\,z^2+372\,z+585\right)\sinh\left(2\sqrt{z}\right)}{8775}$$

07.22.03.ab51.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},-\frac{13}{4};-z\right)=\left(-\frac{512\,z^3}{8775}+\frac{352\,z^2}{585}-\frac{128\,z}{65}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{585}\sqrt{z}\left(64\,z^2-372\,z+585\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.ab52.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},-\frac{11}{4};z\right)=$$

$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024\,z^3+2544\,z^2-7056\,z+3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256\,z^3+1584\,z^2+2436\,z-3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.28\,z\left(64\,z^2+312\,z+495\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab53.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1024z^3+2544z^2+7056z+3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^3-1584z^2+2436z+3465\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+28z\left(64z^2-312z+495\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab54.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) = -\frac{1}{675}(16z+45)\left(2\sqrt{z}\,(4z+15)\sinh\left(2\sqrt{z}\right)-3(8z+5)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.ab55.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) = \frac{1}{675}(16z-45)\left(3(8z-5)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(4z-15)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ab56.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{315\sqrt[4]{z}}\left(\sqrt{2}\left(\left(128z^3+240z^2-648z+315\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(48z^2+76z-105\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(32z^2+192z+315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab57.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{315\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-128z^3+240z^2+648z+315\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(48z^2-76z-105\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(32z^2-192z+315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab58.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, -\frac{5}{4}; z\right) = \frac{1}{75}\left(\left(32z^2+144z+75\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,(44z+75)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ab59.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, -\frac{5}{4}; -z\right) = \frac{1}{75}\left(\left(32z^2-144z+75\right)\cos\left(2\sqrt{z}\right)+2(75-44z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ab5a.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{45\sqrt[4]{z}}\left(\sqrt{2}\left(\left(48z^2-96z+45\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(16z^2+36z-45\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+12z(8z+15)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab5b.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},-\frac{3}{4};-z\right)=$$

$$\frac{1}{45\sqrt[4]{z}}\left(\sqrt{2}\left(\left(48z^2+96z+45\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(16z^2-36z-45\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+12\left(15-8z\right)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab5c.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},-\frac{1}{4};z\right)=\left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\left(4z+15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ab5d.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},-\frac{1}{4};-z\right)=\left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}\left(15-4z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.ab5e.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},\frac{1}{4};z\right)=$$

$$\frac{1}{15\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8z^2-24z+15\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\left(15-11z\right)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(2z+15\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab5f.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},\frac{1}{4};-z\right)=$$

$$\frac{1}{15\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8z^2+24z+15\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(11z+15\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\left(15-2z\right)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab5g.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},\frac{3}{4};z\right)=\frac{1}{240}e^{-2\sqrt{z}}$$
$$\left(4\left(4z+15\sqrt{z}+e^{4\sqrt{z}}\left(4z-15\sqrt{z}+30\right)+30\right)+45e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-45e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)$$

07.22.03.ab5h.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},\frac{3}{4};-z\right)=\left(1-\frac{2z}{15}\right)\cos\left(2\sqrt{z}\right)+\frac{3}{4}\sqrt{\pi}\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\frac{1}{2}\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.ab5i.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},\frac{5}{4};z\right)=\frac{\left(-6\left(23z-20\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(32z+249\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+18zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{60\sqrt{2}\sqrt[4]{z}}$$

07.22.03.ab5j.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},\frac{5}{4};-z\right)=\frac{\left(6\left(23z+20\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(32z-249\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+18zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{60\sqrt{2}\sqrt[4]{z}}$$

07.22.03.ab5k.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) = \frac{1}{5120\, z^{3/4}} \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z} \left(-64\, z - 140\sqrt{z} + e^{4\sqrt{z}} \left(64\, z - 140\sqrt{z} + 585\right) - 585\right) + 45\, e^{2\sqrt{z}} \sqrt{2\pi}\, (16\, z + 13) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - 45\, e^{2\sqrt{z}} \sqrt{2\pi}\, (16\, z + 13) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.ab5l.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, \frac{7}{4}; -z\right) = \frac{45\sqrt{\pi}\, (16\, z - 13)\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z} \left(140\sqrt{z} \cos\left(2\sqrt{z}\right) + (64\, z - 585) \sin\left(2\sqrt{z}\right)\right)}{1280\, z^{3/4}} $$

07.22.03.ab5m.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) = \frac{1}{384\sqrt{2}\, z^{3/4}} \left(\left(2\,(153 - 176\, z)\sqrt{z}\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\,(385 - 208\, z)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\, (304\, z + 1155)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab5n.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, \frac{9}{4}; -z\right) = \frac{1}{384\sqrt{2}\, z^{3/4}} \left(\left(2\sqrt{z}\, (176\, z + 153)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\,(208\, z + 385)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\, (304\, z - 1155)\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab5o.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, \frac{11}{4}; z\right) = \frac{1}{655\,360\, z^{7/4}} \left(7\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z} \left(4928\, z^{3/2} + 13\,104\, z + 39\,780\sqrt{z} + e^{4\sqrt{z}} \left(4928\, z^{3/2} - 13\,104\, z + 39\,780\sqrt{z} - 29\,835\right) + 29\,835\right) + 45\, e^{2\sqrt{z}} \sqrt{2\pi}\, \left(256\, z^2 + 416\, z - 663\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - 45\, e^{2\sqrt{z}} \sqrt{2\pi}\, \left(256\, z^2 + 416\, z - 663\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.ab5p.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, \frac{11}{4}; -z\right) = \frac{1}{163\,840\, z^{7/4}} \left(7 \left(45\sqrt{\pi}\, \left(256\, z^2 - 416\, z - 663\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z} \left(4\sqrt{z}\, (1232\, z - 9945) \cos\left(2\sqrt{z}\right) + 117\,(255 - 112\, z) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.ab5q.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, \frac{13}{4}; z\right) = -\frac{1}{4096\sqrt{2}\, z^{7/4}} \left(3 \left(2\sqrt{z}\, \left(768\, z^2 + 4384\, z - 4389\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4352\, z^2 - 44\,352\, z + 21\,945\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\, \left(-768\, z^2 + 2464\, z + 21\,945\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab5r.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{4096\sqrt{2}\,z^{7/4}}\left(3\left(2\sqrt{z}\left(768z^2-4384z-4389\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4352z^2+44\,352z+21\,945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(768z^2+2464z-21\,945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab5s.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{41\,943\,040\,z^{11/4}}\left(77e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(15\,360z^{5/2}-36\,608z^2-254\,592z^{3/2}-1\,082\,016z-1\,949\,220\sqrt{z}+\right.\right.\right.$$
$$\left.e^{4\sqrt{z}}\left(15\,360z^{5/2}+36\,608z^2-254\,592z^{3/2}+1\,082\,016z-1\,949\,220\sqrt{z}+1\,461\,915\right)-1\,461\,915\right)+$$
$$15e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+9984z^2-31\,824z+97\,461\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.\left.15e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+9984z^2-31\,824z+97\,461\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab5t.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},\frac{15}{4};-z\right)=\frac{1}{10\,485\,760\,z^{11/4}}\left(77\left(15\sqrt{\pi}\left(4096z^3-9984z^2-31\,824z-97\,461\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\left(12\sqrt{z}\left(1280z^2+21\,216z-162\,435\right)\cos\left(2\sqrt{z}\right)+13\left(2816z^2-83\,232z+112\,455\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ab5u.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},\frac{17}{4};z\right)=-\frac{1}{917\,504\sqrt{2}\,z^{11/4}}$$
$$\left(39\left(2\sqrt{z}\left(12\,288z^3-1792z^2-1\,053\,360z+908\,523\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-12\,288z^3+335\,104z^2+2\,832\,368z-1\,514\,205\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(12\,288z^3+64\,768z^2+1\,193\,808z+4\,542\,615\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab5v.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},\frac{17}{4};-z\right)=\frac{1}{917\,504\sqrt{2}\,z^{11/4}}$$
$$\left(39\left(2\sqrt{z}\left(12\,288z^3+1792z^2-1\,053\,360z-908\,523\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-12\,288z^3-335\,104z^2+2\,832\,368z+1\,514\,205\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(12\,288z^3-64\,768z^2+1\,193\,808z-4\,542\,615\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab5w.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{2\,147\,483\,648\, z^{15/4}} \left(231\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(245\,760\, z^{7/2} - 61\,440\, z^3 + 2\,941\,952\, z^{5/2} + 24\,384\,256\, z^2 + 120\,294\,720\, z^{3/2} + \right.\right.\right. $$
$$ \left. 335\,265\,840\, z + 536\,035\,500\sqrt{z} + e^{4\sqrt{z}} \left(245\,760\, z^{7/2} + 61\,440\, z^3 + 2\,941\,952\, z^{5/2} - 24\,384\,256\, z^2 + \right.\right. $$
$$ \left.\left. 120\,294\,720\, z^{3/2} - 335\,265\,840\, z + 536\,035\,500\sqrt{z} - 402\,026\,625\right) + 402\,026\,625\right) + $$
$$ 15\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(65\,536\, z^4 + 212\,992\, z^3 - 1\,018\,368\, z^2 + 6\,237\,504\, z - 26\,801\,775\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - $$
$$ \left.\left. 15\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(65\,536\, z^4 + 212\,992\, z^3 - 1\,018\,368\, z^2 + 6\,237\,504\, z - 26\,801\,775\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.ab5x.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) = $$
$$ \frac{1}{536\,870\,912\, z^{15/4}} \left(231 \left(15\sqrt{\pi}\, \left(65\,536\, z^4 - 212\,992\, z^3 - 1\,018\,368\, z^2 - 6\,237\,504\, z - 26\,801\,775\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ 2\sqrt[4]{z}\, \left(4\sqrt{z}\, \left(61\,440\, z^3 - 735\,488\, z^2 + 30\,073\,680\, z - 134\,008\,875\right) \cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left. \left(61\,440\, z^3 + 24\,384\,256\, z^2 - 335\,265\,840\, z + 402\,026\,625\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.ab5y.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) = $$
$$ -\frac{1}{29\,360\,128\sqrt{2}\, z^{15/4}} \left(221 \left(2\sqrt{z}\, \left(65\,536\, z^4 + 196\,608\, z^3 + 6\,741\,504\, z^2 + 116\,290\,944\, z - 106\,297\,191\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 3\left(65\,536\, z^4 + 1\,171\,456\, z^3 + 62\,920\,704\, z^2 + 319\,800\,096\, z - 177\,161\,985\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\, \left(-65\,536\, z^4 - 245\,760\, z^3 + 10\,593\,792\, z^2 + 174\,436\,416\, z + 531\,485\,955\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab5z.01

$$ {}_1F_2\left(-\frac{1}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) = $$
$$ \frac{1}{29\,360\,128\sqrt{2}\, z^{15/4}} \left(221 \left(2\sqrt{z}\, \left(65\,536\, z^4 - 196\,608\, z^3 + 6\,741\,504\, z^2 - 116\,290\,944\, z - 106\,297\,191\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 3\left(-65\,536\, z^4 + 1\,171\,456\, z^3 - 62\,920\,704\, z^2 + 319\,800\,096\, z + 177\,161\,985\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\, \left(65\,536\, z^4 - 245\,760\, z^3 - 10\,593\,792\, z^2 + 174\,436\,416\, z - 531\,485\,955\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab60.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},\frac{23}{4};z\right)=$$
$$\frac{1}{137\,438\,953\,472\,z^{19/4}}\left(4389\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(786\,432\,z^{9/2}-196\,608\,z^4+3\,342\,336\,z^{7/2}-34\,537\,472\,z^3-522\,762\,240\,z^{5/2}-\right.\right.\right.$$
$$3\,362\,311\,680\,z^2-12\,742\,329\,600\,z^{3/2}-30\,875\,644\,800\,z-46\,635\,088\,500\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(786\,432\,z^{9/2}+196\,608\,z^4+3\,342\,336\,z^{7/2}+34\,537\,472\,z^3-522\,762\,240\,z^{5/2}+3\,362\,311\,680\,z^2-\right.$$
$$\left.12\,742\,329\,600\,z^{3/2}+30\,875\,644\,800\,z-46\,635\,088\,500\sqrt{z}+34\,976\,316\,375\right)-34\,976\,316\,375\Big)+$$
$$3\,e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5+4\,259\,840\,z^4-27\,156\,480\,z^3+249\,500\,160\,z^2-2\,144\,142\,000\,z+11\,658\,772\,125\right)$$
$$\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-3\,e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left.\left.\left(1\,048\,576\,z^5+4\,259\,840\,z^4-27\,156\,480\,z^3+249\,500\,160\,z^2-2\,144\,142\,000\,z+11\,658\,772\,125\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab61.01

$${}_1F_2\left(-\frac{1}{4};-\frac{5}{2},\frac{23}{4};-z\right)=\frac{1}{34\,359\,738\,368\,z^{19/4}}$$
$$\left(4389\left(3\sqrt{\pi}\left(1\,048\,576\,z^5-4\,259\,840\,z^4-27\,156\,480\,z^3-249\,500\,160\,z^2-2\,144\,142\,000\,z-11\,658\,772\,125\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\left(12\sqrt{z}\left(65\,536\,z^4-278\,528\,z^3-43\,563\,520\,z^2+1\,061\,860\,800\,z-3\,886\,257\,375\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(196\,608\,z^4-34\,537\,472\,z^3+3\,362\,311\,680\,z^2-30\,875\,644\,800\,z+34\,976\,316\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1=-\frac{1}{4}$, $b_{1.}=-\frac{3}{2}$

07.22.03.ab62.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{4\,542\,615\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(126\,976\,z^4+1\,402\,368\,z^3+3\,270\,960\,z^2-9\,216\,900\,z+4\,542\,615\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(8192\,z^4+310\,272\,z^3+2\,096\,160\,z^2+3\,160\,080\,z-4\,542\,615\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(37\,888\,z^3+612\,480\,z^2+2\,896\,740\,z+4\,542\,615\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab63.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{4\,542\,615\sqrt[4]{z}}\left(\sqrt{2}\left(\left(126\,976z^4-1\,402\,368z^3+3\,270\,960z^2+9\,216\,900z+4\,542\,615\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\right.\right.$$
$$\sqrt{z}\left(8192z^4-310\,272z^3+2\,096\,160z^2-3\,160\,080z-4\,542\,615\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4z\left(37\,888z^3-612\,480z^2+2\,896\,740z-4\,542\,615\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab64.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},-\frac{21}{4};z\right)=$$
$$\left(\frac{31\,744z^3}{626\,535}+\frac{640z^2}{1071}+\frac{124z}{63}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(2048z^3+65\,536z^2+397\,800z+626\,535\right)\sinh\left(2\sqrt{z}\right)}{626\,535}$$

07.22.03.ab65.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},-\frac{21}{4};-z\right)=$$
$$\left(-\frac{31\,744z^3}{626\,535}+\frac{640z^2}{1071}-\frac{124z}{63}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-2048z^3+65\,536z^2-397\,800z+626\,535\right)\sin\left(2\sqrt{z}\right)}{626\,535}$$

07.22.03.ab66.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},-\frac{19}{4};z\right)=\frac{1}{197\,505\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(4096z^4+61\,440z^3+144\,144z^2-401\,940z+197\,505\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(4096z^3+30\,272z^2+46\,200z-65\,835\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1024z^3+25\,344z^2+124\,740z+197\,505\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab67.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},-\frac{19}{4};-z\right)=\frac{1}{197\,505\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(4096z^4-61\,440z^3+144\,144z^2+401\,940z+197\,505\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(4096z^3-30\,272z^2+46\,200z+65\,835\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-1024z^3+25\,344z^2-124\,740z+197\,505\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab68.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},-\frac{17}{4};z\right)=\left(\frac{1024z^3}{29\,835}+\frac{128z^2}{221}+\frac{100z}{51}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(2816z^2+18\,720z+29\,835\right)\sinh\left(2\sqrt{z}\right)}{29\,835}$$

07.22.03.ab69.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},-\frac{17}{4};-z\right)=\left(-\frac{1024\,z^3}{29\,835}+\frac{128\,z^2}{221}-\frac{100\,z}{51}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(2816\,z^2-18\,720\,z+29\,835\right)\sin\left(2\sqrt{z}\right)}{29\,835}$$

07.22.03.ab6a.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},-\frac{15}{4};z\right)=\frac{1}{10\,395\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(\left(3328\,z^3+7728\,z^2-21\,252\,z+10\,395\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(512\,z^3+4768\,z^2+7392\,z-10\,395\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(1216\,z^2+6468\,z+10\,395\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab6b.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},-\frac{15}{4};-z\right)=\frac{1}{10\,395\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(\left(-3328\,z^3+7728\,z^2+21\,252\,z+10\,395\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(512\,z^3-4768\,z^2+7392\,z+10\,395\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(1216\,z^2-6468\,z+10\,395\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab6c.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},-\frac{13}{4};z\right)=\left(\frac{64\,z^2}{117}+\frac{76\,z}{39}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(128\,z^2+1080\,z+1755\right)\sinh\left(2\sqrt{z}\right)}{1755}$$

07.22.03.ab6d.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},-\frac{13}{4};-z\right)=\left(\frac{64\,z^2}{117}-\frac{76\,z}{39}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(128\,z^2-1080\,z+1755\right)\sin\left(2\sqrt{z}\right)}{1755}$$

07.22.03.ab6e.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{693\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(256\,z^3+528\,z^2-1428\,z+693\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(320\,z^2+504\,z-693\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(64\,z^2+420\,z+693\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab6f.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{693\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-256\,z^3+528\,z^2+1428\,z+693\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(320\,z^2-504\,z-693\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(64\,z^2-420\,z+693\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab6g.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) = \left(\frac{64\,z^2}{135} + \frac{52\,z}{27} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{27}\sqrt{z}\,(16\,z + 27)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ab6h.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{3}{2}, -\frac{9}{4}; -z\right) = \left(\frac{64\,z^2}{135} - \frac{52\,z}{27} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{27}(27 - 16\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ab6i.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{3}{2}, -\frac{7}{4}; z\right) =$$

$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(16\,z^2 - 44\,z + 21\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(32\,z^2 + 48\,z - 63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 36\,z\,(4\,z + 7)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab6j.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{3}{2}, -\frac{7}{4}; -z\right) =$$

$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(16\,z^2 + 44\,z + 21\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,z^2 - 48\,z - 63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 36\,(7 - 4\,z)\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab6k.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{3}{2}, -\frac{5}{4}; z\right) = \left(\frac{28\,z}{15} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,(8\,z + 15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ab6l.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{3}{2}, -\frac{5}{4}; -z\right) = \left(1 - \frac{28\,z}{15}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}(15 - 8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ab6m.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{3}{2}, -\frac{3}{4}; z\right) =$$

$$\frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,z^2 - 20\,z + 9\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(8\,z - 9)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\,(4\,z + 9)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab6n.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{3}{2}, -\frac{3}{4}; -z\right) =$$

$$\frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,z^2 + 20\,z + 9\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(8\,z + 9)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,(9 - 4\,z)\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab6o.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{3}{2}, -\frac{1}{4}; z\right) = \left(\frac{4\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ab6p.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{3}{2}, -\frac{1}{4}; -z\right) = \left(1 - \frac{4\,z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ab6q.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},\frac{1}{4};z\right)=\frac{\sqrt{2}\left((3-4z)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4(3-2z)\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+12z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ab6r.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},\frac{1}{4};-z\right)=\frac{\sqrt{2}\left((4z+3)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\;(2z+3)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+12z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ab6s.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},\frac{3}{4};z\right)=$$

$$\frac{1}{24}e^{-2\sqrt{z}}\left(4\left(-e^{4\sqrt{z}}\left(\sqrt{z}-3\right)+\sqrt{z}+3\right)+5e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-5e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)$$

07.22.03.ab6t.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},\frac{3}{4};-z\right)=\cos\left(2\sqrt{z}\right)+\frac{5}{6}\sqrt{\pi}\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\frac{1}{3}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ab6u.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},\frac{5}{4};z\right)=\frac{\left(-2(7z-6)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+27\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+6z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{6\sqrt{2}\sqrt[4]{z}}$$

07.22.03.ab6v.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},\frac{5}{4};-z\right)=\frac{\left(2(7z+6)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-27\sqrt{z}\;J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+6z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{6\sqrt{2}\sqrt[4]{z}}$$

07.22.03.ab6w.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},\frac{7}{4};z\right)=\frac{1}{512\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}+45\right)+4\sqrt{z}-45\right)+\right.\right.$$
$$\left.\left.5e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+9)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-5e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+9)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab6x.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},\frac{7}{4};-z\right)=\frac{1}{128}\left(8\cos\left(2\sqrt{z}\right)+\frac{5\sqrt{\pi}\,(16z-9)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)}{z^{3/4}}+\frac{90\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.ab6y.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},\frac{9}{4};z\right)=$$

$$\frac{1}{576\sqrt{2}\,z^{3/4}}\left(5\left(-2\sqrt{z}\;(80z-69)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3(16z+77)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\;(80z+231)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab6z.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) =$$
$$\frac{1}{576\sqrt{2}\, z^{3/4}}\left(5\left(2\sqrt{z}\,(80z+69)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3(77-16z)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(80z-231)\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab70.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) =$$
$$\frac{1}{65\,536\, z^{7/4}}\left(7e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(320z^{3/2}+432z+2340\sqrt{z}+e^{4\sqrt{z}}\left(320z^{3/2}-432z+2340\sqrt{z}-1755\right)+1755\right)+\right.$$
$$\left.5e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+288z-351\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-5e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+288z-351\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab71.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) =$$
$$\frac{1}{16\,384\, z^{7/4}}\left(7\left(5\sqrt{\pi}\left(256z^2-288z-351\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(20\sqrt{z}\,(16z-117)\cos\left(2\sqrt{z}\right)+27(65-16z)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ab72.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) =$$
$$-\frac{1}{2048\sqrt{2}\, z^{7/4}}\left(5\left(2\sqrt{z}\left(256z^2+576z-693\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(256z^2+2464z-1155\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(3465-256z^2\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab73.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) =$$
$$\frac{1}{2048\sqrt{2}\, z^{7/4}}\left(5\left(2\sqrt{z}\left(256z^2-576z-693\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-256z^2+2464z+1155\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(256z^2-3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab74.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) = \frac{1}{12\,582\,912\, z^{11/4}}$$
$$\left(77e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(5120z^{5/2}-1280z^2-14\,976z^{3/2}-138\,528z-278\,460\sqrt{z}+e^{4\sqrt{z}}\left(5120z^{5/2}+1280z^2-14\,976z^{3/2}+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.138\,528z-278\,460\sqrt{z}+208\,845\right)-208\,845\right)+5e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+6912z^2-16\,848z+41\,769\right)\right.$$
$$\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-5e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+6912z^2-16\,848z+41\,769\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab75.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},\frac{15}{4};-z\right)=\frac{1}{3\,145\,728\,z^{11/4}}\left(77\left(5\sqrt{\pi}\,\left(4096\,z^3-6912\,z^2-16\,848\,z-41\,769\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(1280\,z^2+3744\,z-69\,615\right)\cos\left(2\sqrt{z}\right)+\left(1280\,z^2-138\,528\,z+208\,845\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ab76.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},\frac{17}{4};z\right)=-\frac{1}{458\,752\sqrt{2}\,z^{11/4}}$$
$$\left(65\left(2\sqrt{z}\,\left(4096\,z^3+5376\,z^2-144\,144\,z+118\,503\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096\,z^3-19\,712\,z^2-380\,688\,z+197\,505\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(4096\,z^3+8448\,z^2+121\,968\,z+592\,515\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab77.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},\frac{17}{4};-z\right)=\frac{1}{458\,752\sqrt{2}\,z^{11/4}}$$
$$\left(65\left(2\sqrt{z}\,\left(4096\,z^3-5376\,z^2-144\,144\,z-118\,503\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096\,z^3+19\,712\,z^2-380\,688\,z-197\,505\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4096\,z^3-8448\,z^2+121\,968\,z-592\,515\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab78.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},\frac{19}{4};z\right)=$$
$$\frac{1}{1\,073\,741\,824\,z^{15/4}}\left(385\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(81\,920\,z^{7/2}-20\,480\,z^3+199\,680\,z^{5/2}+1\,507\,584\,z^2+11\,583\,936\,z^{3/2}+\right.\right.\right.$$
$$\left.\left.38\,093\,328\,z+64\,324\,260\sqrt{z}\right)+e^{4\sqrt{z}}\left(81\,920\,z^{7/2}+20\,480\,z^3+199\,680\,z^{5/2}-1\,507\,584\,z^2+\right.\right.$$
$$\left.\left.\left.11\,583\,936\,z^{3/2}-38\,093\,328\,z+64\,324\,260\sqrt{z}-48\,243\,195\right)+48\,243\,195\right)+$$
$$5\,e^{2\sqrt{z}}\sqrt{2\pi}\,\left(65\,536\,z^4+147\,456\,z^3-539\,136\,z^2+2\,673\,216\,z-9\,648\,639\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.5\,e^{2\sqrt{z}}\sqrt{2\pi}\,\left(65\,536\,z^4+147\,456\,z^3-539\,136\,z^2+2\,673\,216\,z-9\,648\,639\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab79.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},\frac{19}{4};-z\right)=$$
$$\frac{1}{268\,435\,456\,z^{15/4}}\left(385\left(5\sqrt{\pi}\,\left(65\,536\,z^4-147\,456\,z^3-539\,136\,z^2-2\,673\,216\,z-9\,648\,639\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(20\,480\,z^3-49\,920\,z^2+2\,895\,984\,z-16\,081\,065\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(20\,480\,z^3+1\,507\,584\,z^2-38\,093\,328\,z+48\,243\,195\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ab7a.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},\frac{21}{4};z\right)=$$
$$-\frac{1}{132\,120\,576\sqrt{2}\,z^{15/4}}\left(1105\left(2\sqrt{z}\left(65\,536z^4+122\,880z^3+709\,632z^2+40\,027\,680z-35\,432\,397\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$3\left(65\,536z^4+180\,224z^3+16\,912\,896z^2+108\,706\,752z-59\,053\,995\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\left(-65\,536z^4-172\,032z^3+2\,230\,272z^2+51\,825\,312z+177\,161\,985\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.ab7b.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},\frac{21}{4};-z\right)=$$
$$\frac{1}{132\,120\,576\sqrt{2}\,z^{15/4}}\left(1105\left(2\sqrt{z}\left(65\,536z^4-122\,880z^3+709\,632z^2-40\,027\,680z-35\,432\,397\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$3\left(-65\,536z^4+180\,224z^3-16\,912\,896z^2+108\,706\,752z+59\,053\,995\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\left(65\,536z^4-172\,032z^3-2\,230\,272z^2+51\,825\,312z-177\,161\,985\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.ab7c.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},\frac{23}{4};z\right)=$$
$$\frac{1}{68\,719\,476\,736\,z^{19/4}}\left(7315\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144z^{9/2}-65\,536z^4+786\,432z^{7/2}-245\,760z^3-28\,514\,304z^{5/2}-\right.\right.\right.$$
$$263\,757\,312z^2-1\,176\,215\,040z^{3/2}-3\,087\,564\,480z-4\,824\,319\,500\sqrt{z}\,+$$
$$e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4+786\,432z^{7/2}+245\,760z^3-28\,514\,304z^{5/2}+263\,757\,312z^2-\right.$$
$$\left.\left.1\,176\,215\,040z^{3/2}+3\,087\,564\,480z-4\,824\,319\,500\sqrt{z}\,+3\,618\,239\,625\right)-3\,618\,239\,625\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5+2\,949\,120z^4-14\,376\,960z^3+106\,928\,640z^2-771\,891\,120z+3\,618\,239\,625\right)$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left.\left.\left(1\,048\,576z^5+2\,949\,120z^4-14\,376\,960z^3+106\,928\,640z^2-771\,891\,120z+3\,618\,239\,625\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab7d.01

$${}_1F_2\left(-\frac{1}{4};-\frac{3}{2},\frac{23}{4};-z\right)=\frac{1}{17\,179\,869\,184\,z^{19/4}}$$
$$\left(7315\left(\sqrt{\pi}\left(1\,048\,576z^5-2\,949\,120z^4-14\,376\,960z^3-106\,928\,640z^2-771\,891\,120z-3\,618\,239\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4-196\,608z^3-7\,128\,576z^2+294\,053\,760z-1\,206\,079\,875\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(65\,536z^4-245\,760z^3+263\,757\,312z^2-3\,087\,564\,480z+3\,618\,239\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = -\frac{1}{4}$, $b_1 = -\frac{1}{2}$

07.22.03.ab7e.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,514\,205\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(8192z^4 + 349\,184z^3 + 1\,293\,600z^2 - 3\,160\,080z + 1\,514\,205\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(41\,984z^3 + 612\,480z^2 + 1\,141\,140z - 1\,514\,205\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(2048z^3 + 120\,320z^2 + 877\,800z + 1\,514\,205\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab7f.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{1\,514\,205\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192z^4 - 349\,184z^3 + 1\,293\,600z^2 + 3\,160\,080z + 1\,514\,205\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(41\,984z^3 - 612\,480z^2 + 1\,141\,140z + 1\,514\,205\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-2048z^3 + 120\,320z^2 - 877\,800z + 1\,514\,205\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab7g.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{208\,845}\left(\left(2048z^3 + 84\,480z^2 + 397\,800z + 208\,845\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(9472z^2 + 114\,720z + 208\,845\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ab7h.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{21}{4}; -z\right) =$$
$$\frac{1}{208\,845}\left(\left(-2048z^3 + 84\,480z^2 - 397\,800z + 208\,845\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(9472z^2 - 114\,720z + 208\,845\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ab7i.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{65\,835\sqrt[4]{z}}\left(\sqrt{2}\left(\left(13\,312z^3 + 59\,136z^2 - 138\,600z + 65\,835\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024z^3 + 25\,344z^2 + 50\,820z - 65\,835\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4096z^2 + 36\,960z + 65\,835\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab7j.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{65\,835\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-13\,312z^3 + 59\,136z^2 + 138\,600z + 65\,835\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024z^3 - 25\,344z^2 + 50\,820z + 65\,835\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4096z^2 - 36\,960z + 65\,835\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab7k.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{17}{4}; z\right) = \left(\frac{256\,z^2}{765} + \frac{32\,z}{17} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(256\,z^2 + 5152\,z + 9945\right)\sinh\left(2\sqrt{z}\right)}{9945}$$

07.22.03.ab7l.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) = \left(\frac{256\,z^2}{765} - \frac{32\,z}{17} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(256\,z^2 - 5152\,z + 9945\right)\sin\left(2\sqrt{z}\right)}{9945}$$

07.22.03.ab7m.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) =$$

$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512\,z^3 + 3360\,z^2 - 7392\,z + 3465\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(1216\,z^2 + 2772\,z - 3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(128\,z^2 + 1848\,z + 3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab7n.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) =$$

$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-512\,z^3 + 3360\,z^2 + 7392\,z + 3465\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(1216\,z^2 - 2772\,z - 3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(128\,z^2 - 1848\,z + 3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab7o.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) = \left(\frac{128\,z^2}{585} + \frac{24\,z}{13} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{585}\sqrt{z}\,\left(272\,z + 585\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ab7p.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) = \left(\frac{128\,z^2}{585} - \frac{24\,z}{13} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{585}\left(585 - 272\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ab7q.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) = \frac{1}{231\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(256\,z^2 - 504\,z + 231\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(64\,z^2 + 196\,z - 231\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 28\,z\left(16\,z + 33\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab7r.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{11}{4}; -z\right) = \frac{1}{231\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(256\,z^2 + 504\,z + 231\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(64\,z^2 - 196\,z - 231\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 28\left(33 - 16\,z\right) z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab7s.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{9}{4}; z\right) = \left(\frac{16\,z}{9}+1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{45}\sqrt{z}\,(16\,z+45)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ab7t.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{9}{4}; -z\right) = \left(1-\frac{16\,z}{9}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{45}(45-16\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ab7u.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{7}{4}; z\right) =$$

$$\frac{1}{21\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,z^2-48\,z+21\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\,(21-20\,z)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\,(8\,z+21)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab7v.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) =$$

$$\frac{1}{21\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,z^2+48\,z+21\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(20\,z+21)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,(21-8\,z)\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab7w.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) = \left(\frac{8\,z}{5}+1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ab7x.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{5}{4}; -z\right) = \left(1-\frac{8\,z}{5}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ab7y.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{3}{4}; z\right) = \frac{\sqrt{2}\left((3-8\,z)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(4\,z-3)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ab7z.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{3}{4}; -z\right) = \frac{\sqrt{2}\left((8\,z+3)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(4\,z+3)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ab80.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ab81.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ab82.01

$${}_1F_2\left(-\frac{1}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) = \frac{\sqrt{2}\left(I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)\right)^2\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ab83.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{1}{4};-z\right)=\frac{\sqrt{2}\left(J_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\;J_{\frac{5}{4}}\left(\sqrt{z}\right)\right)^2\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ab84.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{3}{4};z\right)=\frac{1}{4}\left(2\,e^{-2\sqrt{z}}\left(1+e^{4\sqrt{z}}\right)+\sqrt{2\pi}\;\sqrt[4]{z}\;\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\sqrt{2\pi}\;\sqrt[4]{z}\;\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)$$

07.22.03.ab85.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{3}{4};-z\right)=\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\;\sqrt[4]{z}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)$$

07.22.03.ab86.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{5}{4};z\right)=\frac{\left(-2\,(z-1)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+5\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\,z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt{2}\;\sqrt[4]{z}}$$

07.22.03.ab87.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{5}{4};-z\right)=\frac{\left(2\,(z+1)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-5\sqrt{z}\;J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt{2}\;\sqrt[4]{z}}$$

07.22.03.ab88.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{7}{4};z\right)=\frac{1}{256\,z^{3/4}}\left(3\,e^{-2\sqrt{z}}\right.$$
$$\left.\left(4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}+5\right)+4\sqrt{z}-5\right)+e^{2\sqrt{z}}\;\sqrt{2\pi}\;(16\,z+5)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-e^{2\sqrt{z}}\;\sqrt{2\pi}\;(16\,z+5)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab89.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{7}{4};-z\right)=\frac{3}{64}\left(8\cos\left(2\sqrt{z}\right)+\frac{\sqrt{\pi}\;(16\,z-5)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)}{z^{3/4}}+\frac{10\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.ab8a.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{96\sqrt{2}\;z^{3/4}}\left(5\left(2\,(15-16\,z)\sqrt{z}\;I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\,(16\,z+7)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\;(16\,z+21)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab8b.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{96\sqrt{2}\;z^{3/4}}\left(5\left(2\sqrt{z}\;(16\,z+15)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\,(7-16\,z)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\;(16\,z-21)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab8c.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{32\,768\,z^{7/4}}\left(21\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(64\,z^{3/2}-16\,z+180\sqrt{z}+e^{4\sqrt{z}}\left(64\,z^{3/2}+16\,z+180\sqrt{z}-135\right)+135\right)+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(256\,z^2+160\,z-135\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(256\,z^2+160\,z-135\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab8d.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{8192\,z^{7/4}}\left(21\left(\sqrt{\pi}\left(256\,z^2-160\,z-135\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\,(16\,z-45)\cos\left(2\sqrt{z}\right)+(16\,z+135)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ab8e.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{13}{4};z\right)=-\frac{1}{1024\sqrt{2}\,z^{7/4}}\left(3\left(2\sqrt{z}\left(256\,z^2+32\,z-231\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.3\left(256\,z^2+896\,z-385\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(256\,z^2+224\,z-1155\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab8f.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{1024\sqrt{2}\,z^{7/4}}\left(3\left(2\sqrt{z}\left(256\,z^2-32\,z-231\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-256\,z^2+896\,z+385\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(256\,z^2-224\,z-1155\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab8g.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{2\,097\,152\,z^{11/4}}\left(77\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024\,z^{5/2}-256\,z^2+1152\,z^{3/2}-6624\,z-16\,380\sqrt{z}+e^{4\sqrt{z}}\left(1024\,z^{5/2}+256\,z^2+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.1152\,z^{3/2}+6624\,z-16\,380\sqrt{z}+12\,285\right)-12\,285\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\,z^3+3840\,z^2-6480\,z+12\,285\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\,z^3+3840\,z^2-6480\,z+12\,285\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab8h.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{15}{4};-z\right)=\frac{1}{524\,288\,z^{11/4}}\left(77\left(\sqrt{\pi}\left(4096\,z^3-3840\,z^2-6480\,z-12\,285\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\left(4\sqrt{z}\left(256\,z^2-288\,z-4095\right)\cos\left(2\sqrt{z}\right)+\left(256\,z^2-6624\,z+12\,285\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ab8i.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{17}{4};z\right)=$$
$$-\frac{1}{229\,376\sqrt{2}\,z^{11/4}}\left(39\left(2\sqrt{z}\left(4096z^3+1792z^2-40\,656z+31\,185\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3+5376z^2-104\,720z+51\,975\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(4096z^3+4864z^2+18\,480z+155\,925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab8j.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{17}{4};-z\right)=$$
$$\frac{1}{229\,376\sqrt{2}\,z^{11/4}}\left(39\left(2\sqrt{z}\left(4096z^3-1792z^2-40\,656z-31\,185\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-4096z^3+5376z^2+104\,720z+51\,975\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3-4864z^2+18\,480z-155\,925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab8k.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{19}{4};z\right)=\frac{1}{536\,870\,912z^{15/4}}$$
$$\left(1155e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384z^{7/2}-4096z^3+23\,552z^{5/2}-8960z^2+351\,936z^{3/2}+1\,664\,208z+3\,063\,060\sqrt{z}+\right.\right.\right.$$
$$e^{4\sqrt{z}}\left(16\,384z^{7/2}+4096z^3+23\,552z^{5/2}+8960z^2+351\,936z^{3/2}-1\,664\,208z+3\,063\,060\sqrt{z}-2\,297\,295\right)+$$
$$\left.\left.2\,297\,295\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4+81\,920z^3-207\,360z^2+786\,240z-2\,297\,295\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4+81\,920z^3-207\,360z^2+786\,240z-2\,297\,295\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab8l.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{19}{4};-z\right)=$$
$$\frac{1}{134\,217\,728z^{15/4}}\left(1155\left(\sqrt{\pi}\left(65\,536z^4-81\,920z^3-207\,360z^2-786\,240z-2\,297\,295\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\right.\right.$$
$$\sqrt[4]{z}\left(4\sqrt{z}\left(4096z^3-5888z^2+87\,984z-765\,765\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(4096z^3-8960z^2-1\,664\,208z+2\,297\,295\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ab8m.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{21}{4};z\right)=$$
$$-\frac{1}{22\,020\,096\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(65\,536z^4+49\,152z^3-354\,816z^2+9\,092\,160z-7\,702\,695\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(65\,536z^4+106\,496z^3+2\,365\,440z^2+24\,282\,720z-12\,837\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(-65\,536z^4-98\,304z^3+253\,440z^2+9\,313\,920z+38\,513\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab8n.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{21}{4};-z\right)=$$
$$\frac{1}{22\,020\,096\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(65\,536z^4-49\,152z^3-354\,816z^2-9\,092\,160z-7\,702\,695\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$3\left(-65\,536z^4+106\,496z^3-2\,365\,440z^2+24\,282\,720z+12\,837\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\left(65\,536z^4-98\,304z^3-253\,440z^2+9\,313\,920z-38\,513\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.ab8o.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{23}{4};z\right)=\frac{1}{34\,359\,738\,368\,z^{19/4}}$$
$$\left(4389\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144z^{9/2}-65\,536z^4+458\,752z^{7/2}-163\,840z^3-1\,198\,080z^{5/2}-31\,449\,600z^2-196\,035\,840z^{3/2}-\right.\right.\right.$$
$$\left.\left.588\,107\,520z-964\,863\,900\sqrt{z}\right)+e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4+458\,752z^{7/2}+163\,840z^3-1\,198\,080z^{5/2}+\right.\right.$$
$$\left.\left.31\,449\,600z^2-196\,035\,840z^{3/2}+588\,107\,520z-964\,863\,900\sqrt{z}+723\,647\,925\right)-723\,647\,925\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5+1\,638\,400z^4-5\,529\,600z^3+31\,449\,600z^2-183\,783\,600z+723\,647\,925\right)$$
$$\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left.\left.\left(1\,048\,576z^5+1\,638\,400z^4-5\,529\,600z^3+31\,449\,600z^2-183\,783\,600z+723\,647\,925\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab8p.01

$${}_1F_2\left(-\frac{1}{4};-\frac{1}{2},\frac{23}{4};-z\right)=\frac{1}{8\,589\,934\,592\,z^{19/4}}$$
$$\left(4389\left(\sqrt{\pi}\left(1\,048\,576z^5-1\,638\,400z^4-5\,529\,600z^3-31\,449\,600z^2-183\,783\,600z-723\,647\,925\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4-114\,688z^3-299\,520z^2+49\,008\,960z-241\,215\,975\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(65\,536z^4-163\,840z^3+31\,449\,600z^2-588\,107\,520z+723\,647\,925\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = -\frac{1}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.ab8q.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},-\frac{23}{4};z\right)=\frac{1}{1\,514\,205\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(48\,128z^3+739\,200z^2-2\,896\,740z+1\,514\,205\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2048z^3+147\,456z^2+877\,800z-1\,514\,205\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(13\,568z^2+305\,760z+1\,514\,205\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab8r.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},-\frac{23}{4};-z\right)=\frac{1}{1\,514\,205\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-48\,128z^3+739\,200z^2+2\,896\,740z+1\,514\,205\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2048z^3-147\,456z^2+877\,800z+1\,514\,205\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(13\,568z^2-305\,760z+1\,514\,205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab8s.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},-\frac{21}{4};z\right)=\frac{45\left(256z^2+3872z+4641\right)\cosh\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2+14\,880z+71\,505\right)\sinh\left(2\sqrt{z}\right)}{208\,845}$$

07.22.03.ab8t.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},-\frac{21}{4};-z\right)=\frac{45\left(256z^2-3872z+4641\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(256z^2-14\,880z+71\,505\right)\sin\left(2\sqrt{z}\right)}{208\,845}$$

07.22.03.ab8u.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},-\frac{19}{4};z\right)=\frac{1}{65\,835\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(1024z^3+29\,568z^2-124\,740z+65\,835\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(1536z^2+12\,320z-21\,945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(256z^2+11\,040z+65\,835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab8v.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},-\frac{19}{4};-z\right)=\frac{1}{65\,835\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-1024z^3+29\,568z^2+124\,740z+65\,835\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(1536z^2-12\,320z-21\,945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(256z^2-11\,040z+65\,835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab8w.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},-\frac{17}{4};z\right)=\frac{\left(256z^2+7200z+9945\right)\cosh\left(2\sqrt{z}\right)-32\sqrt{z}\left(64z+405\right)\sinh\left(2\sqrt{z}\right)}{9945}$$

07.22.03.ab8x.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},-\frac{17}{4};-z\right)=\frac{\left(256z^2-7200z+9945\right)\cos\left(2\sqrt{z}\right)+32\left(405-64z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)}{9945}$$

07.22.03.ab8y.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},-\frac{15}{4};z\right)=\frac{1}{3465\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(21\left(64z^2-308z+165\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(128z^2+1848z-3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+36z\left(48z+385\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab8z.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},-\frac{15}{4};-z\right)=\frac{1}{3465\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(21\left(64z^2+308z+165\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(128z^2-1848z-3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+36\left(385-48z\right)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab90.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},-\frac{13}{4};z\right)=\frac{1}{585}\left(\left(336z+585\right)\cosh\left(2\sqrt{z}\right)-4\sqrt{z}\left(16z+177\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ab91.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},-\frac{13}{4};-z\right)=\frac{1}{585}\left(\left(585-336z\right)\cos\left(2\sqrt{z}\right)+4\left(177-16z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ab92.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(64z^2-420z+231\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+28\left(33-16z\right)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(16z+231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab93.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(64z^2+420z+231\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-28\sqrt{z}\left(16z+33\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\left(231-16z\right)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab94.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},-\frac{9}{4};z\right)=\left(\frac{16z}{45}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{16}{15}\sqrt{z}\sinh\left(2\sqrt{z}\right)$$

07.22.03.ab95.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},-\frac{9}{4};-z\right)=\left(1-\frac{16z}{45}\right)\cos\left(2\sqrt{z}\right)+\frac{16}{15}\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.ab96.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},-\frac{7}{4};z\right)=\frac{\sqrt{2}\left(\left(21-36z\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\left(21-8z\right)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+84zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{21\sqrt[4]{z}}$$

07.22.03.ab97.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{1}{2}, -\frac{7}{4}; -z\right) = \frac{\sqrt{2}\left(3\,(12\,z+7)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(8\,z+21)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 84\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{21\sqrt[4]{z}} $$

07.22.03.ab98.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{1}{2}, -\frac{5}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - \frac{4}{5}\sqrt{z}\,\sinh\left(2\sqrt{z}\right) $$

07.22.03.ab99.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{1}{2}, -\frac{5}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + \frac{4}{5}\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.ab9a.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{1}{2}, -\frac{3}{4}; z\right) = \frac{\sqrt{2}\left((3-4\,z)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}} $$

07.22.03.ab9b.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{1}{2}, -\frac{3}{4}; -z\right) = \frac{\sqrt{2}\left((4\,z+3)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}} $$

07.22.03.ab9c.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{1}{2}, -\frac{1}{4}; z\right) = \cosh\left(2\sqrt{z}\right) $$

07.22.03.ab9d.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{1}{2}, -\frac{1}{4}; -z\right) = \cos\left(2\sqrt{z}\right) $$

07.22.03.ab9e.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{1}{2}, \frac{1}{4}; z\right) = \frac{\sqrt{2}\left((1-4\,z)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}} $$

07.22.03.ab9f.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{1}{2}, \frac{1}{4}; -z\right) = \frac{\sqrt{2}\left((4\,z+1)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}} $$

07.22.03.ab9g.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{1}{2}, \frac{3}{4}; z\right) = \frac{1}{2}\left(\sqrt{2\pi}\,\sqrt[4]{z}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{-2\sqrt{z}} + e^{2\sqrt{z}} - \sqrt{2\pi}\,\sqrt[4]{z}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right) $$

07.22.03.ab9h.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{1}{2}, \frac{3}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{\pi}\,\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) $$

07.22.03.ab9i.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{1}{2}, \frac{5}{4}; z\right) = \frac{\sqrt{2}\left((1-2\,z)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\,z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}} $$

07.22.03.ab9j.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{5}{4};-z\right)=\frac{\sqrt{2}\left((2z+1)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ab9k.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{7}{4};z\right)=\frac{1}{128z^{3/4}}\left(3e^{-2\sqrt{z}}\right.$$
$$\left.\left(4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}+1\right)+4\sqrt{z}-1\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+1)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+1)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab9l.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{7}{4};-z\right)=\frac{3}{32}\left(8\cos\left(2\sqrt{z}\right)+\frac{\sqrt{\pi}\,(16z-1)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)}{z^{3/4}}+\frac{2\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.ab9m.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{9}{4};z\right)=\frac{5\left(2(9-16z)\sqrt{z}\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3(16z+1)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,(16z+3)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{48\sqrt{2}\,z^{3/4}}$$

07.22.03.ab9n.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{9}{4};-z\right)=\frac{5\left(2\sqrt{z}\,(16z+9)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3(1-16z)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,(16z-3)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{48\sqrt{2}\,z^{3/4}}$$

07.22.03.ab9o.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{16384z^{7/4}}\left(21e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(64z^{3/2}-16z+20\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}+16z+20\sqrt{z}-15\right)+15\right)+e^{2\sqrt{z}}\right.\right.$$
$$\left.\left.\sqrt{2\pi}\left(256z^2+32z-15\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+32z-15\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab9p.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{4096z^{7/4}}\left(21\left(\sqrt{\pi}\left(256z^2-32z-15\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\,(16z-5)\cos\left(2\sqrt{z}\right)+(16z+15)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ab9q.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{13}{4};z\right)=\frac{1}{512\sqrt{2}\,z^{7/4}}$$
$$\left(3\left(2\sqrt{z}\left(-256z^2+128z+21\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(256z^2+96z-35\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(256z^2+64z-105\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab9r.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{13}{4};-z\right)=\frac{1}{512\sqrt{2}\,z^{7/4}}$$
$$\left(3\left(2\sqrt{z}\,\left(256z^2+128z-21\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-256z^2+96z+35\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(256z^2-64z-105\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab9s.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{1\,048\,576\,z^{11/4}}\left(77e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024z^{5/2}-256z^2+384z^{3/2}-288z-1260\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.384z^{3/2}+288z-1260\sqrt{z}+945\right)-945\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+768z^2-720z+945\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+768z^2-720z+945\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ab9t.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{15}{4};-z\right)=\frac{1}{262\,144\,z^{11/4}}\left(77\left(\sqrt{\pi}\left(4096z^3-768z^2-720z-945\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\left(4\sqrt{z}\left(256z^2-96z-315\right)\cos\left(2\sqrt{z}\right)+\left(256z^2-288z+945\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ab9u.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{17}{4};z\right)=$$
$$-\frac{1}{114\,688\sqrt{2}\,z^{11/4}}\left(39\left(2\sqrt{z}\,\left(4096z^3-1792z^2-3024z+2079\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3+1792z^2-7504z+3465\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(4096z^3+1280z^2-336z+10\,395\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab9v.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{17}{4};-z\right)=\frac{1}{114\,688\sqrt{2}\,z^{11/4}}$$
$$\left(39\left(2\sqrt{z}\,\left(4096z^3+1792z^2-3024z-2079\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-4096z^3+1792z^2+7504z+3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(4096z^3-1280z^2-336z-10\,395\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ab9w.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{19}{4};z\right)= \frac{1}{268\,435\,456\,z^{15/4}}\left(1155\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384\,z^{7/2}-4096\,z^3+7168\,z^{5/2}-4864\,z^2+1728\,z^{3/2}+83\,664\,z+180\,180\sqrt{z}+ e^{4\sqrt[4]{z}}\left(16\,384\,z^{7/2}+4096\,z^3+7168\,z^{5/2}+4864\,z^2+1728\,z^{3/2}-83\,664\,z+180\,180\sqrt{z}-135\,135\right)+135\,135\right)+ e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4+16\,384\,z^3-23\,040\,z^2+60\,480\,z-135\,135\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)- e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4+16\,384\,z^3-23\,040\,z^2+60\,480\,z-135\,135\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ab9x.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{19}{4};-z\right)= \frac{1}{67\,108\,864\,z^{15/4}}\left(1155\left(\sqrt{\pi}\left(65\,536\,z^4-16\,384\,z^3-23\,040\,z^2-60\,480\,z-135\,135\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(4096\,z^3-1792\,z^2+432\,z-45\,045\right)\cos\left(2\sqrt{z}\right)+\left(4096\,z^3-4864\,z^2-83\,664\,z+135\,135\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.ab9y.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{21}{4};z\right)= -\frac{1}{11\,010\,048\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(65\,536\,z^4-24\,576\,z^3-64\,512\,z^2+510\,048\,z-405\,405\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 3\left(65\,536\,z^4+32\,768\,z^3+10\,752\,z^2+1\,330\,560\,z-675\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ 2\sqrt{z}\left(-65\,536\,z^4-24\,576\,z^3+18\,432\,z^2+332\,640\,z+2\,027\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ab9z.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{21}{4};-z\right)= \frac{1}{11\,010\,048\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(65\,536\,z^4+24\,576\,z^3-64\,512\,z^2-510\,048\,z-405\,405\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3 \left(-65\,536\,z^4+32\,768\,z^3-10\,752\,z^2+1\,330\,560\,z+675\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ 2\sqrt{z}\left(65\,536\,z^4-24\,576\,z^3-18\,432\,z^2+332\,640\,z-2\,027\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aba0.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{23}{4};z\right)= \frac{1}{17\,179\,869\,184\,z^{19/4}}\left(4389\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144\,z^{9/2}-65\,536\,z^4+131\,072\,z^{7/2}-81\,920\,z^3-30\,720\,z^{5/2}-222\,720\,z^2- 6\,589\,440\,z^{3/2}-25\,945\,920\,z-45\,945\,900\sqrt{z}+e^{4\sqrt[4]{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4+131\,072\,z^{7/2}+81\,920\,z^3- 30\,720\,z^{5/2}+222\,720\,z^2-6\,589\,440\,z^{3/2}+25\,945\,920\,z-45\,945\,900\sqrt{z}+34\,459\,425\right)-34\,459\,425\right)+ e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5+327\,680\,z^4-614\,400\,z^3+2\,419\,200\,z^2-10\,810\,800\,z+34\,459\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)- e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5+327\,680\,z^4-614\,400\,z^3+2\,419\,200\,z^2-10\,810\,800\,z+34\,459\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aba1.01

$${}_1F_2\left(-\frac{1}{4};\frac{1}{2},\frac{23}{4};-z\right)=$$
$$\frac{1}{4\,294\,967\,296\,z^{19/4}}\left(4389\left(\sqrt{\pi}\,\left(1\,048\,576\,z^5-327\,680\,z^4-614\,400\,z^3-2\,419\,200\,z^2-10\,810\,800\,z-34\,459\,425\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(65\,536\,z^4-32\,768\,z^3-7680\,z^2+1\,647\,360\,z-11\,486\,475\right)\cos\left(2\sqrt{z}\right)+$$
$$\left.\left.\left(65\,536\,z^4-81\,920\,z^3+222\,720\,z^2-25\,945\,920\,z+34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = -\frac{1}{4}$, $b_{1.} = \frac{3}{2}$

07.22.03.aba2.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{23}{4};z\right)=$$
$$-\frac{1}{1\,514\,205\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(2048\,z^3+193\,536\,z^2+2\,984\,520\,z-1\,514\,205\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(15\,616\,z^2+426\,720\,z+1\,514\,205\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+8\,z\left(256\,z^2+30\,240\,z+113\,085\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aba3.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{1\,514\,205\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(2048\,z^3-193\,536\,z^2+2\,984\,520\,z+1\,514\,205\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(15\,616\,z^2-426\,720\,z+1\,514\,205\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-8\,z\left(256\,z^2-30\,240\,z+113\,085\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aba4.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{21}{4};z\right)=\frac{5\left(2816\,z^2+61\,152\,z+100\,947\right)\sinh\left(2\sqrt{z}\right)-4\sqrt{z}\,\left(256\,z^2+21\,920\,z+147\,945\right)\cosh\left(2\sqrt{z}\right)}{417\,690\sqrt{z}}$$

07.22.03.aba5.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{21}{4};-z\right)=\frac{5\left(2816\,z^2-61\,152\,z+100\,947\right)\sin\left(2\sqrt{z}\right)-4\sqrt{z}\,\left(256\,z^2-21\,920\,z+147\,945\right)\cos\left(2\sqrt{z}\right)}{417\,690\sqrt{z}}$$

07.22.03.aba6.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{65\,835\sqrt[4]{z}}\left(\sqrt{2}\,\left(-21\left(256\,z^2+6160\,z-3135\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(256\,z^2+14\,112\,z+65\,835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.48\,z\left(128\,z+315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aba7.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{19}{4};-z\right)= $$

$$ -\frac{1}{65\,835\sqrt[4]{z}}\left(\sqrt{2}\left(21\left(256z^2-6160z-3135\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(256z^2-14\,112z+65\,835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right. $$

$$ \left.\left.48\left(315-128z\right)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aba8.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{17}{4};z\right)=\frac{\left(256z^2+11\,040z+21\,945\right)\sinh\left(2\sqrt{z}\right)-320\sqrt{z}\,\left(8z+75\right)\cosh\left(2\sqrt{z}\right)}{19\,890\sqrt{z}} $$

07.22.03.aba9.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{17}{4};-z\right)=\frac{320\sqrt{z}\,\left(8z-75\right)\cos\left(2\sqrt{z}\right)+\left(256z^2-11\,040z+21\,945\right)\sin\left(2\sqrt{z}\right)}{19\,890\sqrt{z}} $$

07.22.03.abaa.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{15}{4};z\right)=\frac{1}{3465\sqrt[4]{z}} $$

$$ \left(\sqrt{2}\left(\left(-128z^2-6776z+3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(496z+3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+8\left(75-16z\right)zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abab.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{15}{4};-z\right)=\frac{1}{3465\sqrt[4]{z}} $$

$$ \left(\sqrt{2}\left(\left(-128z^2+6776z+3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(496z-3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(16z+75\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abac.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{13}{4};z\right)=\frac{3\left(144z+385\right)\sinh\left(2\sqrt{z}\right)-4\sqrt{z}\,\left(16z+285\right)\cosh\left(2\sqrt{z}\right)}{1170\sqrt{z}} $$

07.22.03.abad.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{13}{4};-z\right)=\frac{4\sqrt{z}\,\left(16z-285\right)\cos\left(2\sqrt{z}\right)+3\left(385-144z\right)\sin\left(2\sqrt{z}\right)}{1170\sqrt{z}} $$

07.22.03.abae.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{11}{4};z\right)=\frac{\sqrt{2}\left(-7\left(64z-33\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(16z+231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+144zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{231\sqrt[4]{z}} $$

07.22.03.abaf.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{11}{4};-z\right)=\frac{\sqrt{2}\left(7\left(64z+33\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(16z-231\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+144zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{231\sqrt[4]{z}} $$

07.22.03.abag.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{9}{4};z\right)=\frac{(16z+77)\sinh\left(2\sqrt{z}\right)-64\sqrt{z}\cosh\left(2\sqrt{z}\right)}{90\sqrt{z}}$$

07.22.03.abah.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{9}{4};-z\right)=\frac{(77-16z)\sin\left(2\sqrt{z}\right)-64\sqrt{z}\cos\left(2\sqrt{z}\right)}{90\sqrt{z}}$$

07.22.03.abai.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{7}{4};z\right)=\frac{\sqrt{2}\left((21-40z)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+84\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+24zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{21\sqrt[4]{z}}$$

07.22.03.abaj.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{7}{4};-z\right)=\frac{\sqrt{2}\left((40z+21)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-84\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+24zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{21\sqrt[4]{z}}$$

07.22.03.abak.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{5}{4};z\right)=\frac{7\sinh\left(2\sqrt{z}\right)}{10\sqrt{z}}-\frac{2}{5}\cosh\left(2\sqrt{z}\right)$$

07.22.03.abal.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{5}{4};-z\right)=\frac{7\sin\left(2\sqrt{z}\right)}{10\sqrt{z}}-\frac{2}{5}\cos\left(2\sqrt{z}\right)$$

07.22.03.abam.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{3}{4};z\right)=\frac{\sqrt{2}\left((9-16z)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+36\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+16zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{9\sqrt[4]{z}}$$

07.22.03.aban.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{3}{4};-z\right)=\frac{\sqrt{2}\left((16z+9)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-36\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+16zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{9\sqrt[4]{z}}$$

07.22.03.abao.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{1}{4};z\right)=\frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.abap.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},-\frac{1}{4};-z\right)=\frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.abaq.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{1}{4};z\right)=\frac{\sqrt{2}\left((3-8z)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+8zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.abar.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{1}{4};-z\right)=\frac{\sqrt{2}\left((8z+3)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+8zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.abas.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{12\sqrt{z}}\left(e^{-2\sqrt{z}}\left(4e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{4\sqrt{z}}-4e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)+4e^{4\sqrt{z}}\sqrt{z}+4\sqrt{z}-1\right)\right)$$

07.22.03.abat.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{3}{4};-z\right)=\frac{1}{6}\left(4\cos\left(2\sqrt{z}\right)+8\sqrt{\pi}\sqrt[4]{z}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\frac{\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.abau.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{5}{4};z\right)=\frac{\sqrt{2}\left((3-4z)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+6\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.abav.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{5}{4};-z\right)=\frac{\sqrt{2}\left((4z+3)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-6\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.abaw.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{7}{4};z\right)=\frac{1}{64z^{3/4}}\left(e^{-2\sqrt{z}}\right.$$
$$\left.\left(4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}+1\right)+4\sqrt{z}-1\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-3)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-3)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abax.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{7}{4};-z\right)=\frac{1}{16}\left(8\cos\left(2\sqrt{z}\right)+\frac{\sqrt{\pi}\,(16z+3)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)}{z^{3/4}}+\frac{2\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.abay.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{9}{4};z\right)=$$
$$-\frac{1}{72\sqrt{2}\,z^{3/4}}\left(5\left(2\sqrt{z}\,(16z-15)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3(1-16z)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2(3-16z)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abaz.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{9}{4};-z\right)=\frac{5\left(2\sqrt{z}\,(16z+15)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3(16z+1)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,(16z+3)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{72\sqrt{2}\,z^{3/4}}$$

07.22.03.abb0.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{8192\,z^{7/4}}\left(7\,e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)(3-16z)^2-e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)(3-16z)^2+4\sqrt[4]{z}\right.\right.$$
$$\left.\left.\left(64z^{3/2}-16z-12\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}+16z-12\sqrt{z}+9\right)-9\right)\right)\right)$$

07.22.03.abb1.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{11}{4};-z\right)=\frac{7\left(\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)(16z+3)^2+2\sqrt[4]{z}\left(4\sqrt{z}\,(16z+3)\cos\left(2\sqrt{z}\right)+(16z-9)\sin\left(2\sqrt{z}\right)\right)\right)}{2048\,z^{7/4}}$$

07.22.03.abb2.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{13}{4};z\right)=\frac{1}{256\sqrt{2}\,z^{7/4}}$$
$$\left(\left(-2\sqrt{z}\left(256z^2-288z+9\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(256z^2-64z+15\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(256z^2-96z+45\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abb3.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{13}{4};-z\right)=\frac{1}{256\sqrt{2}\,z^{7/4}}$$
$$\left(\left(2\sqrt{z}\left(256z^2+288z+9\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(256z^2+64z+15\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(256z^2+96z+45\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abb4.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{15}{4};z\right)=\frac{1}{1\,572\,864\,z^{11/4}}\left(77\,e^{-2\sqrt{z}}\right.$$
$$\left(4\sqrt[4]{z}\left(1024z^{5/2}-256z^2-384z^{3/2}-96z+420\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2-384z^{3/2}+96z+420\sqrt{z}-315\right)+\right.\right.$$
$$\left.\left.315\right)+e^{2\sqrt{z}}\,\sqrt{2\pi}\left(4096z^3-2304z^2+432z-315\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\right.$$
$$\left.\left.e^{2\sqrt{z}}\,\sqrt{2\pi}\left(4096z^3-2304z^2+432z-315\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abb5.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{15}{4};-z\right)=\frac{1}{393\,216\,z^{11/4}}\left(77\left(\sqrt{\pi}\left(4096z^3+2304z^2+432z+315\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\left(4\sqrt{z}\left(256z^2+96z+105\right)\cos\left(2\sqrt{z}\right)+\left(256z^2-96z-315\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.abb6.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{17}{4};z\right)=$$
$$-\frac{1}{57\,344\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\,\left(4096z^3-5376z^2+1008z-567\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3-1792z^2+2352z-945\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-4096z^3+2304z^2-1008z+2835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abb7.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{17}{4};-z\right)=\frac{1}{57\,344\sqrt{2}\,z^{11/4}}$$
$$\left(13\left(2\sqrt{z}\,\left(4096z^3+5376z^2+1008z+567\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3+1792z^2+2352z+945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(4096z^3+2304z^2+1008z+2835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abb8.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{19}{4};z\right)=$$
$$\frac{1}{134\,217\,728\,z^{15/4}}\left(385\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(16\,384z^{7/2}-4096z^3-9216z^{5/2}-768z^2+7872z^{3/2}-13\,104z-41\,580\sqrt{z}\,+\right.\right.\right.$$
$$\left.e^{4\sqrt{z}}\left(16\,384z^{7/2}+4096z^3-9216z^{5/2}+768z^2+7872z^{3/2}+13\,104z-41\,580\sqrt{z}\,+31\,185\right)-31\,185\right)+$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536z^4-49\,152z^3+13\,824z^2-20\,160z+31\,185\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.\left.e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536z^4-49\,152z^3+13\,824z^2-20\,160z+31\,185\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abb9.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{19}{4};-z\right)=\frac{1}{33\,554\,432\,z^{15/4}}\left(385\left(\sqrt{\pi}\,\left(65\,536z^4+49\,152z^3+13\,824z^2+20\,160z+31\,185\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(4096z^3+2304z^2+1968z+10\,395\right)\cos\left(2\sqrt{z}\right)+\left(4096z^3-768z^2+13\,104z-31\,185\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.abba.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{21}{4};z\right)=-\frac{1}{16\,515\,072\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\,\left(65\,536z^4-98\,304z^3+32\,256z^2-112\,896z+81\,081\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(65\,536z^4-40\,960z^3+43\,008z^2-284\,256z+135\,135\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\,\left(65\,536z^4-49\,152z^3+23\,040z^2+12\,096z+405\,405\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abbb.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{21}{4};-z\right)=\frac{1}{16\,515\,072\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(65\,536z^4+98\,304z^3+32\,256z^2+112\,896z+81\,081\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(65\,536z^4+40\,960z^3+43\,008z^2+284\,256z+135\,135\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+49\,152z^3+23\,040z^2-12\,096z+405\,405\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abbc.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{23}{4};z\right)=$$
$$\frac{1}{8\,589\,934\,592\,z^{19/4}}\left(1463e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144z^{9/2}-65\,536z^4-196\,608z^{7/2}+153\,600z^{5/2}-207\,360z^2+380\,160z^{3/2}+\right.\right.\right.$$
$$3\,991\,680z+8\,108\,100\sqrt{z}\left.+e^{4\sqrt{z}}\left(262\,144z^{9/2}+65\,536z^4-196\,608z^{7/2}+153\,600z^{5/2}+\right.\right.$$
$$\left.\left.207\,360z^2+380\,160z^{3/2}-3\,991\,680z+8\,108\,100\sqrt{z}-6\,081\,075\right)+6\,081\,075\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-983\,040z^4+368\,640z^3-806\,400z^2+2\,494\,800z-6\,081\,075\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576z^5-983\,040z^4+368\,640z^3-806\,400z^2+2\,494\,800z-6\,081\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abbd.01

$${}_1F_2\left(-\frac{1}{4};\frac{3}{2},\frac{23}{4};-z\right)=$$
$$\frac{1}{2\,147\,483\,648\,z^{19/4}}\left(1463\left(\sqrt{\pi}\left(1\,048\,576z^5+983\,040z^4+368\,640z^3+806\,400z^2+2\,494\,800z+6\,081\,075\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4+49\,152z^3+38\,400z^2-95\,040z+2\,027\,025\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(65\,536z^4+207\,360z^2+3\,991\,680z-6\,081\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = -\frac{1}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.abbe.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{504\,735\sqrt[4]{z}}\left(\sqrt{2}\left(\left(18\,176z^2+152\,928z+504\,735\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\left(256z^2+40\,096z+468\,645\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(19\,712z^2+1\,422\,240z+7\,210\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abbf.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{504\,735\sqrt[4]{z}}\left(\sqrt{2}\left(\left(18\,176z^2-152\,928z+504\,735\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(256z^2-40\,096z+468\,645\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-19\,712z^2+1\,422\,240z-7\,210\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abbg.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{21}{4};z\right)=\frac{1}{556\,920z^{3/2}}$$
$$\left(2\sqrt{z}\left(17\,152z^2+566\,880z+1\,946\,835\right)\cosh\left(2\sqrt{z}\right)-\left(2048z^3+261\,120z^2+2\,884\,200z+1\,946\,835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abbh.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{21}{4};-z\right)=\frac{1}{556\,920z^{3/2}}$$
$$\left(\left(-2048z^3+261\,120z^2-2\,884\,200z+1\,946\,835\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(17\,152z^2-566\,880z+1\,946\,835\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.abbi.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{19}{4};z\right)=\frac{1}{21\,945\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256z^2-3648z+21\,945\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.16\sqrt{z}\left(448z+6945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(256z^2+48\,000z+248\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abbj.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{19}{4};-z\right)=\frac{1}{21\,945\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256z^2+3648z+21\,945\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.16\sqrt{z}\left(448z-6945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-256z^2+48\,000z-248\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abbk.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{17}{4};z\right)=\frac{2\sqrt{z}\left(256z^2+17\,440z+72\,105\right)\cosh\left(2\sqrt{z}\right)-5\left(1280z^2+20\,064z+14\,421\right)\sinh\left(2\sqrt{z}\right)}{26\,520z^{3/2}}$$

07.22.03.abbl.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{17}{4};-z\right)=\frac{5\left(1280z^2-20\,064z+14\,421\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(256z^2-17\,440z+72\,105\right)\cos\left(2\sqrt{z}\right)}{26\,520z^{3/2}}$$

07.22.03.abbm.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{1155\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1155-688z\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\left(16z+417\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+3\left(656z+3315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abbn.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{15}{4};-z\right)=$$

$$\frac{1}{1155\sqrt[4]{z}}\left(\sqrt{2}\left((688z+1155)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\,(16z-417)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+3(656z-3315)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abbo.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{13}{4};z\right)=\frac{10\sqrt{z}\,(112z+627)\cosh\left(2\sqrt{z}\right)-\left(128z^2+3960z+3135\right)\sinh\left(2\sqrt{z}\right)}{1560\,z^{3/2}}$$

07.22.03.abbp.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{13}{4};-z\right)=\frac{10\sqrt{z}\,(112z-627)\cos\left(2\sqrt{z}\right)+\left(128z^2-3960z+3135\right)\sin\left(2\sqrt{z}\right)}{1560\,z^{3/2}}$$

07.22.03.abbq.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{11}{4};z\right)=\frac{\sqrt{2}\left((539-528z)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-496\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+(752z+3315)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{539\sqrt[4]{z}}$$

07.22.03.abbr.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{11}{4};-z\right)=\frac{\sqrt{2}\left(11(48z+49)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+496\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+(752z-3315)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{539\sqrt[4]{z}}$$

07.22.03.abbs.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{9}{4};z\right)=\frac{2\sqrt{z}\,(16z+165)\cosh\left(2\sqrt{z}\right)-11(16z+15)\sinh\left(2\sqrt{z}\right)}{120\,z^{3/2}}$$

07.22.03.abbt.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{9}{4};-z\right)=\frac{2\sqrt{z}\,(16z-165)\cos\left(2\sqrt{z}\right)+11(15-16z)\sin\left(2\sqrt{z}\right)}{120\,z^{3/2}}$$

07.22.03.abbu.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{7}{4};z\right)=\frac{\sqrt{2}\left((49-64z)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+40\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+(64z+195)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{49\sqrt[4]{z}}$$

07.22.03.abbv.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{7}{4};-z\right)=\frac{\sqrt{2}\left((64z+49)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-40\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+(64z-195)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{49\sqrt[4]{z}}$$

07.22.03.abbw.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{5}{4};z\right)=\frac{66\sqrt{z}\,\cosh\left(2\sqrt{z}\right)-3(8z+11)\sinh\left(2\sqrt{z}\right)}{40\,z^{3/2}}$$

07.22.03.abbx.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{5}{4};-z\right)=\frac{3(11-8z)\sin\left(2\sqrt{z}\right)-66\sqrt{z}\,\cos\left(2\sqrt{z}\right)}{40\,z^{3/2}}$$

07.22.03.abby.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{3}{4};z\right)=\frac{\sqrt{2}\left((21-32z)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+48\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+(32z+45)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{21\sqrt[4]{z}}$$

07.22.03.abbz.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{3}{4};-z\right)=\frac{\sqrt{2}\left((32z+21)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-48\sqrt{z}\;J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+(32z-45)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{21\sqrt[4]{z}}$$

07.22.03.abc0.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{1}{4};z\right)=\frac{3\cosh\left(2\sqrt{z}\right)}{4z}-\frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}}$$

07.22.03.abc1.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},-\frac{1}{4};-z\right)=\frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}}$$

07.22.03.abc2.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{1}{4};z\right)=\frac{\sqrt{2}\left((7-16z)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+24\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+(16z+5)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{7\sqrt[4]{z}}$$

07.22.03.abc3.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{1}{4};-z\right)=\frac{\sqrt{2}\left((16z+7)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-24\sqrt{z}\;J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+(16z-5)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{7\sqrt[4]{z}}$$

07.22.03.abc4.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{3}{4};z\right)=$$

$$\frac{1}{112z^{3/2}}\left(e^{-2\sqrt{z}}\left(32e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-32e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+32e^{4\sqrt{z}}z^{3/2}+32z^{3/2}+\right.\right.$$
$$\left.\left.8e^{4\sqrt{z}}z-8z+6e^{4\sqrt{z}}\sqrt{z}+6\sqrt{z}-3e^{4\sqrt{z}}+3\right)\right)$$

07.22.03.abc5.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{3}{4};-z\right)=\frac{64\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+2(16z-3)\cos\left(2\sqrt{z}\right)\sqrt{z}+(8z+3)\sin\left(2\sqrt{z}\right)}{56z^{3/2}}$$

07.22.03.abc6.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{5}{4};z\right)=\frac{\sqrt{2}\left((7-8z)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+(8z-1)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{7\sqrt[4]{z}}$$

07.22.03.abc7.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{5}{4};-z\right)=\frac{\sqrt{2}\left((8z+7)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\;J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+(8z+1)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{7\sqrt[4]{z}}$$

07.22.03.abc8.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{7}{4};z\right)=$$
$$\frac{1}{224\,z^{3/2}}\left(3\,e^{-2\sqrt{z}}\left(2\left(8\,z^{3/2}-2\,z-2\sqrt{z}+e^{4\sqrt{z}}\left(8\,z^{3/2}+2\,z-2\sqrt{z}+1\right)-1\right)+e^{2\sqrt{z}}\sqrt{2\,\pi}\;z^{3/4}\,(16\,z-7)\,\mathrm{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\,\pi}\;z^{3/4}\,(16\,z-7)\,\mathrm{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abc9.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{7}{4};-z\right)=\frac{3\left(2\sqrt{z}\;(4\,z+1)\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\;z^{3/4}\,(16\,z+7)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+(2\,z-1)\sin\left(2\sqrt{z}\right)\right)}{56\,z^{3/2}}$$

07.22.03.abca.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{9}{4};z\right)=$$
$$-\frac{1}{84\sqrt{2}\;z^{3/4}}\left(5\left(2\sqrt{z}\;(16\,z-21)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\,(7-16\,z)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\,(9-16\,z)\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abcb.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{9}{4};-z\right)=\frac{5\left(2\sqrt{z}\;(16\,z+21)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\,(16\,z+7)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\;(16\,z+9)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{84\sqrt{2}\;z^{3/4}}$$

07.22.03.abcc.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{4096\,z^{7/4}}\left(3\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(64\,z^{3/2}-16\,z-44\sqrt{z}+e^{4\sqrt{z}}\left(64\,z^{3/2}+16\,z-44\sqrt{z}+1\right)-1\right)+e^{2\sqrt{z}}\sqrt{2\,\pi}\right.\right.$$
$$\left.\left.(256\,z^2-224\,z-63)\,\mathrm{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\,\pi}\;(256\,z^2-224\,z-63)\,\mathrm{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abcd.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{1024\,z^{7/4}}\left(3\left(\sqrt{\pi}\;(256\,z^2+224\,z-63)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\;(16\,z+11)\cos\left(2\sqrt{z}\right)+(16\,z-1)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.abce.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{13}{4};z\right)=-\frac{1}{896\sqrt{2}\;z^{7/4}}\left(3\left(2\sqrt{z}\;\left(256\,z^2-448\,z-21\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.3\left(-256\,z^2+224\,z+35\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\;\left(-256\,z^2+256\,z+105\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abcf.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{13}{4};-z\right)=\frac{1}{896\sqrt{2}\,z^{7/4}}\left(3\left(2\sqrt{z}\,\left(256z^2+448z-21\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(256z^2+224z-35\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(256z^2+256z-105\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abcg.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{15}{4};z\right)=\frac{1}{262\,144\,z^{11/4}}\left(11\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(1024z^{5/2}-256z^2-1152z^{3/2}+96z-588\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2-1152z^{3/2}-96z-588\sqrt{z}+441\right)-441\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-5376z^2-3024z+441\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-5376z^2-3024z+441\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abch.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{15}{4};-z\right)=\frac{1}{65\,536\,z^{11/4}}\left(11\left(\sqrt{\pi}\,\left(4096z^3+5376z^2-3024z-441\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(256z^2+288z-147\right)\cos\left(2\sqrt{z}\right)+\left(256z^2+96z+441\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abci.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{17}{4};z\right)=-\frac{1}{200\,704\sqrt{2}\,z^{11/4}}\left(39\left(2\sqrt{z}\,\left(4096z^3-8960z^2-1680z+567\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3-5376z^2-3472z+945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-4096z^3+5888z^2+4368z-2835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abcj.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{17}{4};-z\right)=\frac{1}{200\,704\sqrt{2}\,z^{11/4}}\left(39\left(2\sqrt{z}\,\left(4096z^3+8960z^2-1680z-567\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3+5376z^2-3472z-945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4096z^3+5888z^2-4368z-2835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abck.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{19}{4};z\right)=$$
$$\frac{1}{67\,108\,864\,z^{15/4}}\left(165\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384\,z^{7/2}-4096\,z^3-25\,600\,z^{5/2}+3328\,z^2-22\,848\,z^{3/2}-2352\,z+32\,340\sqrt{z}+\right.\right.\right.$$
$$\left.\left.e^{4\sqrt{z}}\left(16\,384\,z^{7/2}+4096\,z^3-25\,600\,z^{5/2}-3328\,z^2-22\,848\,z^{3/2}+2352\,z+32\,340\sqrt{z}-24\,255\right)+24\,255\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-114\,688\,z^3-96\,768\,z^2+28\,224\,z-24\,255\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-114\,688\,z^3-96\,768\,z^2+28\,224\,z-24\,255\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abcl.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{19}{4};-z\right)=\frac{1}{16\,777\,216\,z^{15/4}}\left(165\left(\sqrt{\pi}\left(65\,536\,z^4+114\,688\,z^3-96\,768\,z^2-28\,224\,z-24\,255\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.$$
$$\left.2\sqrt[4]{z}\left(4\sqrt{z}\left(4096\,z^3+6400\,z^2-5712\,z-8085\right)\cos\left(2\sqrt{z}\right)+\left(4096\,z^3+3328\,z^2+2352\,z+24\,255\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abcm.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{21}{4};z\right)=-\frac{1}{19\,267\,584\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(65\,536\,z^4-172\,032\,z^3-64\,512\,z^2+86\,688\,z-51\,597\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$3\left(-65\,536\,z^4+114\,688\,z^3+118\,272\,z^2-205\,632\,z+85\,995\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\left(-65\,536\,z^4+122\,880\,z^3+129\,024\,z^2-66\,528\,z+257\,985\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.abcn.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{21}{4};-z\right)=\frac{1}{19\,267\,584\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(65\,536\,z^4+172\,032\,z^3-64\,512\,z^2-86\,688\,z-51\,597\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$3\left(-65\,536\,z^4-114\,688\,z^3+118\,272\,z^2+205\,632\,z+85\,995\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\left(65\,536\,z^4+122\,880\,z^3-129\,024\,z^2-66\,528\,z-257\,985\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.abco.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{23}{4};z\right)=$$
$$\frac{1}{4\,294\,967\,296\,z^{19/4}}\left(627\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144\,z^{9/2}-65\,536\,z^4-524\,288\,z^{7/2}+81\,920\,z^3-645\,120\,z^{5/2}+53\,760\,z^2+\right.\right.\right.$$
$$591\,360\,z^{3/2}-1\,552\,320\,z-4\,365\,900\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-524\,288\,z^{7/2}-81\,920\,z^3-\right.$$
$$\left.\left.645\,120\,z^{5/2}-53\,760\,z^2+591\,360\,z^{3/2}+1\,552\,320\,z-4\,365\,900\sqrt{z}+3\,274\,425\right)-3\,274\,425\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-2\,293\,760\,z^4-2\,580\,480\,z^3+1\,128\,960\,z^2-1\,940\,400\,z+3\,274\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-2\,293\,760\,z^4-2\,580\,480\,z^3+1\,128\,960\,z^2-1\,940\,400\,z+3\,274\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abcp.01

$${}_1F_2\left(-\frac{1}{4};\frac{5}{2},\frac{23}{4};-z\right)=$$
$$\frac{1}{1\,073\,741\,824\,z^{19/4}}\left(627\left(\sqrt{\pi}\,\left(1\,048\,576\,z^5+2\,293\,760\,z^4-2\,580\,480\,z^3-1\,128\,960\,z^2-1\,940\,400\,z-3\,274\,425\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(65\,536\,z^4+131\,072\,z^3-161\,280\,z^2-147\,840\,z-1\,091\,475\right)\cos\left(2\sqrt{z}\right)+$$
$$\left.\left.\left(65\,536\,z^4+81\,920\,z^3-53\,760\,z^2-1\,552\,320\,z+3\,274\,425\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1=-\frac{1}{4}$, $b_{1.}=\frac{7}{2}$

07.22.03.abcq.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{23}{4};z\right)=$$
$$-\frac{1}{201\,894\sqrt{2}\,z^{5/4}}\left(\left(8z\left(256z^2+100\,320z+1\,247\,349\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(22\,784z^2+1\,557\,408z+12\,978\,225\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(2048z^3+135\,168z^2+11\,536\,200z+64\,891\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abcr.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{23}{4};-z\right)=\frac{1}{201\,894\sqrt{2}\,z^{5/4}}$$
$$\left(\left(-8z\left(256z^2-100\,320z+1\,247\,349\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(22\,784z^2-1\,557\,408z+12\,978\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(2048z^3-135\,168z^2+11\,536\,200z-64\,891\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abcs.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{21}{4};z\right)=\frac{1}{445\,536\,z^{5/2}}\left(3\left(27\,648z^3+1\,398\,400z^2+9\,675\,180z+5\,486\,535\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\,\left(2048z^3+385\,536z^2+7\,079\,400z+16\,459\,605\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.abct.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{21}{4};-z\right)=\frac{1}{445\,536\,z^{5/2}}\left(2\sqrt{z}\,\left(2048z^3-385\,536z^2+7\,079\,400z-16\,459\,605\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.3\left(-27\,648z^3+1\,398\,400z^2-9\,675\,180z+5\,486\,535\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abcu.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{96\,558\sqrt{2}\,z^{5/4}}\left(\left(-96\,z\,(2888\,z+34\,039)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(2816\,z^2+445\,056\,z+4\,326\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.9\left(9216\,z^2-353\,600\,z-2\,403\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abcv.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{96\,558\sqrt{2}\,z^{5/4}}\left(\left(96\,z\,(2888\,z-34\,039)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(2816\,z^2-445\,056\,z+4\,326\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.9\left(9216\,z^2+353\,600\,z-2\,403\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abcw.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{21\,216\,z^{5/2}}\left(\left(1024\,z^3+109\,440\,z^2+917\,700\,z+530\,955\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(7936\,z^2+209\,760\,z+530\,955\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.abcx.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{21\,216\,z^{5/2}}\left(\left(-1024\,z^3+109\,440\,z^2-917\,700\,z+530\,955\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(7936\,z^2-209\,760\,z+530\,955\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.abcy.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{15}{4};z\right)=\frac{1}{5082\sqrt{2}\,z^{5/4}}$$
$$\left(\left(-8\,z\,(1456\,z+13\,647)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+36\sqrt{z}\,\left(1424\,z+16\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+3\left(2944\,z^2-26\,520\,z-248\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abcz.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{15}{4};-z\right)=\frac{1}{5082\sqrt{2}\,z^{5/4}}$$
$$\left(\left(8\,z\,(1456\,z-13\,647)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+36\,(16\,575-1424\,z)\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+3\left(2944\,z^2+26\,520\,z-248\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abd0.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{13}{4};z\right)=\frac{15\left(192z^2+2204z+1311\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(128z^2+6840z+19\,665\right)\cosh\left(2\sqrt{z}\right)}{1248z^{5/2}}$$

07.22.03.abd1.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{13}{4};-z\right)=\frac{15\left(192z^2-2204z+1311\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(128z^2-6840z+19\,665\right)\cos\left(2\sqrt{z}\right)}{1248z^{5/2}}$$

07.22.03.abd2.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{11}{4};z\right)=-\frac{1}{11\,858\sqrt{2}\,z^{5/4}}\left(5\left(1024z(5z+28)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.4\sqrt{z}\,(3152z+41\,769)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-5120z^2+10\,608z+208\,845\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abd3.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{11}{4};-z\right)=\frac{1}{11\,858\sqrt{2}\,z^{5/4}}$$
$$\left(5\left(1024z(5z-28)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(3152z-41\,769)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(5120z^2+10\,608z-208\,845\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abd4.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{9}{4};z\right)=\frac{\left(64z^2+1380z+855\right)\sinh\left(2\sqrt{z}\right)-30\sqrt{z}\,(16z+57)\cosh\left(2\sqrt{z}\right)}{96z^{5/2}}$$

07.22.03.abd5.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{9}{4};-z\right)=\frac{30\sqrt{z}\,(16z-57)\cos\left(2\sqrt{z}\right)+\left(64z^2-1380z+855\right)\sin\left(2\sqrt{z}\right)}{96z^{5/2}}$$

07.22.03.abd6.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{7}{4};z\right)=-\frac{1}{1078\sqrt{2}\,z^{5/4}}$$
$$\left(5\left(8z(64z+145)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,(64z+663)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-512z^2-312z+9945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abd7.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{7}{4};-z\right)=\frac{1}{1078\sqrt{2}\,z^{5/4}}$$
$$\left(5\left(8z(64z-145)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12(663-64z)\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(512z^2-312z-9945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abd8.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{5}{4};z\right)=-\frac{3\left(2\sqrt{z}\,(8z+45)\cosh\left(2\sqrt{z}\right)-(68z+45)\sinh\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.abd9.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{5}{4};-z\right)=\frac{3\left(2\sqrt{z}\ (8z-45)\cos\left(2\sqrt{z}\right)+(45-68z)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.abda.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{3}{4};z\right)=$$

$$-\frac{1}{462\sqrt{2}\ z^{5/4}}\left(5\left(32z(8z+3)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\ (32z+117)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-256z^2-288z+1755\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abdb.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{3}{4};-z\right)=$$

$$\frac{1}{462\sqrt{2}\ z^{5/4}}\left(5\left(32z(8z-3)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12(117-32z)\sqrt{z}\ J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(256z^2-288z-1755\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abdc.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{1}{4};z\right)=\frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\ \cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.abdd.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},-\frac{1}{4};-z\right)=-\frac{15\left(6\sqrt{z}\ \cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.abde.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{1}{4};z\right)=$$

$$\frac{1}{154\sqrt{2}\ z^{5/4}}\left(5\left(-8z(16z-5)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\ (16z+9)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(128z^2+56z-135\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abdf.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{1}{4};-z\right)=$$

$$\frac{1}{154\sqrt{2}\ z^{5/4}}\left(5\left(8z(16z+5)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\ (16z-9)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(128z^2-56z-135\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abdg.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{3}{4};z\right)=$$

$$\frac{1}{4928\,z^{5/2}}\left(5\,e^{-2\sqrt{z}}\left(256\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{11/4}-256\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{11/4}+256\,e^{4\sqrt{z}}\ z^{5/2}+256\,z^{5/2}+\right.\right.$$
$$\left.\left.64\,e^{4\sqrt{z}}\ z^2-64\,z^2+48\,e^{4\sqrt{z}}\ z^{3/2}+48\,z^{3/2}+60\,e^{4\sqrt{z}}\ z-60\,z-126\,e^{4\sqrt{z}}\ \sqrt{z}\ -126\sqrt{z}\ +63\,e^{4\sqrt{z}}\ -63\right)\right)$$

07.22.03.abdh.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{3}{4};-z\right)=\frac{5\left(512\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2\left(128z^2-24z-63\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\ +\left(64z^2-60z+63\right)\sin\left(2\sqrt{z}\right)\right)}{2464\,z^{5/2}}$$

07.22.03.abdi.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{5}{4};z\right)=$$

$$-\frac{1}{154\sqrt{2}\,z^{5/4}}\left(5\left(64\,(z-1)\,z\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\,(1-8\,z)\,\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-64\,z^2+16\,z-15\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abdj.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{5}{4};-z\right)=$$

$$\frac{1}{154\sqrt{2}\,z^{5/4}}\left(5\left(64\,z\,(z+1)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\,\sqrt{z}\;(8\,z+1)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(64\,z^2+16\,z+15\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abdk.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{7}{4};z\right)=\frac{1}{4928\,z^{5/2}}$$

$$\left(15\,e^{-2\sqrt{z}}\left(64\,e^{4\sqrt{z}}\;z^{5/2}+64\,z^{5/2}+16\,e^{4\sqrt{z}}\;z^2-16\,z^2+4\,e^{2\sqrt{z}}\;\sqrt{2\,\pi}\;(16\,z-11)\,\mathrm{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{7/4}-4\,e^{2\sqrt{z}}\;\sqrt{2\,\pi}\right.\right.$$
$$\left.\left.(16\,z-11)\,\mathrm{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{7/4}-32\,e^{4\sqrt{z}}\;z^{3/2}-32\,z^{3/2}+4\,e^{4\sqrt{z}}\;z-4\,z+18\,e^{4\sqrt{z}}\;\sqrt{z}\;+18\,\sqrt{z}\;-9\,e^{4\sqrt{z}}\;+9\right)\right)$$

07.22.03.abdl.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{7}{4};-z\right)=$$

$$\frac{1}{2464\,z^{5/2}}\left(15\left(8\,\sqrt{\pi}\;(16\,z+11)\,S\left(\frac{2\,\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+2\left(32\,z^2+16\,z+9\right)\cos\left(2\,\sqrt{z}\right)\sqrt{z}\;+\left(16\,z^2-4\,z-9\right)\sin\left(2\,\sqrt{z}\right)\right)\right)$$

07.22.03.abdm.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{9}{4};z\right)=$$

$$-\frac{1}{462\sqrt{2}\,z^{5/4}}\left(25\left(2\,z\,(16\,z-27)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\,(13-16\,z)\,\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-32\,z^2+30\,z+9\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abdn.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{9}{4};-z\right)=$$

$$\frac{1}{462\sqrt{2}\,z^{5/4}}\left(25\left(2\,z\,(16\,z+27)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\,\sqrt{z}\;(16\,z+13)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(32\,z^2+30\,z-9\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abdo.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{11}{4};z\right)=$$

$$\frac{1}{22\,528\,z^{5/2}}\left(15\,e^{-2\sqrt{z}}\left(4\left(64\,z^{5/2}-16\,z^2-76\,z^{3/2}+7\,z-48\,\sqrt{z}\;+e^{4\sqrt{z}}\left(64\,z^{5/2}+16\,z^2-76\,z^{3/2}-7\,z-48\,\sqrt{z}\;+24\right)-24\right)+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\;\sqrt{2\,\pi}\;z^{3/4}\left(256\,z^2-352\,z-231\right)\mathrm{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-e^{2\sqrt{z}}\;\sqrt{2\,\pi}\;z^{3/4}\left(256\,z^2-352\,z-231\right)\mathrm{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abdp.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{11}{4};-z\right)=\frac{1}{5632\,z^{5/2}}$$
$$\left(15\left(\sqrt{\pi}\;z^{3/4}\left(256\,z^2+352\,z-231\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\left(4\sqrt{z}\;\left(16\,z^2+19\,z-12\right)\cos\left(2\sqrt{z}\right)+\left(16\,z^2+7\,z+24\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.abdq.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{13}{4};z\right)=$$
$$-\frac{1}{4928\sqrt{2}\;z^{7/4}}\left(15\left(2\sqrt{z}\;\left(256\,z^2-608\,z-231\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-256\,z^2+384\,z+385\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\;\left(-256\,z^2+416\,z+435\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abdr.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{13}{4};-z\right)=\frac{1}{4928\sqrt{2}\;z^{7/4}}\left(15\left(2\sqrt{z}\;\left(256\,z^2+608\,z-231\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.3\left(256\,z^2+384\,z-385\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\;\left(256\,z^2+416\,z-435\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abds.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{131\,072\,z^{11/4}}\left(5\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024\,z^{5/2}-256\,z^2-1920\,z^{3/2}+288\,z-2748\sqrt{z}\;+e^{4\sqrt{z}}\left(1024\,z^{5/2}+256\,z^2-1920\,z^{3/2}-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.288\,z-2748\sqrt{z}\;-243\right)+243\right)+e^{2\sqrt{z}}\;\sqrt{2\pi}\;\left(4096\,z^3-8448\,z^2-11\,088\,z-4851\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-e^{2\sqrt{z}}\;\sqrt{2\pi}\;\left(4096\,z^3-8448\,z^2-11\,088\,z-4851\right)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abdt.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{15}{4};-z\right)=\frac{1}{32\,768\,z^{11/4}}\left(5\left(\sqrt{\pi}\;\left(4096\,z^3+8448\,z^2-11\,088\,z+4851\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\;\left(4\sqrt{z}\;\left(256\,z^2+480\,z-687\right)\cos\left(2\sqrt{z}\right)+\left(256\,z^2+288\,z-243\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.abdu.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{17}{4};z\right)=$$
$$-\frac{1}{1\,103\,872\sqrt{2}\;z^{11/4}}\left(195\left(2\sqrt{z}\;\left(4096\,z^3-12\,544\,z^2-11\,088\,z-2079\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-4096\,z^3+8960\,z^2+16\,016\,z+3465\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\;\left(-4096\,z^3+9472\,z^2+16\,464\,z+10\,395\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abdv.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{17}{4};-z\right)=\frac{1}{1\,103\,872\sqrt{2}\,z^{11/4}}$$
$$\left(195\left(2\sqrt{z}\left(4096z^3+12\,544z^2-11\,088z+2079\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3+8960z^2-16\,016z+3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(4096z^3+9472z^2-16\,464z+10\,395\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abdw.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{19}{4};z\right)=$$
$$\frac{1}{33\,554\,432z^{15/4}}\left(75e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384z^{7/2}-4096z^3-41\,984z^{5/2}+7424z^2-90\,432z^{3/2}+17\,616z-71\,148\sqrt{z}+\right.\right.\right.$$
$$\left.\left.e^{4\sqrt{z}}\left(16\,384z^{7/2}+4096z^3-41\,984z^{5/2}-7424z^2-90\,432z^{3/2}-17\,616z-71\,148\sqrt{z}+53\,361\right)-53\,361\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-180\,224z^3-354\,816z^2-310\,464z+53\,361\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-180\,224z^3-354\,816z^2-310\,464z+53\,361\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abdx.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{19}{4};-z\right)=\frac{1}{8\,388\,608z^{15/4}}\left(75\left(\sqrt{\pi}\left(65\,536z^4+180\,224z^3-354\,816z^2+310\,464z+53\,361\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\right.\right.$$
$$\left.\left.\left(4\sqrt{z}\left(4096z^3+10\,496z^2-22\,608z+17\,787\right)\cos\left(2\sqrt{z}\right)+\left(4096z^3+7424z^2-17\,616z-53\,361\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.abdy.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{21}{4};z\right)=$$
$$-\frac{1}{105\,971\,712\sqrt{2}\,z^{15/4}}\left(1105\left(2\sqrt{z}\left(65\,536z^4-245\,760z^3-354\,816z^2-221\,760z+81\,081\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$3\left(65\,536z^4-188\,416z^3-473\,088z^2-465\,696z+135\,135\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\left(-65\,536z^4+196\,608z^3+474\,624z^2+532\,224z-405\,405\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abdz.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{21}{4};-z\right)=$$
$$\frac{1}{105\,971\,712\sqrt{2}\,z^{15/4}}\left(1105\left(2\sqrt{z}\left(65\,536z^4+245\,760z^3-354\,816z^2+221\,760z+81\,081\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$3\left(65\,536z^4+188\,416z^3-473\,088z^2+465\,696z+135\,135\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\left(65\,536z^4+196\,608z^3-474\,624z^2+532\,224z+405\,405\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abe0.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{23}{4};z\right)=$$
$$\frac{1}{2\,147\,483\,648\,z^{19/4}}\left(285\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144\,z^{9/2}-65\,536\,z^4-851\,968\,z^{7/2}+163\,840\,z^3-2\,426\,880\,z^{5/2}+560\,640\,z^2-\right.\right.\right.$$
$$\left.\left.\left.3\,252\,480\,z^{3/2}+5\,336\,100\sqrt{z}\right)+e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-851\,968\,z^{7/2}-163\,840\,z^3-\right.\right.\right.$$
$$\left.\left.\left.2\,426\,880\,z^{5/2}-560\,640\,z^2-3\,252\,480\,z^{3/2}+5\,336\,100\sqrt{z}-4\,002\,075\right)+4\,002\,075\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-3\,604\,480\,z^4-9\,461\,760\,z^3-12\,418\,560\,z^2+4\,268\,880\,z-4\,002\,075\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-3\,604\,480\,z^4-9\,461\,760\,z^3-12\,418\,560\,z^2+4\,268\,880\,z-4\,002\,075\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\Big)\Big)$$

07.22.03.abe1.01

$${}_1F_2\left(-\frac{1}{4};\frac{7}{2},\frac{23}{4};-z\right)=$$
$$\frac{1}{536\,870\,912\,z^{19/4}}\left(285\left(\sqrt{\pi}\left(1\,048\,576\,z^5+3\,604\,480\,z^4-9\,461\,760\,z^3+12\,418\,560\,z^2+4\,268\,880\,z+4\,002\,075\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536\,z^4+212\,992\,z^3-606\,720\,z^2+813\,120\,z+1\,334\,025\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(65\,536\,z^4+163\,840\,z^3-560\,640\,z^2-4\,002\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = -\frac{1}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.abe2.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},-\frac{23}{4};z\right)=\frac{1}{115\,368\sqrt{2}\,z^{9/4}}$$
$$\left(\left(4z\left(-22\,784\,z^2+1\,980\,384\,z+32\,012\,955\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2048\,z^3+597\,504\,z^2+23\,841\,480\,z+160\,064\,775\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(308\,224\,z^3+12\,305\,280\,z^2+190\,347\,300\,z+800\,323\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abe3.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},-\frac{23}{4};-z\right)=\frac{1}{115\,368\sqrt{2}\,z^{9/4}}$$
$$\left(\left(4z\left(22\,784\,z^2+1\,980\,384\,z-32\,012\,955\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-2048\,z^3+597\,504\,z^2-23\,841\,480\,z+160\,064\,775\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(308\,224\,z^3-12\,305\,280\,z^2+190\,347\,300\,z-800\,323\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abe4.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},-\frac{21}{4};z\right)=\frac{1}{254\,592\,z^{7/2}}\left(2\sqrt{z}\left(99\,328\,z^3+7\,551\,360\,z^2+95\,099\,940\,z+192\,028\,725\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(8192\,z^4+2\,237\,440\,z^3+66\,074\,400\,z^2+351\,138\,240\,z+192\,028\,725\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abe5.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},-\frac{21}{4};-z\right)=\frac{1}{254\,592\,z^{7/2}}\left(2\sqrt{z}\,\left(99\,328\,z^3-7\,551\,360\,z^2+95\,099\,940\,z-192\,028\,725\right)\cos\left(2\sqrt{z}\right)+\left(8192\,z^4-2\,237\,440\,z^3+66\,074\,400\,z^2-351\,138\,240\,z+192\,028\,725\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abe6.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},-\frac{19}{4};z\right)=\frac{1}{55\,176\sqrt{2}\,z^{9/4}}\left(\left(4z\left(-21\,760\,z^2+412\,128\,z+9\,517\,365\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(27\,136\,z^2+2\,050\,880\,z+15\,862\,275\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(109\,568\,z^3+2\,970\,240\,z^2+51\,912\,900\,z+237\,934\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abe7.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},-\frac{19}{4};-z\right)=\frac{1}{55\,176\sqrt{2}\,z^{9/4}}\left(\left(4z\left(21\,760\,z^2+412\,128\,z-9\,517\,365\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,\left(27\,136\,z^2-2\,050\,880\,z+15\,862\,275\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(109\,568\,z^3-2\,970\,240\,z^2+51\,912\,900\,z-237\,934\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abe8.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},-\frac{17}{4};z\right)=\frac{1}{84\,864\,z^{7/2}}\left(7\left(2\sqrt{z}\,\left(1024\,z^3+167\,808\,z^2+2\,595\,780\,z+5\,486\,535\right)\cosh\left(2\sqrt{z}\right)-19\left(2048\,z^3+88\,320\,z^2+521\,640\,z+288\,765\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abe9.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},-\frac{17}{4};-z\right)=\frac{1}{84\,864\,z^{7/2}}\left(7\left(2\sqrt{z}\,\left(1024\,z^3-167\,808\,z^2+2\,595\,780\,z-5\,486\,535\right)\cos\left(2\sqrt{z}\right)-19\left(2048\,z^3-88\,320\,z^2+521\,640\,z-288\,765\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abea.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},-\frac{15}{4};z\right)=\frac{1}{8712\sqrt{2}\,z^{9/4}}\left(\left(4z\left(-4096\,z^2+17\,616\,z+865\,215\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+60\sqrt{z}\,\left(128\,z^2-30\,056\,z-288\,405\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,384\,z^3+212\,160\,z^2+4\,176\,900\,z+21\,630\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abeb.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{8712\sqrt{2}\,z^{9/4}}\left(\left(4z\left(4096z^2+17\,616z-865\,215\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-60\sqrt{z}\left(128z^2+30\,056z-288\,405\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(16\,384z^3-212\,160z^2+4\,176\,900z-21\,630\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abec.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},-\frac{13}{4};z\right)=$$
$$-\frac{1}{4992z^{7/2}}\left(7\left(\left(512z^3+45\,600z^2+314\,640z+176\,985\right)\sinh\left(2\sqrt{z}\right)-114\sqrt{z}\left(64z^2+1380z+3105\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abed.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},-\frac{13}{4};-z\right)=$$
$$-\frac{1}{4992z^{7/2}}\left(7\left(114\sqrt{z}\left(64z^2-1380z+3105\right)\cos\left(2\sqrt{z}\right)+\left(512z^3-45\,600z^2+314\,640z-176\,985\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abee.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},-\frac{11}{4};z\right)=$$
$$-\frac{1}{20\,328\sqrt{2}\,z^{9/4}}\left(5\left(4z\left(2048z^2+1680z-208\,845\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(-1024z^2+24\,752z+348\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(8192z^3+42\,432z^2+835\,380z+5\,221\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abef.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{20\,328\sqrt{2}\,z^{9/4}}\left(5\left(4z\left(2048z^2-1680z-208\,845\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(1024z^2+24\,752z-348\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(8192z^3-42\,432z^2+835\,380z-5\,221\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abeg.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},-\frac{9}{4};z\right)=\frac{7\left(2\sqrt{z}\left(64z^2+2660z+6555\right)\cosh\left(2\sqrt{z}\right)-5\left(256z^2+2280z+1311\right)\sinh\left(2\sqrt{z}\right)\right)}{384z^{7/2}}$$

07.22.03.abeh.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},-\frac{9}{4};-z\right)=\frac{35\left(256z^2-2280z+1311\right)\sin\left(2\sqrt{z}\right)-14\sqrt{z}\left(64z^2-2660z+6555\right)\cos\left(2\sqrt{z}\right)}{384z^{7/2}}$$

07.22.03.abei.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{9}{2}, -\frac{7}{4}; z\right) = \frac{1}{1848\sqrt{2}\, z^{9/4}}\left(\left(-4z\left(1024z^2+1728z-41\,769\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(512z^2-1768z-69\,615\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(4096z^3+9984z^2+119\,340z+1\,044\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abej.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{9}{2}, -\frac{7}{4}; -z\right) = \frac{1}{1848\sqrt{2}\, z^{9/4}}\left(\left(4z\left(1024z^2-1728z-41\,769\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(512z^2+1768z-69\,615\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(4096z^3-9984z^2+119\,340z-1\,044\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abek.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{9}{2}, -\frac{5}{4}; z\right) = -\frac{21\left(\left(32z^2+480z+285\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\,(20z+57)\cosh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}} $$

07.22.03.abel.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{9}{2}, -\frac{5}{4}; -z\right) = \frac{21\left(10\sqrt{z}\,(20z-57)\cos\left(2\sqrt{z}\right) + \left(32z^2-480z+285\right)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}} $$

07.22.03.abem.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{9}{2}, -\frac{3}{4}; z\right) = \frac{1}{792\sqrt{2}\, z^{9/4}}\left(\left(-4z\left(512z^2+384z-5967\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(256z^2+416z-9945\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(2048z^3+3072z^2+7020z+149\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aben.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{1}{792\sqrt{2}\, z^{9/4}}\left(\left(4z\left(512z^2-384z-5967\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(256z^2-416z-9945\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(2048z^3-3072z^2+7020z-149\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abeo.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{9}{2}, -\frac{1}{4}; z\right) = \frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right) - 3\,(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}} $$

07.22.03.abep.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{9}{2}, -\frac{1}{4}; -z\right) = \frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right) + 3\,(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}} $$

07.22.03.abeq.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{1}{4};z\right)=\frac{1}{264\sqrt{2}\,z^{9/4}}\left(\left(-4z\left(256z^2-48z-351\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$

$$\left.\left.12\sqrt{z}\left(128z^2+88z-585\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(1024z^3+576z^2-540z+8775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aber.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{1}{4};-z\right)=\frac{1}{264\sqrt{2}\,z^{9/4}}\left(\left(4z\left(256z^2+48z-351\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$

$$\left.\left.12\sqrt{z}\left(128z^2-88z-585\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(1024z^3-576z^2-540z-8775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abes.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{3}{4};z\right)=$$

$$\frac{1}{8448z^{7/2}}\left(e^{-2\sqrt{z}}\left(2048e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}-2048e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{15/4}+2048e^{4\sqrt{z}}z^{7/2}+\right.\right.$$

$$2048z^{7/2}+512e^{4\sqrt{z}}z^3-512z^3+384e^{4\sqrt{z}}z^{5/2}+384z^{5/2}+480e^{4\sqrt{z}}z^2-480z^2+840e^{4\sqrt{z}}z^{3/2}+$$

$$\left.\left.840z^{3/2}-5040e^{4\sqrt{z}}z+5040z+6930e^{4\sqrt{z}}\sqrt{z}+6930\sqrt{z}-3465e^{4\sqrt{z}}+3465\right)\right)$$

07.22.03.abet.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{3}{4};-z\right)=\frac{1}{4224z^{7/2}}\left(4096\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+\right.$$

$$\left.2\left(1024z^3-192z^2+420z-3465\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(512z^3-480z^2-5040z+3465\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abeu.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{5}{4};z\right)=\frac{1}{264\sqrt{2}\,z^{9/4}}\left(\left(-4z\left(128z^2-144z+27\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$

$$\left.\left.12\sqrt{z}\left(64z^2-16z+45\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(512z^3-192z^2+180z-675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abev.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{5}{4};-z\right)=\frac{1}{264\sqrt{2}\,z^{9/4}}\left(\left(4z\left(128z^2+144z+27\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$

$$\left.\left.12\sqrt{z}\left(64z^2+16z+45\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(512z^3+192z^2+180z+675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abew.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{7}{4};z\right)= \frac{1}{2816\,z^{7/2}}\left(e^{-2\sqrt{z}}\left(512\,e^{4\sqrt{z}}\,z^{7/2}+512\,z^{7/2}+128\,e^{4\sqrt{z}}\,z^3-128\,z^3+32\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z-15)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}-\right.\right. $$
$$ 32\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z-15)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}-384\,e^{4\sqrt{z}}\,z^{5/2}-384\,z^{5/2}+120\,e^{4\sqrt{z}}\,z^{3/2}+ $$
$$ \left.\left.120\,z^{3/2}+360\,e^{4\sqrt{z}}\,z-360\,z-630\,e^{4\sqrt{z}}\,\sqrt{z}-630\,\sqrt{z}+315\,e^{4\sqrt{z}}-315\right)\right) $$

07.22.03.abex.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{7}{4};-z\right)= \frac{1}{1408\,z^{7/2}} $$
$$ \left(64\,\sqrt{\pi}\,(16\,z+15)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2\left(256\,z^3+192\,z^2+60\,z+315\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(128\,z^3+360\,z-315\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.abey.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{9}{4};z\right)= -\frac{1}{792\,\sqrt{2}\,z^{9/4}}\left(5\left(4\,z\left(64\,z^2-132\,z-9\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ \left.\left.12\,\sqrt{z}\left(-32\,z^2+38\,z+15\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-256\,z^3+336\,z^2+180\,z-225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abez.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{9}{4};-z\right)= \frac{1}{792\,\sqrt{2}\,z^{9/4}}\left(5\left(4\,z\left(64\,z^2+132\,z-9\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ \left.\left.12\,\sqrt{z}\left(32\,z^2+38\,z-15\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(256\,z^3+336\,z^2-180\,z-225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abf0.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{11}{4};z\right)= \frac{1}{11\,264\,z^{7/2}} $$
$$ \left(7\,e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-480\,z-495\right)\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}-e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\,z^2-480\,z-495\right)\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+\right.\right. $$
$$ 4\left(64\,z^{7/2}-16\,z^3-108\,z^{5/2}+15\,z^2-120\,z^{3/2}+90\,\sqrt{z}+\right. $$
$$ \left.\left.\left.e^{4\sqrt{z}}\left(64\,z^{7/2}+16\,z^3-108\,z^{5/2}-15\,z^2-120\,z^{3/2}+90\,\sqrt{z}-45\right)+45\right)\right)\right) $$

07.22.03.abf1.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{11}{4};-z\right)= \frac{1}{2816\,z^{7/2}}\left(7\left(\sqrt{\pi}\,\left(256\,z^2+480\,z-495\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+\right.\right. $$
$$ \left.\left.2\left(2\,\sqrt{z}\,\left(32\,z^3+54\,z^2-60\,z-45\right)\cos\left(2\sqrt{z}\right)+\left(16\,z^3+15\,z^2+45\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abf2.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{13}{4};z\right)=-\frac{1}{352\sqrt{2}\,z^{9/4}}\left(\left(2z\left(256z^2-768z-621\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.3\sqrt{z}\left(-256z^2+544z+915\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(-256z^3+576z^2+945z+450\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abf3.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{13}{4};-z\right)=\frac{1}{352\sqrt{2}\,z^{9/4}}\left(\left(2z\left(256z^2+768z-621\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.3\sqrt{z}\left(256z^2+544z-915\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(256z^3+576z^2-945z+450\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abf4.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{196\,608\,z^{7/2}}\left(7e^{-2\sqrt{z}}\left(4\left(1024z^{7/2}-256z^3-2688z^{5/2}+480z^2-6060z^{3/2}+1215z-5760\sqrt{z}\right)+e^{4\sqrt{z}}\left(1024z^{7/2}+\right.\right.\right.$$
$$\left.\left.256z^3-2688z^{5/2}-480z^2-6060z^{3/2}-1215z-5760\sqrt{z}+2880\right)-2880\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(4096z^3-11\,520z^2-23\,760z-24\,255\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(4096z^3-11\,520z^2-23\,760z-24\,255\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.abf5.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{15}{4};-z\right)=\frac{1}{49\,152\,z^{7/2}}\left(7\left(\sqrt{\pi}\,z^{3/4}\left(4096z^3+11\,520z^2-23\,760z+24\,255\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\left(4\sqrt{z}\left(256z^3+672z^2-1515z+1440\right)\cos\left(2\sqrt{z}\right)+\left(256z^3+480z^2-1215z-2880\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big)$$

07.22.03.abf6.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{17}{4};z\right)=-\frac{1}{78\,848\sqrt{2}\,z^{11/4}}$$
$$\left(13\left(2\sqrt{z}\left(4096z^3-16\,128z^2-27\,216z-31\,185\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-4096z^3+12\,544z^2+35\,280z+51\,975\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-4096z^3+13\,056z^2+35\,280z+55\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abf7.01

$${}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{17}{4};-z\right)=$$
$$\frac{1}{78\,848\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(4096z^3+16\,128z^2-27\,216z+31\,185\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3+12\,544z^2-35\,280z+51\,975\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3+13\,056z^2-35\,280z+55\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abf8.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{19}{4};z\right)=\frac{1}{16\,777\,216\,z^{15/4}}\left(35\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384\,z^{7/2}-4096\,z^3-58\,368\,z^{5/2}+11\,520\,z^2-194\,880\,z^{3/2}+46\,800\,z-407\,340\sqrt{z}+e^{4\sqrt{z}}\left(16\,384\,z^{7/2}+4096\,z^3-58\,368\,z^{5/2}-11\,520\,z^2-194\,880\,z^{3/2}-46\,800\,z-407\,340\sqrt{z}-63\,135\right)+63\,135\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-245\,760\,z^3-760\,320\,z^2-1\,552\,320\,z-800\,415\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-245\,760\,z^3-760\,320\,z^2-1\,552\,320\,z-800\,415\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abf9.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{19}{4};-z\right)=\frac{1}{4\,194\,304\,z^{15/4}}\left(35\left(\sqrt{\pi}\left(65\,536\,z^4+245\,760\,z^3-760\,320\,z^2+1\,552\,320\,z-800\,415\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(4096\,z^3+14\,592\,z^2-48\,720\,z+101\,835\right)\cos\left(2\sqrt{z}\right)+\left(4096\,z^3+11\,520\,z^2-46\,800\,z+63\,135\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abfa.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{21}{4};z\right)=-\frac{1}{22\,708\,224\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(65\,536\,z^4-319\,488\,z^3-838\,656\,z^2-1\,884\,960\,z-405\,405\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-65\,536\,z^4+262\,144\,z^3+1\,021\,440\,z^2+2\,661\,120\,z+675\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-65\,536\,z^4+270\,336\,z^3+1\,013\,760\,z^2+2\,630\,880\,z+2\,027\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abfb.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{21}{4};-z\right)=\frac{1}{22\,708\,224\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(65\,536\,z^4+319\,488\,z^3-838\,656\,z^2+1\,884\,960\,z-405\,405\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(65\,536\,z^4+262\,144\,z^3-1\,021\,440\,z^2+2\,661\,120\,z-675\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(65\,536\,z^4+270\,336\,z^3-1\,013\,760\,z^2+2\,630\,880\,z-2\,027\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abfc.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{23}{4};z\right)=\frac{1}{1\,073\,741\,824\,z^{19/4}}$$
$$\left(133\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144\,z^{9/2}-65\,536\,z^4-1\,179\,648\,z^{7/2}+245\,760\,z^3-5\,191\,680\,z^{5/2}+1\,313\,280\,z^2-16\,312\,320\,z^{3/2}+\right.\right.\right.$$
$$\left.\left.\left.4\,040\,640\,z-16\,008\,300\sqrt{z}\right)+e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-1\,179\,648\,z^{7/2}-245\,760\,z^3-5\,191\,680\,z^{5/2}-\right.\right.\right.$$
$$\left.\left.\left.1\,313\,280\,z^2-16\,312\,320\,z^{3/2}-4\,040\,640\,z-16\,008\,300\sqrt{z}+12\,006\,225\right)-12\,006\,225\right)+$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-4\,915\,200\,z^4-20\,275\,200\,z^3-62\,092\,800\,z^2-64\,033\,200\,z+12\,006\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-4\,915\,200\,z^4-20\,275\,200\,z^3-62\,092\,800\,z^2-64\,033\,200\,z+12\,006\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\Big)\Big)$$

07.22.03.abfd.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{9}{2},\frac{23}{4};-z\right)=\frac{1}{268\,435\,456\,z^{19/4}}$$
$$\left(133\left(\sqrt{\pi}\left(1\,048\,576\,z^5+4\,915\,200\,z^4-20\,275\,200\,z^3+62\,092\,800\,z^2-64\,033\,200\,z-12\,006\,225\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536\,z^4+294\,912\,z^3-1\,297\,920\,z^2+4\,078\,080\,z-4\,002\,075\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(65\,536\,z^4+245\,760\,z^3-1\,313\,280\,z^2+4\,040\,640\,z+12\,006\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1=-\frac{1}{4}$, $b_{1.}=\frac{11}{2}$

07.22.03.abfe.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{23}{4};z\right)=$$
$$-\frac{1}{2\,922\,656\sqrt{2}\,z^{13/4}}\left(3\left(4z\left(432\,128\,z^3+19\,771\,904\,z^2+825\,222\,840\,z+9\,187\,718\,085\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(3\,021\,824\,z^3+328\,456\,320\,z^2+8\,209\,544\,460\,z+45\,938\,590\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-1\,417\,216\,z^4+63\,104\,000\,z^3+4\,592\,945\,760\,z^2+61\,464\,873\,600\,z+229\,692\,952\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abff.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{2\,922\,656\sqrt{2}\,z^{13/4}}\left(3\left(4z\left(432\,128\,z^3-19\,771\,904\,z^2+825\,222\,840\,z-9\,187\,718\,085\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(3\,021\,824\,z^3-328\,456\,320\,z^2+8\,209\,544\,460\,z-45\,938\,590\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(1\,417\,216\,z^4+63\,104\,000\,z^3-4\,592\,945\,760\,z^2+61\,464\,873\,600\,z-229\,692\,952\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abfg.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{21}{4};z\right)=\frac{1}{113\,152\,z^{9/2}}\left(115\left(4096\,z^4+456\,192\,z^3+9\,602\,064\,z^2+44\,645\,580\,z+23\,992\,605\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(8192\,z^4+3\,179\,520\,z^3+144\,767\,520\,z^2+1\,455\,375\,600\,z+2\,759\,149\,575\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.abfh.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{21}{4};-z\right)=\frac{1}{113\,152\,z^{9/2}}\left(115\left(4096\,z^4-456\,192\,z^3+9\,602\,064\,z^2-44\,645\,580\,z+23\,992\,605\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(8192\,z^4-3\,179\,520\,z^3+144\,767\,520\,z^2-1\,455\,375\,600\,z+2\,759\,149\,575\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.abfi.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{19}{4};z\right)=-\frac{1}{1\,397\,792\sqrt{2}\,z^{13/4}}\left(3\left(4\,z\left(196\,608\,z^3+3\,776\,768\,z^2+186\,117\,360\,z+2\,464\,997\,535\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(508\,928\,z^3+65\,312\,640\,z^2+2\,026\,141\,260\,z+12\,324\,987\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-786\,432\,z^4+5\,918\,720\,z^3+1\,039\,796\,160\,z^2+15\,608\,478\,600\,z+61\,624\,938\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abfj.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{19}{4};-z\right)=\frac{1}{1\,397\,792\sqrt{2}\,z^{13/4}}\left(3\left(4\,z\left(196\,608\,z^3-3\,776\,768\,z^2+186\,117\,360\,z-2\,464\,997\,535\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(508\,928\,z^3-65\,312\,640\,z^2+2\,026\,141\,260\,z-12\,324\,987\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(786\,432\,z^4+5\,918\,720\,z^3-1\,039\,796\,160\,z^2+15\,608\,478\,600\,z-61\,624\,938\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abfk.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{17}{4};z\right)=\frac{1}{113\,152\,z^{9/2}}\left(21\left(\left(4096\,z^4+1\,000\,960\,z^3+26\,280\,720\,z^2+130\,521\,780\,z+70\,747\,425\right)\sinh\left(2\sqrt{z}\right)-46\sqrt{z}\left(2048\,z^3+138\,240\,z^2+1\,573\,560\,z+3\,075\,975\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abfl.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{17}{4};-z\right)=\frac{1}{113\,152\,z^{9/2}}\left(21\left(46\sqrt{z}\left(2048\,z^3-138\,240\,z^2+1\,573\,560\,z-3\,075\,975\right)\cos\left(2\sqrt{z}\right)+\left(4096\,z^4-1\,000\,960\,z^3+26\,280\,720\,z^2-130\,521\,780\,z+70\,747\,425\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abfm.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{15}{4};z\right)=\frac{1}{73\,568\sqrt{2}\,z^{13/4}}\left(\left(-4z\left(32\,768z^3+233\,856z^2+11\,536\,200z+199\,864\,665\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(16\,384z^3+1\,147\,840z^2+48\,836\,580z+333\,107\,775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(131\,072z^4+391\,680z^3-67\,148\,640z^2-1\,176\,692\,400z-4\,996\,616\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abfn.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{15}{4};-z\right)=\frac{1}{73\,568\sqrt{2}\,z^{13/4}}\left(\left(4z\left(32\,768z^3-233\,856z^2+11\,536\,200z-199\,864\,665\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(16\,384z^3-1\,147\,840z^2+48\,836\,580z-333\,107\,775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(131\,072z^4-391\,680z^3-67\,148\,640z^2+1\,176\,692\,400z-4\,996\,616\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abfo.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{13}{4};z\right)=-\frac{1}{6656\,z^{9/2}}\left(21\left(2\sqrt{z}\left(512z^3+72\,864z^2+993\,600z+2\,021\,355\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(18\,176z^3+678\,960z^2+3\,688\,740z+2\,021\,355\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abfp.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{13}{4};-z\right)=\frac{1}{6656\,z^{9/2}}\left(21\left(2\sqrt{z}\left(512z^3-72\,864z^2+993\,600z-2\,021\,355\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-18\,176z^3+678\,960z^2-3\,688\,740z+2\,021\,355\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abfq.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{11}{4};z\right)=-\frac{1}{514\,976\sqrt{2}\,z^{13/4}}\left(15\left(4z\left(16\,384z^3+57\,344z^2+1\,485\,120z+42\,395\,535\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(8192z^3+129\,472z^2+8\,756\,020z+70\,659\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-65\,536z^4-278\,528z^3+10\,395\,840z^2+225\,552\,600z+1\,059\,888\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abfr.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{11}{4};-z\right)=\frac{1}{514\,976\sqrt{2}\,z^{13/4}}\left(15\left(4z\left(16\,384z^3-57\,344z^2+1\,485\,120z-42\,395\,535\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(8192z^3-129\,472z^2+8\,756\,020z-70\,659\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(65\,536z^4-278\,528z^3-10\,395\,840z^2+225\,552\,600z-1\,059\,888\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abfs.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{512\,z^{9/2}}\left(21\left(\left(256z^3+18\,960z^2+117\,300z+65\,205\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(1664z^2+30\,360z+65\,205\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abft.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{9}{4};-z\right)=$$
$$-\frac{1}{512\,z^{9/2}}\left(21\left(2\sqrt{z}\,\left(1664\,z^2-30\,360\,z+65\,205\right)\cos\left(2\sqrt{z}\right)+\left(256\,z^3-18\,960\,z^2+117\,300\,z-65\,205\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abfu.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{7}{4};z\right)=-\frac{1}{46\,816\sqrt{2}\,z^{13/4}}$$
$$\left(3\left(4\,z\left(8192\,z^3+18\,944\,z^2+37\,128\,z+7\,309\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(4096\,z^3+13\,056\,z^2+1\,144\,780\,z+12\,182\,625\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-32\,768\,z^4-100\,352\,z^3+1\,166\,880\,z^2+33\,415\,200\,z+182\,739\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abfv.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{7}{4};-z\right)=\frac{1}{46\,816\sqrt{2}\,z^{13/4}}$$
$$\left(3\left(4\,z\left(8192\,z^3-18\,944\,z^2+37\,128\,z-7\,309\,575\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(4096\,z^3-13\,056\,z^2+1\,144\,780\,z-12\,182\,625\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(32\,768\,z^4-100\,352\,z^3-1\,166\,880\,z^2+33\,415\,200\,z-182\,739\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abfw.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{5}{4};z\right)=-\frac{189\left(2\sqrt{z}\,\left(32\,z^2+1040\,z+2415\right)\cosh\left(2\sqrt{z}\right)-5\left(112\,z^2+852\,z+483\right)\sinh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.abfx.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{5}{4};-z\right)=-\frac{189\left(2\sqrt{z}\,\left(32\,z^2-1040\,z+2415\right)\cos\left(2\sqrt{z}\right)-5\left(112\,z^2-852\,z+483\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.abfy.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},-\frac{3}{4};z\right)=$$
$$\frac{1}{6688\sqrt{2}\,z^{13/4}}\left(\left(-4\,z\left(4096\,z^3+4608\,z^2-31\,824\,z+877\,149\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,\left(2048\,z^3+4096\,z^2+76\,908\,z+1\,461\,915\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,384\,z^4+30\,720\,z^3-97\,344\,z^2-3\,102\,840\,z-21\,928\,725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abfz.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{11}{2}, -\frac{3}{4}; -z\right) = \frac{1}{6688\sqrt{2}\, z^{13/4}}\left(\left(4z\left(4096z^3 - 4608z^2 - 31\,824z - 877\,149\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,\left(2048z^3 - 4096z^2 + 76\,908z - 1\,461\,915\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(16\,384z^4 - 30\,720z^3 - 97\,344z^2 + 3\,102\,840z - 21\,928\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abg0.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{11}{2}, -\frac{1}{4}; z\right) = \frac{945\left(\left(16z^2 + 180z + 105\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\,(8z + 21)\cosh\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}} $$

07.22.03.abg1.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{11}{2}, -\frac{1}{4}; -z\right) = \frac{945\left(10\sqrt{z}\,(8z - 21)\cos\left(2\sqrt{z}\right) + \left(16z^2 - 180z + 105\right)\sin\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}} $$

07.22.03.abg2.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{11}{2}, \frac{1}{4}; z\right) = -\frac{1}{6688\sqrt{2}\, z^{13/4}}\left(3\left(4z\left(2048z^3 - 128z^2 - 4056z + 41\,769\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,\left(1024z^3 + 832z^2 - 572z + 69\,615\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-8192z^4 - 5632z^3 + 8544z^2 + 84\,240z + 1\,044\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abg3.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{11}{2}, \frac{1}{4}; -z\right) = \frac{1}{6688\sqrt{2}\, z^{13/4}}\left(3\left(4z\left(2048z^3 + 128z^2 - 4056z - 41\,769\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,\left(-1024z^3 + 832z^2 + 572z + 69\,615\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(8192z^4 - 5632z^3 - 8544z^2 + 84\,240z - 1\,044\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abg4.01

$$ {}_1F_2\left(-\frac{1}{4}; \frac{11}{2}, \frac{3}{4}; z\right) = \frac{1}{214\,016\, z^{9/2}}\left(3e^{-2\sqrt{z}}\left(16\,384e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{19/4} - 16\,384e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{19/4} + 16\,384e^{4\sqrt{z}}\, z^{9/2} + 16\,384z^{9/2} + 4096e^{4\sqrt{z}}\, z^4 - 4096z^4 + 3072e^{4\sqrt{z}}\, z^{7/2} + 3072z^{7/2} + 3840e^{4\sqrt{z}}\, z^3 - 3840z^3 + 6720e^{4\sqrt{z}}\, z^{5/2} + 6720z^{5/2} + 15\,120e^{4\sqrt{z}}\, z^2 - 15\,120z^2 - 221\,760e^{4\sqrt{z}}\, z^{3/2} - 221\,760z^{3/2} + 595\,980e^{4\sqrt{z}}\, z - 595\,980z - 727\,650e^{4\sqrt{z}}\sqrt{z} - 727\,650\sqrt{z} + 363\,825e^{4\sqrt{z}} - 363\,825\right)\right) $$

07.22.03.abg5.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{3}{4};-z\right)=$$
$$\frac{1}{107\,008\,z^{9/2}}\left(3\left(32\,768\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{19/4}+2\left(8192\,z^4-1536\,z^3+3360\,z^2+110\,880\,z-363\,825\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.\right.$$
$$\left.\left.\left(4096\,z^4-3840\,z^3+15\,120\,z^2-595\,980\,z+363\,825\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abg6.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{5}{4};z\right)=$$
$$-\frac{1}{6688\sqrt{2}\;z^{13/4}}\left(3\left(4\,z\left(1024\,z^3-1280\,z^2+480\,z-2457\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\;\left(512\,z^3-192\,z^2+436\,z-4095\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-4096\,z^4+2048\,z^3-2112\,z^2+1080\,z-61\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abg7.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{5}{4};-z\right)=\frac{1}{6688\sqrt{2}\;z^{13/4}}$$
$$\left(3\left(4\,z\left(1024\,z^3+1280\,z^2+480\,z+2457\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\;\left(512\,z^3+192\,z^2+436\,z+4095\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096\,z^4+2048\,z^3+2112\,z^2+1080\,z+61\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abg8.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{7}{4};z\right)=\frac{1}{214\,016\,z^{9/2}}$$
$$\left(9\,e^{-2\sqrt{z}}\left(4096\,e^{4\sqrt{z}}\;z^{9/2}+4096\,z^{9/2}+1024\,e^{4\sqrt{z}}\;z^4-1024\,z^4+256\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;(16\,z-19)\,\mathrm{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{15/4}-\right.\right.$$
$$256\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;(16\,z-19)\,\mathrm{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{15/4}-4096\,e^{4\sqrt{z}}\;z^{7/2}-4096\,z^{7/2}-256\,e^{4\sqrt{z}}\;z^3+$$
$$256\,z^3+768\,e^{4\sqrt{z}}\;z^{5/2}+768\,z^{5/2}+2640\,e^{4\sqrt{z}}\;z^2-2640\,z^2+8400\,e^{4\sqrt{z}}\;z^{3/2}+8400\,z^{3/2}-$$
$$\left.\left.36\,540\,e^{4\sqrt{z}}\;z+36\,540\,z+48\,510\,e^{4\sqrt{z}}\;\sqrt{z}\;+48\,510\,\sqrt{z}\;-24\,255\,e^{4\sqrt{z}}\;+24\,255\right)\right)$$

07.22.03.abg9.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{7}{4};-z\right)=$$
$$\frac{1}{107\,008\,z^{9/2}}\left(9\left(512\sqrt{\pi}\;(16\,z+19)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+2\left(2048\,z^4+2048\,z^3+384\,z^2-4200\,z+24\,255\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.\right.$$
$$\left.\left.\left(1024\,z^4+256\,z^3+2640\,z^2+36\,540\,z-24\,255\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abga.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{9}{4};z\right)=$$
$$-\frac{1}{6688\sqrt{2}\,z^{13/4}}\left(5\left(4z\left(512z^3-1248z^2-216z+567\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(256z^3-400z^2-276z+945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-2048z^4+3456z^3+2592z^2-2880z+14\,175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abgb.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{6688\sqrt{2}\,z^{13/4}}\left(5\left(4z\left(512z^3+1248z^2-216z-567\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(256z^3+400z^2-276z-945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(2048z^4+3456z^3-2592z^2-2880z-14\,175\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abgc.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{214\,016\,z^{9/2}}\left(63e^{-2\sqrt{z}}\left(512e^{4\sqrt{z}}z^{9/2}+512z^{9/2}+128e^{4\sqrt{z}}z^4-128z^4-1120e^{4\sqrt{z}}z^{7/2}-1120z^{7/2}-184e^{4\sqrt{z}}z^3+\right.\right.$$
$$184z^3+2e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-608z-855\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-$$
$$2e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-608z-855\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{11/4}-1728e^{4\sqrt{z}}z^{5/2}-1728z^{5/2}-240e^{4\sqrt{z}}z^2+$$
$$\left.\left.240z^2+480e^{4\sqrt{z}}z^{3/2}+480z^{3/2}+2700e^{4\sqrt{z}}z-2700z-4410e^{4\sqrt{z}}\sqrt{z}-4410\sqrt{z}+2205e^{4\sqrt{z}}-2205\right)\right)$$

07.22.03.abgd.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{107\,008\,z^{9/2}}\left(63\left(4\sqrt{\pi}\left(256z^2+608z-855\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2\left(256z^4+560z^3-864z^2-240z-2205\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.\right.$$
$$\left.\left.\left(128z^4+184z^3-240z^2-2700z+2205\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abge.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{13}{4};z\right)=$$
$$-\frac{1}{6688\sqrt{2}\,z^{13/4}}\left(9\left(4z\left(256z^3-928z^2-1191z-315\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+6\sqrt{z}\left(-256z^3+704z^2+1625z+1050\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1024z^4+2944z^3+6540z^2+5400z-7875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abgf.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{6688\sqrt{2}\,z^{13/4}}\left(9\left(4z\left(256z^3+928z^2-1191z+315\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-6\sqrt{z}\left(256z^3+704z^2-1625z+1050\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(1024z^4+2944z^3-6540z^2+5400z+7875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abgg.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{622\,592\,z^{9/2}}\left(21e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-14\,592z^2-41\,040z-65\,835\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left(4096z^3-14\,592z^2-41\,040z-65\,835\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+4\left(1024z^{9/2}-256z^4-3456z^{7/2}+672z^3-\right.$$
$$10\,524z^{5/2}+2475z^2-17\,280z^{3/2}+1440z+15\,120\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{9/2}+256z^4-3456z^{7/2}-\right.$$
$$\left.\left.\left.\left.672z^3-10\,524z^{5/2}-2475z^2-17\,280z^{3/2}-1440z+15\,120\sqrt{z}-7560\right)+7560\right)\right)\right)$$

07.22.03.abgh.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{15}{4};-z\right)=\frac{1}{155\,648\,z^{9/2}}$$
$$\left(21\left(\sqrt{\pi}\left(4096z^3+14\,592z^2-41\,040z+65\,835\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+2\left(4\sqrt{z}\left(256z^4+864z^3-2631z^2+4320z+3780\right)\right.\right.\right.$$
$$\left.\left.\left.\cos\left(2\sqrt{z}\right)+\left(256z^4+672z^3-2475z^2+1440z-7560\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.abgi.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{17}{4};z\right)=-\frac{1}{749\,056\sqrt{2}\,z^{13/4}}$$
$$\left(117\left(2z\left(4096z^3-19\,712z^2-50\,064z-104\,391\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\left(-4096z^3+16\,128z^2+61\,264z+150\,465\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(-4096z^4+16\,640z^3+60\,816z^2+148\,995z+88\,200\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abgj.01

$${}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{17}{4};-z\right)=\frac{1}{749\,056\sqrt{2}\,z^{13/4}}$$
$$\left(117\left(2z\left(4096z^3+19\,712z^2-50\,064z+104\,391\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(4096z^3+16\,128z^2-61\,264z+150\,465\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(4096z^4+16\,640z^3-60\,816z^2+148\,995z-88\,200\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abgk.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{19}{4};z\right)= \frac{1}{159\,383\,552\,z^{9/2}}\left(315\,e^{-2\sqrt{z}}\left(4\left(16\,384\,z^{9/2}-4096\,z^4-74\,752\,z^{7/2}+15\,616\,z^3-336\,192\,z^{5/2}+85\,200\,z^2-1\,105\,260\,z^{3/2}+276\,975\,z-1\,290\,240\sqrt{z}\right)+e^{4\sqrt{z}}\left(16\,384\,z^{9/2}+4096\,z^4-74\,752\,z^{7/2}-15\,616\,z^3-336\,192\,z^{5/2}-85\,200\,z^2-1\,105\,260\,z^{3/2}-276\,975\,z-1\,290\,240\sqrt{z}+645\,120\right)-645\,120\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(65\,536\,z^4-311\,296\,z^3-1\,313\,280\,z^2-4\,213\,440\,z-5\,069\,295\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\left(65\,536\,z^4-311\,296\,z^3-1\,313\,280\,z^2-4\,213\,440\,z-5\,069\,295\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abgl.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{19}{4};-z\right)= \frac{1}{39\,845\,888\,z^{9/2}}\left(315\left(\sqrt{\pi}\,z^{3/4}\left(65\,536\,z^4+311\,296\,z^3-1\,313\,280\,z^2+4\,213\,440\,z-5\,069\,295\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\left(4\sqrt{z}\left(4096\,z^4+18\,688\,z^3-84\,048\,z^2+276\,315\,z-322\,560\right)\cos\left(2\sqrt{z}\right)+\left(4096\,z^4+15\,616\,z^3-85\,200\,z^2+276\,975\,z+645\,120\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abgm.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{21}{4};z\right)= -\frac{1}{23\,969\,792\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(65\,536\,z^4-393\,216\,z^3-1\,516\,032\,z^2-5\,749\,632\,z-7\,702\,695\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-65\,536\,z^4+335\,872\,z^3+1\,763\,328\,z^2+7\,227\,360\,z+12\,837\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-65\,536\,z^4+344\,064\,z^3+1\,746\,432\,z^2+7\,076\,160\,z+13\,111\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abgn.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{21}{4};-z\right)= \frac{1}{23\,969\,792\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(65\,536\,z^4+393\,216\,z^3-1\,516\,032\,z^2+5\,749\,632\,z-7\,702\,695\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(65\,536\,z^4+335\,872\,z^3-1\,763\,328\,z^2+7\,227\,360\,z-12\,837\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(65\,536\,z^4+344\,064\,z^3-1\,746\,432\,z^2+7\,076\,160\,z-13\,111\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abgo.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{23}{4};z\right)=\frac{1}{536\,870\,912\,z^{19/4}}\left(63\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144\,z^{9/2}-65\,536\,z^4-1\,507\,328\,z^{7/2}+327\,680\,z^3-8\,939\,520\,z^{5/2}+2\,311\,680\,z^2-43\,749\,120\,z^{3/2}+11\,859\,840\,z-108\,719\,100\sqrt{z}\right)+e^{4\sqrt{z}}\left(262\,144\,z^{9/2}+65\,536\,z^4-1\,507\,328\,z^{7/2}-327\,680\,z^3-8\,939\,520\,z^{5/2}-2\,311\,680\,z^2-43\,749\,120\,z^{3/2}-11\,859\,840\,z-108\,719\,100\sqrt{z}-21\,679\,875\right)+21\,679\,875\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-6\,225\,920\,z^4-35\,020\,800\,z^3-168\,537\,600\,z^2-405\,543\,600\,z-228\,118\,275\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(1\,048\,576\,z^5-6\,225\,920\,z^4-35\,020\,800\,z^3-168\,537\,600\,z^2-405\,543\,600\,z-228\,118\,275\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abgp.01

$$ {}_1F_2\left(-\frac{1}{4};\frac{11}{2},\frac{23}{4};-z\right)=\frac{1}{134\,217\,728\,z^{19/4}}\left(63\left(\sqrt{\pi}\left(1\,048\,576\,z^5+6\,225\,920\,z^4-35\,020\,800\,z^3+168\,537\,600\,z^2-405\,543\,600\,z+228\,118\,275\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536\,z^4+376\,832\,z^3-2\,234\,880\,z^2+10\,937\,280\,z-27\,179\,775\right)\cos\left(2\sqrt{z}\right)+\left(65\,536\,z^4+327\,680\,z^3-2\,311\,680\,z^2+11\,859\,840\,z-21\,679\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{1}{4}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = \frac{1}{4}$, $b_{1.} = -\frac{11}{2}$

07.22.03.abgq.01

$$ {}_1F_2\left(\frac{1}{4};-\frac{11}{2},-\frac{23}{4};z\right)=\frac{1}{15\,740\,160\,975}\left(\left(262\,144\,z^6+5\,750\,784\,z^5+113\,863\,680\,z^4+1\,489\,561\,920\,z^3+10\,745\,935\,200\,z^2+31\,604\,750\,100\,z+15\,740\,160\,975\right)\cosh\left(2\sqrt{z}\right)-6\sqrt{z}\left(196\,608\,z^5+4\,444\,160\,z^4+73\,032\,960\,z^3+728\,426\,160\,z^2+3\,539\,289\,600\,z+5\,246\,720\,325\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abgr.01

$$ {}_1F_2\left(\frac{1}{4};-\frac{11}{2},-\frac{23}{4};-z\right)=\frac{1}{15\,740\,160\,975}\left(\left(262\,144\,z^6-5\,750\,784\,z^5+113\,863\,680\,z^4-1\,489\,561\,920\,z^3+10\,745\,935\,200\,z^2-31\,604\,750\,100\,z+15\,740\,160\,975\right)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\left(196\,608\,z^5-4\,444\,160\,z^4+73\,032\,960\,z^3-728\,426\,160\,z^2+3\,539\,289\,600\,z-5\,246\,720\,325\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abgs.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{21}{4}; z\right) = \frac{1}{2\,170\,943\,775\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(131\,072 z^6 + 2\,441\,216 z^5 + 42\,822\,144 z^4 + 474\,094\,080 z^3 + 2\,643\,338\,880 z^2 + 4\,360\,683\,600 z + 2\,170\,943\,775\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(278\,528 z^5 + 5\,707\,776 z^4 + 82\,824\,768 z^3 + 698\,574\,240 z^2 + 2\,623\,928\,580 z + 2\,170\,943\,775\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(32\,768 z^5 + 688\,128 z^4 + 12\,341\,376 z^3 + 143\,213\,616 z^2 + 887\,173\,560 z + 2\,170\,943\,775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abgt.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{21}{4}; -z\right) = \frac{1}{2\,170\,943\,775\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(131\,072 z^6 - 2\,441\,216 z^5 + 42\,822\,144 z^4 - 474\,094\,080 z^3 + 2\,643\,338\,880 z^2 - 4\,360\,683\,600 z + 2\,170\,943\,775\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(278\,528 z^5 - 5\,707\,776 z^4 + 82\,824\,768 z^3 - 698\,574\,240 z^2 + 2\,623\,928\,580 z - 2\,170\,943\,775\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(-32\,768 z^5 + 688\,128 z^4 - 12\,341\,376 z^3 + 143\,213\,616 z^2 - 887\,173\,560 z + 2\,170\,943\,775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abgu.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{19}{4}; z\right) = $$
$$ \frac{1}{684\,354\,825}\left(\left(278\,528 z^5 + 5\,130\,240 z^4 + 65\,701\,440 z^3 + 469\,576\,800 z^2 + 1\,375\,258\,500 z + 684\,354\,825\right)\cosh\left(2\sqrt{z}\right) - \right. $$
$$ \left. 2\sqrt{z}\left(32\,768 z^5 + 614\,400 z^4 + 9\,744\,000 z^3 + 95\,855\,760 z^2 + 462\,785\,400 z + 684\,354\,825\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.abgv.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{19}{4}; -z\right) = $$
$$ \frac{1}{684\,354\,825}\left(\left(-278\,528 z^5 + 5\,130\,240 z^4 - 65\,701\,440 z^3 + 469\,576\,800 z^2 - 1\,375\,258\,500 z + 684\,354\,825\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left. 2\sqrt{z}\left(32\,768 z^5 - 614\,400 z^4 + 9\,744\,000 z^3 - 95\,855\,760 z^2 + 462\,785\,400 z - 684\,354\,825\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.abgw.01

$${}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{17}{4}; z\right) = \frac{1}{103\,378\,275\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(131\,072 z^5 + 2\,110\,464 z^4 + 22\,867\,200 z^3 + 126\,312\,480 z^2 + 207\,862\,200 z + 103\,378\,275\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(16\,384 z^5 + 288\,768 z^4 + 4\,033\,728 z^3 + 33\,536\,160 z^2 + 125\,159\,580 z + 103\,378\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.36 z\left(4096 z^4 + 67\,840 z^3 + 769\,104 z^2 + 4\,717\,440 z + 11\,486\,475\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abgx.01

$${}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{17}{4}; -z\right) = -\frac{1}{103\,378\,275\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(131\,072 z^5 - 2\,110\,464 z^4 + 22\,867\,200 z^3 - 126\,312\,480 z^2 + 207\,862\,200 z - 103\,378\,275\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(16\,384 z^5 - 288\,768 z^4 + 4\,033\,728 z^3 - 33\,536\,160 z^2 + 125\,159\,580 z - 103\,378\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.36 z\left(4096 z^4 - 67\,840 z^3 + 769\,104 z^2 - 4\,717\,440 z + 11\,486\,475\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abgy.01

$${}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{36\,018\,675}\left(\left(16\,384 z^5 + 288\,768 z^4 + 3\,539\,520 z^3 + 24\,907\,680 z^2 + 72\,473\,940 z + 36\,018\,675\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left.6\sqrt{z}\left(12\,288 z^4 + 177\,664 z^3 + 1\,705\,200 z^2 + 8\,149\,680 z + 12\,006\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abgz.01

$${}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{36\,018\,675}\left(\left(-16\,384 z^5 + 288\,768 z^4 - 3\,539\,520 z^3 + 24\,907\,680 z^2 - 72\,473\,940 z + 36\,018\,675\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.6\sqrt{z}\left(12\,288 z^4 - 177\,664 z^3 + 1\,705\,200 z^2 - 8\,149\,680 z + 12\,006\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abh0.01

$${}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{13}{4}; z\right) =$$
$$\frac{1}{6\,081\,075\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192 z^5 + 133\,632 z^4 + 1\,374\,720 z^3 + 7\,472\,640 z^2 + 12\,247\,200 z + 6\,081\,075\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(19\,456 z^4 + 247\,104 z^3 + 1\,999\,200 z^2 + 7\,382\,340 z + 6\,081\,075\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(2048 z^4 + 38\,784 z^3 + 417\,648 z^2 + 2\,517\,480 z + 6\,081\,075\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abh1.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{13}{4}; -z\right) = \frac{1}{6\,081\,075\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-8192z^5 + 133\,632z^4 - 1\,374\,720z^3 + 7\,472\,640z^2 - 12\,247\,200z + 6\,081\,075\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(19\,456z^4 - 247\,104z^3 + 1\,999\,200z^2 - 7\,382\,340z + 6\,081\,075\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(2048z^4 - 38\,784z^3 + 417\,648z^2 - 2\,517\,480z + 6\,081\,075\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abh2.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{11}{4}; z\right) = \frac{1}{2\,401\,245}\left(3\left(7168z^4 + 82\,368z^3 + 561\,120z^2 + 1\,614\,060z + 800\,415\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(2048z^4 + 38\,784z^3 + 349\,776z^2 + 1\,640\,520z + 2\,401\,245\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.abh3.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) = \frac{1}{2\,401\,245}\left(3\left(7168z^4 - 82\,368z^3 + 561\,120z^2 - 1\,614\,060z + 800\,415\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(2048z^4 - 38\,784z^3 + 349\,776z^2 - 1\,640\,520z + 2\,401\,245\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.abh4.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{9}{4}; z\right) = \frac{1}{467\,775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(11\,264z^4 + 111\,360z^3 + 581\,280z^2 + 945\,000z + 467\,775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024z^4 + 20\,928z^3 + 157\,920z^2 + 570\,780z + 467\,775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12z\left(1024z^3 + 11\,312z^2 + 65\,520z + 155\,925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abh5.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{9}{4}; -z\right) = \frac{1}{467\,775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(11\,264z^4 - 111\,360z^3 + 581\,280z^2 - 945\,000z + 467\,775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1024z^4 - 20\,928z^3 + 157\,920z^2 - 570\,780z + 467\,775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12z\left(-1024z^3 + 11\,312z^2 - 65\,520z + 155\,925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abh6.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{7}{4}; z\right) = \frac{1}{218\,295}\left(\left(1024z^4 + 24\,384z^3 + 157\,920z^2 + 442\,260z + 218\,295\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(3328z^3 + 33\,936z^2 + 151\,200z + 218\,295\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.abh7.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{7}{4}; -z\right) = \frac{1}{218\,295}\left(\left(1024z^4 - 24\,384z^3 + 157\,920z^2 - 442\,260z + 218\,295\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-3328z^3 + 33\,936z^2 - 151\,200z + 218\,295\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.abh8.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{5}{4}; z\right) = \frac{1}{51\,975\sqrt{2}} \left(\sqrt[4]{z}\left(\left(512z^4 + 13\,184z^3 + 67\,200z^2 + 105\,840z + 51\,975\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1856z^3 + 18\,864z^2 + 64\,260z + 51\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(128z^3 + 3792z^2 + 22\,680z + 51\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abh9.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{5}{4}; -z\right) = \frac{1}{51\,975\sqrt{2}} \left(\sqrt[4]{z}\left(\left(512z^4 - 13\,184z^3 + 67\,200z^2 - 105\,840z + 51\,975\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1856z^3 - 18\,864z^2 + 64\,260z - 51\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-128z^3 + 3792z^2 - 22\,680z + 51\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abha.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{3}{4}; z\right) = \left(\frac{64z^3}{945} + \frac{224z^2}{297} + \frac{68z}{33} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(128z^3 + 4368z^2 + 22\,680z + 31\,185\right)\sinh\left(2\sqrt{z}\right)}{31\,185} $$

07.22.03.abhb.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{3}{4}; -z\right) = \left(-\frac{64z^3}{945} + \frac{224z^2}{297} - \frac{68z}{33} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-128z^3 + 4368z^2 - 22\,680z + 31\,185\right)\sin\left(2\sqrt{z}\right)}{31\,185} $$

07.22.03.abhc.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{1}{4}; z\right) = \frac{1}{10\,395\sqrt{2}} \left(\sqrt[4]{z}\left(\left(1152z^3 + 13\,252z^2 + 22\,680z + 10\,395\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(128z^3 + 5312z^2 + 26\,739z + 20\,790\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(304z^2 + 4059z + 10\,395\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abhd.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) = -\frac{1}{10\,395\sqrt{2}} \left(\sqrt[4]{z}\left(\left(1152z^3 - 13\,252z^2 + 22\,680z - 10\,395\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\sqrt{z}\left(128z^3 - 5312z^2 + 26\,739z - 20\,790\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(304z^2 - 4059z + 10\,395\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abhe.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) = \left(\frac{64z^3}{10\,395} + \frac{32z^2}{99} + \frac{20z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16z^2 + 240z + 495\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.abhf.01

$${}_1F_2\left(\frac{1}{4};-\frac{11}{2},\frac{1}{4};-z\right)=\left(-\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}-\frac{20\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.abhg.01

$${}_1F_2\left(\frac{1}{4};-\frac{11}{2},\frac{3}{4};z\right)=\frac{1}{166\,320\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(2\left(256\,z^3+15\,856\,z^2+91\,665\,z+83\,160\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(12\,032\,z^2+217\,008\,z+456\,435\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\,z\left(256\,z^2+17\,424\,z+123\,795\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abhh.01

$${}_1F_2\left(\frac{1}{4};-\frac{11}{2},\frac{3}{4};-z\right)=$$
$$-\frac{1}{166\,320\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(256\,z^3-15\,856\,z^2+91\,665\,z-83\,160\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-12\,032\,z^2+217\,008\,z-456\,435\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\,z\left(256\,z^2-17\,424\,z+123\,795\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abhi.01

$${}_1F_2\left(\frac{1}{4};-\frac{11}{2},\frac{5}{4};z\right)=\frac{1}{5\,322\,240\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1024\,z^{5/2}-13\,568\,z^2-84\,288\,z^{3/2}-308\,784\,z-688\,380\sqrt{z}+\right.\right.\right.$$
$$\left.\left.e^{4\sqrt{z}}\left(1024\,z^{5/2}-13\,568\,z^2+84\,288\,z^{3/2}-308\,784\,z+688\,380\sqrt{z}-848\,925\right)-848\,925\right)+$$
$$\left.1\,514\,205\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+1\,514\,205\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abhj.01

$${}_1F_2\left(\frac{1}{4};-\frac{11}{2},\frac{5}{4};-z\right)=\frac{1}{1\,330\,560\sqrt[4]{z}}\left(1\,514\,205\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.$$
$$\left.2\sqrt[4]{z}\left(\left(13\,568\,z^2-308\,784\,z+848\,925\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(256\,z^2-21\,072\,z+172\,095\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abhk.01

$${}_1F_2\left(\frac{1}{4};-\frac{11}{2},\frac{7}{4};z\right)=\frac{1}{1\,774\,080\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(-2\sqrt{z}\left(29\,696\,z^2+794\,880\,z+853\,335\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(8192\,z^3+834\,048\,z^2+8\,497\,440\,z+5\,221\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.30\sqrt{z}\left(2048\,z^2+60\,480\,z+348\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abhl.01

$${}_1F_2\left(\frac{1}{4};-\frac{11}{2},\frac{7}{4};-z\right)=$$
$$\frac{1}{1\,774\,080\sqrt{2}\,\sqrt[4]{z}}\left(\left(-2\sqrt{z}\left(29\,696z^2-794\,880z+853\,335\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-8192z^3+834\,048z^2-8\,497\,440z+5\,221\,125\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+30\sqrt{z}\left(2048z^2-60\,480z+348\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abhm.01

$${}_1F_2\left(\frac{1}{4};-\frac{11}{2},\frac{9}{4};z\right)=\frac{1}{68\,124\,672z^{5/4}}$$
$$\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384z^3+270\,336z^{5/2}+2\,092\,032z^2+9\,647\,616z^{3/2}+27\,897\,408z+54\,511\,380\sqrt{z}+e^{4\sqrt{z}}\left(16\,384z^3-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.270\,336z^{5/2}+2\,092\,032z^2-9\,647\,616z^{3/2}+27\,897\,408z-54\,511\,380\sqrt{z}+40\,883\,535\right)+40\,883\,535\right)+\right.$$
$$\left.1\,514\,205e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-27)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+1\,514\,205e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-27)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abhn.01

$${}_1F_2\left(\frac{1}{4};-\frac{11}{2},\frac{9}{4};-z\right)=\frac{1}{17\,031\,168z^{5/4}}$$
$$\left(1\,514\,205\sqrt{\pi}\,(16z+27)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(16\,384z^3-2\,092\,032z^2+27\,897\,408z-40\,883\,535\right)\cos\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.132\sqrt{z}\left(2048z^2-73\,088z+412\,965\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abho.01

$${}_1F_2\left(\frac{1}{4};-\frac{11}{2},\frac{11}{4};z\right)=\frac{1}{8\,110\,080\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(16\,384z^3+2\,488\,320z^2+47\,813\,040z+50\,470\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(1\,196\,032z^3+52\,807\,680z^2+361\,998\,000z+151\,412\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(16\,384z^3+2\,641\,920z^2+38\,984\,400z+151\,412\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abhp.01

$${}_1F_2\left(\frac{1}{4};-\frac{11}{2},\frac{11}{4};-z\right)=\frac{1}{8\,110\,080\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(16\,384z^3-2\,488\,320z^2+47\,813\,040z-50\,470\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-1\,196\,032z^3+52\,807\,680z^2-361\,998\,000z+151\,412\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(-16\,384z^3+2\,641\,920z^2-38\,984\,400z+151\,412\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abhq.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) = \frac{1}{968\,884\,224\, z^{9/4}} \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(-524\,288\, z^{7/2} - 10\,616\,832\, z^3 - 101\,449\,728\, z^{5/2} - 587\,710\,464\, z^2 - 2\,118\,156\,480\, z^{3/2} - 5\,451\,138\,000\, z - 8\,449\,263\,900\sqrt{z} + e^{4\sqrt{z}}\left(524\,288\, z^{7/2} - 10\,616\,832\, z^3 + 101\,449\,728\, z^{5/2} - 587\,710\,464\, z^2 + 2\,118\,156\,480\, z^{3/2} - 5\,451\,138\,000\, z + 8\,449\,263\,900\sqrt{z} - 6\,336\,947\,925\right) - 6\,336\,947\,925\right) + 1\,514\,205\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 864\, z + 4185\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 1\,514\,205\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 864\, z + 4185\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abhr.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) = \frac{1}{242\,221\,056\, z^{9/4}} \left(1\,514\,205\sqrt{\pi}\left(256\, z^2 + 864\, z + 4185\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(3\left(3\,538\,944\, z^3 - 195\,903\,488\, z^2 + 1\,817\,046\,000\, z - 2\,112\,315\,975\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(131\,072\, z^3 - 25\,362\,432\, z^2 + 529\,539\,120\, z - 2\,112\,315\,975\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.abhs.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) = \frac{1}{23\,592\,960\sqrt{2}\, z^{9/4}} \left(\left(-2\sqrt{z}\left(2\,883\,584\, z^3 + 163\,872\,000\, z^2 + 2\,261\,095\,200\, z + 2\,331\,754\,425\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(524\,288\, z^4 + 122\,880\,000\, z^3 + 3\,332\,609\,280\, z^2 + 17\,442\,734\,400\, z + 6\,995\,263\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 90\sqrt{z}\left(65\,536\, z^3 + 5\,148\,416\, z^2 + 55\,989\,024\, z + 155\,450\,295\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abht.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) = \frac{1}{23\,592\,960\sqrt{2}\, z^{9/4}} \left(\left(2\sqrt{z}\left(2\,883\,584\, z^3 - 163\,872\,000\, z^2 + 2\,261\,095\,200\, z - 2\,331\,754\,425\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(524\,288\, z^4 - 122\,880\,000\, z^3 + 3\,332\,609\,280\, z^2 - 17\,442\,734\,400\, z + 6\,995\,263\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 90\sqrt{z}\left(65\,536\, z^3 - 5\,148\,416\, z^2 + 55\,989\,024\, z - 155\,450\,295\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abhu.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) = \frac{1}{62\,008\,590\,336\,z^{13/4}}\left(13\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(8\,388\,608\,z^4 + 205\,520\,896\,z^{7/2} + 2\,393\,899\,008\,z^3 + 17\,700\,387\,840\,z^{5/2} + 82\,566\,570\,240\,z^2 + 270\,376\,444\,800\,z^{3/2} + 608\,347\,000\,800\,z + 887\,172\,709\,500\sqrt{z} + e^{4\sqrt{z}}\left(8\,388\,608\,z^4 - 205\,520\,896\,z^{7/2} + 2\,393\,899\,008\,z^3 - 17\,700\,387\,840\,z^{5/2} + 82\,566\,570\,240\,z^2 - 270\,376\,444\,800\,z^{3/2} + 608\,347\,000\,800\,z - 887\,172\,709\,500\sqrt{z} + 665\,379\,532\,125\right) + 665\,379\,532\,125\right) + 504\,735\,e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\,z^3 - 20\,736\,z^2 + 200\,880\,z - 1\,318\,275\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 504\,735\,e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\,z^3 - 20\,736\,z^2 + 200\,880\,z - 1\,318\,275\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abhv.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) = \frac{1}{15\,502\,147\,584\,z^{13/4}}\left(13\left(504\,735\sqrt{\pi}\left(4096\,z^3 + 20\,736\,z^2 + 200\,880\,z + 1\,318\,275\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(8\,388\,608\,z^4 - 2\,393\,899\,008\,z^3 + 82\,566\,570\,240\,z^2 - 608\,347\,000\,800\,z + 665\,379\,532\,125\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(-51\,380\,224\,z^3 + 4\,425\,096\,960\,z^2 - 67\,594\,111\,200\,z + 221\,793\,177\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abhw.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) = \frac{1}{50\,331\,648\sqrt{2}\,z^{13/4}}\left(\left(2\sqrt{z}\left(1\,048\,576\,z^4 + 409\,882\,624\,z^3 + 14\,101\,850\,880\,z^2 + 136\,288\,666\,800\,z + 135\,574\,864\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(112\,197\,632\,z^4 + 11\,392\,143\,360\,z^3 + 227\,475\,406\,080\,z^2 + 1\,028\,636\,809\,200\,z + 406\,724\,593\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576\,z^4 + 306\,032\,640\,z^3 + 16\,316\,801\,280\,z^2 + 160\,957\,676\,880\,z + 406\,724\,593\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abhx.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) = \frac{1}{50\,331\,648\sqrt{2}\,z^{13/4}}\left(\left(-2\sqrt{z}\left(1\,048\,576\,z^4 - 409\,882\,624\,z^3 + 14\,101\,850\,880\,z^2 - 136\,288\,666\,800\,z + 135\,574\,864\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(112\,197\,632\,z^4 - 11\,392\,143\,360\,z^3 + 227\,475\,406\,080\,z^2 - 1\,028\,636\,809\,200\,z + 406\,724\,593\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576\,z^4 - 306\,032\,640\,z^3 + 16\,316\,801\,280\,z^2 - 160\,957\,676\,880\,z + 406\,724\,593\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abhy.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) = \frac{1}{15\,874\,199\,126\,016\,z^{17/4}} $$
$$ \left(221\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-536\,870\,912\,z^{9/2} - 15\,703\,474\,176\,z^4 - 211\,679\,723\,520\,z^{7/2} - 1\,926\,623\,784\,960\,z^3 - \right.\right.\right. $$
$$ 11\,601\,607\,449\,600\,z^{5/2} - 49\,208\,512\,953\,600\,z^2 - 148\,842\,232\,862\,400\,z^{3/2} - 317\,252\,960\,917\,200\,z - $$
$$ 449\,796\,563\,716\,500\sqrt{z} + e^{4\sqrt{z}}\left(536\,870\,912\,z^{9/2} - 15\,703\,474\,176\,z^4 + 211\,679\,723\,520\,z^{7/2} - \right. $$
$$ 1\,926\,623\,784\,960\,z^3 + 11\,601\,607\,449\,600\,z^{5/2} - 49\,208\,512\,953\,600\,z^2 + 148\,842\,232\,862\,400\,z^{3/2} - $$
$$ \left.\left.\left.\left.\left.317\,252\,960\,917\,200\,z + 449\,796\,563\,716\,500\sqrt{z} - 337\,347\,422\,787\,375\right) - 337\,347\,422\,787\,375\right) + \right. \right. $$
$$ 504\,735\,e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4 - 442\,368\,z^3 + 6\,428\,160\,z^2 - 84\,369\,600\,z + 668\,365\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ \left.\left.504\,735\,e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4 - 442\,368\,z^3 + 6\,428\,160\,z^2 - 84\,369\,600\,z + 668\,365\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abhz.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) = $$
$$ \frac{1}{3\,968\,549\,781\,504\,z^{17/4}}\left(221\left(504\,735\sqrt{\pi}\left(65\,536\,z^4 + 442\,368\,z^3 + 6\,428\,160\,z^2 + 84\,369\,600\,z + 668\,365\,425\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$
$$ 2\sqrt[4]{z}\left(9\left(1\,744\,830\,464\,z^4 - 214\,069\,309\,440\,z^3 + 5\,467\,612\,550\,400\,z^2 - 35\,250\,328\,990\,800\,z + 37\,483\,046\,976\,375\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(134\,217\,728\,z^4 - 52\,919\,930\,880\,z^3 + 2\,900\,401\,862\,400\,z^2 - \right. $$
$$ \left.\left.\left.37\,210\,558\,215\,600\,z + 112\,449\,140\,929\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\Bigg) $$

07.22.03.abi0.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) = \frac{1}{4\,831\,838\,208\sqrt{2}\,z^{17/4}} $$
$$ \left(19\left(-2\sqrt{z}\left(477\,691\,904\,z^4 + 116\,030\,586\,880\,z^3 + 3\,435\,388\,070\,400\,z^2 + 28\,509\,457\,204\,800\,z + 27\,792\,847\,207\,125\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(100\,663\,296\,z^5 + 48\,424\,878\,080\,z^4 + 3\,094\,236\,487\,680\,z^3 + 50\,872\,980\,787\,200\,z^2 + \right. $$
$$ 212\,581\,387\,418\,400\,z + 83\,378\,541\,621\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 10\sqrt{z}\left(224\,067\,584\,z^4 + \right. $$
$$ \left.\left.\left.\left.23\,504\,977\,920\,z^3 + 787\,134\,306\,816\,z^2 + 6\,941\,433\,058\,560\,z + 16\,675\,708\,324\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abi1.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) = -\frac{1}{4\,831\,838\,208\sqrt{2}\,z^{17/4}} $$
$$ \left(19\left(2\sqrt{z}\left(477\,691\,904 z^4 - 116\,030\,586\,880 z^3 + 3\,435\,388\,070\,400 z^2 - 28\,509\,457\,204\,800 z + 27\,792\,847\,207\,125\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(100\,663\,296 z^5 - 48\,424\,878\,080 z^4 + 3\,094\,236\,487\,680 z^3 - 50\,872\,980\,787\,200 z^2 + \right. $$
$$ \left. 212\,581\,387\,418\,400 z - 83\,378\,541\,621\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 10\sqrt{z}\left(224\,067\,584 z^4 - \right. $$
$$ \left.\left. \left. 23\,504\,977\,920 z^3 + 787\,134\,306\,816 z^2 - 6\,941\,433\,058\,560 z + 16\,675\,708\,324\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{1}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.abi2.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) = \left(\frac{65\,536 z^5}{158\,991\,525} + \frac{20\,480 z^4}{2\,725\,569} + \frac{7936 z^3}{82\,593} + \frac{18\,896 z^2}{27\,531} + \frac{416 z}{207} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{1\,430\,923\,725} $$
$$ \left(2\sqrt{z}\left(65\,536 z^5 + 1\,290\,240 z^4 + 20\,401\,920 z^3 + 200\,526\,480 z^2 + 967\,774\,500 z + 1\,430\,923\,725\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.abi3.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, -\frac{23}{4}; -z\right) = \left(-\frac{65\,536 z^5}{158\,991\,525} + \frac{20\,480 z^4}{2\,725\,569} - \frac{7936 z^3}{82\,593} + \frac{18\,896 z^2}{27\,531} - \frac{416 z}{207} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{1\,430\,923\,725} $$
$$ \left(2\sqrt{z}\left(-65\,536 z^5 + 1\,290\,240 z^4 - 20\,401\,920 z^3 + 200\,526\,480 z^2 - 967\,774\,500 z + 1\,430\,923\,725\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.abi4.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, -\frac{21}{4}; z\right) = \frac{1}{197\,358\,525\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(245\,760 z^5 + 4\,020\,224 z^4 + 43\,623\,360 z^3 + 241\,094\,880 z^2 + 396\,805\,500 z + 197\,358\,525\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z}\left(32\,768 z^5 + 548\,864 z^4 + 7\,690\,368 z^3 + 63\,994\,320 z^2 + 238\,918\,680 z + 197\,358\,525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(69\,632 z^4 + 1\,162\,752 z^3 + 13\,203\,216 z^2 + 81\,031\,860 z + 197\,358\,525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abi5.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) = -\frac{1}{197\,358\,525\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(245\,760 z^5 - 4\,020\,224 z^4 + 43\,623\,360 z^3 - 241\,094\,880 z^2 + 396\,805\,500 z - 197\,358\,525\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(32\,768 z^5 - 548\,864 z^4 + 7\,690\,368 z^3 - 63\,994\,320 z^2 + 238\,918\,680 z - 197\,358\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 4 z\left(69\,632 z^4 - 1\,162\,752 z^3 + 13\,203\,216 z^2 - 81\,031\,860 z + 197\,358\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abi6.01

$${}_1F_2\left(\frac{1}{4};-\frac{9}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{62\,214\,075}\left(\left(32\,768\,z^5+491\,520\,z^4+6\,088\,320\,z^3+42\,966\,000\,z^2+125\,155\,800\,z+62\,214\,075\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.30\sqrt{z}\left(4096\,z^4+60\,928\,z^3+587\,664\,z^2+2\,813\,580\,z+4\,147\,605\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abi7.01

$${}_1F_2\left(\frac{1}{4};-\frac{9}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{62\,214\,075}\left(\left(-32\,768\,z^5+491\,520\,z^4-6\,088\,320\,z^3+42\,966\,000\,z^2-125\,155\,800\,z+62\,214\,075\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.30\sqrt{z}\left(4096\,z^4-60\,928\,z^3+587\,664\,z^2-2\,813\,580\,z+4\,147\,605\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abi8.01

$${}_1F_2\left(\frac{1}{4};-\frac{9}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^5+200\,704\,z^4+2\,111\,040\,z^3+11\,530\,080\,z^2+18\,918\,900\,z+9\,398\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(28\,672\,z^4+377\,088\,z^3+3\,078\,000\,z^2+11\,400\,480\,z+9\,398\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(4096\,z^4+58\,368\,z^3+640\,656\,z^2+3\,882\,060\,z+9\,398\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abi9.01

$${}_1F_2\left(\frac{1}{4};-\frac{9}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-16\,384\,z^5+200\,704\,z^4-2\,111\,040\,z^3+11\,530\,080\,z^2-18\,918\,900\,z+9\,398\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(28\,672\,z^4-377\,088\,z^3+3\,078\,000\,z^2-11\,400\,480\,z+9\,398\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(4096\,z^4-58\,368\,z^3+640\,656\,z^2-3\,882\,060\,z+9\,398\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abia.01

$${}_1F_2\left(\frac{1}{4};-\frac{9}{2},-\frac{15}{4};z\right)=\frac{1}{3\,274\,425}\left(\left(28\,672\,z^4+330\,240\,z^3+2\,283\,120\,z^2+6\,597\,360\,z+3\,274\,425\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(4096\,z^4+50\,688\,z^3+472\,080\,z^2+2\,231\,460\,z+3\,274\,425\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abib.01

$${}_1F_2\left(\frac{1}{4};-\frac{9}{2},-\frac{15}{4};-z\right)=\frac{1}{3\,274\,425}\left(\left(28\,672\,z^4-330\,240\,z^3+2\,283\,120\,z^2-6\,597\,360\,z+3\,274\,425\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(4096\,z^4-50\,688\,z^3+472\,080\,z^2-2\,231\,460\,z+3\,274\,425\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abic.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, -\frac{13}{4}; z\right) = \frac{1}{552\,825\sqrt{2}} \left(\sqrt[4]{z}\left(\left(13\,312 z^4 + 127\,680 z^3 + 683\,040 z^2 + 1\,115\,100 z + 552\,825\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048 z^4 + 23\,424 z^3 + 184\,080 z^2 + 672\,840 z + 552\,825\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(1280 z^3 + 12\,976 z^2 + 76\,860 z + 184\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abid.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, -\frac{13}{4}; -z\right) = \frac{1}{552\,825\sqrt{2}} \left(\sqrt[4]{z}\left(\left(13\,312 z^4 - 127\,680 z^3 + 683\,040 z^2 - 1\,115\,100 z + 552\,825\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048 z^4 - 23\,424 z^3 + 184\,080 z^2 - 672\,840 z + 552\,825\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(-1280 z^3 + 12\,976 z^2 - 76\,860 z + 184\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abie.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, -\frac{11}{4}; z\right) = \frac{1}{218\,295}\left(\left(2048 z^4 + 23\,424 z^3 + 154\,800 z^2 + 441\,000 z + 218\,295\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(1280 z^3 + 10\,832 z^2 + 49\,980 z + 72\,765\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.abif.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, -\frac{11}{4}; -z\right) = \frac{1}{218\,295}\left(\left(2048 z^4 - 23\,424 z^3 + 154\,800 z^2 - 441\,000 z + 218\,295\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(-1280 z^3 + 10\,832 z^2 - 49\,980 z + 72\,765\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.abig.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, -\frac{9}{4}; z\right) = \frac{1}{42\,525\sqrt{2}} \left(\sqrt[4]{z}\left(\left(1024 z^4 + 10\,560 z^3 + 53\,280 z^2 + 86\,100 z + 42\,525\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048 z^3 + 14\,640 z^2 + 52\,080 z + 42\,525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(256 z^3 + 3216 z^2 + 18\,060 z + 42\,525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abih.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) = \frac{1}{42\,525\sqrt{2}} \left(\sqrt[4]{z}\left(\left(1024 z^4 - 10\,560 z^3 + 53\,280 z^2 - 86\,100 z + 42\,525\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048 z^3 - 14\,640 z^2 + 52\,080 z - 42\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-256 z^3 + 3216 z^2 - 18\,060 z + 42\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abii.01

$${}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{19\,845}\left(3\left(768\,z^3 + 4880\,z^2 + 13\,440\,z + 6615\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256\,z^3 + 3216\,z^2 + 13\,860\,z + 19\,845\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abij.01

$${}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{19\,845}\left(2\sqrt{z}\left(-256\,z^3 + 3216\,z^2 - 13\,860\,z + 19\,845\right)\sin\left(2\sqrt{z}\right) - 3\left(768\,z^3 - 4880\,z^2 + 13\,440\,z - 6615\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.abik.01

$${}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, -\frac{5}{4}; z\right) = \frac{1}{4725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1216\,z^3 + 6240\,z^2 + 9660\,z + 4725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$\left.\left.4\sqrt{z}\left(128\,z^3 + 1776\,z^2 + 5880\,z + 4725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 84\,z\left(16\,z^2 + 100\,z + 225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abil.01

$${}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, -\frac{5}{4}; -z\right) =$$
$$-\frac{1}{4725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1216\,z^3 - 6240\,z^2 + 9660\,z - 4725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(128\,z^3 - 1776\,z^2 + 5880\,z - 4725\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 84\,z\left(16\,z^2 - 100\,z + 225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abim.01

$${}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) = \left(\frac{128\,z^3}{2835} + \frac{16\,z^2}{21} + \frac{56\,z}{27} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(368\,z^2 + 2100\,z + 2835\right)\sinh\left(2\sqrt{z}\right)}{2835}$$

07.22.03.abin.01

$${}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) = \left(-\frac{128\,z^3}{2835} + \frac{16\,z^2}{21} - \frac{56\,z}{27} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(368\,z^2 - 2100\,z + 2835\right)\sin\left(2\sqrt{z}\right)}{2835}$$

07.22.03.abio.01

$${}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) =$$
$$\frac{1}{945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64\,z^3 + 1192\,z^2 + 2100\,z + 945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(208\,z^2 + 1227\,z + 945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.4\,z\left(16\,z^2 + 354\,z + 945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abip.01

$${}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) =$$
$$-\frac{1}{945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^3-1192z^2+2100z-945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(208z^2-1227z+945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(16z^2-354z+945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abiq.01

$${}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) = \left(\frac{16z^2}{63}+\frac{16z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{945}\sqrt{z}\left(16z^2+420z+945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.abir.01

$${}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) = \left(\frac{16z^2}{63}-\frac{16z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\left(16z^2-420z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.abis.01

$${}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{7560\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(528z^2+3965z+3780\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(256z^2+8464z+20\,295\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.10z\left(112z+1035\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abit.01

$${}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) =$$
$$\frac{1}{7560\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(528z^2-3965z+3780\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(256z^2-8464z+20\,295\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.10\left(1035-112z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abiu.01

$${}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) = \frac{1}{241\,920\sqrt[4]{z}}$$
$$\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(256z^2+2496z^{3/2}+11\,088z+27\,300\sqrt{z}+e^{4\sqrt{z}}\left(256z^2-2496z^{3/2}+11\,088z-27\,300\sqrt{z}+35\,595\right)+\right.\right.\right.$$
$$\left.\left.\left.35\,595\right)+65\,835e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+65\,835e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abiv.01

$${}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{5}{4}; -z\right) =$$
$$\frac{1}{60\,480\sqrt[4]{z}}\left(65\,835\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(\left(256z^2-11\,088z+35\,595\right)\cos\left(2\sqrt{z}\right)+156\left(175-16z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abiw.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{7}{4}; z\right) = -\frac{1}{80\,640\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(512z^2+26\,720z+29\,295\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(22\,528z^2+313\,920z+208\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(512z^2+29\,664z+208\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abix.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{7}{4}; -z\right) = \frac{1}{80\,640\sqrt{2}\,\sqrt[4]{z}}\left(\left(-2\sqrt{z}\left(512z^2-26\,720z+29\,295\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(22\,528z^2-313\,920z+208\,845\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(512z^2-29\,664z+208\,845\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abiy.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{9}{4}; z\right) = \frac{1}{3\,096\,576z^{5/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4096z^{5/2}-51\,200z^2-292\,608z^{3/2}-948\,864z-2\,018\,940\sqrt{z}+e^{4\sqrt{z}}\left(4096z^{5/2}-51\,200z^2+292\,608z^{3/2}-948\,864z+2\,018\,940\sqrt{z}-1\,514\,205\right)-1\,514\,205\right)+65\,835e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-23)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+65\,835e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-23)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abiz.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = \frac{1}{774\,144z^{5/4}}\left(65\,835\sqrt{\pi}\,(16z+23)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(\left(51\,200z^2-948\,864z+1\,514\,205\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(1024z^2-73\,152z+504\,735\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.abj0.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = \frac{1}{368\,640\sqrt{2}\,z^{5/4}}\left(\left(10\sqrt{z}\left(11\,264z^2+323\,280z+348\,075\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(16\,384z^3+1\,474\,560z^2+12\,252\,240z+5\,221\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\left(19\,456z^2+371\,280z+1\,740\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abj1.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = \frac{1}{368\,640\sqrt{2}\, z^{5/4}} $$
$$ \left(\left(-10\sqrt{z}\left(11\,264 z^2 - 323\,280 z + 348\,075\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,384 z^3 + 1\,474\,560 z^2 - 12\,252\,240 z + 5\,221\,125\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(19\,456 z^2 - 371\,280 z + 1\,740\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abj2.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = $$
$$ \frac{1}{44\,040\,192 z^{9/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(131\,072 z^3 + 2\,064\,384 z^{5/2} + 15\,040\,512 z^2 + 59\,991\,360 z^{3/2} + 169\,590\,960 z + \right.\right.\right. $$
$$ 272\,556\,900\sqrt{z} + e^{4\sqrt{z}}\left(131\,072 z^3 - 2\,064\,384 z^{5/2} + 15\,040\,512 z^2 - 59\,991\,360 z^{3/2} + \right. $$
$$ \left. 169\,590\,960 z - 272\,556\,900\sqrt{z} + 204\,417\,675\right) + 204\,417\,675\Big) + 65\,835\, e^{2\sqrt{z}}\sqrt{2\pi} $$
$$ \left.\left.\left(256 z^2 - 736 z + 3105\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 65\,835\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2 - 736 z + 3105\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abj3.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = \frac{1}{11\,010\,048 z^{9/4}} $$
$$ \left(65\,835\sqrt{\pi}\left(256 z^2 + 736 z + 3105\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(131\,072 z^3 - 15\,040\,512 z^2 + 169\,590\,960 z - 204\,417\,675\right)\right.\right. $$
$$ \left.\left.\cos\left(2\sqrt{z}\right) - 12\sqrt{z}\left(172\,032 z^2 - 4\,999\,280 z + 22\,713\,075\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.abj4.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{15}{4}; z\right) = -\frac{1}{11\,796\,480\sqrt{2}\, z^{9/4}}\left(11\left(2\sqrt{z}\left(32\,768 z^3 + 3\,398\,400 z^2 + 66\,830\,400 z + 70\,659\,225\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 35\left(65\,536 z^3 + 2\,545\,920 z^2 + 14\,957\,280 z + 6\,056\,505\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 2\sqrt{z}\left(32\,768 z^3 + 5\,940\,480 z^2 + 71\,285\,760 z + 211\,977\,675\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big) $$

07.22.03.abj5.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{15}{4}; -z\right) = \frac{1}{11\,796\,480\sqrt{2}\, z^{9/4}}\left(11\left(2\sqrt{z}\left(32\,768 z^3 - 3\,398\,400 z^2 + 66\,830\,400 z - 70\,659\,225\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 35\left(65\,536 z^3 - 2\,545\,920 z^2 + 14\,957\,280 z - 6\,056\,505\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 2\sqrt{z}\left(-32\,768 z^3 + 5\,940\,480 z^2 - 71\,285\,760 z + 211\,977\,675\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big) $$

07.22.03.abj6.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{17}{4}; z\right) = \frac{1}{2\,818\,572\,288\, z^{13/4}} \left(13\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\, \left(-2\,097\,152\, z^{7/2} - 40\,894\,464\, z^3 - 396\,026\,880\, z^{5/2} - 2\,048\,935\,680\, z^2 - 7\,226\,651\,520\, z^{3/2} - 17\,007\,550\,560\, z - 25\,347\,791\,700\sqrt{z} + e^{4\sqrt{z}} \left(2\,097\,152\, z^{7/2} - 40\,894\,464\, z^3 + 396\,026\,880\, z^{5/2} - 2\,048\,935\,680\, z^2 + 7\,226\,651\,520\, z^{3/2} - 17\,007\,550\,560\, z + 25\,347\,791\,700\sqrt{z} - 19\,010\,843\,775\right) - 19\,010\,843\,775\right) + 21\,945\, e^{2\sqrt{z}} \sqrt{2\pi}\, \left(4096\, z^3 - 17\,664\, z^2 + 149\,040\, z - 866\,295\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + 21\,945\, e^{2\sqrt{z}} \sqrt{2\pi}\, \left(4096\, z^3 - 17\,664\, z^2 + 149\,040\, z - 866\,295\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.abj7.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = \frac{1}{704\,643\,072\, z^{13/4}} \left(13 \left(21\,945\sqrt{\pi}\, \left(4096\, z^3 + 17\,664\, z^2 + 149\,040\, z + 866\,295\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\, \left(3\left(13\,631\,488\, z^3 - 682\,978\,560\, z^2 + 5\,669\,183\,520\, z - 6\,336\,947\,925\right) \cos\left(2\sqrt{z}\right) + 4\sqrt{z}\, \left(524\,288\, z^3 - 99\,006\,720\, z^2 + 1\,806\,662\,880\, z - 6\,336\,947\,925\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abj8.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) = -\frac{1}{25\,165\,824\sqrt{2}\, z^{13/4}} \left(11 \left(-2\sqrt{z}\, \left(8\,138\,752\, z^3 + 323\,331\,840\, z^2 + 3\,622\,366\,800\, z + 3\,664\,185\,525\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1\,048\,576\, z^4 + 230\,830\,080\, z^3 + 5\,695\,223\,040\, z^2 + 27\,617\,662\,800\, z + 10\,992\,556\,575\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 1530\sqrt{z}\, \left(4096\, z^3 + 495\,872\, z^2 + 5\,446\,896\, z + 14\,369\,355\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abj9.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) = \frac{1}{25\,165\,824\sqrt{2}\, z^{13/4}} \left(11 \left(2\sqrt{z}\, \left(8\,138\,752\, z^3 - 323\,331\,840\, z^2 + 3\,622\,366\,800\, z - 3\,664\,185\,525\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1\,048\,576\, z^4 - 230\,830\,080\, z^3 + 5\,695\,223\,040\, z^2 - 27\,617\,662\,800\, z + 10\,992\,556\,575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 1530\sqrt{z}\, \left(4096\, z^3 - 495\,872\, z^2 + 5\,446\,896\, z - 14\,369\,355\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abja.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) = -\frac{1}{721\,554\,505\,728\, z^{17/4}} $$
$$ \left(221\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(134\,217\,728\, z^4 + 2\,828\,124\,160\, z^{7/2} + 35\,951\,185\,920\, z^3 + 250\,040\,632\,320\, z^{5/2} + 1\,150\,117\,436\,160\, z^2 + \right.\right.\right. $$
$$ \left. 3\,650\,082\,004\,800\, z^{3/2} + 8\,009\,902\,177\,200\, z + 11\,533\,245\,223\,500\, \sqrt{z} + e^{4\sqrt{z}} \left(134\,217\,728\, z^4 - \right.\right. $$
$$ \left. 2\,828\,124\,160\, z^{7/2} + 35\,951\,185\,920\, z^3 - 250\,040\,632\,320\, z^{5/2} + 1\,150\,117\,436\,160\, z^2 - 3\,650\,082\,004\,800 \right. $$
$$ \left. z^{3/2} + 8\,009\,902\,177\,200\, z - 11\,533\,245\,223\,500\, \sqrt{z} + 8\,649\,933\,917\,625\right) + 8\,649\,933\,917\,625\Big) - $$
$$ 21\,945\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(65\,536\, z^4 - 376\,832\, z^3 + 4\,769\,280\, z^2 - 55\,442\,880\, z + 394\,164\,225\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - $$
$$ \left. 21\,945\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(65\,536\, z^4 - 376\,832\, z^3 + 4\,769\,280\, z^2 - 55\,442\,880\, z + 394\,164\,225\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\Big) $$

07.22.03.abjb.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) = $$
$$ \frac{1}{180\,388\,626\,432\, z^{17/4}} \left(221 \left(21\,945\, \sqrt{\pi}\, \left(65\,536\, z^4 + 376\,832\, z^3 + 4\,769\,280\, z^2 + 55\,442\,880\, z + 394\,164\,225\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$
$$ 2\sqrt[4]{z}\, \left(\left(134\,217\,728\, z^4 - 35\,951\,185\,920\, z^3 + 1\,150\,117\,436\,160\, z^2 - 8\,009\,902\,177\,200\, z + 8\,649\,933\,917\,625\right) \right. $$
$$ \left.\left. \cos\left(2\sqrt{z}\right) - 8740\, \sqrt{z}\, \left(323\,584\, z^3 - 28\,608\,768\, z^2 + 417\,629\,520\, z - 1\,319\,593\,275\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.abjc.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) = \frac{1}{2\,415\,919\,104\, \sqrt{2}\, z^{17/4}} $$
$$ \left(209 \left(2\sqrt{z}\, \left(7\,405\,568\, z^4 - 2\,072\,944\,640\, z^3 - 75\,308\,313\,600\, z^2 - 686\,773\,058\,400\, z - 677\,874\,322\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 85 \left(7\,536\,640\, z^4 + 730\,988\,544\, z^3 + 13\,836\,925\,440\, z^2 + 60\,696\,155\,520\, z + 23\,924\,976\,075\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left. \left. 10\sqrt{z}\, \left(3\,997\,696\, z^4 + 395\,649\,024\, z^3 + 17\,247\,080\,448\, z^2 + 164\,155\,511\,520\, z + 406\,724\,593\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abjd.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) = \frac{1}{2\,415\,919\,104\, \sqrt{2}\, z^{17/4}} $$
$$ \left(209 \left(2\sqrt{z}\, \left(7\,405\,568\, z^4 + 2\,072\,944\,640\, z^3 - 75\,308\,313\,600\, z^2 + 686\,773\,058\,400\, z - 677\,874\,322\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 85 \left(7\,536\,640\, z^4 - 730\,988\,544\, z^3 + 13\,836\,925\,440\, z^2 - 60\,696\,155\,520\, z + 23\,924\,976\,075\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. \left. 10\sqrt{z}\, \left(3\,997\,696\, z^4 - 395\,649\,024\, z^3 + 17\,247\,080\,448\, z^2 - 164\,155\,511\,520\, z + 406\,724\,593\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{1}{4}$, $b_1 = -\frac{7}{2}$

07.22.03.abje.01

$${}_1F_2\left(\frac{1}{4};-\frac{7}{2},-\frac{23}{4};z\right)=\left(\frac{65\,536\,z^5}{158\,991\,525}+\frac{4096\,z^4}{504\,735}+\frac{13\,568\,z^3}{137\,655}+\frac{6352\,z^2}{9177}+\frac{324\,z}{161}+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\,\left(32\,768\,z^4+473\,088\,z^3+4\,523\,904\,z^2+21\,593\,880\,z+31\,798\,305\right)\sinh\left(2\sqrt{z}\right)}{31\,798\,305}$$

07.22.03.abjf.01

$${}_1F_2\left(\frac{1}{4};-\frac{7}{2},-\frac{23}{4};-z\right)=\left(-\frac{65\,536\,z^5}{158\,991\,525}+\frac{4096\,z^4}{504\,735}-\frac{13\,568\,z^3}{137\,655}+\frac{6352\,z^2}{9177}-\frac{324\,z}{161}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\,\left(32\,768\,z^4-473\,088\,z^3+4\,523\,904\,z^2-21\,593\,880\,z+31\,798\,305\right)\sin\left(2\sqrt{z}\right)}{31\,798\,305}$$

07.22.03.abjg.01

$${}_1F_2\left(\frac{1}{4};-\frac{7}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{21\,928\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768\,z^5+475\,136\,z^4+4\,944\,000\,z^3+26\,928\,720\,z^2+44\,155\,800\,z+21\,928\,725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\,\left(69\,632\,z^4+886\,272\,z^3+7\,197\,840\,z^2+26\,612\,820\,z+21\,928\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(8192\,z^4+138\,240\,z^3+1\,501\,344\,z^2+9\,069\,840\,z+21\,928\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abjh.01

$${}_1F_2\left(\frac{1}{4};-\frac{7}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{21\,928\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-32\,768\,z^5+475\,136\,z^4-4\,944\,000\,z^3+26\,928\,720\,z^2-44\,155\,800\,z+21\,928\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\,\left(69\,632\,z^4-886\,272\,z^3+7\,197\,840\,z^2-26\,612\,820\,z+21\,928\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(8192\,z^4-138\,240\,z^3+1\,501\,344\,z^2-9\,069\,840\,z+21\,928\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abji.01

$${}_1F_2\left(\frac{1}{4};-\frac{7}{2},-\frac{19}{4};z\right)=\frac{1}{6\,912\,675}\left(15\left(4096\,z^4+46\,592\,z^3+321\,552\,z^2+928\,620\,z+460\,845\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\,\left(8192\,z^4+107\,520\,z^3+997\,920\,z^2+4\,712\,400\,z+6\,912\,675\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abjj.01

$${}_1F_2\left(\frac{1}{4};-\frac{7}{2},-\frac{19}{4};-z\right)=\frac{1}{6\,912\,675}\left(15\left(4096\,z^4-46\,592\,z^3+321\,552\,z^2-928\,620\,z+460\,845\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\,\left(8192\,z^4-107\,520\,z^3+997\,920\,z^2-4\,712\,400\,z+6\,912\,675\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abjk.01

$${}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) =$$
$$\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(24\,576 z^4 + 240\,640 z^3 + 1\,289\,520 z^2 + 2\,106\,000 z + 1\,044\,225\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\right.\right.$$
$$\left(4096 z^4 + 44\,032 z^3 + 347\,280 z^2 + 1\,270\,620 z + 1\,044\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(7168 z^3 + 73\,344 z^2 + 435\,240 z + 1\,044\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abjl.01

$${}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(24\,576 z^4 - 240\,640 z^3 + 1\,289\,520 z^2 - 2\,106\,000 z + 1\,044\,225\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right.$$
$$\left(4096 z^4 - 44\,032 z^3 + 347\,280 z^2 - 1\,270\,620 z + 1\,044\,225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(-7168 z^3 + 73\,344 z^2 - 435\,240 z + 1\,044\,225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abjm.01

$${}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, -\frac{15}{4}; z\right) =$$
$$\left(\frac{4096 z^4}{363\,825} + \frac{512 z^3}{4851} + \frac{272 z^2}{385} + \frac{212 z}{105} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(2048 z^3 + 17\,920 z^2 + 83\,160 z + 121\,275\right)\sinh\left(2\sqrt{z}\right)}{121\,275}$$

07.22.03.abjn.01

$${}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, -\frac{15}{4}; -z\right) =$$
$$\left(\frac{4096 z^4}{363\,825} - \frac{512 z^3}{4851} + \frac{272 z^2}{385} - \frac{212 z}{105} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-2048 z^3 + 17\,920 z^2 - 83\,160 z + 121\,275\right)\sin\left(2\sqrt{z}\right)}{121\,275}$$

07.22.03.abjo.01

$${}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, -\frac{13}{4}; z\right) = \frac{1}{61\,425\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(2048 z^4 + 14\,720 z^3 + 76\,560 z^2 + 124\,200 z + 61\,425\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2816 z^3 + 20\,880 z^2 + 75\,060 z + 61\,425\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(512 z^3 + 4512 z^2 + 25\,920 z + 61\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abjp.01

$${}_1F_2\left(\frac{1}{4};-\frac{7}{2},-\frac{13}{4};-z\right)=\frac{1}{61\,425\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(2048z^4-14\,720z^3+76\,560z^2-124\,200z+61\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2816z^3-20\,880z^2+75\,060z-61\,425\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(512z^3-4512z^2+25\,920z-61\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abjq.01

$${}_1F_2\left(\frac{1}{4};-\frac{7}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{24\,255}\left(\left(2816z^3+17\,520z^2+49\,140z+24\,255\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(512z^3+3744z^2+16\,800z+24\,255\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abjr.01

$${}_1F_2\left(\frac{1}{4};-\frac{7}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{24\,255}\left(\left(-2816z^3+17\,520z^2-49\,140z+24\,255\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(-512z^3+3744z^2-16\,800z+24\,255\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abjs.01

$${}_1F_2\left(\frac{1}{4};-\frac{7}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{4725\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(256z^3+1200z^2+1920z+945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^3+1680z^2+5820z+4725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.12z\left(128z^2+680z+1575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abjt.01

$${}_1F_2\left(\frac{1}{4};-\frac{7}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{4725\sqrt{2}}\left(\sqrt[4]{z}\left(-5\left(256z^3-1200z^2+1920z-945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^3-1680z^2+5820z-4725\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+12z\left(128z^2-680z+1575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abju.01

$${}_1F_2\left(\frac{1}{4};-\frac{7}{2},-\frac{7}{4};z\right)=\frac{\left(256z^3+1680z^2+4500z+2205\right)\cosh\left(2\sqrt{z}\right)-6\sqrt{z}\left(128z^2+520z+735\right)\sinh\left(2\sqrt{z}\right)}{2205}$$

07.22.03.abjv.01

$${}_1F_2\left(\frac{1}{4};-\frac{7}{2},-\frac{7}{4};-z\right)=\frac{\left(-256z^3+1680z^2-4500z+2205\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\left(128z^2-520z+735\right)\sin\left(2\sqrt{z}\right)}{2205}$$

07.22.03.abjw.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, -\frac{5}{4}; z\right) = \frac{1}{525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^3+720z^2+1080z+525\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(208z^2+660z+525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(32z^2+240z+525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abjx.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, -\frac{5}{4}; -z\right) = \frac{1}{525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-128z^3+720z^2-1080z+525\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(208z^2-660z+525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(32z^2-240z+525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abjy.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, -\frac{3}{4}; z\right) = \frac{1}{21}\left(16z^2+44z+21\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{315}\sqrt{z}\left(32z^2+240z+315\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.abjz.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) = \frac{1}{21}\left(16z^2-44z+21\right)\cos\left(2\sqrt{z}\right) + \frac{2}{315}\sqrt{z}\left(32z^2-240z+315\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.abk0.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) = \frac{1}{105\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^2+240z+105\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16z^2+138z+105\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12z\left(12z+35\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abk1.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) = \frac{1}{105\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^2-240z+105\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16z^2-138z+105\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12\left(35-12z\right) z\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abk2.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) = \left(\frac{16z^2}{105}+\frac{12z}{7}+1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\left(8z+21\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.abk3.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) = \left(\frac{16z^2}{105}-\frac{12z}{7}+1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}\left(21-8z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.abk4.01

$${}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) =$$

$$\frac{1}{420\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2+410z+420\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\,\left(368z+1095\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(16z+255\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abk5.01

$${}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) =$$

$$\frac{1}{420\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2-410z+420\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1095-368z\right)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(255-16z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abk6.01

$${}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) =$$

$$\frac{1}{13\,440\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-64z^{3/2}-432z-1260\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}-432z+1260\sqrt{z}-1785\right)-1785\right)+\right.$$
$$\left.3465e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+3465e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abk7.01

$${}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = \frac{3465\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(3\left(144z-595\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(16z-315\right)\sin\left(2\sqrt{z}\right)\right)}{3360\sqrt[4]{z}}$$

07.22.03.abk8.01

$${}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) = \frac{1}{4480\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(-10\sqrt{z}\,\left(192z+215\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(512z^2+13\,280z+9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(1024z+9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abk9.01

$${}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) = \frac{1}{4480\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(10\sqrt{z}\,\left(192z-215\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(512z^2-13\,280z+9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(9945-1024z\right)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abka.01

$${}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) = \frac{1}{172\,032z^{5/4}}$$
$$\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024z^2+9216z^{3/2}+36\,288z+87\,780\sqrt{z}+e^{4\sqrt{z}}\left(1024z^2-9216z^{3/2}+36\,288z-87\,780\sqrt{z}+65\,835\right)+\right.\right.$$
$$\left.\left.65\,835\right)+3465e^{2\sqrt{z}}\sqrt{2\pi}\,\left(16z-19\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+3465e^{2\sqrt{z}}\sqrt{2\pi}\,\left(16z-19\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abkb.01

$${}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{9}{4}; -z\right) = \frac{1}{43\,008\, z^{5/4}}$$
$$\left(3465\sqrt{\pi}\,(16z+19)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\,\left(\left(1024z^2-36\,288z+65\,835\right)\cos\left(2\sqrt{z}\right)+12\,(7315-768z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abkc.01

$${}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{11}{4}; z\right) =$$
$$\frac{1}{20\,480\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\,\left(1024z^2+63\,280z+69\,615\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(41\,984z^2+477\,360z+208\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1024z^2+31\,824z+208\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abkd.01

$${}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{11}{4}; -z\right) =$$
$$\frac{1}{20\,480\sqrt{2}\,z^{5/4}}\left(\left(-2\sqrt{z}\,\left(1024z^2-63\,280z+69\,615\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(41\,984z^2-477\,360z+208\,845\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1024z^2-31\,824z+208\,845\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abke.01

$${}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{13}{4}; z\right) =$$
$$\frac{1}{7\,340\,032\,z^{9/4}}\left(3e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-32\,768z^{5/2}-385\,024z^2-1\,805\,760z^{3/2}-5\,969\,040z-10\,094\,700\sqrt{z}+\right.\right.\right.$$
$$\left.e^{4\sqrt{z}}\left(32\,768z^{5/2}-385\,024z^2+1\,805\,760z^{3/2}-5\,969\,040z+10\,094\,700\sqrt{z}-7\,571\,025\right)-7\,571\,025\right)+$$
$$\left.\left.3465e^{2\sqrt{z}}\sqrt{2\pi}\,\left(256z^2-608z+2185\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+3465e^{2\sqrt{z}}\sqrt{2\pi}\,\left(256z^2-608z+2185\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abkf.01

$${}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) = \frac{1}{1\,835\,008\,z^{9/4}}\left(3\left(3465\sqrt{\pi}\,\left(256z^2+608z+2185\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\,\left(\left(385\,024z^2-5\,969\,040z+7\,571\,025\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(8192z^2-451\,440z+2\,523\,675\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.abkg.01

$${}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) = \frac{1}{655\,360\sqrt{2}\,z^{9/4}}\left(11\left(-10\sqrt{z}\,\left(9472z^2+445\,536z+487\,305\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.\left(32\,768z^3+2\,545\,920z^2+17\,821\,440z+7\,309\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-1326\sqrt{z}\,(16z+105)^2\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abkh.01

$${}_1F_2\left(\frac{1}{4};-\frac{7}{2},\frac{15}{4};-z\right)=-\frac{1}{655\,360\sqrt{2}\,z^{9/4}}\left(11\left(10\sqrt{z}\,\left(9472z^2-445\,536z+487\,305\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.\left(32\,768z^3-2\,545\,920z^2+17\,821\,440z-7\,309\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-1326\,(105-16z)^2\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abki.01

$${}_1F_2\left(\frac{1}{4};-\frac{7}{2},\frac{17}{4};z\right)=$$
$$\frac{1}{469\,762\,048\,z^{13/4}}\left(39\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(524\,288z^3+9\,047\,040z^{5/2}+53\,771\,520z^2+212\,277\,120z^{3/2}+533\,000\,160z+\right.\right.\right.$$
$$\left.\left.\left.817\,670\,700\sqrt{z}\,+e^{4\sqrt{z}}\left(524\,288z^3-9\,047\,040z^{5/2}+53\,771\,520z^2-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.212\,277\,120z^{3/2}+533\,000\,160z-817\,670\,700\sqrt{z}\,+613\,253\,025\right)+613\,253\,025\right)+$$
$$1155\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096z^3-14\,592z^2+104\,880z-530\,955\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.1155\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096z^3-14\,592z^2+104\,880z-530\,955\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.abkj.01

$${}_1F_2\left(\frac{1}{4};-\frac{7}{2},\frac{17}{4};-z\right)=$$
$$\frac{1}{117\,440\,512\,z^{13/4}}\left(39\left(1155\sqrt{\pi}\,\left(4096z^3+14\,592z^2+104\,880z+530\,955\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(\left(524\,288z^3-53\,771\,520z^2+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.533\,000\,160z-613\,253\,025\right)\cos\left(2\sqrt{z}\right)-1140\sqrt{z}\,\left(7936z^2-186\,208z+717\,255\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.abkk.01

$${}_1F_2\left(\frac{1}{4};-\frac{7}{2},\frac{19}{4};z\right)=\frac{1}{4\,194\,304\sqrt{2}\,z^{13/4}}$$
$$\left(33\left(2\sqrt{z}\,\left(200\,704z^3+7\,637\,760z^2+107\,406\,000z+111\,035\,925\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-1105\left(4096z^3+140\,544z^2+750\,960z+\right.\right.\right.$$
$$\left.\left.\left.301\,455\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-34\sqrt{z}\,\left(4096z^3-549\,120z^2-7\,010\,640z-19\,594\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abkl.01

$${}_1F_2\left(\frac{1}{4};-\frac{7}{2},\frac{19}{4};-z\right)=$$
$$\frac{1}{4\,194\,304\sqrt{2}\,z^{13/4}}\left(33\left(2\sqrt{z}\,\left(200\,704z^3-7\,637\,760z^2+107\,406\,000z-111\,035\,925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-1105\right.\right.$$
$$\left(4096z^3-140\,544z^2+750\,960z-301\,455\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.34\sqrt{z}\,\left(4096z^3+549\,120z^2-7\,010\,640z+19\,594\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abkm.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) = \frac{1}{120\,259\,084\,288\, z^{17/4}} \left(663\, e^{-2\sqrt{z}} \left(76\sqrt[4]{z}\left(-770\,048\, z^{7/2} - 33\,361\,920\, z^3 - 294\,282\,240\, z^{5/2} - 1\,524\,314\,880\, z^2 - 5\,174\,072\,640\, z^{3/2} - 11\,808\,886\,320\, z - 17\,343\,225\,900\sqrt{z} + e^{4\sqrt{z}}\left(770\,048\, z^{7/2} - 33\,361\,920\, z^3 + 294\,282\,240\, z^{5/2} - 1\,524\,314\,880\, z^2 + 5\,174\,072\,640\, z^{3/2} - 11\,808\,886\,320\, z + 17\,343\,225\,900\sqrt{z} - 13\,007\,419\,425\right) - 13\,007\,419\,425\right) + 1155\, e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\, z^4 - 311\,296\, z^3 + 3\,356\,160\, z^2 - 33\,981\,120\, z + 213\,974\,865\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 1155\, e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\, z^4 - 311\,296\, z^3 + 3\,356\,160\, z^2 - 33\,981\,120\, z + 213\,974\,865\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abkn.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) = \frac{1}{30\,064\,771\,072\, z^{17/4}} \left(663\left(1155\sqrt{\pi}\left(65\,536\, z^4 + 311\,296\, z^3 + 3\,356\,160\, z^2 + 33\,981\,120\, z + 213\,974\,865\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 38\sqrt[4]{z}\left(45\left(741\,376\, z^3 - 33\,873\,664\, z^2 + 262\,419\,696\, z - 289\,053\,765\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(192\,512\, z^3 - 73\,570\,560\, z^2 + 1\,293\,518\,160\, z - 4\,335\,806\,475\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abko.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = \frac{1}{134\,217\,728\sqrt{2}\, z^{17/4}} \left(209\left(2\sqrt{z}\left(720\,896\, z^4 - 36\,208\,640\, z^3 - 1\,756\,684\,800\, z^2 - 18\,273\,340\,800\, z - 18\,320\,927\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 85\left(65\,536\, z^4 + 15\,015\,936\, z^3 + 348\,641\,280\, z^2 + 1\,630\,268\,640\, z + 646\,620\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(720\,896\, z^4 + 29\,245\,440\, z^3 + 2\,021\,460\,480\, z^2 + 21\,318\,897\,600\, z + 54\,962\,782\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abkp.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) = \frac{1}{134\,217\,728\sqrt{2}\, z^{17/4}} \left(209\left(2\sqrt{z}\left(720\,896\, z^4 + 36\,208\,640\, z^3 - 1\,756\,684\,800\, z^2 + 18\,273\,340\,800\, z - 18\,320\,927\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 85\left(65\,536\, z^4 - 15\,015\,936\, z^3 + 348\,641\,280\, z^2 - 1\,630\,268\,640\, z + 646\,620\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(720\,896\, z^4 - 29\,245\,440\, z^3 + 2\,021\,460\,480\, z^2 - 21\,318\,897\,600\, z + 54\,962\,782\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{1}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.abkq.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},-\frac{23}{4};z\right)=\left(\frac{65\,536\,z^4}{7\,571\,025}+\frac{2048\,z^3}{19\,665}+\frac{1536\,z^2}{2185}+\frac{232\,z}{115}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(16\,384\,z^4+371\,712\,z^3+3\,326\,400\,z^2+15\,537\,060\,z+22\,713\,075\right)\sinh\left(2\sqrt{z}\right)}{22\,713\,075}$$

07.22.03.abkr.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},-\frac{23}{4};-z\right)=\left(\frac{65\,536\,z^4}{7\,571\,025}-\frac{2048\,z^3}{19\,665}+\frac{1536\,z^2}{2185}-\frac{232\,z}{115}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(16\,384\,z^4-371\,712\,z^3+3\,326\,400\,z^2-15\,537\,060\,z+22\,713\,075\right)\sin\left(2\sqrt{z}\right)}{22\,713\,075}$$

07.22.03.abks.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},-\frac{21}{4};z\right)=\frac{1}{3\,132\,675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(77\,824\,z^4+735\,744\,z^3+3\,884\,400\,z^2+6\,325\,020\,z+3\,132\,675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(8192\,z^4+138\,240\,z^3+1\,052\,064\,z^2+3\,818\,880\,z+3\,132\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(7168\,z^3+74\,880\,z^2+437\,580\,z+1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abkt.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},-\frac{21}{4};-z\right)=\frac{1}{3\,132\,675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(77\,824\,z^4-735\,744\,z^3+3\,884\,400\,z^2-6\,325\,020\,z+3\,132\,675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(8192\,z^4-138\,240\,z^3+1\,052\,064\,z^2-3\,818\,880\,z+3\,132\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(-7168\,z^3+74\,880\,z^2-437\,580\,z+1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abku.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},-\frac{19}{4};z\right)=\left(\frac{8192\,z^4}{987\,525}+\frac{1024\,z^3}{9405}+\frac{32\,z^2}{45}+\frac{192\,z}{95}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(17\,408\,z^3+147\,840\,z^2+679\,140\,z+987\,525\right)\sinh\left(2\sqrt{z}\right)}{987\,525}$$

07.22.03.abkv.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},-\frac{19}{4};-z\right)=\left(\frac{8192\,z^4}{987\,525}-\frac{1024\,z^3}{9405}+\frac{32\,z^2}{45}-\frac{192\,z}{95}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-17\,408\,z^3+147\,840\,z^2-679\,140\,z+987\,525\right)\sin\left(2\sqrt{z}\right)}{987\,525}$$

07.22.03.abkw.01

$${}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, -\frac{17}{4}; z\right) =$$
$$\frac{1}{149\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096z^4+36\,352z^3+186\,480z^2+301\,860z+149\,175\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(7168z^3+51\,072z^2+\right.\right.\right.$$
$$\left.\left.\left.182\,520z+149\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1024z^3+11\,136z^2+63\,180z+149\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abkx.01

$${}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{149\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096z^4-36\,352z^3+186\,480z^2-301\,860z+149\,175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(7168z^3-51\,072z^2+\right.\right.\right.$$
$$\left.\left.\left.182\,520z-149\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-1024z^3+11\,136z^2-63\,180z+149\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abky.01

$${}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{51\,975}\left(3\left(2048z^3+12\,544z^2+35\,112z+17\,325\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(1024z^3+8064z^2+36\,036z+51\,975\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abkz.01

$${}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{51\,975}\left(\left(-6144z^3+37\,632z^2-105\,336z+51\,975\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(-1024z^3+8064z^2-36\,036z+51\,975\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abl0.01

$${}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, -\frac{13}{4}; z\right) =$$
$$\frac{1}{8775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2304z^3+11\,120z^2+17\,820z+8775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^3+3104z^2+10\,800z+8775\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(704z^2+3780z+8775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abl1.01

$${}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, -\frac{13}{4}; -z\right) =$$
$$-\frac{1}{8775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2304z^3-11\,120z^2+17\,820z-8775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(512z^3-3104z^2+10\,800z-8775\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(704z^2-3780z+8775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abl2.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},-\frac{11}{4};z\right)=\frac{\left(512\,z^3+2592\,z^2+7056\,z+3465\right)\cosh\left(2\sqrt{z}\right)-6\sqrt{z}\,\left(192\,z^2+812\,z+1155\right)\sinh\left(2\sqrt{z}\right)}{3465}$$

07.22.03.abl3.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},-\frac{11}{4};-z\right)=\frac{\left(-512\,z^3+2592\,z^2-7056\,z+3465\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\,\left(192\,z^2-812\,z+1155\right)\sin\left(2\sqrt{z}\right)}{3465}$$

07.22.03.abl4.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},-\frac{9}{4};z\right)=$$

$$\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(256\,z^3+880\,z^2+1380\,z+675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(256\,z^2+840\,z+675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.4\,z\left(64\,z^2+300\,z+675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abl5.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},-\frac{9}{4};-z\right)=$$

$$\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(-256\,z^3+880\,z^2-1380\,z+675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(256\,z^2-840\,z+675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.4\,z\left(64\,z^2-300\,z+675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abl6.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},-\frac{7}{4};z\right)=\frac{1}{315}\left(\left(256\,z^2+648\,z+315\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(64\,z^2+228\,z+315\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abl7.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},-\frac{7}{4};-z\right)=\frac{1}{315}\left(\left(256\,z^2-648\,z+315\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(64\,z^2-228\,z+315\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abl8.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},-\frac{5}{4};z\right)=\frac{1}{75\sqrt{2}}$$

$$\left(\sqrt[4]{z}\,\left(\left(112\,z^2+156\,z+75\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(32\,z^2+96\,z+75\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(12\,z+25\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abl9.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},-\frac{5}{4};-z\right)=\frac{1}{75\sqrt{2}}$$

$$\left(\sqrt[4]{z}\,\left(\left(112\,z^2-156\,z+75\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(32\,z^2-96\,z+75\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+12\left(25-12\,z\right)z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abla.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},-\frac{3}{4};z\right)=\frac{1}{45}\left(32\,z^2+96\,z+45\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{5}\sqrt{z}\,\left(4\,z+5\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ablb.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},-\frac{3}{4};-z\right)=\frac{1}{45}\left(32z^2-96z+45\right)\cos\left(2\sqrt{z}\right)+\frac{2}{5}(5-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ablc.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},-\frac{1}{4};z\right)=$$

$$\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16z^2+36z+15\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-20\sqrt{z}\,(4z+3)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z(4z+15)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abld.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},-\frac{1}{4};-z\right)=$$

$$\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16z^2-36z+15\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+20(3-4z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4(15-4z)\,zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.able.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},\frac{1}{4};z\right)=\left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\,(4z+15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ablf.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},\frac{1}{4};-z\right)=\left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}(15-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ablg.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},\frac{3}{4};z\right)=-\frac{\sqrt[4]{z}\left(-2(13z+15)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,(16z+75)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-30z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{30\sqrt{2}}$$

07.22.03.ablh.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},\frac{3}{4};-z\right)=-\frac{\sqrt[4]{z}\left((26z-30)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,(16z-75)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-30z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{30\sqrt{2}}$$

07.22.03.abli.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},\frac{5}{4};z\right)=$$

$$\frac{1}{960\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(16z+68\sqrt{z}+e^{4\sqrt{z}}\left(16z-68\sqrt{z}+111\right)+111\right)+231\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.\right.$$

$$\left.\left.231\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ablj.01

$${}_1F_2\left(\frac{1}{4};-\frac{5}{2},\frac{5}{4};-z\right)=\frac{231\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left((16z-111)\cos\left(2\sqrt{z}\right)-68\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)}{240\sqrt[4]{z}}$$

07.22.03.ablk.01

$${}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) =$$

$$-\frac{1}{320\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\,(32z+35)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 5\,(128z+117)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(32z+585)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abll.01

$${}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, \frac{7}{4}; -z\right) =$$

$$\frac{1}{320\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\,(32z-35)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 5\,(117-128z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\,(585-32z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ablm.01

$${}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) =$$

$$\frac{1}{12\,288\,z^{5/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-256z^{3/2} - 1536z - 4620\sqrt{z} + e^{4\sqrt{z}}\left(256z^{3/2} - 1536z + 4620\sqrt{z} - 3465\right) - 3465\right) + \right.\right.$$
$$\left.\left.231\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-15)\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + 231\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-15)\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abln.01

$${}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, \frac{9}{4}; -z\right) =$$

$$\frac{1}{3072\,z^{5/4}}\left(231\sqrt{\pi}\,(16z+15)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(3\,(512z-1155)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,(64z-1155)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ablo.01

$${}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, \frac{11}{4}; z\right) = -\frac{1}{10\,240\sqrt{2}\,z^{5/4}}\left(7\left(-10\sqrt{z}\,(592z+663)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left.\left(1024z^2 + 21\,840z + 9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 78\sqrt{z}\,(16z+255)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ablp.01

$${}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, \frac{11}{4}; -z\right) = \frac{1}{10\,240\sqrt{2}\,z^{5/4}}$$
$$\left(7\left(10\sqrt{z}\,(592z-663)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1024z^2 - 21\,840z + 9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 78\,(255-16z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ablq.01

$${}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, \frac{13}{4}; z\right) =$$

$$-\frac{1}{524\,288\,z^{9/4}}\left(3\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(8192z^2 + 52\,800z^{3/2} + 240\,240z + 438\,900\sqrt{z} + e^{4\sqrt{z}}\left(8192z^2 - 52\,800z^{3/2} + \right.\right.\right.\right.$$
$$\left.\left.\left.\left.240\,240z - 438\,900\sqrt{z} + 329\,175\right) + 329\,175\right) - 231\,e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left.\left.\left(256z^2 - 480z + 1425\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 231\,e^{2\sqrt{z}}\sqrt{2\pi}\,\left(256z^2 - 480z + 1425\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ablr.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, \frac{13}{4}; -z\right) = \frac{1}{131\,072\, z^{9/4}}\left(3\left(231\sqrt{\pi}\,\left(256 z^2+480 z+1425\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\,\left(\left(8192 z^2-240\,240 z+329\,175\right)\cos\left(2\sqrt{z}\right)+3300\,(133-16 z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abls.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, \frac{15}{4}; z\right) = \frac{1}{1\,638\,400\sqrt{2}\, z^{9/4}} \left(77\left(2\sqrt{z}\,\left(9472 z^2-424\,320 z-487\,305\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+39\left(9472 z^2+89\,760 z+37\,485\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 234\sqrt{z}\,\left(256 z^2+3264 z+12\,495\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ablt.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, \frac{15}{4}; -z\right) = \frac{1}{1\,638\,400\sqrt{2}\, z^{9/4}} \left(77\left(2\sqrt{z}\,\left(9472 z^2+424\,320 z-487\,305\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+39\left(9472 z^2-89\,760 z+37\,485\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 234\sqrt{z}\,\left(256 z^2-3264 z+12\,495\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ablu.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, \frac{17}{4}; z\right) = \frac{1}{33\,554\,432\, z^{13/4}}\left(39\, e^{-2\sqrt{z}}\,\left(-20\sqrt[4]{z}\,\left(-41\,984 z^{5/2}-284\,416 z^2-1\,364\,352 z^{3/2}-3\,792\,096 z-6\,056\,820\sqrt{z}\,+ e^{4\sqrt{z}}\,\left(41\,984 z^{5/2}-284\,416 z^2+1\,364\,352 z^{3/2}-3\,792\,096 z+6\,056\,820\sqrt{z}\,-4\,542\,615\right)-4\,542\,615\right)+ 77\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096 z^3-11\,520 z^2+68\,400 z-294\,975\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+ 77\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096 z^3-11\,520 z^2+68\,400 z-294\,975\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ablv.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, \frac{17}{4}; -z\right) = \frac{1}{8\,388\,608\, z^{13/4}}\left(39\left(77\sqrt{\pi}\,\left(4096 z^3+11\,520 z^2+68\,400 z+294\,975\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 10\sqrt[4]{z}\,\left(11\left(25\,856 z^2-344\,736 z+412\,965\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(10\,496 z^2-341\,088 z+1\,514\,205\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.ablw.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) = \frac{1}{10\,485\,760\sqrt{2}\, z^{13/4}} \left(231\left(2\sqrt{z}\left(45\,056 z^3 + 848\,640 z^2 + 17\,980\,560 z + 19\,144\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 13\left(28\,672 z^3 + 1\,762\,560 z^2 + 10\,881\,360 z + 4\,417\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-45\,056 z^3 + 1\,188\,096 z^2 + 18\,935\,280 z + 57\,432\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ablx.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) = \frac{1}{10\,485\,760\sqrt{2}\, z^{13/4}} \left(231\left(2\sqrt{z}\left(45\,056 z^3 - 848\,640 z^2 + 17\,980\,560 z - 19\,144\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 13\left(28\,672 z^3 - 1\,762\,560 z^2 + 10\,881\,360 z - 4\,417\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(45\,056 z^3 + 1\,188\,096 z^2 - 18\,935\,280 z + 57\,432\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ably.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) = \frac{1}{8\,589\,934\,592 z^{17/4}} \left(663 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1\,261\,568 z^{7/2} + 8\,704\,000 z^3 + 124\,032\,000 z^{5/2} + 777\,680\,640 z^2 + 2\,921\,117\,760 z^{3/2} + 7\,050\,138\,480 z + 10\,629\,719\,100\sqrt{z} + e^{4\sqrt{z}}\left(1\,261\,568 z^{7/2} + 8\,704\,000 z^3 - 124\,032\,000 z^{5/2} + 777\,680\,640 z^2 - 2\,921\,117\,760 z^{3/2} + 7\,050\,138\,480 z - 10\,629\,719\,100\sqrt{z} + 7\,972\,289\,325\right) + 7\,972\,289\,325\right) + 77 e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 245\,760 z^3 + 2\,188\,800 z^2 - 18\,878\,400 z + 103\,536\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 77 e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 245\,760 z^3 + 2\,188\,800 z^2 - 18\,878\,400 z + 103\,536\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ablz.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) = \frac{1}{2\,147\,483\,648 z^{17/4}} \left(663\left(77\sqrt{\pi}\left(65\,536 z^4 + 245\,760 z^3 + 2\,188\,800 z^2 + 18\,878\,400 z + 103\,536\,225\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(-8\,704\,000 z^3 + 777\,680\,640 z^2 - 7\,050\,138\,480 z + 7\,972\,289\,325\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(315\,392 z^3 + 31\,008\,000 z^2 - 730\,279\,440 z + 2\,657\,429\,775\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abm0.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, \frac{23}{4}; z\right) = \frac{1}{1\,006\,632\,960\sqrt{2}\, z^{17/4}} $$
$$ \left(1463\left(2\sqrt{z}\left(720\,896 z^4 - 9\,052\,160 z^3 - 641\,571\,840 z^2 - 8\,138\,988\,000 z - 8\,327\,694\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(-720\,896 z^4 + 380\,190\,720 z^3 + 12\,235\,691\,520 z^2 + 62\,486\,424\,000 z + 24\,983\,083\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 2\sqrt{z}\left(720\,896 z^4 + 2\,924\,544 z^3 + 753\,592\,320 z^2 + 9\,189\,180\,000 z + 24\,983\,083\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abm1.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{5}{2}, \frac{23}{4}; -z\right) = \frac{1}{1\,006\,632\,960\sqrt{2}\, z^{17/4}} $$
$$ \left(1463\left(2\sqrt{z}\left(720\,896 z^4 + 9\,052\,160 z^3 - 641\,571\,840 z^2 + 8\,138\,988\,000 z - 8\,327\,694\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(-720\,896 z^4 - 380\,190\,720 z^3 + 12\,235\,691\,520 z^2 - 62\,486\,424\,000 z + 24\,983\,083\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(720\,896 z^4 - 2\,924\,544 z^3 + 753\,592\,320 z^2 - 9\,189\,180\,000 z + 24\,983\,083\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{1}{4}$, $b_{1.} = -\frac{3}{2}$

07.22.03.abm2.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, -\frac{23}{4}; z\right) = \left(\frac{16\,384 z^4}{4\,542\,615} + \frac{1024 z^3}{9405} + \frac{320 z^2}{437} + \frac{140 z}{69} + 1\right)\cosh\left(2\sqrt{z}\right) - $$
$$ \frac{2\sqrt{z}\left(20\,480 z^3 + 238\,336 z^2 + 1\,053\,360 z + 1\,514\,205\right)\sinh\left(2\sqrt{z}\right)}{1\,514\,205} $$

07.22.03.abm3.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, -\frac{23}{4}; -z\right) = \left(\frac{16\,384 z^4}{4\,542\,615} - \frac{1024 z^3}{9405} + \frac{320 z^2}{437} - \frac{140 z}{69} + 1\right)\cos\left(2\sqrt{z}\right) + $$
$$ \frac{2\sqrt{z}\left(-20\,480 z^3 + 238\,336 z^2 - 1\,053\,360 z + 1\,514\,205\right)\sin\left(2\sqrt{z}\right)}{1\,514\,205} $$

07.22.03.abm4.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, -\frac{21}{4}; z\right) = $$
$$ \frac{1}{626\,535\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192 z^4 + 162\,816 z^3 + 797\,472 z^2 + 1\,272\,960 z + 626\,535\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(25\,600 z^3 + 224\,640 z^2 + \right.\right.\right. $$
$$ \left.\left.\left. 771\,732 z + 626\,535\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(2048 z^3 + 47\,616 z^2 + 270\,504 z + 626\,535\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abm5.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{626\,535\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192z^4-162\,816z^3+797\,472z^2-1\,272\,960z+626\,535\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(25\,600z^3-224\,640z^2+\right.\right.\right.$$
$$\left.\left.\left.771\,732z-626\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-2048z^3+47\,616z^2-270\,504z+626\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abm6.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},-\frac{19}{4};z\right)=\frac{1}{197\,505}$$
$$\left(21\left(1024z^3+7040z^2+19\,140z+9405\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(2048z^3+32\,256z^2+138\,600z+197\,505\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abm7.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},-\frac{19}{4};-z\right)=$$
$$\left(-\frac{1024z^3}{9405}+\frac{128z^2}{171}-\frac{116z}{57}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-2048z^3+32\,256z^2-138\,600z+197\,505\right)\sin\left(2\sqrt{z}\right)}{197\,505}$$

07.22.03.abm8.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{29\,835\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192z^3+38\,592z^2+60\,840z+29\,835\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1024z^3+11\,136z^2+36\,972z+29\,835\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+36z\left(256z^2+1456z+3315\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abm9.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},-\frac{17}{4};-z\right)=$$
$$-\frac{1}{29\,835\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192z^3-38\,592z^2+60\,840z-29\,835\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024z^3-11\,136z^2+36\,972z-29\,835\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-36z\left(256z^2-1456z+3315\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abma.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},-\frac{15}{4};z\right)=\left(\frac{1024z^3}{10\,395}+\frac{128z^2}{165}+\frac{92z}{45}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(256z^2+1056z+1485\right)\sinh\left(2\sqrt{z}\right)}{1485}$$

07.22.03.abmb.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},-\frac{15}{4};-z\right)=\left(-\frac{1024z^3}{10\,395}+\frac{128z^2}{165}-\frac{92z}{45}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(256z^2-1056z+1485\right)\sin\left(2\sqrt{z}\right)}{1485}$$

07.22.03.abmc.01

$${}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, -\frac{13}{4}; z\right) =$$
$$\frac{1}{1755\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3+2336z^2+3600z+1755\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(704z^2+2196z+1755\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^2+792z+1755\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abmd.01

$${}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, -\frac{13}{4}; -z\right) =$$
$$-\frac{1}{1755\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3-2336z^2+3600z-1755\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(704z^2-2196z+1755\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(128z^2-792z+1755\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abme.01

$${}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, -\frac{11}{4}; z\right) = \left(\frac{64z^2}{77}+\frac{68z}{33}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{693}\sqrt{z}\left(128z^2+504z+693\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.abmf.01

$${}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, -\frac{11}{4}; -z\right) = \left(\frac{64z^2}{77}-\frac{68z}{33}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{693}\sqrt{z}\left(128z^2-504z+693\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.abmg.01

$${}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) = \frac{1}{135\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(192z^2+280z+135\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z^2+172z+135\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(64z+135\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abmh.01

$${}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, -\frac{9}{4}; -z\right) = \frac{1}{135\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(192z^2-280z+135\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(64z^2-172z+135\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\left(135-64z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abmi.01

$${}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, -\frac{7}{4}; z\right) = \frac{1}{63}\left(16z+21\right)\left(\left(4z+3\right)\cosh\left(2\sqrt{z}\right)-6\sqrt{z}\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abmj.01

$${}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, -\frac{7}{4}; -z\right) = \frac{1}{63}\left(16z-21\right)\left(\left(4z-3\right)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abmk.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},-\frac{5}{4};z\right)=$$

$$\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2+32z+15\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-20\sqrt{z}\,(4z+3)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\,(8z+15)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abml.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},-\frac{5}{4};-z\right)=$$

$$\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2-32z+15\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+20\,(3-4z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,(15-8z)\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abmm.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},-\frac{3}{4};z\right)=\left(\frac{20z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{9}\sqrt{z}\,(8z+9)\sinh\left(2\sqrt{z}\right)$$

07.22.03.abmn.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},-\frac{3}{4};-z\right)=\left(1-\frac{20z}{9}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{9}\,(9-8z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.abmo.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},-\frac{1}{4};z\right)=-\frac{\sqrt[4]{z}\left(-(8z+3)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(4z+3)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-12z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{3\sqrt{2}}$$

07.22.03.abmp.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},-\frac{1}{4};-z\right)=-\frac{\sqrt[4]{z}\left((8z-3)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(4z-3)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-12z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{3\sqrt{2}}$$

07.22.03.abmq.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},\frac{1}{4};z\right)=\left(\frac{4z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.abmr.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},\frac{1}{4};-z\right)=\left(1-\frac{4z}{3}\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.abms.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},\frac{3}{4};z\right)=\frac{\sqrt[4]{z}\left((2z+3)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-7\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{3\sqrt{2}}$$

07.22.03.abmt.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},\frac{3}{4};-z\right)=-\frac{\sqrt[4]{z}\left((2z-3)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-7\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-2z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{3\sqrt{2}}$$

07.22.03.abmu.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{96\sqrt[4]{z}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}-9\right)-4\sqrt{z}-9\right)+21\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+21\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abmv.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},\frac{5}{4};-z\right)=-\frac{3}{4}\cos\left(2\sqrt{z}\right)+\frac{7\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)}{8\sqrt[4]{z}}-\frac{1}{3}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.abmw.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},\frac{7}{4};z\right)=\frac{\left(2\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(32z+45)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-90\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{32\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.abmx.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},\frac{7}{4};-z\right)=\frac{\left(2\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(45-32z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+90\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{32\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.abmy.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},\frac{9}{4};z\right)=\frac{1}{6144\,z^{5/4}}\left(5\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(64z+308\sqrt{z}+e^{4\sqrt{z}}\left(64z-308\sqrt{z}+231\right)+231\right)+\right.\right.$$
$$\left.\left.21\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-11)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+21\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-11)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abmz.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},\frac{9}{4};-z\right)=\frac{5\left(21\sqrt{\pi}\,(16z+11)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left((64z-231)\cos\left(2\sqrt{z}\right)-308\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)}{1536\,z^{5/4}}$$

07.22.03.abn0.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{1024\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\,(176z+195)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-15\,(80z+39)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+6\,(195-16z)\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abn1.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{1024\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\,(176z-195)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-15\,(80z-39)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\,(16z+195)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abn2.01

$${}_1F_2\left(\frac{1}{4};-\frac{3}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{262\,144\,z^{9/4}}\left(15\,e^{-2\sqrt{z}}\left(44\sqrt[4]{z}\left(-64z^{3/2}-1008z-2100\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}-1008z+2100\sqrt{z}-1575\right)-1575\right)+\right.\right.$$
$$\left.\left.21\,e^{2\sqrt{z}}\sqrt{2\pi}\,\left(256z^2-352z+825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+21\,e^{2\sqrt{z}}\sqrt{2\pi}\,\left(256z^2-352z+825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abn3.01

$${}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) = \frac{1}{65\,536\, z^{9/4}}$$
$$\left(15\left(21\sqrt{\pi}\,\left(256\,z^2+352\,z+825\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+22\sqrt[4]{z}\,\left(63\,(16\,z-25)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,(16\,z-525)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.abn4.01

$${}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) =$$
$$\frac{1}{163\,840\sqrt{2}\, z^{9/4}}\left(77\left(2\sqrt{z}\,\left(1792\,z^2-18\,720\,z-23\,205\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(2816\,z^2+54\,080\,z+23\,205\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1792\,z^2+13\,728\,z+69\,615\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abn5.01

$${}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, \frac{15}{4}; -z\right) =$$
$$\frac{1}{163\,840\sqrt{2}\, z^{9/4}}\left(77\left(2\sqrt{z}\,\left(1792\,z^2+18\,720\,z-23\,205\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(2816\,z^2-54\,080\,z+23\,205\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1792\,z^2-13\,728\,z+69\,615\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abn6.01

$${}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) =$$
$$\frac{1}{16\,777\,216\, z^{13/4}}\left(195\, e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-7168\,z^{5/2}-30\,976\,z^2-232\,320\,z^{3/2}-776\,160\,z-1\,316\,700\sqrt{z}\,+\right.\right.\right.$$
$$\left.\left.\left. e^{4\sqrt{z}}\left(7168\,z^{5/2}-30\,976\,z^2+232\,320\,z^{3/2}-776\,160\,z+1\,316\,700\sqrt{z}\,-987\,525\right)-987\,525\right)+\right.$$
$$7\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3-8448\,z^2+39\,600\,z-141\,075\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+$$
$$\left.7\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3-8448\,z^2+39\,600\,z-141\,075\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abn7.01

$${}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) = \frac{1}{4\,194\,304\, z^{13/4}}\left(195\left(7\sqrt{\pi}\,\left(4096\,z^3+8448\,z^2+39\,600\,z+141\,075\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\,\left(11\left(2816\,z^2-70\,560\,z+89\,775\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(1792\,z^2-58\,080\,z+329\,175\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.abn8.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) = \frac{1}{1\,048\,576\sqrt{2}\, z^{13/4}} $$
$$ \left(231\left(2\sqrt{z}\,\left(4096 z^3 + 9984 z^2 + 689\,520 z + 765\,765\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4096 z^3 + 708\,864 z^2 + 5\,569\,200 z + 2\,297\,295\right)\right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-4096 z^3 + 29\,952 z^2 + 668\,304 z + 2\,297\,295\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abn9.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, \frac{19}{4}; -z\right) = \frac{1}{1\,048\,576\sqrt{2}\, z^{13/4}} $$
$$ \left(231\left(2\sqrt{z}\,\left(4096 z^3 - 9984 z^2 + 689\,520 z - 765\,765\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4096 z^3 + 708\,864 z^2 - 5\,569\,200 z + 2\,297\,295\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4096 z^3 + 29\,952 z^2 - 668\,304 z + 2\,297\,295\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abna.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) = $$
$$ \frac{1}{4\,294\,967\,296 z^{17/4}}\left(3315 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-114\,688 z^{7/2} + 28\,672 z^3 + 2\,391\,040 z^{5/2} + 21\,443\,840 z^2 + 95\,705\,280 z^{3/2} + \right.\right.\right. $$
$$ \left.\left.\left. 251\,753\,040 z + 393\,693\,300\sqrt{z} + e^{4\sqrt{z}}\left(114\,688 z^{7/2} + 28\,672 z^3 - 2\,391\,040 z^{5/2} + 21\,443\,840 z^2 - \right.\right.\right.\right. $$
$$ \left.\left.\left.\left. 95\,705\,280 z^{3/2} + 251\,753\,040 z - 393\,693\,300\sqrt{z} + 295\,269\,975\right) + 295\,269\,975\right) + \right. $$
$$ 7 e^{2\sqrt{z}}\sqrt{2\pi}\,\left(65\,536 z^4 - 180\,224 z^3 + 1\,267\,200 z^2 - 9\,028\,800 z + 42\,181\,425\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + $$
$$ \left. 7 e^{2\sqrt{z}}\sqrt{2\pi}\,\left(65\,536 z^4 - 180\,224 z^3 + 1\,267\,200 z^2 - 9\,028\,800 z + 42\,181\,425\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.abnb.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) = $$
$$ \frac{1}{1\,073\,741\,824 z^{17/4}}\left(3315\left(7\sqrt{\pi}\,\left(65\,536 z^4 + 180\,224 z^3 + 1\,267\,200 z^2 + 9\,028\,800 z + 42\,181\,425\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right.\right. $$
$$ 2\sqrt[4]{z}\,\left(\left(-28\,672 z^3 + 21\,443\,840 z^2 - 251\,753\,040 z + 295\,269\,975\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left. \left. 4\sqrt{z}\,\left(28\,672 z^3 + 597\,760 z^2 - 23\,926\,320 z + 98\,423\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abnc.01

$${}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) =$$
$$\frac{1}{100\,663\,296\sqrt{2}\,z^{17/4}}\left(1463\left(2\sqrt{z}\left(65\,536z^4-212\,992z^3-15\,275\,520z^2-273\,049\,920z-287\,161\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-65\,536z^4+6\,070\,272z^3+366\,612\,480z^2+2\,131\,889\,760z+861\,485\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-196\,608z^3+19\,348\,992z^2+294\,053\,760z+861\,485\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abnd.01

$${}_1F_2\left(\frac{1}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{100\,663\,296\sqrt{2}\,z^{17/4}}\left(1463\left(2\sqrt{z}\left(65\,536z^4+212\,992z^3-15\,275\,520z^2+273\,049\,920z-287\,161\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-65\,536z^4-6\,070\,272z^3+366\,612\,480z^2-2\,131\,889\,760z+861\,485\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+196\,608z^3+19\,348\,992z^2-294\,053\,760z+861\,485\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{1}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.abne.01

$${}_1F_2\left(\frac{1}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,514\,205}\left(\left(77\,824z^3+1\,079\,040z^2+3\,160\,080z+1\,514\,205\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(4096z^3+182\,016z^2+1\,101\,360z+1\,514\,205\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abnf.01

$${}_1F_2\left(\frac{1}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) = \frac{1}{1\,514\,205}\left(\left(-77\,824z^3+1\,079\,040z^2-3\,160\,080z+1\,514\,205\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(-4096z^3+182\,016z^2-1\,101\,360z+1\,514\,205\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abng.01

$${}_1F_2\left(\frac{1}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) = \frac{1}{208\,845\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(31\,744z^3+284\,544z^2+437\,580z+208\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2048z^3+64\,512z^2+270\,504z+208\,845\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+12z\left(2816z^2+29\,856z+69\,615\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abnh.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{21}{4};-z\right)=-\frac{1}{208\,845\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(31\,744z^3-284\,544z^2+437\,580z-208\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048z^3-64\,512z^2+270\,504z-208\,845\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-12z\left(2816z^2-29\,856z+69\,615\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abni.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{19}{4};z\right)=\left(\frac{2048z^3}{65\,835}+\frac{1024z^2}{1463}+\frac{40z}{19}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(2304z^2+16\,160z+21\,945\right)\sinh\left(2\sqrt{z}\right)}{21\,945}$$

07.22.03.abnj.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{19}{4};-z\right)=\left(-\frac{2048z^3}{65\,835}+\frac{1024z^2}{1463}-\frac{40z}{19}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(2304z^2-16\,160z+21\,945\right)\sin\left(2\sqrt{z}\right)}{21\,945}$$

07.22.03.abnk.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^3+13\,824z^2+21\,060z+9945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2816z^2+13\,104z+9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(256z^2+4224z+9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abnl.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-1024z^3+13\,824z^2-21\,060z+9945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2816z^2-13\,104z+9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(256z^2-4224z+9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abnm.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{15}{4};z\right)=\left(\frac{256z^2}{385}+\frac{32z}{15}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(256z^2+2592z+3465\right)\sinh\left(2\sqrt{z}\right)}{3465}$$

07.22.03.abnn.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{15}{4};-z\right)=\left(\frac{256z^2}{385}-\frac{32z}{15}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(256z^2-2592z+3465\right)\sin\left(2\sqrt{z}\right)}{3465}$$

07.22.03.abno.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{13}{4};z\right)=\frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\right.$$
$$\left.\left(\left(832z^2+1260z+585\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(128z^2+792z+585\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+60z\left(16z+39\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abnp.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{13}{4};-z\right)=\frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\right.$$
$$\left.\left(\left(832z^2-1260z+585\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(128z^2-792z+585\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+60\left(39-16z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abnq.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{11}{4};z\right)=\left(\frac{128z^2}{231}+\frac{24z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\left(16z+21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.abnr.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{11}{4};-z\right)=\left(\frac{128z^2}{231}-\frac{24z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}\left(21-16z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.abns.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^2+100z+45\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z+45\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(16z+45\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abnt.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^2-100z+45\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z-45\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\left(45-16z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abnu.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{7}{4};z\right)=\left(\frac{16z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\left(16z+21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.abnv.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{7}{4};-z\right)=\left(1-\frac{16z}{7}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}\left(21-16z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.abnw.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{5}{4};z\right)=-\frac{\sqrt[4]{z}\left(-\left(12z+5\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(8z+5\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-20zI_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.abnx.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{5}{4};-z\right)=-\frac{\sqrt[4]{z}\left(\left(12z-5\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(8z-5\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-20zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.abny.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{3}{4};z\right)=\left(\frac{8z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\sinh\left(2\sqrt{z}\right)$$

07.22.03.abnz.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{3}{4};-z\right)=\left(1-\frac{8z}{3}\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.abo0.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{1}{4};z\right)=\frac{\sqrt[4]{z}\left((4z+1)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\;I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.abo1.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},-\frac{1}{4};-z\right)=-\frac{\sqrt[4]{z}\left((4z-1)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\;J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-4z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.abo2.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},\frac{1}{4};z\right)=\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\;\sinh\left(2\sqrt{z}\right)$$

07.22.03.abo3.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},\frac{1}{4};-z\right)=\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;\sin\left(2\sqrt{z}\right)$$

07.22.03.abo4.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},\frac{3}{4};z\right)=\frac{\sqrt[4]{z}\;I_{-\frac{1}{4}}\left(\sqrt{z}\right)\left(I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\;I_{\frac{3}{4}}\left(\sqrt{z}\right)\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.abo5.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},\frac{3}{4};-z\right)=\frac{\sqrt[4]{z}\;J_{-\frac{1}{4}}\left(\sqrt{z}\right)\left(J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\;J_{\frac{3}{4}}\left(\sqrt{z}\right)\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.abo6.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},\frac{5}{4};z\right)=\frac{1}{16}\left(-4\,e^{-2\sqrt{z}}\left(1+e^{4\sqrt{z}}\right)+\frac{3\sqrt{2\pi}\;\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)}{\sqrt[4]{z}}+\frac{3\sqrt{2\pi}\;\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)}{\sqrt[4]{z}}\right)$$

07.22.03.abo7.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},\frac{5}{4};-z\right)=\frac{3\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)}{4\sqrt[4]{z}}-\frac{1}{2}\cos\left(2\sqrt{z}\right)$$

07.22.03.abo8.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},\frac{7}{4};z\right)=\frac{3\left(2\sqrt{z}\;I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+5\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-10\sqrt{z}\;I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{16\sqrt{2}\;\sqrt[4]{z}}$$

07.22.03.abo9.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},\frac{7}{4};-z\right)=\frac{3\left(2\sqrt{z}\;J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+5\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+10\sqrt{z}\;J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{16\sqrt{2}\;\sqrt[4]{z}}$$

07.22.03.aboa.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},\frac{9}{4};z\right)=\frac{1}{1024\,z^{5/4}}\left(5\,e^{-2\sqrt{z}}\left(-28\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}-3\right)-4\sqrt{z}-3\right)+\right.\right.$$
$$\left.\left.3\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;(16z-7)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+3\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;(16z-7)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abob.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},\frac{9}{4};-z\right)=\frac{5\left(3\sqrt{\pi}\ (16z+7)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-14\sqrt[4]{z}\ \left(3\cos\left(2\sqrt{z}\right)+4\sqrt{z}\ \sin\left(2\sqrt{z}\right)\right)\right)}{256\,z^{5/4}}$$

07.22.03.aboc.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{512\sqrt{2}\ z^{5/4}}\left(21\left(2\sqrt{z}\ (16z+15)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-5\,(16z+9)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\,(45-16z)\sqrt{z}\ I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abod.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{512\sqrt{2}\ z^{5/4}}\left(21\left(2\sqrt{z}\ (16z-15)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+5\,(9-16z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\ (16z+45)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aboe.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},\frac{13}{4};z\right)=$$
$$-\frac{1}{131\,072\,z^{9/4}}\left(45\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-192\,z^{3/2}+560\,z+1540\sqrt{z}+e^{4\sqrt{z}}\left(192\,z^{3/2}+560\,z-1540\sqrt{z}+1155\right)+1155\right)-\right.$$
$$\left.3\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ \left(256\,z^2-224\,z+385\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)-3\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ \left(256\,z^2-224\,z+385\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.abof.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{32\,768\,z^{9/4}}\left(45\left(3\sqrt{\pi}\ \left(256\,z^2+224\,z+385\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\ \left(4\sqrt{z}\ (48z+385)\sin\left(2\sqrt{z}\right)-35\,(16z-33)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.abog.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{81\,920\sqrt{2}\ z^{9/4}}\left(231\left(2\sqrt{z}\ \left(256\,z^2-960\,z-1365\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-256\,z^2+9120\,z+4095\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\ \left(256\,z^2+384\,z+4095\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aboh.01

$${}_1F_2\left(\frac{1}{4};-\frac{1}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{81\,920\sqrt{2}\ z^{9/4}}\left(231\left(2\sqrt{z}\ \left(256\,z^2+960\,z-1365\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-256\,z^2-9120\,z+4095\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\ \left(256\,z^2-384\,z+4095\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aboi.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) = \frac{1}{8\,388\,608\, z^{13/4}} $$
$$ \left(585\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-1024 z^{5/2} + 256 z^2 - 7040 z^{3/2} - 36\,960 z - 69\,300\sqrt{z} + e^{4\sqrt{z}}\left(1024 z^{5/2} + 256 z^2 + 7040 z^{3/2} - 36\,960 z + 69\,300\sqrt{z} - 51\,975\right) - 51\,975\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 - 5376 z^2 + 18\,480 z - 51\,975\right) \right.\right. $$
$$ \left.\left. \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 - 5376 z^2 + 18\,480 z - 51\,975\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aboj.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) = \frac{1}{2\,097\,152\, z^{13/4}} \left(585 \left(\sqrt{\pi}\left(4096 z^3 + 5376 z^2 + 18\,480 z + 51\,975\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right. $$
$$ \left.\left. 2\sqrt[4]{z}\left(\left(256 z^2 + 36\,960 z - 51\,975\right)\cos\left(2\sqrt{z}\right) - 4\sqrt{z}\left(256 z^2 - 1760 z + 17\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abok.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) = \frac{1}{524\,288\sqrt{2}\, z^{13/4}} $$
$$ \left(99\left(2\sqrt{z}\left(4096 z^3 - 6912 z^2 + 215\,280 z + 255\,255\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4096 z^3 + 139\,008 z^2 + 1\,812\,720 z + 765\,765\right) \right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-4096 z^3 + 5888 z^2 + 179\,088 z + 765\,765\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abol.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) = \frac{1}{524\,288\sqrt{2}\, z^{13/4}} $$
$$ \left(99\left(2\sqrt{z}\left(4096 z^3 + 6912 z^2 + 215\,280 z - 255\,255\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4096 z^3 + 139\,008 z^2 - 1\,812\,720 z + 765\,765\right) \right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4096 z^3 + 5888 z^2 - 179\,088 z + 765\,765\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abom.01

$$ {}_1F_2\left(\frac{1}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) = $$
$$ \frac{1}{2\,147\,483\,648\, z^{17/4}} \left(9945\, e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384 z^{7/2} + 4096 z^3 + 25\,600 z^{5/2} + 520\,960 z^2 + 3\,389\,760 z^{3/2} + 10\,367\,280 z + 17\,117\,100\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^{7/2} + 4096 z^3 - 25\,600 z^{5/2} + 520\,960 z^2 - 3\,389\,760 z^{3/2} + 10\,367\,280 z - 17\,117\,100\sqrt{z} + 12\,837\,825\right) + 12\,837\,825\right) + \right.\right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 114\,688 z^3 + 591\,360 z^2 - 3\,326\,400 z + 12\,837\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ \left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 114\,688 z^3 + 591\,360 z^2 - 3\,326\,400 z + 12\,837\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abon.01

$${}_1F_2\left(\frac{1}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) =$$
$$\frac{1}{536\,870\,912\, z^{17/4}}\left(9945\left(\sqrt{\pi}\,\left(65\,536\, z^4 + 114\,688\, z^3 + 591\,360\, z^2 + 3\,326\,400\, z + 12\,837\,825\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) -\right.\right.$$
$$2\sqrt[4]{z}\,\left(\left(-4096\, z^3 + 520\,960\, z^2 - 10\,367\,280\, z + 12\,837\,825\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.\left.\left.4\sqrt{z}\,\left(4096\, z^3 + 6400\, z^2 - 847\,440\, z + 4\,279\,275\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aboo.01

$${}_1F_2\left(\frac{1}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) =$$
$$\frac{1}{16\,777\,216\sqrt{2}\, z^{17/4}}\left(209\left(2\sqrt{z}\,\left(65\,536\, z^4 - 139\,264\, z^3 - 1\,797\,120\, z^2 - 73\,513\,440\, z - 80\,405\,325\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.\right.$$
$$\left(-65\,536\, z^4 + 98\,304\, z^3 + 81\,768\,960\, z^2 + 588\,107\,520\, z + 241\,215\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.2\sqrt{z}\,\left(65\,536\, z^4 - 122\,880\, z^3 + 3\,354\,624\, z^2 + 73\,513\,440\, z + 241\,215\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abop.01

$${}_1F_2\left(\frac{1}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{16\,777\,216\sqrt{2}\, z^{17/4}}\left(209\left(2\sqrt{z}\,\left(65\,536\, z^4 + 139\,264\, z^3 - 1\,797\,120\, z^2 + 73\,513\,440\, z - 80\,405\,325\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.\right.$$
$$\left(-65\,536\, z^4 - 98\,304\, z^3 + 81\,768\,960\, z^2 - 588\,107\,520\, z + 241\,215\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.2\sqrt{z}\,\left(65\,536\, z^4 + 122\,880\, z^3 + 3\,354\,624\, z^2 - 73\,513\,440\, z + 241\,215\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{1}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.aboq.01

$${}_1F_2\left(\frac{1}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{1\,514\,205}\left(\left(4096\, z^3 + 280\,320\, z^2 + 2\,061\,360\, z + 1\,514\,205\right)\cosh\left(2\sqrt{z}\right) - 96\sqrt{z}\,\left(512\, z^2 + 10\,000\, z + 27\,195\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abor.01

$${}_1F_2\left(\frac{1}{4}; \frac{1}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{1\,514\,205}\left(\left(-4096\, z^3 + 280\,320\, z^2 - 2\,061\,360\, z + 1\,514\,205\right)\cos\left(2\sqrt{z}\right) + 96\sqrt{z}\,\left(512\, z^2 - 10\,000\, z + 27\,195\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abos.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{21}{4};z\right)=\frac{1}{208\,845\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(2048z^3+95\,744z^2+397\,800z+208\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(10\,496z^2+142\,944z+208\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.8z\left(256z^2+13\,344z+71\,505\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abot.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{21}{4};-z\right)=$$
$$-\frac{1}{208\,845\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^3-95\,744z^2+397\,800z-208\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(10\,496z^2-142\,944z+208\,845\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-8z\left(256z^2-13\,344z+71\,505\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abou.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{19}{4};z\right)=\frac{\left(8960z^2+84\,960z+65\,835\right)\cosh\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2+9120z+27\,945\right)\sinh\left(2\sqrt{z}\right)}{65\,835}$$

07.22.03.abov.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{19}{4};-z\right)=\frac{\left(8960z^2-84\,960z+65\,835\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(256z^2-9120z+27\,945\right)\sin\left(2\sqrt{z}\right)}{65\,835}$$

07.22.03.abow.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{17}{4};z\right)=\frac{1}{9945\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(3584z^2+18\,720z+9945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^2+6144z+9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+960z(4z+27)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abox.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(3584z^2-18\,720z+9945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(256z^2-6144z+9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.960z(4z-27)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aboy.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{15}{4};z\right)=\frac{\left(256z^2+4128z+3465\right)\cosh\left(2\sqrt{z}\right)-384\sqrt{z}\,(4z+15)\sinh\left(2\sqrt{z}\right)}{3465}$$

07.22.03.aboz.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{15}{4};-z\right)=\frac{\left(256\,z^2-4128\,z+3465\right)\cos\left(2\sqrt{z}\right)+384\,(15-4\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)}{3465}$$

07.22.03.abp0.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{13}{4};z\right)=$$

$$\frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128\,z^2+1080\,z+585\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(304\,z+585)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+8\,z\,(16\,z+177)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abp1.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{13}{4};-z\right)=\frac{1}{585\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(128\,z^2-1080\,z+585\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(304\,z-585)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+8\,(177-16\,z)\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abp2.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{11}{4};z\right)=\left(\frac{80\,z}{77}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{4}{231}\sqrt{z}\,(16\,z+93)\sinh\left(2\sqrt{z}\right)$$

07.22.03.abp3.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{11}{4};-z\right)=\left(1-\frac{80\,z}{77}\right)\cos\left(2\sqrt{z}\right)-\frac{4}{231}\sqrt{z}\,(16\,z-93)\sin\left(2\sqrt{z}\right)$$

07.22.03.abp4.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{9}{4};z\right)=-\frac{\sqrt[4]{z}\left(-5\,(16\,z+9)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(16\,z+45)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-96\,z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{45\sqrt{2}}$$

07.22.03.abp5.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{9}{4};-z\right)=-\frac{\sqrt[4]{z}\left(5\,(16\,z-9)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(16\,z-45)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-96\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{45\sqrt{2}}$$

07.22.03.abp6.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{7}{4};z\right)=\left(\frac{16\,z}{21}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{32}{21}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.abp7.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{7}{4};-z\right)=\left(1-\frac{16\,z}{21}\right)\cos\left(2\sqrt{z}\right)+\frac{32}{21}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.abp8.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{5}{4};z\right)=\frac{\sqrt[4]{z}\left((8\,z+5)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-20\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+8\,z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.abp9.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{5}{4};-z\right)=-\frac{\sqrt[4]{z}\left((8\,z-5)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-20\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-8\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.abpa.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{3}{4};z\right)=\cosh\left(2\sqrt{z}\right)-\frac{4}{3}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.abpb.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{3}{4};-z\right)=\cos\left(2\sqrt{z}\right)+\frac{4}{3}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.abpc.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{1}{4};z\right)=\frac{\sqrt[4]{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)\left(I_{-\frac{1}{4}}\left(\sqrt{z}\right)-4\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.abpd.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},-\frac{1}{4};-z\right)=\frac{\sqrt[4]{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)\left(J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.abpe.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{1}{4};z\right)=\cosh\left(2\sqrt{z}\right)$$

07.22.03.abpf.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{1}{4};-z\right)=\cos\left(2\sqrt{z}\right)$$

07.22.03.abpg.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{3}{4};z\right)=\frac{\sqrt[4]{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.abph.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{3}{4};-z\right)=\frac{\sqrt[4]{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.0068.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{5}{4};z\right)==\frac{\sqrt{\pi}}{4\sqrt{2}\,\sqrt[4]{z}}\left(\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)$$

07.22.03.0069.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{5}{4};z\right)==-\frac{(-1)^{3/4}\sqrt{\pi}}{2\sqrt[4]{z}}C\left(\frac{2\sqrt[4]{-1}\,\sqrt[4]{z}}{\sqrt{\pi}}\right)$$

07.22.03.0070.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{5}{4};z\right)==-\frac{\sqrt[4]{-1}\,\sqrt{\pi}}{2\sqrt[4]{z}}C\left(\frac{2\,(-1)^{3/4}\sqrt[4]{z}}{\sqrt{\pi}}\right)$$

07.22.03.abpi.01

$${}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{5}{4};-z\right)=\frac{\sqrt{\pi}}{2\sqrt[4]{z}}C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)$$

07.22.03.abpj.01

$$ {}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{7}{4};z\right)=\frac{3\left(2\sqrt{z}\ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\ I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{8\sqrt{2}\ \sqrt[4]{z}} $$

07.22.03.abpk.01

$$ {}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{7}{4};-z\right)=\frac{3\left(2\sqrt{z}\ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\ J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{8\sqrt{2}\ \sqrt[4]{z}} $$

07.22.03.abpl.01

$$ {}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{9}{4};z\right)=\frac{1}{512\,z^{5/4}}\left(5\,e^{-2\sqrt{z}}\right. $$
$$ \left.\left(-4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}-3\right)-4\sqrt{z}-3\right)+e^{2\sqrt{z}}\ \sqrt{2\pi}\ (16z-3)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)+e^{2\sqrt{z}}\ \sqrt{2\pi}\ (16z-3)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right) $$

07.22.03.abpm.01

$$ {}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{9}{4};-z\right)=\frac{5\left(-6\sqrt[4]{z}\ \cos\left(2\sqrt{z}\right)+\sqrt{\pi}\ (16z+3)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-8\,z^{3/4}\sin\left(2\sqrt{z}\right)\right)}{128\,z^{5/4}} $$

07.22.03.abpn.01

$$ {}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{11}{4};z\right)= $$
$$ \frac{1}{256\sqrt{2}\ z^{5/4}}\left(7\left(2\sqrt{z}\ (16z+5)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-(16z+15)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\,(15-16z)\sqrt{z}\ I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abpo.01

$$ {}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{11}{4};-z\right)= $$
$$ \frac{1}{256\sqrt{2}\ z^{5/4}}\left(7\left(2\sqrt{z}\ (16z-5)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(15-16z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\ (16z+15)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abpp.01

$$ {}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{13}{4};z\right)= $$
$$ -\frac{1}{65\,536\,z^{9/4}}\left(45\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-64\,z^{3/2}+16z+140\sqrt{z}+e^{4\sqrt{z}}\left(64\,z^{3/2}+16z-140\sqrt{z}+105\right)+105\right)-\right. $$
$$ \left.\left.e^{2\sqrt{z}}\ \sqrt{2\pi}\ \left(256\,z^2-96z+105\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)-e^{2\sqrt{z}}\ \sqrt{2\pi}\ \left(256\,z^2-96z+105\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right) $$

07.22.03.abpq.01

$$ {}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{13}{4};-z\right)= $$
$$ \frac{1}{16\,384\,z^{9/4}}\left(45\left(\sqrt{\pi}\ \left(256\,z^2+96z+105\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\ \left((105-16z)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\ (16z+35)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abpr.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{1}{2}, \frac{15}{4}; z\right) = \frac{1}{40\,960\sqrt{2}\, z^{9/4}}\left(77\left(2\sqrt{z}\,\left(256 z^2-160 z-315\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-256 z^2+1920 z+945\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(256 z^2-96 z+945\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abps.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{1}{2}, \frac{15}{4}; -z\right) = \frac{1}{40\,960\sqrt{2}\, z^{9/4}}\left(77\left(2\sqrt{z}\,\left(256 z^2+160 z-315\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-256 z^2-1920 z+945\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(256 z^2+96 z+945\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abpt.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{1}{2}, \frac{17}{4}; z\right) = \frac{1}{4\,194\,304\, z^{13/4}}\left(195\, e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-1024 z^{5/2}+256 z^2+384 z^{3/2}-6048 z-13\,860\sqrt{z}\right.\right.\right.+ e^{4\sqrt{z}}\left(1024 z^{5/2}+256 z^2-\right.$$
$$\left.\left.\left.384 z^{3/2}-6048 z+13\,860\sqrt{z}-10\,395\right)-10\,395\right)+ e^{2\sqrt{z}}\sqrt{2\pi}\,\left(4096 z^3-2304 z^2+5040 z-10\,395\right)$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+ e^{2\sqrt{z}}\sqrt{2\pi}\,\left(4096 z^3-2304 z^2+5040 z-10\,395\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abpu.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{1}{2}, \frac{17}{4}; -z\right) = \frac{1}{1\,048\,576\, z^{13/4}}\left(195\left(\sqrt{\pi}\,\left(4096 z^3+2304 z^2+5040 z+10\,395\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\,\left(\left(-256 z^2-6048 z+10\,395\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(256 z^2+96 z+3465\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.abpv.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{1}{2}, \frac{19}{4}; z\right) = \frac{1}{262\,144\sqrt{2}\, z^{13/4}}$$
$$\left(33\left(2\sqrt{z}\,\left(4096 z^3-3328 z^2+33\,840 z+45\,045\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096 z^3-768 z^2+307\,440 z+135\,135\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(-4096 z^3+2304 z^2+19\,152 z+135\,135\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abpw.01

$$ {}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{19}{4};-z\right)=\frac{1}{262\,144\sqrt{2}\,z^{13/4}}$$
$$\left(33\left(2\sqrt{z}\,\left(4096z^3+3328z^2+33\,840z-45\,045\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096z^3+768z^2+307\,440z-135\,135\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(4096z^3+2304z^2-19\,152z+135\,135\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abpx.01

$$ {}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{21}{4};z\right)=\frac{1}{1\,073\,741\,824\,z^{17/4}}$$
$$\left(3315\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-16\,384z^{7/2}+4096z^3+9216z^{5/2}+768z^2+348\,480z^{3/2}+1\,496\,880z+2\,702\,700\sqrt{z}\,+\right.\right.\right.$$
$$\left.e^{4\sqrt{z}}\left(16\,384z^{7/2}+4096z^3-9216z^{5/2}+768z^2-348\,480z^{3/2}+1\,496\,880z-2\,702\,700\sqrt{z}\,+2\,027\,025\right)+\right.$$
$$\left.\left.2\,027\,025\right)+e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536z^4-49\,152z^3+161\,280z^2-665\,280z+2\,027\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.$$
$$\left.e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536z^4-49\,152z^3+161\,280z^2-665\,280z+2\,027\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abpy.01

$$ {}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{21}{4};-z\right)=$$
$$\frac{1}{268\,435\,456\,z^{17/4}}\left(3315\left(\sqrt{\pi}\,\left(65\,536z^4+49\,152z^3+161\,280z^2+665\,280z+2\,027\,025\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\right.\right.$$
$$\left(\left(-4096z^3+768z^2-1\,496\,880z+2\,027\,025\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.4\sqrt{z}\,\left(4096z^3+2304z^2-87\,120z+675\,675\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.abpz.01

$$ {}_1F_2\left(\frac{1}{4};\frac{1}{2},\frac{23}{4};z\right)=$$
$$\frac{1}{25\,165\,824\sqrt{2}\,z^{17/4}}\left(209\left(2\sqrt{z}\,\left(65\,536z^4-65\,536z^3+207\,360z^2-9\,884\,160z-11\,486\,475\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-65\,536z^4+24\,576z^3+7\,464\,960z^2+82\,162\,080z+34\,459\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\,\left(65\,536z^4-49\,152z^3+216\,576z^2+8\,648\,640z+34\,459\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abq0.01

$${}_1F_2\left(\frac{1}{4}; \frac{1}{2}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{25\,165\,824\sqrt{2}\,z^{17/4}}\left(209\left(2\sqrt{z}\left(65\,536z^4+65\,536z^3+207\,360z^2+9\,884\,160z-11\,486\,475\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-65\,536z^4-24\,576z^3+7\,464\,960z^2-82\,162\,080z+34\,459\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+49\,152z^3+216\,576z^2-8\,648\,640z+34\,459\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{1}{4}$, $b_{1.} = \frac{3}{2}$

07.22.03.abq1.01

$${}_1F_2\left(\frac{1}{4}; \frac{3}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{3\,028\,410\sqrt{z}}\left(\left(4096z^3+433\,920z^2+4\,803\,120z+5\,221\,125\right)\sinh\left(2\sqrt{z}\right)-240\sqrt{z}\left(256z^2+7616z+30\,891\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.abq2.01

$${}_1F_2\left(\frac{1}{4}; \frac{3}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{3\,028\,410\sqrt{z}}\left(\left(-4096z^3+433\,920z^2-4\,803\,120z+5\,221\,125\right)\sin\left(2\sqrt{z}\right)-240\sqrt{z}\left(256z^2-7616z+30\,891\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.abq3.01

$${}_1F_2\left(\frac{1}{4}; \frac{3}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{208\,845\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-13\,056z^2-261\,920z+208\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(256z^2+20\,128z+147\,945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(13\,568z^2+305\,760z+1\,514\,205\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abq4.01

$${}_1F_2\left(\frac{1}{4}; \frac{3}{2}, -\frac{21}{4}; -z\right) =$$
$$-\frac{1}{208\,845\sqrt{2}}\left(\sqrt[4]{z}\left(\left(13\,056z^2-261\,920z-208\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(256z^2-20\,128z+147\,945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-13\,568z^2+305\,760z-1\,514\,205\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abq5.01

$${}_1F_2\left(\frac{1}{4}; \frac{3}{2}, -\frac{19}{4}; z\right) = \frac{45\left(256z^2+3872z+4641\right)\sinh\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2+14\,880z+71\,505\right)\cosh\left(2\sqrt{z}\right)}{131\,670\sqrt{z}}$$

07.22.03.abq6.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{19}{4};-z\right)=\frac{45\left(256z^2-3872z+4641\right)\sin\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2-14\,880z+71\,505\right)\cos\left(2\sqrt{z}\right)}{131\,670\sqrt{z}}$$

07.22.03.abq7.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{17}{4};z\right)=-\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^2+9760z-9945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.128\sqrt{z}\,(38z+375)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(256z^2+11\,040z+65\,835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abq8.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{17}{4};-z\right)=-\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^2-9760z-9945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.128\sqrt{z}\,(38z-375)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-256z^2+11\,040z-65\,835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abq9.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{15}{4};z\right)=\frac{\left(256z^2+7200z+9945\right)\sinh\left(2\sqrt{z}\right)-32\sqrt{z}\,(64z+405)\cosh\left(2\sqrt{z}\right)}{6930\sqrt{z}}$$

07.22.03.abqa.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{15}{4};-z\right)=\frac{32\sqrt{z}\,(64z-405)\cos\left(2\sqrt{z}\right)+\left(256z^2-7200z+9945\right)\sin\left(2\sqrt{z}\right)}{6930\sqrt{z}}$$

07.22.03.abqb.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\left((585-400z)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\,(16z+285)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-9\,(48z+385)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abqc.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\left(5\,(80z+117)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\,(16z-285)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+9\,(385-48z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abqd.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{11}{4};z\right)=\frac{3\,(112z+195)\sinh\left(2\sqrt{z}\right)-4\sqrt{z}\,(16z+177)\cosh\left(2\sqrt{z}\right)}{462\sqrt{z}}$$

07.22.03.abqe.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{11}{4};-z\right)=\frac{4\sqrt{z}\,(16z-177)\cos\left(2\sqrt{z}\right)+3\,(195-112z)\sin\left(2\sqrt{z}\right)}{462\sqrt{z}}$$

07.22.03.abqf.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{9}{4};z\right)=-\frac{\sqrt[4]{z}\left((16z-45)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-128\sqrt{z}\;I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+(16z+231)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{45\sqrt{2}}$$

07.22.03.abqg.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{9}{4};-z\right)=\frac{\sqrt[4]{z}\left((16z+45)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-128\sqrt{z}\;J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+(231-16z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{45\sqrt{2}}$$

07.22.03.abqh.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{7}{4};z\right)=\frac{(16z+45)\sinh\left(2\sqrt{z}\right)-48\sqrt{z}\;\cosh\left(2\sqrt{z}\right)}{42\sqrt{z}}$$

07.22.03.abqi.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{7}{4};-z\right)=\frac{(45-16z)\sin\left(2\sqrt{z}\right)-48\sqrt{z}\;\cos\left(2\sqrt{z}\right)}{42\sqrt{z}}$$

07.22.03.abqj.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{5}{4};z\right)=\frac{\sqrt[4]{z}\left(5\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\;I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-21\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.abqk.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{5}{4};-z\right)=\frac{\sqrt[4]{z}\left(5\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\;J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+21\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.abql.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{3}{4};z\right)=\frac{5\sinh\left(2\sqrt{z}\right)}{6\sqrt{z}}-\frac{2}{3}\cosh\left(2\sqrt{z}\right)$$

07.22.03.abqm.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{3}{4};-z\right)=\frac{5\sin\left(2\sqrt{z}\right)}{6\sqrt{z}}-\frac{2}{3}\cos\left(2\sqrt{z}\right)$$

07.22.03.abqn.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{1}{4};z\right)=\frac{\sqrt[4]{z}\left(I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-3\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.abqo.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},-\frac{1}{4};-z\right)=\frac{\sqrt[4]{z}\left(J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+3\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.abqp.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{1}{4};z\right)=\frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.abqq.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{1}{4};-z\right)=\frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.abqr.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{3}{4};z\right)=\frac{\sqrt[4]{z}\left(I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.abqs.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{3}{4};-z\right)=\frac{\sqrt[4]{z}\left(J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.abqt.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{5}{4};z\right)=\frac{e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{4\sqrt{z}}+e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)+1\right)}{4\sqrt{z}}$$

07.22.03.abqu.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{5}{4};-z\right)=\frac{\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)}{\sqrt[4]{z}}-\frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.abqv.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{7}{4};z\right)=\frac{3\left(2\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{4\sqrt{2}\sqrt[4]{z}}$$

07.22.03.abqw.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{7}{4};-z\right)=\frac{3\left(2\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{4\sqrt{2}\sqrt[4]{z}}$$

07.22.03.abqx.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{9}{4};z\right)=\frac{1}{256\,z^{5/4}}\left(5e^{-2\sqrt{z}}\right.$$
$$\left.\left(-4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}+1\right)-4\sqrt{z}+1\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+1)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+1)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abqy.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{9}{4};-z\right)=-\frac{5\left(-2\sqrt[4]{z}\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\,(1-16z)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+8z^{3/4}\sin\left(2\sqrt{z}\right)\right)}{64\,z^{5/4}}$$

07.22.03.abqz.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{11}{4};z\right)=\frac{7\left(2\sqrt{z}\,(16z-1)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(3-16z)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,(16z+3)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{128\sqrt{2}\,z^{5/4}}$$

07.22.03.abr0.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{11}{4};-z\right)=\frac{7\left(2\sqrt{z}\ (16z+1)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-(16z+3)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\ (16z-3)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{128\sqrt{2}\ z^{5/4}}$$

07.22.03.abr1.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{32\,768\,z^{9/4}}\left(45\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-64z^{3/2}+16z-20\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}+16z+20\sqrt{z}-15\right)-15\right)+e^{2\sqrt{z}}\right.\right.$$
$$\left.\left.\sqrt{2\pi}\left(256z^2+32z-15\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)+e^{2\sqrt{z}}\ \sqrt{2\pi}\left(256z^2+32z-15\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.abr2.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{8192\,z^{9/4}}\left(45\left(\sqrt{\pi}\left(256z^2-32z-15\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left((16z+15)\cos\left(2\sqrt{z}\right)+4(5-16z)\sqrt{z}\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.abr3.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{15}{4};z\right)=\frac{1}{20\,480\sqrt{2}\ z^{9/4}}$$
$$\left(77\left(2\sqrt{z}\left(256z^2+35\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(256z^2+160z+105\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(256z^2+64z-105\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abr4.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{15}{4};-z\right)=\frac{1}{20\,480\sqrt{2}\ z^{9/4}}$$
$$\left(77\left(2\sqrt{z}\left(256z^2+35\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-256z^2+160z-105\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(256z^2-64z-105\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abr5.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{17}{4};z\right)=$$
$$-\frac{1}{2\,097\,152\,z^{13/4}}\left(195\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1024z^{5/2}+256z^2-384z^{3/2}+288z+1260\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.384z^{3/2}+288z-1260\sqrt{z}+945\right)+945\right)-e^{2\sqrt{z}}\ \sqrt{2\pi}\left(4096z^3+768z^2-720z+945\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)-e^{2\sqrt{z}}\ \sqrt{2\pi}\left(4096z^3+768z^2-720z+945\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.abr6.01

$$ {}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{17}{4};-z\right)=\frac{1}{524\,288\,z^{13/4}}\left(195\left(\sqrt{\pi}\,\left(4096\,z^3-768\,z^2-720\,z-945\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(\left(256\,z^2-288\,z+945\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(-256\,z^2+96\,z+315\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abr7.01

$$ {}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{19}{4};z\right)=\frac{1}{131\,072\sqrt{2}\,z^{13/4}}\left(33\left(2\sqrt{z}\,\left(4096\,z^3+256\,z^2-2000\,z-3465\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4096\,z^3-2816\,z^2+21\,840\,z+10\,395\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(4096\,z^3+1280\,z^2-336\,z+10\,395\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abr8.01

$$ {}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{19}{4};-z\right)=\frac{1}{131\,072\sqrt{2}\,z^{13/4}}\left(33\left(2\sqrt{z}\,\left(4096\,z^3-256\,z^2-2000\,z+3465\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4096\,z^3+2816\,z^2+21\,840\,z-10\,395\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4096\,z^3-1280\,z^2-336\,z-10\,395\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abr9.01

$$ {}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{21}{4};z\right)=\frac{1}{536\,870\,912\,z^{17/4}}\left(3315\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-16\,384\,z^{7/2}+4096\,z^3-7168\,z^{5/2}+4864\,z^2-1728\,z^{3/2}-83\,664\,z-180\,180\sqrt{z}+e^{4\sqrt{z}}\left(16\,384\,z^{7/2}+4096\,z^3+7168\,z^{5/2}+4864\,z^2+1728\,z^{3/2}-83\,664\,z+180\,180\sqrt{z}-135\,135\right)-135\,135\right)+e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536\,z^4+16\,384\,z^3-23\,040\,z^2+60\,480\,z-135\,135\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536\,z^4+16\,384\,z^3-23\,040\,z^2+60\,480\,z-135\,135\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abra.01

$$ {}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{21}{4};-z\right)=-\frac{1}{134\,217\,728\,z^{17/4}}\left(3315\left(\sqrt{\pi}\,\left(-65\,536\,z^4+16\,384\,z^3+23\,040\,z^2+60\,480\,z+135\,135\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(\left(-4096\,z^3+4864\,z^2+83\,664\,z-135\,135\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(4096\,z^3-1792\,z^2+432\,z-45\,045\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abrb.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{23}{4};z\right)=\frac{1}{12\,582\,912\sqrt{2}\,z^{17/4}}\left(209\left(2\sqrt{z}\left(65\,536z^4+8192z^3-46\,080z^2+522\,720z+675\,675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(65\,536z^4+49\,152z^3+69\,120z^2+4\,656\,960z+2\,027\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(-65\,536z^4-24\,576z^3+18\,432z^2+332\,640z+2\,027\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abrc.01

$${}_1F_2\left(\frac{1}{4};\frac{3}{2},\frac{23}{4};-z\right)=\frac{1}{12\,582\,912\sqrt{2}\,z^{17/4}}\left(209\left(2\sqrt{z}\left(65\,536z^4-8192z^3-46\,080z^2-522\,720z+675\,675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-65\,536z^4+49\,152z^3-69\,120z^2+4\,656\,960z-2\,027\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-24\,576z^3-18\,432z^2+332\,640z-2\,027\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{1}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.abrd.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{23}{4};z\right)=\frac{1}{4\,037\,880z^{3/2}}\left(2\sqrt{z}\left(4096z^3+661\,248z^2+11\,765\,040z+30\,282\,525\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(151\,552z^3+6\,961\,920z^2+50\,122\,800z+30\,282\,525\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abre.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{23}{4};-z\right)=\frac{1}{4\,037\,880z^{3/2}}\left(2\sqrt{z}\left(4096z^3-661\,248z^2+11\,765\,040z-30\,282\,525\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(-151\,552z^3+6\,961\,920z^2-50\,122\,800z+30\,282\,525\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abrf.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{278\,460\sqrt{2}\,z^{3/4}}\left(\left(8z\left(256z^2+30\,496z+489\,069\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(16\,640z^2+566\,880z+2\,725\,569\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(2048z^3+261\,120z^2+2\,422\,728z+8\,176\,707\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abrg.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{21}{4};-z\right)=\frac{1}{278\,460\sqrt{2}\,z^{3/4}}$$
$$\left(\left(8z\left(256z^2-30\,496z+489\,069\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(16\,640z^2-566\,880z+2\,725\,569\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-2048z^3+261\,120z^2-2\,422\,728z+8\,176\,707\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abrh.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{19}{4};z\right)=\frac{1}{175\,560\,z^{3/2}}$$
$$\left(6\sqrt{z}\,\left(4864\,z^2+122\,080\,z+348\,075\right)\cosh\left(2\sqrt{z}\right)-\left(2048\,z^3+192\,000\,z^2+1\,670\,760\,z+1\,044\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abri.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{175\,560\,z^{3/2}}\left(\left(-2048\,z^3+192\,000\,z^2-1\,670\,760\,z+1\,044\,225\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\,\left(4864\,z^2-122\,080\,z+348\,075\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.abrj.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{17}{4};z\right)=\frac{1}{13\,260\sqrt{2}\,z^{3/4}}\left(\left(16\,z\,(384\,z+9241)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.4\sqrt{z}\,\left(256\,z^2+17\,440\,z+100\,947\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(6400\,z^2+70\,224\,z+302\,841\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abrk.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{13\,260\sqrt{2}\,z^{3/4}}\left(\left(-16\,z\,(384\,z-9241)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(256\,z^2-17\,440\,z+100\,947\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(6400\,z^2-70\,224\,z+302\,841\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abrl.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{15}{4};z\right)=\frac{2\sqrt{z}\,\left(256\,z^2+12\,576\,z+41\,769\right)\cosh\left(2\sqrt{z}\right)-3\left(1792\,z^2+21\,216\,z+13\,923\right)\sinh\left(2\sqrt{z}\right)}{9240\,z^{3/2}}$$

07.22.03.abrm.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{15}{4};-z\right)=\frac{3\left(1792\,z^2-21\,216\,z+13\,923\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(256\,z^2-12\,576\,z+41\,769\right)\cos\left(2\sqrt{z}\right)}{9240\,z^{3/2}}$$

07.22.03.abrn.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{13}{4};z\right)=\frac{1}{780\sqrt{2}\,z^{3/4}}$$
$$\left(\left(8\,z\,(16\,z+829)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-28\sqrt{z}\,\left(80\,z+627\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(128\,z^2+1848\,z+13\,167\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abro.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{13}{4};-z\right)=\frac{1}{780\sqrt{2}\,z^{3/4}}$$
$$\left(\left(-8\,z\,(16\,z-829)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+28\sqrt{z}\,\left(80\,z-627\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(128\,z^2-1848\,z+13\,167\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abrp.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{11}{4};z\right)=\frac{2\sqrt{z}\ (464z+1989)\cosh\left(2\sqrt{z}\right)-\left(128z^2+2808z+1989\right)\sinh\left(2\sqrt{z}\right)}{616\,z^{3/2}}$$

07.22.03.abrq.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{11}{4};-z\right)=\frac{2\sqrt{z}\ (464z-1989)\cos\left(2\sqrt{z}\right)+\left(128z^2-2808z+1989\right)\sin\left(2\sqrt{z}\right)}{616\,z^{3/2}}$$

07.22.03.abrr.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{9}{4};z\right)=\frac{\left(368z\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\ (16z+231)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+693\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{60\sqrt{2}\ z^{3/4}}$$

07.22.03.abrs.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{9}{4};-z\right)=\frac{\left(368z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\ (16z-231)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+693\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{60\sqrt{2}\ z^{3/4}}$$

07.22.03.abrt.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{7}{4};z\right)=\frac{2\sqrt{z}\ (16z+117)\cosh\left(2\sqrt{z}\right)-9\,(16z+13)\sinh\left(2\sqrt{z}\right)}{56\,z^{3/2}}$$

07.22.03.abru.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{7}{4};-z\right)=\frac{2\sqrt{z}\ (16z-117)\cos\left(2\sqrt{z}\right)+9\,(13-16z)\sin\left(2\sqrt{z}\right)}{56\,z^{3/2}}$$

07.22.03.abrv.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{5}{4};z\right)=\frac{3\left(136z\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-308\sqrt{z}\ I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+7\,(33-8z)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{100\sqrt{2}\ z^{3/4}}$$

07.22.03.abrw.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{5}{4};-z\right)=\frac{3\left(136z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-308\sqrt{z}\ J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+7\,(8z+33)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{100\sqrt{2}\ z^{3/4}}$$

07.22.03.abrx.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{3}{4};z\right)=\frac{18\sqrt{z}\ \cosh\left(2\sqrt{z}\right)-(8z+9)\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.abry.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{3}{4};-z\right)=\frac{(9-8z)\sin\left(2\sqrt{z}\right)-18\sqrt{z}\ \cos\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.abrz.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{1}{4};z\right)=\frac{3\left(16z\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-28\sqrt{z}\ I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+(21-16z)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}\ z^{3/4}}$$

07.22.03.abs0.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},-\frac{1}{4};-z\right)=\frac{3\left(16\,z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-28\sqrt{z}\;J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+(16\,z+21)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}\;z^{3/4}}$$

07.22.03.abs1.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},\frac{1}{4};z\right)=\frac{3\cosh\left(2\sqrt{z}\right)}{4\,z}-\frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.abs2.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},\frac{1}{4};-z\right)=\frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\;\cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.abs3.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},\frac{3}{4};z\right)=\frac{3\left(8\,z\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\;I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+(3-8\,z)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}\;z^{3/4}}$$

07.22.03.abs4.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},\frac{3}{4};-z\right)=\frac{3\left(8\,z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\;J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+(8\,z+3)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}\;z^{3/4}}$$

07.22.03.abs5.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},\frac{5}{4};z\right)=-\frac{1}{80\,z^{3/2}}\left(3\,e^{-2\sqrt{z}}\left(-8\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{5/4}-\right.\right.$$
$$\left.\left.8\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{5/4}+8\,e^{4\sqrt{z}}\;z-8\,z+2\,e^{4\sqrt{z}}\;\sqrt{z}\;+2\sqrt{z}\;-e^{4\sqrt{z}}\;+1\right)\right)$$

07.22.03.abs6.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},\frac{5}{4};-z\right)=-\frac{3\left(-16\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}-2\cos\left(2\sqrt{z}\right)\sqrt{z}\;+(8\,z+1)\sin\left(2\sqrt{z}\right)\right)}{40\,z^{3/2}}$$

07.22.03.abs7.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},\frac{7}{4};z\right)=\frac{9\left(4\,z\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-2\sqrt{z}\;I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-(4\,z+1)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}\;z^{3/4}}$$

07.22.03.abs8.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},\frac{7}{4};-z\right)=\frac{9\left(4\,z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-2\sqrt{z}\;J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+(4\,z-1)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}\;z^{3/4}}$$

07.22.03.abs9.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},\frac{9}{4};z\right)=$$
$$-\frac{1}{128\,z^{3/2}}\left(3\,e^{-2\sqrt{z}}\left(4\left(-4\,z+\sqrt{z}\;+e^{4\sqrt{z}}\left(4\,z+\sqrt{z}\;+2\right)-2\right)-e^{2\sqrt{z}}\;\sqrt{2\pi}\;\sqrt[4]{z}\;(16\,z+5)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\;\sqrt{2\pi}\;\sqrt[4]{z}\;(16\,z+5)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.absa.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{5}{2}, \frac{9}{4}; -z\right) = \frac{3\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right) + \sqrt{\pi}\,\sqrt[4]{z}\,(16z-5)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 4(1-2z)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{3/2}} $$

07.22.03.absb.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{5}{2}, \frac{11}{4}; z\right) = $$

$$ \frac{1}{320\sqrt{2}\,z^{5/4}}\left(21\left(2\sqrt{z}\,(16z+5)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - (16z+15)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,(16z+9)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.absc.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{5}{2}, \frac{11}{4}; -z\right) = $$

$$ \frac{1}{320\sqrt{2}\,z^{5/4}}\left(21\left(2\sqrt{z}\,(16z-5)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (15-16z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(16z-9)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.absd.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{5}{2}, \frac{13}{4}; z\right) = $$

$$ \frac{1}{16\,384\,z^{9/4}}\left(27\,e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)(16z+5)^2 + e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)(16z+5)^2 - 4\sqrt[4]{z}\right.\right. $$
$$ \left.\left.\left(-64\,z^{3/2} + 16z - 52\sqrt{z} + e^{4\sqrt{z}}\left(64\,z^{3/2} + 16z + 52\sqrt{z} + 25\right) + 25\right)\right)\right) $$

07.22.03.abse.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{5}{2}, \frac{13}{4}; -z\right) = \frac{27\left(\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)(5-16z)^2 + 2\sqrt[4]{z}\left((16z-25)\cos\left(2\sqrt{z}\right) + 4(13-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)}{4096\,z^{9/4}} $$

07.22.03.absf.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{5}{2}, \frac{15}{4}; z\right) = \frac{1}{51\,200\sqrt{2}\,z^{9/4}}\left(231\left(2\sqrt{z}\,\left(256z^2+160z-35\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left.\left.\left(-256z^2-320z+105\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(256z^2+224z+105\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.absg.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{5}{2}, \frac{15}{4}; -z\right) = $$

$$ \frac{1}{51\,200\sqrt{2}\,z^{9/4}}\left(231\left(2\sqrt{z}\,\left(256z^2-160z-35\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-256z^2+320z+105\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left.2\sqrt{z}\,\left(256z^2-224z+105\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.absh.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{5}{2}, \frac{17}{4}; z\right) = \frac{1}{1\,048\,576\, z^{13/4}} \left(117\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-1024\, z^{5/2} + 256\, z^2 - 1152\, z^{3/2} + 480\, z - 900\sqrt{z} + e^{4\sqrt{z}}\left(1024\, z^{5/2} + 256\, z^2 + 1152\, z^{3/2} + 480\, z + 900\sqrt{z} - 675\right) - 675\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\, z^3 + 3840\, z^2 + 1200\, z - 675\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\, z^3 + 3840\, z^2 + 1200\, z - 675\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.absi.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{5}{2}, \frac{17}{4}; -z\right) = \frac{1}{262\,144\, z^{13/4}} \left(117\left(\sqrt{\pi}\left(4096\, z^3 - 3840\, z^2 + 1200\, z + 675\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(-256\, z^2 + 480\, z + 675\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(256\, z^2 - 288\, z + 225\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.absj.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{5}{2}, \frac{19}{4}; z\right) = \frac{1}{327\,680\sqrt{2}\, z^{13/4}} \left(99\left(2\sqrt{z}\left(4096\, z^3 + 3840\, z^2 + 240\, z + 1925\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4096\, z^3 + 6400\, z^2 + 9520\, z + 5775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(4096\, z^3 + 4864\, z^2 + 2800\, z - 5775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.absk.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{5}{2}, \frac{19}{4}; -z\right) = \frac{1}{327\,680\sqrt{2}\, z^{13/4}} \left(99\left(2\sqrt{z}\left(4096\, z^3 - 3840\, z^2 + 240\, z - 1925\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4096\, z^3 + 6400\, z^2 - 9520\, z + 5775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4096\, z^3 - 4864\, z^2 + 2800\, z + 5775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.absl.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{5}{2}, \frac{21}{4}; z\right) = \frac{1}{268\,435\,456\, z^{17/4}} \left(1989\, e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384\, z^{7/2} + 4096\, z^3 - 23\,552\, z^{5/2} + 8960\, z^2 - 20\,160\, z^{3/2} + 22\,320\, z + 81\,900\sqrt{z} + e^{4\sqrt{z}}\left(16\,384\, z^{7/2} + 4096\, z^3 + 23\,552\, z^{5/2} + 8960\, z^2 + 20\,160\, z^{3/2} + 22\,320\, z - 81\,900\sqrt{z} + 61\,425\right) + 61\,425\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\, z^4 + 81\,920\, z^3 + 38\,400\, z^2 - 43\,200\, z + 61\,425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\, z^4 + 81\,920\, z^3 + 38\,400\, z^2 - 43\,200\, z + 61\,425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.absm.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},\frac{21}{4};-z\right)=\frac{1}{67\,108\,864\,z^{17/4}}\left(1989\left(\sqrt{\pi}\,\left(65\,536\,z^4-81\,920\,z^3+38\,400\,z^2+43\,200\,z+61\,425\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\right.\right.$$
$$\left.\left.\left(\left(-4096\,z^3+8960\,z^2-22\,320\,z+61\,425\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(4096\,z^3-5888\,z^2+5040\,z+20\,475\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.absn.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},\frac{23}{4};z\right)=\frac{1}{10\,485\,760\sqrt{2}\,z^{17/4}}\left(209\left(2\sqrt{z}\,\left(65\,536\,z^4+81\,920\,z^3+23\,040\,z^2-158\,400\,z-259\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-65\,536\,z^4-122\,880\,z^3-184\,320\,z^2+1\,663\,200\,z+779\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\,\left(65\,536\,z^4+98\,304\,z^3+69\,120\,z^2+779\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abso.01

$${}_1F_2\left(\frac{1}{4};\frac{5}{2},\frac{23}{4};-z\right)=\frac{1}{10\,485\,760\sqrt{2}\,z^{17/4}}\left(209\left(2\sqrt{z}\,\left(65\,536\,z^4-81\,920\,z^3+23\,040\,z^2+158\,400\,z-259\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-65\,536\,z^4+122\,880\,z^3-184\,320\,z^2-1\,663\,200\,z+779\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\,\left(65\,536\,z^4-98\,304\,z^3+69\,120\,z^2+779\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{1}{4}$, $b_{1.} = \frac{7}{2}$

07.22.03.absp.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{23}{4};z\right)=\frac{1}{3\,230\,304\,z^{5/2}}\left(\left(16\,384\,z^4+3\,935\,232\,z^3+111\,384\,000\,z^2+605\,650\,500\,z+333\,107\,775\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.6\sqrt{z}\,\left(61\,440\,z^3+4\,288\,256\,z^2+53\,835\,600\,z+111\,035\,925\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.absq.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{23}{4};-z\right)=\frac{1}{3\,230\,304\,z^{5/2}}\left(6\sqrt{z}\,\left(61\,440\,z^3-4\,288\,256\,z^2+53\,835\,600\,z-111\,035\,925\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(16\,384\,z^4-3\,935\,232\,z^3+111\,384\,000\,z^2-605\,650\,500\,z+333\,107\,775\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.absr.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{21}{4};z\right)=\frac{1}{222\,768\sqrt{2}\,z^{7/4}}$$
$$\left(\left(-4z\left(20\,224\,z^2+809\,568\,z+9\,388\,071\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(2048\,z^3+385\,536\,z^2+7\,960\,392\,z+28\,164\,213\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-9\left(9216\,z^3+615\,296\,z^2+4\,441\,668\,z+9\,388\,071\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abss.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{222\,768\sqrt{2}\,z^{7/4}}\left(\left(4z\left(20\,224z^2-809\,568z+9\,388\,071\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048z^3-385\,536z^2+7\,960\,392z-28\,164\,213\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-9\left(9216z^3-615\,296z^2+4\,441\,668z-9\,388\,071\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abst.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{19}{4};z\right)=\frac{1}{140\,448z^{5/2}}\left(\left(72\,704z^3+2\,970\,240z^2+18\,099\,900z+10\,094\,175\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(2048z^3+301\,056z^2+4\,641\,000z+10\,094\,175\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.absu.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{19}{4};-z\right)=\frac{1}{140\,448z^{5/2}}\left(2\sqrt{z}\left(2048z^3-301\,056z^2+4\,641\,000z-10\,094\,175\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(-72\,704z^3+2\,970\,240z^2-18\,099\,900z+10\,094\,175\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.absv.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{17}{4};z\right)=$$
$$-\frac{1}{10\,608\sqrt{2}\,z^{7/4}}\left(\left(4z\left(256z^2+16\,576z+302\,841\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(7936z^2+230\,736z+908\,523\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(1024z^3+160\,512z^2+1\,211\,364z+2\,725\,569\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.absw.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{10\,608\sqrt{2}\,z^{7/4}}\left(\left(4z\left(256z^2-16\,576z+302\,841\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(7936z^2-230\,736z+908\,523\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-1024z^3+160\,512z^2-1\,211\,364z+2\,725\,569\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.absx.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{7392z^{5/2}}\left(\left(1024z^3+84\,864z^2+612\,612z+348\,075\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\left(2304z^2+49\,504z+116\,025\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.absy.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{7392z^{5/2}}\left(\left(-1024z^3+84\,864z^2-612\,612z+348\,075\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\left(2304z^2-49\,504z+116\,025\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.absz.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{13}{4};z\right)=\frac{1}{1872\sqrt{2}\,z^{7/4}}\left(\left(-92\,z\,(16\,z+1463)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(384\,z^2+21\,736\,z+100\,947\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-11\left(1472\,z^2+11\,172\,z+27\,531\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abt0.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{13}{4};-z\right)=\frac{1}{1872\sqrt{2}\,z^{7/4}}\left(\left(-92\,z\,(16\,z-1463)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(384\,z^2-21\,736\,z+100\,947\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+11\left(1472\,z^2-11\,172\,z+27\,531\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abt1.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{11}{4};z\right)=-\frac{5\left(2\sqrt{z}\,\left(128\,z^2+5304\,z+13\,923\right)\cosh\left(2\sqrt{z}\right)-39\left(64\,z^2+612\,z+357\right)\sinh\left(2\sqrt{z}\right)\right)}{2464\,z^{5/2}}$$

07.22.03.abt2.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{11}{4};-z\right)=-\frac{5\left(2\sqrt{z}\,\left(128\,z^2-5304\,z+13\,923\right)\cos\left(2\sqrt{z}\right)-39\left(64\,z^2-612\,z+357\right)\sin\left(2\sqrt{z}\right)\right)}{2464\,z^{5/2}}$$

07.22.03.abt3.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{9}{4};z\right)=\frac{1}{144\sqrt{2}\,z^{7/4}}\left(\left(4\,z\,(80\,z-1463)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+44\sqrt{z}\,\left(64\,z+399\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-11\left(64\,z^2+420\,z+1197\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abt4.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{9}{4};-z\right)=\frac{1}{144\sqrt{2}\,z^{7/4}}\left(\left(4\,z\,(80\,z+1463)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+44\sqrt{z}\,\left(64\,z-399\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+11\left(64\,z^2-420\,z+1197\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abt5.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{7}{4};z\right)=\frac{5\left(\left(64\,z^2+1092\,z+663\right)\sinh\left(2\sqrt{z}\right)-26\sqrt{z}\,\left(16\,z+51\right)\cosh\left(2\sqrt{z}\right)\right)}{224\,z^{5/2}}$$

07.22.03.abt6.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{7}{4};-z\right)=\frac{5\left(26\sqrt{z}\,\left(16\,z-51\right)\cos\left(2\sqrt{z}\right)+\left(64\,z^2-1092\,z+663\right)\sin\left(2\sqrt{z}\right)\right)}{224\,z^{5/2}}$$

07.22.03.abt7.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{80\sqrt{2}\,z^{7/4}}\left(\left(4z(64z-385)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+44\sqrt{z}\,(8z+105)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(256z^2+924z+3465\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abt8.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{80\sqrt{2}\,z^{7/4}}\left(\left(4z(64z+385)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+44\sqrt{z}\,(8z-105)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(256z^2-924z+3465\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abt9.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{3}{4};z\right)=-\frac{5\left(2\sqrt{z}\,(8z+39)\cosh\left(2\sqrt{z}\right)-3(20z+13)\sinh\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.abta.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{3}{4};-z\right)=\frac{5\left(2\sqrt{z}\,(8z-39)\cos\left(2\sqrt{z}\right)+3(13-20z)\sin\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.abtb.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{48\sqrt{2}\,z^{7/4}}\left(\left(4z(32z-77)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4(231-16z)\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(128z^2+84z+693\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abtc.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},-\frac{1}{4};-z\right)=$$
$$\frac{1}{48\sqrt{2}\,z^{7/4}}\left(\left(4z(32z+77)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(16z+231)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(128z^2-84z+693\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abtd.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},\frac{1}{4};z\right)=\frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.abte.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},\frac{1}{4};-z\right)=-\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.abtf.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{48\sqrt{2}\,z^{7/4}}\left(\left(4z(16z-7)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4(21-8z)\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-64z^2+12z-63\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abtg.01

$${}_1F_2\left(\frac{1}{4}; \frac{7}{2}, \frac{3}{4}; -z\right) =$$
$$\frac{1}{48\sqrt{2}\, z^{7/4}}\left(\left(4z(16z+7) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(8z+21) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(64z^2+12z+63\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abth.01

$${}_1F_2\left(\frac{1}{4}; \frac{7}{2}, \frac{5}{4}; z\right) =$$
$$\frac{1}{192 z^{5/2}}\left(e^{-2\sqrt{z}}\left(64 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{9/4} + 64 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{9/4} - 64 e^{4\sqrt{z}} z^2 + 64 z^2 - \right.\right.$$
$$\left.\left.16 e^{4\sqrt{z}} z^{3/2} - 16 z^{3/2} - 12 e^{4\sqrt{z}} z + 12 z + 30 e^{4\sqrt{z}}\sqrt{z} + 30\sqrt{z} - 15 e^{4\sqrt{z}} + 15\right)\right)$$

07.22.03.abti.01

$${}_1F_2\left(\frac{1}{4}; \frac{7}{2}, \frac{5}{4}; -z\right) = \frac{128\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{9/4} + 2(8z+15)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(-64z^2+12z-15\right)\sin\left(2\sqrt{z}\right)}{96 z^{5/2}}$$

07.22.03.abtj.01

$${}_1F_2\left(\frac{1}{4}; \frac{7}{2}, \frac{7}{4}; z\right) =$$
$$\frac{1}{16\sqrt{2}\, z^{7/4}}\left(\left(4z(8z+1) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(4z+3) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-32z^2-12z+9\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abtk.01

$${}_1F_2\left(\frac{1}{4}; \frac{7}{2}, \frac{7}{4}; -z\right) =$$
$$\frac{1}{16\sqrt{2}\, z^{7/4}}\left(\left(4z(8z-1) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(4z-3) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(32z^2-12z-9\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abtl.01

$${}_1F_2\left(\frac{1}{4}; \frac{7}{2}, \frac{9}{4}; z\right) =$$
$$-\frac{1}{192 z^{5/2}}\left(5 e^{-2\sqrt{z}}\left(16 e^{4\sqrt{z}} z^2 - 16 z^2 + 4 e^{4\sqrt{z}} z^{3/2} + 4 z^{3/2} - e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+9)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{5/4} - e^{2\sqrt{z}}\right.\right.$$
$$\left.\left.\sqrt{2\pi}\,(16z+9)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{5/4} + 12 e^{4\sqrt{z}} z - 12 z + 6 e^{4\sqrt{z}}\sqrt{z} + 6\sqrt{z} - 3 e^{4\sqrt{z}} + 3\right)\right)$$

07.22.03.abtm.01

$${}_1F_2\left(\frac{1}{4}; \frac{7}{2}, \frac{9}{4}; -z\right) = \frac{5\left(2\sqrt{\pi}\,(16z-9) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{5/4} + 2(2z-3)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(-16z^2+12z+3\right)\sin\left(2\sqrt{z}\right)\right)}{96 z^{5/2}}$$

07.22.03.abtn.01

$${}_1F_2\left(\frac{1}{4}; \frac{7}{2}, \frac{11}{4}; z\right) =$$
$$\frac{1}{96\sqrt{2}\, z^{7/4}}\left(7\left(2z(16z+11) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\,(16z+21) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\left(16z^2+15z+9\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abto.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{96\sqrt{2}\,z^{7/4}}\left(7\left(2z(16z-11)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(21-16z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(16z^2-15z+9\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abtp.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},\frac{13}{4};z\right)=$$
$$-\frac{1}{8192\,z^{5/2}}\left(15\,e^{-2\sqrt{z}}\left(4\left(-64z^2+16z^{3/2}-84z+33\sqrt{z}+e^{4\sqrt{z}}\left(64z^2+16z^{3/2}+84z+33\sqrt{z}+96\right)-96\right)-\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(256z^2+288z+225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(256z^2+288z+225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abtq.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{2048\,z^{5/2}}\left(15\left(\sqrt{\pi}\,\sqrt[4]{z}\left(256z^2-288z+225\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\left(4\left(16z^2-21z+24\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\,(16z-33)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.abtr.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},\frac{15}{4};z\right)=\frac{1}{15\,360\sqrt{2}\,z^{9/4}}\left(77\left(2\sqrt{z}\left(256z^2+320z+315\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.\left(256z^2+480z+945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(256z^2+384z+495\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abts.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{15\,360\sqrt{2}\,z^{9/4}}\left(77\left(2\sqrt{z}\left(256z^2-320z+315\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-256z^2+480z-945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(256z^2-384z+495\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abtt.01

$${}_1F_2\left(\frac{1}{4};\frac{7}{2},\frac{17}{4};z\right)=$$
$$\frac{1}{524\,288\,z^{13/4}}\left(65\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1024z^{5/2}+256z^2-1920z^{3/2}+672z-3444\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2+1920z^{3/2}+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.672z+3444\sqrt{z}+2025\right)+2025\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+6912z^2+10\,800z+2025\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+6912z^2+10\,800z+2025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abtu.01

$$ {}_1F_2\left(\frac{1}{4};\frac{7}{2},\frac{17}{4};-z\right)=\frac{1}{131\,072\,z^{13/4}}\left(65\left(\sqrt{\pi}\,\left(4096\,z^3-6912\,z^2+10\,800\,z-2025\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(\left(256\,z^2-672\,z+2025\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\,\left(256\,z^2-480\,z+861\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abtv.01

$$ {}_1F_2\left(\frac{1}{4};\frac{7}{2},\frac{19}{4};z\right)=\frac{1}{32\,768\sqrt{2}\,z^{13/4}}\left(11\left(2\sqrt{z}\,\left(4096\,z^3+7424\,z^2+13\,680\,z-3465\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096\,z^3+9984\,z^2+25\,200\,z-10\,395\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(4096\,z^3+8448\,z^2+17\,136\,z+10\,395\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abtw.01

$$ {}_1F_2\left(\frac{1}{4};\frac{7}{2},\frac{19}{4};-z\right)=\frac{1}{32\,768\sqrt{2}\,z^{13/4}}\left(11\left(2\sqrt{z}\,\left(4096\,z^3-7424\,z^2+13\,680\,z+3465\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096\,z^3-9984\,z^2+25\,200\,z+10\,395\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4096\,z^3-8448\,z^2+17\,136\,z-10\,395\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abtx.01

$$ {}_1F_2\left(\frac{1}{4};\frac{7}{2},\frac{21}{4};z\right)=\frac{1}{134\,217\,728\,z^{17/4}}\left(1105\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-16\,384\,z^{7/2}+4096\,z^3-39\,936\,z^{5/2}+13\,056\,z^2-100\,032\,z^{3/2}+45\,360\,z-105\,300\sqrt{z}+e^{4\sqrt{z}}\left(16\,384\,z^{7/2}+4096\,z^3+39\,936\,z^{5/2}+13\,056\,z^2+100\,032\,z^{3/2}+45\,360\,z+105\,300\sqrt{z}-78\,975\right)-78\,975\right)+e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536\,z^4+147\,456\,z^3+345\,600\,z^2+129\,600\,z-78\,975\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536\,z^4+147\,456\,z^3+345\,600\,z^2+129\,600\,z-78\,975\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abty.01

$$ {}_1F_2\left(\frac{1}{4};\frac{7}{2},\frac{21}{4};-z\right)=\frac{1}{33\,554\,432\,z^{17/4}}\left(1105\left(\sqrt{\pi}\,\left(65\,536\,z^4-147\,456\,z^3+345\,600\,z^2-129\,600\,z-78\,975\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(\left(4096\,z^3-13\,056\,z^2+45\,360\,z+78\,975\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\,\left(4096\,z^3-9984\,z^2+25\,008\,z-26\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abtz.01

$$ {}_1F_2\left(\frac{1}{4};\frac{7}{2},\frac{23}{4};z\right)=\frac{1}{9\,437\,184\sqrt{2}\,z^{17/4}}\left(209\left(2\sqrt{z}\left(65\,536z^4+155\,648z^3+414\,720z^2+47\,520z+259\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(65\,536z^4+196\,608z^3+622\,080z^2+1\,330\,560z+779\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+172\,032z^3+479\,232z^2+332\,640z-779\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abu0.01

$$ {}_1F_2\left(\frac{1}{4};\frac{7}{2},\frac{23}{4};-z\right)=\frac{1}{9\,437\,184\sqrt{2}\,z^{17/4}}\left(209\left(2\sqrt{z}\left(65\,536z^4-155\,648z^3+414\,720z^2-47\,520z+259\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-65\,536z^4+196\,608z^3-622\,080z^2+1\,330\,560z-779\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-172\,032z^3+479\,232z^2-332\,640z-779\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{1}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.abu1.01

$$ {}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{1\,845\,888z^{7/2}}\left(2\sqrt{z}\left(16\,384z^4+5\,704\,704z^3+248\,472\,000z^2+2\,494\,037\,700z+4\,740\,379\,875\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.3\left(294\,912z^4+30\,464\,000z^3+629\,462\,400z^2+2\,938\,181\,400z+1\,580\,126\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abu2.01

$$ {}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{1\,845\,888z^{7/2}}\left(3\left(294\,912z^4-30\,464\,000z^3+629\,462\,400z^2-2\,938\,181\,400z+1\,580\,126\,625\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(16\,384z^4-5\,704\,704z^3+248\,472\,000z^2-2\,494\,037\,700z+4\,740\,379\,875\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.abu3.01

$$ {}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{21}{4};z\right)=\frac{1}{1\,654\,848\sqrt{2}\,z^{11/4}}\left(\left(4z\left(26\,624z^3+9\,160\,704z^2+225\,313\,704z+1\,642\,912\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(1\,291\,264z^3+106\,222\,464z^2+1\,614\,748\,212z+4\,928\,737\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(106\,496z^4+22\,821\,888z^3+1\,095\,073\,056z^2+7\,660\,665\,936z+14\,786\,211\,825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abu4.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{21}{4};-z\right)=\frac{1}{1\,654\,848\sqrt{2}\,z^{11/4}}\left(\left(-4z\left(26\,624z^3-9\,160\,704z^2+225\,313\,704z-1\,642\,912\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1\,291\,264z^3-106\,222\,464z^2+1\,614\,748\,212z-4\,928\,737\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(106\,496z^4-22\,821\,888z^3+1\,095\,073\,056z^2-7\,660\,665\,936z+14\,786\,211\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abu5.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{19}{4};z\right)=\frac{1}{80\,256z^{7/2}}\left(6\sqrt{z}\left(29\,696z^3+1\,904\,000z^2+21\,741\,300z+42\,706\,125\right)\cosh\left(2\sqrt{z}\right)-\left(8192z^4+1\,827\,840z^3+47\,124\,000z^2+236\,048\,400z+128\,118\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abu6.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{19}{4};-z\right)=\frac{1}{80\,256z^{7/2}}\left(6\sqrt{z}\left(29\,696z^3-1\,904\,000z^2+21\,741\,300z-42\,706\,125\right)\cos\left(2\sqrt{z}\right)+\left(8192z^4-1\,827\,840z^3+47\,124\,000z^2-236\,048\,400z+128\,118\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abu7.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{17}{4};z\right)=-\frac{1}{551\,616\sqrt{2}\,z^{11/4}}\left(7\left(-4z\left(212\,480z^2+5\,537\,664z+46\,940\,355\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(13\,312z^3+2\,349\,312z^2+43\,436\,052z+140\,821\,065\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-171\left(1024z^3+161\,920z^2+1\,232\,616z+2\,470\,545\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abu8.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{17}{4};-z\right)=\frac{1}{551\,616\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(212\,480z^2-5\,537\,664z+46\,940\,355\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(13\,312z^3-2\,349\,312z^2+43\,436\,052z-140\,821\,065\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-171\left(1024z^3-161\,920z^2+1\,232\,616z-2\,470\,545\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abu9.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{15}{4};z\right)=\frac{1}{4224z^{7/2}}\left(2\sqrt{z}\left(1024z^3+137\,088z^2+1\,892\,100z+3\,882\,375\right)\cosh\left(2\sqrt{z}\right)-17\left(2048z^3+75\,264z^2+415\,800z+228\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abua.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{15}{4};-z\right)=\frac{1}{4224z^{7/2}}\left(2\sqrt{z}\left(1024z^3-137\,088z^2+1\,892\,100z-3\,882\,375\right)\cos\left(2\sqrt{z}\right)-17\left(2048z^3-75\,264z^2+415\,800z-228\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abub.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{13}{4};z\right)=\frac{1}{97\,344\sqrt{2}\,z^{11/4}}$$
$$\left(7\left(4z\left(19\,328z^2+423\,016z+4\,542\,615\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-76\sqrt{z}\left(8128z^2+203\,412z+717\,255\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-37\,376z^3+2\,267\,232z^2+19\,381\,824z+40\,883\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abuc.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{13}{4};-z\right)=\frac{1}{97\,344\sqrt{2}\,z^{11/4}}$$
$$\left(7\left(4z\left(19\,328z^2-423\,016z+4\,542\,615\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-76\sqrt{z}\left(8128z^2-203\,412z+717\,255\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(37\,376z^3+2\,267\,232z^2-19\,381\,824z+40\,883\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abud.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{11}{4};z\right)=$$
$$-\frac{1}{1408z^{7/2}}\left(5\left(\left(512z^3+37\,536z^2+239\,904z+133\,875\right)\sinh\left(2\sqrt{z}\right)-102\sqrt{z}\left(64z^2+1204z+2625\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abue.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{11}{4};-z\right)=$$
$$-\frac{1}{1408z^{7/2}}\left(5\left(102\sqrt{z}\left(64z^2-1204z+2625\right)\cos\left(2\sqrt{z}\right)+\left(512z^3-37\,536z^2+239\,904z-133\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abuf.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{7488\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(1024z^2+10\,032z+168\,245\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(3008z^2+126\,236z+504\,735\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-4096z^3+66\,176z^2+667\,128z+1\,514\,205\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abug.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{7488\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(1024z^2-10\,032z+168\,245\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(3008z^2-126\,236z+504\,735\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^3+66\,176z^2-667\,128z+1\,514\,205\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abuh.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{7}{4};z\right)=\frac{5\left(2\sqrt{z}\,\left(64z^2+2244z+5355\right)\cosh\left(2\sqrt{z}\right)-3\left(384z^2+3128z+1785\right)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.abui.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{7}{4};-z\right)=-\frac{5\left(2\sqrt{z}\,\left(64z^2-2244z+5355\right)\cos\left(2\sqrt{z}\right)-3\left(384z^2-3128z+1785\right)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.abuj.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{4160\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(512z^2+440z+36\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(256z^2+22\,220z+109\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-2048z^3+10\,208z^2+129\,360z+329\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abuk.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{4160\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(512z^2-440z+36\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(256z^2-22\,220z+109\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(2048z^3+10\,208z^2-129\,360z+329\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abul.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{3}{4};z\right)=-\frac{35\left(\left(32z^2+432z+255\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(92z+255\right)\cosh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.abum.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{3}{4};-z\right)=\frac{35\left(2\sqrt{z}\,\left(92z-255\right)\cos\left(2\sqrt{z}\right)+\left(32z^2-432z+255\right)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.abun.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{1}{4};z\right)=$$
$$\frac{1}{2496\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(256z^2-352z+5775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(128z^2+2244z+17\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-1024z^3+1152z^2+16\,632z+51\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abuo.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},-\frac{1}{4};-z\right)=$$
$$\frac{1}{2496\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(256z^2+352z+5775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(128z^2-2244z+17\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(1024z^3+1152z^2-16\,632z+51\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abup.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},\frac{1}{4};z\right)=\frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right)-3\,(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.abuq.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},\frac{1}{4};-z\right)=\frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right)+3\,(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.abur.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},\frac{3}{4};z\right)=\frac{1}{2496\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(128z^2-72z+385\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.4\sqrt{z}\,\left(64z^2+4z+1155\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-512z^3+160z^2+672z+3465\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abus.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},\frac{3}{4};-z\right)=\frac{1}{2496\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(128z^2+72z+385\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.4\sqrt{z}\,\left(64z^2-4z+1155\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(512z^3+160z^2-672z+3465\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abut.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},\frac{5}{4};z\right)=$$
$$-\frac{1}{9984\,z^{7/2}}\left(7\,e^{-2\sqrt{z}}\left(-512\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}-512\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}+512\,e^{4\sqrt{z}}\,z^3-\right.\right.$$
$$512z^3+128\,e^{4\sqrt{z}}\,z^{5/2}+128z^{5/2}+96\,e^{4\sqrt{z}}\,z^2-96z^2+120\,e^{4\sqrt{z}}\,z^{3/2}+$$
$$\left.\left.120z^{3/2}-960\,e^{4\sqrt{z}}\,z+960z+1350\,e^{4\sqrt{z}}\,\sqrt{z}+1350\sqrt{z}-675\,e^{4\sqrt{z}}+675\right)\right)$$

07.22.03.abuu.01

$${}_1F_2\left(\frac{1}{4};\frac{9}{2},\frac{5}{4};-z\right)=$$
$$\frac{1}{4992\,z^{7/2}}\left(7\left(1024\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4}+2\left(64z^2-60z+675\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-512z^3+96z^2+960z-675\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abuv.01

$${}_1F_2\left(\frac{1}{4}; \frac{9}{2}, \frac{7}{4}; z\right) = \frac{1}{832\sqrt{2}\, z^{11/4}}\left(7\left(4z\left(64z^2+16z-35\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$

$$\left.\left. 4\sqrt{z}\,\left(32z^2+28z-105\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(256z^3+128z^2-24z+315\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abuw.01

$${}_1F_2\left(\frac{1}{4}; \frac{9}{2}, \frac{7}{4}; -z\right) = \frac{1}{832\sqrt{2}\, z^{11/4}}\left(7\left(4z\left(64z^2-16z-35\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$

$$\left.\left. 4\sqrt{z}\,\left(-32z^2+28z+105\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(256z^3-128z^2-24z-315\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abux.01

$${}_1F_2\left(\frac{1}{4}; \frac{9}{2}, \frac{9}{4}; z\right) =$$

$$-\frac{1}{9984\, z^{7/2}}\left(35\, e^{-2\sqrt{z}}\left(128\, e^{4\sqrt{z}}\, z^3 - 128z^3 + 32\, e^{4\sqrt{z}}\, z^{5/2} + 32z^{5/2} - 8\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z+13)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{9/4} - \right.\right.$$

$$8\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z+13)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{9/4} + 128\, e^{4\sqrt{z}}\, z^2 - 128z^2 + 56\, e^{4\sqrt{z}}\, z^{3/2} +$$

$$\left.\left. 56z^{3/2} + 72\, e^{4\sqrt{z}}\, z - 72z - 150\, e^{4\sqrt{z}}\,\sqrt{z} - 150\sqrt{z} + 75\, e^{4\sqrt{z}} - 75\right)\right)$$

07.22.03.abuy.01

$${}_1F_2\left(\frac{1}{4}; \frac{9}{2}, \frac{9}{4}; -z\right) = -\frac{1}{4992\, z^{7/2}}$$

$$\left(35\left(16\sqrt{\pi}\,(13-16z)\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{9/4} - 2\left(16z^2-28z-75\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(128z^3-128z^2+72z-75\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abuz.01

$${}_1F_2\left(\frac{1}{4}; \frac{9}{2}, \frac{11}{4}; z\right) = \frac{1}{2496\sqrt{2}\, z^{11/4}}\left(49\left(4z\left(32z^2+34z+15\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$

$$\left.\left. 4\sqrt{z}\,\left(16z^2+27z+45\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(128z^3+168z^2+144z-135\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abv0.01

$${}_1F_2\left(\frac{1}{4}; \frac{9}{2}, \frac{11}{4}; -z\right) = \frac{1}{2496\sqrt{2}\, z^{11/4}}\left(49\left(4z\left(32z^2-34z+15\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$

$$\left.\left. 4\sqrt{z}\,\left(16z^2-27z+45\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(128z^3-168z^2+144z+135\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abv1.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{9}{2}, \frac{13}{4}; z\right) = $$
$$ -\frac{1}{53\,248\, z^{7/2}}\left(105\, e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2+416 z+585\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} - e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2+416 z+585\right)\right.\right. $$
$$ \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} + 4\left(-64 z^3+16 z^{5/2}-116 z^2+41 z^{3/2}-192 z+120\sqrt{z}\,+\right. $$
$$ \left.\left.\left. e^{4\sqrt{z}}\left(64 z^3+16 z^{5/2}+116 z^2+41 z^{3/2}+192 z+120\sqrt{z}\,-60\right)+60\right)\right)\right) $$

07.22.03.abv2.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{9}{2}, \frac{13}{4}; -z\right) = \frac{1}{13\,312\, z^{7/2}}\left(105\left(\sqrt{\pi}\, z^{5/4}\left(256 z^2-416 z+585\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.\right. $$
$$ \left.\left. 2\left(4\left(16 z^3-29 z^2+48 z+15\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\left(16 z^2-41 z+120\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abv3.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{9}{2}, \frac{15}{4}; z\right) = $$
$$ \frac{1}{99\,840\sqrt{2}\, z^{11/4}}\left(539\left(2 z\left(256 z^2+480 z+965\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(256 z^2+640 z+1695\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right. $$
$$ \left.\left. 2\left(256 z^3+544 z^2+1185 z+900\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abv4.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{9}{2}, \frac{15}{4}; -z\right) = $$
$$ \frac{1}{99\,840\sqrt{2}\, z^{11/4}}\left(539\left(2 z\left(256 z^2-480 z+965\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-256 z^2+640 z-1695\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right. $$
$$ \left.\left. 2\left(256 z^3-544 z^2+1185 z-900\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abv5.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{9}{2}, \frac{17}{4}; z\right) = \frac{1}{262\,144\, z^{7/2}}\left(35\, e^{-2\sqrt{z}}\left(-4\left(-1024 z^3+256 z^{5/2}-2688 z^2+864 z^{3/2}-7908 z+3285\sqrt{z}\,+\right.\right.\right. $$
$$ \left.\left.\left. e^{4\sqrt{z}}\left(1024 z^3+256 z^{5/2}+2688 z^2+864 z^{3/2}+7908 z+3285\sqrt{z}\,+11\,520\right)-11\,520\right)+\right. $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(4096 z^3+9984 z^2+28\,080 z+26\,325\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+ $$
$$ \left. e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(4096 z^3+9984 z^2+28\,080 z+26\,325\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abv6.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{9}{2}, \frac{17}{4}; -z\right) = \frac{1}{65\,536\, z^{7/2}}\left(35\left(2\sqrt{z}\,\left(256 z^2 - 864 z + 3285\right)\cos\left(2\sqrt{z}\right) + \sqrt{\pi}\,\sqrt[4]{z}\,\left(4096 z^3 - 9984 z^2 + 28\,080 z - 26\,325\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 8\left(256 z^3 - 672 z^2 + 1977 z - 2880\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.abv7.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{9}{2}, \frac{19}{4}; z\right) = \frac{1}{212\,992\sqrt{2}\, z^{13/4}}\left(77\left(2\sqrt{z}\,\left(4096 z^3 + 11\,008 z^2 + 38\,320 z + 45\,045\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4096 z^3 + 13\,568 z^2 + 52\,080 z + 135\,135\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(4096 z^3 + 12\,032 z^2 + 42\,672 z + 66\,465\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abv8.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{9}{2}, \frac{19}{4}; -z\right) = \frac{1}{212\,992\sqrt{2}\, z^{13/4}}\left(77\left(2\sqrt{z}\,\left(4096 z^3 - 11\,008 z^2 + 38\,320 z - 45\,045\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4096 z^3 + 13\,568 z^2 - 52\,080 z + 135\,135\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4096 z^3 - 12\,032 z^2 + 42\,672 z - 66\,465\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abv9.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{9}{2}, \frac{21}{4}; z\right) = \frac{1}{67\,108\,864\, z^{17/4}}\left(595\, e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-16\,384 z^{7/2} + 4096 z^3 - 56\,320 z^{5/2} + 17\,152 z^2 - 241\,344 z^{3/2} + 83\,760 z - 526\,740\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^{7/2} + 4096 z^3 + 56\,320 z^{5/2} + 17\,152 z^2 + 241\,344 z^{3/2} + 83\,760 z + 526\,740\sqrt{z} + 342\,225\right) + 342\,225\right) + e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536 z^4 + 212\,992 z^3 + 898\,560 z^2 + 1\,684\,800 z + 342\,225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536 z^4 + 212\,992 z^3 + 898\,560 z^2 + 1\,684\,800 z + 342\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abva.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{9}{2}, \frac{21}{4}; -z\right) = \frac{1}{16\,777\,216\, z^{17/4}}\left(595\left(\sqrt{\pi}\,\left(65\,536 z^4 - 212\,992 z^3 + 898\,560 z^2 - 1\,684\,800 z + 342\,225\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(4096 z^3 - 17\,152 z^2 + 83\,760 z - 342\,225\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(-4096 z^3 + 14\,080 z^2 - 60\,336 z + 131\,685\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abvb.01

$${}_1F_2\left(\frac{1}{4}; \frac{9}{2}, \frac{23}{4}; z\right) =$$
$$\frac{1}{61\,341\,696\sqrt{2}\,z^{17/4}}\left(1463\left(2\sqrt{z}\left(65\,536z^4+229\,376z^3+1\,128\,960z^2+2\,471\,040z-675\,675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(65\,536z^4+270\,336z^3+1\,382\,400z^2+4\,324\,320z-2\,027\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+245\,760z^3+1\,211\,904z^2+2\,963\,520z+2\,027\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abvc.01

$${}_1F_2\left(\frac{1}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{61\,341\,696\sqrt{2}\,z^{17/4}}\left(1463\left(2\sqrt{z}\left(65\,536z^4-229\,376z^3+1\,128\,960z^2-2\,471\,040z-675\,675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-65\,536z^4+270\,336z^3-1\,382\,400z^2+4\,324\,320z+2\,027\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-245\,760z^3+1\,211\,904z^2-2\,963\,520z+2\,027\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{1}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.abvd.01

$${}_1F_2\left(\frac{1}{4}; \frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{2\,461\,184\,z^{9/2}}$$
$$\left(3\left(\left(65\,536z^5+32\,256\,000z^4+2\,085\,216\,000z^3+35\,057\,206\,800z^2+150\,576\,772\,500z+80\,028\,766\,125\right)\sinh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\left(1\,048\,576z^4+155\,904\,000z^3+5\,016\,211\,200z^2+43\,871\,751\,000z+80\,028\,766\,125\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abve.01

$${}_1F_2\left(\frac{1}{4}; \frac{11}{2}, -\frac{23}{4}; -z\right) =$$
$$-\frac{1}{2\,461\,184\,z^{9/2}}\left(3\left(2\sqrt{z}\left(1\,048\,576z^4-155\,904\,000z^3+5\,016\,211\,200z^2-43\,871\,751\,000z+80\,028\,766\,125\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(65\,536z^5-32\,256\,000z^4+2\,085\,216\,000z^3-35\,057\,206\,800z^2+150\,576\,772\,500z-80\,028\,766\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abvf.01

$${}_1F_2\left(\frac{1}{4}; \frac{11}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{12\,503\,296\sqrt{2}\,z^{15/4}}\left(\left(-4z\left(10\,886\,144z^3+3\,168\,047\,232z^2+72\,288\,146\,700z+448\,515\,092\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(1\,810\,432z^4+720\,903\,168z^3+37\,497\,662\,496z^2+473\,158\,778\,400z+1\,345\,545\,276\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.1311\left(126\,976z^4+9\,601\,536z^3+261\,577\,008z^2+1\,669\,229\,100z+3\,079\,050\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abvg.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{12\,503\,296\sqrt{2}\,z^{15/4}}\left(\left(-4z\left(10\,886\,144z^3-3\,168\,047\,232z^2+72\,288\,146\,700z-448\,515\,092\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(1\,810\,432z^4-720\,903\,168z^3+37\,497\,662\,496z^2-473\,158\,778\,400z+1\,345\,545\,276\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.1311\left(126\,976z^4-9\,601\,536z^3+261\,577\,008z^2-1\,669\,229\,100z+3\,079\,050\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abvh.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{19}{4};z\right)=$$
$$-\frac{1}{107\,008\,z^{9/2}}\left(3\left(2\sqrt{z}\left(8192z^4+2\,688\,000z^3+109\,620\,000z^2+1\,045\,044\,000z+1\,951\,921\,125\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.105\left(4096z^4+396\,800z^3+7\,704\,720z^2+34\,739\,100z+18\,589\,725\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abvi.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{19}{4};-z\right)=$$
$$-\frac{1}{107\,008\,z^{9/2}}\left(3\left(2\sqrt{z}\left(8192z^4-2\,688\,000z^3+109\,620\,000z^2-1\,045\,044\,000z+1\,951\,921\,125\right)\cos\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.105\left(4096z^4-396\,800z^3+7\,704\,720z^2-34\,739\,100z+18\,589\,725\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abvj.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{12\,503\,296\sqrt{2}\,z^{15/4}}\left(21\left(4z\left(461\,824z^3-61\,921\,152z^2-1\,689\,852\,780z-11\,500\,386\,975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$1748\sqrt{z}\left(23\,552z^3+1\,853\,568z^2+26\,638\,920z+78\,950\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.19\left(192\,512z^4+11\,905\,536z^3+424\,104\,912z^2+2\,875\,714\,380z+5\,447\,551\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abvk.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{12\,503\,296\sqrt{2}\,z^{15/4}}\left(21\left(4z\left(461\,824z^3+61\,921\,152z^2-1\,689\,852\,780z+11\,500\,386\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$1748\sqrt{z}\left(23\,552z^3-1\,853\,568z^2+26\,638\,920z-78\,950\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.19\left(192\,512z^4-11\,905\,536z^3+424\,104\,912z^2-2\,875\,714\,380z+5\,447\,551\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abvl.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{15}{4};z\right)=\frac{1}{5632\,z^{9/2}}\left(3\left(\left(4096\,z^4+849\,408\,z^3+20\,336\,400\,z^2+97\,744\,500\,z+52\,754\,625\right)\sinh\left(2\sqrt{z}\right)-42\sqrt{z}\,\left(2048\,z^3+121\,600\,z^2+1\,305\,000\,z+2\,512\,125\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abvm.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{15}{4};-z\right)=\frac{1}{5632\,z^{9/2}}\left(3\left(42\sqrt{z}\,\left(2048\,z^3-121\,600\,z^2+1\,305\,000\,z-2\,512\,125\right)\cos\left(2\sqrt{z}\right)+\left(4096\,z^4-849\,408\,z^3+20\,336\,400\,z^2-97\,744\,500\,z+52\,754\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abvn.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{13}{4};z\right)=\frac{1}{735\,488\sqrt{2}\,z^{15/4}}\left(7\left(4\,z\left(114\,688\,z^3-3\,663\,808\,z^2-127\,193\,220\,z-985\,747\,455\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+76\sqrt{z}\,\left(14\,848\,z^3+2\,863\,776\,z^2+49\,729\,680\,z+155\,644\,335\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(458\,752\,z^4+10\,579\,200\,z^3+615\,372\,912\,z^2+4\,524\,444\,540\,z+8\,871\,727\,095\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abvo.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{13}{4};-z\right)=\frac{1}{735\,488\sqrt{2}\,z^{15/4}}\left(7\left(4\,z\left(114\,688\,z^3+3\,663\,808\,z^2-127\,193\,220\,z+985\,747\,455\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+76\sqrt{z}\,\left(14\,848\,z^3-2\,863\,776\,z^2+49\,729\,680\,z-155\,644\,335\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(458\,752\,z^4-10\,579\,200\,z^3+615\,372\,912\,z^2-4\,524\,444\,540\,z+8\,871\,727\,095\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abvp.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{11}{4};z\right)=-\frac{1}{5632\,z^{9/2}}\left(45\left(2\sqrt{z}\,\left(512\,z^3+62\,496\,z^2+798\,000\,z+1\,598\,625\right)\cosh\left(2\sqrt{z}\right)-\left(16\,640\,z^3+558\,096\,z^2+2\,929\,500\,z+1\,598\,625\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abvq.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{11}{4};-z\right)=\frac{1}{5632\,z^{9/2}}\left(45\left(2\sqrt{z}\,\left(512\,z^3-62\,496\,z^2+798\,000\,z-1\,598\,625\right)\cos\left(2\sqrt{z}\right)+\left(-16\,640\,z^3+558\,096\,z^2-2\,929\,500\,z+1\,598\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abvr.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{9}{4};z\right)=\frac{1}{56\,576\sqrt{2}\,z^{15/4}}\left(7\left(4\,z\left(8192\,z^3-74\,176\,z^2-3\,364\,900\,z-31\,798\,305\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(-4096\,z^3+1\,201\,408\,z^2+28\,265\,160\,z+95\,394\,915\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(32\,768\,z^4+50\,944\,z^3+16\,923\,984\,z^2+139\,306\,860\,z+286\,184\,745\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abvs.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{9}{4};-z\right)=\frac{1}{56\,576\sqrt{2}\,z^{15/4}}\left(7\left(4z\left(8192z^3+74\,176z^2-3\,364\,900z+31\,798\,305\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(4096z^3+1\,201\,408z^2-28\,265\,160z+95\,394\,915\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(32\,768z^4-50\,944z^3+16\,923\,984z^2-139\,306\,860z+286\,184\,745\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abvt.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{512z^{9/2}}\left(45\left(\left(256z^3+16\,656z^2+99\,540z+55\,125\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\left(512z^2+8680z+18\,375\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abvu.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{7}{4};-z\right)=$$
$$-\frac{1}{512z^{9/2}}\left(45\left(6\sqrt{z}\left(512z^2-8680z+18\,375\right)\cos\left(2\sqrt{z}\right)+\left(256z^3-16\,656z^2+99\,540z-55\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abvv.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{5}{4};z\right)=\frac{1}{282\,880\sqrt{2}\,z^{15/4}}$$
$$\left(63\left(4z\left(4096z^3-11\,520z^2-438\,900z-5\,888\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-2048z^3+110\,560z^2+4\,681\,600z+17\,665\,725\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(16\,384z^4-41\,984z^3+2\,482\,480z^2+24\,139\,500z+52\,997\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abvw.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{5}{4};-z\right)=\frac{1}{282\,880\sqrt{2}\,z^{15/4}}$$
$$\left(63\left(4z\left(4096z^3+11\,520z^2-438\,900z+5\,888\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2048z^3+110\,560z^2-4\,681\,600z+17\,665\,725\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,384z^4+41\,984z^3+2\,482\,480z^2-24\,139\,500z+52\,997\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abvx.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{3}{4};z\right)=-\frac{315\left(2\sqrt{z}\left(32z^2+960z+2205\right)\cosh\left(2\sqrt{z}\right)-3\left(176z^2+1300z+735\right)\sinh\left(2\sqrt{z}\right)\right)}{512z^{9/2}}$$

07.22.03.abvy.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},-\frac{3}{4};-z\right)=-\frac{315\left(2\sqrt{z}\left(32z^2-960z+2205\right)\cos\left(2\sqrt{z}\right)-3\left(176z^2-1300z+735\right)\sin\left(2\sqrt{z}\right)\right)}{512z^{9/2}}$$

07.22.03.abvz.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, -\frac{1}{4}; z\right) = \frac{1}{56\,576\sqrt{2}\ z^{15/4}} \left(21\left(4z\left(2048z^3 - 3584z^2 - 23\,100z - 768\,075\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\ \left(-1024z^3 + 1152z^2 + 508\,200z + 2\,304\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(8192z^4 - 12\,288z^3 + 225\,456z^2 + 2\,841\,300z + 6\,912\,675\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abw0.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, -\frac{1}{4}; -z\right) = \frac{1}{56\,576\sqrt{2}\ z^{15/4}} \left(21\left(4z\left(2048z^3 + 3584z^2 - 23\,100z + 768\,075\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\ \left(1024z^3 + 1152z^2 - 508\,200z + 2\,304\,225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(8192z^4 + 12\,288z^3 + 225\,456z^2 - 2\,841\,300z + 6\,912\,675\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abw1.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, \frac{1}{4}; z\right) = \frac{945\left(\left(16z^2 + 180z + 105\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\ (8z + 21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.abw2.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, \frac{1}{4}; -z\right) = \frac{945\left(10\sqrt{z}\ (8z - 21)\cos\left(2\sqrt{z}\right) + \left(16z^2 - 180z + 105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}} $$

07.22.03.abw3.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, \frac{3}{4}; z\right) = \frac{1}{56\,576\sqrt{2}\ z^{15/4}} \left(21\left(4z\left(1024z^3 - 704z^2 + 1540z - 40\,425\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\ \left(-512z^3 + 32z^2 + 18\,480z + 121\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(4096z^4 - 1792z^3 + 7056z^2 + 124\,740z + 363\,825\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abw4.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, \frac{3}{4}; -z\right) = \frac{1}{56\,576\sqrt{2}\ z^{15/4}} \left(21\left(4z\left(1024z^3 + 704z^2 + 1540z + 40\,425\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\ \left(512z^3 + 32z^2 - 18\,480z + 121\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(4096z^4 + 1792z^3 + 7056z^2 - 124\,740z + 363\,825\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abw5.01

$$ {}_1F_2\left(\frac{1}{4};\frac{11}{2},\frac{5}{4};z\right)= $$

$$ -\frac{1}{226\,304\,z^{9/2}}\left(21\,e^{-2\sqrt{z}}\left(-4096\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}-4096\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{17/4}+4096\,e^{4\sqrt{z}}\,z^4-\right.\right. $$

$$ 4096\,z^4+1024\,e^{4\sqrt{z}}\,z^{7/2}+1024\,z^{7/2}+768\,e^{4\sqrt{z}}\,z^3-768\,z^3+960\,e^{4\sqrt{z}}\,z^{5/2}+ $$

$$ 960\,z^{5/2}+1680\,e^{4\sqrt{z}}\,z^2-1680\,z^2-36\,000\,e^{4\sqrt{z}}\,z^{3/2}-36\,000\,z^{3/2}+99\,900\,e^{4\sqrt{z}}\,z- $$

$$ \left.\left.99\,900\,z-122\,850\,e^{4\sqrt{z}}\,\sqrt{z}-122\,850\,\sqrt{z}+61\,425\,e^{4\sqrt{z}}-61\,425\right)\right) $$

07.22.03.abw6.01

$$ {}_1F_2\left(\frac{1}{4};\frac{11}{2},\frac{5}{4};-z\right)=\frac{1}{113\,152\,z^{9/2}}\left(21\left(8192\,\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{17/4}+2\left(512\,z^3-480\,z^2-18\,000\,z+61\,425\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\right.\right. $$

$$ \left.\left.\left(-4096\,z^4+768\,z^3-1680\,z^2+99\,900\,z-61\,425\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.abw7.01

$$ {}_1F_2\left(\frac{1}{4};\frac{11}{2},\frac{7}{4};z\right)=\frac{1}{56\,576\,\sqrt{2}\,z^{15/4}} $$

$$ \left(63\left(4\,z\left(512\,z^3+192\,z^2-420\,z+2695\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(256\,z^3+256\,z^2+280\,z+8085\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right. $$

$$ \left.\left.\left(-2048\,z^4-1280\,z^3+688\,z^2+5460\,z+24\,255\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abw8.01

$$ {}_1F_2\left(\frac{1}{4};\frac{11}{2},\frac{7}{4};-z\right)=\frac{1}{56\,576\,\sqrt{2}\,z^{15/4}} $$

$$ \left(63\left(4\,z\left(512\,z^3-192\,z^2-420\,z-2695\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(256\,z^3-256\,z^2+280\,z-8085\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right. $$

$$ \left.\left.\left(2048\,z^4-1280\,z^3-688\,z^2+5460\,z-24\,255\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abw9.01

$$ {}_1F_2\left(\frac{1}{4};\frac{11}{2},\frac{9}{4};z\right)= $$

$$ -\frac{1}{226\,304\,z^{9/2}}\left(105\,e^{-2\sqrt{z}}\left(1024\,e^{4\sqrt{z}}\,z^4-1024\,z^4+256\,e^{4\sqrt{z}}\,z^{7/2}+256\,z^{7/2}-64\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z+17)\right.\right. $$

$$ \operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}-64\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z+17)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{13/4}+1280\,e^{4\sqrt{z}}\,z^3- $$

$$ 1280\,z^3+512\,e^{4\sqrt{z}}\,z^{5/2}+512\,z^{5/2}+624\,e^{4\sqrt{z}}\,z^2-624\,z^2+1200\,e^{4\sqrt{z}}\,z^{3/2}+1200\,z^{3/2}- $$

$$ \left.\left.6900\,e^{4\sqrt{z}}\,z+6900\,z+9450\,e^{4\sqrt{z}}\,\sqrt{z}+9450\,\sqrt{z}-4725\,e^{4\sqrt{z}}+4725\right)\right) $$

07.22.03.abwa.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, \frac{9}{4}; -z\right) = -\frac{1}{113\,152\, z^{9/2}}\left(105\left(-128\sqrt{\pi}\,(16z-17)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{13/4} - 2\left(128z^3-256z^2+600z-4725\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,+\right.\right.$$
$$\left.\left.\left(1024z^4-1280z^3+624z^2+6900z-4725\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abwb.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, \frac{11}{4}; z\right) = \frac{1}{56\,576\sqrt{2}\, z^{15/4}}$$
$$\left(147\left(4z\left(256z^3+368z^2+300z-735\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(128z^3+264z^2+480z-2205\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left.\left(1024z^4+1728z^3+1968z^2-180z+6615\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abwc.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, \frac{11}{4}; -z\right) = \frac{1}{56\,576\sqrt{2}\, z^{15/4}}$$
$$\left(147\left(4z\left(256z^3-368z^2+300z+735\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(128z^3-264z^2+480z+2205\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.\left(1024z^4-1728z^3+1968z^2+180z+6615\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.abwd.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, \frac{13}{4}; z\right) = \frac{1}{452\,608\, z^{9/2}}\left(945\, e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2+544z+1105\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4} + e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2+544z+1105\right)\right.\right.$$
$$\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4} - 2\left(-128z^4+32z^{7/2}-296z^3+98z^{5/2}-656z^2+320z^{3/2}-540z-1050\sqrt{z}\,+\right.$$
$$\left.\left.\left.e^{4\sqrt{z}}\left(128z^4+32z^{7/2}+296z^3+98z^{5/2}+656z^2+320z^{3/2}+540z-1050\sqrt{z}\,+525\right)-525\right)\right)\right)$$

07.22.03.abwe.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, \frac{13}{4}; -z\right) = \frac{1}{113\,152\, z^{9/2}}\left(945\left(\sqrt{\pi}\,\left(256z^2-544z+1105\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4} + 2\left(16z^3-49z^2+160z+525\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\,+\right.\right.$$
$$\left.\left.\left(-128z^4+296z^3-656z^2+540z-525\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.abwf.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, \frac{15}{4}; z\right) = \frac{1}{282\,880\sqrt{2}\, z^{15/4}} $$
$$ \left(1617\left(2z\left(256z^3+640z^2+1915z+1050\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(256z^3+800z^2+2745z+6300\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right. $$
$$ \left.\left.\left(512z^4+1408z^3+4350z^2+4500z-4725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abwg.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, \frac{15}{4}; -z\right) = \frac{1}{282\,880\sqrt{2}\, z^{15/4}} $$
$$ \left(1617\left(2z\left(256z^3-640z^2+1915z-1050\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-256z^3+800z^2-2745z+6300\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left.\left(512z^4-1408z^3+4350z^2-4500z-4725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abwh.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, \frac{17}{4}; z\right) = $$
$$ \frac{1}{2\,228\,224 z^{9/2}}\left(315 e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+13\,056z^2+53\,040z+89\,505\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} + e^{2\sqrt{z}}\right.\right. $$
$$ \sqrt{2\pi}\left(4096z^3+13\,056z^2+53\,040z+89\,505\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} - $$
$$ 4\left(-1024z^4+256z^{7/2}-3456z^3+1056z^{5/2}-14\,292z^2+5025z^{3/2}-28\,800z+20\,160\sqrt{z}+e^{4\sqrt{z}}\right. $$
$$ \left.\left.\left.\left(1024z^4+256z^{7/2}+3456z^3+1056z^{5/2}+14\,292z^2+5025z^{3/2}+28\,800z+20\,160\sqrt{z}-10\,080\right)+10\,080\right)\right)\right) $$

07.22.03.abwi.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, \frac{17}{4}; -z\right) = \frac{1}{557\,056 z^{9/2}} $$
$$ \left(315\left(\sqrt{\pi}\left(4096z^3-13\,056z^2+53\,040z-89\,505\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{5/4} + 2\left(256z^3-1056z^2+5025z-20\,160\right)\cos\left(2\sqrt{z}\right)\sqrt{z} - \right.\right. $$
$$ \left.\left.8\left(256z^4-864z^3+3573z^2-7200z-2520\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.abwj.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, \frac{19}{4}; z\right) = \frac{1}{1\,810\,432\sqrt{2}\, z^{15/4}} $$
$$ \left(693\left(2z\left(4096z^3+14\,592z^2+74\,160z+176\,855\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(4096z^3+17\,152z^2+90\,160z+295\,365\right)\right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\left(4096z^4+15\,616z^3+79\,408z^2+208\,635z+176\,400\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abwk.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, \frac{19}{4}; -z\right) = \frac{1}{1\,810\,432\sqrt{2}\, z^{15/4}} $$
$$ \left(693\left(2z\left(4096z^3 - 14\,592z^2 + 74\,160z - 176\,855\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-4096z^3 + 17\,152z^2 - 90\,160z + 295\,365\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\left(4096z^4 - 15\,616z^3 + 79\,408z^2 - 208\,635z + 176\,400\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abwl.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, \frac{21}{4}; z\right) = $$
$$ \frac{1}{33\,554\,432 z^{9/2}}\left(315 e^{-2\sqrt{z}}\left(-4\left(-16\,384z^4 + 4096z^{7/2} - 72\,704z^3 + 21\,248z^{5/2} - 444\,096z^2 + 137\,520z^{3/2} - \right.\right.\right. $$
$$ \left.\left. 1\,581\,780z + 656\,865\sqrt{z} + e^{4\sqrt{z}}\left(16\,384z^4 + 4096z^{7/2} + 72\,704z^3 + 21\,248z^{5/2} + \right.\right.\right. $$
$$ \left.\left. 444\,096z^2 + 137\,520z^{3/2} + 1\,581\,780z + 656\,865\sqrt{z} + 2\,580\,480\right) - 2\,580\,480\right) + $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(65\,536z^4 + 278\,528z^3 + 1\,697\,280z^2 + 5\,728\,320z + 5\,817\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ \left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(65\,536z^4 + 278\,528z^3 + 1\,697\,280z^2 + 5\,728\,320z + 5\,817\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abwm.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, \frac{21}{4}; -z\right) = $$
$$ \frac{1}{8\,388\,608 z^{9/2}}\left(315\left(\sqrt{\pi}\sqrt[4]{z}\left(65\,536z^4 - 278\,528z^3 + 1\,697\,280z^2 - 5\,728\,320z + 5\,817\,825\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right.\right. $$
$$ 2\left(4\left(4096z^4 - 18\,176z^3 + 111\,024z^2 - 395\,445z + 645\,120\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.\left.\sqrt{z}\left(4096z^3 - 21\,248z^2 + 137\,520z - 656\,865\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abwn.01

$$ {}_1F_2\left(\frac{1}{4}; \frac{11}{2}, \frac{23}{4}; z\right) = $$
$$ \frac{1}{57\,933\,824\sqrt{2}\, z^{17/4}}\left(1463\left(2\sqrt{z}\left(65\,536z^4 + 303\,104z^3 + 2\,165\,760z^2 + 8\,926\,560z + 11\,486\,475\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ \left(65\,536z^4 + 344\,064z^3 + 2\,465\,280z^2 + 11\,551\,680z + 34\,459\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 2\sqrt{z}\left(65\,536z^4 + 319\,488z^3 + 2\,267\,136z^2 + 9\,707\,040z + 16\,343\,775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.abwo.01

$${}_1F_2\left(\frac{1}{4};\frac{11}{2},\frac{23}{4};-z\right)=$$
$$\frac{1}{57\,933\,824\sqrt{2}\,z^{17/4}}\left(1463\left(2\sqrt{z}\left(65\,536z^4-303\,104z^3+2\,165\,760z^2-8\,926\,560z+11\,486\,475\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-65\,536z^4+344\,064z^3-2\,465\,280z^2+11\,551\,680z-34\,459\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-319\,488z^3+2\,267\,136z^2-9\,707\,040z+16\,343\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1=\frac{3}{4}$, $b_{1.}\geq-\frac{11}{2}$

For fixed z and $a_1=\frac{3}{4}$, $b_{1.}=-\frac{11}{2}$

07.22.03.abwp.01

$${}_1F_2\left(\frac{3}{4};-\frac{11}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{15\,740\,160\,975\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,048\,576z^7+4\,259\,840z^6+68\,726\,784z^5+808\,093\,440z^4+5\,216\,238\,720z^3+\right.\right.\right.$$
$$\left.9\,762\,152\,400z^2-31\,107\,037\,500z+15\,740\,160\,975\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$4\sqrt{z}\left(524\,288z^6+10\,715\,136z^5+158\,269\,440z^4+1\,549\,658\,880z^3+7\,728\,890\,400z^2+\right.$$
$$10\,120\,156\,200z-15\,740\,160\,975\left.\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(262\,144z^6+1\,654\,784z^5+26\,618\,880z^4+\right.$$
$$\left.\left.\left.343\,062\,720z^3+2\,762\,575\,200z^2+10\,866\,725\,100z+15\,740\,160\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abwq.01

$${}_1F_2\left(\frac{3}{4};-\frac{11}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{15\,740\,160\,975\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1\,048\,576z^7+4\,259\,840z^6-68\,726\,784z^5+808\,093\,440z^4-5\,216\,238\,720z^3+\right.\right.\right.$$
$$\left.9\,762\,152\,400z^2+31\,107\,037\,500z+15\,740\,160\,975\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$4\sqrt{z}\left(524\,288z^6-10\,715\,136z^5+158\,269\,440z^4-1\,549\,658\,880z^3+7\,728\,890\,400z^2-\right.$$
$$10\,120\,156\,200z-15\,740\,160\,975\left.\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(262\,144z^6-1\,654\,784z^5+26\,618\,880z^4-\right.$$
$$\left.\left.\left.343\,062\,720z^3+2\,762\,575\,200z^2-10\,866\,725\,100z+15\,740\,160\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abwr.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{21}{4}; z\right) = \frac{1}{2\,170\,943\,775} \left(\left(262\,144\,z^6 + 1\,425\,408\,z^5 + 20\,966\,400\,z^4 + 235\,932\,480\,z^3 + 1\,562\,652\,000\,z^2 + 4\,398\,275\,700\,z + 2\,170\,943\,775\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(65\,536\,z^5 + 921\,600\,z^4 + 12\,337\,920\,z^3 + 109\,877\,040\,z^2 + 501\,228\,000\,z + 723\,647\,925\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.abws.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{21}{4}; -z\right) = \frac{1}{2\,170\,943\,775} \left(\left(262\,144\,z^6 - 1\,425\,408\,z^5 + 20\,966\,400\,z^4 - 235\,932\,480\,z^3 + 1\,562\,652\,000\,z^2 - 4\,398\,275\,700\,z + 2\,170\,943\,775\right)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\left(65\,536\,z^5 - 921\,600\,z^4 + 12\,337\,920\,z^3 - 109\,877\,040\,z^2 + 501\,228\,000\,z - 723\,647\,925\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.abwt.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{19}{4}; z\right) = \frac{1}{684\,354\,825\sqrt[4]{z}} \left(\sqrt{2}\left(\left(65\,536\,z^6 + 3\,268\,608\,z^5 + 36\,368\,640\,z^4 + 228\,412\,800\,z^3 + 417\,962\,160\,z^2 - 1\,349\,063\,100\,z + 684\,354\,825\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(131\,072\,z^6 + 540\,672\,z^5 + 7\,365\,120\,z^4 + 69\,189\,120\,z^3 + 337\,962\,240\,z^2 + 436\,590\,000\,z - 684\,354\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(114\,688\,z^5 + 1\,320\,960\,z^4 + 15\,744\,960\,z^3 + 122\,744\,160\,z^2 + 475\,883\,100\,z + 684\,354\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abwu.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{19}{4}; -z\right) = \frac{1}{684\,354\,825\sqrt[4]{z}} \left(\sqrt{2}\left(\left(65\,536\,z^6 - 3\,268\,608\,z^5 + 36\,368\,640\,z^4 - 228\,412\,800\,z^3 + 417\,962\,160\,z^2 + 1\,349\,063\,100\,z + 684\,354\,825\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072\,z^6 - 540\,672\,z^5 + 7\,365\,120\,z^4 - 69\,189\,120\,z^3 + 337\,962\,240\,z^2 - 436\,590\,000\,z - 684\,354\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-114\,688\,z^5 + 1\,320\,960\,z^4 - 15\,744\,960\,z^3 + 122\,744\,160\,z^2 - 475\,883\,100\,z + 684\,354\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abwv.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{17}{4}; z\right) = \frac{1}{103\,378\,275} \left(\left(114\,688\,z^5 + 1\,136\,640\,z^4 + 11\,820\,480\,z^3 + 75\,751\,200\,z^2 + 210\,073\,500\,z + 103\,378\,275\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(32\,768\,z^5 + 163\,840\,z^4 + 1\,910\,400\,z^3 + 16\,193\,520\,z^2 + 72\,235\,800\,z + 103\,378\,275\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.abww.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{103\,378\,275}\left(\left(-114\,688\,z^5 + 1\,136\,640\,z^4 - 11\,820\,480\,z^3 + 75\,751\,200\,z^2 - 210\,073\,500\,z + 103\,378\,275\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-32\,768\,z^5 + 163\,840\,z^4 - 1\,910\,400\,z^3 + 16\,193\,520\,z^2 - 72\,235\,800\,z + 103\,378\,275\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abwx.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{15}{4}; z\right) = \frac{1}{36\,018\,675\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(65\,536\,z^6 + 172\,032\,z^5 + 2\,016\,000\,z^4 + 12\,136\,320\,z^3 + 21\,485\,520\,z^2 - 70\,727\,580\,z + 36\,018\,675\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(16\,384\,z^5 + 143\,360\,z^4 + 1\,263\,360\,z^3 + 5\,977\,440\,z^2 + 7\,567\,560\,z - 12\,006\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(16\,384\,z^5 + 92\,160\,z^4 + 907\,200\,z^3 + 6\,683\,040\,z^2 + 25\,322\,220\,z + 36\,018\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abwy.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{15}{4}; -z\right) = \frac{1}{36\,018\,675\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(65\,536\,z^6 - 172\,032\,z^5 + 2\,016\,000\,z^4 - 12\,136\,320\,z^3 + 21\,485\,520\,z^2 + 70\,727\,580\,z + 36\,018\,675\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(16\,384\,z^5 - 143\,360\,z^4 + 1\,263\,360\,z^3 - 5\,977\,440\,z^2 + 7\,567\,560\,z + 12\,006\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(16\,384\,z^5 - 92\,160\,z^4 + 907\,200\,z^3 - 6\,683\,040\,z^2 + 25\,322\,220\,z - 36\,018\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abwz.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{13}{4}; z\right) = \frac{1}{6\,081\,075}\left(\left(16\,384\,z^5 + 92\,160\,z^4 + 759\,360\,z^3 + 4\,586\,400\,z^2 + 12\,417\,300\,z + 6\,081\,075\right)\cosh\left(2\sqrt{z}\right) - 10\sqrt{z}\left(4096\,z^4 + 26\,112\,z^3 + 200\,592\,z^2 + 861\,840\,z + 1\,216\,215\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abx0.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{6\,081\,075}\left(\left(-16\,384\,z^5 + 92\,160\,z^4 - 759\,360\,z^3 + 4\,586\,400\,z^2 - 12\,417\,300\,z + 6\,081\,075\right)\cos\left(2\sqrt{z}\right) + 10\sqrt{z}\left(4096\,z^4 - 26\,112\,z^3 + 200\,592\,z^2 - 861\,840\,z + 1\,216\,215\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abx1.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{2\,401\,245\sqrt[4]{z}}\left(\sqrt{2}\left(7\left(4096 z^5 + 19\,200 z^4 + 117\,120 z^3 + 196\,560 z^2 - 669\,060 z + 343\,035\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(8192 z^5 + 39\,424 z^4 + 268\,800 z^3 + 1\,209\,600 z^2 + 1\,481\,760 z - 2\,401\,245\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(13\,312 z^4 + 73\,920 z^3 + 473\,760 z^2 + 1\,719\,900 z + 2\,401\,245\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abx2.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{2\,401\,245\sqrt[4]{z}}\left(\sqrt{2}\left(-7\left(4096 z^5 - 19\,200 z^4 + 117\,120 z^3 - 196\,560 z^2 - 669\,060 z - 343\,035\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(8192 z^5 - 39\,424 z^4 + 268\,800 z^3 - 1\,209\,600 z^2 + 1\,481\,760 z + 2\,401\,245\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(13\,312 z^4 - 73\,920 z^3 + 473\,760 z^2 - 1\,719\,900 z + 2\,401\,245\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abx3.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{9}{4}; z\right) = \frac{1}{467\,775}\left(15\left(1024 z^4 + 4928 z^3 + 24\,864 z^2 + 64\,260 z + 31\,185\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left.2\sqrt{z}\left(2048 z^4 + 17\,280 z^3 + 85\,680 z^2 + 340\,200 z + 467\,775\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abx4.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{9}{4}; -z\right) = \frac{1}{467\,775}\left(15\left(1024 z^4 - 4928 z^3 + 24\,864 z^2 - 64\,260 z + 31\,185\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(2048 z^4 - 17\,280 z^3 + 85\,680 z^2 - 340\,200 z + 467\,775\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abx5.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096 z^5 + 22\,272 z^4 + 67\,200 z^3 + 115\,920 z^2 - 419\,580 z + 218\,295\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\right.\right.$$
$$\left(8192 z^4 + 30\,720 z^3 + 110\,880 z^2 + 128\,520 z - 218\,295\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(1024 z^4 + 12\,480 z^3 + 50\,400 z^2 + 162\,540 z + 218\,295\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abx6.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096z^5+22\,272z^4-67\,200z^3+115\,920z^2+419\,580z+218\,295\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\right.\right.$$
$$\sqrt{z}\left(8192z^4-30\,720z^3+110\,880z^2-128\,520z-218\,295\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(1024z^4-12\,480z^3+50\,400z^2-162\,540z+218\,295\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abx7.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{5}{4}; z\right) =$$
$$\left(\frac{1024z^4}{51\,975}+\frac{448z^3}{1485}+\frac{32z^2}{33}+\frac{116z}{55}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(2816z^3+15\,120z^2+40\,320z+51\,975\right)\sinh\left(2\sqrt{z}\right)}{51\,975}$$

07.22.03.abx8.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{5}{4}; -z\right) =$$
$$\left(\frac{1024z^4}{51\,975}-\frac{448z^3}{1485}+\frac{32z^2}{33}-\frac{116z}{55}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-2816z^3+15\,120z^2-40\,320z+51\,975\right)\sin\left(2\sqrt{z}\right)}{51\,975}$$

07.22.03.abx9.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{31\,185\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(1792z^4+5696z^3+1680z^2-18\,900z+10\,395\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^4+8832z^3+19\,080z^2+\right.\right.\right.$$
$$\left.\left.\left.15\,120z-31\,185\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+36z\left(192z^3+1360z^2+2940z+3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abxa.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{31\,185\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(1792z^4-5696z^3+1680z^2+18\,900z+10\,395\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(512z^4-8832z^3+19\,080z^2-\right.\right.\right.$$
$$\left.\left.\left.15\,120z-31\,185\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-36z\left(192z^3-1360z^2+2940z-3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abxb.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{1}{4}; z\right) = \left(\frac{1984z^3}{10\,395}+\frac{160z^2}{99}+\frac{28z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(128z^3+3696z^2+12\,600z+10\,395\right)\sinh\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.abxc.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) =$$

$$\left(-\frac{1984\,z^3}{10\,395} + \frac{160\,z^2}{99} - \frac{28\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-128\,z^3 + 3696\,z^2 - 12\,600\,z + 10\,395\right)\sin\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.abxd.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) =$$

$$\frac{1}{10\,395\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256\,z^4 + 7040\,z^3 + 10\,374\,z^2 - 26\,460\,z + 10\,395\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(4352\,z^3 + 40\,224\,z^2 + 28\,455\,z - 41\,580\right)\right.\right.$$

$$\left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\,z\left(128\,z^3 + 5248\,z^2 + 24\,465\,z + 20\,790\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abxe.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) =$$

$$\frac{1}{10\,395\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256\,z^4 - 7040\,z^3 + 10\,374\,z^2 + 26\,460\,z + 10\,395\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(4352\,z^3 - 40\,224\,z^2 + 28\,455\,z + 41\,580\right)\right.\right.$$

$$\left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\,z\left(-128\,z^3 + 5248\,z^2 - 24\,465\,z + 20\,790\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abxf.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) = \left(\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} + \frac{20\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16\,z^2 + 240\,z + 495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.abxg.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{3}{4}; -z\right) = \left(-\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} - \frac{20\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(16\,z^2 - 240\,z + 495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.abxh.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) = -\frac{1}{166\,320\sqrt{2}\,\sqrt[4]{z}}$$

$$\left(\left(\left(22\,016\,z^3 + 311\,136\,z^2 + 95\,886\,z - 332\,640\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\left(4096\,z^3 + 255\,744\,z^2 + 1\,566\,096\,z - 183\,645\right)\right.\right.$$

$$\left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 98\,z\left(256\,z^2 + 5328\,z + 17\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abxi.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) = \frac{1}{166\,320\sqrt{2}\,\sqrt[4]{z}} \left(\left(\left(22\,016 z^3 - 311\,136 z^2 + 95\,886 z + 332\,640\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(4096 z^3 - 255\,744 z^2 + 1\,566\,096 z + 183\,645\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 98 z\left(256 z^2 - 5328 z + 17\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abxj.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{7}{4}; z\right) = \frac{1}{7\,096\,320 z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-4096 z^3 - 56\,320 z^{5/2} - 369\,920 z^2 - 1\,477\,440 z^{3/2} - 3\,795\,120 z - 6\,074\,460\sqrt{z} + e^{4\sqrt{z}}\left(4096 z^3 - 56\,320 z^{5/2} + 369\,920 z^2 - 1\,477\,440 z^{3/2} + 3\,795\,120 z - 6\,074\,460\sqrt{z} + 5\,221\,125\right) - 5\,221\,125\right) + 5\,221\,125 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 5\,221\,125 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abxk.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{7}{4}; -z\right) = \frac{1}{1\,774\,080 z^{3/4}}\left(-5\,221\,125\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(20\sqrt{z}\left(2816 z^2 - 73\,872 z + 303\,723\right)\cos\left(2\sqrt{z}\right) + \left(4096 z^3 - 369\,920 z^2 + 3\,795\,120 z - 5\,221\,125\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.abxl.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{9}{4}; z\right) = \frac{1}{1\,064\,448\sqrt{2}\,z^{3/4}} \left(\left(2\sqrt{z}\left(8192 z^3 + 784\,896 z^2 + 7\,497\,504 z - 7\,112\,259\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(163\,840 z^3 + 5\,060\,608 z^2 + 23\,003\,904 z - 13\,627\,845\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(8192 z^3 + 975\,360 z^2 + 13\,948\,704 z + 40\,883\,535\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abxm.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{9}{4}; -z\right) = \frac{1}{1\,064\,448\sqrt{2}\,z^{3/4}} \left(\left(-2\sqrt{z}\left(8192 z^3 - 784\,896 z^2 + 7\,497\,504 z + 7\,112\,259\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(163\,840 z^3 - 5\,060\,608 z^2 + 23\,003\,904 z + 13\,627\,845\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(8192 z^3 - 975\,360 z^2 + 13\,948\,704 z - 40\,883\,535\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abxn.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{11}{4}; z\right) =$$
$$\frac{1}{64\,880\,640\,z^{7/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(65\,536\,z^{7/2}+1\,146\,880\,z^3+9\,646\,080\,z^{5/2}+50\,165\,760\,z^2+173\,594\,880\,z^{3/2}+\right.\right.\right.$$
$$\left.\left.\left.400\,982\,400\,z+605\,650\,500\sqrt{z}\right)+e^{4\sqrt{z}}\left(65\,536\,z^{7/2}-1\,146\,880\,z^3+9\,646\,080\,z^{5/2}-50\,165\,760\,z^2+\right.\right.\right.$$
$$\left.\left.\left.173\,594\,880\,z^{3/2}-400\,982\,400\,z+605\,650\,500\sqrt{z}-454\,237\,875\right)+454\,237\,875\right)+$$
$$5\,221\,125\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-87)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-5\,221\,125\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-87)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\Big)\Big)$$

07.22.03.abxo.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{11}{4}; -z\right) = \frac{1}{16\,220\,160\,z^{7/4}}\left(2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,384\,z^3-2\,411\,520\,z^2+43\,398\,720\,z-151\,412\,625\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.5\left(-229\,376\,z^3+10\,033\,152\,z^2-80\,196\,480\,z+90\,847\,575\right)\sin\left(2\sqrt{z}\right)\right)-5\,221\,125\sqrt{\pi}\,(16z+87)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.abxp.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) = \frac{1}{3\,784\,704\sqrt{2}\,z^{7/4}}\left(\left(-2\sqrt{z}\left(1\,196\,032\,z^3+55\,437\,312\,z^2+437\,151\,792\,z-422\,463\,195\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(262\,144\,z^4+45\,449\,216\,z^3+960\,605\,184\,z^2+3\,706\,773\,840\,z-2\,112\,315\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.2\sqrt{z}\left(1\,294\,336\,z^3+73\,463\,808\,z^2+799\,500\,240\,z+2\,112\,315\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)$$

07.22.03.abxq.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) = \frac{1}{3\,784\,704\sqrt{2}\,z^{7/4}}\left(\left(-2\sqrt{z}\left(1\,196\,032\,z^3-55\,437\,312\,z^2+437\,151\,792\,z+422\,463\,195\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-262\,144\,z^4+45\,449\,216\,z^3-960\,605\,184\,z^2+3\,706\,773\,840\,z+2\,112\,315\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\left(1\,294\,336\,z^3-73\,463\,808\,z^2+799\,500\,240\,z-2\,112\,315\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big)$$

07.22.03.abxr.01

$${}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) =$$
$$\frac{1}{754\,974\,720\,z^{11/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-2\,097\,152\,z^4-45\,613\,056\,z^{7/2}-479\,723\,520\,z^3-3\,164\,405\,760\,z^{5/2}-14\,257\,152\,000\,z^2-\right.\right.\right.$$
$$\left.\left.\left.44\,575\,876\,800\,z^{3/2}-97\,388\,600\,400\,z-139\,905\,265\,500\sqrt{z}\right)+\right.$$
$$e^{4\sqrt{z}}\left(2\,097\,152\,z^4-45\,613\,056\,z^{7/2}+479\,723\,520\,z^3-3\,164\,405\,760\,z^{5/2}+14\,257\,152\,000\,z^2-\right.$$
$$\left.\left.\left.44\,575\,876\,800\,z^{3/2}+97\,388\,600\,400\,z-139\,905\,265\,500\sqrt{z}+104\,928\,949\,125\right)-104\,928\,949\,125\right)+$$
$$5\,221\,125\,e^{2\sqrt{z}}\sqrt{2\pi}\left(256\,z^2-2784\,z+20\,097\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-5\,221\,125\,e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left.\left(256\,z^2-2784\,z+20\,097\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.abxs.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) = \frac{1}{188\,743\,680\, z^{11/4}}\left(2\sqrt[4]{z}\left(348\sqrt{z}\left(131\,072\, z^3 - 9\,093\,120\, z^2 + 128\,091\,600\, z - 402\,026\,625\right)\cos\left(2\sqrt{z}\right) + \left(2\,097\,152\, z^4 - 479\,723\,520\, z^3 + 14\,257\,152\,000\, z^2 - 97\,388\,600\,400\, z + 104\,928\,949\,125\right)\sin\left(2\sqrt{z}\right)\right) - 5\,221\,125\sqrt{\pi}\left(256\, z^2 + 2784\, z + 20\,097\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.abxt.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) = \frac{1}{121\,110\,528\sqrt{2}\, z^{11/4}}\left(13\left(2\sqrt{z}\left(524\,288\, z^4 + 130\,744\,320\, z^3 + 4\,022\,844\,672\, z^2 + 27\,037\,644\,480\, z - 26\,615\,181\,285\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(49\,283\,072\, z^4 + 3\,996\,647\,424\, z^3 + 66\,285\,838\,080\, z^2 + 229\,819\,978\,080\, z - 133\,075\,906\,425\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(524\,288\, z^4 + 149\,618\,688\, z^3 + 5\,814\,547\,200\, z^2 + 54\,075\,288\,960\, z + 133\,075\,906\,425\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abxu.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) = \frac{1}{121\,110\,528\sqrt{2}\, z^{11/4}}\left(13\left(2\sqrt{z}\left(524\,288\, z^4 - 130\,744\,320\, z^3 + 4\,022\,844\,672\, z^2 - 27\,037\,644\,480\, z - 26\,615\,181\,285\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-49\,283\,072\, z^4 + 3\,996\,647\,424\, z^3 - 66\,285\,838\,080\, z^2 + 229\,819\,978\,080\, z + 133\,075\,906\,425\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(524\,288\, z^4 - 149\,618\,688\, z^3 + 5\,814\,547\,200\, z^2 - 54\,075\,288\,960\, z + 133\,075\,906\,425\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abxv.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) = \frac{1}{3\,221\,225\,472\, z^{15/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(33\,554\,432\, z^{9/2} + 889\,192\,448\, z^4 + 11\,454\,644\,224\, z^{7/2} + 93\,585\,408\,000\, z^3 + 534\,049\,152\,000\, z^{5/2} + 2\,181\,849\,196\,800\, z^2 + 6\,438\,307\,075\,200\, z^{3/2} + 13\,505\,521\,629\,600\, z + 18\,980\,481\,019\,500\sqrt{z} + e^{4\sqrt{z}}\left(33\,554\,432\, z^{9/2} - 889\,192\,448\, z^4 + 11\,454\,644\,224\, z^{7/2} - 93\,585\,408\,000\, z^3 + 534\,049\,152\,000\, z^{5/2} - 2\,181\,849\,196\,800\, z^2 + 6\,438\,307\,075\,200\, z^{3/2} - 13\,505\,521\,629\,600\, z + 18\,980\,481\,019\,500\sqrt{z} - 14\,235\,360\,764\,625\right) + 14\,235\,360\,764\,625\right) + 1\,740\,375\, e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\, z^3 - 66\,816\, z^2 + 964\,656\, z - 8\,179\,479\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 1\,740\,375\, e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\, z^3 - 66\,816\, z^2 + 964\,656\, z - 8\,179\,479\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right) $$

07.22.03.abxw.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) = \frac{1}{805\,306\,368\, z^{15/4}} $$
$$ \left(-1\,740\,375\sqrt{\pi}\,\left(4096 z^3 + 66\,816 z^2 + 964\,656 z + 8\,179\,479\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(8\,388\,608 z^4 - 2\,863\,661\,056 z^3 + 133\,512\,288\,000 z^2 - 1\,609\,576\,768\,800 z + 4\,745\,120\,254\,875\right)\cos\left(2\sqrt{z}\right) + \left(-889\,192\,448 z^4 + 93\,585\,408\,000 z^3 - 2\,181\,849\,196\,800 z^2 + 13\,505\,521\,629\,600 z - 14\,235\,360\,764\,625\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.abxx.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) = \frac{1}{3\,875\,536\,896\sqrt{2}\, z^{15/4}} $$
$$ \left(221\left(-6\sqrt{z}\,\left(38\,797\,312 z^4 + 4\,511\,952\,896 z^3 + 108\,150\,577\,920 z^2 + 642\,144\,056\,400 z - 642\,566\,519\,595\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216 z^5 + 6\,628\,048\,896 z^4 + 358\,840\,627\,200 z^3 + 5\,083\,077\,162\,240 z^2 + 16\,486\,203\,721\,680 z - 9\,638\,497\,793\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\,\left(13\,631\,488 z^4 + 1\,745\,203\,200 z^3 + 53\,216\,951\,040 z^2 + 452\,880\,545\,040 z + 1\,070\,944\,199\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abxy.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) = \frac{1}{3\,875\,536\,896\sqrt{2}\, z^{15/4}} $$
$$ \left(221\left(6\sqrt{z}\,\left(38\,797\,312 z^4 - 4\,511\,952\,896 z^3 + 108\,150\,577\,920 z^2 - 642\,144\,056\,400 z - 642\,566\,519\,595\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216 z^5 - 6\,628\,048\,896 z^4 + 358\,840\,627\,200 z^3 - 5\,083\,077\,162\,240 z^2 + 16\,486\,203\,721\,680 z + 9\,638\,497\,793\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\,\left(13\,631\,488 z^4 - 1\,745\,203\,200 z^3 + 53\,216\,951\,040 z^2 - 452\,880\,545\,040 z + 1\,070\,944\,199\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abxz.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) = \frac{1}{824\,633\,720\,832\, z^{19/4}} $$
$$ \left(19\, e^{-2\sqrt{z}}\,\left(4\sqrt[4]{z}\,\left(-2\,147\,483\,648 z^5 - 68\,182\,605\,824 z^{9/2} - 1\,056\,964\,608\,000 z^4 - 10\,453\,051\,392\,000 z^{7/2} - 73\,378\,088\,448\,000 z^3 - 378\,737\,322\,163\,200 z^{5/2} - 1\,453\,579\,288\,761\,600 z^2 - 4\,121\,475\,878\,520\,000 z^{3/2} - 8\,427\,333\,572\,658\,000 z - 11\,672\,995\,826\,992\,500\sqrt{z} + e^{4\sqrt{z}}\,\left(2\,147\,483\,648 z^5 - 68\,182\,605\,824 z^{9/2} + 1\,056\,964\,608\,000 z^4 - 10\,453\,051\,392\,000 z^{7/2} + 73\,378\,088\,448\,000 z^3 - 378\,737\,322\,163\,200 z^{5/2} + 1\,453\,579\,288\,761\,600 z^2 - 4\,121\,475\,878\,520\,000 z^{3/2} + 8\,427\,333\,572\,658\,000 z - 11\,672\,995\,826\,992\,500\sqrt{z} + 8\,754\,746\,870\,244\,375\right) - 8\,754\,746\,870\,244\,375\right) + 1\,740\,375\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536 z^4 - 1\,425\,408 z^3 + 30\,868\,992 z^2 - 523\,486\,656 z + 5\,030\,379\,585\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 1\,740\,375\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536 z^4 - 1\,425\,408 z^3 + 30\,868\,992 z^2 - 523\,486\,656 z + 5\,030\,379\,585\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aby0.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) = -\frac{1}{206\,158\,430\,208\, z^{19/4}} \left(19\left(1\,740\,375\sqrt{\pi}\left(65\,536 z^4 + 1\,425\,408 z^3 + 30\,868\,992 z^2 + 523\,486\,656 z + 5\,030\,379\,585\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(17\,045\,651\,456 z^4 - 2\,613\,262\,848\,000 z^3 + 94\,684\,330\,540\,800 z^2 - 1\,030\,368\,969\,630\,000 z + 2\,918\,248\,956\,748\,125\right)\cos\left(2\sqrt{z}\right) + \left(2\,147\,483\,648 z^5 - 1\,056\,964\,608\,000 z^4 + 73\,378\,088\,448\,000 z^3 - 1\,453\,579\,288\,761\,600 z^2 + 8\,427\,333\,572\,658\,000 z - 8\,754\,746\,870\,244\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{3}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.aby1.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,430\,923\,725\sqrt[4]{z}} \left(\sqrt{2}\left(\left(262\,144 z^6 + 6\,881\,280 z^5 + 76\,188\,672 z^4 + 477\,759\,744 z^3 + 873\,180\,000 z^2 - 2\,820\,371\,400 z + 1\,430\,923\,725\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(262\,144 z^6 + 1\,130\,496 z^5 + 15\,461\,376 z^4 + 144\,881\,856 z^3 + 706\,860\,000 z^2 + 912\,473\,100 z - 1\,430\,923\,725\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(262\,144 z^5 + 2\,789\,376 z^4 + 33\,030\,144 z^3 + 256\,964\,400 z^2 + 995\,425\,200 z + 1\,430\,923\,725\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aby2.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{23}{4}; -z\right) = \frac{1}{1\,430\,923\,725\sqrt[4]{z}} \left(\sqrt{2}\left(\left(262\,144 z^6 - 6\,881\,280 z^5 + 76\,188\,672 z^4 - 477\,759\,744 z^3 + 873\,180\,000 z^2 + 2\,820\,371\,400 z + 1\,430\,923\,725\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(262\,144 z^6 - 1\,130\,496 z^5 + 15\,461\,376 z^4 - 144\,881\,856 z^3 + 706\,860\,000 z^2 - 912\,473\,100 z - 1\,430\,923\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(262\,144 z^5 - 2\,789\,376 z^4 + 33\,030\,144 z^3 - 256\,964\,400 z^2 + 995\,425\,200 z - 1\,430\,923\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aby3.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{21}{4}; z\right) = \left(\frac{65\,536 z^5}{65\,786\,175} + \frac{4096 z^4}{375\,921} + \frac{7936 z^3}{69\,615} + \frac{112 z^2}{153} + \frac{128 z}{63} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{197\,358\,525}\left(2\sqrt{z}\left(65\,536 z^5 + 307\,200 z^4 + 3\,628\,800 z^3 + 30\,859\,920 z^2 + 137\,837\,700 z + 197\,358\,525\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aby4.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) = \left(-\frac{65\,536\,z^5}{65\,786\,175} + \frac{4096\,z^4}{375\,921} - \frac{7936\,z^3}{69\,615} + \frac{112\,z^2}{153} - \frac{128\,z}{63} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{197\,358\,525}\left(2\sqrt{z}\left(-65\,536\,z^5 + 307\,200\,z^4 - 3\,628\,800\,z^3 + 30\,859\,920\,z^2 - 137\,837\,700\,z + 197\,358\,525\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aby5.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{19}{4}; z\right) = \frac{1}{62\,214\,075\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(131\,072\,z^6 + 344\,064\,z^5 + 3\,451\,392\,z^4 + 20\,934\,144\,z^3 + 37\,255\,680\,z^2 - 122\,245\,200\,z + 62\,214\,075\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(16\,384\,z^5 + 243\,712\,z^4 + 2\,167\,872\,z^3 + 10\,311\,840\,z^2 + 13\,097\,700\,z - 20\,738\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(32\,768\,z^5 + 147\,456\,z^4 + 1\,540\,224\,z^3 + 11\,476\,080\,z^2 + 43\,659\,000\,z + 62\,214\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aby6.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{62\,214\,075\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(131\,072\,z^6 - 344\,064\,z^5 + 3\,451\,392\,z^4 - 20\,934\,144\,z^3 + 37\,255\,680\,z^2 + 122\,245\,200\,z + 62\,214\,075\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(16\,384\,z^5 - 243\,712\,z^4 + 2\,167\,872\,z^3 - 10\,311\,840\,z^2 + 13\,097\,700\,z + 20\,738\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-32\,768\,z^5 + 147\,456\,z^4 - 1\,540\,224\,z^3 + 11\,476\,080\,z^2 - 43\,659\,000\,z + 62\,214\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aby7.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{17}{4}; z\right) = \left(\frac{32\,768\,z^5}{9\,398\,025} + \frac{8192\,z^4}{626\,535} + \frac{128\,z^3}{1053} + \frac{496\,z^2}{663} + \frac{104\,z}{51} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(4096\,z^4 + 38\,400\,z^3 + 305\,424\,z^2 + 1\,326\,780\,z + 1\,879\,605\right)\sinh\left(2\sqrt{z}\right)}{1\,879\,605} $$

07.22.03.aby8.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{17}{4}; -z\right) = \left(-\frac{32\,768\,z^5}{9\,398\,025} + \frac{8192\,z^4}{626\,535} - \frac{128\,z^3}{1053} + \frac{496\,z^2}{663} - \frac{104\,z}{51} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(4096\,z^4 - 38\,400\,z^3 + 305\,424\,z^2 - 1\,326\,780\,z + 1\,879\,605\right)\sin\left(2\sqrt{z}\right)}{1\,879\,605} $$

07.22.03.aby9.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{15}{4}; z\right) = \frac{1}{3\,274\,425\sqrt[4]{z}}\left(\sqrt{2}\left(189\left(1024z^4+5888z^3+10\,080z^2-33\,880z+17\,325\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384z^5+43\,008z^4+358\,848z^3+1\,643\,040z^2+2\,037\,420z-3\,274\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ 12z\left(4096z^4+30\,464z^3+210\,000z^2+776\,160z+1\,091\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abya.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{3\,274\,425\sqrt[4]{z}}\left(\sqrt{2}\left(189\left(1024z^4-5888z^3+10\,080z^2+33\,880z+17\,325\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384z^5-43\,008z^4+358\,848z^3-1\,643\,040z^2+2\,037\,420z+3\,274\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ 12z\left(4096z^4-30\,464z^3+210\,000z^2-776\,160z+1\,091\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abyb.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{13}{4}; z\right) = \frac{1}{552\,825}\left(3\left(4096z^4+25\,088z^3+142\,800z^2+378\,000z+184\,275\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4096z^4+13\,824z^3+95\,760z^2+396\,900z+552\,825\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.abyc.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{13}{4}; -z\right) = \frac{1}{552\,825}\left(3\left(4096z^4-25\,088z^3+142\,800z^2-378\,000z+184\,275\right)\cos\left(2\sqrt{z}\right)+ 2\sqrt{z}\left(4096z^4-13\,824z^3+95\,760z^2-396\,900z+552\,825\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.abyd.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{11}{4}; z\right) = \frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192z^5+10\,752z^4+75\,264z^3+120\,960z^2-423\,360z+218\,295\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(5120z^4+25\,536z^3+110\,880z^2+132\,300z-218\,295\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ 4z\left(2048z^4+8064z^3+45\,360z^2+158\,760z+218\,295\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abye.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{11}{4}; -z\right) = \frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-8192z^5+10\,752z^4-75\,264z^3+120\,960z^2+423\,360z+218\,295\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(5120z^4-25\,536z^3+110\,880z^2-132\,300z-218\,295\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ 4z\left(2048z^4-8064z^3+45\,360z^2-158\,760z+218\,295\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abyf.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{9}{4}; z\right) = \frac{1}{42\,525}$$
$$\left(\left(2048\,z^4 + 8064\,z^3 + 35\,280\,z^2 + 88\,200\,z + 42\,525\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(768\,z^3 + 2800\,z^2 + 10\,500\,z + 14\,175\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abyg.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) = \frac{1}{42\,525}$$
$$\left(\left(2048\,z^4 - 8064\,z^3 + 35\,280\,z^2 - 88\,200\,z + 42\,525\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(-768\,z^3 + 2800\,z^2 - 10\,500\,z + 14\,175\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abyh.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{19\,845\sqrt[4]{z}}\left(\sqrt{2}\,\left(3\left(1024\,z^4 + 1792\,z^3 + 3360\,z^2 - 12\,600\,z + 6615\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(1024\,z^4 + 3264\,z^3 + 10\,080\,z^2 + \right.\right.\right.$$
$$\left.\left.\left.11\,340\,z - 19\,845\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(512\,z^3 + 1680\,z^2 + 5040\,z + 6615\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abyi.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{19\,845\sqrt[4]{z}}\left(\sqrt{2}\,\left(3\left(1024\,z^4 - 1792\,z^3 + 3360\,z^2 + 12\,600\,z + 6615\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(1024\,z^4 - 3264\,z^3 + 10\,080\,z^2 - \right.\right.\right.$$
$$\left.\left.\left.11\,340\,z - 19\,845\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(-512\,z^3 + 1680\,z^2 - 5040\,z + 6615\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abyj.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{4725}\left(7\left(256\,z^3 + 720\,z^2 + 1440\,z + 675\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(256\,z^3 + 1680\,z^2 + 3780\,z + 4725\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abyk.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{5}{4}; -z\right) = \left(-\frac{256\,z^3}{675} + \frac{16\,z^2}{15} - \frac{32\,z}{15} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(-256\,z^3 + 1680\,z^2 - 3780\,z + 4725\right)\sin\left(2\sqrt{z}\right)}{4725}$$

07.22.03.abyl.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{2835\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(512\,z^4 + 1920\,z^3 - 5040\,z + 2835\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,\left(320\,z^3 + 624\,z^2 + 420\,z - 945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.$$
$$\left.4\,z\left(128\,z^3 + 1296\,z^2 + 2520\,z + 2835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abym.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{2835\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512z^4 - 1920z^3 + 5040z + 2835\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(320z^3 - 624z^2 + 420z + 945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-128z^3 + 1296z^2 - 2520z + 2835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abyn.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) = \left(\frac{128z^3}{945} + \frac{16z^2}{9} + \frac{8z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{45}\sqrt{z}\left(16z^2 + 60z + 45\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.abyo.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) = \left(-\frac{128z^3}{945} + \frac{16z^2}{9} - \frac{8z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{45}\sqrt{z}\left(16z^2 - 60z + 45\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.abyp.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{945\sqrt[4]{z}}\left(\sqrt{2}\left(\left(640z^3 + 1092z^2 - 2520z + 945\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(128z^3 + 1920z^2 + 1365z - 1890\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(208z^2 + 1155z + 945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abyq.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) =$$
$$\frac{1}{945\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-640z^3 + 1092z^2 + 2520z + 945\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(128z^3 - 1920z^2 + 1365z + 1890\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(208z^2 - 1155z + 945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abyr.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) = \left(\frac{16z^2}{63} + \frac{16z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(16z^2 + 420z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.abys.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) = \left(\frac{16z^2}{63} - \frac{16z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(16z^2 - 420z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.abyt.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) =$$

$$-\frac{1}{7560\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(256z^3+6384z^2+2961z-7560\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\left(2816z^2+22\,064z-1785\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.2z\left(256z^2+9744z+35\,595\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abyu.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{5}{4}; -z\right) =$$

$$\frac{1}{7560\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(256z^3-6384z^2+2961z+7560\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\left(-2816z^2+22\,064z+1785\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$

$$\left.\left.2z\left(256z^2-9744z+35\,595\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abyv.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{7}{4}; z\right) = \frac{1}{322\,560z^{3/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(1024z^{5/2}+10\,496z^2+50\,496z^{3/2}+142\,128z+238\,140\sqrt{z}+\right.\right.\right.$$

$$\left.e^{4\sqrt{z}}\left(1024z^{5/2}-10\,496z^2+50\,496z^{3/2}-142\,128z+238\,140\sqrt{z}-208\,845\right)+208\,845\right)+$$

$$\left.\left.208\,845e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-208\,845e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.abyw.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{7}{4}; -z\right) =$$

$$\frac{1}{80\,640z^{3/4}}\left(2\sqrt[4]{z}\left(\left(10\,496z^2-142\,128z+208\,845\right)\sin\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2-12\,624z+59\,535\right)\cos\left(2\sqrt{z}\right)\right)-\right.$$

$$\left.208\,845\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.abyx.01

$${}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{9}{4}; z\right) = \frac{1}{48\,384\sqrt{2}\,z^{3/4}}$$

$$\left(\left(42\sqrt{z}\left(1024z^2+13\,056z-12\,117\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(8192z^3+483\,840z^2+2\,562\,336z-1\,514\,205\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.6\sqrt{z}\left(8192z^2+158\,144z+504\,735\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abyy.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = \frac{1}{48\,384\sqrt{2}\,z^{3/4}} \left(\left(42\sqrt{z}\left(1024z^2 - 13\,056z - 12\,117\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(8192z^3 - 483\,840z^2 + 2\,562\,336z + 1\,514\,205\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\left(8192z^2 - 158\,144z + 504\,735\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abyz.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = \frac{1}{2\,949\,120\,z^{7/4}} \left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-16\,384z^3 - 221\,184z^{5/2} - 1\,416\,192z^2 - 5\,460\,480z^{3/2} - 13\,366\,080z - 20\,884\,500\sqrt{z} + e^{4\sqrt{z}}\left(16\,384z^3 - 221\,184z^{5/2} + 1\,416\,192z^2 - 5\,460\,480z^{3/2} + 13\,366\,080z - 20\,884\,500\sqrt{z} + 15\,663\,375\right) - 15\,663\,375\right) + 208\,845\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 75)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 208\,845\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 75)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abz0.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = \frac{1}{737\,280\,z^{7/4}} \left(-208\,845\sqrt{\pi}\,(16z + 75) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(108\sqrt{z}\left(2048z^2 - 50\,560z + 193\,375\right)\cos\left(2\sqrt{z}\right) + \left(16\,384z^3 - 1\,416\,192z^2 + 13\,366\,080z - 15\,663\,375\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.abz1.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = -\frac{1}{172\,032\sqrt{2}\,z^{7/4}} \left(\left(2\sqrt{z}\left(16\,384z^3 + 1\,505\,280z^2 + 14\,364\,336z - 13\,627\,845\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(966\,656z^3 + 28\,342\,272z^2 + 121\,136\,400z - 68\,139\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,384z^3 + 1\,880\,064z^2 + 24\,227\,280z + 68\,139\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abz2.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = \frac{1}{172\,032\sqrt{2}\,z^{7/4}} \left(\left(-2\sqrt{z}\left(16\,384z^3 - 1\,505\,280z^2 + 14\,364\,336z + 13\,627\,845\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(966\,656z^3 - 28\,342\,272z^2 + 121\,136\,400z + 68\,139\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,384z^3 - 1\,880\,064z^2 + 24\,227\,280z - 68\,139\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abz3.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{15}{4}; z\right) = $$
$$ -\frac{1}{377\,487\,360\, z^{11/4}}\left(11\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(524\,288\, z^{7/2} + 9\,043\,968\, z^3 + 74\,711\,040\, z^{5/2} + 380\,190\,720\, z^2 + 1\,269\,777\,600\, z^{3/2} + \right.\right.\right. $$
$$ \left.\left.\left. 2\,890\,414\,800\, z + 4\,239\,553\,500\sqrt{z}\right) + e^{4\sqrt{z}}\left(524\,288\, z^{7/2} - 9\,043\,968\, z^3 + 74\,711\,040\, z^{5/2} - 380\,190\,720\, z^2 + \right.\right. $$
$$ \left.\left. 1\,269\,777\,600\, z^{3/2} - 2\,890\,414\,800\, z + 4\,239\,553\,500\sqrt{z} - 3\,179\,665\,125\right) + 3\,179\,665\,125\right) - $$
$$ 208\,845\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2 - 2400 z + 15\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 208\,845\, e^{2\sqrt{z}}\sqrt{2\pi} $$
$$ \left.\left(256 z^2 - 2400 z + 15\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abz4.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{15}{4}; -z\right) = -\frac{1}{94\,371\,840\, z^{11/4}}\left(11\left(208\,845\sqrt{\pi}\left(256 z^2 + 2400 z + 15\,225\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right. $$
$$ 2\sqrt[4]{z}\left(3\left(3\,014\,656 z^3 - 126\,730\,240 z^2 + 963\,471\,600 z - 1\,059\,888\,375\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left. \left. 4\sqrt{z}\left(131\,072 z^3 - 18\,677\,760 z^2 + 317\,444\,400 z - 1\,059\,888\,375\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abz5.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{17}{4}; z\right) = -\frac{1}{5\,505\,024\sqrt{2}\, z^{11/4}}\left(13\left(-6\sqrt{z}\left(786\,432 z^3 + 33\,935\,104 z^2 + 261\,654\,624 z - 253\,477\,917\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(524\,288 z^4 + 88\,276\,992 z^3 + 1\,783\,127\,808 z^2 + 6\,628\,583\,808 z - 3\,802\,168\,755\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left. 6\sqrt{z}\left(851\,968 z^3 + 47\,993\,088 z^2 + 494\,236\,512 z + 1\,267\,389\,585\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.abz6.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = -\frac{1}{5\,505\,024\sqrt{2}\, z^{11/4}}\left(13\left(6\sqrt{z}\left(786\,432 z^3 - 33\,935\,104 z^2 + 261\,654\,624 z + 253\,477\,917\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(524\,288 z^4 - 88\,276\,992 z^3 + 1\,783\,127\,808 z^2 - 6\,628\,583\,808 z - 3\,802\,168\,755\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 6\sqrt{z}\left(-851\,968 z^3 + 47\,993\,088 z^2 - 494\,236\,512 z + 1\,267\,389\,585\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.abz7.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) = \frac{1}{1\,610\,612\,736\, z^{15/4}} \left(11\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-8\,388\,608\, z^4 - 180\,355\,072\, z^{7/2} - 1\,871\,708\,160\, z^3 - 12\,237\,388\,800\, z^{5/2} - 53\,969\,260\,800\, z^2 - 166\,675\,017\,600\, z^{3/2} - 359\,514\,136\,800\, z - 512\,985\,973\,500\sqrt{z} + e^{4\sqrt{z}}\left(8\,388\,608\, z^4 - 180\,355\,072\, z^{7/2} + 1\,871\,708\,160\, z^3 - 12\,237\,388\,800\, z^{5/2} + 53\,969\,260\,800\, z^2 - 166\,675\,017\,600\, z^{3/2} + 359\,514\,136\,800\, z - 512\,985\,973\,500\sqrt{z} + 384\,739\,480\,125\right) - 384\,739\,480\,125\right) + 69\,615\, e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\, z^3 - 57\,600\, z^2 + 730\,800\, z - 5\,526\,675\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 69\,615\, e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\, z^3 - 57\,600\, z^2 + 730\,800\, z - 5\,526\,675\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.abz8.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) = -\frac{1}{402\,653\,184\, z^{15/4}} \left(11\left(69\,615\sqrt{\pi}\left(4096\, z^3 + 57\,600\, z^2 + 730\,800\, z + 5\,526\,675\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(4\sqrt{z}\left(45\,088\,768\, z^3 - 3\,059\,347\,200\, z^2 + 41\,668\,754\,400\, z - 128\,246\,493\,375\right)\cos\left(2\sqrt{z}\right) + \left(8\,388\,608\, z^4 - 1\,871\,708\,160\, z^3 + 53\,969\,260\,800\, z^2 - 359\,514\,136\,800\, z + 384\,739\,480\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.abz9.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) = -\frac{1}{176\,160\,768\sqrt{2}\, z^{15/4}} \left(221\left(2\sqrt{z}\left(1\,048\,576\, z^4 + 263\,540\,736\, z^3 + 7\,675\,202\,304\, z^2 + 50\,019\,642\,288\, z - 49\,428\,193\,815\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(32\,505\,856\, z^4 + 2\,579\,320\,832\, z^3 + 41\,632\,157\,952\, z^2 + 141\,947\,633\,520\, z - 82\,380\,323\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576\, z^4 + 284\,602\,368\, z^3 + 11\,064\,252\,672\, z^2 + 101\,391\,166\,800\, z + 247\,140\,969\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abza.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) = \frac{1}{176\,160\,768\sqrt{2}\, z^{15/4}} \left(221\left(2\sqrt{z}\left(1\,048\,576\, z^4 - 263\,540\,736\, z^3 + 7\,675\,202\,304\, z^2 - 50\,019\,642\,288\, z - 49\,428\,193\,815\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-32\,505\,856\, z^4 + 2\,579\,320\,832\, z^3 - 41\,632\,157\,952\, z^2 + 141\,947\,633\,520\, z + 82\,380\,323\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(1\,048\,576\, z^4 - 284\,602\,368\, z^3 + 11\,064\,252\,672\, z^2 - 101\,391\,166\,800\, z + 247\,140\,969\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abzb.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) = -\frac{1}{412\,316\,860\,416\,z^{19/4}} \left(209\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(536\,870\,912\,z^{9/2} + 14\,092\,861\,440\,z^4 + 178\,543\,411\,200\,z^{7/2} + 1\,452\,730\,675\,200\right.\right.\right. $$
$$ \left. z^3 + 8\,196\,793\,113\,600\,z^{5/2} + 33\,208\,382\,188\,800\,z^2 + 97\,320\,767\,544\,000\,z^{3/2} + 203\,142\,445\,506\,000\,z + $$
$$ 284\,707\,215\,292\,500\sqrt{z} + e^{4\sqrt{z}} \left(536\,870\,912\,z^{9/2} - 14\,092\,861\,440\,z^4 + 178\,543\,411\,200\,z^{7/2} - \right. $$
$$ \left. 1\,452\,730\,675\,200\,z^3 + 8\,196\,793\,113\,600\,z^{5/2} - 33\,208\,382\,188\,800\,z^2 + 97\,320\,767\,544\,000\,z^{3/2} - \right. $$
$$ \left. 203\,142\,445\,506\,000\,z + 284\,707\,215\,292\,500\sqrt{z} - 213\,530\,411\,469\,375\right) + 213\,530\,411\,469\,375\Big) - $$
$$ 69\,615\, e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4 - 1\,228\,800\,z^3 + 23\,385\,600\,z^2 - 353\,707\,200\,z + 3\,067\,304\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ \left. 69\,615\, e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4 - 1\,228\,800\,z^3 + 23\,385\,600\,z^2 - 353\,707\,200\,z + 3\,067\,304\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.abzc.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) = -\frac{1}{103\,079\,215\,104\,z^{19/4}} $$
$$ \left(209\left(69\,615\sqrt{\pi}\left(65\,536\,z^4 + 1\,228\,800\,z^3 + 23\,385\,600\,z^2 + 353\,707\,200\,z + 3\,067\,304\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\right.\right. $$
$$ \left(4\sqrt{z}\left(134\,217\,728\,z^4 - 44\,635\,852\,800\,z^3 + 2\,049\,198\,278\,400\,z^2 - 24\,330\,191\,886\,000\,z + 71\,176\,803\,823\,125\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) - 105\left(134\,217\,728\,z^4 - 13\,835\,530\,240\,z^3 + 316\,270\,306\,560\,z^2 - \right. $$
$$ \left.\left.\left. 1\,934\,689\,957\,200\,z + 2\,033\,622\,966\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\Big) $$

For fixed z and $a_1 = \frac{3}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.abzd.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) = \frac{1}{158\,991\,525\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(262\,144\,z^6 + 770\,048\,z^5 + 8\,961\,024\,z^4 + 53\,621\,568\,z^3 + 94\,580\,640\,z^2 - 312\,057\,900\,z + 158\,991\,525\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 4\sqrt{z}\left(262\,144\,z^5 + 1\,912\,832\,z^4 + 16\,806\,912\,z^3 + 79\,223\,760\,z^2 + 100\,069\,200\,z - 158\,991\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 4z\left(65\,536\,z^5 + 438\,272\,z^4 + 4\,055\,808\,z^3 + 29\,623\,440\,z^2 + 111\,919\,500\,z + 158\,991\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Big) $$

07.22.03.abze.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{158\,991\,525\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(262\,144\,z^6 - 770\,048\,z^5 + 8\,961\,024\,z^4 - 53\,621\,568\,z^3 + 94\,580\,640\,z^2 + 312\,057\,900\,z + 158\,991\,525\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z}\left(262\,144\,z^5 - 1\,912\,832\,z^4 + 16\,806\,912\,z^3 - 79\,223\,760\,z^2 + 100\,069\,200\,z + 158\,991\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 4z\left(65\,536\,z^5 - 438\,272\,z^4 + 4\,055\,808\,z^3 - 29\,623\,440\,z^2 + 111\,919\,500\,z - 158\,991\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abzf.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) = $$
$$ \frac{1}{21\,928\,725}\left(\left(65\,536\,z^5 + 307\,200\,z^4 + 2\,707\,200\,z^3 + 16\,482\,960\,z^2 + 44\,752\,500\,z + 21\,928\,725\right)\cosh\left(2\sqrt{z}\right) - \right. $$
$$ \left. 2\sqrt{z}\left(65\,536\,z^4 + 460\,800\,z^3 + 3\,594\,240\,z^2 + 15\,514\,200\,z + 21\,928\,725\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.abzg.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) = $$
$$ \frac{1}{21\,928\,725}\left(\left(-65\,536\,z^5 + 307\,200\,z^4 - 2\,707\,200\,z^3 + 16\,482\,960\,z^2 - 44\,752\,500\,z + 21\,928\,725\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\left(65\,536\,z^4 - 460\,800\,z^3 + 3\,594\,240\,z^2 - 15\,514\,200\,z + 21\,928\,725\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.abzh.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) = $$
$$ \frac{1}{6\,912\,675\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384\,z^5 + 411\,648\,z^4 + 2\,350\,656\,z^3 + 4\,013\,856\,z^2 - 13\,513\,500\,z + 6\,912\,675\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z}\left(32\,768\,z^5 + 90\,112\,z^4 + 759\,936\,z^3 + 3\,470\,544\,z^2 + 4\,296\,600\,z - 6\,912\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4z\left(28\,672\,z^4 + 195\,072\,z^3 + 1\,334\,256\,z^2 + 4\,920\,300\,z + 6\,912\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abzi.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) = $$
$$ \frac{1}{6\,912\,675\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,384\,z^5 + 411\,648\,z^4 - 2\,350\,656\,z^3 + 4\,013\,856\,z^2 + 13\,513\,500\,z + 6\,912\,675\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z}\left(32\,768\,z^5 - 90\,112\,z^4 + 759\,936\,z^3 - 3\,470\,544\,z^2 + 4\,296\,600\,z + 6\,912\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4z\left(28\,672\,z^4 - 195\,072\,z^3 + 1\,334\,256\,z^2 - 4\,920\,300\,z + 6\,912\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abzj.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) = \frac{1}{1\,044\,225}\left(5\left(4096 z^4 + 28\,160 z^3 + 161\,424 z^2 + 428\,220 z + 208\,845\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(8192 z^4 + 25\,600 z^3 + 180\,000 z^2 + 748\,800 z + 1\,044\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abzk.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{17}{4}; -z\right) = \frac{1}{1\,044\,225}\left(5\left(4096 z^4 - 28\,160 z^3 + 161\,424 z^2 - 428\,220 z + 208\,845\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(8192 z^4 - 25\,600 z^3 + 180\,000 z^2 - 748\,800 z + 1\,044\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abzl.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{15}{4}; z\right) = \frac{1}{363\,825\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384 z^5 + 24\,576 z^4 + 124\,992 z^3 + 203\,616 z^2 - 706\,860 z + 363\,825\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4096 z^4 + 42\,240 z^3 + 184\,464 z^2 + 221\,760 z - 363\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^4 + 12\,288 z^3 + 74\,256 z^2 + 263\,340 z + 363\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abzm.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{15}{4}; -z\right) = \frac{1}{363\,825\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,384 z^5 + 24\,576 z^4 - 124\,992 z^3 + 203\,616 z^2 + 706\,860 z + 363\,825\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096 z^4 - 42\,240 z^3 + 184\,464 z^2 - 221\,760 z - 363\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^4 - 12\,288 z^3 + 74\,256 z^2 - 263\,340 z + 363\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abzn.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{13}{4}; z\right) = \frac{1}{61\,425}\left(\left(4096 z^4 + 9728 z^3 + 49\,680 z^2 + 126\,900 z + 61\,425\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(2048 z^3 + 11\,520 z^2 + 45\,000 z + 61\,425\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abzo.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{13}{4}; -z\right) = \frac{1}{61\,425}\left(\left(4096 z^4 - 9728 z^3 + 49\,680 z^2 - 126\,900 z + 61\,425\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-2048 z^3 + 11\,520 z^2 - 45\,000 z + 61\,425\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abzp.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{11}{4}; z\right) = \frac{1}{24\,255\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1024z^4+8512z^3+12\,768z^2-46\,620z+24\,255\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2048z^4+2944z^3+12\,432z^2+14\,280z-24\,255\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1280z^3+5488z^2+18\,060z+24\,255\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abzq.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{11}{4}; -z\right) = \frac{1}{24\,255\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1024z^4-8512z^3+12\,768z^2+46\,620z+24\,255\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048z^4-2944z^3+12\,432z^2-14\,280z-24\,255\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-1280z^3+5488z^2-18\,060z+24\,255\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abzr.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{9}{4}; z\right) = \frac{1}{4725}\left(\left(1280z^3+4176z^2+9900z+4725\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(512z^3+1056z^2+3600z+4725\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.abzs.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{9}{4}; -z\right) = \frac{1}{4725}\left(\left(-1280z^3+4176z^2-9900z+4725\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(-512z^3+1056z^2-3600z+4725\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.abzt.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{7}{4}; z\right) = \frac{1}{2205\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024z^4+320z^3+1056z^2-4140z+2205\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^3+1104z^2+1200z-2205\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(256z^3+656z^2+1740z+2205\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abzu.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{1}{2205\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024z^4-320z^3+1056z^2+4140z+2205\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^3-1104z^2+1200z+2205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-256z^3+656z^2-1740z+2205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.abzv.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{5}{4}; z\right) = \frac{1}{525}\left(\left(256\,z^3 + 656\,z^2 + 1140\,z + 525\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(256\,z^2 + 440\,z + 525\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.abzw.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{5}{4}; -z\right) = \frac{1}{525}\left(\left(-256\,z^3 + 656\,z^2 - 1140\,z + 525\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(256\,z^2 - 440\,z + 525\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.abzx.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{3}{4}; z\right) =$$

$$\frac{1}{315\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(320\,z^3 - 96\,z^2 - 540\,z + 315\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(128\,z^3 + 240\,z^2 + 120\,z - 315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(176\,z^2 + 300\,z + 315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abzy.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) =$$

$$\frac{1}{315\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-320\,z^3 - 96\,z^2 + 540\,z + 315\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(128\,z^3 - 240\,z^2 + 120\,z + 315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(176\,z^2 - 300\,z + 315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.abzz.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) = \left(\frac{208\,z^2}{105} + \frac{20\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{105}\sqrt{z}\,\left(32\,z^2 + 160\,z + 105\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ac00.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) = \left(\frac{208\,z^2}{105} - \frac{20\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{105}\sqrt{z}\,\left(32\,z^2 - 160\,z + 105\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.ac01.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) = \frac{1}{105\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(64\,z^3 + 152\,z^2 - 300\,z + 105\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(112\,z^2 + 83\,z - 105\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(16\,z^2 + 134\,z + 105\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac02.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) =$$

$$\frac{1}{105\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-64\,z^3 + 152\,z^2 + 300\,z + 105\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(112\,z^2 - 83\,z - 105\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(16\,z^2 - 134\,z + 105\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac03.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) = \left(\frac{16\,z^2}{105} + \frac{12\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,(8\,z+21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ac04.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) = \left(\frac{16\,z^2}{105} - \frac{12\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}(21-8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ac05.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) = -\frac{1}{420\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left((608\,z^2+438\,z-840)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\,\left(-256\,z^2-3344\,z+105\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 10\,z\,(80\,z+357)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac06.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = \frac{1}{420\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left((-608\,z^2+438\,z+840)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\,\left(-256\,z^2+3344\,z+105\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 10\,z\,(80\,z-357)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac07.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) = \frac{1}{17\,920\,z^{3/4}}\left(e^{-2\sqrt{z}}\right.$$
$$\left(4\sqrt[4]{z}\,\left(-256\,z^2-1856\,z^{3/2}-6128\,z-11\,020\sqrt{z}+e^{4\sqrt{z}}\left(256\,z^2-1856\,z^{3/2}+6128\,z-11\,020\sqrt{z}+9945\right)-9945\right)+\right.$$
$$\left.\left.9945\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-9945\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac08.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) = \frac{2\sqrt[4]{z}\,\left(116\sqrt{z}\,(16\,z-95)\cos\left(2\sqrt{z}\right)+\left(256\,z^2-6128\,z+9945\right)\sin\left(2\sqrt{z}\right)\right)-9945\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)}{4480\,z^{3/4}}$$

07.22.03.ac09.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) =$$
$$\frac{1}{2688\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\,\left(512\,z^2+11\,616\,z-10\,479\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-16\,384\,z^2-111\,552\,z+65\,835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(512\,z^2+18\,144\,z+65\,835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac0a.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{9}{4}; -z\right) =$$
$$\frac{1}{2688\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\,\left(512\,z^2-11\,616\,z-10\,479\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-16\,384\,z^2+111\,552\,z+65\,835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(512\,z^2-18\,144\,z+65\,835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac0b.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{11}{4}; z\right) = \frac{1}{163\,840\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z} \left(4096 z^{5/2} + 40\,960 z^2 + 190\,208 z^{3/2} + 509\,184 z + 835\,380\sqrt{z} + e^{4\sqrt{z}} \left(4096 z^{5/2} - 40\,960 z^2 + 190\,208 z^{3/2} - 509\,184 z + 835\,380\sqrt{z} - 626\,535\right) + 626\,535\right) + 9945 e^{2\sqrt{z}} \sqrt{2\pi}\, (16z - 63) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 9945 e^{2\sqrt{z}} \sqrt{2\pi}\, (16z - 63) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac0c.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{11}{4}; -z\right) = \frac{1}{40\,960 z^{7/4}} \left(2\sqrt[4]{z} \left(\left(40\,960 z^2 - 509\,184 z + 626\,535\right) \sin\left(2\sqrt{z}\right) - 4\sqrt{z} \left(1024 z^2 - 47\,552 z + 208\,845\right) \cos\left(2\sqrt{z}\right)\right) - 9945\sqrt{\pi}\, (16z + 63) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.ac0d.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{13}{4}; z\right) = \frac{1}{28\,672\sqrt{2}\, z^{7/4}} \left(3\left(-2\sqrt{z} \left(41\,984 z^2 + 544\,432 z - 504\,735\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384 z^3 + 917\,504 z^2 + 4\,564\,560 z - 2\,523\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z} \left(48\,128 z^2 + 819\,280 z + 2\,523\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac0e.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) = \frac{1}{28\,672\sqrt{2}\, z^{7/4}} \left(3\left(2\sqrt{z} \left(41\,984 z^2 - 544\,432 z - 504\,735\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384 z^3 - 917\,504 z^2 + 4\,564\,560 z + 2\,523\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z} \left(48\,128 z^2 - 819\,280 z + 2\,523\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac0f.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) = \frac{1}{20\,971\,520 z^{11/4}} \left(11 e^{-2\sqrt{z}} \left(4\sqrt[4]{z} \left(-131\,072 z^3 - 1\,736\,704 z^{5/2} - 10\,862\,592 z^2 - 40\,098\,240 z^{3/2} - 96\,904\,080 z - 146\,191\,500\sqrt{z} + e^{4\sqrt{z}} \left(131\,072 z^3 - 1\,736\,704 z^{5/2} + 10\,862\,592 z^2 - 40\,098\,240 z^{3/2} + 96\,904\,080 z - 146\,191\,500\sqrt{z} + 109\,643\,625\right) - 109\,643\,625\right) + 9945 e^{2\sqrt{z}} \sqrt{2\pi}\, \left(256 z^2 - 2016 z + 11\,025\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 9945 e^{2\sqrt{z}} \sqrt{2\pi}\, \left(256 z^2 - 2016 z + 11\,025\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac0g.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{15}{4}; -z\right) =$$

$$-\frac{1}{5\,242\,880\,z^{11/4}}\left(11\left(9945\sqrt{\pi}\,\left(256\,z^2+2016\,z+11\,025\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(434\,176\,z^2-10\,024\,560\,z+36\,547\,875\right)\right.\right.\right.$$

$$\left.\left.\left.\cos\left(2\sqrt{z}\right)+\left(131\,072\,z^3-10\,862\,592\,z^2+96\,904\,080\,z-109\,643\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ac0h.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) = \frac{1}{917\,504\sqrt{2}\,z^{11/4}}\left(39\left(2\sqrt{z}\,\left(32\,768\,z^3+2\,722\,048\,z^2+25\,842\,432\,z-24\,530\,121\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$

$$\left(1\,900\,544\,z^3+52\,808\,448\,z^2+216\,430\,368\,z-122\,650\,605\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$\left.\left.2\sqrt{z}\,\left(32\,768\,z^3+3\,798\,784\,z^2+45\,224\,256\,z+122\,650\,605\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac0i.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) = -\frac{1}{917\,504\sqrt{2}\,z^{11/4}}\left(39\left(2\sqrt{z}\,\left(32\,768\,z^3-2\,722\,048\,z^2+25\,842\,432\,z+24\,530\,121\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$

$$\left(1\,900\,544\,z^3-52\,808\,448\,z^2+216\,430\,368\,z+122\,650\,605\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$\left.\left.2\sqrt{z}\,\left(-32\,768\,z^3+3\,798\,784\,z^2-45\,224\,256\,z+122\,650\,605\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac0j.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) = \frac{1}{268\,435\,456\,z^{15/4}}$$

$$\left(33\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(2\,097\,152\,z^{7/2}+35\,651\,584\,z^3+293\,063\,680\,z^{5/2}+1\,447\,496\,960\,z^2+4\,767\,235\,200\,z^{3/2}+10\,681\,725\,600\right.\right.\right.$$

$$z+15\,545\,029\,500\sqrt{z}\,+e^{4\sqrt{z}}\left(2\,097\,152\,z^{7/2}-35\,651\,584\,z^3+293\,063\,680\,z^{5/2}-1\,447\,496\,960\,z^2+\right.$$

$$\left.\left.\left.4\,767\,235\,200\,z^{3/2}-10\,681\,725\,600\,z+15\,545\,029\,500\sqrt{z}\,-11\,658\,772\,125\right)+11\,658\,772\,125\right)+$$

$$3315\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3-48\,384\,z^2+529\,200\,z-3\,516\,975\right)\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$

$$\left.3315\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3-48\,384\,z^2+529\,200\,z-3\,516\,975\right)\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac0k.01

$${}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = -\frac{1}{67\,108\,864\,z^{15/4}}\left(33\left(3315\sqrt{\pi}\,\left(4096\,z^3+48\,384\,z^2+529\,200\,z+3\,516\,975\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$

$$2\sqrt[4]{z}\,\left(17\left(2\,097\,152\,z^3-85\,146\,880\,z^2+628\,336\,800\,z-685\,810\,125\right)\sin\left(2\sqrt{z}\right)-\right.$$

$$\left.\left.\left.4\sqrt{z}\,\left(524\,288\,z^3-73\,265\,920\,z^2+1\,191\,808\,800\,z-3\,886\,257\,375\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ac0l.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) = \frac{1}{205\,520\,896\sqrt{2}\, z^{15/4}}\left(663\left(-2\sqrt{z}\left(35\,287\,040 z^3 + 1\,369\,648\,896 z^2 + 10\,160\,921\,232 z - 9\,885\,638\,763\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(7\,340\,032 z^4 + 1\,209\,618\,432 z^3 + 23\,594\,140\,416 z^2 + 85\,953\,543\,984 z - 49\,428\,193\,815\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 38\sqrt{z}\left(1\,716\,224 z^3 + 101\,232\,384 z^2 + 1\,025\,961\,552 z + 2\,601\,483\,885\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac0m.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) = -\frac{1}{205\,520\,896\sqrt{2}\, z^{15/4}}\left(663\left(2\sqrt{z}\left(35\,287\,040 z^3 - 1\,369\,648\,896 z^2 + 10\,160\,921\,232 z + 9\,885\,638\,763\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(7\,340\,032 z^4 - 1\,209\,618\,432 z^3 + 23\,594\,140\,416 z^2 - 85\,953\,543\,984 z - 49\,428\,193\,815\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 38\sqrt{z}\left(-1\,716\,224 z^3 + 101\,232\,384 z^2 - 1\,025\,961\,552 z + 2\,601\,483\,885\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac0n.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = \frac{1}{68\,719\,476\,736 z^{19/4}}\left(627 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-134\,217\,728 z^4 - 2\,797\,813\,760 z^{7/2} - 29\,247\,877\,120 z^3 - 188\,550\,835\,200 z^{5/2} - 823\,617\,849\,600 z^2 - 2\,522\,736\,216\,000 z^{3/2} - 5\,409\,670\,266\,000 z - 7\,694\,789\,602\,500\sqrt{z} + e^{4\sqrt{z}}\left(134\,217\,728 z^4 - 2\,797\,813\,760 z^{7/2} + 29\,247\,877\,120 z^3 - 188\,550\,835\,200 z^{5/2} + 823\,617\,849\,600 z^2 - 2\,522\,736\,216\,000 z^{3/2} + 5\,409\,670\,266\,000 z - 7\,694\,789\,602\,500\sqrt{z} + 5\,771\,092\,201\,875\right) - 5\,771\,092\,201\,875\right) + 3315 e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 1\,032\,192 z^3 + 16\,934\,400 z^2 - 225\,086\,400 z + 1\,740\,902\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 3315 e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 - 1\,032\,192 z^3 + 16\,934\,400 z^2 - 225\,086\,400 z + 1\,740\,902\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ac0o.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) = -\frac{1}{17\,179\,869\,184 z^{19/4}}\left(627\left(3315\sqrt{\pi}\left(65\,536 z^4 + 1\,032\,192 z^3 + 16\,934\,400 z^2 + 225\,086\,400 z + 1\,740\,902\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(2380\sqrt{z}\left(1\,175\,552 z^3 - 79\,223\,040 z^2 + 1\,059\,973\,200 z - 3\,233\,104\,875\right)\cos\left(2\sqrt{z}\right) + \left(134\,217\,728 z^4 - 29\,247\,877\,120 z^3 + 823\,617\,849\,600 z^2 - 5\,409\,670\,266\,000 z + 5\,771\,092\,201\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{3}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.ac0p.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{22\,713\,075\sqrt[4]{z}}\left(\sqrt{2}\left(\left(327\,680 z^5 + 1\,265\,664 z^4 + 7\,780\,608 z^3 + 12\,917\,520 z^2 - 44\,241\,120 z + 22\,713\,075\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(65\,536 z^5 + 438\,272 z^4 + 2\,556\,672 z^3 + 11\,460\,240 z^2 + 13\,957\,020 z - 22\,713\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(131\,072 z^4 + 749\,568 z^3 + 4\,540\,800 z^2 + 16\,327\,080 z + 22\,713\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac0q.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{22\,713\,075\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-327\,680 z^5 + 1\,265\,664 z^4 - 7\,780\,608 z^3 + 12\,917\,520 z^2 + 44\,241\,120 z + 22\,713\,075\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(65\,536 z^5 - 438\,272 z^4 + 2\,556\,672 z^3 - 11\,460\,240 z^2 + 13\,957\,020 z + 22\,713\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(131\,072 z^4 - 749\,568 z^3 + 4\,540\,800 z^2 - 16\,327\,080 z + 22\,713\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac0r.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{21}{4}; z\right) = \frac{1}{3\,132\,675}\left(3\left(32\,768 z^4 + 153\,600 z^3 + 823\,680 z^2 + 2\,148\,120 z + 1\,044\,225\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left.2\sqrt{z}\left(16\,384 z^4 + 101\,376 z^3 + 561\,600 z^2 + 2\,267\,460 z + 3\,132\,675\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ac0s.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{21}{4}; -z\right) = \frac{1}{3\,132\,675}\left(3\left(32\,768 z^4 - 153\,600 z^3 + 823\,680 z^2 - 2\,148\,120 z + 1\,044\,225\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(16\,384 z^4 - 101\,376 z^3 + 561\,600 z^2 - 2\,267\,460 z + 3\,132\,675\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ac0t.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{987\,525\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768 z^5 + 49\,152 z^4 + 342\,144 z^3 + 543\,312 z^2 - 1\,912\,680 z + 987\,525\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\right.\right.$$
$$\sqrt{z}\left(28\,672 z^4 + 115\,200 z^3 + 502\,128 z^2 + 595\,980 z - 987\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(8192 z^4 + 39\,936 z^3 + 208\,032 z^2 + 720\,720 z + 987\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac0u.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{19}{4}; -z\right) =$$

$$\frac{1}{987\,525\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32\,768\,z^5+49\,152\,z^4-342\,144\,z^3+543\,312\,z^2+1\,912\,680\,z+987\,525\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$

$$4\sqrt{z}\left(28\,672\,z^4-115\,200\,z^3+502\,128\,z^2-595\,980\,z-987\,525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$\left.\left.4\,z\left(8192\,z^4-39\,936\,z^3+208\,032\,z^2-720\,720\,z+987\,525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac0v.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{17}{4}; z\right) =$$

$$\left(\frac{8192\,z^4}{149\,175}+\frac{1024\,z^3}{5967}+\frac{32\,z^2}{39}+\frac{176\,z}{85}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(7168\,z^3+28\,800\,z^2+109\,980\,z+149\,175\right)\sinh\left(2\sqrt{z}\right)}{149\,175}$$

07.22.03.ac0w.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{17}{4}; -z\right) =$$

$$\left(\frac{8192\,z^4}{149\,175}-\frac{1024\,z^3}{5967}+\frac{32\,z^2}{39}-\frac{176\,z}{85}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-7168\,z^3+28\,800\,z^2-109\,980\,z+149\,175\right)\sin\left(2\sqrt{z}\right)}{149\,175}$$

07.22.03.ac0x.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{15}{4}; z\right) = \frac{1}{51\,975\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(9\left(2048\,z^3+3024\,z^2-11\,088\,z+5775\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4096\,z^4+6144\,z^3+26\,640\,z^2+30\,492\,z-51\,975\right)\right.\right.$$

$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(1024\,z^3+3968\,z^2+12\,936\,z+17\,325\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac0y.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{15}{4}; -z\right) = \frac{1}{51\,975\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(9\left(-2048\,z^3+3024\,z^2+11\,088\,z+5775\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4096\,z^4-6144\,z^3+26\,640\,z^2-30\,492\,z-51\,975\right)\right.\right.$$

$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(-1024\,z^3+3968\,z^2-12\,936\,z+17\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac0z.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{13}{4}; z\right) =$$

$$\frac{1}{8775}\left(\left(2048\,z^3+7680\,z^2+18\,360\,z+8775\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(1024\,z^3+1920\,z^2+6660\,z+8775\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ac10.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{8775}\left(\left(-2048\,z^3 + 7680\,z^2 - 18\,360\,z + 8775\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-1024\,z^3 + 1920\,z^2 - 6660\,z + 8775\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ac11.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{11}{4}; z\right) = \frac{1}{3465\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(2048\,z^4 + 1408\,z^3 + 1680\,z^2 - 6552\,z + 3465\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(256\,z^3 + 1776\,z^2 + 1932\,z - 3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.4\,z\left(512\,z^3 + 928\,z^2 + 2688\,z + 3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac12.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2048\,z^4 - 1408\,z^3 + 1680\,z^2 + 6552\,z + 3465\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(256\,z^3 - 1776\,z^2 + 1932\,z + 3465\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(512\,z^3 - 928\,z^2 + 2688\,z - 3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac13.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) = \frac{1}{675}\left(\left(512\,z^3 + 672\,z^2 + 1440\,z + 675\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(64\,z^2 + 180\,z + 225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ac14.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) = \frac{1}{675}\left(\left(-512\,z^3 + 672\,z^2 - 1440\,z + 675\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(64\,z^2 - 180\,z + 225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ac15.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{315\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-256\,z^3 + 144\,z^2 - 576\,z + 315\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(256\,z^3 + 144\,z^2 + 156\,z - 315\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.4\,z\left(128\,z^2 + 264\,z + 315\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac16.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{315\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256z^3+144z^2+576z+315\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^3-144z^2+156z+315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^2-264z+315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac17.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{5}{4}; z\right) = \frac{1}{75}\left(\left(128z^2+168z+75\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(64z^2+68z+75\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ac18.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{5}{4}; -z\right) = \frac{1}{75}\left(\left(128z^2-168z+75\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(64z^2-68z+75\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ac19.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{3}{4}; z\right) = \frac{1}{45\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(128z^3-48z^2-72z+45\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(16z^2+4z-15\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(32z^2+48z+45\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac1a.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{3}{4}; -z\right) = \frac{1}{45\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-128z^3-48z^2+72z+45\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.12\sqrt{z}\left(16z^2-4z-15\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(32z^2-48z+45\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac1b.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{1}{4}; z\right) = \frac{1}{15}\left(\left(32z^2+48z+15\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(28z+15\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ac1c.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, -\frac{1}{4}; -z\right) = \frac{1}{15}\left(\left(32z^2-48z+15\right)\cos\left(2\sqrt{z}\right)+2\left(15-28z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ac1d.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{15\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32z^2-48z+15\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(16z^2+14z-15\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+20z\left(4z+3\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac1e.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) =$$

$$\frac{1}{15\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32z^2+48z+15\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(16z^2-14z-15\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+20\left(3-4z\right)z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac1f.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{3}{4}; z\right) = \left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\,\left(4z+15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ac1g.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) = \left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}\left(15-4z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ac1h.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{5}{4}; z\right) =$$

$$\frac{1}{30\sqrt{2}\,\sqrt[4]{z}}\left(\left(\left(-32z^2-42z+60\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,\left(208z+9\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2z\left(16z+111\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac1i.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{5}{4}; -z\right) =$$

$$\frac{1}{30\sqrt{2}\,\sqrt[4]{z}}\left(\left(\left(-32z^2+42z+60\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,\left(208z-9\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(16z-111\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac1j.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) =$$

$$\frac{1}{1280\,z^{3/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(64z^{3/2}+304z+620\sqrt{z}\,+e^{4\sqrt{z}}\left(64z^{3/2}-304z+620\sqrt{z}\,-585\right)+585\right)+585\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-585\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac1k.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{7}{4}; -z\right) = \frac{2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16z-155\right)\cos\left(2\sqrt{z}\right)+\left(585-304z\right)\sin\left(2\sqrt{z}\right)\right)-585\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)}{320\,z^{3/4}}$$

07.22.03.ac1l.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) = \frac{1}{192\sqrt{2}\,z^{3/4}}$$

$$\left(\left(6\sqrt{z}\,\left(192z-167\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-512z^2-5856z+3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\,\left(256z+1155\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac1m.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{9}{4}; -z\right) = \frac{1}{192\sqrt{2}\, z^{3/4}}$$
$$\left(\left(-6\sqrt{z}\,(192z+167)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-512z^2+5856z+3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\,(256z-1155)\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac1n.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{11}{4}; z\right) = -\frac{1}{81\,920\, z^{7/4}}\left(7\, e^{-2\sqrt{z}}\right.$$
$$\left(4\sqrt[4]{z}\left(-1024z^2-7168z^{3/2}-22\,464z-39\,780\sqrt{z}+e^{4\sqrt{z}}\left(1024z^2-7168z^{3/2}+22\,464z-39\,780\sqrt{z}+29\,835\right)-\right.\right.$$
$$\left.\left.29\,835\right)-585\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-51)\,\mathrm{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+585\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-51)\,\mathrm{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac1o.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{11}{4}; -z\right) = \frac{1}{20\,480\, z^{7/4}}$$
$$\left(7\left(2\sqrt[4]{z}\left(4\sqrt{z}\,(1792z-9945)\cos\left(2\sqrt{z}\right)+\left(1024z^2-22\,464z+29\,835\right)\sin\left(2\sqrt{z}\right)\right)-585\sqrt{\pi}\,(16z+51)\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)$$

07.22.03.ac1p.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{13}{4}; z\right) =$$
$$-\frac{1}{2048\sqrt{2}\, z^{7/4}}\left(3\left(2\sqrt{z}\,\left(1024z^2+24\,368z-21\,945\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-31\,744z^2-203\,280z+109\,725\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1024z^2+30\,800z+109\,725\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac1q.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{13}{4}; -z\right) =$$
$$\frac{1}{2048\sqrt{2}\, z^{7/4}}\left(3\left(2\sqrt{z}\,\left(1024z^2-24\,368z-21\,945\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-31\,744z^2+203\,280z+109\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1024z^2-30\,800z+109\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac1r.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{15}{4}; z\right) =$$
$$-\frac{1}{10\,485\,760\, z^{11/4}}\left(77\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(32\,768z^{5/2}+319\,488z^2+1\,400\,256z^{3/2}+3\,723\,408z+5\,847\,660\sqrt{z}+\right.\right.\right.$$
$$\left.\left.e^{4\sqrt{z}}\left(32\,768z^{5/2}-319\,488z^2+1\,400\,256z^{3/2}-3\,723\,408z+5\,847\,660\sqrt{z}-4\,385\,745\right)+4\,385\,745\right)-585\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\,\left(256z^2-1632z+7497\right)\mathrm{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+585\, e^{2\sqrt{z}}\sqrt{2\pi}\,\left(256z^2-1632z+7497\right)\mathrm{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac1s.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{15}{4}; -z\right) = -\frac{1}{2\,621\,440\,z^{11/4}}\left(77\left(585\sqrt{\pi}\,\left(256z^2+1632z+7497\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\left(4\sqrt{z}\,\left(8192z^2-350\,064z+1\,461\,915\right)\cos\left(2\sqrt{z}\right)-39\left(8192z^2-95\,472z+112\,455\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ac1t.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{17}{4}; z\right) = -\frac{1}{65\,536\sqrt{2}\,z^{11/4}}$$
$$\left(39\left(-2\sqrt{z}\,\left(71\,936z^2+983\,136z-908\,523\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(32\,768z^3+1\,714\,944z^2+8\,145\,984z-4\,542\,615\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-22\sqrt{z}\,\left(9472z^2+140\,448z+412\,965\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac1u.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{17}{4}; -z\right) =$$
$$\frac{1}{65\,536\sqrt{2}\,z^{11/4}}\left(39\left(2\sqrt{z}\,\left(71\,936z^2-983\,136z-908\,523\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(32\,768z^3-1\,714\,944z^2+8\,145\,984z+4\,542\,615\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-22\sqrt{z}\,\left(9472z^2-140\,448z+412\,965\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac1v.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) =$$
$$\frac{1}{134\,217\,728\,z^{15/4}}\left(231\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-524\,288z^3-7\,015\,424z^{5/2}-41\,696\,512z^2-151\,482\,240z^{3/2}-358\,656\,480z-\right.\right.\right.$$
$$\left.\left.\left.536\,035\,500\sqrt{z}\,+e^{4\sqrt{z}}\left(524\,288z^3-7\,015\,424z^{5/2}+41\,696\,512z^2-\right.\right.\right.$$
$$\left.\left.\left.151\,482\,240z^{3/2}+358\,656\,480z-536\,035\,500\sqrt{z}\,+402\,026\,625\right)-402\,026\,625\right)+$$
$$195\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096z^3-39\,168z^2+359\,856z-2\,061\,675\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.195\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096z^3-39\,168z^2+359\,856z-2\,061\,675\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac1w.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) = -\frac{1}{33\,554\,432\,z^{15/4}}$$
$$\left(231\left(195\sqrt{\pi}\,\left(4096z^3+39\,168z^2+359\,856z+2\,061\,675\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(884\sqrt{z}\,\left(7936z^2-171\,360z+606\,375\right)\right.\right.\right.$$
$$\left.\left.\left.\cos\left(2\sqrt{z}\right)+\left(524\,288z^3-41\,696\,512z^2+358\,656\,480z-402\,026\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ac1x.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) =$$
$$-\frac{1}{14\,680\,064\sqrt{2}\,z^{15/4}}\left(663\left(2\sqrt{z}\left(618\,496z^3+37\,078\,272z^2+334\,336\,464z-318\,891\,573\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-33\right.\right.$$
$$\left(806\,912z^3+21\,280\,000z^2+85\,015\,728z-48\,316\,905\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(299\,008z^3+50\,882\,304z^2+595\,991\,088z+1\,594\,457\,865\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac1y.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) =$$
$$-\frac{1}{14\,680\,064\sqrt{2}\,z^{15/4}}\left(663\left(2\sqrt{z}\left(618\,496z^3-37\,078\,272z^2+334\,336\,464z+318\,891\,573\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$33\left(806\,912z^3-21\,280\,000z^2+85\,015\,728z+48\,316\,905\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(-299\,008z^3+50\,882\,304z^2-595\,991\,088z+1\,594\,457\,865\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac1z.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{23}{4}; z\right) = \frac{1}{34\,359\,738\,368\,z^{19/4}}$$
$$\left(4389\,e^{-2\sqrt{z}}\left(-68\sqrt[4]{z}\left(1\,785\,856z^{7/2}+33\,107\,968z^3+266\,972\,160z^{5/2}+1\,304\,459\,520z^2+4\,252\,248\,000z^{3/2}+\right.\right.\right.$$
$$9\,459\,450\,000z+13\,716\,202\,500\sqrt{z}+e^{4\sqrt{z}}\left(1\,785\,856z^{7/2}-33\,107\,968z^3+266\,972\,160z^{5/2}-1\,304\,459\,520\right.$$
$$\left.\left.z^2+4\,252\,248\,000z^{3/2}-9\,459\,450\,000z+13\,716\,202\,500\sqrt{z}-10\,287\,151\,875\right)+10\,287\,151\,875\right)+$$
$$195\,e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-835\,584z^3+11\,515\,392z^2-131\,947\,200z+896\,828\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.195\,e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-835\,584z^3+11\,515\,392z^2-131\,947\,200z+896\,828\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac20.01

$${}_1F_2\left(\frac{3}{4}; -\frac{5}{2}, \frac{23}{4}; -z\right) =$$
$$-\frac{1}{8\,589\,934\,592\,z^{19/4}}\left(4389\left(195\sqrt{\pi}\left(65\,536z^4+835\,584z^3+11\,515\,392z^2+131\,947\,200z+896\,828\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.$$
$$34\sqrt[4]{z}\left(4\sqrt{z}\left(446\,464z^3-66\,743\,040z^2+1\,063\,062\,000z-3\,429\,050\,625\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(-33\,107\,968z^3+1\,304\,459\,520z^2-9\,459\,450\,000z+10\,287\,151\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{3}{4}$, $b_{1.} = -\frac{3}{2}$

07.22.03.ac21.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{4\,542\,615\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536 z^5 + 577\,536 z^4 + 1\,343\,232 z^3 + 2\,383\,920 z^2 - 8\,690\,220 z + 4\,542\,615\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(163\,840 z^4 + 749\,568 z^3 + 2\,280\,960 z^2 + 2\,633\,400 z - 4\,542\,615\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(16\,384 z^4 + 279\,552 z^3 + 1\,129\,920 z^2 + 3\,423\,420 z + 4\,542\,615\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac22.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{4\,542\,615\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-65\,536 z^5 + 577\,536 z^4 - 1\,343\,232 z^3 + 2\,383\,920 z^2 + 8\,690\,220 z + 4\,542\,615\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(163\,840 z^4 - 749\,568 z^3 + 2\,280\,960 z^2 - 2\,633\,400 z - 4\,542\,615\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(16\,384 z^4 - 279\,552 z^3 + 1\,129\,920 z^2 - 3\,423\,420 z + 4\,542\,615\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac23.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{21}{4}; z\right) =$$
$$\left(\frac{16\,384 z^4}{626\,535} + \frac{19\,456 z^3}{69\,615} + \frac{320 z^2}{357} + \frac{44 z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(4096 z^3 + 17\,664 z^2 + 53\,040 z + 69\,615\right)\sinh\left(2\sqrt{z}\right)}{69\,615}$$

07.22.03.ac24.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{21}{4}; -z\right) =$$
$$\left(\frac{16\,384 z^4}{626\,535} - \frac{19\,456 z^3}{69\,615} + \frac{320 z^2}{357} - \frac{44 z}{21} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-4096 z^3 + 17\,664 z^2 - 53\,040 z + 69\,615\right)\sin\left(2\sqrt{z}\right)}{69\,615}$$

07.22.03.ac25.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{197\,505\sqrt[4]{z}}\left(\sqrt{2}\left(9\left(4096 z^4 + 5632 z^3 + 11\,088 z^2 - 41\,580 z + 21\,945\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(8192 z^4 + 39\,936 z^3 + 98\,208 z^2 + \right.\right.\right.$$
$$\left.\left.\left.110\,880 z - 197\,505\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(5120 z^3 + 18\,304 z^2 + 50\,820 z + 65\,835\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac26.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{197\,505\sqrt[4]{z}}\left(\sqrt{2}\left(9\left(4096z^4 - 5632z^3 + 11\,088z^2 + 41\,580z + 21\,945\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8192z^4 - 39\,936z^3 + 98\,208z^2 - 110\,880z - 197\,505\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12z\left(-5120z^3 + 18\,304z^2 - 50\,820z + 65\,835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac27.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{17}{4}; z\right) =$$
$$\frac{1}{29\,835}\left(\left(11\,264z^3 + 28\,800z^2 + 63\,180z + 29\,835\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(2048z^3 + 9216z^2 + 23\,400z + 29\,835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ac28.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{29\,835}\left(\left(-11\,264z^3 + 28\,800z^2 - 63\,180z + 29\,835\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-2048z^3 + 9216z^2 - 23\,400z + 29\,835\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ac29.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{10\,395\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^4 + 1536z^3 + 5040z^2 - 19\,404z + 10\,395\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1024z^3 + 1664z^2 + 1848z - 3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(1024z^3 + 3456z^2 + 8316z + 10\,395\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac2a.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{10\,395\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^4 - 1536z^3 + 5040z^2 + 19\,404z + 10\,395\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1024z^3 - 1664z^2 + 1848z + 3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-1024z^3 + 3456z^2 - 8316z + 10\,395\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac2b.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{13}{4}; z\right) = \frac{\left(1024z^3 + 1920z^2 + 3780z + 1755\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(256z^2 + 480z + 585\right)\sinh\left(2\sqrt{z}\right)}{1755}$$

07.22.03.ac2c.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{13}{4}; -z\right) = \left(-\frac{1024z^3}{1755} + \frac{128z^2}{117} - \frac{28z}{13} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{585}\sqrt{z}\left(256z^2 - 480z + 585\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.ac2d.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-256z^3+336z^2-1260z+693\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^3+288z^2+336z-693\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(320z^2+588z+693\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac2e.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256z^3+336z^2+1260z+693\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(512z^3-288z^2+336z+693\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(320z^2-588z+693\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac2f.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) = \left(\frac{64z^2}{45}+\frac{20z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{135}\sqrt{z}\left(128z^2+120z+135\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ac2g.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{9}{4}; -z\right) = \left(\frac{64z^2}{45}-\frac{20z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{135}\sqrt{z}\left(128z^2-120z+135\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.ac2h.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{7}{4}; z\right) = \frac{1}{63\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(256z^3+48z^2-108z+63\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\left(21-8z\right)\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(64z^2+60z+63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac2i.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{7}{4}; -z\right) = \frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left.\left(\left(-256z^3+48z^2+108z+63\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\;\left(8z+21\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(64z^2-60z+63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac2j.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{5}{4}; z\right) = \frac{1}{15}\left(\left(64z^2+36z+15\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\;\left(16z+15\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ac2k.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{5}{4}; -z\right) = \frac{1}{15}\left(\left(64z^2-36z+15\right)\cos\left(2\sqrt{z}\right)+2\left(15-16z\right)\sqrt{z}\;\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ac2l.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\left(-3\left(16z^2+4z-3\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(32z^2-9\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+12z(4z+3)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac2m.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-48z^2+12z+9\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(32z^2-9\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+12(3-4z)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac2n.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{1}{4}; z\right) = (4z+1)\cosh\left(2\sqrt{z}\right)-\frac{2}{3}\sqrt{z}\,(8z+3)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ac2o.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, -\frac{1}{4}; -z\right) = (1-4z)\cos\left(2\sqrt{z}\right)+\frac{2}{3}(3-8z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ac2p.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, \frac{1}{4}; z\right) = \frac{1}{3\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16z^2-12z+3\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(4z-3)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z(4z+3)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac2q.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, \frac{1}{4}; -z\right) =$$
$$\frac{1}{3\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16z^2+12z+3\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(4z+3)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4(3-4z)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac2r.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, \frac{3}{4}; z\right) = \left(\frac{4z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ac2s.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, \frac{3}{4}; -z\right) = \left(1-\frac{4z}{3}\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ac2t.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, \frac{5}{4}; z\right) = \frac{\left(-6(z-1)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,(16z+3)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-18zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.ac2u.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, \frac{5}{4}; -z\right) = \frac{\left(6(z+1)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,(16z-3)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-18zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.ac2v.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, \frac{7}{4}; z\right) =$$
$$\frac{1}{128\, z^{3/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-16\, z - 44\sqrt{z} + e^{4\sqrt{z}}\left(16\, z - 44\sqrt{z} + 45\right) - 45\right) + 45\, e^{2\sqrt{z}}\sqrt{2\,\pi}\ \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) - \right.\right.$$
$$\left.\left. 45\, e^{2\sqrt{z}}\sqrt{2\,\pi}\ \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac2w.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, \frac{7}{4}; -z\right) = \frac{-45\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(44\sqrt{z}\cos\left(2\sqrt{z}\right) + (16\, z - 45)\sin\left(2\sqrt{z}\right)\right)}{32\, z^{3/4}}$$

07.22.03.ac2x.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, \frac{9}{4}; z\right) =$$
$$\frac{1}{96\sqrt{2}\ z^{3/4}}\left(5\left(2\sqrt{z}\ (32\, z - 27)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\,(77 - 128\, z)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\ (32\, z + 231)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac2y.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) =$$
$$-\frac{1}{96\sqrt{2}\ z^{3/4}}\left(5\left(2\sqrt{z}\ (32\, z + 27)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\,(128\, z + 77)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\,(231 - 32\, z)\sqrt{z}\ J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac2z.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) =$$
$$\frac{1}{8192\, z^{7/4}}\left(7\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(256\, z^{3/2} + 1152\, z + 2340\sqrt{z} + e^{4\sqrt{z}}\left(256\, z^{3/2} - 1152\, z + 2340\sqrt{z} - 1755\right) + 1755\right) + \right.\right.$$
$$\left.\left. 45\, e^{2\sqrt{z}}\sqrt{2\,\pi}\ (16\, z - 39)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) - 45\, e^{2\sqrt{z}}\sqrt{2\,\pi}\ (16\, z - 39)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac30.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) =$$
$$-\frac{1}{2048\, z^{7/4}}\left(7\left(45\sqrt{\pi}\ (16\, z + 39)\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(9\,(128\, z - 195)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\ (64\, z - 585)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ac31.01

$${}_1F_2\left(\frac{3}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) = \frac{1}{1024\sqrt{2}\ z^{7/4}}$$
$$\left(15\left(2\,(1155 - 1328\, z)\sqrt{z}\ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1024\, z^2 + 11\,088\, z - 5775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 154\sqrt{z}\ (16\, z + 75)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac32.01

$${}_1F_2\left(\frac{3}{4};-\frac{3}{2},\frac{13}{4};-z\right)=-\frac{1}{1024\sqrt{2}\,z^{7/4}}\left(15\left(2\sqrt{z}\,(1328z+1155)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.(1024z^2-11\,088z-5775)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+154(75-16z)\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac33.01

$${}_1F_2\left(\frac{3}{4};-\frac{3}{2},\frac{15}{4};z\right)=\frac{1}{1\,048\,576\,z^{11/4}}\left(77e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-8192z^2-52\,416z^{3/2}-166\,608z-\right.\right.\right.$$
$$\left.\left.278\,460\sqrt{z}+e^{4\sqrt{z}}\left(8192z^2-52\,416z^{3/2}+166\,608z-278\,460\sqrt{z}+208\,845\right)-208\,845\right)+$$
$$\left.45e^{2\sqrt{z}}\sqrt{2\pi}\,(256z^2-1248z+4641)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-45e^{2\sqrt{z}}\sqrt{2\pi}\,(256z^2-1248z+4641)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac34.01

$${}_1F_2\left(\frac{3}{4};-\frac{3}{2},\frac{15}{4};-z\right)=-\frac{1}{262\,144\,z^{11/4}}\left(77\left(45\sqrt{\pi}\,(256z^2+1248z+4641)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\left(3276\sqrt{z}\,(16z-85)\cos\left(2\sqrt{z}\right)+(8192z^2-166\,608z+208\,845)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ac35.01

$${}_1F_2\left(\frac{3}{4};-\frac{3}{2},\frac{17}{4};z\right)=$$
$$\frac{1}{32\,768\sqrt{2}\,z^{11/4}}\left(195\left(2\sqrt{z}\,(1280z^2+44\,352z-39\,501)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-231\left(256z^2+1568z-855\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.22\sqrt{z}\,(256z^2+5376z+17\,955)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac36.01

$${}_1F_2\left(\frac{3}{4};-\frac{3}{2},\frac{17}{4};-z\right)=$$
$$\frac{1}{32\,768\sqrt{2}\,z^{11/4}}\left(195\left(2\sqrt{z}\,(1280z^2-44\,352z-39\,501)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-231\left(256z^2-1568z-855\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.22\sqrt{z}\,(256z^2-5376z+17\,955)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac37.01

$${}_1F_2\left(\frac{3}{4};-\frac{3}{2},\frac{19}{4};z\right)=$$
$$\frac{1}{67\,108\,864\,z^{15/4}}\left(1155e^{-2\sqrt{z}}\left(52\sqrt[4]{z}\left(11\,264z^{5/2}+95\,488z^2+411\,264z^{3/2}+1\,062\,432z+1\,649\,340\sqrt{z}+\right.\right.\right.$$
$$\left.\left.e^{4\sqrt{z}}\left(11\,264z^{5/2}-95\,488z^2+411\,264z^{3/2}-1\,062\,432z+1\,649\,340\sqrt{z}-1\,237\,005\right)+1\,237\,005\right)+\right.$$
$$15e^{2\sqrt{z}}\sqrt{2\pi}\,(4096z^3-29\,952z^2+222\,768z-1\,072\,071)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.15e^{2\sqrt{z}}\sqrt{2\pi}\,(4096z^3-29\,952z^2+222\,768z-1\,072\,071)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac38.01

$${}_1F_2\left(\frac{3}{4};-\frac{3}{2},\frac{19}{4};-z\right)=-\frac{1}{16\,777\,216\,z^{15/4}}\left(1155\left(15\sqrt{\pi}\left(4096z^3+29\,952z^2+222\,768z+1\,072\,071\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+26\sqrt[4]{z}\left(4\sqrt{z}\left(2816z^2-102\,816z+412\,335\right)\cos\left(2\sqrt{z}\right)+\left(-95\,488z^2+1\,062\,432z-1\,237\,005\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ac39.01

$${}_1F_2\left(\frac{3}{4};-\frac{3}{2},\frac{21}{4};z\right)=-\frac{1}{7\,340\,032\sqrt{2}\,z^{15/4}}\left(3315\left(6\sqrt{z}\left(4096z^3+335\,104z^2+4\,236\,848z-3\,936\,933\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-11\left(45\,056z^3+2\,091\,264z^2+9\,595\,152z-5\,368\,545\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\left(-4096z^3+464\,640z^2+6\,811\,728z+19\,684\,665\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac3a.01

$${}_1F_2\left(\frac{3}{4};-\frac{3}{2},\frac{21}{4};-z\right)=-\frac{1}{7\,340\,032\sqrt{2}\,z^{15/4}}\left(3315\left(6\sqrt{z}\left(4096z^3-335\,104z^2+4\,236\,848z+3\,936\,933\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-11\left(45\,056z^3-2\,091\,264z^2+9\,595\,152z+5\,368\,545\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\left(4096z^3+464\,640z^2-6\,811\,728z+19\,684\,665\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac3b.01

$${}_1F_2\left(\frac{3}{4};-\frac{3}{2},\frac{23}{4};z\right)=\frac{1}{17\,179\,869\,184\,z^{19/4}}\left(21\,945\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(245\,760z^{7/2}-8\,450\,048z^3-109\,304\,832z^{5/2}-642\,759\,936z^2-2\,303\,421\,120z^{3/2}-5\,403\,237\,840z-8\,040\,532\,500\sqrt{z}+e^{4\sqrt{z}}\left(245\,760z^{7/2}+8\,450\,048z^3-109\,304\,832z^{5/2}+642\,759\,936z^2-2\,303\,421\,120z^{3/2}+5\,403\,237\,840z-8\,040\,532\,500\sqrt{z}+6\,030\,399\,375\right)-6\,030\,399\,375\right)+15e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-638\,976z^3+7\,128\,576z^2-68\,612\,544z+402\,026\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-15e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4-638\,976z^3+7\,128\,576z^2-68\,612\,544z+402\,026\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac3c.01

$${}_1F_2\left(\frac{3}{4};-\frac{3}{2},\frac{23}{4};-z\right)=-\frac{1}{4\,294\,967\,296\,z^{19/4}}\left(21\,945\left(15\sqrt{\pi}\left(65\,536z^4+638\,976z^3+7\,128\,576z^2+68\,612\,544z+402\,026\,625\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(12\sqrt{z}\left(20\,480z^3+9\,108\,736z^2-191\,951\,760z+670\,044\,375\right)\cos\left(2\sqrt{z}\right)+\left(8\,450\,048z^3-642\,759\,936z^2+5\,403\,237\,840z-6\,030\,399\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{3}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.ac3d.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,514\,205\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(212\,992\,z^4 + 1\,058\,816\,z^3 + 73\,920\,z^2 - 2\,633\,400\,z + 1\,514\,205\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.$$
$$ 4\sqrt{z}\,\left(16\,384\,z^4 + 410\,624\,z^3 + 1\,129\,920\,z^2 + 614\,460\,z - 1\,514\,205\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 4\,z\left(65\,536\,z^3 + 623\,360\,z^2 + 1\,404\,480\,z + 1\,514\,205\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.ac3e.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) = $$
$$ \frac{1}{1\,514\,205\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(212\,992\,z^4 - 1\,058\,816\,z^3 + 73\,920\,z^2 + 2\,633\,400\,z + 1\,514\,205\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right. $$
$$ \left(16\,384\,z^4 - 410\,624\,z^3 + 1\,129\,920\,z^2 - 614\,460\,z - 1\,514\,205\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(-65\,536\,z^3 + 623\,360\,z^2 - 1\,404\,480\,z + 1\,514\,205\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.ac3f.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) = \frac{1}{208\,845} $$
$$ \left(\left(53\,248\,z^3 + 326\,400\,z^2 + 477\,360\,z + 208\,845\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(4096\,z^3 + 83\,712\,z^2 + 222\,000\,z + 208\,845\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ac3g.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{21}{4}; -z\right) = \frac{1}{208\,845}\left(\left(-53\,248\,z^3 + 326\,400\,z^2 - 477\,360\,z + 208\,845\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\,\left(-4096\,z^3 + 83\,712\,z^2 - 222\,000\,z + 208\,845\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ac3h.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{19}{4}; z\right) = \frac{1}{65\,835\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\,\left(\left(8192\,z^4 + 56\,320\,z^3 - 7392\,z^2 - 110\,880\,z + 65\,835\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(19\,456\,z^3 + 54\,912\,z^2 + 23\,100\,z - 65\,835\right)\right.\right. $$
$$ \left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2048\,z^3 + 30\,208\,z^2 + 64\,680\,z + 65\,835\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.ac3i.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{19}{4}; -z\right) = \frac{1}{65\,835\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(8192z^4 - 56\,320z^3 - 7392z^2 + 110\,880z + 65\,835\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(19\,456z^3 - 54\,912z^2 + 23\,100z + 65\,835\right)\right.\right.$$
$$\left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-2048z^3 + 30\,208z^2 - 64\,680z + 65\,835\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac3j.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{17}{4}; z\right) =$$
$$\frac{1}{9945}\left(\left(2048z^3 + 17\,920z^2 + 23\,400z + 9945\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4352z^2 + 11\,680z + 9945\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ac3k.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{9945}\left(\left(-2048z^3 + 17\,920z^2 - 23\,400z + 9945\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(4352z^2 - 11\,680z + 9945\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ac3l.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^3 - 1344z^2 - 5544z + 3465\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024z^3 + 3456z^2 + 924z - 3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +\right.\right.$$
$$\left.\left. 28z\left(256z^2 + 528z + 495\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac3m.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096z^3 - 1344z^2 + 5544z + 3465\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024z^3 - 3456z^2 + 924z + 3465\right)\right.\right.$$
$$\left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 28z\left(256z^2 - 528z + 495\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac3n.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) = \left(\frac{256z^2}{117} + \frac{32z}{13} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{585}\sqrt{z}\left(256z^2 + 800z + 585\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ac3o.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) = \left(\frac{256z^2}{117} - \frac{32z}{13} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{585}\sqrt{z}\left(256z^2 - 800z + 585\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.ac3p.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512z^3-224z^2-336z+231\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(320z^2+28z-231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^2+280z+231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac3q.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-512z^3-224z^2+336z+231\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(320z^2-28z-231\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^2-280z+231\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac3r.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{9}{4}; z\right) = \left(\frac{128z^2}{45}+\frac{8z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{9}\sqrt{z}\,(16z+9)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ac3s.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{9}{4}; -z\right) = \left(\frac{128z^2}{45}-\frac{8z}{3}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{9}(9-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ac3t.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{21\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-64z^2-24z+21\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-64z^2+4z+21\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z(32z+21)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac3u.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{21\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-64z^2+24z+21\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(64z^2+4z-21\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4(21-32z)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac3v.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) = \frac{1}{5}(16z+5)\left(\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ac3w.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{5}{4}; -z\right) = -\frac{1}{5}(16z-5)\left(\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ac3x.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{3}{4}; z\right) = \frac{\sqrt{2}\left(\left(32z^2+3\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(4z+3)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z(8z+3)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ac3y.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{3}{4}; -z\right) = \frac{\sqrt{2}\left(\left(32z^2+3\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(4z-3)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4(3-8z)\, z\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ac3z.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) = (8z+1)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ac40.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) = (1-8z)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ac41.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) = \frac{\sqrt{2}\left((1-8z) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4(1-4z)\sqrt{z}\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ac42.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{1}{4}; -z\right) = \frac{\sqrt{2}\left((8z+1) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(4z+1)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ac43.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{3}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ac44.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{3}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ac45.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{5}{4}; z\right) = \frac{\sqrt{2}\left((1-2z) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2z\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ac46.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{5}{4}; -z\right) = \frac{\sqrt{2}\left((2z+1) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2z\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ac47.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{7}{4}; z\right) =$$
$$-\frac{1}{64 z^{3/4}}\left(3e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}-5\right)+4\sqrt{z}+5\right) - 5e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 5e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac48.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{7}{4}; -z\right) = \frac{3}{16}\left(-8\cos\left(2\sqrt{z}\right) - \frac{5\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)}{z^{3/4}} + \frac{10\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.ac49.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{9}{4}; z\right) = -\frac{5\left(2\sqrt{z}\ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (32z-21)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 42\sqrt{z}\ I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{16\sqrt{2}\ z^{3/4}}$$

07.22.03.ac4a.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{9}{4}; -z\right) = \frac{5\left(-2\sqrt{z}\ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (32z+21)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 42\sqrt{z}\ J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{16\sqrt{2}\ z^{3/4}}$$

07.22.03.ac4b.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) =$$
$$-\frac{1}{4096\, z^{7/4}}\left(21\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-64z - 180\sqrt{z} + e^{4\sqrt{z}}\left(64z - 180\sqrt{z} + 135\right) - 135\right) - 5\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-27)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) + 5\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-27)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac4c.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = -\frac{21\left(5\sqrt{\pi}\,(16z+27)\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(180\sqrt{z}\cos\left(2\sqrt{z}\right) + (64z-135)\sin\left(2\sqrt{z}\right)\right)\right)}{1024\, z^{7/4}}$$

07.22.03.ac4d.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) =$$
$$-\frac{1}{512\sqrt{2}\ z^{7/4}}\left(15\left(2\sqrt{z}\,(272z-231)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 21\,(112z-55)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 14\sqrt{z}\,(16z+165)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac4e.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) =$$
$$-\frac{1}{512\sqrt{2}\ z^{7/4}}\left(15\left(2\sqrt{z}\,(272z+231)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 21\,(112z+55)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 14\,(165-16z)\sqrt{z}\ J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac4f.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) =$$
$$-\frac{1}{524\,288\, z^{11/4}}\left(231\, e^{-2\sqrt{z}}\left(36\sqrt[4]{z}\left(192z^{3/2} + 976z + 1820\sqrt{z} + e^{4\sqrt{z}}\left(192z^{3/2} - 976z + 1820\sqrt{z} - 1365\right) + 1365\right) -\right.$$
$$\left.5\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 - 864z + 2457\right)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) + 5\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 - 864z + 2457\right)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac4g.01

$${}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) = -\frac{1}{131\,072\, z^{11/4}}$$
$$\left(231\left(5\sqrt{\pi}\left(256z^2 + 864z + 2457\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 18\sqrt[4]{z}\left(4\sqrt{z}\,(48z-455)\cos\left(2\sqrt{z}\right) + (1365-976z)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ac4h.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) = -\frac{1}{16\,384\sqrt{2}\, z^{11/4}}\left(195\left(2\sqrt{z}\,\left(256 z^2 - 7392 z + 6237\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 21\left(256 z^2 + 2816 z - 1485\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(256 z^2 + 7392 z + 31\,185\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac4i.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) = -\frac{1}{16\,384\sqrt{2}\, z^{11/4}}\left(195\left(2\sqrt{z}\,\left(256 z^2 + 7392 z + 6237\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 21\left(256 z^2 - 2816 z - 1485\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(256 z^2 - 7392 z + 31\,185\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac4j.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) = \frac{1}{33\,554\,432 z^{15/4}}\left(1155 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(5120 z^{5/2} + 97\,024 z^2 + 614\,016 z^{3/2} + 1\,860\,768 z + 3\,063\,060\sqrt{z} + e^{4\sqrt{z}}\left(5120 z^{5/2} - 97\,024 z^2 + 614\,016 z^{3/2} - 1\,860\,768 z + 3\,063\,060\sqrt{z} - 2\,297\,295\right) + 2\,297\,295\right) + 5 e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 - 20\,736 z^2 + 117\,936 z - 459\,459\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 5 e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 - 20\,736 z^2 + 117\,936 z - 459\,459\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ac4k.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) = -\frac{1}{8\,388\,608 z^{15/4}}\left(1155\left(5\sqrt{\pi}\,\left(4096 z^3 + 20\,736 z^2 + 117\,936 z + 459\,459\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\,\left(1280 z^2 - 153\,504 z + 765\,765\right)\cos\left(2\sqrt{z}\right) + \left(-97\,024 z^2 + 1\,860\,768 z - 2\,297\,295\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.ac4l.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) = -\frac{1}{3\,670\,016\sqrt{2}\, z^{15/4}}\left(3315\left(2\sqrt{z}\,\left(4096 z^3 + 59\,136 z^2 + 1\,718\,640 z - 1\,540\,539\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4096 z^3 + 808\,192 z^2 + 4\,690\,224 z - 2\,567\,565\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-4096 z^3 + 109\,824 z^2 + 2\,361\,744 z + 7\,702\,695\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac4m.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) = -\frac{1}{3\,670\,016\sqrt{2}\, z^{15/4}} $$
$$ \left(3315\left(2\sqrt{z}\,\left(4096 z^3 - 59\,136 z^2 + 1\,718\,640 z + 1\,540\,539\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4096 z^3 - 808\,192 z^2 + 4\,690\,224 z + 2\,567\,565\right)\right.\right. $$
$$ \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4096 z^3 + 109\,824 z^2 - 2\,361\,744 z + 7\,702\,695\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac4n.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) = $$
$$ \frac{1}{8\,589\,934\,592 z^{19/4}}\left(21\,945 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(81\,920 z^{7/2} - 20\,480 z^3 - 6\,829\,056 z^{5/2} - 58\,076\,928 z^2 - 245\,044\,800 z^{3/2} - \right.\right.\right. $$
$$ \left. 624\,864\,240 z - 964\,863\,900\sqrt{z} + e^{4\sqrt{z}}\left(81\,920 z^{7/2} + 20\,480 z^3 - 6\,829\,056 z^{5/2} + 58\,076\,928 z^2 - \right.\right. $$
$$ \left.\left. 245\,044\,800 z^{3/2} + 624\,864\,240 z - 964\,863\,900\sqrt{z} + 723\,647\,925\right) - 723\,647\,925\right) + $$
$$ 5 e^{2\sqrt{z}}\sqrt{2\pi}\,\left(65\,536 z^4 - 442\,368 z^3 + 3\,773\,952 z^2 - 29\,405\,376 z + 144\,729\,585\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - $$
$$ \left.\left. 5 e^{2\sqrt{z}}\sqrt{2\pi}\,\left(65\,536 z^4 - 442\,368 z^3 + 3\,773\,952 z^2 - 29\,405\,376 z + 144\,729\,585\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ac4o.01

$$ {}_1F_2\left(\frac{3}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) = $$
$$ -\frac{1}{2\,147\,483\,648 z^{19/4}}\left(21\,945\left(5\sqrt{\pi}\,\left(65\,536 z^4 + 442\,368 z^3 + 3\,773\,952 z^2 + 29\,405\,376 z + 144\,729\,585\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right. $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\,\left(20\,480 z^3 + 1\,707\,264 z^2 - 61\,261\,200 z + 241\,215\,975\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left.\left(20\,480 z^3 - 58\,076\,928 z^2 + 624\,864\,240 z - 723\,647\,925\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{3}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.ac4p.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,514\,205\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(16\,384 z^4 + 650\,240 z^3 + 1\,848\,000 z^2 - 3\,423\,420 z + 1\,514\,205\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 4\sqrt{z}\,\left(81\,920 z^3 + 1\,077\,504 z^2 + 1\,404\,480 z - 1\,514\,205\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(4096 z^3 + 227\,072 z^2 + 1\,449\,840 z + 1\,514\,205\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac4q.01

$${}_1F_2\left(\frac{3}{4};\frac{1}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{1\,514\,205\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384\,z^4-650\,240\,z^3+1\,848\,000\,z^2+3\,423\,420\,z+1\,514\,205\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(81\,920\,z^3-1\,077\,504\,z^2+1\,404\,480\,z+1\,514\,205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(-4096\,z^3+227\,072\,z^2-1\,449\,840\,z+1\,514\,205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac4r.01

$${}_1F_2\left(\frac{3}{4};\frac{1}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{208\,845}\left(\left(4096\,z^3+157\,440\,z^2+621\,360\,z+208\,845\right)\cosh\left(2\sqrt{z}\right)-48\sqrt{z}\,\left(768\,z^2+8320\,z+11\,445\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ac4s.01

$${}_1F_2\left(\frac{3}{4};\frac{1}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{208\,845}\left(\left(-4096\,z^3+157\,440\,z^2-621\,360\,z+208\,845\right)\cos\left(2\sqrt{z}\right)+48\sqrt{z}\,\left(768\,z^2-8320\,z+11\,445\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ac4t.01

$${}_1F_2\left(\frac{3}{4};\frac{1}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{65\,835\sqrt[4]{z}}\left(\sqrt{2}\left(\left(25\,600\,z^3+88\,704\,z^2-152\,460\,z+65\,835\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(2048\,z^3+46\,080\,z^2+64\,680\,z-65\,835\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(7936\,z^2+62\,880\,z+65\,835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac4u.01

$${}_1F_2\left(\frac{3}{4};\frac{1}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{65\,835\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-25\,600\,z^3+88\,704\,z^2+152\,460\,z+65\,835\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(2048\,z^3-46\,080\,z^2+64\,680\,z+65\,835\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(7936\,z^2-62\,880\,z+65\,835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac4v.01

$${}_1F_2\left(\frac{3}{4};\frac{1}{2},-\frac{17}{4};z\right)=\frac{5\left(1280\,z^2+6048\,z+1989\right)\cosh\left(2\sqrt{z}\right)-4\sqrt{z}\,\left(256\,z^2+4640\,z+6705\right)\sinh\left(2\sqrt{z}\right)}{9945}$$

07.22.03.ac4w.01

$${}_1F_2\left(\frac{3}{4};\frac{1}{2},-\frac{17}{4};-z\right)=\frac{5\left(1280\,z^2-6048\,z+1989\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(256\,z^2-4640\,z+6705\right)\sin\left(2\sqrt{z}\right)}{9945}$$

07.22.03.ac4x.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024z^3+5376z^2-8316z+3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(768z^2+1232z-1155\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(256z^2+3264z+3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac4y.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1024z^3+5376z^2+8316z+3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(768z^2-1232z-1155\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(256z^2-3264z+3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac4z.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, -\frac{13}{4}; z\right) = \frac{1}{585}\left(\left(256z^2+1824z+585\right)\cosh\left(2\sqrt{z}\right)-32\sqrt{z}\,(32z+51)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ac50.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, -\frac{13}{4}; -z\right) = \frac{1}{585}\left(\left(256z^2-1824z+585\right)\cos\left(2\sqrt{z}\right)+32(51-32z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ac51.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, -\frac{11}{4}; z\right) = \frac{1}{231\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(7\left(64z^2-84z+33\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(128z^2+280z-231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z(208z+231)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac52.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, -\frac{11}{4}; -z\right) = \frac{1}{231\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(7\left(64z^2+84z+33\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(128z^2-280z-231\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4(231-208z)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac53.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, -\frac{9}{4}; z\right) = \left(\frac{16z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{4}{45}\sqrt{z}\,(16z+33)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ac54.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, -\frac{9}{4}; -z\right) = \left(1-\frac{16z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{4}{45}(33-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ac55.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{21\sqrt[4]{z}}\left(\sqrt{2}\left(\left(64z^2-60z+21\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\left(21-32z\right)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(16z+21\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac56.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{21\sqrt[4]{z}}\left(\sqrt{2}\left(\left(64z^2+60z+21\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(32z+21\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\left(21-16z\right)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac57.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, -\frac{5}{4}; z\right) = \left(\frac{16z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{16}{5}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ac58.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, -\frac{5}{4}; -z\right) = \left(1-\frac{16z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{16}{5}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ac59.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, -\frac{3}{4}; z\right) = \frac{\sqrt{2}\left(\left(3-12z\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(8z-3\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+12zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ac5a.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, -\frac{3}{4}; -z\right) = \frac{\sqrt{2}\left(3\left(4z+1\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(8z+3\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+12zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ac5b.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, -\frac{1}{4}; z\right) = \cosh\left(2\sqrt{z}\right)-4\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ac5c.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, -\frac{1}{4}; -z\right) = \cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ac5d.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, \frac{1}{4}; z\right) = \frac{\sqrt{2}\left(\left(4z+1\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ac5e.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, \frac{1}{4}; -z\right) = \frac{\sqrt{2}\left(\left(1-4z\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ac5f.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, \frac{3}{4}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.ac5g.01

$${}_1F_2\left(\frac{3}{4};\frac{1}{2},\frac{3}{4};-z\right)=\cos\left(2\sqrt{z}\right)$$

07.22.03.ac5h.01

$${}_1F_2\left(\frac{3}{4};\frac{1}{2},\frac{5}{4};z\right)=\frac{\sqrt{2}\ I_{\frac{1}{4}}\left(\sqrt{z}\right)\left(I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\ I_{\frac{5}{4}}\left(\sqrt{z}\right)\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ac5i.01

$${}_1F_2\left(\frac{3}{4};\frac{1}{2},\frac{5}{4};-z\right)=\frac{\sqrt{2}\ J_{\frac{1}{4}}\left(\sqrt{z}\right)\left(J_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\ J_{\frac{5}{4}}\left(\sqrt{z}\right)\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ac5j.01

$${}_1F_2\left(\frac{3}{4};\frac{1}{2},\frac{7}{4};z\right)=\frac{3\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1+e^{4\sqrt{z}}\right)+e^{2\sqrt{z}}\ \sqrt{2\pi}\ \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)-e^{2\sqrt{z}}\ \sqrt{2\pi}\ \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)}{32\,z^{3/4}}$$

07.22.03.ac5k.01

$${}_1F_2\left(\frac{3}{4};\frac{1}{2},\frac{7}{4};-z\right)=\frac{3\left(2\sqrt[4]{z}\ \sin\left(2\sqrt{z}\right)-\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)}{8\,z^{3/4}}$$

07.22.03.ac5l.01

$${}_1F_2\left(\frac{3}{4};\frac{1}{2},\frac{9}{4};z\right)=\frac{5\left(2\sqrt{z}\ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\ I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{8\sqrt{2}\ z^{3/4}}$$

07.22.03.ac5m.01

$${}_1F_2\left(\frac{3}{4};\frac{1}{2},\frac{9}{4};-z\right)=\frac{5\left(2\sqrt{z}\ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-6\sqrt{z}\ J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{8\sqrt{2}\ z^{3/4}}$$

07.22.03.ac5n.01

$${}_1F_2\left(\frac{3}{4};\frac{1}{2},\frac{11}{4};z\right)=\frac{1}{2048\,z^{7/4}}\left(21\,e^{-2\sqrt{z}}\left(20\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}-3\right)+4\sqrt{z}+3\right)+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\ \sqrt{2\pi}\ (16\,z-15)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)-e^{2\sqrt{z}}\ \sqrt{2\pi}\ (16\,z-15)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac5o.01

$${}_1F_2\left(\frac{3}{4};\frac{1}{2},\frac{11}{4};-z\right)=-\frac{21\left(40\,z^{3/4}\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\ (16\,z+15)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-30\sqrt[4]{z}\ \sin\left(2\sqrt{z}\right)\right)}{512\,z^{7/4}}$$

07.22.03.ac5p.01

$${}_1F_2\left(\frac{3}{4};\frac{1}{2},\frac{13}{4};z\right)=$$
$$-\frac{1}{256\sqrt{2}\ z^{7/4}}\left(15\left(2\sqrt{z}\ (16\,z-21)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-15\,(16\,z-7)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\,(105-16\,z)\sqrt{z}\ I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac5q.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, \frac{13}{4}; -z\right) =$$
$$-\frac{1}{256\sqrt{2}\, z^{7/4}}\left(15\left(2\sqrt{z}\,(16z+21)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 15\,(16z+7)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(16z+105)\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac5r.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, \frac{15}{4}; z\right) =$$
$$\frac{1}{262\,144\, z^{11/4}}\left(231\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(64z^{3/2} - 528z - 1260\sqrt{z} + e^{4\sqrt{z}}\left(64z^{3/2} + 528z - 1260\sqrt{z} + 945\right) - 945\right) + \right.\right.$$
$$\left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\,\left(256z^2 - 480z + 945\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\,\left(256z^2 - 480z + 945\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac5s.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, \frac{15}{4}; -z\right) = -\frac{1}{65\,536\, z^{11/4}}$$
$$\left(231\left(\sqrt{\pi}\,\left(256z^2 + 480z + 945\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\,(16z+315)\cos\left(2\sqrt{z}\right) + 3\,(176z-315)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ac5t.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, \frac{17}{4}; z\right) =$$
$$-\frac{1}{8192\sqrt{2}\, z^{11/4}}\left(39\left(2\sqrt{z}\,\left(256z^2 - 2688z + 2079\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(256z^2 - 6944z + 3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left. 2\sqrt{z}\,\left(256z^2 + 1344z + 10\,395\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac5u.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, \frac{17}{4}; -z\right) =$$
$$-\frac{1}{8192\sqrt{2}\, z^{11/4}}\left(39\left(2\sqrt{z}\,\left(256z^2 + 2688z + 2079\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(256z^2 + 6944z + 3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 2\sqrt{z}\,\left(256z^2 - 1344z + 10\,395\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac5v.01

$${}_1F_2\left(\frac{3}{4}; \frac{1}{2}, \frac{19}{4}; z\right) = \frac{1}{16\,777\,216\, z^{15/4}}$$
$$\left(1155\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024z^{5/2} - 256z^2 + 21\,888z^{3/2} + 98\,784z + 180\,180\sqrt{z} + e^{4\sqrt{z}}\left(1024z^{5/2} + 256z^2 + 21\,888z^{3/2} - \right.\right.\right.\right.$$
$$\left.\left.\left.\left. 98\,784z + 180\,180\sqrt{z} - 135\,135\right) + 135\,135\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(4096z^3 - 11\,520z^2 + 45\,360z - 135\,135\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\,\left(4096z^3 - 11\,520z^2 + 45\,360z - 135\,135\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac5w.01

$$ {}_1F_2\left(\frac{3}{4};\frac{1}{2},\frac{19}{4};-z\right)=-\frac{1}{4\,194\,304\,z^{15/4}}\left(1155\left(\sqrt{\pi}\,\left(4096\,z^3+11\,520\,z^2+45\,360\,z+135\,135\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right. $$
$$ \left.\left.2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(256\,z^2-5472\,z+45\,045\right)\cos\left(2\sqrt{z}\right)+\left(256\,z^2+98\,784\,z-135\,135\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.ac5x.01

$$ {}_1F_2\left(\frac{3}{4};\frac{1}{2},\frac{21}{4};z\right)=-\frac{1}{1\,835\,008\sqrt{2}\,z^{15/4}} $$
$$ \left(663\left(2\sqrt{z}\,\left(4096\,z^3-16\,128\,z^2+476\,784\,z-405\,405\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096\,z^3+130\,816\,z^2+1\,275\,120\,z-675\,675\right)\right.\right. $$
$$ \left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-4096\,z^3+13\,056\,z^2+498\,960\,z+2\,027\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac5y.01

$$ {}_1F_2\left(\frac{3}{4};\frac{1}{2},\frac{21}{4};-z\right)=-\frac{1}{1\,835\,008\sqrt{2}\,z^{15/4}} $$
$$ \left(663\left(2\sqrt{z}\,\left(4096\,z^3+16\,128\,z^2+476\,784\,z+405\,405\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096\,z^3-130\,816\,z^2+1\,275\,120\,z+675\,675\right)\right.\right. $$
$$ \left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4096\,z^3+13\,056\,z^2-498\,960\,z+2\,027\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac5z.01

$$ {}_1F_2\left(\frac{3}{4};\frac{1}{2},\frac{23}{4};z\right)= $$
$$ \frac{1}{4\,294\,967\,296\,z^{19/4}}\left(21\,945\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(16\,384\,z^{7/2}-4096\,z^3-58\,368\,z^{5/2}-1\,561\,344\,z^2-9\,472\,320\,z^{3/2}-\right.\right.\right. $$
$$ \left.28\,108\,080\,z-45\,945\,900\sqrt{z}\,+e^{4\sqrt{z}}\left(16\,384\,z^{7/2}+4096\,z^3-58\,368\,z^{5/2}+1\,561\,344\,z^2-\right.\right. $$
$$ \left.\left.9\,472\,320\,z^{3/2}+28\,108\,080\,z-45\,945\,900\sqrt{z}\,+34\,459\,425\right)-34\,459\,425\right)+ $$
$$ e^{2\sqrt{z}}\sqrt{2\pi}\,\left(65\,536\,z^4-245\,760\,z^3+1\,451\,520\,z^2-8\,648\,640\,z+34\,459\,425\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)- $$
$$ \left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\,\left(65\,536\,z^4-245\,760\,z^3+1\,451\,520\,z^2-8\,648\,640\,z+34\,459\,425\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ac60.01

$$ {}_1F_2\left(\frac{3}{4};\frac{1}{2},\frac{23}{4};-z\right)= $$
$$ -\frac{1}{1\,073\,741\,824\,z^{19/4}}\left(21\,945\left(\sqrt{\pi}\,\left(65\,536\,z^4+245\,760\,z^3+1\,451\,520\,z^2+8\,648\,640\,z+34\,459\,425\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right. $$
$$ 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(4096\,z^3+14\,592\,z^2-2\,368\,080\,z+11\,486\,475\right)\cos\left(2\sqrt{z}\right)+\right. $$
$$ \left.\left.\left.\left(4096\,z^3-1\,561\,344\,z^2+28\,108\,080\,z-34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{3}{4}$, $b_{1.} = \frac{3}{2}$

07.22.03.ac61.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{3}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,514\,205\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(102\,400 z^3 + 2\,059\,008 z^2 + 3\,160\,080 z - 1\,514\,205\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096 z^3 + 341\,760 z^2 + 3\,035\,760 z + 1\,514\,205\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 224 z\left(512 z^2 + 14\,160 z + 66\,195\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac62.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{3}{2}, -\frac{23}{4}; -z\right) = \frac{1}{1\,514\,205\sqrt[4]{z}}\left(\sqrt{2}\left(\left(102\,400 z^3 - 2\,059\,008 z^2 + 3\,160\,080 z + 1\,514\,205\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096 z^3 - 341\,760 z^2 + 3\,035\,760 z - 1\,514\,205\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 224 z\left(512 z^2 - 14\,160 z + 66\,195\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac63.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{3}{2}, -\frac{21}{4}; z\right) = \frac{1}{417\,690\sqrt{z}}\left(\left(4096 z^3 + 280\,320 z^2 + 2\,061\,360 z + 1\,514\,205\right)\sinh\left(2\sqrt{z}\right) - 96\sqrt{z}\left(512 z^2 + 10\,000 z + 27\,195\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.ac64.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{3}{2}, -\frac{21}{4}; -z\right) = \frac{1}{417\,690\sqrt{z}}\left(\left(-4096 z^3 + 280\,320 z^2 - 2\,061\,360 z + 1\,514\,205\right)\sin\left(2\sqrt{z}\right) - 96\sqrt{z}\left(512 z^2 - 10\,000 z + 27\,195\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.ac65.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{3}{2}, -\frac{19}{4}; z\right) = -\frac{1}{65\,835\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2048 z^3 + 75\,264 z^2 + 138\,600 z - 65\,835\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(3328 z^2 + 38\,752 z + 21\,945\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 8 z\left(256 z^2 + 13\,344 z + 71\,505\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac66.01

$$ {}_1F_2\left(\frac{3}{4};\frac{3}{2},-\frac{19}{4};-z\right)=\frac{1}{65\,835\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2048z^3-75\,264z^2+138\,600z+65\,835\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(3328z^2-38\,752z+21\,945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-8z\left(256z^2-13\,344z+71\,505\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac67.01

$$ {}_1F_2\left(\frac{3}{4};\frac{3}{2},-\frac{17}{4};z\right)=\frac{5\left(1792z^2+16\,992z+13\,167\right)\sinh\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2+9120z+27\,945\right)\cosh\left(2\sqrt{z}\right)}{19\,890\sqrt{z}} $$

07.22.03.ac68.01

$$ {}_1F_2\left(\frac{3}{4};\frac{3}{2},-\frac{17}{4};-z\right)=\frac{5\left(1792z^2-16\,992z+13\,167\right)\sin\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2-9120z+27\,945\right)\cos\left(2\sqrt{z}\right)}{19\,890\sqrt{z}} $$

07.22.03.ac69.01

$$ {}_1F_2\left(\frac{3}{4};\frac{3}{2},-\frac{15}{4};z\right)=\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-3072z^2-7392z+3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(256z^2+5184z+3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-960z(4z+27)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac6a.01

$$ {}_1F_2\left(\frac{3}{4};\frac{3}{2},-\frac{15}{4};-z\right)=\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-3072z^2+7392z+3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^2-5184z+3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+960z(4z-27)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac6b.01

$$ {}_1F_2\left(\frac{3}{4};\frac{3}{2},-\frac{13}{4};z\right)=\frac{\left(256z^2+4128z+3465\right)\sinh\left(2\sqrt{z}\right)-384\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right)}{1170\sqrt{z}} $$

07.22.03.ac6c.01

$$ {}_1F_2\left(\frac{3}{4};\frac{3}{2},-\frac{13}{4};-z\right)=\frac{384\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right)+\left(256z^2-4128z+3465\right)\sin\left(2\sqrt{z}\right)}{1170\sqrt{z}} $$

07.22.03.ac6d.01

$${}_1F_2\left(\frac{3}{4}; \frac{3}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-128z^2-504z+231\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(272z+231)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 8z(16z+177)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac6e.01

$${}_1F_2\left(\frac{3}{4}; \frac{3}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-128z^2+504z+231\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(272z-231)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 8z(16z-177)\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac6f.01

$${}_1F_2\left(\frac{3}{4}; \frac{3}{2}, -\frac{9}{4}; z\right) = \frac{3(80z+77)\sinh\left(2\sqrt{z}\right) - 4\sqrt{z}\,(16z+93)\cosh\left(2\sqrt{z}\right)}{90\sqrt{z}}$$

07.22.03.ac6g.01

$${}_1F_2\left(\frac{3}{4}; \frac{3}{2}, -\frac{9}{4}; -z\right) = \frac{4\sqrt{z}\,(16z-93)\cos\left(2\sqrt{z}\right) + 3(77-80z)\sin\left(2\sqrt{z}\right)}{90\sqrt{z}}$$

07.22.03.ac6h.01

$${}_1F_2\left(\frac{3}{4}; \frac{3}{2}, -\frac{7}{4}; z\right) = \frac{\sqrt{2}\left((21-48z) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(16z+21)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 96z\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{21\sqrt[4]{z}}$$

07.22.03.ac6i.01

$${}_1F_2\left(\frac{3}{4}; \frac{3}{2}, -\frac{7}{4}; -z\right) = \frac{\sqrt{2}\left(3(16z+7) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(16z-21)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 96z\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{21\sqrt[4]{z}}$$

07.22.03.ac6j.01

$${}_1F_2\left(\frac{3}{4}; \frac{3}{2}, -\frac{5}{4}; z\right) = \frac{(16z+21)\sinh\left(2\sqrt{z}\right) - 32\sqrt{z}\,\cosh\left(2\sqrt{z}\right)}{10\sqrt{z}}$$

07.22.03.ac6k.01

$${}_1F_2\left(\frac{3}{4}; \frac{3}{2}, -\frac{5}{4}; -z\right) = \frac{(21-16z)\sin\left(2\sqrt{z}\right) - 32\sqrt{z}\,\cos\left(2\sqrt{z}\right)}{10\sqrt{z}}$$

07.22.03.ac6l.01

$${}_1F_2\left(\frac{3}{4}; \frac{3}{2}, -\frac{3}{4}; z\right) = \frac{\sqrt{2}\left((3-8z) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 8z\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ac6m.01

$${}_1F_2\left(\frac{3}{4}; \frac{3}{2}, -\frac{3}{4}; -z\right) = \frac{\sqrt{2}\left((8z+3) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 8z\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ac6n.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},-\frac{1}{4};z\right)=\frac{3\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}-2\cosh\left(2\sqrt{z}\right)$$

07.22.03.ac6o.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},-\frac{1}{4};-z\right)=\frac{3\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}-2\cos\left(2\sqrt{z}\right)$$

07.22.03.ac6p.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{1}{4};z\right)=\frac{\sqrt{2}\ I_{\frac{1}{4}}\left(\sqrt{z}\right)\left(I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\sqrt{z}\ I_{\frac{5}{4}}\left(\sqrt{z}\right)\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ac6q.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{1}{4};-z\right)=\frac{\sqrt{2}\ J_{\frac{1}{4}}\left(\sqrt{z}\right)\left(J_{\frac{1}{4}}\left(\sqrt{z}\right)-4\sqrt{z}\ J_{\frac{5}{4}}\left(\sqrt{z}\right)\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ac6r.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{3}{4};z\right)=\frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.ac6s.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{3}{4};-z\right)=\frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.ac6t.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{5}{4};z\right)=\frac{\sqrt{2}\ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ac6u.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{5}{4};-z\right)=\frac{\sqrt{2}\ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.0100.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{7}{4};z\right)==-\frac{3}{8z^{3/4}}\sqrt{\frac{\pi}{2}}\left(\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)-\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)$$

07.22.03.0101.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{7}{4};z\right)==-\frac{3(-1)^{3/4}\sqrt{\pi}}{4z^{3/4}}S\left(\frac{2(-1)^{3/4}\sqrt[4]{z}}{\sqrt{\pi}}\right)$$

07.22.03.0102.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{7}{4};z\right)==-\frac{3\sqrt[4]{-1}\sqrt{\pi}}{4z^{3/4}}S\left(\frac{2\sqrt[4]{-1}\sqrt[4]{z}}{\sqrt{\pi}}\right)$$

07.22.03.ac6v.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{7}{4};-z\right)=\frac{3\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)}{4z^{3/4}}$$

07.22.03.ac6w.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{9}{4};z\right)=\frac{5\left(2\sqrt{z}\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{4\sqrt{2}\,z^{3/4}}$$

07.22.03.ac6x.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{9}{4};-z\right)=\frac{5\left(2\sqrt{z}\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{4\sqrt{2}\,z^{3/4}}$$

07.22.03.ac6y.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{11}{4};z\right)=-\frac{1}{1024\,z^{7/4}}\left(21\,e^{-2\sqrt{z}}\right.$$
$$\left.\left(4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}-3\right)+4\sqrt{z}+3\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-3)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-3)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac6z.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{11}{4};-z\right)=\frac{21\left(8z^{3/4}\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\,(16z+3)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-6\sqrt[4]{z}\,\sin\left(2\sqrt{z}\right)\right)}{256\,z^{7/4}}$$

07.22.03.ac70.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{128\sqrt{2}\,z^{7/4}}\left(15\left(2\sqrt{z}\,(16z-3)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\,(5-16z)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\,(15-16z)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac71.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{128\sqrt{2}\,z^{7/4}}\left(15\left(2\sqrt{z}\,(16z+3)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\,(16z+5)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,(16z+15)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac72.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{15}{4};z\right)=$$
$$-\frac{1}{131\,072\,z^{11/4}}\left(231\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(64z^{3/2}-16z-140\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}+16z-140\sqrt{z}+105\right)-105\right)+\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-96z+105\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-96z+105\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac73.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{32\,768\,z^{11/4}}\left(231\left(\sqrt{\pi}\left(256z^2+96z+105\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\,(16z+35)\cos\left(2\sqrt{z}\right)+(16z-105)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ac74.01

$$ {}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{17}{4};z\right)=\frac{1}{4096\sqrt{2}\,z^{11/4}}\left(39\left(2\sqrt{z}\,\left(256z^2-288z+189\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$

$$\left.\left.3\left(256z^2-704z+315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(256z^2-96z+945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac75.01

$$ {}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{17}{4};-z\right)=\frac{1}{4096\sqrt{2}\,z^{11/4}}\left(39\left(2\sqrt{z}\,\left(256z^2+288z+189\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$

$$\left.\left.3\left(256z^2+704z+315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(256z^2+96z+945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac76.01

$$ {}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{19}{4};z\right)=$$

$$-\frac{1}{8\,388\,608\,z^{15/4}}\left(1155\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(1024z^{5/2}-256z^2-384z^{3/2}+6048z+13\,860\sqrt{z}\,+e^{4\sqrt{z}}\,\left(1024z^{5/2}+256z^2-384\right.\right.\right.\right.$$

$$\left.\left.\left.\left.z^{3/2}-6048z+13\,860\sqrt{z}\,-10\,395\right)+10\,395\right)+e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096z^3-2304z^2+5040z-10\,395\right)\right.\right.$$

$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096z^3-2304z^2+5040z-10\,395\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac77.01

$$ {}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{19}{4};-z\right)=\frac{1}{2\,097\,152\,z^{15/4}}\left(1155\left(\sqrt{\pi}\,\left(4096z^3+2304z^2+5040z+10\,395\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$

$$\left.\left.2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(256z^2+96z+3465\right)\cos\left(2\sqrt{z}\right)+\left(256z^2+6048z-10\,395\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ac78.01

$$ {}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{21}{4};z\right)=\frac{1}{917\,504\sqrt{2}\,z^{15/4}}$$

$$\left(663\left(2\sqrt{z}\,\left(4096z^3-5376z^2+34\,608z-27\,027\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3-1792z^2+89\,712z-45\,045\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(-4096z^3+2304z^2+19\,152z+135\,135\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac79.01

$$ {}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{21}{4};-z\right)=\frac{1}{917\,504\sqrt{2}\,z^{15/4}}$$

$$\left(663\left(2\sqrt{z}\,\left(4096z^3+5376z^2+34\,608z+27\,027\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3+1792z^2+89\,712z+45\,045\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(4096z^3+2304z^2-19\,152z+135\,135\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac7a.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{23}{4};z\right)=-\frac{1}{2\,147\,483\,648\,z^{19/4}}$$
$$\left(21\,945\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384\,z^{7/2}-4096\,z^3-9216\,z^{5/2}-768\,z^2-348\,480\,z^{3/2}-1\,496\,880\,z-2\,702\,700\sqrt{z}+\right.\right.\right.$$
$$\left.\left.\left.e^{4\sqrt{z}}\left(16\,384\,z^{7/2}+4096\,z^3-9216\,z^{5/2}+768\,z^2-348\,480\,z^{3/2}+1\,496\,880\,z-2\,702\,700\sqrt{z}+2\,027\,025\right)-\right.\right.\right.$$
$$\left.\left.\left.2\,027\,025\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-49\,152\,z^3+161\,280\,z^2-665\,280\,z+2\,027\,025\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\right.$$
$$\left.e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536\,z^4-49\,152\,z^3+161\,280\,z^2-665\,280\,z+2\,027\,025\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac7b.01

$${}_1F_2\left(\frac{3}{4};\frac{3}{2},\frac{23}{4};-z\right)=$$
$$\frac{1}{536\,870\,912\,z^{19/4}}\left(21\,945\left(\sqrt{\pi}\left(65\,536\,z^4+49\,152\,z^3+161\,280\,z^2+665\,280\,z+2\,027\,025\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\right.\right.$$
$$\left(4\sqrt{z}\left(4096\,z^3+2304\,z^2-87\,120\,z+675\,675\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left.\left.\left(4096\,z^3-768\,z^2+1\,496\,880\,z-2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{3}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.ac7c.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{23}{4};z\right)=\frac{1}{504\,735\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(4096\,z^3+514\,304\,z^2+7\,039\,536\,z+504\,735\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-256\sqrt{z}\left(544\,z^2+22\,106\,z+149\,835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096\,z^3+621\,824\,z^2+11\,765\,040\,z+50\,470\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac7d.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{23}{4};-z\right)=\frac{1}{504\,735\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-4096\,z^3+514\,304\,z^2-7\,039\,536\,z+504\,735\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+256\sqrt{z}\left(544\,z^2-22\,106\,z+149\,835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096\,z^3-621\,824\,z^2+11\,765\,040\,z-50\,470\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac7e.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{21}{4};z\right)=\frac{1}{556\,920\,z^{3/2}}\left(2\sqrt{z}\left(4096\,z^3+470\,784\,z^2+6\,335\,280\,z+13\,627\,845\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(126\,976\,z^3+4\,273\,920\,z^2+24\,227\,280\,z+13\,627\,845\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ac7f.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{21}{4};-z\right)=\frac{1}{556\,920\,z^{3/2}}\left(2\sqrt{z}\,\left(4096\,z^3-470\,784\,z^2+6\,335\,280\,z-13\,627\,845\right)\cos\left(2\sqrt{z}\right)+\left(-126\,976\,z^3+4\,273\,920\,z^2-24\,227\,280\,z+13\,627\,845\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ac7g.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{19}{4};z\right)=\frac{1}{21\,945\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(7\left(1792\,z^2+33\,312\,z+3135\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\,\left(256\,z^2+20\,384\,z+163\,065\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+5\left(2816\,z^2+73\,248\,z+348\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac7h.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{19}{4};-z\right)=\frac{1}{21\,945\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(7\left(1792\,z^2-33\,312\,z+3135\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\,\left(256\,z^2-20\,384\,z+163\,065\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-5\left(2816\,z^2-73\,248\,z+348\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac7i.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{17}{4};z\right)=\frac{1}{26\,520\,z^{3/2}}\left(2\sqrt{z}\,\left(12\,032\,z^2+218\,080\,z+504\,735\right)\cosh\left(2\sqrt{z}\right)-\left(2048\,z^3+133\,120\,z^2+877\,800\,z+504\,735\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ac7j.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{17}{4};-z\right)=\frac{1}{26\,520\,z^{3/2}}\left(\left(-2048\,z^3+133\,120\,z^2-877\,800\,z+504\,735\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(12\,032\,z^2-218\,080\,z+504\,735\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ac7k.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{15}{4};z\right)=\frac{1}{1155\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(256\,z^2+8736\,z+1155\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-2432\sqrt{z}\,\left(2\,z+21\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(256\,z^2+12\,576\,z+69\,615\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac7l.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{15}{4};-z\right)=\frac{1}{1155\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(256z^2-8736z+1155\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-2432\sqrt{z}\,(2z-21)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-256z^2+12\,576z-69\,615\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac7m.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{13}{4};z\right)=\frac{2\sqrt{z}\,\left(256z^2+8480z+21\,945\right)\cosh\left(2\sqrt{z}\right)-\left(4352z^2+36\,960z+21\,945\right)\sinh\left(2\sqrt{z}\right)}{1560z^{3/2}}$$

07.22.03.ac7n.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{13}{4};-z\right)=\frac{\left(4352z^2-36\,960z+21\,945\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(256z^2-8480z+21\,945\right)\cos\left(2\sqrt{z}\right)}{1560z^{3/2}}$$

07.22.03.ac7o.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{77\sqrt[4]{z}}\left(\sqrt{2}\left(\left(368z+77\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\,(16z+293)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+(464z+3315)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac7p.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{77\sqrt[4]{z}}\left(\sqrt{2}\left(\left(77-368z\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\,(16z-293)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+(464z-3315)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac7q.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{9}{4};z\right)=\frac{2\sqrt{z}\,(368z+1155)\cosh\left(2\sqrt{z}\right)-\left(128z^2+1848z+1155\right)\sinh\left(2\sqrt{z}\right)}{120z^{3/2}}$$

07.22.03.ac7r.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{9}{4};-z\right)=\frac{2\sqrt{z}\,(368z-1155)\cos\left(2\sqrt{z}\right)+\left(128z^2-1848z+1155\right)\sin\left(2\sqrt{z}\right)}{120z^{3/2}}$$

07.22.03.ac7s.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{7}{4};z\right)=\frac{\sqrt{2}\left(\left(16z+7\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-128\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+(16z+195)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{7\sqrt[4]{z}}$$

07.22.03.ac7t.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{7}{4};-z\right)=\frac{\sqrt{2}\left(\left(7-16z\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+128\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+(16z-195)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{7\sqrt[4]{z}}$$

07.22.03.ac7u.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{5}{4};z\right)=\frac{6\sqrt{z}\ (16z+77)\cosh\left(2\sqrt{z}\right)-21\,(16z+11)\sinh\left(2\sqrt{z}\right)}{40\,z^{3/2}}$$

07.22.03.ac7v.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{5}{4};-z\right)=\frac{6\sqrt{z}\ (16z-77)\cos\left(2\sqrt{z}\right)+21\,(11-16z)\sin\left(2\sqrt{z}\right)}{40\,z^{3/2}}$$

07.22.03.ac7w.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{3}{4};z\right)=\frac{\sqrt{2}\left(I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\ I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+15\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ac7x.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{3}{4};-z\right)=\frac{2\,\Gamma\left(\frac{5}{4}\right)^2J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\ J_{\frac{5}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{1}{4}\right)^2J_{\frac{1}{4}}\left(\sqrt{z}\right)-30\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{5}{4}\right)^2}{\sqrt{2}\ \sqrt[4]{z}}$$

07.22.03.ac7y.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{1}{4};z\right)=-\frac{3\left((8z+7)\sinh\left(2\sqrt{z}\right)-14\sqrt{z}\ \cosh\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.ac7z.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},-\frac{1}{4};-z\right)=-\frac{3\left(14\sqrt{z}\ \cos\left(2\sqrt{z}\right)+(8z-7)\sin\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.ac80.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},\frac{1}{4};z\right)=\frac{\sqrt{2}\left(I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+5\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ac81.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},\frac{1}{4};-z\right)=\frac{\sqrt{2}\left(J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-5\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ac82.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},\frac{3}{4};z\right)=\frac{3\cosh\left(2\sqrt{z}\right)}{4z}-\frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.ac83.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},\frac{3}{4};-z\right)=\frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\ \cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.ac84.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},\frac{5}{4};z\right)=\frac{\sqrt{2}\left(I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ac85.01

$$ {}_1F_2\left(\frac{3}{4};\frac{5}{2},\frac{5}{4};-z\right)=\frac{\sqrt{2}\left(J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}} $$

07.22.03.ac86.01

$$ {}_1F_2\left(\frac{3}{4};\frac{5}{2},\frac{7}{4};z\right)= $$

$$ -\frac{1}{16\,z^{3/2}}\left(3\,e^{-2\sqrt{z}}\left(2\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{4\sqrt{z}}-2\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)+2\,e^{4\sqrt{z}}\,\sqrt{z}+2\sqrt{z}+1\right)\right) $$

07.22.03.ac87.01

$$ {}_1F_2\left(\frac{3}{4};\frac{5}{2},\frac{7}{4};-z\right)=\frac{3\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)+4\sqrt{\pi}\,z^{3/4}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\sin\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}} $$

07.22.03.ac88.01

$$ {}_1F_2\left(\frac{3}{4};\frac{5}{2},\frac{9}{4};z\right)=\frac{5\left(2\sqrt{z}\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{2\sqrt{2}\,z^{3/4}} $$

07.22.03.ac89.01

$$ {}_1F_2\left(\frac{3}{4};\frac{5}{2},\frac{9}{4};-z\right)=\frac{5\left(2\sqrt{z}\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{2\sqrt{2}\,z^{3/4}} $$

07.22.03.ac8a.01

$$ {}_1F_2\left(\frac{3}{4};\frac{5}{2},\frac{11}{4};z\right)=-\frac{1}{512\,z^{7/4}}\left(21\,e^{-2\sqrt{z}}\right. $$
$$ \left.\left(4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}+1\right)+4\sqrt{z}-1\right)+e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z+9)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z+9)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ac8b.01

$$ {}_1F_2\left(\frac{3}{4};\frac{5}{2},\frac{11}{4};-z\right)=\frac{21\left(\sqrt{\pi}\,(16\,z-9)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\,\cos\left(2\sqrt{z}\right)+\sin\left(2\sqrt{z}\right)\right)\right)}{128\,z^{7/4}} $$

07.22.03.ac8c.01

$$ {}_1F_2\left(\frac{3}{4};\frac{5}{2},\frac{13}{4};z\right)= $$

$$ \frac{1}{64\sqrt{2}\,z^{7/4}}\left(15\left(2\sqrt{z}\,(16\,z+3)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\,(16\,z+5)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,(16\,z+15)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac8d.01

$$ {}_1F_2\left(\frac{3}{4};\frac{5}{2},\frac{13}{4};-z\right)= $$

$$ \frac{1}{64\sqrt{2}\,z^{7/4}}\left(15\left(2\sqrt{z}\,(16\,z-3)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\,(5-16\,z)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,(16\,z-15)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac8e.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{5}{2}, \frac{15}{4}; z\right) = $$
$$ -\frac{1}{65\,536\, z^{11/4}}\left(231\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(64\, z^{3/2}-16\, z+84\sqrt{z}+e^{4\sqrt{z}}\left(64\, z^{3/2}+16\, z+84\sqrt{z}-63\right)+63\right)+e^{2\sqrt{z}}\right.\right. $$
$$ \left.\left.\sqrt{2\pi}\left(256\, z^2+288\, z-63\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2+288\, z-63\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ac8f.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{5}{2}, \frac{15}{4}; -z\right) = $$
$$ \frac{1}{16\,384\, z^{11/4}}\left(231\left(\sqrt{\pi}\left(256\, z^2-288\, z-63\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\,(16\, z-21)\cos\left(2\sqrt{z}\right)+(16\, z+63)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.ac8g.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{5}{2}, \frac{17}{4}; z\right) = \frac{1}{2048\sqrt{2}\, z^{11/4}}\left(39\left(2\sqrt{z}\left(256\, z^2+192\, z-81\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ \left.\left.3\left(256\, z^2+416\, z-135\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(256\, z^2+384\, z-405\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac8h.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{5}{2}, \frac{17}{4}; -z\right) = \frac{1}{2048\sqrt{2}\, z^{11/4}}\left(39\left(2\sqrt{z}\left(256\, z^2-192\, z-81\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ \left.\left.3\left(-256\, z^2+416\, z+135\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(256\, z^2-384\, z-405\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac8i.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{5}{2}, \frac{19}{4}; z\right) = $$
$$ -\frac{1}{4\,194\,304\, z^{15/4}}\left(1155\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024\, z^{5/2}-256\, z^2+1920\, z^{3/2}-672\, z-4620\sqrt{z}+e^{4\sqrt{z}}\left(1024\, z^{5/2}+256\, z^2+\right.\right.\right.\right. $$
$$ \left.\left.\left.\left.1920\, z^{3/2}+672\, z-4620\sqrt{z}+3465\right)-3465\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\, z^3+6912\, z^2-3024\, z+3465\right)\right.\right. $$
$$ \left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\, z^3+6912\, z^2-3024\, z+3465\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ac8j.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{5}{2}, \frac{19}{4}; -z\right) = \frac{1}{1\,048\,576\, z^{15/4}}\left(1155\left(\sqrt{\pi}\left(4096\, z^3-6912\, z^2-3024\, z-3465\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right. $$
$$ \left.\left.2\sqrt[4]{z}\left(4\sqrt{z}\left(256\, z^2-480\, z-1155\right)\cos\left(2\sqrt{z}\right)+\left(256\, z^2-672\, z+3465\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.ac8k.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},\frac{21}{4};z\right)=\frac{1}{458\,752\sqrt{2}\,z^{15/4}}$$
$$\left(663\left(2\sqrt{z}\,\left(4096z^3+5376z^2-11\,088z+7371\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(4096z^3+8960z^2-27\,216z+12\,285\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(4096z^3+8448z^2-3024z+36\,855\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac8l.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},\frac{21}{4};-z\right)=\frac{1}{458\,752\sqrt{2}\,z^{15/4}}$$
$$\left(663\left(2\sqrt{z}\,\left(4096z^3-5376z^2-11\,088z-7371\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-4096z^3+8960z^2+27\,216z+12\,285\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(4096z^3-8448z^2-3024z-36\,855\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac8m.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},\frac{23}{4};z\right)=-\frac{1}{1\,073\,741\,824\,z^{19/4}}$$
$$\left(21\,945\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(16\,384z^{7/2}-4096z^3+39\,936z^{5/2}-13\,056z^2-10\,560z^{3/2}+277\,200z+623\,700\sqrt{z}\,+\right.\right.\right.$$
$$\left.e^{4\sqrt{z}}\left(16\,384z^{7/2}+4096z^3+39\,936z^{5/2}+13\,056z^2-10\,560z^{3/2}-277\,200z+623\,700\sqrt{z}\,-467\,775\right)+\right.$$
$$\left.\left.467\,775\right)+e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536z^4+147\,456z^3-96\,768z^2+221\,760z-467\,775\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\right.$$
$$\left.\left.e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(65\,536z^4+147\,456z^3-96\,768z^2+221\,760z-467\,775\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac8n.01

$${}_1F_2\left(\frac{3}{4};\frac{5}{2},\frac{23}{4};-z\right)=$$
$$\frac{1}{268\,435\,456\,z^{19/4}}\left(21\,945\left(\sqrt{\pi}\,\left(65\,536z^4-147\,456z^3-96\,768z^2-221\,760z-467\,775\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(4\sqrt{z}\,\right.\right.\right.$$
$$\left.\left.\left.\left(4096z^3-9984z^2-2640z-155\,925\right)\cos\left(2\sqrt{z}\,\right)+\left(4096z^3-13\,056z^2-277\,200z+467\,775\right)\sin\left(2\sqrt{z}\,\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{3}{4}$, $b_{1.} = \frac{7}{2}$

07.22.03.ac8o.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{23}{4};z\right)=\frac{1}{201\,894\sqrt{2}\,z^{5/4}}$$
$$\left(\left(-16z\left(10\,496z^2+628\,224z+7\,112\,787\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4096z^3+892\,160z^2+24\,629\,808z+142\,760\,475\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\left(180\,224z^3+12\,864\,768z^2+184\,579\,200z+713\,802\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac8p.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{23}{4};-z\right)=-\frac{1}{201\,894\sqrt{2}\,z^{5/4}}$$
$$\left(\left(16z\left(10\,496z^2-628\,224z+7\,112\,787\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4096z^3-892\,160z^2+24\,629\,808z-142\,760\,475\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-180\,224z^3+12\,864\,768z^2-184\,579\,200z+713\,802\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac8q.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{21}{4};z\right)=\frac{1}{445\,536z^{5/2}}\left(\left(16\,384z^4+3\,001\,344z^3+69\,220\,800z^2+334\,855\,620z+181\,055\,655\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.6\sqrt{z}\left(53\,248z^3+2\,925\,312z^2+31\,149\,360z+60\,351\,885\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.ac8r.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{21}{4};-z\right)=\frac{1}{445\,536z^{5/2}}\left(6\sqrt{z}\left(53\,248z^3-2\,925\,312z^2+31\,149\,360z-60\,351\,885\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(16\,384z^4-3\,001\,344z^3+69\,220\,800z^2-334\,855\,620z+181\,055\,655\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ac8s.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{19}{4};z\right)=$$
$$-\frac{1}{8778\sqrt{2}\,z^{5/4}}\left(\left(8z\left(256z^2+31\,008z+430\,413\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(17\,152z^2+667\,296z+4\,326\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(2048z^3+301\,056z^2+5\,171\,400z+21\,630\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac8t.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{8778\sqrt{2}\,z^{5/4}}\left(\left(-8z\left(256z^2-31\,008z+430\,413\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(17\,152z^2-667\,296z+4\,326\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(2048z^3-301\,056z^2+5\,171\,400z-21\,630\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac8u.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{17}{4};z\right)=\frac{1}{21\,216\,z^{5/2}}\left(\left(62\,464\,z^3+2\,006\,400\,z^2+10\,671\,540\,z+5\,840\,505\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(2048\,z^3+226\,816\,z^2+2\,884\,200\,z+5\,840\,505\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.ac8v.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{17}{4};-z\right)=\frac{1}{21\,216\,z^{5/2}}\left(2\sqrt{z}\left(2048\,z^3-226\,816\,z^2+2\,884\,200\,z-5\,840\,505\right)\cos\left(2\sqrt{z}\right)+\left(-62\,464\,z^3+2\,006\,400\,z^2-10\,671\,540\,z+5\,840\,505\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ac8w.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{15}{4};z\right)=\frac{1}{462\sqrt{2}\,z^{5/4}}\left(\left(-48\,z\,(128\,z+2467)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(256\,z^2+19\,488\,z+149\,175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-9\left(768\,z^2+17\,680\,z+82\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac8x.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{15}{4};-z\right)=\frac{1}{462\sqrt{2}\,z^{5/4}}\left(\left(48\,z\,(128\,z-2467)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(256\,z^2-19\,488\,z+149\,175\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-9\left(768\,z^2-17\,680\,z+82\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac8y.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{13}{4};z\right)=\frac{1}{1248\,z^{5/2}}\left(\left(1024\,z^3+63\,360\,z^2+388\,740\,z+216\,315\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(5888\,z^2+100\,320\,z+216\,315\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.ac8z.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{13}{4};-z\right)=\frac{1}{1248\,z^{5/2}}\left(\left(-1024\,z^3+63\,360\,z^2-388\,740\,z+216\,315\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(5888\,z^2-100\,320\,z+216\,315\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ac90.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{11}{4};z\right)=-\frac{1}{154\sqrt{2}\,z^{5/4}}\left(5\left(8\,z\,(16\,z+589)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(592\,z+5967\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(128\,z^2+5304\,z+29\,835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac91.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{11}{4};-z\right)=\frac{1}{154\sqrt{2}\,z^{5/4}}\left(5\left(8\,z\,(16\,z-589)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(592\,z-5967\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-128\,z^2+5304\,z-29\,835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac92.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{9}{4};z\right)=\frac{33\left(64z^2+500z+285\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(128z^2+3960z+9405\right)\cosh\left(2\sqrt{z}\right)}{96\,z^{5/2}}$$

07.22.03.ac93.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{9}{4};-z\right)=\frac{33\left(64z^2-500z+285\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(128z^2-3960z+9405\right)\cos\left(2\sqrt{z}\right)}{96\,z^{5/2}}$$

07.22.03.ac94.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{7}{4};z\right)=\frac{5\left(-1552\,z\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(112z+1989\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-39\left(32z+255\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{98\sqrt{2}\,z^{5/4}}$$

07.22.03.ac95.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{7}{4};-z\right)=$$

$$-\frac{1}{98\sqrt{2}\,z^{5/4}}\left(5\left(1552\,z\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(112z-1989\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+39\left(255-32z\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac96.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{5}{4};z\right)=\frac{3\left(\left(64z^2+836z+495\right)\sinh\left(2\sqrt{z}\right)-22\sqrt{z}\,\left(16z+45\right)\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.ac97.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{5}{4};-z\right)=\frac{3\left(22\sqrt{z}\,\left(16z-45\right)\cos\left(2\sqrt{z}\right)+\left(64z^2-836z+495\right)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.ac98.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{3}{4};z\right)=-\frac{5\left(88\,z\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-468\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+3\left(8z+195\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{14\sqrt{2}\,z^{5/4}}$$

07.22.03.ac99.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{3}{4};-z\right)=-\frac{5\left(88\,z\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-468\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+3\left(195-8z\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{14\sqrt{2}\,z^{5/4}}$$

07.22.03.ac9a.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{1}{4};z\right)=-\frac{15\left(2\sqrt{z}\,\left(8z+33\right)\cosh\left(2\sqrt{z}\right)-\left(52z+33\right)\sinh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.ac9b.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},-\frac{1}{4};-z\right)=\frac{15\left(2\sqrt{z}\,\left(8z-33\right)\cos\left(2\sqrt{z}\right)+\left(33-52z\right)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.ac9c.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},\frac{1}{4};z\right)=\frac{5\left(-16\,z\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+108\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(16z-135\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{14\sqrt{2}\,z^{5/4}}$$

07.22.03.ac9d.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},\frac{1}{4};-z\right)=-\frac{5\left(16\,z\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-108\sqrt{z}\;J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+(16\,z+135)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{14\sqrt{2}\;z^{5/4}}$$

07.22.03.ac9e.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},\frac{3}{4};z\right)=\frac{15\left((4\,z+3)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\;\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.ac9f.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},\frac{3}{4};-z\right)=-\frac{15\left(6\sqrt{z}\;\cos\left(2\sqrt{z}\right)+(4\,z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.ac9g.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},\frac{5}{4};z\right)=\frac{5\left(8\,z\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+(15-8\,z)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{14\sqrt{2}\;z^{5/4}}$$

07.22.03.ac9h.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},\frac{5}{4};-z\right)=\frac{5\left(8\,z\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\;J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+(8\,z+15)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{14\sqrt{2}\;z^{5/4}}$$

07.22.03.ac9i.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},\frac{7}{4};z\right)=$$
$$-\frac{1}{448\,z^{5/2}}\left(15\,e^{-2\sqrt{z}}\left(16\,e^{2\sqrt{z}}\;\sqrt{2\,\pi}\;\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{7/4}-16\,e^{2\sqrt{z}}\;\sqrt{2\,\pi}\;\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{7/4}+16\,e^{4\sqrt{z}}\;z^{3/2}+\right.\right.$$
$$\left.\left.16\,z^{3/2}+4\,e^{4\sqrt{z}}\;z-4\,z-18\,e^{4\sqrt{z}}\;\sqrt{z}\;-18\sqrt{z}\;+9\,e^{4\sqrt{z}}\;-9\right)\right)$$

07.22.03.ac9j.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},\frac{7}{4};-z\right)=\frac{15\left(32\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+2\,(8\,z+9)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+(4\,z-9)\sin\left(2\sqrt{z}\right)\right)}{224\,z^{5/2}}$$

07.22.03.ac9k.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},\frac{9}{4};z\right)=\frac{25\left(4\,z\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-6\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-(4\,z+3)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{14\sqrt{2}\;z^{5/4}}$$

07.22.03.ac9l.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},\frac{9}{4};-z\right)=\frac{25\left(4\,z\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-6\sqrt{z}\;J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+(4\,z-3)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{14\sqrt{2}\;z^{5/4}}$$

07.22.03.ac9m.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},\frac{11}{4};z\right)=$$
$$-\frac{1}{256\,z^{5/2}}\left(15\,e^{-2\sqrt{z}}\left(4\left(4\,z^{3/2}-z+6\sqrt{z}+e^{4\sqrt{z}}\left(4\,z^{3/2}+z+6\sqrt{z}-3\right)+3\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\,(16\,z+21)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\,z^{3/4}\,(16\,z+21)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ac9n.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},\frac{11}{4};-z\right)=\frac{15\left(\sqrt{\pi}\,z^{3/4}\,(16\,z-21)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\left(2\sqrt{z}\,(2\,z-3)\cos\left(2\sqrt{z}\right)+(z+3)\sin\left(2\sqrt{z}\right)\right)\right)}{64\,z^{5/2}}$$

07.22.03.ac9o.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{224\sqrt{2}\,z^{7/4}}\left(75\left(2\sqrt{z}\,(16\,z+21)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\,(16\,z+35)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,(16\,z+33)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac9p.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{224\sqrt{2}\,z^{7/4}}\left(75\left(2\sqrt{z}\,(16\,z-21)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\,(35-16\,z)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,(16\,z-33)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac9q.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},\frac{15}{4};z\right)=$$
$$-\frac{1}{32\,768\,z^{11/4}}\left(165\,e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\sqrt{2\pi}\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)(16\,z+21)^2-e^{2\sqrt{z}}\sqrt{2\pi}\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)(16\,z+21)^2+\right.\right.$$
$$\left.\left.4\sqrt[4]{z}\left(64\,z^{3/2}-16\,z+180\sqrt{z}+e^{4\sqrt{z}}\left(64\,z^{3/2}+16\,z+180\sqrt{z}+57\right)-57\right)\right)\right)$$

07.22.03.ac9r.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},\frac{15}{4};-z\right)=\frac{165\left(\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)(21-16\,z)^2+2\sqrt[4]{z}\left(4\sqrt{z}\,(16\,z-45)\cos\left(2\sqrt{z}\right)+(16\,z-57)\sin\left(2\sqrt{z}\right)\right)\right)}{8192\,z^{11/4}}$$

07.22.03.ac9s.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},\frac{17}{4};z\right)=\frac{1}{7168\sqrt{2}\,z^{11/4}}\left(195\left(2\sqrt{z}\left(256\,z^2+672\,z+189\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.3\left(256\,z^2+896\,z+315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(256\,z^2+864\,z+945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac9t.01

$${}_1F_2\left(\frac{3}{4};\frac{7}{2},\frac{17}{4};-z\right)=\frac{1}{7168\sqrt{2}\,z^{11/4}}\left(195\left(2\sqrt{z}\left(256\,z^2-672\,z+189\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.3\left(256\,z^2-896\,z+315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(256\,z^2-864\,z+945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ac9u.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{7}{2}, \frac{19}{4}; z\right) = -\frac{1}{2\,097\,152\, z^{15/4}}\left(825\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024 z^{5/2} - 256 z^2 + 4224 z^{3/2} - 1248 z + 6468\sqrt{z} + e^{4\sqrt{z}}\left(1024 z^{5/2} + 256 z^2 + 4224 z^{3/2} + 1248 z + 6468\sqrt{z} - 4851\right) + 4851\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 + 16\,128 z^2 + 21\,168 z - 4851\right)\right.\right. $$
$$ \left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 + 16\,128 z^2 + 21\,168 z - 4851\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ac9v.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{7}{2}, \frac{19}{4}; -z\right) = \frac{1}{524\,288\, z^{15/4}}\left(825\left(\sqrt{\pi}\left(4096 z^3 - 16\,128 z^2 + 21\,168 z + 4851\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right. $$
$$ \left.\left. 2\sqrt[4]{z}\left(4\sqrt{z}\left(256 z^2 - 1056 z + 1617\right)\cos\left(2\sqrt{z}\right) + \left(256 z^2 - 1248 z - 4851\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.ac9w.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{7}{2}, \frac{21}{4}; z\right) = \frac{1}{1\,605\,632\sqrt{2}\, z^{15/4}} $$
$$ \left(3315\left(2\sqrt{z}\left(4096 z^3 + 16\,128 z^2 + 17\,136 z - 7371\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4096 z^3 + 19\,712 z^2 + 37\,296 z - 12\,285\right)\right.\right. $$
$$ \left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(4096 z^3 + 19\,200 z^2 + 33\,264 z - 36\,855\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac9x.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{7}{2}, \frac{21}{4}; -z\right) = \frac{1}{1\,605\,632\sqrt{2}\, z^{15/4}} $$
$$ \left(3315\left(2\sqrt{z}\left(4096 z^3 - 16\,128 z^2 + 17\,136 z + 7371\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4096 z^3 - 19\,712 z^2 + 37\,296 z + 12\,285\right)\right.\right. $$
$$ \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4096 z^3 - 19\,200 z^2 + 33\,264 z + 36\,855\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ac9y.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{7}{2}, \frac{23}{4}; z\right) = -\frac{1}{536\,870\,912\, z^{19/4}} $$
$$ \left(15\,675\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384 z^{7/2} - 4096 z^3 + 89\,088 z^{5/2} - 25\,344 z^2 + 192\,192 z^{3/2} - 77\,616 z - 485\,100\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^{7/2} + 4096 z^3 + 89\,088 z^{5/2} + 25\,344 z^2 + 192\,192 z^{3/2} + 77\,616 z - 485\,100\sqrt{z} + 363\,825\right) - 363\,825\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 + 344\,064 z^3 + 677\,376 z^2 - 310\,464 z + 363\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - \right. $$
$$ \left. e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 + 344\,064 z^3 + 677\,376 z^2 - 310\,464 z + 363\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ac9z.01

$${}_1F_2\left(\frac{3}{4}; \frac{7}{2}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{134\,217\,728\, z^{19/4}}\left(15\,675\left(\sqrt{\pi}\,\left(65\,536\, z^4 - 344\,064\, z^3 + 677\,376\, z^2 + 310\,464\, z + 363\,825\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\right.\right.$$
$$\left(4\sqrt{z}\,\left(4096\, z^3 - 22\,272\, z^2 + 48\,048\, z + 121\,275\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.\left.\left.\left(4096\, z^3 - 25\,344\, z^2 + 77\,616\, z - 363\,825\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{3}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.aca0.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, -\frac{23}{4}; z\right) = \frac{1}{115\,368\,\sqrt{2}\, z^{9/4}}\left(\left(4\, z\left(4096\, z^3 + 1\,263\,360\, z^2 + 49\,663\,344\, z + 480\,194\,325\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 -\right.$$
$$4\sqrt{z}\,\left(212\,992\, z^3 + 21\,421\,824\, z^2 + 461\,448\,000\, z + 2\,400\,971\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left(16\,384\, z^4 + 5\,704\,704\, z^3 + 276\,868\,800\, z^2 + 3\,374\,338\,500\, z + 12\,004\,858\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aca1.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, -\frac{23}{4}; -z\right) = \frac{1}{115\,368\,\sqrt{2}\, z^{9/4}}\left(\left(4\, z\left(4096\, z^3 - 1\,263\,360\, z^2 + 49\,663\,344\, z - 480\,194\,325\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.$$
$$4\sqrt{z}\,\left(-212\,992\, z^3 + 21\,421\,824\, z^2 - 461\,448\,000\, z + 2\,400\,971\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left(-16\,384\, z^4 + 5\,704\,704\, z^3 - 276\,868\,800\, z^2 + 3\,374\,338\,500\, z - 12\,004\,858\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aca2.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{254\,592\, z^{7/2}}\left(2\sqrt{z}\,\left(16\,384\, z^4 + 4\,574\,208\, z^3 + 169\,905\,600\, z^2 + 1\,558\,175\,940\, z + 2\,880\,430\,875\right)\cosh\left(2\sqrt{z}\right) -\right.$$
$$\left.3\left(262\,144\, z^4 + 22\,374\,400\, z^3 + 407\,773\,440\, z^2 + 1\,799\,583\,480\, z + 960\,143\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aca3.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, -\frac{21}{4}; -z\right) =$$
$$\frac{1}{254\,592\, z^{7/2}}\left(3\left(262\,144\, z^4 - 22\,374\,400\, z^3 + 407\,773\,440\, z^2 - 1\,799\,583\,480\, z + 960\,143\,625\right)\sin\left(2\sqrt{z}\right) -\right.$$
$$\left.2\sqrt{z}\,\left(16\,384\, z^4 - 4\,574\,208\, z^3 + 169\,905\,600\, z^2 - 1\,558\,175\,940\, z + 2\,880\,430\,875\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aca4.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{5016\sqrt{2}\, z^{9/4}}\left(\left(12 z \left(6912 z^2 + 385\,376 z + 4\,326\,075\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\, \left(2048 z^3 + 434\,688 z^2 + 11\,536\,200 z + 64\,891\,125\right)\right.\right.$$
$$\left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(29\,696 z^3 + 2\,121\,600 z^2 + 28\,840\,500 z + 108\,151\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aca5.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, -\frac{19}{4}; -z\right) =$$
$$-\frac{1}{5016\sqrt{2}\, z^{9/4}}\left(\left(12 z \left(6912 z^2 - 385\,376 z + 4\,326\,075\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\, \left(2048 z^3 - 434\,688 z^2 + 11\,536\,200 z - 64\,891\,125\right)\right.\right.$$
$$\left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(-29\,696 z^3 + 2\,121\,600 z^2 - 28\,840\,500 z + 108\,151\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aca6.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, -\frac{17}{4}; z\right) =$$
$$-\frac{1}{84\,864 z^{7/2}}\left(7\left(\left(8192 z^4 + 1\,459\,200 z^3 + 32\,512\,800 z^2 + 152\,915\,040 z + 82\,298\,025\right) \sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\right.\right.$$
$$\left.\left. \left(78\,848 z^3 + 4\,195\,200 z^2 + 43\,184\,340 z + 82\,298\,025\right) \cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aca7.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, -\frac{17}{4}; -z\right) = \frac{1}{84\,864 z^{7/2}}\left(7\left(2\sqrt{z}\, \left(78\,848 z^3 - 4\,195\,200 z^2 + 43\,184\,340 z - 82\,298\,025\right) \cos\left(2\sqrt{z}\right) + \right.\right.$$
$$\left.\left. \left(8192 z^4 - 1\,459\,200 z^3 + 32\,512\,800 z^2 - 152\,915\,040 z + 82\,298\,025\right) \sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aca8.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, -\frac{15}{4}; z\right) = \frac{1}{2904\sqrt{2}\, z^{9/4}}$$
$$\left(\left(4 z \left(2816 z^2 + 306\,432 z + 4\,326\,075\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\, \left(30\,976 z^2 + 1\,149\,200 z + 7\,210\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. \left(11\,264 z^3 + 1\,697\,280 z^2 + 26\,851\,500 z + 108\,151\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aca9.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{2904\sqrt{2}\, z^{9/4}}$$
$$\left(\left(-4 z \left(2816 z^2 - 306\,432 z + 4\,326\,075\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\, \left(30\,976 z^2 - 1\,149\,200 z + 7\,210\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. \left(11\,264 z^3 - 1\,697\,280 z^2 + 26\,851\,500 z - 108\,151\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acaa.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},-\frac{13}{4};z\right)=\frac{1}{4992\,z^{7/2}}\left(7\left(2\sqrt{z}\,\left(1024\,z^3+109\,440\,z^2+1\,337\,220\,z+2\,654\,775\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.15\left(2048\,z^3+63\,232\,z^2+325\,128\,z+176\,985\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acab.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},-\frac{13}{4};-z\right)=\frac{1}{4992\,z^{7/2}}\left(7\left(2\sqrt{z}\,\left(1024\,z^3-109\,440\,z^2+1\,337\,220\,z-2\,654\,775\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.15\left(-2048\,z^3+63\,232\,z^2-325\,128\,z+176\,985\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acac.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},-\frac{11}{4};z\right)=$$
$$-\frac{1}{968\sqrt{2}\,z^{9/4}}\left(5\left(-4\,z\,(6992\,z+149\,175)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(1408\,z^2+100\,776\,z+745\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.663\left(64\,z^2+1260\,z+5625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acad.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{968\sqrt{2}\,z^{9/4}}\left(5\left(4\,z\,(6992\,z-149\,175)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(1408\,z^2-100\,776\,z+745\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.663\left(64\,z^2-1260\,z+5625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acae.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},-\frac{9}{4};z\right)=$$
$$-\frac{1}{384\,z^{7/2}}\left(7\left(\left(512\,z^3+30\,240\,z^2+177\,840\,z+98\,325\right)\sinh\left(2\sqrt{z}\right)-30\sqrt{z}\,\left(192\,z^2+3116\,z+6555\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acaf.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},-\frac{9}{4};-z\right)=$$
$$-\frac{1}{384\,z^{7/2}}\left(7\left(30\sqrt{z}\,\left(192\,z^2-3116\,z+6555\right)\cos\left(2\sqrt{z}\right)+\left(512\,z^3-30\,240\,z^2+177\,840\,z-98\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acag.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},-\frac{7}{4};z\right)=\frac{1}{616\sqrt{2}\,z^{9/4}}$$
$$\left(5\left(4\,z\,(592\,z+41\,769)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-2652\sqrt{z}\,(32\,z+315)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+117\left(64\,z^2+1700\,z+8925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acah.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, -\frac{7}{4}; -z\right) = \frac{1}{616\sqrt{2}\, z^{9/4}}$$
$$\left(5\left(4z(592z - 41\,769) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 2652\sqrt{z}\,(32z - 315) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 117\left(64z^2 - 1700z + 8925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acai.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, -\frac{5}{4}; z\right) = \frac{21\left(2\sqrt{z}\,\left(64z^2 + 1860z + 4275\right)\cosh\left(2\sqrt{z}\right) - \left(1024z^2 + 7560z + 4275\right)\sinh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.acaj.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, -\frac{5}{4}; -z\right) = -\frac{21\left(2\sqrt{z}\,\left(64z^2 - 1860z + 4275\right)\cos\left(2\sqrt{z}\right) + \left(-1024z^2 + 7560z - 4275\right)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.acak.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, -\frac{3}{4}; z\right) = -\frac{1}{88\sqrt{2}\, z^{9/4}}$$
$$\left(5\left(4z(64z - 1989) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 260\sqrt{z}\,(8z + 153) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - \left(256z^2 + 7020z + 49\,725\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acal.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, -\frac{3}{4}; -z\right) = -\frac{1}{88\sqrt{2}\, z^{9/4}}$$
$$\left(5\left(4z(64z + 1989) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 260\sqrt{z}\,(8z - 153) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(256z^2 - 7020z + 49\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acam.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, -\frac{1}{4}; z\right) = -\frac{105\left(\left(32z^2 + 384z + 225\right)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,(28z + 75)\cosh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.acan.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, -\frac{1}{4}; -z\right) = \frac{105\left(6\sqrt{z}\,(28z - 75)\cos\left(2\sqrt{z}\right) + \left(32z^2 - 384z + 225\right)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.acao.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{88\sqrt{2}\, z^{9/4}}\left(5\left(-4z(32z - 351) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,(16z - 585) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(128z^2 + 540z + 8775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acap.01

$${}_1F_2\left(\frac{3}{4}; \frac{9}{2}, \frac{1}{4}; -z\right) =$$
$$-\frac{1}{88\sqrt{2}\, z^{9/4}}\left(5\left(4z(32z + 351) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,(16z + 585) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(128z^2 - 540z + 8775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acaq.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},\frac{3}{4};z\right)=\frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right)-3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.acar.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},\frac{3}{4};-z\right)=\frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right)+3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.acas.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},\frac{5}{4};z\right)=$$

$$\frac{1}{88\sqrt{2}\,z^{9/4}}\left(5\left(4z(16z-27)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12(45-8z)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-64z^2+60z-675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acat.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},\frac{5}{4};-z\right)=$$

$$\frac{1}{88\sqrt{2}\,z^{9/4}}\left(5\left(4z(16z+27)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,(8z+45)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(64z^2+60z+675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acau.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},\frac{7}{4};z\right)=-\frac{1}{2816\,z^{7/2}}$$

$$\left(15\,e^{-2\sqrt{z}}\left(128\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}-128\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+128\,e^{4\sqrt{z}}\,z^{5/2}+128\,z^{5/2}+\right.\right.$$
$$\left.\left.32\,e^{4\sqrt{z}}\,z^2-32z^2+24\,e^{4\sqrt{z}}\,z^{3/2}+24z^{3/2}-432\,e^{4\sqrt{z}}\,z+432z+630\,e^{4\sqrt{z}}\sqrt{z}+630\sqrt{z}-315\,e^{4\sqrt{z}}+315\right)\right)$$

07.22.03.acav.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},\frac{7}{4};-z\right)=$$

$$\frac{1}{1408\,z^{7/2}}\left(15\left(256\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2\left(64z^2-12z+315\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(32z^2+432z-315\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acaw.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},\frac{9}{4};z\right)=$$

$$\frac{1}{88\sqrt{2}\,z^{9/4}}\left(25\left(4z(8z+3)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,(4z+5)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-32z^2-36z+75\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acax.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},\frac{9}{4};-z\right)=$$

$$\frac{1}{88\sqrt{2}\,z^{9/4}}\left(25\left(4z(8z-3)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12(5-4z)\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(32z^2-36z-75\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acay.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},\frac{11}{4};z\right)=$$
$$-\frac{1}{2816\,z^{7/2}}\left(105\,e^{-2\sqrt{z}}\left(32\,e^{4\sqrt{z}}\,z^{5/2}+32\,z^{5/2}+8\,e^{4\sqrt{z}}\,z^2-8\,z^2+2\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z+33)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}-\right.\right.$$
$$2\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\,z+33)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{7/4}+72\,e^{4\sqrt{z}}\,z^{3/2}+$$
$$\left.\left.72\,z^{3/2}+24\,e^{4\sqrt{z}}\,z-24\,z-90\,e^{4\sqrt{z}}\,\sqrt{z}-90\,\sqrt{z}+45\,e^{4\sqrt{z}}-45\right)\right)$$

07.22.03.acaz.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{1408\,z^{7/2}}\left(105\left(4\sqrt{\pi}\,(16\,z-33)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+2\left(16\,z^2-36\,z-45\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(8\,z^2-24\,z+45\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acb0.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{176\sqrt{2}\,z^{9/4}}\left(75\left(2\,z\,(16\,z+39)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\,(16\,z+53)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\left(16\,z^2+51\,z+45\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acb1.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},\frac{13}{4};-z\right)=$$
$$\frac{1}{176\sqrt{2}\,z^{9/4}}\left(75\left(2\,z\,(16\,z-39)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\,(53-16\,z)\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(16\,z^2-51\,z+45\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acb2.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},\frac{15}{4};z\right)=-\frac{1}{16\,384\,z^{7/2}}\left(105\,e^{-2\sqrt{z}}\right.$$
$$\left(4\left(64\,z^{5/2}-16\,z^2+276\,z^{3/2}-81\,z+480\sqrt{z}+e^{4\sqrt{z}}\left(64\,z^{5/2}+16\,z^2+276\,z^{3/2}+81\,z+480\sqrt{z}-240\right)+240\right)+\right.$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(256\,z^2+1056\,z+1617\right)\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.\left.e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\left(256\,z^2+1056\,z+1617\right)\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.acb3.01

$${}_1F_2\left(\frac{3}{4};\frac{9}{2},\frac{15}{4};-z\right)=\frac{1}{4096\,z^{7/2}}\left(105\left(\sqrt{\pi}\,z^{3/4}\left(256\,z^2-1056\,z+1617\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\left(4\sqrt{z}\,\left(16\,z^2-69\,z+120\right)\cos\left(2\sqrt{z}\right)+\left(16\,z^2-81\,z-240\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.acb4.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{9}{2}, \frac{17}{4}; z\right) = \frac{1}{5632\sqrt{2}\, z^{11/4}}\left(195\left(2\sqrt{z}\,\left(256z^2+1152z+2079\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(256z^2+1376z+3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(256z^2+1344z+3195\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acb5.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{9}{2}, \frac{17}{4}; -z\right) = \frac{1}{5632\sqrt{2}\, z^{11/4}}\left(195\left(2\sqrt{z}\,\left(256z^2-1152z+2079\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(256z^2-1376z+3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(256z^2-1344z+3195\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acb6.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{9}{2}, \frac{19}{4}; z\right) = -\frac{1}{1\,048\,576\, z^{15/4}}\left(525\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(1024z^{5/2}-256z^2+6528z^{3/2}-1824z+21\,012\sqrt{z}\right) + e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2+6528z^{3/2}+1824z+21\,012\sqrt{z}+7281\right)-7281\right) + e^{2\sqrt{z}}\sqrt{2\pi}\,\left(4096z^3+25\,344z^2+77\,616z+53\,361\right)\left(\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\,\left(4096z^3+25\,344z^2+77\,616z+53\,361\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acb7.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{9}{2}, \frac{19}{4}; -z\right) = \frac{1}{262\,144\, z^{15/4}}\left(525\left(\sqrt{\pi}\,\left(4096z^3-25\,344z^2+77\,616z-53\,361\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(256z^2-1632z+5253\right)\cos\left(2\sqrt{z}\right) + \left(256z^2-1824z+7281\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.acb8.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{9}{2}, \frac{21}{4}; z\right) = \frac{1}{1\,261\,568\sqrt{2}\, z^{15/4}}\left(3315\left(2\sqrt{z}\,\left(4096z^3+26\,880z^2+92\,400z+27\,027\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4096z^3+30\,464z^2+121\,968z+45\,045\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(4096z^3+29\,952z^2+116\,592z+135\,135\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acb9.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{9}{2}, \frac{21}{4}; -z\right) = \frac{1}{1\,261\,568\sqrt{2}\, z^{15/4}} $$
$$ \left(3315\left(2\sqrt{z}\left(4096z^3 - 26\,880z^2 + 92\,400z - 27\,027\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4096z^3 - 30\,464z^2 + 121\,968z - 45\,045\right)\right.\right. $$
$$ \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4096z^3 - 29\,952z^2 + 116\,592z - 135\,135\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acba.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{9}{2}, \frac{23}{4}; z\right) = -\frac{1}{268\,435\,456\, z^{19/4}} $$
$$ \left(9975\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384z^{7/2} - 4096z^3 + 138\,240z^{5/2} - 37\,632z^2 + 652\,992z^{3/2} - 202\,032z + 1\,067\,220\sqrt{z} + e^{4\sqrt[4]{z}}\right.\right.\right. $$
$$ \left.\left.\left(16\,384z^{7/2} + 4096z^3 + 138\,240z^{5/2} + 37\,632z^2 + 652\,992z^{3/2} + 202\,032z + 1\,067\,220\sqrt{z} - 800\,415\right) + 800\,415\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 540\,672z^3 + 2\,483\,712z^2 + 3\,415\,104z - 800\,415\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - $$
$$ \left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536z^4 + 540\,672z^3 + 2\,483\,712z^2 + 3\,415\,104z - 800\,415\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acbb.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) = $$
$$ \frac{1}{67\,108\,864\, z^{19/4}}\left(9975\left(\sqrt{\pi}\left(65\,536z^4 - 540\,672z^3 + 2\,483\,712z^2 - 3\,415\,104z - 800\,415\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\right.\right. $$
$$ \left(4\sqrt{z}\left(4096z^3 - 34\,560z^2 + 163\,248z - 266\,805\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left.\left(4096z^3 - 37\,632z^2 + 202\,032z + 800\,415\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{3}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.acbc.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{11}{2}, -\frac{23}{4}; z\right) = $$
$$ \frac{1}{153\,824\sqrt{2}\, z^{13/4}}\left(3\left(-4z\left(249\,856z^3 + 35\,614\,976z^2 + 1\,081\,326\,480z + 9\,187\,718\,085\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right. $$
$$ \left(16\,384z^4 + 7\,801\,856z^3 + 519\,188\,160z^2 + 9\,490\,062\,660z + 45\,938\,590\,425\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left.\left(1\,048\,576z^4 + 161\,546\,240z^3 + 6\,115\,724\,160z^2 + 67\,867\,464\,600z + 229\,692\,952\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acbd.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{153\,824\sqrt{2}\,z^{13/4}}\left(3\left(4z\left(249\,856z^3-35\,614\,976z^2+1\,081\,326\,480z-9\,187\,718\,085\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(16\,384z^4-7\,801\,856z^3+519\,188\,160z^2-9\,490\,062\,660z+45\,938\,590\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-1\,048\,576z^4+161\,546\,240z^3-6\,115\,724\,160z^2+67\,867\,464\,600z-229\,692\,952\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acbe.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{21}{4};z\right)=\frac{1}{113\,152\,z^{9/2}}$$
$$\left(\left(65\,536z^5+26\,849\,280z^4+1\,525\,374\,720z^3+23\,789\,615\,760z^2+99\,086\,822\,100z+52\,423\,841\,925\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(950\,272z^4+120\,821\,760z^3+3\,511\,382\,400z^2+29\,188\,366\,200z+52\,423\,841\,925\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.acbf.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{21}{4};-z\right)=\frac{1}{113\,152\,z^{9/2}}$$
$$\left(\left(-65\,536z^5+26\,849\,280z^4-1\,525\,374\,720z^3+23\,789\,615\,760z^2-99\,086\,822\,100z+52\,423\,841\,925\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(950\,272z^4-120\,821\,760z^3+3\,511\,382\,400z^2-29\,188\,366\,200z+52\,423\,841\,925\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.acbg.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{19}{4};z\right)=-\frac{1}{6688\sqrt{2}\,z^{13/4}}\left(3\left(4z\left(2048z^3+643\,072z^2+23\,841\,480z+224\,090\,685\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(105\,472z^3+10\,412\,160z^2+218\,803\,260z+1\,120\,453\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(8192z^4+2\,698\,240z^3+132\,281\,760z^2+1\,591\,995\,600z+5\,602\,267\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acbh.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{19}{4};-z\right)=\frac{1}{6688\sqrt{2}\,z^{13/4}}\left(3\left(4z\left(2048z^3-643\,072z^2+23\,841\,480z-224\,090\,685\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(-105\,472z^3+10\,412\,160z^2-218\,803\,260z+1\,120\,453\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-8192z^4+2\,698\,240z^3-132\,281\,760z^2+1\,591\,995\,600z-5\,602\,267\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acbi.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{17}{4};z\right)=$$
$$-\frac{1}{113\,152\,z^{9/2}}\left(21\left(2\sqrt{z}\left(8192z^4+2\,237\,440z^3+81\,177\,120z^2+731\,538\,000z+1\,344\,201\,075\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.95\left(4096z^4+341\,504z^3+6\,090\,768z^2+26\,566\,380z+14\,149\,485\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acbj.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{17}{4};-z\right)=$$
$$-\frac{1}{113\,152\,z^{9/2}}\left(21\left(2\sqrt{z}\,\left(8192\,z^4-2\,237\,440\,z^3+81\,177\,120\,z^2-731\,538\,000\,z+1\,344\,201\,075\right)\cos\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.95\left(4096\,z^4-341\,504\,z^3+6\,090\,768\,z^2-26\,566\,380\,z+14\,149\,485\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acbk.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{15}{4};z\right)=\frac{1}{3872\sqrt{2}\,z^{13/4}}$$
$$\left(3\left(-4\,z\left(124\,928\,z^2+6\,152\,640\,z+66\,621\,555\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(11\,264\,z^3+2\,350\,080\,z^2+60\,372\,780\,z+333\,107\,775\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-85\left(5120\,z^3+394\,368\,z^2+5\,293\,080\,z+19\,594\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acbl.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{15}{4};-z\right)=-\frac{1}{3872\sqrt{2}\,z^{13/4}}$$
$$\left(3\left(4\,z\left(124\,928\,z^2-6\,152\,640\,z+66\,621\,555\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(11\,264\,z^3-2\,350\,080\,z^2+60\,372\,780\,z-333\,107\,775\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-85\left(5120\,z^3-394\,368\,z^2+5\,293\,080\,z-19\,594\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acbm.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{13}{4};z\right)=\frac{1}{6656\,z^{9/2}}\left(21\left(\left(4096\,z^4+710\,144\,z^3+15\,417\,360\,z^2+71\,501\,940\,z+38\,405\,745\right)\sinh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.38\sqrt{z}\,\left(2048\,z^3+105\,984\,z^2+1\,068\,120\,z+2\,021\,355\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acbn.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{13}{4};-z\right)=\frac{1}{6656\,z^{9/2}}\left(21\left(38\sqrt{z}\,\left(2048\,z^3-105\,984\,z^2+1\,068\,120\,z-2\,021\,355\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096\,z^4-710\,144\,z^3+15\,417\,360\,z^2-71\,501\,940\,z+38\,405\,745\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acbo.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{11}{4};z\right)=$$
$$-\frac{1}{3872\sqrt{2}\,z^{13/4}}\left(15\left(4\,z\left(6272\,z^2+450\,840\,z+6\,056\,505\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-204\sqrt{z}\,\left(2752\,z^2+96\,980\,z+593\,775\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+17\left(512\,z^3+143\,520\,z^2+2\,246\,400\,z+8\,906\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acbp.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{11}{4};-z\right)=$$
$$-\frac{1}{3872\sqrt{2}\,z^{13/4}}\left(15\left(4z\left(6272z^2-450\,840z+6\,056\,505\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-204\sqrt{z}\left(2752z^2-96\,980z+593\,775\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-17\left(512z^3-143\,520z^2+2\,246\,400z-8\,906\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acbq.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{9}{4};z\right)=-\frac{1}{512z^{9/2}}\left(21\left(2\sqrt{z}\left(512z^3+52\,896z^2+629\,280z+1\,238\,895\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(15\,104z^3+451\,440z^2+2\,281\,140z+1\,238\,895\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acbr.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{9}{4};-z\right)=\frac{1}{512z^{9/2}}\left(21\left(2\sqrt{z}\left(512z^3-52\,896z^2+629\,280z-1\,238\,895\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-15\,104z^3+451\,440z^2-2\,281\,140z+1\,238\,895\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acbs.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{7}{4};z\right)=$$
$$-\frac{1}{2464\sqrt{2}\,z^{13/4}}\left(15\left(4z\left(1024z^2+74\,256z+1\,461\,915\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-1020\sqrt{z}\left(64z^2+4004z+28\,665\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-4096z^3+424\,320z^2+8\,353\,800z+36\,547\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acbt.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{7}{4};-z\right)=$$
$$-\frac{1}{2464\sqrt{2}\,z^{13/4}}\left(15\left(4z\left(1024z^2-74\,256z+1\,461\,915\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-1020\sqrt{z}\left(64z^2-4004z+28\,665\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^3+424\,320z^2-8\,353\,800z+36\,547\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acbu.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{512z^{9/2}}\left(189\left(\left(256z^3+14\,480z^2+83\,220z+45\,885\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(1408z^2+22\,040z+45\,885\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acbv.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{5}{4};-z\right)=$$
$$-\frac{1}{512z^{9/2}}\left(189\left(2\sqrt{z}\left(1408z^2-22\,040z+45\,885\right)\cos\left(2\sqrt{z}\right)+\left(256z^3-14\,480z^2+83\,220z-45\,885\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acbw.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{3}{4};z\right)=$$
$$-\frac{1}{352\sqrt{2}\,z^{13/4}}\left(3\left(4z\left(512z^2+5304z+292\,383\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(256z^2+52\,156z+487\,305\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-2048z^3+51\,168z^2+1\,432\,080z+7\,309\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acbx.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{3}{4};-z\right)=$$
$$-\frac{1}{352\sqrt{2}\,z^{13/4}}\left(3\left(4z\left(512z^2-5304z+292\,383\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(256z^2-52\,156z+487\,305\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(2048z^3+51\,168z^2-1\,432\,080z+7\,309\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acby.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{1}{4};z\right)=-\frac{945\left(2\sqrt{z}\left(32z^2+880z+1995\right)\cosh\left(2\sqrt{z}\right)-\left(496z^2+3540z+1995\right)\sinh\left(2\sqrt{z}\right)\right)}{512z^{9/2}}$$

07.22.03.acbz.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},-\frac{1}{4};-z\right)=-\frac{945\left(2\sqrt{z}\left(32z^2-880z+1995\right)\cos\left(2\sqrt{z}\right)+\left(-496z^2+3540z-1995\right)\sin\left(2\sqrt{z}\right)\right)}{512z^{9/2}}$$

07.22.03.acc0.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},\frac{1}{4};z\right)=$$
$$-\frac{1}{352\sqrt{2}\,z^{13/4}}\left(3\left(4z\left(256z^2-1248z+41\,769\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(128z^2+4108z+69\,615\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-1024z^3+4224z^2+154\,440z+1\,044\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acc1.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},\frac{1}{4};-z\right)=$$
$$-\frac{1}{352\sqrt{2}\,z^{13/4}}\left(3\left(4z\left(256z^2+1248z+41\,769\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(128z^2-4108z+69\,615\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(1024z^3+4224z^2-154\,440z+1\,044\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acc2.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},\frac{3}{4};z\right)=\frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\left(8z+21\right)\cosh\left(2\sqrt{z}\right)\right)}{512z^{9/2}}$$

07.22.03.acc3.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},\frac{3}{4};-z\right)=\frac{945\left(10\sqrt{z}\ (8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.acc4.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},\frac{5}{4};z\right)=\frac{1}{352\sqrt{2}\ z^{13/4}}\left(3\left(4z\left(128z^2-264z+2457\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.12\sqrt{z}\ \left(64z^2-76z+4095\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-512z^3+672z^2+4320z+61\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acc5.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},\frac{5}{4};-z\right)=\frac{1}{352\sqrt{2}\ z^{13/4}}\left(3\left(4z\left(128z^2+264z+2457\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.12\sqrt{z}\ \left(64z^2+76z+4095\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(512z^3+672z^2-4320z+61\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acc6.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},\frac{7}{4};z\right)=$$
$$-\frac{1}{11\,264\,z^{9/2}}\left(9\,e^{-2\sqrt{z}}\left(1024\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ \mathrm{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{15/4}-1024\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ \mathrm{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{15/4}+1024\,e^{4\sqrt{z}}\ z^{7/2}+\right.\right.$$
$$1024\,z^{7/2}+256\,e^{4\sqrt{z}}\ z^3-256\,z^3+192\,e^{4\sqrt{z}}\ z^{5/2}+192\,z^{5/2}+240\,e^{4\sqrt{z}}\ z^2-240\,z^2-13\,440\,e^{4\sqrt{z}}\ z^{3/2}-$$
$$\left.\left.13\,440\,z^{3/2}+39\,060\,e^{4\sqrt{z}}\ z-39\,060\,z-48\,510\,e^{4\sqrt{z}}\ \sqrt{z}\ -48\,510\sqrt{z}\ +24\,255\,e^{4\sqrt{z}}\ -24\,255\right)\right)$$

07.22.03.acc7.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},\frac{7}{4};-z\right)=\frac{1}{5632\,z^{9/2}}\left(9\left(2048\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{15/4}+\right.\right.$$
$$\left.\left.2\left(512z^3-96z^2-6720z+24\,255\right)\cos\left(2\sqrt{z}\right)\sqrt{z}\ +\left(256z^3-240z^2+39\,060z-24\,255\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acc8.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},\frac{9}{4};z\right)=\frac{1}{352\sqrt{2}\ z^{13/4}}\left(15\left(4z\left(64z^2+48z-189\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.12\sqrt{z}\ \left(32z^2+52z-315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\left(256z^3+384z^2-360z+4725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acc9.01

$${}_1F_2\left(\frac{3}{4};\frac{11}{2},\frac{9}{4};-z\right)=\frac{1}{352\sqrt{2}\ z^{13/4}}\left(15\left(4z\left(64z^2-48z-189\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.12\sqrt{z}\ \left(-32z^2+52z+315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(256z^3-384z^2-360z-4725\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acca.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{11}{2}, \frac{11}{4}; z\right) = -\frac{1}{11\,264\, z^{9/2}}\left(63\, e^{-2\sqrt{z}}\left(256\, e^{4\sqrt{z}}\, z^{7/2} + 256\, z^{7/2} + 64\, e^{4\sqrt{z}}\, z^3 - 64\, z^3 + 16\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16z+45)\, \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{11/4} - 16\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16z+45)\, \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{11/4} + 768\, e^{4\sqrt{z}}\, z^{5/2} + 768\, z^{5/2} + 240\, e^{4\sqrt{z}}\, z^2 - 240\, z^2 + 240\, e^{4\sqrt{z}}\, z^{3/2} + 240\, z^{3/2} - 3060\, e^{4\sqrt{z}}\, z + 3060\, z + 4410\, e^{4\sqrt{z}}\, \sqrt{z} + 4410\, \sqrt{z} - 2205\, e^{4\sqrt{z}} + 2205\right)\right) $$

07.22.03.accb.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{11}{2}, \frac{11}{4}; -z\right) = \frac{1}{5632\, z^{9/2}}\left(63\left(32\, \sqrt{\pi}\, (16z-45)\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{11/4} + 2\left(128z^3 - 384z^2 + 120z - 2205\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(64z^3 - 240z^2 - 3060z + 2205\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.accc.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{11}{2}, \frac{13}{4}; z\right) = \frac{1}{352\sqrt{2}\, z^{13/4}}\left(45\left(4z\left(32z^2 + 114z + 63\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\, \left(16z^2 + 71z + 105\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - \left(128z^3 + 552z^2 + 720z - 1575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.accd.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{11}{2}, \frac{13}{4}; -z\right) = \frac{1}{352\sqrt{2}\, z^{13/4}}\left(45\left(4z\left(32z^2 - 114z + 63\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\, \left(16z^2 - 71z + 105\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(128z^3 - 552z^2 + 720z + 1575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acce.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{11}{2}, \frac{15}{4}; z\right) = -\frac{1}{8192\, z^{9/2}}\left(63\, e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(256z^2 + 1440z + 3465\right)\operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{7/4} - e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(256z^2 + 1440z + 3465\right)\operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{7/4} + 4\left(64\, z^{7/2} - 16\, z^3 + 372\, z^{5/2} - 105\, z^2 + 960\, z^{3/2} - 360z - 1260\sqrt{z} + e^{4\sqrt{z}}\left(64\, z^{7/2} + 16\, z^3 + 372\, z^{5/2} + 105\, z^2 + 960\, z^{3/2} + 360z - 1260\sqrt{z} + 630\right) - 630\right)\right)\right) $$

07.22.03.accf.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{11}{2}, \frac{15}{4}; -z\right) = \frac{1}{2048\, z^{9/2}}\left(63\left(\sqrt{\pi}\, \left(256z^2 - 1440z + 3465\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} + 2\left(4\sqrt{z}\, \left(16z^3 - 93z^2 + 240z + 315\right)\cos\left(2\sqrt{z}\right) + \left(16z^3 - 105z^2 + 360z - 630\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.accg.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{11}{2}, \frac{17}{4}; z\right) = \frac{1}{2816\sqrt{2}\, z^{13/4}}\left(117\left(2z\left(256z^2+1632z+5229\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(256z^2+1856z+7035\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\left(256z^3+1824z^2+6705z+6300\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acch.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{11}{2}, \frac{17}{4}; -z\right) = \frac{1}{2816\sqrt{2}\, z^{13/4}}\left(117\left(2z\left(256z^2-1632z+5229\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\left(256z^2-1856z+7035\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\left(256z^3-1824z^2+6705z-6300\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acci.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{11}{2}, \frac{19}{4}; z\right) = -\frac{1}{524\,288\, z^{9/2}}\left(315\, e^{-2\sqrt{z}}\left(4\left(1024z^{7/2}-256z^3+8832z^{5/2}-2400z^2+43\,620z^{3/2}-13\,365z+80\,640\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{7/2}+256z^3+8832z^{5/2}+2400z^2+43\,620z^{3/2}+13\,365z+80\,640\sqrt{z}-40\,320\right)+40\,320\right)+e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(4096z^3+34\,560z^2+166\,320z+266\,805\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\left(4096z^3+34\,560z^2+166\,320z+266\,805\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.accj.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{11}{2}, \frac{19}{4}; -z\right) = \frac{1}{131\,072\, z^{9/2}}\left(315\left(\sqrt{\pi}\, z^{3/4}\left(4096z^3-34\,560z^2+166\,320z-266\,805\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\left(4\sqrt{z}\left(256z^3-2208z^2+10\,905z-20\,160\right)\cos\left(2\sqrt{z}\right)+\left(256z^3-2400z^2+13\,365z+40\,320\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.acck.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{11}{2}, \frac{21}{4}; z\right) = \frac{1}{630\,784\sqrt{2}\, z^{15/4}}\left(1989\left(2\sqrt{z}\left(4096z^3+37\,632z^2+214\,704z+405\,405\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4096z^3+41\,216z^2+253\,680z+675\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(4096z^3+40\,704z^2+246\,960z+615\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.accl.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{11}{2}, \frac{21}{4}; -z\right) = \frac{1}{630\,784\sqrt{2}\, z^{15/4}} $$
$$ \left(1989\left(2\sqrt{z}\left(4096 z^3 - 37\,632 z^2 + 214\,704 z - 405\,405\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4096 z^3 - 41\,216 z^2 + 253\,680 z - 675\,675\right)\right.\right. $$
$$ \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4096 z^3 - 40\,704 z^2 + 246\,960 z - 615\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.accm.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{11}{2}, \frac{23}{4}; z\right) = -\frac{1}{134\,217\,728 z^{19/4}} $$
$$ \left(5985 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384 z^{7/2} - 4096 z^3 + 187\,392 z^{5/2} - 49\,920 z^2 + 1\,371\,840 z^{3/2} - 390\,960 z + 4\,635\,540\sqrt{z} + e^{4\sqrt{z}}\right.\right.\right. $$
$$ \left(16\,384 z^{7/2} + 4096 z^3 + 187\,392 z^{5/2} + 49\,920 z^2 + 1\,371\,840 z^{3/2} + 390\,960 z + 4\,635\,540\sqrt{z} + 1\,684\,305\right) - $$
$$ \left.\left.\left. 1\,684\,305\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 + 737\,280 z^3 + 5\,322\,240 z^2 + 17\,075\,520 z + 12\,006\,225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - \right.\right. $$
$$ \left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\left(65\,536 z^4 + 737\,280 z^3 + 5\,322\,240 z^2 + 17\,075\,520 z + 12\,006\,225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.accn.01

$$ {}_1F_2\left(\frac{3}{4}; \frac{11}{2}, \frac{23}{4}; -z\right) = $$
$$ \frac{1}{33\,554\,432 z^{19/4}}\left(5985\left(\sqrt{\pi}\left(65\,536 z^4 - 737\,280 z^3 + 5\,322\,240 z^2 - 17\,075\,520 z + 12\,006\,225\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right. $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(4096 z^3 - 46\,848 z^2 + 342\,960 z - 1\,158\,885\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left.\left(4096 z^3 - 49\,920 z^2 + 390\,960 z - 1\,684\,305\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{5}{4}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = \frac{5}{4}$, $b_{1.} = -\frac{11}{2}$

07.22.03.acco.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{15\,740\,160\,975} $$
$$ \left(7\left(262\,144 z^6 + 2\,015\,232 z^5 + 26\,127\,360 z^4 + 268\,868\,160 z^3 + 1\,681\,495\,200 z^2 + 4\,586\,066\,100 z + 2\,248\,594\,425\right)\right. $$
$$ \cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(524\,288 z^6 - 2\,064\,384 z^5 - 25\,589\,760 z^4 - 307\,359\,360 z^3 - \right. $$
$$ \left.\left. 2\,546\,192\,880 z^2 - 11\,115\,581\,400 z - 15\,740\,160\,975\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.accp.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{15\,740\,160\,975} \left(7\left(262\,144\,z^6 - 2\,015\,232\,z^5 + 26\,127\,360\,z^4 - 268\,868\,160\,z^3 + 1\,681\,495\,200\,z^2 - 4\,586\,066\,100\,z + 2\,248\,594\,425\right) \cos\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(524\,288\,z^6 + 2\,064\,384\,z^5 - 25\,589\,760\,z^4 + 307\,359\,360\,z^3 - 2\,546\,192\,880\,z^2 + 11\,115\,581\,400\,z - 15\,740\,160\,975\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.accq.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, -\frac{21}{4}; z\right) = \frac{1}{2\,170\,943\,775\,\sqrt{2}} \left(\sqrt[4]{z}\,\left(\left(1\,048\,576\,z^6 + 5\,603\,328\,z^5 + 65\,378\,304\,z^4 + 574\,629\,120\,z^3 + 2\,798\,621\,280\,z^2 + 4\,435\,867\,800\,z + 2\,170\,943\,775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(262\,144\,z^6 - 933\,888\,z^5 - 10\,552\,320\,z^4 - 112\,598\,208\,z^3 - 793\,709\,280\,z^2 - 2\,699\,112\,780\,z - 2\,170\,943\,775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(65\,536\,z^5 + 552\,960\,z^4 + 6\,490\,368\,z^3 + 59\,400\,432\,z^2 + 320\,785\,920\,z + 723\,647\,925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.accr.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, -\frac{21}{4}; -z\right) = \frac{1}{2\,170\,943\,775\,\sqrt{2}} \left(\sqrt[4]{z}\,\left(\left(1\,048\,576\,z^6 - 5\,603\,328\,z^5 + 65\,378\,304\,z^4 - 574\,629\,120\,z^3 + 2\,798\,621\,280\,z^2 - 4\,435\,867\,800\,z + 2\,170\,943\,775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(262\,144\,z^6 + 933\,888\,z^5 - 10\,552\,320\,z^4 + 112\,598\,208\,z^3 - 793\,709\,280\,z^2 + 2\,699\,112\,780\,z - 2\,170\,943\,775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 12\,z\left(65\,536\,z^5 - 552\,960\,z^4 + 6\,490\,368\,z^3 - 59\,400\,432\,z^2 + 320\,785\,920\,z - 723\,647\,925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.accs.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, -\frac{19}{4}; z\right) = \frac{1}{684\,354\,825} \left(\left(-262\,144\,z^6 + 933\,888\,z^5 + 9\,262\,080\,z^4 + 87\,272\,640\,z^3 + 523\,908\,000\,z^2 + 1\,401\,453\,900\,z + 684\,354\,825\right) \cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(65\,536\,z^5 + 471\,040\,z^4 + 4\,919\,040\,z^3 + 38\,419\,920\,z^2 + 162\,993\,600\,z + 228\,118\,275\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.acct.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, -\frac{19}{4}; -z\right) = \frac{1}{684\,354\,825} \left(\left(-262\,144\,z^6 - 933\,888\,z^5 + 9\,262\,080\,z^4 - 87\,272\,640\,z^3 + 523\,908\,000\,z^2 - 1\,401\,453\,900\,z + 684\,354\,825\right) \cos\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(65\,536\,z^5 - 471\,040\,z^4 + 4\,919\,040\,z^3 - 38\,419\,920\,z^2 + 162\,993\,600\,z - 228\,118\,275\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.accu.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, -\frac{17}{4}; z\right) = -\frac{1}{103\,378\,275\sqrt{2}} \left(\sqrt[4]{z}\left(\left(131\,072 z^6 - 442\,368 z^5 - 3\,608\,064 z^4 - 28\,984\,320 z^3 - 135\,535\,680 z^2 - 212\,284\,800 z - 103\,378\,275\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(81\,920 z^5 + 645\,120 z^4 + 5\,917\,248 z^3 + 39\,221\,280 z^2 + 129\,582\,180 z + 103\,378\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(32\,768 z^5 - 122\,880 z^4 - 1\,090\,944 z^3 - 9\,068\,976 z^2 - 46\,879\,560 z - 103\,378\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.accv.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, -\frac{17}{4}; -z\right) = -\frac{1}{103\,378\,275\sqrt{2}} \left(\sqrt[4]{z}\left(\left(131\,072 z^6 + 442\,368 z^5 - 3\,608\,064 z^4 + 28\,984\,320 z^3 - 135\,535\,680 z^2 + 212\,284\,800 z - 103\,378\,275\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(81\,920 z^5 - 645\,120 z^4 + 5\,917\,248 z^3 - 39\,221\,280 z^2 + 129\,582\,180 z - 103\,378\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(32\,768 z^5 + 122\,880 z^4 - 1\,090\,944 z^3 + 9\,068\,976 z^2 - 46\,879\,560 z + 103\,378\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.accw.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, -\frac{15}{4}; z\right) = \frac{1}{36\,018\,675}\left(3\left(16\,384 z^5 + 215\,040 z^4 + 1\,696\,320 z^3 + 9\,525\,600 z^2 + 24\,740\,100 z + 12\,006\,225\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(32\,768 z^5 - 122\,880 z^4 - 915\,840 z^3 - 6\,456\,240 z^2 - 26\,195\,400 z - 36\,018\,675\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.accx.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, -\frac{15}{4}; -z\right) = \frac{1}{36\,018\,675}\left(\left(-49\,152 z^5 + 645\,120 z^4 - 5\,088\,960 z^3 + 28\,576\,800 z^2 - 74\,220\,300 z + 36\,018\,675\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(32\,768 z^5 + 122\,880 z^4 - 915\,840 z^3 + 6\,456\,240 z^2 - 26\,195\,400 z + 36\,018\,675\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.accy.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, -\frac{13}{4}; z\right) = \frac{1}{6\,081\,075\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384 z^5 + 294\,912 z^4 + 1\,877\,760 z^3 + 8\,195\,040 z^2 + 12\,587\,400 z + 6\,081\,075\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,384 z^5 - 61\,440 z^4 - 414\,144 z^3 - 2\,449\,440 z^2 - 7\,722\,540 z - 6\,081\,075\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36 z\left(9728 z^3 + 66\,192 z^2 + 317\,520 z + 675\,675\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.accz.01

$${}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{6\,081\,075\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-16\,384 z^5 + 294\,912 z^4 - 1\,877\,760 z^3 + 8\,195\,040 z^2 - 12\,587\,400 z + 6\,081\,075\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(16\,384 z^5 + 61\,440 z^4 - 414\,144 z^3 + 2\,449\,440 z^2 - 7\,722\,540 z + 6\,081\,075\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.36 z\left(9728 z^3 - 66\,192 z^2 + 317\,520 z - 675\,675\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acd0.01

$${}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, -\frac{11}{4}; z\right) = \frac{1}{2\,401\,245}\left(\left(-16\,384 z^5 + 55\,296 z^4 + 414\,144 z^3 + 2\,026\,080 z^2 + 5\,000\,940 z + 2\,401\,245\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(4096 z^4 - 87\,552 z^3 - 480\,816 z^2 - 1\,799\,280 z - 2\,401\,245\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acd1.01

$${}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) = \frac{1}{2\,401\,245}\left(\left(16\,384 z^5 + 55\,296 z^4 - 414\,144 z^3 + 2\,026\,080 z^2 - 5\,000\,940 z + 2\,401\,245\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left.2\sqrt{z}\left(4096 z^4 + 87\,552 z^3 - 480\,816 z^2 + 1\,799\,280 z - 2\,401\,245\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acd2.01

$${}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, -\frac{9}{4}; z\right) =$$
$$-\frac{1}{467\,775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192 z^5 - 24\,064 z^4 - 184\,320 z^3 - 665\,280 z^2 - 982\,800 z - 467\,775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\right.\right.$$
$$\sqrt{z}\left(-5120 z^4 + 45\,888 z^3 + 211\,680 z^2 + 608\,580 z + 467\,775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(2048 z^4 - 4224 z^3 - 57\,456 z^2 - 234\,360 z - 467\,775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acd3.01

$${}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{467\,775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192 z^5 + 24\,064 z^4 - 184\,320 z^3 + 665\,280 z^2 - 982\,800 z + 467\,775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\right.\right.$$
$$\sqrt{z}\left(5120 z^4 + 45\,888 z^3 - 211\,680 z^2 + 608\,580 z - 467\,775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4 z\left(2048 z^4 + 4224 z^3 - 57\,456 z^2 + 234\,360 z - 467\,775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acd4.01

$${}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, -\frac{7}{4}; z\right) = \frac{1}{218\,295}\left(9\left(-1024 z^4 + 5056 z^3 + 23\,520 z^2 + 51\,660 z + 24\,255\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(2048 z^4 - 1152 z^3 - 57\,456 z^2 - 173\,880 z - 218\,295\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acd5.01

$${}_1F_2\left(\frac{5}{4};-\frac{11}{2},-\frac{7}{4};-z\right)=\frac{1}{218\,295}\left(-9\left(1024\,z^4+5056\,z^3-23\,520\,z^2+51\,660\,z-24\,255\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\left(2048\,z^4+1152\,z^3-57\,456\,z^2+173\,880\,z-218\,295\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acd6.01

$${}_1F_2\left(\frac{5}{4};-\frac{11}{2},-\frac{5}{4};z\right)=\frac{1}{51\,975\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-6144\,z^4+20\,480\,z^3+90\,720\,z^2+113\,400\,z+51\,975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024\,z^4+2368\,z^3-30\,720\,z^2-71\,820\,z-51\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-1792\,z^3+3984\,z^2+30\,240\,z+51\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acd7.01

$${}_1F_2\left(\frac{5}{4};-\frac{11}{2},-\frac{5}{4};-z\right)=-\frac{1}{51\,975\sqrt{2}}\left(\sqrt[4]{z}\left(\left(6144\,z^4+20\,480\,z^3-90\,720\,z^2+113\,400\,z-51\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024\,z^4-2368\,z^3-30\,720\,z^2+71\,820\,z-51\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-4\,z\left(1792\,z^3+3984\,z^2-30\,240\,z+51\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acd8.01

$${}_1F_2\left(\frac{5}{4};-\frac{11}{2},-\frac{3}{4};z\right)=\left(-\frac{1024\,z^4}{31\,185}-\frac{832\,z^3}{3465}+\frac{32\,z^2}{33}+\frac{76\,z}{33}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(256\,z^3-112\,z^2-3360\,z-3465\right)\sinh\left(2\sqrt{z}\right)}{3465}$$

07.22.03.acd9.01

$${}_1F_2\left(\frac{5}{4};-\frac{11}{2},-\frac{3}{4};-z\right)=\left(-\frac{1024\,z^4}{31\,185}+\frac{832\,z^3}{3465}+\frac{32\,z^2}{33}-\frac{76\,z}{33}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(256\,z^3+112\,z^2-3360\,z+3465\right)\sin\left(2\sqrt{z}\right)}{3465}$$

07.22.03.acda.01

$${}_1F_2\left(\frac{5}{4};-\frac{11}{2},-\frac{1}{4};z\right)=-\frac{1}{10\,395\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512\,z^4+6272\,z^3-12\,312\,z^2-30\,240\,z-10\,395\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-1472\,z^3-2928\,z^2+15\,957\,z+10\,395\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(128\,z^3+1968\,z^2-1674\,z-10\,395\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acdb.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) = -\frac{1}{10\,395\sqrt{2}} \left(\sqrt[4]{z}\left(\left(512z^4 - 6272z^3 - 12\,312z^2 + 30\,240z - 10\,395\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-1472z^3 + 2928z^2 + 15\,957z - 10\,395\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-128z^3 + 1968z^2 + 1674z - 10\,395\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acdc.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) = \left(-\frac{1856z^3}{10\,395} - \frac{32z^2}{33} + \frac{12z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(128z^3 + 3024z^2 + 2520z - 10\,395\right)\sinh\left(2\sqrt{z}\right)}{10\,395} $$

07.22.03.acdd.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) = \left(\frac{1856z^3}{10\,395} - \frac{32z^2}{33} - \frac{12z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(128z^3 - 3024z^2 + 2520z + 10\,395\right)\sin\left(2\sqrt{z}\right)}{10\,395} $$

07.22.03.acde.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) = \frac{1}{83\,160\sqrt{2}} \left(\sqrt[4]{z}\left(\left(-8704z^3 - 74\,304z^2 + 1890z + 83\,160\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(2048z^3 + 72\,960z^2 + 210\,816z - 123\,795\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 18z\left(512z^2 + 5280z + 4725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acdf.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{3}{4}; -z\right) = \frac{1}{83\,160\sqrt{2}} \left(\sqrt[4]{z}\left(2\left(4352z^3 - 37\,152z^2 - 945z + 41\,580\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(2048z^3 - 72\,960z^2 + 210\,816z + 123\,795\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 18z\left(512z^2 - 5280z + 4725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acdg.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) = \left(\frac{64z^3}{10\,395} + \frac{32z^2}{99} + \frac{20z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16z^2 + 240z + 495\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.acdh.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) = \left(-\frac{64z^3}{10\,395} + \frac{32z^2}{99} - \frac{20z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(16z^2 - 240z + 495\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.acdi.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{7}{4}; z\right) = \frac{1}{887\,040\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\sqrt{z}\,\left(4096z^3 + 283\,392z^2 + 2\,261\,520z + 2\,183\,895\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\left(28\,672z^3 + 615\,168z^2 + 2\,257\,200z + 745\,875\right)\right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4096z^3 + 309\,504z^2 + 2\,887\,920z + 5\,221\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acdj.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{7}{4}; -z\right) = \frac{1}{887\,040\sqrt{2}\,\sqrt[4]{z}} $$
$$ \left(\left(2\sqrt{z}\,\left(-4096z^3 + 283\,392z^2 - 2\,261\,520z + 2\,183\,895\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 7\left(28\,672z^3 - 615\,168z^2 + 2\,257\,200z - 745\,875\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4096z^3 - 309\,504z^2 + 2\,887\,920z - 5\,221\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acdk.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{9}{4}; z\right) = $$
$$ \frac{1}{17\,031\,168z^{5/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-16\,384z^{7/2} - 233\,472z^3 - 1\,618\,944z^{5/2} - 7\,032\,576z^2 - 20\,661\,696z^{3/2} - \right.\right.\right. $$
$$ \left. 41\,480\,208z - 54\,511\,380\sqrt{z} + e^{4\sqrt{z}}\left(16\,384z^{7/2} - 233\,472z^3 + 1\,618\,944z^{5/2} - 7\,032\,576z^2 + \right.\right. $$
$$ \left.\left. 20\,661\,696z^{3/2} - 41\,480\,208z + 54\,511\,380\sqrt{z} - 40\,883\,535\right) - 40\,883\,535\right) + $$
$$ \left.\left. 40\,883\,535\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + 40\,883\,535\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acdl.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{9}{4}; -z\right) = \frac{1}{4\,257\,792z^{5/4}}\left(2\sqrt[4]{z}\,\left(\left(-233\,472z^3 + 7\,032\,576z^2 - 41\,480\,208z + 40\,883\,535\right)\cos\left(2\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. 4\sqrt{z}\,\left(-4096z^3 + 404\,736z^2 - 5\,165\,424z + 13\,627\,845\right)\sin\left(2\sqrt{z}\right)\right) - 40\,883\,535\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.acdm.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{11}{4}; z\right) = \frac{1}{4\,055\,040\sqrt{2}\,z^{5/4}}\left(\left(-2\sqrt{z}\,\left(524\,288z^3 + 20\,183\,040z^2 + 157\,092\,480z + 151\,412\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(131\,072z^4 + 16\,932\,864z^3 + 294\,382\,080z^2 + 1\,169\,532\,000z + 454\,237\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 6\sqrt{z}\,\left(180\,224z^3 + 7\,480\,320z^2 + 66\,830\,400z + 151\,412\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acdn.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{11}{4}; -z\right) = \frac{1}{4\,055\,040\sqrt{2}\, z^{5/4}}\left(\left(2\sqrt{z}\left(-524\,288 z^3 + 20\,183\,040 z^2 - 157\,092\,480 z + 151\,412\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(-131\,072 z^4 + 16\,932\,864 z^3 - 294\,382\,080 z^2 + 1\,169\,532\,000 z - 454\,237\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 6\sqrt{z}\left(180\,224 z^3 - 7\,480\,320 z^2 + 66\,830\,400 z - 151\,412\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acdo.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) = $$
$$ \frac{1}{121\,110\,528 z^{9/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144 z^4 + 4\,849\,664 z^{7/2} + 44\,089\,344 z^3 + 255\,811\,584 z^{5/2} + 1\,034\,068\,992 z^2 + \right.\right.\right. $$
$$ 2\,990\,338\,560 z^{3/2} + 6\,105\,274\,560 z + 8\,449\,263\,900\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(262\,144 z^4 - 4\,849\,664 z^{7/2} + 44\,089\,344 z^3 - 255\,811\,584 z^{5/2} + 1\,034\,068\,992 z^2 - \right. $$
$$ \left.\left. 2\,990\,338\,560 z^{3/2} + 6\,105\,274\,560 z - 8\,449\,263\,900\sqrt{z} + 6\,336\,947\,925\right) + 6\,336\,947\,925\right) + $$
$$ \left.\left. 40\,883\,535 e^{2\sqrt{z}}\sqrt{2\pi}\,(16 z - 155)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 40\,883\,535 e^{2\sqrt{z}}\sqrt{2\pi}\,(16 z - 155)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acdp.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) = $$
$$ \frac{1}{30\,277\,632 z^{9/4}}\left(2\sqrt[4]{z}\left(\left(262\,144 z^4 - 44\,089\,344 z^3 + 1\,034\,068\,992 z^2 - 6\,105\,274\,560 z + 6\,336\,947\,925\right)\cos\left(2\sqrt{z}\right) + \right.\right. $$
$$ 4\sqrt{z}\left(-1\,212\,416 z^3 + 63\,952\,896 z^2 - 747\,584\,640 z + 2\,112\,315\,975\right) $$
$$ \left.\left.\sin\left(2\sqrt{z}\right)\right) - 40\,883\,535\sqrt{\pi}\,(16 z + 155) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.acdq.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) = $$
$$ \frac{1}{11\,796\,480\sqrt{2}\, z^{9/4}}\left(\left(2\sqrt{z}\left(262\,144 z^4 + 54\,231\,040 z^3 + 1\,584\,368\,640 z^2 + 12\,113\,010\,000 z + 11\,658\,772\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ \left(21\,757\,952 z^4 + 1\,459\,322\,880 z^3 + 22\,455\,014\,400 z^2 + 89\,636\,274\,000 z + 34\,976\,316\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(262\,144 z^4 + 57\,016\,320 z^3 + 1\,782\,144\,000 z^2 + 15\,020\,132\,400 z + 34\,976\,316\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acdr.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) = $$
$$ \frac{1}{11\,796\,480\sqrt{2}\,z^{9/4}}\left(\left(2\sqrt{z}\left(262\,144\,z^4 - 54\,231\,040\,z^3 + 1\,584\,368\,640\,z^2 - 12\,113\,010\,000\,z + 11\,658\,772\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(-21\,757\,952\,z^4 + 1\,459\,322\,880\,z^3 - 22\,455\,014\,400\,z^2 + 89\,636\,274\,000\,z - 34\,976\,316\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left.2\sqrt{z}\left(262\,144\,z^4 - 57\,016\,320\,z^3 + 1\,782\,144\,000\,z^2 - 15\,020\,132\,400\,z + 34\,976\,316\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acds.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) = $$
$$ \frac{1}{15\,502\,147\,584\,z^{13/4}}\left(13\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-8\,388\,608\,z^{9/2} - 195\,035\,136\,z^4 - 2\,239\,758\,336\,z^{7/2} - 16\,585\,064\,448\,z^3 - \right.\right.\right. $$
$$ 86\,991\,667\,200\,z^{5/2} - 334\,917\,918\,720\,z^2 - 946\,317\,556\,800\,z^{3/2} - 1\,926\,432\,169\,200\,z - $$
$$ 2\,661\,518\,128\,500\sqrt{z} + e^{4\sqrt{z}}\left(8\,388\,608\,z^{9/2} - 195\,035\,136\,z^4 + 2\,239\,758\,336\,z^{7/2} - \right. $$
$$ \left.\left.\left.16\,585\,064\,448\,z^3 + 86\,991\,667\,200\,z^{5/2} - 334\,917\,918\,720\,z^2 + 946\,317\,556\,800\,z^{3/2} - \right.\right.\right. $$
$$ \left.\left.\left.1\,926\,432\,169\,200\,z + 2\,661\,518\,128\,500\sqrt{z} - 1\,996\,138\,596\,375\right) - 1\,996\,138\,596\,375\right) + $$
$$ 40\,883\,535\,e^{2\sqrt{z}}\sqrt{2\pi}\left(256\,z^2 - 4960\,z + 48\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 40\,883\,535\,e^{2\sqrt{z}}\sqrt{2\pi} $$
$$ \left.\left.\left(256\,z^2 - 4960\,z + 48\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acdt.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) = \frac{1}{3\,875\,536\,896\,z^{13/4}} $$
$$ \left(13\left(2\sqrt[4]{z}\left(3\left(65\,011\,712\,z^4 - 5\,528\,354\,816\,z^3 + 111\,639\,306\,240\,z^2 - 642\,144\,056\,400\,z + 665\,379\,532\,125\right)\cos\left(2\sqrt{z}\right) + \right.\right.\right. $$
$$ \left.\left.4\sqrt{z}\left(2\,097\,152\,z^4 - 559\,939\,584\,z^3 + 21\,747\,916\,800\,z^2 - 236\,579\,389\,200\,z + 665\,379\,532\,125\right)\sin\left(2\sqrt{z}\right)\right) - \right. $$
$$ \left.\left.40\,883\,535\sqrt{\pi}\left(256\,z^2 + 4960\,z + 48\,825\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right) $$

07.22.03.acdu.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) = \frac{1}{25\,165\,824\sqrt{2}\,z^{13/4}} $$
$$ \left(\left(-2\sqrt{z}\left(53\,477\,376\,z^4 + 5\,491\,130\,368\,z^3 + 134\,890\,479\,360\,z^2 + 991\,328\,738\,400\,z + 949\,024\,050\,975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(8\,388\,608\,z^5 + 2\,751\,463\,424\,z^4 + 133\,066\,752\,000\,z^3 + 1\,871\,411\,592\,960\,z^2 + \right. $$
$$ \left.7\,312\,381\,876\,800\,z + 2\,847\,072\,152\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z} $$
$$ \left.\left.\left(54\,525\,952\,z^4 + 5\,849\,088\,000\,z^3 + 154\,529\,706\,240\,z^2 + 1\,238\,627\,950\,560\,z + 2\,847\,072\,152\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acdv.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) = \frac{1}{25\,165\,824\sqrt{2}\, z^{13/4}} $$
$$ \left(\left(2\sqrt{z}\left(53\,477\,376 z^4 - 5\,491\,130\,368 z^3 + 134\,890\,479\,360 z^2 - 991\,328\,738\,400 z + 949\,024\,050\,975\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(8\,388\,608 z^5 - 2\,751\,463\,424 z^4 + 133\,066\,752\,000 z^3 - 1\,871\,411\,592\,960 z^2 + \right. $$
$$ \left. 7\,312\,381\,876\,800 z - 2\,847\,072\,152\,925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z} $$
$$ \left.\left.\left(54\,525\,952 z^4 - 5\,849\,088\,000 z^3 + 154\,529\,706\,240 z^2 - 1\,238\,627\,950\,560 z + 2\,847\,072\,152\,925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acdw.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) = $$
$$ \frac{1}{992\,137\,445\,376 z^{17/4}} \left(221 e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(134\,217\,728 z^5 + 3\,825\,205\,248 z^{9/2} + 54\,005\,858\,304 z^4 + 494\,885\,928\,960 z^{7/2} + \right.\right. $$
$$ 3\,247\,688\,908\,800 z^3 + 15\,927\,630\,566\,400 z^{5/2} + 58\,942\,064\,966\,400 z^2 + $$
$$ 163\,036\,996\,214\,400 z^{3/2} + 327\,899\,033\,431\,200 z + 449\,796\,563\,716\,500\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(134\,217\,728 z^5 - 3\,825\,205\,248 z^{9/2} + 54\,005\,858\,304 z^4 - 494\,885\,928\,960 z^{7/2} + \right. $$
$$ 3\,247\,688\,908\,800 z^3 - 15\,927\,630\,566\,400 z^{5/2} + 58\,942\,064\,966\,400 z^2 - 163\,036\,996\,214\,400 z^{3/2} + $$
$$ \left.\left. 327\,899\,033\,431\,200 z - 449\,796\,563\,716\,500\sqrt{z} + 337\,347\,422\,787\,375\right) + 337\,347\,422\,787\,375\right) + $$
$$ 13\,627\,845 e^{2\sqrt{z}} \sqrt{2\pi}\left(4096 z^3 - 119\,040 z^2 + 2\,343\,600 z - 24\,754\,275\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ \left.13\,627\,845 e^{2\sqrt{z}} \sqrt{2\pi}\left(4096 z^3 - 119\,040 z^2 + 2\,343\,600 z - 24\,754\,275\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acdx.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) = $$
$$ -\frac{1}{248\,034\,361\,344 z^{17/4}} \left(221\left(13\,627\,845\sqrt{\pi}\left(4096 z^3 + 119\,040 z^2 + 2\,343\,600 z + 24\,754\,275\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right. $$
$$ 2\sqrt[4]{z}\left(\left(134\,217\,728 z^5 - 54\,005\,858\,304 z^4 + 3\,247\,688\,908\,800 z^3 - 58\,942\,064\,966\,400 z^2 + \right.\right. $$
$$ \left. 327\,899\,033\,431\,200 z - 337\,347\,422\,787\,375\right)\cos\left(2\sqrt{z}\right) - 228\sqrt{z} $$
$$ \left.\left.\left(16\,777\,216 z^4 - 2\,170\,552\,320 z^3 + 69\,858\,028\,800 z^2 - 715\,074\,544\,800 z + 1\,972\,791\,946\,125\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.acdy.01

$${}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) =$$
$$\frac{1}{805\,306\,368\sqrt{2}\,z^{17/4}}\left(19\left(2\sqrt{z}\left(16\,777\,216 z^5 + 7\,991\,197\,696 z^4 + 573\,721\,374\,720 z^3 + 12\,486\,782\,880\,000 z^2 + 87\,697\,569\,445\,200 z + 83\,378\,541\,621\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 5\left(419\,430\,400 z^5 + 65\,509\,785\,600 z^4 + 2\,584\,463\,192\,064 z^3 + 33\,815\,426\,261\,760 z^2 + 128\,850\,351\,149\,520 z + 50\,027\,124\,972\,825\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216 z^5 + 8\,257\,536\,000 z^4 + 613\,643\,489\,280 z^3 + 14\,382\,337\,432\,320 z^2 + 110\,629\,089\,370\,800 z + 250\,135\,624\,864\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acdz.01

$${}_1F_2\left(\frac{5}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) =$$
$$-\frac{1}{805\,306\,368\sqrt{2}\,z^{17/4}}\left(19\left(2\sqrt{z}\left(16\,777\,216 z^5 - 7\,991\,197\,696 z^4 + 573\,721\,374\,720 z^3 - 12\,486\,782\,880\,000 z^2 + 87\,697\,569\,445\,200 z - 83\,378\,541\,621\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 5\left(419\,430\,400 z^5 - 65\,509\,785\,600 z^4 + 2\,584\,463\,192\,064 z^3 - 33\,815\,426\,261\,760 z^2 + 128\,850\,351\,149\,520 z - 50\,027\,124\,972\,825\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-16\,777\,216 z^5 + 8\,257\,536\,000 z^4 - 613\,643\,489\,280 z^3 + 14\,382\,337\,432\,320 z^2 - 110\,629\,089\,370\,800 z + 250\,135\,624\,864\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{5}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.ace0.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,430\,923\,725}$$
$$\left(\left(-524\,288 z^6 + 2\,064\,384 z^5 + 19\,568\,640 z^4 + 183\,173\,760 z^3 + 1\,096\,880\,400 z^2 + 2\,930\,974\,200 z + 1\,430\,923\,725\right)\cosh\left(2\sqrt{z}\right) - 10\sqrt{z}\left(65\,536 z^5 + 602\,112 z^4 + 6\,209\,280 z^3 + 48\,310\,416 z^2 + 204\,615\,180 z + 286\,184\,745\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ace1.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{23}{4}; -z\right) = \frac{1}{1\,430\,923\,725}$$
$$\left(\left(-524\,288 z^6 - 2\,064\,384 z^5 + 19\,568\,640 z^4 - 183\,173\,760 z^3 + 1\,096\,880\,400 z^2 - 2\,930\,974\,200 z + 1\,430\,923\,725\right)\cos\left(2\sqrt{z}\right) - 10\sqrt{z}\left(65\,536 z^5 - 602\,112 z^4 + 6\,209\,280 z^3 - 48\,310\,416 z^2 + 204\,615\,180 z - 286\,184\,745\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ace2.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{21}{4}; z\right) = -\frac{1}{197\,358\,525\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(262\,144 z^6 - 770\,048 z^5 - 6\,820\,864 z^4 - 55\,149\,120 z^3 - 258\,504\,480 z^2 - 405\,159\,300 z - 197\,358\,525\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 4\sqrt{z}\left(196\,608 z^5 + 1\,208\,320 z^4 + 11\,228\,928 z^3 + 74\,720\,880 z^2 + 247\,272\,480 z + 197\,358\,525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 4 z\left(65\,536 z^5 - 225\,280 z^4 - 2\,060\,544 z^3 - 17\,246\,736 z^2 - 89\,385\,660 z - 197\,358\,525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.ace3.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) = -\frac{1}{197\,358\,525\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(262\,144 z^6 + 770\,048 z^5 - 6\,820\,864 z^4 + 55\,149\,120 z^3 - 258\,504\,480 z^2 + 405\,159\,300 z - 197\,358\,525\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 4\sqrt{z}\left(196\,608 z^5 - 1\,208\,320 z^4 + 11\,228\,928 z^3 - 74\,720\,880 z^2 + 247\,272\,480 z - 197\,358\,525\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left. 4 z\left(65\,536 z^5 + 225\,280 z^4 - 2\,060\,544 z^3 + 17\,246\,736 z^2 - 89\,385\,660 z + 197\,358\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.ace4.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{19}{4}; z\right) = $$
$$ \frac{1}{62\,214\,075}\left(3\left(65\,536 z^5 + 348\,160 z^4 + 2\,876\,160 z^3 + 16\,354\,800 z^2 + 42\,688\,800 z + 20\,738\,025\right)\cosh\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\left(65\,536 z^5 - 184\,320 z^4 - 1\,532\,160 z^3 - 11\,032\,560 z^2 - 45\,114\,300 z - 62\,214\,075\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ace5.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{19}{4}; -z\right) = $$
$$ \frac{1}{62\,214\,075}\left(2\sqrt{z}\left(65\,536 z^5 + 184\,320 z^4 - 1\,532\,160 z^3 + 11\,032\,560 z^2 - 45\,114\,300 z + 62\,214\,075\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left. 3\left(65\,536 z^5 - 348\,160 z^4 + 2\,876\,160 z^3 - 16\,354\,800 z^2 + 42\,688\,800 z - 20\,738\,025\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.ace6.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{17}{4}; z\right) = $$
$$ \frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(114\,688 z^5 + 395\,264 z^4 + 2\,819\,520 z^3 + 12\,566\,880 z^2 + 19\,410\,300 z + 9\,398\,025\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 4\sqrt{z}\left(32\,768 z^5 - 81\,920 z^4 - 605\,568 z^3 - 3\,721\,680 z^2 - 11\,891\,880 z - 9\,398\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 4 z\left(20\,480 z^4 + 121\,344 z^3 + 891\,216 z^2 + 4\,373\,460 z + 9\,398\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.ace7.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-114\,688\,z^5+395\,264\,z^4-2\,819\,520\,z^3+12\,566\,880\,z^2-19\,410\,300\,z+9\,398\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(32\,768\,z^5+81\,920\,z^4-605\,568\,z^3+3\,721\,680\,z^2-11\,891\,880\,z+9\,398\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(20\,480\,z^4-121\,344\,z^3+891\,216\,z^2-4\,373\,460\,z+9\,398\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ace8.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{15}{4}; z\right) = \frac{1}{3\,274\,425}\left(\left(-32\,768\,z^5+81\,920\,z^4+516\,480\,z^3+2\,696\,400\,z^2+6\,791\,400\,z+3\,274\,425\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.10\sqrt{z}\left(4096\,z^4+19\,968\,z^3+125\,328\,z^2+485\,100\,z+654\,885\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ace9.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{3\,274\,425}\left(\left(32\,768\,z^5+81\,920\,z^4-516\,480\,z^3+2\,696\,400\,z^2-6\,791\,400\,z+3\,274\,425\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.10\sqrt{z}\left(4096\,z^4-19\,968\,z^3+125\,328\,z^2-485\,100\,z+654\,885\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acea.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{13}{4}; z\right) =$$
$$-\frac{1}{552\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^5-38\,912\,z^4-187\,200\,z^3-764\,640\,z^2-1\,152\,900\,z-552\,825\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(8192\,z^4+44\,544\,z^3+235\,440\,z^2+710\,640\,z+552\,825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(4096\,z^4-10\,752\,z^3-60\,048\,z^2-268\,380\,z-552\,825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aceb.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{552\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^5+38\,912\,z^4-187\,200\,z^3+764\,640\,z^2-1\,152\,900\,z+552\,825\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(8192\,z^4-44\,544\,z^3+235\,440\,z^2-710\,640\,z+552\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4\,z\left(4096\,z^4+10\,752\,z^3-60\,048\,z^2+268\,380\,z-552\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acec.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{11}{4}; z\right) = \frac{1}{218\,295}\left(\left(4096\,z^4+44\,544\,z^3+193\,680\,z^2+458\,640\,z+218\,295\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(4096\,z^4-10\,752\,z^3-47\,856\,z^2-167\,580\,z-218\,295\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aced.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{11}{4}; -z\right) = \frac{1}{218\,295}\left(\left(4096\,z^4 - 44\,544\,z^3 + 193\,680\,z^2 - 458\,640\,z + 218\,295\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4096\,z^4 + 10\,752\,z^3 - 47\,856\,z^2 + 167\,580\,z - 218\,295\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acee.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{9}{4}; z\right) = \frac{1}{42\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024\,z^4 + 20\,160\,z^3 + 62\,880\,z^2 + 90\,300\,z + 42\,525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048\,z^4 - 5248\,z^3 - 20\,880\,z^2 - 56\,280\,z - 42\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-256\,z^3 + 6096\,z^2 + 22\,260\,z + 42\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acef.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) = \frac{1}{42\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024\,z^4 - 20\,160\,z^3 + 62\,880\,z^2 - 90\,300\,z + 42\,525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048\,z^4 + 5248\,z^3 - 20\,880\,z^2 + 56\,280\,z - 42\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(256\,z^3 + 6096\,z^2 - 22\,260\,z + 42\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aceg.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) = \frac{1}{19\,845}\left(\left(-2048\,z^4 + 4224\,z^3 + 20\,880\,z^2 + 42\,840\,z + 19\,845\right)\cosh\left(2\sqrt{z}\right) + 6\sqrt{z}\left(256\,z^3 - 2032\,z^2 - 5460\,z - 6615\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aceh.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) = \frac{1}{19\,845}\left(\left(-2048\,z^4 - 4224\,z^3 + 20\,880\,z^2 - 42\,840\,z + 19\,845\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(256\,z^3 + 2032\,z^2 - 5460\,z + 6615\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acei.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{5}{4}; z\right) = -\frac{1}{4725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024\,z^4 - 1600\,z^3 - 9120\,z^2 - 10\,500\,z - 4725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(-256\,z^3 + 1040\,z^2 + 2240\,z + 1575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(256\,z^3 - 144\,z^2 - 2940\,z - 4725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acej.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{5}{4}; -z\right) =$$
$$\frac{1}{4725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-1024z^4 - 1600z^3 + 9120z^2 - 10\,500z + 4725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(256z^3 + 1040z^2 - 2240z + 1575\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(256z^3 + 144z^2 - 2940z + 4725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acek.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{2835}\left(5\left(-256z^3 + 528z^2 + 1344z + 567\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256z^3 + 272z^2 - 2940z - 2835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acel.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{2835}\left(5\left(256z^3 + 528z^2 - 1344z + 567\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256z^3 - 272z^2 - 2940z + 2835\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acem.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) =$$
$$\frac{1}{945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-832z^3 + 912z^2 + 2940z + 945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(128z^3 + 528z^2 - 1482z - 945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.12z\left(-80z^2 + 8z + 315\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acen.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(832z^3 + 912z^2 - 2940z + 945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(128z^3 - 528z^2 - 1482z + 945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left.12z\left(80z^2 + 8z - 315\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aceo.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) = \left(-\frac{128z^3}{945} - \frac{80z^2}{63} + \frac{8z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(304z^2 + 420z - 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.acep.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) = \left(\frac{128z^3}{945} - \frac{80z^2}{63} - \frac{8z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(-304z^2 + 420z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aceq.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) =$$
$$-\frac{1}{3780\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^3+3712z^2+470z-3780\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-3072z^2-11\,168z+5175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2z\left(128z^2+2272z+2385\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acer.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) =$$
$$\frac{1}{3780\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^3-3712z^2+470z+3780\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-3072z^2+11\,168z+5175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2z\left(128z^2-2272z+2385\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aces.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) = \left(\frac{16z^2}{63}+\frac{16z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{945}\sqrt{z}\left(16z^2+420z+945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.acet.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{5}{4}; -z\right) = \left(\frac{16z^2}{63}-\frac{16z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\left(16z^2-420z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aceu.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{7}{4}; z\right) = \frac{1}{40\,320\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(70\sqrt{z}\left(256z^2+2576z+2565\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096z^3+157\,952z^2+638\,640z+208\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(9472z^2+112\,464z+208\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acev.01

$${}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{7}{4}; -z\right) = \frac{1}{40\,320\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(70\sqrt{z}\left(256z^2-2576z+2565\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4096z^3-157\,952z^2+638\,640z-208\,845\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\left(9472z^2-112\,464z+208\,845\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acew.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{9}{4}; z\right) = \frac{1}{774\,144\, z^{5/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z} \left(4096 z^3 + 44\,032 z^{5/2} + 228\,608 z^2 + 729\,408 z^{3/2} + 1\,518\,384 z + 2\,018\,940\sqrt{z} + e^{4\sqrt{z}} \left(4096 z^3 - 44\,032 z^{5/2} + 228\,608 z^2 - 729\,408 z^{3/2} + 1\,518\,384 z - 2\,018\,940\sqrt{z} + 1\,514\,205\right) + 1\,514\,205\right) + 1\,514\,205 e^{2\sqrt{z}} \sqrt{2\pi}\, \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 1\,514\,205 e^{2\sqrt{z}} \sqrt{2\pi}\, \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acex.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = \frac{1}{193\,536 z^{5/4}} \left(2\sqrt[4]{z} \left(\left(-4096 z^3 + 228\,608 z^2 - 1\,518\,384 z + 1\,514\,205\right) \cos\left(2\sqrt{z}\right) + 4\sqrt{z} \left(11\,008 z^2 - 182\,352 z + 504\,735\right) \sin\left(2\sqrt{z}\right)\right) - 1\,514\,205\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right) $$

07.22.03.acey.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = -\frac{1}{184\,320\sqrt{2}\, z^{5/4}} \left(\left(2\sqrt{z} \left(8192 z^3 + 596\,480 z^2 + 5\,317\,920 z + 5\,221\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 5\left(81\,920 z^3 + 1\,889\,280 z^2 + 8\,019\,648 z + 3\,132\,675\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z} \left(8192 z^3 + 649\,728 z^2 + 6\,683\,040 z + 15\,663\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acez.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = \frac{1}{184\,320\sqrt{2}\, z^{5/4}} \left(\left(-2\sqrt{z} \left(8192 z^3 - 596\,480 z^2 + 5\,317\,920 z - 5\,221\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 5\left(81\,920 z^3 - 1\,889\,280 z^2 + 8\,019\,648 z - 3\,132\,675\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z} \left(8192 z^3 - 649\,728 z^2 + 6\,683\,040 z - 15\,663\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acf0.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = \frac{1}{5\,505\,024 z^{9/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z} \left(-65\,536 z^{7/2} - 950\,272 z^3 - 6\,746\,112 z^{5/2} - 30\,222\,336 z^2 - 92\,294\,400 z^{3/2} - 193\,818\,240 z - 272\,556\,900\sqrt{z} + e^{4\sqrt{z}} \left(65\,536 z^{7/2} - 950\,272 z^3 + 6\,746\,112 z^{5/2} - 30\,222\,336 z^2 + 92\,294\,400 z^{3/2} - 193\,818\,240 z + 272\,556\,900\sqrt{z} - 204\,417\,675\right) - 204\,417\,675\right) + 1\,514\,205 e^{2\sqrt{z}} \sqrt{2\pi}\, (16 z - 135) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 1\,514\,205 e^{2\sqrt{z}} \sqrt{2\pi}\, (16 z - 135) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acf1.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = \frac{1}{1\,376\,256\, z^{9/4}} \left(-1\,514\,205\,\sqrt{\pi}\,(16z+135)\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\,\left(\left(950\,272\, z^3 - 30\,222\,336\, z^2 + 193\,818\,240\, z - 204\,417\,675\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(16\,384\, z^3 - 1\,686\,528\, z^2 + 23\,073\,600\, z - 68\,139\,225\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.acf2.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{15}{4}; z\right) = -\frac{1}{5\,898\,240\,\sqrt{2}\, z^{9/4}} \left(11\left(-10\sqrt{z}\,\left(212\,992\, z^3 + 8\,570\,880\, z^2 + 72\,399\,600\, z + 70\,659\,225\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(262\,144\, z^4 + 35\,061\,760\, z^3 + 641\,571\,840\, z^2 + 2\,701\,062\,000\, z + 1\,059\,888\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(1\,097\,728\, z^3 + 47\,523\,840\, z^2 + 439\,966\,800\, z + 1\,059\,888\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acf3.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{15}{4}; -z\right) = -\frac{1}{5\,898\,240\,\sqrt{2}\, z^{9/4}} \left(11\left(10\sqrt{z}\,\left(212\,992\, z^3 - 8\,570\,880\, z^2 + 72\,399\,600\, z - 70\,659\,225\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(262\,144\, z^4 - 35\,061\,760\, z^3 + 641\,571\,840\, z^2 - 2\,701\,062\,000\, z + 1\,059\,888\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-1\,097\,728\, z^3 + 47\,523\,840\, z^2 - 439\,966\,800\, z + 1\,059\,888\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acf4.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{17}{4}; z\right) = -\frac{1}{704\,643\,072\, z^{13/4}} \left(13\, e^{-2\sqrt{z}}\,\left(4\sqrt[4]{z}\,\left(2\,097\,152\, z^4 + 39\,321\,600\, z^{7/2} + 363\,331\,584\, z^3 + 2\,147\,942\,400\, z^{5/2} + 8\,860\,262\,400\, z^2 + 26\,040\,864\,960\, z^{3/2} + 54\,293\,334\,480\, z + 76\,043\,375\,100\sqrt{z} + e^{4\sqrt{z}}\,\left(2\,097\,152\, z^4 - 39\,321\,600\, z^{7/2} + 363\,331\,584\, z^3 - 2\,147\,942\,400\, z^{5/2} + 8\,860\,262\,400\, z^2 - 26\,040\,864\,960\, z^{3/2} + 54\,293\,334\,480\, z - 76\,043\,375\,100\sqrt{z} + 57\,032\,531\,325\right) + 57\,032\,531\,325\right) - 1\,514\,205\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\, z^2 - 4320\, z + 37\,665\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 1\,514\,205\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256\, z^2 - 4320\, z + 37\,665\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acf5.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = -\frac{1}{176\,160\,768\, z^{13/4}} \left(13\left(1\,514\,205\,\sqrt{\pi}\,\left(256\, z^2 + 4320\, z + 37\,665\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\,\left(\left(2\,097\,152\, z^4 - 363\,331\,584\, z^3 + 8\,860\,262\,400\, z^2 - 54\,293\,334\,480\, z + 57\,032\,531\,325\right)\cos\left(2\sqrt{z}\right) - 60\sqrt{z}\,\left(655\,360\, z^3 - 35\,799\,040\, z^2 + 434\,014\,416\, z - 1\,267\,389\,585\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.acf6.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) = -\frac{1}{12\,582\,912\sqrt{2}\, z^{13/4}} $$
$$ \left(11\left(2\sqrt{z}\left(524\,288 z^4 + 111\,345\,664 z^3 + 3\,332\,609\,280 z^2 + 26\,487\,115\,200 z + 25\,649\,298\,675\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 21\left(2\,097\,152 z^4 + 144\,834\,560 z^3 + 2\,297\,268\,480 z^2 + 9\,367\,394\,400 z + 3\,664\,185\,525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. \left. 2\sqrt{z}\left(524\,288 z^4 + 116\,981\,760 z^3 + 3\,795\,966\,720 z^2 + 32\,559\,770\,880 z + 76\,947\,896\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acf7.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) = \frac{1}{12\,582\,912\sqrt{2}\, z^{13/4}} $$
$$ \left(11\left(2\sqrt{z}\left(524\,288 z^4 - 111\,345\,664 z^3 + 3\,332\,609\,280 z^2 - 26\,487\,115\,200 z + 25\,649\,298\,675\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. \right. $$
$$ 21\left(2\,097\,152 z^4 - 144\,834\,560 z^3 + 2\,297\,268\,480 z^2 - 9\,367\,394\,400 z + 3\,664\,185\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left. \left. 2\sqrt{z}\left(524\,288 z^4 - 116\,981\,760 z^3 + 3\,795\,966\,720 z^2 - 32\,559\,770\,880 z + 76\,947\,896\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acf8.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) = $$
$$ \frac{1}{45\,097\,156\,608 z^{17/4}}\left(221 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-33\,554\,432 z^{9/2} - 788\,529\,152 z^4 - 9\,164\,554\,240 z^{7/2} - 68\,734\,156\,800 z^3 - \right.\right.\right. $$
$$ 365\,667\,056\,640 z^{5/2} - 1\,422\,238\,245\,120 z^2 - 4\,055\,646\,672\,000 z^{3/2} - 8\,314\,075\,677\,600 z - $$
$$ 11\,533\,245\,223\,500\sqrt{z} + e^{4\sqrt{z}}\left(33\,554\,432 z^{9/2} - 788\,529\,152 z^4 + 9\,164\,554\,240 z^{7/2} - \right. $$
$$ 68\,734\,156\,800 z^3 + 365\,667\,056\,640 z^{5/2} - 1\,422\,238\,245\,120 z^2 + 4\,055\,646\,672\,000 z^{3/2} - $$
$$ \left. 8\,314\,075\,677\,600 z + 11\,533\,245\,223\,500\sqrt{z} - 8\,649\,933\,917\,625\right) - 8\,649\,933\,917\,625\Big) + $$
$$ 504\,735 e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 - 103\,680 z^2 + 1\,807\,920 z - 17\,137\,575\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + $$
$$ \left. 504\,735 e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 - 103\,680 z^2 + 1\,807\,920 z - 17\,137\,575\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.acf9.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) = $$
$$ -\frac{1}{11\,274\,289\,152 z^{17/4}}\left(221\left(504\,735\sqrt{\pi}\left(4096 z^3 + 103\,680 z^2 + 1\,807\,920 z + 17\,137\,575\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\right.\right. $$
$$ \Big(\left(788\,529\,152 z^4 - 68\,734\,156\,800 z^3 + 1\,422\,238\,245\,120 z^2 - 8\,314\,075\,677\,600 z + 8\,649\,933\,917\,625\right) $$
$$ \cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(8\,388\,608 z^4 - 2\,291\,138\,560 z^3 + 91\,416\,764\,160 z^2 - \right. $$
$$ \left.\left. 1\,013\,911\,668\,000 z + 2\,883\,311\,305\,875\right)\sin\left(2\sqrt{z}\right)\Big)\right)\Big) $$

07.22.03.acfa.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) = -\frac{1}{402\,653\,184\sqrt{2}\, z^{17/4}} $$
$$ \left(209\left(-2\sqrt{z}\left(108\,003\,328 z^4 + 11\,392\,143\,360 z^3 + 283\,882\,809\,600 z^2 + 2\,118\,946\,143\,600 z + 2\,033\,622\,966\,375\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216 z^5 + 5\,615\,124\,480 z^4 + 277\,525\,647\,360 z^3 + \right. $$
$$ \left. 3\,970\,298\,592\,000 z^2 + 15\,653\,400\,562\,800 z + 6\,100\,868\,899\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 30\sqrt{z}\left(7\,340\,032 z^4 + 800\,280\,576 z^3 + 21\,691\,747\,584 z^2 + 175\,880\,905\,200 z + 406\,724\,593\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acfb.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) = \frac{1}{402\,653\,184\sqrt{2}\, z^{17/4}} $$
$$ \left(209\left(2\sqrt{z}\left(108\,003\,328 z^4 - 11\,392\,143\,360 z^3 + 283\,882\,809\,600 z^2 - 2\,118\,946\,143\,600 z + 2\,033\,622\,966\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(16\,777\,216 z^5 - 5\,615\,124\,480 z^4 + 277\,525\,647\,360 z^3 - 3\,970\,298\,592\,000 z^2 + \right. $$
$$ \left. 15\,653\,400\,562\,800 z - 6\,100\,868\,899\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 30\sqrt{z}\left(7\,340\,032 z^4 - 800\,280\,576 z^3 + 21\,691\,747\,584 z^2 - 175\,880\,905\,200 z + 406\,724\,593\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{5}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.acfc.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) = $$
$$ \frac{1}{158\,991\,525}\left(\left(65\,536 z^5 + 3\,010\,560 z^4 + 22\,767\,360 z^3 + 126\,680\,400 z^2 + 327\,858\,300 z + 158\,991\,525\right)\cosh\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\left(131\,072 z^5 - 532\,480 z^4 - 4\,139\,520 z^3 - 28\,717\,920 z^2 - 115\,869\,600 z - 158\,991\,525\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.acfd.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) = $$
$$ \frac{1}{158\,991\,525}\left(\left(-65\,536 z^5 + 3\,010\,560 z^4 - 22\,767\,360 z^3 + 126\,680\,400 z^2 - 327\,858\,300 z + 158\,991\,525\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\left(131\,072 z^5 + 532\,480 z^4 - 4\,139\,520 z^3 + 28\,717\,920 z^2 - 115\,869\,600 z + 158\,991\,525\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.acfe.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{21\,928\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072\,z^5+987\,136\,z^4+6\,689\,280\,z^3+29\,455\,920\,z^2+45\,349\,200\,z+21\,928\,725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(65\,536\,z^5-225\,280\,z^4-1\,458\,432\,z^3-8\,770\,320\,z^2-27\,806\,220\,z-21\,928\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(16\,384\,z^4+301\,056\,z^3+2\,119\,104\,z^2+10\,263\,240\,z+21\,928\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acff.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) =$$
$$\frac{1}{21\,928\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-131\,072\,z^5+987\,136\,z^4-6\,689\,280\,z^3+29\,455\,920\,z^2-45\,349\,200\,z+21\,928\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(65\,536\,z^5+225\,280\,z^4-1\,458\,432\,z^3+8\,770\,320\,z^2-27\,806\,220\,z+21\,928\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(16\,384\,z^4-301\,056\,z^3+2\,119\,104\,z^2-10\,263\,240\,z+21\,928\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acfg.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{6\,912\,675}\left(\left(-65\,536\,z^5+184\,320\,z^4+1\,102\,080\,z^3+5\,710\,320\,z^2+14\,345\,100\,z+6\,912\,675\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(32\,768\,z^4+215\,040\,z^3+1\,330\,560\,z^2+5\,128\,200\,z+6\,912\,675\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acfh.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{6\,912\,675}\left(\left(65\,536\,z^5+184\,320\,z^4-1\,102\,080\,z^3+5\,710\,320\,z^2-14\,345\,100\,z+6\,912\,675\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(32\,768\,z^4-215\,040\,z^3+1\,330\,560\,z^2-5\,128\,200\,z+6\,912\,675\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acfi.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) =$$
$$-\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768\,z^5-65\,536\,z^4-350\,080\,z^3-1\,440\,720\,z^2-2\,176\,200\,z-1\,044\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(20\,480\,z^4+82\,432\,z^3+442\,320\,z^2+1\,340\,820\,z+1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(8192\,z^4-19\,456\,z^3-112\,224\,z^2-505\,440\,z-1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acfj.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768 z^5 + 65\,536 z^4 - 350\,080 z^3 + 1\,440\,720 z^2 - 2\,176\,200 z + 1\,044\,225\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(20\,480 z^4 - 82\,432 z^3 + 442\,320 z^2 - 1\,340\,820 z + 1\,044\,225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4 z\left(8192 z^4 + 19\,456 z^3 - 112\,224 z^2 + 505\,440 z - 1\,044\,225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acfk.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{15}{4}; z\right) = \left(\frac{4096 z^4}{72\,765} + \frac{512 z^3}{2695} + \frac{48 z^2}{55} + \frac{44 z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) +$$
$$\frac{2\sqrt{z}\left(8192 z^4 - 15\,360 z^3 - 77\,280 z^2 - 277\,200 z - 363\,825\right)\sinh\left(2\sqrt{z}\right)}{363\,825}$$

07.22.03.acfl.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{15}{4}; -z\right) =$$
$$\left(\frac{4096 z^4}{72\,765} - \frac{512 z^3}{2695} + \frac{48 z^2}{55} - \frac{44 z}{21} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(8192 z^4 + 15\,360 z^3 - 77\,280 z^2 + 277\,200 z - 363\,825\right)\sin\left(2\sqrt{z}\right)}{363\,825}$$

07.22.03.acfm.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{13}{4}; z\right) =$$
$$\frac{1}{61\,425\sqrt{2}}\left(\sqrt[4]{z}\left(\left(12\,288 z^4 + 24\,320 z^3 + 88\,560 z^2 + 129\,600 z + 61\,425\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096 z^4 - 6656 z^3 - 28\,560 z^2 - \right.\right.\right.$$
$$\left.\left.\left.80\,460 z - 61\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(2048 z^3 + 7872 z^2 + 31\,320 z + 61\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acfn.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{61\,425\sqrt{2}}\left(\sqrt[4]{z}\left(\left(12\,288 z^4 - 24\,320 z^3 + 88\,560 z^2 - 129\,600 z + 61\,425\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4096 z^4 + 6656 z^3 - 28\,560 z^2 + \right.\right.\right.$$
$$\left.\left.\left.80\,460 z - 61\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(2048 z^3 - 7872 z^2 + 31\,320 z - 61\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acfo.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{11}{4}; z\right) = \frac{1}{24\,255}\left(\left(-4096 z^4 + 6656 z^3 + 23\,280 z^2 + 51\,660 z + 24\,255\right)\cosh\left(2\sqrt{z}\right) -$$
$$\left.2\sqrt{z}\left(2048 z^3 + 6144 z^2 + 19\,320 z + 24\,255\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acfp.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{11}{4}; -z\right) = \frac{1}{24\,255}\left(\left(-4096\,z^4 - 6656\,z^3 + 23\,280\,z^2 - 51\,660\,z + 24\,255\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-2048\,z^3 + 6144\,z^2 - 19\,320\,z + 24\,255\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acfq.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{9}{4}; z\right) = -\frac{1}{4725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048\,z^4 - 3200\,z^3 - 7440\,z^2 - 10\,200\,z - 4725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(256\,z^3 + 880\,z^2 + 2140\,z + 1575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(512\,z^3 - 864\,z^2 - 2640\,z - 4725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acfr.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{9}{4}; -z\right) = -\frac{1}{4725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048\,z^4 + 3200\,z^3 - 7440\,z^2 + 10\,200\,z - 4725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(256\,z^3 - 880\,z^2 + 2140\,z - 1575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(512\,z^3 + 864\,z^2 - 2640\,z + 4725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acfs.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{7}{4}; z\right) = \frac{1}{2205}\left(\left(256\,z^3 + 2640\,z^2 + 4860\,z + 2205\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(512\,z^3 - 864\,z^2 - 1920\,z - 2205\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acft.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{1}{2205}\left(\left(-256\,z^3 + 2640\,z^2 - 4860\,z + 2205\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(512\,z^3 + 864\,z^2 - 1920\,z + 2205\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acfu.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{5}{4}; z\right) = \frac{1}{525\sqrt{2}}\left(\sqrt[4]{z}\left(75\left(16\,z^2 + 16\,z + 7\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(256\,z^3 - 400\,z^2 - 780\,z - 525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-64\,z^2 + 360\,z + 525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acfv.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{5}{4}; -z\right) =$$
$$\frac{1}{525\sqrt{2}}\left(\sqrt[4]{z}\left(75\left(16z^2-16z+7\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(256z^3+400z^2-780z+525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(64z^2+360z-525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acfw.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{3}{4}; z\right) = \frac{1}{315}\left(\left(-256z^3+240z^2+780z+315\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\left(128z^2-360z-315\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acfx.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) = \frac{1}{315}\left(\left(256z^3+240z^2-780z+315\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\left(128z^2+360z-315\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acfy.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) =$$
$$-\frac{1}{105\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^3-48z^2-360z-105\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+28\sqrt{z}\left(-16z^2+24z+15\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(32z^2+24z-105\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acfz.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{105\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^3+48z^2-360z+105\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-28\sqrt{z}\left(16z^2+24z-15\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(-32z^2+24z+105\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acg0.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) = \left(-\frac{176z^2}{105}+\frac{4z}{7}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{105}\sqrt{z}\left(32z^2+80z-105\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.acg1.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) = \left(-\frac{176z^2}{105}-\frac{4z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{105}\sqrt{z}\left(-32z^2+80z+105\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.acg2.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) = \frac{1}{210\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(-14\left(16z^2+5z-15\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(128z^2+736z-255\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2z\left(128z+165\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acg3.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) = -\frac{1}{210\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(14\left(16z^2-5z-15\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(128z^2-736z-255\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(165-128z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acg4.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) = \left(\frac{16z^2}{105}+\frac{12z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\left(8z+21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.acg5.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = \left(\frac{16z^2}{105}-\frac{12z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}\left(21-8z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.acg6.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) =$$
$$\frac{1}{2240\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(256z^2+4240z+4435\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-5\left(1280z^2+6160z+1989\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(256z^2+5104z+9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acg7.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) =$$
$$\frac{1}{2240\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(256z^2-4240z+4435\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-5\left(1280z^2-6160z+1989\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\left(256z^2-5104z+9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acg8.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) = \frac{1}{43008z^{5/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1024z^{5/2}-7936z^2-29376z^{3/2}-64848z-87780\sqrt{z}+\right.\right.\right.$$
$$\left.e^{4\sqrt{z}}\left(1024z^{5/2}-7936z^2+29376z^{3/2}-64848z+87780\sqrt{z}-65835\right)-65835\right)+$$
$$\left.\left.65835e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+65835e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.acg9.01

$${}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{9}{4}; -z\right) = \frac{1}{10752z^{5/4}}$$
$$\left(2\sqrt[4]{z}\left(\left(7936z^2-64848z+65835\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(256z^2-7344z+21945\right)\sin\left(2\sqrt{z}\right)\right)-65835\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)$$

07.22.03.acga.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{11}{4}; z\right) = \frac{1}{10\,240\sqrt{2}\,z^{5/4}} \left(\left(-2\sqrt{z}\left(18\,432z^2+207\,040z+208\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(8192z^3+338\,432z^2+1\,591\,200z+626\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- 2\sqrt{z}\left(19\,456z^2+254\,592z+626\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acgb.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{11}{4}; -z\right) = \frac{1}{10\,240\sqrt{2}\,z^{5/4}} \left(\left(2\sqrt{z}\left(18\,432z^2-207\,040z+208\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(8192z^3-338\,432z^2+1\,591\,200z-626\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)- 2\sqrt{z}\left(19\,456z^2-254\,592z+626\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acgc.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{13}{4}; z\right) = \frac{1}{917\,504z^{9/4}} \left(3e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384z^3+180\,224z^{5/2}+965\,632z^2+3\,210\,240z^{3/2}+7\,022\,400z+10\,094\,700\sqrt{z}+ e^{4\sqrt[4]{z}}\left(16\,384z^3-180\,224z^{5/2}+965\,632z^2-3\,210\,240z^{3/2}+7\,022\,400z-10\,094\,700\sqrt{z}+7\,571\,025\right)+ 7\,571\,025\right)+65\,835e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-115)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+65\,835e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-115)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acgd.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) = -\frac{1}{229\,376z^{9/4}} \left(3\left(65\,835\sqrt{\pi}\,(16z+115)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(16\,384z^3-965\,632z^2+7\,022\,400z-7\,571\,025\right)\cos\left(2\sqrt{z}\right)- 44\sqrt{z}\left(4096z^2-72\,960z+229\,425\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.acge.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) = \frac{1}{327\,680\sqrt{2}\,z^{9/4}} \left(11\left(2\sqrt{z}\left(16\,384z^3+1\,249\,280z^2+12\,252\,240z+12\,182\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-51\left(16\,384z^3+399\,360z^2+1\,812\,720z+ 716\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(16\,384z^3+1\,357\,824z^2+14\,479\,920z+36\,547\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acgf.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{15}{4}; -z\right) = -\frac{1}{327\,680\sqrt{2}\, z^{9/4}}\left(11\left(2\sqrt{z}\left(16\,384 z^3 - 1\,249\,280 z^2 + 12\,252\,240 z - 12\,182\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 51\left(16\,384 z^3 - 399\,360 z^2 + 1\,812\,720 z - 716\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(-16\,384 z^3 + 1\,357\,824 z^2 - 14\,479\,920 z + 36\,547\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acgg.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) = \frac{1}{117\,440\,512 z^{13/4}} $$
$$ \left(39 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-524\,288 z^{7/2} - 7\,733\,248 z^3 - 56\,033\,280 z^{5/2} - 256\,819\,200 z^2 - 798\,346\,560 z^{3/2} - 1\,720\,136\,880 z - \right.\right.\right. $$
$$ \left. 2\,453\,012\,100\sqrt{z} + e^{4\sqrt{z}}\left(524\,288 z^{7/2} - 7\,733\,248 z^3 + 56\,033\,280 z^{5/2} - 256\,819\,200 z^2 + 798\,346\,560 z^{3/2} - \right.\right. $$
$$ \left.\left. 1\,720\,136\,880 z + 2\,453\,012\,100\sqrt{z} - 1\,839\,759\,075\right) - 1\,839\,759\,075\right) + 65\,835 e^{2\sqrt{z}}\sqrt{2\pi} $$
$$ \left.\left.\left(256 z^2 - 3680 z + 27\,945\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 65\,835 e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2 - 3680 z + 27\,945\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acgh.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) = -\frac{1}{29\,360\,128 z^{13/4}}\left(39\left(65\,835\sqrt{\pi}\left(256 z^2 + 3680 z + 27\,945\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right. $$
$$ 2\sqrt[4]{z}\left(\left(7\,733\,248 z^3 - 256\,819\,200 z^2 + 1\,720\,136\,880 z - 1\,839\,759\,075\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left.\left. 4\sqrt{z}\left(131\,072 z^3 - 14\,008\,320 z^2 + 199\,586\,640 z - 613\,253\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.acgi.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) = \frac{1}{2\,097\,152\sqrt{2}\, z^{13/4}}\left(33\left(-6\sqrt{z}\left(720\,896 z^3 + 29\,702\,400 z^2 + 263\,608\,800 z + 259\,083\,825\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(524\,288 z^4 + 72\,417\,280 z^3 + 1\,372\,250\,880 z^2 + 5\,925\,628\,800 z + 2\,331\,754\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 34\sqrt{z}\left(131\,072 z^3 + 5\,940\,480 z^2 + 55\,954\,080 z + 137\,162\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acgj.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = $$
$$ -\frac{1}{2\,097\,152\sqrt{2}\, z^{13/4}}\left(33\left(6\sqrt{z}\left(720\,896 z^3 - 29\,702\,400 z^2 + 263\,608\,800 z - 259\,083\,825\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(524\,288 z^4 - 72\,417\,280 z^3 + 1\,372\,250\,880 z^2 - 5\,925\,628\,800 z + 2\,331\,754\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 34\sqrt{z}\left(131\,072 z^3 - 5\,940\,480 z^2 + 55\,954\,080 z - 137\,162\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acgk.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) = \frac{1}{7\,516\,192\,768\, z^{17/4}} \left(663\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(8\,388\,608\, z^4 + 159\,383\,552\, z^{7/2} + 1\,494\,220\,800\, z^3 + 8\,987\,796\,480\, z^{5/2} + 37\,489\,985\,280\, z^2 + 111\,390\,111\,360\, z^{3/2} + 234\,180\,888\,480\, z + 329\,521\,292\,100\sqrt{z} + e^{4\sqrt{z}} \left(8\,388\,608\, z^4 - 159\,383\,552\, z^{7/2} + 1\,494\,220\,800\, z^3 - 8\,987\,796\,480\, z^{5/2} + 37\,489\,985\,280\, z^2 - 111\,390\,111\,360\, z^{3/2} + 234\,180\,888\,480\, z - 329\,521\,292\,100\sqrt{z} + 247\,140\,969\,075\right) + 247\,140\,969\,075\right) + 21\,945\, e^{2\sqrt{z}} \sqrt{2\pi}\, \left(4096\, z^3 - 88\,320\, z^2 + 1\,341\,360\, z - 11\,261\,835\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + 21\,945\, e^{2\sqrt{z}} \sqrt{2\pi}\, \left(4096\, z^3 - 88\,320\, z^2 + 1\,341\,360\, z - 11\,261\,835\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.acgl.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) = -\frac{1}{1\,879\,048\,192\, z^{17/4}} \left(663 \left(21\,945\sqrt{\pi}\, \left(4096\, z^3 + 88\,320\, z^2 + 1\,341\,360\, z + 11\,261\,835\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\, \left(\left(8\,388\,608\, z^4 - 1\,494\,220\,800\, z^3 + 37\,489\,985\,280\, z^2 - 234\,180\,888\,480\, z + 247\,140\,969\,075\right) \cos\left(2\sqrt{z}\right) - 76\sqrt{z}\, \left(2\,097\,152\, z^3 - 118\,260\,480\, z^2 + 1\,465\,659\,360\, z - 4\,335\,806\,475\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.acgm.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = \frac{1}{67\,108\,864\sqrt{2}\, z^{17/4}} \left(627 \left(2\sqrt{z}\, \left(1\,048\,576\, z^4 + 230\,830\,080\, z^3 + 6\,988\,550\,400\, z^2 + 56\,596\,597\,200\, z + 54\,962\,782\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 85\left(1\,048\,576\, z^4 + 74\,280\,960\, z^3 + 1\,202\,123\,520\, z^2 + 4\,953\,508\,560\, z + 1\,939\,862\,925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\, \left(1\,048\,576\, z^4 + 237\,096\,960\, z^3 + 7\,971\,275\,520\, z^2 + 69\,286\,417\,200\, z + 164\,888\,348\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acgn.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) = \frac{1}{67\,108\,864\sqrt{2}\, z^{17/4}} \left(627 \left(2\sqrt{z}\, \left(1\,048\,576\, z^4 - 230\,830\,080\, z^3 + 6\,988\,550\,400\, z^2 - 56\,596\,597\,200\, z + 54\,962\,782\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 85\left(1\,048\,576\, z^4 - 74\,280\,960\, z^3 + 1\,202\,123\,520\, z^2 - 4\,953\,508\,560\, z + 1\,939\,862\,925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\, \left(1\,048\,576\, z^4 - 237\,096\,960\, z^3 + 7\,971\,275\,520\, z^2 - 69\,286\,417\,200\, z + 164\,888\,348\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{5}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.acgo.01

$${}_1F_2\left(\frac{5}{4};-\frac{5}{2},-\frac{23}{4};z\right)=\left(-\frac{131\,072\,z^5}{22\,713\,075}+\frac{8192\,z^4}{504\,735}+\frac{3584\,z^3}{19\,665}+\frac{1120\,z^2}{1311}+\frac{48\,z}{23}+1\right)\cosh\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\left(16\,384\,z^4-168\,960\,z^3-931\,392\,z^2-3\,423\,420\,z-4\,542\,615\right)\sinh\left(2\sqrt{z}\right)}{4\,542\,615}$$

07.22.03.acgp.01

$${}_1F_2\left(\frac{5}{4};-\frac{5}{2},-\frac{23}{4};-z\right)=\left(\frac{131\,072\,z^5}{22\,713\,075}+\frac{8192\,z^4}{504\,735}-\frac{3584\,z^3}{19\,665}+\frac{1120\,z^2}{1311}-\frac{48\,z}{23}+1\right)\cos\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\left(16\,384\,z^4+168\,960\,z^3-931\,392\,z^2+3\,423\,420\,z-4\,542\,615\right)\sin\left(2\sqrt{z}\right)}{4\,542\,615}$$

07.22.03.acgq.01

$${}_1F_2\left(\frac{5}{4};-\frac{5}{2},-\frac{21}{4};z\right)=$$
$$-\frac{1}{3\,132\,675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536\,z^5-217\,088\,z^4-1\,148\,160\,z^3-4\,408\,560\,z^2-6\,563\,700\,z-3\,132\,675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(-16\,384\,z^4+301\,056\,z^3+1\,385\,280\,z^2+4\,057\,560\,z+3\,132\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(16\,384\,z^4-46\,080\,z^3-366\,912\,z^2-1\,551\,420\,z-3\,132\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acgr.01

$${}_1F_2\left(\frac{5}{4};-\frac{5}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{3\,132\,675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536\,z^5+217\,088\,z^4-1\,148\,160\,z^3+4\,408\,560\,z^2-6\,563\,700\,z+3\,132\,675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(16\,384\,z^4+301\,056\,z^3-1\,385\,280\,z^2+4\,057\,560\,z-3\,132\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4\,z\left(16\,384\,z^4+46\,080\,z^3-366\,912\,z^2+1\,551\,420\,z-3\,132\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acgs.01

$${}_1F_2\left(\frac{5}{4};-\frac{5}{2},-\frac{19}{4};z\right)=$$
$$\left(\frac{2048\,z^3}{9405}+\frac{256\,z^2}{285}+\frac{40\,z}{19}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(16\,384\,z^4-46\,080\,z^3-221\,760\,z^2-762\,300\,z-987\,525\right)\sinh\left(2\sqrt{z}\right)}{987\,525}$$

07.22.03.acgt.01

$${}_1F_2\left(\frac{5}{4};-\frac{5}{2},-\frac{19}{4};-z\right)=$$
$$\left(-\frac{2048\,z^3}{9405}+\frac{256\,z^2}{285}-\frac{40\,z}{19}+1\right)\cos\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\left(16\,384\,z^4+46\,080\,z^3-221\,760\,z^2+762\,300\,z-987\,525\right)\sin\left(2\sqrt{z}\right)}{987\,525}$$

07.22.03.acgu.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, -\frac{17}{4}; z\right) = \frac{1}{149\,175\sqrt{2}} \left(\sqrt[4]{z}\left(\left(12\,288 z^4 + 64\,000 z^3 + 218\,160 z^2 + 315\,900 z + 149\,175\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8192 z^4 - 19\,456 z^3 - 71\,520 z^2 - 196\,560 z - 149\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1024 z^3 + 20\,352 z^2 + 77\,220 z + 149\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acgv.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, -\frac{17}{4}; -z\right) = \frac{1}{149\,175\sqrt{2}} \left(\sqrt[4]{z}\left(\left(12\,288 z^4 - 64\,000 z^3 + 218\,160 z^2 - 315\,900 z + 149\,175\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(8192 z^4 + 19\,456 z^3 - 71\,520 z^2 + 196\,560 z - 149\,175\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-1024 z^3 + 20\,352 z^2 - 77\,220 z + 149\,175\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acgw.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, -\frac{15}{4}; z\right) = \left(-\frac{8192 z^4}{51\,975} + \frac{1024 z^3}{3465} + \frac{32 z^2}{33} + \frac{32 z}{15} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(1024 z^3 + 4480 z^2 + 13\,860 z + 17\,325\right)\sinh\left(2\sqrt{z}\right)}{17\,325} $$

07.22.03.acgx.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, -\frac{15}{4}; -z\right) = \left(-\frac{8192 z^4}{51\,975} - \frac{1024 z^3}{3465} + \frac{32 z^2}{33} - \frac{32 z}{15} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-1024 z^3 + 4480 z^2 - 13\,860 z + 17\,325\right)\sin\left(2\sqrt{z}\right)}{17\,325} $$

07.22.03.acgy.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, -\frac{13}{4}; z\right) = -\frac{1}{8775\sqrt{2}} \left(\sqrt[4]{z}\left(\left(4096 z^4 - 5120 z^3 - 13\,680 z^2 - 18\,900 z - 8775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048 z^3 + 4800 z^2 + 11\,880 z + 8775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1024 z^3 - 1536 z^2 - 4860 z - 8775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acgz.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, -\frac{13}{4}; -z\right) = -\frac{1}{8775\sqrt{2}} \left(\sqrt[4]{z}\left(\left(4096 z^4 + 5120 z^3 - 13\,680 z^2 + 18\,900 z - 8775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048 z^3 - 4800 z^2 + 11\,880 z - 8775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(1024 z^3 + 1536 z^2 - 4860 z + 8775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ach0.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{3465}\left(\left(2048 z^3 + 3840 z^2 + 7560 z + 3465\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1024 z^3 - 1152 z^2 - 2940 z - 3465\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ach1.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{3465}\left(\left(-2048 z^3 + 3840 z^2 - 7560 z + 3465\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1024 z^3 + 1152 z^2 - 2940 z + 3465\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ach2.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(256 z^3 + 240 z^2 + 300 z + 135\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(512 z^3 - 480 z^2 - 960 z - 675\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(64 z^2 + 140 z + 225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ach3.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\left(-5\left(256 z^3 - 240 z^2 + 300 z - 135\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(512 z^3 + 480 z^2 - 960 z + 675\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(64 z^2 - 140 z + 225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ach4.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, -\frac{7}{4}; z\right) = \frac{1}{315}\left(\left(-512 z^3 + 480 z^2 + 720 z + 315\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(64 z^2 + 100 z + 105\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ach5.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, -\frac{7}{4}; -z\right) = \frac{1}{315}\left(\left(512 z^3 + 480 z^2 - 720 z + 315\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(64 z^2 - 100 z + 105\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ach6.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, -\frac{5}{4}; z\right) = -\frac{1}{75\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256 z^3 - 240 z^2 - 180 z - 75\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(64 z^2 + 120 z + 75\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(64 z^2 - 60 z - 75\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ach7.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, -\frac{5}{4}; -z\right) =$$
$$\frac{1}{75\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^3+240z^2-180z+75\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(64z^2-120z+75\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(64z^2+60z-75\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ach8.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, -\frac{3}{4}; z\right) = \left(\frac{8z}{3}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{45}\sqrt{z}\left(64z^2-60z-45\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ach9.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, -\frac{3}{4}; -z\right) = \left(1-\frac{8z}{3}\right)\cos\left(2\sqrt{z}\right)-\frac{2}{45}\sqrt{z}\left(64z^2+60z-45\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.acha.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, -\frac{1}{4}; z\right) =$$
$$\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-16z^2+60z+15\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(32z^2-24z-15\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+12(5-4z)zI_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.achb.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, -\frac{1}{4}; -z\right) =$$
$$-\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16z^2+60z-15\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(32z^2+24z-15\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-12z(4z+5)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.achc.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{1}{4}; z\right) = \left(1-\frac{32z^2}{15}\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{3}\sqrt{z}\,(4z-3)\sinh\left(2\sqrt{z}\right)$$

07.22.03.achd.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) = \left(1-\frac{32z^2}{15}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{3}\sqrt{z}\,(4z+3)\sin\left(2\sqrt{z}\right)$$

07.22.03.ache.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{3}{4}; z\right) =$$
$$-\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16z^2+10z-15\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(15-64z)\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2z(8z+15)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.achf.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) =$$
$$-\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16z^2-10z-15\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\,(64z+15)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2(15-8z)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.achg.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{5}{4}; z\right) = \left(\frac{8z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,(4z + 15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.achh.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{5}{4}; -z\right) = \left(1 - \frac{8z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}(15 - 4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.achi.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) = \frac{1}{160\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(10\sqrt{z}\,(48z + 55) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(256z^2 + 1840z + 585\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(272z + 585) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.achj.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{7}{4}; -z\right) = \frac{1}{160\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(10(55 - 48z)\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-256z^2 + 1840z - 585\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(272z - 585) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.achk.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) = \frac{1}{3072\,z^{5/4}}$$
$$\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(256z^2 + 1344z^{3/2} + 3312z + 4620\sqrt{z} + e^{4\sqrt{z}}\left(256z^2 - 1344z^{3/2} + 3312z - 4620\sqrt{z} + 3465\right) + 3465\right) + 3465\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + 3465\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.achl.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{9}{4}; -z\right) = \frac{2\sqrt[4]{z}\left(\left(256z^2 - 3312z + 3465\right)\cos\left(2\sqrt{z}\right) + 84(55 - 16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right) - 3465\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)}{768\,z^{5/4}}$$

07.22.03.achm.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{11}{4}; z\right) =$$
$$-\frac{1}{5120\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\left(512z^2 + 9440z + 9945\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 13\left(1024z^2 + 5760z + 2295\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(512z^2 + 11\,232z + 29\,835\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.achn.01

$${}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{11}{4}; -z\right) =$$
$$\frac{1}{5120\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\left(512z^2 - 9440z + 9945\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 13\left(1024z^2 - 5760z + 2295\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(512z^2 - 11\,232z + 29\,835\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acho.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{13}{4}; z\right) = \frac{1}{65\,536\, z^{9/4}} \left(3\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\, \left(-4096\, z^{5/2} - 32\,768\, z^2 - 126\,720\, z^{3/2} - 295\,680\, z - 438\,900\sqrt{z} + \right.\right.\right. $$
$$ \left. e^{4\sqrt{z}} \left(4096\, z^{5/2} - 32\,768\, z^2 + 126\,720\, z^{3/2} - 295\,680\, z + 438\,900\sqrt{z} - 329\,175\right) - 329\,175\right) + $$
$$ \left.\left. 3465\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16z - 95) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + 3465\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16z - 95) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.achp.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{13}{4}; -z\right) = $$
$$ \frac{1}{16\,384\, z^{9/4}} \left(3\left(2\sqrt[4]{z}\, \left(\left(32\,768\, z^2 - 295\,680\, z + 329\,175\right) \cos\left(2\sqrt{z}\right) + 4\sqrt{z}\, \left(1024\, z^2 - 31\,680\, z + 109\,725\right) \sin\left(2\sqrt{z}\right)\right) - \right.\right. $$
$$ \left.\left. 3465\sqrt{\pi}\, (16z + 95)\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right) $$

07.22.03.achq.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{15}{4}; z\right) = -\frac{1}{163\,840\sqrt{2}\, z^{9/4}} $$
$$ \left(77\left(-2\sqrt{z}\, \left(37\,888\, z^2 + 477\,360\, z + 487\,305\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384\, z^3 + 718\,848\, z^2 + 3\,659\,760\, z + 1\,461\,915\right)\right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 78\sqrt{z}\, \left(1024\, z^2 + 13\,872\, z + 37\,485\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.achr.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{15}{4}; -z\right) = $$
$$ \frac{1}{163\,840\sqrt{2}\, z^{9/4}} \left(77\left(2\sqrt{z}\, \left(37\,888\, z^2 - 477\,360\, z + 487\,305\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384\, z^3 - 718\,848\, z^2 + 3\,659\,760\, z - 1\,461\,915\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 78\sqrt{z}\, \left(1024\, z^2 - 13\,872\, z + 37\,485\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.achs.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{17}{4}; z\right) = $$
$$ -\frac{1}{8\,388\,608\, z^{13/4}} \left(39\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(131\,072\, z^3 + 1\,474\,560\, z^{5/2} + 8\,110\,080\, z^2 + 27\,487\,680\, z^{3/2} + 62\,148\,240\, z + \right.\right.\right. $$
$$ 90\,852\,300\sqrt{z} + e^{4\sqrt{z}} \left(131\,072\, z^3 - 1\,474\,560\, z^{5/2} + 8\,110\,080\, z^2 - 27\,487\,680\, z^{3/2} + \right. $$
$$ \left. 62\,148\,240\, z - 90\,852\,300\sqrt{z} + 68\,139\,225\right) + 68\,139\,225\right) - 3465\, e^{2\sqrt{z}}\, \sqrt{2\pi} $$
$$ \left.\left. \left(256\, z^2 - 3040\, z + 19\,665\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - 3465\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(256\, z^2 - 3040\, z + 19\,665\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.acht.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{17}{4}; -z\right) = -\frac{1}{2\,097\,152\, z^{13/4}} \left(39\left(3465\sqrt{\pi}\left(256 z^2+3040 z+19\,665\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(131\,072 z^3-8\,110\,080 z^2+62\,148\,240 z-68\,139\,225\right)\right.\right.\right. $$
$$ \left.\left.\left.\cos\left(2\sqrt{z}\right)-60\sqrt{z}\left(24\,576 z^2-458\,128 z+1\,514\,205\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.achu.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) = -\frac{1}{1\,048\,576\sqrt{2}\, z^{13/4}} \left(231\left(2\sqrt{z}\left(32\,768 z^3+2\,545\,920 z^2+26\,732\,160 z+26\,801\,775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right. $$
$$ 13\left(131\,072 z^3+3\,329\,280 z^2+15\,593\,760 z+6\,185\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.2\sqrt{z}\left(32\,768 z^3+2\,885\,376 z^2+31\,187\,520 z+80\,405\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.achv.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) = -\frac{1}{1\,048\,576\sqrt{2}\, z^{13/4}} \left(231\left(2\sqrt{z}\left(32\,768 z^3-2\,545\,920 z^2+26\,732\,160 z-26\,801\,775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right. $$
$$ 13\left(131\,072 z^3-3\,329\,280 z^2+15\,593\,760 z-6\,185\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.2\sqrt{z}\left(-32\,768 z^3+2\,885\,376 z^2-31\,187\,520 z+80\,405\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.achw.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) = \frac{1}{536\,870\,912\, z^{17/4}} \left(663\, e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-2\,097\,152 z^{7/2}-31\,457\,280 z^3-233\,180\,160 z^{5/2}-1\,081\,048\,320 z^2-3\,405\,663\,360 z^{3/2}-\right.\right.\right. $$
$$ 7\,413\,547\,680 z-10\,629\,719\,100\sqrt{z}+e^{4\sqrt{z}}\left(2\,097\,152 z^{7/2}-31\,457\,280 z^3+233\,180\,160 z^{5/2}-1\,081\,048\,320\right. $$
$$ \left.\left.\left.z^2+3\,405\,663\,360 z^{3/2}-7\,413\,547\,680 z+10\,629\,719\,100\sqrt{z}-7\,972\,289\,325\right)-7\,972\,289\,325\right)+ $$
$$ 1155\, e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3-72\,960 z^2+943\,920 z-6\,902\,415\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+ $$
$$ \left.1155\, e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3-72\,960 z^2+943\,920 z-6\,902\,415\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Bigg) $$

07.22.03.achx.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) = -\frac{1}{134\,217\,728\, z^{17/4}} \left(663\left(1155\sqrt{\pi}\left(4096 z^3+72\,960 z^2+943\,920 z+6\,902\,415\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right. $$
$$ 2\sqrt[4]{z}\left(15\left(2\,097\,152 z^3-72\,069\,888 z^2+494\,236\,512 z-531\,485\,955\right)\cos\left(2\sqrt{z}\right)+\right. $$
$$ \left.\left.\left.4\sqrt{z}\left(524\,288 z^3-58\,295\,040 z^2+851\,415\,840 z-2\,657\,429\,775\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.achy.01

$${}_1F_2\left(\frac{5}{4};-\frac{5}{2},\frac{23}{4};z\right)=-\frac{1}{33\,554\,432\sqrt{2}\,z^{17/4}}\left(4389\left(-2210\sqrt{z}\left(4096z^3+168\,192z^2+1\,528\,560z+1\,507\,275\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1\,048\,576z^4+149\,360\,640z^3+2\,899\,802\,880z^2+12\,681\,068\,400z+4\,996\,616\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-306\sqrt{z}\left(28\,672z^3+1\,381\,120z^2+13\,213\,200z+32\,657\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.achz.01

$${}_1F_2\left(\frac{5}{4};-\frac{5}{2},\frac{23}{4};-z\right)=-\frac{1}{33\,554\,432\sqrt{2}\,z^{17/4}}\left(4389\left(2210\sqrt{z}\left(4096z^3-168\,192z^2+1\,528\,560z-1\,507\,275\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1\,048\,576z^4-149\,360\,640z^3+2\,899\,802\,880z^2-12\,681\,068\,400z+4\,996\,616\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-306\sqrt{z}\left(28\,672z^3-1\,381\,120z^2+13\,213\,200z-32\,657\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{5}{4}$, $b_{1.} = -\frac{3}{2}$

07.22.03.aci0.01

$${}_1F_2\left(\frac{5}{4};-\frac{3}{2},-\frac{23}{4};z\right)=\frac{1}{4\,542\,615}\left(\left(-212\,992z^4+709\,632z^3+4\,656\,960z^2+9\,743\,580z+4\,542\,615\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\left(32\,768z^4+67\,584z^3-1\,212\,288z^2-3\,686\,760z-4\,542\,615\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aci1.01

$${}_1F_2\left(\frac{5}{4};-\frac{3}{2},-\frac{23}{4};-z\right)=\frac{1}{4\,542\,615}\left(\left(-212\,992z^4-709\,632z^3+4\,656\,960z^2-9\,743\,580z+4\,542\,615\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(-32\,768z^4+67\,584z^3+1\,212\,288z^2-3\,686\,760z+4\,542\,615\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aci2.01

$${}_1F_2\left(\frac{5}{4};-\frac{3}{2},-\frac{21}{4};z\right)=\frac{1}{626\,535\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-65\,536z^4+319\,488z^3+1\,003\,392z^2+1\,352\,520z+626\,535\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(16\,384z^4-5120z^3-366\,912z^2-851\,292z-626\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-20\,480z^3+74\,496z^2+350\,064z+626\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aci3.01

$${}_1F_2\left(\frac{5}{4};-\frac{3}{2},-\frac{21}{4};-z\right)=-\frac{1}{626\,535\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536z^4+319\,488z^3-1\,003\,392z^2+1\,352\,520z-626\,535\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(16\,384z^4+5120z^3-366\,912z^2+851\,292z-626\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(20\,480z^3+74\,496z^2-350\,064z+626\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aci4.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{19}{4}; z\right) =$$

$$\left(-\frac{16\,384\,z^4}{197\,505} + \frac{1024\,z^3}{9405} + \frac{64\,z^2}{57} + \frac{124\,z}{57} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(4096\,z^3 - 19\,712\,z^2 - 55\,440\,z - 65\,835\right)\sinh\left(2\sqrt{z}\right)}{65\,835}$$

07.22.03.aci5.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{19}{4}; -z\right) =$$

$$\left(-\frac{16\,384\,z^4}{197\,505} - \frac{1024\,z^3}{9405} + \frac{64\,z^2}{57} - \frac{124\,z}{57} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(4096\,z^3 + 19\,712\,z^2 - 55\,440\,z + 65\,835\right)\sin\left(2\sqrt{z}\right)}{65\,835}$$

07.22.03.aci6.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{17}{4}; z\right) = -\frac{1}{29\,835\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(8192\,z^4 - 17\,408\,z^3 - 51\,552\,z^2 - 65\,520\,z - 29\,835\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1024\,z^3 - 6784\,z^2 - 13\,884\,z - 9945\right)\right.\right.$$

$$\left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2048\,z^3 - 3072\,z^2 - 17\,784\,z - 29\,835\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aci7.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{17}{4}; -z\right) = \frac{1}{29\,835\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(-8192\,z^4 - 17\,408\,z^3 + 51\,552\,z^2 - 65\,520\,z + 29\,835\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(1024\,z^3 + 6784\,z^2 - 13\,884\,z + 9945\right)\right.\right.$$

$$\left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2048\,z^3 + 3072\,z^2 - 17\,784\,z + 29\,835\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aci8.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{15}{4}; z\right) = \left(-\frac{1024\,z^3}{10\,395} + \frac{128\,z^2}{99} + \frac{20\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048\,z^3 - 3584\,z^2 - 9240\,z - 10\,395\right)\sinh\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.aci9.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{15}{4}; -z\right) = \left(\frac{1024\,z^3}{10\,395} + \frac{128\,z^2}{99} - \frac{20\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048\,z^3 + 3584\,z^2 - 9240\,z + 10\,395\right)\sin\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.acia.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{13}{4}; z\right) = \frac{1}{1755\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024\,z^3 + 3456\,z^2 + 3960\,z + 1755\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$

$$\left.\left. 4\sqrt{z}\left(1024\,z^3 - 1536\,z^2 - 2556\,z - 1755\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36\,z\left(128\,z + 195\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acib.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{13}{4}; -z\right) = \frac{1}{1755\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-1024z^3+3456z^2-3960z+1755\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\left(1024z^3+1536z^2-2556z+1755\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+36\left(195-128z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acic.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{11}{4}; z\right) = \left(-\frac{1024z^3}{693}+\frac{128z^2}{77}+\frac{76z}{33}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{693}\sqrt{z}\left(256z^2+672z+693\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.acid.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{11}{4}; -z\right) = \frac{1}{693}\left(\left(1024z^3+1152z^2-1596z+693\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(256z^2-672z+693\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acie.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) =$$
$$-\frac{1}{135\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3-352z^2-320z-135\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(192z^2+212z+135\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^2-104z-135\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acif.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{135\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3+352z^2-320z+135\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(192z^2-212z+135\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(128z^2+104z-135\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acig.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{7}{4}; z\right) = \frac{1}{63}\left(3\left(64z^2+52z+21\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\left(128z^2-72z-63\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acih.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{7}{4}; -z\right) = \frac{1}{63}\left(3\left(64z^2-52z+21\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\left(128z^2+72z-63\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acii.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^2+40z+15\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(64z^2-28z-15\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(16z+15\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acij.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{5}{4}; -z\right) =$$

$$\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^2-40z+15\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z^2+28z-15\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\left(15-16z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acik.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{3}{4}; z\right) = \frac{1}{9}\left(\left(-64z^2+28z+9\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(16z+9\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acil.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{3}{4}; -z\right) = \frac{2}{9}\left(9-16z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)-\frac{1}{9}\left(64z^2+28z-9\right)\cos\left(2\sqrt{z}\right)$$

07.22.03.acim.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{1}{4}; z\right) =$$

$$-\frac{1}{3\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2-16z-3\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4z+3\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(8z-3\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acin.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, -\frac{1}{4}; -z\right) =$$

$$-\frac{1}{3\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2+16z-3\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4z-3\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(8z+3\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acio.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{1}{4}; z\right) = \left(1-\frac{4z}{3}\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{3}\sqrt{z}\left(8z-3\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.acip.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{1}{4}; -z\right) = \left(\frac{4z}{3}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{3}\sqrt{z}\left(8z+3\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aciq.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{3}{4}; z\right) = \frac{\sqrt[4]{z}\left(\left(3-4z\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+2\sqrt{z}\left(8z-1\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-8zI_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{3\sqrt{2}}$$

07.22.03.acir.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{3}{4}; -z\right) = \frac{\sqrt[4]{z}\left(\left(4z+3\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+2\sqrt{z}\left(8z+1\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-8zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{3\sqrt{2}}$$

07.22.03.acis.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{5}{4}; z\right) = \left(\frac{4z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.acit.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{5}{4}; -z\right) = \left(1-\frac{4z}{3}\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aciu.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{7}{4}; z\right) =$$

$$\frac{1}{8\sqrt{2}\,\sqrt[4]{z}}\left(\sqrt{z}\,(16z+23)\,\Gamma\left(\frac{3}{4}\right)^2 I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 8\,(16z+5)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{7}{4}\right)^2 I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \sqrt{z}\,(16z+45)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aciv.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{7}{4}; -z\right) =$$

$$\frac{1}{8\sqrt{2}\,\sqrt[4]{z}}\left((23-16z)\sqrt{z}\,\Gamma\left(\frac{3}{4}\right)^2 J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\,(16z-5)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{7}{4}\right)^2 J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \sqrt{z}\,(16z-45)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aciw.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{9}{4}; z\right) =$$

$$\frac{1}{1536\,z^{5/4}}\left(5\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-64z^{3/2}-208z-308\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}-208z+308\sqrt{z}-231\right)-231\right)+231\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+231\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.acix.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) = -\frac{5\left(231\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left((208z-231)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,(16z-77)\sin\left(2\sqrt{z}\right)\right)\right)}{384\,z^{5/4}}$$

07.22.03.aciy.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) = \frac{1}{512\sqrt{2}\,z^{5/4}}$$

$$\left(7\left(-2\sqrt{z}\,(512z+585)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(512z^2+4320z+1755\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-18\sqrt{z}\,(64z+195)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aciz.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) = -\frac{1}{512\sqrt{2}\,z^{5/4}}$$

$$\left(7\left(2\sqrt{z}\,(512z-585)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(512z^2-4320z+1755\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+18\,(195-64z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acj0.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) = \frac{1}{32\,768\,z^{9/4}}\left(15\,e^{-2\sqrt{z}}\right.$$
$$\left(4\sqrt[4]{z}\left(1024z^2+5632z^{3/2}+14\,784z+23\,100\sqrt{z}+e^{4\sqrt{z}}\left(1024z^2-5632z^{3/2}+14\,784z-23\,100\sqrt{z}+17\,325\right)+\right.\right.$$
$$\left.\left.\left.17\,325\right)+231\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-75)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+231\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z-75)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.acj1.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) = \frac{1}{8192\, z^{9/4}}$$
$$\left(15\left(2\sqrt[4]{z}\left(\left(1024\, z^2 - 14\,784\, z + 17\,325\right)\cos\left(2\sqrt{z}\right) + 44\,(525 - 128\, z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right) - 231\sqrt{\pi}\,(16\, z + 75)\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)$$

07.22.03.acj2.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) =$$
$$\frac{1}{16\,384\sqrt{2}\, z^{9/4}}\left(77\left(2\sqrt{z}\,\left(1024\, z^2 + 21\,840\, z + 23\,205\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(9216\, z^2 + 57\,200\, z + 23\,205\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 2\sqrt{z}\,\left(1024\, z^2 + 23\,088\, z + 69\,615\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acj3.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{15}{4}; -z\right) =$$
$$\frac{1}{16\,384\sqrt{2}\, z^{9/4}}\left(77\left(2\sqrt{z}\,\left(1024\, z^2 - 21\,840\, z + 23\,205\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(9216\, z^2 - 57\,200\, z + 23\,205\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left. 2\sqrt{z}\,\left(1024\, z^2 - 23\,088\, z + 69\,615\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acj4.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) =$$
$$\frac{1}{4\,194\,304\, z^{13/4}}\left(195\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-32\,768\, z^{5/2} - 270\,336\, z^2 - 1\,066\,560\, z^{3/2} - 2\,605\,680\, z - 3\,950\,100\sqrt{z} + \right.\right.\right.$$
$$\left.\left.\left. e^{4\sqrt{z}}\left(32\,768\, z^{5/2} - 270\,336\, z^2 + 1\,066\,560\, z^{3/2} - 2\,605\,680\, z + 3\,950\,100\sqrt{z} - 2\,962\,575\right) - 2\,962\,575\right) + 231\right.$$
$$\left. e^{2\sqrt{z}}\sqrt{2\pi}\,\left(256\, z^2 - 2400\, z + 12\,825\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + 231\, e^{2\sqrt{z}}\sqrt{2\pi}\,\left(256\, z^2 - 2400\, z + 12\,825\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.acj5.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) =$$
$$\frac{1}{1\,048\,576\, z^{13/4}}\left(195\left(2\sqrt[4]{z}\,\left(33\left(8192\, z^2 - 78\,960\, z + 89\,775\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(8192\, z^2 - 266\,640\, z + 987\,525\right)\sin\left(2\sqrt{z}\right)\right) - \right.\right.$$
$$\left.\left. 231\sqrt{\pi}\,\left(256\, z^2 + 2400\, z + 12\,825\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)$$

07.22.03.acj6.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) = \frac{1}{524\,288\sqrt{2}\,z^{13/4}} \left(231\left(-78\sqrt{z}\left(9472z^2+133\,280z+137\,445\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(163\,840z^3+7\,557\,888z^2+40\,098\,240z+16\,081\,065\right)\right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-78\sqrt{z}\left(11\,008z^2+148\,512z+412\,335\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acj7.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{19}{4}; -z\right) = \frac{1}{524\,288\sqrt{2}\,z^{13/4}} \left(231\left(78\sqrt{z}\left(9472z^2-133\,280z+137\,445\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(163\,840z^3-7\,557\,888z^2+40\,098\,240z-16\,081\,065\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-78\sqrt{z}\left(11\,008z^2-148\,512z+412\,335\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acj8.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) = \frac{1}{268\,435\,456\,z^{17/4}} \left(3315\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(524\,288z^3+6\,108\,160z^{5/2}+33\,862\,400z^2+116\,772\,480z^{3/2}+267\,553\,440z+\right.\right.\right. $$
$$ \left.\left.\left. 393\,693\,300\sqrt{z}+e^{4\sqrt{z}}\left(524\,288z^3-6\,108\,160z^{5/2}+33\,862\,400z^2-\right.\right.\right. $$
$$ \left.\left.\left. 116\,772\,480z^{3/2}+267\,553\,440z-393\,693\,300\sqrt{z}+295\,269\,975\right)+295\,269\,975\right)+ $$
$$ 77\,e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-57\,600z^2+615\,600z-3\,834\,675\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+ $$
$$ \left.\left.77\,e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-57\,600z^2+615\,600z-3\,834\,675\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acj9.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) = -\frac{1}{67\,108\,864\,z^{17/4}} \left(3315\left(77\sqrt{\pi}\left(4096z^3+57\,600z^2+615\,600z+3\,834\,675\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(524\,288z^3-33\,862\,400z^2+\right.\right.\right. $$
$$ \left.\left.\left. 267\,553\,440z-295\,269\,975\right)\cos\left(2\sqrt{z}\right)-20\sqrt{z}\left(305\,408z^2-5\,838\,624z+19\,684\,665\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.acja.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) = \frac{1}{16\,777\,216\sqrt{2}\,z^{17/4}} \left(4389\left(26\sqrt{z}\left(28\,672z^3+2\,023\,680z^2+21\,946\,320z+22\,089\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 39\left(446\,464z^3+11\,685\,120z^2+55\,606\,320z+22\,089\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.6\sqrt{z}\left(94\,208z^3+10\,013\,952z^2+110\,270\,160z+287\,161\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acjb.01

$${}_1F_2\left(\frac{5}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) =$$
$$-\frac{1}{16\,777\,216\sqrt{2}\,z^{17/4}}\left(4389\left(26\sqrt{z}\left(28\,672z^3-2\,023\,680z^2+21\,946\,320z-22\,089\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$39\left(446\,464z^3-11\,685\,120z^2+55\,606\,320z-22\,089\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.6\sqrt{z}\left(-94\,208z^3+10\,013\,952z^2-110\,270\,160z+287\,161\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{5}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.acjc.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,514\,205}\left(\left(-32\,768z^4-444\,416z^3+900\,480z^2+3\,686\,760z+1\,514\,205\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(94\,208z^3+155\,904z^2-1\,389\,360z-1\,514\,205\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acjd.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) = \frac{1}{1\,514\,205}\left(\left(-32\,768z^4+444\,416z^3+900\,480z^2-3\,686\,760z+1\,514\,205\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(94\,208z^3-155\,904z^2-1\,389\,360z+1\,514\,205\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acje.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) =$$
$$-\frac{1}{208\,845\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384z^4+103\,424z^3-396\,864z^2-517\,140z-208\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-36\sqrt{z}\left(4096z^3-256z^2-\right.\right.\right.$$
$$\left.\left.\left.38\,896z-23\,205\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(4096z^3+36\,096z^2-85\,968z-208\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acjf.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, -\frac{21}{4}; -z\right) =$$
$$\frac{1}{208\,845\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-16\,384z^4+103\,424z^3+396\,864z^2-517\,140z+208\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+36\sqrt{z}\left(4096z^3+256z^2-\right.\right.\right.$$
$$\left.\left.\left.38\,896z+23\,205\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(4096z^3-36\,096z^2-85\,968z+208\,845\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acjg.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, -\frac{19}{4}; z\right) =$$
$$\left(-\frac{4096z^3}{9405}+\frac{256z^2}{627}+\frac{48z}{19}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(4096z^3+16\,128z^2-62\,160z-65\,835\right)\sinh\left(2\sqrt{z}\right)}{65\,835}$$

07.22.03.acjh.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, -\frac{19}{4}; -z\right) =$$

$$\left(\frac{4096\,z^3}{9405} + \frac{256\,z^2}{627} - \frac{48\,z}{19} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(4096\,z^3 - 16\,128\,z^2 - 62\,160\,z + 65\,835\right)\sin\left(2\sqrt{z}\right)}{65\,835}$$

07.22.03.acji.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, -\frac{17}{4}; z\right) =$$

$$\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-9216\,z^3 + 19\,584\,z^2 + 25\,740\,z + 9945\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048\,z^3 + 2560\,z^2 - 17\,784\,z - 9945\right)\right.\right.$$

$$\left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-2816\,z^2 + 3360\,z + 9945\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acjj.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) =$$

$$\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(9\left(1024\,z^3 + 2176\,z^2 - 2860\,z + 1105\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048\,z^3 - 2560\,z^2 - 17\,784\,z + 9945\right)\right.\right.$$

$$\left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(2816\,z^2 + 3360\,z - 9945\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acjk.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) = \left(-\frac{2048\,z^3}{3465} + \frac{8\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(256\,z^2 - 480\,z - 495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.acjl.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) = \left(\frac{2048\,z^3}{3465} - \frac{8\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(256\,z^2 + 480\,z - 495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.acjm.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) =$$

$$-\frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024\,z^3 - 1152\,z^2 - 1620\,z - 585\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-512\,z^2 + 1152\,z + 585\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$

$$\left.\left. 4\,z\left(256\,z^2 - 96\,z - 585\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acjn.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) =$$

$$\frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024\,z^3 + 1152\,z^2 - 1620\,z + 585\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512\,z^2 + 1152\,z - 585\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$

$$\left.\left. 4\,z\left(256\,z^2 + 96\,z - 585\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acjo.01

$${}_1F_2\left(\frac{5}{4};-\frac{1}{2},-\frac{11}{4};z\right)=\frac{1}{231}\left(\left(-256\,z^2+672\,z+231\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(256\,z^2-224\,z-231\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acjp.01

$${}_1F_2\left(\frac{5}{4};-\frac{1}{2},-\frac{11}{4};-z\right)=\frac{1}{231}\left(\left(-256\,z^2-672\,z+231\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(256\,z^2+224\,z-231\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acjq.01

$${}_1F_2\left(\frac{5}{4};-\frac{1}{2},-\frac{9}{4};z\right)=\frac{1}{45\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(\left(64\,z^2+140\,z+45\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(128\,z^2-104\,z-45\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\left(45-16\,z\right)z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acjr.01

$${}_1F_2\left(\frac{5}{4};-\frac{1}{2},-\frac{9}{4};-z\right)=\frac{1}{45\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(\left(64\,z^2-140\,z+45\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(128\,z^2+104\,z-45\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(16\,z+45\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acjs.01

$${}_1F_2\left(\frac{5}{4};-\frac{1}{2},-\frac{7}{4};z\right)=\left(-\frac{128\,z^2}{21}+\frac{24\,z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\,\left(16\,z+21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.acjt.01

$${}_1F_2\left(\frac{5}{4};-\frac{1}{2},-\frac{7}{4};-z\right)=\frac{1}{21}\left(\left(-128\,z^2-72\,z+21\right)\cos\left(2\sqrt{z}\right)+2\left(21-16\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acju.01

$${}_1F_2\left(\frac{5}{4};-\frac{1}{2},-\frac{5}{4};z\right)=$$
$$-\frac{1}{5\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(64\,z^2-20\,z-5\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(16\,z+5\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(16\,z-5\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acjv.01

$${}_1F_2\left(\frac{5}{4};-\frac{1}{2},-\frac{5}{4};-z\right)=$$
$$-\frac{1}{5\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(64\,z^2+20\,z-5\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(16\,z-5\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-4\,z\left(16\,z+5\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acjw.01

$${}_1F_2\left(\frac{5}{4};-\frac{1}{2},-\frac{3}{4};z\right)=\left(\frac{16\,z}{3}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{3}\sqrt{z}\,\left(16\,z-3\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.acjx.01

$${}_1F_2\left(\frac{5}{4};-\frac{1}{2},-\frac{3}{4};-z\right)=\left(1-\frac{16\,z}{3}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{3}\sqrt{z}\,\left(16\,z+3\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.acjy.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) = \frac{\sqrt[4]{z}\left((12z+1)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(8z-1)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.acjz.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) = \frac{\sqrt[4]{z}\left((1-12z)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(8z+1)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.ack0.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) = (1-8z)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ack1.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{1}{4}; -z\right) = (8z+1)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ack2.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{3}{4}; z\right) = -\frac{\sqrt[4]{z}\left((4z-1)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.ack3.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{3}{4}; -z\right) = \frac{\sqrt[4]{z}\left((4z+1)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.ack4.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{5}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ack5.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{5}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ack6.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{7}{4}; z\right) = \frac{3\left(6\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - (16z+5)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 10\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{8\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.ack7.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{7}{4}; -z\right) = \frac{3\left(6\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (16z-5)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 10\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{8\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.ack8.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{9}{4}; z\right) =$$

$$-\frac{1}{256\,z^{5/4}}\left(5\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16z+28\sqrt{z}+e^{4\sqrt{z}}\left(16z-28\sqrt{z}+21\right)+21\right) - 21\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 21\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ack9.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{9}{4}; -z\right) = -\frac{5\left(21\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\ \left((16z-21)\cos\left(2\sqrt{z}\right) - 28\sqrt{z}\ \sin\left(2\sqrt{z}\right)\right)\right)}{64\,z^{5/4}}$$

07.22.03.acka.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) =$$

$$-\frac{1}{256\sqrt{2}\ z^{5/4}}\left(21\left(2\sqrt{z}\ (32z+45)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 5\,(64z+27)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\ (32z+135)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ackb.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) =$$

$$-\frac{1}{256\sqrt{2}\ z^{5/4}}\left(21\left(2\sqrt{z}\ (32z-45)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 5\,(64z-27)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\,(135-32z)\sqrt{z}\ J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ackc.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) =$$

$$-\frac{1}{16\,384\,z^{9/4}}\left(45\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-256\,z^{3/2} - 896z - 1540\sqrt{z} + e^{4\sqrt{z}}\left(256\,z^{3/2} - 896z + 1540\sqrt{z} - 1155\right) - 1155\right) - \right.$$
$$\left. 21\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ (16z-55)\,\mathrm{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) - 21\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ (16z-55)\,\mathrm{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)$$

07.22.03.ackd.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) =$$

$$-\frac{1}{4096\,z^{9/4}}\left(45\left(21\sqrt{\pi}\ (16z+55)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\ \left(7\,(128z-165)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\ (64z-385)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.acke.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) = -\frac{1}{8192\sqrt{2}\ z^{9/4}}\left(231\left(-30\sqrt{z}\ (80z+91)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left.\left(1024z^2 + 9840z + 4095\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\ (368z+1365)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ackf.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) = -\frac{1}{8192\sqrt{2}\ z^{9/4}}\left(231\right.$$
$$\left.\left(30\sqrt{z}\ (80z-91)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1024z^2 - 9840z + 4095\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\,(1365-368z)\sqrt{z}\ J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ackg.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) = $$
$$ -\frac{1}{2\,097\,152\, z^{13/4}} \left(585\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z} \left(8192\, z^2 + 45\,760\, z^{3/2} + 129\,360\, z + 207\,900\sqrt{z} + e^{4\sqrt{z}} \left(8192\, z^2 - 45\,760\, z^{3/2} + \right.\right.\right.\right. $$
$$ \left.\left.\left.\left. 129\,360\, z - 207\,900\sqrt{z} + 155\,925\right) + 155\,925\right) - 21\, e^{2\sqrt{z}} \sqrt{2\pi} \right. $$
$$ \left. \left(256\, z^2 - 1760\, z + 7425\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - 21\, e^{2\sqrt{z}} \sqrt{2\pi} \left(256\, z^2 - 1760\, z + 7425\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.ackh.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) = -\frac{1}{524\,288\, z^{13/4}} \left(585 \left(21\sqrt{\pi} \left(256\, z^2 + 1760\, z + 7425\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right.\right. $$
$$ \left.\left. 2\sqrt[4]{z} \left(\left(8192\, z^2 - 129\,360\, z + 155\,925\right) \cos\left(2\sqrt{z}\right) + 220\,(945 - 208\, z)\sqrt{z}\, \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.acki.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) = $$
$$ -\frac{1}{262\,144\sqrt{2}\, z^{13/4}} \left(693 \left(6\sqrt{z} \left(2816\, z^2 + 79\,040\, z + 85\,085\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 21\left(13\,568\, z^2 + 89\,440\, z + 36\,465\right) \right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z} \left(12\,032\, z^2 + 244\,608\, z + 765\,765\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ackj.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) = \frac{1}{262\,144\sqrt{2}\, z^{13/4}} $$
$$ \left(693 \left(6\sqrt{z} \left(2816\, z^2 - 79\,040\, z + 85\,085\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 21\left(13\,568\, z^2 - 89\,440\, z + 36\,465\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right. $$
$$ \left.\left. 2\sqrt{z} \left(12\,032\, z^2 - 244\,608\, z + 765\,765\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ackk.01

$$ {}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) = $$
$$ \frac{1}{134\,217\,728\, z^{17/4}} \left(9945\, e^{-2\sqrt{z}} \left(-20\sqrt[4]{z} \left(-27\,648\, z^{5/2} - 222\,464\, z^2 - 899\,712\, z^{3/2} - 2\,239\,776\, z - 3\,423\,420\sqrt{z} + \right.\right.\right. $$
$$ \left.\left.\left. e^{4\sqrt{z}} \left(27\,648\, z^{5/2} - 222\,464\, z^2 + 899\,712\, z^{3/2} - 2\,239\,776\, z + 3\,423\,420\sqrt{z} - 2\,567\,565\right) - 2\,567\,565\right) + \right. $$
$$ 7\, e^{2\sqrt{z}} \sqrt{2\pi} \left(4096\, z^3 - 42\,240\, z^2 + 356\,400\, z - 1\,833\,975\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + $$
$$ \left. 7\, e^{2\sqrt{z}} \sqrt{2\pi} \left(4096\, z^3 - 42\,240\, z^2 + 356\,400\, z - 1\,833\,975\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right) $$

07.22.03.ackl.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) = -\frac{1}{33\,554\,432\, z^{17/4}}\left(9945\left(7\sqrt{\pi}\,\left(4096 z^3 + 42\,240 z^2 + 356\,400 z + 1\,833\,975\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right.\right.$$
$$\left.\left. 10\sqrt[4]{z}\,\left(11\left(20\,224 z^2 - 203\,616 z + 233\,415\right)\cos\left(2\sqrt{z}\right) + 36\sqrt{z}\,\left(768 z^2 - 24\,992 z + 95\,095\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ackm.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) = \frac{1}{8\,388\,608\sqrt{2}\, z^{17/4}}$$
$$\left(13\,167\left(2\sqrt{z}\,\left(4096 z^3 + 748\,800 z^2 + 11\,085\,360 z + 11\,486\,475\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(110\,592 z^3 + 5\,274\,880 z^2 + 28\,588\,560 z + \right.\right.\right.$$
$$\left.\left.\left. 11\,486\,475\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-4096 z^3 + 888\,576 z^2 + 12\,252\,240 z + 34\,459\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ackn.01

$${}_1F_2\left(\frac{5}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) = -\frac{1}{8\,388\,608\sqrt{2}\, z^{17/4}}\left(13\,167\left(2\sqrt{z}\,\left(4096 z^3 - 748\,800 z^2 + 11\,085\,360 z - 11\,486\,475\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.$$
$$3\left(-110\,592 z^3 + 5\,274\,880 z^2 - 28\,588\,560 z + 11\,486\,475\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left. 2\sqrt{z}\,\left(4096 z^3 + 888\,576 z^2 - 12\,252\,240 z + 34\,459\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

For fixed z and $a_1 = \frac{5}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.acko.01

$${}_1F_2\left(\frac{5}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,514\,205}$$
$$\left(4\sqrt{z}\,\left(4096 z^3 + 145\,152 z^2 + 381\,360 z - 443\,835\right)\sinh\left(2\sqrt{z}\right) - 35\left(4096 z^3 + 37\,632 z^2 + 3888 z - 43\,263\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.ackp.01

$${}_1F_2\left(\frac{5}{4}; \frac{1}{2}, -\frac{23}{4}; -z\right) = \frac{1}{1\,514\,205}$$
$$\left(35\left(4096 z^3 - 37\,632 z^2 + 3888 z + 43\,263\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(4096 z^3 - 145\,152 z^2 + 381\,360 z + 443\,835\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ackq.01

$${}_1F_2\left(\frac{5}{4}; \frac{1}{2}, -\frac{21}{4}; z\right) = \frac{1}{208\,845\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(\left(-57\,344 z^3 - 281\,856 z^2 + 318\,240 z + 208\,845\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(4096 z^3 + 97\,536 z^2 + 112\,176 z - 208\,845\right)\right.\right.$$
$$\left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 48 z\left(1280 z^2 + 8256 z - 945\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ackr.01

$${}_1F_2\left(\frac{5}{4};\frac{1}{2},-\frac{21}{4};-z\right)=\frac{1}{208\,845\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(57\,344z^3-281\,856z^2-318\,240z+208\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4096z^3-97\,536z^2+112\,176z+208\,845\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+48z\left(-1280z^2+8256z+945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acks.01

$${}_1F_2\left(\frac{5}{4};\frac{1}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{65\,835}\left(192\sqrt{z}\left(128z^2+440z-375\right)\sinh\left(2\sqrt{z}\right)-\left(4096z^3+65\,280z^2+22\,320z-65\,835\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.ackt.01

$${}_1F_2\left(\frac{5}{4};\frac{1}{2},-\frac{19}{4};-z\right)=\frac{\left(4096z^3-65\,280z^2+22\,320z+65\,835\right)\cos\left(2\sqrt{z}\right)+192\sqrt{z}\left(-128z^2+440z+375\right)\sin\left(2\sqrt{z}\right)}{65\,835}$$

07.22.03.acku.01

$${}_1F_2\left(\frac{5}{4};\frac{1}{2},-\frac{17}{4};z\right)=$$
$$-\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^3+16\,896z^2-14\,040z-9945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4864z^2+7776z-9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.8z\left(256z^2+2784z+225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ackv.01

$${}_1F_2\left(\frac{5}{4};\frac{1}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^3-16\,896z^2-14\,040z+9945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4864z^2-7776z-9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.8z\left(256z^2-2784z+225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ackw.01

$${}_1F_2\left(\frac{5}{4};\frac{1}{2},-\frac{15}{4};z\right)=\frac{4\sqrt{z}\left(256z^2+1440z-855\right)\sinh\left(2\sqrt{z}\right)-15\left(256z^2+160z-231\right)\cosh\left(2\sqrt{z}\right)}{3465}$$

07.22.03.ackx.01

$${}_1F_2\left(\frac{5}{4};\frac{1}{2},-\frac{15}{4};-z\right)=\frac{\left(-3840z^2+2400z+3465\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(-256z^2+1440z+855\right)\sin\left(2\sqrt{z}\right)}{3465}$$

07.22.03.acky.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, -\frac{13}{4}; z\right) = \frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\right.$$
$$\left.\left(\left(-1280 z^2 + 720 z + 585\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(256 z^2 + 672 z - 585\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 48 z (32 z + 9) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ackz.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, -\frac{13}{4}; -z\right) = -\frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(256 z^2 + 144 z - 117\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left.4\sqrt{z}\left(256 z^2 - 672 z - 585\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 48 (9 - 32 z) z J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acl0.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, -\frac{11}{4}; z\right) = \frac{1}{231}\left(\left(-256 z^2 - 288 z + 231\right)\cosh\left(2\sqrt{z}\right) + 64\sqrt{z}\,(8 z - 3)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acl1.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, -\frac{11}{4}; -z\right) = \frac{1}{231}\left(\left(-256 z^2 + 288 z + 231\right)\cos\left(2\sqrt{z}\right) + 64\sqrt{z}\,(8 z + 3)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acl2.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, -\frac{9}{4}; z\right) =$$
$$-\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128 z^2 - 40 z - 45\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 20\sqrt{z}\,(16 z - 9) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 8 z (16 z + 9) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acl3.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, -\frac{9}{4}; -z\right) =$$
$$-\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128 z^2 + 40 z - 45\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 20\sqrt{z}\,(16 z + 9) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 8 (9 - 16 z) z J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acl4.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, -\frac{7}{4}; z\right) = \left(1 - \frac{16 z}{7}\right)\cosh\left(2\sqrt{z}\right) + \frac{4}{21}\sqrt{z}\,(16 z - 3)\sinh\left(2\sqrt{z}\right)$$

07.22.03.acl5.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, -\frac{7}{4}; -z\right) = \left(\frac{16 z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{4}{21}\sqrt{z}\,(16 z + 3)\sin\left(2\sqrt{z}\right)$$

07.22.03.acl6.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, -\frac{5}{4}; z\right) = \frac{\sqrt[4]{z}\left(5 I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(16 z - 5) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 16 z I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.acl7.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, -\frac{5}{4}; -z\right) = \frac{\sqrt[4]{z}\left(5 J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(16 z + 5) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 16 z J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.acl8.01

$${}_1F_2\left(\frac{5}{4}; \frac{1}{2}, -\frac{3}{4}; z\right) = \frac{1}{3}(3-16z)\cosh\left(2\sqrt{z}\right)$$

07.22.03.acl9.01

$${}_1F_2\left(\frac{5}{4}; \frac{1}{2}, -\frac{3}{4}; -z\right) = \frac{1}{3}(16z+3)\cos\left(2\sqrt{z}\right)$$

07.22.03.acla.01

$${}_1F_2\left(\frac{5}{4}; \frac{1}{2}, -\frac{1}{4}; z\right) = -\frac{\sqrt[4]{z}\left((8z-1)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\, I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 8z\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.aclb.01

$${}_1F_2\left(\frac{5}{4}; \frac{1}{2}, -\frac{1}{4}; -z\right) = \frac{\sqrt[4]{z}\left((8z+1)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 8z\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.aclc.01

$${}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{1}{4}; z\right) = \cosh\left(2\sqrt{z}\right) + 4\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.acld.01

$${}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{1}{4}; -z\right) = \cos\left(2\sqrt{z}\right) - 4\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.acle.01

$${}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{3}{4}; z\right) = \frac{\sqrt[4]{z}\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)\left(I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\sqrt{z}\, I_{\frac{3}{4}}\left(\sqrt{z}\right)\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.aclf.01

$${}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{3}{4}; -z\right) = \frac{\sqrt[4]{z}\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)\left(J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right)\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.aclg.01

$${}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{5}{4}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.aclh.01

$${}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{5}{4}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.acli.01

$${}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{7}{4}; z\right) = \frac{3\left(2\sqrt{z}\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{4\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.aclj.01

$${}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{7}{4}; -z\right) = \frac{3\left(2\sqrt{z}\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{4\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.aclk.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{9}{4}; z\right) = \frac{1}{128\, z^{5/4}} \left(5\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z} \left(e^{4\sqrt{z}} \left(4\sqrt{z} - 3\right) - 4\sqrt{z} - 3\right) + 3\, e^{2\sqrt{z}} \sqrt{2\pi}\, \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + 3\, e^{2\sqrt{z}} \sqrt{2\pi}\, \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.acll.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{9}{4}; -z\right) = \frac{5\left(6\sqrt[4]{z}\, \cos\left(2\sqrt{z}\right) - 3\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 8\, z^{3/4} \sin\left(2\sqrt{z}\right)\right)}{32\, z^{5/4}} $$

07.22.03.aclm.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{11}{4}; z\right) = \frac{21\left(-10\sqrt{z}\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (32z + 15)\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 30\sqrt{z}\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{128\sqrt{2}\, z^{5/4}} $$

07.22.03.acln.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{11}{4}; -z\right) = \frac{21\left(10\sqrt{z}\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (32z - 15)\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 30\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{128\sqrt{2}\, z^{5/4}} $$

07.22.03.aclo.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{13}{4}; z\right) = \frac{1}{8192\, z^{9/4}} \left(45\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z} \left(64z + 140\sqrt{z} + e^{4\sqrt{z}} \left(64z - 140\sqrt{z} + 105\right) + 105\right) + 3\, e^{2\sqrt{z}} \sqrt{2\pi}\, (16z - 35) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + 3\, e^{2\sqrt{z}} \sqrt{2\pi}\, (16z - 35) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.aclp.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{13}{4}; -z\right) = -\frac{45\left(3\sqrt{\pi}\, (16z + 35)\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z} \left((64z - 105)\cos\left(2\sqrt{z}\right) - 140\sqrt{z}\, \sin\left(2\sqrt{z}\right)\right)\right)}{2048\, z^{9/4}} $$

07.22.03.aclq.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{15}{4}; z\right) = \frac{1}{4096\sqrt{2}\, z^{9/4}} \left(231\left(10\sqrt{z}\, (16z + 21)\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 45\,(16z + 7)\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\, (16z + 105)\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aclr.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{15}{4}; -z\right) = -\frac{1}{4096\sqrt{2}\, z^{9/4}} \left(231\left(10\sqrt{z}\, (16z - 21)\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 45\,(16z - 7)\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\,(105 - 16z)\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acls.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{17}{4}; z\right) = \frac{1}{1\,048\,576\, z^{13/4}} \left(585\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z} \left(-1856\, z^{3/2} - 7728z - 13\,860\sqrt{z} + e^{4\sqrt{z}} \left(1856\, z^{3/2} - 7728z + 13\,860\sqrt{z} - 10\,395\right) - 10\,395\right) + 3\, e^{2\sqrt{z}} \sqrt{2\pi}\, \left(256\, z^2 - 1120z + 3465\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + 3\, e^{2\sqrt{z}} \sqrt{2\pi}\, \left(256\, z^2 - 1120z + 3465\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.aclt.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{17}{4}; -z\right) = -\frac{1}{262\,144\, z^{13/4}} \left(585\left(3\sqrt{\pi}\,\left(256 z^2+1120 z+3465\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(21\,(368 z-495)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,(464 z-3465)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aclu.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{19}{4}; z\right) = \frac{1}{131\,072\sqrt{2}\, z^{13/4}} \left(693\left(2\sqrt{z}\,\left(256 z^2-12\,960 z-15\,015\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(3328 z^2+35\,840 z+15\,015\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(256 z^2+11\,424 z+45\,045\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aclv.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{19}{4}; -z\right) = -\frac{1}{131\,072\sqrt{2}\, z^{13/4}} \left(693\left(2\sqrt{z}\,\left(256 z^2+12\,960 z-15\,015\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(3328 z^2-35\,840 z+15\,015\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(256 z^2-11\,424 z+45\,045\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aclw.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{21}{4}; z\right) = \frac{1}{67\,108\,864 z^{17/4}} \left(9945\, e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-1024 z^{5/2}-32\,512 z^2-190\,080 z^{3/2}-554\,400 z-900\,900\sqrt{z}+e^{4\sqrt{z}}\left(1024 z^{5/2}-32\,512 z^2+190\,080 z^{3/2}-554\,400 z+900\,900\sqrt{z}-675\,675\right)-675\,675\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,\left(4096 z^3-26\,880 z^2+166\,320 z-675\,675\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,\left(4096 z^3-26\,880 z^2+166\,320 z-675\,675\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aclx.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{1}{2}, \frac{21}{4}; -z\right) = -\frac{1}{16\,777\,216 z^{17/4}} \left(9945\left(\sqrt{\pi}\,\left(4096 z^3+26\,880 z^2+166\,320 z+675\,675\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\,\left(\left(32\,512 z^2-554\,400 z+675\,675\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(256 z^2-47\,520 z+225\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.acly.01

$${}_1F_2\left(\frac{5}{4};\frac{1}{2},\frac{23}{4};z\right)=\frac{1}{4\,194\,304\sqrt{2}\,z^{17/4}}\left(1881\right.$$
$$\left(2\sqrt{z}\left(4096z^3+111\,360z^2+3\,534\,960z+3\,828\,825\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096z^3+4\,128\,000z^2+28\,108\,080z+11\,486\,475\right)\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-4096z^3+174\,336z^2+3\,603\,600z+11\,486\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aclz.01

$${}_1F_2\left(\frac{5}{4};\frac{1}{2},\frac{23}{4};-z\right)=-\frac{1}{4\,194\,304\sqrt{2}\,z^{17/4}}$$
$$\left(1881\left(2\sqrt{z}\left(4096z^3-111\,360z^2+3\,534\,960z-3\,828\,825\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4096z^3+4\,128\,000z^2-28\,108\,080z+\right.\right.\right.$$
$$\left.\left.\left.11\,486\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3+174\,336z^2-3\,603\,600z+11\,486\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{5}{4}$, $b_{1.} = \frac{3}{2}$

07.22.03.acm0.01

$${}_1F_2\left(\frac{5}{4};\frac{3}{2},-\frac{23}{4};z\right)=\frac{1}{3\,028\,410\sqrt{z}}\left(4\sqrt{z}\left(4096z^3+295\,680z^2+2\,518\,320z+3\,367\,665\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.7\left(28\,672z^3+610\,560z^2+2\,178\,000z+745\,875\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acm1.01

$${}_1F_2\left(\frac{5}{4};\frac{3}{2},-\frac{23}{4};-z\right)=\frac{1}{3\,028\,410\sqrt{z}}\left(7\left(28\,672z^3-610\,560z^2+2\,178\,000z-745\,875\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.4\sqrt{z}\left(4096z^3-295\,680z^2+2\,518\,320z-3\,367\,665\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.acm2.01

$${}_1F_2\left(\frac{5}{4};\frac{3}{2},-\frac{21}{4};z\right)=\frac{1}{208\,845\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(4096z^3+204\,544z^2+1\,057\,520z+208\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-112\sqrt{z}\left(768z^2+11\,648z+25\,485\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^3+227\,072z^2+1\,449\,840z+1\,514\,205\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acm3.01

$${}_1F_2\left(\frac{5}{4};\frac{3}{2},-\frac{21}{4};-z\right)=$$
$$-\frac{1}{208\,845\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096z^3-204\,544z^2+1\,057\,520z-208\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-112\sqrt{z}\left(768z^2-11\,648z+25\,485\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-4096z^3+227\,072z^2-1\,449\,840z+1\,514\,205\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acm4.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{19}{4}; z\right) =$$

$$\frac{1}{131\,670\sqrt{z}}\left(48\sqrt{z}\left(768z^2+8320z+11\,445\right)\cosh\left(2\sqrt{z}\right)-\left(4096z^3+157\,440z^2+621\,360z+208\,845\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acm5.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{19}{4}; -z\right) =$$

$$\frac{1}{131\,670\sqrt{z}}\left(48\sqrt{z}\left(768z^2-8320z+11\,445\right)\cos\left(2\sqrt{z}\right)+\left(4096z^3-157\,440z^2+621\,360z-208\,845\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acm6.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{17}{4}; z\right) =$$

$$-\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(-\left(7424z^2+47\,200z+9945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(256z^2+6752z+15\,945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$

$$\left.\left.\left(7936z^2+62\,880z+65\,835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acm7.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{17}{4}; -z\right) =$$

$$\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(7424z^2-47\,200z+9945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(256z^2-6752z+15\,945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.\left(-7936z^2+62\,880z-65\,835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acm8.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{15}{4}; z\right) = \frac{4\sqrt{z}\left(256z^2+4640z+6705\right)\cosh\left(2\sqrt{z}\right)-5\left(1280z^2+6048z+1989\right)\sinh\left(2\sqrt{z}\right)}{6930\sqrt{z}}$$

07.22.03.acm9.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{15}{4}; -z\right) = \frac{4\sqrt{z}\left(256z^2-4640z+6705\right)\cos\left(2\sqrt{z}\right)-5\left(1280z^2-6048z+1989\right)\sin\left(2\sqrt{z}\right)}{6930\sqrt{z}}$$

07.22.03.acma.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{13}{4}; z\right) = \frac{1}{585\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(256z^2+2560z+585\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-80\sqrt{z}\left(32z+87\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(256z^2+3264z+3465\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acmb.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{13}{4}; -z\right) = \frac{1}{585\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(256z^2 - 2560z + 585\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 80\sqrt{z}\,(32z - 87)\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-256z^2 + 3264z - 3465\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acmc.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{11}{4}; z\right) = \frac{32\sqrt{z}\,(32z + 51)\cosh\left(2\sqrt{z}\right) - \left(256z^2 + 1824z + 585\right)\sinh\left(2\sqrt{z}\right)}{462\sqrt{z}}$$

07.22.03.acmd.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{11}{4}; -z\right) = \frac{\left(-256z^2 + 1824z - 585\right)\sin\left(2\sqrt{z}\right) - 32\sqrt{z}\,(32z - 51)\cos\left(2\sqrt{z}\right)}{462\sqrt{z}}$$

07.22.03.acme.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{9}{4}; z\right) =$$
$$-\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\left(-(176z + 45) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\,(16z + 61) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - (208z + 231) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acmf.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{9}{4}; -z\right) =$$
$$-\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\left((176z - 45) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\,(16z - 61) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + (231 - 208z) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acmg.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{7}{4}; z\right) = \frac{4\sqrt{z}\,(16z + 33)\cosh\left(2\sqrt{z}\right) - 9(16z + 5)\sinh\left(2\sqrt{z}\right)}{42\sqrt{z}}$$

07.22.03.acmh.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{7}{4}; -z\right) = \frac{9(16z - 5)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\,(16z - 33)\cos\left(2\sqrt{z}\right)}{42\sqrt{z}}$$

07.22.03.acmi.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{5}{4}; z\right) = \frac{\sqrt[4]{z}\left((16z + 5) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 48\sqrt{z}\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + (16z + 21) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.acmj.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{5}{4}; -z\right) = -\frac{\sqrt[4]{z}\left((16z - 5) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 48\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + (21 - 16z) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.acmk.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{3}{4}; z\right) = \frac{16\sqrt{z}\,\cosh\left(2\sqrt{z}\right) - (16z+5)\sinh\left(2\sqrt{z}\right)}{6\sqrt{z}}$$

07.22.03.acml.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{3}{4}; -z\right) = \frac{16\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (16z-5)\sin\left(2\sqrt{z}\right)}{6\sqrt{z}}$$

07.22.03.acmm.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{1}{4}; z\right) = \frac{\sqrt[4]{z}\left(I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 8\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.acmn.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, -\frac{1}{4}; -z\right) = \frac{\sqrt[4]{z}\left(J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 3\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.acmo.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, \frac{1}{4}; z\right) = 2\cosh\left(2\sqrt{z}\right) - \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.acmp.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, \frac{1}{4}; -z\right) = 2\cos\left(2\sqrt{z}\right) - \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.acmq.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, \frac{3}{4}; z\right) = \frac{\sqrt[4]{z}\left(I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.acmr.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, \frac{3}{4}; -z\right) = \frac{\sqrt[4]{z}\left(J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{\sqrt{2}}$$

07.22.03.acms.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, \frac{5}{4}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.acmt.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, \frac{5}{4}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.acmu.01

$${}_1F_2\left(\frac{5}{4}; \frac{3}{2}, \frac{7}{4}; z\right) = \frac{3\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{3}{4}\right)^2}{2\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.acmv.01

$${}_1F_2\left(\frac{5}{4};\frac{3}{2},\frac{7}{4};-z\right)=\frac{3\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{3}{4}\right)^2}{2\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.acmw.01

$${}_1F_2\left(\frac{5}{4};\frac{3}{2},\frac{9}{4};z\right)=\frac{5\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1+e^{4\sqrt{z}}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)}{64\,z^{5/4}}$$

07.22.03.acmx.01

$${}_1F_2\left(\frac{5}{4};\frac{3}{2},\frac{9}{4};-z\right)=\frac{5\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)}{16\,z^{5/4}}-\frac{5\cos\left(2\sqrt{z}\right)}{8\,z}$$

07.22.03.acmy.01

$${}_1F_2\left(\frac{5}{4};\frac{3}{2},\frac{11}{4};z\right)=\frac{21\left(2\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-3\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{64\sqrt{2}\,z^{5/4}}$$

07.22.03.acmz.01

$${}_1F_2\left(\frac{5}{4};\frac{3}{2},\frac{11}{4};-z\right)=\frac{21\left(-2\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+3\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{64\sqrt{2}\,z^{5/4}}$$

07.22.03.acn0.01

$${}_1F_2\left(\frac{5}{4};\frac{3}{2},\frac{13}{4};z\right)=-\frac{1}{4096\,z^{9/4}}\left(45\,e^{-2\sqrt{z}}\left(-20\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}-3\right)-4\sqrt{z}-3\right)+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\,(16\,z-15)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,(16\,z-15)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.acn1.01

$${}_1F_2\left(\frac{5}{4};\frac{3}{2},\frac{13}{4};-z\right)=\frac{45\left(\sqrt{\pi}\,(16\,z+15)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-10\sqrt[4]{z}\left(3\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)}{1024\,z^{9/4}}$$

07.22.03.acn2.01

$${}_1F_2\left(\frac{5}{4};\frac{3}{2},\frac{15}{4};z\right)=$$
$$-\frac{1}{2048\sqrt{2}\,z^{9/4}}\left(77\left(2\sqrt{z}\,(16\,z+35)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-(208\,z+105)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\,(105-16\,z)\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acn3.01

$${}_1F_2\left(\frac{5}{4};\frac{3}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{2048\sqrt{2}\,z^{9/4}}\left(77\left(2\sqrt{z}\,(16\,z-35)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(105-208\,z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,(16\,z+105)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acn4.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{3}{2}, \frac{17}{4}; z\right) = \frac{1}{524\,288\, z^{13/4}} \left(585\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(-64\, z^{3/2} + 528\, z + 1260\sqrt{z} + e^{4\sqrt{z}}\left(64\, z^{3/2} + 528\, z - 1260\sqrt{z} + 945\right) + 945\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 480\, z + 945\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 480\, z + 945\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acn5.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{3}{2}, \frac{17}{4}; -z\right) = \frac{1}{131\,072\, z^{13/4}} \left(585\left(\sqrt{\pi}\left(256\, z^2 + 480\, z + 945\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(945 - 528\, z\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(16\, z + 315\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.acn6.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{3}{2}, \frac{19}{4}; z\right) = -\frac{1}{65\,536\sqrt{2}\, z^{13/4}} \left(231\left(2\sqrt{z}\left(256\, z^2 - 2560\, z - 3465\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-256\, z^2 + 23\,520\, z + 10\,395\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(256\, z^2 + 1344\, z + 10\,395\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acn7.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{3}{2}, \frac{19}{4}; -z\right) = \frac{1}{65\,536\sqrt{2}\, z^{13/4}} \left(231\left(2\sqrt{z}\left(256\, z^2 + 2560\, z - 3465\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-256\, z^2 - 23\,520\, z + 10\,395\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(256\, z^2 - 1344\, z + 10\,395\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acn8.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{3}{2}, \frac{21}{4}; z\right) = -\frac{1}{33\,554\,432\, z^{17/4}} \left(3315\, e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(-1024\, z^{5/2} + 256\, z^2 - 21\,888\, z^{3/2} - 98\,784\, z - 180\,180\sqrt{z} + e^{4\sqrt{z}}\left(1024\, z^{5/2} + 256\, z^2 + 21\,888\, z^{3/2} - 98\,784\, z + 180\,180\sqrt{z} - 135\,135\right) - 135\,135\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\, z^3 - 11\,520\, z^2 + 45\,360\, z - 135\,135\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\, z^3 - 11\,520\, z^2 + 45\,360\, z - 135\,135\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acn9.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{3}{2}, \frac{21}{4}; -z\right) = \frac{1}{8\,388\,608\, z^{17/4}} \left(3315\left(\sqrt{\pi}\left(4096\, z^3 + 11\,520\, z^2 + 45\,360\, z + 135\,135\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(256\, z^2 + 98\,784\, z - 135\,135\right)\cos\left(2\sqrt{z}\right) - 4\sqrt{z}\left(256\, z^2 - 5472\, z + 45\,045\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.acna.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{3}{2}, \frac{23}{4}; z\right) = -\frac{1}{2\,097\,152\sqrt{2}\, z^{17/4}} \left(627\left(2\sqrt{z}\,\left(4096 z^3 - 14\,080 z^2 + 578\,160 z + 675\,675\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4096 z^3 + 418\,560 z^2 + 4\,823\,280 z + 2\,027\,025\right)\right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-4096 z^3 + 13\,056 z^2 + 498\,960 z + 2\,027\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acnb.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{3}{2}, \frac{23}{4}; -z\right) = \frac{1}{2\,097\,152\sqrt{2}\, z^{17/4}} \left(627\left(2\sqrt{z}\,\left(4096 z^3 + 14\,080 z^2 + 578\,160 z - 675\,675\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4096 z^3 + 418\,560 z^2 - 4\,823\,280 z + 2\,027\,025\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4096 z^3 + 13\,056 z^2 - 498\,960 z + 2\,027\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{5}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.acnc.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{5}{2}, -\frac{23}{4}; z\right) = \frac{1}{4\,037\,880 z^{3/2}} \left(\left(32\,768 z^4 + 4\,229\,120 z^3 + 73\,234\,560 z^2 + 292\,383\,000 z + 151\,412\,625\right)\sinh\left(2\sqrt{z}\right) - \right. $$
$$ \left. 10\sqrt{z}\,\left(53\,248 z^3 + 2\,123\,520 z^2 + 17\,696\,112 z + 30\,282\,525\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.acnd.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{5}{2}, -\frac{23}{4}; -z\right) = \frac{1}{4\,037\,880 z^{3/2}} \left(\left(-32\,768 z^4 + 4\,229\,120 z^3 - 73\,234\,560 z^2 + 292\,383\,000 z - 151\,412\,625\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left. 10\sqrt{z}\,\left(53\,248 z^3 - 2\,123\,520 z^2 + 17\,696\,112 z - 30\,282\,525\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.acne.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{5}{2}, -\frac{21}{4}; z\right) = $$
$$ \frac{1}{278\,460\sqrt{2}\, z^{3/4}} \left(\left(-224 z\left(512 z^2 + 14\,800 z + 79\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(4096 z^3 + 405\,248 z^2 + 5\,201\,520 z + 13\,627\,845\right)\right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(118\,784 z^3 + 3\,751\,680 z^2 + 24\,227\,280 z + 40\,883\,535\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acnf.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{5}{2}, -\frac{21}{4}; -z\right) = $$
$$ -\frac{1}{278\,460\sqrt{2}\, z^{3/4}} \left(\left(224 z\left(512 z^2 - 14\,800 z + 79\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(4096 z^3 - 405\,248 z^2 + 5\,201\,520 z - 13\,627\,845\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-118\,784 z^3 + 3\,751\,680 z^2 - 24\,227\,280 z + 40\,883\,535\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acng.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},-\frac{19}{4};z\right)=\frac{1}{175\,560\,z^{3/2}}\left(5\left(20\,480\,z^3+470\,784\,z^2+2\,004\,912\,z+1\,044\,225\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(4096\,z^3+311\,040\,z^2+2\,975\,280\,z+5\,221\,125\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.acnh.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},-\frac{19}{4};-z\right)=\frac{1}{175\,560\,z^{3/2}}\left(5\left(20\,480\,z^3-470\,784\,z^2+2\,004\,912\,z-1\,044\,225\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(4096\,z^3-311\,040\,z^2+2\,975\,280\,z-5\,221\,125\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.acni.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},-\frac{17}{4};z\right)=$$
$$-\frac{1}{13\,260\sqrt{2}\,z^{3/4}}\left(\left(8\,z\left(256\,z^2+13\,600\,z+82\,465\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(11\,008\,z^2+183\,200\,z+504\,735\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(2048\,z^3+120\,320\,z^2+877\,800\,z+1\,514\,205\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acnj.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{13\,260\sqrt{2}\,z^{3/4}}\left(\left(-8\,z\left(256\,z^2-13\,600\,z+82\,465\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(11\,008\,z^2-183\,200\,z+504\,735\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(2048\,z^3-120\,320\,z^2+877\,800\,z-1\,514\,205\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acnk.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{9240\,z^{3/2}}\left(\left(2048\,z^3+84\,480\,z^2+397\,800\,z+208\,845\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(9472\,z^2+114\,720\,z+208\,845\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.acnl.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{9240\,z^{3/2}}\left(2\sqrt{z}\left(9472\,z^2-114\,720\,z+208\,845\right)\cos\left(2\sqrt{z}\right)+\left(2048\,z^3-84\,480\,z^2+397\,800\,z-208\,845\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acnm.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},-\frac{13}{4};z\right)=\frac{1}{780\sqrt{2}\,z^{3/4}}\left(\left(-320\,z\left(12\,z+89\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\left(256\,z^2+7360\,z+21\,945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(4096\,z^2+36\,960\,z+65\,835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acnn.01

$${}_1F_2\left(\frac{5}{4}; \frac{5}{2}, -\frac{13}{4}; -z\right) = \frac{1}{780\sqrt{2}\, z^{3/4}}\left(\left(320\, z\,(12\, z-89)\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(256\, z^2-7360\, z+21\,945\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-4096\, z^2+36\,960\, z-65\,835\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acno.01

$${}_1F_2\left(\frac{5}{4}; \frac{5}{2}, -\frac{11}{4}; z\right) = \frac{13\left(256\, z^2+1440\, z+765\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(256\, z^2+5152\, z+9945\right)\cosh\left(2\sqrt{z}\right)}{616\, z^{3/2}}$$

07.22.03.acnp.01

$${}_1F_2\left(\frac{5}{4}; \frac{5}{2}, -\frac{11}{4}; -z\right) = \frac{2\sqrt{z}\,\left(256\, z^2-5152\, z+9945\right)\cos\left(2\sqrt{z}\right) - 13\left(256\, z^2-1440\, z+765\right)\sin\left(2\sqrt{z}\right)}{616\, z^{3/2}}$$

07.22.03.acnq.01

$${}_1F_2\left(\frac{5}{4}; \frac{5}{2}, -\frac{9}{4}; z\right) = -\frac{1}{60\sqrt{2}\, z^{3/4}}\left(\left(8\, z\,(16\, z+185)\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 84\sqrt{z}\,(16\, z+55)\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(128\, z^2+1848\, z+3465\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acnr.01

$${}_1F_2\left(\frac{5}{4}; \frac{5}{2}, -\frac{9}{4}; -z\right) = \frac{1}{60\sqrt{2}\, z^{3/4}}\left(\left(8\, z\,(16\, z-185)\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 84\sqrt{z}\,(16\, z-55)\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-128\, z^2+1848\, z-3465\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acns.01

$${}_1F_2\left(\frac{5}{4}; \frac{5}{2}, -\frac{7}{4}; z\right) = \frac{\left(128\, z^2+1080\, z+585\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,(272\, z+585)\cosh\left(2\sqrt{z}\right)}{56\, z^{3/2}}$$

07.22.03.acnt.01

$${}_1F_2\left(\frac{5}{4}; \frac{5}{2}, -\frac{7}{4}; -z\right) = \frac{\left(-128\, z^2+1080\, z-585\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,(272\, z-585)\cos\left(2\sqrt{z}\right)}{56\, z^{3/2}}$$

07.22.03.acnu.01

$${}_1F_2\left(\frac{5}{4}; \frac{5}{2}, -\frac{5}{4}; z\right) = \frac{3\left(-96\, z\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(16\, z+77)\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 7\,(16\, z+33)\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}\, z^{3/4}}$$

07.22.03.acnv.01

$${}_1F_2\left(\frac{5}{4}; \frac{5}{2}, -\frac{5}{4}; -z\right) = -\frac{3\left(96\, z\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(16\, z-77)\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 7\,(33-16\, z)\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}\, z^{3/4}}$$

07.22.03.acnw.01

$${}_1F_2\left(\frac{5}{4}; \frac{5}{2}, -\frac{3}{4}; z\right) = \frac{5\,(16\, z+9)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,(16\, z+45)\cosh\left(2\sqrt{z}\right)}{8\, z^{3/2}}$$

07.22.03.acnx.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},-\frac{3}{4};-z\right)=\frac{5\,(16\,z-9)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,(16\,z-45)\cos\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.acny.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},-\frac{1}{4};z\right)=-\frac{3\left(8\,z\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-28\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+(8\,z+21)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{4\sqrt{2}\,z^{3/4}}$$

07.22.03.acnz.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},-\frac{1}{4};-z\right)=\frac{3\left(-8\,z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+28\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+(8\,z-21)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{4\sqrt{2}\,z^{3/4}}$$

07.22.03.aco0.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},\frac{1}{4};z\right)=\frac{3\left((8\,z+5)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.aco1.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},\frac{1}{4};-z\right)=\frac{3\left(10\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(8\,z-5)\sin\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.aco2.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},\frac{3}{4};z\right)=\frac{3\left(4\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)-3\,I_{\frac{3}{4}}\left(\sqrt{z}\right)\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{3}{4}\right)^2}{4\sqrt{2}\,z^{3/4}}$$

07.22.03.aco3.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},\frac{3}{4};-z\right)=\frac{3\left(4\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)-3\,J_{\frac{3}{4}}\left(\sqrt{z}\right)\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{3}{4}\right)^2}{4\sqrt{2}\,z^{3/4}}$$

07.22.03.aco4.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},\frac{5}{4};z\right)=\frac{3\cosh\left(2\sqrt{z}\right)}{4\,z}-\frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.aco5.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},\frac{5}{4};-z\right)=\frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.aco6.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},\frac{7}{4};z\right)=\frac{2\sqrt{2}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{7}{4}\right)^2}{z^{3/4}}$$

07.22.03.aco7.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},\frac{7}{4};-z\right)=\frac{2\sqrt{2}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{7}{4}\right)^2}{z^{3/4}}$$

07.22.03.aco8.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},\frac{9}{4};z\right)=\frac{15\,e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+2e^{4\sqrt{z}}-e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)-2\right)}{32z^{3/2}}$$

07.22.03.aco9.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},\frac{9}{4};-z\right)=\frac{15\left(\sqrt{\pi}\sqrt[4]{z}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\sin\left(2\sqrt{z}\right)\right)}{8z^{3/2}}$$

07.22.03.acoa.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},\frac{11}{4};z\right)=-\frac{63\left(2\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-3I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{32\sqrt{2}\,z^{5/4}}$$

07.22.03.acob.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},\frac{11}{4};-z\right)=\frac{63\left(2\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-3J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{32\sqrt{2}\,z^{5/4}}$$

07.22.03.acoc.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},\frac{13}{4};z\right)=-\frac{1}{2048z^{9/4}}\left(135e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}+5\right)-4\sqrt{z}+5\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+5)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+5)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.acod.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},\frac{13}{4};-z\right)=\frac{135\left(10\sqrt[4]{z}\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\,(16z-5)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-8z^{3/4}\sin\left(2\sqrt{z}\right)\right)}{512z^{9/4}}$$

07.22.03.acoe.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},\frac{15}{4};z\right)=$$

$$-\frac{1}{1024\sqrt{2}\,z^{9/4}}\left(231\left(2\sqrt{z}\,(16z-7)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(21-16z)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,(16z+21)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acof.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},\frac{15}{4};-z\right)=$$

$$\frac{1}{1024\sqrt{2}\,z^{9/4}}\left(231\left(2\sqrt{z}\,(16z+7)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-(16z+21)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,(16z-21)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acog.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},\frac{17}{4};z\right)=$$

$$-\frac{1}{262\,144z^{13/4}}\left(1755e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-64z^{3/2}+16z-180\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}+16z+180\sqrt{z}-135\right)-135\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+160z-135\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+160z-135\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.acoh.01

$${}_1F_2\left(\frac{5}{4}; \frac{5}{2}, \frac{17}{4}; -z\right) =$$

$$\frac{1}{65\,536\, z^{13/4}}\left(1755\left(\sqrt{\pi}\,\left(256\, z^2-160\, z-135\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(\left(16\, z+135\right)\cos\left(2\sqrt{z}\right)+4\left(45-16\, z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.acoi.01

$${}_1F_2\left(\frac{5}{4}; \frac{5}{2}, \frac{19}{4}; z\right) =$$

$$-\frac{1}{32\,768\sqrt{2}\, z^{13/4}}\left(693\left(2\sqrt{z}\,\left(256\, z^2+160\, z+385\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(256\, z^2+2240\, z+1155\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(256\, z^2+224\, z-1155\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acoj.01

$${}_1F_2\left(\frac{5}{4}; \frac{5}{2}, \frac{19}{4}; -z\right) =$$

$$\frac{1}{32\,768\sqrt{2}\, z^{13/4}}\left(693\left(2\sqrt{z}\,\left(256\, z^2-160\, z+385\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-256\, z^2+2240\, z-1155\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(256\, z^2-224\, z-1155\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acok.01

$${}_1F_2\left(\frac{5}{4}; \frac{5}{2}, \frac{21}{4}; z\right) =$$

$$\frac{1}{16\,777\,216\, z^{17/4}}\left(9945\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-1024\, z^{5/2}+256\, z^2-1152\, z^{3/2}+6624\, z+16\,380\sqrt{z}\right.\right.\right.+e^{4\sqrt{z}}\left(1024\, z^{5/2}+256\, z^2+\right.$$

$$\left.\left.\left.1152\, z^{3/2}+6624\, z-16\,380\sqrt{z}+12\,285\right)+12\,285\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,\left(4096\, z^3+3840\, z^2-6480\, z+12\,285\right)$$

$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\,\left(4096\, z^3+3840\, z^2-6480\, z+12\,285\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.acol.01

$${}_1F_2\left(\frac{5}{4}; \frac{5}{2}, \frac{21}{4}; -z\right)=\frac{1}{4\,194\,304\, z^{17/4}}\left(9945\left(\sqrt{\pi}\,\left(4096\, z^3-3840\, z^2-6480\, z-12\,285\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$

$$\left.\left.2\sqrt[4]{z}\,\left(\left(256\, z^2-6624\, z+12\,285\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,\left(-256\, z^2+288\, z+4095\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.acom.01

$${}_1F_2\left(\frac{5}{4}; \frac{5}{2}, \frac{23}{4}; z\right)=-\frac{1}{1\,048\,576\sqrt{2}\, z^{17/4}}$$

$$\left(1881\left(2\sqrt{z}\,\left(4096\, z^3+3840\, z^2-37\,840\, z-51\,975\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4096\, z^3-6400\, z^2+351\,120\, z+155\,925\right)\right.\right.$$

$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(4096\, z^3+4864\, z^2+18\,480\, z+155\,925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acon.01

$${}_1F_2\left(\frac{5}{4};\frac{5}{2},\frac{23}{4};-z\right)=\frac{1}{1\,048\,576\sqrt{2}\,z^{17/4}}$$
$$\left(1881\left(2\sqrt{z}\,\left(4096z^3-3840z^2-37\,840z+51\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4096z^3+6400z^2+351\,120z-155\,925\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4096z^3-4864z^2+18\,480z-155\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1=\frac{5}{4}$, $b_{1.}=\frac{7}{2}$

07.22.03.acoo.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{3\,230\,304z^{5/2}}\left(2\sqrt{z}\,\left(32\,768z^4+6\,948\,864z^3+209\,903\,232z^2+1\,695\,821\,400z+2\,997\,969\,975\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(1\,359\,872z^4+91\,112\,448z^3+1\,403\,438\,400z^2+5\,693\,114\,700z+2\,997\,969\,975\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acop.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{3\,230\,304z^{5/2}}\left(2\sqrt{z}\,\left(32\,768z^4-6\,948\,864z^3+209\,903\,232z^2-1\,695\,821\,400z+2\,997\,969\,975\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(-1\,359\,872z^4+91\,112\,448z^3-1\,403\,438\,400z^2+5\,693\,114\,700z-2\,997\,969\,975\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acoq.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},-\frac{21}{4};z\right)=\frac{1}{222\,768\sqrt{2}\,z^{7/4}}\left(\left(4z\left(4096z^3+669\,952z^2+15\,111\,216z+84\,492\,639\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\,\left(151\,552z^3+8\,004\,864z^2+93\,448\,080z+253\,477\,917\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(16\,384z^4+2\,835\,456z^3+69\,220\,800z^2+425\,188\,764z+760\,433\,751\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acor.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},-\frac{21}{4};-z\right)=\frac{1}{222\,768\sqrt{2}\,z^{7/4}}\left(\left(4z\left(4096z^3-669\,952z^2+15\,111\,216z-84\,492\,639\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\,\left(151\,552z^3-8\,004\,864z^2+93\,448\,080z-253\,477\,917\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-16\,384z^4+2\,835\,456z^3-69\,220\,800z^2+425\,188\,764z-760\,433\,751\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acos.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},-\frac{19}{4};z\right)=\frac{1}{140\,448z^{5/2}}\left(6\sqrt{z}\,\left(45\,056z^3+1\,879\,808z^2+16\,707\,600z+30\,282\,525\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(16\,384z^4+2\,190\,336z^3+40\,098\,240z^2+171\,252\,900z+90\,847\,575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acot.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},-\frac{19}{4};-z\right)=\frac{1}{140\,448\,z^{5/2}}\left(\left(-16\,384\,z^4+2\,190\,336\,z^3-40\,098\,240\,z^2+171\,252\,900\,z-90\,847\,575\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\left(45\,056\,z^3-1\,879\,808\,z^2+16\,707\,600\,z-30\,282\,525\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.acou.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},-\frac{17}{4};z\right)=\frac{1}{10\,608\sqrt{2}\,z^{7/4}}\left(\left(4z\left(14\,592\,z^2+444\,896\,z+2\,725\,569\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2048\,z^3+210\,944\,z^2+2\,884\,200\,z+8\,176\,707\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(60\,416\,z^3+2\,006\,400\,z^2+13\,325\,004\,z+24\,530\,121\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acov.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},-\frac{17}{4};-z\right)=-\frac{1}{10\,608\sqrt{2}\,z^{7/4}}\left(\left(4z\left(14\,592\,z^2-444\,896\,z+2\,725\,569\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048\,z^3-210\,944\,z^2+2\,884\,200\,z-8\,176\,707\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-60\,416\,z^3+2\,006\,400\,z^2-13\,325\,004\,z+24\,530\,121\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acow.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},-\frac{15}{4};z\right)=\frac{1}{7392\,z^{5/2}}\left(2\sqrt{z}\left(2048\,z^3+162\,816\,z^2+1\,670\,760\,z+3\,132\,675\right)\cosh\left(2\sqrt{z}\right)-51\left(1024\,z^3+24\,960\,z^2+114\,660\,z+61\,425\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acox.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},-\frac{15}{4};-z\right)=\frac{1}{7392\,z^{5/2}}\left(51\left(1024\,z^3-24\,960\,z^2+114\,660\,z-61\,425\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(2048\,z^3-162\,816\,z^2+1\,670\,760\,z-3\,132\,675\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.acoy.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},-\frac{13}{4};z\right)=\frac{1}{624\sqrt{2}\,z^{7/4}}\left(\left(4z\left(256\,z^2+14\,368\,z+100\,947\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-44\sqrt{z}\left(512\,z^2+9120\,z+27\,531\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(1024\,z^3+63\,360\,z^2+474\,012\,z+908\,523\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acoz.01

$${}_1F_2\left(\frac{5}{4}; \frac{7}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{624\sqrt{2}\, z^{7/4}}\left(\left(-4z\left(256z^2-14\,368z+100\,947\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+44\sqrt{z}\left(512z^2-9120z+27\,531\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(1024z^3-63\,360z^2+474\,012z-908\,523\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acp0.01

$${}_1F_2\left(\frac{5}{4}; \frac{7}{2}, -\frac{11}{4}; z\right) =$$
$$-\frac{1}{2464z^{5/2}}\left(5\left(\left(1024z^3+44\,928z^2+230\,724z+125\,307\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(4864z^2+63\,648z+125\,307\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acp1.01

$${}_1F_2\left(\frac{5}{4}; \frac{7}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{2464z^{5/2}}\left(5\left(2\sqrt{z}\left(4864z^2-63\,648z+125\,307\right)\cos\left(2\sqrt{z}\right)+\left(1024z^3-44\,928z^2+230\,724z-125\,307\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acp2.01

$${}_1F_2\left(\frac{5}{4}; \frac{7}{2}, -\frac{9}{4}; z\right) = \frac{1}{48\sqrt{2}\, z^{7/4}}$$
$$\left(\left(4z\left(496z+4389\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(128z^2+3960z+13\,167\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+33\left(64z^2+588z+1197\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acp3.01

$${}_1F_2\left(\frac{5}{4}; \frac{7}{2}, -\frac{9}{4}; -z\right) = \frac{1}{48\sqrt{2}\, z^{7/4}}$$
$$\left(\left(4z\left(496z-4389\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(128z^2-3960z+13\,167\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-33\left(64z^2-588z+1197\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acp4.01

$${}_1F_2\left(\frac{5}{4}; \frac{7}{2}, -\frac{7}{4}; z\right) = \frac{5\left(2\sqrt{z}\left(128z^2+2808z+5967\right)\cosh\left(2\sqrt{z}\right)-9\left(192z^2+1196z+663\right)\sinh\left(2\sqrt{z}\right)\right)}{224z^{5/2}}$$

07.22.03.acp5.01

$${}_1F_2\left(\frac{5}{4}; \frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{5\left(2\sqrt{z}\left(128z^2-2808z+5967\right)\cos\left(2\sqrt{z}\right)-9\left(192z^2-1196z+663\right)\sin\left(2\sqrt{z}\right)\right)}{224z^{5/2}}$$

07.22.03.acp6.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{16\sqrt{2}\,z^{7/4}}\left(3\left(4z\,(16z+231)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-44\sqrt{z}\,(16z+63)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(64z^2+924z+2079\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acp7.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{16\sqrt{2}\,z^{7/4}}\left(3\left(4z\,(16z-231)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-44\sqrt{z}\,(16z-63)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-64z^2+924z-2079\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acp8.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},-\frac{3}{4};z\right)=-\frac{5\left(\left(64z^2+612z+351\right)\sinh\left(2\sqrt{z}\right)-18\sqrt{z}\,(16z+39)\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.acp9.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},-\frac{3}{4};-z\right)=-\frac{5\left(18\sqrt{z}\,(16z-39)\cos\left(2\sqrt{z}\right)+\left(64z^2-612z+351\right)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.acpa.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},-\frac{1}{4};z\right)=\frac{3\left(308z\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(40z+231)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+63\,(4z+11)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{16\sqrt{2}\,z^{7/4}}$$

07.22.03.acpb.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},-\frac{1}{4};-z\right)=-\frac{3\left(308z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(40z-231)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+63\,(11-4z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{16\sqrt{2}\,z^{7/4}}$$

07.22.03.acpc.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},\frac{1}{4};z\right)=\frac{15\left(2\sqrt{z}\,(8z+27)\cosh\left(2\sqrt{z}\right)-(44z+27)\sinh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.acpd.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},\frac{1}{4};-z\right)=-\frac{15\left(2\sqrt{z}\,(8z-27)\cos\left(2\sqrt{z}\right)+(27-44z)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.acpe.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},\frac{3}{4};z\right)=\frac{84z\,\Gamma\left(\frac{3}{4}\right)^2I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-448\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{7}{4}\right)^2I_{-\frac{1}{4}}\left(\sqrt{z}\right)+9\,(4z+21)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{3}{4}\right)^2}{16\sqrt{2}\,z^{7/4}}$$

07.22.03.acpf.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},\frac{3}{4};-z\right)=\frac{-84z\,\Gamma\left(\frac{3}{4}\right)^2J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+448\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{7}{4}\right)^2J_{-\frac{1}{4}}\left(\sqrt{z}\right)+9\,(4z-21)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{3}{4}\right)^2}{16\sqrt{2}\,z^{7/4}}$$

07.22.03.acpg.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},\frac{5}{4};z\right)=\frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\cosh\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.acph.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},\frac{5}{4};-z\right)=-\frac{15\left(6\sqrt{z}\cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.acpi.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},\frac{7}{4};z\right)=\frac{\left(-4zI_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+(4z-9)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{7}{4}\right)^2}{\sqrt{2}\,z^{7/4}}$$

07.22.03.acpj.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},\frac{7}{4};-z\right)=\frac{\left(4zJ_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+(4z+9)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{7}{4}\right)^2}{\sqrt{2}\,z^{7/4}}$$

07.22.03.acpk.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},\frac{9}{4};z\right)=\frac{1}{64z^{5/2}}\left(15e^{-2\sqrt{z}}\left(-4e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}-\right.\right.$$
$$\left.\left.4e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4}+4e^{4\sqrt{z}}z-4z+6e^{4\sqrt{z}}\sqrt{z}+6\sqrt{z}-3e^{4\sqrt{z}}+3\right)\right)$$

07.22.03.acpl.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},\frac{9}{4};-z\right)=\frac{15\left(8\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}+6\cos\left(2\sqrt{z}\right)\sqrt{z}-(4z+3)\sin\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.acpm.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},\frac{11}{4};z\right)=\frac{7\left(-2zI_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+(2z+3)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{7}{4}\right)^2}{\sqrt{2}\,z^{7/4}}$$

07.22.03.acpn.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},\frac{11}{4};-z\right)=\frac{7\left(2zJ_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+(2z-3)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{7}{4}\right)^2}{\sqrt{2}\,z^{7/4}}$$

07.22.03.acpo.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{1024z^{5/2}}\left(135e^{-2\sqrt{z}}\left(4\left(-4z+\sqrt{z}+e^{4\sqrt{z}}\left(4z+\sqrt{z}+12\right)-12\right)-e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\,(16z+25)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\,(16z+25)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.acpp.01

$${}_1F_2\left(\frac{5}{4};\frac{7}{2},\frac{13}{4};-z\right)=\frac{135\left(2\sqrt{z}\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\sqrt[4]{z}\,(16z-25)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-8(z-3)\sin\left(2\sqrt{z}\right)\right)}{256z^{5/2}}$$

07.22.03.acpq.01

$${}_1F_2\left(\frac{5}{4}; \frac{7}{2}, \frac{15}{4}; z\right) =$$

$$-\frac{1}{512\sqrt{2}\, z^{9/4}}\left(231\left(2\sqrt{z}\,(16z+35)\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - (16z+105)\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,(16z+39)\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acpr.01

$${}_1F_2\left(\frac{5}{4}; \frac{7}{2}, \frac{15}{4}; -z\right) =$$

$$\frac{1}{512\sqrt{2}\, z^{9/4}}\left(231\left(2\sqrt{z}\,(16z-35)\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (105-16z)\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(16z-39)\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acps.01

$${}_1F_2\left(\frac{5}{4}; \frac{7}{2}, \frac{17}{4}; z\right) =$$

$$-\frac{1}{131\,072\, z^{13/4}}\left(1755\, e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-64z^{3/2}+16z-212\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}+16z+212\sqrt{z}+225\right)+225\right)+\right.\right.$$
$$\left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+800z+225\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2+800z+225\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.acpt.01

$${}_1F_2\left(\frac{5}{4}; \frac{7}{2}, \frac{17}{4}; -z\right) =$$

$$\frac{1}{32\,768\, z^{13/4}}\left(1755\left(\sqrt{\pi}\left(256z^2-800z+225\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left((16z-225)\cos\left(2\sqrt{z}\right)+4(53-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.acpu.01

$${}_1F_2\left(\frac{5}{4}; \frac{7}{2}, \frac{19}{4}; z\right) =$$

$$-\frac{1}{16\,384\sqrt{2}\, z^{13/4}}\left(693\left(2\sqrt{z}\left(256z^2+960z-385\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-256z^2-1120z+1155\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left. 2\sqrt{z}\left(256z^2+1024z+1155\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acpv.01

$${}_1F_2\left(\frac{5}{4}; \frac{7}{2}, \frac{19}{4}; -z\right) =$$

$$\frac{1}{16\,384\sqrt{2}\, z^{13/4}}\left(693\left(2\sqrt{z}\left(256z^2-960z-385\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-256z^2+1120z+1155\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 2\sqrt{z}\left(256z^2-1024z+1155\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acpw.01

$${}_1F_2\left(\frac{5}{4}; \frac{7}{2}, \frac{21}{4}; z\right) =$$

$$-\frac{1}{8\,388\,608\,z^{17/4}}\left(9945\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1024\,z^{5/2}+256\,z^2-4992\,z^{3/2}+1440\,z-11\,700\sqrt{z}+e^{4\sqrt{z}}\left(1024\,z^{5/2}+256\,z^2+4992\,z^{3/2}+1440\,z+11\,700\sqrt{z}-8775\right)-8775\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\,z^3+19\,200\,z^2+10\,800\,z-8775\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096\,z^3+19\,200\,z^2+10\,800\,z-8775\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.acpx.01

$${}_1F_2\left(\frac{5}{4}; \frac{7}{2}, \frac{21}{4}; -z\right) = \frac{1}{2\,097\,152\,z^{17/4}}\left(9945\left(\sqrt{\pi}\left(4096\,z^3-19\,200\,z^2+10\,800\,z+8775\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\left(\left(-256\,z^2+1440\,z+8775\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(256\,z^2-1248\,z+2925\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.acpy.01

$${}_1F_2\left(\frac{5}{4}; \frac{7}{2}, \frac{23}{4}; z\right) = -\frac{1}{524\,288\sqrt{2}\,z^{17/4}}$$
$$\left(1881\left(2\sqrt{z}\left(4096\,z^3+21\,760\,z^2+11\,440\,z+28\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096\,z^3+24\,320\,z^2+166\,320\,z+86\,625\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(4096\,z^3+22\,784\,z^2+18\,480\,z-86\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acpz.01

$${}_1F_2\left(\frac{5}{4}; \frac{7}{2}, \frac{23}{4}; -z\right) = \frac{1}{524\,288\sqrt{2}\,z^{17/4}}$$
$$\left(1881\left(2\sqrt{z}\left(4096\,z^3-21\,760\,z^2+11\,440\,z-28\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4096\,z^3+24\,320\,z^2-166\,320\,z+86\,625\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096\,z^3-22\,784\,z^2+18\,480\,z+86\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{5}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.acq0.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,845\,888\,z^{7/2}}$$
$$\left(\left(131\,072\,z^5+42\,983\,424\,z^4+2\,079\,168\,000\,z^3+29\,394\,237\,600\,z^2+117\,253\,936\,800\,z+61\,624\,938\,375\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(1\,687\,552\,z^4+177\,079\,296\,z^3+4\,522\,190\,400\,z^2+35\,087\,352\,300\,z+61\,624\,938\,375\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.acq1.01

$${}_1F_2\left(\frac{5}{4};\frac{9}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{1\,845\,888\,z^{7/2}}\left(2\sqrt{z}\,\left(1\,687\,552\,z^4-177\,079\,296\,z^3+4\,522\,190\,400\,z^2-35\,087\,352\,300\,z+61\,624\,938\,375\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(131\,072\,z^5-42\,983\,424\,z^4+2\,079\,168\,000\,z^3-29\,394\,237\,600\,z^2+117\,253\,936\,800\,z-61\,624\,938\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acq2.01

$${}_1F_2\left(\frac{5}{4};\frac{9}{2},-\frac{21}{4};z\right)=\frac{1}{127\,296\sqrt{2}\,z^{11/4}}\left(\left(-4\,z\left(188\,416\,z^3+15\,637\,248\,z^2+300\,418\,272\,z+1\,642\,912\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\,\left(16\,384\,z^4+4\,375\,552\,z^3+169\,905\,600\,z^2+1\,840\,061\,916\,z+4\,928\,737\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(770\,048\,z^4+67\,123\,200\,z^3+1\,414\,873\,152\,z^2+8\,336\,607\,048\,z+14\,786\,211\,825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acq3.01

$${}_1F_2\left(\frac{5}{4};\frac{9}{2},-\frac{21}{4};-z\right)=\frac{1}{127\,296\sqrt{2}\,z^{11/4}}\left(\left(4\,z\left(188\,416\,z^3-15\,637\,248\,z^2+300\,418\,272\,z-1\,642\,912\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\,\left(16\,384\,z^4-4\,375\,552\,z^3+169\,905\,600\,z^2-1\,840\,061\,916\,z+4\,928\,737\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-770\,048\,z^4+67\,123\,200\,z^3-1\,414\,873\,152\,z^2+8\,336\,607\,048\,z-14\,786\,211\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acq4.01

$${}_1F_2\left(\frac{5}{4};\frac{9}{2},-\frac{19}{4};z\right)=\frac{1}{80\,256\,z^{7/2}}\left(21\left(32\,768\,z^4+2\,263\,040\,z^3+36\,067\,200\,z^2+149\,970\,600\,z+79\,311\,375\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\,\left(16\,384\,z^4+3\,566\,592\,z^3+111\,384\,000\,z^2+928\,664\,100\,z+1\,665\,538\,875\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.acq5.01

$${}_1F_2\left(\frac{5}{4};\frac{9}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{80\,256\,z^{7/2}}\left(2\sqrt{z}\,\left(16\,384\,z^4-3\,566\,592\,z^3+111\,384\,000\,z^2-928\,664\,100\,z+1\,665\,538\,875\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.21\left(32\,768\,z^4-2\,263\,040\,z^3+36\,067\,200\,z^2-149\,970\,600\,z+79\,311\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acq6.01

$${}_1F_2\left(\frac{5}{4};\frac{9}{2},-\frac{17}{4};z\right)=-\frac{1}{42\,432\sqrt{2}\,z^{11/4}}\left(7\left(4\,z\left(2048\,z^3+345\,088\,z^2+7\,960\,392\,z+46\,940\,355\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\,\left(25\,600\,z^3+1\,398\,400\,z^2+16\,901\,412\,z+46\,940\,355\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(8192\,z^4+1\,459\,200\,z^3+37\,379\,232\,z^2+232\,581\,888\,z+422\,463\,195\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acq7.01

$${}_1F_2\left(\frac{5}{4};\frac{9}{2},-\frac{17}{4};-z\right)=\frac{1}{42\,432\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(2048z^3-345\,088z^2+7\,960\,392z-46\,940\,355\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(25\,600z^3-1\,398\,400z^2+16\,901\,412z-46\,940\,355\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-8192z^4+1\,459\,200z^3-37\,379\,232z^2+232\,581\,888z-422\,463\,195\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acq8.01

$${}_1F_2\left(\frac{5}{4};\frac{9}{2},-\frac{15}{4};z\right)=\frac{1}{4224z^{7/2}}\left(\left(8192z^4+1\,131\,520z^3+21\,534\,240z^2+94\,676\,400z+50\,470\,875\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(68\,608z^3+2\,970\,240z^2+27\,381\,900z+50\,470\,875\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.acq9.01

$${}_1F_2\left(\frac{5}{4};\frac{9}{2},-\frac{15}{4};-z\right)=\frac{1}{4224z^{7/2}}\left(\left(-8192z^4+1\,131\,520z^3-21\,534\,240z^2+94\,676\,400z-50\,470\,875\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(68\,608z^3-2\,970\,240z^2+27\,381\,900z-50\,470\,875\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.acqa.01

$${}_1F_2\left(\frac{5}{4};\frac{9}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{2496\sqrt{2}\,z^{11/4}}\left(7\left(-4z\left(7424z^2+230\,736z+1\,514\,205\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024z^3+109\,440z^2+1\,557\,468z+4\,542\,615\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-3\left(10\,240z^3+361\,152z^2+2\,422\,728z+4\,542\,615\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acqb.01

$${}_1F_2\left(\frac{5}{4};\frac{9}{2},-\frac{13}{4};-z\right)=$$
$$-\frac{1}{2496\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(7424z^2-230\,736z+1\,514\,205\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024z^3-109\,440z^2+1\,557\,468z-4\,542\,615\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+3\left(-10\,240z^3+361\,152z^2-2\,422\,728z+4\,542\,615\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acqc.01

$${}_1F_2\left(\frac{5}{4};\frac{9}{2},-\frac{11}{4};z\right)=-\frac{1}{1408z^{7/2}}\left(5\left(2\sqrt{z}\left(1024z^3+84\,864z^2+909\,636z+1\,740\,375\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.13\left(2048z^3+52\,224z^2+248\,472z+133\,875\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acqd.01

$${}_1F_2\left(\frac{5}{4};\frac{9}{2},-\frac{11}{4};-z\right)=-\frac{1}{1408z^{7/2}}\left(5\left(2\sqrt{z}\left(1024z^3-84\,864z^2+909\,636z-1\,740\,375\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.13\left(-2048z^3+52\,224z^2-248\,472z+133\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acqe.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, -\frac{9}{4}; z\right) =$$
$$-\frac{1}{576\sqrt{2}\, z^{11/4}}\left(7\left(4z\left(384z^2+21\,736z+168\,245\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(8640z^2+161\,348z+504\,735\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(1536z^3+103\,136z^2+772\,464z+1\,514\,205\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acqf.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, -\frac{9}{4}; -z\right) =$$
$$-\frac{1}{576\sqrt{2}\, z^{11/4}}\left(7\left(4z\left(384z^2-21\,736z+168\,245\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(8640z^2-161\,348z+504\,735\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-1536z^3+103\,136z^2-772\,464z+1\,514\,205\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acqg.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{128z^{7/2}}\left(5\left(\left(512z^3+23\,712z^2+127\,296z+69\,615\right)\sinh\left(2\sqrt{z}\right)-78\sqrt{z}\left(64z^2+884z+1785\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acqh.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, -\frac{7}{4}; -z\right) = \frac{5\left(78\sqrt{z}\left(64z^2-884z+1785\right)\cos\left(2\sqrt{z}\right)+\left(512z^3-23\,712z^2+127\,296z-69\,615\right)\sin\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.acqi.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, -\frac{5}{4}; z\right) = \frac{1}{64\sqrt{2}\, z^{11/4}}\left(7\left(-44z\left(64z+665\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\left(192z^2+6292z+21\,945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-11\left(320z^2+2856z+5985\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acqj.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, -\frac{5}{4}; -z\right) = \frac{1}{64\sqrt{2}\, z^{11/4}}\left(7\left(44z\left(64z-665\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\left(192z^2-6292z+21\,945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-11\left(320z^2-2856z+5985\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acqk.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, -\frac{3}{4}; z\right) = -\frac{35\left(2\sqrt{z}\left(64z^2+1508z+3315\right)\cosh\left(2\sqrt{z}\right)-\left(896z^2+5928z+3315\right)\sinh\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.acql.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{35\left(2\sqrt{z}\left(64z^2-1508z+3315\right)\cos\left(2\sqrt{z}\right)+\left(-896z^2+5928z-3315\right)\sin\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.acqm.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, -\frac{1}{4}; z\right) = -\frac{1}{64\sqrt{2}\, z^{11/4}}$$
$$\left(7\left(44\, z\,(8\, z+175)\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 44\sqrt{z}\,(124\, z+525)\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(608\, z^2+7392\, z+17\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acqn.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, -\frac{1}{4}; -z\right) = \frac{1}{64\sqrt{2}\, z^{11/4}}$$
$$\left(7\left(44\, z\,(8\, z-175)\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 44\sqrt{z}\,(124\, z-525)\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-608\, z^2+7392\, z-17\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acqo.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{1}{4}; z\right) = \frac{105\left(\left(32\, z^2+336\, z+195\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,(76\, z+195)\cosh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.acqp.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{1}{4}; -z\right) = -\frac{105\left(2\sqrt{z}\,(76\, z-195)\cos\left(2\sqrt{z}\right) + \left(32\, z^2-336\, z+195\right)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.acqq.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{3}{4}; z\right) = \frac{1}{192\sqrt{2}\, z^{11/4}}$$
$$\left(7\left(4\, z\,(16\, z-385)\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(172\, z+1155)\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(64\, z^2+1176\, z+3465\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acqr.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{3}{4}; -z\right) = -\frac{1}{192\sqrt{2}\, z^{11/4}}$$
$$\left(7\left(4\, z\,(16\, z+385)\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(172\, z-1155)\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(64\, z^2-1176\, z+3465\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acqs.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{5}{4}; z\right) = \frac{105\left(2\sqrt{z}\,(4\, z+15)\cosh\left(2\sqrt{z}\right) - 3\,(8\, z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.acqt.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{5}{4}; -z\right) = \frac{105\left(2\sqrt{z}\,(4\, z-15)\cos\left(2\sqrt{z}\right) + 3\,(5-8\, z)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.acqu.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{7}{4}; z\right) =$$
$$-\frac{1}{64\sqrt{2}\, z^{11/4}}\left(7\left(4\, z\,(8\, z-35)\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\,(105-4\, z)\sqrt{z}\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(32\, z^2+48\, z+315\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acqv.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{7}{4}; -z\right) =$$

$$\frac{1}{64\sqrt{2}\, z^{11/4}}\left(7\left(4z(8z+35) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(4z+105) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(32z^2-48z+315\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acqw.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{9}{4}; z\right) =$$

$$\frac{1}{768 z^{7/2}}\left(35 e^{-2\sqrt{z}}\left(-32 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{9/4} - 32 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{9/4} + 32 e^{4\sqrt{z}} z^2 - 32 z^2 + \right.\right.$$
$$\left.\left. 8 e^{4\sqrt{z}} z^{3/2} + 8 z^{3/2} + 96 e^{4\sqrt{z}} z - 96 z - 150 e^{4\sqrt{z}}\sqrt{z} - 150\sqrt{z} + 75 e^{4\sqrt{z}} - 75\right)\right)$$

07.22.03.acqx.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{9}{4}; -z\right) = \frac{35\left(64\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{9/4} + 2(4z+75)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(-32z^2+96z-75\right)\sin\left(2\sqrt{z}\right)\right)}{384 z^{7/2}}$$

07.22.03.acqy.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{11}{4}; z\right) =$$

$$-\frac{1}{64\sqrt{2}\, z^{11/4}}\left(49\left(4z(4z+5) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(2z+15) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-16z^2-24z+45\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acqz.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{11}{4}; -z\right) =$$

$$\frac{1}{64\sqrt{2}\, z^{11/4}}\left(49\left(4z(4z-5) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4(15-2z)\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(16z^2-24z-45\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acr0.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{13}{4}; z\right) =$$

$$\frac{1}{512 z^{7/2}}\left(105 e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+45)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} - e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+45)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right) z^{5/4} + \right.\right.$$
$$\left.\left. 2\left(-8z^2+2z^{3/2}-24z+30\sqrt{z} + e^{4\sqrt{z}}\left(8z^2+2z^{3/2}+24z+30\sqrt{z}-15\right)+15\right)\right)\right)$$

07.22.03.acr1.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{13}{4}; -z\right) = \frac{105\left(\sqrt{\pi}\,(16z-45) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{5/4} + 2(z-15)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(-8z^2+24z+15\right)\sin\left(2\sqrt{z}\right)\right)}{128 z^{7/2}}$$

07.22.03.acr2.01

$${}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{15}{4}; z\right) =$$

$$-\frac{1}{768\sqrt{2}\, z^{11/4}}\left(539\left(2z(16z+65) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\,(16z+75) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\left(16z^2+69z+90\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acr3.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{15}{4}; -z\right) = \frac{1}{768\sqrt{2}\, z^{11/4}}\left(539\left(2z(16z-65) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (75-16z)\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\left(16z^2-69z+90\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acr4.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{17}{4}; z\right) = \frac{1}{65\,536 z^{7/2}}\left(1365 e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)(16z+45)^2 - e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)(16z+45)^2 + 4\left(-64z^2+16z^{3/2}-372z+105\sqrt{z}+e^{4\sqrt{z}}\left(64z^2+16z^{3/2}+372z+105\sqrt{z}+960\right)-960\right)\right)\right) $$

07.22.03.acr5.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{17}{4}; -z\right) = \frac{1}{16\,384 z^{7/2}}\left(1365\left(\sqrt{\pi}(45-16z)^2\sqrt[4]{z}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\left(4\left(16z^2-93z+240\right)\sin\left(2\sqrt{z}\right) - \sqrt{z}(16z-105)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.acr6.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{19}{4}; z\right) = -\frac{1}{8192\sqrt{2}\, z^{13/4}}\left(539\left(2\sqrt{z}\left(256z^2+1760z+3465\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(256z^2+1920z+10\,395\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(256z^2+1824z+4005\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acr7.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{19}{4}; -z\right) = \frac{1}{8192\sqrt{2}\, z^{13/4}}\left(539\left(2\sqrt{z}\left(256z^2-1760z+3465\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-256z^2+1920z-10\,395\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(256z^2-1824z+4005\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acr8.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{9}{2}, \frac{21}{4}; z\right) = -\frac{1}{4\,194\,304 z^{17/4}}\left(7735 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-1024z^{5/2}+256z^2-8832z^{3/2}+2400z-26\,340\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2+8832z^{3/2}+2400z+26\,340\sqrt{z}+26\,325\right)+26\,325\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+34\,560z^2+97\,200z+26\,325\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+34\,560z^2+97\,200z+26\,325\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acr9.01

$${}_1F_2\left(\frac{5}{4};\frac{9}{2},\frac{21}{4};-z\right)=\frac{1}{1\,048\,576\,z^{17/4}}\left(7735\left(\sqrt{\pi}\,\left(4096\,z^3-34\,560\,z^2+97\,200\,z-26\,325\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\,\left(\left(256\,z^2-2400\,z+26\,325\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\,\left(256\,z^2-2208\,z+6585\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.acra.01

$${}_1F_2\left(\frac{5}{4};\frac{9}{2},\frac{23}{4};z\right)=-\frac{1}{262\,144\sqrt{2}\,z^{17/4}}$$
$$\left(1463\left(2\sqrt{z}\,\left(4096\,z^3+39\,680\,z^2+134\,640\,z-51\,975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096\,z^3+42\,240\,z^2+166\,320\,z-155\,925\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(4096\,z^3+40\,704\,z^2+146\,160\,z+155\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acrb.01

$${}_1F_2\left(\frac{5}{4};\frac{9}{2},\frac{23}{4};-z\right)=\frac{1}{262\,144\sqrt{2}\,z^{17/4}}$$
$$\left(1463\left(2\sqrt{z}\,\left(4096\,z^3-39\,680\,z^2+134\,640\,z+51\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096\,z^3-42\,240\,z^2+166\,320\,z+155\,925\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4096\,z^3-40\,704\,z^2+146\,160\,z-155\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{5}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.acrc.01

$${}_1F_2\left(\frac{5}{4};\frac{11}{2},-\frac{23}{4};z\right)=\frac{1}{2\,461\,184\,z^{9/2}}$$
$$\left(3\left(2\sqrt{z}\,\left(131\,072\,z^5+63\,463\,424\,z^4+4\,638\,144\,000\,z^3+105\,227\,892\,000\,z^2+783\,742\,806\,000\,z+1\,360\,489\,024\,125\right)\right.\right.$$
$$\cosh\left(2\sqrt{z}\right)-25\left(327\,680\,z^5+51\,179\,520\,z^4+2\,022\,230\,784\,z^3+\right.$$
$$\left.\left.\left.26\,659\,554\,768\,z^2+103\,909\,126\,860\,z+54\,419\,560\,965\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acrd.01

$${}_1F_2\left(\frac{5}{4};\frac{11}{2},-\frac{23}{4};-z\right)=-\frac{1}{2\,461\,184\,z^{9/2}}$$
$$\left(3\left(2\sqrt{z}\,\left(131\,072\,z^5-63\,463\,424\,z^4+4\,638\,144\,000\,z^3-105\,227\,892\,000\,z^2+783\,742\,806\,000\,z-1\,360\,489\,024\,125\right)\right.\right.$$
$$\cos\left(2\sqrt{z}\right)-25\left(327\,680\,z^5-51\,179\,520\,z^4+2\,022\,230\,784\,z^3-\right.$$
$$\left.\left.\left.26\,659\,554\,768\,z^2+103\,909\,126\,860\,z-54\,419\,560\,965\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acre.01

$${}_1F_2\left(\frac{5}{4}; \frac{11}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{56\,576\sqrt{2}\, z^{15/4}}\left(\left(4z\left(16\,384z^4+6\,474\,752z^3+382\,350\,528z^2+6\,571\,649\,700z+34\,501\,160\,925\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$228\sqrt{z}\left(16\,384z^4+2\,119\,680z^3+68\,037\,312z^2+691\,752\,600z+1\,815\,850\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(65\,536z^5+\right.$$
$$\left.\left.\left.26\,849\,280z^4+1\,642\,169\,088z^3+31\,093\,291\,152z^2+177\,434\,541\,900z+310\,510\,448\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acrf.01

$${}_1F_2\left(\frac{5}{4}; \frac{11}{2}, -\frac{21}{4}; -z\right) =$$
$$\frac{1}{56\,576\sqrt{2}\, z^{15/4}}\left(\left(-4z\left(16\,384z^4-6\,474\,752z^3+382\,350\,528z^2-6\,571\,649\,700z+34\,501\,160\,925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$228\sqrt{z}\left(16\,384z^4-2\,119\,680z^3+68\,037\,312z^2-691\,752\,600z+1\,815\,850\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(65\,536z^5-\right.$$
$$\left.\left.\left.26\,849\,280z^4+1\,642\,169\,088z^3-31\,093\,291\,152z^2+177\,434\,541\,900z-310\,510\,448\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acrg.01

$${}_1F_2\left(\frac{5}{4}; \frac{11}{2}, -\frac{19}{4}; z\right) = -\frac{1}{107\,008\, z^{9/2}}$$
$$\left(3\left(\left(65\,536z^5+21\,934\,080z^4+1\,085\,280\,000z^3+15\,641\,312\,400z^2+63\,034\,240\,500z+33\,182\,659\,125\right)\sinh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\left(851\,968z^4+91\,392\,000z^3+2\,385\,331\,200z^2+18\,790\,695\,000z+33\,182\,659\,125\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acrh.01

$${}_1F_2\left(\frac{5}{4}; \frac{11}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{107\,008\, z^{9/2}}\left(3\left(2\sqrt{z}\left(851\,968z^4-91\,392\,000z^3+2\,385\,331\,200z^2-18\,790\,695\,000z+33\,182\,659\,125\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(65\,536z^5-21\,934\,080z^4+1\,085\,280\,000z^3-15\,641\,312\,400z^2+63\,034\,240\,500z-33\,182\,659\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acri.01

$${}_1F_2\left(\frac{5}{4}; \frac{11}{2}, -\frac{17}{4}; z\right) =$$
$$-\frac{1}{735\,488\sqrt{2}\, z^{15/4}}\left(21\left(-12z\left(412\,672z^3+35\,407\,488z^2+688\,458\,540z+3\,833\,462\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(106\,496z^4+29\,086\,720z^3+1\,157\,497\,632z^2+12\,767\,776\,560z+34\,501\,160\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.19\left(266\,240z^4+23\,563\,776z^3+512\,853\,264z^2+3\,053\,593\,620z+5\,447\,551\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acrj.01

$${}_1F_2\left(\frac{5}{4};\frac{11}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{735\,488\sqrt{2}\,z^{15/4}}\left(21\left(12z\left(412\,672z^3-35\,407\,488z^2+688\,458\,540z-3\,833\,462\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(106\,496z^4-29\,086\,720z^3+1\,157\,497\,632z^2-12\,767\,776\,560z+34\,501\,160\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.19\left(266\,240z^4-23\,563\,776z^3+512\,853\,264z^2-3\,053\,593\,620z+5\,447\,551\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acrk.01

$${}_1F_2\left(\frac{5}{4};\frac{11}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{5632z^{9/2}}\left(3\left(2\sqrt{z}\left(8192z^4+1\,827\,840z^3+58\,548\,000z^2+496\,944\,000z+896\,828\,625\right)\cosh\left(2\sqrt{z}\right)-85\right.\right.$$
$$\left.\left.\left(4096z^4+290\,304z^3+4\,732\,560z^2+19\,914\,300z+10\,550\,925\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acrl.01

$${}_1F_2\left(\frac{5}{4};\frac{11}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{5632z^{9/2}}\left(3\left(2\sqrt{z}\left(8192z^4-1\,827\,840z^3+58\,548\,000z^2-496\,944\,000z+896\,828\,625\right)\cos\left(2\sqrt{z}\right)-85\right.\right.$$
$$\left.\left.\left(4096z^4-290\,304z^3+4\,732\,560z^2-19\,914\,300z+10\,550\,925\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acrm.01

$${}_1F_2\left(\frac{5}{4};\frac{11}{2},-\frac{13}{4};z\right)=\frac{1}{43\,264\sqrt{2}\,z^{15/4}}\left(21\left(4z\left(13\,312z^3+2\,349\,312z^2+54\,511\,380z+328\,582\,485\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$76\sqrt{z}\left(26\,624z^3+1\,497\,024z^2+18\,489\,240z+51\,881\,445\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(53\,248z^4+9\,572\,352z^3+256\,809\,168z^2+1\,617\,170\,940z+2\,957\,242\,365\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acrn.01

$${}_1F_2\left(\frac{5}{4};\frac{11}{2},-\frac{13}{4};-z\right)=\frac{1}{43\,264\sqrt{2}\,z^{15/4}}\left(21\left(4z\left(13\,312z^3-2\,349\,312z^2+54\,511\,380z-328\,582\,485\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$76\sqrt{z}\left(26\,624z^3-1\,497\,024z^2+18\,489\,240z-51\,881\,445\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-53\,248z^4+9\,572\,352z^3-256\,809\,168z^2+1\,617\,170\,940z-2\,957\,242\,365\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acro.01

$${}_1F_2\left(\frac{5}{4};\frac{11}{2},-\frac{11}{4};z\right)=-\frac{1}{5632z^{9/2}}\left(45\left(\left(4096z^4+583\,168z^3+11\,406\,864z^2+50\,872\,500z+27\,176\,625\right)\sinh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.34\sqrt{z}\left(2048z^3+91\,392z^2+861\,000z+1\,598\,625\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acrp.01

$${}_1F_2\left(\frac{5}{4};\frac{11}{2},-\frac{11}{4};-z\right)=-\frac{1}{5632\,z^{9/2}}\left(45\left(34\sqrt{z}\,\left(2048\,z^3-91\,392\,z^2+861\,000\,z-1\,598\,625\right)\cos\left(2\sqrt{z}\right)+\left(4096\,z^4-583\,168\,z^3+11\,406\,864\,z^2-50\,872\,500\,z+27\,176\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acrq.01

$${}_1F_2\left(\frac{5}{4};\frac{11}{2},-\frac{9}{4};z\right)=-\frac{1}{3328\sqrt{2}\,z^{15/4}}\left(7\left(-76\,z\left(8128\,z^2+247\,940\,z+1\,673\,595\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(19\,968\,z^3+2\,211\,296\,z^2+32\,303\,040\,z+95\,394\,915\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(580\,352\,z^3+22\,261\,008\,z^2+151\,420\,500\,z+286\,184\,745\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acrr.01

$${}_1F_2\left(\frac{5}{4};\frac{11}{2},-\frac{9}{4};-z\right)=-\frac{1}{3328\sqrt{2}\,z^{15/4}}\left(7\left(76\,z\left(8128\,z^2-247\,940\,z+1\,673\,595\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(19\,968\,z^3-2\,211\,296\,z^2+32\,303\,040\,z-95\,394\,915\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-580\,352\,z^3+22\,261\,008\,z^2-151\,420\,500\,z+286\,184\,745\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acrs.01

$${}_1F_2\left(\frac{5}{4};\frac{11}{2},-\frac{7}{4};z\right)=\frac{1}{512\,z^{9/2}}\left(45\left(2\sqrt{z}\,\left(512\,z^3+44\,064\,z^2+485\,520\,z+937\,125\right)\cosh\left(2\sqrt{z}\right)-\left(13\,568\,z^3+358\,224\,z^2+1\,735\,020\,z+937\,125\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acrt.01

$${}_1F_2\left(\frac{5}{4};\frac{11}{2},-\frac{7}{4};-z\right)=-\frac{1}{512\,z^{9/2}}\left(45\left(2\sqrt{z}\,\left(512\,z^3-44\,064\,z^2+485\,520\,z-937\,125\right)\cos\left(2\sqrt{z}\right)+\left(-13\,568\,z^3+358\,224\,z^2-1\,735\,020\,z+937\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acru.01

$${}_1F_2\left(\frac{5}{4};\frac{11}{2},-\frac{5}{4};z\right)=\frac{1}{3328\sqrt{2}\,z^{15/4}}\left(63\left(4\,z\left(3008\,z^2+146\,300\,z+1\,177\,715\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(57\,664\,z^2+1\,111\,880\,z+3\,533\,145\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(7936\,z^3+703\,472\,z^2+5\,354\,580\,z+10\,599\,435\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acrv.01

$${}_1F_2\left(\frac{5}{4}; \frac{11}{2}, -\frac{5}{4}; -z\right) =$$
$$-\frac{1}{3328\sqrt{2}\, z^{15/4}}\left(63\left(4z\left(3008z^2 - 146\,300z + 1\,177\,715\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(57\,664z^2 - 1\,111\,880z + 3\,533\,145\right)\right.\right.$$
$$\left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-7936z^3 + 703\,472z^2 - 5\,354\,580z + 10\,599\,435\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acrw.01

$${}_1F_2\left(\frac{5}{4}; \frac{11}{2}, -\frac{3}{4}; z\right) =$$
$$-\frac{1}{512 z^{9/2}}\left(315\left(\left(256z^3 + 12\,432z^2 + 68\,340z + 37\,485\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\left(256z^2 + 3672z + 7497\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acrx.01

$${}_1F_2\left(\frac{5}{4}; \frac{11}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{512 z^{9/2}}\left(315\left(10\sqrt{z}\left(256z^2 - 3672z + 7497\right)\cos\left(2\sqrt{z}\right) + \left(256z^3 - 12\,432z^2 + 68\,340z - 37\,485\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.acry.01

$${}_1F_2\left(\frac{5}{4}; \frac{11}{2}, -\frac{1}{4}; z\right) =$$
$$\frac{1}{3328\sqrt{2}\, z^{15/4}}\left(63\left(4z\left(256z^2 + 23\,100z + 256\,025\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(6368z^2 + 215\,600z + 768\,075\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.\left(-1024z^3 + 119\,504z^2 + 1\,085\,700z + 2\,304\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acrz.01

$${}_1F_2\left(\frac{5}{4}; \frac{11}{2}, -\frac{1}{4}; -z\right) =$$
$$-\frac{1}{3328\sqrt{2}\, z^{15/4}}\left(63\left(4z\left(256z^2 - 23\,100z + 256\,025\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(6368z^2 - 215\,600z + 768\,075\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.\left(1024z^3 + 119\,504z^2 - 1\,085\,700z + 2\,304\,225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acs0.01

$${}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{1}{4}; z\right) = \frac{945\left(2\sqrt{z}\left(32z^2 + 800z + 1785\right)\cosh\left(2\sqrt{z}\right) - \left(464z^2 + 3180z + 1785\right)\sinh\left(2\sqrt{z}\right)\right)}{512 z^{9/2}}$$

07.22.03.acs1.01

$${}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{1}{4}; -z\right) = \frac{945\left(2\sqrt{z}\left(32z^2 - 800z + 1785\right)\cos\left(2\sqrt{z}\right) + \left(-464z^2 + 3180z - 1785\right)\sin\left(2\sqrt{z}\right)\right)}{512 z^{9/2}}$$

07.22.03.acs2.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{3}{4}; z\right) = \frac{1}{3328\sqrt{2}\, z^{15/4}}\left(21\left(4z\left(128z^2+1540z+40\,425\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(64z^2+27\,720z+121\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-512z^3+12\,432z^2+152\,460z+363\,825\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acs3.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{3}{4}; -z\right) = -\frac{1}{3328\sqrt{2}\, z^{15/4}}\left(21\left(4z\left(128z^2-1540z+40\,425\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(64z^2-27\,720z+121\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(512z^3+12\,432z^2-152\,460z+363\,825\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acs4.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{5}{4}; z\right) = \frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\,(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}} $$

07.22.03.acs5.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{5}{4}; -z\right) = \frac{945\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right) + \left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}} $$

07.22.03.acs6.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{7}{4}; z\right) = -\frac{1}{3328\sqrt{2}\, z^{15/4}}\left(63\left(4z\left(64z^2-140z+2695\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(32z^2+1120z+8085\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-256z^3+496z^2+7980z+24\,255\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acs7.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{7}{4}; -z\right) = \frac{1}{3328\sqrt{2}\, z^{15/4}}\left(63\left(4z\left(64z^2+140z+2695\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(32z^2-1120z+8085\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(256z^3+496z^2-7980z+24\,255\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acs8.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{9}{4}; z\right) = \frac{1}{13\,312\, z^{9/2}} \left(105\, e^{-2\sqrt{z}} \left(-256\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{13/4} - 256\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{13/4} + 256\, e^{4\sqrt{z}}\, z^3 - 256\, z^3 + 64\, e^{4\sqrt{z}}\, z^{5/2} + 64\, z^{5/2} + 48\, e^{4\sqrt{z}}\, z^2 - 48\, z^2 + 2400\, e^{4\sqrt{z}}\, z^{3/2} + 2400\, z^{3/2} - 7500\, e^{4\sqrt{z}}\, z + 7500\, z + 9450\, e^{4\sqrt{z}}\, \sqrt{z} + 9450\, \sqrt{z} - 4725\, e^{4\sqrt{z}} + 4725\right)\right) $$

07.22.03.acs9.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{9}{4}; -z\right) = \frac{1}{6656\, z^{9/2}} \left(105 \left(512\, \sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{13/4} + 2\left(32\, z^2 - 1200\, z + 4725\right) \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(-256\, z^3 + 48\, z^2 + 7500\, z - 4725\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.acsa.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{11}{4}; z\right) = -\frac{1}{3328\, \sqrt{2}\, z^{15/4}} \left(441 \left(4\, z \left(32\, z^2 + 60\, z - 245\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\, \sqrt{z} \left(16\, z^2 + 40\, z - 735\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(128\, z^3 + 272\, z^2 + 300\, z + 2205\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acsb.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{11}{4}; -z\right) = \frac{1}{3328\, \sqrt{2}\, z^{15/4}} \left(441 \left(4\, z \left(32\, z^2 - 60\, z - 245\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\, \sqrt{z} \left(-16\, z^2 + 40\, z + 735\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(128\, z^3 - 272\, z^2 + 300\, z - 2205\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acsc.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{13}{4}; z\right) = \frac{1}{13\,312\, z^{9/2}} \left(945\, e^{-2\sqrt{z}} \left(64\, e^{4\sqrt{z}}\, z^3 - 64\, z^3 + 16\, e^{4\sqrt{z}}\, z^{5/2} + 16\, z^{5/2} - 4\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16\, z + 65) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{9/4} - 4\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16\, z + 65) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right) z^{9/4} + 272\, e^{4\sqrt{z}}\, z^2 - 272\, z^2 + 80\, e^{4\sqrt{z}}\, z^{3/2} + 80\, z^{3/2} + 660\, e^{4\sqrt{z}}\, z - 660\, z - 1050\, e^{4\sqrt{z}}\, \sqrt{z} - 1050\, \sqrt{z} + 525\, e^{4\sqrt{z}} - 525\right)\right) $$

07.22.03.acsd.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{13}{4}; -z\right) = -\frac{1}{6656\, z^{9/2}} \left(945 \left(-8\, \sqrt{\pi}\, (16\, z - 65)\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{9/4} - 2\left(8\, z^2 - 40\, z - 525\right) \cos\left(2\sqrt{z}\right) \sqrt{z} + \left(64\, z^3 - 272\, z^2 + 660\, z - 525\right) \sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.acse.01

$${}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{15}{4}; z\right) =$$

$$-\frac{1}{3328\sqrt{2}\, z^{15/4}}\left(1617\left(4z\left(16z^2+95z+105\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-2\sqrt{z}\,\left(16z^2+105z+630\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$

$$\left.\left.\left(64z^3+396z^2+540z-945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acsf.01

$${}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{15}{4}; -z\right) =$$

$$\frac{1}{3328\sqrt{2}\, z^{15/4}}\left(1617\left(4z\left(16z^2-95z+105\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-2\sqrt{z}\,\left(16z^2-105z+630\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.\left(64z^3-396z^2+540z+945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acsg.01

$${}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{17}{4}; z\right) =$$

$$\frac{1}{32\,768\, z^{9/2}}\left(945\, e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2+2080z+5265\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}-e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2+2080z+5265\right)\right.\right.$$

$$\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}+4\left(-64z^3+16z^{5/2}-532z^2+145z^{3/2}-1440z+1680\sqrt{z}\,+\right.$$

$$\left.\left.\left.e^{4\sqrt{z}}\left(64z^3+16z^{5/2}+532z^2+145z^{3/2}+1440z+1680\sqrt{z}\,-840\right)+840\right)\right)\right)$$

07.22.03.acsh.01

$${}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{17}{4}; -z\right) = \frac{1}{8192\, z^{9/2}}\left(945\left(\sqrt{\pi}\,z^{5/4}\left(256z^2-2080z+5265\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.\right.$$

$$\left.\left.2\left(4\left(16z^3-133z^2+360z+210\right)\sin\left(2\sqrt{z}\right)-\sqrt{z}\,\left(16z^2-145z+1680\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.acsi.01

$${}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{19}{4}; z\right) =$$

$$-\frac{1}{53\,248\sqrt{2}\, z^{15/4}}\left(4851\left(2z\left(256z^2+2560z+9415\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\,\left(256z^2+2720z+11\,445\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$

$$\left.\left.2\left(256z^3+2624z^2+10\,155z+12\,600\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.acsj.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{19}{4}; -z\right) = \frac{1}{53\,248\sqrt{2}\, z^{15/4}}\left(4851\left(2z\left(256z^2-2560z+9415\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-256z^2+2720z-11\,445\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\left(256z^3-2624z^2+10\,155z-12\,600\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acsk.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{21}{4}; z\right) = -\frac{1}{2\,097\,152\, z^{9/2}}\left(5355\, e^{-2\sqrt{z}}\left(-4\left(-1024z^3+256z^{5/2}-12\,672z^2+3360z^{3/2}-65\,940z+19\,665\sqrt{z}+e^{4\sqrt{z}}\left(1024z^3+256z^{5/2}+12\,672z^2+3360z^{3/2}+65\,940z+19\,665\sqrt{z}+161\,280\right)-161\,280\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(4096z^3+49\,920z^2+252\,720z+342\,225\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\left(4096z^3+49\,920z^2+252\,720z+342\,225\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acsl.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{21}{4}; -z\right) = \frac{1}{524\,288\, z^{9/2}}\left(5355\left(2\sqrt{z}\left(256z^2-3360z+19\,665\right)\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\,\sqrt[4]{z}\left(4096z^3-49\,920z^2+252\,720z-342\,225\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-8\left(256z^3-3168z^2+16\,485z-40\,320\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.acsm.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{23}{4}; z\right) = -\frac{1}{1\,703\,936\sqrt{2}\, z^{17/4}}\left(13\,167\left(2\sqrt{z}\left(4096z^3+57\,600z^2+358\,640z+675\,675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4096z^3+60\,160z^2+401\,520z+2\,027\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(4096z^3+58\,624z^2+374\,640z+795\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.acsn.01

$$ {}_1F_2\left(\frac{5}{4}; \frac{11}{2}, \frac{23}{4}; -z\right) = \frac{1}{1\,703\,936\sqrt{2}\, z^{17/4}}\left(13\,167\left(2\sqrt{z}\left(4096z^3-57\,600z^2+358\,640z-675\,675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4096z^3+60\,160z^2-401\,520z+2\,027\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3-58\,624z^2+374\,640z-795\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{7}{4}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = \frac{7}{4}$, $b_{1.} = -\frac{11}{2}$

07.22.03.acso.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{47\,220\,482\,925\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(9\,437\,184 z^7 + 9\,764\,864 z^6 + 104\,853\,504 z^5 + 985\,501\,440 z^4 + 5\,470\,819\,200 z^3 + 8\,807\,475\,600 z^2 - 30\,609\,324\,900 z + 15\,740\,160\,975\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2\,097\,152 z^7 - 2\,752\,512 z^6 - 60\,530\,688 z^5 - 668\,505\,600 z^4 - 5\,428\,684\,800 z^3 - 24\,059\,851\,200 z^2 - 28\,867\,330\,800 z + 47\,220\,482\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(1\,835\,008 z^6 + 4\,440\,064 z^5 + 45\,327\,360 z^4 + 453\,499\,200 z^3 + 3\,135\,132\,000 z^2 + 11\,364\,437\,700 z + 15\,740\,160\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acsp.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{47\,220\,482\,925\sqrt[4]{z}}\left(\sqrt{2}\left(-3\left(9\,437\,184 z^7 - 9\,764\,864 z^6 + 104\,853\,504 z^5 - 985\,501\,440 z^4 + 5\,470\,819\,200 z^3 - 8\,807\,475\,600 z^2 - 30\,609\,324\,900 z - 15\,740\,160\,975\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2\,097\,152 z^7 + 2\,752\,512 z^6 - 60\,530\,688 z^5 + 668\,505\,600 z^4 - 5\,428\,684\,800 z^3 + 24\,059\,851\,200 z^2 - 28\,867\,330\,800 z - 47\,220\,482\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(1\,835\,008 z^6 - 4\,440\,064 z^5 + 45\,327\,360 z^4 - 453\,499\,200 z^3 + 3\,135\,132\,000 z^2 - 11\,364\,437\,700 z + 15\,740\,160\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acsq.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{21}{4}; z\right) = \frac{1}{6\,512\,831\,325}\left(21\left(262\,144 z^6 + 507\,904 z^5 + 4\,869\,120 z^4 + 42\,949\,440 z^3 + 245\,700\,000 z^2 + 639\,065\,700 z + 310\,134\,825\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(524\,288 z^6 - 2\,064\,384 z^5 - 16\,128\,000 z^4 - 157\,368\,960 z^3 - 1\,159\,900\,560 z^2 - 4\,736\,604\,600 z - 6\,512\,831\,325\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.acsr.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{21}{4}; -z\right) = \frac{1}{6\,512\,831\,325}\left(21\left(262\,144 z^6 - 507\,904 z^5 + 4\,869\,120 z^4 - 42\,949\,440 z^3 + 245\,700\,000 z^2 - 639\,065\,700 z + 310\,134\,825\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(524\,288 z^6 + 2\,064\,384 z^5 - 16\,128\,000 z^4 + 157\,368\,960 z^3 - 1\,159\,900\,560 z^2 + 4\,736\,604\,600 z - 6\,512\,831\,325\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.acss.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{2\,053\,064\,475\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1\,048\,576 z^7 - 2\,555\,904 z^6 + 16\,257\,024 z^5 + 137\,491\,200 z^4 + 722\,494\,080 z^3 + \right.\right.\right.$$
$$\left.\left.\left. 1\,104\,863\,760 z^2 - 3\,968\,603\,100 z + 2\,053\,064\,475\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\right.\right.$$
$$\left(2\,883\,584 z^6 + 3\,342\,336 z^5 + 33\,223\,680 z^4 + 249\,258\,240 z^3 + 1\,058\,127\,840 z^2 + 1\,231\,183\,800 z - 2\,053\,064\,475\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-262\,144 z^6 + 1\,327\,104 z^5 + 7\,726\,080 z^4 + 66\,306\,240 z^3 + \right.$$
$$\left.\left.\left. 428\,772\,960 z^2 + 1\,506\,235\,500 z + 2\,053\,064\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acst.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{2\,053\,064\,475\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,048\,576 z^7 - 2\,555\,904 z^6 - 16\,257\,024 z^5 + 137\,491\,200 z^4 - 722\,494\,080 z^3 + \right.\right.\right.$$
$$\left.\left.\left. 1\,104\,863\,760 z^2 + 3\,968\,603\,100 z + 2\,053\,064\,475\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right.$$
$$\left(2\,883\,584 z^6 - 3\,342\,336 z^5 + 33\,223\,680 z^4 - 249\,258\,240 z^3 + 1\,058\,127\,840 z^2 - 1\,231\,183\,800 z - 2\,053\,064\,475\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(262\,144 z^6 + 1\,327\,104 z^5 - 7\,726\,080 z^4 + 66\,306\,240 z^3 - \right.$$
$$\left.\left.\left. 428\,772\,960 z^2 + 1\,506\,235\,500 z - 2\,053\,064\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acsu.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{17}{4}; z\right) = \frac{1}{310\,134\,825}$$
$$\left(\left(-262\,144 z^6 + 1\,327\,104 z^5 + 6\,312\,960 z^4 + 47\,759\,040 z^3 + 255\,376\,800 z^2 + 643\,488\,300 z + 310\,134\,825\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left. 6\sqrt{z}\left(196\,608 z^5 + 389\,120 z^4 + 2\,945\,280 z^3 + 19\,671\,120 z^2 + 76\,658\,400 z + 103\,378\,275\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acsv.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{17}{4}; -z\right) = \frac{1}{310\,134\,825}$$
$$\left(\left(-262\,144 z^6 - 1\,327\,104 z^5 + 6\,312\,960 z^4 - 47\,759\,040 z^3 + 255\,376\,800 z^2 - 643\,488\,300 z + 310\,134\,825\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left. 6\sqrt{z}\left(196\,608 z^5 - 389\,120 z^4 + 2\,945\,280 z^3 - 19\,671\,120 z^2 + 76\,658\,400 z - 103\,378\,275\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acsw.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{15}{4}; z\right) = \frac{1}{108\,056\,025\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(21\left(65\,536\,z^6 + 24\,576\,z^5 + 380\,160\,z^4 + 1\,837\,440\,z^3 + 2\,605\,680\,z^2 - 9\,854\,460\,z + 5\,145\,525\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(131\,072\,z^6 - 540\,672\,z^5 - 2\,096\,640\,z^4 - 14\,192\,640\,z^3 - 56\,548\,800\,z^2 - 62\,868\,960\,z + 108\,056\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) $$
$$ \left.\left. I_{\frac{1}{4}}\left(\sqrt{z}\right) + 60\,z\left(16\,384\,z^5 + 47\,104\,z^4 + 280\,896\,z^3 + 1\,618\,848\,z^2 + 5\,413\,716\,z + 7\,203\,735\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acsx.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{15}{4}; -z\right) = \frac{1}{108\,056\,025\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(21\left(65\,536\,z^6 - 24\,576\,z^5 + 380\,160\,z^4 - 1\,837\,440\,z^3 + 2\,605\,680\,z^2 + 9\,854\,460\,z + 5\,145\,525\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z}\left(131\,072\,z^6 + 540\,672\,z^5 - 2\,096\,640\,z^4 + 14\,192\,640\,z^3 - 56\,548\,800\,z^2 + 62\,868\,960\,z + 108\,056\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) $$
$$ \left.\left. J_{\frac{1}{4}}\left(\sqrt{z}\right) - 60\,z\left(16\,384\,z^5 - 47\,104\,z^4 + 280\,896\,z^3 - 1\,618\,848\,z^2 + 5\,413\,716\,z - 7\,203\,735\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acsy.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{13}{4}; z\right) = $$
$$ \frac{1}{18\,243\,225}\left(\left(212\,992\,z^5 + 706\,560\,z^4 + 3\,366\,720\,z^3 + 15\,976\,800\,z^2 + 38\,272\,500\,z + 18\,243\,225\right)\cosh\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\left(32\,768\,z^5 - 245\,760\,z^4 - 700\,800\,z^3 - 3\,865\,680\,z^2 - 13\,948\,200\,z - 18\,243\,225\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.acsz.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{13}{4}; -z\right) = $$
$$ \frac{1}{18\,243\,225}\left(\left(-212\,992\,z^5 + 706\,560\,z^4 - 3\,366\,720\,z^3 + 15\,976\,800\,z^2 - 38\,272\,500\,z + 18\,243\,225\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\left(32\,768\,z^5 + 245\,760\,z^4 - 700\,800\,z^3 + 3\,865\,680\,z^2 - 13\,948\,200\,z + 18\,243\,225\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.act0.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{11}{4}; z\right) = \frac{1}{7\,203\,735\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(-65\,536\,z^6 + 344\,064\,z^5 + 403\,200\,z^4 + 2\,620\,800\,z^3 + 3\,281\,040\,z^2 - 13\,573\,980\,z + 7\,203\,735\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 12\sqrt{z}\left(32\,768\,z^5 + 93\,184\,z^4 + 349\,440\,z^3 + 1\,280\,160\,z^2 + 1\,323\,000\,z - 2\,401\,245\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(-16\,384\,z^5 + 147\,456\,z^4 + 423\,360\,z^3 + 1\,844\,640\,z^2 + 5\,635\,980\,z + 7\,203\,735\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.act1.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) = \frac{1}{7\,203\,735\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-65\,536\,z^6 - 344\,064\,z^5 + 403\,200\,z^4 - 2\,620\,800\,z^3 + 3\,281\,040\,z^2 + 13\,573\,980\,z + 7\,203\,735\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(32\,768\,z^5 - 93\,184\,z^4 + 349\,440\,z^3 - 1\,280\,160\,z^2 + 1\,323\,000\,z + 2\,401\,245\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(16\,384\,z^5 + 147\,456\,z^4 - 423\,360\,z^3 + 1\,844\,640\,z^2 - 5\,635\,980\,z + 7\,203\,735\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.act2.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{9}{4}; z\right) = \frac{1}{1\,403\,325}\left(\left(-16\,384\,z^5 + 153\,600\,z^4 + 423\,360\,z^3 + 1\,380\,960\,z^2 + 3\,005\,100\,z + 1\,403\,325\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(4096\,z^4 + 48\,640\,z^3 + 122\,640\,z^2 + 378\,000\,z + 467\,775\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.act3.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{9}{4}; -z\right) = \frac{1}{1\,403\,325}\left(\left(16\,384\,z^5 + 153\,600\,z^4 - 423\,360\,z^3 + 1\,380\,960\,z^2 - 3\,005\,100\,z + 1\,403\,325\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(4096\,z^4 - 48\,640\,z^3 + 122\,640\,z^2 - 378\,000\,z + 467\,775\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.act4.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{7}{4}; z\right) = \frac{1}{654\,885\,\sqrt[4]{z}}\left(\sqrt{2}\left(7\left(4096\,z^5 + 25\,344\,z^4 + 17\,280\,z^3 + 35\,280\,z^2 - 170\,100\,z + 93\,555\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8192\,z^5 - 75\,264\,z^4 - 161\,280\,z^3 - 342\,720\,z^2 - 317\,520\,z + 654\,885\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(1024\,z^4 + 100\,800\,z^3 + 231\,840\,z^2 + 555\,660\,z + 654\,885\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.act5.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{7}{4}; -z\right) = \frac{1}{654\,885\,\sqrt[4]{z}}\left(\sqrt{2}\left(-7\left(4096\,z^5 - 25\,344\,z^4 + 17\,280\,z^3 - 35\,280\,z^2 - 170\,100\,z - 93\,555\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8192\,z^5 + 75\,264\,z^4 - 161\,280\,z^3 + 342\,720\,z^2 - 317\,520\,z - 654\,885\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(1024\,z^4 - 100\,800\,z^3 + 231\,840\,z^2 - 555\,660\,z + 654\,885\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.act6.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{5}{4}; z\right) = \frac{1}{155\,925}\left(3\left(-1024\,z^4 + 38\,080\,z^3 + 77\,280\,z^2 + 117\,180\,z + 51\,975\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(2048\,z^4 - 16\,512\,z^3 - 95\,760\,z^2 - 143\,640\,z - 155\,925\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.act7.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{5}{4}; -z\right) = \frac{1}{155\,925}\left(-3\left(1024\,z^4 + 38\,080\,z^3 - 77\,280\,z^2 + 117\,180\,z - 51\,975\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(2048\,z^4 + 16\,512\,z^3 - 95\,760\,z^2 + 143\,640\,z - 155\,925\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.act8.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{3}{4}; z\right) = \frac{1}{93\,555\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096\,z^5 + 31\,488\,z^4 + 103\,680\,z^3 - 65\,520\,z^2 - 147\,420\,z + 93\,555\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(1024\,z^4 - 19\,200\,z^3 - 26\,640\,z^2 - 7560\,z + 31\,185\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-1024\,z^4 + 4800\,z^3 + 72\,000\,z^2 + 102\,060\,z + 93\,555\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.act9.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{3}{4}; -z\right) = \frac{1}{93\,555\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096\,z^5 + 31\,488\,z^4 - 103\,680\,z^3 - 65\,520\,z^2 + 147\,420\,z + 93\,555\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1024\,z^4 + 19\,200\,z^3 - 26\,640\,z^2 + 7560\,z + 31\,185\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(1024\,z^4 + 4800\,z^3 - 72\,000\,z^2 + 102\,060\,z - 93\,555\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acta.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{1}{4}; z\right) = \frac{1}{31\,185}\left(\left(-1024\,z^4 + 192\,z^3 + 84\,000\,z^2 + 102\,060\,z + 31\,185\right)\cosh\left(2\sqrt{z}\right) + 14\sqrt{z}\left(256\,z^3 - 2064\,z^2 - 8640\,z - 4455\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.actb.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) = \frac{1}{31\,185}\left(\left(-1024\,z^4 - 192\,z^3 + 84\,000\,z^2 - 102\,060\,z + 31\,185\right)\cos\left(2\sqrt{z}\right) + 14\sqrt{z}\left(256\,z^3 + 2064\,z^2 - 8640\,z + 4455\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.actc.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) = \frac{1}{31\,185\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-3840\,z^4 + 25\,152\,z^3 + 57\,204\,z^2 - 102\,060\,z + 31\,185\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\sqrt{z}\left(1024\,z^4 + 4608\,z^3 - 82\,512\,z^2 - 55\,125\,z + 62\,370\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(-448\,z^3 + 1168\,z^2 + 15\,645\,z + 10\,395\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.actd.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) =$$
$$\frac{1}{31\,185\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-3840z^4 - 25\,152z^3 + 57\,204z^2 + 102\,060z + 31\,185\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(1024z^4 - 4608z^3 - 82\,512z^2 + 55\,125z + 62\,370\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12z\left(448z^3 + 1168z^2 - 15\,645z + 10\,395\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acte.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) = \left(-\frac{64z^3}{1155} - \frac{32z^2}{297} + \frac{52z}{33} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(128z^3 + 2352z^2 - 7560z - 31\,185\right)\sinh\left(2\sqrt{z}\right)}{31\,185}$$

07.22.03.actf.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{3}{4}; -z\right) = \left(\frac{64z^3}{1155} - \frac{32z^2}{297} - \frac{52z}{33} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(128z^3 - 2352z^2 - 7560z + 31\,185\right)\sin\left(2\sqrt{z}\right)}{31\,185}$$

07.22.03.actg.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{249\,480\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(2\left(2048z^4 + 45\,312z^3 - 72\,576z^2 - 259\,623z + 249\,480\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-65\,536z^3 - 387\,840z^2 + 1\,110\,816z + 481\,635\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(2048z^3 + 71\,424z^2 + 130\,368z - 516\,285\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acth.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) =$$
$$\frac{1}{249\,480\sqrt{2}\sqrt[4]{z}}\left(\left(2\left(2048z^4 - 45\,312z^3 - 72\,576z^2 + 259\,623z + 249\,480\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-65\,536z^3 + 387\,840z^2 + 1\,110\,816z - 481\,635\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2z\left(2048z^3 - 71\,424z^2 + 130\,368z + 516\,285\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acti.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{7}{4}; z\right) = \left(\frac{64z^3}{10\,395} + \frac{32z^2}{99} + \frac{20z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16z^2 + 240z + 495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.actj.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{7}{4}; -z\right) = \left(-\frac{64z^3}{10\,395} + \frac{32z^2}{99} - \frac{20z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(16z^2 - 240z + 495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.actk.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{9}{4}; z\right) = \frac{1}{1\,596\,672\sqrt{2}\,z^{3/4}}\left(\left(-18\sqrt{z}\left(20\,480z^3+363\,776z^2+918\,288z-1\,085\,931\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ \left(65\,536z^4+4\,583\,424z^3+40\,239\,360z^2+66\,073\,392z-40\,883\,535\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)- $$
$$ \left.\left.6\sqrt{z}\left(69\,632z^3+1\,717\,504z^2+9\,177\,168z+13\,627\,845\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.actl.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{9}{4}; -z\right) = \frac{1}{1\,596\,672\sqrt{2}\,z^{3/4}}\left(\left(18\sqrt{z}\left(20\,480z^3-363\,776z^2+918\,288z+1\,085\,931\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ \left(65\,536z^4-4\,583\,424z^3+40\,239\,360z^2-66\,073\,392z-40\,883\,535\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.6\sqrt{z}\left(-69\,632z^3+1\,717\,504z^2-9\,177\,168z+13\,627\,845\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.actm.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{11}{4}; z\right) = $$
$$ \frac{1}{48\,660\,480z^{7/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-65\,536z^4-966\,656z^{7/2}-7\,065\,600z^3-33\,285\,120z^{5/2}-110\,887\,680z^2-270\,786\,240z^{3/2}-\right.\right.\right. $$
$$ \left.\left.484\,520\,400z-605\,650\,500\sqrt{z}+e^{4\sqrt{z}}\left(65\,536z^4-966\,656z^{7/2}+7\,065\,600z^3-33\,285\,120z^{5/2}+\right.\right.\right. $$
$$ \left.\left.\left.110\,887\,680z^2-270\,786\,240z^{3/2}+484\,520\,400z-605\,650\,500\sqrt{z}+454\,237\,875\right)-454\,237\,875\right)+ $$
$$ \left.\left.454\,237\,875e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-454\,237\,875e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.actn.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{11}{4}; -z\right) = \frac{1}{12\,165\,120z^{7/4}} $$
$$ \left(454\,237\,875\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(4\sqrt{z}\left(241\,664z^3-8\,321\,280z^2+67\,696\,560z-151\,412\,625\right)\cos\left(2\sqrt{z}\right)+\right.\right. $$
$$ \left.\left.\left(65\,536z^4-7\,065\,600z^3+110\,887\,680z^2-484\,520\,400z+454\,237\,875\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.acto.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) = $$
$$ \frac{1}{5\,677\,056\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(131\,072z^4+16\,146\,432z^3+286\,272\,000z^2+1\,197\,659\,232z-1\,267\,389\,585\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 3\left(2\,883\,584z^4+126\,418\,944z^3+1\,328\,667\,648z^2+3\,488\,728\,320z-2\,112\,315\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.2\sqrt{z}\left(131\,072z^4+19\,488\,768z^3+443\,570\,688z^2+3\,052\,637\,280z+6\,336\,947\,925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.actp.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) = \frac{1}{5\,677\,056\sqrt{2}\, z^{7/4}}\left(\left(2\sqrt{z}\left(-131\,072 z^4 + 16\,146\,432 z^3 - 286\,272\,000 z^2 + 1\,197\,659\,232 z + 1\,267\,389\,585\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(2\,883\,584 z^4 - 126\,418\,944 z^3 + 1\,328\,667\,648 z^2 - 3\,488\,728\,320 z - 2\,112\,315\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(131\,072 z^4 - 19\,488\,768 z^3 + 443\,570\,688 z^2 - 3\,052\,637\,280 z + 6\,336\,947\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.actq.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) = \frac{1}{283\,115\,520 z^{11/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1\,048\,576 z^{9/2} + 20\,447\,232 z^4 + 199\,950\,336 z^{7/2} + 1\,282\,375\,680 z^3 + 5\,941\,923\,840 z^{5/2} + 20\,672\,870\,400 z^2 + 54\,266\,284\,800 z^{3/2} + 104\,656\,406\,400 z + 139\,905\,265\,500\sqrt{z} + e^{4\sqrt{z}}\left(1\,048\,576 z^{9/2} - 20\,447\,232 z^4 + 199\,950\,336 z^{7/2} - 1\,282\,375\,680 z^3 + 5\,941\,923\,840 z^{5/2} - 20\,672\,870\,400 z^2 + 54\,266\,284\,800 z^{3/2} - 104\,656\,406\,400 z + 139\,905\,265\,500\sqrt{z} - 104\,928\,949\,125\right) + 104\,928\,949\,125\right) + 454\,237\,875 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 231)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 454\,237\,875 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 231)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.actr.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) = \frac{1}{70\,778\,880 z^{11/4}}\left(454\,237\,875\sqrt{\pi}\,(16z + 231) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(262\,144 z^4 - 49\,987\,584 z^3 + 1\,485\,480\,960 z^2 - 13\,566\,571\,200 z + 34\,976\,316\,375\right)\cos\left(2\sqrt{z}\right) - 3\left(6\,815\,744 z^4 - 427\,458\,560 z^3 + 6\,890\,956\,800 z^2 - 34\,885\,468\,800 z + 34\,976\,316\,375\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.acts.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) = \frac{1}{181\,665\,792\sqrt{2}\, z^{11/4}}\left(13\left(-2\sqrt{z}\left(21\,757\,952 z^4 + 1\,540\,718\,592 z^3 + 27\,108\,652\,032 z^2 + 128\,428\,811\,280 z - 133\,075\,906\,425\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4\,194\,304 z^5 + 973\,602\,816 z^4 + 35\,352\,920\,064 z^3 + 390\,737\,571\,840 z^2 + 1\,115\,302\,834\,800 z - 665\,379\,532\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(23\,330\,816 z^4 + 1\,923\,514\,368 z^3 + 41\,864\,739\,840 z^2 + 304\,173\,500\,400 z + 665\,379\,532\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.actt.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) = -\frac{1}{181\,665\,792\sqrt{2}\ z^{11/4}}$$
$$\left(13\left(2\sqrt{z}\ \left(21\,757\,952\,z^4 - 1\,540\,718\,592\,z^3 + 27\,108\,652\,032\,z^2 - 128\,428\,811\,280\,z - 133\,075\,906\,425\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(4\,194\,304\,z^5 - 973\,602\,816\,z^4 + 35\,352\,920\,064\,z^3 - 390\,737\,571\,840\,z^2 + 1\,115\,302\,834\,800\,z + 665\,379\,532\,125\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}$$
$$\left.\left.\left(23\,330\,816\,z^4 - 1\,923\,514\,368\,z^3 + 41\,864\,739\,840\,z^2 - 304\,173\,500\,400\,z + 665\,379\,532\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.actu.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) = \frac{1}{2\,415\,919\,104\,z^{15/4}}$$
$$\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\ \left(-33\,554\,432\,z^5 - 830\,472\,192\,z^{9/2} - 10\,343\,153\,664\,z^4 - 84\,994\,424\,832\,z^{7/2} - 508\,870\,656\,000\,z^3 - \right.\right.\right.$$
$$2\,315\,361\,484\,800\,z^{5/2} - 8\,103\,765\,196\,800\,z^2 - 21\,553\,405\,473\,600\,z^{3/2} - 42\,195\,428\,074\,800\,z -$$
$$56\,941\,443\,058\,500\sqrt{z} + e^{4\sqrt{z}}\left(33\,554\,432\,z^5 - 830\,472\,192\,z^{9/2} + 10\,343\,153\,664\,z^4 - 84\,994\,424\,832\,z^{7/2} + \right.$$
$$\left.508\,870\,656\,000\,z^3 - 2\,315\,361\,484\,800\,z^{5/2} + 8\,103\,765\,196\,800\,z^2 - 21\,553\,405\,473\,600\,z^{3/2} + \right.$$
$$\left.42\,195\,428\,074\,800\,z - 56\,941\,443\,058\,500\sqrt{z} + 42\,706\,082\,293\,875\right) - 42\,706\,082\,293\,875\Big) +$$
$$454\,237\,875\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ \left(256\,z^2 - 7392\,z + 94\,017\right) \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) - 454\,237\,875\,e^{2\sqrt{z}}$$
$$\left.\left.\sqrt{2\pi}\ \left(256\,z^2 - 7392\,z + 94\,017\right) \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.actv.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) = \frac{1}{603\,979\,776\,z^{15/4}}\left(454\,237\,875\sqrt{\pi}\ \left(256\,z^2 + 7392\,z + 94\,017\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.$$
$$2\sqrt[4]{z}\ \left(12\sqrt{z}\ \left(69\,206\,016\,z^4 - 7\,082\,868\,736\,z^3 + 192\,946\,790\,400\,z^2 - 1\,796\,117\,122\,800\,z + 4\,745\,120\,254\,875\right)\right.$$
$$\cos\left(2\sqrt{z}\right) + \left(33\,554\,432\,z^5 - 10\,343\,153\,664\,z^4 + 508\,870\,656\,000\,z^3 - \right.$$
$$\left.\left.\left.8\,103\,765\,196\,800\,z^2 + 42\,195\,428\,074\,800\,z - 42\,706\,082\,293\,875\right) \sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.actw.01

$${}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) =$$
$$\frac{1}{5\,813\,305\,344\sqrt{2}\ z^{15/4}}\left(221\left(2\sqrt{z}\ \left(8\,388\,608\,z^5 + 2\,906\,652\,672\,z^4 + 159\,116\,525\,568\,z^3 + 2\,703\,764\,448\,000\,z^2 + \right.\right.\right.$$
$$13\,059\,182\,283\,840\,z - 13\,493\,896\,911\,495\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(301\,989\,888\,z^5 + 36\,780\,900\,352\,z^4 + \right.$$
$$\left.\left.1\,190\,819\,266\,560\,z^3 + 13\,086\,219\,928\,320\,z^2 + 37\,758\,070\,516\,320\,z - 22\,489\,828\,185\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$2\sqrt{z}\ \left(8\,388\,608\,z^5 + 3\,252\,682\,752\,z^4 + 202\,980\,556\,800\,z^3 + 4\,217\,872\,538\,880\,z^2 + \right.$$
$$\left.\left.30\,660\,688\,840\,320\,z + 67\,469\,484\,557\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.actx.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) = \frac{1}{5\,813\,305\,344\sqrt{2}\, z^{15/4}}\left(221\left(2\sqrt{z}\left(8\,388\,608 z^5 - 2\,906\,652\,672 z^4 + 159\,116\,525\,568 z^3 - 2\,703\,764\,448\,000 z^2 + 13\,059\,182\,283\,840 z + 13\,493\,896\,911\,495\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(301\,989\,888 z^5 - 36\,780\,900\,352 z^4 + 1\,190\,819\,266\,560 z^3 - 13\,086\,219\,928\,320 z^2 + 37\,758\,070\,516\,320 z + 22\,489\,828\,185\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-8\,388\,608 z^5 + 3\,252\,682\,752 z^4 - 202\,980\,556\,800 z^3 + 4\,217\,872\,538\,880 z^2 - 30\,660\,688\,840\,320 z + 67\,469\,484\,557\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acty.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) = \frac{1}{154\,618\,822\,656 z^{19/4}}\left(19 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(536\,870\,912 z^{11/2} + 16\,374\,562\,816 z^5 + 251\,456\,913\,408 z^{9/2} + 2\,554\,331\,136\,000 z^4 + 18\,997\,837\,824\,000 z^{7/2} + 108\,287\,675\,596\,800 z^3 + 481\,750\,235\,366\,400 z^{5/2} + 1\,669\,667\,634\,835\,200 z^2 + 4\,425\,163\,574\,832\,000 z^{3/2} + 8\,655\,099\,344\,892\,000 z + 11\,672\,995\,826\,992\,500\sqrt{z} + e^{4\sqrt{z}}\left(536\,870\,912 z^{11/2} - 16\,374\,562\,816 z^5 + 251\,456\,913\,408 z^{9/2} - 2\,554\,331\,136\,000 z^4 + 18\,997\,837\,824\,000 z^{7/2} - 108\,287\,675\,596\,800 z^3 + 481\,750\,235\,366\,400 z^{5/2} - 1\,669\,667\,634\,835\,200 z^2 + 4\,425\,163\,574\,832\,000 z^{3/2} - 8\,655\,099\,344\,892\,000 z + 11\,672\,995\,826\,992\,500\sqrt{z} - 8\,754\,746\,870\,244\,375\right) + 8\,754\,746\,870\,244\,375\right) + 151\,412\,625 e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 - 177\,408 z^2 + 4\,512\,816 z - 57\,820\,455\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 151\,412\,625 e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 - 177\,408 z^2 + 4\,512\,816 z - 57\,820\,455\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.actz.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) = \frac{1}{38\,654\,705\,664 z^{19/4}}\left(19\left(151\,412\,625\sqrt{\pi}\left(4096 z^3 + 177\,408 z^2 + 4\,512\,816 z + 57\,820\,455\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(16\,374\,562\,816 z^5 - 2\,554\,331\,136\,000 z^4 + 108\,287\,675\,596\,800 z^3 - 1\,669\,667\,634\,835\,200 z^2 + 8\,655\,099\,344\,892\,000 z - 8\,754\,746\,870\,244\,375\right)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\left(134\,217\,728 z^5 - 62\,864\,228\,352 z^4 + 4\,749\,459\,456\,000 z^3 - 120\,437\,558\,841\,600 z^2 + 1\,106\,290\,893\,708\,000 z - 2\,918\,248\,956\,748\,125\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{7}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.acu0.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) = \frac{1}{4\,292\,771\,175\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-2\,097\,152\,z^7 - 1\,966\,080\,z^6 + 34\,578\,432\,z^5 + 288\,529\,920\,z^4 + 1\,511\,516\,160\,z^3 + 2\,305\,195\,200\,z^2 - 8\,295\,210\,000\,z + 4\,292\,771\,175\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(1\,835\,008\,z^6 + 2\,277\,376\,z^5 + 23\,331\,840\,z^4 + 174\,242\,880\,z^3 + 737\,906\,400\,z^2 + 857\,171\,700\,z - 1\,430\,923\,725\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-524\,288\,z^6 + 3\,244\,032\,z^5 + 16\,496\,640\,z^4 + 139\,628\,160\,z^3 + 898\,959\,600\,z^2 + 3\,152\,179\,800\,z + 4\,292\,771\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acu1.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{23}{4}; -z\right) = \frac{1}{4\,292\,771\,175\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(2\,097\,152\,z^7 - 1\,966\,080\,z^6 - 34\,578\,432\,z^5 + 288\,529\,920\,z^4 - 1\,511\,516\,160\,z^3 + 2\,305\,195\,200\,z^2 + 8\,295\,210\,000\,z + 4\,292\,771\,175\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(1\,835\,008\,z^6 - 2\,277\,376\,z^5 + 23\,331\,840\,z^4 - 174\,242\,880\,z^3 + 737\,906\,400\,z^2 - 857\,171\,700\,z - 1\,430\,923\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(524\,288\,z^6 + 3\,244\,032\,z^5 - 16\,496\,640\,z^4 + 139\,628\,160\,z^3 - 898\,959\,600\,z^2 + 3\,152\,179\,800\,z - 4\,292\,771\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acu2.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{21}{4}; z\right) = \frac{1}{592\,075\,575}\left(\left(-524\,288\,z^6 + 2\,064\,384\,z^5 + 11\,827\,200\,z^4 + 90\,599\,040\,z^3 + 486\,486\,000\,z^2 + 1\,228\,008\,600\,z + 592\,075\,575\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(1\,245\,184\,z^5 + 2\,150\,400\,z^4 + 16\,692\,480\,z^3 + 112\,235\,760\,z^2 + 438\,574\,500\,z + 592\,075\,575\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.acu3.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{1}{592\,075\,575}\left(\left(-524\,288\,z^6 - 2\,064\,384\,z^5 + 11\,827\,200\,z^4 - 90\,599\,040\,z^3 + 486\,486\,000\,z^2 - 1\,228\,008\,600\,z + 592\,075\,575\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-1\,245\,184\,z^5 + 2\,150\,400\,z^4 - 16\,692\,480\,z^3 + 112\,235\,760\,z^2 - 438\,574\,500\,z + 592\,075\,575\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.acu4.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{19}{4}; z\right) = \frac{1}{186\,642\,225\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(3\left(1\,048\,576\,z^6 + 688\,128\,z^5 + 4\,515\,840\,z^4 + 22\,176\,000\,z^3 + 31\,822\,560\,z^2 - 119\,334\,600\,z + 62\,214\,075\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(262\,144\,z^6 - 147\,456\,z^5 - 3\,548\,160\,z^4 - 24\,212\,160\,z^3 - 97\,463\,520\,z^2 - 109\,147\,500\,z + 186\,642\,225\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 12\,z\left(196\,608\,z^5 + 348\,160\,z^4 + 2\,338\,560\,z^3 + 13\,804\,560\,z^2 + 46\,569\,600\,z + 62\,214\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acu5.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{186\,642\,225\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(3\left(1\,048\,576\,z^6 - 688\,128\,z^5 + 4\,515\,840\,z^4 - 22\,176\,000\,z^3 + 31\,822\,560\,z^2 + 119\,334\,600\,z + 62\,214\,075\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z}\left(262\,144\,z^6 + 147\,456\,z^5 - 3\,548\,160\,z^4 + 24\,212\,160\,z^3 - 97\,463\,520\,z^2 + 109\,147\,500\,z + 186\,642\,225\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 12\,z\left(196\,608\,z^5 - 348\,160\,z^4 + 2\,338\,560\,z^3 - 13\,804\,560\,z^2 + 46\,569\,600\,z - 62\,214\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acu6.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{17}{4}; z\right) = $$
$$ \frac{1}{28\,194\,075}\left(3\left(196\,608\,z^5 + 266\,240\,z^4 + 1\,639\,680\,z^3 + 8\,089\,200\,z^2 + 19\,656\,000\,z + 9\,398\,025\right)\cosh\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\left(65\,536\,z^5 - 184\,320\,z^4 - 979\,200\,z^3 - 5\,790\,960\,z^2 - 21\,375\,900\,z - 28\,194\,075\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.acu7.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{17}{4}; -z\right) = $$
$$ \frac{1}{28\,194\,075}\left(2\sqrt{z}\left(65\,536\,z^5 + 184\,320\,z^4 - 979\,200\,z^3 + 5\,790\,960\,z^2 - 21\,375\,900\,z + 28\,194\,075\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ \left. 3\left(196\,608\,z^5 - 266\,240\,z^4 + 1\,639\,680\,z^3 - 8\,089\,200\,z^2 + 19\,656\,000\,z - 9\,398\,025\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.acu8.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{15}{4}; z\right) = \frac{1}{9\,823\,275\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-131\,072\,z^6 - 344\,064\,z^5 + 806\,400\,z^4 + 3\,548\,160\,z^3 + 4\,656\,960\,z^2 - 18\,627\,840\,z + 9\,823\,275\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(311\,296\,z^5 + 215\,040\,z^4 + 1\,391\,040\,z^3 + 5\,211\,360\,z^2 + 5\,530\,140\,z - 9\,823\,275\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-32\,768\,z^5 + 122\,880\,z^4 + 470\,400\,z^3 + 2\,383\,920\,z^2 + 7\,567\,560\,z + 9\,823\,275\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acu9.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{9\,823\,275\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-131\,072\,z^6 + 344\,064\,z^5 + 806\,400\,z^4 - 3\,548\,160\,z^3 + 4\,656\,960\,z^2 + 18\,627\,840\,z + 9\,823\,275\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(311\,296\,z^5 - 215\,040\,z^4 + 1\,391\,040\,z^3 - 5\,211\,360\,z^2 + 5\,530\,140\,z + 9\,823\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(32\,768\,z^5 + 122\,880\,z^4 - 470\,400\,z^3 + 2\,383\,920\,z^2 - 7\,567\,560\,z + 9\,823\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acua.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{13}{4}; z\right) = \frac{1}{1\,658\,475}\left(\left(-32\,768\,z^5 + 122\,880\,z^4 + 362\,880\,z^3 + 1\,537\,200\,z^2 + 3\,515\,400\,z + 1\,658\,475\right)\cosh\left(2\sqrt{z}\right) - 30\sqrt{z}\left(4096\,z^4 + 5632\,z^3 + 25\,872\,z^2 + 86\,940\,z + 110\,565\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.acub.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{13}{4}; -z\right) = \frac{1}{1\,658\,475}\left(\left(32\,768\,z^5 + 122\,880\,z^4 - 362\,880\,z^3 + 1\,537\,200\,z^2 - 3\,515\,400\,z + 1\,658\,475\right)\cos\left(2\sqrt{z}\right) + 30\sqrt{z}\left(4096\,z^4 - 5632\,z^3 + 25\,872\,z^2 - 86\,940\,z + 110\,565\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.acuc.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{11}{4}; z\right) = \frac{1}{654\,885\,\sqrt[4]{z}} \left(\sqrt{2}\left(9\left(16\,384\,z^5 + 26\,880\,z^4 + 30\,240\,z^3 - 135\,240\,z + 72\,765\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,384\,z^5 - 49\,152\,z^4 - 100\,800\,z^3 - 352\,800\,z^2 - 343\,980\,z + 654\,885\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12z\left(8192\,z^4 + 17\,920\,z^3 + 62\,160\,z^2 + 176\,400\,z + 218\,295\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acud.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{11}{4}; -z\right) = \frac{1}{654\,885\,\sqrt[4]{z}} \left(\sqrt{2}\left(-9\left(16\,384\,z^5 + 26\,880\,z^4 - 30\,240\,z^3 - 135\,240\,z - 72\,765\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,384\,z^5 + 49\,152\,z^4 - 100\,800\,z^3 + 352\,800\,z^2 - 343\,980\,z - 654\,885\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12z\left(8192\,z^4 - 17\,920\,z^3 + 62\,160\,z^2 - 176\,400\,z + 218\,295\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acue.01

$${}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{9}{4}; z\right) = \frac{1}{127\,575}\left(5\left(4096\,z^4 + 10\,752\,z^3 + 27\,216\,z^2 + 55\,440\,z + 25\,515\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(4096\,z^4 - 23\,040\,z^3 - 38\,640\,z^2 - 107\,100\,z - 127\,575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acuf.01

$${}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) = \frac{1}{127\,575}\left(5\left(4096\,z^4 - 10\,752\,z^3 + 27\,216\,z^2 - 55\,440\,z + 25\,515\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4096\,z^4 + 23\,040\,z^3 - 38\,640\,z^2 + 107\,100\,z - 127\,575\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acug.01

$${}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) = \frac{1}{59\,535\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-8192\,z^5 + 32\,256\,z^4 + 20\,160\,z^2 - 105\,840\,z + 59\,535\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 36\sqrt{z}\left(1024\,z^4 + 2240\,z^3 + 3360\,z^2 + 2940\,z - 6615\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-2048\,z^4 + 13\,440\,z^3 + 25\,200\,z^2 + 52\,920\,z + 59\,535\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acuh.01

$${}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) = \frac{1}{59\,535\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192\,z^5 + 32\,256\,z^4 + 20\,160\,z^2 + 105\,840\,z + 59\,535\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 36\sqrt{z}\left(1024\,z^4 - 2240\,z^3 + 3360\,z^2 - 2940\,z - 6615\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(2048\,z^4 + 13\,440\,z^3 - 25\,200\,z^2 + 52\,920\,z - 59\,535\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acui.01

$${}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{5}{4}; z\right) = \left(-\frac{2048\,z^4}{14\,175} + \frac{128\,z^3}{135} + \frac{16\,z^2}{9} + \frac{104\,z}{45} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256\,z^3 + 3920\,z^2 + 4620\,z + 4725\right)\sinh\left(2\sqrt{z}\right)}{4725}$$

07.22.03.acuj.01

$${}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{5}{4}; -z\right) = \left(-\frac{2048\,z^4}{14\,175} - \frac{128\,z^3}{135} + \frac{16\,z^2}{9} - \frac{104\,z}{45} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-256\,z^3 + 3920\,z^2 - 4620\,z + 4725\right)\sin\left(2\sqrt{z}\right)}{4725}$$

07.22.03.acuk.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) = \frac{1}{8505\sqrt[4]{z}} \left(\sqrt{2}\left(\left(2048z^4 + 13\,824z^3 - 10\,080z^2 - 12\,600z + 8505\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1024z^4 - 6336z^3 - 8640z^2 - 1260z + 8505\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-256z^3 + 7920z^2 + 10\,080z + 8505\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acul.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{1}{8505\sqrt[4]{z}} \left(\sqrt{2}\left(\left(2048z^4 - 13\,824z^3 - 10\,080z^2 + 12\,600z + 8505\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024z^4 + 6336z^3 - 8640z^2 + 1260z + 8505\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(256z^3 + 7920z^2 - 10\,080z + 8505\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acum.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) = \left(-\frac{256z^3}{945} + \frac{80z^2}{27} + \frac{32z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(256z^3 - 1008z^2 - 6300z - 2835\right)\sinh\left(2\sqrt{z}\right)}{2835} $$

07.22.03.acun.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) = \left(\frac{256z^3}{945} + \frac{80z^2}{27} - \frac{32z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(256z^3 + 1008z^2 - 6300z + 2835\right)\sin\left(2\sqrt{z}\right)}{2835} $$

07.22.03.acuo.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) = \frac{1}{2835\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-512z^4 + 1920z^3 + 6552z^2 - 10\,080z + 2835\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 36\sqrt{z}\left(64z^3 - 432z^2 - 315z + 315\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-128z^3 - 48z^2 + 4410z + 2835\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acup.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) = \frac{1}{2835\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-512z^4 - 1920z^3 + 6552z^2 + 10\,080z + 2835\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 36\sqrt{z}\left(64z^3 + 432z^2 - 315z - 315\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(128z^3 - 48z^2 - 4410z + 2835\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acuq.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) = \left(-\frac{128z^3}{2835} - \frac{16z^2}{63} + \frac{40z}{27} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(272z^2 - 420z - 2835\right)\sinh\left(2\sqrt{z}\right)}{2835} $$

07.22.03.acur.01

$${}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) = \left(\frac{128\,z^3}{2835} - \frac{16\,z^2}{63} - \frac{40\,z}{27} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(272\,z^2 + 420\,z - 2835\right)\sin\left(2\sqrt{z}\right)}{2835}$$

07.22.03.acus.01

$${}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) = \frac{1}{11\,340\,\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(18\left(256\,z^3 - 224\,z^2 - 1449\,z + 1260\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\,\left(-2048\,z^3 - 22\,272\,z^2 + 44\,352\,z + 24\,885\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.6\,z\left(1024\,z^2 + 2912\,z - 6825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acut.01

$${}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{5}{4}; -z\right) =$$
$$-\frac{1}{11\,340\,\sqrt{2}\,\sqrt[4]{z}}\left(\left(18\left(256\,z^3 + 224\,z^2 - 1449\,z - 1260\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\,\left(2048\,z^3 - 22\,272\,z^2 - 44\,352\,z + 24\,885\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\,z\left(-1024\,z^2 + 2912\,z + 6825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acuu.01

$${}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{7}{4}; z\right) = \left(\frac{16\,z^2}{63} + \frac{16\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\,\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.acuv.01

$${}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{7}{4}; -z\right) = \left(\frac{16\,z^2}{63} - \frac{16\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\,\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.acuw.01

$${}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{9}{4}; z\right) = -\frac{1}{72\,576\,\sqrt{2}\,z^{3/4}}$$
$$\left(\left(2\sqrt{z}\,\left(4096\,z^3 + 123\,648\,z^2 + 321\,552\,z - 375\,417\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\left(20\,480\,z^3 + 220\,416\,z^2 + 353\,808\,z - 216\,315\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4096\,z^3 + 180\,480\,z^2 + 1\,043\,952\,z + 1\,514\,205\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acux.01

$${}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = \frac{1}{72\,576\,\sqrt{2}\,z^{3/4}}$$
$$\left(\left(2\sqrt{z}\,\left(4096\,z^3 - 123\,648\,z^2 + 321\,552\,z + 375\,417\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\left(20\,480\,z^3 - 220\,416\,z^2 + 353\,808\,z + 216\,315\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-4096\,z^3 + 180\,480\,z^2 - 1\,043\,952\,z + 1\,514\,205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acuy.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = \frac{1}{2\,211\,840\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(16\,384\, z^{7/2} + 184\,320\, z^3 + 1\,029\,120\, z^{5/2} + 3\,690\,240\, z^2 + 9\,270\,720\, z^{3/2} + 16\,707\,600\, z + 20\,884\,500\sqrt{z} + e^{4\sqrt{z}}\left(16\,384\, z^{7/2} - 184\,320\, z^3 + 1\,029\,120\, z^{5/2} - 3\,690\,240\, z^2 + 9\,270\,720\, z^{3/2} - 16\,707\,600\, z + 20\,884\,500\sqrt{z} - 15\,663\,375\right) + 15\,663\,375\right) + 15\,663\,375\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 15\,663\,375\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acuz.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = \frac{1}{552\,960\, z^{7/4}} \left(15\,663\,375\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(15\left(12\,288\, z^3 - 246\,016\, z^2 + 1\,113\,840\, z - 1\,044\,225\right)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\left(4096\, z^3 - 257\,280\, z^2 + 2\,317\,680\, z - 5\,221\,125\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.acv0.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = \frac{1}{258\,048\sqrt{2}\, z^{7/4}} \left(\left(6\sqrt{z}\left(131\,072\, z^3 + 2\,967\,552\, z^2 + 13\,007\,232\, z - 13\,627\,845\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(131\,072\, z^4 + 10\,641\,408\, z^3 + 126\,024\,192\, z^2 + 339\,181\,920\, z - 204\,417\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(147\,456\, z^3 + 4\,410\,368\, z^2 + 32\,303\,040\, z + 68\,139\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acv1.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = \frac{1}{258\,048\sqrt{2}\, z^{7/4}} \left(\left(6\sqrt{z}\left(131\,072\, z^3 - 2\,967\,552\, z^2 + 13\,007\,232\, z + 13\,627\,845\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(131\,072\, z^4 - 10\,641\,408\, z^3 + 126\,024\,192\, z^2 - 339\,181\,920\, z - 204\,417\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(-147\,456\, z^3 + 4\,410\,368\, z^2 - 32\,303\,040\, z + 68\,139\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acv2.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{15}{4}; z\right) = -\frac{1}{141\,557\,760\, z^{11/4}} \left(11\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-262\,144\, z^4 - 4\,063\,232\, z^{7/2} - 31\,703\,040\, z^3 - 162\,078\,720\, z^{5/2} - 594\,048\,000\, z^2 - 1\,603\,929\,600\, z^{3/2} - 3\,141\,028\,800\, z - 4\,239\,553\,500\sqrt{z} + e^{4\sqrt{z}}\left(262\,144\, z^4 - 4\,063\,232\, z^{7/2} + 31\,703\,040\, z^3 - 162\,078\,720\, z^{5/2} + 594\,048\,000\, z^2 - 1\,603\,929\,600\, z^{3/2} + 3\,141\,028\,800\, z - 4\,239\,553\,500\sqrt{z} + 3\,179\,665\,125\right) - 3\,179\,665\,125\right) - 15\,663\,375\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 203)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 15\,663\,375\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 203)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acv3.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{15}{4}; -z\right) = \frac{1}{35\,389\,440\,z^{11/4}} \left(\left(11\left(15\,663\,375\sqrt{\pi}\,(16z+203)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,015\,808z^3 - 40\,519\,680z^2 + 400\,982\,400z - 1\,059\,888\,375\right)\right.\right.\right.\right. \cos\left(2\sqrt{z}\right) + \left.\left.\left.\left.\left(262\,144z^4 - 31\,703\,040z^3 + 594\,048\,000z^2 - 3\,141\,028\,800z + 3\,179\,665\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)\right) $$

07.22.03.acv4.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{17}{4}; z\right) = -\frac{1}{8\,257\,536\sqrt{2}\,z^{11/4}} \left(13\left(2\sqrt{z}\left(262\,144z^4 + 35\,880\,960z^3 + 738\,855\,936z^2 + 3\,706\,773\,840z - 3\,802\,168\,755\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(6\,029\,312z^4 + 298\,287\,104z^3 + 3\,617\,940\,480z^2 + 10\,684\,230\,480z - 6\,336\,947\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(262\,144z^4 + 42\,860\,544z^3 + 1\,107\,532\,800z^2 + 8\,503\,775\,280z + 19\,010\,843\,775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acv5.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = -\frac{1}{8\,257\,536\sqrt{2}\,z^{11/4}} \left(13\left(2\sqrt{z}\left(262\,144z^4 - 35\,880\,960z^3 + 738\,855\,936z^2 - 3\,706\,773\,840z - 3\,802\,168\,755\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(6\,029\,312z^4 - 298\,287\,104z^3 + 3\,617\,940\,480z^2 - 10\,684\,230\,480z - 6\,336\,947\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(262\,144z^4 - 42\,860\,544z^3 + 1\,107\,532\,800z^2 - 8\,503\,775\,280z + 19\,010\,843\,775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acv6.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) = -\frac{1}{1\,207\,959\,552\,z^{15/4}} \left(11\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(8\,388\,608z^{9/2} + 169\,869\,312z^4 + 1\,736\,441\,856z^{7/2} + 11\,698\,176\,000z^3 + 57\,028\,608\,000z^{5/2} + 208\,154\,419\,200z^2 + 567\,857\,908\,800z^{3/2} + 1\,129\,417\,052\,400z + 1\,538\,957\,920\,500\sqrt{z} + e^{4\sqrt{z}}\left(8\,388\,608z^{9/2} - 169\,869\,312z^4 + 1\,736\,441\,856z^{7/2} - 11\,698\,176\,000z^3 + 57\,028\,608\,000z^{5/2} - 208\,154\,419\,200z^2 + 567\,857\,908\,800z^{3/2} - 1\,129\,417\,052\,400z + 1\,538\,957\,920\,500\sqrt{z} - 1\,154\,218\,440\,375\right) + 1\,154\,218\,440\,375\right) - 15\,663\,375\,e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 - 6496z + 73\,689\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 15\,663\,375\,e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 - 6496z + 73\,689\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acv7.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) = \frac{1}{301\,989\,888\, z^{15/4}} \left(11 \left(15\,663\,375\, \sqrt{\pi}\, \left(256 z^2 + 6496 z + 73\,689\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\, \left(4\sqrt{z}\, \left(2\,097\,152 z^4 - 434\,110\,464 z^3 + 14\,257\,152\,000 z^2 - 141\,964\,477\,200 z + 384\,739\,480\,125\right) \cos\left(2\sqrt{z}\right) - 3\left(56\,623\,104 z^4 - 3\,899\,392\,000 z^3 + 69\,384\,806\,400 z^2 - 376\,472\,350\,800 z + 384\,739\,480\,125\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.acv8.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) = -\frac{1}{264\,241\,152\sqrt{2}\, z^{15/4}} \left(221 \left(-2\sqrt{z}\, \left(45\,088\,768 z^4 + 3\,473\,670\,144 z^3 + 66\,285\,838\,080 z^2 + 337\,970\,556\,000 z - 345\,997\,356\,705\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(8\,388\,608 z^5 + 2\,095\,054\,848 z^4 + 82\,695\,782\,400 z^3 + 980\,332\,657\,920 z^2 + 2\,920\,065\,603\,840 z - 1\,729\,986\,783\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 46\sqrt{z}\, \left(2\,097\,152 z^4 + 186\,777\,600 z^3 + 4\,398\,831\,360 z^2 + 33\,503\,168\,160 z + 75\,216\,816\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acv9.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) = -\frac{1}{264\,241\,152\sqrt{2}\, z^{15/4}} \left(221 \left(2\sqrt{z}\, \left(45\,088\,768 z^4 - 3\,473\,670\,144 z^3 + 66\,285\,838\,080 z^2 - 337\,970\,556\,000 z - 345\,997\,356\,705\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(8\,388\,608 z^5 - 2\,095\,054\,848 z^4 + 82\,695\,782\,400 z^3 - 980\,332\,657\,920 z^2 + 2\,920\,065\,603\,840 z + 1\,729\,986\,783\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 46\sqrt{z}\, \left(2\,097\,152 z^4 - 186\,777\,600 z^3 + 4\,398\,831\,360 z^2 - 33\,503\,168\,160 z + 75\,216\,816\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acva.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) = \frac{1}{77\,309\,411\,328\, z^{19/4}} \left(209\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(134\,217\,728 z^5 + 3\,422\,552\,064 z^{9/2} + 44\,040\,192\,000 z^4 + 374\,341\,632\,000 z^{7/2} + 2\,316\,238\,848\,000 z^3 + 10\,863\,593\,395\,200 z^{5/2} + 38\,960\,608\,377\,600 z^2 + 105\,528\,543\,120\,000 z^{3/2} + 209\,298\,277\,188\,000 z + 284\,707\,215\,292\,500\sqrt{z} + e^{4\sqrt{z}} \left(-134\,217\,728 z^5 + 3\,422\,552\,064 z^{9/2} - 44\,040\,192\,000 z^4 + 374\,341\,632\,000 z^{7/2} - 2\,316\,238\,848\,000 z^3 + 10\,863\,593\,395\,200 z^{5/2} - 38\,960\,608\,377\,600 z^2 + 105\,528\,543\,120\,000 z^{3/2} - 209\,298\,277\,188\,000 z + 284\,707\,215\,292\,500\sqrt{z} - 213\,530\,411\,469\,375\right) + 213\,530\,411\,469\,375\right) + 5\,221\,125\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(4096 z^3 - 155\,904 z^2 + 3\,537\,072 z - 40\,897\,395\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - 5\,221\,125\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(4096 z^3 - 155\,904 z^2 + 3\,537\,072 z - 40\,897\,395\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right) $$

07.22.03.acvb.01

$${}_1F_2\left(\frac{7}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{19\,327\,352\,832\, z^{19/4}}\left(209\left(5\,221\,125\sqrt{\pi}\left(4096 z^3+155\,904 z^2+3\,537\,072 z+40\,897\,395\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\right.\right.$$
$$\left(204\sqrt{z}\left(16\,777\,216 z^4-1\,835\,008\,000 z^3+53\,252\,908\,800 z^2-517\,296\,780\,000 z+1\,395\,623\,604\,375\right)\right.$$
$$\cos\left(2\sqrt{z}\right)+\left(134\,217\,728 z^5-44\,040\,192\,000 z^4+2\,316\,238\,848\,000 z^3-\right.$$
$$\left.\left.\left.38\,960\,608\,377\,600 z^2+209\,298\,277\,188\,000 z-213\,530\,411\,469\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{7}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.acvc.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) = \frac{1}{476\,974\,575\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(4\,980\,736 z^6+2\,408\,448 z^5+35\,804\,160 z^4+170\,533\,440 z^3+239\,833\,440 z^2-912\,473\,100 z+476\,974\,575\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(524\,288 z^6-3\,244\,032 z^5-9\,246\,720 z^4-63\,181\,440 z^3-\right.$$
$$\left.249\,978\,960 z^2-276\,507\,000 z+476\,974\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4 z\left(851\,968 z^5+3\,624\,960 z^4+19\,111\,680 z^3+108\,163\,440 z^2+359\,459\,100 z+476\,974\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acvd.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{476\,974\,575\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(4\,980\,736 z^6-2\,408\,448 z^5+35\,804\,160 z^4-170\,533\,440 z^3+239\,833\,440 z^2+912\,473\,100 z+476\,974\,575\right)\right.\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(524\,288 z^6+3\,244\,032 z^5-9\,246\,720 z^4+63\,181\,440 z^3-\right.$$
$$\left.249\,978\,960 z^2+276\,507\,000 z+476\,974\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4 z\left(851\,968 z^5-3\,624\,960 z^4+19\,111\,680 z^3-108\,163\,440 z^2+359\,459\,100 z-476\,974\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acve.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{65\,786\,175}\left(15\left(65\,536 z^5+143\,360 z^4+790\,272 z^3+3\,813\,264 z^2+9\,189\,180 z+4\,385\,745\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(131\,072 z^5-761\,856 z^4-2\,419\,200 z^3-13\,759\,200 z^2-50\,122\,800 z-65\,786\,175\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acvf.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) =$$
$$\frac{1}{65\,786\,175}\left(2\sqrt{z}\,\left(131\,072\,z^5 + 761\,856\,z^4 - 2\,419\,200\,z^3 + 13\,759\,200\,z^2 - 50\,122\,800\,z + 65\,786\,175\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$\left. 15\left(65\,536\,z^5 - 143\,360\,z^4 + 790\,272\,z^3 - 3\,813\,264\,z^2 + 9\,189\,180\,z - 4\,385\,745\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.acvg.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) = \frac{1}{20\,738\,025\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(\left(-262\,144\,z^6 - 344\,064\,z^5 + 1\,741\,824\,z^4 + 7\,495\,488\,z^3 + 9\,779\,616\,z^2 - 39\,293\,100\,z + 20\,738\,025\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$12\sqrt{z}\,\left(196\,608\,z^5 + 143\,360\,z^4 + 983\,808\,z^3 + 3\,670\,128\,z^2 + 3\,880\,800\,z - 6\,912\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left. 4\,z\left(-65\,536\,z^5 + 307\,200\,z^4 + 1\,016\,064\,z^3 + 5\,067\,216\,z^2 + 16\,008\,300\,z + 20\,738\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acvh.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) = \frac{1}{20\,738\,025\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(\left(-262\,144\,z^6 + 344\,064\,z^5 + 1\,741\,824\,z^4 - 7\,495\,488\,z^3 + 9\,779\,616\,z^2 + 39\,293\,100\,z + 20\,738\,025\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$12\sqrt{z}\,\left(196\,608\,z^5 - 143\,360\,z^4 + 983\,808\,z^3 - 3\,670\,128\,z^2 + 3\,880\,800\,z + 6\,912\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left. 4\,z\left(65\,536\,z^5 + 307\,200\,z^4 - 1\,016\,064\,z^3 + 5\,067\,216\,z^2 - 16\,008\,300\,z + 20\,738\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acvi.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) = \frac{1}{3\,132\,675}\left(\left(-65\,536\,z^5 + 184\,320\,z^4 + 672\,000\,z^3 + 2\,887\,920\,z^2 + 6\,633\,900\,z + 3\,132\,675\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left. 2\sqrt{z}\,\left(131\,072\,z^4 + 153\,600\,z^3 + 725\,760\,z^2 + 2\,457\,000\,z + 3\,132\,675\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acvj.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{17}{4}; -z\right) = \frac{1}{3\,132\,675}\left(\left(65\,536\,z^5 + 184\,320\,z^4 - 672\,000\,z^3 + 2\,887\,920\,z^2 - 6\,633\,900\,z + 3\,132\,675\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left. 2\sqrt{z}\,\left(131\,072\,z^4 - 153\,600\,z^3 + 725\,760\,z^2 - 2\,457\,000\,z + 3\,132\,675\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acvk.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{1\,091\,475\sqrt[4]{z}}\left(\sqrt{2}\left(21\left(16\,384 z^5 + 6144 z^4 + 19\,008 z^3 + 22\,176 z^2 - 97\,020 z + 51\,975\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right.$$
$$\left(32\,768 z^5 - 169\,344 z^3 - 587\,664 z^2 - 582\,120 z + 1\,091\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.12 z\left(20\,480 z^4 + 25\,088 z^3 + 99\,792 z^2 + 291\,060 z + 363\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acvl.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{1\,091\,475\sqrt[4]{z}}\left(\sqrt{2}\left(-21\left(16\,384 z^5 - 6144 z^4 + 19\,008 z^3 - 22\,176 z^2 - 97\,020 z - 51\,975\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\right.\right.$$
$$\sqrt{z}\left(32\,768 z^5 - 169\,344 z^3 + 587\,664 z^2 - 582\,120 z - 1\,091\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.12 z\left(20\,480 z^4 - 25\,088 z^3 + 99\,792 z^2 - 291\,060 z + 363\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acvm.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{13}{4}; z\right) = \frac{1}{184\,275}\left(15\left(4096 z^4 + 3584 z^3 + 12\,432 z^2 + 26\,460 z + 12\,285\right)\cosh\left(2\sqrt{z}\right) +\right.$$
$$\left.2\sqrt{z}\left(8192 z^4 - 15\,360 z^3 - 50\,400 z^2 - 151\,200 z - 184\,275\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acvn.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{13}{4}; -z\right) = \frac{1}{184\,275}\left(15\left(4096 z^4 - 3584 z^3 + 12\,432 z^2 - 26\,460 z + 12\,285\right)\cos\left(2\sqrt{z}\right) -\right.$$
$$\left.2\sqrt{z}\left(8192 z^4 + 15\,360 z^3 - 50\,400 z^2 + 151\,200 z - 184\,275\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acvo.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{72\,765\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,384 z^5 - 43\,008 z^4 + 28\,224 z^3 + 26\,208 z^2 - 132\,300 z + 72\,765\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\right.\right.$$
$$\left(32\,768 z^4 + 10\,752 z^3 + 39\,312 z^2 + 35\,280 z - 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(-4096 z^4 + 10\,752 z^3 + 24\,528 z^2 + 61\,740 z + 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acvp.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{72\,765\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384 z^5 - 43\,008 z^4 - 28\,224 z^3 + 26\,208 z^2 + 132\,300 z + 72\,765\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right.$$
$$\left(32\,768 z^4 - 10\,752 z^3 + 39\,312 z^2 - 35\,280 z - 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4 z \left(4096 z^4 + 10\,752 z^3 - 24\,528 z^2 + 61\,740 z - 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acvq.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{9}{4}; z\right) =$$
$$\left(-\frac{4096 z^4}{14\,175} + \frac{512 z^3}{675} + \frac{272 z^2}{225} + \frac{20 z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(2048 z^3 + 1792 z^2 + 4200 z + 4725\right)\sinh\left(2\sqrt{z}\right)}{4725}$$

07.22.03.acvr.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{9}{4}; -z\right) =$$
$$\left(-\frac{4096 z^4}{14\,175} - \frac{512 z^3}{675} + \frac{272 z^2}{225} - \frac{20 z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-2048 z^3 + 1792 z^2 - 4200 z + 4725\right)\sin\left(2\sqrt{z}\right)}{4725}$$

07.22.03.acvs.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{7}{4}; z\right) = \frac{1}{6615\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(3\left(5120 z^4 - 1344 z^3 + 672 z^2 - 3780 z + 2205\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048 z^4 - 4224 z^3 - 3024 z^2 - 2520 z + 6615\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(768 z^3 + 1232 z^2 + 2100 z + 2205\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acvt.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{1}{6615\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(3\left(5120 z^4 + 1344 z^3 + 672 z^2 + 3780 z + 2205\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048 z^4 + 4224 z^3 - 3024 z^2 + 2520 z + 6615\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(-768 z^3 + 1232 z^2 - 2100 z + 2205\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acvu.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{1575}\left(7\left(256 z^3 + 528 z^2 + 540 z + 225\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(512 z^3 - 2016 z^2 - 1680 z - 1575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acvv.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{5}{4}; -z\right) =$$
$$\frac{1}{1575}\left(2\sqrt{z}\,\left(512\,z^3+2016\,z^2-1680\,z+1575\right)\sin\left(2\sqrt{z}\right)-7\left(256\,z^3-528\,z^2+540\,z-225\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.acvw.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{945\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-1024\,z^4+2880\,z^3-2016\,z^2-1260\,z+945\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(256\,z^3+432\,z^2-315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(-256\,z^3+1104\,z^2+1260\,z+945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acvx.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{945\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-1024\,z^4-2880\,z^3-2016\,z^2+1260\,z+945\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(256\,z^3-432\,z^2+315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(256\,z^3+1104\,z^2-1260\,z+945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acvy.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) = \left(-\frac{256\,z^3}{315}+\frac{16\,z^2}{5}+4\,z+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{3}\sqrt{z}\,\left(8\,z+3\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.acvz.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) = \left(\frac{256\,z^3}{315}+\frac{16\,z^2}{5}-4\,z+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{3}\left(3-8\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.acw0.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{315\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(64\,z^3+1008\,z^2-1260\,z+315\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(128\,z^3-432\,z^2-378\,z+315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(-80\,z^2+504\,z+315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acw1.01

$${}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) =$$
$$\frac{1}{315\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-64\,z^3+1008\,z^2+1260\,z+315\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(128\,z^3+432\,z^2-378\,z-315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4\,z\left(80\,z^2+504\,z-315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acw2.01

$${}_1F_2\left(\frac{7}{4};-\frac{7}{2},\frac{3}{4};z\right)=\left(-\frac{16\,z^2}{35}+\frac{4\,z}{3}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{315}\sqrt{z}\,\left(32\,z^2-315\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.acw3.01

$${}_1F_2\left(\frac{7}{4};-\frac{7}{2},\frac{3}{4};-z\right)=\left(-\frac{16\,z^2}{35}-\frac{4\,z}{3}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{315}\sqrt{z}\,\left(315-32\,z^2\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.acw4.01

$${}_1F_2\left(\frac{7}{4};-\frac{7}{2},\frac{5}{4};z\right)=\frac{1}{630\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\left(128\,z^3-819\,z+630\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\,\left(512\,z^2-672\,z-525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\,z\left(128\,z^2+672\,z-945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acw5.01

$${}_1F_2\left(\frac{7}{4};-\frac{7}{2},\frac{5}{4};-z\right)=\frac{1}{630\sqrt{2}\,\sqrt[4]{z}}\left(\left(\left(-256\,z^3+1638\,z+1260\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.3\sqrt{z}\,\left(512\,z^2+672\,z-525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\,z\left(128\,z^2-672\,z-945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acw6.01

$${}_1F_2\left(\frac{7}{4};-\frac{7}{2},\frac{7}{4};z\right)=\left(\frac{16\,z^2}{105}+\frac{12\,z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\,\left(8\,z+21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.acw7.01

$${}_1F_2\left(\frac{7}{4};-\frac{7}{2},\frac{7}{4};-z\right)=\left(\frac{16\,z^2}{105}-\frac{12\,z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}\left(21-8\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.acw8.01

$${}_1F_2\left(\frac{7}{4};-\frac{7}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{4032\sqrt{2}\,z^{3/4}}\left(\left(-42\sqrt{z}\,\left(256\,z^2+720\,z-819\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4096\,z^3+69\,888\,z^2+109\,872\,z-65\,835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.6\sqrt{z}\,\left(2304\,z^2+15\,568\,z+21\,945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acw9.01

$${}_1F_2\left(\frac{7}{4};-\frac{7}{2},\frac{9}{4};-z\right)=$$
$$-\frac{1}{4032\sqrt{2}\,z^{3/4}}\left(\left(42\sqrt{z}\,\left(256\,z^2-720\,z-819\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4096\,z^3-69\,888\,z^2+109\,872\,z+65\,835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.6\sqrt{z}\,\left(2304\,z^2-15\,568\,z+21\,945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acwa.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, \frac{11}{4}; z\right) = \frac{1}{122\,880\, z^{7/4}} \left(e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(-4096 z^3 - 33\,792 z^{5/2} - 139\,008 z^2 - 366\,528 z^{3/2} - 668\,304 z - 835\,380\sqrt{z} + e^{4\sqrt{z}}\left(4096 z^3 - 33\,792 z^{5/2} + 139\,008 z^2 - 366\,528 z^{3/2} + 668\,304 z - 835\,380\sqrt{z} + 626\,535\right) - 626\,535\right) + 626\,535\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 626\,535\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acwb.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, \frac{11}{4}; -z\right) = \frac{1}{30\,720 z^{7/4}} \left(626\,535\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(12\sqrt{z}\left(2816 z^2 - 30\,544 z + 69\,615\right)\cos\left(2\sqrt{z}\right) + \left(4096 z^3 - 139\,008 z^2 + 668\,304 z - 626\,535\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.acwc.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, \frac{13}{4}; z\right) = \frac{1}{14\,336\sqrt{2}\, z^{7/4}} \left(\left(2\sqrt{z}\left(8192 z^3 + 311\,808 z^2 + 1\,465\,632 z - 1\,514\,205\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(311\,296 z^3 + 4\,537\,344 z^2 + 12\,640\,320 z - 7\,571\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(8192 z^3 + 434\,688 z^2 + 3\,511\,200 z + 7\,571\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acwd.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) = \frac{1}{14\,336\sqrt{2}\, z^{7/4}} \left(\left(2\sqrt{z}\left(8192 z^3 - 311\,808 z^2 + 1\,465\,632 z + 1\,514\,205\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(311\,296 z^3 - 4\,537\,344 z^2 + 12\,640\,320 z + 7\,571\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-8192 z^3 + 434\,688 z^2 - 3\,511\,200 z + 7\,571\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acwe.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) = \frac{1}{7\,864\,320 z^{11/4}} \left(11\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(65\,536 z^{7/2} + 786\,432 z^3 + 4\,780\,032 z^{5/2} + 19\,009\,536 z^2 + 53\,464\,320 z^{3/2} + 106\,928\,640 z + 146\,191\,500\sqrt{z} + e^{4\sqrt{z}}\left(65\,536 z^{7/2} - 786\,432 z^3 + 4\,780\,032 z^{5/2} - 19\,009\,536 z^2 + 53\,464\,320 z^{3/2} - 106\,928\,640 z + 146\,191\,500\sqrt{z} - 109\,643\,625\right) + 109\,643\,625\right) + 626\,535\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 175)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 626\,535\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 175)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acwf.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, \frac{15}{4}; -z\right) = \frac{1}{1\,966\,080\, z^{11/4}} \left(\left(11\left(626\,535\sqrt{\pi}\,(16z+175)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(3\left(262\,144z^3 - 6\,336\,512z^2 + 35\,642\,880z - 36\,547\,875\right)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\left(16\,384z^3 - 1\,195\,008z^2 + 13\,366\,080z - 36\,547\,875\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)\right) $$

07.22.03.acwg.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) = \frac{1}{458\,752\sqrt{2}\, z^{11/4}} \left(13\left(-6\sqrt{z}\left(278\,528z^3 + 7\,440\,384z^2 + 40\,378\,800z - 40\,883\,535\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(262\,144z^4 + 24\,182\,784z^3 + 337\,075\,200z^2 + 1\,041\,773\,040z - 613\,253\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 114\sqrt{z}\left(16\,384z^3 + 563\,200z^2 + 4\,675\,440z + 10\,758\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acwh.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) = \frac{1}{458\,752\sqrt{2}\, z^{11/4}} \left(13\left(6\sqrt{z}\left(278\,528z^3 - 7\,440\,384z^2 + 40\,378\,800z + 40\,883\,535\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(262\,144z^4 - 24\,182\,784z^3 + 337\,075\,200z^2 - 1\,041\,773\,040z - 613\,253\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 114\sqrt{z}\left(16\,384z^3 - 563\,200z^2 + 4\,675\,440z - 10\,758\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acwi.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) = \frac{1}{67\,108\,864\, z^{15/4}} \left(11\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-2\,097\,152z^4 - 34\,078\,720z^{7/2} - 280\,756\,224z^3 - 1\,520\,762\,880z^{5/2} - 5\,892\,956\,160z^2 - 16\,640\,769\,600z^{3/2} - 33\,799\,474\,800z - 46\,635\,088\,500\sqrt{z} + e^{4\sqrt{z}}\left(2\,097\,152z^4 - 34\,078\,720z^{7/2} + 280\,756\,224z^3 - 1\,520\,762\,880z^{5/2} + 5\,892\,956\,160z^2 - 16\,640\,769\,600z^{3/2} + 33\,799\,474\,800z - 46\,635\,088\,500\sqrt{z} + 34\,976\,316\,375\right) - 34\,976\,316\,375\right) + 626\,535\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 - 5600z + 55\,825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 626\,535\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 - 5600z + 55\,825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acwj.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = \frac{1}{16\,777\,216\, z^{15/4}} \left(11\left(626\,535\sqrt{\pi}\left(256z^2 + 5600z + 55\,825\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(260\sqrt{z}\left(131\,072z^3 - 5\,849\,088z^2 + 64\,002\,960z - 179\,365\,725\right)\cos\left(2\sqrt{z}\right) + \left(2\,097\,152z^4 - 280\,756\,224z^3 + 5\,892\,956\,160z^2 - 33\,799\,474\,800z + 34\,976\,316\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.acwk.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) = \frac{1}{14\,680\,064\sqrt{2}\, z^{15/4}}\left(221\left(2\sqrt{z}\left(524\,288 z^4 + 78\,839\,808 z^3 + 1\,783\,127\,808 z^2 + 9\,768\,439\,296 z - 9\,885\,638\,763\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(12\,582\,912 z^4 + 684\,851\,200 z^3 + 9\,019\,008\,768 z^2 + 27\,997\,044\,768 z - 16\,476\,064\,605\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(524\,288 z^4 + 93\,388\,800 z^3 + 2\,647\,003\,392 z^2 + 21\,455\,679\,168 z + 49\,428\,193\,815\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acwl.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) = -\frac{1}{14\,680\,064\sqrt{2}\, z^{15/4}}\left(221\left(2\sqrt{z}\left(524\,288 z^4 - 78\,839\,808 z^3 + 1\,783\,127\,808 z^2 - 9\,768\,439\,296 z - 9\,885\,638\,763\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-12\,582\,912 z^4 + 684\,851\,200 z^3 - 9\,019\,008\,768 z^2 + 27\,997\,044\,768 z + 16\,476\,064\,605\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(524\,288 z^4 - 93\,388\,800 z^3 + 2\,647\,003\,392 z^2 - 21\,455\,679\,168 z + 49\,428\,193\,815\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acwm.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = \frac{1}{4\,294\,967\,296 z^{19/4}}\left(209 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(33\,554\,432 z^{9/2} + 704\,643\,072 z^4 + 7\,486\,832\,640 z^{7/2} + 52\,407\,828\,480 z^3 + 264\,826\,598\,400 z^{5/2} + 994\,525\,459\,200 z^2 + 2\,771\,456\,688\,000 z^{3/2} + 5\,596\,210\,620\,000 z + 7\,694\,789\,602\,500\sqrt{z} + e^{4\sqrt{z}}\left(33\,554\,432 z^{9/2} - 704\,643\,072 z^4 + 7\,486\,832\,640 z^{7/2} - 52\,407\,828\,480 z^3 + 264\,826\,598\,400 z^{5/2} - 994\,525\,459\,200 z^2 + 2\,771\,456\,688\,000 z^{3/2} - 5\,596\,210\,620\,000 z + 7\,694\,789\,602\,500\sqrt{z} - 5\,771\,092\,201\,875\right) + 5\,771\,092\,201\,875\right) + 208\,845 e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 - 134\,400 z^2 + 2\,679\,600 z - 27\,633\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 208\,845 e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 - 134\,400 z^2 + 2\,679\,600 z - 27\,633\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acwn.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) = \frac{1}{1\,073\,741\,824 z^{19/4}}\left(209\left(208\,845\sqrt{\pi}\left(4096 z^3 + 134\,400 z^2 + 2\,679\,600 z + 27\,633\,375\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(8\,388\,608 z^4 - 1\,871\,708\,160 z^3 + 66\,206\,649\,600 z^2 - 692\,864\,172\,000 z + 1\,923\,697\,400\,625\right)\cos\left(2\sqrt{z}\right) - 21\left(33\,554\,432 z^4 - 2\,495\,610\,880 z^3 + 47\,358\,355\,200 z^2 - 266\,486\,220\,000 z + 274\,813\,914\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{7}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.acwo.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) = \frac{1}{68\,139\,225\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-524\,288\,z^6 + 4\,030\,464\,z^5 + 3\,594\,240\,z^4 + 25\,027\,200\,z^3 + 30\,436\,560\,z^2 - 127\,983\,240\,z + 68\,139\,225\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(196\,608\,z^5 + 1\,208\,320\,z^4 + 3\,283\,200\,z^3 + 12\,125\,520\,z^2 + 12\,376\,980\,z - 22\,713\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-131\,072\,z^5 + 1\,351\,680\,z^4 + 4\,631\,040\,z^3 + 17\,946\,720\,z^2 + 53\,721\,360\,z + 68\,139\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acwp.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{23}{4}; -z\right) = \frac{1}{68\,139\,225\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-524\,288\,z^6 - 4\,030\,464\,z^5 + 3\,594\,240\,z^4 - 25\,027\,200\,z^3 + 30\,436\,560\,z^2 + 127\,983\,240\,z + 68\,139\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(196\,608\,z^5 - 1\,208\,320\,z^4 + 3\,283\,200\,z^3 - 12\,125\,520\,z^2 + 12\,376\,980\,z + 22\,713\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(131\,072\,z^5 + 1\,351\,680\,z^4 - 4\,631\,040\,z^3 + 17\,946\,720\,z^2 - 53\,721\,360\,z + 68\,139\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acwq.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{21}{4}; z\right) = \left(-\frac{131\,072\,z^5}{9\,398\,025} + \frac{352\,256\,z^4}{3\,132\,675} + \frac{512\,z^3}{1989} + \frac{736\,z^2}{765} + \frac{32\,z}{15} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(16\,384\,z^4 + 89\,088\,z^3 + 262\,080\,z^2 + 835\,380\,z + 1\,044\,225\right)\sinh\left(2\sqrt{z}\right)}{1\,044\,225} $$

07.22.03.acwr.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{21}{4}; -z\right) = \left(\frac{131\,072\,z^5}{9\,398\,025} + \frac{352\,256\,z^4}{3\,132\,675} - \frac{512\,z^3}{1989} + \frac{736\,z^2}{765} - \frac{32\,z}{15} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(16\,384\,z^4 - 89\,088\,z^3 + 262\,080\,z^2 - 835\,380\,z + 1\,044\,225\right)\sin\left(2\sqrt{z}\right)}{1\,044\,225} $$

07.22.03.acws.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{19}{4}; z\right) = \frac{1}{2\,962\,575\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(524\,288\,z^5 + 12\,288\,z^4 + 1\,115\,136\,z^3 + 1\,208\,592\,z^2 - 5\,488\,560\,z + 2\,962\,575\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(65\,536\,z^5 - 307\,200\,z^4 - 438\,528\,z^3 - 1\,595\,088\,z^2 - 1\,538\,460\,z + 2\,962\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(81\,920\,z^4 + 288\,768\,z^3 + 868\,032\,z^2 + 2\,411\,640\,z + 2\,962\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acwt.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{2\,962\,575\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-524\,288 z^5 + 12\,288 z^4 - 1\,115\,136 z^3 + 1\,208\,592 z^2 + 5\,488\,560 z + 2\,962\,575\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(65\,536 z^5 + 307\,200 z^4 - 438\,528 z^3 + 1\,595\,088 z^2 - 1\,538\,460 z - 2\,962\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(81\,920 z^4 - 288\,768 z^3 + 868\,032 z^2 - 2\,411\,640 z + 2\,962\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acwu.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{17}{4}; z\right) = \frac{1}{447\,525}\left(3\left(32\,768 z^4 + 51\,200 z^3 + 155\,520 z^2 + 322\,920 z + 149\,175\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(16\,384 z^4 - 70\,656 z^3 - 129\,600 z^2 - 372\,060 z - 447\,525\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acwv.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{17}{4}; -z\right) = \frac{1}{447\,525}\left(3\left(32\,768 z^4 - 51\,200 z^3 + 155\,520 z^2 - 322\,920 z + 149\,175\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left.2\sqrt{z}\left(16\,384 z^4 + 70\,656 z^3 - 129\,600 z^2 + 372\,060 z - 447\,525\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acww.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{155\,925\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32\,768 z^5 - 49\,152 z^4 + 63\,360 z^3 + 55\,440 z^2 - 282\,744 z + 155\,925\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\right.\right.$$
$$\sqrt{z}\left(20\,480 z^4 + 6656 z^3 + 27\,984 z^2 + 24\,948 z - 51\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(-8192 z^4 + 27\,648 z^3 + 53\,856 z^2 + 133\,056 z + 155\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acwx.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{155\,925\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768 z^5 - 49\,152 z^4 - 63\,360 z^3 + 55\,440 z^2 + 282\,744 z + 155\,925\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\right.\right.$$
$$\sqrt{z}\left(20\,480 z^4 - 6656 z^3 + 27\,984 z^2 - 24\,948 z - 51\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4 z\left(8192 z^4 + 27\,648 z^3 - 53\,856 z^2 + 133\,056 z - 155\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acwy.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{13}{4}; z\right) = \frac{1}{26\,325}\left(\left(-8192 z^4 + 15\,360 z^3 + 31\,200 z^2 + 58\,320 z + 26\,325\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left.2\sqrt{z}\left(13\,312 z^3 + 9600 z^2 + 23\,220 z + 26\,325\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acwz.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{13}{4}; -z\right) = \frac{1}{26\,325}\left(\left(-8192\,z^4 - 15\,360\,z^3 + 31\,200\,z^2 - 58\,320\,z + 26\,325\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-13\,312\,z^3 + 9600\,z^2 - 23\,220\,z + 26\,325\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acx0.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{11}{4}; z\right) = \frac{1}{10\,395\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(9\left(4096\,z^4 + 768\,z^3 + 336\,z^2 - 2016\,z + 1155\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096\,z^4 + 1536\,z^3 - 5328\,z^2 - 4284\,z + 10\,395\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(2048\,z^3 + 1600\,z^2 + 3192\,z + 3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acx1.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{11}{4}; -z\right) = \frac{1}{10\,395\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(9\left(4096\,z^4 - 768\,z^3 + 336\,z^2 + 2016\,z + 1155\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4096\,z^4 - 1536\,z^3 - 5328\,z^2 + 4284\,z + 10\,395\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(-2048\,z^3 + 1600\,z^2 - 3192\,z + 3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acx2.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{2025}\left(3\left(2048\,z^3 + 1024\,z^2 + 1560\,z + 675\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1024\,z^3 - 1152\,z^2 - 1980\,z - 2025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acx3.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{2025}\left(\left(-6144\,z^3 + 3072\,z^2 - 4680\,z + 2025\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1024\,z^3 + 1152\,z^2 - 1980\,z + 2025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acx4.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{7}{4}; z\right) = \frac{1}{945\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-2048\,z^4 - 4992\,z^3 + 336\,z^2 - 1512\,z + 945\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(3328\,z^3 + 240\,z^2 + 252\,z - 945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.4\,z\left(-512\,z^3 + 864\,z^2 + 1008\,z + 945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acx5.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{7}{4}; -z\right) = \frac{1}{945\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-2048z^4 + 4992z^3 + 336z^2 + 1512z + 945\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(3328z^3 - 240z^2 + 252z + 945\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(512z^3 + 864z^2 - 1008z + 945\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acx6.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{5}{4}; z\right) = \frac{1}{225}\left(\left(-512z^3 + 864z^2 + 576z + 225\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(192z^2 + 92z + 75\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.acx7.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{5}{4}; -z\right) = \frac{1}{225}\left(\left(512z^3 + 864z^2 - 576z + 225\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(192z^2 - 92z + 75\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.acx8.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{3}{4}; z\right) = \frac{1}{135\sqrt[4]{z}} \left(\sqrt{2}\left(3\left(512z^3 - 208z^2 - 48z + 45\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(256z^3 - 336z^2 + 36z + 135\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12z\left(64z^2 + 72z + 45\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acx9.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{3}{4}; -z\right) = \frac{1}{135\sqrt[4]{z}} \left(\sqrt{2}\left(-3\left(512z^3 + 208z^2 - 48z - 45\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(256z^3 + 336z^2 + 36z - 135\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12z\left(64z^2 - 72z + 45\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acxa.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{1}{4}; z\right) = \frac{1}{45}\left(\left(128z^2 + 216z + 45\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(64z^2 - 156z - 45\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.acxb.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, -\frac{1}{4}; -z\right) = \frac{1}{45}\left(\left(128z^2 - 216z + 45\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(64z^2 + 156z - 45\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.acxc.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, \frac{1}{4}; z\right) = \frac{1}{45\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-128z^3 + 240z^2 - 216z + 45\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(16z^2 + 24z - 15\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-32z^2 + 72z + 45\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acxd.01

$${}_1F_2\left(\frac{7}{4};-\frac{5}{2},\frac{1}{4};-z\right)=\frac{1}{45\sqrt[4]{z}}\left(\sqrt{2}\left(\left(128z^3+240z^2+216z+45\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.12\sqrt{z}\left(16z^2-24z-15\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(32z^2+72z-45\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acxe.01

$${}_1F_2\left(\frac{7}{4};-\frac{5}{2},\frac{3}{4};z\right)=\frac{1}{45}\left(\left(-32z^2+48z+45\right)\cosh\left(2\sqrt{z}\right)+6\sqrt{z}\,(4z-15)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acxf.01

$${}_1F_2\left(\frac{7}{4};-\frac{5}{2},\frac{3}{4};-z\right)=\frac{1}{45}\left(\left(-32z^2-48z+45\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\,(4z+15)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acxg.01

$${}_1F_2\left(\frac{7}{4};-\frac{5}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{45\sqrt{2}\sqrt[4]{z}}\left(\left(2\left(16z^2-69z+45\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-128z^2+96z+129\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\,(64z-51)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acxh.01

$${}_1F_2\left(\frac{7}{4};-\frac{5}{2},\frac{5}{4};-z\right)=$$
$$\frac{1}{45\sqrt{2}\sqrt[4]{z}}\left(\left(2\left(16z^2+69z+45\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(128z^2+96z-129\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-2z\,(64z+51)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acxi.01

$${}_1F_2\left(\frac{7}{4};-\frac{5}{2},\frac{7}{4};z\right)=\left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\,(4z+15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.acxj.01

$${}_1F_2\left(\frac{7}{4};-\frac{5}{2},\frac{7}{4};-z\right)=\left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}(15-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.acxk.01

$${}_1F_2\left(\frac{7}{4};-\frac{5}{2},\frac{9}{4};z\right)=-\frac{1}{288\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(256z^2+912z-981\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.15\left(256z^2+400z-231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(256z^2+2544z+3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acxl.01

$${}_1F_2\left(\frac{7}{4};-\frac{5}{2},\frac{9}{4};-z\right)=\frac{1}{288\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(-256z^2+912z+981\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.15\left(256z^2-400z-231\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(256z^2-2544z+3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acxm.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, \frac{11}{4}; z\right) =$$

$$-\frac{1}{61\,440\,z^{7/4}}\left(7\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024\,z^{5/2}+5888\,z^2+17\,088\,z^{3/2}+31\,824\,z+39\,780\sqrt{z}\right.\right.\right.$$
$$\left.+e^{4\sqrt{z}}\left(1024\,z^{5/2}-5888\,z^2+17\,088\,z^{3/2}-31\,824\,z+39\,780\sqrt{z}-29\,835\right)+29\,835\right)-$$
$$\left.\left.29\,835\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+29\,835\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.acxn.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, \frac{11}{4}; -z\right) = \frac{1}{15\,360\,z^{7/4}}$$
$$\left(7\left(29\,835\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(256\,z^2-4272\,z+9945\right)\cos\left(2\sqrt{z}\right)+\left(-5888\,z^2+31\,824\,z-29\,835\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.acxo.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, \frac{13}{4}; z\right) = \frac{1}{1024\sqrt{2}\,z^{7/4}}$$
$$\left(\left(6\sqrt{z}\left(4096\,z^2+21\,696\,z-21\,945\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(8192\,z^3+188\,928\,z^2+554\,400\,z-329\,175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.30\sqrt{z}\left(1024\,z^2+9856\,z+21\,945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acxp.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, \frac{13}{4}; -z\right) =$$
$$-\frac{1}{1024\sqrt{2}\,z^{7/4}}\left(\left(6\sqrt{z}\left(4096\,z^2-21\,696\,z-21\,945\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(8192\,z^3-188\,928\,z^2+554\,400\,z+329\,175\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-30\sqrt{z}\left(1024\,z^2-9856\,z+21\,945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acxq.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, \frac{15}{4}; z\right) = -\frac{1}{3\,932\,160\,z^{11/4}}\left(77\,e^{-2\sqrt{z}}\right.$$
$$\left(4\sqrt[4]{z}\left(-16\,384\,z^3-147\,456\,z^{5/2}-678\,912\,z^2-2\,036\,736\,z^{3/2}-4\,200\,768\,z-5\,847\,660\sqrt{z}\right.\right.$$
$$\left.+e^{4\sqrt{z}}\left(16\,384\,z^3-147\,456\,z^{5/2}+678\,912\,z^2-2\,036\,736\,z^{3/2}+4\,200\,768\,z-5\,847\,660\sqrt{z}+4\,385\,745\right)-4\,385\,745\right)-$$
$$\left.\left.29\,835\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16\,z-147)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+29\,835\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16\,z-147)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.acxr.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, \frac{15}{4}; -z\right) =$$
$$\frac{1}{983\,040\, z^{11/4}}\left(77\left(29\,835\sqrt{\pi}\,(16z+147)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(36\sqrt{z}\,\left(4096z^2-56\,576z+162\,435\right)\cos\left(2\sqrt{z}\right)+\right.\right.\right.$$
$$\left.\left.\left.\left(16\,384z^3-678\,912z^2+4\,200\,768z-4\,385\,745\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.acxs.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, \frac{17}{4}; z\right) = -\frac{1}{32\,768\sqrt{2}\, z^{11/4}}$$
$$\left(13\left(2\sqrt{z}\,\left(16\,384z^3+749\,568z^2+4\,564\,560z-4\,542\,615\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(671\,744z^3+11\,827\,200z^2+38\,974\,320z-\right.\right.\right.$$
$$\left.\left.\left.22\,713\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(16\,384z^3+1\,013\,760z^2+9\,480\,240z+22\,713\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acxt.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, \frac{17}{4}; -z\right) = \frac{1}{32\,768\sqrt{2}\, z^{11/4}}$$
$$\left(13\left(2\sqrt{z}\,\left(16\,384z^3-749\,568z^2+4\,564\,560z+4\,542\,615\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(671\,744z^3-11\,827\,200z^2+38\,974\,320z+\right.\right.\right.$$
$$\left.\left.\left.22\,713\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-16\,384z^3+1\,013\,760z^2-9\,480\,240z+22\,713\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acxu.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) =$$
$$-\frac{1}{33\,554\,432\, z^{15/4}}\left(77\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(524\,288z^{7/2}+6\,684\,672z^3+43\,450\,368z^{5/2}+184\,664\,064z^2+548\,009\,280z^{3/2}+\right.\right.\right.$$
$$\left.\left.\left.1\,146\,141\,360z+1\,608\,106\,500\sqrt{z}\,+e^{4\sqrt{z}}\,\left(524\,288z^{7/2}-6\,684\,672z^3+43\,450\,368z^{5/2}-184\,664\,064z^2+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.548\,009\,280z^{3/2}-1\,146\,141\,360z+1\,608\,106\,500\sqrt{z}\,-1\,206\,079\,875\right)+1\,206\,079\,875\right)-\right.$$
$$29\,835\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2-4704z+40\,425\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+29\,835\, e^{2\sqrt{z}}\,\sqrt{2\pi}$$
$$\left.\left.\left(256z^2-4704z+40\,425\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.acxv.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) = \frac{1}{8\,388\,608\,z^{15/4}}$$
$$\left(77\left(29\,835\sqrt{\pi}\,\left(256z^2+4704z+40\,425\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(51\left(131\,072z^3-3\,620\,864z^2+22\,473\,360z-23\,648\,625\right)\right.\right.\right.$$
$$\left.\left.\left.\sin\left(2\sqrt{z}\right)-4\sqrt{z}\,\left(131\,072z^3-10\,862\,592z^2+137\,002\,320z-402\,026\,625\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.acxw.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) =$$
$$-\frac{1}{1\,048\,576\sqrt{2}\,z^{15/4}}\left(221\left(-6\sqrt{z}\,\left(589\,824z^3+17\,602\,816z^2+106\,600\,032z-106\,297\,191\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(524\,288z^4+54\,067\,200z^3+832\,575\,744z^2+2\,732\,837\,184z-1\,594\,457\,865\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.6\sqrt{z}\,\left(655\,360z^3+25\,200\,384z^2+222\,890\,976z+531\,485\,955\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acxx.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) = \frac{1}{1\,048\,576\sqrt{2}\,z^{15/4}}\left(221\left(6\sqrt{z}\,\left(589\,824z^3-17\,602\,816z^2+106\,600\,032z+106\,297\,191\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(524\,288z^4-54\,067\,200z^3+832\,575\,744z^2-2\,732\,837\,184z-1\,594\,457\,865\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.6\sqrt{z}\,\left(655\,360z^3-25\,200\,384z^2+222\,890\,976z-531\,485\,955\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acxy.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, \frac{23}{4}; z\right) =$$
$$\frac{1}{2\,147\,483\,648\,z^{19/4}}\left(1463\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-8\,388\,608z^4-142\,606\,336z^{7/2}-1\,229\,979\,648z^3-6\,962\,242\,560z^{5/2}-\right.\right.\right.$$
$$27\,914\,315\,520z^2-80\,864\,784\,000z^{3/2}-167\,243\,076\,000z-233\,175\,442\,500\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(8\,388\,608z^4-142\,606\,336z^{7/2}+1\,229\,979\,648z^3-6\,962\,242\,560z^{5/2}+27\,914\,315\,520z^2-\right.$$
$$\left.\left.\left.80\,864\,784\,000z^{3/2}+167\,243\,076\,000z-233\,175\,442\,500\sqrt{z}+174\,881\,581\,875\right)-174\,881\,581\,875\right)+$$
$$9945\,e^{2\sqrt{z}}\sqrt{2\pi}\,\left(4096z^3-112\,896z^2+1\,940\,400z-17\,584\,875\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.9945\,e^{2\sqrt{z}}\sqrt{2\pi}\,\left(4096z^3-112\,896z^2+1\,940\,400z-17\,584\,875\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.acxz.01

$${}_1F_2\left(\frac{7}{4}; -\frac{5}{2}, \frac{23}{4}; -z\right) = \frac{1}{536\,870\,912\, z^{19/4}}\left(1463\left(9945\sqrt{\pi}\left(4096 z^3 + 112\,896 z^2 + 1\,940\,400 z + 17\,584\,875\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(68\sqrt{z}\left(2\,097\,152 z^3 - 102\,385\,920 z^2 + 1\,189\,188\,000 z - 3\,429\,050\,625\right)\cos\left(2\sqrt{z}\right) + \left(8\,388\,608 z^4 - 1\,229\,979\,648 z^3 + 27\,914\,315\,520 z^2 - 167\,243\,076\,000 z + 174\,881\,581\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{7}{4}$, $b_{1.} = -\frac{3}{2}$

07.22.03.acy0.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{23}{4}; z\right) = \frac{1}{13\,627\,845\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(65\,536 z^5 + 1\,658\,880 z^4 + 633\,600 z^3 + 1\,718\,640 z^2 - 8\,163\,540 z + 4\,542\,615\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072 z^5 - 1\,253\,376 z^4 - 4\,631\,040 z^3 - 6\,732\,000 z^2 - 6\,320\,160 z + 13\,627\,845\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(-16\,384 z^4 + 711\,680 z^3 + 1\,869\,120 z^2 + 3\,950\,100 z + 4\,542\,615\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acy1.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{23}{4}; -z\right) = \frac{1}{13\,627\,845\sqrt[4]{z}}\left(\sqrt{2}\left(-3\left(65\,536 z^5 - 1\,658\,880 z^4 + 633\,600 z^3 - 1\,718\,640 z^2 - 8\,163\,540 z - 4\,542\,615\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072 z^5 + 1\,253\,376 z^4 - 4\,631\,040 z^3 + 6\,732\,000 z^2 - 6\,320\,160 z - 13\,627\,845\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 12 z\left(16\,384 z^4 + 711\,680 z^3 - 1\,869\,120 z^2 + 3\,950\,100 z - 4\,542\,615\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acy2.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{21}{4}; z\right) = \left(\frac{16\,384 z^4}{1\,879\,605} + \frac{7168 z^3}{9945} + \frac{64 z^2}{51} + \frac{20 z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(32\,768 z^4 - 276\,480 z^3 - 943\,488 z^2 - 1\,670\,760 z - 1\,879\,605\right)\sinh\left(2\sqrt{z}\right)}{1\,879\,605}$$

07.22.03.acy3.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{21}{4}; -z\right) = \left(\frac{16\,384 z^4}{1\,879\,605} - \frac{7168 z^3}{9945} + \frac{64 z^2}{51} - \frac{20 z}{9} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(32\,768 z^4 + 276\,480 z^3 - 943\,488 z^2 + 1\,670\,760 z - 1\,879\,605\right)\sin\left(2\sqrt{z}\right)}{1\,879\,605}$$

07.22.03.acy4.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{592\,515\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-65\,536 z^5 + 380\,928 z^4 - 25\,344 z^3 + 210\,672 z^2 - 1\,039\,500 z + 592\,515\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$12\sqrt{z}\left(16\,384 z^4 + 96\,256 z^3 + 90\,816 z^2 + 83\,160 z - 197\,505\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(-16\,384 z^4 + 119\,808 z^3 + 297\,792 z^2 + 540\,540 z + 592\,515\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acy5.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{592\,515\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536 z^5 + 380\,928 z^4 + 25\,344 z^3 + 210\,672 z^2 + 1\,039\,500 z + 592\,515\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$12\sqrt{z}\left(16\,384 z^4 - 96\,256 z^3 + 90\,816 z^2 - 83\,160 z - 197\,505\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4 z\left(16\,384 z^4 + 119\,808 z^3 - 297\,792 z^2 + 540\,540 z - 592\,515\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acy6.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{17}{4}; z\right) = \frac{1}{89\,505}\left(\left(-16\,384 z^4 + 95\,232 z^3 + 129\,600 z^2 + 203\,580 z + 89\,505\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left.6\sqrt{z}\left(4096 z^3 + 20\,736 z^2 + 28\,080 z + 29\,835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acy7.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{17}{4}; -z\right) = \frac{1}{89\,505}\left(\left(-16\,384 z^4 - 95\,232 z^3 + 129\,600 z^2 - 203\,580 z + 89\,505\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left.6\sqrt{z}\left(4096 z^3 - 20\,736 z^2 + 28\,080 z - 29\,835\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acy8.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{31\,185\sqrt[4]{z}}\left(\sqrt{2}\left(\left(53\,248 z^4 - 16\,896 z^3 + 11\,088 z^2 - 52\,668 z + 31\,185\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8192 z^4 - 27\,648 z^3 - 11\,616 z^2 - \right.\right.\right.$$
$$\left.\left.\left.11\,088 z + 31\,185\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(7168 z^3 + 21\,120 z^2 + 30\,492 z + 31\,185\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acy9.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{31\,185\sqrt[4]{z}}\left(\sqrt{2}\left(\left(53\,248 z^4 + 16\,896 z^3 + 11\,088 z^2 + 52\,668 z + 31\,185\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(8192 z^4 + 27\,648 z^3 - 11\,616 z^2 + 11\,088 z + 31\,185\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-7168 z^3 + 21\,120 z^2 - 30\,492 z + 31\,185\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acya.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{13}{4}; z\right) =$$
$$\frac{1}{5265}\left(3\left(3072 z^3 + 3200 z^2 + 4140 z + 1755\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(2048 z^3 - 6144 z^2 - 5400 z - 5265\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.acyb.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{5265}\left(\left(-9216 z^3 + 9600 z^2 - 12\,420 z + 5265\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(2048 z^3 + 6144 z^2 - 5400 z + 5265\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acyc.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{11}{4}; z\right) = \frac{1}{2079\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-4096 z^4 - 6144 z^3 + 1008 z^2 - 3276 z + 2079\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(2048 z^3 + 64 z^2 + 168 z - 693\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-1024 z^3 + 2304 z^2 + 2268 z + 2079\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acyd.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{11}{4}; -z\right) = \frac{1}{2079\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-4096 z^4 + 6144 z^3 + 1008 z^2 + 3276 z + 2079\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(2048 z^3 - 64 z^2 + 168 z + 693\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1024 z^3 + 2304 z^2 - 2268 z + 2079\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acye.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) = \left(-\frac{1024 z^3}{405} + \frac{128 z^2}{45} + \frac{68 z}{27} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{81}\sqrt{z}\left(256 z^2 + 96 z + 81\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.acyf.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{9}{4}; -z\right) = \frac{1}{405}\left(\left(1024 z^3 + 1152 z^2 - 1020 z + 405\right)\cos\left(2\sqrt{z}\right) + 10\sqrt{z}\left(256 z^2 - 96 z + 81\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.acyg.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{7}{4}; z\right) = \frac{1}{189\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(1280z^3+112z^2-84z+63\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(512z^3+288z^2+189\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+36z\left(64z^2+28z+21\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acyh.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{7}{4}; -z\right) = \frac{1}{189\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-3840z^3+336z^2+252z+189\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(512z^3-288z^2-189\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+36z\left(64z^2-28z+21\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acyi.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{5}{4}; z\right) = \left(\frac{64z^2}{5}+\frac{44z}{15}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{45}\sqrt{z}\left(128z^2-72z-45\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.acyj.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{5}{4}; -z\right) = \left(\frac{64z^2}{5}-\frac{44z}{15}+1\right)\cos\left(2\sqrt{z}\right)-\frac{2}{45}\sqrt{z}\left(128z^2+72z-45\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.acyk.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{3}{4}; z\right) = \frac{1}{27\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(256z^3+528z^2+12z-27\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-320z^2+24z+27\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-64z^2+60z+27\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acyl.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{3}{4}; -z\right) = \frac{1}{27\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256z^3-528z^2+12z+27\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(320z^2+24z-27\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(64z^2+60z-27\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acym.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{1}{4}; z\right) = \frac{1}{9}\left(\left(-64z^2+60z+9\right)\cosh\left(2\sqrt{z}\right)-6\sqrt{z}\left(16z+3\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.acyn.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, -\frac{1}{4}; -z\right) = \frac{2}{3}\left(3-16z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)-\frac{1}{9}\left(64z^2+60z-9\right)\cos\left(2\sqrt{z}\right) $$

07.22.03.acyo.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(48z^2-20z+3\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(32z^2-24z+9\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+12z(4z+3)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acyp.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{1}{4}; -z\right) =$$
$$\frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(48z^2+20z+3\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(32z^2+24z+9\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+12(3-4z)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acyq.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{3}{4}; z\right) = \left(\frac{4z}{9}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{9}\sqrt{z}\,(8z-9)\sinh\left(2\sqrt{z}\right)$$

07.22.03.acyr.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{3}{4}; -z\right) = \left(1-\frac{4z}{9}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{9}\sqrt{z}\,(8z+9)\sin\left(2\sqrt{z}\right)$$

07.22.03.acys.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{5}{4}; z\right) = \frac{\sqrt{2}\left(\left(16z^2-18z+9\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+15\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2z(8z-3)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{9\sqrt[4]{z}}$$

07.22.03.acyt.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{5}{4}; -z\right) = \frac{\sqrt{2}\left(\left(16z^2+18z+9\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-15\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-2z(8z+3)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{9\sqrt[4]{z}}$$

07.22.03.acyu.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{7}{4}; z\right) = \left(\frac{4z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.acyv.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{7}{4}; -z\right) = \left(1-\frac{4z}{3}\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.acyw.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{9}{4}; z\right) =$$
$$\frac{1}{144\sqrt{2}\,z^{3/4}}\left(5\left(10(15-16z)\sqrt{z}\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(256z^2+432z-231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-22\sqrt{z}\,(16z+21)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acyx.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) = \frac{1}{144\sqrt{2}\,z^{3/4}}$$
$$\left(5\left(10\sqrt{z}\,(16z+15)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(256z^2-432z-231\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+22(21-16z)\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acyy.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) = \frac{1}{6144\, z^{7/4}} \left(7\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(-256 z^2 - 960 z^{3/2} - 1872 z - 2340\sqrt{z} + e^{4\sqrt{z}}\left(256 z^2 - 960 z^{3/2} + 1872 z - 2340\sqrt{z} + 1755\right) - 1755\right) + 1755\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 1755\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acyz.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) = \frac{1}{1536\, z^{7/4}} \left(7\left(1755\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(60\sqrt{z}\,(16z - 39)\cos\left(2\sqrt{z}\right) + \left(256 z^2 - 1872 z + 1755\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.acz0.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) = \frac{1}{512\sqrt{2}\, z^{7/4}} \left(5\left(2\sqrt{z}\left(512 z^2 + 3552 z - 3465\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(3072 z^2 + 9856 z - 5775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(512 z^2 + 7392 z + 17\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acz1.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) = -\frac{1}{512\sqrt{2}\, z^{7/4}} \left(5\left(2\sqrt{z}\left(512 z^2 - 3552 z - 3465\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-3072 z^2 + 9856 z + 5775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(512 z^2 - 7392 z + 17\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acz2.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) = \frac{1}{393\,216\, z^{11/4}} \left(77\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4096 z^{5/2} + 26\,624 z^2 + 89\,856 z^{3/2} + 194\,688 z + 278\,460\sqrt{z} + e^{4\sqrt{z}}\left(4096 z^{5/2} - 26\,624 z^2 + 89\,856 z^{3/2} - 194\,688 z + 278\,460\sqrt{z} - 208\,845\right) + 208\,845\right) + 1755\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 119)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 1755\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 119)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acz3.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{15}{4}; -z\right) = \frac{1}{98\,304\, z^{11/4}} \left(77\left(1755\sqrt{\pi}\,(16z + 119) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(1024 z^2 - 22\,464 z + 69\,615\right)\cos\left(2\sqrt{z}\right) - 13\left(2048 z^2 - 14\,976 z + 16\,065\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.acz4.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) = \frac{1}{16\,384\sqrt{2}\, z^{11/4}} \left(65\left(-6\sqrt{z}\left(9216z^2+67\,760z-65\,835\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(16\,384z^3+473\,088z^2+1\,718\,640z-987\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)- 66\sqrt{z}\left(1024z^2+11\,760z+29\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acz5.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) = -\frac{1}{16\,384\sqrt{2}\, z^{11/4}} \left(65\left(6\sqrt{z}\left(9216z^2-67\,760z-65\,835\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(16\,384z^3-473\,088z^2+1\,718\,640z+987\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)-66\sqrt{z}\left(1024z^2-11\,760z+29\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acz6.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) = \frac{1}{16\,777\,216 z^{15/4}} \left(385 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-131\,072z^3-1\,277\,952z^{5/2}-6\,389\,760z^2-20\,494\,656z^{3/2}-44\,776\,368z-64\,324\,260\sqrt{z}+e^{4\sqrt{z}}\left(131\,072z^3-1\,277\,952z^{5/2}+6\,389\,760z^2-20\,494\,656z^{3/2}+44\,776\,368z-64\,324\,260\sqrt{z}+48\,243\,195\right)-48\,243\,195\right)+1755 e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-3808z+27\,489\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)- 1755 e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-3808z+27\,489\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.acz7.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{19}{4}; -z\right) = \frac{1}{4\,194\,304 z^{15/4}} \left(385\left(1755\sqrt{\pi}\left(256z^2+3808z+27\,489\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(156\sqrt{z}\left(8192z^2-131\,376z+412\,335\right)\cos\left(2\sqrt{z}\right)+\left(131\,072z^3-6\,389\,760z^2+44\,776\,368z-48\,243\,195\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.acz8.01

$$ {}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) = \frac{1}{524\,288\sqrt{2}\, z^{15/4}} \left(1105\left(2\sqrt{z}\left(32\,768z^3+1\,714\,944z^2+12\,078\,528z-11\,810\,799\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-11\left(131\,072z^3+2\,618\,112z^2+9\,307\,872z-5\,368\,545\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(32\,768z^3+2\,340\,096z^2+23\,595\,264z+59\,053\,995\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.acz9.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) = \frac{1}{524\,288\sqrt{2}\,z^{15/4}}$$
$$\left(1105\left(2\sqrt{z}\left(32\,768z^3 - 1\,714\,944z^2 + 12\,078\,528z + 11\,810\,799\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 11\left(131\,072z^3 - 2\,618\,112z^2 + 9\,307\,872z + 5\,368\,545\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-32\,768z^3 + 2\,340\,096z^2 - 23\,595\,264z + 59\,053\,995\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acza.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) = \frac{1}{1\,073\,741\,824\,z^{19/4}}$$
$$\left(7315\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(2\,097\,152z^{7/2} + 28\,311\,552z^3 + 194\,847\,744z^{5/2} + 863\,745\,792z^2 + 2\,646\,483\,840z^{3/2} + 5\,660\,534\,880z + 8\,040\,532\,500\sqrt{z} + e^{4\sqrt{z}}\left(2\,097\,152z^{7/2} - 28\,311\,552z^3 + 194\,847\,744z^{5/2} - 863\,745\,792z^2 + 2\,646\,483\,840z^{3/2} - 5\,660\,534\,880z + 8\,040\,532\,500\sqrt{z} - 6\,030\,399\,375\right) + 6\,030\,399\,375\right) + 585\,e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3 - 91\,392z^2 + 1\,319\,472z - 10\,308\,375\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 585\,e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3 - 91\,392z^2 + 1\,319\,472z - 10\,308\,375\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aczb.01

$${}_1F_2\left(\frac{7}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) = \frac{1}{268\,435\,456\,z^{19/4}}\left(7315\left(585\sqrt{\pi}\left(4096z^3 + 91\,392z^2 + 1\,319\,472z + 10\,308\,375\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(4\sqrt{z}\left(524\,288z^3 - 48\,711\,936z^2 + 661\,620\,960z - 2\,010\,133\,125\right)\cos\left(2\sqrt{z}\right) + 3\left(-9\,437\,184z^3 + 287\,915\,264z^2 - 1\,886\,844\,960z + 2\,010\,133\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{7}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.aczc.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{4\,542\,615\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-131\,072z^5 + 761\,856z^4 + 6\,842\,880z^3 - 4\,102\,560z^2 - 6\,320\,160z + 4\,542\,615\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 44\sqrt{z}\left(16\,384z^4 - 199\,680z^3 - 509\,760z^2 - 23\,940z + 412\,965\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-32\,768z^4 + 30\,720z^3 + 3\,350\,400z^2 + 5\,793\,480z + 4\,542\,615\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aczd.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{4\,542\,615\sqrt[4]{z}}\left(\sqrt{2}\left(\left(131\,072 z^5 + 761\,856 z^4 - 6\,842\,880 z^3 - 4\,102\,560 z^2 + 6\,320\,160 z + 4\,542\,615\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$44\sqrt{z}\left(16\,384 z^4 + 199\,680 z^3 - 509\,760 z^2 + 23\,940 z + 412\,965\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4 z\left(32\,768 z^4 + 30\,720 z^3 - 3\,350\,400 z^2 + 5\,793\,480 z - 4\,542\,615\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.acze.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) =$$
$$\left(-\frac{32\,768 z^4}{626\,535} + \frac{2048 z^3}{9945} + \frac{640 z^2}{221} + \frac{8 z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(4096 z^3 - 48\,384 z^2 - 115\,920 z - 69\,615\right)\sinh\left(2\sqrt{z}\right)}{69\,615}$$

07.22.03.aczf.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{21}{4}; -z\right) =$$
$$\left(-\frac{32\,768 z^4}{626\,535} - \frac{2048 z^3}{9945} + \frac{640 z^2}{221} - \frac{8 z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(4096 z^3 + 48\,384 z^2 - 115\,920 z + 69\,615\right)\sin\left(2\sqrt{z}\right)}{69\,615}$$

07.22.03.aczg.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{19}{4}; z\right) = \frac{1}{197\,505\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(99\left(4096 z^3 - 2688 z^2 - 2520 z + 1995\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,384 z^4 - 95\,232 z^3 - 297\,792 z^2 + 13\,860 z + 197\,505\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(-4096 z^3 + 54\,016 z^2 + 92\,400 z + 65\,835\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aczh.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{19}{4}; -z\right) = \frac{1}{197\,505\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(-99\left(4096 z^3 + 2688 z^2 - 2520 z - 1995\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384 z^4 + 95\,232 z^3 - 297\,792 z^2 - 13\,860 z + 197\,505\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(4096 z^3 + 54\,016 z^2 - 92\,400 z + 65\,835\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aczi.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{17}{4}; z\right) = \frac{1}{29\,835}$$
$$\left(\left(-4096 z^3 + 103\,680 z^2 + 84\,240 z + 29\,835\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(4096 z^3 - 20\,736 z^2 - 58\,320 z - 29\,835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aczj.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{29\,835}\left(\left(4096\,z^3 + 103\,680\,z^2 - 84\,240\,z + 29\,835\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(4096\,z^3 + 20\,736\,z^2 - 58\,320\,z + 29\,835\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aczk.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) = \frac{1}{10\,395\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(\left(-8192\,z^4 + 33\,792\,z^3 - 22\,176\,z^2 - 11\,088\,z + 10\,395\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,\left(1024\,z^3 + 7040\,z^2 - 924\,z - 3465\right)\right.\right.$$
$$\left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-2048\,z^3 + 9216\,z^2 + 16\,632\,z + 10\,395\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aczl.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) = \frac{1}{10\,395\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(\left(-8192\,z^4 - 33\,792\,z^3 - 22\,176\,z^2 + 11\,088\,z + 10\,395\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,\left(1024\,z^3 - 7040\,z^2 - 924\,z + 3465\right)\right.\right.$$
$$\left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2048\,z^3 + 9216\,z^2 - 16\,632\,z + 10\,395\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aczm.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) = \left(-\frac{2048\,z^3}{1755} + \frac{512\,z^2}{117} + \frac{40\,z}{13} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{585}\sqrt{z}\,\left(256\,z^2 + 1440\,z + 585\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aczn.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) = \frac{\left(2048\,z^3 + 7680\,z^2 - 5400\,z + 1755\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(256\,z^2 - 1440\,z + 585\right)\sin\left(2\sqrt{z}\right)}{1755}$$

07.22.03.aczo.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{693\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(5120\,z^3 - 2688\,z^2 - 504\,z + 693\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(1024\,z^3 - 2304\,z^2 + 420\,z + 693\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 4\,z\left(512\,z^2 + 1344\,z + 693\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aczp.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-5120z^3 - 2688z^2 + 504z + 693\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1024z^3 + 2304z^2 + 420z - 693\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(512z^2 - 1344z + 693\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aczq.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{9}{4}; z\right) = \left(\frac{256z^2}{45} + \frac{32z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{135}\sqrt{z}\left(256z^2 - 480z - 135\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aczr.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{9}{4}; -z\right) = \left(\frac{256z^2}{45} - \frac{32z}{9} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{135}\sqrt{z}\left(256z^2 + 480z - 135\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aczs.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{7}{4}; z\right) = \frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-512z^3 - 672z^2 + 63\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(-192z^2 + 28z + 21\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-128z^2 + 168z + 63\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aczt.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) = \frac{1}{63\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(512z^3 - 672z^2 + 63\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(192z^2 + 28z - 21\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(128z^2 + 168z - 63\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aczu.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) = \left(-\frac{128z^2}{15} + \frac{24z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\left(112z + 15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aczv.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{5}{4}; -z\right) = \frac{1}{15}\left(\left(-128z^2 - 72z + 15\right)\cos\left(2\sqrt{z}\right) + 2\left(15 - 112z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aczw.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(128z^2 + 8z + 3\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(64z^2 + 36z + 9\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12z\left(16z + 3\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aczx.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{3}{4}; -z\right) =$$

$$\frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(128z^2-8z+3\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(64z^2-36z+9\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+12\left(3-16z\right)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aczy.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) = (16z+1)\cosh\left(2\sqrt{z}\right)+\frac{2}{3}\sqrt{z}\,(16z-3)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aczz.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) = (1-16z)\cos\left(2\sqrt{z}\right)+\frac{2}{3}\sqrt{z}\,(16z+3)\sin\left(2\sqrt{z}\right)$$

07.22.03.ad00.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) =$$

$$-\frac{1}{3\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32z^2+48z-3\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(28z-3)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z(8z-3)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad01.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{1}{4}; -z\right) =$$

$$\frac{1}{3\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32z^2+48z+3\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(28z+3)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z(8z+3)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad02.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{3}{4}; z\right) = \left(1-\frac{8z}{3}\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ad03.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{3}{4}; -z\right) = \left(\frac{8z}{3}+1\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ad04.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{5}{4}; z\right) = \frac{\sqrt{2}\,I_{\frac{1}{4}}\left(\sqrt{z}\right)\left(\left(3-12z\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\left(3-8z\right)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ad05.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{5}{4}; -z\right) = \frac{\sqrt{2}\,J_{\frac{1}{4}}\left(\sqrt{z}\right)\left(3\left(4z+1\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(8z+3\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ad06.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{7}{4}; z\right) = \cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ad07.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{7}{4}; -z\right) = \cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ad08.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{9}{4}; z\right) =$$
$$-\frac{1}{24\sqrt{2}\, z^{3/4}}\left(5\left(2\sqrt{z}\,(16z-9)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3(7-16z)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(16z+21)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad09.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{9}{4}; -z\right) = \frac{5\left(2\sqrt{z}\,(16z+9)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3(16z+7)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2(21-16z)\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{24\sqrt{2}\, z^{3/4}}$$

07.22.03.ad0a.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) =$$
$$-\frac{1}{1024\, z^{7/4}}\left(7e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(64z^{3/2}+144z+180\sqrt{z}\right) + e^{4\sqrt{z}}\left(64z^{3/2}-144z+180\sqrt{z}-135\right)+135\right)-135\right.$$
$$\left. e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 135\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)$$

07.22.03.ad0b.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = \frac{7\left(135\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(9(16z-15)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\,(16z-45)\cos\left(2\sqrt{z}\right)\right)\right)}{256\, z^{7/4}}$$

07.22.03.ad0c.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) = -\frac{1}{256\sqrt{2}\, z^{7/4}}$$
$$\left(15\left(2(231-256z)\sqrt{z}\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(512z^2+2016z-1155\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 14\sqrt{z}\,(64z+165)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad0d.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) = \frac{1}{256\sqrt{2}\, z^{7/4}}$$
$$\left(15\left(2\sqrt{z}\,(256z+231)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(512z^2-2016z-1155\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 14(165-64z)\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad0e.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) = -\frac{1}{65\,536\, z^{11/4}}\left(77e^{-2\sqrt{z}}\right.$$
$$\left(4\sqrt[4]{z}\left(-1024z^2-4608z^{3/2}-10\,944z-16\,380\sqrt{z}+e^{4\sqrt{z}}\left(1024z^2-4608z^{3/2}+10\,944z-16\,380\sqrt{z}+12\,285\right)-\right.\right.$$
$$\left.\left.12\,285\right)-135\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-91)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+135\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-91)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)$$

07.22.03.ad0f.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) = \frac{1}{16\,384\, z^{11/4}}$$
$$\left(77\left(135\sqrt{\pi}\,(16z+91)\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(36\sqrt{z}\,(128z-455)\cos\left(2\sqrt{z}\right) + \left(1024z^2-10\,944z+12\,285\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ad0g.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) =$$
$$-\frac{1}{8192\sqrt{2}\, z^{11/4}}\left(195\left(2\sqrt{z}\,\left(1024z^2+11\,088z-10\,395\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 21\left(1024z^2+4400z-2475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 2\sqrt{z}\,\left(1024z^2+18\,480z+51\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad0h.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) =$$
$$-\frac{1}{8192\sqrt{2}\, z^{11/4}}\left(195\left(2\sqrt{z}\,\left(1024z^2-11\,088z-10\,395\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 21\left(-1024z^2+4400z+2475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left. 2\sqrt{z}\,\left(1024z^2-18\,480z+51\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad0i.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) =$$
$$-\frac{1}{8\,388\,608\, z^{15/4}}\left(1155\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(32\,768z^{5/2}+237\,568z^2+876\,096z^{3/2}+2\,057\,328z+3\,063\,060\sqrt{z}\, + \right.\right.\right.$$
$$\left.\left.\left. e^{4\sqrt{z}}\left(32\,768z^{5/2}-237\,568z^2+876\,096z^{3/2}-2\,057\,328z+3\,063\,060\sqrt{z}\, - 2\,297\,295\right) + 2\,297\,295\right) - \right.$$
$$135\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2-2912z+17\,017\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) +$$
$$\left.135\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(256z^2-2912z+17\,017\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.ad0j.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) = \frac{1}{2\,097\,152\, z^{15/4}}\left(1155\left(135\sqrt{\pi}\,\left(256z^2+2912z+17\,017\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right.$$
$$\left.\left. 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(8192z^2-219\,024z+765\,765\right)\cos\left(2\sqrt{z}\right) + \left(-237\,568z^2+2\,057\,328z-2\,297\,295\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ad0k.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) =$$
$$-\frac{1}{262\,144\sqrt{2}\, z^{15/4}}\left(3315\left(-462\sqrt{z}\,\left(256z^2+2336z-2223\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(32\,768z^3+1\,123\,584z^2+4\,523\,904z-2\,567\,565\right)\right.\right.$$
$$\left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 198\sqrt{z}\,\left(768z^2+9632z+25\,935\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad0l.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) =$$
$$-\frac{1}{262\,144\sqrt{2}\,z^{15/4}}\left(3315\left(462\sqrt{z}\left(256z^2-2336z-2223\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(32\,768z^3-1\,123\,584z^2+4\,523\,904z+2\,567\,565\right)\right.$$
$$\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-198\sqrt{z}\left(768z^2-9632z+25\,935\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.ad0m.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) =$$
$$\frac{1}{536\,870\,912\,z^{19/4}}\left(21\,945\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-524\,288z^3-5\,551\,104z^{5/2}-29\,283\,072z^2-98\,017\,920z^{3/2}-220\,540\,320z-\right.\right.\right.$$
$$\left.\left.321\,621\,300\sqrt{z}\right)+e^{4\sqrt{z}}\left(524\,288z^3-5\,551\,104z^{5/2}+29\,283\,072z^2-\right.\right.$$
$$\left.\left.98\,017\,920z^{3/2}+220\,540\,320z-321\,621\,300\sqrt{z}+241\,215\,975\right)-241\,215\,975\right)+$$
$$45e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-69\,888z^2+816\,816z-5\,360\,355\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-$$
$$\left.45e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3-69\,888z^2+816\,816z-5\,360\,355\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Bigg)$$

07.22.03.ad0n.01

$${}_1F_2\left(\frac{7}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) = \frac{1}{134\,217\,728\,z^{19/4}}\left(21\,945\right.$$
$$\left(45\sqrt{\pi}\left(4096z^3+69\,888z^2+816\,816z+5\,360\,355\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(156\sqrt{z}\left(35\,584z^2-628\,320z+2\,061\,675\right)\right.\right.$$
$$\left.\left.\left.\cos\left(2\sqrt{z}\right)+\left(524\,288z^3-29\,283\,072z^2+220\,540\,320z-241\,215\,975\right)\sin\left(2\sqrt{z}\right)\right)\right)\Bigg)$$

For fixed z and $a_1 = \frac{7}{4}$, $b_1 = \frac{1}{2}$

07.22.03.ad0o.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{4\,542\,615\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-344\,064z^4+1\,133\,568z^3+9\,092\,160z^2-11\,850\,300z+4\,542\,615\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(32\,768z^4+411\,648z^3-3\,127\,680z^2-5\,793\,480z+4\,542\,615\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.12z\left(-36\,864z^3-37\,120z^2+1\,480\,080z+1\,514\,205\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad0p.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{4\,542\,615\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-344\,064\,z^4-1\,133\,568\,z^3+9\,092\,160\,z^2+11\,850\,300\,z+4\,542\,615\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\right.\right.$$
$$\sqrt{z}\left(32\,768\,z^4-411\,648\,z^3-3\,127\,680\,z^2+5\,793\,480\,z+4\,542\,615\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.12\,z\left(36\,864\,z^3-37\,120\,z^2-1\,480\,080\,z+1\,514\,205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad0q.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},-\frac{21}{4};z\right)=\frac{1}{626\,535}$$
$$\left(4\sqrt{z}\left(4096\,z^3+37\,632\,z^2-277\,200\,z-477\,855\right)\sinh\left(2\sqrt{z}\right)-21\left(4096\,z^3-6400\,z^2-102\,480\,z-29\,835\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.ad0r.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},-\frac{21}{4};-z\right)=\frac{1}{626\,535}$$
$$\left(21\left(4096\,z^3+6400\,z^2-102\,480\,z+29\,835\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(4096\,z^3-37\,632\,z^2-277\,200\,z+477\,855\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ad0s.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{197\,505\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,384\,z^4+15\,360\,z^3+458\,304\,z^2-540\,540\,z+197\,505\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(28\,672\,z^3-120\,576\,z^2-\right.\right.\right.$$
$$\left.\left.\left.277\,200\,z+197\,505\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-4096\,z^3-20\,736\,z^2+185\,040\,z+197\,505\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad0t.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{197\,505\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,384\,z^4-15\,360\,z^3+458\,304\,z^2+540\,540\,z+197\,505\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(28\,672\,z^3+120\,576\,z^2-\right.\right.\right.$$
$$\left.\left.\left.277\,200\,z-197\,505\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(4096\,z^3-20\,736\,z^2-185\,040\,z+197\,505\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad0u.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{29\,835}\left(\left(-4096\,z^3-3840\,z^2+104\,400\,z+29\,835\right)\cosh\left(2\sqrt{z}\right)+48\sqrt{z}\left(256\,z^2-960\,z-1965\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ad0v.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},-\frac{17}{4};-z\right)=\frac{\left(4096\,z^3-3840\,z^2-104\,400\,z+29\,835\right)\cos\left(2\sqrt{z}\right)-48\sqrt{z}\left(256\,z^2+960\,z-1965\right)\sin\left(2\sqrt{z}\right)}{29\,835}$$

07.22.03.ad0w.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},-\frac{15}{4};z\right)=\frac{1}{10\,395\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(-3\left(1024z^3-9856z^2+10\,164z-3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048z^3-4608z^2-16\,632z+10\,395\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.36z\left(-256z^2+992z+1155\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad0x.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{10\,395\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(1024z^3+9856z^2+10\,164z+3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048z^3+4608z^2-16\,632z-10\,395\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-36z\left(256z^2+992z-1155\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad0y.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},-\frac{13}{4};z\right)=\frac{\left(-1280z^2+6240z+1755\right)\cosh\left(2\sqrt{z}\right)+4\sqrt{z}\left(256z^2-480z-1455\right)\sinh\left(2\sqrt{z}\right)}{1755}$$

07.22.03.ad0z.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},-\frac{13}{4};-z\right)=\frac{-5\left(256z^2+1248z-351\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2+480z-1455\right)\sin\left(2\sqrt{z}\right)}{1755}$$

07.22.03.ad10.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},-\frac{11}{4};z\right)=\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1024z^3+2688z^2-2268z+693\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.84\sqrt{z}\left(64z-33\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-256z^2+480z+693\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad11.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},-\frac{11}{4};-z\right)=\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024z^3+2688z^2+2268z+693\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.84\sqrt{z}\left(64z+33\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(256z^2+480z-693\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad12.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},-\frac{9}{4};z\right)=\left(-\frac{256z^2}{135}+\frac{32z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{32}{9}\sqrt{z}\sinh\left(2\sqrt{z}\right)$$

07.22.03.ad13.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},-\frac{9}{4};-z\right)=\left(-\frac{256z^2}{135}-\frac{32z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{32}{9}\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.ad14.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(7\left(64z^2-36z+9\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(128z^2-168z+63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(16z+63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad15.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(7\left(64z^2+36z+9\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(128z^2+168z+63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\left(63-16z\right)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad16.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, -\frac{5}{4}; z\right) = \left(\frac{16z}{5}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{4}{15}\sqrt{z}\left(16z-15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ad17.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, -\frac{5}{4}; -z\right) = \left(1-\frac{16z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{4}{15}\sqrt{z}\left(16z+15\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.ad18.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-64z^2-60z+9\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\left(3-16z\right)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\left(9-16z\right)zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad19.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{9\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-64z^2+60z+9\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(16z+3\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(16z+9\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad1a.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, -\frac{1}{4}; z\right) = \left(1-\frac{16z}{3}\right)\cosh\left(2\sqrt{z}\right)-\frac{16}{3}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ad1b.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, -\frac{1}{4}; -z\right) = \left(\frac{16z}{3}+1\right)\cos\left(2\sqrt{z}\right)+\frac{16}{3}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ad1c.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{1}{4}; z\right) = \frac{\sqrt{2}\left(\left(36z+3\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(8z+3\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+12zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ad1d.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{1}{4}; -z\right) = \frac{\sqrt{2}\left(\left(3-36z\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(8z-3\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+12zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ad1e.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{3}{4}; z\right) = \cosh\left(2\sqrt{z}\right) + \frac{4}{3}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ad1f.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{3}{4}; -z\right) = \cos\left(2\sqrt{z}\right) - \frac{4}{3}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ad1g.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{5}{4}; z\right) = \frac{\sqrt{2}\left((4z+3)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ad1h.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{5}{4}; -z\right) = \frac{\sqrt{2}\left((3-4z)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 8\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ad1i.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{7}{4}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.ad1j.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{7}{4}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.ad1k.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{9}{4}; z\right) = \frac{5\left(6\sqrt{z}\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (16z-3)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{12\sqrt{2}\,z^{3/4}}$$

07.22.03.ad1l.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{9}{4}; -z\right) = -\frac{5\left(-6\sqrt{z}\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (16z+3)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{12\sqrt{2}\,z^{3/4}}$$

07.22.03.ad1m.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{11}{4}; z\right) =$$

$$\frac{1}{512\,z^{7/4}}\left(7e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-16z-20\sqrt{z}+e^{4\sqrt{z}}\left(16z-20\sqrt{z}+15\right)-15\right)+15e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-\right.\right.$$

$$\left.\left.15e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ad1n.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{11}{4}; -z\right) = \frac{7\left(15\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(20\sqrt{z}\cos\left(2\sqrt{z}\right) + (16z-15)\sin\left(2\sqrt{z}\right)\right)\right)}{128\,z^{7/4}}$$

07.22.03.ad1o.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{13}{4}; z\right) =$$
$$\frac{1}{128\sqrt{2}\, z^{7/4}}\left(15\left(2\sqrt{z}\,(32z-21)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3(64z-35)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(32z+105)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad1p.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{13}{4}; -z\right) =$$
$$\frac{1}{128\sqrt{2}\, z^{7/4}}\left(15\left(2\sqrt{z}\,(32z+21)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3(64z+35)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2(105-32z)\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad1q.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{15}{4}; z\right) =$$
$$\frac{1}{32\,768\, z^{11/4}}\left(77\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(256z^{3/2}+768z+1260\sqrt{z}+e^{4\sqrt{z}}\left(256z^{3/2}-768z+1260\sqrt{z}-945\right)+945\right)+\right.\right.$$
$$\left.\left.15\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-63)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 15\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-63)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ad1r.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{15}{4}; -z\right) =$$
$$\frac{1}{8192\, z^{11/4}}\left(77\left(15\sqrt{\pi}\,(16z+63)\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(3(256z-315)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\,(64z-315)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ad1s.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{17}{4}; z\right) = \frac{1}{4096\sqrt{2}\, z^{11/4}}$$
$$\left(195\left(-14\sqrt{z}\,(112z-99)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1024z^2+6384z-3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 126\sqrt{z}\,(16z+55)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad1t.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{17}{4}; -z\right) = \frac{1}{4096\sqrt{2}\, z^{11/4}}$$
$$\left(195\left(14\sqrt{z}\,(112z+99)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1024z^2-6384z-3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 126(55-16z)\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad1u.01

$${}_1F_2\left(\frac{7}{4}; \frac{1}{2}, \frac{19}{4}; z\right) = \frac{1}{4\,194\,304\, z^{15/4}}\left(1155\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-8192z^2-42\,048z^{3/2}-113\,904z-\right.\right.\right.$$
$$\left.\left.180\,180\sqrt{z}+e^{4\sqrt{z}}\left(8192z^2-42\,048z^{3/2}+113\,904z-180\,180\sqrt{z}+135\,135\right)-135\,135\right)+\right.$$
$$\left.15\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-2016z+9009\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 15\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-2016z+9009\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ad1v.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},\frac{19}{4};-z\right)=\frac{1}{1\,048\,576\,z^{15/4}}\left(1155\left(15\sqrt{\pi}\,\left(256z^2+2016z+9009\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\,\left(36\sqrt{z}\,\left(1168z-5005\right)\cos\left(2\sqrt{z}\right)+\left(8192z^2-113\,904z+135\,135\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ad1w.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},\frac{21}{4};z\right)=$$
$$\frac{1}{131\,072\sqrt{2}\,z^{15/4}}\left(3315\left(14\sqrt{z}\,\left(256z^2+4224z-3861\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-63\left(768z^2+3872z-2145\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.18\sqrt{z}\,\left(256z^2+4928z+15\,015\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad1x.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},\frac{21}{4};-z\right)=$$
$$-\frac{1}{131\,072\sqrt{2}\,z^{15/4}}\left(3315\left(14\sqrt{z}\,\left(256z^2-4224z-3861\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-63\left(768z^2-3872z-2145\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.18\sqrt{z}\,\left(256z^2-4928z+15\,015\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad1y.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},\frac{23}{4};z\right)=$$
$$\frac{1}{268\,435\,456\,z^{19/4}}\left(21\,945\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(136\,192z^{5/2}+1\,047\,296z^2+4\,118\,400z^{3/2}+10\,090\,080z+15\,315\,300\sqrt{z}\right.\right.\right.+e^{4\sqrt{z}}$$
$$\left.\left.\left.\left(136\,192z^{5/2}-1\,047\,296z^2+4\,118\,400z^{3/2}-10\,090\,080z+15\,315\,300\sqrt{z}-11\,486\,475\right)+11\,486\,475\right)+\right.$$
$$5e^{2\sqrt{z}}\sqrt{2\pi}\,\left(4096z^3-48\,384z^2+432\,432z-2\,297\,295\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.5e^{2\sqrt{z}}\sqrt{2\pi}\,\left(4096z^3-48\,384z^2+432\,432z-2\,297\,295\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ad1z.01

$${}_1F_2\left(\frac{7}{4};\frac{1}{2},\frac{23}{4};-z\right)=\frac{1}{67\,108\,864\,z^{19/4}}\left(21\,945\left(5\sqrt{\pi}\,\left(4096z^3+48\,384z^2+432\,432z+2\,297\,295\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\right.\right.$$
$$\left.\left.\left(4\sqrt{z}\,\left(34\,048z^2-1\,029\,600z+3\,828\,825\right)\cos\left(2\sqrt{z}\right)+\left(-1\,047\,296z^2+10\,090\,080z-11\,486\,475\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{7}{4}$, $b_{1.} = \frac{3}{2}$

07.22.03.ad20.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{3}{2}, -\frac{23}{4}; z\right) = \frac{1}{4\,542\,615\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(32\,768\,z^4 + 1\,198\,080\,z^3 + 1\,636\,992\,z^2 - 10\,006\,920\,z + 4\,542\,615\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(53\,248\,z^3 + 604\,416\,z^2 - 75\,600\,z - 1\,514\,205\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 8\,z\left(4096\,z^3 + 212\,736\,z^2 + 1\,053\,360\,z - 339\,255\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ad21.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{3}{2}, -\frac{23}{4}; -z\right) = \frac{1}{4\,542\,615\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(32\,768\,z^4 - 1\,198\,080\,z^3 + 1\,636\,992\,z^2 + 10\,006\,920\,z + 4\,542\,615\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(53\,248\,z^3 - 604\,416\,z^2 - 75\,600\,z + 1\,514\,205\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 8\,z\left(4096\,z^3 - 212\,736\,z^2 + 1\,053\,360\,z + 339\,255\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ad22.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{3}{2}, -\frac{21}{4}; z\right) = \frac{1}{1\,253\,070\,\sqrt{z}} \left(4\sqrt{z}\left(4096\,z^3 + 145\,152\,z^2 + 381\,360\,z - 443\,835\right)\cosh\left(2\sqrt{z}\right) - 35\left(4096\,z^3 + 37\,632\,z^2 + 3888\,z - 43\,263\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ad23.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{3}{2}, -\frac{21}{4}; -z\right) = \frac{1}{1\,253\,070\,\sqrt{z}} \left(35\left(4096\,z^3 - 37\,632\,z^2 + 3888\,z + 43\,263\right)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\left(4096\,z^3 - 145\,152\,z^2 + 381\,360\,z + 443\,835\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.ad24.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{3}{2}, -\frac{19}{4}; z\right) = \frac{1}{197\,505\,\sqrt[4]{z}} \left(\sqrt{2}\left(3\left(16\,384\,z^3 + 34\,048\,z^2 - 147\,840\,z + 65\,835\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4096\,z^3 + 82\,176\,z^2 + 13\,104\,z - 197\,505\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 48\,z\left(1280\,z^2 + 8256\,z - 945\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ad25.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{3}{2}, -\frac{19}{4}; -z\right) = \frac{1}{197\,505\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-49\,152\,z^3 + 102\,144\,z^2 + 443\,520\,z + 197\,505\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4096\,z^3 - 82\,176\,z^2 + 13\,104\,z + 197\,505\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 48\,z\left(1280\,z^2 - 8256\,z - 945\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ad26.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{59\,670\sqrt{z}}\left(192\sqrt{z}\left(128z^2+440z-375\right)\cosh\left(2\sqrt{z}\right)-\left(4096z^3+65\,280z^2+22\,320z-65\,835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ad27.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},-\frac{17}{4};-z\right)=\frac{192\sqrt{z}\left(128z^2-440z-375\right)\cos\left(2\sqrt{z}\right)+\left(4096z^3-65\,280z^2+22\,320z+65\,835\right)\sin\left(2\sqrt{z}\right)}{59\,670\sqrt{z}}$$

07.22.03.ad28.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{10\,395\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2048z^3+7680z^2-24\,024z+10\,395\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4352z^2+2208z-10\,395\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.8z\left(256z^2+2784z+225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad29.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{10\,395\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-2048z^3+7680z^2+24\,024z+10\,395\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4352z^2-2208z-10\,395\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.8z\left(256z^2-2784z+225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad2a.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},-\frac{13}{4};z\right)=\frac{4\sqrt{z}\left(256z^2+1440z-855\right)\cosh\left(2\sqrt{z}\right)-15\left(256z^2+160z-231\right)\sinh\left(2\sqrt{z}\right)}{3510\sqrt{z}}$$

07.22.03.ad2b.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},-\frac{13}{4};-z\right)=\frac{4\sqrt{z}\left(256z^2-1440z-855\right)\cos\left(2\sqrt{z}\right)+15\left(-256z^2+160z+231\right)\sin\left(2\sqrt{z}\right)}{3510\sqrt{z}}$$

07.22.03.ad2c.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},-\frac{11}{4};z\right)=\frac{1}{693\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(3\left(256z^2-560z+231\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^2+288z-693\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+48z\left(32z+9\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad2d.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},-\frac{11}{4};-z\right)=\frac{1}{693\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(3\left(256z^2+560z+231\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(256z^2-288z-693\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+48\left(9-32z\right)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad2e.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},-\frac{9}{4};z\right)=\frac{64\sqrt{z}\,(8z-3)\cosh\left(2\sqrt{z}\right)+\left(-256z^2-288z+231\right)\sinh\left(2\sqrt{z}\right)}{270\sqrt{z}}$$

07.22.03.ad2f.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},-\frac{9}{4};-z\right)=\frac{\left(-256z^2+288z+231\right)\sin\left(2\sqrt{z}\right)-64\sqrt{z}\,(8z+3)\cos\left(2\sqrt{z}\right)}{270\sqrt{z}}$$

07.22.03.ad2g.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},-\frac{7}{4};z\right)=$$

$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(128z^2-168z+63\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12(21-16z)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+8z(16z+9)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad2h.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},-\frac{7}{4};-z\right)=$$

$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(128z^2+168z+63\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,(16z+21)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+8(9-16z)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad2i.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},-\frac{5}{4};z\right)=\frac{4\sqrt{z}\,(16z-3)\cosh\left(2\sqrt{z}\right)+3(7-16z)\sinh\left(2\sqrt{z}\right)}{30\sqrt{z}}$$

07.22.03.ad2j.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},-\frac{5}{4};-z\right)=\frac{3(16z+7)\sin\left(2\sqrt{z}\right)-4\sqrt{z}\,(16z+3)\cos\left(2\sqrt{z}\right)}{30\sqrt{z}}$$

07.22.03.ad2k.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},-\frac{3}{4};z\right)=\frac{\sqrt{2}\left((9-32z)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4(9-16z)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+16zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{9\sqrt[4]{z}}$$

07.22.03.ad2l.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},-\frac{3}{4};-z\right)=\frac{\sqrt{2}\left((32z+9)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(16z+9)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+16zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{9\sqrt[4]{z}}$$

07.22.03.ad2m.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},-\frac{1}{4};z\right)=\frac{(3-16z)\sinh\left(2\sqrt{z}\right)}{6\sqrt{z}}$$

07.22.03.ad2n.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},-\frac{1}{4};-z\right)=\frac{(16z+3)\sin\left(2\sqrt{z}\right)}{6\sqrt{z}}$$

07.22.03.ad2o.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},\frac{1}{4};z\right)=\frac{\sqrt{2}\left((8z+3)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+8z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ad2p.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},\frac{1}{4};-z\right)=\frac{\sqrt{2}\left((3-8z)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\;J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+8z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ad2q.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},\frac{3}{4};z\right)=\frac{1}{6}\left(4\cosh\left(2\sqrt{z}\right)+\frac{\sinh\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.ad2r.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},\frac{3}{4};-z\right)=\frac{1}{6}\left(4\cos\left(2\sqrt{z}\right)+\frac{\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.ad2s.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},\frac{5}{4};z\right)=\frac{\sqrt{2}\;I_{\frac{1}{4}}\left(\sqrt{z}\right)\left(3\,I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ad2t.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},\frac{5}{4};-z\right)=\frac{\sqrt{2}\;J_{\frac{1}{4}}\left(\sqrt{z}\right)\left(3\,J_{\frac{1}{4}}\left(\sqrt{z}\right)-4\sqrt{z}\;J_{\frac{5}{4}}\left(\sqrt{z}\right)\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ad2u.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},\frac{7}{4};z\right)=\frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.ad2v.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},\frac{7}{4};-z\right)=\frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.ad2w.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},\frac{9}{4};z\right)=\frac{5\left(2\sqrt{z}\;I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{6\sqrt{2}\;z^{3/4}}$$

07.22.03.ad2x.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},\frac{9}{4};-z\right)=\frac{5\left(2\sqrt{z}\;J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\;J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{6\sqrt{2}\;z^{3/4}}$$

07.22.03.ad2y.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{3}{2}, \frac{11}{4}; z\right) = \frac{1}{256\, z^{7/4}} \left(7\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}-3\right)+4\sqrt{z}+3\right)-3\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+3\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ad2z.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{3}{2}, \frac{11}{4}; -z\right) = -\frac{7\left(8\, z^{3/4}\cos\left(2\sqrt{z}\right)+3\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-6\sqrt[4]{z}\,\sin\left(2\sqrt{z}\right)\right)}{64\, z^{7/4}} $$

07.22.03.ad30.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{3}{2}, \frac{13}{4}; z\right) = \frac{15\left(6\sqrt{z}\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+(32z-15)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)-30\sqrt{z}\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{64\sqrt{2}\, z^{7/4}} $$

07.22.03.ad31.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{3}{2}, \frac{13}{4}; -z\right) = \frac{15\left(-6\sqrt{z}\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+(32z+15)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)-30\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{64\sqrt{2}\, z^{7/4}} $$

07.22.03.ad32.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{3}{2}, \frac{15}{4}; z\right) = \frac{1}{16\,384\, z^{11/4}} \left(77\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(-64z-140\sqrt{z}+e^{4\sqrt{z}}\left(64z-140\sqrt{z}+105\right)-105\right)-3\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-35)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+3\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-35)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ad33.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{3}{2}, \frac{15}{4}; -z\right) = -\frac{77\left(3\sqrt{\pi}\,(16z+35)\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(140\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(64z-105)\sin\left(2\sqrt{z}\right)\right)\right)}{4096\, z^{11/4}} $$

07.22.03.ad34.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{3}{2}, \frac{17}{4}; z\right) = \frac{1}{2048\sqrt{2}\, z^{11/4}} \left(195\left(2\sqrt{z}\,(80z-63)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3(105-208z)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\,(16z+105)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ad35.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{3}{2}, \frac{17}{4}; -z\right) = -\frac{1}{2048\sqrt{2}\, z^{11/4}} \left(195\left(2\sqrt{z}\,(80z+63)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3(208z+105)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)+6(105-16z)\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ad36.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{3}{2}, \frac{19}{4}; z\right) = \frac{1}{2\,097\,152\, z^{15/4}} \left(1155\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(1856\, z^{3/2}+7728z+13\,860\sqrt{z}+e^{4\sqrt{z}}\left(1856\, z^{3/2}-7728z+13\,860\sqrt{z}-10\,395\right)+10\,395\right)-3\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-1120z+3465\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+3\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-1120z+3465\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ad37.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},\frac{19}{4};-z\right)=-\frac{1}{524\,288\,z^{15/4}}\left(1155\right.$$
$$\left.\left(3\sqrt{\pi}\,\left(256\,z^2+1120\,z+3465\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(21\,(368\,z-495)\sin\left(2\sqrt{z}\right)-4\sqrt{z}\,(464\,z-3465)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad38.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},\frac{21}{4};z\right)=$$
$$\frac{1}{65\,536\sqrt{2}\,z^{15/4}}\left(663\left(2\sqrt{z}\,\left(256\,z^2-10\,528\,z+9009\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(9472\,z^2+84\,672\,z-45\,045\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(256\,z^2+11\,424\,z+45\,045\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad39.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},\frac{21}{4};-z\right)=$$
$$-\frac{1}{65\,536\sqrt{2}\,z^{15/4}}\left(663\left(2\sqrt{z}\,\left(256\,z^2+10\,528\,z+9009\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(9472\,z^2-84\,672\,z-45\,045\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(256\,z^2-11\,424\,z+45\,045\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad3a.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},\frac{23}{4};z\right)=$$
$$-\frac{1}{134\,217\,728\,z^{19/4}}\left(21\,945\,e^{-2\sqrt{z}}\,\left(4\sqrt[4]{z}\,\left(1024\,z^{5/2}+32\,512\,z^2+190\,080\,z^{3/2}+554\,400\,z+900\,900\sqrt{z}\,+e^{4\sqrt{z}}\right.\right.\right.$$
$$\left.\left.\left.\left(1024\,z^{5/2}-32\,512\,z^2+190\,080\,z^{3/2}-554\,400\,z+900\,900\sqrt{z}\,-675\,675\right)+675\,675\right)+\right.\right.$$
$$e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3-26\,880\,z^2+166\,320\,z-675\,675\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-$$
$$\left.\left.e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096\,z^3-26\,880\,z^2+166\,320\,z-675\,675\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ad3b.01

$${}_1F_2\left(\frac{7}{4};\frac{3}{2},\frac{23}{4};-z\right)=-\frac{1}{33\,554\,432\,z^{19/4}}\left(21\,945\left(\sqrt{\pi}\,\left(4096\,z^3+26\,880\,z^2+166\,320\,z+675\,675\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(256\,z^2-47\,520\,z+225\,225\right)\cos\left(2\sqrt{z}\right)+\left(-32\,512\,z^2+554\,400\,z-675\,675\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{7}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.ad3c.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},-\frac{23}{4};z\right)=-\frac{1}{1\,514\,205\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(217\,088\,z^3+5\,660\,928\,z^2+27\,438\,768\,z-1\,514\,205\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\left(4096\,z^3+393\,984\,z^2+5\,157\,936\,z+\right.\right.\right.$$
$$\left.\left.\left.15\,898\,365\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(241\,664\,z^3+8\,209\,152\,z^2+64\,950\,480\,z+151\,412\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad3d.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},-\frac{23}{4};-z\right)=\frac{1}{1\,514\,205\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(217\,088\,z^3-5\,660\,928\,z^2+27\,438\,768\,z+1\,514\,205\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(4096\,z^3-393\,984\,z^2+5\,157\,936\,z-\right.\right.\right.$$
$$\left.\left.\left.15\,898\,365\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-241\,664\,z^3+8\,209\,152\,z^2-64\,950\,480\,z+151\,412\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad3e.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},-\frac{21}{4};z\right)=\frac{1}{1\,670\,760\,z^{3/2}}\left(\left(32\,768\,z^4+2\,623\,488\,z^3+29\,312\,640\,z^2+84\,795\,480\,z+40\,883\,535\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.6\sqrt{z}\left(69\,632\,z^3+1\,750\,784\,z^2+9\,816\,240\,z+13\,627\,845\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.ad3f.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},-\frac{21}{4};-z\right)=\frac{1}{1\,670\,760\,z^{3/2}}\left(\left(-32\,768\,z^4+2\,623\,488\,z^3-29\,312\,640\,z^2+84\,795\,480\,z-40\,883\,535\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.6\sqrt{z}\left(69\,632\,z^3-1\,750\,784\,z^2+9\,816\,240\,z-13\,627\,845\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ad3g.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},-\frac{19}{4};z\right)=$$
$$-\frac{1}{65\,835\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096\,z^3+188\,160\,z^2+976\,752\,z-65\,835\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-336\sqrt{z}\left(256\,z^2+4224\,z+13\,215\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(4096\,z^3+255\,744\,z^2+2\,242\,800\,z+5\,221\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad3h.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},-\frac{19}{4};-z\right)=\frac{1}{65\,835\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(4096\,z^3-188\,160\,z^2+976\,752\,z+65\,835\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-336\sqrt{z}\left(256\,z^2-4224\,z+13\,215\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-4096\,z^3+255\,744\,z^2-2\,242\,800\,z+5\,221\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad3i.01

$${}_1F_2\left(\frac{7}{4}; \frac{5}{2}, -\frac{17}{4}; z\right) = \frac{1}{79\,560\, z^{3/2}}\left(\left(77\,824\, z^3 + 1\,079\,040\, z^2 + 3\,160\,080\, z + 1\,514\,205\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4096\, z^3 + 182\,016\, z^2 + 1\,101\,360\, z + 1\,514\,205\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.ad3j.01

$${}_1F_2\left(\frac{7}{4}; \frac{5}{2}, -\frac{17}{4}; -z\right) = \frac{1}{79\,560\, z^{3/2}}\left(\left(77\,824\, z^3 - 1\,079\,040\, z^2 + 3\,160\,080\, z - 1\,514\,205\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4096\, z^3 - 182\,016\, z^2 + 1\,101\,360\, z - 1\,514\,205\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ad3k.01

$${}_1F_2\left(\frac{7}{4}; \frac{5}{2}, -\frac{15}{4}; z\right) = \frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-6912\, z^2 - 40\,992\, z + 3465\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\left(256\, z^2 + 7008\, z + 22\,617\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 3\left(2816\, z^2 + 29\,856\, z + 69\,615\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad3l.01

$${}_1F_2\left(\frac{7}{4}; \frac{5}{2}, -\frac{15}{4}; -z\right) = \frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-6912\, z^2 + 40\,992\, z + 3465\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 8\sqrt{z}\left(256\, z^2 - 7008\, z + 22\,617\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(2816\, z^2 - 29\,856\, z + 69\,615\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad3m.01

$${}_1F_2\left(\frac{7}{4}; \frac{5}{2}, -\frac{13}{4}; z\right) = \frac{1}{4680\, z^{3/2}}\left(\left(2048\, z^3 + 46\,080\, z^2 + 138\,600\, z + 65\,835\right)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(2304\, z^2 + 16\,160\, z + 21\,945\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.ad3n.01

$${}_1F_2\left(\frac{7}{4}; \frac{5}{2}, -\frac{13}{4}; -z\right) = \frac{1}{4680\, z^{3/2}}\left(6\sqrt{z}\left(2304\, z^2 - 16\,160\, z + 21\,945\right)\cos\left(2\sqrt{z}\right) + \left(2048\, z^3 - 46\,080\, z^2 + 138\,600\, z - 65\,835\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ad3o.01

$${}_1F_2\left(\frac{7}{4}; \frac{5}{2}, -\frac{11}{4}; z\right) = -\frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256\, z^2 + 2112\, z - 231\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 80\sqrt{z}\left(32\, z + 111\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(256\, z^2 + 4224\, z + 9945\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad3p.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},-\frac{11}{4};-z\right)=\frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left.\left(\left(-256z^2+2112z+231\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+80\sqrt{z}\,(32z-111)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(256z^2-4224z+9945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad3q.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},-\frac{9}{4};z\right)=\frac{3\left(768z^2+2464z+1155\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(256z^2+2592z+3465\right)\cosh\left(2\sqrt{z}\right)}{360\,z^{3/2}}$$

07.22.03.ad3r.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},-\frac{9}{4};-z\right)=\frac{2\sqrt{z}\,\left(256z^2-2592z+3465\right)\cos\left(2\sqrt{z}\right)-3\left(768z^2-2464z+1155\right)\sin\left(2\sqrt{z}\right)}{360\,z^{3/2}}$$

07.22.03.ad3s.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{21\sqrt[4]{z}}\left(\sqrt{2}\,\left(-3\,(48z-7)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\,(16z+69)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-15\,(16z+39)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad3t.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{21\sqrt[4]{z}}\left(\sqrt{2}\,\left(3\,(48z+7)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\,(16z-69)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+15\,(39-16z)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad3u.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},-\frac{5}{4};z\right)=\frac{\left(128z^2+504z+231\right)\sinh\left(2\sqrt{z}\right)-22\sqrt{z}\,(16z+21)\cosh\left(2\sqrt{z}\right)}{40\,z^{3/2}}$$

07.22.03.ad3v.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},-\frac{5}{4};-z\right)=\frac{\left(-128z^2+504z-231\right)\sin\left(2\sqrt{z}\right)-22\sqrt{z}\,(16z-21)\cos\left(2\sqrt{z}\right)}{40\,z^{3/2}}$$

07.22.03.ad3w.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},-\frac{3}{4};z\right)=\frac{\left((3-16z)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+48\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-(16z+45)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{1}{4}\right)^2}{24\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.ad3x.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},-\frac{3}{4};-z\right)=\frac{\sqrt{2}\,\left((16z+3)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-48\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+(45-16z)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{3\sqrt[4]{z}}$$

07.22.03.ad3y.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},-\frac{1}{4};z\right)=\frac{3\,(16z+7)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,(16z+21)\cosh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.ad3z.01

$${}_1F_2\left(\frac{7}{4}; \frac{5}{2}, -\frac{1}{4}; -z\right) = \frac{3\,(16\,z-7)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,(16\,z-21)\cos\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.ad40.01

$${}_1F_2\left(\frac{7}{4}; \frac{5}{2}, \frac{1}{4}; z\right) = \frac{2\,\Gamma\left(\frac{5}{4}\right)^2 I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\; I_{\frac{5}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{1}{4}\right)^2 I_{\frac{1}{4}}\left(\sqrt{z}\right) - 10\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2 \Gamma\left(\frac{5}{4}\right)^2}{\sqrt{2}\;\sqrt[4]{z}}$$

07.22.03.ad41.01

$${}_1F_2\left(\frac{7}{4}; \frac{5}{2}, \frac{1}{4}; -z\right) = \frac{\sqrt{2}\,\left(J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 8\sqrt{z}\; J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 5\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ad42.01

$${}_1F_2\left(\frac{7}{4}; \frac{5}{2}, \frac{3}{4}; z\right) = \frac{(8\,z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\;\cosh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.ad43.01

$${}_1F_2\left(\frac{7}{4}; \frac{5}{2}, \frac{3}{4}; -z\right) = \frac{6\sqrt{z}\;\cos\left(2\sqrt{z}\right) + (8\,z-3)\sin\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.ad44.01

$${}_1F_2\left(\frac{7}{4}; \frac{5}{2}, \frac{5}{4}; z\right) = \frac{\sqrt{2}\,\left(I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ad45.01

$${}_1F_2\left(\frac{7}{4}; \frac{5}{2}, \frac{5}{4}; -z\right) = \frac{\sqrt{2}\,\left(J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt[4]{z}}$$

07.22.03.ad46.01

$${}_1F_2\left(\frac{7}{4}; \frac{5}{2}, \frac{7}{4}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4\,z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.ad47.01

$${}_1F_2\left(\frac{7}{4}; \frac{5}{2}, \frac{7}{4}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\;\cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.ad48.01

$${}_1F_2\left(\frac{7}{4}; \frac{5}{2}, \frac{9}{4}; z\right) = \frac{5\, I_{\frac{1}{4}}\left(\sqrt{z}\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt{2}\;z^{3/4}}$$

07.22.03.ad49.01

$${}_1F_2\left(\frac{7}{4}; \frac{5}{2}, \frac{9}{4}; -z\right) = \frac{5\, J_{\frac{1}{4}}\left(\sqrt{z}\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{5}{4}\right)^2}{\sqrt{2}\;z^{3/4}}$$

07.22.03.ad4a.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},\frac{11}{4};z\right)=\frac{21\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1+e^{4\sqrt{z}}\right)+3\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-3\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)}{128\,z^{7/4}}$$

07.22.03.ad4b.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},\frac{11}{4};-z\right)=\frac{21\left(3\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\,\sin\left(2\sqrt{z}\right)\right)}{32\,z^{7/4}}$$

07.22.03.ad4c.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},\frac{13}{4};z\right)=\frac{45\left(-2\sqrt{z}\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+5\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+10\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{32\sqrt{2}\,z^{7/4}}$$

07.22.03.ad4d.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},\frac{13}{4};-z\right)=\frac{45\left(2\sqrt{z}\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-5\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+10\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{32\sqrt{2}\,z^{7/4}}$$

07.22.03.ad4e.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},\frac{15}{4};z\right)=\frac{1}{8192\,z^{11/4}}\left(231\,e^{-2\sqrt{z}}\left(28\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}-3\right)+4\sqrt{z}+3\right)+\right.\right.$$
$$\left.\left.3\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-7)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-3\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-7)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ad4f.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},\frac{15}{4};-z\right)=\frac{231\left(56\,z^{3/4}\cos\left(2\sqrt{z}\right)+3\sqrt{\pi}\,(16z+7)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-42\sqrt[4]{z}\,\sin\left(2\sqrt{z}\right)\right)}{2048\,z^{11/4}}$$

07.22.03.ad4g.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},\frac{17}{4};z\right)=$$
$$-\frac{1}{1024\sqrt{2}\,z^{11/4}}\left(585\left(2\sqrt{z}\,(16z-9)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+(45-112z)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\,(45-16z)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad4h.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},\frac{17}{4};-z\right)=$$
$$\frac{1}{1024\sqrt{2}\,z^{11/4}}\left(585\left(2\sqrt{z}\,(16z+9)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-(112z+45)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,(16z+45)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad4i.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},\frac{19}{4};z\right)=$$
$$\frac{1}{1\,048\,576\,z^{15/4}}\left(3465\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(192z^{3/2}-560z-1540\sqrt{z}+e^{4\sqrt{z}}\left(192z^{3/2}+560z-1540\sqrt{z}+1155\right)-1155\right)+\right.$$
$$\left.3\,e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-224z+385\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-3\,e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-224z+385\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ad4j.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},\frac{19}{4};-z\right)=\frac{1}{262\,144\,z^{15/4}}$$
$$\left(3465\left(3\sqrt{\pi}\,\left(256z^2+224z+385\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(4\sqrt{z}\,(48z+385)\cos\left(2\sqrt{z}\right)+35\,(16z-33)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ad4k.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},\frac{21}{4};z\right)=$$
$$-\frac{1}{32\,768\sqrt{2}\,z^{15/4}}\left(1989\left(2\sqrt{z}\,\left(256z^2-1088z+819\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(256z^2-2784z+1365\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(256z^2+384z+4095\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad4l.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},\frac{21}{4};-z\right)=$$
$$\frac{1}{32\,768\sqrt{2}\,z^{15/4}}\left(1989\left(2\sqrt{z}\,\left(256z^2+1088z+819\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(256z^2+2784z+1365\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(256z^2-384z+4095\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad4m.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},\frac{23}{4};z\right)=\frac{1}{67\,108\,864\,z^{19/4}}$$
$$\left(65\,835\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(1024z^{5/2}-256z^2+7040z^{3/2}+36\,960z+69\,300\sqrt{z}\,+e^{4\sqrt{z}}\,\left(1024z^{5/2}+256z^2+7040z^{3/2}-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.36\,960z+69\,300\sqrt{z}\,-51\,975\right)+51\,975\right)+e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096z^3-5376z^2+18\,480z-51\,975\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\,\sqrt{2\pi}\,\left(4096z^3-5376z^2+18\,480z-51\,975\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ad4n.01

$${}_1F_2\left(\frac{7}{4};\frac{5}{2},\frac{23}{4};-z\right)=\frac{1}{16\,777\,216\,z^{19/4}}\left(65\,835\left(\sqrt{\pi}\,\left(4096z^3+5376z^2+18\,480z+51\,975\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(256z^2-1760z+17\,325\right)\cos\left(2\sqrt{z}\right)+\left(256z^2+36\,960z-51\,975\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{7}{4}$, $b_1 = \frac{7}{2}$

07.22.03.ad4o.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{23}{4};z\right)=\frac{1}{605\,682\sqrt{2}\,z^{5/4}}\left(\left(8z\left(4096z^3+661\,248z^2+15\,834\,672z+100\,083\,753\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(102\,400z^3+5\,854\,464z^2+83\,041\,392z+333\,107\,775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(32\,768z^4+6\,236\,160z^3+184\,173\,696z^2+1\,695\,821\,400z+4\,996\,616\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad4p.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{23}{4};-z\right)=\frac{1}{605\,682\sqrt{2}\,z^{5/4}}\left(\left(-8z\left(4096z^3-661\,248z^2+15\,834\,672z-100\,083\,753\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(102\,400z^3-5\,854\,464z^2+83\,041\,392z-333\,107\,775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(32\,768z^4-6\,236\,160z^3+184\,173\,696z^2-1\,695\,821\,400z+4\,996\,616\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad4q.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{1\,336\,608z^{5/2}}\left(2\sqrt{z}\left(32\,768z^4+4\,884\,480z^3+112\,113\,792z^2+763\,159\,320z+1\,267\,389\,585\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.3\left(376\,832z^4+18\,400\,256z^3+226\,121\,280z^2+817\,670\,700z+422\,463\,195\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ad4r.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{1\,336\,608z^{5/2}}\left(2\sqrt{z}\left(32\,768z^4-4\,884\,480z^3+112\,113\,792z^2-763\,159\,320z+1\,267\,389\,585\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.3\left(376\,832z^4-18\,400\,256z^3+226\,121\,280z^2-817\,670\,700z+422\,463\,195\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ad4s.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{19}{4};z\right)=\frac{1}{26\,334\sqrt{2}\,z^{5/4}}$$
$$\left(\left(224z\left(512z^2+16\,080z+108\,387\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4096z^3+446\,208z^2+7\,280\,112z+30\,282\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(126\,976z^3+5\,037\,312z^2+50\,122\,800z+151\,412\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad4t.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{19}{4};-z\right)=\frac{1}{26\,334\sqrt{2}\,z^{5/4}}$$
$$\left(\left(224z\left(512z^2-16\,080z+108\,387\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4096z^3-446\,208z^2+7\,280\,112z-30\,282\,525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-126\,976z^3+5\,037\,312z^2-50\,122\,800z+151\,412\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad4u.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{17}{4};z\right)=\frac{1}{63\,648\,z^{5/2}}\left(6\sqrt{z}\,\left(36\,864\,z^3+1\,110\,784\,z^2+8\,075\,760\,z+13\,627\,845\right)\cosh\left(2\sqrt{z}\right)-\left(16\,384\,z^4+1\,502\,208\,z^3+21\,067\,200\,z^2+78\,738\,660\,z+40\,883\,535\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ad4v.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{17}{4};-z\right)=\frac{1}{63\,648\,z^{5/2}}\left(\left(-16\,384\,z^4+1\,502\,208\,z^3-21\,067\,200\,z^2+78\,738\,660\,z-40\,883\,535\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\,\left(36\,864\,z^3-1\,110\,784\,z^2+8\,075\,760\,z-13\,627\,845\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ad4w.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{15}{4};z\right)=\frac{1}{1386\sqrt{2}\,z^{5/4}}\left(\left(8\,z\left(256\,z^2+14\,112\,z+104\,769\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-60\sqrt{z}\,\left(768\,z^2+15\,904\,z+69\,615\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(2048\,z^3+148\,992\,z^2+1\,670\,760\,z+5\,221\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad4x.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{15}{4};-z\right)=\frac{1}{1386\sqrt{2}\,z^{5/4}}\left(\left(8\,z\left(256\,z^2-14\,112\,z+104\,769\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-60\sqrt{z}\,\left(768\,z^2-15\,904\,z+69\,615\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-2048\,z^3+148\,992\,z^2-1\,670\,760\,z+5\,221\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad4y.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{13}{4};z\right)=\frac{1}{3744\,z^{5/2}}\left(2\sqrt{z}\,\left(2048\,z^3+109\,056\,z^2+877\,800\,z+1\,514\,205\right)\cosh\left(2\sqrt{z}\right)-\left(41\,984\,z^3+739\,200\,z^2+2\,896\,740\,z+1\,514\,205\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ad4z.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{13}{4};-z\right)=\frac{1}{3744\,z^{5/2}}\left(\left(41\,984\,z^3-739\,200\,z^2+2\,896\,740\,z-1\,514\,205\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(2048\,z^3-109\,056\,z^2+877\,800\,z-1\,514\,205\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ad50.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{11}{4};z\right)=-\frac{1}{462\sqrt{2}\,z^{5/4}}\left(5\left(-960\,z\left(4\,z+35\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(256\,z^2+8832\,z+41\,769\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-9\left(512\,z^2+7072\,z+23\,205\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad51.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{11}{4};-z\right)=-\frac{1}{462\sqrt{2}\,z^{5/4}}\left(5\left(960\,z\,(4\,z-35)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\,\left(256\,z^2-8832\,z+41\,769\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-9\left(512\,z^2-7072\,z+23\,205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad52.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{288\,z^{5/2}}\left(30\sqrt{z}\,\left(256\,z^2+2464\,z+4389\right)\cosh\left(2\sqrt{z}\right)-\left(1024\,z^3+29\,568\,z^2+124\,740\,z+65\,835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ad53.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{9}{4};-z\right)=\frac{30\sqrt{z}\,\left(256\,z^2-2464\,z+4389\right)\cos\left(2\sqrt{z}\right)+\left(1024\,z^3-29\,568\,z^2+124\,740\,z-65\,835\right)\sin\left(2\sqrt{z}\right)}{288\,z^{5/2}}$$

07.22.03.ad54.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{42\sqrt{2}\,z^{5/4}}\left(5\left(8\,z\,(16\,z+201)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(368\,z+1989\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(128\,z^2+2808\,z+9945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad55.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{7}{4};-z\right)=\frac{1}{42\sqrt{2}\,z^{5/4}}$$
$$\left(5\left(-8\,z\,(16\,z-201)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(368\,z-1989\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(128\,z^2-2808\,z+9945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad56.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{5}{4};z\right)=\frac{2\sqrt{z}\,\left(128\,z^2+1848\,z+3465\right)\cosh\left(2\sqrt{z}\right)-21\left(64\,z^2+308\,z+165\right)\sinh\left(2\sqrt{z}\right)}{32\,z^{5/2}}$$

07.22.03.ad57.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{5}{4};-z\right)=\frac{2\sqrt{z}\,\left(128\,z^2-1848\,z+3465\right)\cos\left(2\sqrt{z}\right)-21\left(64\,z^2-308\,z+165\right)\sin\left(2\sqrt{z}\right)}{32\,z^{5/2}}$$

07.22.03.ad58.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{3}{4};z\right)=-\frac{5\left(-96\,z\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(16\,z+117\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-9\left(16\,z+65\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{6\sqrt{2}\,z^{5/4}}$$

07.22.03.ad59.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{3}{4};-z\right)=\frac{5\left(96\,z\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(16\,z-117\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+9\left(65-16\,z\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{6\sqrt{2}\,z^{5/4}}$$

07.22.03.ad5a.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{1}{4};z\right)=-\frac{5\left(\left(64z^2+420z+231\right)\sinh\left(2\sqrt{z}\right)-14\sqrt{z}\ (16z+33)\cosh\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.ad5b.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},-\frac{1}{4};-z\right)=-\frac{5\left(14\sqrt{z}\ (16z-33)\cos\left(2\sqrt{z}\right)+\left(64z^2-420z+231\right)\sin\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.ad5c.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},\frac{1}{4};z\right)=\frac{5\left(8zI_{\frac{1}{4}}\left(\sqrt{z}\right)^2-36\sqrt{z}\ I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+(8z+45)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{2\sqrt{2}\ z^{5/4}}$$

07.22.03.ad5d.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},\frac{1}{4};-z\right)=\frac{5\left(8zJ_{\frac{1}{4}}\left(\sqrt{z}\right)^2-36\sqrt{z}\ J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+(45-8z)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{2\sqrt{2}\ z^{5/4}}$$

07.22.03.ad5e.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},\frac{3}{4};z\right)=\frac{5\left(2\sqrt{z}\ (8z+21)\cosh\left(2\sqrt{z}\right)-3(12z+7)\sinh\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.ad5f.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},\frac{3}{4};-z\right)=-\frac{5\left(2\sqrt{z}\ (8z-21)\cos\left(2\sqrt{z}\right)+3(7-12z)\sin\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.ad5g.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},\frac{5}{4};z\right)=\frac{5\left(4\sqrt{z}\ I_{\frac{1}{4}}\left(\sqrt{z}\right)-5I_{\frac{5}{4}}\left(\sqrt{z}\right)\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{5}{4}\right)^2}{2\sqrt{2}\ z^{5/4}}$$

07.22.03.ad5h.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},\frac{5}{4};-z\right)=\frac{5\left(4\sqrt{z}\ J_{\frac{1}{4}}\left(\sqrt{z}\right)-5J_{\frac{5}{4}}\left(\sqrt{z}\right)\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{5}{4}\right)^2}{2\sqrt{2}\ z^{5/4}}$$

07.22.03.ad5i.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},\frac{7}{4};z\right)=\frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\ \cosh\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.ad5j.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},\frac{7}{4};-z\right)=-\frac{15\left(6\sqrt{z}\ \cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)}{32z^{5/2}}$$

07.22.03.ad5k.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},\frac{9}{4};z\right)=\frac{4\sqrt{2}\ I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{9}{4}\right)^2}{z^{5/4}}$$

07.22.03.ad5l.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},\frac{9}{4};-z\right)=\frac{4\sqrt{2}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{9}{4}\right)^2}{z^{5/4}}$$

07.22.03.ad5m.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{64\,z^{5/2}}\left(105\,e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{4\sqrt{z}}-e^{2\sqrt{z}}\,\sqrt{2\pi}\,z^{3/4}\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)+2\,e^{4\sqrt{z}}\,\sqrt{z}+2\sqrt{z}+1\right)\right)$$

07.22.03.ad5n.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},\frac{11}{4};-z\right)=\frac{105\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)+2\sqrt{\pi}\,z^{3/4}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.ad5o.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},\frac{13}{4};z\right)=\frac{9\left(-2\sqrt{z}\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+5\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{9}{4}\right)^2}{\sqrt{2}\,z^{7/4}}$$

07.22.03.ad5p.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},\frac{13}{4};-z\right)=\frac{9\left(2\sqrt{z}\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-5\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{9}{4}\right)^2}{\sqrt{2}\,z^{7/4}}$$

07.22.03.ad5q.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},\frac{15}{4};z\right)=\frac{1}{4096\,z^{11/4}}\left(1155\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}+5\right)+4\sqrt{z}-5\right)+\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z+21)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z+21)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ad5r.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},\frac{15}{4};-z\right)=\frac{1155\left(8\,z^{3/4}\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\,(16z-21)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+10\sqrt[4]{z}\,\sin\left(2\sqrt{z}\right)\right)}{1024\,z^{11/4}}$$

07.22.03.ad5s.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},\frac{17}{4};z\right)=$$
$$-\frac{1}{512\sqrt{2}\,z^{11/4}}\left(975\left(2\sqrt{z}\,(16z+9)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\,(16z+15)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,(16z+45)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad5t.01

$${}_1F_2\left(\frac{7}{4};\frac{7}{2},\frac{17}{4};-z\right)=$$
$$\frac{1}{512\sqrt{2}\,z^{11/4}}\left(975\left(2\sqrt{z}\,(16z-9)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\,(15-16z)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,(16z-45)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad5u.01

$${}_1F_2\left(\frac{7}{4}; \frac{7}{2}, \frac{19}{4}; z\right) =$$
$$\frac{1}{524\,288\, z^{15/4}}\left(17\,325\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(64 z^{3/2} - 16 z + 308\sqrt{z} + e^{4\sqrt{z}}\left(64 z^{3/2} + 16 z + 308\sqrt{z} - 231\right) + 231\right) + \right.\right.$$
$$\left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2 + 672 z - 231\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2 + 672 z - 231\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ad5v.01

$${}_1F_2\left(\frac{7}{4}; \frac{7}{2}, \frac{19}{4}; -z\right) =$$
$$\frac{1}{131\,072\, z^{15/4}}\left(17\,325\left(\sqrt{\pi}\left(256 z^2 - 672 z - 231\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\,(16 z - 77)\cos\left(2\sqrt{z}\right) + (16 z + 231)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ad5w.01

$${}_1F_2\left(\frac{7}{4}; \frac{7}{2}, \frac{21}{4}; z\right) =$$
$$-\frac{1}{16\,384\sqrt{2}\, z^{15/4}}\left(3315\left(2\sqrt{z}\left(256 z^2 + 672 z - 351\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(256 z^2 + 1536 z - 585\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left. 2\sqrt{z}\left(256 z^2 + 864 z - 1755\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad5x.01

$${}_1F_2\left(\frac{7}{4}; \frac{7}{2}, \frac{21}{4}; -z\right) =$$
$$\frac{1}{16\,384\sqrt{2}\, z^{15/4}}\left(3315\left(2\sqrt{z}\left(256 z^2 - 672 z - 351\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-256 z^2 + 1536 z + 585\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 2\sqrt{z}\left(256 z^2 - 864 z - 1755\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad5y.01

$${}_1F_2\left(\frac{7}{4}; \frac{7}{2}, \frac{23}{4}; z\right) = \frac{1}{33\,554\,432\, z^{19/4}}$$
$$\left(109\,725\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024 z^{5/2} - 256 z^2 + 4224 z^{3/2} - 7392 z - 23\,100\sqrt{z} + e^{4\sqrt{z}}\left(1024 z^{5/2} + 256 z^2 + 4224 z^{3/2} + \right.\right.\right.\right.$$
$$\left.\left.\left.\left. 7392 z - 23\,100\sqrt{z} + 17\,325\right) - 17\,325\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 + 16\,128 z^2 - 11\,088 z + 17\,325\right)\right.\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 + 16\,128 z^2 - 11\,088 z + 17\,325\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ad5z.01

$${}_1F_2\left(\frac{7}{4}; \frac{7}{2}, \frac{23}{4}; -z\right) = \frac{1}{8\,388\,608\, z^{19/4}}\left(109\,725\left(\sqrt{\pi}\left(4096 z^3 - 16\,128 z^2 - 11\,088 z - 17\,325\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right.$$
$$\left.\left. 2\sqrt[4]{z}\left(4\sqrt{z}\left(256 z^2 - 1056 z - 5775\right)\cos\left(2\sqrt{z}\right) + \left(256 z^2 - 7392 z + 17\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{7}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.ad60.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},-\frac{23}{4};z\right)=\frac{1}{346\,104\sqrt{2}\,z^{9/4}}\left(\left(-12z\left(126\,976z^3+11\,333\,376z^2+257\,968\,656z+1\,760\,712\,525\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(32\,768z^4+9\,480\,192z^3+432\,678\,528z^2+6\,218\,011\,800z+26\,410\,687\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-3\left(540\,672z^4+55\,223\,296z^3+1\,507\,396\,800z^2+14\,276\,047\,500z+44\,017\,813\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad61.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},-\frac{23}{4};-z\right)=\frac{1}{346\,104\sqrt{2}\,z^{9/4}}\left(\left(-12z\left(126\,976z^3-11\,333\,376z^2+257\,968\,656z-1\,760\,712\,525\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(32\,768z^4-9\,480\,192z^3+432\,678\,528z^2-6\,218\,011\,800z+26\,410\,687\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+3\left(540\,672z^4-55\,223\,296z^3+1\,507\,396\,800z^2-14\,276\,047\,500z+44\,017\,813\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad62.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},-\frac{21}{4};z\right)=\frac{1}{763\,776z^{7/2}}\left(\left(131\,072z^5+32\,661\,504z^4+1\,292\,121\,600z^3+16\,135\,368\,480z^2+60\,834\,700\,080z+31\,684\,739\,625\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(1\,458\,176z^4+120\,523\,776z^3+2\,616\,546\,240z^2+18\,588\,380\,580z+31\,684\,739\,625\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.ad63.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},-\frac{21}{4};-z\right)=\frac{1}{763\,776z^{7/2}}\left(2\sqrt{z}\left(1\,458\,176z^4-120\,523\,776z^3+2\,616\,546\,240z^2-18\,588\,380\,580z+31\,684\,739\,625\right)\cos\left(2\sqrt{z}\right)+\left(131\,072z^5-32\,661\,504z^4+1\,292\,121\,600z^3-16\,135\,368\,480z^2+60\,834\,700\,080z-31\,684\,739\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ad64.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},-\frac{19}{4};z\right)=-\frac{1}{15\,048\sqrt{2}\,z^{9/4}}\left(\left(4z\left(4096z^3+724\,224z^2+19\,604\,016z+142\,760\,475\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(53\,248z^3+3\,373\,312z^2+53\,835\,600z+237\,934\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,384z^4+3\,388\,416z^3+111\,384\,000z^2+1\,124\,779\,500z+3\,569\,011\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad65.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},-\frac{19}{4};-z\right)=\frac{1}{15\,048\sqrt{2}\,z^{9/4}}\left(\left(-4z\left(4096z^3-724\,224z^2+19\,604\,016z-142\,760\,475\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(53\,248z^3-3\,373\,312z^2+53\,835\,600z-237\,934\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,384z^4-3\,388\,416z^3+111\,384\,000z^2-1\,124\,779\,500z+3\,569\,011\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad66.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},-\frac{17}{4};z\right)=$$
$$-\frac{1}{254\,592\,z^{7/2}}\left(7\left(2\sqrt{z}\,\left(16\,384\,z^4+2\,681\,856\,z^3+69\,220\,800\,z^2+521\,751\,780\,z+905\,278\,275\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.3\left(196\,608\,z^4+10\,700\,800\,z^3+147\,671\,040\,z^2+576\,263\,160\,z+301\,759\,425\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad67.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{254\,592\,z^{7/2}}\left(7\left(2\sqrt{z}\,\left(16\,384\,z^4-2\,681\,856\,z^3+69\,220\,800\,z^2-521\,751\,780\,z+905\,278\,275\right)\cos\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.3\left(196\,608\,z^4-10\,700\,800\,z^3+147\,671\,040\,z^2-576\,263\,160\,z+301\,759\,425\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad68.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{792\sqrt{2}\,z^{9/4}}\left(\left(-4\,z\left(15\,104\,z^2+543\,264\,z+4\,326\,075\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(2048\,z^3+248\,832\,z^2+4\,641\,000\,z+21\,630\,375\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-65\left(1024\,z^3+45\,696\,z^2+504\,900\,z+1\,663\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad69.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{792\sqrt{2}\,z^{9/4}}\left(\left(4\,z\left(15\,104\,z^2-543\,264\,z+4\,326\,075\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(2048\,z^3-248\,832\,z^2+4\,641\,000\,z-21\,630\,375\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-65\left(1024\,z^3-45\,696\,z^2+504\,900\,z-1\,663\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad6a.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},-\frac{13}{4};z\right)=\frac{1}{14\,976\,z^{7/2}}\left(7\left(\left(8192\,z^4+844\,800\,z^3+13\,543\,200\,z^2+55\,376\,640\,z+29\,202\,525\right)\sinh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.114\sqrt{z}\,\left(1024\,z^3+35\,200\,z^2+288\,420\,z+512\,325\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad6b.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},-\frac{13}{4};-z\right)=-\frac{1}{14\,976\,z^{7/2}}\left(7\left(114\sqrt{z}\,\left(1024\,z^3-35\,200\,z^2+288\,420\,z-512\,325\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(8192\,z^4-844\,800\,z^3+13\,543\,200\,z^2-55\,376\,640\,z+29\,202\,525\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad6c.01

$${}_1F_2\left(\frac{7}{4}; \frac{9}{2}, -\frac{11}{4}; z\right) =$$
$$-\frac{1}{264\sqrt{2}\, z^{9/4}}\left(5\left(4z\left(256z^2+16\,416z+149\,175\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,\left(2048z^2+49\,504z+248\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.\left(1024z^3+84\,864z^2+1\,074\,060z+3\,729\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad6d.01

$${}_1F_2\left(\frac{7}{4}; \frac{9}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{264\sqrt{2}\, z^{9/4}}\left(5\left(4z\left(256z^2-16\,416z+149\,175\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,\left(2048z^2-49\,504z+248\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.\left(-1024z^3+84\,864z^2-1\,074\,060z+3\,729\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad6e.01

$${}_1F_2\left(\frac{7}{4}; \frac{9}{2}, -\frac{9}{4}; z\right) = -\frac{1}{1152\, z^{7/2}}\left(7\left(2\sqrt{z}\,\left(1024z^3+63\,360z^2+589\,380z+1\,081\,575\right)\cosh\left(2\sqrt{z}\right) - \right.\right.$$
$$\left.\left.11\left(2048z^3+42\,240z^2+184\,680z+98\,325\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad6f.01

$${}_1F_2\left(\frac{7}{4}; \frac{9}{2}, -\frac{9}{4}; -z\right) = -\frac{1}{1152\, z^{7/2}}\left(7\left(2\sqrt{z}\,\left(1024z^3-63\,360z^2+589\,380z-1\,081\,575\right)\cos\left(2\sqrt{z}\right) - \right.\right.$$
$$\left.\left.11\left(2048z^3-42\,240z^2+184\,680z-98\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad6g.01

$${}_1F_2\left(\frac{7}{4}; \frac{9}{2}, -\frac{7}{4}; z\right) = \frac{1}{24\sqrt{2}\, z^{9/4}}\left(5\left(-12z\left(176z+1989\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left.4\sqrt{z}\,\left(128z^2+5304z+29\,835\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 39\left(64z^2+1020z+3825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad6h.01

$${}_1F_2\left(\frac{7}{4}; \frac{9}{2}, -\frac{7}{4}; -z\right) = -\frac{1}{24\sqrt{2}\, z^{9/4}}\left(5\left(12z\left(176z-1989\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left.4\sqrt{z}\,\left(128z^2-5304z+29\,835\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 39\left(64z^2-1020z+3825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad6i.01

$${}_1F_2\left(\frac{7}{4}; \frac{9}{2}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{128\, z^{7/2}}\left(7\left(\left(512z^3+17\,952z^2+87\,120z+47\,025\right)\sinh\left(2\sqrt{z}\right) - 66\sqrt{z}\,\left(64z^2+740z+1425\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad6j.01

$${}_1F_2\left(\frac{7}{4}; \frac{9}{2}, -\frac{5}{4}; -z\right) = \frac{7\left(66\sqrt{z}\,\left(64z^2-740z+1425\right)\cos\left(2\sqrt{z}\right)+\left(512z^3-17\,952z^2+87\,120z-47\,025\right)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.ad6k.01

$${}_1F_2\left(\frac{7}{4}; \frac{9}{2}, -\frac{3}{4}; z\right) = -\frac{1}{24\sqrt{2}\,z^{9/4}}$$
$$\left(5\left(4z\left(112z+1989\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-52\sqrt{z}\,\left(112z+765\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(448z^2+11\,700z+49\,725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad6l.01

$${}_1F_2\left(\frac{7}{4}; \frac{9}{2}, -\frac{3}{4}; -z\right) = -\frac{1}{24\sqrt{2}\,z^{9/4}}$$
$$\left(5\left(4z\left(112z-1989\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-52\sqrt{z}\,\left(112z-765\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-448z^2+11\,700z-49\,725\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad6m.01

$${}_1F_2\left(\frac{7}{4}; \frac{9}{2}, -\frac{1}{4}; z\right) = -\frac{35\left(2\sqrt{z}\,\left(64z^2+1188z+2475\right)\cosh\left(2\sqrt{z}\right)-3\left(256z^2+1496z+825\right)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.ad6n.01

$${}_1F_2\left(\frac{7}{4}; \frac{9}{2}, -\frac{1}{4}; -z\right) = \frac{35\left(2\sqrt{z}\,\left(64z^2-1188z+2475\right)\cos\left(2\sqrt{z}\right)-3\left(256z^2-1496z+825\right)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.ad6o.01

$${}_1F_2\left(\frac{7}{4}; \frac{9}{2}, \frac{1}{4}; z\right) = \frac{5\left(-468z\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(56z+585\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-45\left(12z+65\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{8\sqrt{2}\,z^{9/4}}$$

07.22.03.ad6p.01

$${}_1F_2\left(\frac{7}{4}; \frac{9}{2}, \frac{1}{4}; -z\right) = \frac{5\left(468z\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(56z-585\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+45\left(65-12z\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{8\sqrt{2}\,z^{9/4}}$$

07.22.03.ad6q.01

$${}_1F_2\left(\frac{7}{4}; \frac{9}{2}, \frac{3}{4}; z\right) = \frac{35\left(\left(32z^2+288z+165\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(68z+165\right)\cosh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.ad6r.01

$${}_1F_2\left(\frac{7}{4}; \frac{9}{2}, \frac{3}{4}; -z\right) = -\frac{35\left(2\sqrt{z}\,\left(68z-165\right)\cos\left(2\sqrt{z}\right)+\left(32z^2-288z+165\right)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.ad6s.01

$${}_1F_2\left(\frac{7}{4}; \frac{9}{2}, \frac{5}{4}; z\right) = \frac{180z\,\Gamma\left(\frac{5}{4}\right)^2 I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-576\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{9}{4}\right)^2 I_{\frac{1}{4}}\left(\sqrt{z}\right)+25\left(4z+45\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{5}{4}\right)^2}{8\sqrt{2}\,z^{9/4}}$$

07.22.03.ad6t.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},\frac{5}{4};-z\right)=\frac{-180\,z\,\Gamma\left(\frac{5}{4}\right)^2 J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+576\sqrt{z}\;J_{\frac{5}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{9}{4}\right)^2 J_{\frac{1}{4}}\left(\sqrt{z}\right)+25\,(4\,z-45)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{5}{4}\right)^2}{8\sqrt{2}\;z^{9/4}}$$

07.22.03.ad6u.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},\frac{7}{4};z\right)=\frac{105\left(2\sqrt{z}\;(4\,z+15)\cosh\left(2\sqrt{z}\right)-3\,(8\,z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.ad6v.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},\frac{7}{4};-z\right)=\frac{105\left(2\sqrt{z}\;(4\,z-15)\cos\left(2\sqrt{z}\right)+3\,(5-8\,z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.ad6w.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},\frac{9}{4};z\right)=\frac{\sqrt{2}\left(-4\,z\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+20\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+(4\,z-25)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{9}{4}\right)^2}{z^{9/4}}$$

07.22.03.ad6x.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},\frac{9}{4};-z\right)=\frac{\sqrt{2}\left(4\,z\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-20\sqrt{z}\;J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+(4\,z+25)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{9}{4}\right)^2}{z^{9/4}}$$

07.22.03.ad6y.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},\frac{11}{4};z\right)=$$

$$\frac{1}{256\,z^{7/2}}\left(105\,e^{-2\sqrt{z}}\left(8\,e^{2\sqrt{z}}\;\sqrt{2\,\pi}\;\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{7/4}-8\,e^{2\sqrt{z}}\;\sqrt{2\,\pi}\;\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)z^{7/4}+8\,e^{4\sqrt{z}}\;z^{3/2}+8\,z^{3/2}+16\,e^{4\sqrt{z}}\;z-16\,z-30\,e^{4\sqrt{z}}\;\sqrt{z}\;-30\sqrt{z}\;+15\,e^{4\sqrt{z}}\;-15\right)\right)$$

07.22.03.ad6z.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},\frac{11}{4};-z\right)=\frac{105\left(16\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+2\,(4\,z+15)\cos\left(2\sqrt{z}\right)\sqrt{z}\;+(16\,z-15)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.ad70.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},\frac{13}{4};z\right)=\frac{9\sqrt{2}\left(-2\,z\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+(2\,z+5)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{9}{4}\right)^2}{z^{9/4}}$$

07.22.03.ad71.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},\frac{13}{4};-z\right)=\frac{9\sqrt{2}\left(2\,z\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\sqrt{z}\;J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+(2\,z-5)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{9}{4}\right)^2}{z^{9/4}}$$

07.22.03.ad72.01

$${}_1F_2\left(\frac{7}{4};\frac{9}{2},\frac{15}{4};z\right)=\frac{1}{2048\,z^{7/2}}\left(1155\,e^{-2\sqrt{z}}\left(4\left(4\,z^{3/2}-z+20\sqrt{z}\;+e^{4\sqrt{z}}\;\left(4\,z^{3/2}+z+20\sqrt{z}\;-10\right)+10\right)+e^{2\sqrt{z}}\;\sqrt{2\,\pi}\;z^{3/4}\,(16\,z+49)\operatorname{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-e^{2\sqrt{z}}\;\sqrt{2\,\pi}\;z^{3/4}\,(16\,z+49)\operatorname{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ad73.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{9}{2}, \frac{15}{4}; -z\right) = \frac{1155\left(8\,(z-5)\,\sqrt{z}\,\cos\left(2\sqrt{z}\right) + \sqrt{\pi}\,z^{3/4}\,(16z-49)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\,(z+10)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{7/2}} $$

07.22.03.ad74.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{9}{2}, \frac{17}{4}; z\right) = $$

$$ -\frac{1}{256\sqrt{2}\,z^{11/4}}\left(975\left(2\sqrt{z}\,(16z+63)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\,(16z+105)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,(16z+75)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ad75.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{9}{2}, \frac{17}{4}; -z\right) = $$

$$ \frac{1}{256\sqrt{2}\,z^{11/4}}\left(975\left(2\sqrt{z}\,(16z-63)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\,(105-16z)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(16z-75)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ad76.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{9}{2}, \frac{19}{4}; z\right) = $$

$$ \frac{1}{262\,144\,z^{15/4}}\left(17\,325\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(64z^{3/2} - 16z + 404\sqrt{z} + e^{4\sqrt{z}}\left(64z^{3/2} + 16z + 404\sqrt{z} + 337\right) - 337\right) + \right. $$

$$ \left. e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 + 1568z + 1617\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 + 1568z + 1617\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ad77.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{9}{2}, \frac{19}{4}; -z\right) = \frac{1}{65\,536\,z^{15/4}} $$

$$ \left(17\,325\left(\sqrt{\pi}\left(256z^2 - 1568z + 1617\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\,(16z-101)\cos\left(2\sqrt{z}\right) + (16z-337)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.ad78.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{9}{2}, \frac{21}{4}; z\right) = $$

$$ -\frac{1}{8192\sqrt{2}\,z^{15/4}}\left(3315\left(2\sqrt{z}\,\left(256z^2 + 1792z + 819\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(256z^2 + 2016z + 1365\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) - \right. \right. $$

$$ \left. \left. 2\sqrt{z}\,\left(256z^2 + 1984z + 4095\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ad79.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{9}{2}, \frac{21}{4}; -z\right) = $$

$$ \frac{1}{8192\sqrt{2}\,z^{15/4}}\left(3315\left(2\sqrt{z}\,\left(256z^2 - 1792z + 819\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(256z^2 - 2016z + 1365\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right. \right. $$

$$ \left. \left. 2\sqrt{z}\,\left(256z^2 - 1984z + 4095\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ad7a.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{9}{2}, \frac{23}{4}; z\right) = \frac{1}{16\,777\,216\, z^{19/4}} \left(109\,725\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(1024 z^{5/2} - 256 z^2 + 9600 z^{3/2} - 2592 z + 32\,340\sqrt{z} + e^{4\sqrt{z}}\left(1024 z^{5/2} + 256 z^2 + 9600 z^{3/2} + 2592 z + 32\,340\sqrt{z} - 24\,255\right) + 24\,255\right) + e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 + 37\,632 z^2 + 77\,616 z - 24\,255\right) \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\left(4096 z^3 + 37\,632 z^2 + 77\,616 z - 24\,255\right) \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ad7b.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) = \frac{1}{4\,194\,304\, z^{19/4}} \left(109\,725\left(\sqrt{\pi}\left(4096 z^3 - 37\,632 z^2 + 77\,616 z + 24\,255\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(256 z^2 - 2400 z + 8085\right)\cos\left(2\sqrt{z}\right) + \left(256 z^2 - 2592 z - 24\,255\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{7}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.ad7c.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{153\,824\sqrt{2}\, z^{13/4}} \left(\left(4 z\left(32\,768 z^4 + 13\,854\,720 z^3 + 931\,531\,392 z^2 + 20\,061\,451\,800 z + 137\,815\,771\,275\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1\,949\,696 z^4 + 288\,402\,432 z^3 + 11\,479\,406\,400 z^2 + 161\,558\,712\,900 z + 689\,078\,856\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(131\,072 z^5 + 61\,366\,272 z^4 + 4\,638\,144\,000 z^3 + 118\,730\,570\,400 z^2 + 1\,114\,050\,834\,000 z + 3\,445\,394\,281\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ad7d.01

$$ {}_1F_2\left(\frac{7}{4}; \frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{153\,824\sqrt{2}\, z^{13/4}} \left(\left(4 z\left(32\,768 z^4 - 13\,854\,720 z^3 + 931\,531\,392 z^2 - 20\,061\,451\,800 z + 137\,815\,771\,275\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1\,949\,696 z^4 - 288\,402\,432 z^3 + 11\,479\,406\,400 z^2 - 161\,558\,712\,900 z + 689\,078\,856\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-131\,072 z^5 + 61\,366\,272 z^4 - 4\,638\,144\,000 z^3 + 118\,730\,570\,400 z^2 - 1\,114\,050\,834\,000 z + 3\,445\,394\,281\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ad7e.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{339\,456\, z^{9/2}}\left(2\sqrt{z}\,\left(131\,072\, z^5 + 50\,847\,744\, z^4 + 3\,171\,571\,200\, z^3 + 65\,136\,143\,520\, z^2 + 460\,868\,940\,000\, z + 786\,357\,628\,875\right)\right.$$
$$\cosh\left(2\sqrt{z}\right) - 3\left(2\,424\,832\, z^5 + 313\,241\,600\, z^4 + 10\,889\,061\,120\, z^3 +\right.$$
$$\left.\left.133\,344\,746\,640\, z^2 + 503\,115\,259\,500\, z + 262\,119\,209\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ad7f.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, -\frac{21}{4}; -z\right) =$$
$$\frac{1}{339\,456\, z^{9/2}}\left(3\left(2\,424\,832\, z^5 - 313\,241\,600\, z^4 + 10\,889\,061\,120\, z^3 - 133\,344\,746\,640\, z^2 + 503\,115\,259\,500\, z - 262\,119\,209\,625\right)\right.$$
$$\sin\left(2\sqrt{z}\right) - 2\sqrt{z}$$
$$\left.\left(131\,072\, z^5 - 50\,847\,744\, z^4 + 3\,171\,571\,200\, z^3 - 65\,136\,143\,520\, z^2 + 460\,868\,940\,000\, z - 786\,357\,628\,875\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ad7g.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, -\frac{19}{4}; z\right) = \frac{1}{6688\sqrt{2}\, z^{13/4}}\left(\left(12\, z\left(65\,536\, z^3 + 6\,298\,368\, z^2 + 153\,816\,000\, z + 1\,120\,453\,425\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 -\right.$$
$$4\sqrt{z}\,\left(16\,384\, z^4 + 5\,059\,584\, z^3 + 248\,472\,000\, z^2 + 3\,801\,177\,900\, z + 16\,806\,801\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.51\left(16\,384\, z^4 + 1\,792\,000\, z^3 + 52\,478\,400\, z^2 + 519\,129\,000\, z + 1\,647\,725\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad7h.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, -\frac{19}{4}; -z\right) = \frac{1}{6688\sqrt{2}\, z^{13/4}}\left(\left(-12\, z\left(65\,536\, z^3 - 6\,298\,368\, z^2 + 153\,816\,000\, z - 1\,120\,453\,425\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 -\right.$$
$$4\sqrt{z}\,\left(16\,384\, z^4 - 5\,059\,584\, z^3 + 248\,472\,000\, z^2 - 3\,801\,177\,900\, z + 16\,806\,801\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.51\left(16\,384\, z^4 - 1\,792\,000\, z^3 + 52\,478\,400\, z^2 - 519\,129\,000\, z + 1\,647\,725\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad7i.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, -\frac{17}{4}; z\right) =$$
$$-\frac{1}{113\,152\, z^{9/2}}\left(7\left(\left(65\,536\, z^5 + 17\,510\,400\, z^4 + 746\,745\,600\, z^3 + 9\,902\,664\,720\, z^2 + 38\,515\,475\,700\, z + 20\,163\,016\,125\right)\right.\right.$$
$$\left.\left.\sinh\left(2\sqrt{z}\right) - 46\sqrt{z}\,\left(32\,768\, z^4 + 2\,918\,400\, z^3 + 67\,962\,240\, z^2 + 505\,715\,400\, z + 876\,652\,875\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad7j.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{113\,152\, z^{9/2}}\left(7\left(46\sqrt{z}\,\left(32\,768\, z^4 - 2\,918\,400\, z^3 + 67\,962\,240\, z^2 - 505\,715\,400\, z + 876\,652\,875\right)\cos\left(2\sqrt{z}\right) +\right.\right.$$
$$\left.\left.\left(65\,536\, z^5 - 17\,510\,400\, z^4 + 746\,745\,600\, z^3 - 9\,902\,664\,720\, z^2 + 38\,515\,475\,700\, z - 20\,163\,016\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad7k.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},-\frac{15}{4};z\right)=\frac{1}{352\sqrt{2}\,z^{13/4}}\left(\left(4z\left(2048z^3+393\,216z^2+11\,536\,200z+90\,847\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(27\,648z^3+1\,904\,000z^2+32\,685\,900z+151\,412\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(8192z^4+1\,827\,840z^3+65\,239\,200z^2+692\,172\,000z+2\,271\,189\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad7l.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},-\frac{15}{4};-z\right)=\frac{1}{352\sqrt{2}\,z^{13/4}}\left(\left(-4z\left(2048z^3-393\,216z^2+11\,536\,200z-90\,847\,575\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(27\,648z^3-1\,904\,000z^2+32\,685\,900z-151\,412\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(8192z^4-1\,827\,840z^3+65\,239\,200z^2-692\,172\,000z+2\,271\,189\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad7m.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{6656\,z^{9/2}}\left(7\left(2\sqrt{z}\left(8192z^4+1\,459\,200z^3+40\,903\,200z^2+325\,652\,400z+576\,086\,175\right)\cosh\left(2\sqrt{z}\right)-15\right.\right.$$
$$\left.\left.\left(20\,480z^4+1\,216\,000z^3+18\,018\,384z^2+72\,917\,820z+38\,405\,745\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad7n.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{6656\,z^{9/2}}\left(7\left(2\sqrt{z}\left(8192z^4-1\,459\,200z^3+40\,903\,200z^2-325\,652\,400z+576\,086\,175\right)\cos\left(2\sqrt{z}\right)-15\right.\right.$$
$$\left.\left.\left(20\,480z^4-1\,216\,000z^3+18\,018\,384z^2-72\,917\,820z+38\,405\,745\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad7o.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},-\frac{11}{4};z\right)=-\frac{1}{3872\sqrt{2}\,z^{13/4}}$$
$$\left(15\left(-4z\left(87\,296z^2+3\,447\,600z+30\,282\,525\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(11\,264z^3+1\,507\,968z^2+30\,696\,900z+151\,412\,625\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-17\left(22\,528z^3+1\,110\,720z^2+12\,987\,000z+44\,533\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad7p.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},-\frac{11}{4};-z\right)=\frac{1}{3872\sqrt{2}\,z^{13/4}}$$
$$\left(15\left(4z\left(87\,296z^2-3\,447\,600z+30\,282\,525\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(11\,264z^3-1\,507\,968z^2+30\,696\,900z-151\,412\,625\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+17\left(-22\,528z^3+1\,110\,720z^2-12\,987\,000z+44\,533\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad7q.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},-\frac{9}{4};z\right)=-\frac{1}{512\,z^{9/2}}\left(7\left(\left(4096\,z^4+468\,480\,z^3+8\,194\,320\,z^2+35\,003\,700\,z+18\,583\,425\right)\sinh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.30\sqrt{z}\,\left(2048\,z^3+77\,824\,z^2+681\,720\,z+1\,238\,895\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad7r.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},-\frac{9}{4};-z\right)=-\frac{1}{512\,z^{9/2}}\left(7\left(30\sqrt{z}\,\left(2048\,z^3-77\,824\,z^2+681\,720\,z-1\,238\,895\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096\,z^4-468\,480\,z^3+8\,194\,320\,z^2-35\,003\,700\,z+18\,583\,425\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad7s.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{352\sqrt{2}\,z^{13/4}}\left(15\left(4\,z\left(1408\,z^2+100\,776\,z+1\,044\,225\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-204\sqrt{z}\,\left(704\,z^2+18\,980\,z+102\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(5632\,z^3+530\,400\,z^2+7\,160\,400\,z+26\,105\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad7t.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{352\sqrt{2}\,z^{13/4}}\left(15\left(4\,z\left(1408\,z^2-100\,776\,z+1\,044\,225\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-204\sqrt{z}\,\left(704\,z^2-18\,980\,z+102\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-5632\,z^3+530\,400\,z^2-7\,160\,400\,z+26\,105\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad7u.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},-\frac{5}{4};z\right)=\frac{1}{512\,z^{9/2}}\left(63\left(2\sqrt{z}\,\left(512\,z^3+36\,000\,z^2+364\,800\,z+688\,275\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(12\,032\,z^3+277\,680\,z^2+1\,282\,500\,z+688\,275\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad7v.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},-\frac{5}{4};-z\right)=-\frac{1}{512\,z^{9/2}}\left(63\left(2\sqrt{z}\,\left(512\,z^3-36\,000\,z^2+364\,800\,z-688\,275\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-12\,032\,z^3+277\,680\,z^2-1\,282\,500\,z+688\,275\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad7w.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},-\frac{3}{4};z\right)=$$
$$-\frac{1}{352\sqrt{2}\,z^{13/4}}\left(15\left(-2652\,z\,(32\,z+441)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(4928\,z^2+236\,028\,z+1\,461\,915\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.39\left(2752\,z^2+46\,920\,z+187\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad7x.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, -\frac{3}{4}; -z\right) =$$
$$-\frac{1}{352\sqrt{2}\, z^{13/4}}\left(15\left(2652 z (32 z-441) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(4928 z^2-236\,028 z+1\,461\,915\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left. 39\left(2752 z^2-46\,920 z+187\,425\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad7y.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, -\frac{1}{4}; z\right) =$$
$$-\frac{1}{512 z^{9/2}}\left(315\left(\left(256 z^3+10\,512 z^2+54\,900 z+29\,925\right)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(384 z^2+5000 z+9975\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad7z.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{512 z^{9/2}}\left(315\left(6\sqrt{z}\,\left(384 z^2-5000 z+9975\right)\cos\left(2\sqrt{z}\right) + \left(256 z^3-10\,512 z^2+54\,900 z-29\,925\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad80.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, \frac{1}{4}; z\right) = \frac{1}{352\sqrt{2}\, z^{13/4}}$$
$$\left(45\left(52 z (40 z+1071) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 52\sqrt{z}\,\left(676 z+5355\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(2848 z^2+74\,880 z+348\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad81.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, \frac{1}{4}; -z\right) = -\frac{1}{352\sqrt{2}\, z^{13/4}}\left(45\left(52 z (40 z-1071) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$\left.\left. 52\sqrt{z}\,\left(676 z-5355\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-2848 z^2+74\,880 z-348\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad82.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, \frac{3}{4}; z\right) = \frac{315\left(2\sqrt{z}\,\left(32 z^2+720 z+1575\right)\cosh\left(2\sqrt{z}\right) - 3\left(144 z^2+940 z+525\right)\sinh\left(2\sqrt{z}\right)\right)}{512 z^{9/2}}$$

07.22.03.ad83.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, \frac{3}{4}; -z\right) = \frac{315\left(2\sqrt{z}\,\left(32 z^2-720 z+1575\right)\cos\left(2\sqrt{z}\right) - 3\left(144 z^2-940 z+525\right)\sin\left(2\sqrt{z}\right)\right)}{512 z^{9/2}}$$

07.22.03.ad84.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{352\sqrt{2}\, z^{13/4}}$$
$$\left(45\left(4 z (16 z-819) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(284 z+4095\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - \left(64 z^2+3240 z+20\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad85.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},\frac{5}{4};-z\right)=-\frac{1}{352\sqrt{2}\,z^{13/4}}$$
$$\left(45\left(4z(16z+819)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(284z-4095)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(64z^2-3240z+20\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad86.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},\frac{7}{4};z\right)=\frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.ad87.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},\frac{7}{4};-z\right)=\frac{945\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.ad88.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},\frac{9}{4};z\right)=$$
$$-\frac{1}{352\sqrt{2}\,z^{13/4}}\left(225\left(4z(8z-63)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12(105-4z)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\left(32z^2+80z+1575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad89.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},\frac{9}{4};-z\right)=$$
$$\frac{1}{352\sqrt{2}\,z^{13/4}}\left(225\left(4z(8z+63)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,(4z+105)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(32z^2-80z+1575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad8a.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},\frac{11}{4};z\right)=\frac{1}{11\,264\,z^{9/2}}$$
$$\left(945\,e^{-2\sqrt{z}}\left(64\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}-64\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{11/4}+64\,e^{4\sqrt{z}}\,z^{5/2}+64\,z^{5/2}+16\,e^{4\sqrt{z}}\right.\right.$$
$$\left.\left.z^2-16z^2+320\,e^{4\sqrt{z}}\,z^{3/2}+320\,z^{3/2}-1140\,e^{4\sqrt{z}}\,z+1140z+1470\,e^{4\sqrt{z}}\sqrt{z}+1470\sqrt{z}-735\,e^{4\sqrt{z}}+735\right)\right)$$

07.22.03.ad8b.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{5632\,z^{9/2}}\left(945\left(128\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{11/4}+2\left(32z^2-160z+735\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(16z^2+1140z-735\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad8c.01

$${}_1F_2\left(\frac{7}{4};\frac{11}{2},\frac{13}{4};z\right)=$$
$$-\frac{1}{352\sqrt{2}\,z^{13/4}}\left(2025\left(4z(4z+7)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(6z+35)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-16z^2-40z+175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad8d.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, \frac{13}{4}; -z\right) =$$
$$\frac{1}{352\sqrt{2}\, z^{13/4}}\left(2025\left(4z(4z-7)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(6z-35)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(16z^2-40z-175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad8e.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, \frac{15}{4}; z\right) = \frac{1}{1024\, z^{9/2}}$$
$$\left(945\, e^{-2\sqrt{z}}\left(16\, e^{4\sqrt{z}}\, z^{5/2} + 16\, z^{5/2} + 4\, e^{4\sqrt{z}}\, z^2 - 4z^2 + e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z+77)\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{7/4} - e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z+77)\right.\right.$$
$$\left.\left.\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{7/4} + 80\, e^{4\sqrt{z}}\, z^{3/2} + 80\, z^{3/2} + 100\, e^{4\sqrt{z}}\, z - 100z - 210\, e^{4\sqrt{z}}\,\sqrt{z} - 210\sqrt{z} + 105\, e^{4\sqrt{z}} - 105\right)\right)$$

07.22.03.ad8f.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, \frac{15}{4}; -z\right) =$$
$$\frac{1}{512\, z^{9/2}}\left(945\left(2\sqrt{\pi}\,(16z-77)\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{7/4} + 2\left(8z^2-40z-105\right)\cos\left(2\sqrt{z}\right)\sqrt{z} + \left(4z^2-100z+105\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ad8g.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, \frac{17}{4}; z\right) = -\frac{1}{1408\sqrt{2}\, z^{13/4}}$$
$$\left(8775\left(2z(16z+105)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\sqrt{z}\,(16z+119)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\left(16z^2+117z+210\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad8h.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, \frac{17}{4}; -z\right) = \frac{1}{1408\sqrt{2}\, z^{13/4}}$$
$$\left(8775\left(2z(16z-105)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3(119-16z)\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\left(16z^2-117z+210\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad8i.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, \frac{19}{4}; z\right) = \frac{1}{131\,072\, z^{9/2}}$$
$$\left(14\,175\, e^{-2\sqrt{z}}\left(e^{2\sqrt{z}}\,\sqrt{2\pi}\, z^{3/4}\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)(16z+77)^2 - e^{2\sqrt{z}}\,\sqrt{2\pi}\, z^{3/4}\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)(16z+77)^2 + 4\left(64z^{5/2}-\right.\right.\right.$$
$$\left.\left.\left.16z^2+628z^{3/2}-169z+2240\sqrt{z} + e^{4\sqrt{z}}\left(64z^{5/2}+16z^2+628z^{3/2}+169z+2240\sqrt{z}-1120\right)+1120\right)\right)\right)$$

07.22.03.ad8j.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, \frac{19}{4}; -z\right) = \frac{1}{32\,768\, z^{9/2}}$$
$$\left(14\,175\left(\sqrt{\pi}\, z^{3/4}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)(77-16z)^2 + 2\left(4\sqrt{z}\,\left(16z^2-157z+560\right)\cos\left(2\sqrt{z}\right) + \left(16z^2-169z-1120\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ad8k.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, \frac{21}{4}; z\right) =$$
$$-\frac{1}{45\,056\sqrt{2}\,z^{15/4}}\left(29\,835\left(2\sqrt{z}\left(256z^2+2912z+9009\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(256z^2+3136z+15\,015\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\left(256z^2+3104z+11\,445\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad8l.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, \frac{21}{4}; -z\right) =$$
$$\frac{1}{45\,056\sqrt{2}\,z^{15/4}}\left(29\,835\left(2\sqrt{z}\left(256z^2-2912z+9009\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(256z^2-3136z+15\,015\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(256z^2-3104z+11\,445\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ad8m.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, \frac{23}{4}; z\right) = \frac{1}{8\,388\,608\,z^{19/4}}$$
$$\left(89\,775\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024z^{5/2}-256z^2+14\,976z^{3/2}-3936z+74\,340\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}+256z^2+14\,976z^{3/2}+\right.\right.\right.\right.$$
$$\left.\left.\left.\left.3936z+74\,340\sqrt{z}+51\,765\right)-51\,765\right)+e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+59\,136z^2+284\,592z+266\,805\right)\right.$$
$$\left.\left.\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-e^{2\sqrt{z}}\sqrt{2\pi}\left(4096z^3+59\,136z^2+284\,592z+266\,805\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ad8n.01

$${}_1F_2\left(\frac{7}{4}; \frac{11}{2}, \frac{23}{4}; -z\right) = \frac{1}{2\,097\,152\,z^{19/4}}\left(89\,775\left(\sqrt{\pi}\left(4096z^3-59\,136z^2+284\,592z-266\,805\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\left(4\sqrt{z}\left(256z^2-3744z+18\,585\right)\cos\left(2\sqrt{z}\right)+\left(256z^2-3936z+51\,765\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{9}{4}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = \frac{9}{4}$, $b_{1.} = -\frac{11}{2}$

07.22.03.ad8o.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{78\,700\,804\,875}\left(\left(4\,194\,304z^7+36\,700\,160z^6+147\,947\,520z^5+1\,381\,847\,040z^4+11\,625\,768\,000z^3+64\,091\,412\,000z^2+\right.\right.$$
$$\left.\left.163\,000\,876\,500z+78\,700\,804\,875\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\left(19\,922\,944z^6-27\,525\,120z^5-\right.\right.$$
$$\left.\left.222\,781\,440z^4-2\,075\,673\,600z^3-14\,651\,960\,400z^2-58\,066\,470\,000z-78\,700\,804\,875\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ad8p.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{78\,700\,804\,875}\left(\left(-4\,194\,304\,z^7 + 36\,700\,160\,z^6 - 147\,947\,520\,z^5 + 1\,381\,847\,040\,z^4 - 11\,625\,768\,000\,z^3 + 64\,091\,412\,000\,z^2 - 163\,000\,876\,500\,z + 78\,700\,804\,875\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(19\,922\,944\,z^6 + 27\,525\,120\,z^5 - 222\,781\,440\,z^4 + 2\,075\,673\,600\,z^3 - 14\,651\,960\,400\,z^2 + 58\,066\,470\,000\,z - 78\,700\,804\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ad8q.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{10\,854\,718\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2\,097\,152\,z^7 + 22\,937\,600\,z^6 + 55\,664\,640\,z^5 + 472\,158\,720\,z^4 + 3\,419\,020\,800\,z^3 + 14\,789\,174\,400\,z^2 + 22\,555\,260\,000\,z + 10\,854\,718\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(9\,699\,328\,z^6 - 12\,042\,240\,z^5 - 88\,888\,320\,z^4 - 739\,333\,440\,z^3 - 4\,463\,877\,600\,z^2 - 13\,871\,484\,900\,z - 10\,854\,718\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(524\,288\,z^6 + 3\,440\,640\,z^5 + 17\,049\,600\,z^4 + 144\,754\,560\,z^3 + 1\,085\,600\,880\,z^2 + 5\,187\,709\,800\,z + 10\,854\,718\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ad8r.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{21}{4}; -z\right) =$$
$$-\frac{1}{10\,854\,718\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2\,097\,152\,z^7 - 22\,937\,600\,z^6 + 55\,664\,640\,z^5 - 472\,158\,720\,z^4 + 3\,419\,020\,800\,z^3 - 14\,789\,174\,400\,z^2 + 22\,555\,260\,000\,z - 10\,854\,718\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(9\,699\,328\,z^6 + 12\,042\,240\,z^5 - 88\,888\,320\,z^4 + 739\,333\,440\,z^3 - 4\,463\,877\,600\,z^2 + 13\,871\,484\,900\,z - 10\,854\,718\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(524\,288\,z^6 - 3\,440\,640\,z^5 + 17\,049\,600\,z^4 - 144\,754\,560\,z^3 + 1\,085\,600\,880\,z^2 - 5\,187\,709\,800\,z + 10\,854\,718\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ad8s.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{19}{4}; z\right) = \frac{1}{3\,421\,774\,125}$$
$$\left(-35\left(262\,144\,z^6 - 344\,064\,z^5 - 2\,184\,192\,z^4 - 16\,044\,480\,z^3 - 82\,827\,360\,z^2 - 203\,949\,900\,z - 97\,764\,975\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(524\,288\,z^6 + 3\,440\,640\,z^5 + 13\,977\,600\,z^4 + 105\,840\,000\,z^3 + 681\,080\,400\,z^2 + 2\,575\,881\,000\,z + 3\,421\,774\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ad8t.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{19}{4}; -z\right) = \frac{1}{3\,421\,774\,125} \left(2\sqrt{z}\,\left(524\,288 z^6 - 3\,440\,640 z^5 + 13\,977\,600 z^4 - 105\,840\,000 z^3 + 681\,080\,400 z^2 - 2\,575\,881\,000 z + 3\,421\,774\,125\right) \sin\left(2\sqrt{z}\right) - 35\left(262\,144 z^6 + 344\,064 z^5 - 2\,184\,192 z^4 + 16\,044\,480 z^3 - 82\,827\,360 z^2 + 203\,949\,900 z - 97\,764\,975\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.ad8u.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{17}{4}; z\right) = -\frac{1}{516\,891\,375\sqrt{2}} \left(\sqrt[4]{z}\,\left(\left(4\,456\,448 z^6 - 5\,898\,240 z^5 - 28\,431\,360 z^4 - 178\,963\,200 z^3 - 725\,306\,400 z^2 - 1\,083\,537\,000 z - 516\,891\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(262\,144 z^6 + 1\,196\,032 z^5 + 6\,220\,800 z^4 + 41\,250\,240 z^3 + 226\,044\,000 z^2 + 670\,023\,900 z + 516\,891\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1\,048\,576 z^5 - 1\,536\,000 z^4 - 8\,893\,440 z^3 - 57\,592\,080 z^2 - 256\,510\,800 z - 516\,891\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ad8v.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{17}{4}; -z\right) = \frac{1}{516\,891\,375\sqrt{2}} \left(\sqrt[4]{z}\,\left(\left(-4\,456\,448 z^6 - 5\,898\,240 z^5 + 28\,431\,360 z^4 - 178\,963\,200 z^3 + 725\,306\,400 z^2 - 1\,083\,537\,000 z + 516\,891\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(262\,144 z^6 - 1\,196\,032 z^5 + 6\,220\,800 z^4 - 41\,250\,240 z^3 + 226\,044\,000 z^2 - 670\,023\,900 z + 516\,891\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1\,048\,576 z^5 + 1\,536\,000 z^4 - 8\,893\,440 z^3 + 57\,592\,080 z^2 - 256\,510\,800 z + 516\,891\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ad8w.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{15}{4}; z\right) = \frac{1}{180\,093\,375} \left(\left(262\,144 z^6 + 245\,760 z^5 + 6\,220\,800 z^4 + 34\,862\,400 z^3 + 161\,935\,200 z^2 + 379\,833\,300 z + 180\,093\,375\right)\cosh\left(2\sqrt{z}\right) + 30\sqrt{z}\,\left(65\,536 z^5 - 102\,400 z^4 - 481\,536 z^3 - 2\,646\,000 z^2 - 9\,313\,920 z - 12\,006\,225\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ad8x.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{15}{4}; -z\right) = \frac{1}{180\,093\,375} \left(\left(262\,144 z^6 - 245\,760 z^5 + 6\,220\,800 z^4 - 34\,862\,400 z^3 + 161\,935\,200 z^2 - 379\,833\,300 z + 180\,093\,375\right)\cos\left(2\sqrt{z}\right) + 30\sqrt{z}\,\left(65\,536 z^5 + 102\,400 z^4 - 481\,536 z^3 + 2\,646\,000 z^2 - 9\,313\,920 z + 12\,006\,225\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ad8y.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{13}{4}; z\right) = \frac{1}{30\,405\,375\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(131\,072 z^6 - 81\,920 z^5 + 2\,880\,000 z^4 + 12\,326\,400 z^3 + 44\,755\,200 z^2 + 64\,638\,000 z + 30\,405\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$12\sqrt{z}\left(147\,456 z^5 - 235\,520 z^4 - 1\,064\,640 z^3 - 4\,888\,800 z^2 - 13\,437\,900 z - 10\,135\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(32\,768 z^5 - 122\,880 z^4 + 835\,200 z^3 + 4\,037\,040 z^2 + 15\,989\,400 z + 30\,405\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ad8z.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{13}{4}; -z\right) = \frac{1}{30\,405\,375\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(131\,072 z^6 + 81\,920 z^5 + 2\,880\,000 z^4 - 12\,326\,400 z^3 + 44\,755\,200 z^2 - 64\,638\,000 z + 30\,405\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$12\sqrt{z}\left(147\,456 z^5 + 235\,520 z^4 - 1\,064\,640 z^3 + 4\,888\,800 z^2 - 13\,437\,900 z + 10\,135\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4 z\left(32\,768 z^5 + 122\,880 z^4 + 835\,200 z^3 - 4\,037\,040 z^2 + 15\,989\,400 z - 30\,405\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ad90.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{12\,006\,225}\left(\left(-376\,832 z^5 + 460\,800 z^4 + 3\,193\,920 z^3 + 11\,944\,800 z^2 + 25\,798\,500 z + 12\,006\,225\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left.2\sqrt{z}\left(32\,768 z^5 - 204\,800 z^4 + 835\,200 z^3 + 3\,160\,080 z^2 + 9\,790\,200 z + 12\,006\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ad91.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{12\,006\,225}\left(\left(376\,832 z^5 + 460\,800 z^4 - 3\,193\,920 z^3 + 11\,944\,800 z^2 - 25\,798\,500 z + 12\,006\,225\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left.2\sqrt{z}\left(32\,768 z^5 + 204\,800 z^4 + 835\,200 z^3 - 3\,160\,080 z^2 + 9\,790\,200 z - 12\,006\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ad92.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{9}{4}; z\right) =$$
$$-\frac{1}{2\,338\,875\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(32\,768 z^5 - 27\,648 z^4 - 288\,000 z^3 - 756\,000 z^2 - 1\,020\,600 z - 467\,775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(16\,384 z^5 - 153\,600 z^4 + 411\,840 z^3 + 1\,360\,800 z^2 + 3\,231\,900 z + 2\,338\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.36 z\left(4096 z^4 + 1280 z^3 - 48\,720 z^2 - 151\,200 z - 259\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ad93.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{2\,338\,875\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(32\,768 z^5 + 27\,648 z^4 - 288\,000 z^3 + 756\,000 z^2 - 1\,020\,600 z + 467\,775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(16\,384 z^5 + 153\,600 z^4 + 411\,840 z^3 - 1\,360\,800 z^2 + 3\,231\,900 z - 2\,338\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.36 z\left(4096 z^4 - 1280 z^3 - 48\,720 z^2 + 151\,200 z - 259\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ad94.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{7}{4}; z\right) = \frac{1}{1\,091\,475}\left(\left(16\,384 z^5 - 202\,752 z^4 + 313\,920 z^3 + 1\,360\,800 z^2 + 2\,438\,100 z + 1\,091\,475\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(28\,672 z^4 + 69\,120 z^3 - 438\,480 z^2 - 982\,800 z - 1\,091\,475\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ad95.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{7}{4}; -z\right) = \frac{1}{1\,091\,475}\left(2\sqrt{z}\left(-28\,672 z^4 + 69\,120 z^3 + 438\,480 z^2 - 982\,800 z + 1\,091\,475\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$\left.\left(16\,384 z^5 + 202\,752 z^4 + 313\,920 z^3 - 1\,360\,800 z^2 + 2\,438\,100 z - 1\,091\,475\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ad96.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{259\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192 z^5 - 110\,080 z^4 + 102\,400 z^3 + 604\,800 z^2 + 604\,800 z + 259\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\right.\right.$$
$$\sqrt{z}\left(9216 z^4 + 79\,040 z^3 - 218\,400 z^2 - 396\,900 z - 259\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(2048 z^4 - 29\,312 z^3 - 1680 z^2 + 189\,000 z + 259\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ad97.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{5}{4}; -z\right) =$$
$$-\frac{1}{259\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192 z^5 + 110\,080 z^4 + 102\,400 z^3 - 604\,800 z^2 + 604\,800 z - 259\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(9216 z^4 - 79\,040 z^3 - 218\,400 z^2 + 396\,900 z - 259\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4 z\left(2048 z^4 + 29\,312 z^3 - 1680 z^2 - 189\,000 z + 259\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ad98.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{3}{4}; z\right) = \left(-\frac{1024 z^4}{51\,975} - \frac{3008 z^3}{3465} + \frac{32 z^2}{33} + \frac{28 z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) -$$
$$\frac{2\sqrt{z}\left(2048 z^4 - 28\,800 z^3 - 45\,360 z^2 + 189\,000 z + 155\,925\right)\sinh\left(2\sqrt{z}\right)}{155\,925}$$

07.22.03.ad99.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{3}{4}; -z\right) = \left(-\frac{1024\,z^4}{51\,975} + \frac{3008\,z^3}{3465} + \frac{32\,z^2}{33} - \frac{28\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(2048\,z^4 + 28\,800\,z^3 - 45\,360\,z^2 - 189\,000\,z + 155\,925\right)\sin\left(2\sqrt{z}\right)}{155\,925}$$

07.22.03.ad9a.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{1}{4}; z\right) = \frac{1}{51\,975\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024\,z^4 - 83\,200\,z^3 + 32\,400\,z^2 + 189\,000\,z + 51\,975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(1024\,z^4 - 12\,352\,z^3 - 60\,000\,z^2 + 87\,750\,z + 51\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(512\,z^3 - 23\,664\,z^2 - 13\,500\,z + 51\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ad9b.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) = \frac{1}{51\,975\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024\,z^4 + 83\,200\,z^3 + 32\,400\,z^2 - 189\,000\,z + 51\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(1024\,z^4 + 12\,352\,z^3 - 60\,000\,z^2 - 87\,750\,z + 51\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-512\,z^3 - 23\,664\,z^2 + 13\,500\,z + 51\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ad9c.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) = \left(\frac{1024\,z^4}{51\,975} - \frac{1472\,z^3}{10\,395} - \frac{32\,z^2}{15} + \frac{4\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(-256\,z^3 + 5040\,z^2 + 10\,080\,z - 10\,395\right)\sinh\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.ad9d.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) = \left(\frac{1024\,z^4}{51\,975} + \frac{1472\,z^3}{10\,395} - \frac{32\,z^2}{15} - \frac{4\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(-256\,z^3 - 5040\,z^2 + 10\,080\,z + 10\,395\right)\sin\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.ad9e.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) = \frac{1}{207\,900\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(1024\,z^4 - 512\,z^3 - 136\,080\,z^2 - 57\,645\,z + 103\,950\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\,\left(-17\,408\,z^3 + 172\,032\,z^2 + 887\,760\,z - 205\,065\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\,z\left(1024\,z^3 + 1920\,z^2 - 155\,952\,z - 210\,735\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ad9f.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{3}{4}; -z\right) =$$
$$\frac{1}{207\,900\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(1024z^4+512z^3-136\,080z^2+57\,645z+103\,950\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-17\,408z^3-172\,032z^2+\right.\right.\right.$$
$$\left.\left.\left.887\,760z+205\,065\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(-1024z^3+1920z^2+155\,952z-210\,735\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ad9g.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) = \left(-\frac{64z^3}{2079}+\frac{32z^2}{495}+\frac{92z}{55}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(128z^3+1680z^2-17\,640z-51\,975\right)\sinh\left(2\sqrt{z}\right)}{51\,975}$$

07.22.03.ad9h.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) = \left(\frac{64z^3}{2079}+\frac{32z^2}{495}-\frac{92z}{55}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(128z^3-1680z^2-17\,640z+51\,975\right)\sin\left(2\sqrt{z}\right)}{51\,975}$$

07.22.03.ad9i.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{7}{4}; z\right) = \frac{1}{2\,217\,600\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(-65\,536z^3-311\,040z^2+2\,276\,640z+2\,849\,175\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(32\,768z^4+966\,656z^3-933\,120z^2-17\,781\,120z-\right.\right.\right.$$
$$\left.\left.\left.5\,221\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-69\,632z^3-450\,816z^2+2\,207\,520z+5\,221\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ad9j.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{7}{4}; -z\right) = \frac{1}{2\,217\,600\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(65\,536z^3-311\,040z^2-2\,276\,640z+2\,849\,175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(32\,768z^4-966\,656z^3-933\,120z^2+17\,781\,120z-\right.\right.\right.$$
$$\left.\left.\left.5\,221\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-69\,632z^3+450\,816z^2+2\,207\,520z-5\,221\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ad9k.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{9}{4}; z\right) = \left(\frac{64z^3}{10\,395}+\frac{32z^2}{99}+\frac{20z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{495}\sqrt{z}\left(16z^2+240z+495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ad9l.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{9}{4}; -z\right) = \left(-\frac{64z^3}{10\,395}+\frac{32z^2}{99}-\frac{20z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\left(16z^2-240z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.ad9m.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{11}{4}; z\right) = \frac{1}{10\,137\,600\sqrt{2}\, z^{5/4}}\left(\left(2\sqrt{z}\left(65\,536 z^4 + 5\,058\,560 z^3 + 56\,367\,360 z^2 + 192\,034\,800 z + 151\,412\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(1\,114\,112 z^4 + 28\,610\,560 z^3 + 182\,396\,160 z^2 + 417\,690\,000 z + 151\,412\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(65\,536 z^4 + 5\,492\,736 z^3 + 68\,647\,680 z^2 + 284\,029\,200 z + 454\,237\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ad9n.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{11}{4}; -z\right) = \frac{1}{10\,137\,600\sqrt{2}\, z^{5/4}}\left(\left(-2\sqrt{z}\left(65\,536 z^4 - 5\,058\,560 z^3 + 56\,367\,360 z^2 - 192\,034\,800 z + 151\,412\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(1\,114\,112 z^4 - 28\,610\,560 z^3 + 182\,396\,160 z^2 - 417\,690\,000 z + 151\,412\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(65\,536 z^4 - 5\,492\,736 z^3 + 68\,647\,680 z^2 - 284\,029\,200 z + 454\,237\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ad9o.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) = \frac{1}{151\,388\,160 z^{9/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-262\,144 z^{9/2} - 3\,997\,696 z^4 - 30\,752\,768 z^{7/2} - 156\,610\,560 z^3 - 586\,398\,720 z^{5/2} - 1\,697\,752\,320 z^2 - 3\,862\,520\,640 z^{3/2} - 6\,759\,411\,120 z - 8\,449\,263\,900\sqrt{z} + e^{4\sqrt{z}}\left(262\,144 z^{9/2} - 3\,997\,696 z^4 + 30\,752\,768 z^{7/2} - 156\,610\,560 z^3 + 586\,398\,720 z^{5/2} - 1\,697\,752\,320 z^2 + 3\,862\,520\,640 z^{3/2} - 6\,759\,411\,120 z + 8\,449\,263\,900\sqrt{z} - 6\,336\,947\,925\right) - 6\,336\,947\,925\right) + 6\,336\,947\,925 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 6\,336\,947\,925 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ad9p.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) = \frac{1}{37\,847\,040 z^{9/4}}\left(6\,336\,947\,925\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(3\,997\,696 z^4 - 156\,610\,560 z^3 + 1\,697\,752\,320 z^2 - 6\,759\,411\,120 z + 6\,336\,947\,925\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(65\,536 z^4 - 7\,688\,192 z^3 + 146\,599\,680 z^2 - 965\,630\,160 z + 2\,112\,315\,975\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.ad9q.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) =$$
$$\frac{1}{29\,491\,200\sqrt{2}\,z^{9/4}}\left(\left(-10\sqrt{z}\,\left(1\,835\,008\,z^4+97\,124\,352\,z^3+1\,453\,317\,120\,z^2+7\,752\,326\,400\,z+6\,995\,263\,275\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(2\,097\,152\,z^5+336\,199\,680\,z^4+9\,088\,081\,920\,z^3+86\,077\,555\,200\,z^2+276\,176\,628\,000\,z+104\,928\,949\,125\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.18\sqrt{z}\,\left(1\,048\,576\,z^4+58\,900\,480\,z^3+950\,476\,800\,z^2+5\,814\,244\,800\,z+11\,658\,772\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ad9r.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) =$$
$$\frac{1}{29\,491\,200\sqrt{2}\,z^{9/4}}\left(\left(-10\sqrt{z}\,\left(1\,835\,008\,z^4-97\,124\,352\,z^3+1\,453\,317\,120\,z^2-7\,752\,326\,400\,z+6\,995\,263\,275\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-2\,097\,152\,z^5+336\,199\,680\,z^4-9\,088\,081\,920\,z^3+86\,077\,555\,200\,z^2-276\,176\,628\,000\,z+104\,928\,949\,125\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.18\sqrt{z}\,\left(1\,048\,576\,z^4-58\,900\,480\,z^3+950\,476\,800\,z^2-5\,814\,244\,800\,z+11\,658\,772\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ad9s.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) =$$
$$\frac{1}{9\,688\,842\,240\,z^{13/4}}\left(13\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(4\,194\,304\,z^5+85\,983\,232\,z^{9/2}+900\,464\,640\,z^4+6\,332\,743\,680\,z^{7/2}+\right.\right.\right.$$
$$33\,130\,168\,320\,z^3+134\,837\,084\,160\,z^{5/2}+432\,602\,311\,680\,z^2+1\,081\,505\,779\,200\,z^{3/2}+2\,027\,823\,336\,000\,z+$$
$$2\,661\,518\,128\,500\sqrt{z}+e^{4\sqrt{z}}\left(4\,194\,304\,z^5-85\,983\,232\,z^{9/2}+900\,464\,640\,z^4-6\,332\,743\,680\,z^{7/2}+\right.$$
$$33\,130\,168\,320\,z^3-134\,837\,084\,160\,z^{5/2}+432\,602\,311\,680\,z^2-1\,081\,505\,779\,200\,z^{3/2}+$$
$$\left.2\,027\,823\,336\,000\,z-2\,661\,518\,128\,500\sqrt{z}+1\,996\,138\,596\,375\right)+1\,996\,138\,596\,375\Big)+$$
$$\left.\left.6\,336\,947\,925\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-315)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+6\,336\,947\,925\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-315)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ad9t.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) =$$
$$\frac{1}{2\,422\,210\,560\,z^{13/4}}\left(13\left(6\,336\,947\,925\sqrt{\pi}\,(16z+315)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(\left(4\,194\,304\,z^5-900\,464\,640\,z^4+\right.\right.\right.\right.$$
$$\left.33\,130\,168\,320\,z^3-432\,602\,311\,680\,z^2+2\,027\,823\,336\,000\,z-1\,996\,138\,596\,375\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}$$
$$\left.\left.\left.\left(21\,495\,808\,z^4-1\,583\,185\,920\,z^3+33\,709\,271\,040\,z^2-270\,376\,444\,800\,z+665\,379\,532\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ad9u.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) = \frac{1}{62\,914\,560\sqrt{2}\, z^{13/4}}$$
$$\left(\left(2\sqrt{z}\left(4\,194\,304 z^5 + 1\,135\,083\,520 z^4 + 52\,805\,550\,080 z^3 + 868\,260\,556\,800 z^2 + 5\,143\,184\,046\,000 z + 4\,745\,120\,254\,875\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(390\,070\,272 z^5 + 37\,106\,483\,200 z^4 + 1\,024\,613\,990\,400 z^3 + 10\,791\,238\,348\,800 z^2 + \right.$$
$$\left.37\,121\,530\,446\,000 z + 14\,235\,360\,764\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4\,194\,304 z^5 + 1\,184\,890\,880 z^4 + \right.$$
$$\left.\left.\left.57\,759\,744\,000 z^3 + 1\,012\,970\,649\,600 z^2 + 6\,752\,760\,814\,800 z + 14\,235\,360\,764\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ad9v.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) = \frac{1}{62\,914\,560\sqrt{2}\, z^{13/4}}$$
$$\left(\left(2\sqrt{z}\left(4\,194\,304 z^5 - 1\,135\,083\,520 z^4 + 52\,805\,550\,080 z^3 - 868\,260\,556\,800 z^2 + 5\,143\,184\,046\,000 z - 4\,745\,120\,254\,875\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-390\,070\,272 z^5 + 37\,106\,483\,200 z^4 - 1\,024\,613\,990\,400 z^3 + 10\,791\,238\,348\,800 z^2 - \right.$$
$$\left.37\,121\,530\,446\,000 z + 14\,235\,360\,764\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-4\,194\,304 z^5 + 1\,184\,890\,880 z^4 - \right.$$
$$\left.\left.\left.57\,759\,744\,000 z^3 + 1\,012\,970\,649\,600 z^2 - 6\,752\,760\,814\,800 z + 14\,235\,360\,764\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ad9w.01

$${}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) =$$
$$\frac{1}{1\,240\,171\,806\,720 z^{17/4}}\left(221 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-134\,217\,728 z^{11/2} - 3\,523\,215\,360 z^5 - 47\,311\,749\,120 z^{9/2} - 427\,378\,606\,080 z^4 - \right.\right.\right.$$
$$2\,876\,524\,462\,080 z^{7/2} - 15\,101\,753\,425\,920 z^3 - 62\,923\,972\,608\,000 z^{5/2} - 207\,649\,109\,606\,400 z^2 -$$
$$531\,695\,278\,699\,200 z^{3/2} - 1\,015\,635\,317\,835\,600 z - 1\,349\,389\,691\,149\,500\sqrt{z} +$$
$$e^{4\sqrt{z}}\left(134\,217\,728 z^{11/2} - 3\,523\,215\,360 z^5 + 47\,311\,749\,120 z^{9/2} - 427\,378\,606\,080 z^4 + 2\,876\,524\,462\,080 z^{7/2} - \right.$$
$$\left.15\,101\,753\,425\,920 z^3 + 62\,923\,972\,608\,000 z^{5/2} - 207\,649\,109\,606\,400 z^2 + 531\,695\,278\,699\,200 z^{3/2} - \right.$$
$$\left.1\,015\,635\,317\,835\,600 z + 1\,349\,389\,691\,149\,500\sqrt{z} - 1\,012\,042\,268\,362\,125\right) - 1\,012\,042\,268\,362\,125\Big) +$$
$$6\,336\,947\,925 e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2 - 10\,080 z + 159\,705\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 6\,336\,947\,925 e^{2\sqrt{z}}$$
$$\left.\left.\sqrt{2\pi}\left(256 z^2 - 10\,080 z + 159\,705\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ad9x.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) = \frac{1}{310\,042\,951\,680\, z^{17/4}} \left(221\left(6\,336\,947\,925\sqrt{\pi}\left(256 z^2 + 10\,080 z + 159\,705\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(15\left(234\,881\,024 z^5 - 28\,491\,907\,072 z^4 + 1\,006\,783\,561\,728 z^3 - 13\,843\,273\,973\,760 z^2 + 67\,709\,021\,189\,040 z - 67\,469\,484\,557\,475\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(33\,554\,432 z^5 - 11\,827\,937\,280 z^4 + 719\,131\,115\,520 z^3 - 15\,730\,993\,152\,000 z^2 + 132\,923\,819\,674\,800 z - 337\,347\,422\,787\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.ad9y.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) = \frac{1}{2\,013\,265\,920\sqrt{2}\, z^{17/4}} \left(19\left(-2\sqrt{z}\left(973\,078\,528 z^5 + 143\,796\,469\,760 z^4 + 6\,174\,297\,292\,800 z^3 + 103\,268\,739\,974\,400 z^2 + 629\,067\,370\,932\,000 z + 583\,649\,791\,349\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(134\,217\,728 z^6 + 58\,703\,478\,784 z^5 + 4\,421\,910\,528\,000 z^4 + 120\,398\,797\,209\,600 z^3 + 1\,300\,538\,029\,190\,400 z^2 + 4\,555\,315\,444\,680\,000 z + 1\,750\,949\,374\,048\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(989\,855\,744 z^5 + 151\,388\,160\,000 z^4 + 6\,767\,979\,724\,800 z^3 + 120\,494\,409\,235\,200 z^2 + 819\,956\,780\,042\,400 z + 1\,750\,949\,374\,048\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ad9z.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) = \frac{1}{2\,013\,265\,920\sqrt{2}\, z^{17/4}} \left(19\left(2\sqrt{z}\left(973\,078\,528 z^5 - 143\,796\,469\,760 z^4 + 6\,174\,297\,292\,800 z^3 - 103\,268\,739\,974\,400 z^2 + 629\,067\,370\,932\,000 z - 583\,649\,791\,349\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(134\,217\,728 z^6 - 58\,703\,478\,784 z^5 + 4\,421\,910\,528\,000 z^4 - 120\,398\,797\,209\,600 z^3 + 1\,300\,538\,029\,190\,400 z^2 - 4\,555\,315\,444\,680\,000 z + 1\,750\,949\,374\,048\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-989\,855\,744 z^5 + 151\,388\,160\,000 z^4 - 6\,767\,979\,724\,800 z^3 + 120\,494\,409\,235\,200 z^2 - 819\,956\,780\,042\,400 z + 1\,750\,949\,374\,048\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{9}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.ada0.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) = \frac{1}{7\,154\,618\,625} $$
$$ \left(\left(-17\,825\,792\,z^6 + 27\,525\,120\,z^5 + 162\,570\,240\,z^4 + 1\,181\,537\,280\,z^3 + 6\,074\,838\,000\,z^2 + 14\,931\,378\,000\,z + 7\,154\,618\,625\right)\right. $$
$$ \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(1\,048\,576\,z^6 + 4\,718\,592\,z^5 + 30\,105\,600\,z^4 + \right. $$
$$ \left.\left. 223\,534\,080\,z^3 + 1\,429\,520\,400\,z^2 + 5\,391\,886\,500\,z + 7\,154\,618\,625\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ada1.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{23}{4}; -z\right) = \frac{1}{7\,154\,618\,625} $$
$$ \left(\left(-17\,825\,792\,z^6 - 27\,525\,120\,z^5 + 162\,570\,240\,z^4 - 1\,181\,537\,280\,z^3 + 6\,074\,838\,000\,z^2 - 14\,931\,378\,000\,z + 7\,154\,618\,625\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(1\,048\,576\,z^6 - 4\,718\,592\,z^5 + 30\,105\,600\,z^4 - \right. $$
$$ \left.\left. 223\,534\,080\,z^3 + 1\,429\,520\,400\,z^2 - 5\,391\,886\,500\,z + 7\,154\,618\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ada2.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{21}{4}; z\right) = -\frac{1}{986\,792\,625\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\,\left(5\left(1\,835\,008\,z^6 - 1\,916\,928\,z^5 - 10\,681\,344\,z^4 - 67\,953\,600\,z^3 - 276\,475\,680\,z^2 - 413\,513\,100\,z - 197\,358\,525\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(524\,288\,z^6 + 3\,440\,640\,z^5 + 11\,520\,000\,z^4 + 77\,984\,640\,z^3 + \right. $$
$$ \left. 430\,045\,200\,z^2 + 1\,278\,131\,400\,z + 986\,792\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 12\,z\left(720\,896\,z^5 - 921\,600\,z^4 - 5\,564\,160\,z^3 - 36\,419\,760\,z^2 - 162\,899\,100\,z - 328\,930\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ada3.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{1}{986\,792\,625\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\,\left(-5\left(1\,835\,008\,z^6 + 1\,916\,928\,z^5 - 10\,681\,344\,z^4 + 67\,953\,600\,z^3 - 276\,475\,680\,z^2 + 413\,513\,100\,z - 197\,358\,525\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(524\,288\,z^6 - 3\,440\,640\,z^5 + 11\,520\,000\,z^4 - 77\,984\,640\,z^3 + \right. $$
$$ \left. 430\,045\,200\,z^2 - 1\,278\,131\,400\,z + 986\,792\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 12\,z\left(720\,896\,z^5 + 921\,600\,z^4 - 5\,564\,160\,z^3 + 36\,419\,760\,z^2 - 162\,899\,100\,z + 328\,930\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ada4.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{19}{4}; z\right) = \left(\frac{524\,288\,z^6}{311\,070\,375} + \frac{32\,768\,z^5}{2\,962\,575} + \frac{2048\,z^4}{65\,835} + \frac{2944\,z^3}{15\,675} + \frac{592\,z^2}{665} + \frac{40\,z}{19} + 1\right)\cosh\left(2\sqrt{z}\right) + $$
$$ \frac{1}{103\,690\,125}\left(2\sqrt{z}\,\left(720\,896\,z^5 - 716\,800\,z^4 - 3\,951\,360\,z^3 - 22\,453\,200\,z^2 - 80\,041\,500\,z - 103\,690\,125\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ada5.01

$${}_1F_2\left(\frac{9}{4};-\frac{9}{2},-\frac{19}{4};-z\right)=\left(\frac{524\,288\,z^6}{311\,070\,375}-\frac{32\,768\,z^5}{2\,962\,575}+\frac{2048\,z^4}{65\,835}-\frac{2944\,z^3}{15\,675}+\frac{592\,z^2}{665}-\frac{40\,z}{19}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{1}{103\,690\,125}\left(2\sqrt{z}\left(720\,896\,z^5+716\,800\,z^4-3\,951\,360\,z^3+22\,453\,200\,z^2-80\,041\,500\,z+103\,690\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ada6.01

$${}_1F_2\left(\frac{9}{4};-\frac{9}{2},-\frac{17}{4};z\right)=\frac{1}{46\,990\,125\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(262\,144\,z^6+2\,211\,840\,z^5+3\,456\,000\,z^4+18\,158\,400\,z^3+68\,234\,400\,z^2+99\,508\,500\,z+46\,990\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(1\,048\,576\,z^5-921\,600\,z^4-4\,515\,840\,z^3-22\,042\,800\,z^2-61\,916\,400\,z-46\,990\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(65\,536\,z^5+307\,200\,z^4+1\,094\,400\,z^3+5\,924\,880\,z^2+24\,324\,300\,z+46\,990\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ada7.01

$${}_1F_2\left(\frac{9}{4};-\frac{9}{2},-\frac{17}{4};-z\right)=\frac{1}{46\,990\,125\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(262\,144\,z^6-2\,211\,840\,z^5+3\,456\,000\,z^4-18\,158\,400\,z^3+68\,234\,400\,z^2-99\,508\,500\,z+46\,990\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(1\,048\,576\,z^5+921\,600\,z^4-4\,515\,840\,z^3+22\,042\,800\,z^2-61\,916\,400\,z+46\,990\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4\,z\left(65\,536\,z^5-307\,200\,z^4+1\,094\,400\,z^3-5\,924\,880\,z^2+24\,324\,300\,z-46\,990\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ada8.01

$${}_1F_2\left(\frac{9}{4};-\frac{9}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{16\,372\,125}\left(15\left(-65\,536\,z^5+61\,440\,z^4+251\,136\,z^3+1\,043\,280\,z^2+2\,328\,480\,z+1\,091\,475\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(65\,536\,z^5+307\,200\,z^4+864\,000\,z^3+4\,006\,800\,z^2+13\,097\,700\,z+16\,372\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ada9.01

$${}_1F_2\left(\frac{9}{4};-\frac{9}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{16\,372\,125}\left(15\left(65\,536\,z^5+61\,440\,z^4-251\,136\,z^3+1\,043\,280\,z^2-2\,328\,480\,z+1\,091\,475\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(-65\,536\,z^5+307\,200\,z^4-864\,000\,z^3+4\,006\,800\,z^2-13\,097\,700\,z+16\,372\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adaa.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{13}{4}; z\right) = -\frac{1}{2\,764\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(475\,136 z^5 - 460\,800 z^4 - 1\,298\,880 z^3 - 4\,255\,200 z^2 - 5\,953\,500 z - 2\,764\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,768 z^5 + 98\,304 z^4 + 374\,400 z^3 + 1\,458\,000 z^2 + 3\,742\,200 z + 2\,764\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36 z\left(12\,288 z^4 - 12\,800 z^3 - 47\,760 z^2 - 170\,100 z - 307\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adab.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{13}{4}; -z\right) = \frac{1}{2\,764\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(475\,136 z^5 + 460\,800 z^4 - 1\,298\,880 z^3 + 4\,255\,200 z^2 - 5\,953\,500 z + 2\,764\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(32\,768 z^5 - 98\,304 z^4 + 374\,400 z^3 - 1\,458\,000 z^2 + 3\,742\,200 z - 2\,764\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 36 z\left(12\,288 z^4 + 12\,800 z^3 - 47\,760 z^2 + 170\,100 z - 307\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adac.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{11}{4}; z\right) = \left(\frac{32\,768 z^5}{1\,091\,475} + \frac{1664 z^3}{4851} + \frac{1744 z^2}{1617} + \frac{24 z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(20\,480 z^4 - 23\,040 z^3 - 66\,096 z^2 - 185\,220 z - 218\,295\right)\sinh\left(2\sqrt{z}\right)}{218\,295} $$

07.22.03.adad.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{11}{4}; -z\right) = \left(-\frac{32\,768 z^5}{1\,091\,475} - \frac{1664 z^3}{4851} + \frac{1744 z^2}{1617} - \frac{24 z}{11} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(20\,480 z^4 + 23\,040 z^3 - 66\,096 z^2 + 185\,220 z - 218\,295\right)\sin\left(2\sqrt{z}\right)}{218\,295} $$

07.22.03.adae.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{9}{4}; z\right) = \frac{1}{212\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384 z^5 - 20\,480 z^4 + 175\,680 z^3 + 367\,200 z^2 + 472\,500 z + 212\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(45\,056 z^4 - 49\,920 z^3 - 140\,400 z^2 - 302\,400 z - 212\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^4 - 15\,360 z^3 + 49\,680 z^2 + 132\,300 z + 212\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adaf.01

$${}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) =$$
$$-\frac{1}{212\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384 z^5 + 20\,480 z^4 + 175\,680 z^3 - 367\,200 z^2 + 472\,500 z - 212\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(45\,056 z^4 + 49\,920 z^3 - 140\,400 z^2 + 302\,400 z - 212\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left. 4 z\left(4096 z^4 + 15\,360 z^3 + 49\,680 z^2 - 132\,300 z + 212\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adag.01

$${}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) = \left(-\frac{4096 z^4}{11\,025} + \frac{512 z^3}{2205} + \frac{208 z^2}{147} + \frac{16 z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) -$$
$$\frac{2\sqrt{z}\left(4096 z^4 - 23\,040 z^3 + 49\,680 z^2 + 94\,500 z + 99\,225\right)\sinh\left(2\sqrt{z}\right)}{99\,225}$$

07.22.03.adah.01

$${}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) = \frac{1}{99\,225}\left(2\sqrt{z}\left(4096 z^4 + 23\,040 z^3 + 49\,680 z^2 - 94\,500 z + 99\,225\right)\sin\left(2\sqrt{z}\right) -\right.$$
$$\left. 9\left(4096 z^4 + 2560 z^3 - 15\,600 z^2 + 25\,200 z - 11\,025\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.adai.01

$${}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{5}{4}; z\right) =$$
$$-\frac{1}{23\,625\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(3072 z^4 - 448 z^3 - 12\,960 z^2 - 11\,340 z - 4725\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048 z^4 - 16\,000 z^3 + 22\,800 z^2 + \right.\right.$$
$$\left.\left. 37\,800 z + 23\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(3328 z^3 + 4080 z^2 - 18\,900 z - 23\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adaj.01

$${}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{5}{4}; -z\right) =$$
$$\frac{1}{23\,625\sqrt{2}}\left(\sqrt[4]{z}\left(-5\left(3072 z^4 + 448 z^3 - 12\,960 z^2 + 11\,340 z - 4725\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048 z^4 + 16\,000 z^3 + 22\,800 z^2 - \right.\right.$$
$$\left.\left. 37\,800 z + 23\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(3328 z^3 - 4080 z^2 - 18\,900 z + 23\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adak.01

$${}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) =$$
$$\left(\frac{2048 z^4}{14\,175} - \frac{2176 z^3}{1575} + \frac{16 z^2}{21} + \frac{8 z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(256 z^3 + 1040 z^2 - 2100 z - 1575\right)\sinh\left(2\sqrt{z}\right)}{1575}$$

07.22.03.adal.01

$${}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) =$$

$$\left(\frac{2048\,z^4}{14\,175} + \frac{2176\,z^3}{1575} + \frac{16\,z^2}{21} - \frac{8\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(256\,z^3 - 1040\,z^2 - 2100\,z + 1575\right)\sin\left(2\sqrt{z}\right)}{1575}$$

07.22.03.adam.01

$${}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) = \frac{1}{4725\sqrt{2}}$$

$$\left(\sqrt[4]{z}\,\left(\left(1024\,z^4 - 9920\,z^3 + 18\,900\,z + 4725\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(512\,z^3 + 8400\,z^2 - 8100\,z - 4725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(256\,z^3 - 2544\,z^2 - 2700\,z + 4725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adan.01

$${}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) = \frac{1}{4725\sqrt{2}}$$

$$\left(\sqrt[4]{z}\,\left(\left(1024\,z^4 + 9920\,z^3 - 18\,900\,z + 4725\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(512\,z^3 - 8400\,z^2 - 8100\,z + 4725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(256\,z^3 + 2544\,z^2 - 2700\,z - 4725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adao.01

$${}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) = \left(\frac{256\,z^3}{4725} - \frac{272\,z^2}{105} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(-256\,z^3 + 2160\,z^2 + 6300\,z - 4725\right)\sinh\left(2\sqrt{z}\right)}{4725}$$

07.22.03.adap.01

$${}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) = \left(-\frac{256\,z^3}{4725} - \frac{272\,z^2}{105} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(-256\,z^3 - 2160\,z^2 + 6300\,z + 4725\right)\sin\left(2\sqrt{z}\right)}{4725}$$

07.22.03.adaq.01

$${}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) =$$

$$-\frac{1}{9450\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(-896\,z^3 + 12\,960\,z^2 + 7290\,z - 9450\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\,\left(1024\,z^3 - 4992\,z^2 - 45\,360\,z + 7965\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 18\,z\left(-64\,z^2 + 768\,z + 1215\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adar.01

$${}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) =$$

$$-\frac{1}{9450\sqrt{2}}\left(\sqrt[4]{z}\,\left(2\left(448\,z^3 + 6480\,z^2 - 3645\,z - 4725\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\,\left(1024\,z^3 + 4992\,z^2 - 45\,360\,z - 7965\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 18\,z\left(64\,z^2 + 768\,z - 1215\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adas.01

$${}_1F_2\left(\frac{9}{4};-\frac{9}{2},\frac{5}{4};z\right)=\left(-\frac{128\,z^3}{4725}-\frac{16\,z^2}{315}+\frac{8\,z}{5}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{315}\sqrt{z}\left(16\,z^2-84\,z-315\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.adat.01

$${}_1F_2\left(\frac{9}{4};-\frac{9}{2},\frac{5}{4};-z\right)=\left(\frac{128\,z^3}{4725}-\frac{16\,z^2}{315}-\frac{8\,z}{5}+1\right)\cos\left(2\sqrt{z}\right)-\frac{2}{315}\sqrt{z}\left(16\,z^2+84\,z-315\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.adau.01

$${}_1F_2\left(\frac{9}{4};-\frac{9}{2},\frac{7}{4};z\right)=\frac{1}{100\,800\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(-2048\,z^3-20\,736\,z^2+86\,400\,z+120\,015\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(45\,056\,z^3+20\,736\,z^2-721\,440\,z-208\,845\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-2048\,z^3-26\,880\,z^2+74\,304\,z+208\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adav.01

$${}_1F_2\left(\frac{9}{4};-\frac{9}{2},\frac{7}{4};-z\right)=\frac{1}{100\,800\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(2048\,z^3-20\,736\,z^2-86\,400\,z+120\,015\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-45\,056\,z^3+20\,736\,z^2+721\,440\,z-208\,845\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-2048\,z^3+26\,880\,z^2+74\,304\,z-208\,845\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adaw.01

$${}_1F_2\left(\frac{9}{4};-\frac{9}{2},\frac{9}{4};z\right)=\left(\frac{16\,z^2}{63}+\frac{16\,z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{945}\sqrt{z}\left(16\,z^2+420\,z+945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.adax.01

$${}_1F_2\left(\frac{9}{4};-\frac{9}{2},\frac{9}{4};-z\right)=\left(\frac{16\,z^2}{63}-\frac{16\,z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\left(16\,z^2-420\,z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aday.01

$${}_1F_2\left(\frac{9}{4};-\frac{9}{2},\frac{11}{4};z\right)=\frac{1}{460\,800\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(151\,552\,z^3+2\,039\,040\,z^2+6\,754\,320\,z+5\,221\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(65\,536\,z^4+2\,936\,832\,z^3+19\,664\,640\,z^2+43\,439\,760\,z+15\,663\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.6\sqrt{z}\left(53\,248\,z^3+816\,384\,z^2+3\,341\,520\,z+5\,221\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adaz.01

$${}_1F_2\left(\frac{9}{4};-\frac{9}{2},\frac{11}{4};-z\right)=\frac{1}{460\,800\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(151\,552\,z^3-2\,039\,040\,z^2+6\,754\,320\,z-5\,221\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(65\,536\,z^4-2\,936\,832\,z^3+19\,664\,640\,z^2-43\,439\,760\,z+15\,663\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.6\sqrt{z}\left(53\,248\,z^3-816\,384\,z^2+3\,341\,520\,z-5\,221\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adb0.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = \frac{1}{6\,881\,280\, z^{9/4}} \left(e^{-2\sqrt{z}} \left(-4\sqrt[4]{z}\left(65\,536 z^4 + 770\,048 z^{7/2} + 4\,608\,000 z^3 + 18\,416\,640 z^{5/2} + 54\,516\,480 z^2 + 124\,597\,440 z^{3/2} + 218\,045\,520 z + 272\,556\,900\sqrt{z} + e^{4\sqrt{z}}\left(65\,536 z^4 - 770\,048 z^{7/2} + 4\,608\,000 z^3 - 18\,416\,640 z^{5/2} + 54\,516\,480 z^2 - 124\,597\,440 z^{3/2} + 218\,045\,520 z - 272\,556\,900\sqrt{z} + 204\,417\,675\right) + 204\,417\,675\right) + 204\,417\,675\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 204\,417\,675\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adb1.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = \frac{1}{1\,720\,320\, z^{9/4}} \left(204\,417\,675\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(65\,536 z^4 - 4\,608\,000 z^3 + 54\,516\,480 z^2 - 218\,045\,520 z + 204\,417\,675\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(-192\,512 z^3 + 4\,604\,160 z^2 - 31\,149\,360 z + 68\,139\,225\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.adb2.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, \frac{15}{4}; z\right) = -\frac{1}{14\,745\,600\sqrt{2}\, z^{9/4}} \left(11\left(2\sqrt{z}\left(131\,072 z^4 + 12\,738\,560 z^3 + 213\,649\,920 z^2 + 1\,169\,532\,000 z + 1\,059\,888\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\left(1\,048\,576 z^4 + 36\,618\,240 z^3 + 366\,612\,480 z^2 + 1\,193\,400\,000 z + 454\,237\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(131\,072 z^4 + 13\,688\,832 z^3 + 249\,500\,160 z^2 + 1\,570\,514\,400 z + 3\,179\,665\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adb3.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, \frac{15}{4}; -z\right) = -\frac{1}{14\,745\,600\sqrt{2}\, z^{9/4}} \left(11\left(2\sqrt{z}\left(131\,072 z^4 - 12\,738\,560 z^3 + 213\,649\,920 z^2 - 1\,169\,532\,000 z + 1\,059\,888\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\left(1\,048\,576 z^4 - 36\,618\,240 z^3 + 366\,612\,480 z^2 - 1\,193\,400\,000 z + 454\,237\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(131\,072 z^4 - 13\,688\,832 z^3 + 249\,500\,160 z^2 - 1\,570\,514\,400 z + 3\,179\,665\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adb4.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, \frac{17}{4}; z\right) = -\frac{1}{440\,401\,920\, z^{13/4}} \left(13\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(-1\,048\,576\, z^{9/2} - 17\,301\,504\, z^4 - 147\,259\,392\, z^{7/2} - 846\,888\,960\, z^3 - 3\,624\,652\,800\, z^{5/2} - 11\,961\,354\,240\, z^2 - 30\,401\,775\,360\, z^{3/2} - 57\,564\,017\,280\, z - 76\,043\,375\,100\sqrt{z} + e^{4\sqrt{z}} \left(1\,048\,576\, z^{9/2} - 17\,301\,504\, z^4 + 147\,259\,392\, z^{7/2} - 846\,888\,960\, z^3 + 3\,624\,652\,800\, z^{5/2} - 11\,961\,354\,240\, z^2 + 30\,401\,775\,360\, z^{3/2} - 57\,564\,017\,280\, z + 76\,043\,375\,100\sqrt{z} - 57\,032\,531\,325\right) - 57\,032\,531\,325\right) - 204\,417\,675\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16z - 279) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - 204\,417\,675\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16z - 279) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.adb5.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = \frac{1}{110\,100\,480\, z^{13/4}} \left(13 \left(204\,417\,675\sqrt{\pi}\, (16z + 279)\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\, \left(3\left(5\,767\,168\, z^4 - 282\,296\,320\, z^3 + 3\,987\,118\,080\, z^2 - 19\,188\,005\,760\, z + 19\,010\,843\,775\right) \cos\left(2\sqrt{z}\right) + 4\sqrt{z}\, \left(262\,144\, z^4 - 36\,814\,848\, z^3 + 906\,163\,200\, z^2 - 7\,600\,443\,840\, z + 19\,010\,843\,775\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.adb6.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) = -\frac{1}{31\,457\,280\sqrt{2}\, z^{13/4}} \left(11 \left(-10\sqrt{z}\, \left(3\,932\,160\, z^4 + 248\,479\,744\, z^3 + 4\,491\,002\,880\, z^2 + 27\,617\,662\,800\, z + 25\,649\,298\,675\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4\,194\,304\, z^5 + 781\,189\,120\, z^4 + 25\,472\,778\,240\, z^3 + 284\,430\,182\,400\, z^2 + 1\,000\,534\,626\,000\, z + 384\,739\,480\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 14\sqrt{z}\, \left(2\,883\,584\, z^4 + 192\,184\,320\, z^3 + 3\,717\,043\,200\, z^2 + 25\,679\,581\,200\, z + 54\,962\,782\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adb7.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) = -\frac{1}{31\,457\,280\sqrt{2}\, z^{13/4}} \left(11 \left(10\sqrt{z}\, \left(3\,932\,160\, z^4 - 248\,479\,744\, z^3 + 4\,491\,002\,880\, z^2 - 27\,617\,662\,800\, z + 25\,649\,298\,675\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4\,194\,304\, z^5 - 781\,189\,120\, z^4 + 25\,472\,778\,240\, z^3 - 284\,430\,182\,400\, z^2 + 1\,000\,534\,626\,000\, z - 384\,739\,480\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 14\sqrt{z}\, \left(2\,883\,584\, z^4 - 192\,184\,320\, z^3 + 3\,717\,043\,200\, z^2 - 25\,679\,581\,200\, z + 54\,962\,782\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adb8.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) = -\frac{1}{56\,371\,445\,760\, z^{17/4}} \left(221\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(33\,554\,432\, z^5 + 729\,808\,896\, z^{9/2} + 8\,178\,892\,800\, z^4 + 61\,860\,741\,120\, z^{7/2} + 347\,966\,668\,800\, z^3 + 1\,513\,655\,009\,280\, z^{5/2} + 5\,135\,408\,087\,040\, z^2 + 13\,383\,634\,017\,600\, z^{3/2} + 25\,854\,747\,534\,000\, z + 34\,599\,735\,670\,500\sqrt{z} + e^{4\sqrt{z}} \left(33\,554\,432\, z^5 - 729\,808\,896\, z^{9/2} + 8\,178\,892\,800\, z^4 - 61\,860\,741\,120\, z^{7/2} + 347\,966\,668\,800\, z^3 - 1\,513\,655\,009\,280\, z^{5/2} + 5\,135\,408\,087\,040\, z^2 - 13\,383\,634\,017\,600\, z^{3/2} + 25\,854\,747\,534\,000\, z - 34\,599\,735\,670\,500\sqrt{z} + 25\,949\,801\,752\,875\right) + 25\,949\,801\,752\,875\right) - 204\,417\,675\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(256\, z^2 - 8928\, z + 126\,945\right) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - 204\,417\,675\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, \left(256\, z^2 - 8928\, z + 126\,945\right) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.adb9.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) = \frac{1}{14\,092\,861\,440\, z^{17/4}} \left(221 \left(204\,417\,675\, \sqrt{\pi}\, \left(256\, z^2 + 8928\, z + 126\,945\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\, \left(\left(33\,554\,432\, z^5 - 8\,178\,892\,800\, z^4 + 347\,966\,668\,800\, z^3 - 5\,135\,408\,087\,040\, z^2 + 25\,854\,747\,534\,000\, z - 25\,949\,801\,752\,875\right) \cos\left(2\sqrt{z}\right) - 12\sqrt{z}\, \left(60\,817\,408\, z^4 - 5\,155\,061\,760\, z^3 + 126\,137\,917\,440\, z^2 - 1\,115\,302\,834\,800\, z + 2\,883\,311\,305\,875\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.adba.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) = -\frac{1}{1\,006\,632\,960\sqrt{2}\, z^{17/4}} \left(209 \left(2\sqrt{z}\, \left(8\,388\,608\, z^5 + 2\,537\,553\,920\, z^4 + 133\,066\,752\,000\, z^3 + 2\,410\,973\,510\,400\, z^2 + 15\,243\,011\,784\,000\, z + 14\,235\,360\,764\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\left(117\,440\,512\, z^5 + 12\,567\,183\,360\, z^4 + 387\,794\,534\,400\, z^3 + 4\,419\,933\,523\,200\, z^2 + 15\,829\,281\,468\,000\, z + 6\,100\,868\,899\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\, \left(8\,388\,608\, z^5 + 2\,642\,411\,520\, z^4 + 144\,764\,928\,000\, z^3 + 2\,798\,589\,830\,400\, z^2 + 19\,698\,661\,382\,400\, z + 42\,706\,082\,293\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adbb.01

$${}_1F_2\left(\frac{9}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{1\,006\,632\,960\sqrt{2}\,z^{17/4}}\left(209\left(2\sqrt{z}\left(8\,388\,608 z^5 - 2\,537\,553\,920 z^4 + 133\,066\,752\,000 z^3 - 2\,410\,973\,510\,400 z^2 + \right.\right.\right.$$
$$\left.\left.\left.15\,243\,011\,784\,000 z - 14\,235\,360\,764\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\left(117\,440\,512 z^5 - 12\,567\,183\,360 z^4 + \right.\right.\right.$$
$$\left.\left.\left.387\,794\,534\,400 z^3 - 4\,419\,933\,523\,200 z^2 + 15\,829\,281\,468\,000 z - 6\,100\,868\,899\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(-8\,388\,608 z^5 + 2\,642\,411\,520 z^4 - 144\,764\,928\,000 z^3 + 2\,798\,589\,830\,400 z^2 - \right.\right.$$
$$\left.\left.19\,698\,661\,382\,400 z + 42\,706\,082\,293\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

For fixed z and $a_1 = \frac{9}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.adbc.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{794\,957\,625}\left(\left(1\,048\,576 z^6 - 2\,621\,440 z^5 + 30\,105\,600 z^4 + 157\,301\,760 z^3 + 719\,888\,400 z^2 + 1\,678\,792\,500 z + 794\,957\,625\right)\right.$$
$$\cosh\left(2\sqrt{z}\right) +$$
$$\left.2\sqrt{z}\left(3\,670\,016 z^5 - 6\,225\,920 z^4 - 33\,116\,160 z^3 - 177\,408\,000 z^2 - 618\,849\,000 z - 794\,957\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adbd.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{794\,957\,625}$$
$$\left(\left(1\,048\,576 z^6 + 2\,621\,440 z^5 + 30\,105\,600 z^4 - 157\,301\,760 z^3 + 719\,888\,400 z^2 - 1\,678\,792\,500 z + 794\,957\,625\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(3\,670\,016 z^5 + 6\,225\,920 z^4 - 33\,116\,160 z^3 + 177\,408\,000 z^2 - 618\,849\,000 z + 794\,957\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adbe.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) = \frac{1}{109\,643\,625\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(524\,288 z^6 + 1\,474\,560 z^5 + 9\,062\,400 z^4 + 43\,555\,200 z^3 + 160\,477\,200 z^2 + 232\,713\,000 z + 109\,643\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.4\sqrt{z}\left(1\,900\,544 z^5 - 2\,764\,800 z^4 - 11\,086\,080 z^3 - 52\,275\,600 z^2 - 144\,998\,100 z - 109\,643\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.$$
$$\left.\left.4 z\left(131\,072 z^5 - 73\,728 z^4 + 2\,803\,200 z^3 + 14\,245\,920 z^2 + 57\,283\,200 z + 109\,643\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adbf.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) = \frac{1}{109\,643\,625\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(524\,288 z^6 - 1\,474\,560 z^5 + 9\,062\,400 z^4 - 43\,555\,200 z^3 + 160\,477\,200 z^2 - 232\,713\,000 z + 109\,643\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(1\,900\,544 z^5 + 2\,764\,800 z^4 - 11\,086\,080 z^3 + 52\,275\,600 z^2 - 144\,998\,100 z + 109\,643\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}($$
$$\left.\left.\sqrt{z}\right) - 4z\left(131\,072 z^5 + 73\,728 z^4 + 2\,803\,200 z^3 - 14\,245\,920 z^2 + 57\,283\,200 z - 109\,643\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adbg.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{34\,563\,375}\left(\left(-1\,900\,544 z^5 + 2\,150\,400 z^4 + 8\,090\,880 z^3 + 33\,208\,560 z^2 + 73\,804\,500 z + 34\,563\,375\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left.2\sqrt{z}\left(131\,072 z^5 + 385\,024 z^4 + 1\,881\,600 z^3 + 8\,537\,760 z^2 + 27\,720\,000 z + 34\,563\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adbh.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{34\,563\,375}\left(\left(1\,900\,544 z^5 + 2\,150\,400 z^4 - 8\,090\,880 z^3 + 33\,208\,560 z^2 - 73\,804\,500 z + 34\,563\,375\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(-131\,072 z^5 + 385\,024 z^4 - 1\,881\,600 z^3 + 8\,537\,760 z^2 - 27\,720\,000 z + 34\,563\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adbi.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) =$$
$$-\frac{1}{5\,221\,125\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(196\,608 z^5 - 143\,360 z^4 - 482\,560 z^3 - 1\,600\,560 z^2 - 2\,246\,400 z - 1\,044\,225\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(65\,536 z^5 + 307\,200 z^4 + 684\,800 z^3 + 2\,730\,000 z^2 + 7\,055\,100 z + 5\,221\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4z\left(229\,376 z^4 - 204\,800 z^3 - 798\,720 z^2 - 2\,878\,200 z - 5\,221\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adbj.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{5\,221\,125\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(196\,608 z^5 + 143\,360 z^4 - 482\,560 z^3 + 1\,600\,560 z^2 - 2\,246\,400 z + 1\,044\,225\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(65\,536 z^5 - 307\,200 z^4 + 684\,800 z^3 - 2\,730\,000 z^2 + 7\,055\,100 z - 5\,221\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4z\left(229\,376 z^4 + 204\,800 z^3 - 798\,720 z^2 + 2\,878\,200 z - 5\,221\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adbk.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{15}{4}; z\right) = \frac{1}{1\,819\,125}\left(\left(65\,536\,z^5 + 307\,200\,z^4 + 556\,800\,z^3 + 1\,910\,160\,z^2 + 3\,950\,100\,z + 1\,819\,125\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(229\,376\,z^4 - 153\,600\,z^3 - 524\,160\,z^2 - 1\,524\,600\,z - 1\,819\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adbl.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{15}{4}; -z\right) = \frac{1}{1\,819\,125}\left(\left(-65\,536\,z^5 + 307\,200\,z^4 - 556\,800\,z^3 + 1\,910\,160\,z^2 - 3\,950\,100\,z + 1\,819\,125\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(229\,376\,z^4 + 153\,600\,z^3 - 524\,160\,z^2 + 1\,524\,600\,z - 1\,819\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adbm.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{13}{4}; z\right) = \frac{1}{307\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768\,z^5 + 204\,800\,z^4 + 184\,960\,z^3 + 507\,600\,z^2 + 675\,000\,z + 307\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(110\,592\,z^4 - 64\,000\,z^3 - 186\,000\,z^2 - 429\,300\,z - 307\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8192\,z^4 + 25\,600\,z^3 + 60\,960\,z^2 + 183\,600\,z + 307\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adbn.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{13}{4}; -z\right) = -\frac{1}{307\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768\,z^5 - 204\,800\,z^4 + 184\,960\,z^3 - 507\,600\,z^2 + 675\,000\,z - 307\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(110\,592\,z^4 + 64\,000\,z^3 - 186\,000\,z^2 + 429\,300\,z - 307\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(8192\,z^4 - 25\,600\,z^3 + 60\,960\,z^2 - 183\,600\,z + 307\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adbo.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{11}{4}; z\right) = \frac{1}{121\,275}\left(5\left(-20\,480\,z^4 + 12\,800\,z^3 + 29\,616\,z^2 + 54\,180\,z + 24\,255\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(8192\,z^4 + 25\,600\,z^3 + 45\,600\,z^2 + 109\,200\,z + 121\,275\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adbp.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{11}{4}; -z\right) = \frac{1}{121\,275}\left(2\sqrt{z}\left(8192\,z^4 - 25\,600\,z^3 + 45\,600\,z^2 - 109\,200\,z + 121\,275\right)\sin\left(2\sqrt{z}\right) - 5\left(20\,480\,z^4 + 12\,800\,z^3 - 29\,616\,z^2 + 54\,180\,z - 24\,255\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.adbq.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{9}{4}; z\right) = -\frac{1}{23\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(49\,152 z^4 - 33\,280 z^3 - 45\,360 z^2 - 54\,000 z - 23\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096 z^4 + 7168 z^3 + 18\,960 z^2 + 35\,100 z + 23\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(11\,264 z^3 - 7680 z^2 - 16\,200 z - 23\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adbr.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{9}{4}; -z\right) = \frac{1}{23\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-49\,152 z^4 - 33\,280 z^3 + 45\,360 z^2 - 54\,000 z + 23\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096 z^4 - 7168 z^3 + 18\,960 z^2 - 35\,100 z + 23\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(11\,264 z^3 + 7680 z^2 - 16\,200 z + 23\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adbs.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{7}{4}; z\right) = \frac{1}{11\,025}\left(\left(4096 z^4 - 2560 z^3 + 18\,960 z^2 + 26\,100 z + 11\,025\right)\cosh\left(2\sqrt{z}\right) + 10\sqrt{z}\left(2048 z^3 - 1536 z^2 - 2280 z - 2205\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.adbt.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{1}{11\,025}\left(\left(4096 z^4 + 2560 z^3 + 18\,960 z^2 - 26\,100 z + 11\,025\right)\cos\left(2\sqrt{z}\right) + 10\sqrt{z}\left(2048 z^3 + 1536 z^2 - 2280 z + 2205\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.adbu.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{5}{4}; z\right) = \frac{1}{2625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048 z^4 - 3200 z^3 + 9360 z^2 + 6600 z + 2625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4352 z^3 - 2960 z^2 - 4500 z - 2625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(512 z^3 - 1760 z^2 + 2400 z + 2625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adbv.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{5}{4}; -z\right) = \frac{1}{2625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048 z^4 + 3200 z^3 + 9360 z^2 - 6600 z + 2625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4352 z^3 + 2960 z^2 - 4500 z + 2625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(512 z^3 + 1760 z^2 + 2400 z - 2625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adbw.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{1575}\left(\left(-3328\,z^3 + 240\,z^2 + 4500\,z + 1575\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(512\,z^3 - 2400\,z^2 + 2400\,z + 1575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adbx.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{1575}\left(\left(3328\,z^3 + 240\,z^2 - 4500\,z + 1575\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(512\,z^3 + 2400\,z^2 + 2400\,z - 1575\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adby.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) =$$
$$-\frac{1}{525\sqrt{2}}\left(\sqrt[4]{z}\,\left(5\left(256\,z^3 + 144\,z^2 - 480\,z - 105\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(256\,z^3 - 1520\,z^2 + 900\,z + 525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(256\,z^2 + 600\,z - 525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adbz.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{525\sqrt{2}}\left(\sqrt[4]{z}\,\left(5\left(256\,z^3 - 144\,z^2 - 480\,z + 105\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(256\,z^3 + 1520\,z^2 + 900\,z - 525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(256\,z^2 - 600\,z - 525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adc0.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) = \frac{1}{525}\left(\left(256\,z^3 - 1648\,z^2 - 300\,z + 525\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(128\,z^2 + 1000\,z - 525\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adc1.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) = \frac{1}{525}\left(\left(-256\,z^3 - 1648\,z^2 + 300\,z + 525\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-128\,z^2 + 1000\,z + 525\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adc2.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{525\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(128\,z^3 - 720\,z^2 - 570\,z + 525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\,\left(-64\,z^2 + 2880\,z - 345\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\,z\left(64\,z^2 - 336\,z - 705\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adc3.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) =$$
$$-\frac{1}{525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^3+720z^2-570z-525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\left(64z^2+2880z+345\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2z\left(64z^2+336z-705\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adc4.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) = \left(-\frac{16z^2}{75}+\frac{52z}{35}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{525}\sqrt{z}\left(32z^2-80z-525\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.adc5.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = \left(-\frac{16z^2}{75}-\frac{52z}{35}+1\right)\cos\left(2\sqrt{z}\right)-\frac{2}{525}\sqrt{z}\left(32z^2+80z-525\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.adc6.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) =$$
$$\frac{1}{5600\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(-1536z^2+3680z+6115\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(2048z^3+5376z^2-34\,880z-9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(-1792z^2+2464z+9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adc7.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) =$$
$$\frac{1}{5600\sqrt{2}\sqrt[4]{z}}\left(\left(-2\sqrt{z}\left(1536z^2+3680z-6115\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-2048z^3+5376z^2+34\,880z-9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(1792z^2+2464z-9945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adc8.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) = \left(\frac{16z^2}{105}+\frac{12z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\left(8z+21\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.adc9.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{9}{4}; -z\right) = \left(\frac{16z^2}{105}-\frac{12z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}\left(21-8z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.adca.01

$${}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{11}{4}; z\right) = \frac{1}{25\,600\sqrt{2}\,z^{5/4}}$$
$$\left(\left(2\sqrt{z}\left(4096z^3+86\,272z^2+278\,000z+208\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(110\,592z^3+831\,232z^2+1\,750\,320z+626\,535\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3+101\,120z^2+413\,712z+626\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adcb.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{11}{4}; -z\right) = \frac{1}{25\,600\sqrt{2}\,z^{5/4}} $$
$$ \left(\left(2\sqrt{z}\left(4096z^3 - 86\,272z^2 + 278\,000z - 208\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-110\,592z^3 + 831\,232z^2 - 1\,750\,320z + 626\,535\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-4096z^3 + 101\,120z^2 - 413\,712z + 626\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adcc.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{13}{4}; z\right) = \frac{1}{1\,146\,880\,z^{9/4}} $$
$$ \left(3e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-16\,384z^{7/2} - 143\,360z^3 - 650\,240z^{5/2} - 2\,003\,200z^2 - 4\,614\,720z^{3/2} - 8\,075\,760z - 10\,094\,700\sqrt{z} + \right.\right.\right. $$
$$ \left.\left.\left. e^{4\sqrt{z}}\left(16\,384z^{7/2} - 143\,360z^3 + 650\,240z^{5/2} - 2\,003\,200z^2 + 4\,614\,720z^{3/2} - 8\,075\,760z + 10\,094\,700\sqrt{z} - \right.\right.\right.\right. $$
$$ \left.\left.\left.\left. 7\,571\,025\right) - 7\,571\,025\right) + 7\,571\,025\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 7\,571\,025\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adcd.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) = $$
$$ \frac{1}{286\,720\,z^{9/4}}\left(3\left(7\,571\,025\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(5\left(28\,672z^3 - 400\,640z^2 + 1\,615\,152z - 1\,514\,205\right)\cos\left(2\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. 4\sqrt{z}\left(4096z^3 - 162\,560z^2 + 1\,153\,680z - 2\,523\,675\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.adce.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) = \frac{1}{819\,200\sqrt{2}\,z^{9/4}}\left(11\left(-14\sqrt{z}\left(49\,152z^3 + 1\,008\,640z^2 + 5\,728\,320z + 5\,221\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(131\,072z^4 + 7\,921\,664z^3 + 86\,561\,280z^2 + 287\,370\,720z + 109\,643\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 2\sqrt{z}\left(360\,448z^3 + 8\,146\,944z^2 + 53\,464\,320z + 109\,643\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adcf.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{15}{4}; -z\right) = \frac{1}{819\,200\sqrt{2}\,z^{9/4}}\left(11\left(14\sqrt{z}\left(49\,152z^3 - 1\,008\,640z^2 + 5\,728\,320z - 5\,221\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(131\,072z^4 - 7\,921\,664z^3 + 86\,561\,280z^2 - 287\,370\,720z + 109\,643\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 2\sqrt{z}\left(-360\,448z^3 + 8\,146\,944z^2 - 53\,464\,320z + 109\,643\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adcg.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) = \frac{1}{73\,400\,320\, z^{13/4}} \left(39\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(262\,144\, z^4 + 3\,407\,872\, z^{7/2} + 23\,183\,360\, z^3 + 107\,397\,120\, z^{5/2} + 369\,177\,600\, z^2 + 959\,861\,760\, z^{3/2} + 1\,841\,273\,280\, z + 2\,453\,012\,100\sqrt{z} + e^{4\sqrt{z}} \left(262\,144\, z^4 - 3\,407\,872\, z^{7/2} + 23\,183\,360\, z^3 - 107\,397\,120\, z^{5/2} + 369\,177\,600\, z^2 - 959\,861\,760\, z^{3/2} + 1\,841\,273\,280\, z - 2\,453\,012\,100\sqrt{z} + 1\,839\,759\,075\right) + 1\,839\,759\,075\right) + 7\,571\,025\, e^{2\sqrt{z}} \sqrt{2\pi}\, (16z - 243) \operatorname{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) + 7\,571\,025\, e^{2\sqrt{z}} \sqrt{2\pi}\, (16z - 243) \operatorname{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.adch.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) = \frac{1}{18\,350\,080\, z^{13/4}} \left(39 \left(7\,571\,025\sqrt{\pi}\, (16z + 243)\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\, \left(\left(262\,144\, z^4 - 23\,183\,360\, z^3 + 369\,177\,600\, z^2 - 1\,841\,273\,280\, z + 1\,839\,759\,075\right) \cos\left(2\sqrt{z}\right) + 4\sqrt{z}\, \left(-851\,968\, z^3 + 26\,849\,280\, z^2 - 239\,965\,440\, z + 613\,253\,025\right) \sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.adci.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) = \frac{1}{5\,242\,880\sqrt{2}\, z^{13/4}} \left(33 \left(2\sqrt{z}\, \left(262\,144\, z^4 + 30\,801\,920\, z^3 + 641\,571\,840\, z^2 + 4\,149\,054\,000\, z + 3\,886\,257\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(15\,990\,784\, z^4 + 687\,964\,160\, z^3 + 8\,340\,433\,920\, z^2 + 30\,212\,910\,000\, z + 11\,658\,772\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\, \left(262\,144\, z^4 + 32\,866\,304\, z^3 + 736\,619\,520\, z^2 + 5\,340\,862\,800\, z + 11\,658\,772\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adcj.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = -\frac{1}{5\,242\,880\sqrt{2}\, z^{13/4}} \left(33 \left(2\sqrt{z}\, \left(262\,144\, z^4 - 30\,801\,920\, z^3 + 641\,571\,840\, z^2 - 4\,149\,054\,000\, z + 3\,886\,257\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-15\,990\,784\, z^4 + 687\,964\,160\, z^3 - 8\,340\,433\,920\, z^2 + 30\,212\,910\,000\, z - 11\,658\,772\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\, \left(262\,144\, z^4 - 32\,866\,304\, z^3 + 736\,619\,520\, z^2 - 5\,340\,862\,800\, z + 11\,658\,772\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adck.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) = \frac{1}{9\,395\,240\,960\, z^{17/4}} \left(663\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(-8\,388\,608\, z^{9/2} - 148\,897\,792\, z^4 - 1\,374\,683\,136\, z^{7/2} - 8\,591\,769\,600\, z^3 - 39\,736\,934\,400\, z^{5/2} - 139\,992\,145\,920\, z^2 - 373\,418\,527\,680\, z^{3/2} - 731\,978\,810\,640\, z - 988\,563\,876\,300\sqrt{z} + e^{4\sqrt{z}}\left(8\,388\,608\, z^{9/2} - 148\,897\,792\, z^4 + 1\,374\,683\,136\, z^{7/2} - 8\,591\,769\,600\, z^3 + 39\,736\,934\,400\, z^{5/2} - 139\,992\,145\,920\, z^2 + 373\,418\,527\,680\, z^{3/2} - 731\,978\,810\,640\, z + 988\,563\,876\,300\sqrt{z} - 741\,422\,907\,225\right) - 741\,422\,907\,225\right) + 7\,571\,025\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 7776\, z + 97\,929\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 7\,571\,025\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 7776\, z + 97\,929\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adcl.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) = \frac{1}{2\,348\,810\,240\, z^{17/4}} \left(663\left(7\,571\,025\sqrt{\pi}\left(256\, z^2 + 7776\, z + 97\,929\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(148\,897\,792\, z^4 - 8\,591\,769\,600\, z^3 + 139\,992\,145\,920\, z^2 - 731\,978\,810\,640\, z + 741\,422\,907\,225\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(2\,097\,152\, z^4 - 343\,670\,784\, z^3 + 9\,934\,233\,600\, z^2 - 93\,354\,631\,920\, z + 247\,140\,969\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.adcm.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = \frac{1}{167\,772\,160\sqrt{2}\, z^{17/4}} \left(627\left(-10\sqrt{z}\left(8\,388\,608\, z^4 + 608\,305\,152\, z^3 + 12\,314\,615\,040\, z^2 + 81\,722\,440\,800\, z + 76\,947\,896\,025\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(8\,388\,608\, z^5 + 1\,782\,579\,200\, z^4 + 66\,153\,185\,280\, z^3 + 810\,073\,555\,200\, z^2 + 2\,984\,645\,664\,000\, z + 1\,154\,218\,440\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(42\,991\,616\, z^4 + 3\,275\,489\,280\, z^3 + 71\,018\,438\,400\, z^2 + 522\,312\,991\,200\, z + 1\,154\,218\,440\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adcn.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) = -\frac{1}{167\,772\,160\sqrt{2}\, z^{17/4}} \left(627\left(10\sqrt{z}\left(8\,388\,608\, z^4 - 608\,305\,152\, z^3 + 12\,314\,615\,040\, z^2 - 81\,722\,440\,800\, z + 76\,947\,896\,025\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(8\,388\,608\, z^5 - 1\,782\,579\,200\, z^4 + 66\,153\,185\,280\, z^3 - 810\,073\,555\,200\, z^2 + 2\,984\,645\,664\,000\, z - 1\,154\,218\,440\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(42\,991\,616\, z^4 - 3\,275\,489\,280\, z^3 + 71\,018\,438\,400\, z^2 - 522\,312\,991\,200\, z + 1\,154\,218\,440\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{9}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.adco.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) = \frac{1}{113\,565\,375}\left(5\left(-524\,288\,z^5 + 196\,608\,z^4 + 6\,623\,232\,z^3 + 23\,063\,040\,z^2 + 48\,981\,240\,z + 22\,713\,075\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(262\,144\,z^5 - 2\,621\,440\,z^4 + 7\,772\,160\,z^3 + 31\,046\,400\,z^2 + 93\,485\,700\,z + 113\,565\,375\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.adcp.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{23}{4}; -z\right) = \frac{1}{113\,565\,375}\left(5\left(524\,288\,z^5 + 196\,608\,z^4 - 6\,623\,232\,z^3 + 23\,063\,040\,z^2 - 48\,981\,240\,z + 22\,713\,075\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(262\,144\,z^5 + 2\,621\,440\,z^4 + 7\,772\,160\,z^3 - 31\,046\,400\,z^2 + 93\,485\,700\,z - 113\,565\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.adcq.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{21}{4}; z\right) = -\frac{1}{15\,663\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,507\,328\,z^5 - 2\,150\,400\,z^4 - 8\,436\,480\,z^3 - 24\,850\,800\,z^2 - 34\,011\,900\,z - 15\,663\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072\,z^5 - 761\,856\,z^4 + 2\,803\,200\,z^3 + 8\,779\,680\,z^2 + 21\,481\,200\,z + 15\,663\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(114\,688\,z^4 - 91\,136\,z^3 - 911\,040\,z^2 - 2\,983\,500\,z - 5\,221\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adcr.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{21}{4}; -z\right) = \frac{1}{15\,663\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,507\,328\,z^5 + 2\,150\,400\,z^4 - 8\,436\,480\,z^3 + 24\,850\,800\,z^2 - 34\,011\,900\,z + 15\,663\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(131\,072\,z^5 + 761\,856\,z^4 + 2\,803\,200\,z^3 - 8\,779\,680\,z^2 + 21\,481\,200\,z - 15\,663\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 12\,z\left(114\,688\,z^4 + 91\,136\,z^3 - 911\,040\,z^2 + 2\,983\,500\,z - 5\,221\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adcs.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{19}{4}; z\right) = \frac{1}{4\,937\,625}\left(\left(131\,072\,z^5 - 368\,640\,z^4 + 1\,881\,600\,z^3 + 5\,433\,120\,z^2 + 10\,810\,800\,z + 4\,937\,625\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(376\,832\,z^4 - 445\,440\,z^3 - 1\,552\,320\,z^2 - 4\,227\,300\,z - 4\,937\,625\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.adct.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{19}{4}; -z\right) = \frac{1}{4\,937\,625}\left(-\left(131\,072\,z^5 + 368\,640\,z^4 + 1\,881\,600\,z^3 - 5\,433\,120\,z^2 + 10\,810\,800\,z - 4\,937\,625\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(376\,832\,z^4 + 445\,440\,z^3 - 1\,552\,320\,z^2 + 4\,227\,300\,z - 4\,937\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.adcu.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{17}{4}; z\right) = \frac{1}{745\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536\,z^5 + 102\,400\,z^4 + 515\,840\,z^3 + 1\,263\,600\,z^2 + 1\,649\,700\,z + 745\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(196\,608\,z^4 - 204\,800\,z^3 - 474\,240\,z^2 - 1\,053\,000\,z - 745\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(16\,384\,z^4 - 19\,456\,z^3 + 162\,240\,z^2 + 456\,300\,z + 745\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adcv.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{17}{4}; -z\right) = -\frac{1}{745\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536\,z^5 - 102\,400\,z^4 + 515\,840\,z^3 - 1\,263\,600\,z^2 + 1\,649\,700\,z - 745\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(196\,608\,z^4 + 204\,800\,z^3 - 474\,240\,z^2 + 1\,053\,000\,z - 745\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(16\,384\,z^4 + 19\,456\,z^3 + 162\,240\,z^2 - 456\,300\,z + 745\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adcw.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{15}{4}; z\right) = \frac{1}{259\,875}\left(3\left(-65\,536\,z^4 + 51\,200\,z^3 + 107\,520\,z^2 + 194\,040\,z + 86\,625\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(16\,384\,z^4 + 27\,648\,z^3 + 100\,800\,z^2 + 235\,620\,z + 259\,875\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.adcx.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{15}{4}; -z\right) = \frac{1}{259\,875}\left(2\sqrt{z}\left(16\,384\,z^4 - 27\,648\,z^3 + 100\,800\,z^2 - 235\,620\,z + 259\,875\right)\sin\left(2\sqrt{z}\right) - 3\left(65\,536\,z^4 + 51\,200\,z^3 - 107\,520\,z^2 + 194\,040\,z - 86\,625\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.adcy.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{13}{4}; z\right) = -\frac{1}{43\,875\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(20\,480\,z^4 - 9728\,z^3 - 16\,560\,z^2 - 19\,980\,z - 8775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8192\,z^4 + 25\,600\,z^3 + 34\,080\,z^2 + 64\,800\,z + 43\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(23\,552\,z^3 - 13\,440\,z^2 - 29\,700\,z - 43\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adcz.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{43\,875\sqrt{2}}\left(\sqrt[4]{z}\left(-5\left(20\,480 z^4 + 9728 z^3 - 16\,560 z^2 + 19\,980 z - 8775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8192 z^4 - 25\,600 z^3 + 34\,080 z^2 - 64\,800 z + 43\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(23\,552 z^3 + 13\,440 z^2 - 29\,700 z + 43\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.add0.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{11}{4}; z\right) = \frac{1}{17\,325}\left(\left(8192 z^4 + 25\,600 z^3 + 26\,400 z^2 + 40\,320 z + 17\,325\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(23\,552 z^3 - 9600 z^2 - 17\,220 z - 17\,325\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.add1.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{11}{4}; -z\right) = \frac{1}{17\,325}\left(\left(8192 z^4 - 25\,600 z^3 + 26\,400 z^2 - 40\,320 z + 17\,325\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(23\,552 z^3 + 9600 z^2 - 17\,220 z + 17\,325\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.add2.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{3375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096 z^4 + 17\,920 z^3 + 7920 z^2 + 8100 z + 3375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(11\,264 z^3 - 3840 z^2 - 5400 z - 3375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1024 z^3 + 1920 z^2 + 2700 z + 3375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.add3.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{3375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096 z^4 - 17\,920 z^3 + 7920 z^2 - 8100 z + 3375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(11\,264 z^3 + 3840 z^2 - 5400 z + 3375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-1024 z^3 + 1920 z^2 - 2700 z + 3375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.add4.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{1575}\left(-5\left(2048 z^3 - 768 z^2 - 792 z - 315\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(1024 z^3 + 1920 z^2 + 1860 z + 1575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.add5.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{1575}\left(5\left(2048 z^3 + 768 z^2 - 792 z + 315\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-1024 z^3 + 1920 z^2 - 1860 z + 1575\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.add6.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{5}{4}; z\right) =$$
$$-\frac{1}{375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4864 z^3 - 2160 z^2 - 1020 z - 375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(512 z^3 + 416 z^2 + 720 z + 375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1088 z^2 - 420 z - 375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.add7.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{5}{4}; -z\right) =$$
$$\frac{1}{375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4864 z^3 + 2160 z^2 - 1020 z + 375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512 z^3 - 416 z^2 + 720 z - 375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(1088 z^2 + 420 z - 375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.add8.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{3}{4}; z\right) = \frac{1}{225}\left(\left(512 z^3 - 480 z^2 + 720 z + 225\right)\cosh\left(2\sqrt{z}\right) + 30\sqrt{z}\left(64 z^2 - 28 z - 15\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.add9.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{3}{4}; -z\right) = -\frac{1}{225}\left(512 z^3 + 480 z^2 + 720 z - 225\right)\cos\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\left(64 z^2 + 28 z - 15\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.adda.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{1}{4}; z\right) = \frac{1}{75\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256 z^3 - 400 z^2 + 420 z + 75\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(128 z^2 - 40 z - 25\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(64 z^2 - 180 z + 75\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.addb.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, -\frac{1}{4}; -z\right) =$$
$$-\frac{1}{75\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256 z^3 + 400 z^2 + 420 z - 75\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(128 z^2 + 40 z - 25\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(64 z^2 + 180 z + 75\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.addc.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{1}{4}; z\right) = \left(-\frac{256 z^2}{75} - \frac{8 z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{75}\sqrt{z}\left(64 z^2 - 220 z + 75\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.addd.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) = \left(-\frac{256 z^2}{75} + \frac{8 z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{75}\sqrt{z}\left(64 z^2 + 220 z + 75\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.adde.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{3}{4}; z\right) =$$

$$-\frac{1}{75\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(16z^2+24z-15\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+2\sqrt{z}\left(64z^2-240z+15\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+48z(z+5)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.addf.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) =$$

$$\frac{1}{75\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-80z^2+120z+75\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+2\sqrt{z}\left(64z^2+240z+15\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+48(z-5)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.addg.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{5}{4}; z\right) = \frac{1}{75}\left(\left(-32z^2+96z+75\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\,(4z-75)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.addh.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{5}{4}; -z\right) = \frac{1}{75}\left(\left(-32z^2-96z+75\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,(4z+75)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.addi.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) = \frac{1}{400\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(-128z^2+160z+395\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$

$$\left.\left.\left(768z^2-2080z-585\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-128z^2+32z+585\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.addj.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{7}{4}; -z\right) = \frac{1}{400\sqrt{2}\,\sqrt[4]{z}}\left(\left(-2\sqrt{z}\left(128z^2+160z-395\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$

$$\left.\left.\left(768z^2+2080z-585\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(128z^2+32z-585\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.addk.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) = \left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\,(4z+15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.addl.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{9}{4}; -z\right) = \left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}(15-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.addm.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{11}{4}; z\right) =$$

$$-\frac{1}{12\,800\sqrt{2}\,z^{5/4}}\left(7\left(-2\sqrt{z}\left(4352z^2+13\,840z+9945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4096z^3+42\,752z^2+84\,240z+29\,835\right)\right.\right.$$

$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(4864z^2+20\,592z+29\,835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.addn.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{11}{4}; -z\right) =$$
$$-\frac{1}{12\,800\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\,\left(4352z^2-13\,840z+9945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4096z^3-42\,752z^2+84\,240z-29\,835\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(4864z^2-20\,592z+29\,835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.addo.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{13}{4}; z\right) =$$
$$-\frac{1}{81\,920\,z^{9/4}}\left(3\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(4096z^3+25\,600z^{5/2}+85\,760z^2+200\,640z^{3/2}+351\,120z+438\,900\sqrt{z}\,+\right.\right.\right.$$
$$\left.\left.e^{4\sqrt{z}}\left(4096z^3-25\,600z^{5/2}+85\,760z^2-200\,640z^{3/2}+351\,120z-438\,900\sqrt{z}\,+329\,175\right)+329\,175\right)-$$
$$\left.329\,175\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-329\,175\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.addp.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{13}{4}; -z\right) = \frac{1}{20\,480\,z^{9/4}}\left(3\left(329\,175\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\,\left(\left(4096z^3-85\,760z^2+351\,120z-329\,175\right)\cos\left(2\sqrt{z}\right)-20\sqrt{z}\,\left(1280z^2-10\,032z+21\,945\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.addq.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{15}{4}; z\right) = -\frac{1}{409\,600\sqrt{2}\,z^{9/4}}$$
$$\left(77\left(2\sqrt{z}\,\left(8192z^3+264\,704z^2+1\,591\,200z+1\,461\,915\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(262\,144z^3+3\,354\,624z^2+11\,456\,640z+\right.\right.\right.$$
$$\left.\left.\left.4\,385\,745\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(8192z^3+299\,520z^2+2\,100\,384z+4\,385\,745\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.addr.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{15}{4}; -z\right) = \frac{1}{409\,600\sqrt{2}\,z^{9/4}}$$
$$\left(77\left(2\sqrt{z}\,\left(8192z^3-264\,704z^2+1\,591\,200z-1\,461\,915\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-262\,144z^3+3\,354\,624z^2-11\,456\,640z+\right.\right.\right.$$
$$\left.\left.\left.4\,385\,745\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-8192z^3+299\,520z^2-2\,100\,384z+4\,385\,745\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adds.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{17}{4}; z\right) = $$
$$ -\frac{1}{5\,242\,880\, z^{13/4}}\left(39\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-65\,536\, z^{7/2} - 655\,360\, z^3 - 3\,502\,080\, z^{5/2} - 12\,840\,960\, z^2 - 34\,510\,080\, z^{3/2} - \right.\right.\right. $$
$$ 67\,415\,040\, z - 90\,852\,300\sqrt{z} + e^{4\sqrt{z}}\left(65\,536\, z^{7/2} - 655\,360\, z^3 + 3\,502\,080\, z^{5/2} - 12\,840\,960\, z^2 + \right. $$
$$ \left. 34\,510\,080\, z^{3/2} - 67\,415\,040\, z + 90\,852\,300\sqrt{z} - 68\,139\,225\right) - 68\,139\,225\Big) - $$
$$ \left.\left. 329\,175\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 207)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 329\,175\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 207)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.addt.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{17}{4}; -z\right) = \frac{1}{1\,310\,720\, z^{13/4}} $$
$$ \left(39\left(329\,175\sqrt{\pi}\,(16z + 207)\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(5\left(131\,072\, z^3 - 2\,568\,192\, z^2 + 13\,483\,008\, z - 13\,627\,845\right)\cos\left(2\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. 4\sqrt{z}\left(16\,384\, z^3 - 875\,520\, z^2 + 8\,627\,520\, z - 22\,713\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.addu.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) = $$
$$ -\frac{1}{2\,621\,440\sqrt{2}\, z^{13/4}}\left(231\left(-2\sqrt{z}\left(770\,048\, z^3 + 20\,367\,360\, z^2 + 141\,457\,680\, z + 134\,008\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(262\,144\, z^4 + 20\,021\,248\, z^3 + 274\,959\,360\, z^2 + 1\,036\,985\,040\, z + 402\,026\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left. 2\sqrt{z}\left(802\,816\, z^3 + 23\,083\,008\, z^2 + 179\,328\,240\, z + 402\,026\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big) $$

07.22.03.addv.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) = \frac{1}{2\,621\,440\sqrt{2}\, z^{13/4}}\left(231\left(2\sqrt{z}\left(770\,048\, z^3 - 20\,367\,360\, z^2 + 141\,457\,680\, z - 134\,008\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(262\,144\, z^4 - 20\,021\,248\, z^3 + 274\,959\,360\, z^2 - 1\,036\,985\,040\, z + 402\,026\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 2\sqrt{z}\left(-802\,816\, z^3 + 23\,083\,008\, z^2 - 179\,328\,240\, z + 402\,026\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big) $$

07.22.03.addw.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) =$$
$$-\frac{1}{671\,088\,640\, z^{17/4}}\left(663\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(2\,097\,152\, z^4 + 29\,884\,416\, z^{7/2} + 224\,133\,120\, z^3 + 1\,139\,343\,360\, z^{5/2} + 4\,237\,516\,800\, z^2 + 11\,670\,626\,880\, z^{3/2} + 23\,330\,870\,640\, z + 31\,889\,157\,300\sqrt{z} + e^{4\sqrt{z}}\left(2\,097\,152\, z^4 - 29\,884\,416\, z^{7/2} + 224\,133\,120\, z^3 - 1\,139\,343\,360\, z^{5/2} + 4\,237\,516\,800\, z^2 - 11\,670\,626\,880\, z^{3/2} + 23\,330\,870\,640\, z - 31\,889\,157\,300\sqrt{z} + 23\,916\,867\,975\right) + 23\,916\,867\,975\right) - 329\,175\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 6624\, z + 72\,657\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 329\,175\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 6624\, z + 72\,657\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.addx.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) = \frac{1}{167\,772\,160\, z^{17/4}}\left(663\left(329\,175\sqrt{\pi}\left(256\, z^2 + 6624\, z + 72\,657\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(2\,097\,152\, z^4 - 224\,133\,120\, z^3 + 4\,237\,516\,800\, z^2 - 23\,330\,870\,640\, z + 23\,916\,867\,975\right)\cos\left(2\sqrt{z}\right) - 228\sqrt{z}\left(131\,072\, z^3 - 4\,997\,120\, z^2 + 51\,186\,960\, z - 139\,864\,725\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.addy.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{23}{4}; z\right) = -\frac{1}{83\,886\,080\sqrt{2}\, z^{17/4}}$$
$$\left(4389\left(2\sqrt{z}\left(524\,288\, z^4 + 72\,417\,280\, z^3 + 1\,728\,679\,680\, z^2 + 12\,252\,240\,000\, z + 11\,658\,772\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(11\,534\,336\, z^4 + 579\,338\,240\, z^3 + 7\,847\,374\,080\, z^2 + 30\,017\,988\,000\, z + 11\,658\,772\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(524\,288\, z^4 + 76\,873\,728\, z^3 + 1\,978\,179\,840\, z^2 + 15\,437\,822\,400\, z + 34\,976\,316\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.addz.01

$${}_1F_2\left(\frac{9}{4}; -\frac{5}{2}, \frac{23}{4}; -z\right) = -\frac{1}{83\,886\,080\sqrt{2}\, z^{17/4}}$$
$$\left(4389\left(2\sqrt{z}\left(524\,288\, z^4 - 72\,417\,280\, z^3 + 1\,728\,679\,680\, z^2 - 12\,252\,240\,000\, z + 11\,658\,772\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(11\,534\,336\, z^4 - 579\,338\,240\, z^3 + 7\,847\,374\,080\, z^2 - 30\,017\,988\,000\, z + 11\,658\,772\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(524\,288\, z^4 - 76\,873\,728\, z^3 + 1\,978\,179\,840\, z^2 - 15\,437\,822\,400\, z + 34\,976\,316\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{9}{4}$, $b_1 = -\frac{3}{2}$

07.22.03.ade0.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{22\,713\,075}\left(\left(262\,144\,z^5 - 3\,932\,160\,z^4 + 2\,365\,440\,z^3 + 31\,046\,400\,z^2 + 51\,351\,300\,z + 22\,713\,075\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left. 10\sqrt{z}\left(65\,536\,z^4 + 540\,672\,z^3 - 1\,774\,080\,z^2 - 4\,213\,440\,z - 4\,542\,615\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ade1.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{23}{4}; -z\right) = \frac{1}{22\,713\,075}\left(10\sqrt{z}\left(-65\,536\,z^4 + 540\,672\,z^3 + 1\,774\,080\,z^2 - 4\,213\,440\,z + 4\,542\,615\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$\left.\left(262\,144\,z^5 + 3\,932\,160\,z^4 + 2\,365\,440\,z^3 - 31\,046\,400\,z^2 + 51\,351\,300\,z - 22\,713\,075\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ade2.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{3\,132\,675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072\,z^5 - 1\,417\,216\,z^4 + 2\,496\,000\,z^3 + 6\,233\,760\,z^2 + 7\,160\,400\,z + 3\,132\,675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(212\,992\,z^4 + 525\,312\,z^3 - 2\,733\,120\,z^2 - 4\,654\,260\,z - 3\,132\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4z\left(32\,768\,z^4 - 399\,360\,z^3 + 383\,616\,z^2 + 2\,148\,120\,z + 3\,132\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ade3.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{21}{4}; -z\right) =$$
$$-\frac{1}{3\,132\,675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072\,z^5 + 1\,417\,216\,z^4 + 2\,496\,000\,z^3 - 6\,233\,760\,z^2 + 7\,160\,400\,z - 3\,132\,675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(212\,992\,z^4 - 525\,312\,z^3 - 2\,733\,120\,z^2 + 4\,654\,260\,z - 3\,132\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4z\left(32\,768\,z^4 + 399\,360\,z^3 + 383\,616\,z^2 - 2\,148\,120\,z + 3\,132\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ade4.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{19}{4}; z\right) = \left(-\frac{16\,384\,z^4}{65\,835} - \frac{1024\,z^3}{9405} + \frac{448\,z^2}{285} + \frac{44\,z}{19} + 1\right)\cosh\left(2\sqrt{z}\right) -$$
$$\frac{2\sqrt{z}\left(32\,768\,z^4 - 276\,480\,z^3 + 443\,520\,z^2 + 970\,200\,z + 987\,525\right)\sinh\left(2\sqrt{z}\right)}{987\,525}$$

07.22.03.ade5.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{19}{4}; -z\right) = \left(-\frac{16\,384\,z^4}{65\,835} + \frac{1024\,z^3}{9405} + \frac{448\,z^2}{285} - \frac{44\,z}{19} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{2\sqrt{z}\left(32\,768\,z^4 + 276\,480\,z^3 + 443\,520\,z^2 - 970\,200\,z + 987\,525\right)\sin\left(2\sqrt{z}\right)}{987\,525}$$

07.22.03.ade6.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{17}{4}; z\right) = -\frac{1}{149\,175\sqrt{2}} \left(\sqrt[4]{z}\left(\left(147\,456 z^4 - 133\,120 z^3 - 336\,960 z^2 - 351\,000 z - 149\,175\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,384 z^4 - 84\,992 z^3 + 162\,240 z^2 + 231\,660 z + 149\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(32\,768 z^3 - 5376 z^2 - 112\,320 z - 149\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ade7.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{17}{4}; -z\right) = \frac{1}{149\,175\sqrt{2}} \left(\sqrt[4]{z}\left(\left(-147\,456 z^4 - 133\,120 z^3 + 336\,960 z^2 - 351\,000 z + 149\,175\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,384 z^4 + 84\,992 z^3 + 162\,240 z^2 - 231\,660 z + 149\,175\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(32\,768 z^3 + 5376 z^2 - 112\,320 z + 149\,175\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ade8.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{15}{4}; z\right) = \left(\frac{16\,384 z^4}{51\,975} - \frac{1024 z^3}{1155} + \frac{64 z^2}{33} + \frac{12 z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(12\,288 z^3 - 8960 z^2 - 18\,480 z - 17\,325\right)\sinh\left(2\sqrt{z}\right)}{17\,325} $$

07.22.03.ade9.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{15}{4}; -z\right) = \left(\frac{16\,384 z^4}{51\,975} + \frac{1024 z^3}{1155} + \frac{64 z^2}{33} - \frac{12 z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(12\,288 z^3 + 8960 z^2 - 18\,480 z + 17\,325\right)\sin\left(2\sqrt{z}\right)}{17\,325} $$

07.22.03.adea.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{13}{4}; z\right) = \frac{1}{8775\sqrt{2}} \left(\sqrt[4]{z}\left(\left(8192 z^4 + 5120 z^3 + 24\,480 z^2 + 21\,600 z + 8775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(19\,456 z^3 - 13\,440 z^2 - 14\,580 z - 8775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(2048 z^3 - 3072 z^2 + 7560 z + 8775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adeb.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{13}{4}; -z\right) = \frac{1}{8775\sqrt{2}} \left(\sqrt[4]{z}\left(\left(8192 z^4 - 5120 z^3 + 24\,480 z^2 - 21\,600 z + 8775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(19\,456 z^3 + 13\,440 z^2 - 14\,580 z + 8775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(2048 z^3 + 3072 z^2 + 7560 z - 8775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adec.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{3465}\left(\left(-19\,456\,z^3 + 9600\,z^2 + 8820\,z + 3465\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(2048\,z^3 + 1536\,z^2 + 4200\,z + 3465\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aded.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{3465}\left(\left(19\,456\,z^3 + 9600\,z^2 - 8820\,z + 3465\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-2048\,z^3 + 1536\,z^2 - 4200\,z + 3465\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adee.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) =$$
$$-\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\,\left(5\left(2048\,z^3 - 576\,z^2 - 360\,z - 135\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(1024\,z^3 + 1920\,z^2 + 1260\,z + 675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.36\,z\left(256\,z^2 - 80\,z - 75\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adef.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\,\left(5\left(2048\,z^3 + 576\,z^2 - 360\,z + 135\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(-1024\,z^3 + 1920\,z^2 - 1260\,z + 675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left.36\,z\left(256\,z^2 + 80\,z - 75\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adeg.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{7}{4}; z\right) = \frac{1}{315}\left(\left(1024\,z^3 + 1920\,z^2 + 900\,z + 315\right)\cosh\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(768\,z^2 - 160\,z - 105\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adeh.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{7}{4}; -z\right) = \left(-\frac{1024\,z^3}{315} + \frac{128\,z^2}{21} - \frac{20\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{105}\sqrt{z}\,\left(768\,z^2 + 160\,z - 105\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.adei.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{75\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(512\,z^3 + 1440\,z^2 + 240\,z + 75\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(1088\,z^2 - 180\,z - 75\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.4\,z\left(128\,z^2 + 120\,z + 75\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adej.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{5}{4}; -z\right) =$$
$$-\frac{1}{75\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512z^3-1440z^2+240z-75\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1088z^2+180z-75\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4z\left(128z^2-120z+75\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adek.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{3}{4}; z\right) = \left(-\frac{64z^2}{3}+4z+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{45}\sqrt{z}\left(128z^2+120z+45\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.adel.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{3}{4}; -z\right) = \left(-\frac{64z^2}{3}-4z+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{45}\sqrt{z}\left(128z^2-120z+45\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.adem.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{1}{4}; z\right) = -\frac{1}{15\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(448z^2-120z-15\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(64z^2+12z+15\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+12z\left(32z-5\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aden.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, -\frac{1}{4}; -z\right) = \frac{1}{15\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(-448z^2-120z+15\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(64z^2-12z+15\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+12z\left(32z+5\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adeo.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{1}{4}; z\right) = \left(\frac{64z^2}{15}-4z+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{3}\sqrt{z}\left(16z-3\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.adep.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{1}{4}; -z\right) = \left(\frac{64z^2}{15}+4z+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{3}\sqrt{z}\left(16z+3\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.adeq.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{3}{4}; z\right) = \frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2-40z+15\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+112z^{3/2}I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(8z-15\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ader.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{3}{4}; -z\right) =$$
$$\frac{1}{15\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32z^2+40z+15\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+112z^{3/2}J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(8z+15\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ades.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{5}{4}; z\right) = \left(\frac{4z}{5}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{15}\sqrt{z}\left(8z-15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.adet.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{5}{4}; -z\right) = \left(1 - \frac{4z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\,(8z+15)\sin\left(2\sqrt{z}\right)$$

07.22.03.adeu.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{7}{4}; z\right) =$$

$$\frac{1}{40\sqrt{2}\,\sqrt[4]{z}}\left(\left(70\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(128z^2 - 160z - 45\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\,(45 - 16z)\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adev.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{7}{4}; -z\right) =$$

$$\frac{1}{40\sqrt{2}\,\sqrt[4]{z}}\left(\left(70\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(128z^2 + 160z - 45\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,(16z+45)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adew.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{9}{4}; z\right) = \left(\frac{4z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.adex.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) = \left(1 - \frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.adey.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) = \frac{1}{1280\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\,\left(256z^2 + 880z + 585\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 -\right.\right.$$

$$\left.\left.\left(2816z^2 + 5040z + 1755\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(256z^2 + 1296z + 1755\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adez.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) =$$

$$-\frac{1}{1280\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\,\left(256z^2 - 880z + 585\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-2816z^2 + 5040z - 1755\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) -\right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(256z^2 - 1296z + 1755\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adf0.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) = \frac{1}{8192\,z^{9/4}}\left(3\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-1024z^{5/2} - 4352z^2 - 10\,560z^{3/2} - 18\,480z - 23\,100\sqrt{z} +\right.\right.\right.$$

$$\left.e^{4\sqrt{z}}\left(1024z^{5/2} - 4352z^2 + 10\,560z^{3/2} - 18\,480z + 23\,100\sqrt{z} - 17\,325\right) - 17\,325\right) +$$

$$\left.\left.17\,325\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + 17\,325\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.adf1.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) = -\frac{1}{2048\, z^{9/4}}$$
$$\left(3\left(2\sqrt[4]{z}\,\left(\left(4352\, z^2 - 18\,480\, z + 17\,325\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(256\, z^2 - 2640\, z + 5775\right)\sin\left(2\sqrt{z}\right)\right) - 17\,325\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)$$

07.22.03.adf2.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) = \frac{1}{40\,960\sqrt{2}\; z^{9/4}}$$
$$\left(77\left(-2\sqrt{z}\,\left(11\,264\, z^2 + 74\,880\, z + 69\,615\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(8192\, z^3 + 152\,064\, z^2 + 542\,880\, z + 208\,845\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\,\left(4096\, z^2 + 32\,448\, z + 69\,615\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adf3.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{15}{4}; -z\right) =$$
$$-\frac{1}{40\,960\sqrt{2}\; z^{9/4}}\left(77\left(2\sqrt{z}\,\left(11\,264\, z^2 - 74\,880\, z + 69\,615\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(8192\, z^3 - 152\,064\, z^2 + 542\,880\, z - 208\,845\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\,\left(4096\, z^2 - 32\,448\, z + 69\,615\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adf4.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) =$$
$$\frac{1}{524\,288\, z^{13/4}}\left(39\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(16\,384\, z^3 + 122\,880\, z^{5/2} + 506\,880\, z^2 + 1\,436\,160\, z^{3/2} + 2\,882\,880\, z + 3\,950\,100\sqrt{z} + e^{4\sqrt{z}}\left(16\,384\, z^3 - 122\,880\, z^{5/2} + 506\,880\, z^2 - 1\,436\,160\, z^{3/2} + 2\,882\,880\, z - 3\,950\,100\sqrt{z} + 2\,962\,575\right) + 2\,962\,575\right) + 17\,325\, e^{2\sqrt{z}}\sqrt{2\pi}\,\left(16\, z - 171\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 17\,325\, e^{2\sqrt{z}}\sqrt{2\pi}\,\left(16\, z - 171\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.adf5.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) = \frac{1}{131\,072\, z^{13/4}}\left(39\left(17\,325\sqrt{\pi}\,\left(16\, z + 171\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(\left(16\,384\, z^3 - 506\,880\, z^2 + 2\,882\,880\, z - 2\,962\,575\right)\cos\left(2\sqrt{z}\right) - 60\sqrt{z}\,\left(2048\, z^2 - 23\,936\, z + 65\,835\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.adf6.01

$${}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) = \frac{1}{262\,144\sqrt{2}\; z^{13/4}}$$
$$\left(231\left(2\sqrt{z}\,\left(16\,384\, z^3 + 718\,848\, z^2 + 5\,569\,200\, z + 5\,360\,355\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(606\,208\, z^3 + 10\,303\,488\, z^2 + 41\,212\,080\, z + 16\,081\,065\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,384\, z^3 + 798\,720\, z^2 + 6\,905\,808\, z + 16\,081\,065\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adf7.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{19}{4}; -z\right) = \frac{1}{262\,144\sqrt{2}\,z^{13/4}} \left(231\left(2\sqrt{z}\,\left(16\,384z^3 - 718\,848z^2 + 5\,569\,200z - 5\,360\,355\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-606\,208z^3 + 10\,303\,488z^2 - 41\,212\,080z + 16\,081\,065\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-16\,384z^3 + 798\,720z^2 - 6\,905\,808z + 16\,081\,065\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adf8.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) = \frac{1}{67\,108\,864z^{17/4}} \left(663e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-524\,288z^{7/2} - 5\,898\,240z^3 - 35\,389\,440z^{5/2} - 143\,278\,080z^2 - 413\,519\,040z^{3/2} - 850\,061\,520z - 1\,181\,079\,900\sqrt{z} + e^{4\sqrt{z}}\left(524\,288z^{7/2} - 5\,898\,240z^3 + 35\,389\,440z^{5/2} - 143\,278\,080z^2 + 413\,519\,040z^{3/2} - 850\,061\,520z + 1\,181\,079\,900\sqrt{z} - 885\,809\,925\right) - 885\,809\,925\right) + 17\,325e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 - 5472z + 51\,129\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 17\,325e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 - 5472z + 51\,129\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adf9.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) = \frac{1}{16\,777\,216z^{17/4}} \left(663\left(17\,325\sqrt{\pi}\,\left(256z^2 + 5472z + 51\,129\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(15\left(393\,216z^3 - 9\,551\,872z^2 + 56\,670\,768z - 59\,053\,995\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(131\,072z^3 - 8\,847\,360z^2 + 103\,379\,760z - 295\,269\,975\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.adfa.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) = \frac{1}{8\,388\,608\sqrt{2}\,z^{17/4}} \left(4389\left(-26\sqrt{z}\,\left(131\,072z^3 + 4\,112\,640z^2 + 32\,044\,320z + 30\,925\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(524\,288z^4 + 48\,562\,176z^3 + 766\,321\,920z^2 + 3\,087\,564\,480z + 1\,206\,079\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\,\left(196\,608z^3 + 6\,732\,544z^2 + 57\,177\,120z + 134\,008\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adfb.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) = \frac{1}{8\,388\,608\sqrt{2}\,z^{17/4}} \left(4389\left(26\sqrt{z}\,\left(131\,072z^3 - 4\,112\,640z^2 + 32\,044\,320z - 30\,925\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(524\,288z^4 - 48\,562\,176z^3 + 766\,321\,920z^2 - 3\,087\,564\,480z + 1\,206\,079\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\,\left(196\,608z^3 - 6\,732\,544z^2 + 57\,177\,120z - 134\,008\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{9}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.adfc.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) = \frac{1}{7\,571\,025}\left(\left(65\,536\,z^4 - 6\,307\,840\,z^3 + 591\,360\,z^2 + 21\,067\,200\,z + 7\,571\,025\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(65\,536\,z^4 - 901\,120\,z^3 - 4\,139\,520\,z^2 + 7\,909\,440\,z + 7\,571\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adfd.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) = \frac{1}{7\,571\,025}\left(\left(65\,536\,z^4 + 6\,307\,840\,z^3 + 591\,360\,z^2 - 21\,067\,200\,z + 7\,571\,025\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(65\,536\,z^4 + 901\,120\,z^3 - 4\,139\,520\,z^2 - 7\,909\,440\,z + 7\,571\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adfe.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) = -\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(49\,152\,z^4 + 1\,776\,640\,z^3 - 2\,358\,720\,z^2 - 2\,983\,500\,z - 1\,044\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,768\,z^4 - 415\,744\,z^3 - 708\,480\,z^2 + 2\,148\,120\,z + 1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(4096\,z^3 + 546\,048\,z^2 - 245\,520\,z - 1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adff.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{21}{4}; -z\right) = \frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-49\,152\,z^4 + 1\,776\,640\,z^3 + 2\,358\,720\,z^2 - 2\,983\,500\,z + 1\,044\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,768\,z^4 + 415\,744\,z^3 - 708\,480\,z^2 - 2\,148\,120\,z + 1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(4096\,z^3 - 546\,048\,z^2 - 245\,520\,z + 1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adfg.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{19}{4}; z\right) = \left(\frac{32\,768\,z^4}{329\,175} - \frac{2048\,z^3}{1881} - \frac{128\,z^2}{285} + \frac{56\,z}{19} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(4096\,z^3 + 59\,136\,z^2 - 70\,224\,z - 65\,835\right)\sinh\left(2\sqrt{z}\right)}{65\,835}$$

07.22.03.adfh.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{19}{4}; -z\right) = \left(\frac{32\,768\,z^4}{329\,175} + \frac{2048\,z^3}{1881} - \frac{128\,z^2}{285} - \frac{56\,z}{19} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(4096\,z^3 - 59\,136\,z^2 - 70\,224\,z + 65\,835\right)\sin\left(2\sqrt{z}\right)}{65\,835}$$

07.22.03.adfi.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{17}{4}; z\right) =$$
$$\frac{1}{49\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384 z^4 - 136\,192 z^3 + 112\,320 z^2 + 152\,100 z + 49\,725\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,384 z^3 + 68\,864 z^2 - 112\,320 z - 49\,725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^3 - 37\,120 z^2 + 1392 z + 49\,725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adfj.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{49\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384 z^4 + 136\,192 z^3 + 112\,320 z^2 - 152\,100 z + 49\,725\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,384 z^3 - 68\,864 z^2 - 112\,320 z + 49\,725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(4096 z^3 + 37\,120 z^2 + 1392 z - 49\,725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adfk.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) =$$
$$\left(-\frac{4096 z^3}{3465} - \frac{256 z^2}{165} + \frac{16 z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(4096 z^3 - 26\,880 z^2 + 18\,480 z + 17\,325\right)\sinh\left(2\sqrt{z}\right)}{17\,325}$$

07.22.03.adfl.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) =$$
$$\left(\frac{4096 z^3}{3465} - \frac{256 z^2}{165} - \frac{16 z}{5} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(4096 z^3 + 26\,880 z^2 + 18\,480 z - 17\,325\right)\sin\left(2\sqrt{z}\right)}{17\,325}$$

07.22.03.adfm.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) =$$
$$-\frac{1}{2925\sqrt{2}}\left(\sqrt[4]{z}\left(\left(13\,312 z^3 - 5760 z^2 - 9900 z - 2925\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048 z^3 - 8704 z^2 + 7560 z + 2925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(2816 z^2 + 1248 z - 2925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adfn.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{2925\sqrt{2}}\left(\sqrt[4]{z}\left(\left(13\,312 z^3 + 5760 z^2 - 9900 z + 2925\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048 z^3 + 8704 z^2 + 7560 z - 2925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-2816 z^2 + 1248 z + 2925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adfo.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) = \frac{\left(2048 z^3 - 5120 z^2 + 4200 z + 1155\right) \cosh\left(2 \sqrt{z}\right) + 2 \sqrt{z} \left(3328 z^2 - 1120 z - 1155\right) \sinh\left(2 \sqrt{z}\right)}{1155}$$

07.22.03.adfp.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{11}{4}; -z\right) = \frac{-\left(2048 z^3 + 5120 z^2 + 4200 z - 1155\right) \cos\left(2 \sqrt{z}\right) - 2 \sqrt{z} \left(3328 z^2 + 1120 z - 1155\right) \sin\left(2 \sqrt{z}\right)}{1155}$$

07.22.03.adfq.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{9}{4}; z\right) = \frac{1}{225 \sqrt{2}} \left(\sqrt[4]{z} \left(\left(1024 z^3 + 900 z + 225\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$

$$\left.\left. 4 \sqrt{z} \left(1792 z^2 - 720 z - 225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z \left(256 z^2 - 384 z + 225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adfr.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{9}{4}; -z\right) =$$

$$-\frac{1}{225 \sqrt{2}} \left(\sqrt[4]{z} \left(\left(1024 z^3 + 900 z - 225\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4 \sqrt{z} \left(1792 z^2 + 720 z - 225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$

$$\left.\left. 4 z \left(256 z^2 + 384 z + 225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adfs.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{7}{4}; z\right) = \left(-\frac{256 z^2}{15} + \frac{32 z}{7} + 1\right) \cosh\left(2 \sqrt{z}\right) - \frac{2}{105} \sqrt{z} \left(256 z^2 + 32 z + 105\right) \sinh\left(2 \sqrt{z}\right)$$

07.22.03.adft.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) = \left(-\frac{256 z^2}{15} - \frac{32 z}{7} + 1\right) \cos\left(2 \sqrt{z}\right) + \frac{2}{105} \sqrt{z} \left(256 z^2 - 32 z + 105\right) \sin\left(2 \sqrt{z}\right)$$

07.22.03.adfu.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) = -\frac{1}{25 \sqrt{2}}$$

$$\left(\sqrt[4]{z} \left(5 \left(192 z^2 - 28 z - 5\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4 \sqrt{z} \left(128 z^2 + 120 z + 25\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z \left(208 z - 25\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adfv.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{5}{4}; -z\right) = \frac{1}{25 \sqrt{2}}$$

$$\left(\sqrt[4]{z} \left(-5 \left(192 z^2 + 28 z - 5\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4 \sqrt{z} \left(128 z^2 - 120 z + 25\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z \left(208 z + 25\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adfw.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{3}{4}; z\right) = \left(\frac{128 z^2}{15} + 8 z + 1\right) \cosh\left(2 \sqrt{z}\right) + \frac{2}{15} \sqrt{z} \left(208 z - 15\right) \sinh\left(2 \sqrt{z}\right)$$

07.22.03.adfx.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{3}{4}; -z\right) = \left(\frac{128\,z^2}{15} - 8\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\,(208\,z + 15)\sin\left(2\sqrt{z}\right)$$

07.22.03.adfy.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) =$$

$$\frac{1}{5\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64\,z^2 + 100\,z + 5\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(96\,z - 5)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\,(16\,z + 5)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adfz.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) =$$

$$\frac{1}{5\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64\,z^2 - 100\,z + 5\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(96\,z + 5)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,(5 - 16\,z)\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adg0.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) = (1 - 16\,z)\cosh\left(2\sqrt{z}\right) - \frac{2}{5}\sqrt{z}\,(16\,z + 5)\sinh\left(2\sqrt{z}\right)$$

07.22.03.adg1.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{1}{4}; -z\right) = (16\,z + 1)\cos\left(2\sqrt{z}\right) + \frac{2}{5}(5 - 16\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.adg2.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{3}{4}; z\right) = -\frac{\sqrt[4]{z}\left((36\,z - 5)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(8\,z - 1)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 28\,z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.adg3.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{3}{4}; -z\right) = -\frac{\sqrt[4]{z}\left(-(36\,z + 5)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(8\,z + 1)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 28\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.adg4.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{5}{4}; z\right) = \left(1 - \frac{8\,z}{5}\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.adg5.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{5}{4}; -z\right) = \left(\frac{8\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.adg6.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{7}{4}; z\right) = -\frac{3\left(2\sqrt{z}\,(8\,z - 5)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (16\,z + 5)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(8\,z - 5)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.adg7.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{7}{4}; -z\right) = \frac{3\left(2\sqrt{z}\,(8\,z + 5)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (16\,z - 5)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,(8\,z + 5)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.adg8.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{9}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.adg9.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{9}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.adga.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) = -\frac{1}{640\sqrt{2}\,z^{5/4}}$$
$$\left(21\left(-10\sqrt{z}\,(16z+9)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(256z^2+400z+135\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,(112z+135)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adgb.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = \frac{1}{640\sqrt{2}\,z^{5/4}}$$
$$\left(21\left(10\sqrt{z}\,(16z-9)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(256z^2-400z+135\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\,(135-112z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adgc.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) = -\frac{1}{4096\,z^{9/4}}$$
$$\left(9e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(256z^2+704z^{3/2}+1232z+1540\sqrt{z}+e^{4\sqrt{z}}\left(256z^2-704z^{3/2}+1232z-1540\sqrt{z}+1155\right)+1155\right)-\right.\right.$$
$$\left.\left.1155\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-1155\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.adgd.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) =$$
$$\frac{1}{1024\,z^{9/4}}\left(9\left(1155\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(256z^2-1232z+1155\right)\cos\left(2\sqrt{z}\right)+44\,(35-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.adge.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) =$$
$$-\frac{1}{20\,480\sqrt{2}\,z^{9/4}}\left(231\left(2\sqrt{z}\,\left(512z^2+4320z+4095\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(8192z^2+31\,680z+12\,285\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(512z^2+5472z+12\,285\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adgf.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) = -\frac{1}{20\,480\sqrt{2}\,z^{9/4}}\left(231\left(2\sqrt{z}\left(512z^2-4320z+4095\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-8192z^2+31\,680z-12\,285\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(512z^2-5472z+12\,285\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adgg.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) = -\frac{1}{262\,144\,z^{13/4}}\left(117e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-4096z^{5/2}-22\,528z^2-70\,400z^{3/2}-147\,840z-207\,900\sqrt{z}+e^{4\sqrt{z}}\left(4096z^{5/2}-22\,528z^2+70\,400z^{3/2}-147\,840z+207\,900\sqrt{z}-155\,925\right)-155\,925\right)-1155e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-135)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-1155e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-135)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adgh.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) = \frac{1}{65\,536\,z^{13/4}}\left(117\left(1155\sqrt{\pi}\,(16z+135)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(11\left(2048z^2-13\,440z+14\,175\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(1024z^2-17\,600z+51\,975\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.adgi.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) = -\frac{1}{131\,072\sqrt{2}\,z^{13/4}}\left(693\left(-6\sqrt{z}\left(9216z^2+86\,320z+85\,085\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(16\,384z^3+442\,368z^2+1\,943\,760z+765\,765\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(29\,696z^2+310\,128z+765\,765\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adgj.01

$$ {}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) = -\frac{1}{131\,072\sqrt{2}\,z^{13/4}}\left(693\left(6\sqrt{z}\left(9216z^2-86\,320z+85\,085\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(16\,384z^3-442\,368z^2+1\,943\,760z-765\,765\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(29\,696z^2-310\,128z+765\,765\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adgk.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) =$$
$$-\frac{1}{33\,554\,432\, z^{17/4}}\left(1989\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(131\,072\, z^3 + 1\,146\,880\, z^{5/2} + 5\,406\,720\, z^2 + 16\,822\,080\, z^{3/2} + 36\,091\,440\, z + 51\,351\,300\sqrt{z} + e^{4\sqrt{z}}\left(131\,072\, z^3 - 1\,146\,880\, z^{5/2} + 5\,406\,720\, z^2 - 16\,822\,080\, z^{3/2} + 36\,091\,440\, z - 51\,351\,300\sqrt{z} + 38\,513\,475\right) + 38\,513\,475\right) - 1155\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2 - 4320 z + 33\,345\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 1155\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2 - 4320 z + 33\,345\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.adgl.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) = \frac{1}{8\,388\,608\, z^{17/4}}$$
$$\left(1989\left(1155\sqrt{\pi}\left(256 z^2 + 4320 z + 33\,345\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(131\,072 z^3 - 5\,406\,720 z^2 + 36\,091\,440 z - 38\,513\,475\right)\cos\left(2\sqrt{z}\right) - 20\sqrt{z}\left(57\,344 z^2 - 841\,104 z + 2\,567\,565\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.adgm.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) =$$
$$-\frac{1}{4\,194\,304\sqrt{2}\, z^{17/4}}\left(13\,167\left(2\sqrt{z}\left(32\,768 z^3 + 1\,807\,104 z^2 + 16\,336\,320 z + 16\,081\,065\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 21\left(65\,536 z^3 + 1\,341\,184 z^2 + 5\,834\,400 z + 2\,297\,295\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(32\,768 z^3 + 2\,026\,752 z^2 + 19\,603\,584 z + 48\,243\,195\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adgn.01

$${}_1F_2\left(\frac{9}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{4\,194\,304\sqrt{2}\, z^{17/4}}\left(13\,167\left(2\sqrt{z}\left(32\,768 z^3 - 1\,807\,104 z^2 + 16\,336\,320 z - 16\,081\,065\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 21\left(65\,536 z^3 - 1\,341\,184 z^2 + 5\,834\,400 z - 2\,297\,295\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-32\,768 z^3 + 2\,026\,752 z^2 - 19\,603\,584 z + 48\,243\,195\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{9}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.adgo.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) = \frac{1}{7\,571\,025}\left(\left(65\,536 z^4 - 114\,688 z^3 - 11\,020\,800 z^2 - 8\,326\,080 z + 7\,571\,025\right)\cosh\left(2\sqrt{z}\right) - 256\sqrt{z}\left(1024 z^3 - 13\,440 z^2 - 63\,420 z + 24\,885\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adgp.01

$${}_1F_2\left(\frac{9}{4};\frac{1}{2},-\frac{23}{4};-z\right)=\frac{1}{7\,571\,025}\left(\left(65\,536\,z^4+114\,688\,z^3-11\,020\,800\,z^2+8\,326\,080\,z+7\,571\,025\right)\cos\left(2\sqrt{z}\right)-256\sqrt{z}\left(1024\,z^3+13\,440\,z^2-63\,420\,z-24\,885\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adgq.01

$${}_1F_2\left(\frac{9}{4};\frac{1}{2},-\frac{21}{4};z\right)=\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768\,z^4-194\,560\,z^3-2\,766\,720\,z^2+1\,193\,400\,z+1\,044\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(45\,056\,z^3-687\,360\,z^2-1\,485\,360\,z+1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+8\,z\left(4096\,z^3-17\,664\,z^2-432\,720\,z-169\,155\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adgr.01

$${}_1F_2\left(\frac{9}{4};\frac{1}{2},-\frac{21}{4};-z\right)=\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768\,z^4+194\,560\,z^3-2\,766\,720\,z^2-1\,193\,400\,z+1\,044\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(45\,056\,z^3+687\,360\,z^2-1\,485\,360\,z-1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-8\,z\left(4096\,z^3+17\,664\,z^2-432\,720\,z+169\,155\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adgs.01

$${}_1F_2\left(\frac{9}{4};\frac{1}{2},-\frac{19}{4};z\right)=\frac{1}{329\,175}\left(7\left(4096\,z^3-72\,960\,z^2-69\,840\,z+47\,025\right)\cosh\left(2\sqrt{z}\right)+4\sqrt{z}\left(-4096\,z^3+26\,880\,z^2+210\,000\,z-60\,165\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adgt.01

$${}_1F_2\left(\frac{9}{4};\frac{1}{2},-\frac{19}{4};-z\right)=\frac{1}{329\,175}\left(4\sqrt{z}\left(-4096\,z^3-26\,880\,z^2+210\,000\,z+60\,165\right)\sin\left(2\sqrt{z}\right)-7\left(4096\,z^3+72\,960\,z^2-69\,840\,z-47\,025\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.adgu.01

$${}_1F_2\left(\frac{9}{4};\frac{1}{2},-\frac{17}{4};z\right)=\frac{1}{49\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096\,z^3-157\,440\,z^2+46\,800\,z+49\,725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4096\,z^3-28\,928\,z^2-90\,000\,z+49\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+512\,z\left(16\,z^2-357\,z-180\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adgv.01

$${}_1F_2\left(\frac{9}{4};\frac{1}{2},-\frac{17}{4};-z\right)=-\frac{1}{49\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096\,z^3+157\,440\,z^2+46\,800\,z-49\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4096\,z^3+28\,928\,z^2-90\,000\,z-49\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-512\,z\left(16\,z^2+357\,z-180\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adgw.01

$${}_1F_2\left(\frac{9}{4};\frac{1}{2},-\frac{15}{4};z\right)=\left(\frac{4096\,z^3}{17\,325}-\frac{256\,z^2}{165}-\frac{112\,z}{55}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{32}{165}\sqrt{z}\,(16\,z-3)\sinh\left(2\sqrt{z}\right)$$

07.22.03.adgx.01

$${}_1F_2\left(\frac{9}{4};\frac{1}{2},-\frac{15}{4};-z\right)=\left(-\frac{4096\,z^3}{17\,325}-\frac{256\,z^2}{165}+\frac{112\,z}{55}+1\right)\cos\left(2\sqrt{z}\right)+\frac{32}{165}\sqrt{z}\,(16\,z+3)\sin\left(2\sqrt{z}\right)$$

07.22.03.adgy.01

$${}_1F_2\left(\frac{9}{4};\frac{1}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{2925\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048\,z^3-11\,264\,z^2+1800\,z+2925\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(256\,z^2+2336\,z-975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.8\,z\left(256\,z^2-1440\,z-963\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adgz.01

$${}_1F_2\left(\frac{9}{4};\frac{1}{2},-\frac{13}{4};-z\right)=$$
$$-\frac{1}{2925\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048\,z^3+11\,264\,z^2+1800\,z-2925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(256\,z^2-2336\,z-975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.8\,z\left(256\,z^2+1440\,z-963\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adh0.01

$${}_1F_2\left(\frac{9}{4};\frac{1}{2},-\frac{11}{4};z\right)=\frac{-5\left(256\,z^2+672\,z-231\right)\cosh\left(2\sqrt{z}\right)-4\sqrt{z}\left(256\,z^2-1120\,z+105\right)\sinh\left(2\sqrt{z}\right)}{1155}$$

07.22.03.adh1.01

$${}_1F_2\left(\frac{9}{4};\frac{1}{2},-\frac{11}{4};-z\right)=\frac{4\sqrt{z}\left(256\,z^2+1120\,z+105\right)\sin\left(2\sqrt{z}\right)-5\left(256\,z^2-672\,z-231\right)\cos\left(2\sqrt{z}\right)}{1155}$$

07.22.03.adh2.01

$${}_1F_2\left(\frac{9}{4};\frac{1}{2},-\frac{9}{4};z\right)=$$
$$-\frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024\,z^2-225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(256\,z^2-768\,z+225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+96\,z\,(8\,z+9)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adh3.01

$${}_1F_2\left(\frac{9}{4};\frac{1}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(225-1024\,z^2\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(256\,z^2+768\,z+225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+96\,z\,(8\,z-9)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adh4.01

$${}_1F_2\left(\frac{9}{4};\frac{1}{2},-\frac{7}{4};z\right)=\frac{512}{105}\sinh\left(2\sqrt{z}\right)z^{3/2}+\left(\frac{256\,z^2}{105}-\frac{32\,z}{7}+1\right)\cosh\left(2\sqrt{z}\right)$$

07.22.03.adh5.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, -\frac{7}{4}; -z\right) = \frac{512}{105}\sin\left(2\sqrt{z}\right)z^{3/2} + \left(\frac{256\,z^2}{105} + \frac{32\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right)$$

07.22.03.adh6.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, -\frac{5}{4}; z\right) =$$

$$\frac{1}{25\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128\,z^2 - 40\,z + 25\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(144\,z - 25\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 8\,z\,(16\,z - 19)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adh7.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, -\frac{5}{4}; -z\right) =$$

$$\frac{1}{25\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128\,z^2 + 40\,z + 25\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(144\,z + 25\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 8\,z\,(16\,z + 19)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adh8.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, -\frac{3}{4}; z\right) = \left(1 - \frac{48\,z}{5}\right)\cosh\left(2\sqrt{z}\right) + \frac{4}{15}\,(3 - 16\,z)\,\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.adh9.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, -\frac{3}{4}; -z\right) = \left(\frac{48\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{4}{15}\,\sqrt{z}\,\left(16\,z + 3\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.adha.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, -\frac{1}{4}; z\right) = -\frac{\sqrt[4]{z}\left(\left(80\,z - 5\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(16\,z + 5\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 64\,z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.adhb.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, -\frac{1}{4}; -z\right) = -\frac{\sqrt[4]{z}\left(-5\,(16\,z + 1)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(16\,z - 5\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 64\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.adhc.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{1}{4}; z\right) = \left(\frac{16\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{32}{5}\,\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.adhd.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{1}{4}; -z\right) = \left(1 - \frac{16\,z}{5}\right)\cos\left(2\sqrt{z}\right) - \frac{32}{5}\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.adhe.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{3}{4}; z\right) = \frac{\sqrt[4]{z}\left(\left(8\,z + 5\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 28\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 8\,z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.adhf.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{3}{4}; -z\right) = -\frac{\sqrt[4]{z}\left(\left(8\,z - 5\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 28\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 8\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.adhg.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{5}{4}; z\right) = \cosh\left(2\sqrt{z}\right) + \frac{4}{5}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.adhh.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{5}{4}; -z\right) = \cos\left(2\sqrt{z}\right) - \frac{4}{5}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.adhi.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{7}{4}; z\right) = \frac{3\left(4\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (8z-1)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{10\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.adhj.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{7}{4}; -z\right) = -\frac{3\left(-4\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (8z+1)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{10\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.adhk.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{9}{4}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.adhl.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{9}{4}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.adhm.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{11}{4}; z\right) =$$

$$\frac{1}{320\sqrt{2}\,z^{5/4}}\left(21\left(2\sqrt{z}\,(16z+5)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\,(16z+5)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(16z+15)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adhn.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{11}{4}; -z\right) =$$

$$\frac{1}{320\sqrt{2}\,z^{5/4}}\left(21\left(2\sqrt{z}\,(16z-5)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\,(5-16z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\,(15-16z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adho.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{13}{4}; z\right) =$$

$$\frac{1}{2048\,z^{9/4}}\left(9\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-64z^{3/2} - 112z - 140\sqrt{z} + e^{4\sqrt{z}}\left(64z^{3/2} - 112z + 140\sqrt{z} - 105\right) - 105\right) + 105\right.\right.$$
$$\left.\left.e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + 105\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.adhp.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{13}{4}; -z\right) = \frac{9\left(105\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(7\,(16z-15)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,(16z-35)\sin\left(2\sqrt{z}\right)\right)\right)}{512\,z^{9/4}}$$

07.22.03.adhq.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{15}{4}; z\right) = \frac{1}{10\,240\sqrt{2}\, z^{9/4}} $$
$$ \left(231\left(-10\sqrt{z}\,(64z+63) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(512z^2+2400z+945\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\,(128z+315) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adhr.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{15}{4}; -z\right) = \frac{1}{10\,240\sqrt{2}\, z^{9/4}} $$
$$ \left(231\left(10\sqrt{z}\,(64z-63) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(512z^2-2400z+945\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\,(315-128z)\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adhs.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{17}{4}; z\right) = \frac{1}{131\,072\, z^{13/4}}\left(117\, e^{-2\sqrt{z}}\right. $$
$$ \left(4\sqrt[4]{z}\left(1024z^2+4096z^{3/2}+9408z+13\,860\sqrt{z}+e^{4\sqrt{z}}\left(1024z^2-4096z^{3/2}+9408z-13\,860\sqrt{z}+10\,395\right)+\right.\right. $$
$$ \left.\left.\left.10\,395\right)+105\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-99)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+105\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-99)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adht.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{17}{4}; -z\right) = \frac{1}{32\,768\, z^{13/4}} $$
$$ \left(117\left(105\sqrt{\pi}\,(16z+99) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(1024z^2-9408z+10\,395\right)\cos\left(2\sqrt{z}\right)+4\,(3465-1024z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.adhu.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{65\,536\sqrt{2}\, z^{13/4}}\left(693\left(2\sqrt{z}\,\left(1024z^2+14\,640z+15\,015\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 21\left(1024z^2+5360z+2145\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right. $$
$$ \left.\left.2\sqrt{z}\,\left(1024z^2+16\,464z+45\,045\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adhv.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{19}{4}; -z\right) = $$
$$ -\frac{1}{65\,536\sqrt{2}\, z^{13/4}}\left(693\left(2\sqrt{z}\,\left(1024z^2-14\,640z+15\,015\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 21\left(1024z^2-5360z+2145\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right. $$
$$ \left.\left.2\sqrt{z}\,\left(1024z^2-16\,464z+45\,045\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adhw.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{21}{4}; z\right) = \frac{1}{16\,777\,216\, z^{17/4}}\left(1989\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-32\,768\, z^{5/2} - 221\,184\, z^2 - 792\,000\, z^{3/2} - 1\,829\,520\, z - 2\,702\,700\sqrt{z} + e^{4\sqrt{z}}\left(32\,768\, z^{5/2} - 221\,184\, z^2 + 792\,000\, z^{3/2} - 1\,829\,520\, z + 2\,702\,700\sqrt{z} - 2\,027\,025\right) - 2\,027\,025\right) + 105\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 3168\, z + 19\,305\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 105\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 3168\, z + 19\,305\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.adhx.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{21}{4}; -z\right) = \frac{1}{4\,194\,304\, z^{17/4}}\left(1989\left(105\sqrt{\pi}\left(256\, z^2 + 3168\, z + 19\,305\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(27\left(8192\, z^2 - 67\,760\, z + 75\,075\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(8192\, z^2 - 198\,000\, z + 675\,675\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.adhy.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{23}{4}; z\right) = \frac{1}{2\,097\,152\sqrt{2}\, z^{17/4}}\left(13\,167\left(-6\sqrt{z}\left(21\,248\, z^2 + 251\,680\, z + 255\,255\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(32\,768\, z^3 + 1\,169\,664\, z^2 + 5\,765\,760\, z + 2\,297\,295\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\left(7936\, z^2 + 96\,096\, z + 255\,255\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adhz.01

$${}_1F_2\left(\frac{9}{4}; \frac{1}{2}, \frac{23}{4}; -z\right) = -\frac{1}{2\,097\,152\sqrt{2}\, z^{17/4}}\left(13\,167\left(6\sqrt{z}\left(21\,248\, z^2 - 251\,680\, z + 255\,255\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(32\,768\, z^3 - 1\,169\,664\, z^2 + 5\,765\,760\, z - 2\,297\,295\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\left(7936\, z^2 - 96\,096\, z + 255\,255\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{9}{4}$, $b_{1.} = \frac{3}{2}$

07.22.03.adi0.01

$${}_1F_2\left(\frac{9}{4}; \frac{3}{2}, -\frac{23}{4}; z\right) = \frac{1}{15\,142\,050\sqrt{z}}\left(\left(65\,536\, z^4 + 1\,720\,320\, z^3 - 6\,720\,000\, z^2 - 52\,839\,360\, z - 15\,663\,375\right)\sinh\left(2\sqrt{z}\right) - 64\sqrt{z}\left(8192\, z^3 + 26\,880\, z^2 - 463\,680\, z - 726\,075\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.adi1.01

$${}_1F_2\left(\frac{9}{4}; \frac{3}{2}, -\frac{23}{4}; -z\right) = \frac{1}{15\,142\,050\sqrt{z}}\left(64\sqrt{z}\left(8192\, z^3 - 26\,880\, z^2 - 463\,680\, z + 726\,075\right)\cos\left(2\sqrt{z}\right) + \left(65\,536\, z^4 - 1\,720\,320\, z^3 - 6\,720\,000\, z^2 + 52\,839\,360\, z - 15\,663\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adi2.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{3}{2}, -\frac{21}{4}; z\right) = \frac{1}{1\,044\,225\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(-5\left(20\,480 z^3 - 9984 z^2 - 761\,808 z - 208\,845\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\left(4096 z^3 + 65\,280 z^2 - 377\,040 z - 1\,279\,215\right)\right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(-36\,864 z^3 - 37\,120 z^2 + 1\,480\,080 z + 1\,514\,205\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adi3.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{3}{2}, -\frac{21}{4}; -z\right) = \frac{1}{1\,044\,225\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(5\left(20\,480 z^3 + 9984 z^2 - 761\,808 z + 208\,845\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\left(4096 z^3 - 65\,280 z^2 - 377\,040 z + 1\,279\,215\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(-36\,864 z^3 + 37\,120 z^2 + 1\,480\,080 z - 1\,514\,205\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adi4.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{3}{2}, -\frac{19}{4}; z\right) = \frac{1}{658\,350\sqrt{z}} $$
$$ \left(21\left(4096 z^3 - 6400 z^2 - 102\,480 z - 29\,835\right)\sinh\left(2\sqrt{z}\right) - 4\sqrt{z}\left(4096 z^3 + 37\,632 z^2 - 277\,200 z - 477\,855\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.adi5.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{3}{2}, -\frac{19}{4}; -z\right) = \frac{1}{658\,350\sqrt{z}} $$
$$ \left(4\sqrt{z}\left(4096 z^3 - 37\,632 z^2 - 277\,200 z + 477\,855\right)\cos\left(2\sqrt{z}\right) - 21\left(4096 z^3 + 6400 z^2 - 102\,480 z + 29\,835\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.adi6.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{3}{2}, -\frac{17}{4}; z\right) = $$
$$ -\frac{1}{49\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096 z^3 + 11\,520 z^2 - 169\,680 z - 49\,725\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 32\sqrt{z}\left(-1024 z^2 + 3120 z + 14\,445\right)\right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(4096 z^3 + 20\,736 z^2 - 185\,040 z - 197\,505\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adi7.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{3}{2}, -\frac{17}{4}; -z\right) = \frac{1}{49\,725\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(4096 z^3 - 11\,520 z^2 - 169\,680 z + 49\,725\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 32\sqrt{z}\left(1024 z^2 + 3120 z - 14\,445\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. \left(-4096 z^3 + 20\,736 z^2 + 185\,040 z - 197\,505\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adi8.01

$${}_1F_2\left(\frac{9}{4}; \frac{3}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{34\,650\sqrt{z}}\left(\left(4096z^3+3840z^2-104\,400z-29\,835\right)\sinh\left(2\sqrt{z}\right)-48\sqrt{z}\left(256z^2-960z-1965\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.adi9.01

$${}_1F_2\left(\frac{9}{4}; \frac{3}{2}, -\frac{15}{4}; -z\right) = \frac{\left(-4096z^3+3840z^2+104\,400z-29\,835\right)\sin\left(2\sqrt{z}\right)-48\sqrt{z}\left(256z^2+960z-1965\right)\cos\left(2\sqrt{z}\right)}{34\,650\sqrt{z}}$$

07.22.03.adia.01

$${}_1F_2\left(\frac{9}{4}; \frac{3}{2}, -\frac{13}{4}; z\right) =$$
$$\frac{1}{2925\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-1792z^2+9120z+2925\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(256z^2-288z-3195\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.9\left(-256z^2+992z+1155\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adib.01

$${}_1F_2\left(\frac{9}{4}; \frac{3}{2}, -\frac{13}{4}; -z\right) =$$
$$-\frac{1}{2925\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1792z^2+9120z-2925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(256z^2+288z-3195\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.9\left(256z^2+992z-1155\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adic.01

$${}_1F_2\left(\frac{9}{4}; \frac{3}{2}, -\frac{11}{4}; z\right) = \frac{5\left(256z^2-1248z-351\right)\sinh\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2-480z-1455\right)\cosh\left(2\sqrt{z}\right)}{2310\sqrt{z}}$$

07.22.03.adid.01

$${}_1F_2\left(\frac{9}{4}; \frac{3}{2}, -\frac{11}{4}; -z\right) = \frac{5\left(256z^2+1248z-351\right)\sin\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2+480z-1455\right)\cos\left(2\sqrt{z}\right)}{2310\sqrt{z}}$$

07.22.03.adie.01

$${}_1F_2\left(\frac{9}{4}; \frac{3}{2}, -\frac{9}{4}; z\right) = -\frac{1}{225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(256z^2-608z-225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-32\sqrt{z}\left(8z-57\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(256z^2-480z-693\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adif.01

$${}_1F_2\left(\frac{9}{4}; \frac{3}{2}, -\frac{9}{4}; -z\right) = -\frac{1}{225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(256z^2+608z-225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-32\sqrt{z}\left(8z+57\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-256z^2-480z+693\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adig.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},-\frac{7}{4};z\right)=\frac{480\sqrt{z}\,\cosh\left(2\sqrt{z}\right)+\left(256z^2-480z-135\right)\sinh\left(2\sqrt{z}\right)}{210\sqrt{z}}$$

07.22.03.adih.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},-\frac{7}{4};-z\right)=\frac{480\sqrt{z}\,\cos\left(2\sqrt{z}\right)+\left(256z^2+480z-135\right)\sin\left(2\sqrt{z}\right)}{210\sqrt{z}}$$

07.22.03.adii.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},-\frac{5}{4};z\right)=\frac{\sqrt[4]{z}\left((48z+25)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\,(16z-23)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+(16z+63)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{25\sqrt{2}}$$

07.22.03.adij.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},-\frac{5}{4};-z\right)=\frac{\sqrt[4]{z}\left((25-48z)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\,(16z+23)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+(16z-63)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{25\sqrt{2}}$$

07.22.03.adik.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},-\frac{3}{4};z\right)=\frac{-4\sqrt{z}\,(16z-15)\cosh\left(2\sqrt{z}\right)-3\,(16z+5)\sinh\left(2\sqrt{z}\right)}{30\sqrt{z}}$$

07.22.03.adil.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},-\frac{3}{4};-z\right)=\frac{4\sqrt{z}\,(16z+15)\cos\left(2\sqrt{z}\right)+3\,(16z-5)\sin\left(2\sqrt{z}\right)}{30\sqrt{z}}$$

07.22.03.adim.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},-\frac{1}{4};z\right)=-\frac{\sqrt[4]{z}\left((16z-5)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+32\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+(16z-9)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.adin.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},-\frac{1}{4};-z\right)=\frac{\sqrt[4]{z}\left((16z+5)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+32\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-(16z+9)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.adio.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{1}{4};z\right)=\frac{16\sqrt{z}\,\cosh\left(2\sqrt{z}\right)+(16z-3)\sinh\left(2\sqrt{z}\right)}{10\sqrt{z}}$$

07.22.03.adip.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{1}{4};-z\right)=\frac{16\sqrt{z}\,\cos\left(2\sqrt{z}\right)-(16z+3)\sin\left(2\sqrt{z}\right)}{10\sqrt{z}}$$

07.22.03.adiq.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{3}{4};z\right)=\frac{\sqrt[4]{z}\left(5\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+3\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.adir.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{3}{4};-z\right)=-\frac{\sqrt[4]{z}\left(-5\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+3\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}}$$

07.22.03.adis.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{5}{4};z\right)=\frac{2}{5}\cosh\left(2\sqrt{z}\right)+\frac{3\sinh\left(2\sqrt{z}\right)}{10\sqrt{z}}$$

07.22.03.adit.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{5}{4};-z\right)=\frac{2}{5}\cos\left(2\sqrt{z}\right)+\frac{3\sin\left(2\sqrt{z}\right)}{10\sqrt{z}}$$

07.22.03.adiu.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{7}{4};z\right)=\frac{3\left(\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.adiv.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{7}{4};-z\right)=\frac{3\left(\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{5\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.adiw.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{9}{4};z\right)=\frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.adix.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{9}{4};-z\right)=\frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.adiy.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{11}{4};z\right)=\frac{21\left(-2\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(16z+3)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-6\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{160\sqrt{2}\,z^{5/4}}$$

07.22.03.adiz.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{11}{4};-z\right)=\frac{21\left(2\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(16z-3)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-6\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{160\sqrt{2}\,z^{5/4}}$$

07.22.03.adj0.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{13}{4};z\right)=$$

$$\frac{1}{1024\,z^{9/4}}\left(9\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16z+20\sqrt{z}+e^{4\sqrt{z}}\left(16z-20\sqrt{z}+15\right)+15\right)-15\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\right.\right.$$

$$\left.\left.15\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.adj1.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{13}{4};-z\right)=-\frac{9\left(15\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\ \left((16z-15)\cos\left(2\sqrt{z}\right)-20\sqrt{z}\ \sin\left(2\sqrt{z}\right)\right)\right)}{256\,z^{9/4}}$$

07.22.03.adj2.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{15}{4};z\right)=$$

$$\frac{1}{5120\sqrt{2}\ z^{9/4}}\left(231\left(2\sqrt{z}\ (32z+35)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-(256z+105)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\ (32z+105)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adj3.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{15}{4};-z\right)=$$

$$-\frac{1}{5120\sqrt{2}\ z^{9/4}}\left(231\left(2\sqrt{z}\ (32z-35)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(105-256z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\,(105-32z)\sqrt{z}\ J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adj4.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{17}{4};z\right)=$$

$$\frac{1}{65\,536\,z^{13/4}}\left(117\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\ \left(-256\,z^{3/2}-768\,z-1260\sqrt{z}\ +e^{4\sqrt{z}}\ \left(256\,z^{3/2}-768\,z+1260\sqrt{z}\ -945\right)-945\right)-\right.\right.$$

$$\left.\left.15\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ (16z-63)\,\mathrm{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)-15\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ (16z-63)\,\mathrm{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.adj5.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{17}{4};-z\right)=$$

$$-\frac{1}{16\,384\,z^{13/4}}\left(117\left(15\sqrt{\pi}\ (16z+63)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\ \left((768z-945)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\ (64z-315)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.adj6.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{19}{4};z\right)=\frac{1}{32\,768\sqrt{2}\ z^{13/4}}\left(693\right.$$

$$\left.\left(-10\sqrt{z}\ (208z+231)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1024z^2+8400z+3465\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-126\sqrt{z}\ (16z+55)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adj7.01

$${}_1F_2\left(\frac{9}{4};\frac{3}{2},\frac{19}{4};-z\right)=-\frac{1}{32\,768\sqrt{2}\ z^{13/4}}\left(693\left(10\sqrt{z}\ (208z-231)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$

$$\left.\left.\left(1024z^2-8400z+3465\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+126\,(55-16z)\sqrt{z}\ J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adj8.01

$${}_1F_2\left(\frac{9}{4}; \frac{3}{2}, \frac{21}{4}; z\right) = \frac{1}{8\,388\,608\, z^{17/4}} \left(1989\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(8192\, z^2 + 42\,048\, z^{3/2} + 113\,904\, z + 180\,180\sqrt{z} + 135\,135\right) + 135\,135\right) - 15\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 2016\, z + 9009\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 15\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 2016\, z + 9009\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.adj9.01

$${}_1F_2\left(\frac{9}{4}; \frac{3}{2}, \frac{21}{4}; -z\right) = -\frac{1}{2\,097\,152\, z^{17/4}} \left(1989\left(15\sqrt{\pi}\left(256\, z^2 + 2016\, z + 9009\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(8192\, z^2 - 113\,904\, z + 135\,135\right)\cos\left(2\sqrt{z}\right) + 36\left(5005 - 1168\, z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.adja.01

$${}_1F_2\left(\frac{9}{4}; \frac{3}{2}, \frac{23}{4}; z\right) = \frac{1}{1\,048\,576\sqrt{2}\, z^{17/4}} \left(13\,167\left(2\sqrt{z}\left(1792\, z^2 + 42\,240\, z + 45\,045\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 9\left(5888\, z^2 + 36\,960\, z + 15\,015\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 18\sqrt{z}\left(256\, z^2 + 4928\, z + 15\,015\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adjb.01

$${}_1F_2\left(\frac{9}{4}; \frac{3}{2}, \frac{23}{4}; -z\right) = \frac{1}{1\,048\,576\sqrt{2}\, z^{17/4}} \left(13\,167\left(2\sqrt{z}\left(1792\, z^2 - 42\,240\, z + 45\,045\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 9\left(5888\, z^2 - 36\,960\, z + 15\,015\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\left(256\, z^2 - 4928\, z + 15\,015\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{9}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.adjc.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, -\frac{23}{4}; z\right) = \frac{1}{20\,189\,400\, z^{3/2}} \left(2\sqrt{z}\left(65\,536\, z^4 + 4\,997\,120\, z^3 + 50\,910\,720\, z^2 + 142\,363\,200\, z + 151\,412\,625\right)\cosh\left(2\sqrt{z}\right) - 5\left(327\,680\, z^4 + 7\,684\,096\, z^3 + 39\,040\,512\, z^2 + 66\,830\,400\, z + 30\,282\,525\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adjd.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, -\frac{23}{4}; -z\right) = \frac{1}{20\,189\,400\, z^{3/2}} \left(5\left(327\,680\, z^4 - 7\,684\,096\, z^3 + 39\,040\,512\, z^2 - 66\,830\,400\, z + 30\,282\,525\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\left(65\,536\, z^4 - 4\,997\,120\, z^3 + 50\,910\,720\, z^2 - 142\,363\,200\, z + 151\,412\,625\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.adje.01

$${}_1F_2\left(\frac{9}{4};\frac{5}{2},-\frac{21}{4};z\right)=\frac{1}{1\,392\,300\sqrt{2}\,z^{3/4}}\left(\left(8z\left(4096z^3+218\,880z^2+1\,471\,920z+2\,445\,345\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(176\,128z^3+3\,014\,400z^2+10\,910\,160z+13\,627\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(32\,768z^4+1\,935\,360z^3+15\,350\,400z^2+36\,340\,920z+40\,883\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adjf.01

$${}_1F_2\left(\frac{9}{4};\frac{5}{2},-\frac{21}{4};-z\right)=\frac{1}{1\,392\,300\sqrt{2}\,z^{3/4}}\left(\left(-8z\left(4096z^3-218\,880z^2+1\,471\,920z-2\,445\,345\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(176\,128z^3-3\,014\,400z^2+10\,910\,160z-13\,627\,845\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(32\,768z^4-1\,935\,360z^3+15\,350\,400z^2-36\,340\,920z+40\,883\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adjg.01

$${}_1F_2\left(\frac{9}{4};\frac{5}{2},-\frac{19}{4};z\right)=\frac{1}{877\,800z^{3/2}}\left(2\sqrt{z}\left(151\,552z^3+1\,908\,480z^2+5\,172\,720z+5\,221\,125\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(32\,768z^4+1\,361\,920z^3+7\,324\,800z^2+11\,695\,320z+5\,221\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adjh.01

$${}_1F_2\left(\frac{9}{4};\frac{5}{2},-\frac{19}{4};-z\right)=\frac{1}{877\,800z^{3/2}}\left(2\sqrt{z}\left(151\,552z^3-1\,908\,480z^2+5\,172\,720z-5\,221\,125\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(32\,768z^4-1\,361\,920z^3+7\,324\,800z^2-11\,695\,320z+5\,221\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adji.01

$${}_1F_2\left(\frac{9}{4};\frac{5}{2},-\frac{17}{4};z\right)=\frac{1}{66\,300\sqrt{2}\,z^{3/4}}$$
$$\left(\left(80z\left(768z^2+6080z+9241\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(4096z^3+119\,040z^2+438\,320z+504\,735\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(65\,536z^3+623\,360z^2+1\,404\,480z+1\,514\,205\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adjj.01

$${}_1F_2\left(\frac{9}{4};\frac{5}{2},-\frac{17}{4};-z\right)=\frac{1}{66\,300\sqrt{2}\,z^{3/4}}$$
$$\left(\left(80z\left(768z^2-6080z+9241\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4096z^3-119\,040z^2+438\,320z-504\,735\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-65\,536z^3+623\,360z^2-1\,404\,480z+1\,514\,205\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adjk.01

$${}_1F_2\left(\frac{9}{4};\frac{5}{2},-\frac{15}{4};z\right)=\frac{1}{46\,200z^{3/2}}$$
$$\left(2\sqrt{z}\left(4096z^3+83\,712z^2+222\,000z+208\,845\right)\cosh\left(2\sqrt{z}\right)-\left(53\,248z^3+326\,400z^2+477\,360z+208\,845\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adjl.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, -\frac{15}{4}; -z\right) = \frac{1}{46\,200\, z^{3/2}}$$
$$\left(2\sqrt{z}\,\left(4096 z^3 - 83\,712 z^2 + 222\,000 z - 208\,845\right)\cos\left(2\sqrt{z}\right) + \left(-53\,248 z^3 + 326\,400 z^2 - 477\,360 z + 208\,845\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adjm.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, -\frac{13}{4}; z\right) =$$
$$\frac{1}{3900\sqrt{2}\, z^{3/4}}\left(\left(8 z\left(256 z^2 + 3040 z + 4145\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 28\sqrt{z}\,\left(768 z^2 + 3040 z + 3135\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.\left(2048 z^3 + 30\,208 z^2 + 64\,680 z + 65\,835\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adjn.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{3900\sqrt{2}\, z^{3/4}}\left(\left(8 z\left(256 z^2 - 3040 z + 4145\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 28\sqrt{z}\,\left(768 z^2 - 3040 z + 3135\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.\left(-2048 z^3 + 30\,208 z^2 - 64\,680 z + 65\,835\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adjo.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{3080\, z^{3/2}}\left(2\sqrt{z}\,\left(4352 z^2 + 11\,680 z + 9945\right)\cosh\left(2\sqrt{z}\right) - \left(2048 z^3 + 17\,920 z^2 + 23\,400 z + 9945\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adjp.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{3080\, z^{3/2}}\left(\left(-2048 z^3 + 17\,920 z^2 - 23\,400 z + 9945\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(4352 z^2 - 11\,680 z + 9945\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.adjq.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, -\frac{9}{4}; z\right) = \frac{1}{300\sqrt{2}\, z^{3/4}}$$
$$\left(\left(16 z\,(96 z + 115)\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(256 z^2 + 1312 z + 1155\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 7\left(256 z^2 + 528 z + 495\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adjr.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{5}{2}, -\frac{9}{4}; -z\right) = \frac{1}{300\sqrt{2}\, z^{3/4}} \left(\left(-16z(96z-115) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(256z^2-1312z+1155\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 7\left(256z^2-528z+495\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adjs.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{5}{2}, -\frac{7}{4}; z\right) = \frac{2\sqrt{z}\left(256z^2+800z+585\right)\cosh\left(2\sqrt{z}\right) - 5\left(256z^2+288z+117\right)\sinh\left(2\sqrt{z}\right)}{280\, z^{3/2}} $$

07.22.03.adjt.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{5}{2}, -\frac{7}{4}; -z\right) = \frac{5\left(256z^2-288z+117\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256z^2-800z+585\right)\cos\left(2\sqrt{z}\right)}{280\, z^{3/2}} $$

07.22.03.adju.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{5}{2}, -\frac{5}{4}; z\right) = \frac{1}{100\sqrt{2}\, z^{3/4}} \left(3\left(8z(16z+17) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 28\sqrt{z}\,(16z+11) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(128z^2+280z+231\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adjv.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{5}{2}, -\frac{5}{4}; -z\right) = \frac{1}{100\sqrt{2}\, z^{3/4}} \left(3\left(-8z(16z-17) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 28\sqrt{z}\,(16z-11) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(128z^2-280z+231\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adjw.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{5}{2}, -\frac{3}{4}; z\right) = \frac{10\sqrt{z}\,(16z+9)\cosh\left(2\sqrt{z}\right) - \left(128z^2+120z+45\right)\sinh\left(2\sqrt{z}\right)}{40\, z^{3/2}} $$

07.22.03.adjx.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{5}{2}, -\frac{3}{4}; -z\right) = \frac{10\sqrt{z}\,(16z-9)\cos\left(2\sqrt{z}\right) + \left(128z^2-120z+45\right)\sin\left(2\sqrt{z}\right)}{40\, z^{3/2}} $$

07.22.03.adjy.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{5}{2}, -\frac{1}{4}; z\right) = \frac{3\left(16z\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(16z+7) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + (32z+21) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}\, z^{3/4}} $$

07.22.03.adjz.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{5}{2}, -\frac{1}{4}; -z\right) = \frac{3\left(16z\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(16z-7) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + (21-32z) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}\, z^{3/4}} $$

07.22.03.adk0.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, \frac{1}{4}; z\right) = \frac{3\,(16\,z+5)\left(2\sqrt{z}\,\cosh\left(2\sqrt{z}\right)-\sinh\left(2\sqrt{z}\right)\right)}{40\,z^{3/2}}$$

07.22.03.adk1.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, \frac{1}{4}; -z\right) = \frac{3\,(16\,z-5)\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)-\sin\left(2\sqrt{z}\right)\right)}{40\,z^{3/2}}$$

07.22.03.adk2.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, \frac{3}{4}; z\right) = \frac{3\left(8\,z\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+(8\,z+3)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}\,z^{3/4}}$$

07.22.03.adk3.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, \frac{3}{4}; -z\right) = \frac{3\left(8\,z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+(3-8\,z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}\,z^{3/4}}$$

07.22.03.adk4.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, \frac{5}{4}; z\right) = \frac{3\left((8\,z+1)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{40\,z^{3/2}}$$

07.22.03.adk5.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, \frac{5}{4}; -z\right) = \frac{6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+3\,(8\,z-1)\sin\left(2\sqrt{z}\right)}{40\,z^{3/2}}$$

07.22.03.adk6.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, \frac{7}{4}; z\right) = \frac{9\left(4\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)-I_{\frac{3}{4}}\left(\sqrt{z}\right)\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}\,z^{3/4}}$$

07.22.03.adk7.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, \frac{7}{4}; -z\right) = \frac{9\left(4\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)-J_{\frac{3}{4}}\left(\sqrt{z}\right)\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}\,z^{3/4}}$$

07.22.03.adk8.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, \frac{9}{4}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4\,z}-\frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.adk9.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, \frac{9}{4}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.adka.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, \frac{11}{4}; z\right) = \frac{63\left(2\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-3\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{80\sqrt{2}\,z^{5/4}}$$

07.22.03.adkb.01

$${}_1F_2\left(\frac{9}{4};\frac{5}{2},\frac{11}{4};-z\right)=-\frac{63\left(2\sqrt{z}\ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-3J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\ J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{80\sqrt{2}\ z^{5/4}}$$

07.22.03.adkc.01

$${}_1F_2\left(\frac{9}{4};\frac{5}{2},\frac{13}{4};z\right)=$$

$$\frac{1}{512\,z^{9/4}}\left(27\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}-5\right)-4\sqrt{z}-5\right)+5\,e^{2\sqrt{z}}\sqrt{2\pi}\ \mathrm{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)+5\,e^{2\sqrt{z}}\sqrt{2\pi}\ \mathrm{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.adkd.01

$${}_1F_2\left(\frac{9}{4};\frac{5}{2},\frac{13}{4};-z\right)=-\frac{27\left(10\sqrt[4]{z}\cos\left(2\sqrt{z}\right)-5\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+8\,z^{3/4}\sin\left(2\sqrt{z}\right)\right)}{128\,z^{9/4}}$$

07.22.03.adke.01

$${}_1F_2\left(\frac{9}{4};\frac{5}{2},\frac{15}{4};z\right)=\frac{693\left(-14\sqrt{z}\ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(32z+21)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-42\sqrt{z}\ I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{2560\sqrt{2}\ z^{9/4}}$$

07.22.03.adkf.01

$${}_1F_2\left(\frac{9}{4};\frac{5}{2},\frac{15}{4};-z\right)=-\frac{693\left(14\sqrt{z}\ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(32z-21)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-42\sqrt{z}\ J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{2560\sqrt{2}\ z^{9/4}}$$

07.22.03.adkg.01

$${}_1F_2\left(\frac{9}{4};\frac{5}{2},\frac{17}{4};z\right)=\frac{1}{32\,768\,z^{13/4}}\left(351\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(64z+180\sqrt{z}+e^{4\sqrt{z}}\left(64z-180\sqrt{z}+135\right)+135\right)+\right.\right.$$
$$\left.\left.5\,e^{2\sqrt{z}}\sqrt{2\pi}\ (16z-27)\,\mathrm{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)+5\,e^{2\sqrt{z}}\sqrt{2\pi}\ (16z-27)\,\mathrm{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.adkh.01

$${}_1F_2\left(\frac{9}{4};\frac{5}{2},\frac{17}{4};-z\right)=\frac{351\left(5\sqrt{\pi}\ (16z+27)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left((64z-135)\cos\left(2\sqrt{z}\right)-180\sqrt{z}\ \sin\left(2\sqrt{z}\right)\right)\right)}{8192\,z^{13/4}}$$

07.22.03.adki.01

$${}_1F_2\left(\frac{9}{4};\frac{5}{2},\frac{19}{4};z\right)=\frac{1}{16\,384\sqrt{2}\ z^{13/4}}$$
$$\left(693\left(2\sqrt{z}\ (272z+385)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-7\,(368z+165)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+14\sqrt{z}\ (16z+165)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adkj.01

$${}_1F_2\left(\frac{9}{4};\frac{5}{2},\frac{19}{4};-z\right)=\frac{1}{16\,384\sqrt{2}\ z^{13/4}}$$
$$\left(693\left(2\sqrt{z}\ (272z-385)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-7\,(368z-165)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+14\,(165-16z)\sqrt{z}\ J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adkk.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, \frac{21}{4}; z\right) =$$
$$\frac{1}{4\,194\,304\, z^{17/4}}\left(5967\, e^{-2\sqrt{z}}\left(36\sqrt[4]{z}\left(-192\, z^{3/2} - 976\, z - 1820\sqrt{z} + e^{4\sqrt{z}}\left(192\, z^{3/2} - 976\, z + 1820\sqrt{z} - 1365\right) - 1365\right) + \right.\right.$$
$$\left.\left. 5\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 864\, z + 2457\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 5\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 864\, z + 2457\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.adkl.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, \frac{21}{4}; -z\right) = \frac{1}{1\,048\,576\, z^{17/4}}$$
$$\left(5967\left(5\sqrt{\pi}\left(256\, z^2 + 864\, z + 2457\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 18\sqrt[4]{z}\left((976\, z - 1365)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,(48\, z - 455)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.adkm.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, \frac{23}{4}; z\right) =$$
$$\frac{1}{524\,288\sqrt{2}\, z^{17/4}}\left(13\,167\left(2\sqrt{z}\left(256\, z^2 - 8800\, z - 10\,395\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(5888\, z^2 + 73\,920\, z + 31\,185\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left. 2\sqrt{z}\left(256\, z^2 + 7392\, z + 31\,185\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adkn.01

$${}_1F_2\left(\frac{9}{4}; \frac{5}{2}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{524\,288\sqrt{2}\, z^{17/4}}\left(13\,167\left(2\sqrt{z}\left(256\, z^2 + 8800\, z - 10\,395\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(5888\, z^2 - 73\,920\, z + 31\,185\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 2\sqrt{z}\left(256\, z^2 - 7392\, z + 31\,185\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{9}{4}$, $b_{1.} = \frac{7}{2}$

07.22.03.adko.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, -\frac{23}{4}; z\right) = \frac{1}{16\,151\,520\, z^{5/2}}$$
$$\left(\left(262\,144\, z^5 + 40\,632\,320\, z^4 + 1\,041\,438\,720\, z^3 + 9\,356\,256\,000\, z^2 + 29\,676\,874\,500\, z + 14\,989\,849\,875\right)\sinh\left(2\sqrt{z}\right) - \right.$$
$$\left. 10\sqrt{z}\left(458\,752\, z^4 + 23\,937\,024\, z^3 + 351\,472\,128\, z^2 + 1\,938\,081\,600\, z + 2\,997\,969\,975\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.adkp.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{16\,151\,520\, z^{5/2}}$$
$$\left(\left(-262\,144\, z^5 + 40\,632\,320\, z^4 - 1\,041\,438\,720\, z^3 + 9\,356\,256\,000\, z^2 - 29\,676\,874\,500\, z + 14\,989\,849\,875\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$\left. 10\sqrt{z}\left(458\,752\, z^4 - 23\,937\,024\, z^3 + 351\,472\,128\, z^2 - 1\,938\,081\,600\, z + 2\,997\,969\,975\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.adkq.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},-\frac{21}{4};z\right)=\frac{1}{1\,113\,840\sqrt{2}\,z^{7/4}}\left(\left(-4z\left(249\,856z^3+9\,980\,160z^2+111\,340\,080z+422\,463\,195\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(32\,768z^4+3\,999\,744z^3+81\,636\,480z^2+576\,263\,160z+1\,267\,389\,585\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-9\left(114\,688z^4+4\,910\,080z^3+59\,991\,360z^2+272\,556\,900z+422\,463\,195\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adkr.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},-\frac{21}{4};-z\right)=\frac{1}{1\,113\,840\sqrt{2}\,z^{7/4}}\left(\left(-4z\left(249\,856z^3-9\,980\,160z^2+111\,340\,080z-422\,463\,195\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(32\,768z^4-3\,999\,744z^3+81\,636\,480z^2-576\,263\,160z+1\,267\,389\,585\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+9\left(114\,688z^4-4\,910\,080z^3+59\,991\,360z^2-272\,556\,900z+422\,463\,195\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adks.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},-\frac{19}{4};z\right)=\frac{1}{702\,240z^{5/2}}\left(5\left(180\,224z^4+5\,956\,608z^3+56\,137\,536z^2+179\,606\,700z+90\,847\,575\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(32\,768z^4+3\,164\,160z^3+51\,999\,360z^2+292\,383\,000z+454\,237\,875\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.adkt.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},-\frac{19}{4};-z\right)=\frac{1}{702\,240z^{5/2}}\left(5\left(180\,224z^4-5\,956\,608z^3+56\,137\,536z^2-179\,606\,700z+90\,847\,575\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(32\,768z^4-3\,164\,160z^3+51\,999\,360z^2-292\,383\,000z+454\,237\,875\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.adku.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},-\frac{17}{4};z\right)=-\frac{1}{53\,040\sqrt{2}\,z^{7/4}}\left(\left(4z\left(4096z^3+290\,560z^2+3\,543\,920z+13\,627\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(98\,304z^3+2\,520\,320z^2+18\,458\,880z+40\,883\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,384z^4+1\,264\,640z^3+17\,054\,400z^2+78\,738\,660z+122\,650\,605\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adkv.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},-\frac{17}{4};-z\right)=\frac{1}{53\,040\sqrt{2}\,z^{7/4}}\left(\left(-4z\left(4096z^3-290\,560z^2+3\,543\,920z-13\,627\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(98\,304z^3-2\,520\,320z^2+18\,458\,880z-40\,883\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,384z^4-1\,264\,640z^3+17\,054\,400z^2-78\,738\,660z+122\,650\,605\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adkw.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},-\frac{15}{4};z\right)=\frac{1}{36\,960z^{5/2}}\left(\left(16\,384z^4+936\,960z^3+9\,547\,200z^2+30\,909\,060z+15\,663\,375\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\left(28\,672z^3+577\,280z^2+3\,341\,520z+5\,221\,125\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.adkx.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, -\frac{15}{4}; -z\right) = \frac{1}{36\,960\, z^{5/2}}\left(6\sqrt{z}\left(28\,672\, z^3 - 577\,280\, z^2 + 3\,341\,520\, z - 5\,221\,125\right)\cos\left(2\sqrt{z}\right) + \left(16\,384\, z^4 - 936\,960\, z^3 + 9\,547\,200\, z^2 - 30\,909\,060\, z + 15\,663\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adky.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, -\frac{13}{4}; z\right) = \frac{1}{3120\sqrt{2}\, z^{7/4}}\left(\left(-140\, z\left(256\, z^2 + 3680\, z + 14\,421\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048\, z^3 + 87\,040\, z^2 + 677\,160\, z + 1\,514\,205\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(37\,888\, z^3 + 612\,480\, z^2 + 2\,896\,740\, z + 4\,542\,615\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adkz.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, -\frac{13}{4}; -z\right) = \frac{1}{3120\sqrt{2}\, z^{7/4}}\left(\left(140\, z\left(256\, z^2 - 3680\, z + 14\,421\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048\, z^3 - 87\,040\, z^2 + 677\,160\, z - 1\,514\,205\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-37\,888\, z^3 + 612\,480\, z^2 - 2\,896\,740\, z + 4\,542\,615\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adl0.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, -\frac{11}{4}; z\right) = \frac{1}{2464\, z^{5/2}}\left(\left(31\,744\, z^3 + 374\,400\, z^2 + 1\,233\,180\, z + 626\,535\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(2048\, z^3 + 65\,536\, z^2 + 397\,800\, z + 626\,535\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.adl1.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, -\frac{11}{4}; -z\right) = \frac{1}{2464\, z^{5/2}}\left(2\sqrt{z}\left(2048\, z^3 - 65\,536\, z^2 + 397\,800\, z - 626\,535\right)\cos\left(2\sqrt{z}\right) + \left(-31\,744\, z^3 + 374\,400\, z^2 - 1\,233\,180\, z + 626\,535\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adl2.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, -\frac{9}{4}; z\right) = -\frac{1}{240\sqrt{2}\, z^{7/4}}\left(\left(4\, z\left(256\, z^2 + 5440\, z + 21\,945\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(3328\, z^2 + 29\,040\, z + 65\,835\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(1024\, z^3 + 25\,344\, z^2 + 124\,740\, z + 197\,505\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adl3.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{240\sqrt{2}\, z^{7/4}}\left(\left(4z\left(256z^2-5440z+21\,945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(3328z^2-29\,040z+65\,835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-1024z^3+25\,344z^2-124\,740z+197\,505\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adl4.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{224z^{5/2}}\left(\left(1024z^3+17\,280z^2+58\,500z+29\,835\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(2816z^2+18\,720z+29\,835\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.adl5.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{224z^{5/2}}\left(\left(-1024z^3+17\,280z^2-58\,500z+29\,835\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(2816z^2-18\,720z+29\,835\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.adl6.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, -\frac{5}{4}; z\right) = \frac{1}{80\sqrt{2}\, z^{7/4}}\left(3\left(-4z\left(272z+1155\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\left(128z^2+1496z+3465\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(1216z^2+6468z+10\,395\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adl7.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, -\frac{5}{4}; -z\right) = -\frac{1}{80\sqrt{2}\, z^{7/4}}\left(3\left(4z\left(272z-1155\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\left(128z^2-1496z+3465\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1216z^2+6468z-10\,395\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adl8.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, -\frac{3}{4}; z\right) = \frac{15\left(64z^2+228z+117\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(128z^2+1080z+1755\right)\cosh\left(2\sqrt{z}\right)}{32z^{5/2}}$$

07.22.03.adl9.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, -\frac{3}{4}; -z\right) = \frac{15\left(64z^2-228z+117\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(128z^2-1080z+1755\right)\cos\left(2\sqrt{z}\right)}{32z^{5/2}}$$

07.22.03.adla.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, -\frac{1}{4}; z\right) = \frac{1}{16\sqrt{2}\, z^{7/4}}$$
$$\left(-12z\left(16z+77\right)\Gamma\left(\frac{3}{4}\right)^2 I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+64\sqrt{z}\left(32z+77\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{7}{4}\right)^2 I_{-\frac{1}{4}}\left(\sqrt{z}\right)-3\left(64z^2+420z+693\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adlb.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},-\frac{1}{4};-z\right)=\frac{1}{16\sqrt{2}\,z^{7/4}}$$
$$\left(12\,(77-16\,z)\,z\,\Gamma\left(\frac{3}{4}\right)^2 J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+64\sqrt{z}\,(32\,z-77)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{7}{4}\right)^2 J_{-\frac{1}{4}}\left(\sqrt{z}\right)+3\left(64\,z^2-420\,z+693\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adlc.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{1}{4};z\right)=\frac{3\left(64\,z^2+260\,z+135\right)\sinh\left(2\sqrt{z}\right)-30\sqrt{z}\,(16\,z+27)\cosh\left(2\sqrt{z}\right)}{32\,z^{5/2}}$$

07.22.03.adld.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{1}{4};-z\right)=\frac{30\sqrt{z}\,(16\,z-27)\cos\left(2\sqrt{z}\right)+3\left(64\,z^2-260\,z+135\right)\sin\left(2\sqrt{z}\right)}{32\,z^{5/2}}$$

07.22.03.adle.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{3}{4};z\right)=\frac{3\left(-28\,z\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(8\,z+21)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-9\,(4\,z+7)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{16\sqrt{2}\,z^{7/4}}$$

07.22.03.adlf.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{3}{4};-z\right)=\frac{3\left(28\,z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(8\,z-21)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+9\,(7-4\,z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{16\sqrt{2}\,z^{7/4}}$$

07.22.03.adlg.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{5}{4};z\right)=\frac{6\sqrt{z}\,(8\,z+15)\cosh\left(2\sqrt{z}\right)-3\,(28\,z+15)\sinh\left(2\sqrt{z}\right)}{32\,z^{5/2}}$$

07.22.03.adlh.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{5}{4};-z\right)=\frac{3\,(28\,z-15)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\,(8\,z-15)\cos\left(2\sqrt{z}\right)}{32\,z^{5/2}}$$

07.22.03.adli.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{7}{4};z\right)=\frac{\left(4\,z\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+(4\,z+9)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{7}{4}\right)^2}{\sqrt{2}\,z^{7/4}}$$

07.22.03.adlj.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{7}{4};-z\right)=\frac{\left(-4\,z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+(4\,z-9)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{7}{4}\right)^2}{\sqrt{2}\,z^{7/4}}$$

07.22.03.adlk.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{9}{4};z\right)=\frac{15\left((4\,z+3)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.adll.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{9}{4};-z\right)=-\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4\,z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.adlm.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{11}{4};z\right)=\frac{7\left(2\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)-3\,I_{\frac{3}{4}}\left(\sqrt{z}\right)\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{7}{4}\right)^2}{\sqrt{2}\,z^{7/4}}$$

07.22.03.adln.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{11}{4};-z\right)=\frac{7\,J_{\frac{3}{4}}\left(\sqrt{z}\right)\left(3\,J_{\frac{3}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)\right)\Gamma\left(\frac{7}{4}\right)^2}{\sqrt{2}\,z^{7/4}}$$

07.22.03.adlo.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{13}{4};z\right)=$$
$$\frac{1}{256\,z^{5/2}}\left(135\,e^{-2\sqrt{z}}\left(4\left(e^{4\sqrt{z}}\left(\sqrt{z}-3\right)+\sqrt{z}+3\right)+5\,e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+5\,e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.adlp.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{13}{4};-z\right)=\frac{135\left(2\sqrt{z}\,\cos\left(2\sqrt{z}\right)+5\sqrt{\pi}\,\sqrt[4]{z}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-6\sin\left(2\sqrt{z}\right)\right)}{64\,z^{5/2}}$$

07.22.03.adlq.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{15}{4};z\right)=\frac{693\left(14\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-21\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-6\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{256\sqrt{2}\,z^{9/4}}$$

07.22.03.adlr.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{15}{4};-z\right)=\frac{693\left(14\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-21\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{256\sqrt{2}\,z^{9/4}}$$

07.22.03.adls.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{17}{4};z\right)=$$
$$\frac{1}{16\,384\,z^{13/4}}\left(1755\,e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}+45\right)-4\sqrt{z}+45\right)+5\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+9)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+\right.\right.$$
$$\left.\left.5\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+9)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.adlt.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{17}{4};-z\right)=\frac{1755\left(90\sqrt[4]{z}\,\cos\left(2\sqrt{z}\right)+5\sqrt{\pi}\,(16z-9)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-8\,z^{3/4}\sin\left(2\sqrt{z}\right)\right)}{4096\,z^{13/4}}$$

07.22.03.adlu.01

$${}_1F_2\left(\frac{9}{4};\frac{7}{2},\frac{19}{4};z\right)=$$
$$\frac{1}{8192\sqrt{2}\,z^{13/4}}\left(3465\left(2\sqrt{z}\,(80z-77)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+7\,(16z+33)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,(80z+231)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adlv.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, \frac{19}{4}; -z\right) =$$
$$\frac{1}{8192\sqrt{2}\, z^{13/4}}\left(3465\left(2\sqrt{z}\,(80z+77)\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 7(16z-33)\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(80z-231)\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adlw.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, \frac{21}{4}; z\right) =$$
$$\frac{1}{2\,097\,152\, z^{17/4}}\left(29\,835\, e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-320z^{3/2} - 432z - 2340\sqrt{z} + e^{4\sqrt{z}}\left(320z^{3/2} - 432z + 2340\sqrt{z} - 1755\right) - 1755\right) + 5\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 + 288z - 351\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 5\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2 + 288z - 351\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.adlx.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, \frac{21}{4}; -z\right) = -\frac{1}{524\,288\, z^{17/4}}$$
$$\left(29\,835\left(2\sqrt[4]{z}\left(27(16z-65)\cos\left(2\sqrt{z}\right) + 20\sqrt{z}\,(16z-117)\sin\left(2\sqrt{z}\right)\right) - 5\sqrt{\pi}\left(256z^2 - 288z - 351\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)$$

07.22.03.adly.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, \frac{23}{4}; z\right) =$$
$$\frac{1}{262\,144\sqrt{2}\, z^{17/4}}\left(65\,835\left(2\sqrt{z}\left(256z^2 + 704z + 1155\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(256z^2 + 7392z + 3465\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(3465 - 256z^2\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adlz.01

$${}_1F_2\left(\frac{9}{4}; \frac{7}{2}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{262\,144\sqrt{2}\, z^{17/4}}\left(65\,835\left(2\sqrt{z}\left(256z^2 - 704z + 1155\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-256z^2 + 7392z - 3465\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(256z^2 - 3465\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{9}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.adm0.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, -\frac{23}{4}; z\right) = \frac{1}{9\,229\,440\, z^{7/2}}$$
$$\left(2\sqrt{z}\left(262\,144z^5 + 70\,778\,880z^4 + 3\,272\,939\,520z^3 + 54\,266\,284\,800z^2 + 339\,769\,930\,500z + 554\,624\,445\,375\right)\cosh\left(2\sqrt{z}\right) - \left(12\,058\,624z^5 + 1\,115\,750\,400z^4 + 29\,940\,019\,200z^3 + 310\,093\,056\,000z^2 + 1\,079\,269\,191\,000z + 554\,624\,445\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adm1.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, -\frac{23}{4}; -z\right) = \frac{1}{9\,229\,440\,z^{7/2}}$$
$$\left(2\sqrt{z}\,\left(262\,144\,z^5 - 70\,778\,880\,z^4 + 3\,272\,939\,520\,z^3 - 54\,266\,284\,800\,z^2 + 339\,769\,930\,500\,z - 554\,624\,445\,375\right)\right.$$
$$\cos\left(2\sqrt{z}\right) + \left(-12\,058\,624\,z^5 + 1\,115\,750\,400\,z^4 - 29\,940\,019\,200\,z^3 + \right.$$
$$\left.\left.310\,093\,056\,000\,z^2 - 1\,079\,269\,191\,000\,z + 554\,624\,445\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adm2.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{636\,480\sqrt{2}\,z^{11/4}}\left(\left(4\,z\left(32\,768\,z^4 + 7\,055\,360\,z^3 + 261\,624\,960\,z^2 + 3\,379\,705\,560\,z + 14\,786\,211\,825\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.$$
$$4\sqrt{z}\,\left(1\,359\,872\,z^4 + 103\,418\,880\,z^3 + 2\,276\,735\,040\,z^2 + 18\,588\,380\,580\,z + 44\,358\,635\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left(131\,072\,z^5 + 29\,614\,080\,z^4 + 1\,157\,875\,200\,z^3 + 16\,135\,368\,480\,z^2 + 81\,112\,933\,440\,z + 133\,075\,906\,425\right)$$
$$\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.adm3.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, -\frac{21}{4}; -z\right) =$$
$$\frac{1}{636\,480\sqrt{2}\,z^{11/4}}\left(\left(4\,z\left(32\,768\,z^4 - 7\,055\,360\,z^3 + 261\,624\,960\,z^2 - 3\,379\,705\,560\,z + 14\,786\,211\,825\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.$$
$$4\sqrt{z}\,\left(1\,359\,872\,z^4 - 103\,418\,880\,z^3 + 2\,276\,735\,040\,z^2 - 18\,588\,380\,580\,z + 44\,358\,635\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left(-131\,072\,z^5 + 29\,614\,080\,z^4 - 1\,157\,875\,200\,z^3 + 16\,135\,368\,480\,z^2 - 81\,112\,933\,440\,z + 133\,075\,906\,425\right)$$
$$\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.adm4.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{401\,280\,z^{7/2}}\left(30\sqrt{z}\,\left(81\,920\,z^4 + 5\,147\,648\,z^3 + 93\,562\,560\,z^2 + 605\,650\,500\,z + 999\,323\,325\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left.\left(131\,072\,z^5 + 23\,715\,840\,z^4 + 748\,500\,480\,z^3 + 8\,186\,724\,000\,z^2 + 29\,071\,224\,000\,z + 14\,989\,849\,875\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adm5.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{401\,280\,z^{7/2}}$$
$$\left(\left(-131\,072\,z^5 + 23\,715\,840\,z^4 - 748\,500\,480\,z^3 + 8\,186\,724\,000\,z^2 - 29\,071\,224\,000\,z + 14\,989\,849\,875\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$\left.30\sqrt{z}\,\left(81\,920\,z^4 - 5\,147\,648\,z^3 + 93\,562\,560\,z^2 - 605\,650\,500\,z + 999\,323\,325\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.adm6.01

$${}_1F_2\left(\frac{9}{4};\frac{9}{2},-\frac{17}{4};z\right)=-\frac{1}{212\,160\sqrt{2}\,z^{11/4}}\left(7\left(-4z\left(135\,168z^3+6\,664\,960z^2+93\,448\,080z+422\,463\,195\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(16\,384z^4+2\,378\,752z^3+60\,830\,400z^2+521\,751\,780z+1\,267\,389\,585\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(557\,056z^4+29\,184\,000z^3+443\,013\,120z^2+2\,289\,477\,960z+3\,802\,168\,755\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adm7.01

$${}_1F_2\left(\frac{9}{4};\frac{9}{2},-\frac{17}{4};-z\right)=-\frac{1}{212\,160\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(135\,168z^3-6\,664\,960z^2+93\,448\,080z-422\,463\,195\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(16\,384z^4-2\,378\,752z^3+60\,830\,400z^2-521\,751\,780z+1\,267\,389\,585\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-557\,056z^4+29\,184\,000z^3-443\,013\,120z^2+2\,289\,477\,960z-3\,802\,168\,755\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adm8.01

$${}_1F_2\left(\frac{9}{4};\frac{9}{2},-\frac{15}{4};z\right)=\frac{1}{21\,120z^{7/2}}\left(2\sqrt{z}\left(16\,384z^4+1\,920\,000z^3+40\,098\,240z^2+271\,498\,500z+454\,237\,875\right)\cosh\left(2\sqrt{z}\right)-15\left(32\,768z^4+1\,357\,824z^3+16\,039\,296z^2+58\,476\,600z+30\,282\,525\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adm9.01

$${}_1F_2\left(\frac{9}{4};\frac{9}{2},-\frac{15}{4};-z\right)=\frac{1}{21\,120z^{7/2}}\left(15\left(32\,768z^4-1\,357\,824z^3+16\,039\,296z^2-58\,476\,600z+30\,282\,525\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(16\,384z^4-1\,920\,000z^3+40\,098\,240z^2-271\,498\,500z+454\,237\,875\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.adma.01

$${}_1F_2\left(\frac{9}{4};\frac{9}{2},-\frac{13}{4};z\right)=\frac{1}{12\,480\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(2048z^3+181\,760z^2+2\,884\,200z+13\,627\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(54\,272z^3+1\,787\,520z^2+16\,439\,940z+40\,883\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(8192z^4+783\,360z^3+13\,543\,200z^2+72\,681\,840z+122\,650\,605\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.admb.01

$${}_1F_2\left(\frac{9}{4};\frac{9}{2},-\frac{13}{4};-z\right)=-\frac{1}{12\,480\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(2048z^3-181\,760z^2+2\,884\,200z-13\,627\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(54\,272z^3-1\,787\,520z^2+16\,439\,940z-40\,883\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-8192z^4+783\,360z^3-13\,543\,200z^2+72\,681\,840z-122\,650\,605\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.admc.01

$${}_1F_2\left(\frac{9}{4};\frac{9}{2},-\frac{11}{4};z\right)=\frac{1}{1408z^{7/2}}\left(2\sqrt{z}\left(48\,128z^3+1\,272\,960z^2+9\,189\,180z+15\,663\,375\right)\cosh\left(2\sqrt{z}\right)-\left(8192z^4+599\,040z^3+7\,956\,000z^2+30\,073\,680z+15\,663\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.admd.01

$${}_1F_2\left(\frac{9}{4};\frac{9}{2},-\frac{11}{4};-z\right)=\frac{1}{1408\,z^{7/2}}\left(2\sqrt{z}\,\left(48\,128\,z^3-1\,272\,960\,z^2+9\,189\,180\,z-15\,663\,375\right)\cos\left(2\sqrt{z}\right)+\left(8192\,z^4-599\,040\,z^3+7\,956\,000\,z^2-30\,073\,680\,z+15\,663\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adme.01

$${}_1F_2\left(\frac{9}{4};\frac{9}{2},-\frac{9}{4};z\right)=-\frac{1}{960\sqrt{2}\,z^{11/4}}\left(7\left(-20\,z\left(1024\,z^2+20\,064\,z+100\,947\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(1024\,z^3+57\,600\,z^2+589\,380\,z+1\,514\,205\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-3\left(7168\,z^3+154\,880\,z^2+877\,800\,z+1\,514\,205\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.admf.01

$${}_1F_2\left(\frac{9}{4};\frac{9}{2},-\frac{9}{4};-z\right)=\frac{1}{960\sqrt{2}\,z^{11/4}}\left(7\left(20\,z\left(1024\,z^2-20\,064\,z+100\,947\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(1024\,z^3-57\,600\,z^2+589\,380\,z-1\,514\,205\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+3\left(-7168\,z^3+154\,880\,z^2-877\,800\,z+1\,514\,205\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.admg.01

$${}_1F_2\left(\frac{9}{4};\frac{9}{2},-\frac{7}{4};z\right)=\frac{1}{128\,z^{7/2}}\left(2\sqrt{z}\,\left(1024\,z^3+44\,928\,z^2+358\,020\,z+626\,535\right)\cosh\left(2\sqrt{z}\right)-9\left(2048\,z^3+33\,280\,z^2+132\,600\,z+69\,615\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.admh.01

$${}_1F_2\left(\frac{9}{4};\frac{9}{2},-\frac{7}{4};-z\right)=\frac{1}{128\,z^{7/2}}\left(2\sqrt{z}\,\left(1024\,z^3-44\,928\,z^2+358\,020\,z-626\,535\right)\cos\left(2\sqrt{z}\right)-9\left(2048\,z^3-33\,280\,z^2+132\,600\,z-69\,615\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.admi.01

$${}_1F_2\left(\frac{9}{4};\frac{9}{2},-\frac{5}{4};z\right)=\frac{1}{320\sqrt{2}\,z^{11/4}}\left(21\left(4\,z\left(128\,z^2+3960\,z+21\,945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(1984\,z^2+24\,420\,z+65\,835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(512\,z^3+17\,952\,z^2+110\,880\,z+197\,505\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.admj.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, -\frac{5}{4}; -z\right) =$$
$$\frac{1}{320\sqrt{2}\, z^{11/4}}\left(21\left(4z\left(128z^2-3960z+21\,945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1984z^2-24\,420z+65\,835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-512z^3+17\,952z^2-110\,880z+197\,505\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.admk.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, -\frac{3}{4}; z\right) =$$
$$-\frac{1}{128z^{7/2}}\left(7\left(\left(512z^3+12\,960z^2+56\,160z+29\,835\right)\sinh\left(2\sqrt{z}\right)-18\sqrt{z}\left(192z^2+1820z+3315\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.adml.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, -\frac{3}{4}; -z\right) =$$
$$-\frac{1}{128z^{7/2}}\left(7\left(18\sqrt{z}\left(192z^2-1820z+3315\right)\cos\left(2\sqrt{z}\right)+\left(512z^3-12\,960z^2+56\,160z-29\,835\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.admm.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, -\frac{1}{4}; z\right) = -\frac{1}{64\sqrt{2}\, z^{11/4}}\left(21\left(-44z\left(16z+105\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\left(64z^2+1188z+3465\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-3\left(256z^2+1848z+3465\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.admn.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, -\frac{1}{4}; -z\right) = -\frac{1}{64\sqrt{2}\, z^{11/4}}\left(21\left(44z\left(16z-105\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\left(64z^2-1188z+3465\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-3\left(256z^2-1848z+3465\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.admo.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{1}{4}; z\right) = \frac{21\left(2\sqrt{z}\left(64z^2+900z+1755\right)\cosh\left(2\sqrt{z}\right)-5\left(128z^2+648z+351\right)\sinh\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.admp.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{1}{4}; -z\right) = -\frac{21\left(2\sqrt{z}\left(64z^2-900z+1755\right)\cos\left(2\sqrt{z}\right)-5\left(128z^2-648z+351\right)\sin\left(2\sqrt{z}\right)\right)}{128z^{7/2}}$$

07.22.03.admq.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{64\sqrt{2}\, z^{11/4}}\left(21\left(4z\left(8z+77\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(68z+231\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(32z^2+336z+693\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.admr.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{3}{4}; -z\right) =$$
$$-\frac{1}{64\sqrt{2}\, z^{11/4}}\left(21\left(4z(8z-77) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4(231-68z)\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-32z^2+336z-693\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adms.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{5}{4}; z\right) = \frac{21\left(\left(32z^2+240z+135\right)\sinh\left(2\sqrt{z}\right) - 30\sqrt{z}\,(4z+9)\cosh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.admt.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{5}{4}; -z\right) = -\frac{21\left(30\sqrt{z}\,(4z-9)\cos\left(2\sqrt{z}\right) + \left(32z^2-240z+135\right)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.admu.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{7}{4}; z\right) =$$
$$\frac{1}{64\sqrt{2}\, z^{11/4}}\left(7\left(-252z\,\Gamma\left(\frac{3}{4}\right)^2 I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 64\sqrt{z}\,(4z+21) I_{\frac{3}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{7}{4}\right)^2 I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 27(8z+21) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{3}{4}\right)^2\right)\right)$$

07.22.03.admv.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{7}{4}; -z\right) =$$
$$-\frac{1}{64\sqrt{2}\, z^{11/4}}\left(7\left(252z\,\Gamma\left(\frac{3}{4}\right)^2 J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 64\sqrt{z}\,(4z-21) J_{\frac{3}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{7}{4}\right)^2 J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 27(21-8z) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{3}{4}\right)^2\right)\right)$$

07.22.03.admw.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{9}{4}; z\right) = \frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right) - 3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.admx.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{9}{4}; -z\right) = \frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right) + 3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.admy.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{11}{4}; z\right) = \frac{147\left(12z\,\Gamma\left(\frac{3}{4}\right)^2 I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 64\sqrt{z}\, I_{\frac{3}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{7}{4}\right)^2 I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 27 I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{3}{4}\right)^2\right)}{64\sqrt{2}\, z^{11/4}}$$

07.22.03.admz.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{11}{4}; -z\right) = \frac{147\left(12z\,\Gamma\left(\frac{3}{4}\right)^2 J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 64\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{7}{4}\right)^2 J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 27 J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{3}{4}\right)^2\right)}{64\sqrt{2}\, z^{11/4}}$$

07.22.03.adn0.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{13}{4}; z\right) = -\frac{1}{256\, z^{7/2}}$$
$$\left(945\, e^{-2\sqrt{z}}\left(-2\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{5/4} - 2\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right) z^{5/4} + 6\, e^{4\sqrt{z}}\sqrt{z} + 6\sqrt{z} - 3\, e^{4\sqrt{z}} + 3\right)\right)$$

07.22.03.adn1.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{13}{4}; -z\right) = \frac{945\left(4\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) z^{5/4} + 6\cos\left(2\sqrt{z}\right)\sqrt{z} - 3\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}} $$

07.22.03.adn2.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{15}{4}; z\right) = \frac{4851\left(2\,z\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\,(z+3)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{128\sqrt{2}\ z^{11/4}} $$

07.22.03.adn3.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{15}{4}; -z\right) = \frac{4851\left(2\,z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\,(z-3)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{128\sqrt{2}\ z^{11/4}} $$

07.22.03.adn4.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{17}{4}; z\right) = $$
$$ -\frac{1}{8192\, z^{7/2}}\left(12\,285\, e^{-2\sqrt{z}}\left(4\left(-4\,z - 3\sqrt{z} + e^{4\sqrt{z}}\left(4\,z - 3\sqrt{z} + 24\right) - 24\right) - e^{2\sqrt{z}}\sqrt{2\pi}\ \sqrt[4]{z}\ (16\,z+45)\,\mathrm{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) - \right.\right. $$
$$ \left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\ \sqrt[4]{z}\ (16\,z+45)\,\mathrm{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right) $$

07.22.03.adn5.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{17}{4}; -z\right) = -\frac{12\,285\left(6\sqrt{z}\ \cos\left(2\sqrt{z}\right) + \sqrt{\pi}\ (45-16\,z)\sqrt[4]{z}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 8\,(z-6)\sin\left(2\sqrt{z}\right)\right)}{2048\, z^{7/2}} $$

07.22.03.adn6.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{4096\sqrt{2}\ z^{13/4}}\left(24\,255\left(2\sqrt{z}\ (16\,z+77)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - (16\,z+231)\,I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\ (16\,z+57)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adn7.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{19}{4}; -z\right) = $$
$$ \frac{1}{4096\sqrt{2}\ z^{13/4}}\left(24\,255\left(2\sqrt{z}\ (16\,z-77)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (231-16\,z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\ (16\,z-57)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adn8.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{21}{4}; z\right) = $$
$$ \frac{1}{1\,048\,576\, z^{17/4}}\left(208\,845\, e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-64\, z^{3/2} + 16\,z - 244\sqrt{z} + e^{4\sqrt{z}}\left(64\, z^{3/2} + 16\,z + 244\sqrt{z} + 585\right) + 585\right) + \right.\right. $$
$$ \left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\ \left(256\, z^2 + 1440\, z + 585\right)\mathrm{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) + e^{2\sqrt{z}}\sqrt{2\pi}\ \left(256\, z^2 + 1440\, z + 585\right)\mathrm{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right) $$

07.22.03.adn9.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{21}{4}; -z\right) = \frac{1}{262\,144\, z^{17/4}}$$
$$\left(208\,845\left(\sqrt{\pi}\,\left(256\, z^2 - 1440\, z + 585\right) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left((16\, z - 585)\cos\left(2\sqrt{z}\right) + 4\,(61 - 16\, z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.adna.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{23}{4}; z\right) = \frac{1}{131\,072\sqrt{2}\, z^{17/4}}\left(92\,169\left(2\sqrt{z}\,\left(256\, z^2 + 1760\, z - 1155\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left.\left(3465 - 256\, z^2\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(256\, z^2 + 1824\, z + 3465\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adnb.01

$${}_1F_2\left(\frac{9}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{131\,072\sqrt{2}\, z^{17/4}}\left(92\,169\left(2\sqrt{z}\,\left(256\, z^2 - 1760\, z - 1155\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(3465 - 256\, z^2\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(256\, z^2 - 1824\, z + 3465\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{9}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.adnc.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{12\,305\,920\, z^{9/2}}\left(3\left(\left(1\,048\,576\, z^6 + 450\,363\,392\, z^5 + 33\,266\,688\,000\, z^4 + 892\,378\,905\,600\, z^3 + 9\,602\,386\,794\,000\, z^2 + \right.\right.\right.$$
$$\left.\left.\left.34\,263\,465\,736\,500\, z + 17\,686\,357\,313\,625\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(15\,204\,352\, z^5 + 2\,241\,658\,880\, z^4 + \right.\right.\right.$$
$$\left.\left.\left.96\,473\,395\,200\, z^3 + 1\,648\,661\,414\,400\, z^2 + 10\,681\,655\,985\,000\, z + 17\,686\,357\,313\,625\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.adnd.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{12\,305\,920\, z^{9/2}}\left(3\left(2\sqrt{z}\,\left(15\,204\,352\, z^5 - 2\,241\,658\,880\, z^4 + 96\,473\,395\,200\, z^3 - 1\,648\,661\,414\,400\, z^2 + 10\,681\,655\,985\,000\, z - \right.\right.\right.$$
$$\left.\left.\left.17\,686\,357\,313\,625\right)\cos\left(2\sqrt{z}\right) + \left(1\,048\,576\, z^6 - 450\,363\,392\, z^5 + 33\,266\,688\,000\, z^4 - \right.\right.\right.$$
$$\left.\left.\left.892\,378\,905\,600\, z^3 + 9\,602\,386\,794\,000\, z^2 - 34\,263\,465\,736\,500\, z + 17\,686\,357\,313\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.adne.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{11}{2}, -\frac{21}{4}; z\right) = \frac{1}{282\,880\sqrt{2}\, z^{15/4}}\left(\left(-140 z \left(49\,152 z^4 + 5\,979\,136 z^3 + 210\,682\,944 z^2 + 2\,816\,421\,300 z + 12\,814\,716\,915\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072 z^5 + 47\,144\,960 z^4 + 2\,929\,927\,680 z^3 + 65\,136\,143\,520 z^2 + 552\,018\,574\,800 z + 1\,345\,545\,276\,075\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(7\,012\,352 z^5 + 886\,026\,240 z^4 + 32\,667\,183\,360 z^3 + 470\,905\,641\,360 z^2 + 2\,424\,938\,739\,300 z + 4\,036\,635\,828\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adnf.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{11}{2}, -\frac{21}{4}; -z\right) = \frac{1}{282\,880\sqrt{2}\, z^{15/4}}\left(\left(140 z \left(49\,152 z^4 - 5\,979\,136 z^3 + 210\,682\,944 z^2 - 2\,816\,421\,300 z + 12\,814\,716\,915\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072 z^5 - 47\,144\,960 z^4 + 2\,929\,927\,680 z^3 - 65\,136\,143\,520 z^2 + 552\,018\,574\,800 z - 1\,345\,545\,276\,075\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-7\,012\,352 z^5 + 886\,026\,240 z^4 - 32\,667\,183\,360 z^3 + 470\,905\,641\,360 z^2 - 2\,424\,938\,739\,300 z + 4\,036\,635\,828\,225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.adng.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{11}{2}, -\frac{19}{4}; z\right) = -\frac{1}{535\,040 z^{9/2}}\left(3\left(2\sqrt{z}\left(131\,072 z^5 + 39\,608\,320 z^4 + 2\,079\,168\,000 z^3 + 38\,438\,618\,400 z^2 + 257\,603\,346\,000 z + 431\,374\,568\,625\right)\cosh\left(2\sqrt{z}\right) - \left(6\,356\,992 z^5 + 665\,333\,760 z^4 + 20\,167\,929\,600 z^3 + 228\,532\,122\,000 z^2 + 832\,769\,437\,500 z + 431\,374\,568\,625\right)\sinh\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.adnh.01

$$ {}_1F_2\left(\frac{9}{4}; \frac{11}{2}, -\frac{19}{4}; -z\right) = \frac{1}{535\,040 z^{9/2}}\left(3\left(2\sqrt{z}\left(131\,072 z^5 - 39\,608\,320 z^4 + 2\,079\,168\,000 z^3 - 38\,438\,618\,400 z^2 + 257\,603\,346\,000 z - 431\,374\,568\,625\right)\cos\left(2\sqrt{z}\right) + \left(-6\,356\,992 z^5 + 665\,333\,760 z^4 - 20\,167\,929\,600 z^3 + 228\,532\,122\,000 z^2 - 832\,769\,437\,500 z + 431\,374\,568\,625\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.adni.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, -\frac{17}{4}; z\right) =$$
$$-\frac{1}{282\,880\sqrt{2}\,z^{15/4}}\left(21\left(4z\left(16\,384z^4+3\,998\,720z^3+169\,905\,600z^2+2\,440\,898\,460z+11\,500\,386\,975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(720\,896z^4+62\,648\,320z^3+1\,563\,131\,520z^2+13\,894\,345\,080z+34\,501\,160\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(65\,536z^5+16\,732\,160z^4+746\,745\,600z^3+11\,604\,867\,120z^2+61\,397\,984\,340z+103\,503\,482\,775\right)$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adnj.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{282\,880\sqrt{2}\,z^{15/4}}\left(21\left(4z\left(16\,384z^4-3\,998\,720z^3+169\,905\,600z^2-2\,440\,898\,460z+11\,500\,386\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(720\,896z^4-62\,648\,320z^3+1\,563\,131\,520z^2-13\,894\,345\,080z+34\,501\,160\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-65\,536z^5+16\,732\,160z^4-746\,745\,600z^3+11\,604\,867\,120z^2-61\,397\,984\,340z+103\,503\,482\,775\right)$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adnk.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, -\frac{15}{4}; z\right) = \frac{1}{28\,160z^{9/2}}$$
$$\left(3\left(\left(65\,536z^5+13\,578\,240z^4+493\,059\,840z^3+5\,986\,890\,000z^2+22\,409\,068\,500z+11\,658\,772\,125\right)\sinh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.10\sqrt{z}\left(131\,072z^4+9\,504\,768z^3+196\,035\,840z^2+1\,372\,807\,800z+2\,331\,754\,425\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.adnl.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, -\frac{15}{4}; -z\right) =$$
$$-\frac{1}{28\,160z^{9/2}}\left(3\left(10\sqrt{z}\left(131\,072z^4-9\,504\,768z^3+196\,035\,840z^2-1\,372\,807\,800z+2\,331\,754\,425\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(65\,536z^5-13\,578\,240z^4+493\,059\,840z^3-5\,986\,890\,000z^2+22\,409\,068\,500z-11\,658\,772\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.adnm.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, -\frac{13}{4}; z\right) = \frac{1}{16\,640\sqrt{2}\,z^{15/4}}\left(21\left(-4z\left(72\,704z^3+4\,195\,200z^2+66\,625\,020z+328\,582\,485\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(8192z^4+1\,381\,376z^3+40\,903\,200z^2+387\,636\,480z+985\,747\,455\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(299\,008z^4+18\,240\,000z^3+314\,954\,640z^2+1\,726\,193\,700z+2\,957\,242\,365\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adnn.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},-\frac{13}{4};-z\right)=-\frac{1}{16\,640\sqrt{2}\,z^{15/4}}\left(21\left(4z\left(72\,704z^3-4\,195\,200z^2+66\,625\,020z-328\,582\,485\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(8192z^4-1\,381\,376z^3+40\,903\,200z^2-387\,636\,480z+985\,747\,455\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-299\,008z^4+18\,240\,000z^3-314\,954\,640z^2+1\,726\,193\,700z-2\,957\,242\,365\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adno.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},-\frac{11}{4};z\right)=-\frac{1}{5632\,z^{9/2}}\left(9\left(2\sqrt{z}\left(8192z^4+1\,131\,520z^3+27\,474\,720z^2+204\,204\,000z+353\,296\,125\right)\cosh\left(2\sqrt{z}\right)-65\left(4096z^4+200\,192z^3+2\,678\,928z^2+10\,388\,700z+5\,435\,325\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.adnp.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},-\frac{11}{4};-z\right)=-\frac{1}{5632\,z^{9/2}}\left(9\left(2\sqrt{z}\left(8192z^4-1\,131\,520z^3+27\,474\,720z^2-204\,204\,000z+353\,296\,125\right)\cos\left(2\sqrt{z}\right)-65\left(4096z^4-200\,192z^3+2\,678\,928z^2-10\,388\,700z+5\,435\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.adnq.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},-\frac{9}{4};z\right)=-\frac{1}{1280\sqrt{2}\,z^{15/4}}\left(21\left(4z\left(1024z^3+109\,440z^2+2\,018\,940z+10\,599\,435\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(29\,696z^3+1\,167\,360z^2+12\,113\,640z+31\,798\,305\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(4096z^4+468\,480z^3+9\,480\,240z^2+54\,511\,380z+95\,394\,915\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adnr.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},-\frac{9}{4};-z\right)=-\frac{1}{1280\sqrt{2}\,z^{15/4}}\left(21\left(4z\left(1024z^3-109\,440z^2+2\,018\,940z-10\,599\,435\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(29\,696z^3-1\,167\,360z^2+12\,113\,640z-31\,798\,305\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-4096z^4+468\,480z^3-9\,480\,240z^2+54\,511\,380z-95\,394\,915\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adns.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},-\frac{7}{4};z\right)=\frac{1}{512\,z^{9/2}}\left(9\left(\left(4096z^4+366\,080z^3+5\,675\,280z^2+23\,112\,180z+12\,182\,625\right)\sinh\left(2\sqrt{z}\right)-26\sqrt{z}\left(2048z^3+65\,280z^2+528\,360z+937\,125\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.adnt.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},-\frac{7}{4};-z\right)=\frac{1}{512\,z^{9/2}}\left(9\left(26\sqrt{z}\left(2048z^3-65\,280z^2+528\,360z-937\,125\right)\cos\left(2\sqrt{z}\right)+\left(4096z^4-366\,080z^3+5\,675\,280z^2-23\,112\,180z+12\,182\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.adnu.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{1280\sqrt{2}\,z^{15/4}}\left(63\left(-20z\left(1728z^2+40\,964z+235\,543\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1536z^3+108\,000z^2+1\,287\,440z+3\,533\,145\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(36\,096z^3+954\,800z^2+5\,881\,260z+10\,599\,435\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adnv.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{1280\sqrt{2}\,z^{15/4}}\left(63\left(20z\left(1728z^2-40\,964z+235\,543\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1536z^3-108\,000z^2+1\,287\,440z-3\,533\,145\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-36\,096z^3+954\,800z^2-5\,881\,260z+10\,599\,435\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adnw.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},-\frac{3}{4};z\right)=-\frac{1}{512z^{9/2}}\left(63\left(2\sqrt{z}\left(512z^3+28\,704z^2+265\,200z+487\,305\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(10\,496z^3+209\,040z^2+914\,940z+487\,305\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.adnx.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},-\frac{3}{4};-z\right)=\frac{1}{512z^{9/2}}\left(63\left(2\sqrt{z}\left(512z^3-28\,704z^2+265\,200z-487\,305\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-10\,496z^3+209\,040z^2-914\,940z+487\,305\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.adny.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},-\frac{1}{4};z\right)=$$
$$-\frac{1}{256\sqrt{2}\,z^{15/4}}\left(63\left(4z\left(192z^2+7700z+51\,205\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(3456z^2+52\,360z+153\,615\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(768z^3+35\,728z^2+244\,860z+460\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adnz.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},-\frac{1}{4};-z\right)=$$
$$\frac{1}{256\sqrt{2}\,z^{15/4}}\left(63\left(4z\left(192z^2-7700z+51\,205\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(3456z^2-52\,360z+153\,615\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-768z^3+35\,728z^2-244\,860z+460\,845\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ado0.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, \frac{1}{4}; z\right) = \frac{1}{512\, z^{9/2}}\left(189\left(\left(256\, z^3 + 8720\, z^2 + 42\,900\, z + 23\,205\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(1024\, z^2 + 11\,960\, z + 23\,205\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ado1.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, \frac{1}{4}; -z\right) = -\frac{1}{512\, z^{9/2}}\left(189\left(2\sqrt{z}\,\left(1024\, z^2 - 11\,960\, z + 23\,205\right)\cos\left(2\sqrt{z}\right) + \left(256\, z^3 - 8720\, z^2 + 42\,900\, z - 23\,205\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ado2.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, \frac{3}{4}; z\right) = \frac{1}{256\sqrt{2}\, z^{15/4}}\left(63\left(-308\, z\,(4\, z + 35)\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(96\, z^2 + 2464\, z + 8085\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 7\left(208\, z^2 + 1716\, z + 3465\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ado3.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, \frac{3}{4}; -z\right) = -\frac{1}{256\sqrt{2}\, z^{15/4}}\left(63\left(308\, z\,(4\, z - 35)\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(96\, z^2 - 2464\, z + 8085\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 7\left(208\, z^2 - 1716\, z + 3465\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ado4.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, \frac{5}{4}; z\right) = \frac{189\left(2\sqrt{z}\,\left(32\, z^2 + 640\, z + 1365\right)\cosh\left(2\sqrt{z}\right) - 5\left(80\, z^2 + 492\, z + 273\right)\sinh\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}}$$

07.22.03.ado5.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, \frac{5}{4}; -z\right) = \frac{189\left(2\sqrt{z}\,\left(32\, z^2 - 640\, z + 1365\right)\cos\left(2\sqrt{z}\right) - 5\left(80\, z^2 - 492\, z + 273\right)\sin\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}}$$

07.22.03.ado6.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, \frac{7}{4}; z\right) = \frac{1}{256\sqrt{2}\, z^{15/4}}\left(63\left(28\, z\,(4\, z + 77)\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 196\sqrt{z}\,(8\, z + 33)\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(176\, z^2 + 2100\, z + 4851\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ado7.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, \frac{7}{4}; -z\right) = \frac{1}{256\sqrt{2}\, z^{15/4}}\left(63\left(28\, z\,(4\, z - 77)\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 196\sqrt{z}\,(8\, z - 33)\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-176\, z^2 + 2100\, z - 4851\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ado8.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},\frac{9}{4};z\right)=\frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,\left(8z+21\right)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.ado9.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},\frac{9}{4};-z\right)=\frac{945\left(10\sqrt{z}\,\left(8z-21\right)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.adoa.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{256\sqrt{2}\,z^{15/4}}\left(441\left(4z\left(4z-49\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(16z+147\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(16z^2+132z+441\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adob.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{256\sqrt{2}\,z^{15/4}}\left(441\left(4z\left(4z+49\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(16z-147\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(16z^2-132z+441\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adoc.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},\frac{13}{4};z\right)=$$
$$-\frac{1}{1024\,z^{9/2}}\left(945\,e^{-2\sqrt{z}}\left(-16\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}-16\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{9/4}+16\,e^{4\sqrt{z}}\,z^2-\right.\right.$$
$$\left.\left.16z^2-32\,e^{4\sqrt{z}}\,z^{3/2}-32z^{3/2}+156\,e^{4\sqrt{z}}\,z-156z-210\,e^{4\sqrt{z}}\,\sqrt{z}-210\sqrt{z}+105\,e^{4\sqrt{z}}-105\right)\right)$$

07.22.03.adod.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},\frac{13}{4};-z\right)=\frac{945\left(32\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{9/4}-2\left(16z-105\right)\cos\left(2\sqrt{z}\right)\sqrt{z}+\left(-16z^2+156z-105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.adoe.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{256\sqrt{2}\,z^{15/4}}\left(4851\left(4z\left(2z+7\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(z+21\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-8z^2-12z+63\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adof.01

$${}_1F_2\left(\frac{9}{4};\frac{11}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{256\sqrt{2}\,z^{15/4}}\left(4851\left(4z\left(2z-7\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\left(z-21\right)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(8z^2-12z-63\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adog.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, \frac{17}{4}; z\right) =$$
$$-\frac{1}{4096\, z^{9/2}}\left(12\,285\, e^{-2\sqrt{z}}\left(-e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+81)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4} - e^{2\sqrt{z}}\sqrt{2\pi}\,(16z+81)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{5/4} + 4\left(-4z^2+z^{3/2}-12z+42\sqrt{z}+e^{4\sqrt{z}}\left(4z^2+z^{3/2}+12z+42\sqrt{z}-21\right)+21\right)\right)\right)$$

07.22.03.adoh.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, \frac{17}{4}; -z\right) =$$
$$\frac{1}{1024\, z^{9/2}}\left(12\,285\left(\sqrt{\pi}\,(16z-81)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4} + 2(z-42)\cos\left(2\sqrt{z}\right)\sqrt{z} + 2\left(-4z^2+12z+21\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.adoi.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, \frac{19}{4}; z\right) = \frac{1}{2048\sqrt{2}\, z^{15/4}}$$
$$\left(24\,255\left(2z(16z+119)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \sqrt{z}\,(16z+21)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\left(16z^2+123z+252\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adoj.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, \frac{19}{4}; -z\right) = \frac{1}{2048\sqrt{2}\, z^{15/4}}$$
$$\left(24\,255\left(2z(16z-119)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (21-16z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\left(16z^2-123z+252\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adok.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, \frac{21}{4}; z\right) = -\frac{1}{524\,288\, z^{9/2}}$$
$$\left(208\,845\, e^{-2\sqrt{z}}\left(4\left(-64z^2+16z^{3/2}-660z-111\sqrt{z}+e^{4\sqrt{z}}\left(64z^2+16z^{3/2}+660z-111\sqrt{z}+2688\right)-2688\right) - e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(256z^2+2592z+5265\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - e^{2\sqrt{z}}\sqrt{2\pi}\sqrt[4]{z}\left(256z^2+2592z+5265\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.adol.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, \frac{21}{4}; -z\right) = \frac{1}{131\,072\, z^{9/2}}\left(208\,845\right.$$
$$\left.\left(2\sqrt{z}\,(16z+111)\cos\left(2\sqrt{z}\right) + \sqrt{\pi}\sqrt[4]{z}\left(256z^2-2592z+5265\right)C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 8\left(16z^2-165z+672\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.adom.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, \frac{23}{4}; z\right) =$$
$$\frac{1}{65\,536\sqrt{2}\, z^{17/4}}\left(92\,169\left(2\sqrt{z}\left(256z^2+3200z+10\,395\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(256z^2+3360z+31\,185\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(256z^2+3264z+9135\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.adon.01

$${}_1F_2\left(\frac{9}{4}; \frac{11}{2}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{65\,536\sqrt{2}\,z^{17/4}}\left(92\,169\left(2\sqrt{z}\left(256z^2-3200z+10\,395\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-256z^2+3360z-31\,185\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(256z^2-3264z+9135\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{11}{4}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = \frac{11}{4}$, $b_{1.} = -\frac{11}{2}$

07.22.03.adoo.01

$${}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{330\,543\,380\,475\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,777\,216z^8+968\,884\,224z^7+423\,886\,848z^6+3\,145\,089\,024z^5+24\,570\,120\,960z^4+\right.\right.\right.$$
$$\left.\left.119\,357\,884\,800z^3+165\,397\,755\,600z^2-632\,343\,858\,300z+330\,543\,380\,475\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$4\sqrt{z}\left(121\,634\,816z^7-715\,309\,056z^5-6\,308\,628\,480z^4-43\,682\,284\,800z^3-174\,042\,237\,600z^2-\right.$$
$$\left.191\,619\,351\,000z+330\,543\,380\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$4z\left(4\,194\,304z^7+154\,140\,672z^6+211\,943\,424z^5+1\,518\,612\,480z^4+12\,271\,089\,600z^3+\right.$$
$$\left.\left.74\,150\,445\,600z^2+249\,105\,156\,300z+330\,543\,380\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.adop.01

$${}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{330\,543\,380\,475\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,777\,216z^8-968\,884\,224z^7+423\,886\,848z^6-3\,145\,089\,024z^5+24\,570\,120\,960z^4-\right.\right.\right.$$
$$\left.\left.119\,357\,884\,800z^3+165\,397\,755\,600z^2+632\,343\,858\,300z+330\,543\,380\,475\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$4\sqrt{z}\left(121\,634\,816z^7-715\,309\,056z^5+6\,308\,628\,480z^4-43\,682\,284\,800z^3+174\,042\,237\,600z^2-\right.$$
$$\left.191\,619\,351\,000z-330\,543\,380\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$4z\left(-4\,194\,304z^7+154\,140\,672z^6-211\,943\,424z^5+1\,518\,612\,480z^4-12\,271\,089\,600z^3+\right.$$
$$\left.\left.74\,150\,445\,600z^2-249\,105\,156\,300z+330\,543\,380\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.adoq.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{21}{4}; z\right) = \frac{1}{45\,589\,819\,275}\left(\left(4\,194\,304\,z^7 + 154\,140\,672\,z^6 + 158\,957\,568\,z^5 + 1\,092\,833\,280\,z^4 + 7\,857\,622\,080\,z^3 + 39\,502\,663\,200\,z^2 + 95\,521\,526\,100\,z + 45\,589\,819\,275\right)\cosh\left(2\sqrt{z}\right) + 6\sqrt{z}\left(9\,437\,184\,z^6 - 12\,845\,056\,z^5 - 66\,232\,320\,z^4 - 500\,290\,560\,z^3 - 3\,132\,969\,840\,z^2 - 11\,578\,366\,800\,z - 15\,196\,606\,425\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ador.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{21}{4}; -z\right) = \frac{1}{45\,589\,819\,275}\left(\left(-4\,194\,304\,z^7 + 154\,140\,672\,z^6 - 158\,957\,568\,z^5 + 1\,092\,833\,280\,z^4 - 7\,857\,622\,080\,z^3 + 39\,502\,663\,200\,z^2 - 95\,521\,526\,100\,z + 45\,589\,819\,275\right)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\left(9\,437\,184\,z^6 + 12\,845\,056\,z^5 - 66\,232\,320\,z^4 + 500\,290\,560\,z^3 - 3\,132\,969\,840\,z^2 + 11\,578\,366\,800\,z - 15\,196\,606\,425\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ados.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{19}{4}; z\right) = \frac{1}{14\,371\,451\,325\sqrt[4]{z}}\left(\sqrt{2}\left(-3\left(19\,922\,944\,z^7 + 35\,323\,904\,z^6 - 57\,716\,736\,z^5 - 389\,410\,560\,z^4 - 1\,754\,121\,600\,z^3 - 2\,241\,162\,000\,z^2 + 9\,076\,706\,100\,z - 4\,790\,483\,775\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2\,097\,152\,z^7 + 83\,755\,008\,z^6 + 39\,739\,392\,z^5 + 328\,204\,800\,z^4 + 2\,049\,062\,400\,z^3 + 7\,683\,984\,000\,z^2 + 8\,068\,183\,200\,z - 14\,371\,451\,325\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(-4\,456\,448\,z^6 + 8\,830\,976\,z^5 + 31\,933\,440\,z^4 + 209\,563\,200\,z^3 + 1\,152\,597\,600\,z^2 + 3\,697\,917\,300\,z + 4\,790\,483\,775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adot.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{19}{4}; -z\right) = \frac{1}{14\,371\,451\,325\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(19\,922\,944\,z^7 - 35\,323\,904\,z^6 - 57\,716\,736\,z^5 + 389\,410\,560\,z^4 - 1\,754\,121\,600\,z^3 + 2\,241\,162\,000\,z^2 + 9\,076\,706\,100\,z + 4\,790\,483\,775\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2\,097\,152\,z^7 - 83\,755\,008\,z^6 + 39\,739\,392\,z^5 - 328\,204\,800\,z^4 + 2\,049\,062\,400\,z^3 - 7\,683\,984\,000\,z^2 + 8\,068\,183\,200\,z + 14\,371\,451\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 12\,z\left(4\,456\,448\,z^6 + 8\,830\,976\,z^5 - 31\,933\,440\,z^4 + 209\,563\,200\,z^3 - 1\,152\,597\,600\,z^2 + 3\,697\,917\,300\,z - 4\,790\,483\,775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adou.01

$${}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{17}{4}; z\right) =$$
$$\left(-\frac{262\,144\,z^6}{44\,304\,975} + \frac{16\,384\,z^5}{1\,342\,575} + \frac{1024\,z^4}{29\,835} + \frac{9664\,z^3}{48\,195} + \frac{608\,z^2}{663} + \frac{36\,z}{17} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{2\,170\,943\,775}\left(2\sqrt{z}\,\left(524\,288\,z^6 + 14\,450\,688\,z^5 + 16\,558\,080\,z^4 + 90\,034\,560\,z^3 + 492\,473\,520\,z^2 + 1\,702\,701\,000\,z + 2\,170\,943\,775\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adov.01

$${}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{17}{4}; -z\right) =$$
$$\left(-\frac{262\,144\,z^6}{44\,304\,975} - \frac{16\,384\,z^5}{1\,342\,575} + \frac{1024\,z^4}{29\,835} - \frac{9664\,z^3}{48\,195} + \frac{608\,z^2}{663} - \frac{36\,z}{17} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{2\,170\,943\,775}\left(2\sqrt{z}\,\left(524\,288\,z^6 - 14\,450\,688\,z^5 + 16\,558\,080\,z^4 - 90\,034\,560\,z^3 + 492\,473\,520\,z^2 - 1\,702\,701\,000\,z + 2\,170\,943\,775\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adow.01

$${}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{756\,392\,175\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(1\,048\,576\,z^7 + 38\,338\,560\,z^6 - 2\,838\,528\,z^5 + 70\,076\,160\,z^4 + 280\,748\,160\,z^3 + 317\,837\,520\,z^2 - 1\,411\,932\,060\,z + 756\,392\,175\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,\left(2\,097\,152\,z^6 - 3\,571\,712\,z^5 - 7\,096\,320\,z^4 - 39\,916\,800\,z^3 - 137\,380\,320\,z^2 - 134\,469\,720\,z + 252\,130\,725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\,\left(262\,144\,z^6 + 5\,062\,656\,z^5 + 10\,644\,480\,z^4 + 43\,243\,200\,z^3 + 202\,577\,760\,z^2 + 605\,113\,740\,z + 756\,392\,175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adox.01

$${}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{756\,392\,175\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-1\,048\,576\,z^7 + 38\,338\,560\,z^6 + 2\,838\,528\,z^5 + 70\,076\,160\,z^4 - 280\,748\,160\,z^3 + 317\,837\,520\,z^2 + 1\,411\,932\,060\,z + 756\,392\,175\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,\left(2\,097\,152\,z^6 + 3\,571\,712\,z^5 - 7\,096\,320\,z^4 + 39\,916\,800\,z^3 - 137\,380\,320\,z^2 + 134\,469\,720\,z + 252\,130\,725\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\,\left(262\,144\,z^6 - 5\,062\,656\,z^5 + 10\,644\,480\,z^4 - 43\,243\,200\,z^3 + 202\,577\,760\,z^2 - 605\,113\,740\,z + 756\,392\,175\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adoy.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{13}{4}; z\right) = \left(\frac{262\,144\,z^6}{127\,702\,575} + \frac{16\,384\,z^5}{552\,825} + \frac{1024\,z^4}{12\,285} + \frac{9536\,z^3}{36\,855} + \frac{352\,z^2}{351} + \frac{28\,z}{13} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(65\,536\,z^5 - 225\,280\,z^4 - 380\,160\,z^3 - 1\,607\,760\,z^2 - 4\,989\,600\,z - 6\,081\,075\right)\sinh\left(2\sqrt{z}\right)}{6\,081\,075} $$

07.22.03.adoz.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{13}{4}; -z\right) = \left(\frac{262\,144\,z^6}{127\,702\,575} - \frac{16\,384\,z^5}{552\,825} + \frac{1024\,z^4}{12\,285} - \frac{9536\,z^3}{36\,855} + \frac{352\,z^2}{351} - \frac{28\,z}{13} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(65\,536\,z^5 + 225\,280\,z^4 - 380\,160\,z^3 + 1\,607\,760\,z^2 - 4\,989\,600\,z + 6\,081\,075\right)\sin\left(2\sqrt{z}\right)}{6\,081\,075} $$

07.22.03.adp0.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{11}{4}; z\right) = \frac{1}{50\,426\,145\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-2\,818\,048\,z^6 + 7\,053\,312\,z^5 + 887\,040\,z^4 + 19\,071\,360\,z^3 + 17\,463\,600\,z^2 - 91\,683\,900\,z + 50\,426\,145\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(131\,072\,z^6 + 1\,622\,016\,z^5 + 4\,053\,504\,z^4 + 8\,870\,400\,z^3 + 27\,941\,760\,z^2 + 24\,449\,040\,z - 50\,426\,145\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-606\,208\,z^5 + 2\,537\,472\,z^4 + 5\,100\,480\,z^3 + 16\,299\,360\,z^2 + 42\,785\,820\,z + 50\,426\,145\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adp1.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) = \frac{1}{50\,426\,145\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-2\,818\,048\,z^6 - 7\,053\,312\,z^5 + 887\,040\,z^4 - 19\,071\,360\,z^3 + 17\,463\,600\,z^2 + 91\,683\,900\,z + 50\,426\,145\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(131\,072\,z^6 - 1\,622\,016\,z^5 + 4\,053\,504\,z^4 - 8\,870\,400\,z^3 + 27\,941\,760\,z^2 - 24\,449\,040\,z - 50\,426\,145\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(606\,208\,z^5 + 2\,537\,472\,z^4 - 5\,100\,480\,z^3 + 16\,299\,360\,z^2 - 42\,785\,820\,z + 50\,426\,145\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adp2.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{9}{4}; z\right) = \left(-\frac{16\,384\,z^5}{297\,675} + \frac{2048\,z^4}{8505} + \frac{1472\,z^3}{2835} + \frac{32\,z^2}{27} + \frac{20\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(32\,768\,z^5 + 2\,217\,600\,z^3 + 3\,492\,720\,z^2 + 8\,731\,800\,z + 9\,823\,275\right)\sinh\left(2\sqrt{z}\right)}{9\,823\,275} $$

07.22.03.adp3.01

$${}_1F_2\left(\frac{11}{4};-\frac{11}{2},-\frac{9}{4};-z\right)=\left(\frac{16\,384\,z^5}{297\,675}+\frac{2048\,z^4}{8505}-\frac{1472\,z^3}{2835}+\frac{32\,z^2}{27}-\frac{20\,z}{9}+1\right)\cos\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\,\left(32\,768\,z^5+2\,217\,600\,z^3-3\,492\,720\,z^2+8\,731\,800\,z-9\,823\,275\right)\sin\left(2\sqrt{z}\right)}{9\,823\,275}$$

07.22.03.adp4.01

$${}_1F_2\left(\frac{11}{4};-\frac{11}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{4\,584\,195\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(65\,536\,z^6+172\,032\,z^5+2\,790\,144\,z^4-443\,520\,z^3+1\,164\,240\,z^2-7\,858\,620\,z+4\,584\,195\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$60\sqrt{z}\,\left(16\,384\,z^5-71\,680\,z^4-123\,648\,z^3-155\,232\,z^2-116\,424\,z+305\,613\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.4\,z\left(16\,384\,z^5-129\,024\,z^4+1\,391\,040\,z^3+2\,328\,480\,z^2+4\,365\,900\,z+4\,584\,195\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.adp5.01

$${}_1F_2\left(\frac{11}{4};-\frac{11}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{4\,584\,195\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(65\,536\,z^6-172\,032\,z^5+2\,790\,144\,z^4+443\,520\,z^3+1\,164\,240\,z^2+7\,858\,620\,z+4\,584\,195\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$60\sqrt{z}\,\left(16\,384\,z^5+71\,680\,z^4-123\,648\,z^3+155\,232\,z^2-116\,424\,z-305\,613\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.4\,z\left(16\,384\,z^5+129\,024\,z^4+1\,391\,040\,z^3-2\,328\,480\,z^2+4\,365\,900\,z-4\,584\,195\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.adp6.01

$${}_1F_2\left(\frac{11}{4};-\frac{11}{2},-\frac{5}{4};z\right)=\left(\frac{16\,384\,z^5}{1\,091\,475}-\frac{2048\,z^4}{11\,025}+\frac{1216\,z^3}{945}+\frac{32\,z^2}{15}+\frac{12\,z}{5}+1\right)\cosh\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\,\left(4096\,z^4-10\,752\,z^3-105\,840\,z^2-105\,840\,z-99\,225\right)\sinh\left(2\sqrt{z}\right)}{99\,225}$$

07.22.03.adp7.01

$${}_1F_2\left(\frac{11}{4};-\frac{11}{2},-\frac{5}{4};-z\right)=\left(-\frac{16\,384\,z^5}{1\,091\,475}-\frac{2048\,z^4}{11\,025}-\frac{1216\,z^3}{945}+\frac{32\,z^2}{15}-\frac{12\,z}{5}+1\right)\cos\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\,\left(4096\,z^4+10\,752\,z^3-105\,840\,z^2+105\,840\,z-99\,225\right)\sin\left(2\sqrt{z}\right)}{99\,225}$$

07.22.03.adp8.01

$${}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{3}{4}; z\right) =$$
$$-\frac{1}{654\,885\sqrt[4]{z}}\left(\sqrt{2}\left(21\left(4096z^5 - 12\,544z^4 - 63\,360z^3 + 55\,440z^2 + 41\,580z - 31\,185\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right.$$
$$\left(8192z^5 - 118\,272z^4 + 645\,120z^3 + 776\,160z^2 - 654\,885\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.60z\left(1024z^4 + 2240z^3 - 51\,744z^2 - 58\,212z - 43\,659\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adp9.01

$${}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{654\,885\sqrt[4]{z}}\left(\sqrt{2}\left(21\left(4096z^5 + 12\,544z^4 - 63\,360z^3 - 55\,440z^2 + 41\,580z + 31\,185\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\right.\right.$$
$$\left(8192z^5 + 118\,272z^4 + 645\,120z^3 - 776\,160z^2 + 654\,885\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.60z\left(1024z^4 - 2240z^3 - 51\,744z^2 + 58\,212z - 43\,659\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adpa.01

$${}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{1}{4}; z\right) = \left(-\frac{1024z^4}{24\,255} - \frac{3392z^3}{6615} + \frac{32z^2}{9} + 4z + 1\right)\cosh\left(2\sqrt{z}\right) -$$
$$\frac{2\sqrt{z}\left(2048z^4 - 38\,016z^3 + 77\,616z^2 + 582\,120z + 218\,295\right)\sinh\left(2\sqrt{z}\right)}{218\,295}$$

07.22.03.adpb.01

$${}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) =$$
$$\left(-\frac{1024z^4}{24\,255} + \frac{3392z^3}{6615} + \frac{32z^2}{9} - 4z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048z^4 + 38\,016z^3 + 77\,616z^2 - 582\,120z + 218\,295\right)\sin\left(2\sqrt{z}\right)}{218\,295}$$

07.22.03.adpc.01

$${}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^5 - 69\,888z^4 + 147\,840z^3 + 637\,560z^2 - 873\,180z + 218\,295\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right.$$
$$\left(2048z^4 + 80\,640z^3 - 332\,640z^2 - 252\,945z + 218\,295\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4z\left(1024z^4 - 18\,240z^3 - 36\,960z^2 + 367\,290z + 218\,295\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adpd.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) = \frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096z^5 - 69\,888z^4 - 147\,840z^3 + 637\,560z^2 + 873\,180z + 218\,295\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048z^4 - 80\,640z^3 - 332\,640z^2 + 252\,945z + 218\,295\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(1024z^4 + 18\,240z^3 - 36\,960z^2 - 367\,290z + 218\,295\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adpe.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) = \left(\frac{1024z^4}{218\,295} - \frac{4672z^3}{72\,765} - \frac{32z^2}{63} + \frac{4z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256z^3 - 11\,088z^2 + 72\,765\right)\sinh\left(2\sqrt{z}\right)}{72\,765} $$

07.22.03.adpf.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{3}{4}; -z\right) = \left(\frac{1024z^4}{218\,295} + \frac{4672z^3}{72\,765} - \frac{32z^2}{63} - \frac{4z}{3} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256z^3 + 11\,088z^2 - 72\,765\right)\sin\left(2\sqrt{z}\right)}{72\,765} $$

07.22.03.adpg.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{873\,180\sqrt{2}\,\sqrt[4]{z}}\left(\left(-6\left(3072z^4 - 78\,848z^3 - 3696z^2 + 395\,703z - 291\,060\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(16\,384z^4 - 122\,880z^3 - 2\,483\,712z^2 + 2\,450\,448z + 2\,442\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 6z\left(5120z^3 - 90\,112z^2 - 380\,688z + 349\,965\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adph.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) = \frac{1}{873\,180\sqrt{2}\,\sqrt[4]{z}}\left(\left(-6\left(3072z^4 + 78\,848z^3 - 3696z^2 - 395\,703z - 291\,060\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(-16\,384z^4 - 122\,880z^3 + 2\,483\,712z^2 + 2\,450\,448z - 2\,442\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 6z\left(5120z^3 + 90\,112z^2 - 380\,688z - 349\,965\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adpi.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{7}{4}; z\right) = \left(-\frac{1472z^3}{72\,765} + \frac{32z^2}{231} + \frac{12z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(128z^3 + 1008z^2 - 27\,720z - 72\,765\right)\sinh\left(2\sqrt{z}\right)}{72\,765} $$

07.22.03.adpj.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{7}{4}; -z\right) = \left(\frac{1472z^3}{72\,765} + \frac{32z^2}{231} - \frac{12z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(128z^3 - 1008z^2 - 27\,720z + 72\,765\right)\sin\left(2\sqrt{z}\right)}{72\,765} $$

07.22.03.adpk.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{9}{4}; z\right) = \frac{1}{5\,588\,352\sqrt{2}\, z^{3/4}}\left(\left(2\sqrt{z}\left(32\,768 z^4 + 540\,672 z^3 - 4\,435\,200 z^2 - 12\,418\,560 z + 13\,765\,059\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(327\,680 z^4 + 540\,672 z^3 - 19\,337\,472 z^2 - 24\,593\,184 z + 13\,627\,845\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(32\,768 z^4 + 933\,888 z^3 - 3\,066\,624 z^2 - 35\,792\,064 z - 40\,883\,535\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adpl.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{9}{4}; -z\right) = \frac{1}{5\,588\,352\sqrt{2}\, z^{3/4}}\left(\left(2\sqrt{z}\left(32\,768 z^4 - 540\,672 z^3 - 4\,435\,200 z^2 + 12\,418\,560 z + 13\,765\,059\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(327\,680 z^4 - 540\,672 z^3 - 19\,337\,472 z^2 + 24\,593\,184 z + 13\,627\,845\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-32\,768 z^4 + 933\,888 z^3 + 3\,066\,624 z^2 - 35\,792\,064 z + 40\,883\,535\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adpm.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{11}{4}; z\right) = \left(\frac{64 z^3}{10\,395} + \frac{32 z^2}{99} + \frac{20 z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16 z^2 + 240 z + 495\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.adpn.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{11}{4}; -z\right) = \left(-\frac{64 z^3}{10\,395} + \frac{32 z^2}{99} - \frac{20 z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(16 z^2 - 240 z + 495\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.adpo.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) = \frac{1}{19\,869\,696\sqrt{2}\, z^{7/4}}\left(\left(-2\sqrt{z}\left(3\,080\,192 z^4 + 68\,530\,176 z^3 + 418\,505\,472 z^2 + 1\,041\,285\,168 z - 1\,267\,389\,585\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1\,048\,576 z^5 + 81\,985\,536 z^4 + 1\,023\,086\,592 z^3 + 5\,043\,177\,216 z^2 + 9\,812\,048\,400 z - 6\,336\,947\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(3\,473\,408 z^4 + 101\,928\,960 z^3 + 884\,074\,752 z^2 + 3\,706\,773\,840 z + 6\,336\,947\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adpp.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) = \frac{1}{19\,869\,696\sqrt{2}\, z^{7/4}} $$
$$ \left(\left(2\sqrt{z}\,\left(3\,080\,192 z^4 - 68\,530\,176 z^3 + 418\,505\,472 z^2 - 1\,041\,285\,168 z - 1\,267\,389\,585\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1\,048\,576 z^5 - \right.\right.\right. $$
$$ \left. 81\,985\,536 z^4 + 1\,023\,086\,592 z^3 - 5\,043\,177\,216 z^2 + 9\,812\,048\,400 z + 6\,336\,947\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 2\sqrt{z}\,\left(3\,473\,408 z^4 - 101\,928\,960 z^3 + 884\,074\,752 z^2 - 3\,706\,773\,840 z + 6\,336\,947\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adpq.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) = $$
$$ \frac{1}{495\,452\,160 z^{11/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-1\,048\,576 z^5 - 16\,515\,072 z^{9/2} - 133\,496\,832 z^4 - 732\,512\,256 z^{7/2} - 3\,056\,578\,560 z^3 - \right.\right.\right. $$
$$ 10\,274\,503\,680 z^{5/2} - 28\,425\,196\,800 z^2 - 63\,956\,692\,800 z^{3/2} - 111\,924\,212\,400 z - $$
$$ 139\,905\,265\,500\sqrt{z} + e^{4\sqrt{z}}\left(1\,048\,576 z^5 - 16\,515\,072 z^{9/2} + 133\,496\,832 z^4 - 732\,512\,256 z^{7/2} + \right. $$
$$ 3\,056\,578\,560 z^3 - 10\,274\,503\,680 z^{5/2} + 28\,425\,196\,800 z^2 - 63\,956\,692\,800 z^{3/2} + $$
$$ \left. 111\,924\,212\,400 z - 139\,905\,265\,500\sqrt{z} + 104\,928\,949\,125\right) - 104\,928\,949\,125\Big) + $$
$$ \left.\left. 104\,928\,949\,125\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 104\,928\,949\,125\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adpr.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) = \frac{1}{123\,863\,040 z^{11/4}}\left(-104\,928\,949\,125\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right. $$
$$ \left. 2\sqrt[4]{z}\,\left(84\sqrt{z}\,\left(196\,608 z^4 - 8\,720\,384 z^3 + 122\,315\,520 z^2 - 761\,389\,200 z + 1\,665\,538\,875\right)\cos\left(2\sqrt{z}\right) + \left(1\,048\,576 z^5 - \right.\right.\right. $$
$$ \left.\left. 133\,496\,832 z^4 + 3\,056\,578\,560 z^3 - 28\,425\,196\,800 z^2 + 111\,924\,212\,400 z - 104\,928\,949\,125\right)\sin\left(2\sqrt{z}\right)\right)\Big) $$

07.22.03.adps.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) = \frac{1}{635\,830\,272\sqrt{2}\, z^{11/4}} $$
$$ \left(13\left(2\sqrt{z}\,\left(2\,097\,152 z^5 + 323\,616\,768 z^4 + 9\,202\,507\,776 z^3 + 100\,488\,503\,808 z^2 + 365\,008\,200\,480 z - 399\,227\,719\,275\right)\right.\right. $$
$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 9\left(16\,777\,216 z^5 + 998\,768\,640 z^4 + 18\,870\,534\,144 z^3 + 148\,852\,408\,320 z^2 + \right. $$
$$ 360\,501\,926\,400 z - 221\,793\,177\,375\Big) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(2\,097\,152 z^5 + 381\,812\,736 z^4 + \right. $$
$$ \left.\left.\left. 12\,867\,674\,112 z^3 + 174\,436\,416\,000 z^2 + 1\,013\,911\,668\,000 z + 1\,996\,138\,596\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adpt.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) = -\frac{1}{635\,830\,272\sqrt{2}\, z^{11/4}} $$
$$ \left(13\left(2\sqrt{z}\left(2\,097\,152 z^5 - 323\,616\,768 z^4 + 9\,202\,507\,776 z^3 - 100\,488\,503\,808 z^2 + 365\,008\,200\,480 z + 399\,227\,719\,275\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 9\left(16\,777\,216 z^5 - 998\,768\,640 z^4 + 18\,870\,534\,144 z^3 - 148\,852\,408\,320 z^2 + \right. $$
$$ \left. 360\,501\,926\,400 z + 221\,793\,177\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-2\,097\,152 z^5 + 381\,812\,736 z^4 - \right. $$
$$ \left.\left. 12\,867\,674\,112 z^3 + 174\,436\,416\,000 z^2 - 1\,013\,911\,668\,000 z + 1\,996\,138\,596\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2 \Bigg) $$

07.22.03.adpu.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{2\,113\,929\,216 z^{15/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,777\,216 z^{11/2} + 360\,710\,144 z^5 + 4\,029\,677\,568 z^{9/2} + 30\,861\,164\,544 z^4 + \right.\right.\right. $$
$$ 180\,065\,206\,272 z^{7/2} + 839\,636\,582\,400 z^3 + 3\,183\,622\,041\,600 z^{5/2} + 9\,778\,267\,699\,200 z^2 + $$
$$ 23\,791\,889\,721\,600 z^{3/2} + 43\,874\,291\,260\,800 z + 56\,941\,443\,058\,500\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(16\,777\,216 z^{11/2} - 360\,710\,144 z^5 + 4\,029\,677\,568 z^{9/2} - 30\,861\,164\,544 z^4 + 180\,065\,206\,272 z^{7/2} - \right. $$
$$ \left. 839\,636\,582\,400 z^3 + 3\,183\,622\,041\,600 z^{5/2} - 9\,778\,267\,699\,200 z^2 + 23\,791\,889\,721\,600 z^{3/2} - \right. $$
$$ \left.\left. 43\,874\,291\,260\,800 z + 56\,941\,443\,058\,500\sqrt{z} - 42\,706\,082\,293\,875\right) + 42\,706\,082\,293\,875\right) + $$
$$ \left.\left. 104\,928\,949\,125 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 407)\,\mathrm{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 104\,928\,949\,125 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 407)\,\mathrm{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adpv.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) = $$
$$ \frac{1}{528\,482\,304 z^{15/4}}\left(2\sqrt[4]{z}\left(4\sqrt{z}\left(4\,194\,304 z^5 - 1\,007\,419\,392 z^4 + 45\,016\,301\,568 z^3 - 795\,905\,510\,400 z^2 + \right.\right.\right. $$
$$ \left. 5\,947\,972\,430\,400 z - 14\,235\,360\,764\,625\right)\cos\left(2\sqrt{z}\right) + $$
$$ \left(-360\,710\,144 z^5 + 30\,861\,164\,544 z^4 - 839\,636\,582\,400 z^3 + 9\,778\,267\,699\,200 z^2 - 43\,874\,291\,260\,800 z + \right. $$
$$ \left.\left. 42\,706\,082\,293\,875\right)\sin\left(2\sqrt{z}\right)\right) - 104\,928\,949\,125\sqrt{\pi}\,(16z + 407)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\Bigg) $$

07.22.03.adpw.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) = \frac{1}{20\,346\,568\,704\sqrt{2}\, z^{15/4}}\left(221\left(-6\sqrt{z}\left(130\,023\,424 z^5 + 13\,061\,586\,944 z^4 + 409\,773\,686\,784 z^3 + 5\,191\,227\,740\,160 z^2 + 21\,055\,565\,638\,800 z - 22\,489\,828\,185\,825\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(67\,108\,864 z^6 + 20\,107\,493\,376 z^5 + 1\,117\,360\,226\,304 z^4 + 24\,114\,090\,147\,840 z^3 + 214\,138\,144\,281\,600 z^2 + 555\,724\,985\,230\,800 z - 337\,347\,422\,787\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\left(46\,137\,344 z^5 + 5\,226\,627\,072 z^4 + 187\,193\,180\,160 z^3 + 2\,884\,015\,411\,200 z^2 + 18\,216\,612\,968\,400 z + 37\,483\,046\,976\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adpx.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) = -\frac{1}{20\,346\,568\,704\sqrt{2}\, z^{15/4}}\left(221\left(6\sqrt{z}\left(130\,023\,424 z^5 - 13\,061\,586\,944 z^4 + 409\,773\,686\,784 z^3 - 5\,191\,227\,740\,160 z^2 + 21\,055\,565\,638\,800 z + 22\,489\,828\,185\,825\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(67\,108\,864 z^6 - 20\,107\,493\,376 z^5 + 1\,117\,360\,226\,304 z^4 - 24\,114\,090\,147\,840 z^3 + 214\,138\,144\,281\,600 z^2 - 555\,724\,985\,230\,800 z - 337\,347\,422\,787\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\left(46\,137\,344 z^5 - 5\,226\,627\,072 z^4 + 187\,193\,180\,160 z^3 - 2\,884\,015\,411\,200 z^2 + 18\,216\,612\,968\,400 z - 37\,483\,046\,976\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adpy.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) = \frac{1}{270\,582\,939\,648 z^{19/4}}\left(19 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-536\,870\,912 z^6 - 14\,898\,167\,808 z^{11/2} - 214\,614\,147\,072 z^5 - 2\,114\,281\,537\,536 z^{9/2} - 15\,804\,923\,904\,000 z^4 - 94\,039\,297\,228\,800 z^{7/2} - 454\,523\,269\,939\,200 z^3 - 1\,790\,105\,193\,676\,800 z^{5/2} - 5\,684\,129\,753\,702\,400 z^2 - 14\,186\,553\,813\,432\,000 z^{3/2} - 26\,648\,595\,351\,378\,000 z - 35\,018\,987\,480\,977\,500\sqrt{z} + e^{4\sqrt{z}}\left(536\,870\,912 z^6 - 14\,898\,167\,808 z^{11/2} + 214\,614\,147\,072 z^5 - 2\,114\,281\,537\,536 z^{9/2} + 15\,804\,923\,904\,000 z^4 - 94\,039\,297\,228\,800 z^{7/2} + 454\,523\,269\,939\,200 z^3 - 1\,790\,105\,193\,676\,800 z^{5/2} + 5\,684\,129\,753\,702\,400 z^2 - 14\,186\,553\,813\,432\,000 z^{3/2} + 26\,648\,595\,351\,378\,000 z - 35\,018\,987\,480\,977\,500\sqrt{z} + 26\,264\,240\,610\,733\,125\right) - 26\,264\,240\,610\,733\,125\right) + 104\,928\,949\,125 e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2 - 13\,024 z + 250\,305\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 104\,928\,949\,125 e^{2\sqrt{z}}\sqrt{2\pi}\left(256 z^2 - 13\,024 z + 250\,305\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adpz.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) = -\frac{1}{67\,645\,734\,912\, z^{19/4}} \left(19\left(104\,928\,949\,125\sqrt{\pi}\,\left(256 z^2 + 13\,024 z + 250\,305\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\,\left(12\sqrt{z}\,\left(1\,241\,513\,984 z^5 - 176\,190\,128\,128 z^4 + 7\,836\,608\,102\,400 z^3 - 149\,175\,432\,806\,400 z^2 + 1\,182\,212\,817\,786\,000 z - 2\,918\,248\,956\,748\,125\right)\cos\left(2\sqrt{z}\right) + \left(536\,870\,912 z^6 - 214\,614\,147\,072 z^5 + 15\,804\,923\,904\,000 z^4 - 454\,523\,269\,939\,200 z^3 + 5\,684\,129\,753\,702\,400 z^2 - 26\,648\,595\,351\,378\,000 z + 26\,264\,240\,610\,733\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{11}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.adq0.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) = \frac{1}{30\,049\,398\,225\sqrt[4]{z}} \left(\sqrt{2}\,\left(-7\left(16\,777\,216 z^7 + 16\,515\,072 z^6 - 53\,379\,072 z^5 - 350\,622\,720 z^4 - 1\,572\,721\,920 z^3 - 2\,000\,829\,600 z^2 + 8\,129\,305\,800 z - 4\,292\,771\,175\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(4\,194\,304 z^7 + 154\,140\,672 z^6 + 77\,070\,336 z^5 + 692\,858\,880 z^4 + 4\,301\,760\,960 z^3 + 16\,078\,154\,400 z^2 + 16\,839\,276\,300 z - 30\,049\,398\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-26\,214\,400 z^6 + 67\,436\,544 z^5 + 206\,438\,400 z^4 + 1\,328\,221\,440 z^3 + 7\,259\,036\,400 z^2 + 23\,226\,588\,000 z + 30\,049\,398\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adq1.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{23}{4}; -z\right) = \frac{1}{30\,049\,398\,225\sqrt[4]{z}} \left(\sqrt{2}\,\left(7\left(16\,777\,216 z^7 - 16\,515\,072 z^6 - 53\,379\,072 z^5 + 350\,622\,720 z^4 - 1\,572\,721\,920 z^3 + 2\,000\,829\,600 z^2 + 8\,129\,305\,800 z + 4\,292\,771\,175\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(4\,194\,304 z^7 - 154\,140\,672 z^6 + 77\,070\,336 z^5 - 692\,858\,880 z^4 + 4\,301\,760\,960 z^3 - 16\,078\,154\,400 z^2 + 16\,839\,276\,300 z + 30\,049\,398\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(26\,214\,400 z^6 + 67\,436\,544 z^5 - 206\,438\,400 z^4 + 1\,328\,221\,440 z^3 - 7\,259\,036\,400 z^2 + 23\,226\,588\,000 z - 30\,049\,398\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adq2.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{21}{4}; z\right) = \frac{1}{4\,144\,529\,025} \left(\left(-26\,214\,400\,z^6 + 38\,535\,168\,z^5 + 138\,485\,760\,z^4 + 823\,495\,680\,z^3 + 3\,788\,694\,000\,z^2 + 8\,771\,490\,000\,z + 4\,144\,529\,025\right) \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(1\,048\,576\,z^6 + 31\,981\,568\,z^5 + 30\,105\,600\,z^4 + 169\,344\,000\,z^3 + 935\,035\,920\,z^2 + 3\,245\,451\,300\,z + 4\,144\,529\,025\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.adq3.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{1}{4\,144\,529\,025} \left(\left(-26\,214\,400\,z^6 - 38\,535\,168\,z^5 + 138\,485\,760\,z^4 - 823\,495\,680\,z^3 + 3\,788\,694\,000\,z^2 - 8\,771\,490\,000\,z + 4\,144\,529\,025\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(1\,048\,576\,z^6 - 31\,981\,568\,z^5 + 30\,105\,600\,z^4 - 169\,344\,000\,z^3 + 935\,035\,920\,z^2 - 3\,245\,451\,300\,z + 4\,144\,529\,025\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.adq4.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{19}{4}; z\right) = \frac{1}{1\,306\,495\,575\,\sqrt[4]{z}} \left(\sqrt{2}\,\left(\left(2\,097\,152\,z^7 + 96\,337\,920\,z^6 + 27\,353\,088\,z^5 + 117\,895\,680\,z^4 + 484\,323\,840\,z^3 + 558\,835\,200\,z^2 - 2\,444\,904\,000\,z + 1\,306\,495\,575\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,\left(4\,456\,448\,z^6 + 802\,816\,z^5 - 12\,149\,760\,z^4 - 67\,878\,720\,z^3 - 236\,728\,800\,z^2 - 234\,303\,300\,z + 435\,498\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\,\left(524\,288\,z^6 + 14\,450\,688\,z^5 + 14\,837\,760\,z^4 + 70\,842\,240\,z^3 + 343\,450\,800\,z^2 + 1\,039\,084\,200\,z + 1\,306\,495\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adq5.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{1\,306\,495\,575\,\sqrt[4]{z}} \left(\sqrt{2}\,\left(\left(-2\,097\,152\,z^7 + 96\,337\,920\,z^6 - 27\,353\,088\,z^5 + 117\,895\,680\,z^4 - 484\,323\,840\,z^3 + 558\,835\,200\,z^2 + 2\,444\,904\,000\,z + 1\,306\,495\,575\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,\left(4\,456\,448\,z^6 - 802\,816\,z^5 - 12\,149\,760\,z^4 + 67\,878\,720\,z^3 - 236\,728\,800\,z^2 + 234\,303\,300\,z + 435\,498\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\,\left(524\,288\,z^6 - 14\,450\,688\,z^5 + 14\,837\,760\,z^4 - 70\,842\,240\,z^3 + 343\,450\,800\,z^2 - 1\,039\,084\,200\,z + 1\,306\,495\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adq6.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{17}{4}; z\right) = \frac{1}{197\,358\,525} \left(\left(524\,288\,z^6 + 14\,450\,688\,z^5 + 10\,536\,960\,z^4 + 47\,134\,080\,z^3 + 193\,006\,800\,z^2 + 423\,095\,400\,z + 197\,358\,525\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(3\,080\,192\,z^5 - 3\,010\,560\,z^4 - 10\,725\,120\,z^3 - 49\,911\,120\,z^2 - 159\,950\,700\,z - 197\,358\,525\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.adq7.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{17}{4}; -z\right) = \frac{1}{197\,358\,525} \left(\left(524\,288\,z^6 - 14\,450\,688\,z^5 + 10\,536\,960\,z^4 - 47\,134\,080\,z^3 + 193\,006\,800\,z^2 - 423\,095\,400\,z + 197\,358\,525\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(3\,080\,192\,z^5 + 3\,010\,560\,z^4 - 10\,725\,120\,z^3 + 49\,911\,120\,z^2 - 159\,950\,700\,z + 197\,358\,525\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.adq8.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{15}{4}; z\right) = \frac{1}{68\,762\,925\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-6\,553\,600\,z^6 - 11\,010\,048\,z^5 + 7\,418\,880\,z^4 + 25\,724\,160\,z^3 + 25\,613\,280\,z^2 - 126\,320\,040\,z + 68\,762\,925\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(262\,144\,z^6 + 7\,946\,240\,z^5 + 2\,042\,880\,z^4 + 11\,954\,880\,z^3 + 38\,031\,840\,z^2 + 34\,636\,140\,z - 68\,762\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-1\,441\,792\,z^5 + 2\,150\,400\,z^4 + 5\,214\,720\,z^3 + 20\,568\,240\,z^2 + 57\,047\,760\,z + 68\,762\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adq9.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{68\,762\,925\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-6\,553\,600\,z^6 + 11\,010\,048\,z^5 + 7\,418\,880\,z^4 - 25\,724\,160\,z^3 + 25\,613\,280\,z^2 + 126\,320\,040\,z + 68\,762\,925\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(262\,144\,z^6 - 7\,946\,240\,z^5 + 2\,042\,880\,z^4 - 11\,954\,880\,z^3 + 38\,031\,840\,z^2 - 34\,636\,140\,z - 68\,762\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(1\,441\,792\,z^5 + 2\,150\,400\,z^4 - 5\,214\,720\,z^3 + 20\,568\,240\,z^2 - 57\,047\,760\,z + 68\,762\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adqa.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{13}{4}; z\right) = \frac{1}{11\,609\,325} \left(-21\left(65\,536\,z^5 - 102\,400\,z^4 - 180\,480\,z^3 - 601\,200\,z^2 - 1\,209\,600\,z - 552\,825\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(65\,536\,z^5 + 1\,290\,240\,z^4 + 1\,048\,320\,z^3 + 3\,522\,960\,z^2 + 9\,922\,500\,z + 11\,609\,325\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.adqb.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{11\,609\,325}\left(21\left(65\,536\,z^5 + 102\,400\,z^4 - 180\,480\,z^3 + 601\,200\,z^2 - 1\,209\,600\,z + 552\,825\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left. 2\sqrt{z}\left(-65\,536\,z^5 + 1\,290\,240\,z^4 - 1\,048\,320\,z^3 + 3\,522\,960\,z^2 - 9\,922\,500\,z + 11\,609\,325\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adqc.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{11}{4}; z\right) = \frac{1}{4\,584\,195\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(131\,072\,z^6 + 3\,588\,096\,z^5 - 806\,400\,z^4 + 1\,774\,080\,z^3 + 1\,330\,560\,z^2 - 8\,149\,680\,z + 4\,584\,195\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(671\,744\,z^5 - 866\,304\,z^4 - 826\,560\,z^3 - 2\,550\,240\,z^2 - 2\,037\,420\,z + 4\,584\,195\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left. 4z\left(32\,768\,z^5 + 417\,792\,z^4 + 712\,320\,z^3 + 1\,718\,640\,z^2 + 4\,074\,840\,z + 4\,584\,195\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adqd.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{11}{4}; -z\right) = \frac{1}{4\,584\,195\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(131\,072\,z^6 - 3\,588\,096\,z^5 - 806\,400\,z^4 - 1\,774\,080\,z^3 + 1\,330\,560\,z^2 + 8\,149\,680\,z + 4\,584\,195\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(671\,744\,z^5 + 866\,304\,z^4 - 826\,560\,z^3 + 2\,550\,240\,z^2 - 2\,037\,420\,z - 4\,584\,195\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left. 4z\left(32\,768\,z^5 - 417\,792\,z^4 + 712\,320\,z^3 - 1\,718\,640\,z^2 + 4\,074\,840\,z - 4\,584\,195\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adqe.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{9}{4}; z\right) = \frac{1}{893\,025}\left(\left(32\,768\,z^5 + 286\,720\,z^4 + 712\,320\,z^3 + 1\,184\,400\,z^2 + 2\,028\,600\,z + 893\,025\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left. 70\sqrt{z}\left(4096\,z^4 - 10\,752\,z^3 - 10\,992\,z^2 - 23\,940\,z - 25\,515\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adqf.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) = \frac{1}{893\,025}\left(\left(-32\,768\,z^5 + 286\,720\,z^4 - 712\,320\,z^3 + 1\,184\,400\,z^2 - 2\,028\,600\,z + 893\,025\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left. 70\sqrt{z}\left(4096\,z^4 + 10\,752\,z^3 - 10\,992\,z^2 + 23\,940\,z - 25\,515\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adqg.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) =$$
$$-\frac{1}{416\,745\sqrt[4]{z}}\left(\sqrt{2}\left(9\left(32\,768z^5 - 64\,512z^4 + 26\,880z^3 - 10\,080z^2 + 76\,440z - 46\,305\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right.$$
$$\left(16\,384z^5 + 116\,736z^4 + 262\,080z^3 + 191\,520z^2 + 132\,300z - 416\,745\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.60z\left(4096z^4 - 12\,544z^3 - 17\,808z^2 - 28\,224z - 27\,783\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adqh.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{416\,745\sqrt[4]{z}}\left(\sqrt{2}\left(9\left(32\,768z^5 + 64\,512z^4 + 26\,880z^3 + 10\,080z^2 + 76\,440z + 46\,305\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\right.\right.$$
$$\left(16\,384z^5 - 116\,736z^4 + 262\,080z^3 - 191\,520z^2 + 132\,300z + 416\,745\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.60z\left(4096z^4 + 12\,544z^3 - 17\,808z^2 + 28\,224z - 27\,783\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adqi.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{5}{4}; z\right) = \frac{1}{99\,225}\left(\left(-53\,248z^4 + 161\,280z^3 + 267\,120z^2 + 246\,960z + 99\,225\right)\cosh\left(2\sqrt{z}\right) -\right.$$
$$\left.2\sqrt{z}\left(4096z^4 - 10\,752z^3 + 149\,520z^2 + 114\,660z + 99\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adqj.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{5}{4}; -z\right) = \frac{1}{99\,225}\left(\left(-53\,248z^4 - 161\,280z^3 + 267\,120z^2 - 246\,960z + 99\,225\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.2\sqrt{z}\left(4096z^4 + 10\,752z^3 + 149\,520z^2 - 114\,660z + 99\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adqk.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) = \frac{1}{59\,535\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192z^5 - 3584z^4 + 193\,536z^3 - 161\,280z^2 - 70\,560z + 59\,535\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.\right.$$
$$4\sqrt{z}\left(23\,552z^4 - 68\,544z^3 - 90\,720z^2 + 8820z + 59\,535\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4z\left(2048z^4 - 17\,024z^3 + 85\,680z^2 + 88\,200z + 59\,535\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adql.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) =$$

$$-\frac{1}{59\,535\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192z^5+3584z^4+193\,536z^3+161\,280z^2-70\,560z-59\,535\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(23\,552z^4+68\,544z^3-90\,720z^2-8820z+59\,535\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4z\left(2048z^4+17\,024z^3+85\,680z^2-88\,200z+59\,535\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adqm.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) =$$

$$\left(\frac{2048z^4}{19\,845}-\frac{7552z^3}{6615}+\frac{80z^2}{21}+\frac{40z}{9}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(1280z^3-112z^2-20\,580z-6615\right)\sinh\left(2\sqrt{z}\right)}{6615}$$

07.22.03.adqn.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) =$$

$$\left(\frac{2048z^4}{19\,845}+\frac{7552z^3}{6615}+\frac{80z^2}{21}-\frac{40z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(1280z^3+112z^2-20\,580z+6615\right)\sin\left(2\sqrt{z}\right)}{6615}$$

07.22.03.adqo.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) =$$

$$\frac{1}{19\,845\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-7168z^4+5376z^3+75\,600z^2-88\,200z+19\,845\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1024z^4-12\,096z^3+30\,240z^2+\right.\right.\right.$$
$$\left.\left.\left.27\,090z-19\,845\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-1024z^3-8400z^2+34\,020z+19\,845\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adqp.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) =$$

$$\frac{1}{19\,845\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-7168z^4-5376z^3+75\,600z^2+88\,200z+19\,845\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024z^4+12\,096z^3+30\,240z^2-\right.\right.\right.$$
$$\left.\left.\left.27\,090z-19\,845\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1024z^3-8400z^2-34\,020z+19\,845\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adqq.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) =$$

$$\frac{1}{19\,845}\left(\left(-256z^3-14\,160z^2+23\,520z+19\,845\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\left(-256z^3+3184z^2+2940z-19\,845\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adqr.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) =$$
$$\frac{1}{19\,845}\left(\left(256\,z^3 - 14\,160\,z^2 - 23\,520\,z + 19\,845\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-256\,z^3 - 3184\,z^2 + 2940\,z + 19\,845\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adqs.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) = \frac{1}{39\,690\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(\left(-2048\,z^4 + 21\,504\,z^3 + 14\,112\,z^2 - 118\,566\,z + 79\,380\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\,\left(1024\,z^3 - 43\,008\,z^2 + 29\,232\,z + 40\,005\right)\right.\right.$$
$$\left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\,z\left(-1024\,z^3 + 8832\,z^2 + 61\,488\,z - 38\,745\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adqt.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{5}{4}; -z\right) = \frac{1}{39\,690\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(\left(-2048\,z^4 - 21\,504\,z^3 + 14\,112\,z^2 + 118\,566\,z + 79\,380\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\sqrt{z}\,\left(1024\,z^3 + 43\,008\,z^2 + 29\,232\,z - 40\,005\right)\right.\right.$$
$$\left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\,z\left(1024\,z^3 + 8832\,z^2 - 61\,488\,z - 38\,745\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adqu.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{7}{4}; z\right) = \left(-\frac{128\,z^3}{6615} + \frac{16\,z^2}{441} + \frac{104\,z}{63} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(208\,z^2 - 2100\,z - 6615\right)\sinh\left(2\sqrt{z}\right)}{6615}$$

07.22.03.adqv.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{7}{4}; -z\right) = \frac{\left(128\,z^3 + 240\,z^2 - 10\,920\,z + 6615\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(208\,z^2 + 2100\,z - 6615\right)\sin\left(2\sqrt{z}\right)}{6615}$$

07.22.03.adqw.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{9}{4}; z\right) = -\frac{1}{254\,016\sqrt{2}\,z^{3/4}}$$
$$\left(\left(-2\sqrt{z}\,\left(32\,768\,z^3 - 155\,904\,z^2 - 530\,208\,z + 556\,857\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(32\,768\,z^4 + 212\,992\,z^3 - 2\,252\,544\,z^2 - 2\,874\,816\,z + \right.\right.\right.$$
$$\left.\left.\left. 1\,514\,205\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-45\,056\,z^3 + 40\,704\,z^2 + 1\,371\,552\,z + 1\,514\,205\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adqx.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = \frac{1}{254\,016\sqrt{2}\,z^{3/4}}$$
$$\left(\left(-2\sqrt{z}\left(32\,768z^3+155\,904z^2-530\,208z-556\,857\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-32\,768z^4+212\,992z^3+2\,252\,544z^2-2\,874\,816z-\right.\right.\right.$$
$$\left.\left.\left.1\,514\,205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(45\,056z^3+40\,704z^2-1\,371\,552z+1\,514\,205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adqy.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = \left(\frac{16z^2}{63}+\frac{16z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{945}\sqrt{z}\left(16z^2+420z+945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.adqz.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = \left(\frac{16z^2}{63}-\frac{16z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\left(16z^2-420z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.adr0.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) =$$
$$-\frac{1}{903\,168\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(65\,536z^4+2\,371\,584z^3+14\,047\,488z^2+33\,015\,024z-40\,883\,535\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$\left(2\,424\,832z^4+35\,328\,000z^3+165\,650\,688z^2+314\,954\,640z-204\,417\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\left(65\,536z^4+3\,330\,048z^3+29\,934\,336z^2+121\,136\,400z+204\,417\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adr1.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) =$$
$$\frac{1}{903\,168\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(65\,536z^4-2\,371\,584z^3+14\,047\,488z^2-33\,015\,024z-40\,883\,535\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-2\,424\,832z^4+35\,328\,000z^3-165\,650\,688z^2+314\,954\,640z+204\,417\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.2\sqrt{z}\left(65\,536z^4-3\,330\,048z^3+29\,934\,336z^2-121\,136\,400z+204\,417\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adr2.01

$${}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{15}{4}; z\right) =$$
$$-\frac{1}{247\,726\,080\,z^{11/4}}\left(11e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144z^{9/2}+3\,211\,264z^4+20\,529\,152z^{7/2}+90\,746\,880z^3+310\,410\,240z^{5/2}+\right.\right.\right.$$
$$861\,369\,600z^2+1\,938\,081\,600z^{3/2}+3\,391\,642\,800z+4\,239\,553\,500\sqrt{z}\,+$$
$$e^{4\sqrt{z}}\left(262\,144z^{9/2}-3\,211\,264z^4+20\,529\,152z^{7/2}-90\,746\,880z^3+310\,410\,240z^{5/2}-861\,369\,600z^2+\right.$$
$$\left.\left.1\,938\,081\,600z^{3/2}-3\,391\,642\,800z+4\,239\,553\,500\sqrt{z}\,-3\,179\,665\,125\right)+3\,179\,665\,125\right)-$$
$$\left.\left.3\,179\,665\,125e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+3\,179\,665\,125e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.adr3.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{15}{4}; -z\right) = -\frac{1}{61\,931\,520\, z^{11/4}}\left(11\left(3\,179\,665\,125\sqrt{\pi}\; S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ 2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536 z^4 - 5\,132\,288 z^3 + 77\,602\,560 z^2 - 484\,520\,400 z + 1\,059\,888\,375\right)\cos\left(2\sqrt{z}\right) - 7\left(458\,752 z^4 - 12\,963\,840 z^3 + 123\,052\,800 z^2 - 484\,520\,400 z + 454\,237\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.adr4.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{17}{4}; z\right) = -\frac{1}{28\,901\,376\sqrt{2}\, z^{11/4}} \left(13\left(-18\sqrt{z}\left(786\,432 z^4 + 27\,787\,264 z^3 + 315\,657\,216 z^2 + 1\,162\,909\,440 z - 1\,267\,389\,585\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(2\,097\,152 z^5 + 224\,526\,336 z^4 + 4\,700\,971\,008 z^3 + 37\,988\,375\,040 z^2 + 92\,887\,391\,520 z - 57\,032\,531\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\left(2\,621\,440 z^4 + 113\,426\,432 z^3 + 1\,624\,381\,440 z^2 + 9\,594\,002\,880 z + 19\,010\,843\,775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adr5.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = \frac{1}{28\,901\,376\sqrt{2}\, z^{11/4}} \left(13\left(18\sqrt{z}\left(786\,432 z^4 - 27\,787\,264 z^3 + 315\,657\,216 z^2 - 1\,162\,909\,440 z - 1\,267\,389\,585\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(2\,097\,152 z^5 - 224\,526\,336 z^4 + 4\,700\,971\,008 z^3 - 37\,988\,375\,040 z^2 + 92\,887\,391\,520 z + 57\,032\,531\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\left(2\,621\,440 z^4 - 113\,426\,432 z^3 + 1\,624\,381\,440 z^2 - 9\,594\,002\,880 z + 19\,010\,843\,775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adr6.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) = \frac{1}{1\,056\,964\,608 z^{15/4}}\left(11 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304 z^5 - 73\,400\,320 z^{9/2} - 677\,117\,952 z^4 - 4\,329\,701\,376 z^{7/2} - 21\,202\,944\,000 z^3 - 82\,691\,481\,600 z^{5/2} - 258\,410\,880\,000 z^2 - 635\,690\,764\,800 z^{3/2} - 1\,180\,291\,694\,400 z - 1\,538\,957\,920\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^5 - 73\,400\,320 z^{9/2} + 677\,117\,952 z^4 - 4\,329\,701\,376 z^{7/2} + 21\,202\,944\,000 z^3 - 82\,691\,481\,600 z^{5/2} + 258\,410\,880\,000 z^2 - 635\,690\,764\,800 z^{3/2} + 1\,180\,291\,694\,400 z - 1\,538\,957\,920\,500\sqrt{z} + 1\,154\,218\,440\,375\right) - 1\,154\,218\,440\,375\right) + 3\,179\,665\,125 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 363)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 3\,179\,665\,125 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 363)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adr7.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) = $$

$$ -\frac{1}{264\,241\,152\,z^{15/4}}\left(11\left(3\,179\,665\,125\sqrt{\pi}\,(16z+363)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(28\sqrt{z}\left(2\,621\,440z^4-154\,632\,192z^3+\right.\right.\right.$$

$$ \left.\left.\left.2\,953\,267\,200z^2-22\,703\,241\,600z+54\,962\,782\,875\right)\cos\left(2\sqrt{z}\right)+\left(4\,194\,304z^5-677\,117\,952z^4+\right.\right.\right.$$

$$ \left.\left.\left.21\,202\,944\,000z^3-258\,410\,880\,000z^2+1\,180\,291\,694\,400z-1\,154\,218\,440\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.adr8.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) = $$

$$ -\frac{1}{924\,844\,032\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(4\,194\,304z^5+799\,539\,200z^4+29\,190\,045\,696z^3+390\,737\,571\,840z^2+\right.\right.\right.$$

$$ \left.\left.\left.1\,629\,018\,079\,920z-1\,729\,986\,783\,525\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$

$$ \left.\left(331\,350\,016z^5+24\,793\,055\,232z^4+587\,140\,055\,040z^3+5\,414\,506\,352\,640z^2+14\,296\,154\,518\,800z-\right.\right.$$

$$ \left.\left.8\,649\,933\,917\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4\,194\,304z^5+926\,941\,184z^4+39\,199\,948\,800z^3+\right.\right.$$

$$ \left.\left.641\,926\,010\,880z^2+4\,157\,037\,838\,800z+8\,649\,933\,917\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.adr9.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) = $$

$$ -\frac{1}{924\,844\,032\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(4\,194\,304z^5-799\,539\,200z^4+29\,190\,045\,696z^3-390\,737\,571\,840z^2+\right.\right.\right.$$

$$ \left.\left.\left.1\,629\,018\,079\,920z+1\,729\,986\,783\,525\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$

$$ \left.\left(331\,350\,016z^5-24\,793\,055\,232z^4+587\,140\,055\,040z^3-5\,414\,506\,352\,640z^2+14\,296\,154\,518\,800z+\right.\right.$$

$$ \left.\left.8\,649\,933\,917\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-4\,194\,304z^5+926\,941\,184z^4-39\,199\,948\,800z^3+\right.\right.$$

$$ \left.\left.641\,926\,010\,880z^2-4\,157\,037\,838\,800z+8\,649\,933\,917\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.adra.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) = -\frac{1}{135\,291\,469\,824\, z^{19/4}} \left(209\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(134\,217\,728\, z^{11/2} + 3\,120\,562\,176\, z^5 + 38\,050\,725\,888\, z^{9/2} + 319\,291\,392\,000\, z^4 + 2\,035\,482\,624\,000\, z^{7/2} + 10\,279\,187\,251\,200\, z^3 + 41\,676\,506\,726\,400\, z^{5/2} + 134\,952\,497\,971\,200\, z^2 + 341\,208\,956\,088\,000\, z^{3/2} + 646\,362\,326\,610\,000\, z + 854\,121\,645\,877\,500\sqrt{z} + e^{4\sqrt{z}}\left(134\,217\,728\, z^{11/2} - 3\,120\,562\,176\, z^5 + 38\,050\,725\,888\, z^{9/2} - 319\,291\,392\,000\, z^4 + 2\,035\,482\,624\,000\, z^{7/2} - 10\,279\,187\,251\,200\, z^3 + 41\,676\,506\,726\,400\, z^{5/2} - 134\,952\,497\,971\,200\, z^2 + 341\,208\,956\,088\,000\, z^{3/2} - 646\,362\,326\,610\,000\, z + 854\,121\,645\,877\,500\sqrt{z} - 640\,591\,234\,408\,125\right) + 640\,591\,234\,408\,125\right) - 3\,179\,665\,125\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 11\,616\, z + 201\,465\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 3\,179\,665\,125\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 11\,616\, z + 201\,465\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adrb.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) = -\frac{1}{33\,822\,867\,456\, z^{19/4}} \left(209\left(3\,179\,665\,125\sqrt{\pi}\left(256\, z^2 + 11\,616\, z + 201\,465\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(3\left(1\,040\,187\,392\, z^5 - 106\,430\,464\,000\, z^4 + 3\,426\,395\,750\,400\, z^3 - 44\,984\,165\,990\,400\, z^2 + 215\,454\,108\,870\,000\, z - 213\,530\,411\,469\,375\right)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\left(33\,554\,432\, z^5 - 9\,512\,681\,472\, z^4 + 508\,870\,656\,000\, z^3 - 10\,419\,126\,681\,600\, z^2 + 85\,302\,239\,022\,000\, z - 213\,530\,411\,469\,375\right)\cos\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{11}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.adrc.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) = \frac{1}{3\,338\,822\,025\sqrt[4]{z}} \left(\sqrt{2}\left(\left(4\,194\,304\, z^7 + 128\,450\,560\, z^6 - 8\,945\,664\, z^5 + 318\,044\,160\, z^4 + 1\,240\,303\,680\, z^3 + 1\,385\,445\,600\, z^2 - 6\,221\,407\,500\, z + 3\,338\,822\,025\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(24\,117\,248\, z^6 - 67\,436\,544\, z^5 - 91\,176\,960\, z^4 - 534\,078\,720\, z^3 - 1\,822\,035\,600\, z^2 - 1\,769\,644\,800\, z + 3\,338\,822\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\, z\left(1\,048\,576\, z^6 + 14\,811\,136\, z^5 + 57\,630\,720\, z^4 + 198\,535\,680\, z^3 + 906\,166\,800\, z^2 + 2\,682\,117\,900\, z + 3\,338\,822\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adrd.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{3\,338\,822\,025\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4\,194\,304 z^7 + 128\,450\,560 z^6 + 8\,945\,664 z^5 + 318\,044\,160 z^4 - 1\,240\,303\,680 z^3 + 1\,385\,445\,600 z^2 + 6\,221\,407\,500 z + 3\,338\,822\,025\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(24\,117\,248 z^6 + 67\,436\,544 z^5 - 91\,176\,960 z^4 + 534\,078\,720 z^3 - 1\,822\,035\,600 z^2 + 1\,769\,644\,800 z + 3\,338\,822\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1\,048\,576 z^6 - 14\,811\,136 z^5 + 57\,630\,720 z^4 - 198\,535\,680 z^3 + 906\,166\,800 z^2 - 2\,682\,117\,900 z + 3\,338\,822\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adre.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) = \frac{1}{460\,503\,225}\left(\left(1\,048\,576 z^6 + 20\,447\,232 z^5 + 30\,105\,600 z^4 + 115\,153\,920 z^3 + 457\,002\,000 z^2 + 989\,925\,300 z + 460\,503\,225\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(5\,767\,168 z^5 - 14\,745\,600 z^4 - 27\,095\,040 z^3 - 119\,508\,480 z^2 - 375\,921\,000 z - 460\,503\,225\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.adrf.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) = \frac{1}{460\,503\,225}\left(\left(1\,048\,576 z^6 - 20\,447\,232 z^5 + 30\,105\,600 z^4 - 115\,153\,920 z^3 + 457\,002\,000 z^2 - 989\,925\,300 z + 460\,503\,225\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(5\,767\,168 z^5 + 14\,745\,600 z^4 - 27\,095\,040 z^3 + 119\,508\,480 z^2 - 375\,921\,000 z + 460\,503\,225\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.adrg.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) = \frac{1}{145\,166\,175\sqrt[4]{z}}\left(\sqrt{2}\left(-7\left(1\,835\,008 z^6 + 1\,818\,624 z^5 - 2\,350\,080 z^4 - 7\,761\,600 z^3 - 7\,650\,720 z^2 + 38\,045\,700 z - 20\,738\,025\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(524\,288 z^6 + 14\,450\,688 z^5 + 3\,655\,680 z^4 + 25\,361\,280 z^3 + 80\,332\,560 z^2 + 72\,765\,000 z - 145\,166\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-2\,818\,048 z^5 + 5\,591\,040 z^4 + 11\,370\,240 z^3 + 43\,853\,040 z^2 + 120\,789\,900 z + 145\,166\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adrh.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) = \frac{1}{145\,166\,175\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(-7\left(1\,835\,008 z^6 - 1\,818\,624 z^5 - 2\,350\,080 z^4 + 7\,761\,600 z^3 - 7\,650\,720 z^2 - 38\,045\,700 z - 20\,738\,025\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(524\,288 z^6 - 14\,450\,688 z^5 + 3\,655\,680 z^4 - 25\,361\,280 z^3 + 80\,332\,560 z^2 - 72\,765\,000 z - 145\,166\,175\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4z\left(2\,818\,048 z^5 + 5\,591\,040 z^4 - 11\,370\,240 z^3 + 43\,853\,040 z^2 - 120\,789\,900 z + 145\,166\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adri.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) = $$
$$ \frac{1}{21\,928\,725}\left(\left(-2\,818\,048 z^5 + 3\,010\,560 z^4 + 6\,961\,920 z^3 + 23\,662\,800 z^2 + 47\,911\,500 z + 21\,928\,725\right)\cosh\left(2\sqrt{z}\right) - \right. $$
$$ \left. 2\sqrt{z}\left(131\,072 z^5 + 2\,908\,160 z^4 + 1\,881\,600 z^3 + 6\,562\,080 z^2 + 18\,673\,200 z + 21\,928\,725\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.adrj.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{17}{4}; -z\right) = $$
$$ \frac{1}{21\,928\,725}\left(\left(2\,818\,048 z^5 + 3\,010\,560 z^4 - 6\,961\,920 z^3 + 23\,662\,800 z^2 - 47\,911\,500 z + 21\,928\,725\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\left(-131\,072 z^5 + 2\,908\,160 z^4 - 1\,881\,600 z^3 + 6\,562\,080 z^2 - 18\,673\,200 z + 21\,928\,725\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.adrk.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{15}{4}; z\right) = \frac{1}{7\,640\,325\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(262\,144 z^6 + 9\,289\,728 z^5 + 1\,612\,800 z^4 + 2\,882\,880 z^3 + 2\,328\,480 z^2 - 13\,679\,820 z + 7\,640\,325\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(1\,441\,792 z^5 + 430\,080 z^4 - 1\,451\,520 z^3 - 4\,268\,880 z^2 - 3\,492\,720 z + 7\,640\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4z\left(65\,536 z^5 + 1\,290\,240 z^4 + 940\,800 z^3 + 2\,716\,560 z^2 + 6\,694\,380 z + 7\,640\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adrl.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{15}{4}; -z\right) = \frac{1}{7\,640\,325\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(262\,144 z^6 - 9\,289\,728 z^5 + 1\,612\,800 z^4 - 2\,882\,880 z^3 + 2\,328\,480 z^2 + 13\,679\,820 z + 7\,640\,325\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(1\,441\,792 z^5 - 430\,080 z^4 - 1\,451\,520 z^3 + 4\,268\,880 z^2 - 3\,492\,720 z - 7\,640\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 4z\left(65\,536 z^5 - 1\,290\,240 z^4 + 940\,800 z^3 - 2\,716\,560 z^2 + 6\,694\,380 z - 7\,640\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adrm.01

$${}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{13}{4}; z\right) =$$
$$\frac{1}{1\,289\,925}\left(\left(65\,536\,z^5 + 1\,290\,240\,z^4 + 618\,240\,z^3 + 1\,587\,600\,z^2 + 2\,891\,700\,z + 1\,289\,925\right)\cosh\left(2\sqrt{z}\right) + 10\sqrt{z}\left(65\,536\,z^4 - 43\,008\,z^3 - 96\,768\,z^2 - 234\,360\,z - 257\,985\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adrn.01

$${}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{1\,289\,925}\left(\left(-65\,536\,z^5 + 1\,290\,240\,z^4 - 618\,240\,z^3 + 1\,587\,600\,z^2 - 2\,891\,700\,z + 1\,289\,925\right)\cos\left(2\sqrt{z}\right) - 10\sqrt{z}\left(65\,536\,z^4 + 43\,008\,z^3 - 96\,768\,z^2 + 234\,360\,z - 257\,985\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adro.01

$${}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{509\,355\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-704\,512\,z^5 - 1\,075\,200\,z^4 + 221\,760\,z^3 + 110\,880\,z^2 - 873\,180\,z + 509\,355\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(32\,768\,z^5 + 720\,896\,z^4 + 67\,200\,z^3 + 277\,200\,z^2 + 194\,040\,z - 509\,355\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-151\,552\,z^4 + 161\,280\,z^3 + 240\,240\,z^2 + 485\,100\,z + 509\,355\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adrp.01

$${}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{509\,355\sqrt[4]{z}}\left(\sqrt{2}\left(\left(704\,512\,z^5 - 1\,075\,200\,z^4 - 221\,760\,z^3 + 110\,880\,z^2 + 873\,180\,z + 509\,355\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(32\,768\,z^5 - 720\,896\,z^4 + 67\,200\,z^3 - 277\,200\,z^2 + 194\,040\,z + 509\,355\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(151\,552\,z^4 + 161\,280\,z^3 - 240\,240\,z^2 + 485\,100\,z - 509\,355\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adrq.01

$${}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{9}{4}; z\right) = \frac{1}{99\,225}\left(-35\left(4096\,z^4 - 4608\,z^3 - 4464\,z^2 - 6660\,z - 2835\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(8192\,z^4 + 107\,520\,z^3 + 57\,120\,z^2 + 100\,800\,z + 99\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adrr.01

$${}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{9}{4}; -z\right) = \frac{1}{99\,225}\left(2\sqrt{z}\left(8192\,z^4 - 107\,520\,z^3 + 57\,120\,z^2 - 100\,800\,z + 99\,225\right)\sin\left(2\sqrt{z}\right) - 35\left(4096\,z^4 + 4608\,z^3 - 4464\,z^2 + 6660\,z - 2835\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.adrs.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{7}{4}; z\right) = \frac{1}{46\,305\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384 z^5 + 319\,488 z^4 - 100\,800 z^3 + 10\,080 z^2 - 71\,820 z + 46\,305\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(69\,632 z^4 - 65\,280 z^3 - 15\,120 z^2 - 10\,080 z + 46\,305\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^4 + 30\,720 z^3 + 42\,000 z^2 + 51\,660 z + 46\,305\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adrt.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{1}{46\,305\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,384 z^5 + 319\,488 z^4 + 100\,800 z^3 + 10\,080 z^2 + 71\,820 z + 46\,305\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(69\,632 z^4 + 65\,280 z^3 - 15\,120 z^2 + 10\,080 z + 46\,305\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^4 - 30\,720 z^3 + 42\,000 z^2 - 51\,660 z + 46\,305\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adru.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{5}{4}; z\right) = \left(\frac{4096 z^4}{11\,025} + \frac{512 z^3}{315} + \frac{80 z^2}{21} + \frac{92 z}{35} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048 z^3 - 3840 z^2 - 2040 z - 1575\right)\sinh\left(2\sqrt{z}\right)}{1575} $$

07.22.03.adrv.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{5}{4}; -z\right) = \left(\frac{4096 z^4}{11\,025} - \frac{512 z^3}{315} + \frac{80 z^2}{21} - \frac{92 z}{35} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048 z^3 + 3840 z^2 - 2040 z + 1575\right)\sin\left(2\sqrt{z}\right)}{1575} $$

07.22.03.adrw.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{3}{4}; z\right) = \frac{1}{6615\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-29\,696 z^4 + 44\,352 z^3 - 30\,240 z^2 - 6300 z + 6615\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048 z^4 + 6528 z^3 + 15\,120 z^2 - 2520 z - 6615\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-5888 z^3 + 11\,760 z^2 + 11\,340 z + 6615\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adrx.01

$${}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{6615\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-29\,696\,z^4 - 44\,352\,z^3 - 30\,240\,z^2 + 6300\,z + 6615\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048\,z^4 - 6528\,z^3 + 15\,120\,z^2 + 2520\,z - 6615\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(5888\,z^3 + 11\,760\,z^2 - 11\,340\,z + 6615\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adry.01

$${}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) = \left(-\frac{4864\,z^3}{2205} + \frac{80\,z^2}{21} + \frac{36\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(512\,z^3 - 2016\,z^2 + 8400\,z + 2205\right)\sinh\left(2\sqrt{z}\right)}{2205}$$

07.22.03.adrz.01

$${}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) = \left(\frac{4864\,z^3}{2205} + \frac{80\,z^2}{21} - \frac{36\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(512\,z^3 + 2016\,z^2 + 8400\,z - 2205\right)\sin\left(2\sqrt{z}\right)}{2205}$$

07.22.03.ads0.01

$${}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{2205\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024\,z^4 - 2240\,z^3 + 12\,096\,z^2 - 11\,340\,z + 2205\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048\,z^3 - 3024\,z^2 - 3780\,z + 2205\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(256\,z^3 - 1904\,z^2 + 3780\,z + 2205\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ads1.01

$${}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) =$$
$$\frac{1}{2205\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024\,z^4 + 2240\,z^3 + 12\,096\,z^2 + 11\,340\,z + 2205\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048\,z^3 + 3024\,z^2 - 3780\,z - 2205\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(256\,z^3 + 1904\,z^2 + 3780\,z - 2205\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ads2.01

$${}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) = \left(\frac{256\,z^3}{2205} - \frac{48\,z^2}{49} + \frac{20\,z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(256\,z^2 + 840\,z - 2205\right)\sinh\left(2\sqrt{z}\right)}{2205}$$

07.22.03.ads3.01

$${}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) = \left(-\frac{256\,z^3}{2205} - \frac{48\,z^2}{49} - \frac{20\,z}{21} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-256\,z^2 + 840\,z + 2205\right)\sin\left(2\sqrt{z}\right)}{2205}$$

07.22.03.ads4.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) = \frac{1}{2205\sqrt{2}\sqrt[4]{z}}\left(\left(14\left(64z^3+144z^2-531z+315\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(1024z^3-8064z^2+3024z+7245\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(64z^2+4032z-1575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ads5.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = \frac{1}{2205\sqrt{2}\sqrt[4]{z}}\left(\left(14\left(-64z^3+144z^2+531z+315\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(1024z^3+8064z^2+3024z-7245\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2z\left(64z^2-4032z-1575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ads6.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) = \left(-\frac{16z^2}{147}+\frac{76z}{49}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{735}\sqrt{z}\left(32z^2-160z-735\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.ads7.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) = \left(-\frac{16z^2}{147}-\frac{76z}{49}+1\right)\cos\left(2\sqrt{z}\right)-\frac{2}{735}\sqrt{z}\left(32z^2+160z-735\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.ads8.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) = \frac{1}{14\,112\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(2048z^3-5376z^2-28\,224z+27\,279\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-20\,480z^3+102\,144z^2+135\,072z-65\,835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(2048z^3+3840z^2-61\,824z-65\,835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ads9.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{9}{4}; -z\right) = \frac{1}{14\,112\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(-2048z^3-5376z^2+28\,224z+27\,279\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(20\,480z^3+102\,144z^2-135\,072z-65\,835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(2048z^3-3840z^2-61\,824z+65\,835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adsa.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{11}{4}; z\right) = \left(\frac{16z^2}{105}+\frac{12z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\left(8z+21\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.adsb.01

$${}_1F_2\left(\frac{11}{4};-\frac{7}{2},\frac{11}{4};-z\right)=\left(\frac{16\,z^2}{105}-\frac{12\,z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}\,(21-8\,z)\,\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.adsc.01

$${}_1F_2\left(\frac{11}{4};-\frac{7}{2},\frac{13}{4};z\right)=\frac{1}{50\,176\,\sqrt{2}\,z^{7/4}}\left(\left(-2\sqrt{z}\,\left(94\,208\,z^3+553\,728\,z^2+1\,190\,448\,z-1\,514\,205\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(65\,536\,z^4+1\,429\,504\,z^3+6\,295\,296\,z^2+11\,586\,960\,z-7\,571\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\,\left(118\,784\,z^3+1\,181\,952\,z^2+4\,564\,560\,z+7\,571\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adsd.01

$${}_1F_2\left(\frac{11}{4};-\frac{7}{2},\frac{13}{4};-z\right)=\frac{1}{50\,176\,\sqrt{2}\,z^{7/4}}\left(\left(-2\sqrt{z}\,\left(94\,208\,z^3-553\,728\,z^2+1\,190\,448\,z+1\,514\,205\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-65\,536\,z^4+1\,429\,504\,z^3-6\,295\,296\,z^2+11\,586\,960\,z+7\,571\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\,\left(118\,784\,z^3-1\,181\,952\,z^2+4\,564\,560\,z-7\,571\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adse.01

$${}_1F_2\left(\frac{11}{4};-\frac{7}{2},\frac{15}{4};z\right)=\frac{1}{13\,762\,560\,z^{11/4}}$$
$$\left(11\,e^{-2\sqrt{z}}\,\left(4\sqrt[4]{z}\,\left(-65\,536\,z^4-606\,208\,z^{7/2}-3\,010\,560\,z^3-10\,644\,480\,z^{5/2}-29\,702\,400\,z^2-66\,830\,400\,z^{3/2}-\right.\right.\right.$$
$$\left.\left.116\,953\,200\,z-146\,191\,500\,\sqrt{z}+e^{4\sqrt{z}}\,\left(65\,536\,z^4-606\,208\,z^{7/2}+3\,010\,560\,z^3-10\,644\,480\,z^{5/2}+\right.\right.\right.$$
$$\left.\left.\left.29\,702\,400\,z^2-66\,830\,400\,z^{3/2}+116\,953\,200\,z-146\,191\,500\,\sqrt{z}+109\,643\,625\right)-109\,643\,625\right)+$$
$$\left.109\,643\,625\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-109\,643\,625\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.adsf.01

$${}_1F_2\left(\frac{11}{4};-\frac{7}{2},\frac{15}{4};-z\right)=$$
$$\frac{1}{3\,440\,640\,z^{11/4}}\left(11\left(2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(151\,552\,z^3-2\,661\,120\,z^2+16\,707\,600\,z-36\,547\,875\right)\cos\left(2\sqrt{z}\right)+\left(65\,536\,z^4-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.3\,010\,560\,z^3+29\,702\,400\,z^2-116\,953\,200\,z+109\,643\,625\right)\sin\left(2\sqrt{z}\right)\right)-109\,643\,625\,\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)$$

07.22.03.adsg.01

$${}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) =$$
$$\frac{1}{1\,605\,632\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\,\left(131\,072\,z^4+7\,495\,680\,z^3+90\,413\,568\,z^2+339\,181\,920\,z-367\,951\,815\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(5\,767\,168\,z^4+145\,145\,856\,z^3+1\,213\,470\,720\,z^2+3\,004\,182\,720\,z-1\,839\,759\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\,\left(131\,072\,z^4+9\,756\,672\,z^3+152\,486\,400\,z^2+920\,636\,640\,z+1\,839\,759\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adsh.01

$${}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) =$$
$$\frac{1}{1\,605\,632\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\,\left(131\,072\,z^4-7\,495\,680\,z^3+90\,413\,568\,z^2-339\,181\,920\,z-367\,951\,815\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-5\,767\,168\,z^4+145\,145\,856\,z^3-1\,213\,470\,720\,z^2+3\,004\,182\,720\,z+1\,839\,759\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\,\left(131\,072\,z^4-9\,756\,672\,z^3+152\,486\,400\,z^2-920\,636\,640\,z+1\,839\,759\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adsi.01

$${}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) =$$
$$\frac{1}{58\,720\,256\,z^{15/4}}\left(11\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(1\,048\,576\,z^{9/2}+14\,680\,064\,z^4+110\,559\,232\,z^{7/2}+584\,908\,800\,z^3+2\,376\,192\,000\,z^{5/2}+\right.\right.\right.$$
$$\left.\left.7\,603\,814\,400\,z^2+18\,979\,833\,600\,z^{3/2}+35\,553\,772\,800\,z+46\,635\,088\,500\sqrt{z}\right)+e^{4\sqrt{z}}$$
$$\left(1\,048\,576\,z^{9/2}-14\,680\,064\,z^4+110\,559\,232\,z^{7/2}-584\,908\,800\,z^3+2\,376\,192\,000\,z^{5/2}-7\,603\,814\,400\,z^2+\right.$$
$$\left.\left.18\,979\,833\,600\,z^{3/2}-35\,553\,772\,800\,z+46\,635\,088\,500\sqrt{z}-34\,976\,316\,375\right)+34\,976\,316\,375\right)+$$
$$\left.109\,643\,625\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-319)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-109\,643\,625\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-319)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.adsj.01

$${}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = -\frac{1}{14\,680\,064\,z^{15/4}}\left(11\left(109\,643\,625\sqrt{\pi}\,(16z+319)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(262\,144\,z^4-27\,639\,808\,z^3+594\,048\,000\,z^2-4\,744\,958\,400\,z+11\,658\,772\,125\right)\cos\left(2\sqrt{z}\right)-$$
$$\left.\left.7\left(2\,097\,152\,z^4-83\,558\,400\,z^3+1\,086\,259\,200\,z^2-5\,079\,110\,400\,z+4\,996\,616\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.adsk.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) = \frac{1}{51\,380\,224\sqrt{2}\, z^{15/4}} $$
$$ \left(221\left(-2\sqrt{z}\,\left(15\,990\,784 z^4 + 751\,337\,472 z^3 + 10\,853\,821\,440 z^2 + 46\,879\,786\,800 z - 49\,428\,193\,815\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(4\,194\,304 z^5 + 575\,668\,224 z^4 + 15\,665\,971\,200 z^3 + 151\,953\,500\,160 z^2 + 410\,143\,623\,120 z - 247\,140\,969\,075\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 2\sqrt{z}\,\left(17\,563\,648 z^4 + 980\,582\,400 z^3 + 17\,499\,018\,240 z^2 + 117\,090\,444\,240 z + 247\,140\,969\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adsl.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) = \frac{1}{51\,380\,224\sqrt{2}\, z^{15/4}} $$
$$ \left(221\left(2\sqrt{z}\,\left(15\,990\,784 z^4 - 751\,337\,472 z^3 + 10\,853\,821\,440 z^2 - 46\,879\,786\,800 z - 49\,428\,193\,815\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(4\,194\,304 z^5 - 575\,668\,224 z^4 + 15\,665\,971\,200 z^3 - 151\,953\,500\,160 z^2 + 410\,143\,623\,120 z + 247\,140\,969\,075\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 2\sqrt{z}\,\left(17\,563\,648 z^4 - 980\,582\,400 z^3 + 17\,499\,018\,240 z^2 - 117\,090\,444\,240 z + 247\,140\,969\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adsm.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = \frac{1}{7\,516\,192\,768 z^{19/4}} $$
$$ \left(209 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-33\,554\,432 z^5 - 645\,922\,816 z^{9/2} - 6\,606\,028\,800 z^4 - 46\,792\,704\,000 z^{7/2} - 251\,510\,784\,000 z^3 - \right.\right.\right. $$
$$ 1\,060\,732\,108\,800 z^{5/2} - 3\,524\,367\,974\,400 z^2 - 9\,060\,531\,480\,000 z^{3/2} - 17\,348\,252\,922\,000 z - $$
$$ 23\,084\,368\,807\,500\sqrt{z} + e^{4\sqrt{z}}\left(33\,554\,432 z^5 - 645\,922\,816 z^{9/2} + 6\,606\,028\,800 z^4 - 46\,792\,704\,000 z^{7/2} + \right. $$
$$ \left.\left. 251\,510\,784\,000 z^3 - 1\,060\,732\,108\,800 z^{5/2} + 3\,524\,367\,974\,400 z^2 - 9\,060\,531\,480\,000 z^{3/2} + \right.\right. $$
$$ \left.\left. 17\,348\,252\,922\,000 z - 23\,084\,368\,807\,500\sqrt{z} + 17\,313\,276\,605\,625\right) - 17\,313\,276\,605\,625\right) + $$
$$ 109\,643\,625 e^{2\sqrt{z}}\sqrt{2\pi}\,\left(256 z^2 - 10\,208 z + 157\,905\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 109\,643\,625 e^{2\sqrt{z}} $$
$$ \left.\left.\sqrt{2\pi}\,\left(256 z^2 - 10\,208 z + 157\,905\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adsn.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) = -\frac{1}{1\,879\,048\,192 z^{19/4}}\left(209\left(109\,643\,625\sqrt{\pi}\,\left(256 z^2 + 10\,208 z + 157\,905\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right. $$
$$ 2\sqrt[4]{z}\,\left(28\sqrt{z}\,\left(23\,068\,672 z^4 - 1\,671\,168\,000 z^3 + 37\,883\,289\,600 z^2 - 323\,590\,410\,000 z + 824\,441\,743\,125\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + \left(33\,554\,432 z^5 - 6\,606\,028\,800 z^4 + 251\,510\,784\,000 z^3 - \right. $$
$$ \left.\left.\left. 3\,524\,367\,974\,400 z^2 + 17\,348\,252\,922\,000 z - 17\,313\,276\,605\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{11}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.adso.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) = \frac{1}{476\,974\,575\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(-20\,971\,520 z^6 + 79\,822\,848 z^5 + 3\,870\,720 z^4 + 184\,504\,320 z^3 + 159\,500\,880 z^2 - 862\,701\,840 z + 476\,974\,575\right)\right.\right. $$
$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1\,048\,576 z^6 + 5\,898\,240 z^5 + 57\,630\,720 z^4 + 80\,478\,720 z^3 + \right. $$
$$ \left. 263\,949\,840 z^2 + 226\,735\,740 z - 476\,974\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(-4\,456\,448 z^5 + 21\,135\,360 z^4 + 59\,028\,480 z^3 + 160\,554\,240 z^2 + 409\,230\,360 z + 476\,974\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adsp.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{23}{4}; -z\right) = \frac{1}{476\,974\,575\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(-20\,971\,520 z^6 - 79\,822\,848 z^5 + 3\,870\,720 z^4 - 184\,504\,320 z^3 + 159\,500\,880 z^2 + 862\,701\,840 z + 476\,974\,575\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,048\,576 z^6 - 5\,898\,240 z^5 + 57\,630\,720 z^4 - 80\,478\,720 z^3 + \right. $$
$$ \left. 263\,949\,840 z^2 - 226\,735\,740 z - 476\,974\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(4\,456\,448 z^5 + 21\,135\,360 z^4 - 59\,028\,480 z^3 + 160\,554\,240 z^2 - 409\,230\,360 z + 476\,974\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adsq.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{21}{4}; z\right) = $$
$$ \frac{1}{65\,786\,175}\left(3\left(-1\,572\,864 z^5 + 5\,963\,776 z^4 + 9\,031\,680 z^3 + 25\,159\,680 z^2 + 48\,452\,040 z + 21\,928\,725\right)\cosh\left(2\sqrt{z}\right) - \right. $$
$$ \left. 2\sqrt{z}\left(262\,144 z^5 + 1\,572\,864 z^4 + 11\,999\,232 z^3 + 22\,014\,720 z^2 + 57\,641\,220 z + 65\,786\,175\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.adsr.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{21}{4}; -z\right) = $$
$$ \frac{1}{65\,786\,175}\left(3\left(1\,572\,864 z^5 + 5\,963\,776 z^4 - 9\,031\,680 z^3 + 25\,159\,680 z^2 - 48\,452\,040 z + 21\,928\,725\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\left(-262\,144 z^5 + 1\,572\,864 z^4 - 11\,999\,232 z^3 + 22\,014\,720 z^2 - 57\,641\,220 z + 65\,786\,175\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.adss.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{19}{4}; z\right) = \frac{1}{20\,738\,025\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(524\,288 z^6 + 11\,698\,176 z^5 - 3\,225\,600 z^4 + 8\,426\,880 z^3 + 5\,821\,200 z^2 - 36\,673\,560 z + 20\,738\,025\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 12\sqrt{z}\left(851\,968 z^5 - 1\,863\,680 z^4 - 1\,102\,080 z^3 - 3\,825\,360 z^2 - 3\,007\,620 z + 6\,912\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(131\,072 z^5 + 1\,105\,920 z^4 + 4\,032\,000 z^3 + 8\,094\,240 z^2 + 18\,627\,840 z + 20\,738\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adst.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{19}{4}; -z\right) = \frac{1}{20\,738\,025\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(524\,288 z^6 - 11\,698\,176 z^5 - 3\,225\,600 z^4 - 8\,426\,880 z^3 + 5\,821\,200 z^2 + 36\,673\,560 z + 20\,738\,025\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 12\sqrt{z}\left(851\,968 z^5 + 1\,863\,680 z^4 - 1\,102\,080 z^3 + 3\,825\,360 z^2 - 3\,007\,620 z - 6\,912\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(-131\,072 z^5 + 1\,105\,920 z^4 - 4\,032\,000 z^3 + 8\,094\,240 z^2 - 18\,627\,840 z + 20\,738\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adsu.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{17}{4}; z\right) = $$
$$ \frac{1}{3\,132\,675}\left(\left(131\,072 z^5 + 1\,695\,744 z^4 + 1\,881\,600 z^3 + 4\,021\,920 z^2 + 7\,076\,160 z + 3\,132\,675\right)\cosh\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\left(606\,208 z^4 - 1\,176\,576 z^3 - 1\,270\,080 z^2 - 2\,899\,260 z - 3\,132\,675\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.adsv.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{17}{4}; -z\right) = $$
$$ \frac{1}{3\,132\,675}\left(\left(-131\,072 z^5 + 1\,695\,744 z^4 - 1\,881\,600 z^3 + 4\,021\,920 z^2 - 7\,076\,160 z + 3\,132\,675\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left. 2\sqrt{z}\left(606\,208 z^4 + 1\,176\,576 z^3 - 1\,270\,080 z^2 + 2\,899\,260 z - 3\,132\,675\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.adsw.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{15}{4}; z\right) = $$
$$ \frac{1}{1\,091\,475\sqrt[4]{z}}\left(\sqrt{2}\left(-21\left(65\,536 z^5 + 61\,440 z^4 - 25\,344 z^3 - 11\,088 z^2 + 88\,704 z - 51\,975\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 4\sqrt{z}\left(65\,536 z^5 + 1\,290\,240 z^4 + 80\,640 z^3 + 587\,664 z^2 + 407\,484 z - 1\,091\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 12 z\left(-98\,304 z^4 + 143\,360 z^3 + 177\,408 z^2 + 349\,272 z + 363\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adsx.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{1\,091\,475\sqrt[4]{z}}\left(\sqrt{2}\left(21\left(65\,536z^5 - 61\,440z^4 - 25\,344z^3 + 11\,088z^2 + 88\,704z + 51\,975\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(65\,536z^5 - 1\,290\,240z^4 + 80\,640z^3 - 587\,664z^2 + 407\,484z + 1\,091\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.12z\left(98\,304z^4 + 143\,360z^3 - 177\,408z^2 + 349\,272z - 363\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adsy.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{13}{4}; z\right) = \frac{1}{184\,275}\left(3\left(-98\,304z^4 + 71\,680z^3 + 94\,080z^2 + 143\,640z + 61\,425\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left.2\sqrt{z}\left(16\,384z^4 + 248\,832z^3 + 100\,800z^2 + 185\,220z + 184\,275\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adsz.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{13}{4}; -z\right) = \frac{1}{184\,275}\left(2\sqrt{z}\left(16\,384z^4 - 248\,832z^3 + 100\,800z^2 - 185\,220z + 184\,275\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$\left.3\left(98\,304z^4 + 71\,680z^3 - 94\,080z^2 + 143\,640z - 61\,425\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.adt0.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{72\,765\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768z^5 + 860\,160z^4 + 88\,704z^3 + 11\,088z^2 - 116\,424z + 72\,765\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right.$$
$$\left(151\,552z^4 + 53\,760z^3 - 33\,264z^2 - 19\,404z + 72\,765\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4z\left(8192z^4 + 107\,520z^3 + 51\,744z^2 + 77\,616z + 72\,765\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adt1.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{72\,765\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32\,768z^5 + 860\,160z^4 - 88\,704z^3 + 11\,088z^2 + 116\,424z + 72\,765\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\right.\right.$$
$$\sqrt{z}\left(151\,552z^4 - 53\,760z^3 - 33\,264z^2 + 19\,404z + 72\,765\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4z\left(8192z^4 - 107\,520z^3 + 51\,744z^2 - 77\,616z + 72\,765\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adt2.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) =$$
$$\left(\frac{8192z^4}{14\,175} + \frac{1024z^3}{135} + \frac{32z^2}{15} + \frac{112z}{45} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(11\,264z^3 - 4480z^2 - 5460z - 4725\right)\sinh\left(2\sqrt{z}\right)}{4725}$$

07.22.03.adt3.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) =$$

$$\left(\frac{8192\,z^4}{14\,175} - \frac{1024\,z^3}{135} + \frac{32\,z^2}{15} - \frac{112\,z}{45} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(11\,264\,z^3 + 4480\,z^2 - 5460\,z + 4725\right)\sin\left(2\sqrt{z}\right)}{4725}$$

07.22.03.adt4.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{7}{4}; z\right) = \frac{1}{6615\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(-9\left(8192\,z^4 + 10\,752\,z^3 - 336\,z^2 + 1008\,z - 735\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(4096\,z^4 + 61\,440\,z^3 - 1008\,z^2 + 252\,z - 6615\right)\right.\right.$$

$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(-5120\,z^3 + 3584\,z^2 + 2856\,z + 2205\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adt5.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{7}{4}; -z\right) = \frac{1}{6615\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(9\left(-8192\,z^4 + 10\,752\,z^3 + 336\,z^2 + 1008\,z + 735\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(4096\,z^4 - 61\,440\,z^3 - 1008\,z^2 - 252\,z - 6615\right)\right.\right.$$

$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(5120\,z^3 + 3584\,z^2 - 2856\,z + 2205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adt6.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{5}{4}; z\right) =$$

$$\frac{1}{1575}\left(7\left(-2048\,z^3 + 1536\,z^2 + 648\,z + 225\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(1024\,z^3 + 8064\,z^2 + 2436\,z + 1575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adt7.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{5}{4}; -z\right) =$$

$$\frac{1}{1575}\left(7\left(2048\,z^3 + 1536\,z^2 - 648\,z + 225\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-1024\,z^3 + 8064\,z^2 - 2436\,z + 1575\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adt8.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{3}{4}; z\right) = \frac{1}{945\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(2048\,z^4 + 26\,496\,z^3 - 9072\,z^2 - 504\,z + 945\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 36\sqrt{z}\,\left(768\,z^3 - 496\,z^2 + 84\,z + 105\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$

$$\left.\left.4\,z\left(512\,z^3 + 1824\,z^2 + 2016\,z + 945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adt9.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{3}{4}; -z\right) = \frac{1}{945\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(2048z^4 - 26\,496z^3 - 9072z^2 + 504z + 945\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 36\sqrt{z}\left(768z^3 + 496z^2 + 84z - 105\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 4z\left(-512z^3 + 1824z^2 - 2016z + 945\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adta.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{1}{4}; z\right) = \left(\frac{512z^3}{315} + \frac{32z^2}{15} + \frac{32z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\left(64z^2 - 76z - 15\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.adtb.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, -\frac{1}{4}; -z\right) = \left(-\frac{512z^3}{315} + \frac{32z^2}{15} - \frac{32z}{5} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\left(64z^2 + 76z - 15\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.adtc.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{315\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-2816z^3 + 3024z^2 - 2016z + 315\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(256z^3 + 144z^2 + 756z - 315\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 4z\left(-512z^2 + 504z + 315\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adtd.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) =$$
$$\frac{1}{315\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2816z^3 + 3024z^2 + 2016z + 315\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(256z^3 - 144z^2 + 756z + 315\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left. 4z\left(512z^2 + 504z - 315\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adte.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{3}{4}; z\right) = \left(-\frac{128z^2}{105} + \frac{8z}{15} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{315}\sqrt{z}\left(64z^2 - 252z + 315\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.adtf.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) = \left(-\frac{128z^2}{105} - \frac{8z}{15} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{315}\sqrt{z}\left(64z^2 + 252z + 315\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.adtg.01

$${}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{5}{4}; z\right) = -\frac{1}{315\sqrt[4]{z}}\left(\sqrt{2}\left(\left(128z^3 - 336z^2 + 630z - 315\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left. 9\sqrt{z}\left(64z^2 - 63\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(64z^2 - 336z + 63\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adth.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{5}{4}; -z\right) = \frac{1}{315\sqrt[4]{z}} \left(\sqrt{2}\left(\left(128z^3+336z^2+630z+315\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 9\sqrt{z}\left(64z^2-63\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2z\left(64z^2+336z+63\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adti.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) = \left(-\frac{32z^2}{105}+\frac{48z}{35}+1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{105}\sqrt{z}\,(4z+105)\sinh\left(2\sqrt{z}\right) $$

07.22.03.adtj.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{7}{4}; -z\right) = \left(-\frac{32z^2}{105}-\frac{48z}{35}+1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{105}(105-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.adtk.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) = -\frac{1}{1008\sqrt{2}\,z^{3/4}} \left(\left(126\sqrt{z}\,(32z-27) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(2048z^3-5376z^2-8064z+3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(-256z^2+1120z+1155\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adtl.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{9}{4}; -z\right) = \frac{1}{1008\sqrt{2}\,z^{3/4}} \left(\left(126\sqrt{z}\,(32z+27) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(2048z^3+5376z^2-8064z-3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\left(256z^2+1120z-1155\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adtm.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{11}{4}; z\right) = \left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,(4z+15)\sinh\left(2\sqrt{z}\right) $$

07.22.03.adtn.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{11}{4}; -z\right) = \left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}(15-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.adto.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{13}{4}; z\right) = -\frac{1}{3584\sqrt{2}\,z^{7/4}} \left(\left(2\sqrt{z}\left(4096z^3+26\,880z^2+49\,392z-65\,835\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(69\,632z^3+284\,928z^2+498\,960z-329\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4096z^3+56\,064z^2+203\,280z+329\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adtp.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{13}{4}; -z\right) = \frac{1}{3584\sqrt{2}\, z^{7/4}}\left(\left(-2\sqrt{z}\left(4096 z^3 - 26\,880 z^2 + 49\,392 z + 65\,835\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(69\,632 z^3 - 284\,928 z^2 + 498\,960 z + 329\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4096 z^3 - 56\,064 z^2 + 203\,280 z - 329\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adtq.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{15}{4}; z\right) = -\frac{1}{983\,040 z^{11/4}}\left(11 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384 z^{7/2} + 110\,592 z^3 + 420\,864 z^{5/2} + 1\,188\,096 z^2 + 2\,673\,216 z^{3/2} + 4\,678\,128 z + 5\,847\,660\sqrt{z} + e^{4\sqrt{z}}\left(16\,384 z^{7/2} - 110\,592 z^3 + 420\,864 z^{5/2} - 1\,188\,096 z^2 + 2\,673\,216 z^{3/2} - 4\,678\,128 z + 5\,847\,660\sqrt{z} - 4\,385\,745\right) + 4\,385\,745\right) - 4\,385\,745 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 4\,385\,745 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adtr.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{15}{4}; -z\right) = \frac{1}{245\,760 z^{11/4}}\left(11\left(2\sqrt[4]{z}\left(4\sqrt{z}\left(4096 z^3 - 105\,216 z^2 + 668\,304 z - 1\,461\,915\right)\cos\left(2\sqrt{z}\right) + 3\left(-36\,864 z^3 + 396\,032 z^2 - 1\,559\,376 z + 1\,461\,915\right)\sin\left(2\sqrt{z}\right)\right) - 4\,385\,745\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right) $$

07.22.03.adts.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{17}{4}; z\right) = -\frac{1}{114\,688\sqrt{2}\, z^{11/4}}\left(13\left(-6\sqrt{z}\left(81\,920 z^3 + 1\,096\,704 z^2 + 4\,213\,440 z - 4\,542\,615\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(131\,072 z^4 + 5\,038\,080 z^3 + 44\,352\,000 z^2 + 111\,656\,160 z - 68\,139\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\left(98\,304 z^3 + 1\,802\,240 z^2 + 11\,235\,840 z + 22\,713\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adtt.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{17}{4}; -z\right) = -\frac{1}{114\,688\sqrt{2}\, z^{11/4}}\left(13\left(6\sqrt{z}\left(81\,920 z^3 - 1\,096\,704 z^2 + 4\,213\,440 z + 4\,542\,615\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(131\,072 z^4 - 5\,038\,080 z^3 + 44\,352\,000 z^2 - 111\,656\,160 z - 68\,139\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(-98\,304 z^3 + 1\,802\,240 z^2 - 11\,235\,840 z + 22\,713\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adtu.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) = $$

$$ -\frac{1}{4\,194\,304\,z^{15/4}}\left(11\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-262\,144\,z^4 - 2\,883\,584\,z^{7/2} - 17\,547\,264\,z^3 - 76\,038\,144\,z^{5/2} - 251\,876\,352\,z^2 - 641\,571\,840\,z^{3/2} - 1\,216\,313\,280\,z - 1\,608\,106\,500\sqrt{z} + e^{4\sqrt{z}}\left(262\,144\,z^4 - 2\,883\,584\,z^{7/2} + 17\,547\,264\,z^3 - 76\,038\,144\,z^{5/2} + 251\,876\,352\,z^2 - 641\,571\,840\,z^{3/2} + 1\,216\,313\,280\,z - 1\,608\,106\,500\sqrt{z} + 1\,206\,079\,875\right) - 1\,206\,079\,875\right) - 4\,385\,745\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 275)\,\mathrm{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 4\,385\,745\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 275)\,\mathrm{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adtv.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) = \frac{1}{1\,048\,576\,z^{15/4}} $$

$$ \left(11\left(2\sqrt[4]{z}\left(4\sqrt{z}\left(720\,896\,z^3 - 19\,009\,536\,z^2 + 160\,392\,960\,z - 402\,026\,625\right)\cos\left(2\sqrt{z}\right) + \left(262\,144\,z^4 - 17\,547\,264\,z^3 + 251\,876\,352\,z^2 - 1\,216\,313\,280\,z + 1\,206\,079\,875\right)\sin\left(2\sqrt{z}\right)\right) - 4\,385\,745\sqrt{\pi}\,(16z + 275)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right) $$

07.22.03.adtw.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) = $$

$$ -\frac{1}{3\,670\,016\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(262\,144\,z^4 + 20\,840\,448\,z^3 + 337\,075\,200\,z^2 + 1\,526\,318\,640\,z - 1\,594\,457\,865\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(4\,456\,448\,z^4 + 153\,190\,400\,z^3 + 1\,595\,489\,280\,z^2 + 4\,433\,592\,240\,z - 2\,657\,429\,775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(262\,144\,z^4 + 26\,050\,560\,z^3 + 529\,689\,600\,z^2 + 3\,706\,773\,840\,z + 7\,972\,289\,325\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adtx.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) = $$

$$ \frac{1}{3\,670\,016\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(262\,144\,z^4 - 20\,840\,448\,z^3 + 337\,075\,200\,z^2 - 1\,526\,318\,640\,z - 1\,594\,457\,865\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-4\,456\,448\,z^4 + 153\,190\,400\,z^3 - 1\,595\,489\,280\,z^2 + 4\,433\,592\,240\,z + 2\,657\,429\,775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(262\,144\,z^4 - 26\,050\,560\,z^3 + 529\,689\,600\,z^2 - 3\,706\,773\,840\,z + 7\,972\,289\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adty.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{23}{4}; z\right) = $$
$$ -\frac{1}{536\,870\,912\, z^{19/4}}\left(209\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(8\,388\,608\, z^{9/2} + 132\,120\,576\, z^4 + 1\,123\,024\,896\, z^{7/2} + 6\,644\,563\,968\, z^3 + \right.\right.\right. $$
$$ 29\,654\,876\,160\, z^{5/2} + 102\,081\,208\,320\, z^2 + 268\,324\,056\,000\, z^{3/2} + 521\,026\,506\,000\, z + $$
$$ 699\,526\,327\,500\sqrt{z} + e^{4\sqrt{z}}\left(8\,388\,608\, z^{9/2} - 132\,120\,576\, z^4 + 1\,123\,024\,896\, z^{7/2} - \right. $$
$$ 6\,644\,563\,968\, z^3 + 29\,654\,876\,160\, z^{5/2} - 102\,081\,208\,320\, z^2 + 268\,324\,056\,000\, z^{3/2} - $$
$$ \left.\left.\left. 521\,026\,506\,000\, z + 699\,526\,327\,500\sqrt{z} - 524\,644\,745\,625\right) + 524\,644\,745\,625\right) - $$
$$ 4\,385\,745\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 8800\, z + 119\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 4\,385\,745\, e^{2\sqrt{z}}\sqrt{2\pi} $$
$$ \left.\left.\left(256\, z^2 - 8800\, z + 119\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adtz.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{5}{2}, \frac{23}{4}; -z\right) = -\frac{1}{134\,217\,728\, z^{19/4}}\left(209\left(4\,385\,745\sqrt{\pi}\left(256\, z^2 + 8800\, z + 119\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + \right.\right. $$
$$ 2\sqrt[4]{z}\left(4\sqrt{z}\left(2\,097\,152\, z^4 - 280\,756\,224\, z^3 + 7\,413\,719\,040\, z^2 - 67\,081\,014\,000\, z + 174\,881\,581\,875\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.\left. 21\left(6\,291\,456\, z^4 - 316\,407\,808\, z^3 + 4\,861\,009\,920\, z^2 - 24\,810\,786\,000\, z + 24\,983\,083\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{11}{4}$, $b_{1.} = -\frac{3}{2}$

07.22.03.adu0.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{23}{4}; z\right) = \frac{1}{95\,394\,915\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(1\,048\,576\, z^6 - 4\,718\,592\, z^5 + 77\,414\,400\, z^4 - 17\,740\,800\, z^3 + 26\,777\,520\, z^2 - 160\,374\,060\, z + 95\,394\,915\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(3\,407\,872\, z^5 - 14\,057\,472\, z^4 - 59\,028\,480\, z^3 - 41\,690\,880\, z^2 - 33\,180\,840\, z + 95\,394\,915\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\, z\left(262\,144\, z^5 - 3\,538\,944\, z^4 + 27\,033\,600\, z^3 + 59\,431\,680\, z^2 + 94\,012\,380\, z + 95\,394\,915\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adu1.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{23}{4}; -z\right) = \frac{1}{95\,394\,915\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(1\,048\,576\, z^6 + 4\,718\,592\, z^5 + 77\,414\,400\, z^4 + 17\,740\,800\, z^3 + 26\,777\,520\, z^2 + 160\,374\,060\, z + 95\,394\,915\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(3\,407\,872\, z^5 + 14\,057\,472\, z^4 - 59\,028\,480\, z^3 + 41\,690\,880\, z^2 - 33\,180\,840\, z - 95\,394\,915\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 4\, z\left(262\,144\, z^5 + 3\,538\,944\, z^4 + 27\,033\,600\, z^3 - 59\,431\,680\, z^2 + 94\,012\,380\, z - 95\,394\,915\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adu2.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{21}{4}; z\right) = \left(\frac{262\,144\,z^5}{13\,157\,235} - \frac{262\,144\,z^4}{1\,879\,605} + \frac{96\,256\,z^3}{69\,615} + \frac{256\,z^2}{153} + \frac{148\,z}{63} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(851\,968\,z^4 - 3\,096\,576\,z^3 - 11\,321\,856\,z^2 - 13\,366\,080\,z - 13\,157\,235\right)\sinh\left(2\sqrt{z}\right)}{13\,157\,235}$$

07.22.03.adu3.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{21}{4}; -z\right) = \frac{1}{13\,157\,235}\left(-\left(262\,144\,z^5 + 1\,835\,008\,z^4 + 18\,192\,384\,z^3 - 22\,014\,720\,z^2 + 30\,909\,060\,z - 13\,157\,235\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(851\,968\,z^4 + 3\,096\,576\,z^3 - 11\,321\,856\,z^2 + 13\,366\,080\,z - 13\,157\,235\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adu4.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{19}{4}; z\right) = \frac{1}{4\,147\,605\sqrt[4]{z}}\left(\sqrt{2}\left(-3\left(720\,896\,z^5 - 2\,150\,400\,z^4 + 887\,040\,z^3 - 388\,080\,z^2 + 2\,231\,460\,z - 1\,382\,535\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(131\,072\,z^5 + 221\,184\,z^4 + 4\,032\,000\,z^3 + 1\,441\,440\,z^2 + 1\,164\,240\,z - 4\,147\,605\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(-147\,456\,z^4 + 486\,400\,z^3 + 1\,108\,800\,z^2 + 1\,455\,300\,z + 1\,382\,535\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adu5.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{19}{4}; -z\right) = \frac{1}{4\,147\,605\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(720\,896\,z^5 + 2\,150\,400\,z^4 + 887\,040\,z^3 + 388\,080\,z^2 + 2\,231\,460\,z + 1\,382\,535\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(131\,072\,z^5 - 221\,184\,z^4 + 4\,032\,000\,z^3 - 1\,441\,440\,z^2 + 1\,164\,240\,z + 4\,147\,605\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 12\,z\left(147\,456\,z^4 + 486\,400\,z^3 - 1\,108\,800\,z^2 + 1\,455\,300\,z - 1\,382\,535\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adu6.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{17}{4}; z\right) = \frac{1}{626\,535}\left(\left(-475\,136\,z^4 + 1\,311\,744\,z^3 + 1\,270\,080\,z^2 + 1\,523\,340\,z + 626\,535\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(32\,768\,z^4 + 67\,584\,z^3 + 798\,336\,z^2 + 687\,960\,z + 626\,535\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adu7.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{17}{4}; -z\right) = \frac{1}{626\,535}\left(\left(-475\,136\,z^4 - 1\,311\,744\,z^3 + 1\,270\,080\,z^2 - 1\,523\,340\,z + 626\,535\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(32\,768\,z^4 - 67\,584\,z^3 + 798\,336\,z^2 - 687\,960\,z + 626\,535\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adu8.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536 z^5 + 1\,003\,520 z^4 - 413\,952 z^3 + 77\,616 z^2 - 329\,868 z + 218\,295\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(262\,144 z^4 - 430\,080 z^3 - 29\,568 z^2 - 38\,808 z + 218\,295\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(16\,384 z^4 + 66\,560 z^3 + 251\,328 z^2 + 252\,252 z + 218\,295\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adu9.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-65\,536 z^5 + 1\,003\,520 z^4 + 413\,952 z^3 + 77\,616 z^2 + 329\,868 z + 218\,295\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(262\,144 z^4 + 430\,080 z^3 - 29\,568 z^2 + 38\,808 z + 218\,295\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(16\,384 z^4 - 66\,560 z^3 + 251\,328 z^2 - 252\,252 z + 218\,295\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adua.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{13}{4}; z\right) = \frac{1}{36\,855}\left(\left(16\,384 z^4 + 125\,952 z^3 + 100\,800 z^2 + 94\,500 z + 36\,855\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left.6\sqrt{z}\left(20\,480 z^3 - 28\,416 z^2 - 15\,120 z - 12\,285\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adub.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{13}{4}; -z\right) = \frac{1}{36\,855}\left(\left(16\,384 z^4 - 125\,952 z^3 + 100\,800 z^2 - 94\,500 z + 36\,855\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.6\sqrt{z}\left(20\,480 z^3 + 28\,416 z^2 - 15\,120 z + 12\,285\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aduc.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{11}{4}; z\right) = \frac{1}{14\,553\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(-7\left(20\,480 z^4 + 16\,896 z^3 - 1584 z^2 + 2772 z - 2079\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(8192 z^4 + 107\,520 z^3 - 7392 z^2 - 14\,553\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-29\,696 z^3 + 29\,568 z^2 + 19\,404 z + 14\,553\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adud.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{11}{4}; -z\right) = \frac{1}{14\,553\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(-7\left(20\,480z^4 - 16\,896z^3 - 1584z^2 - 2772z - 2079\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8192z^4 - 107\,520z^3 - 7392z^2 - 14\,553\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(29\,696z^3 + 29\,568z^2 - 19\,404z + 14\,553\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adue.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{2835}\left(\left(-29\,696z^3 + 13\,440z^2 + 7980z + 2835\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(2048z^3 + 19\,456z^2 + 4200z + 2835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aduf.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{2835}\left(\left(29\,696z^3 + 13\,440z^2 - 7980z + 2835\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-2048z^3 + 19\,456z^2 - 4200z + 2835\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adug.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{1323\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^4 + 75\,264z^3 + 5040z^2 - 1260z + 1323\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(5120z^3 + 1792z^2 + 168z + 441\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(1024z^3 + 8064z^2 + 2268z + 1323\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aduh.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{1323\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^4 - 75\,264z^3 + 5040z^2 + 1260z + 1323\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(5120z^3 - 1792z^2 + 168z - 441\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-1024z^3 + 8064z^2 - 2268z + 1323\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adui.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{5}{4}; z\right) = \left(\frac{1024z^3}{315} + \frac{128z^2}{5} + \frac{52z}{15} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{315}\sqrt{z}\left(3328z^2 - 672z - 315\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aduj.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{5}{4}; -z\right) = \left(-\frac{1024z^3}{315} + \frac{128z^2}{5} - \frac{52z}{15} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{315}\sqrt{z}\left(3328z^2 + 672z - 315\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aduk.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{189\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-7424z^3 - 7728z^2 + 84z + 189\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512z^3 + 4768z^2 - 336z - 189\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 4z\left(-1472z^2 + 588z + 189\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adul.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{189\sqrt[4]{z}}\left(\sqrt{2}\left(\left(7424z^3 - 7728z^2 - 84z + 189\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512z^3 - 4768z^2 - 336z + 189\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left. 4z\left(1472z^2 + 588z - 189\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adum.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{1}{4}; z\right) = \frac{1}{3}\left(-64z^2 + 28z + 3\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{63}\sqrt{z}\left(128z^2 + 504z + 63\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.adun.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, -\frac{1}{4}; -z\right) = \frac{2}{63}\sqrt{z}\left(128z^2 - 504z + 63\right)\sin\left(2\sqrt{z}\right) - \frac{1}{3}\left(64z^2 + 28z - 3\right)\cos\left(2\sqrt{z}\right)$$

07.22.03.aduo.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{1}{4}; z\right) = \frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256z^3 + 1968z^2 - 588z + 63\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left. 4\sqrt{z}\left(640z^2 - 264z + 63\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(64z^2 + 60z + 63\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adup.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{1}{4}; -z\right) =$$
$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-256z^3 + 1968z^2 + 588z + 63\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(640z^2 + 264z + 63\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 4z\left(64z^2 - 60z + 63\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aduq.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{3}{4}; z\right) = \left(\frac{64z^2}{63} - \frac{4z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{9}\sqrt{z}\left(16z - 9\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.adur.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{3}{4}; -z\right) = \left(\frac{64z^2}{63} + \frac{4z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{9}\sqrt{z}\left(16z + 9\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.adus.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{5}{4}; z\right) =$$

$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(80z^2-56z+21\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+2\sqrt{z}\left(64z^2-48z+63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+144z^2I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adut.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{5}{4}; -z\right) =$$

$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(80z^2+56z+21\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-2\sqrt{z}\left(64z^2+48z+63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-144z^2J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aduu.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{7}{4}; z\right) = \left(\frac{20z}{21}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{21}\sqrt{z}\,(8z-21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aduv.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{7}{4}; -z\right) = \left(1-\frac{20z}{21}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}\sqrt{z}\,(8z+21)\sin\left(2\sqrt{z}\right)$$

07.22.03.aduw.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{9}{4}; z\right) = \frac{1}{504\sqrt{2}\,z^{3/4}}$$

$$\left(5\left(2\sqrt{z}\left(128z^2-224z+147\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(256z^2+672z-231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(128z^2-224z-231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$

$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adux.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) = \frac{1}{504\sqrt{2}\,z^{3/4}}\left(5\left(2\sqrt{z}\left(128z^2+224z+147\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$

$$\left.\left.\left(256z^2-672z-231\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(128z^2+224z-231\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aduy.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) = \left(\frac{4z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aduz.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) = \left(1-\frac{4z}{3}\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.adv0.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) = \frac{1}{1792\sqrt{2}\, z^{7/4}}\left(5\left(-14\sqrt{z}\left(256z^2+336z-495\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4096z^3+16\,128z^2+25\,872z-17\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(3328z^2+11\,088z+17\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adv1.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) = \frac{1}{1792\sqrt{2}\, z^{7/4}}\left(5\left(14\sqrt{z}\left(256z^2-336z-495\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4096z^3-16\,128z^2+25\,872z+17\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(3328z^2-11\,088z+17\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adv2.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) = \frac{1}{98\,304\, z^{11/4}}\left(11\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-4096z^3-19\,456z^{5/2}-56\,576z^2-127\,296z^{3/2}-222\,768z-278\,460\sqrt{z}+ e^{4\sqrt{z}}\left(4096z^3-19\,456z^{5/2}+56\,576z^2-127\,296z^{3/2}+222\,768z-278\,460\sqrt{z}+208\,845\right)-208\,845\right)+ 208\,845\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-208\,845\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adv3.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{15}{4}; -z\right) = -\frac{1}{24\,576\, z^{11/4}}\left(11\left(208\,845\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ 2\sqrt[4]{z}\left(4\sqrt{z}\left(4864z^2-31\,824z+69\,615\right)\cos\left(2\sqrt{z}\right)+\left(4096z^3-56\,576z^2+222\,768z-208\,845\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.adv4.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) = \frac{1}{57\,344\sqrt{2}\, z^{11/4}}\left(65\left(2\sqrt{z}\left(8192z^3+139\,776z^2+554\,400z-592\,515\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(65\,536z^3+630\,784z^2+1\,626\,240z-987\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(8192z^3+219\,648z^2+1\,441\,440z+2\,962\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adv5.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) = -\frac{1}{57\,344\sqrt{2}\,z^{11/4}} $$
$$ \left(65\left(2\sqrt{z}\left(8192z^3 - 139\,776z^2 + 554\,400z + 592\,515\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(65\,536z^3 - 630\,784z^2 + 1\,626\,240z + 987\,525\right)\right.\right. $$
$$ \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-8192z^3 + 219\,648z^2 - 1\,441\,440z + 2\,962\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adv6.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{2\,097\,152\,z^{15/4}}\left(55\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(65\,536z^{7/2} + 557\,056z^3 + 2\,715\,648z^{5/2} + 9\,504\,768z^2 + 24\,950\,016z^{3/2} + \right.\right.\right. $$
$$ \left.\left. 48\,117\,888z + 64\,324\,260\sqrt{z}\right) + e^{4\sqrt{z}}\left(65\,536z^{7/2} - 557\,056z^3 + 2\,715\,648z^{5/2} - 9\,504\,768z^2 + \right.\right. $$
$$ \left.\left. 24\,950\,016z^{3/2} - 48\,117\,888z + 64\,324\,260\sqrt{z} - 48\,243\,195\right) + 48\,243\,195\right) + $$
$$ \left. 208\,845\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 231)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 208\,845\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 231)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adv7.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{19}{4}; -z\right) = $$
$$ -\frac{1}{524\,288\,z^{15/4}}\left(55\left(208\,845\sqrt{\pi}\,(16z + 231)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,384z^3 - 678\,912z^2 + 6\,237\,504z - 16\,081\,065\right)\right.\right.\right. $$
$$ \left.\left.\left.\cos\left(2\sqrt{z}\right) + 17\left(-32\,768z^3 + 559\,104z^2 - 2\,830\,464z + 2\,837\,835\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.adv8.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) = \frac{1}{1\,835\,008\sqrt{2}\,z^{15/4}}\left(1105\left(-2\sqrt{z}\left(606\,208z^3 + 11\,827\,200z^2 + 57\,232\,560z - 59\,053\,995\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(262\,144z^4 + 14\,778\,368z^3 + 171\,494\,400z^2 + 496\,132\,560z - 295\,269\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left. 2\sqrt{z}\left(704\,512z^3 + 17\,909\,760z^2 + 133\,776\,720z + 295\,269\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adv9.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) = $$
$$ -\frac{1}{1\,835\,008\sqrt{2}\,z^{15/4}}\left(1105\left(2\sqrt{z}\left(606\,208z^3 - 11\,827\,200z^2 + 57\,232\,560z + 59\,053\,995\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(262\,144z^4 - 14\,778\,368z^3 + 171\,494\,400z^2 - 496\,132\,560z - 295\,269\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left. 2\sqrt{z}\left(-704\,512z^3 + 17\,909\,760z^2 - 133\,776\,720z + 295\,269\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adva.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) =$$
$$\frac{1}{268\,435\,456\, z^{19/4}}\left(1045\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-2\,097\,152\, z^4 - 26\,738\,688\, z^{7/2} - 187\,170\,816\, z^3 - 912\,457\,728\, z^{5/2} - \right.\right.\right.$$
$$3\,307\,659\,264\, z^2 - 8\,968\,639\,680\, z^{3/2} - 17\,753\,495\,760\, z - 24\,121\,597\,500\sqrt{z} +$$
$$e^{4\sqrt{z}}\left(2\,097\,152\, z^4 - 26\,738\,688\, z^{7/2} + 187\,170\,816\, z^3 - 912\,457\,728\, z^{5/2} + 3\,307\,659\,264\, z^2 - \right.$$
$$\left.\left.8\,968\,639\,680\, z^{3/2} + 17\,753\,495\,760\, z - 24\,121\,597\,500\sqrt{z} + 18\,091\,198\,125\right) - 18\,091\,198\,125\right) +$$
$$208\,845\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 7392\, z + 86\,625\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 208\,845\, e^{2\sqrt{z}}\sqrt{2\pi}$$
$$\left.\left.\left(256\, z^2 - 7392\, z + 86\,625\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.advb.01

$${}_1F_2\left(\frac{11}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) = -\frac{1}{67\,108\,864\, z^{19/4}}\left(1045\left(208\,845\sqrt{\pi}\left(256\, z^2 + 7392\, z + 86\,625\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - \right.\right.$$
$$2\sqrt[4]{z}\left(204\sqrt{z}\left(131\,072\, z^3 - 4\,472\,832\, z^2 + 43\,963\,920\, z - 118\,243\,125\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\left.\left.\left(2\,097\,152\, z^4 - 187\,170\,816\, z^3 + 3\,307\,659\,264\, z^2 - 17\,753\,495\,760\, z + 18\,091\,198\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{11}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.advc.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) =$$
$$-\frac{1}{31\,798\,305\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2\,097\,152\, z^5 + 49\,152\, z^4 - 85\,155\,840\, z^3 + 63\,645\,120\, z^2 + 33\,180\,840\, z - 31\,798\,305\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(262\,144\, z^5 - 4\,849\,664\, z^4 + 19\,292\,160\, z^3 + 59\,431\,680\, z^2 - 9\,216\,900\, z - 31\,798\,305\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.20\, z\left(65\,536\, z^4 + 774\,144\, z^3 - 6\,468\,096\, z^2 - 10\,322\,928\, z - 6\,359\,661\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.advd.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{31\,798\,305\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2\,097\,152\, z^5 - 49\,152\, z^4 - 85\,155\,840\, z^3 - 63\,645\,120\, z^2 + 33\,180\,840\, z + 31\,798\,305\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(262\,144\, z^5 + 4\,849\,664\, z^4 + 19\,292\,160\, z^3 - 59\,431\,680\, z^2 - 9\,216\,900\, z + 31\,798\,305\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.20\, z\left(65\,536\, z^4 - 774\,144\, z^3 - 6\,468\,096\, z^2 + 10\,322\,928\, z - 6\,359\,661\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adve.01

$${}_1F_2\left(\frac{11}{4};-\frac{1}{2},-\frac{21}{4};z\right)=\left(-\frac{65\,536\,z^4}{626\,535}-\frac{16\,384\,z^3}{69\,615}+\frac{512\,z^2}{119}+\frac{64\,z}{21}+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\,\left(65\,536\,z^4-1\,032\,192\,z^3+3\,773\,952\,z^2+10\,221\,120\,z+4\,385\,745\right)\sinh\left(2\sqrt{z}\right)}{4\,385\,745}$$

07.22.03.advf.01

$${}_1F_2\left(\frac{11}{4};-\frac{1}{2},-\frac{21}{4};-z\right)=\left(-\frac{65\,536\,z^4}{626\,535}+\frac{16\,384\,z^3}{69\,615}+\frac{512\,z^2}{119}-\frac{64\,z}{21}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\,\left(65\,536\,z^4+1\,032\,192\,z^3+3\,773\,952\,z^2-10\,221\,120\,z+4\,385\,745\right)\sin\left(2\sqrt{z}\right)}{4\,385\,745}$$

07.22.03.advg.01

$${}_1F_2\left(\frac{11}{4};-\frac{1}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{1\,382\,535\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(131\,072\,z^5-761\,856\,z^4+5\,322\,240\,z^3-3\,880\,800\,z^2-1\,164\,240\,z+1\,382\,535\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\,\left(311\,296\,z^4-660\,480\,z^3-3\,326\,400\,z^2+679\,140\,z+1\,382\,535\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(32\,768\,z^4-399\,360\,z^3+1\,511\,040\,z^2+2\,522\,520\,z+1\,382\,535\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.advh.01

$${}_1F_2\left(\frac{11}{4};-\frac{1}{2},-\frac{19}{4};-z\right)=$$
$$-\frac{1}{1\,382\,535\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(131\,072\,z^5+761\,856\,z^4+5\,322\,240\,z^3+3\,880\,800\,z^2-1\,164\,240\,z-1\,382\,535\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\,\left(311\,296\,z^4+660\,480\,z^3-3\,326\,400\,z^2-679\,140\,z+1\,382\,535\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4\,z\left(32\,768\,z^4+399\,360\,z^3+1\,511\,040\,z^2-2\,522\,520\,z+1\,382\,535\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.advi.01

$${}_1F_2\left(\frac{11}{4};-\frac{1}{2},-\frac{17}{4};z\right)=$$
$$\left(\frac{32\,768\,z^4}{208\,845}-\frac{2048\,z^3}{1755}+\frac{1152\,z^2}{221}+\frac{56\,z}{17}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(77\,824\,z^3-145\,152\,z^2-589\,680\,z-208\,845\right)\sinh\left(2\sqrt{z}\right)}{208\,845}$$

07.22.03.advj.01

$${}_1F_2\left(\frac{11}{4};-\frac{1}{2},-\frac{17}{4};-z\right)=$$
$$\left(\frac{32\,768\,z^4}{208\,845}+\frac{2048\,z^3}{1755}+\frac{1152\,z^2}{221}-\frac{56\,z}{17}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(77\,824\,z^3+145\,152\,z^2-589\,680\,z+208\,845\right)\sin\left(2\sqrt{z}\right)}{208\,845}$$

07.22.03.advk.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) = \frac{1}{72\,765\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-212\,992\,z^4 + 473\,088\,z^3 - 310\,464\,z^2 - 38\,808\,z + 72\,765\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384\,z^4 - 15\,360\,z^3 + 251\,328\,z^2 - 58\,212\,z - 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-40\,960\,z^3 + 77\,568\,z^2 + 155\,232\,z + 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.advl.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) = \frac{1}{72\,765\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-212\,992\,z^4 - 473\,088\,z^3 - 310\,464\,z^2 + 38\,808\,z + 72\,765\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,384\,z^4 + 15\,360\,z^3 + 251\,328\,z^2 + 58\,212\,z - 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(40\,960\,z^3 + 77\,568\,z^2 - 155\,232\,z + 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.advm.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) = \left(-\frac{45\,056\,z^3}{12\,285} + \frac{256\,z^2}{39} + \frac{48\,z}{13} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(4096\,z^3 - 2304\,z^2 + 45\,360\,z + 12\,285\right)\sinh\left(2\sqrt{z}\right)}{12\,285} $$

07.22.03.advn.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) = \left(\frac{45\,056\,z^3}{12\,285} + \frac{256\,z^2}{39} - \frac{48\,z}{13} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(4096\,z^3 + 2304\,z^2 + 45\,360\,z - 12\,285\right)\sin\left(2\sqrt{z}\right)}{12\,285} $$

07.22.03.advo.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) = \frac{1}{4851\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(8192\,z^4 + 78\,848\,z^3 - 36\,960\,z^2 + 4851\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(25\,600\,z^3 - 29\,568\,z^2 + 6468\,z + 4851\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2048\,z^3 + 2048\,z^2 + 12\,936\,z + 4851\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.advp.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, -\frac{11}{4}; -z\right) = \frac{1}{4851\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(8192z^4 - 78\,848z^3 - 36\,960z^2 + 4851\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(25\,600z^3 + 29\,568z^2 + 6468z - 4851\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.4z\left(-2048z^3 + 2048z^2 - 12\,936z + 4851\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.advq.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, -\frac{9}{4}; z\right) = \left(\frac{2048z^3}{945} + \frac{512z^2}{63} + \frac{40z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(5888z^2 - 5280z - 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.advr.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, -\frac{9}{4}; -z\right) = \left(-\frac{2048z^3}{945} + \frac{512z^2}{63} - \frac{40z}{9} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(5888z^2 + 5280z - 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.advs.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{441\sqrt[4]{z}}\left(\sqrt{2}\left(-7\left(2048z^3 + 1344z^2 - 72z - 63\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024z^3 + 8064z^2 - 1092z - 441\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.4z\left(-2816z^2 + 1680z + 441\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.advt.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{441\sqrt[4]{z}}\left(\sqrt{2}\left(7\left(2048z^3 - 1344z^2 - 72z + 63\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024z^3 - 8064z^2 - 1092z + 441\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left.4z\left(2816z^2 + 1680z - 441\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.advu.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) = \frac{1}{105}\left(\left(-2816z^2 + 672z + 105\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256z^2 + 1312z + 105\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.advv.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, -\frac{5}{4}; -z\right) = \frac{1}{105}\left(\left(-2816z^2 - 672z + 105\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(256z^2 - 1312z + 105\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.advw.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512z^3+6048z^2+336z+63\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1472z^2+420z+63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^2+504z+63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.advx.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-512z^3+6048z^2-336z+63\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1472z^2-420z+63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^2-504z+63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.advy.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) = \left(\frac{128z^2}{21}+24z+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{21}\sqrt{z}\,(304z-21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.advz.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) = \left(\frac{128z^2}{21}-24z+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}\sqrt{z}\,(304z+21)\sin\left(2\sqrt{z}\right)$$

07.22.03.adw0.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) = -\frac{1}{21\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(704z^2+504z-21\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(64z^2+316z-21\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\,(128z-21)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adw1.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{1}{4}; -z\right) = \frac{1}{21\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-704z^2+504z+21\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(64z^2-316z-21\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\,(128z+21)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adw2.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{3}{4}; z\right) = \left(1-\frac{16z}{3}\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\,(16z+21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.adw3.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{3}{4}; -z\right) = \left(\frac{16z}{3}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}(21-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.adw4.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{5}{4}; z\right) =$$

$$\frac{1}{21\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32z^2-120z+21\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+16\left(3-13z\right)\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\left(3-8z\right)z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adw5.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{5}{4}; -z\right) =$$

$$\frac{1}{21\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32z^2+120z+21\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-16\sqrt{z}\;\left(13z+3\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(8z+3\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adw6.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{7}{4}; z\right) = \left(1-\frac{8z}{7}\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\;\sinh\left(2\sqrt{z}\right)$$

07.22.03.adw7.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{7}{4}; -z\right) = \left(\frac{8z}{7}+1\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\;\sin\left(2\sqrt{z}\right)$$

07.22.03.adw8.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{9}{4}; z\right) =$$

$$-\frac{1}{84\sqrt{2}\;z^{3/4}}\left(5\left(2\sqrt{z}\;\left(64z-21\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(128z^2-96z+21\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\;\left(16z+21\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adw9.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{9}{4}; -z\right) =$$

$$-\frac{1}{84\sqrt{2}\;z^{3/4}}\left(5\left(-2\sqrt{z}\;\left(64z+21\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(128z^2+96z+21\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\;\left(16z-21\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adwa.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) = \cosh\left(2\sqrt{z}\right)-2\sqrt{z}\;\sinh\left(2\sqrt{z}\right)$$

07.22.03.adwb.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = \cos\left(2\sqrt{z}\right)+2\sqrt{z}\;\sin\left(2\sqrt{z}\right)$$

07.22.03.adwc.01

$${}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) = -\frac{1}{896\sqrt{2}\;z^{7/4}}\left(15\left(2\sqrt{z}\;\left(256z^2+112z-231\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$

$$\left.\left.5\left(256z^2+336z-231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\;\left(256z^2+784z+1155\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adwd.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) = \frac{1}{896\sqrt{2}\, z^{7/4}}\left(15\left(2\sqrt{z}\,\left(256z^2-112z-231\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 5\left(256z^2-336z-231\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(256z^2-784z+1155\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adwe.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) = -\frac{1}{16\,384 z^{11/4}}\left(11 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1024z^{5/2}+3328z^2+7488z^{3/2}+13\,104z+16\,380\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}-3328z^2+7488z^{3/2}-13\,104z+16\,380\sqrt{z}-12\,285\right)+12\,285\right)- 12\,285 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+12\,285 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adwf.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) = -\frac{1}{4096 z^{11/4}}\left(11\left(12\,285\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\,\left(256z^2-1872z+4095\right)\cos\left(2\sqrt{z}\right)-13\left(256z^2-1008z+945\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.adwg.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) = -\frac{1}{28\,672\sqrt{2}\, z^{11/4}}\left(195\left(-14\sqrt{z}\,\left(1024z^2+4224z-4455\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(8192z^3+96\,768z^2+258\,720z-155\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)-10\sqrt{z}\,\left(2048z^2+14\,784z+31\,185\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adwh.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) = \frac{1}{28\,672\sqrt{2}\, z^{11/4}}\left(195\left(14\sqrt{z}\,\left(1024z^2-4224z-4455\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(8192z^3-96\,768z^2+258\,720z+155\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)-10\sqrt{z}\,\left(2048z^2-14\,784z+31\,185\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adwi.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) = -\frac{1}{1\,048\,576 z^{15/4}}\left(165 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-16\,384z^3-106\,496z^{5/2}-412\,672z^2-1\,138\,176z^{3/2}-2\,253\,888z-3\,063\,060\sqrt{z}+e^{4\sqrt{z}}\left(16\,384z^3-106\,496z^{5/2}+412\,672z^2-1\,138\,176z^{3/2}+2\,253\,888z-3\,063\,060\sqrt{z}+2\,297\,295\right)-2\,297\,295\right)- 12\,285 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-187)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+12\,285 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-187)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adwj.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) = -\frac{1}{262\,144\, z^{15/4}}\left(165\left(12\,285\sqrt{\pi}\,(16z+187)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(52\sqrt{z}\,\left(2048z^2-21\,888z+58\,905\right)\cos\left(2\sqrt{z}\right)+\left(16\,384z^3-412\,672z^2+2\,253\,888z-2\,297\,295\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.adwk.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) = -\frac{1}{917\,504\sqrt{2}\, z^{15/4}}\left(3315\left(2\sqrt{z}\,\left(16\,384z^3+473\,088z^2+2\,531\,760z-2\,567\,565\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(507\,904z^3+7\,096\,320z^2+21\,787\,920z-12\,837\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(16\,384z^3+675\,840z^2+5\,599\,440z+12\,837\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adwl.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) = -\frac{1}{917\,504\sqrt{2}\, z^{15/4}}\left(3315\left(2\sqrt{z}\,\left(16\,384z^3-473\,088z^2+2\,531\,760z+2\,567\,565\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(507\,904z^3-7\,096\,320z^2+21\,787\,920z+12\,837\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-16\,384z^3+675\,840z^2-5\,599\,440z+12\,837\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adwm.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) = -\frac{1}{134\,217\,728\, z^{19/4}}\left(3135\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(524\,288z^{7/2}+5\,373\,952z^3+30\,670\,848z^{5/2}+120\,766\,464z^2+343\,062\,720z^{3/2}+698\,377\,680z+964\,863\,900\sqrt{z}\right)+e^{4\sqrt{z}}\left(524\,288z^{7/2}-5\,373\,952z^3+30\,670\,848z^{5/2}-120\,766\,464z^2+343\,062\,720z^{3/2}-698\,377\,680z+964\,863\,900\sqrt{z}-723\,647\,925\right)+723\,647\,925\right)-12\,285\, e^{2\sqrt{z}}\sqrt{2\pi}\,\left(256z^2-5984z+58\,905\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+12\,285\, e^{2\sqrt{z}}\sqrt{2\pi}\,\left(256z^2-5984z+58\,905\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adwn.01

$$ {}_1F_2\left(\frac{11}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) = -\frac{1}{33\,554\,432\, z^{19/4}}\left(3135\left(12\,285\sqrt{\pi}\,\left(256z^2+5984z+58\,905\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(4\sqrt{z}\,\left(131\,072z^3-7\,667\,712z^2+85\,765\,680z-241\,215\,975\right)\cos\left(2\sqrt{z}\right)+\left(-5\,373\,952z^3+120\,766\,464z^2-698\,377\,680z+723\,647\,925\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{11}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.adwo.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) = \frac{1}{31\,798\,305\sqrt[4]{z}}\left(\sqrt{2}\left(\left(262\,144 z^5 - 4\,620\,288 z^4 - 3\,483\,648 z^3 + 90\,034\,560 z^2 - 94\,012\,380 z + 31\,798\,305\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(65\,536 z^4 - 8\,097\,792 z^3 + 16\,934\,400 z^2 + 51\,614\,640 z - 31\,798\,305\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(65\,536 z^4 - 1\,056\,768 z^3 - 7\,703\,040 z^2 + 28\,375\,200 z + 31\,798\,305\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adwp.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{23}{4}; -z\right) = \frac{1}{31\,798\,305\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-262\,144 z^5 - 4\,620\,288 z^4 + 3\,483\,648 z^3 + 90\,034\,560 z^2 + 94\,012\,380 z + 31\,798\,305\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(65\,536 z^4 + 8\,097\,792 z^3 + 16\,934\,400 z^2 - 51\,614\,640 z - 31\,798\,305\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(65\,536 z^4 + 1\,056\,768 z^3 - 7\,703\,040 z^2 - 28\,375\,200 z + 31\,798\,305\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adwq.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{21}{4}; z\right) = \frac{1}{4\,385\,745}\left(\left(65\,536 z^4 - 1\,032\,192 z^3 - 2\,419\,200 z^2 + 16\,027\,200 z + 4\,385\,745\right)\cosh\left(2\sqrt{z}\right) + 12\,096\sqrt{z}\left(256 z^2 - 480 z - 1215\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.adwr.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{21}{4}; -z\right) = \frac{1}{4\,385\,745}\left(\left(65\,536 z^4 + 1\,032\,192 z^3 - 2\,419\,200 z^2 - 16\,027\,200 z + 4\,385\,745\right)\cos\left(2\sqrt{z}\right) - 12\,096\sqrt{z}\left(256 z^2 + 480 z - 1215\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.adws.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{19}{4}; z\right) = -\frac{1}{1\,382\,535\sqrt[4]{z}}\left(\sqrt{2}\left(9\left(16\,384 z^4 + 74\,752 z^3 - 517\,440 z^2 + 485\,100 z - 153\,615\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,768 z^4 - 448\,512 z^3 + 489\,600 z^2 + 2\,522\,520 z - 1\,382\,535\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(4096 z^3 + 170\,240 z^2 - 370\,320 z - 460\,845\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adwt.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{19}{4}; -z\right) = \frac{1}{1\,382\,535\,\sqrt[4]{z}} \left(\sqrt{2}\left(-9\left(16\,384\,z^4 - 74\,752\,z^3 - 517\,440\,z^2 - 485\,100\,z - 153\,615\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,768\,z^4 + 448\,512\,z^3 + 489\,600\,z^2 - 2\,522\,520\,z - 1\,382\,535\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(4096\,z^3 - 170\,240\,z^2 - 370\,320\,z + 460\,845\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adwu.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{17}{4}; z\right) = \frac{1}{208\,845} \left(-7\left(4096\,z^3 + 34\,560\,z^2 - 110\,160\,z - 29\,835\right)\cosh\left(2\sqrt{z}\right) - 4\sqrt{z}\left(4096\,z^3 - 48\,384\,z^2 + 45\,360\,z + 182\,385\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.adwv.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{17}{4}; -z\right) = \frac{1}{208\,845} \left(7\left(4096\,z^3 - 34\,560\,z^2 - 110\,160\,z + 29\,835\right)\cos\left(2\sqrt{z}\right) - 4\sqrt{z}\left(4096\,z^3 + 48\,384\,z^2 + 45\,360\,z - 182\,385\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.adww.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{15}{4}; z\right) = \frac{1}{72\,765\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(16\,384\,z^4 - 95\,232\,z^3 + 310\,464\,z^2 - 252\,252\,z + 72\,765\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(8192\,z^3 + 256\,z^2 - 51\,744\,z + 24\,255\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(4096\,z^3 - 39\,168\,z^2 + 47\,088\,z + 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adwx.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{15}{4}; -z\right) = \frac{1}{72\,765\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(16\,384\,z^4 + 95\,232\,z^3 + 310\,464\,z^2 + 252\,252\,z + 72\,765\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(8192\,z^3 - 256\,z^2 - 51\,744\,z - 24\,255\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(4096\,z^3 + 39\,168\,z^2 + 47\,088\,z - 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adwy.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{13}{4}; z\right) = \left(\frac{4096\,z^3}{12\,285} - \frac{256\,z^2}{117} + \frac{48\,z}{13} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{16\sqrt{z}\left(256\,z^2 - 945\right)\sinh\left(2\sqrt{z}\right)}{4095} $$

07.22.03.adwz.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{13}{4}; -z\right) = \left(-\frac{4096\,z^3}{12\,285} - \frac{256\,z^2}{117} - \frac{48\,z}{13} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{16\sqrt{z}\left(945 - 256\,z^2\right)\sin\left(2\sqrt{z}\right)}{4095} $$

07.22.03.adx0.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{11}{4}; z\right) = \frac{1}{4851\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-19\,456\,z^3 + 29\,568\,z^2 - 19\,404\,z + 4851\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048\,z^3 - 4608\,z^2 + 12\,936\,z - 4851\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 4\,z\left(-3328\,z^2 + 1632\,z + 4851\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adx1.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(\left(19\,456\,z^3 + 29\,568\,z^2 + 19\,404\,z + 4851\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048\,z^3 + 4608\,z^2 + 12\,936\,z + 4851\right)\right.\right.$$
$$\left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(3328\,z^2 + 1632\,z - 4851\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adx2.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{9}{4}; z\right) = \left(-\frac{256\,z^2}{63} + \frac{32\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{4}{945}\sqrt{z}\left(256\,z^2 - 480\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.adx3.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{9}{4}; -z\right) = \left(-\frac{256\,z^2}{63} - \frac{32\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{4}{945}\sqrt{z}\left(256\,z^2 + 480\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.adx4.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{441\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024\,z^3 + 5376\,z^2 - 2268\,z + 441\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(768\,z^2 - 560\,z + 147\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 4\,z\left(256\,z^2 - 192\,z + 441\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adx5.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{441\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1024\,z^3 + 5376\,z^2 + 2268\,z + 441\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(768\,z^2 + 560\,z + 147\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 4\,z\left(256\,z^2 + 192\,z + 441\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adx6.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{5}{4}; z\right) = \frac{1}{105}\left(\left(256\,z^2 + 288\,z + 105\right)\cosh\left(2\sqrt{z}\right) + 32\sqrt{z}\left(32\,z - 15\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adx7.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{5}{4}; -z\right) = \frac{1}{105}\left(\left(256\,z^2 - 288\,z + 105\right)\cos\left(2\sqrt{z}\right) + 32\sqrt{z}\,\left(32\,z + 15\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adx8.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{3}{4}; z\right) = -\frac{1}{63\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(21\left(64\,z^2 + 28\,z - 3\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(128\,z^2 + 504\,z - 63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(80\,z - 21\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adx9.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{3}{4}; -z\right) = \frac{1}{63\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(-21\left(64\,z^2 - 28\,z - 3\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(128\,z^2 - 504\,z - 63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(80\,z + 21\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adxa.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{1}{4}; z\right) = \left(1 - \frac{80\,z}{7}\right)\cosh\left(2\sqrt{z}\right) - \frac{4}{21}\sqrt{z}\,\left(16\,z + 33\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.adxb.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, -\frac{1}{4}; -z\right) = \left(\frac{80\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{4}{21}\left(33 - 16\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.adxc.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{21\sqrt[4]{z}}\left(\sqrt{2}\left(\left(64\,z^2 + 420\,z + 21\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(128\,z + 21\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(16\,z + 21\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adxd.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{1}{4}; -z\right) =$$
$$\frac{1}{21\sqrt[4]{z}}\left(\sqrt{2}\left(\left(64\,z^2 - 420\,z + 21\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(128\,z - 21\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\left(21 - 16\,z\right)z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adxe.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{3}{4}; z\right) = \left(\frac{16\,z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{16}{7}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.adxf.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{3}{4}; -z\right) = \left(1 - \frac{16\,z}{21}\right)\cos\left(2\sqrt{z}\right) - \frac{16}{7}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.adxg.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{5}{4}; z\right) = \frac{\sqrt{2}\left(3\left(20\,z + 7\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(8\,z + 15\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 36\,z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{21\sqrt[4]{z}}$$

07.22.03.adxh.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{5}{4}; -z\right) = \frac{\sqrt{2}\left((21-60z)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(8z-15)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 36z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{21\sqrt[4]{z}}$$

07.22.03.adxi.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{7}{4}; z\right) = \cosh\left(2\sqrt{z}\right) + \frac{4}{7}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.adxj.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{7}{4}; -z\right) = \cos\left(2\sqrt{z}\right) - \frac{4}{7}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.adxk.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{9}{4}; z\right) = \frac{5\left(2\sqrt{z}\,(8z+9)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\,(16z-1)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(8z-3)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{42\sqrt{2}\,z^{3/4}}$$

07.22.03.adxl.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{9}{4}; -z\right) = -\frac{5\left(2\sqrt{z}\,(8z-9)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\,(16z+1)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,(8z+3)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{42\sqrt{2}\,z^{3/4}}$$

07.22.03.adxm.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{11}{4}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.adxn.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{11}{4}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.adxo.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{13}{4}; z\right) =$$

$$\frac{1}{448\sqrt{2}\,z^{7/4}}\left(15\left(2\sqrt{z}\,(16z+21)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(256z^2+144z-105\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) - 10\sqrt{z}\,(16z+21)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adxp.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{13}{4}; -z\right) = -\frac{1}{448\sqrt{2}\,z^{7/4}}$$

$$\left(15\left(2\,(21-16z)\sqrt{z}\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(256z^2-144z-105\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 10\,(21-16z)\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adxq.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{15}{4}; z\right) = \frac{1}{8192\,z^{11/4}}$$

$$\left(11\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-256z^2-576z^{3/2}-1008z-1260\sqrt{z}+e^{4\sqrt{z}}\left(256z^2-576z^{3/2}+1008z-1260\sqrt{z}+945\right)-945\right)+\right.\right.$$

$$\left.\left.945\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-945\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.adxr.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{15}{4}; -z\right) =$$

$$\frac{1}{2048\, z^{11/4}}\left(11\left(2\sqrt[4]{z}\,\left(36\sqrt{z}\,(16z-35)\cos\left(2\sqrt{z}\right)+\left(256z^2-1008z+945\right)\sin\left(2\sqrt{z}\right)\right)-945\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)$$

07.22.03.adxs.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{17}{4}; z\right) =$$

$$\frac{1}{14\,336\sqrt{2}\, z^{11/4}}\left(195\left(2\sqrt{z}\,\left(512z^2+2016z-2079\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3\left(2048z^2+5824z-3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(512z^2+4704z+10\,395\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adxt.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{17}{4}; -z\right) =$$

$$\frac{1}{14\,336\sqrt{2}\, z^{11/4}}\left(195\left(2\sqrt{z}\,\left(512z^2-2016z-2079\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-2048z^2+5824z+3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(512z^2-4704z+10\,395\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adxu.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{19}{4}; z\right) = \frac{1}{524\,288\, z^{15/4}}\left(165\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(4096z^{5/2}+20\,480z^2+62\,208z^{3/2}+129\,024z+180\,180\sqrt{z}+\right.\right.\right.$$

$$\left.\left.e^{4\sqrt{z}}\left(4096z^{5/2}-20\,480z^2+62\,208z^{3/2}-129\,024z+180\,180\sqrt{z}-135\,135\right)+135\,135\right)+$$

$$\left.945\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-143)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-945\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-143)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.adxv.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{19}{4}; -z\right) = -\frac{1}{131\,072\, z^{15/4}}\left(165\left(945\sqrt{\pi}\,(16z+143)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$

$$\left.\left.2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(1024z^2-15\,552z+45\,045\right)\cos\left(2\sqrt{z}\right)+\left(-20\,480z^2+129\,024z-135\,135\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.adxw.01

$${}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{21}{4}; z\right) = \frac{1}{458\,752\sqrt{2}\, z^{15/4}}$$

$$\left(3315\left(-42\sqrt{z}\,\left(1024z^2+6512z-6435\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(16\,384z^3+344\,064z^2+1\,164\,240z-675\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$

$$\left.\left.18\sqrt{z}\,\left(3072z^2+30\,800z+75\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adxx.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{21}{4}; -z\right) = \frac{1}{458\,752\sqrt{2}\, z^{15/4}} \left(3315\left(42\sqrt{z}\,\left(1024z^2 - 6512z - 6435\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384z^3 - 344\,064z^2 + 1\,164\,240z + 675\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\,\left(3072z^2 - 30\,800z + 75\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adxy.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{23}{4}; z\right) = \frac{1}{67\,108\,864 z^{19/4}} \left(3135 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-131\,072z^3 - 1\,081\,344z^{5/2} - 4\,964\,352z^2 - 15\,238\,080z^{3/2} - 32\,432\,400z - 45\,945\,900\sqrt{z} + e^{4\sqrt{z}}\left(131\,072z^3 - 1\,081\,344z^{5/2} + 4\,964\,352z^2 - 15\,238\,080z^{3/2} + 32\,432\,400z - 45\,945\,900\sqrt{z} + 34\,459\,425\right) - 34\,459\,425\right) + 945 e^{2\sqrt{z}}\sqrt{2\pi}\,\left(256z^2 - 4576z + 36\,465\right)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 945 e^{2\sqrt{z}}\sqrt{2\pi}\,\left(256z^2 - 4576z + 36\,465\right)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.adxz.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{1}{2}, \frac{23}{4}; -z\right) = -\frac{1}{16\,777\,216 z^{19/4}} \left(3135\left(945\sqrt{\pi}\,\left(256z^2 + 4576z + 36\,465\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(132\sqrt{z}\,\left(8192z^2 - 115\,440z + 348\,075\right)\cos\left(2\sqrt{z}\right) + \left(131\,072z^3 - 4\,964\,352z^2 + 32\,432\,400z - 34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{11}{4}$, $b_{1.} = \frac{3}{2}$

07.22.03.ady0.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{23}{4}; z\right) = \frac{1}{31\,798\,305\sqrt[4]{z}} \left(\sqrt{2}\,\left(\left(-524\,288z^4 + 8\,257\,536z^3 + 26\,369\,280z^2 - 73\,735\,200z + 31\,798\,305\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(65\,536z^4 + 24\,576z^3 - 15\,321\,600z^2 - 10\,452\,960z + 31\,798\,305\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 32z\left(-22\,528z^3 + 238\,080z^2 + 2\,426\,760z + 711\,585\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ady1.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{31\,798\,305\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-524\,288 z^4 - 8\,257\,536 z^3 + 26\,369\,280 z^2 + 73\,735\,200 z + 31\,798\,305\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(65\,536 z^4 - 24\,576 z^3 - 15\,321\,600 z^2 + 10\,452\,960 z + 31\,798\,305\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.32 z\left(22\,528 z^3 + 238\,080 z^2 - 2\,426\,760 z + 711\,585\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ady2.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{21}{4}; z\right) = \frac{1}{8\,771\,490\sqrt{z}}\left(\left(65\,536 z^4 - 114\,688 z^3 - 11\,020\,800 z^2 - 8\,326\,080 z + 7\,571\,025\right)\sinh\left(2\sqrt{z}\right) - \right.$$
$$\left.256\sqrt{z}\left(1024 z^3 - 13\,440 z^2 - 63\,420 z + 24\,885\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.ady3.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{21}{4}; -z\right) = \frac{1}{8\,771\,490\sqrt{z}}\left(256\sqrt{z}\left(1024 z^3 + 13\,440 z^2 - 63\,420 z - 24\,885\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.\left(65\,536 z^4 + 114\,688 z^3 - 11\,020\,800 z^2 + 8\,326\,080 z + 7\,571\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ady4.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{19}{4}; z\right) = \frac{1}{1\,382\,535\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-32\,768 z^4 + 276\,480 z^3 + 1\,427\,328 z^2 - 3\,298\,680 z + 1\,382\,535\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 36\sqrt{z}\left(4096 z^3 - 72\,448 z^2 - 68\,880 z + \right.\right.\right.$$
$$\left.\left.\left.153\,615\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 8 z\left(-4096 z^3 + 17\,664 z^2 + 432\,720 z + 169\,155\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ady5.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{19}{4}; -z\right) = \frac{1}{1\,382\,535\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-32\,768 z^4 - 276\,480 z^3 + 1\,427\,328 z^2 + 3\,298\,680 z + 1\,382\,535\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 36\sqrt{z}\left(4096 z^3 + 72\,448 z^2 - 68\,880 z - \right.\right.\right.$$
$$\left.\left.\left.153\,615\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 8 z\left(4096 z^3 + 17\,664 z^2 - 432\,720 z + 169\,155\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ady6.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{17}{4}; z\right) = \frac{1}{417\,690\sqrt{z}}$$
$$\left(7\left(4096 z^3 - 72\,960 z^2 - 69\,840 z + 47\,025\right)\sinh\left(2\sqrt{z}\right) - 4\sqrt{z}\left(4096 z^3 - 26\,880 z^2 - 210\,000 z + 60\,165\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.ady7.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{17}{4}; -z\right) = \frac{1}{417\,690\sqrt{z}} \left(4\sqrt{z}\left(4096z^3 + 26\,880z^2 - 210\,000z - 60\,165\right)\cos\left(2\sqrt{z}\right) - 7\left(4096z^3 + 72\,960z^2 - 69\,840z - 47\,025\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ady8.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{15}{4}; z\right) = \frac{1}{72\,765\sqrt[4]{z}} \left(\sqrt{2}\left(\left(4096z^3 + 97\,536z^2 - 181\,104z + 72\,765\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096z^3 - 30\,976z^2 - 44\,304z + 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 512z\left(16z^2 - 357z - 180\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ady9.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{15}{4}; -z\right) = \frac{1}{72\,765\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-4096z^3 + 97\,536z^2 + 181\,104z + 72\,765\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096z^3 + 30\,976z^2 - 44\,304z - 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 512z\left(16z^2 + 357z - 180\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adya.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{13}{4}; z\right) = \frac{3360\sqrt{z}\,(16z-3)\cosh\left(2\sqrt{z}\right) + \left(4096z^3 - 26\,880z^2 - 35\,280z + 17\,325\right)\sinh\left(2\sqrt{z}\right)}{24\,570\sqrt{z}} $$

07.22.03.adyb.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{13}{4}; -z\right) = \frac{\left(-4096z^3 - 26\,880z^2 + 35\,280z + 17\,325\right)\sin\left(2\sqrt{z}\right) - 3360\sqrt{z}\,(16z+3)\cos\left(2\sqrt{z}\right)}{24\,570\sqrt{z}} $$

07.22.03.adyc.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{11}{4}; z\right) = \frac{1}{4851\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-2048z^3 + 9216z^2 - 12\,936z + 4851\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1280z^2 + 4128z - 4851\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 8z\left(-256z^2 + 1440z + 963\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.adyd.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2048z^3+9216z^2+12\,936z+4851\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1280z^2-4128z-4851\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.8z\left(256z^2+1440z-963\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adye.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{9}{4}; z\right) = \frac{-4\sqrt{z}\left(256z^2-1120z+105\right)\cosh\left(2\sqrt{z}\right)-5\left(256z^2+672z-231\right)\sinh\left(2\sqrt{z}\right)}{1890\sqrt{z}}$$

07.22.03.adyf.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{9}{4}; -z\right) = \frac{5\left(-256z^2+672z+231\right)\sin\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2+1120z+105\right)\cos\left(2\sqrt{z}\right)}{1890\sqrt{z}}$$

07.22.03.adyg.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{7}{4}; z\right) = \frac{1}{441\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(3\left(512z^2-448z+147\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(256z^2-576z+441\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+96z\left(8z+9\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adyh.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{7}{4}; -z\right) = \frac{1}{441\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(3\left(512z^2+448z+147\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^2+576z+441\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+96\left(9-8z\right)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adyi.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{5}{4}; z\right) = \frac{512\cosh\left(2\sqrt{z}\right)z^{3/2}+\left(256z^2-480z+105\right)\sinh\left(2\sqrt{z}\right)}{210\sqrt{z}}$$

07.22.03.adyj.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{5}{4}; -z\right) = \frac{\left(256z^2+480z+105\right)\sin\left(2\sqrt{z}\right)-512z^{3/2}\cos\left(2\sqrt{z}\right)}{210\sqrt{z}}$$

07.22.03.adyk.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-128z^2-280z+63\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\left(63-176z\right)\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+8\left(19-16z\right)zI_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adyl.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{63\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-128z^2+280z+63\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(176z+63)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 8z(16z+19)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adym.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{1}{4}; z\right) = \frac{3(5-48z)\sinh\left(2\sqrt{z}\right) - 4\sqrt{z}\,(16z-3)\cosh\left(2\sqrt{z}\right)}{42\sqrt{z}}$$

07.22.03.adyn.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, -\frac{1}{4}; -z\right) = \frac{4\sqrt{z}\,(16z+3)\cos\left(2\sqrt{z}\right) + 3(48z+5)\sin\left(2\sqrt{z}\right)}{42\sqrt{z}}$$

07.22.03.adyo.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{1}{4}; z\right) = \frac{\sqrt{2}\left(7(16z+3)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(16z+21)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 64z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{21\sqrt[4]{z}}$$

07.22.03.adyp.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{1}{4}; -z\right) = \frac{\sqrt{2}\left(-7(16z-3)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(16z-21)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 64z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{21\sqrt[4]{z}}$$

07.22.03.adyq.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{3}{4}; z\right) = \frac{32\sqrt{z}\,\cosh\left(2\sqrt{z}\right) + (16z+5)\sinh\left(2\sqrt{z}\right)}{42\sqrt{z}}$$

07.22.03.adyr.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{3}{4}; -z\right) = \frac{32\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (5-16z)\sin\left(2\sqrt{z}\right)}{42\sqrt{z}}$$

07.22.03.adys.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{5}{4}; z\right) = \frac{\sqrt{2}\left((8z+21)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 36\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 8z\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{21\sqrt[4]{z}}$$

07.22.03.adyt.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{5}{4}; -z\right) = \frac{\sqrt{2}\left((21-8z)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 36\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 8z\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{21\sqrt[4]{z}}$$

07.22.03.adyu.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{7}{4}; z\right) = \frac{2}{7}\cosh\left(2\sqrt{z}\right) + \frac{5\sinh\left(2\sqrt{z}\right)}{14\sqrt{z}}$$

07.22.03.adyv.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{7}{4}; -z\right) = \frac{2}{7}\cos\left(2\sqrt{z}\right) + \frac{5\sin\left(2\sqrt{z}\right)}{14\sqrt{z}}$$

07.22.03.adyw.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{9}{4}; z\right) = \frac{5\left(8\sqrt{z}\ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (8z+1)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\ I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{21\sqrt{2}\ z^{3/4}}$$

07.22.03.adyx.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{9}{4}; -z\right) = -\frac{5\left(-8\sqrt{z}\ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (8z-1)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\ J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{21\sqrt{2}\ z^{3/4}}$$

07.22.03.adyy.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{11}{4}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.adyz.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{11}{4}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.adz0.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{13}{4}; z\right) = \frac{15\left(2\sqrt{z}\ (16z-3)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (15-16z)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\ (16z+15)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{224\sqrt{2}\ z^{7/4}}$$

07.22.03.adz1.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{13}{4}; -z\right) =$$

$$\frac{1}{224\sqrt{2}\ z^{7/4}}\left(15\left(2\sqrt{z}\ (16z+3)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - (16z+15)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\,(15-16z)\sqrt{z}\ J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adz2.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{15}{4}; z\right) =$$

$$\frac{1}{4096\, z^{11/4}}\left(11\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(64z^{3/2} + 112z + 140\sqrt{z} + e^{4\sqrt{z}}\left(64z^{3/2} - 112z + 140\sqrt{z} - 105\right) + 105\right) - 105\right.\right.$$
$$\left.\left. e^{2\sqrt{z}}\ \sqrt{2\pi}\ \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) + 105\, e^{2\sqrt{z}}\ \sqrt{2\pi}\ \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.adz3.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{15}{4}; -z\right) = \frac{11\left(105\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(7\,(16z-15)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\ (16z-35)\cos\left(2\sqrt{z}\right)\right)\right)}{1024\, z^{11/4}}$$

07.22.03.adz4.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{17}{4}; z\right) = \frac{1}{7168\sqrt{2}\, z^{11/4}}$$
$$\left(195\left(-6\sqrt{z}\,(64z-63)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(512z^2+1632z-945\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\,(128z+315)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adz5.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{17}{4}; -z\right) = \frac{1}{7168\sqrt{2}\, z^{11/4}}$$
$$\left(195\left(6\sqrt{z}\,(64z+63)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(512z^2-1632z-945\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\,(315-128z)\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adz6.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{19}{4}; z\right) = \frac{1}{262\,144\, z^{15/4}}\left(165\, e^{-2\sqrt{z}}\right.$$
$$\left(4\sqrt[4]{z}\left(-1024z^2-4096z^{3/2}-9408z-13\,860\sqrt{z}+e^{4\sqrt{z}}\left(1024z^2-4096z^{3/2}+9408z-13\,860\sqrt{z}+10\,395\right)-\right.\right.$$
$$\left.\left.10\,395\right)-105\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-99)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+105\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-99)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.adz7.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{19}{4}; -z\right) = \frac{1}{65\,536\, z^{15/4}}$$
$$\left(165\left(105\sqrt{\pi}\,(16z+99)\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\left(4\sqrt{z}\,(1024z-3465)\cos\left(2\sqrt{z}\right)+\left(1024z^2-9408z+10\,395\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.adz8.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{21}{4}; z\right) =$$
$$\frac{1}{229\,376\sqrt{2}\, z^{15/4}}\left(3315\left(2\sqrt{z}\,\left(1024z^2+9520z-9009\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-19\,456z^2-79\,632z+45\,045\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1024z^2+16\,464z+45\,045\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adz9.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{21}{4}; -z\right) =$$
$$-\frac{1}{229\,376\sqrt{2}\, z^{15/4}}\left(3315\left(2\sqrt{z}\,\left(1024z^2-9520z-9009\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-19\,456z^2+79\,632z+45\,045\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1024z^2-16\,464z+45\,045\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adza.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{23}{4}; z\right) =$$
$$\frac{1}{33\,554\,432\, z^{19/4}}\left(3135\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(32\,768\, z^{5/2}+221\,184\, z^2+792\,000\, z^{3/2}+1\,829\,520\, z+2\,702\,700\sqrt{z}+\right.\right.\right.$$
$$e^{4\sqrt{z}}\left(32\,768\, z^{5/2}-221\,184\, z^2+792\,000\, z^{3/2}-1\,829\,520\, z+2\,702\,700\sqrt{z}-2\,027\,025\right)+2\,027\,025\Big)-105$$
$$\left.\left.\left. e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2-3168\, z+19\,305\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+105\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2-3168\, z+19\,305\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)\right)$$

07.22.03.adzb.01

$${}_1F_2\left(\frac{11}{4}; \frac{3}{2}, \frac{23}{4}; -z\right) = \frac{1}{8\,388\,608\, z^{19/4}}\left(3135\left(105\sqrt{\pi}\left(256\, z^2+3168\, z+19\,305\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left. 2\sqrt[4]{z}\left(4\sqrt{z}\left(8192\, z^2-198\,000\, z+675\,675\right)\cos\left(2\sqrt{z}\right)-27\left(8192\, z^2-67\,760\, z+75\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{11}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.adzc.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{10\,599\,435\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536\, z^4+2\,179\,072\, z^3-2\,386\,944\, z^2-47\,452\,608\, z+10\,599\,435\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-32\right.\right.$$
$$\sqrt{z}\left(38\,912\, z^3+354\,816\, z^2-1\,346\,184\, z-5\,110\,245\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(65\,536\, z^4+3\,162\,112\, z^3+8\,644\,608\, z^2-70\,378\,560\, z-151\,412\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adzd.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{10\,599\,435\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536\, z^4-2\,179\,072\, z^3-2\,386\,944\, z^2+47\,452\,608\, z+10\,599\,435\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-32\right.\right.$$
$$\sqrt{z}\left(38\,912\, z^3-354\,816\, z^2-1\,346\,184\, z+5\,110\,245\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-65\,536\, z^4+3\,162\,112\, z^3-8\,644\,608\, z^2-70\,378\,560\, z+151\,412\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adze.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, -\frac{21}{4}; z\right) = \frac{1}{11\,695\,320\, z^{3/2}}\left(2\sqrt{z}\left(65\,536\, z^4+2\,113\,536\, z^3+849\,408\, z^2-36\,550\,080\, z-40\,883\,535\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(-1\,114\,112\, z^4-7\,913\,472\, z^3+28\,224\,000\, z^2+96\,909\,120\, z+40\,883\,535\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adzf.01

$${}_1F_2\left(\frac{11}{4};\frac{5}{2},-\frac{21}{4};-z\right)=\frac{1}{11\,695\,320\,z^{3/2}}\left(\left(1\,114\,112\,z^4-7\,913\,472\,z^3-28\,224\,000\,z^2+96\,909\,120\,z-40\,883\,535\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(65\,536\,z^4-2\,113\,536\,z^3+849\,408\,z^2+36\,550\,080\,z-40\,883\,535\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.adzg.01

$${}_1F_2\left(\frac{11}{4};\frac{5}{2},-\frac{19}{4};z\right)=\frac{1}{460\,845\sqrt[4]{z}}\left(\sqrt{2}\left(\left(94\,208\,z^3+16\,128\,z^2-1\,863\,792\,z+460\,845\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\left(4096\,z^3+71\,424\,z^2-164\,304\,z-752\,535\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(118\,784\,z^3+536\,832\,z^2-2\,333\,520\,z-5\,221\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adzh.01

$${}_1F_2\left(\frac{11}{4};\frac{5}{2},-\frac{19}{4};-z\right)=\frac{1}{460\,845\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-94\,208\,z^3+16\,128\,z^2+1\,863\,792\,z+460\,845\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\left(4096\,z^3-71\,424\,z^2-164\,304\,z+752\,535\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(118\,784\,z^3-536\,832\,z^2-2\,333\,520\,z+5\,221\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adzi.01

$${}_1F_2\left(\frac{11}{4};\frac{5}{2},-\frac{17}{4};z\right)=\frac{1}{556\,920\,z^{3/2}}\left(2\sqrt{z}\left(94\,208\,z^3+155\,904\,z^2-1\,389\,360\,z-1\,514\,205\right)\cosh\left(2\sqrt{z}\right)+\left(-32\,768\,z^4-444\,416\,z^3+900\,480\,z^2+3\,686\,760\,z+1\,514\,205\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adzj.01

$${}_1F_2\left(\frac{11}{4};\frac{5}{2},-\frac{17}{4};-z\right)=\frac{1}{556\,920\,z^{3/2}}\left(2\sqrt{z}\left(94\,208\,z^3-155\,904\,z^2-1\,389\,360\,z+1\,514\,205\right)\cos\left(2\sqrt{z}\right)+\left(32\,768\,z^4-444\,416\,z^3-900\,480\,z^2+3\,686\,760\,z-1\,514\,205\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adzk.01

$${}_1F_2\left(\frac{11}{4};\frac{5}{2},-\frac{15}{4};z\right)=\frac{1}{24\,255\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096\,z^3+8448\,z^2-89\,040\,z+24\,255\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-32\sqrt{z}\left(1024\,z^2-1200\,z-8253\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(4096\,z^3+36\,096\,z^2-85\,968\,z-208\,845\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adzl.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{24\,255\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096 z^3 + 8448 z^2 + 89\,040 z + 24\,255\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 32\sqrt{z}\left(1024 z^2 + 1200 z - 8253\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.\left(4096 z^3 - 36\,096 z^2 - 85\,968 z + 208\,845\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adzm.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, -\frac{13}{4}; z\right) = \frac{1}{32\,760 z^{3/2}}$$
$$\left(2\sqrt{z}\left(4096 z^3 + 16\,128 z^2 - 62\,160 z - 65\,835\right)\cosh\left(2\sqrt{z}\right) + 7\left(-4096 z^3 + 3840 z^2 + 23\,760 z + 9405\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.adzn.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{32\,760 z^{3/2}}\left(2\sqrt{z}\left(4096 z^3 - 16\,128 z^2 - 62\,160 z + 65\,835\right)\cos\left(2\sqrt{z}\right) - 7\left(4096 z^3 + 3840 z^2 - 23\,760 z + 9405\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.adzo.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, -\frac{11}{4}; z\right) = \frac{1}{1617\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1280 z^2 - 5472 z + 1617\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$\left.\left.8\sqrt{z}\left(256 z^2 - 32 z - 1803\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(2816 z^2 - 3360 z - 9945\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adzp.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{1617\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1280 z^2 + 5472 z + 1617\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\left(256 z^2 + 32 z - 1803\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.\left(-2816 z^2 - 3360 z + 9945\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adzq.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, -\frac{9}{4}; z\right) = \frac{14\sqrt{z}\left(256 z^2 - 480 z - 495\right)\cosh\left(2\sqrt{z}\right) + \left(-2048 z^3 + 9240 z + 3465\right)\sinh\left(2\sqrt{z}\right)}{2520 z^{3/2}}$$

07.22.03.adzr.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, -\frac{9}{4}; -z\right) = \frac{\left(-2048 z^3 + 9240 z - 3465\right)\sin\left(2\sqrt{z}\right) - 14\sqrt{z}\left(256 z^2 + 480 z - 495\right)\cos\left(2\sqrt{z}\right)}{2520 z^{3/2}}$$

07.22.03.adzs.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, -\frac{7}{4}; z\right) =$$

$$\frac{1}{147\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256z^2-480z+147\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-32\sqrt{z}\,(8z-33)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(256z^2-96z-585\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adzt.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, -\frac{7}{4}; -z\right) = \frac{1}{147\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(256z^2+480z+147\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-32\sqrt{z}\,(8z+33)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-256z^2-96z+585\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.adzu.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, -\frac{5}{4}; z\right) = \frac{2\sqrt{z}\left(256z^2-224z-231\right)\cosh\left(2\sqrt{z}\right)+\left(-256z^2+672z+231\right)\sinh\left(2\sqrt{z}\right)}{280z^{3/2}}$$

07.22.03.adzv.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, -\frac{5}{4}; -z\right) = \frac{\left(256z^2+672z-231\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(256z^2+224z-231\right)\cos\left(2\sqrt{z}\right)}{280z^{3/2}}$$

07.22.03.adzw.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, -\frac{3}{4}; z\right) = \frac{\sqrt{2}\left((21-80z)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\,(16z-15)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+(16z-45)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{21\sqrt[4]{z}}$$

07.22.03.adzx.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, -\frac{3}{4}; -z\right) = \frac{\sqrt{2}\left((80z+21)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\,(16z+15)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+(16z+45)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{21\sqrt[4]{z}}$$

07.22.03.adzy.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, -\frac{1}{4}; z\right) = \frac{\left(-128z^2+72z+21\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,(16z+21)\cosh\left(2\sqrt{z}\right)}{56z^{3/2}}$$

07.22.03.adzz.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, -\frac{1}{4}; -z\right) = \frac{\left(128z^2+72z-21\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,(16z-21)\cos\left(2\sqrt{z}\right)}{56z^{3/2}}$$

07.22.03.ae00.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{1}{4}; z\right) = \frac{\sqrt{2}\left((16z+7)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+32\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+(16z-5)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{7\sqrt[4]{z}}$$

07.22.03.ae01.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{1}{4}; -z\right) = \frac{\sqrt{2}\left((7-16z)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-32\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+(16z+5)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{7\sqrt[4]{z}}$$

07.22.03.ae02.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{3}{4}; z\right) = \frac{2\sqrt{z}\ (16z-3)\cosh\left(2\sqrt{z}\right) + (16z+3)\sinh\left(2\sqrt{z}\right)}{56\,z^{3/2}}$$

07.22.03.ae03.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{3}{4}; -z\right) = \frac{2\sqrt{z}\ (16z+3)\cos\left(2\sqrt{z}\right) + (16z-3)\sin\left(2\sqrt{z}\right)}{56\,z^{3/2}}$$

07.22.03.ae04.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{5}{4}; z\right) = \frac{\sqrt{2}\left(7\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{7\sqrt[4]{z}}$$

07.22.03.ae05.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{5}{4}; -z\right) = -\frac{\sqrt{2}\left(-7\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{7\sqrt[4]{z}}$$

07.22.03.ae06.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{7}{4}; z\right) = \frac{6\sqrt{z}\ \cosh\left(2\sqrt{z}\right) + 3(8z-1)\sinh\left(2\sqrt{z}\right)}{56\,z^{3/2}}$$

07.22.03.ae07.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{7}{4}; -z\right) = \frac{3\left((8z+1)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\ \cos\left(2\sqrt{z}\right)\right)}{56\,z^{3/2}}$$

07.22.03.ae08.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{9}{4}; z\right) = \frac{5\sqrt{2}\left(\sqrt{z}\ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \sqrt{z}\ I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{7\,z^{3/4}}$$

07.22.03.ae09.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{9}{4}; -z\right) = \frac{5\sqrt{2}\left(\sqrt{z}\ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - \sqrt{z}\ J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{7\,z^{3/4}}$$

07.22.03.ae0a.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{11}{4}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.ae0b.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{11}{4}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\ \cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.ae0c.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{13}{4}; z\right) = \frac{45\left(2\sqrt{z}\ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (16z-5)\,I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 10\sqrt{z}\ I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{112\sqrt{2}\ z^{7/4}}$$

07.22.03.ae0d.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{13}{4}; -z\right) = \frac{45\left(-2\sqrt{z}\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (16z+5)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 10\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{112\sqrt{2}\, z^{7/4}}$$

07.22.03.ae0e.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{15}{4}; z\right) =$$

$$\frac{1}{2048\, z^{11/4}}\left(33\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-16z - 28\sqrt{z} + e^{4\sqrt{z}}\left(16z - 28\sqrt{z} + 21\right) - 21\right) + 21\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 21\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ae0f.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{15}{4}; -z\right) = -\frac{33\left(21\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(28\sqrt{z}\cos\left(2\sqrt{z}\right) + (16z-21)\sin\left(2\sqrt{z}\right)\right)\right)}{512\, z^{11/4}}$$

07.22.03.ae0g.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{17}{4}; z\right) =$$

$$\frac{1}{3584\sqrt{2}\, z^{11/4}}\left(585\left(2\sqrt{z}\,(32z-27)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (135-256z)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(32z+135)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae0h.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{17}{4}; -z\right) =$$

$$-\frac{1}{3584\sqrt{2}\, z^{11/4}}\left(585\left(2\sqrt{z}\,(32z+27)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - (256z+135)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2(135-32z)\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae0i.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{19}{4}; z\right) =$$

$$\frac{1}{131\,072\, z^{15/4}}\left(495\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(256z^{3/2} + 896z + 1540\sqrt{z} + e^{4\sqrt{z}}\left(256z^{3/2} - 896z + 1540\sqrt{z} - 1155\right) + 1155\right) + 21\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-55)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 21\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-55)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ae0j.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{19}{4}; -z\right) =$$

$$-\frac{1}{32\,768\, z^{15/4}}\left(495\left(21\sqrt{\pi}\,(16z+55)\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(7(128z-165)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\,(64z-385)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.ae0k.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{21}{4}; z\right) = \frac{1}{114\,688\sqrt{2}\, z^{15/4}}\left(9945\right.$$
$$\left.\left(-2\sqrt{z}\,(944z-819)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1024z^2+7632z-4095\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\,(368z+1365)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae0l.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{21}{4}; -z\right) = -\frac{1}{114\,688\sqrt{2}\, z^{15/4}}\left(9945\right.$$
$$\left.\left(2\sqrt{z}\,(944z+819)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1024z^2-7632z-4095\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\,(1365-368z)\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae0m.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{23}{4}; z\right) = \frac{1}{16\,777\,216\, z^{19/4}}\left(9405\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-8192z^2-45\,760z^{3/2}-129\,360z-\right.\right.\right.$$
$$\left.\left.\left.207\,900\sqrt{z}+e^{4\sqrt{z}}\left(8192z^2-45\,760z^{3/2}+129\,360z-207\,900\sqrt{z}+155\,925\right)-155\,925\right)+\right.$$
$$\left.21\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-1760z+7425\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 21\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256z^2-1760z+7425\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ae0n.01

$${}_1F_2\left(\frac{11}{4}; \frac{5}{2}, \frac{23}{4}; -z\right) = -\frac{1}{4\,194\,304\, z^{19/4}}\left(9405\left(21\sqrt{\pi}\left(256z^2+1760z+7425\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\left(220\sqrt{z}\,(208z-945)\cos\left(2\sqrt{z}\right)+\left(8192z^2-129\,360z+155\,925\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{11}{4}$, $b_{1.} = \frac{7}{2}$

07.22.03.ae0o.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{23}{4}; z\right) = \frac{1}{4\,239\,774\sqrt{2}\, z^{5/4}}\left(\left(-112z\left(16\,384z^3+546\,048z^2+5\,353\,056z+21\,338\,361\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(65\,536z^4+7\,225\,344z^3+135\,217\,152z^2+1\,001\,746\,368z+2\,997\,969\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.\left(2\,031\,616z^4+84\,381\,696z^3+1\,072\,124\,928z^2+6\,298\,765\,200z+14\,989\,849\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae0p.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{4\,239\,774\sqrt{2}\, z^{5/4}}\left(\left(112z\left(16\,384z^3-546\,048z^2+5\,353\,056z-21\,338\,361\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(65\,536z^4-7\,225\,344z^3+135\,217\,152z^2-1\,001\,746\,368z+2\,997\,969\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.\left(-2\,031\,616z^4+84\,381\,696z^3-1\,072\,124\,928z^2+6\,298\,765\,200z-14\,989\,849\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae0q.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{9\,356\,256\,z^{5/2}}\left(\left(262\,144\,z^5 + 24\,379\,392\,z^4 + 400\,103\,424\,z^3 + 2\,713\,455\,360\,z^2 + 7\,686\,104\,580\,z + 3\,802\,168\,755\right)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(589\,824\,z^4 + 18\,890\,752\,z^3 + 190\,643\,712\,z^2 + 872\,182\,080\,z + 1\,267\,389\,585\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae0r.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{21}{4}; -z\right) = \frac{1}{9\,356\,256\,z^{5/2}}$$
$$\left(\left(-262\,144\,z^5 + 24\,379\,392\,z^4 - 400\,103\,424\,z^3 + 2\,713\,455\,360\,z^2 - 7\,686\,104\,580\,z + 3\,802\,168\,755\right)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\left(589\,824\,z^4 - 18\,890\,752\,z^3 + 190\,643\,712\,z^2 - 872\,182\,080\,z + 1\,267\,389\,585\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ae0s.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{19}{4}; z\right) = -\frac{1}{184\,338\sqrt{2}\,z^{5/4}}\left(\left(8z\left(4096\,z^3 + 231\,168\,z^2 + 2\,327\,472\,z + 9\,038\,673\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 36\sqrt{z}\left(20\,480\,z^3 + 464\,128\,z^2 + 3\,413\,424\,z + 10\,094\,175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(32\,768\,z^4 + 2\,426\,880\,z^3 + 33\,054\,336\,z^2 + 192\,137\,400\,z + 454\,237\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae0t.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{19}{4}; -z\right) = \frac{1}{184\,338\sqrt{2}\,z^{5/4}}$$
$$\left(\left(8z\left(4096\,z^3 - 231\,168\,z^2 + 2\,327\,472\,z - 9\,038\,673\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 36\sqrt{z}\left(20\,480\,z^3 - 464\,128\,z^2 + 3\,413\,424\,z - 10\,094\,175\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-32\,768\,z^4 + 2\,426\,880\,z^3 - 33\,054\,336\,z^2 + 192\,137\,400\,z - 454\,237\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae0u.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{17}{4}; z\right) = \frac{1}{445\,536\,z^{5/2}}\left(\left(671\,744\,z^4 + 13\,138\,944\,z^3 + 88\,482\,240\,z^2 + 248\,329\,620\,z + 122\,650\,605\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(32\,768\,z^4 + 1\,787\,904\,z^3 + 18\,807\,936\,z^2 + 84\,795\,480\,z + 122\,650\,605\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae0v.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{17}{4}; -z\right) = \frac{1}{445\,536\,z^{5/2}}\left(\left(671\,744\,z^4 - 13\,138\,944\,z^3 + 88\,482\,240\,z^2 - 248\,329\,620\,z + 122\,650\,605\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\left(32\,768\,z^4 - 1\,787\,904\,z^3 + 18\,807\,936\,z^2 - 84\,795\,480\,z + 122\,650\,605\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ae0w.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{15}{4}; z\right) = \frac{1}{9702\sqrt{2}\, z^{5/4}} \left(\left(-48 z \left(1280 z^2 + 13\,888 z + 51\,807\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\, \left(4096 z^3 + 146\,688 z^2 + 1\,077\,552 z + 3\,132\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 9\left(8192 z^3 + 129\,280 z^2 + 742\,560 z + 1\,740\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ae0x.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{15}{4}; -z\right) = \frac{1}{9702\sqrt{2}\, z^{5/4}} \left(\left(-48 z \left(1280 z^2 - 13\,888 z + 51\,807\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\, \left(4096 z^3 - 146\,688 z^2 + 1\,077\,552 z - 3\,132\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 9\left(8192 z^3 - 129\,280 z^2 + 742\,560 z - 1\,740\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ae0y.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{13}{4}; z\right) = \frac{1}{26\,208 z^{5/2}} \left(\left(16\,384 z^4 + 494\,592 z^3 + 3\,326\,400 z^2 + 9\,216\,900 z + 4\,542\,615\right) \sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\, \left(20\,480 z^3 + 238\,336 z^2 + 1\,053\,360 z + 1\,514\,205\right) \cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.ae0z.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{13}{4}; -z\right) = \frac{1}{26\,208 z^{5/2}} \left(6\sqrt{z}\, \left(20\,480 z^3 - 238\,336 z^2 + 1\,053\,360 z - 1\,514\,205\right) \cos\left(2\sqrt{z}\right) + \left(16\,384 z^4 - 494\,592 z^3 + 3\,326\,400 z^2 - 9\,216\,900 z + 4\,542\,615\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ae10.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{11}{4}; z\right) = -\frac{1}{3234\sqrt{2}\, z^{5/4}} \left(5\left(8 z \left(256 z^2 + 3552 z + 12\,369\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\, \left(5888 z^2 + 44\,256 z + 125\,307\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(2048 z^3 + 47\,616 z^2 + 270\,504 z + 626\,535\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ae11.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{11}{4}; -z\right) = -\frac{1}{3234\sqrt{2}\, z^{5/4}} \left(5\left(8 z \left(256 z^2 - 3552 z + 12\,369\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\, \left(5888 z^2 - 44\,256 z + 125\,307\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-2048 z^3 + 47\,616 z^2 - 270\,504 z + 626\,535\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ae12.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{9}{4}; z\right) = \frac{1}{2016\, z^{5/2}} \left(21\left(1024\, z^3 + 7040\, z^2 + 19\,140\, z + 9405\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(2048\, z^3 + 32\,256\, z^2 + 138\,600\, z + 197\,505\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.ae13.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{9}{4}; -z\right) = \frac{1}{2016\, z^{5/2}} \left(2\sqrt{z}\,\left(2048\, z^3 - 32\,256\, z^2 + 138\,600\, z - 197\,505\right)\cos\left(2\sqrt{z}\right) - 21\left(1024\, z^3 - 7040\, z^2 + 19\,140\, z - 9405\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ae14.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{7}{4}; z\right) = \frac{1}{294\sqrt{2}\, z^{5/4}} \left(5\left(-48\, z\,(32\, z + 97)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(256\, z^2 + 2208\, z + 5967\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 9\left(256\, z^2 + 1456\, z + 3315\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ae15.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{1}{294\sqrt{2}\, z^{5/4}} \left(5\left(48\, z\,(32\, z - 97)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(256\, z^2 - 2208\, z + 5967\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 9\left(256\, z^2 - 1456\, z + 3315\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ae16.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{5}{4}; z\right) = \frac{1}{224\, z^{5/2}} \left(\left(1024\, z^3 + 8064\, z^2 + 21\,252\, z + 10\,395\right)\sinh\left(2\sqrt{z}\right) - 14\sqrt{z}\,\left(256\, z^2 + 1056\, z + 1485\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.ae17.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{5}{4}; -z\right) = \frac{\left(-1024\, z^3 + 8064\, z^2 - 21\,252\, z + 10\,395\right)\sin\left(2\sqrt{z}\right) - 14\sqrt{z}\,\left(256\, z^2 - 1056\, z + 1485\right)\cos\left(2\sqrt{z}\right)}{224\, z^{5/2}} $$

07.22.03.ae18.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{3}{4}; z\right) = -\frac{1}{42\sqrt{2}\, z^{5/4}} \left(5\left(8\, z\,(16\, z + 33)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 36\sqrt{z}\,(16\, z + 39)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(128\, z^2 + 792\, z + 1755\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ae19.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{3}{4}; -z\right) = \frac{1}{42\sqrt{2}\, z^{5/4}}\left(5\left(8z(16z-33) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 36\sqrt{z}\,(16z-39) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-128z^2+792z-1755\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ae1a.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{1}{4}; z\right) = -\frac{5\left(2\sqrt{z}\,\left(128z^2+504z+693\right)\cosh\left(2\sqrt{z}\right) - 3\left(192z^2+476z+231\right)\sinh\left(2\sqrt{z}\right)\right)}{224\, z^{5/2}} $$

07.22.03.ae1b.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, -\frac{1}{4}; -z\right) = -\frac{5\left(2\sqrt{z}\,\left(128z^2-504z+693\right)\cos\left(2\sqrt{z}\right) - 3\left(192z^2-476z+231\right)\sin\left(2\sqrt{z}\right)\right)}{224\, z^{5/2}} $$

07.22.03.ae1c.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{1}{4}; z\right) = \frac{5\left(-16z I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(16z+27) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - (64z+135) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{14\sqrt{2}\, z^{5/4}} $$

07.22.03.ae1d.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{1}{4}; -z\right) = -\frac{5\left(16z J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(16z-27) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + (135-64z) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{14\sqrt{2}\, z^{5/4}} $$

07.22.03.ae1e.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{3}{4}; z\right) = \frac{5(16z+21)\left((4z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{224\, z^{5/2}} $$

07.22.03.ae1f.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{3}{4}; -z\right) = \frac{5(16z-21)\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4z-3)\sin\left(2\sqrt{z}\right)\right)}{224\, z^{5/2}} $$

07.22.03.ae1g.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{5}{4}; z\right) = \frac{5\left(8z I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + (8z+15) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{14\sqrt{2}\, z^{5/4}} $$

07.22.03.ae1h.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{5}{4}; -z\right) = \frac{5\left(8z J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + (15-8z) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{14\sqrt{2}\, z^{5/4}} $$

07.22.03.ae1i.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{7}{4}; z\right) = \frac{15\left(2\sqrt{z}\,(8z+9)\cosh\left(2\sqrt{z}\right) - (20z+9)\sinh\left(2\sqrt{z}\right)\right)}{224\, z^{5/2}} $$

07.22.03.ae1j.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{7}{4}; -z\right) = -\frac{15\left(2\sqrt{z}\,(8z-9)\cos\left(2\sqrt{z}\right) + (9-20z)\sin\left(2\sqrt{z}\right)\right)}{224\, z^{5/2}} $$

07.22.03.ae1k.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{9}{4}; z\right) = \frac{25\left(4\sqrt{z}\, I_{\frac{1}{4}}\left(\sqrt{z}\right) - 3\, I_{\frac{5}{4}}\left(\sqrt{z}\right)\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) \Gamma\left(\frac{5}{4}\right)^2}{14\sqrt{2}\, z^{5/4}}$$

07.22.03.ae1l.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{9}{4}; -z\right) = \frac{25\left(4\sqrt{z}\, J_{\frac{1}{4}}\left(\sqrt{z}\right) - 3\, J_{\frac{5}{4}}\left(\sqrt{z}\right)\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) \Gamma\left(\frac{5}{4}\right)^2}{14\sqrt{2}\, z^{5/4}}$$

07.22.03.ae1m.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{11}{4}; z\right) = \frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\, \cosh\left(2\sqrt{z}\right)\right)}{32\, z^{5/2}}$$

07.22.03.ae1n.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{11}{4}; -z\right) = -\frac{15\left(6\sqrt{z}\, \cos\left(2\sqrt{z}\right) + (4z-3)\sin\left(2\sqrt{z}\right)\right)}{32\, z^{5/2}}$$

07.22.03.ae1o.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{13}{4}; z\right) = \frac{225\left(2\sqrt{z}\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 5\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2}{56\sqrt{2}\, z^{7/4}}$$

07.22.03.ae1p.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{13}{4}; -z\right) = -\frac{225\left(2\sqrt{z}\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 5\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2}{56\sqrt{2}\, z^{7/4}}$$

07.22.03.ae1q.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{15}{4}; z\right) = \frac{1}{1024\, z^{11/4}}$$
$$\left(165\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(4\sqrt{z}-9\right)+4\sqrt{z}+9\right) - 21\, e^{2\sqrt{z}}\sqrt{2\pi}\, \operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 21\, e^{2\sqrt{z}}\sqrt{2\pi}\, \operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ae1r.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{15}{4}; -z\right) = \frac{165\left(8\, z^{3/4}\cos\left(2\sqrt{z}\right) + 21\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 18\sqrt[4]{z}\, \sin\left(2\sqrt{z}\right)\right)}{256\, z^{11/4}}$$

07.22.03.ae1s.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{17}{4}; z\right) = \frac{2925\left(18\sqrt{z}\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (32z-45)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 90\sqrt{z}\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2}{1792\sqrt{2}\, z^{11/4}}$$

07.22.03.ae1t.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{17}{4}; -z\right) = -\frac{2925\left(-18\sqrt{z}\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (32z+45)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 90\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2}{1792\sqrt{2}\, z^{11/4}}$$

07.22.03.ae1u.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{19}{4}; z\right) =$$
$$\frac{1}{65\,536\, z^{15/4}}\left(2475\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-64\, z - 308\sqrt{z} + e^{4\sqrt{z}}\left(64\, z - 308\sqrt{z} + 231\right) - 231\right) - 21\, e^{2\sqrt{z}}\sqrt{2\pi}\right.\right.$$
$$\left.\left.(16\, z - 11)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 21\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16\, z - 11)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ae1v.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{19}{4}; -z\right) = \frac{2475\left(21\sqrt{\pi}\,(16\, z + 11)\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(308\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (64\, z - 231)\sin\left(2\sqrt{z}\right)\right)\right)}{16\,384\, z^{15/4}}$$

07.22.03.ae1w.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{21}{4}; z\right) = \frac{1}{57\,344\sqrt{2}\, z^{15/4}}$$
$$\left(49\,725\left(2\sqrt{z}\,(176\, z - 117)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 9\,(144\, z - 65)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\,(195 - 16\, z)\sqrt{z}\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae1x.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{21}{4}; -z\right) = \frac{1}{57\,344\sqrt{2}\, z^{15/4}}$$
$$\left(49\,725\left(2\sqrt{z}\,(176\, z + 117)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 9\,(144\, z + 65)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\,(16\, z + 195)\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae1y.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{23}{4}; z\right) =$$
$$\frac{1}{8\,388\,608\, z^{19/4}}\left(47\,025\, e^{-2\sqrt{z}}\left(44\sqrt[4]{z}\left(64\, z^{3/2} + 1008\, z + 2100\sqrt{z} + e^{4\sqrt{z}}\left(64\, z^{3/2} - 1008\, z + 2100\sqrt{z} - 1575\right) + 1575\right) -\right.$$
$$\left.21\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 352\, z + 825\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 21\, e^{2\sqrt{z}}\sqrt{2\pi}\left(256\, z^2 - 352\, z + 825\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)$$

07.22.03.ae1z.01

$${}_1F_2\left(\frac{11}{4}; \frac{7}{2}, \frac{23}{4}; -z\right) = \frac{1}{2\,097\,152\, z^{19/4}}$$
$$\left(47\,025\left(21\sqrt{\pi}\left(256\, z^2 + 352\, z + 825\right) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 22\sqrt[4]{z}\left(4\sqrt{z}\,(16\, z - 525)\cos\left(2\sqrt{z}\right) + 63\,(25 - 16\, z)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{11}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.ae20.01

$${}_1F_2\left(\frac{11}{4};\frac{9}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{2\,422\,728\sqrt{2}\,z^{9/4}}\left(\left(4z\left(65\,536z^4+13\,246\,464z^3+491\,355\,648z^2+7\,018\,681\,824z+36\,974\,963\,025\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(2\,686\,976z^4+206\,868\,480z^3+5\,021\,743\,104z^2+51\,520\,669\,200z+184\,874\,815\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(262\,144z^5+61\,243\,392z^4+2\,633\,078\,784z^3+45\,221\,904\,000z^2+339\,769\,930\,500z+924\,374\,075\,625\right)$$
$$\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.ae21.01

$${}_1F_2\left(\frac{11}{4};\frac{9}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{2\,422\,728\sqrt{2}\,z^{9/4}}\left(\left(-4z\left(65\,536z^4-13\,246\,464z^3+491\,355\,648z^2-7\,018\,681\,824z+36\,974\,963\,025\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(2\,686\,976z^4-206\,868\,480z^3+5\,021\,743\,104z^2-51\,520\,669\,200z+184\,874\,815\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(262\,144z^5-61\,243\,392z^4+2\,633\,078\,784z^3-45\,221\,904\,000z^2+339\,769\,930\,500z-924\,374\,075\,625\right)$$
$$\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.ae22.01

$${}_1F_2\left(\frac{11}{4};\frac{9}{2},-\frac{21}{4};z\right)=\frac{1}{5\,346\,432\,z^{7/2}}$$
$$\left(2\sqrt{z}\left(262\,144z^5+49\,283\,072z^4+1\,740\,576\,768z^3+24\,421\,098\,240z^2+140\,257\,780\,740z+221\,793\,177\,375\right)\right.$$
$$\cosh\left(2\sqrt{z}\right)-\left(9\,961\,472z^5+670\,236\,672z^4+14\,471\,761\,920z^3+\right.$$
$$\left.\left.132\,571\,676\,160z^2+435\,982\,017\,240z+221\,793\,177\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae23.01

$${}_1F_2\left(\frac{11}{4};\frac{9}{2},-\frac{21}{4};-z\right)=\frac{1}{5\,346\,432\,z^{7/2}}$$
$$\left(2\sqrt{z}\left(262\,144z^5-49\,283\,072z^4+1\,740\,576\,768z^3-24\,421\,098\,240z^2+140\,257\,780\,740z-221\,793\,177\,375\right)\right.$$
$$\cos\left(2\sqrt{z}\right)+\left(-9\,961\,472z^5+670\,236\,672z^4-14\,471\,761\,920z^3+\right.$$
$$\left.\left.132\,571\,676\,160z^2-435\,982\,017\,240z+221\,793\,177\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ae24.01

$${}_1F_2\left(\frac{11}{4};\frac{9}{2},-\frac{19}{4};z\right)=\frac{1}{105\,336\sqrt{2}\,z^{9/4}}\left(\left(252z\left(4096z^3+194\,816z^2+2\,948\,976z+15\,862\,275\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(32\,768z^4+4\,687\,872z^3+129\,080\,448z^2+1\,372\,807\,800z+4\,996\,616\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.3\left(376\,832z^4+21\,339\,136z^3+393\,556\,800z^2+3\,028\,252\,500z+8\,327\,694\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae25.01

$${}_1F_2\left(\frac{11}{4};\frac{9}{2},-\frac{19}{4};-z\right)=\frac{1}{105\,336\sqrt{2}\,z^{9/4}}\left(\left(252\,z\left(4096\,z^3-194\,816\,z^2+2\,948\,976\,z-15\,862\,275\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(32\,768\,z^4-4\,687\,872\,z^3+129\,080\,448\,z^2-1\,372\,807\,800\,z+4\,996\,616\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.3\left(376\,832\,z^4-21\,339\,136\,z^3+393\,556\,800\,z^2-3\,028\,252\,500\,z+8\,327\,694\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae26.01

$${}_1F_2\left(\frac{11}{4};\frac{9}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{254\,592\,z^{7/2}}\left(2\sqrt{z}\left(999\,424\,z^4+45\,431\,808\,z^3+678\,363\,840\,z^2+3\,979\,330\,740\,z+6\,336\,947\,925\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(131\,072\,z^5+16\,146\,432\,z^4+393\,254\,400\,z^3+3\,731\,001\,120\,z^2+12\,428\,594\,640\,z+6\,336\,947\,925\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae27.01

$${}_1F_2\left(\frac{11}{4};\frac{9}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{254\,592\,z^{7/2}}\left(\left(-131\,072\,z^5+16\,146\,432\,z^4-393\,254\,400\,z^3+3\,731\,001\,120\,z^2-12\,428\,594\,640\,z+6\,336\,947\,925\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(999\,424\,z^4-45\,431\,808\,z^3+678\,363\,840\,z^2-3\,979\,330\,740\,z+6\,336\,947\,925\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ae28.01

$${}_1F_2\left(\frac{11}{4};\frac{9}{2},-\frac{15}{4};z\right)=\frac{1}{5544\sqrt{2}\,z^{9/4}}\left(\left(4\,z\left(4096\,z^3+331\,520\,z^2+5\,479\,152\,z+30\,282\,525\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(106\,496\,z^3+3\,650\,304\,z^2+40\,840\,800\,z+151\,412\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(16\,384\,z^4+1\,657\,856\,z^3+34\,157\,760\,z^2+271\,498\,500\,z+757\,063\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae29.01

$${}_1F_2\left(\frac{11}{4};\frac{9}{2},-\frac{15}{4};-z\right)=\frac{1}{5544\sqrt{2}\,z^{9/4}}\left(\left(4\,z\left(4096\,z^3-331\,520\,z^2+5\,479\,152\,z-30\,282\,525\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(106\,496\,z^3-3\,650\,304\,z^2+40\,840\,800\,z-151\,412\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-16\,384\,z^4+1\,657\,856\,z^3-34\,157\,760\,z^2+271\,498\,500\,z-757\,063\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae2a.01

$${}_1F_2\left(\frac{11}{4};\frac{9}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{14\,976\,z^{7/2}}\left(2\sqrt{z}\left(16\,384\,z^4+1\,281\,024\,z^3+21\,067\,200\,z^2+127\,193\,220\,z+204\,417\,675\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.3\left(131\,072\,z^4+3\,942\,400\,z^3+39\,325\,440\,z^2+133\,250\,040\,z+68\,139\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae2b.01

$${}_1F_2\left(\frac{11}{4};\frac{9}{2},-\frac{13}{4};-z\right)=\frac{1}{14\,976\,z^{7/2}}\left(3\left(131\,072\,z^4-3\,942\,400\,z^3+39\,325\,440\,z^2-133\,250\,040\,z+68\,139\,225\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(16\,384\,z^4-1\,281\,024\,z^3+21\,067\,200\,z^2-127\,193\,220\,z+204\,417\,675\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ae2c.01

$${}_1F_2\left(\frac{11}{4};\frac{9}{2},-\frac{11}{4};z\right)=$$
$$-\frac{1}{1848\sqrt{2}\,z^{9/4}}\left(5\left(-4z\left(9472\,z^2+182\,112\,z+1\,044\,225\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048\,z^3+113\,664\,z^2+1\,373\,736\,z+5\,221\,125\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\left(44\,032\,z^3+1\,103\,232\,z^2+9\,189\,180\,z+26\,105\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae2d.01

$${}_1F_2\left(\frac{11}{4};\frac{9}{2},-\frac{11}{4};-z\right)=$$
$$-\frac{1}{1848\sqrt{2}\,z^{9/4}}\left(5\left(4z\left(9472\,z^2-182\,112\,z+1\,044\,225\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048\,z^3-113\,664\,z^2+1\,373\,736\,z-5\,221\,125\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-44\,032\,z^3+1\,103\,232\,z^2-9\,189\,180\,z+26\,105\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae2e.01

$${}_1F_2\left(\frac{11}{4};\frac{9}{2},-\frac{9}{4};z\right)=\frac{1}{1152\,z^{7/2}}\left(2\sqrt{z}\left(37\,888\,z^3+739\,200\,z^2+4\,652\,340\,z+7\,571\,025\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(8192\,z^4+394\,240\,z^3+4\,250\,400\,z^2+14\,747\,040\,z+7\,571\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae2f.01

$${}_1F_2\left(\frac{11}{4};\frac{9}{2},-\frac{9}{4};-z\right)=\frac{1}{1152\,z^{7/2}}\left(2\sqrt{z}\left(37\,888\,z^3-739\,200\,z^2+4\,652\,340\,z-7\,571\,025\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(8192\,z^4-394\,240\,z^3+4\,250\,400\,z^2-14\,747\,040\,z+7\,571\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ae2g.01

$${}_1F_2\left(\frac{11}{4};\frac{9}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{168\sqrt{2}\,z^{9/4}}\left(5\left(4z\left(256\,z^2+6912\,z+41\,769\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-60\sqrt{z}\left(256\,z^2+3536\,z+13\,923\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(1024\,z^3+39\,936\,z^2+358\,020\,z+1\,044\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae2h.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{9}{2}, -\frac{7}{4}; -z\right) = -\frac{1}{168\sqrt{2}\, z^{9/4}}\left(5\left(4z\left(256z^2-6912z+41\,769\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-60\sqrt{z}\left(256z^2-3536z+13\,923\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1024z^3+39\,936z^2-358\,020z+1\,044\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ae2i.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{9}{2}, -\frac{5}{4}; z\right) = \frac{1}{128\, z^{7/2}}\left(2\sqrt{z}\left(1024z^3+29\,568z^2+198\,660z+329\,175\right)\cosh\left(2\sqrt{z}\right)-7\left(2048z^3+25\,344z^2+91\,080z+47\,025\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ae2j.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{9}{2}, -\frac{5}{4}; -z\right) = \frac{1}{128\, z^{7/2}}\left(2\sqrt{z}\left(1024z^3-29\,568z^2+198\,660z-329\,175\right)\cos\left(2\sqrt{z}\right)-7\left(2048z^3-25\,344z^2+91\,080z-47\,025\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ae2k.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{9}{2}, -\frac{3}{4}; z\right) = -\frac{1}{24\sqrt{2}\, z^{9/4}}\left(5\left(-4z\left(304z+1989\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(128z^2+2392z+9945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-5\left(320z^2+3276z+9945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ae2l.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{1}{24\sqrt{2}\, z^{9/4}}\left(5\left(4z\left(304z-1989\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(128z^2-2392z+9945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-5\left(320z^2-3276z+9945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ae2m.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{9}{2}, -\frac{1}{4}; z\right) = -\frac{1}{128\, z^{7/2}}\left(5\left(\left(512z^3+8736z^2+33\,264z+17\,325\right)\sinh\left(2\sqrt{z}\right)-42\sqrt{z}\left(64z^2+484z+825\right)\cosh\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.ae2n.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{9}{2}, -\frac{1}{4}; -z\right) = -\frac{5\left(42\sqrt{z}\left(64z^2-484z+825\right)\cos\left(2\sqrt{z}\right)+\left(512z^3-8736z^2+33\,264z-17\,325\right)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}} $$

07.22.03.ae2o.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{1}{4}; z\right) = \frac{1}{8\sqrt{2}\, z^{9/4}}\left(5\left(4z(16z+117) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(128z+585) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(64z^2+900z+2925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae2p.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{1}{4}; -z\right) = \frac{1}{8\sqrt{2}\, z^{9/4}}\left(5\left(4z(16z-117) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4(585-128z)\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-64z^2+900z-2925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae2q.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{3}{4}; z\right) = \frac{5\left(2\sqrt{z}\,\left(64z^2+644z+1155\right)\cosh\left(2\sqrt{z}\right) - \left(512z^2+2184z+1155\right)\sinh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.ae2r.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{3}{4}; -z\right) = -\frac{5\left(2\sqrt{z}\,\left(64z^2-644z+1155\right)\cos\left(2\sqrt{z}\right) + \left(-512z^2+2184z-1155\right)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.ae2s.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{5}{4}; z\right) = \frac{5\left(-36z I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(8z+45) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 15(4z+15) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{8\sqrt{2}\, z^{9/4}}$$

07.22.03.ae2t.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{5}{4}; -z\right) = \frac{5\left(36z J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(8z-45) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 15(15-4z) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{8\sqrt{2}\, z^{9/4}}$$

07.22.03.ae2u.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{7}{4}; z\right) = \frac{15\left(\left(32z^2+192z+105\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,(52z+105)\cosh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.ae2v.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{7}{4}; -z\right) = -\frac{15\left(2\sqrt{z}\,(52z-105)\cos\left(2\sqrt{z}\right) + \left(32z^2-192z+105\right)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.ae2w.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{9}{4}; z\right) = \frac{\sqrt{2}\,\left(4z I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 20\sqrt{z}\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + (4z+25) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{9}{4}\right)^2}{z^{9/4}}$$

07.22.03.ae2x.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{9}{4}; -z\right) = \frac{\sqrt{2}\,\left(-4z J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 20\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + (4z-25) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{9}{4}\right)^2}{z^{9/4}}$$

07.22.03.ae2y.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{11}{4}; z\right) = \frac{105\left(2\sqrt{z}\ (4z+15)\cosh\left(2\sqrt{z}\right) - 3\,(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.ae2z.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{11}{4}; -z\right) = \frac{105\left(2\sqrt{z}\ (4z-15)\cos\left(2\sqrt{z}\right) + 3\,(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.ae30.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{13}{4}; z\right) = \frac{9\sqrt{2}\left(2\sqrt{z}\ I_{\frac{1}{4}}\left(\sqrt{z}\right) - 5\,I_{\frac{5}{4}}\left(\sqrt{z}\right)\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{9}{4}\right)^2}{z^{9/4}}$$

07.22.03.ae31.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{13}{4}; -z\right) = \frac{9\sqrt{2}\ J_{\frac{5}{4}}\left(\sqrt{z}\right)\left(5\,J_{\frac{5}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\ J_{\frac{1}{4}}\left(\sqrt{z}\right)\right)\Gamma\left(\frac{9}{4}\right)^2}{z^{9/4}}$$

07.22.03.ae32.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{15}{4}; z\right) =$$

$$\frac{1}{512\,z^{7/2}}\left(1155\,e^{-2\sqrt{z}}\left(4\,e^{4\sqrt{z}}\ z - 4z - 7\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{3/4} + 7\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)z^{3/4} - \right.\right.$$
$$\left.\left.20\,e^{4\sqrt{z}}\ \sqrt{z} - 20\sqrt{z} + 10\,e^{4\sqrt{z}} - 10\right)\right)$$

07.22.03.ae33.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{15}{4}; -z\right) = \frac{1155\left(10\sqrt{z}\ \cos\left(2\sqrt{z}\right) + 7\sqrt{\pi}\ z^{3/4}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + (2z-5)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.ae34.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{17}{4}; z\right) = \frac{2925\left(18\sqrt{z}\ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 45\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) - 10\sqrt{z}\ I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{128\sqrt{2}\ z^{11/4}}$$

07.22.03.ae35.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{17}{4}; -z\right) = \frac{2925\left(18\sqrt{z}\ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 45\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 10\sqrt{z}\ J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{128\sqrt{2}\ z^{11/4}}$$

07.22.03.ae36.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{19}{4}; z\right) =$$

$$-\frac{1}{32\,768\,z^{15/4}}\left(17\,325\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(e^{4\sqrt{z}}\left(12\sqrt{z}+71\right) + 12\sqrt{z} - 71\right) + 7\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ (16z+33)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) - \right.\right.$$
$$\left.\left.7\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ (16z+33)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.ae37.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{19}{4}; -z\right) = \frac{17\,325\left(24\,z^{3/4}\cos\left(2\sqrt{z}\right) + 7\sqrt{\pi}\,(16\,z-33)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 142\sqrt[4]{z}\,\sin\left(2\sqrt{z}\right)\right)}{8192\,z^{15/4}}$$

07.22.03.ae38.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{21}{4}; z\right) =$$

$$\frac{1}{4096\sqrt{2}\,z^{15/4}}\left(16\,575\left(2\sqrt{z}\,(112\,z+117)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 9\,(16\,z+65)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,(112\,z+585)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae39.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{21}{4}; -z\right) = \frac{1}{4096\sqrt{2}\,z^{15/4}}$$

$$\left(16\,575\left(2\sqrt{z}\,(112\,z-117)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 9\,(16\,z-65)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(112\,z-585)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae3a.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{23}{4}; z\right) =$$

$$-\frac{1}{4\,194\,304\,z^{19/4}}\left(329\,175\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(448\,z^{3/2}+400\,z+4620\sqrt{z}+e^{4\sqrt{z}}\left(448\,z^{3/2}-400\,z+4620\sqrt{z}-3465\right)+3465\right)+\right.\right.$$
$$\left.\left.7\,e^{2\sqrt{z}}\sqrt{2\pi}\left(256\,z^2+1056\,z-495\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 7\,e^{2\sqrt{z}}\sqrt{2\pi}\left(256\,z^2+1056\,z-495\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ae3b.01

$${}_1F_2\left(\frac{11}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) = \frac{1}{1\,048\,576\,z^{19/4}}$$

$$\left(329\,175\left(7\sqrt{\pi}\left(256\,z^2-1056\,z-495\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(28\sqrt{z}\,(16\,z-165)\cos\left(2\sqrt{z}\right) + 5\,(693-80\,z)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{11}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.ae3c.01

$${}_1F_2\left(\frac{11}{4}; \frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,076\,768\sqrt{2}\,z^{13/4}}$$

$$\left(\left(-4\,z\left(3\,407\,872\,z^4+424\,402\,944\,z^3+16\,438\,093\,056\,z^2+262\,933\,070\,400\,z+1\,515\,973\,484\,025\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(262\,144\,z^5+97\,288\,192\,z^4+6\,633\,854\,976\,z^3+176\,017\,564\,800\,z^2+1\,988\,431\,344\,900\,z+7\,579\,867\,420\,125\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) - \left(14\,417\,920\,z^5+2\,000\,388\,096\,z^4+87\,197\,107\,200\,z^3+\right.$$
$$\left.\left.\left.1\,648\,661\,414\,400\,z^2+13\,310\,986\,689\,000\,z+37\,899\,337\,100\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae3d.01

$$ {}_1F_2\left(\frac{11}{4};\frac{11}{2},-\frac{23}{4};-z\right)=-\frac{1}{1\,076\,768\sqrt{2}\,z^{13/4}}\left(\left(4z\left(3\,407\,872z^4-424\,402\,944z^3+16\,438\,093\,056z^2-262\,933\,070\,400z+1\,515\,973\,484\,025\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(262\,144z^5-97\,288\,192z^4+6\,633\,854\,976z^3-176\,017\,564\,800z^2+1\,988\,431\,344\,900z-7\,579\,867\,420\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-14\,417\,920z^5+2\,000\,388\,096z^4-87\,197\,107\,200z^3+1\,648\,661\,414\,400z^2-13\,310\,986\,689\,000z+37\,899\,337\,100\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ae3e.01

$$ {}_1F_2\left(\frac{11}{4};\frac{11}{2},-\frac{21}{4};z\right)=\frac{1}{2\,376\,192z^{9/2}}\left(\left(1\,048\,576z^6+341\,311\,488z^5+20\,673\,945\,600z^4+488\,421\,964\,800z^3+4\,887\,054\,239\,760z^2+16\,856\,281\,480\,500z+8\,649\,933\,917\,625\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(13\,107\,200z^5+1\,523\,515\,392z^4+55\,819\,653\,120z^3+865\,204\,623\,360z^2+5\,323\,036\,257\,000z+8\,649\,933\,917\,625\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.ae3f.01

$$ {}_1F_2\left(\frac{11}{4};\frac{11}{2},-\frac{21}{4};-z\right)=\frac{1}{2\,376\,192z^{9/2}}\left(2\sqrt{z}\left(13\,107\,200z^5-1\,523\,515\,392z^4+55\,819\,653\,120z^3-865\,204\,623\,360z^2+5\,323\,036\,257\,000z-8\,649\,933\,917\,625\right)\cos\left(2\sqrt{z}\right)+\left(1\,048\,576z^6-341\,311\,488z^5+20\,673\,945\,600z^4-488\,421\,964\,800z^3+4\,887\,054\,239\,760z^2-16\,856\,281\,480\,500z+8\,649\,933\,917\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ae3g.01

$$ {}_1F_2\left(\frac{11}{4};\frac{11}{2},-\frac{19}{4};z\right)=-\frac{1}{46\,816\sqrt{2}\,z^{13/4}}\left(\left(4z\left(32\,768z^4+7\,956\,480z^3+364\,678\,272z^2+6\,218\,011\,800z+36\,974\,963\,025\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1\,458\,176z^4+136\,614\,912z^3+4\,025\,246\,400z^2+47\,523\,375\,900z+184\,874\,815\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(131\,072z^5+36\,298\,752z^4+1\,896\,384\,000z^3+38\,438\,618\,400z^2+319\,783\,464\,000z+924\,374\,075\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ae3h.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{46\,816\sqrt{2}\,z^{13/4}}\left(\left(-4z\left(32\,768z^4-7\,956\,480z^3+364\,678\,272z^2-6\,218\,011\,800z+36\,974\,963\,025\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(1\,458\,176z^4-136\,614\,912z^3+4\,025\,246\,400z^2-47\,523\,375\,900z+184\,874\,815\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(131\,072z^5-36\,298\,752z^4+1\,896\,384\,000z^3-38\,438\,618\,400z^2+319\,783\,464\,000z-924\,374\,075\,625\right)$$
$$\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.ae3i.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{113\,152z^{9/2}}\left(\left(5\,439\,488z^5+449\,433\,600z^4+11\,758\,306\,560z^3+122\,759\,627\,760z^2+430\,912\,458\,900z+221\,793\,177\,375\right)\right.$$
$$\sinh\left(2\sqrt{z}\right)-2\sqrt{z}$$
$$\left.\left(131\,072z^5+29\,745\,152z^4+1\,292\,121\,600z^3+21\,368\,460\,960z^2+135\,188\,222\,400z+221\,793\,177\,375\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae3j.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{113\,152z^{9/2}}\left(2\sqrt{z}\left(131\,072z^5-29\,745\,152z^4+1\,292\,121\,600z^3-21\,368\,460\,960z^2+135\,188\,222\,400z-221\,793\,177\,375\right)\right.$$
$$\cos\left(2\sqrt{z}\right)+\left(-5\,439\,488z^5+449\,433\,600z^4-11\,758\,306\,560z^3+\right.$$
$$\left.\left.122\,759\,627\,760z^2-430\,912\,458\,900z+221\,793\,177\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ae3k.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},-\frac{15}{4};z\right)=\frac{1}{2464\sqrt{2}\,z^{13/4}}\left(\left(-28z\left(20\,480z^3+1\,238\,784z^2+23\,072\,400z+142\,760\,475\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(16\,384z^4+2\,903\,040z^3+99\,960\,000z^2+1\,251\,677\,700z+4\,996\,616\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left(622\,592z^4+43\,868\,160z^3+980\,179\,200z^2+8\,479\,107\,000z+24\,983\,083\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.ae3l.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},-\frac{15}{4};-z\right)=\frac{1}{2464\sqrt{2}\,z^{13/4}}\left(\left(28z\left(20\,480z^3-1\,238\,784z^2+23\,072\,400z-142\,760\,475\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(16\,384z^4-2\,903\,040z^3+99\,960\,000z^2-1\,251\,677\,700z+4\,996\,616\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left(-622\,592z^4+43\,868\,160z^3-980\,179\,200z^2+8\,479\,107\,000z-24\,983\,083\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.ae3m.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{11}{2}, -\frac{13}{4}; z\right) = \frac{1}{6656\, z^{9/2}} \left(\left(65\,536\, z^5 + 10\,137\,600\, z^4 + 308\,985\,600\, z^3 + 3\,416\,046\,480\, z^2 + 12\,265\,060\,500\, z + 6\,336\,947\,925\right) \sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\, \left(557\,056\, z^4 + 32\,102\,400\, z^3 + 581\,454\,720\, z^2 + 3\,815\,796\,600\, z + 6\,336\,947\,925\right) \cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.ae3n.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{11}{2}, -\frac{13}{4}; -z\right) = \frac{1}{6656\, z^{9/2}} \left(\left(-65\,536\, z^5 + 10\,137\,600\, z^4 - 308\,985\,600\, z^3 + 3\,416\,046\,480\, z^2 - 12\,265\,060\,500\, z + 6\,336\,947\,925\right) \sin\left(2\sqrt{z}\right) - 2\sqrt{z}\, \left(557\,056\, z^4 - 32\,102\,400\, z^3 + 581\,454\,720\, z^2 - 3\,815\,796\,600\, z + 6\,336\,947\,925\right) \cos\left(2\sqrt{z}\right)\right) $$

07.22.03.ae3o.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{11}{2}, -\frac{11}{4}; z\right) = -\frac{1}{2464\sqrt{2}\, z^{13/4}} \left(15 \left(4\, z \left(2048\, z^3 + 218\,624\, z^2 + 4\,641\,000\, z + 30\,282\,525\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\, \left(60\,416\, z^3 + 2\,696\,064\, z^2 + 36\,663\,900\, z + 151\,412\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(8192\, z^4 + 1\,061\,888\, z^3 + 27\,474\,720\, z^2 + 250\,614\,000\, z + 757\,063\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ae3p.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{11}{2}, -\frac{11}{4}; -z\right) = \frac{1}{2464\sqrt{2}\, z^{13/4}} \left(15 \left(4\, z \left(2048\, z^3 - 218\,624\, z^2 + 4\,641\,000\, z - 30\,282\,525\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\, \left(60\,416\, z^3 - 2\,696\,064\, z^2 + 36\,663\,900\, z - 151\,412\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-8192\, z^4 + 1\,061\,888\, z^3 - 27\,474\,720\, z^2 + 250\,614\,000\, z - 757\,063\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ae3q.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{11}{2}, -\frac{9}{4}; z\right) = \frac{1}{512\, z^{9/2}} \left(55 \left(4096\, z^4 + 161\,280\, z^3 + 1\,934\,352\, z^2 + 7\,158\,060\, z + 3\,716\,685\right) \sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\, \left(8192\, z^4 + 844\,800\, z^3 + 17\,556\,000\, z^2 + 121\,136\,400\, z + 204\,417\,675\right) \cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.ae3r.01

$$ {}_1F_2\left(\frac{11}{4}; \frac{11}{2}, -\frac{9}{4}; -z\right) = \frac{1}{512\, z^{9/2}} \left(55 \left(4096\, z^4 - 161\,280\, z^3 + 1\,934\,352\, z^2 - 7\,158\,060\, z + 3\,716\,685\right) \sin\left(2\sqrt{z}\right) - 2\sqrt{z}\, \left(8192\, z^4 - 844\,800\, z^3 + 17\,556\,000\, z^2 - 121\,136\,400\, z + 204\,417\,675\right) \cos\left(2\sqrt{z}\right)\right) $$

07.22.03.ae3s.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{224\sqrt{2}\,z^{13/4}}\left(15\left(-4z\left(5632z^2+148\,512z+1\,044\,225\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024z^3+78\,336z^2+1\,206\,660z+5\,221\,125\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-5\left(5120z^3+169\,728z^2+1\,670\,760z+5\,221\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae3t.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},-\frac{7}{4};-z\right)=$$
$$-\frac{1}{224\sqrt{2}\,z^{13/4}}\left(15\left(4z\left(5632z^2-148\,512z+1\,044\,225\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024z^3-78\,336z^2+1\,206\,660z-5\,221\,125\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+5\left(-5120z^3+169\,728z^2-1\,670\,760z+5\,221\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae3u.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},-\frac{5}{4};z\right)=\frac{1}{512z^{9/2}}\left(9\left(\left(4096z^4+275\,968z^3+3\,751\,440z^2+14\,483\,700z+7\,571\,025\right)\sinh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.22\sqrt{z}\left(2048z^3+53\,760z^2+399\,000z+688\,275\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ae3v.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},-\frac{5}{4};-z\right)=\frac{1}{512z^{9/2}}\left(9\left(22\sqrt{z}\left(2048z^3-53\,760z^2+399\,000z-688\,275\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^4-275\,968z^3+3\,751\,440z^2-14\,483\,700z+7\,571\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ae3w.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},-\frac{3}{4};z\right)=$$
$$-\frac{1}{32\sqrt{2}\,z^{13/4}}\left(15\left(4z\left(128z^2+5304z+41\,769\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2368z^2+45\,084z+208\,845\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(512z^3+28\,704z^2+318\,240z+1\,044\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae3x.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},-\frac{3}{4};-z\right)=$$
$$-\frac{1}{32\sqrt{2}\,z^{13/4}}\left(15\left(4z\left(128z^2-5304z+41\,769\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2368z^2-45\,084z+208\,845\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-512z^3+28\,704z^2-318\,240z+1\,044\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae3y.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},-\frac{1}{4};z\right)=-\frac{1}{512\,z^{9/2}}\left(45\left(2\sqrt{z}\,\left(512\,z^3+22\,176\,z^2+184\,800\,z+329\,175\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.7\left(1280\,z^3+21\,648\,z^2+89\,100\,z+47\,025\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ae3z.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},-\frac{1}{4};-z\right)=\frac{1}{512\,z^{9/2}}$$
$$\left(45\left(2\sqrt{z}\,\left(512\,z^3-22\,176\,z^2+184\,800\,z-329\,175\right)\cos\left(2\sqrt{z}\right)+7\left(-1280\,z^3+21\,648\,z^2-89\,100\,z+47\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ae40.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{1}{4};z\right)=\frac{1}{32\sqrt{2}\,z^{13/4}}$$
$$\left(45\left(-52\,z\,(16\,z+153)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(64\,z^2+1924\,z+9945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\left(1024\,z^2+14\,040\,z+49\,725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae41.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{1}{4};-z\right)=\frac{1}{32\sqrt{2}\,z^{13/4}}\left(45\left(52\,z\,(16\,z-153)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\,\left(64\,z^2-1924\,z+9945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1024\,z^2+14\,040\,z-49\,725\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae42.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{512\,z^{9/2}}\left(45\left(\left(256\,z^3+7056\,z^2+32\,340\,z+17\,325\right)\sinh\left(2\sqrt{z}\right)-14\sqrt{z}\,\left(128\,z^2+1320\,z+2475\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ae43.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{3}{4};-z\right)=$$
$$-\frac{1}{512\,z^{9/2}}\left(45\left(14\sqrt{z}\,\left(128\,z^2-1320\,z+2475\right)\cos\left(2\sqrt{z}\right)+\left(256\,z^3-7056\,z^2+32\,340\,z-17\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ae44.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{32\sqrt{2}\,z^{13/4}}\left(45\left(4\,z\,(8\,z+117)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(92\,z+585\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(32\,z^2+720\,z+2925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae45.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{5}{4};-z\right)=$$
$$-\frac{1}{32\sqrt{2}\,z^{13/4}}\left(45\left(4z(8z-117)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(92z-585)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-32z^2+720z-2925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae46.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{7}{4};z\right)=\frac{135\left(2\sqrt{z}\left(32z^2+560z+1155\right)\cosh\left(2\sqrt{z}\right)-\left(368z^2+2100z+1155\right)\sinh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.ae47.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{7}{4};-z\right)=\frac{135\left(2\sqrt{z}\left(32z^2-560z+1155\right)\cos\left(2\sqrt{z}\right)+\left(-368z^2+2100z-1155\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.ae48.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{32\sqrt{2}\,z^{13/4}}\left(9\left(-900z\,\Gamma\left(\frac{5}{4}\right)^2I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+64\sqrt{z}\,(4z+45)I_{\frac{5}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{9}{4}\right)^2I_{\frac{1}{4}}\left(\sqrt{z}\right)-125(8z+45)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{5}{4}\right)^2\right)\right)$$

07.22.03.ae49.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{9}{4};-z\right)=$$
$$-\frac{1}{32\sqrt{2}\,z^{13/4}}\left(9\left(900z\,\Gamma\left(\frac{5}{4}\right)^2J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+64\sqrt{z}\,(4z-45)J_{\frac{5}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{9}{4}\right)^2J_{\frac{1}{4}}\left(\sqrt{z}\right)+125(45-8z)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{5}{4}\right)^2\right)\right)$$

07.22.03.ae4a.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{11}{4};z\right)=\frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.ae4b.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{11}{4};-z\right)=\frac{945\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.ae4c.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{13}{4};z\right)=\frac{405\left(20z\,\Gamma\left(\frac{5}{4}\right)^2I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-64\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{9}{4}\right)^2I_{\frac{1}{4}}\left(\sqrt{z}\right)+125\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{5}{4}\right)^2\right)}{32\sqrt{2}\,z^{13/4}}$$

07.22.03.ae4d.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{13}{4};-z\right)=\frac{405\left(20z\,\Gamma\left(\frac{5}{4}\right)^2J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-64\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)\Gamma\left(\frac{9}{4}\right)^2J_{\frac{1}{4}}\left(\sqrt{z}\right)+125\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\Gamma\left(\frac{5}{4}\right)^2\right)}{32\sqrt{2}\,z^{13/4}}$$

07.22.03.ae4e.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{15}{4};z\right)=-\frac{1}{1024\,z^{9/2}}\left(10395\,e^{-2\sqrt{z}}\right.$$
$$\left.\left(4e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}-4e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)z^{7/4}+5\left(-4z-6\sqrt{z}+e^{4\sqrt{z}}\left(4z-6\sqrt{z}+3\right)-3\right)\right)\right)$$

07.22.03.ae4f.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{15}{4};-z\right)=\frac{10\,395\left(8\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{7/4}+5\left(6\sqrt{z}\;\cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)\right)}{512\,z^{9/2}}$$

07.22.03.ae4g.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{17}{4};z\right)=\frac{26\,325\left(2z\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\;I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2(z+5)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{64\sqrt{2}\;z^{13/4}}$$

07.22.03.ae4h.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{17}{4};-z\right)=\frac{26\,325\left(2z\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\;J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2(z-5)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{64\sqrt{2}\;z^{13/4}}$$

07.22.03.ae4i.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{19}{4};z\right)=$$
$$-\frac{1}{16\,384\,z^{9/2}}\left(155\,925\,e^{-2\sqrt{z}}\left(4\left(4z^{3/2}+3z+40\sqrt{z}+e^{4\sqrt{z}}\left(4z^{3/2}-3z+40\sqrt{z}-20\right)+20\right)+e^{2\sqrt{z}}\;\sqrt{2\pi}\right.\right.$$
$$\left.\left.z^{3/4}(16z+77)\,\mathrm{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-e^{2\sqrt{z}}\;\sqrt{2\pi}\;z^{3/4}(16z+77)\,\mathrm{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ae4j.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{19}{4};-z\right)=\frac{155\,925\left(8(z-10)\sqrt{z}\;\cos\left(2\sqrt{z}\right)+\sqrt{\pi}\;z^{3/4}(16z-77)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2(20-3z)\sin\left(2\sqrt{z}\right)\right)}{4096\,z^{9/2}}$$

07.22.03.ae4k.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{21}{4};z\right)=$$
$$\frac{1}{2048\sqrt{2}\;z^{15/4}}\left(149\,175\left(2\sqrt{z}\;(16z+117)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3(16z+195)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\;(16z+105)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae4l.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{21}{4};-z\right)=\frac{1}{2048\sqrt{2}\;z^{15/4}}$$
$$\left(149\,175\left(2\sqrt{z}\;(16z-117)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3(195-16z)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\;(16z-105)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ae4m.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{23}{4};z\right)=$$
$$-\frac{1}{2\,097\,152\,z^{19/4}}\left(2\,962\,575\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(64z^{3/2}-16z+500\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}+16z+500\sqrt{z}+905\right)-905\right)+\right.$$
$$\left.e^{2\sqrt{z}}\;\sqrt{2\pi}\left(256z^2+2464z+3465\right)\mathrm{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)-e^{2\sqrt{z}}\;\sqrt{2\pi}\left(256z^2+2464z+3465\right)\mathrm{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)$$

07.22.03.ae4n.01

$${}_1F_2\left(\frac{11}{4};\frac{11}{2},\frac{23}{4};-z\right)=\frac{1}{524\,288\,z^{19/4}}$$
$$\left(2\,962\,575\left(\sqrt{\pi}\,\left(256\,z^2-2464\,z+3465\right)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(16\,z-125\right)\cos\left(2\sqrt{z}\right)+\left(16\,z-905\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1=\frac{13}{4}$, $b_{1.}\geq-\frac{11}{2}$

For fixed z and $a_1=\frac{13}{4}$, $b_{1.}=-\frac{11}{2}$

07.22.03.ae4o.01

$${}_1F_2\left(\frac{13}{4};-\frac{11}{2},-\frac{23}{4};z\right)=$$
$$\frac{1}{708\,307\,243\,875}\left(15\left(20\,971\,520\,z^7+66\,060\,288\,z^6+167\,215\,104\,z^5+1\,196\,052\,480\,z^4+8\,461\,696\,320\,z^3+\right.\right.$$
$$\left.41\,668\,149\,600\,z^2+99\,293\,663\,700\,z+47\,220\,482\,925\right)\cosh\left(2\sqrt{z}\right)+$$
$$2\sqrt{z}\,\left(8\,388\,608\,z^7+770\,703\,360\,z^6-557\,383\,680\,z^5-3\,251\,404\,800\,z^4-24\,488\,956\,800\,z^3-\right.$$
$$\left.\left.150\,204\,423\,600\,z^2-544\,995\,297\,000\,z-708\,307\,243\,875\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae4p.01

$${}_1F_2\left(\frac{13}{4};-\frac{11}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{708\,307\,243\,875}\left(2\sqrt{z}\,\left(8\,388\,608\,z^7-770\,703\,360\,z^6-557\,383\,680\,z^5+3\,251\,404\,800\,z^4-24\,488\,956\,800\,z^3+\right.\right.$$
$$\left.150\,204\,423\,600\,z^2-544\,995\,297\,000\,z+708\,307\,243\,875\right)\sin\left(2\sqrt{z}\right)-$$
$$15\left(20\,971\,520\,z^7-66\,060\,288\,z^6+167\,215\,104\,z^5-1\,196\,052\,480\,z^4+8\,461\,696\,320\,z^3-\right.$$
$$\left.\left.41\,668\,149\,600\,z^2+99\,293\,663\,700\,z-47\,220\,482\,925\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ae4q.01

$${}_1F_2\left(\frac{13}{4};-\frac{11}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{97\,692\,469\,875\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(155\,189\,248\,z^7+660\,602\,880\,z^6+903\,168\,000\,z^5+5\,889\,300\,480\,z^4+36\,088\,416\,000\,z^3+\right.\right.\right.$$
$$\left.140\,444\,085\,600\,z^2+206\,380\,629\,000\,z+97\,692\,469\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$4\sqrt{z}\,\left(4\,194\,304\,z^7+366\,477\,312\,z^6-237\,404\,160\,z^5-1\,259\,919\,360\,z^4-8\,503\,911\,360\,z^3-\right.$$
$$\left.44\,809\,783\,200\,z^2-128\,226\,653\,100\,z-97\,692\,469\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+36\,z\left(4\,194\,304\,z^6+9\,175\,040\,z^5+$$
$$\left.\left.31\,395\,840\,z^4+205\,632\,000\,z^3+1\,299\,851\,280\,z^2+5\,563\,630\,800\,z+10\,854\,718\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.ae4r.01

$${}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{21}{4}; -z\right) =$$
$$\frac{1}{97\,692\,469\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-155\,189\,248\,z^7+660\,602\,880\,z^6-903\,168\,000\,z^5+5\,889\,300\,480\,z^4-36\,088\,416\,000\,z^3+\right.\right.\right.$$
$$\left.\left.140\,444\,085\,600\,z^2-206\,380\,629\,000\,z+97\,692\,469\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$4\sqrt{z}\left(4\,194\,304\,z^7-366\,477\,312\,z^6-237\,404\,160\,z^5+1\,259\,919\,360\,z^4-8\,503\,911\,360\,z^3+\right.$$
$$\left.44\,809\,783\,200\,z^2-128\,226\,653\,100\,z+97\,692\,469\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+36\,z\left(4\,194\,304\,z^6-9\,175\,040\,z^5+$$
$$\left.\left.31\,395\,840\,z^4-205\,632\,000\,z^3+1\,299\,851\,280\,z^2-5\,563\,630\,800\,z+10\,854\,718\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.ae4s.01

$${}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{30\,795\,967\,125}\left(\left(-4\,194\,304\,z^7-330\,301\,440\,z^6+237\,404\,160\,z^5+1\,064\,448\,000\,z^4+6\,344\,049\,600\,z^3+\right.\right.$$
$$\left.28\,675\,231\,200\,z^2+65\,423\,011\,500\,z+30\,795\,967\,125\right)\cosh\left(2\sqrt{z}\right)-70\sqrt{z}$$
$$\left.\left(1\,048\,576\,z^6+2\,359\,296\,z^5+6\,414\,336\,z^4+37\,463\,040\,z^3+204\,074\,640\,z^2+696\,049\,200\,z+879\,884\,775\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae4t.01

$${}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{30\,795\,967\,125}\left(\left(4\,194\,304\,z^7-330\,301\,440\,z^6-237\,404\,160\,z^5+1\,064\,448\,000\,z^4-6\,344\,049\,600\,z^3+\right.\right.$$
$$\left.28\,675\,231\,200\,z^2-65\,423\,011\,500\,z+30\,795\,967\,125\right)\cos\left(2\sqrt{z}\right)+70\sqrt{z}$$
$$\left.\left(1\,048\,576\,z^6-2\,359\,296\,z^5+6\,414\,336\,z^4-37\,463\,040\,z^3+204\,074\,640\,z^2-696\,049\,200\,z+879\,884\,775\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ae4u.01

$${}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{17}{4}; z\right) =$$
$$-\frac{1}{4\,652\,022\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2\,097\,152\,z^7+156\,631\,040\,z^6-121\,282\,560\,z^5-380\,782\,080\,z^4-1\,949\,875\,200\,z^3-\right.\right.\right.$$
$$\left.\left.6\,970\,017\,600\,z^2-9\,950\,850\,000\,z-4\,652\,022\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$4\sqrt{z}\left(17\,563\,648\,z^6+23\,838\,720\,z^5+97\,735\,680\,z^4+498\,173\,760\,z^3+2\,317\,442\,400\,z^2+\right.$$
$$\left.6\,229\,232\,100\,z+4\,652\,022\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(524\,288\,z^6+34\,897\,920\,z^5-$$
$$\left.\left.29\,030\,400\,z^4-122\,048\,640\,z^3-642\,161\,520\,z^2-2\,507\,614\,200\,z-4\,652\,022\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.ae4v.01

$${}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{4\,652\,022\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2\,097\,152\,z^7 - 156\,631\,040\,z^6 - 121\,282\,560\,z^5 + 380\,782\,080\,z^4 - 1\,949\,875\,200\,z^3 + 6\,970\,017\,600\,z^2 - 9\,950\,850\,000\,z + 4\,652\,022\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(17\,563\,648\,z^6 - 23\,838\,720\,z^5 + 97\,735\,680\,z^4 - 498\,173\,760\,z^3 + 2\,317\,442\,400\,z^2 - 6\,229\,232\,100\,z + 4\,652\,022\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(524\,288\,z^6 - 34\,897\,920\,z^5 - 29\,030\,400\,z^4 + 122\,048\,640\,z^3 - 642\,161\,520\,z^2 + 2\,507\,614\,200\,z - 4\,652\,022\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae4w.01

$${}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{15}{4}; z\right) = \frac{1}{1\,620\,840\,375}$$
$$\left(63\left(262\,144\,z^6 - 81\,920\,z^5 + 1\,551\,360\,z^4 + 6\,580\,800\,z^3 + 25\,956\,000\,z^2 + 55\,509\,300\,z + 25\,727\,625\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(524\,288\,z^6 + 30\,965\,760\,z^5 - 29\,030\,400\,z^4 - 96\,405\,120\,z^3 - 430\,239\,600\,z^2 - 1\,335\,965\,400\,z - 1\,620\,840\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae4x.01

$${}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{15}{4}; -z\right) = \frac{1}{1\,620\,840\,375}$$
$$\left(63\left(262\,144\,z^6 + 81\,920\,z^5 + 1\,551\,360\,z^4 - 6\,580\,800\,z^3 + 25\,956\,000\,z^2 - 55\,509\,300\,z + 25\,727\,625\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-524\,288\,z^6 + 30\,965\,760\,z^5 + 29\,030\,400\,z^4 - 96\,405\,120\,z^3 + 430\,239\,600\,z^2 - 1\,335\,965\,400\,z + 1\,620\,840\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ae4y.01

$${}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{13}{4}; z\right) = \frac{1}{273\,648\,375\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(5\left(1\,572\,864\,z^6 - 1\,605\,632\,z^5 + 9\,289\,728\,z^4 + 28\,304\,640\,z^3 + 87\,665\,760\,z^2 + 119\,410\,200\,z + 54\,729\,675\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(262\,144\,z^6 + 12\,697\,600\,z^5 - 12\,149\,760\,z^4 - 41\,791\,680\,z^3 - 155\,282\,400\,z^2 - 378\,132\,300\,z - 273\,648\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(1\,900\,544\,z^5 - 4\,730\,880\,z^4 + 12\,821\,760\,z^3 + 47\,370\,960\,z^2 + 159\,213\,600\,z + 273\,648\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae4z.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{13}{4}; -z\right) = \frac{1}{273\,648\,375\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(5\left(1\,572\,864 z^6 + 1\,605\,632 z^5 + 9\,289\,728 z^4 - 28\,304\,640 z^3 + 87\,665\,760 z^2 - 119\,410\,200 z + 54\,729\,675\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z}\left(262\,144 z^6 - 12\,697\,600 z^5 - 12\,149\,760 z^4 + 41\,791\,680 z^3 - 155\,282\,400 z^2 + 378\,132\,300 z - 273\,648\,375\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 4 z\left(1\,900\,544 z^5 + 4\,730\,880 z^4 + 12\,821\,760 z^3 - 47\,370\,960 z^2 + 159\,213\,600 z - 273\,648\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae50.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{11}{4}; z\right) = \frac{1}{108\,056\,025} $$
$$ \left(\left(-262\,144 z^6 - 9\,289\,728 z^5 + 4\,838\,400 z^4 + 41\,791\,680 z^3 + 124\,740\,000 z^2 + 239\,330\,700 z + 108\,056\,025\right)\cosh\left(2\sqrt{z}\right) - \right. $$
$$ \left. 18\sqrt{z}\left(196\,608 z^5 - 716\,800 z^4 + 1\,424\,640 z^3 + 4\,016\,880 z^2 + 10\,584\,000 z + 12\,006\,225\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ae51.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) = \frac{1}{108\,056\,025} $$
$$ \left(\left(-262\,144 z^6 + 9\,289\,728 z^5 + 4\,838\,400 z^4 - 41\,791\,680 z^3 + 124\,740\,000 z^2 - 239\,330\,700 z + 108\,056\,025\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left. 18\sqrt{z}\left(196\,608 z^5 + 716\,800 z^4 + 1\,424\,640 z^3 - 4\,016\,880 z^2 + 10\,584\,000 z - 12\,006\,225\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ae52.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{9}{4}; z\right) = -\frac{1}{21\,049\,875\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(131\,072 z^6 + 3\,522\,560 z^5 - 161\,280 z^4 - 19\,353\,600 z^3 - 38\,404\,800 z^2 - 47\,628\,000 z - 21\,049\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 28\sqrt{z}\left(114\,688 z^5 - 583\,680 z^4 + 838\,080 z^3 + 2\,181\,600 z^2 + 4\,398\,300 z + 3\,007\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(32\,768 z^5 + 688\,128 z^4 + 1\,088\,640 z^3 - 5\,609\,520 z^2 - 13\,948\,200 z - 21\,049\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae53.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{9}{4}; -z\right) = -\frac{1}{21\,049\,875\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(131\,072 z^6 - 3\,522\,560 z^5 - 161\,280 z^4 + 19\,353\,600 z^3 - 38\,404\,800 z^2 + 47\,628\,000 z - 21\,049\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 28\sqrt{z}\left(114\,688 z^5 + 583\,680 z^4 + 838\,080 z^3 - 2\,181\,600 z^2 + 4\,398\,300 z - 3\,007\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 4 z\left(32\,768 z^5 - 688\,128 z^4 + 1\,088\,640 z^3 + 5\,609\,520 z^2 - 13\,948\,200 z + 21\,049\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae54.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{7}{4}; z\right) = \frac{1}{9\,823\,275}\left(\left(704\,512\,z^5 - 4\,515\,840\,z^4 + 3\,084\,480\,z^3 + 15\,271\,200\,z^2 + 22\,963\,500\,z + 9\,823\,275\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(32\,768\,z^5 + 368\,640\,z^4 + 2\,217\,600\,z^3 - 5\,609\,520\,z^2 - 9\,865\,800\,z - 9\,823\,275\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ae55.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{7}{4}; -z\right) = \frac{1}{9\,823\,275}\left(2\sqrt{z}\left(32\,768\,z^5 - 368\,640\,z^4 + 2\,217\,600\,z^3 + 5\,609\,520\,z^2 - 9\,865\,800\,z + 9\,823\,275\right)\sin\left(2\sqrt{z}\right) - \left(704\,512\,z^5 + 4\,515\,840\,z^4 + 3\,084\,480\,z^3 - 15\,271\,200\,z^2 + 22\,963\,500\,z - 9\,823\,275\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.ae56.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{5}{4}; z\right) = \frac{1}{2\,338\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(311\,296\,z^5 - 2\,119\,680\,z^4 + 403\,200\,z^3 + 7\,106\,400\,z^2 + 5\,783\,400\,z + 2\,338\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,384\,z^5 + 12\,288\,z^4 + 1\,834\,560\,z^3 - 2\,570\,400\,z^2 - 3\,912\,300\,z - 2\,338\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36\,z\left(8192\,z^4 - 57\,344\,z^3 - 52\,080\,z^2 + 226\,800\,z + 259\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae57.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{5}{4}; -z\right) = \frac{1}{2\,338\,875\sqrt{2}}\left(\sqrt[4]{z}\left(-\left(311\,296\,z^5 + 2\,119\,680\,z^4 + 403\,200\,z^3 - 7\,106\,400\,z^2 + 5\,783\,400\,z - 2\,338\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,384\,z^5 - 12\,288\,z^4 + 1\,834\,560\,z^3 + 2\,570\,400\,z^2 - 3\,912\,300\,z + 2\,338\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36\,z\left(8192\,z^4 + 57\,344\,z^3 - 52\,080\,z^2 - 226\,800\,z + 259\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae58.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{3}{4}; z\right) = \left(-\frac{16\,384\,z^5}{1\,403\,325} + \frac{2048\,z^4}{18\,711} - \frac{2624\,z^3}{1485} + \frac{224\,z^2}{297} + \frac{92\,z}{33} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(4096\,z^4 - 26\,112\,z^3 - 77\,616\,z^2 + 136\,080\,z + 93\,555\right)\sinh\left(2\sqrt{z}\right)}{93\,555} $$

07.22.03.ae59.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{3}{4}; -z\right) = \left(\frac{16\,384\,z^5}{1\,403\,325} + \frac{2048\,z^4}{18\,711} + \frac{2624\,z^3}{1485} + \frac{224\,z^2}{297} - \frac{92\,z}{33} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(4096\,z^4 + 26\,112\,z^3 - 77\,616\,z^2 - 136\,080\,z + 93\,555\right)\sin\left(2\sqrt{z}\right)}{93\,555} $$

07.22.03.ae5a.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{1}{4}; z\right) = -\frac{1}{467\,775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192z^5 - 124\,416z^4 + 1\,267\,200z^3 + 151\,200z^2 - 2\,041\,200z - 467\,775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(23\,552z^4 - 93\,888z^3 - 1\,058\,400z^2 + 831\,600z + 467\,775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(2048z^4 - 36\,480z^3 + 329\,616z^2 + 378\,000z - 467\,775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae5b.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) = \frac{1}{467\,775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192z^5 + 124\,416z^4 + 1\,267\,200z^3 - 151\,200z^2 - 2\,041\,200z + 467\,775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(23\,552z^4 + 93\,888z^3 - 1\,058\,400z^2 - 831\,600z + 467\,775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(2048z^4 + 36\,480z^3 + 329\,616z^2 - 378\,000z - 467\,775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae5c.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) = \frac{1}{467\,775}\left(15\left(1024z^4 + 3136z^3 - 98\,784z^2 - 11\,340z + 31\,185\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(2048z^4 - 44\,160z^3 + 257\,040z^2 + 793\,800z - 467\,775\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ae5d.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) = \frac{1}{467\,775}\left(15\left(1024z^4 - 3136z^3 - 98\,784z^2 + 11\,340z + 31\,185\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(2048z^4 + 44\,160z^3 + 257\,040z^2 - 793\,800z - 467\,775\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ae5e.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) = \frac{1}{935\,550\sqrt{2}}\left(\sqrt[4]{z}\left(2\left(4096z^4 + 80\,640z^3 - 712\,800z^2 - 477\,225z + 467\,775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(8192z^4 - 185\,856z^3 + 380\,160z^2 + 5\,140\,800z - 609\,525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6z\left(1024z^3 + 34\,752z^2 - 241\,920z - 420\,525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae5f.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{3}{4}; -z\right) = -\frac{1}{935\,550\sqrt{2}}\left(\sqrt[4]{z}\left(-2\left(4096z^4 - 80\,640z^3 - 712\,800z^2 + 477\,225z + 467\,775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(8192z^4 + 185\,856z^3 + 380\,160z^2 - 5\,140\,800z - 609\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6z\left(1024z^3 - 34\,752z^2 - 241\,920z + 420\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae5g.01

$${}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) =$$

$$\left(\frac{1024\,z^4}{467\,775} - \frac{64\,z^3}{1485} - \frac{160\,z^2}{891} + \frac{84\,z}{55} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(256\,z^3 - 38\,640\,z^2 + 90\,720\,z + 467\,775\right)\sinh\left(2\sqrt{z}\right)}{467\,775}$$

07.22.03.ae5h.01

$${}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) =$$

$$\left(\frac{1024\,z^4}{467\,775} + \frac{64\,z^3}{1485} - \frac{160\,z^2}{891} - \frac{84\,z}{55} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(256\,z^3 + 38\,640\,z^2 + 90\,720\,z - 467\,775\right)\sin\left(2\sqrt{z}\right)}{467\,775}$$

07.22.03.ae5i.01

$${}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{7}{4}; z\right) =$$

$$\frac{1}{9\,979\,200\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\,\left(16\,384\,z^4 - 204\,800\,z^3 - 3\,110\,400\,z^2 + 5\,907\,600\,z + 10\,210\,725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.$$
$$\left(-180\,224\,z^4 + 5\,652\,480\,z^3 + 11\,404\,800\,z^2 - 56\,624\,400\,z - 15\,663\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.2\sqrt{z}\,\left(16\,384\,z^4 - 178\,176\,z^3 - 3\,847\,680\,z^2 + 3\,250\,800\,z + 15\,663\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.ae5j.01

$${}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{7}{4}; -z\right) =$$

$$\frac{1}{9\,979\,200\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\,\left(16\,384\,z^4 + 204\,800\,z^3 - 3\,110\,400\,z^2 - 5\,907\,600\,z + 10\,210\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.$$
$$\left(-180\,224\,z^4 - 5\,652\,480\,z^3 + 11\,404\,800\,z^2 + 56\,624\,400\,z - 15\,663\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.2\sqrt{z}\,\left(16\,384\,z^4 + 178\,176\,z^3 - 3\,847\,680\,z^2 - 3\,250\,800\,z + 15\,663\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.ae5k.01

$${}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{9}{4}; z\right) =$$

$$\frac{1}{93\,555}\left(21\left(-64\,z^3 + 800\,z^2 + 7740\,z + 4455\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(128\,z^3 + 336\,z^2 - 37\,800\,z - 93\,555\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae5l.01

$${}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{9}{4}; -z\right) =$$

$$\frac{1}{93\,555}\left(21\left(64\,z^3 + 800\,z^2 - 7740\,z + 4455\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(128\,z^3 - 336\,z^2 - 37\,800\,z + 93\,555\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ae5m.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{11}{4}; z\right) = \frac{1}{45\,619\,200\sqrt{2}\, z^{5/4}}\left(\left(10\sqrt{z}\left(-196\,608 z^4 + 16\,384 z^3 + 18\,558\,720 z^2 + 47\,524\,320 z + 30\,282\,525\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(524\,288 z^5 + 12\,124\,160 z^4 - 100\,761\,600 z^3 - 831\,686\,400 z^2 - 1\,336\,608\,000 z - 454\,237\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-1\,048\,576 z^4 - 1\,720\,320 z^3 + 103\,968\,000 z^2 + 367\,567\,200 z + 454\,237\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae5n.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{11}{4}; -z\right) = \frac{1}{45\,619\,200\sqrt{2}\, z^{5/4}}\left(\left(10\sqrt{z}\left(196\,608 z^4 + 16\,384 z^3 - 18\,558\,720 z^2 + 47\,524\,320 z - 30\,282\,525\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(524\,288 z^5 - 12\,124\,160 z^4 - 100\,761\,600 z^3 + 831\,686\,400 z^2 - 1\,336\,608\,000 z + 454\,237\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-1\,048\,576 z^4 + 1\,720\,320 z^3 + 103\,968\,000 z^2 - 367\,567\,200 z + 454\,237\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae5o.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) = \left(\frac{64 z^3}{10\,395} + \frac{32 z^2}{99} + \frac{20 z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16 z^2 + 240 z + 495\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.ae5p.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) = \left(-\frac{64 z^3}{10\,395} + \frac{32 z^2}{99} - \frac{20 z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(16 z^2 - 240 z + 495\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.ae5q.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) = \frac{1}{132\,710\,400\sqrt{2}\, z^{9/4}}\left(\left(2\sqrt{z}\left(1\,048\,576 z^5 + 90\,112\,000 z^4 + 1\,387\,499\,520 z^3 + 10\,339\,142\,400 z^2 + 41\,184\,234\,000 z + 34\,976\,316\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(55\,574\,528 z^5 + 1\,709\,506\,560 z^4 + 17\,843\,097\,600 z^3 + 106\,126\,675\,200 z^2 + 283\,444\,434\,000 z + 104\,928\,949\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 + 97\,320\,960 z^4 + 1\,628\,467\,200 z^3 + 13\,098\,758\,400 z^2 + 59\,596\,009\,200 z + 104\,928\,949\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae5r.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) = \frac{1}{132\,710\,400\sqrt{2}\, z^{9/4}} $$
$$ \left(\left(2\sqrt{z}\left(-1\,048\,576 z^5 + 90\,112\,000 z^4 - 1\,387\,499\,520 z^3 + 10\,339\,142\,400 z^2 - 41\,184\,234\,000 z + 34\,976\,316\,375\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(55\,574\,528 z^5 - 1\,709\,506\,560 z^4 + 17\,843\,097\,600 z^3 - 106\,126\,675\,200 z^2 + \right. $$
$$ 283\,444\,434\,000 z - 104\,928\,949\,125\Big) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 - 97\,320\,960 z^4 + \right. $$
$$ \left.\left. 1\,628\,467\,200 z^3 - 13\,098\,758\,400 z^2 + 59\,596\,009\,200 z - 104\,928\,949\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.ae5s.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) = \frac{1}{21\,799\,895\,040 z^{13/4}} $$
$$ \left(13 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} - 68\,157\,440 z^5 - 578\,027\,520 z^{9/2} - 3\,406\,233\,600 z^4 - 15\,715\,123\,200 z^{7/2} - \right.\right.\right. $$
$$ 60\,294\,205\,440 z^3 - 196\,637\,414\,400 z^{5/2} - 540\,752\,889\,600 z^2 - 1\,216\,694\,001\,600 z^{3/2} - 2\,129\,214\,502\,800 z - $$
$$ 2\,661\,518\,128\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} - 68\,157\,440 z^5 + 578\,027\,520 z^{9/2} - 3\,406\,233\,600 z^4 + \right. $$
$$ 15\,715\,123\,200 z^{7/2} - 60\,294\,205\,440 z^3 + 196\,637\,414\,400 z^{5/2} - 540\,752\,889\,600 z^2 + 1\,216\,694\,001\,600 $$
$$ \left.\left. z^{3/2} - 2\,129\,214\,502\,800 z + 2\,661\,518\,128\,500\sqrt{z} - 1\,996\,138\,596\,375\right) - 1\,996\,138\,596\,375\right) + $$
$$ \left.\left. 1\,996\,138\,596\,375 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 1\,996\,138\,596\,375 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ae5t.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) = -\frac{1}{5\,449\,973\,760 z^{13/4}} $$
$$ \left(13\left(1\,996\,138\,596\,375\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(5\left(13\,631\,488 z^5 - 681\,246\,720 z^4 + 12\,058\,841\,088 z^3 - 108\,150\,577\,920\right.\right.\right. $$
$$ \left. z^2 + 425\,842\,900\,560 z - 399\,227\,719\,275\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(1\,048\,576 z^5 - 144\,506\,880 z^4 + \right. $$
$$ \left.\left.\left. 3\,928\,780\,800 z^3 - 49\,159\,353\,600 z^2 + 304\,173\,500\,400 z - 665\,379\,532\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\Bigg) $$

07.22.03.ae5u.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{283\,115\,520\sqrt{2}\, z^{13/4}}\left(\left(-2\sqrt{z}\left(159\,383\,552 z^5 + 11\,175\,198\,720 z^4 + 274\,682\,019\,840 z^3 + 3\,224\,967\,782\,400 z^2 + \right.\right. $$
$$ 15\,989\,173\,200\,000 z + 14\,235\,360\,764\,625\Big) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ \left(33\,554\,432 z^6 + 6\,549\,405\,696 z^5 + 256\,728\,760\,320 z^4 + 4\,451\,082\,854\,400 z^3 + 36\,792\,541\,094\,400 z^2 + \right. $$
$$ 113\,043\,454\,524\,000 z + 42\,706\,082\,293\,875\Big) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\left(54\,525\,952 z^5 + 4\,012\,113\,920 z^4 + \right. $$
$$ \left.\left. 103\,382\,630\,400 z^3 + 1\,292\,054\,400\,000 z^2 + 7\,312\,381\,876\,800 z + 14\,235\,360\,764\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.ae5v.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) = \frac{1}{283\,115\,520\sqrt{2}\, z^{13/4}}\left(\left(2\sqrt{z}\left(-159\,383\,552 z^5 + 11\,175\,198\,720 z^4 - 274\,682\,019\,840 z^3 + 3\,224\,967\,782\,400 z^2 - 15\,989\,173\,200\,000 z + 14\,235\,360\,764\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-33\,554\,432 z^6 + 6\,549\,405\,696 z^5 - 256\,728\,760\,320 z^4 + 4\,451\,082\,854\,400 z^3 - 36\,792\,541\,094\,400 z^2 + 113\,043\,454\,524\,000 z - 42\,706\,082\,293\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(54\,525\,952 z^5 - 4\,012\,113\,920 z^4 + 103\,382\,630\,400 z^3 - 1\,292\,054\,400\,000 z^2 + 7\,312\,381\,876\,800 z - 14\,235\,360\,764\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae5w.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) = \frac{1}{1\,395\,193\,282\,560 z^{17/4}}\left(221 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(67\,108\,864 z^6 + 1\,509\,949\,440 z^{11/2} + 17\,930\,649\,600 z^5 + 148\,635\,648\,000 z^{9/2} + 957\,461\,299\,200 z^4 + 5\,033\,917\,808\,640 z^{7/2} + 22\,023\,390\,412\,800 z^3 + 80\,228\,065\,075\,200 z^{5/2} + 240\,094\,282\,982\,400 z^2 + 574\,279\,568\,755\,200 z^{3/2} + 1\,047\,573\,535\,377\,600 z + 1\,349\,389\,691\,149\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^6 - 1\,509\,949\,440 z^{11/2} + 17\,930\,649\,600 z^5 - 148\,635\,648\,000 z^{9/2} + 957\,461\,299\,200 z^4 - 5\,033\,917\,808\,640 z^{7/2} + 22\,023\,390\,412\,800 z^3 - 80\,228\,065\,075\,200 z^{5/2} + 240\,094\,282\,982\,400 z^2 - 574\,279\,568\,755\,200 z^{3/2} + 1\,047\,573\,535\,377\,600 z - 1\,349\,389\,691\,149\,500\sqrt{z} + 1\,012\,042\,268\,362\,125\right) + 1\,012\,042\,268\,362\,125\right) + 1\,996\,138\,596\,375 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 507)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 1\,996\,138\,596\,375 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 507)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ae5x.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) = \frac{1}{348\,798\,320\,640 z^{17/4}}\left(221\left(2\sqrt[4]{z}\left(\left(67\,108\,864 z^6 - 17\,930\,649\,600 z^5 + 957\,461\,299\,200 z^4 - 22\,023\,390\,412\,800 z^3 + 240\,094\,282\,982\,400 z^2 - 1\,047\,573\,535\,377\,600 z + 1\,012\,042\,268\,362\,125\right)\cos\left(2\sqrt{z}\right) - 180\sqrt{z}\left(8\,388\,608 z^5 - 825\,753\,600 z^4 + 27\,966\,210\,048 z^3 - 445\,711\,472\,640 z^2 + 3\,190\,442\,048\,640 z - 7\,496\,609\,395\,275\right)\sin\left(2\sqrt{z}\right)\right) - 1\,996\,138\,596\,375\sqrt{\pi}\,(16z + 507) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right) $$

07.22.03.ae5y.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) = \frac{1}{9\,059\,696\,640\,\sqrt{2}\,z^{17/4}}\left(19\left(2\sqrt{z}\,\left(67\,108\,864\,z^6 + 23\,026\,728\,960\,z^5 + 1\,563\,871\,150\,080\,z^4 + 44\,763\,655\,372\,800\,z^3 + 598\,634\,644\,608\,000\,z^2 + 3\,221\,258\,778\,738\,000\,z + 2\,918\,248\,956\,748\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(6\,912\,212\,992\,z^6 + 887\,221\,125\,120\,z^5 + 38\,503\,376\,486\,400\,z^4 + 774\,653\,799\,628\,800\,z^3 + 7\,096\,634\,633\,088\,000\,z^2 + 23\,004\,342\,995\,634\,000\,z + 8\,754\,746\,870\,244\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(67\,108\,864\,z^6 + 23\,907\,532\,800\,z^5 + 1\,681\,096\,704\,000\,z^4 + 50\,047\,429\,017\,600\,z^3 + 710\,516\,219\,212\,800\,z^2 + 4\,327\,549\,672\,446\,000\,z + 8\,754\,746\,870\,244\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae5z.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) = \frac{1}{9\,059\,696\,640\,\sqrt{2}\,z^{17/4}}\left(19\left(2\sqrt{z}\,\left(67\,108\,864\,z^6 - 23\,026\,728\,960\,z^5 + 1\,563\,871\,150\,080\,z^4 - 44\,763\,655\,372\,800\,z^3 + 598\,634\,644\,608\,000\,z^2 - 3\,221\,258\,778\,738\,000\,z + 2\,918\,248\,956\,748\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-6\,912\,212\,992\,z^6 + 887\,221\,125\,120\,z^5 - 38\,503\,376\,486\,400\,z^4 + 774\,653\,799\,628\,800\,z^3 - 7\,096\,634\,633\,088\,000\,z^2 + 23\,004\,342\,995\,634\,000\,z - 8\,754\,746\,870\,244\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(67\,108\,864\,z^6 - 23\,907\,532\,800\,z^5 + 1\,681\,096\,704\,000\,z^4 - 50\,047\,429\,017\,600\,z^3 + 710\,516\,219\,212\,800\,z^2 - 4\,327\,549\,672\,446\,000\,z + 8\,754\,746\,870\,244\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{13}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.ae60.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) = \frac{1}{64\,391\,567\,625}\left(\left(-8\,388\,608\,z^7 - 625\,999\,872\,z^6 + 557\,383\,680\,z^5 + 2\,275\,983\,360\,z^4 + 13\,376\,119\,680\,z^3 + 60\,137\,154\,000\,z^2 + 136\,870\,965\,000\,z + 64\,391\,567\,625\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(24\,117\,248\,z^6 + 30\,408\,704\,z^5 + 162\,570\,240\,z^4 + 926\,069\,760\,z^3 + 5\,003\,737\,200\,z^2 + 17\,005\,180\,500\,z + 21\,463\,855\,875\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ae61.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{23}{4}; -z\right) = \frac{1}{64\,391\,567\,625}\left(\left(8\,388\,608\,z^7 - 625\,999\,872\,z^6 - 557\,383\,680\,z^5 + 2\,275\,983\,360\,z^4 - 13\,376\,119\,680\,z^3 + 60\,137\,154\,000\,z^2 - 136\,870\,965\,000\,z + 64\,391\,567\,625\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(24\,117\,248\,z^6 - 30\,408\,704\,z^5 + 162\,570\,240\,z^4 - 926\,069\,760\,z^3 + 5\,003\,737\,200\,z^2 - 17\,005\,180\,500\,z + 21\,463\,855\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ae62.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{21}{4}; z\right) = -\frac{1}{8\,881\,133\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4\,194\,304 z^7 + 330\,301\,440 z^6 - 185\,794\,560 z^5 - 711\,290\,880 z^4 - 3\,694\,766\,400 z^3 - 13\,275\,381\,600 z^2 - 18\,984\,010\,500 z - 8\,881\,133\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(35\,651\,584 z^6 + 82\,575\,360 z^5 + 179\,343\,360 z^4 + 938\,856\,960 z^3 + 4\,403\,646\,000 z^2 + 11\,879\,103\,600 z + 8\,881\,133\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(1\,048\,576 z^6 + 73\,924\,608 z^5 - 51\,609\,600 z^4 - 227\,957\,760 z^3 - 1\,215\,835\,920 z^2 - 4\,774\,196\,700 z - 8\,881\,133\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae63.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{1}{8\,881\,133\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4\,194\,304 z^7 - 330\,301\,440 z^6 - 185\,794\,560 z^5 + 711\,290\,880 z^4 - 3\,694\,766\,400 z^3 + 13\,275\,381\,600 z^2 - 18\,984\,010\,500 z + 8\,881\,133\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(35\,651\,584 z^6 - 82\,575\,360 z^5 + 179\,343\,360 z^4 - 938\,856\,960 z^3 + 4\,403\,646\,000 z^2 - 11\,879\,103\,600 z + 8\,881\,133\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-1\,048\,576 z^6 + 73\,924\,608 z^5 - 51\,609\,600 z^4 + 227\,957\,760 z^3 - 1\,215\,835\,920 z^2 + 4\,774\,196\,700 z + 8\,881\,133\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae64.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{19}{4}; z\right) = \frac{1}{2\,799\,633\,375}\left(3\left(11\,534\,336 z^6 + 27\,525\,120 z^5 + 49\,029\,120 z^4 + 229\,340\,160 z^3 + 928\,897\,200 z^2 + 2\,008\,314\,000 z + 933\,211\,125\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^6 + 73\,924\,608 z^5 - 38\,707\,200 z^4 - 155\,796\,480 z^3 - 725\,986\,800 z^2 - 2\,292\,097\,500 z - 2\,799\,633\,375\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ae65.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{2\,799\,633\,375}\left(3\left(11\,534\,336 z^6 - 27\,525\,120 z^5 + 49\,029\,120 z^4 - 229\,340\,160 z^3 + 928\,897\,200 z^2 - 2\,008\,314\,000 z + 933\,211\,125\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-1\,048\,576 z^6 + 73\,924\,608 z^5 + 38\,707\,200 z^4 - 155\,796\,480 z^3 + 725\,986\,800 z^2 - 2\,292\,097\,500 z + 2\,799\,633\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ae66.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{17}{4}; z\right) = \frac{1}{422\,911\,125\sqrt{2}} \left(\sqrt[4]{z}\left(5\left(3\,407\,872\,z^6 + 11\,354\,112\,z^5 + 10\,054\,656\,z^4 + 40\,996\,800\,z^3 + 132\,930\,720\,z^2 + 183\,537\,900\,z + 84\,582\,225\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(524\,288\,z^6 + 34\,897\,920\,z^5 - 16\,128\,000\,z^4 - 57\,490\,560\,z^3 - \right. $$
$$ \left. 231\,238\,800\,z^2 - 579\,360\,600\,z - 422\,911\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 36\,z\left(458\,752\,z^5 + 716\,800\,z^4 + 1\,793\,280\,z^3 + 7\,609\,680\,z^2 + 26\,781\,300\,z + 46\,990\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae67.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{17}{4}; -z\right) = \frac{1}{422\,911\,125\sqrt{2}} \left(\sqrt[4]{z}\left(5\left(3\,407\,872\,z^6 - 11\,354\,112\,z^5 + 10\,054\,656\,z^4 - 40\,996\,800\,z^3 + 132\,930\,720\,z^2 - 183\,537\,900\,z + 84\,582\,225\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(524\,288\,z^6 - 34\,897\,920\,z^5 - 16\,128\,000\,z^4 + 57\,490\,560\,z^3 - \right. $$
$$ \left. 231\,238\,800\,z^2 + 579\,360\,600\,z - 422\,911\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 36\,z\left(458\,752\,z^5 - 716\,800\,z^4 + 1\,793\,280\,z^3 - 7\,609\,680\,z^2 + 26\,781\,300\,z - 46\,990\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae68.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{15}{4}; z\right) = \frac{1}{147\,349\,125} \left(\left(-524\,288\,z^6 - 30\,965\,760\,z^5 + 16\,128\,000\,z^4 + 47\,053\,440\,z^3 + 161\,254\,800\,z^2 + 323\,076\,600\,z + 147\,349\,125\right)\cosh\left(2\sqrt{z}\right) - \right. $$
$$ \left. 2\sqrt{z}\left(3\,997\,696\,z^5 + 6\,451\,200\,z^4 + 12\,337\,920\,z^3 + 44\,830\,800\,z^2 + 126\,611\,100\,z + 147\,349\,125\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ae69.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{147\,349\,125} \left(\left(-524\,288\,z^6 + 30\,965\,760\,z^5 + 16\,128\,000\,z^4 - 47\,053\,440\,z^3 + 161\,254\,800\,z^2 - 323\,076\,600\,z + 147\,349\,125\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\left(-3\,997\,696\,z^5 + 6\,451\,200\,z^4 - 12\,337\,920\,z^3 + 44\,830\,800\,z^2 - 126\,611\,100\,z + 147\,349\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ae6a.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{13}{4}; z\right) = -\frac{1}{24\,877\,125\sqrt{2}} \left(\sqrt[4]{z}\left(\left(262\,144\,z^6 + 14\,565\,376\,z^5 - 8\,524\,800\,z^4 - 15\,612\,480\,z^3 - 42\,400\,800\,z^2 - 55\,282\,500\,z - 24\,877\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(1\,900\,544\,z^5 + 1\,634\,304\,z^4 + 5\,218\,560\,z^3 + 15\,865\,200\,z^2 + 35\,380\,800\,z + 24\,877\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(65\,536\,z^5 + 3\,182\,592\,z^4 - 1\,900\,800\,z^3 - 5\,250\,960\,z^2 - 15\,479\,100\,z - 24\,877\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae6b.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{13}{4}; -z\right) = -\frac{1}{24\,877\,125\sqrt{2}} \left(\sqrt[4]{z}\left(\left(262\,144 z^6 - 14\,565\,376 z^5 - 8\,524\,800 z^4 + 15\,612\,480 z^3 - 42\,400\,800 z^2 + 55\,282\,500 z - 24\,877\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,900\,544 z^5 - 1\,634\,304 z^4 + 5\,218\,560 z^3 - 15\,865\,200 z^2 + 35\,380\,800 z - 24\,877\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-65\,536 z^5 + 3\,182\,592 z^4 + 1\,900\,800 z^3 - 5\,250\,960 z^2 + 15\,479\,100 z - 24\,877\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae6c.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{11}{4}; z\right) = \frac{1}{9\,823\,275}\left(9\left(196\,608 z^5 - 102\,400 z^4 + 579\,840 z^3 + 1\,400\,400 z^2 + 2\,469\,600 z + 1\,091\,475\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(65\,536 z^5 + 2\,764\,800 z^4 - 1\,900\,800 z^3 - 3\,924\,720 z^2 - 9\,128\,700 z - 9\,823\,275\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ae6d.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{11}{4}; -z\right) = \frac{1}{9\,823\,275}\left(2\sqrt{z}\left(65\,536 z^5 - 2\,764\,800 z^4 - 1\,900\,800 z^3 + 3\,924\,720 z^2 - 9\,128\,700 z + 9\,823\,275\right)\sin\left(2\sqrt{z}\right) - 9\left(196\,608 z^5 + 102\,400 z^4 + 579\,840 z^3 - 1\,400\,400 z^2 + 2\,469\,600 z - 1\,091\,475\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.ae6e.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{9}{4}; z\right) = \frac{1}{1\,913\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(835\,584 z^5 - 911\,360 z^4 + 2\,566\,080 z^3 + 3\,823\,200 z^2 + 4\,441\,500 z + 1\,913\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,768 z^5 + 1\,089\,536 z^4 - 723\,840 z^3 - 1\,630\,800 z^2 - 2\,910\,600 z - 1\,913\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(200\,704 z^4 - 453\,120 z^3 + 663\,120 z^2 + 1\,379\,700 z + 1\,913\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae6f.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) = \frac{1}{1\,913\,625\sqrt{2}}\left(\sqrt[4]{z}\left(-\left(835\,584 z^5 + 911\,360 z^4 + 2\,566\,080 z^3 - 3\,823\,200 z^2 + 4\,441\,500 z - 1\,913\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,768 z^5 - 1\,089\,536 z^4 - 723\,840 z^3 + 1\,630\,800 z^2 - 2\,910\,600 z + 1\,913\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(200\,704 z^4 + 453\,120 z^3 + 663\,120 z^2 - 1\,379\,700 z + 1\,913\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae6g.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) = \frac{1}{893\,025}\left(\left(-32\,768\,z^5 - 737\,280\,z^4 + 86\,400\,z^3 + 1\,630\,800\,z^2 + 2\,154\,600\,z + 893\,025\right)\cosh\left(2\sqrt{z}\right) - 90\sqrt{z}\left(4096\,z^4 - 12\,800\,z^3 + 14\,736\,z^2 + 21\,420\,z + 19\,845\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae6h.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) = \frac{1}{893\,025}\left(\left(32\,768\,z^5 - 737\,280\,z^4 - 86\,400\,z^3 + 1\,630\,800\,z^2 - 2\,154\,600\,z + 893\,025\right)\cos\left(2\sqrt{z}\right) + 90\sqrt{z}\left(4096\,z^4 + 12\,800\,z^3 + 14\,736\,z^2 - 21\,420\,z + 19\,845\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ae6i.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{5}{4}; z\right) = -\frac{1}{212\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^5 + 256\,000\,z^4 + 135\,360\,z^3 - 799\,200\,z^2 - 548\,100\,z - 212\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 20\sqrt{z}\left(16\,384\,z^4 - 67\,584\,z^3 + 54\,000\,z^2 + 75\,600\,z + 42\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(4096\,z^4 + 44\,544\,z^3 + 123\,120\,z^2 - 207\,900\,z - 212\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae6j.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{5}{4}; -z\right) = \frac{1}{212\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^5 - 256\,000\,z^4 + 135\,360\,z^3 + 799\,200\,z^2 - 548\,100\,z + 212\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 20\sqrt{z}\left(16\,384\,z^4 + 67\,584\,z^3 + 54\,000\,z^2 - 75\,600\,z + 42\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(4096\,z^4 - 44\,544\,z^3 + 123\,120\,z^2 + 207\,900\,z - 212\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae6k.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) = \frac{1}{127\,575}\left(\left(69\,632\,z^4 - 336\,384\,z^3 + 32\,400\,z^2 + 378\,000\,z + 127\,575\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(4096\,z^4 + 13\,824\,z^3 + 199\,440\,z^2 - 207\,900\,z - 127\,575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae6l.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{1}{127\,575}\left(\left(69\,632\,z^4 + 336\,384\,z^3 + 32\,400\,z^2 - 378\,000\,z + 127\,575\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4096\,z^4 - 13\,824\,z^3 + 199\,440\,z^2 + 207\,900\,z - 127\,575\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ae6m.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) = \frac{1}{42\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(29\,696\,z^4 - 141\,120\,z^3 - 64\,800\,z^2 + 207\,900\,z + 42\,525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048\,z^4 - 8832\,z^3 + 140\,400\,z^2 - 75\,600\,z - 42\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 108\,z\left(256\,z^3 - 1168\,z^2 - 2100\,z + 1575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae6n.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{42\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(29\,696 z^4 + 141\,120 z^3 - 64\,800 z^2 - 207\,900 z + 42\,525\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048 z^4 + 8832 z^3 + \right.\right.\right.$$
$$\left.\left.\left. 140\,400 z^2 + 75\,600 z - 42\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 108 z\left(256 z^3 + 1168 z^2 - 2100 z - 1575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae6o.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) = \frac{1}{42\,525}\left(\left(-2048 z^4 + 22\,656 z^3 - 157\,680 z^2 - 37\,800 z + 42\,525\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left. 6\sqrt{z}\left(-1792 z^3 + 5520 z^2 + 31\,500 z - 14\,175\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae6p.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) = \frac{1}{42\,525}\left(\left(-2048 z^4 - 22\,656 z^3 - 157\,680 z^2 + 37\,800 z + 42\,525\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left. 6\sqrt{z}\left(-1792 z^3 - 5520 z^2 + 31\,500 z + 14\,175\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ae6q.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) = -\frac{1}{42\,525\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(1024 z^4 - 14\,400 z^3 + 64\,800 z^2 + 55\,350 z - 42\,525\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(7168 z^3 + 8640 z^2 - 259\,200 z + 20\,925\right)\right.\right.$$
$$\left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2 z\left(512 z^3 - 7968 z^2 + 29\,160 z + 64\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae6r.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) = -\frac{1}{42\,525\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(1024 z^4 + 14\,400 z^3 + 64\,800 z^2 - 55\,350 z - 42\,525\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(7168 z^3 - 8640 z^2 - 259\,200 z - 20\,925\right)\right.\right.$$
$$\left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2 z\left(512 z^3 + 7968 z^2 + 29\,160 z - 64\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae6s.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) =$$
$$\frac{1}{42\,525}\left(\left(-768 z^3 - 14\,160 z^2 + 60\,480 z + 42\,525\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256 z^3 - 4080 z^2 + 3780 z + 42\,525\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae6t.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{5}{4}; -z\right) =$$
$$\frac{1}{42\,525}\left(3\left(256 z^3 - 4720 z^2 - 20\,160 z + 14\,175\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256 z^3 + 4080 z^2 + 3780 z - 42\,525\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ae6u.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{7}{4}; z\right) = \frac{1}{453\,600\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(1024z^3 - 165\,888z^2 + 200\,880z + 435\,645\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,384z^4 + 215\,040z^3 + 787\,968z^2 - 2\,291\,760z - 626\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(1024z^3 - 63\,744z^2 + 15\,984z + 208\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae6v.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{7}{4}; -z\right) = \frac{1}{453\,600\sqrt{2}\,\sqrt[4]{z}}\left(\left(-2\sqrt{z}\left(1024z^3 + 165\,888z^2 + 200\,880z - 435\,645\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,384z^4 - 215\,040z^3 + 787\,968z^2 + 2\,291\,760z - 626\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(1024z^3 + 63\,744z^2 + 15\,984z - 208\,845\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae6w.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{9}{4}; z\right) = \left(-\frac{128z^3}{8505} + \frac{16z^2}{189} + \frac{136z}{81} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(176z^2 - 2940z - 8505\right)\sinh\left(2\sqrt{z}\right)}{8505} $$

07.22.03.ae6x.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = \frac{\left(128z^3 + 720z^2 - 14\,280z + 8505\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(176z^2 + 2940z - 8505\right)\sin\left(2\sqrt{z}\right)}{8505} $$

07.22.03.ae6y.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = \frac{1}{2\,073\,600\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(-32\,768z^4 - 180\,224z^3 + 3\,421\,440z^2 + 8\,674\,560z + 5\,221\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(655\,360z^4 - 2\,605\,056z^3 - 31\,207\,680z^2 - 46\,781\,280z - 15\,663\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-32\,768z^4 - 270\,336z^3 + 3\,638\,016z^2 + 13\,366\,080z + 15\,663\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae6z.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = \frac{1}{2\,073\,600\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(32\,768z^4 - 180\,224z^3 - 3\,421\,440z^2 + 8\,674\,560z - 5\,221\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-655\,360z^4 - 2\,605\,056z^3 + 31\,207\,680z^2 - 46\,781\,280z + 15\,663\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-32\,768z^4 + 270\,336z^3 + 3\,638\,016z^2 - 13\,366\,080z + 15\,663\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae70.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = \left(\frac{16\,z^2}{63} + \frac{16\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ae71.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = \left(\frac{16\,z^2}{63} - \frac{16\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.ae72.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{15}{4}; z\right) = -\frac{1}{66\,355\,200\sqrt{2}\,z^{9/4}}$$
$$\left(11\left(-2\sqrt{z}\left(2\,555\,904\,z^4 + 45\,363\,200\,z^3 + 321\,719\,040\,z^2 + 1\,253\,070\,000\,z + 1\,059\,888\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1\,048\,576\,z^5 + 54\,329\,344\,z^4 + 570\,961\,920\,z^3 + 3\,261\,323\,520\,z^2 + 8\,604\,414\,000\,z + 3\,179\,665\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(2\,686\,976\,z^4 + 52\,875\,264\,z^3 + 409\,893\,120\,z^2 + 1\,821\,128\,400\,z + 3\,179\,665\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae73.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{15}{4}; -z\right) =$$
$$\frac{1}{66\,355\,200\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\left(2\,555\,904\,z^4 - 45\,363\,200\,z^3 + 321\,719\,040\,z^2 - 1\,253\,070\,000\,z + 1\,059\,888\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1\,048\,576\,z^5 - 54\,329\,344\,z^4 + 570\,961\,920\,z^3 - 3\,261\,323\,520\,z^2 + 8\,604\,414\,000\,z - 3\,179\,665\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(2\,686\,976\,z^4 - 52\,875\,264\,z^3 + 409\,893\,120\,z^2 - 1\,821\,128\,400\,z + 3\,179\,665\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae74.01

$${}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{17}{4}; z\right) =$$
$$-\frac{1}{990\,904\,320\,z^{13/4}}\left(13\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1\,048\,576\,z^5 + 13\,369\,344\,z^{9/2} + 91\,029\,504\,z^4 + 441\,925\,632\,z^{7/2} + 1\,719\,152\,640\,z^3 + 5\,618\,211\,840\,z^{5/2} + 15\,450\,082\,560\,z^2 + 34\,762\,685\,760\,z^{3/2} + 60\,834\,700\,080\,z + 76\,043\,375\,100\sqrt{z} + e^{4\sqrt{z}}\left(1\,048\,576\,z^5 - 13\,369\,344\,z^{9/2} + 91\,029\,504\,z^4 - 441\,925\,632\,z^{7/2} + 1\,719\,152\,640\,z^3 - 5\,618\,211\,840\,z^{5/2} + 15\,450\,082\,560\,z^2 - 34\,762\,685\,760\,z^{3/2} + 60\,834\,700\,080\,z - 76\,043\,375\,100\sqrt{z} + 57\,032\,531\,325\right) + 57\,032\,531\,325\right) - 57\,032\,531\,325\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 57\,032\,531\,325\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ae75.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = $$
$$ -\frac{1}{247\,726\,080\, z^{13/4}}\left(13\left(57\,032\,531\,325\,\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(\left(1\,048\,576\, z^5 - 91\,029\,504\, z^4 + 1\,719\,152\,640\, z^3 - \right.\right.\right. $$
$$ \left. 15\,450\,082\,560\, z^2 + 60\,834\,700\,080\, z - 57\,032\,531\,325\right)\cos\left(2\sqrt{z}\right) - $$
$$ \left.\left.\left. 12\sqrt{z}\,\left(1\,114\,112\, z^4 - 36\,827\,136\, z^3 + 468\,184\,320\, z^2 - 2\,896\,890\,480\, z + 6\,336\,947\,925\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.ae76.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) = -\frac{1}{141\,557\,760\sqrt{2}\; z^{13/4}} $$
$$ \left(11\left(2\sqrt{z}\,\left(2\,097\,152\, z^5 + 262\,799\,360\, z^4 + 7\,145\,594\,880\, z^3 + 86\,077\,555\,200\, z^2 + 431\,223\,156\,000\, z + 384\,739\,480\,125\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(130\,023\,424\, z^5 + 6\,444\,810\,240\, z^4 + 117\,478\,932\,480\, z^3 + 986\,951\,347\,200\, z^2 + \right. $$
$$ 3\,052\,478\,520\,000\, z + 1\,154\,218\,440\,375\left) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(2\,097\,152\, z^5 + 279\,576\,576\, z^4 + \right.\right. $$
$$ \left.\left. 8\,027\,873\,280\, z^3 + 103\,186\,137\,600\, z^2 + 590\,145\,847\,200\, z + 1\,154\,218\,440\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.ae77.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) = -\frac{1}{141\,557\,760\sqrt{2}\; z^{13/4}} $$
$$ \left(11\left(2\sqrt{z}\,\left(2\,097\,152\, z^5 - 262\,799\,360\, z^4 + 7\,145\,594\,880\, z^3 - 86\,077\,555\,200\, z^2 + 431\,223\,156\,000\, z - 384\,739\,480\,125\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-130\,023\,424\, z^5 + 6\,444\,810\,240\, z^4 - 117\,478\,932\,480\, z^3 + 986\,951\,347\,200\, z^2 - \right. $$
$$ 3\,052\,478\,520\,000\, z + 1\,154\,218\,440\,375\left) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-2\,097\,152\, z^5 + 279\,576\,576\, z^4 - \right.\right. $$
$$ \left.\left. 8\,027\,873\,280\, z^3 + 103\,186\,137\,600\, z^2 - 590\,145\,847\,200\, z + 1\,154\,218\,440\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.ae78.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) = $$
$$ -\frac{1}{63\,417\,876\,480\, z^{17/4}}\left(221\, e^{-2\sqrt{z}}\,\left(4\sqrt[4]{z}\,\left(-16\,777\,216\, z^{11/2} - 310\,378\,496\, z^5 - 3\,085\,959\,168\, z^{9/2} - 21\,729\,116\,160\, z^4 - \right.\right.\right. $$
$$ 119\,855\,185\,920\, z^{7/2} - 539\,348\,336\,640\, z^3 - 2\,000\,083\,415\,040\, z^{5/2} - 6\,056\,432\,363\,520\, z^2 - $$
$$ 14\,600\,328\,019\,200\, z^{3/2} - 26\,767\,268\,035\,200\, z - 34\,599\,735\,670\,500\sqrt{z} + $$
$$ e^{4\sqrt{z}}\,\left(16\,777\,216\, z^{11/2} - 310\,378\,496\, z^5 + 3\,085\,959\,168\, z^{9/2} - 21\,729\,116\,160\, z^4 + 119\,855\,185\,920\, z^{7/2} - \right. $$
$$ 539\,348\,336\,640\, z^3 + 2\,000\,083\,415\,040\, z^{5/2} - 6\,056\,432\,363\,520\, z^2 + 14\,600\,328\,019\,200\, z^{3/2} - $$
$$ \left.\left.\left. 26\,767\,268\,035\,200\, z + 34\,599\,735\,670\,500\sqrt{z} - 25\,949\,801\,752\,875\right) - 25\,949\,801\,752\,875\right) - $$
$$ \left. 57\,032\,531\,325\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\, z - 455)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 57\,032\,531\,325\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16\, z - 455)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Bigg) $$

07.22.03.ae79.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) = -\frac{1}{15\,854\,469\,120\,z^{17/4}}\left(221\left(57\,032\,531\,325\sqrt{\pi}\,(16z+455)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(310\,378\,496z^5-21\,729\,116\,160z^4+539\,348\,336\,640z^3-6\,056\,432\,363\,520z^2+26\,767\,268\,035\,200z-25\,949\,801\,752\,875\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(4\,194\,304z^5-771\,489\,792z^4+29\,963\,796\,480z^3-500\,020\,853\,760z^2+3\,650\,082\,004\,800z-8\,649\,933\,917\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.ae7a.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) = -\frac{1}{4\,529\,848\,320\sqrt{2}\,z^{17/4}}\left(209\left(-10\sqrt{z}\left(71\,303\,168z^5+6\,513\,229\,824z^4+204\,922\,798\,080z^3+2\,852\,856\,115\,200z^2+15\,653\,400\,562\,800z+14\,235\,360\,764\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(67\,108\,864z^6+16\,609\,443\,840z^5+847\,415\,869\,440z^4+18\,123\,691\,622\,400z^3+170\,706\,227\,328\,000z^2+560\,180\,683\,062\,000z+213\,530\,411\,469\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-6\sqrt{z}\left(121\,634\,816z^5+11\,578\,900\,480z^4+380\,044\,492\,800z^3+5\,623\,020\,748\,800z^2+34\,883\,046\,198\,000z+71\,176\,803\,823\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae7b.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) = -\frac{1}{4\,529\,848\,320\sqrt{2}\,z^{17/4}}\left(209\left(10\sqrt{z}\left(71\,303\,168z^5-6\,513\,229\,824z^4+204\,922\,798\,080z^3-2\,852\,856\,115\,200z^2+15\,653\,400\,562\,800z-14\,235\,360\,764\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(67\,108\,864z^6-16\,609\,443\,840z^5+847\,415\,869\,440z^4-18\,123\,691\,622\,400z^3+170\,706\,227\,328\,000z^2-560\,180\,683\,062\,000z+213\,530\,411\,469\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-6\sqrt{z}\left(121\,634\,816z^5-11\,578\,900\,480z^4+380\,044\,492\,800z^3-5\,623\,020\,748\,800z^2+34\,883\,046\,198\,000z-71\,176\,803\,823\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{13}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.ae7c.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) = \frac{1}{7\,154\,618\,625}$$
$$\left((63\,963\,136\,z^6 - 125\,829\,120\,z^5 + 487\,710\,720\,z^4 + 1\,884\,072\,960\,z^3 + 7\,287\,310\,800\,z^2 + 15\,464\,641\,500\,z + 7\,154\,618\,625\right)$$
$$\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(2\,097\,152\,z^6 + 108\,527\,616\,z^5 - 107\,888\,640\,z^4 -\right.$$
$$\left.\left. 447\,068\,160\,z^3 - 1\,930\,975\,200\,z^2 - 5\,925\,150\,000\,z - 7\,154\,618\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae7d.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{7\,154\,618\,625}$$
$$\left((63\,963\,136\,z^6 + 125\,829\,120\,z^5 + 487\,710\,720\,z^4 - 1\,884\,072\,960\,z^3 + 7\,287\,310\,800\,z^2 - 15\,464\,641\,500\,z + 7\,154\,618\,625\right)$$
$$\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-2\,097\,152\,z^6 + 108\,527\,616\,z^5 + 107\,888\,640\,z^4 -\right.$$
$$\left.\left. 447\,068\,160\,z^3 + 1\,930\,975\,200\,z^2 - 5\,925\,150\,000\,z + 7\,154\,618\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ae7e.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) = \frac{1}{986\,792\,625\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(\left(32\,505\,856\,z^6 + 20\,643\,840\,z^5 + 137\,871\,360\,z^4 + 496\,454\,400\,z^3 + 1\,568\,127\,600\,z^2 + 2\,148\,120\,000\,z + 986\,792\,625\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(1\,048\,576\,z^6 + 58\,195\,968\,z^5 - 51\,609\,600\,z^4 - 143\,354\,880\,z^3 -\right.$$
$$\left.\left. 551\,350\,800\,z^2 - 1\,358\,685\,900\,z - 986\,792\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left. 12\,z\left(2\,621\,440\,z^5 - 2\,506\,752\,z^4 + 14\,100\,480\,z^3 + 55\,373\,760\,z^2 + 189\,750\,600\,z + 328\,930\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae7f.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) = \frac{1}{986\,792\,625\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(\left(32\,505\,856\,z^6 - 20\,643\,840\,z^5 + 137\,871\,360\,z^4 - 496\,454\,400\,z^3 + 1\,568\,127\,600\,z^2 - 2\,148\,120\,000\,z + 986\,792\,625\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(1\,048\,576\,z^6 - 58\,195\,968\,z^5 - 51\,609\,600\,z^4 + 143\,354\,880\,z^3 -\right.$$
$$\left.\left. 551\,350\,800\,z^2 + 1\,358\,685\,900\,z - 986\,792\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left. 12\,z\left(2\,621\,440\,z^5 + 2\,506\,752\,z^4 + 14\,100\,480\,z^3 - 55\,373\,760\,z^2 + 189\,750\,600\,z - 328\,930\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae7g.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) = \frac{1}{311\,070\,375}$$
$$\left(\left(-1\,048\,576\,z^6 - 58\,195\,968\,z^5 + 38\,707\,200\,z^4 + 101\,606\,400\,z^3 + 342\,785\,520\,z^2 + 682\,951\,500\,z + 311\,070\,375\right)\cosh\right.$$
$$\left.\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(2\,621\,440\,z^5 + 2\,031\,616\,z^4 + 9\,031\,680\,z^3 + 31\,933\,440\,z^2 + 89\,397\,000\,z + 103\,690\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae7h.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) = \frac{1}{311\,070\,375} \left(\left(-1\,048\,576\,z^6 + 58\,195\,968\,z^5 + 38\,707\,200\,z^4 - 101\,606\,400\,z^3 + 342\,785\,520\,z^2 - 682\,951\,500\,z + 311\,070\,375\right)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\left(2\,621\,440\,z^5 - 2\,031\,616\,z^4 + 9\,031\,680\,z^3 - 31\,933\,440\,z^2 + 89\,397\,000\,z - 103\,690\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ae7i.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) = -\frac{1}{46\,990\,125\sqrt{2}} \left(\sqrt[4]{z} \left(\left(524\,288\,z^6 + 30\,965\,760\,z^5 - 12\,441\,600\,z^4 - 28\,828\,800\,z^3 - 79\,606\,800\,z^2 - 104\,247\,000\,z - 46\,990\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(3\,866\,624\,z^5 + 6\,451\,200\,z^4 + 9\,457\,920\,z^3 + 29\,624\,400\,z^2 + 66\,654\,900\,z + 46\,990\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(131\,072\,z^5 + 6\,807\,552\,z^4 - 3\,340\,800\,z^3 - 9\,715\,680\,z^2 - 29\,062\,800\,z - 46\,990\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae7j.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{17}{4}; -z\right) = -\frac{1}{46\,990\,125\sqrt{2}} \left(\sqrt[4]{z} \left(\left(524\,288\,z^6 - 30\,965\,760\,z^5 - 12\,441\,600\,z^4 + 28\,828\,800\,z^3 - 79\,606\,800\,z^2 + 104\,247\,000\,z - 46\,990\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(3\,866\,624\,z^5 - 6\,451\,200\,z^4 + 9\,457\,920\,z^3 - 29\,624\,400\,z^2 + 66\,654\,900\,z - 46\,990\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(131\,072\,z^5 - 6\,807\,552\,z^4 - 3\,340\,800\,z^3 + 9\,715\,680\,z^2 - 29\,062\,800\,z + 46\,990\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae7k.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{15}{4}; z\right) = \frac{1}{16\,372\,125} \left(3\left(1\,245\,184\,z^5 + 2\,150\,400\,z^4 + 2\,499\,840\,z^3 + 6\,758\,640\,z^2 + 12\,266\,100\,z + 5\,457\,375\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(131\,072\,z^5 + 6\,807\,552\,z^4 - 2\,419\,200\,z^3 - 6\,138\,720\,z^2 - 14\,968\,800\,z - 16\,372\,125\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ae7l.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{15}{4}; -z\right) = \frac{1}{16\,372\,125} \left(2\sqrt{z}\left(131\,072\,z^5 - 6\,807\,552\,z^4 - 2\,419\,200\,z^3 + 6\,138\,720\,z^2 - 14\,968\,800\,z + 16\,372\,125\right)\sin\left(2\sqrt{z}\right) - 3\left(1\,245\,184\,z^5 - 2\,150\,400\,z^4 + 2\,499\,840\,z^3 - 6\,758\,640\,z^2 + 12\,266\,100\,z - 5\,457\,375\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.ae7m.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{13}{4}; z\right) = \frac{1}{2\,764\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,835\,008 z^5 + 4\,608\,000 z^4 + 2\,396\,160 z^3 + 5\,194\,800 z^2 + 6\,318\,000 z + 2\,764\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(65\,536 z^5 + 3\,182\,592 z^4 - 979\,200 z^3 - 2\,106\,000 z^2 - 4\,106\,700 z - 2\,764\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36 z\left(49\,152 z^4 + 51\,200 z^3 + 87\,360 z^2 + 210\,600 z + 307\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae7n.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{13}{4}; -z\right) = \frac{1}{2\,764\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-1\,835\,008 z^5 + 4\,608\,000 z^4 - 2\,396\,160 z^3 + 5\,194\,800 z^2 - 6\,318\,000 z + 2\,764\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(65\,536 z^5 - 3\,182\,592 z^4 - 979\,200 z^3 + 2\,106\,000 z^2 - 4\,106\,700 z + 2\,764\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36 z\left(49\,152 z^4 - 51\,200 z^3 + 87\,360 z^2 - 210\,600 z + 307\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae7o.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{11}{4}; z\right) = \frac{1}{1\,091\,475}\left(\left(-65\,536 z^5 - 2\,764\,800 z^4 + 979\,200 z^3 + 1\,643\,760 z^2 + 2\,551\,500 z + 1\,091\,475\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(425\,984 z^4 + 460\,800 z^3 + 570\,240 z^2 + 1\,096\,200 z + 1\,091\,475\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ae7p.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{11}{4}; -z\right) = \frac{1}{1\,091\,475}\left(\left(65\,536 z^5 - 2\,764\,800 z^4 - 979\,200 z^3 + 1\,643\,760 z^2 - 2\,551\,500 z + 1\,091\,475\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(425\,984 z^4 - 460\,800 z^3 + 570\,240 z^2 - 1\,096\,200 z + 1\,091\,475\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ae7q.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{9}{4}; z\right) = -\frac{1}{212\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768 z^5 + 1\,286\,144 z^4 - 547\,200 z^3 - 490\,320 z^2 - 513\,000 z - 212\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(200\,704 z^4 + 93\,696 z^3 + 231\,120 z^2 + 342\,900 z + 212\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(8192 z^4 + 273\,408 z^3 - 108\,000 z^2 - 172\,800 z - 212\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae7r.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{212\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768 z^5 - 1\,286\,144 z^4 - 547\,200 z^3 + 490\,320 z^2 - 513\,000 z + 212\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(200\,704 z^4 - 93\,696 z^3 + 231\,120 z^2 - 342\,900 z + 212\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left. 4 z\left(-8192 z^4 + 273\,408 z^3 + 108\,000 z^2 - 172\,800 z + 212\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae7s.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{7}{4}; z\right) = \frac{1}{99\,225}\left(45\left(4096 z^4 - 2560 z^3 + 5136 z^2 + 5580 z + 2205\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left. 2\sqrt{z}\left(8192 z^4 + 230\,400 z^3 - 108\,000 z^2 - 118\,800 z - 99\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae7t.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{1}{99\,225}\left(45\left(4096 z^4 + 2560 z^3 + 5136 z^2 - 5580 z + 2205\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left. 2\sqrt{z}\left(-8192 z^4 + 230\,400 z^3 + 108\,000 z^2 - 118\,800 z + 99\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ae7u.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{23\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(86\,016 z^4 - 90\,880 z^3 + 123\,120 z^2 + 64\,800 z + 23\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096 z^4 + 85\,504 z^3 - \right.\right.\right.$$
$$\left.\left.\left. 34\,320 z^2 - 45\,900 z - 23\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 20 z\left(4096 z^3 - 7872 z^2 + 5400 z + 4725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae7v.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{5}{4}; -z\right) =$$
$$\frac{1}{23\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(86\,016 z^4 + 90\,880 z^3 + 123\,120 z^2 - 64\,800 z + 23\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4096 z^4 - 85\,504 z^3 - \right.\right.\right.$$
$$\left.\left.\left. 34\,320 z^2 + 45\,900 z - 23\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 20 z\left(4096 z^3 + 7872 z^2 + 5400 z - 4725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae7w.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{3}{4}; z\right) =$$
$$\left(-\frac{4096 z^4}{14\,175} - \frac{5632 z^3}{1575} - \frac{16 z^2}{15} + \frac{68 z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(2048 z^3 - 5120 z^2 + 3000 z + 1575\right)\sinh\left(2\sqrt{z}\right)}{1575}$$

07.22.03.ae7x.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) =$$

$$\left(-\frac{4096\,z^4}{14\,175} + \frac{5632\,z^3}{1575} - \frac{16\,z^2}{15} - \frac{68\,z}{21} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(2048\,z^3 + 5120\,z^2 + 3000\,z - 1575\right)\sin\left(2\sqrt{z}\right)}{1575}$$

07.22.03.ae7y.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) = -\frac{1}{4725\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(2048\,z^4 + 14\,720\,z^3 + 19\,440\,z^2 - 27\,000\,z - 4725\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(7936\,z^3 - 24\,240\,z^2 + 8100\,z + 4725\right)\right.\right.$$

$$\left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(512\,z^3 + 1824\,z^2 + 10\,800\,z - 4725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae7z.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) = -\frac{1}{4725\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(2048\,z^4 - 14\,720\,z^3 + 19\,440\,z^2 + 27\,000\,z - 4725\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(7936\,z^3 + 24\,240\,z^2 + 8100\,z - 4725\right)\right.\right.$$

$$\left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(512\,z^3 - 1824\,z^2 + 10\,800\,z + 4725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae80.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) = \left(\frac{256\,z^3}{189} - \frac{2224\,z^2}{525} - \frac{12\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(512\,z^3 - 864\,z^2 + 14\,400\,z - 4725\right)\sinh\left(2\sqrt{z}\right)}{4725}$$

07.22.03.ae81.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) = \left(-\frac{256\,z^3}{189} - \frac{2224\,z^2}{525} + \frac{12\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(512\,z^3 + 864\,z^2 + 14\,400\,z + 4725\right)\sin\left(2\sqrt{z}\right)}{4725}$$

07.22.03.ae82.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) = \frac{1}{4725\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(512\,z^3 - 1296\,z^2 - 1620\,z + 945\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$

$$\left.\left. 2\sqrt{z}\,\left(512\,z^3 - 3360\,z^2 + 16\,200\,z - 675\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 72\,z\left(32\,z^2 - 60\,z - 225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae83.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) = \frac{1}{4725\sqrt{2}}\left(\sqrt[4]{z}\left(-5\left(512\,z^3 + 1296\,z^2 - 1620\,z - 945\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$

$$\left.\left. 2\sqrt{z}\,\left(512\,z^3 + 3360\,z^2 + 16\,200\,z + 675\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 72\,z\left(32\,z^2 + 60\,z - 225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae84.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) = \frac{\left(256\,z^3 - 2544\,z^2 + 5940\,z + 4725\right)\cosh\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(128\,z^2 + 120\,z - 1575\right)\sinh\left(2\sqrt{z}\right)}{4725}$$

07.22.03.ae85.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = \frac{6\sqrt{z}\left(-128z^2+120z+1575\right)\sin\left(2\sqrt{z}\right)-\left(256z^3+2544z^2+5940z-4725\right)\cos\left(2\sqrt{z}\right)}{4725}$$

07.22.03.ae86.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) = \frac{1}{25\,200\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(1024z^3-10\,368z^2+6480z+22\,545\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(5120z^3+62\,208z^2-110\,160z-29\,835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(1024z^3-10\,752z^2-3888z+29\,835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae87.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) =$$
$$-\frac{1}{25\,200\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(1024z^3+10\,368z^2+6480z-22\,545\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(5120z^3-62\,208z^2-110\,160z+29\,835\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-1024z^3-10\,752z^2+3888z+29\,835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae88.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) = \left(-\frac{16z^2}{315}+\frac{100z}{63}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\left(32z^2-240z-945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ae89.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{9}{4}; -z\right) = \frac{1}{945}\left(-3\left(16z^2+500z-315\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\left(32z^2+240z-945\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ae8a.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{11}{4}; z\right) = \frac{1}{115\,200\sqrt{2}\,z^{5/4}}$$
$$\left(\left(2\sqrt{z}\left(-20\,480z^3+145\,152z^2+375\,840z+208\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(32\,768z^4-24\,576z^3-1\,389\,312z^2-1\,909\,440z-\right.\right.\right.$$
$$\left.\left.\left.626\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\left(-8192z^3+46\,848z^2+190\,944z+208\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae8b.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{11}{4}; -z\right) = \frac{1}{115\,200\sqrt{2}\,z^{5/4}}$$
$$\left(\left(-2\sqrt{z}\left(20\,480z^3+145\,152z^2-375\,840z+208\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-32\,768z^4-24\,576z^3+1\,389\,312z^2-1\,909\,440z+\right.\right.\right.$$
$$\left.\left.\left.626\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\left(8192z^3+46\,848z^2-190\,944z+208\,845\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae8c.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{13}{4}; z\right) = \left(\frac{16\,z^2}{105} + \frac{12\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,(8\,z + 21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ae8d.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) = \left(\frac{16\,z^2}{105} - \frac{12\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}(21 - 8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ae8e.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) =$$

$$\frac{1}{3\,686\,400\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\,\left(65\,536\,z^4 + 1\,724\,416\,z^3 + 11\,508\,480\,z^2 + 43\,439\,760\,z + 36\,547\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$\left(1\,900\,544\,z^4 + 21\,221\,376\,z^3 + 114\,566\,400\,z^2 + 297\,395\,280\,z + 109\,643\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.2\sqrt{z}\,\left(65\,536\,z^4 + 1\,978\,368\,z^3 + 14\,766\,336\,z^2 + 63\,488\,880\,z + 109\,643\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae8f.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{15}{4}; -z\right) =$$

$$\frac{1}{3\,686\,400\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\,\left(65\,536\,z^4 - 1\,724\,416\,z^3 + 11\,508\,480\,z^2 - 43\,439\,760\,z + 36\,547\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(-1\,900\,544\,z^4 + 21\,221\,376\,z^3 - 114\,566\,400\,z^2 + 297\,395\,280\,z - 109\,643\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.2\sqrt{z}\,\left(65\,536\,z^4 - 1\,978\,368\,z^3 + 14\,766\,336\,z^2 - 63\,488\,880\,z + 109\,643\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae8g.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) =$$

$$\frac{1}{55\,050\,240\,z^{13/4}}\left(13\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-262\,144\,z^{9/2} - 2\,555\,904\,z^4 - 13\,811\,712\,z^{7/2} - 55\,234\,560\,z^3 - 181\,232\,640\,z^{5/2} - \right.\right.\right.$$
$$498\,389\,760\,z^2 - 1\,121\,376\,960\,z^{3/2} - 1\,962\,409\,680\,z - 2\,453\,012\,100\sqrt{z} +$$
$$e^{4\sqrt{z}}\left(262\,144\,z^{9/2} - 2\,555\,904\,z^4 + 13\,811\,712\,z^{7/2} - 55\,234\,560\,z^3 + 181\,232\,640\,z^{5/2} - 498\,389\,760\,z^2 + \right.$$
$$\left.1\,121\,376\,960\,z^{3/2} - 1\,962\,409\,680\,z + 2\,453\,012\,100\sqrt{z} - 1\,839\,759\,075\right) - 1\,839\,759\,075\Big) +$$
$$\left.\left.1\,839\,759\,075\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + 1\,839\,759\,075\,e^{2\sqrt{z}}\,\sqrt{2\,\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.ae8h.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) = \frac{1}{13\,762\,560\,z^{13/4}}$$
$$\left(13\left(2\sqrt[4]{z}\,\left(3\left(851\,968\,z^4 - 18\,411\,520\,z^3 + 166\,129\,920\,z^2 - 654\,136\,560\,z + 613\,253\,025\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,\left(65\,536\,z^4 - \right.\right.\right.\right.$$
$$\left.\left.\left.\left.3\,452\,928\,z^3 + 45\,308\,160\,z^2 - 280\,344\,240\,z + 613\,253\,025\right)\sin\left(2\sqrt{z}\right)\right) - 1\,839\,759\,075\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)$$

07.22.03.ae8i.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) = \frac{1}{7\,864\,320\sqrt{2}\, z^{13/4}} $$
$$ \left(11\left(-2\sqrt{z}\left(6\,291\,456 z^4 + 205\,373\,440 z^3 + 2\,566\,287\,360 z^2 + 13\,031\,928\,000 z + 11\,658\,772\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(2\,097\,152 z^5 + 174\,718\,976 z^4 + 3\,448\,872\,960 z^3 + 29\,619\,233\,280 z^2 + 92\,393\,028\,000 z + 34\,976\,316\,375\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 2\sqrt{z}\left(6\,553\,600 z^4 + 228\,950\,016 z^3 + 3\,065\,287\,680 z^2 + 17\,776\,886\,400 z + 34\,976\,316\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae8j.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = \frac{1}{7\,864\,320\sqrt{2}\, z^{13/4}} $$
$$ \left(11\left(2\sqrt{z}\left(6\,291\,456 z^4 - 205\,373\,440 z^3 + 2\,566\,287\,360 z^2 - 13\,031\,928\,000 z + 11\,658\,772\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(2\,097\,152 z^5 - 174\,718\,976 z^4 + 3\,448\,872\,960 z^3 - 29\,619\,233\,280 z^2 + 92\,393\,028\,000 z - 34\,976\,316\,375\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 2\sqrt{z}\left(6\,553\,600 z^4 - 228\,950\,016 z^3 + 3\,065\,287\,680 z^2 - 17\,776\,886\,400 z + 34\,976\,316\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae8k.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) = $$
$$ \frac{1}{3\,523\,215\,360 z^{17/4}}\left(221 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304 z^5 + 62\,914\,560 z^{9/2} + 519\,831\,552 z^4 + 3\,093\,037\,056 z^{7/2} + \right.\right.\right. $$
$$ 14\,498\,611\,200 z^3 + 55\,094\,722\,560 z^{5/2} + 169\,452\,518\,400 z^2 + 412\,666\,721\,280 z^{3/2} + 761\,414\,955\,840 z + $$
$$ 988\,563\,876\,300\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^5 - 62\,914\,560 z^{9/2} + 519\,831\,552 z^4 - 3\,093\,037\,056 z^{7/2} + \right. $$
$$ 14\,498\,611\,200 z^3 - 55\,094\,722\,560 z^{5/2} + 169\,452\,518\,400 z^2 - 412\,666\,721\,280 z^{3/2} + $$
$$ \left.\left. 761\,414\,955\,840 z - 988\,563\,876\,300\sqrt{z} + 741\,422\,907\,225\right) + 741\,422\,907\,225\right) + $$
$$ \left.\left. 1\,839\,759\,075 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 403)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 1\,839\,759\,075 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 403)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ae8l.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) = $$
$$ -\frac{1}{880\,803\,840 z^{17/4}}\left(221\left(1\,839\,759\,075\sqrt{\pi}\,(16z + 403) C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(4\,194\,304 z^5 - 519\,831\,552 z^4 + \right.\right.\right. $$
$$ \left.\left. 14\,498\,611\,200 z^3 - 169\,452\,518\,400 z^2 + 761\,414\,955\,840 z - 741\,422\,907\,225\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.\left. 12\sqrt{z}\left(5\,242\,880 z^4 - 257\,753\,088 z^3 + 4\,591\,226\,880 z^2 - 34\,388\,893\,440 z + 82\,380\,323\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.ae8m.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) =$$
$$\frac{1}{251\,658\,240\sqrt{2}\, z^{17/4}}\left(209\left(2\sqrt{z}\,\left(4\,194\,304 z^5 + 702\,545\,920 z^4 + 25\,472\,778\,240 z^3 + 374\,250\,240\,000 z^2 + 2\,105\,241\,138\,000 z + 1\,923\,697\,400\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(297\,795\,584 z^5 + 19\,920\,322\,560 z^4 + 464\,212\,869\,120 z^3 + 4\,533\,774\,336\,000 z^2 + 15\,109\,768\,674\,000 z + 5\,771\,092\,201\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4\,194\,304 z^5 + 740\,818\,944 z^4 + 28\,163\,358\,720 z^3 + 440\,545\,996\,800 z^2 + 2\,798\,105\,310\,000 z + 5\,771\,092\,201\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae8n.01

$${}_1F_2\left(\frac{13}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) =$$
$$-\frac{1}{251\,658\,240\sqrt{2}\, z^{17/4}}\left(209\left(2\sqrt{z}\,\left(4\,194\,304 z^5 - 702\,545\,920 z^4 + 25\,472\,778\,240 z^3 - 374\,250\,240\,000 z^2 + 2\,105\,241\,138\,000 z - 1\,923\,697\,400\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-297\,795\,584 z^5 + 19\,920\,322\,560 z^4 - 464\,212\,869\,120 z^3 + 4\,533\,774\,336\,000 z^2 - 15\,109\,768\,674\,000 z + 5\,771\,092\,201\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-4\,194\,304 z^5 + 740\,818\,944 z^4 - 28\,163\,358\,720 z^3 + 440\,545\,996\,800 z^2 - 2\,798\,105\,310\,000 z + 5\,771\,092\,201\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{13}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.ae8o.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,022\,088\,375}$$
$$\left(\left(-2\,097\,152 z^6 - 55\,050\,240 z^5 - 37\,601\,280 z^4 + 447\,068\,160 z^3 + 1\,212\,472\,800 z^2 + 2\,275\,257\,600 z + 1\,022\,088\,375\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(4\,456\,448 z^5 - 24\,248\,320 z^4 + 37\,509\,120 z^3 + 119\,750\,400 z^2 + 304\,157\,700 z + 340\,696\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae8p.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{23}{4}; -z\right) = \frac{1}{1\,022\,088\,375}$$
$$\left(\left(-2\,097\,152 z^6 + 55\,050\,240 z^5 - 37\,601\,280 z^4 - 447\,068\,160 z^3 + 1\,212\,472\,800 z^2 - 2\,275\,257\,600 z + 1\,022\,088\,375\right)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(4\,456\,448 z^5 + 24\,248\,320 z^4 + 37\,509\,120 z^3 - 119\,750\,400 z^2 + 304\,157\,700 z - 340\,696\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ae8q.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{21}{4}; z\right) =$$
$$-\frac{1}{140\,970\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,048\,576 z^6 + 37\,617\,664 z^5 - 31\,334\,400 z^4 - 106\,928\,640 z^3 - 250\,614\,000 z^2 - 316\,847\,700 z - 140\,970\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(6\,815\,744 z^5 - 23\,052\,288 z^4 + 42\,301\,440 z^3 + 97\,381\,440 z^2 + 204\,071\,400 z + 140\,970\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(262\,144 z^5 + 7\,766\,016 z^4 - 681\,984 z^3 - 34\,369\,920 z^2 - 91\,295\,100 z - 140\,970\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae8r.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{21}{4}; -z\right) =$$
$$-\frac{1}{140\,970\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,048\,576 z^6 - 37\,617\,664 z^5 - 31\,334\,400 z^4 + 106\,928\,640 z^3 - 250\,614\,000 z^2 + 316\,847\,700 z - 140\,970\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(6\,815\,744 z^5 + 23\,052\,288 z^4 + 42\,301\,440 z^3 - 97\,381\,440 z^2 + 204\,071\,400 z - 140\,970\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(262\,144 z^5 - 7\,766\,016 z^4 - 681\,984 z^3 + 34\,369\,920 z^2 - 91\,295\,100 z + 140\,970\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae8s.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{44\,438\,625}\left(\left(6\,815\,744 z^5 - 12\,779\,520 z^4 + 27\,095\,040 z^3 + 58\,544\,640 z^2 + 101\,039\,400 z + 44\,438\,625\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(262\,144 z^5 + 9\,437\,184 z^4 - 6\,481\,920 z^3 - 18\,627\,840 z^2 - 41\,787\,900 z - 44\,438\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae8t.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{44\,438\,625}\left(2\sqrt{z}\left(262\,144 z^5 - 9\,437\,184 z^4 - 6\,481\,920 z^3 + 18\,627\,840 z^2 - 41\,787\,900 z + 44\,438\,625\right)\sin\left(2\sqrt{z}\right) - \left(6\,815\,744 z^5 + 12\,779\,520 z^4 + 27\,095\,040 z^3 - 58\,544\,640 z^2 + 101\,039\,400 z - 44\,438\,625\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ae8u.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{17}{4}; z\right) =$$
$$\frac{1}{6\,712\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(3\,473\,408 z^5 + 921\,600 z^4 + 7\,038\,720 z^3 + 13\,057\,200 z^2 + 15\,479\,100 z + 6\,712\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(131\,072 z^5 + 5\,136\,384 z^4 - 3\,340\,800 z^3 - 5\,447\,520 z^2 - 10\,108\,800 z - 6\,712\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.12 z\left(278\,528 z^4 - 285\,696 z^3 + 711\,360 z^2 + 1\,579\,500 z + 2\,237\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae8v.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{6\,712\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-3\,473\,408 z^5 + 921\,600 z^4 - 7\,038\,720 z^3 + 13\,057\,200 z^2 - 15\,479\,100 z + 6\,712\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(131\,072 z^5 - 5\,136\,384 z^4 - 3\,340\,800 z^3 + 5\,447\,520 z^2 - 10\,108\,800 z + 6\,712\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.12 z\left(278\,528 z^4 + 285\,696 z^3 + 711\,360 z^2 - 1\,579\,500 z + 2\,237\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae8w.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{2\,338\,875}\left(\left(-131\,072 z^5 - 5\,136\,384 z^4 + 2\,419\,200 z^3 + 3\,598\,560 z^2 + 5\,488\,560 z + 2\,338\,875\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left.6\sqrt{z}\left(278\,528 z^4 + 109\,568 z^3 + 423\,360 z^2 + 790\,020 z + 779\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae8x.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{2\,338\,875}\left(\left(131\,072 z^5 - 5\,136\,384 z^4 - 2\,419\,200 z^3 + 3\,598\,560 z^2 - 5\,488\,560 z + 2\,338\,875\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.6\sqrt{z}\left(278\,528 z^4 - 109\,568 z^3 + 423\,360 z^2 - 790\,020 z + 779\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ae8y.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{13}{4}; z\right) =$$
$$-\frac{1}{394\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536 z^5 + 2\,764\,800 z^4 - 748\,800 z^3 - 889\,200 z^2 - 947\,700 z - 394\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$20\sqrt{z}\left(81\,920 z^4 + 92\,160 z^3 + 82\,368 z^2 + 126\,360 z + 78\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(16\,384 z^4 + 592\,896 z^3 - 187\,200 z^2 - 315\,900 z - 394\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae8z.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{394\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536 z^5 - 2\,764\,800 z^4 - 748\,800 z^3 + 889\,200 z^2 - 947\,700 z + 394\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$20\sqrt{z}\left(81\,920 z^4 - 92\,160 z^3 + 82\,368 z^2 - 126\,360 z + 78\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left. 4 z\left(-16\,384 z^4 + 592\,896 z^3 + 187\,200 z^2 - 315\,900 z + 394\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae90.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{11}{4}; z\right) = \frac{1}{155\,925}\left(3\left(131\,072 z^4 + 153\,600 z^3 + 103\,680 z^2 + 128\,520 z + 51\,975\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left. 2\sqrt{z}\left(16\,384 z^4 + 592\,896 z^3 - 129\,600 z^2 - 177\,660 z - 155\,925\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae91.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{11}{4}; -z\right) = \frac{1}{155\,925}\left(3\left(131\,072 z^4 - 153\,600 z^3 + 103\,680 z^2 - 128\,520 z + 51\,975\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left. 2\sqrt{z}\left(-16\,384 z^4 + 592\,896 z^3 + 129\,600 z^2 - 177\,660 z + 155\,925\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ae92.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{30\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(192\,512 z^4 + 345\,600 z^3 + 91\,440 z^2 + 78\,300 z + 30\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8192 z^4 + 273\,408 z^3 - \right.\right.\right.$$
$$\left.\left.\left. 50\,400 z^2 - 54\,000 z - 30\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 180 z\left(1024 z^3 + 640 z^2 + 660 z + 675\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae93.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{30\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(192\,512 z^4 - 345\,600 z^3 + 91\,440 z^2 - 78\,300 z + 30\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(8192 z^4 - 273\,408 z^3 - \right.\right.\right.$$
$$\left.\left.\left. 50\,400 z^2 + 54\,000 z - 30\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 180 z\left(1024 z^3 - 640 z^2 + 660 z - 675\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae94.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{7}{4}; z\right) =$$
$$\left(-\frac{8192 z^4}{14\,175} - \frac{1024 z^3}{63} + \frac{32 z^2}{9} + \frac{96 z}{35} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(44\,032 z^3 + 28\,800 z^2 + 19\,980 z + 14\,175\right)\sinh\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.ae95.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{7}{4}; -z\right) =$$

$$\left(-\frac{8192\,z^4}{14\,175} + \frac{1024\,z^3}{63} + \frac{32\,z^2}{9} - \frac{96\,z}{35} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-44\,032\,z^3 + 28\,800\,z^2 - 19\,980\,z + 14\,175\right)\sin\left(2\sqrt{z}\right)}{14\,175}$$

07.22.03.ae96.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{5}{4}; z\right) = -\frac{1}{3375\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(4096\,z^4 + 105\,472\,z^3 - 30\,960\,z^2 - 10\,260\,z - 3375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(20\,480\,z^3 + 3648\,z^2 + 7560\,z + 3375\right)\right.\right.$$

$$\left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(1024\,z^3 + 21\,504\,z^2 - 4860\,z - 3375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae97.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{5}{4}; -z\right) = -\frac{1}{3375\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(4096\,z^4 - 105\,472\,z^3 - 30\,960\,z^2 + 10\,260\,z - 3375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(20\,480\,z^3 - 3648\,z^2 + 7560\,z - 3375\right)\right.\right.$$

$$\left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-1024\,z^3 + 21\,504\,z^2 + 4860\,z - 3375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae98.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{3}{4}; z\right) =$$

$$\frac{1}{2025}\left(9\left(2048\,z^3 - 1280\,z^2 + 840\,z + 225\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1024\,z^3 + 17\,280\,z^2 - 4860\,z - 2025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ae99.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{3}{4}; -z\right) =$$

$$\frac{1}{2025}\left(2\sqrt{z}\left(1024\,z^3 - 17\,280\,z^2 - 4860\,z + 2025\right)\sin\left(2\sqrt{z}\right) - 9\left(2048\,z^3 + 1280\,z^2 + 840\,z - 225\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ae9a.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{1}{4}; z\right) =$$

$$\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8448\,z^3 - 7760\,z^2 + 4860\,z + 675\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(512\,z^3 + 5792\,z^2 - 960\,z - 675\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$

$$\left.\left. 4\,z\left(1984\,z^2 - 2940\,z + 675\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae9b.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\left(-\left(8448z^3+7760z^2+4860z-675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(512z^3-5792z^2-960z+675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(1984z^2+2940z+675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae9c.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{1}{4}; z\right) = \left(-\frac{512z^3}{675}-\frac{96z^2}{25}-\frac{16z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{75}\sqrt{z}\left(192z^2-340z+75\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ae9d.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) = \left(\frac{512z^3}{675}-\frac{96z^2}{25}+\frac{16z}{5}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{75}\sqrt{z}\left(192z^2+340z+75\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.ae9e.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{3}{4}; z\right) = -\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^3+400z^2+1620z-675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.352z^{3/2}\left(8z-15\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(64z^2-60z+675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae9f.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) = \frac{1}{675\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(256z^3-400z^2+1620z+675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+352z^{3/2}\left(8z+15\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(64z^2+60z+675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae9g.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{5}{4}; z\right) = \left(-\frac{512z^2}{675}+\frac{24z}{25}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{675}\sqrt{z}\left(64z^2-252z+675\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ae9h.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{5}{4}; -z\right) = \left(-\frac{512z^2}{675}-\frac{24z}{25}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{675}\sqrt{z}\left(64z^2+252z+675\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.ae9i.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) =$$
$$-\frac{1}{1800\sqrt{2}\sqrt[4]{z}}\left(\left(22\sqrt{z}\left(64z^2-135\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1024z^3-6144z^2+6480z+1755\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.18\sqrt{z}\left(64z^2+96z-195\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae9j.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{7}{4}; -z\right) =$$
$$\frac{1}{1800\sqrt{2}\,\sqrt[4]{z}}\left(\left(-22\sqrt{z}\left(64z^2-135\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1024z^3+6144z^2+6480z-1755\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.18\sqrt{z}\left(64z^2-96z-195\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae9k.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) = \left(-\frac{32z^2}{135}+\frac{64z}{45}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{45}\sqrt{z}\,(4z+45)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ae9l.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{9}{4}; -z\right) = \left(-\frac{32z^2}{135}-\frac{64z}{45}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{45}(45-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ae9m.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{11}{4}; z\right) =$$
$$-\frac{1}{57\,600\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\left(2048z^3-6912z^2-20\,160z-9945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-8192z^3+76\,032z^2+93\,600z+29\,835\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(2048z^3-5376z^2-29\,952z-29\,835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae9n.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{11}{4}; -z\right) =$$
$$-\frac{1}{57\,600\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\left(2048z^3+6912z^2-20\,160z+9945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(8192z^3+76\,032z^2-93\,600z+29\,835\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(2048z^3+5376z^2-29\,952z+29\,835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae9o.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{13}{4}; z\right) = \left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\,(4z+15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ae9p.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{13}{4}; -z\right) = \left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}(15-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ae9q.01

$${}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{15}{4}; z\right) = -\frac{1}{1\,843\,200\sqrt{2}\,z^{9/4}}\left(77\left(-2\sqrt{z}\left(77\,824z^3+486\,144z^2+1\,750\,320z+1\,461\,915\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(65\,536z^4+946\,176z^3+4\,702\,464z^2+11\,934\,000z+4\,385\,745\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.6\sqrt{z}\left(28\,672z^3+209\,664z^2+859\,248z+1\,461\,915\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ae9r.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{15}{4}; -z\right) = -\frac{1}{1\,843\,200\sqrt{2}\, z^{9/4}}\left(77\left(2\sqrt{z}\left(77\,824 z^3 - 486\,144 z^2 + 1\,750\,320 z - 1\,461\,915\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(65\,536 z^4 - 946\,176 z^3 + 4\,702\,464 z^2 - 11\,934\,000 z + 4\,385\,745\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(-28\,672 z^3 + 209\,664 z^2 - 859\,248 z + 1\,461\,915\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae9s.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{17}{4}; z\right) = -\frac{1}{3\,932\,160 z^{13/4}}\left(13 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(65\,536 z^4 + 475\,136 z^{7/2} + 2\,027\,520 z^3 + 6\,712\,320 z^{5/2} + 18\,458\,880 z^2 + 41\,532\,480 z^{3/2} + 72\,681\,840 z + 90\,852\,300\sqrt{z} + e^{4\sqrt{z}}\left(65\,536 z^4 - 475\,136 z^{7/2} + 2\,027\,520 z^3 - 6\,712\,320 z^{5/2} + 18\,458\,880 z^2 - 41\,532\,480 z^{3/2} + 72\,681\,840 z - 90\,852\,300\sqrt{z} + 68\,139\,225\right) + 68\,139\,225\right) - 68\,139\,225 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 68\,139\,225 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.ae9t.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{17}{4}; -z\right) = \frac{1}{983\,040 z^{13/4}}\left(13\left(2\sqrt[4]{z}\left(\left(65\,536 z^4 - 2\,027\,520 z^3 + 18\,458\,880 z^2 - 72\,681\,840 z + 68\,139\,225\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(-118\,784 z^3 + 1\,678\,080 z^2 - 10\,383\,120 z + 22\,713\,075\right)\sin\left(2\sqrt{z}\right)\right) - 68\,139\,225\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right) $$

07.22.03.ae9u.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) = -\frac{1}{3\,932\,160\sqrt{2}\, z^{13/4}}\left(77\left(2\sqrt{z}\left(131\,072 z^4 + 6\,545\,408 z^3 + 86\,561\,280 z^2 + 447\,763\,680 z + 402\,026\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4\,980\,736 z^4 + 113\,737\,728 z^3 + 1\,008\,184\,320 z^2 + 3\,181\,127\,040 z + 1\,206\,079\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(131\,072 z^4 + 7\,200\,768 z^3 + 102\,855\,168 z^2 + 608\,156\,640 z + 1\,206\,079\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae9v.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) = \frac{1}{3\,932\,160\sqrt{2}\, z^{13/4}}\left(77\left(2\sqrt{z}\left(131\,072 z^4 - 6\,545\,408 z^3 + 86\,561\,280 z^2 - 447\,763\,680 z + 402\,026\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4\,980\,736 z^4 + 113\,737\,728 z^3 - 1\,008\,184\,320 z^2 + 3\,181\,127\,040 z - 1\,206\,079\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(131\,072 z^4 - 7\,200\,768 z^3 + 102\,855\,168 z^2 - 608\,156\,640 z + 1\,206\,079\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae9w.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) = $$
$$ -\frac{1}{251\,658\,240\, z^{17/4}} \left(221\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\, \left(-1\,048\,576\, z^{9/2} - 12\,582\,912\, z^4 - 85\,917\,696\, z^{7/2} - 429\,588\,480\, z^3 - \right.\right.\right. $$
$$ 1\,691\,504\,640\, z^{5/2} - 5\,316\,157\,440\, z^2 - 13\,124\,263\,680\, z^{3/2} - 24\,421\,098\,240\, z - 31\,889\,157\,300\, \sqrt{z} + e^{4\sqrt{z}} $$
$$ \left(1\,048\,576\, z^{9/2} - 12\,582\,912\, z^4 + 85\,917\,696\, z^{7/2} - 429\,588\,480\, z^3 + 1\,691\,504\,640\, z^{5/2} - 5\,316\,157\,440\, z^2 + \right. $$
$$ \left.\left.\left. 13\,124\,263\,680\, z^{3/2} - 24\,421\,098\,240\, z + 31\,889\,157\,300\, \sqrt{z} - 23\,916\,867\,975\right) - 23\,916\,867\,975\right) - $$
$$ \left. 68\,139\,225\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16\, z - 351)\, \mathrm{erf}\left(\sqrt{2}\, \sqrt[4]{z}\right) - 68\,139\,225\, e^{2\sqrt{z}}\, \sqrt{2\pi}\, (16\, z - 351)\, \mathrm{erfi}\left(\sqrt{2}\, \sqrt[4]{z}\right)\right)\right) $$

07.22.03.ae9x.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) = \frac{1}{62\,914\,560\, z^{17/4}} $$
$$ \left(221 \left(2\sqrt[4]{z}\, \left(3\left(4\,194\,304\, z^4 - 143\,196\,160\, z^3 + 1\,772\,052\,480\, z^2 - 8\,140\,366\,080\, z + 7\,972\,289\,325\right) \cos\left(2\sqrt{z}\right) + \right.\right.\right. $$
$$ 4\sqrt{z}\, \left(262\,144\, z^4 - 21\,479\,424\, z^3 + 422\,876\,160\, z^2 - 3\,281\,065\,920\, z + 7\,972\,289\,325\right) $$
$$ \left.\left.\left. \sin\left(2\sqrt{z}\right)\right) - 68\,139\,225\, \sqrt{\pi}\, (16\, z + 351)\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right) $$

07.22.03.ae9y.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{23}{4}; z\right) = -\frac{1}{125\,829\,120\, \sqrt{2}\, z^{17/4}} $$
$$ \left(1463 \left(-2\sqrt{z}\, \left(14\,942\,208\, z^4 + 687\,964\,160\, z^3 + 10\,906\,721\,280\, z^2 + 63\,405\,342\,000\, z + 58\,293\,860\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(4\,194\,304\, z^5 + 493\,355\,008\, z^4 + 13\,089\,423\,360\, z^3 + 134\,302\,371\,840\, z^2 + 456\,702\,246\,000\, z + 174\,881\,581\,875\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left. \left. 2\sqrt{z}\, \left(15\,466\,496\, z^4 + 753\,696\,768\, z^3 + 12\,760\,151\,040\, z^2 + 83\,621\,538\,000\, z + 174\,881\,581\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ae9z.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{5}{2}, \frac{23}{4}; -z\right) = \frac{1}{125\,829\,120\, \sqrt{2}\, z^{17/4}} $$
$$ \left(1463 \left(2\sqrt{z}\, \left(14\,942\,208\, z^4 - 687\,964\,160\, z^3 + 10\,906\,721\,280\, z^2 - 63\,405\,342\,000\, z + 58\,293\,860\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(4\,194\,304\, z^5 - 493\,355\,008\, z^4 + 13\,089\,423\,360\, z^3 - 134\,302\,371\,840\, z^2 + 456\,702\,246\,000\, z - 174\,881\,581\,875\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left. \left. 2\sqrt{z}\, \left(15\,466\,496\, z^4 - 753\,696\,768\, z^3 + 12\,760\,151\,040\, z^2 - 83\,621\,538\,000\, z + 174\,881\,581\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{13}{4}$, $b_{1.} = -\frac{3}{2}$

07.22.03.aea0.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{23}{4}; z\right) = \left(\frac{3\,407\,872\,z^5}{68\,139\,225} - \frac{1\,703\,936\,z^4}{4\,542\,615} - \frac{2048\,z^3}{19\,665} + \frac{768\,z^2}{437} + \frac{164\,z}{69} + 1\right)\cosh\left(2\sqrt{z}\right) +$$
$$\frac{1}{204\,417\,675}\left(2\sqrt{z}\,\left(524\,288\,z^5 + 983\,040\,z^4 + 66\,908\,160\,z^3 - 106\,444\,800\,z^2 - 213\,305\,400\,z - 204\,417\,675\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aea1.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{23}{4}; -z\right) = \left(-\frac{3\,407\,872\,z^5}{68\,139\,225} - \frac{1\,703\,936\,z^4}{4\,542\,615} + \frac{2048\,z^3}{19\,665} + \frac{768\,z^2}{437} - \frac{164\,z}{69} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{1}{204\,417\,675}\left(2\sqrt{z}\,\left(524\,288\,z^5 - 983\,040\,z^4 + 66\,908\,160\,z^3 + 106\,444\,800\,z^2 - 213\,305\,400\,z + 204\,417\,675\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aea2.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{28\,194\,075\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(5\,505\,024\,z^5 - 31\,227\,904\,z^4 + 30\,551\,040\,z^3 + 68\,739\,840\,z^2 + 68\,023\,800\,z + 28\,194\,075\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.$$
$$4\sqrt{z}\,\left(262\,144\,z^5 + 2\,523\,136\,z^4 + 15\,587\,328\,z^3 - 34\,369\,920\,z^2 - 45\,468\,540\,z - 28\,194\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.4\,z\left(1\,310\,720\,z^4 - 8\,134\,656\,z^3 + 1\,822\,464\,z^2 + 22\,913\,280\,z + 28\,194\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aea3.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{21}{4}; -z\right) = \frac{1}{28\,194\,075\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(-\left(5\,505\,024\,z^5 + 31\,227\,904\,z^4 + 30\,551\,040\,z^3 - 68\,739\,840\,z^2 + 68\,023\,800\,z - 28\,194\,075\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.\right.$$
$$4\sqrt{z}\,\left(262\,144\,z^5 - 2\,523\,136\,z^4 + 15\,587\,328\,z^3 + 34\,369\,920\,z^2 - 45\,468\,540\,z + 28\,194\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(1\,310\,720\,z^4 + 8\,134\,656\,z^3 + 1\,822\,464\,z^2 - 22\,913\,280\,z + 28\,194\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aea4.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{19}{4}; z\right) = \left(-\frac{262\,144\,z^5}{8\,887\,725} - \frac{262\,144\,z^4}{592\,515} - \frac{2048\,z^3}{3135} + \frac{1792\,z^2}{855} + \frac{140\,z}{57} + 1\right)\cosh\left(2\sqrt{z}\right) -$$
$$\frac{2\sqrt{z}\,\left(458\,752\,z^4 - 2\,048\,000\,z^3 + 1\,774\,080\,z^2 + 3\,326\,400\,z + 2\,962\,575\right)\sinh\left(2\sqrt{z}\right)}{2\,962\,575}$$

07.22.03.aea5.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{19}{4}; -z\right) = \left(\frac{262\,144\,z^5}{8\,887\,725} - \frac{262\,144\,z^4}{592\,515} + \frac{2048\,z^3}{3135} + \frac{1792\,z^2}{855} - \frac{140\,z}{57} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{2\sqrt{z}\,\left(458\,752\,z^4 + 2\,048\,000\,z^3 + 1\,774\,080\,z^2 - 3\,326\,400\,z + 2\,962\,575\right)\sin\left(2\sqrt{z}\right)}{2\,962\,575}$$

07.22.03.aea6.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{17}{4}; z\right) =$$
$$-\frac{1}{1\,342\,575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072 z^5+3\,006\,464 z^4-1\,497\,600 z^3-3\,875\,040 z^2-3\,369\,600 z-1\,342\,575\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(704\,512 z^4-2\,024\,448 z^3+2\,134\,080 z^2+2\,295\,540 z+1\,342\,575\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4 z\left(32\,768 z^4+583\,680 z^3+222\,336 z^2-1\,221\,480 z-1\,342\,575\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aea7.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{1\,342\,575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072 z^5-3\,006\,464 z^4-1\,497\,600 z^3+3\,875\,040 z^2-3\,369\,600 z+1\,342\,575\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(704\,512 z^4+2\,024\,448 z^3+2\,134\,080 z^2-2\,295\,540 z+1\,342\,575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4 z\left(32\,768 z^4-583\,680 z^3+222\,336 z^2+1\,221\,480 z-1\,342\,575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aea8.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{15}{4}; z\right) = \frac{1}{467\,775}\left(\left(704\,512 z^4-1\,182\,720 z^3+1\,270\,080 z^2+1\,205\,820 z+467\,775\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(32\,768 z^4+755\,712 z^3-309\,120 z^2-582\,120 z-467\,775\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aea9.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{15}{4}; -z\right) = \frac{1}{467\,775}\left(\left(704\,512 z^4+1\,182\,720 z^3+1\,270\,080 z^2-1\,205\,820 z+467\,775\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(-32\,768 z^4+755\,712 z^3+309\,120 z^2-582\,120 z+467\,775\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aeaa.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{13}{4}; z\right) =$$
$$\frac{1}{78\,975\sqrt{2}}\left(\sqrt[4]{z}\left(\left(360\,448 z^4+299\,520 z^2+210\,600 z+78\,975\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(16\,384 z^4+420\,864 z^3-187\,200 z^2-\right.\right.\right.$$
$$\left.\left.\left.147\,420 z-78\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)+12 z\left(28\,672 z^3-28\,416 z^2+28\,080 z+26\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeab.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{78\,975\sqrt{2}}\left(\sqrt[4]{z}\left(\left(360\,448 z^4+299\,520 z^2-210\,600 z+78\,975\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-16\,384 z^4+420\,864 z^3+187\,200 z^2-\right.\right.\right.$$
$$\left.\left.\left.147\,420 z+78\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)-12 z\left(28\,672 z^3+28\,416 z^2+28\,080 z-26\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeac.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{11}{4}; z\right) = \frac{1}{31\,185}\left(\left(-16\,384\,z^4 - 420\,864\,z^3 + 129\,600\,z^2 + 86\,940\,z + 31\,185\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(28\,672\,z^3 + 3328\,z^2 + 15\,120\,z + 10\,395\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aead.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{11}{4}; -z\right) = \frac{1}{31\,185}\left(\left(-16\,384\,z^4 + 420\,864\,z^3 + 129\,600\,z^2 - 86\,940\,z + 31\,185\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(-28\,672\,z^3 + 3328\,z^2 - 15\,120\,z + 10\,395\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aeae.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) = -\frac{1}{6075\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(8192\,z^4 + 230\,400\,z^3 - 38\,880\,z^2 - 18\,000\,z - 6075\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(41\,984\,z^3 + 28\,800\,z^2 + 13\,140\,z + 6075\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2048\,z^3 + 47\,616\,z^2 - 8280\,z - 6075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeaf.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{9}{4}; -z\right) = -\frac{1}{6075\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(8192\,z^4 - 230\,400\,z^3 - 38\,880\,z^2 + 18\,000\,z - 6075\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(41\,984\,z^3 - 28\,800\,z^2 + 13\,140\,z - 6075\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-2048\,z^3 + 47\,616\,z^2 + 8280\,z - 6075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeag.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{2835}\left(3\left(13\,312\,z^3 + 9600\,z^2 + 3060\,z + 945\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(2048\,z^3 + 47\,616\,z^2 - 5400\,z - 2835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aeah.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{2835}\left(2\sqrt{z}\left(2048\,z^3 - 47\,616\,z^2 - 5400\,z + 2835\right)\sin\left(2\sqrt{z}\right) - 3\left(13\,312\,z^3 - 9600\,z^2 + 3060\,z - 945\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aeai.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{5}{4}; z\right) = \frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(19\,456\,z^3 + 23\,040\,z^2 + 2520\,z + 675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left.4\sqrt{z}\left(1024\,z^3 + 21\,504\,z^2 - 1980\,z - 675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36\,z\left(512\,z^2 + 160\,z + 75\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeaj.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{5}{4}; -z\right) =$$
$$\frac{1}{675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-19\,456\,z^3+23\,040\,z^2-2520\,z+675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024\,z^3-21\,504\,z^2-1980\,z+675\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+36\,z\left(512\,z^2-160\,z+75\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeak.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{3}{4}; z\right) = \left(-\frac{1024\,z^3}{405}-\frac{128\,z^2}{3}+\frac{44\,z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{405}\sqrt{z}\left(4352\,z^2+1440\,z+405\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aeal.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{3}{4}; -z\right) = \left(\frac{1024\,z^3}{405}-\frac{128\,z^2}{3}-\frac{44\,z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{405}\sqrt{z}\left(4352\,z^2-1440\,z+405\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aeam.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{1}{4}; z\right) =$$
$$-\frac{1}{135\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512\,z^3+7712\,z^2-1440\,z-135\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1984\,z^2-12\,z+135\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(128\,z^2+1464\,z-135\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aean.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{135\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512\,z^3-7712\,z^2-1440\,z+135\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1984\,z^2+12\,z+135\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(-128\,z^2+1464\,z+135\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeao.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{1}{4}; z\right) = \left(\frac{64\,z^2}{5}-\frac{20\,z}{3}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{135}\sqrt{z}\left(128\,z^2+1080\,z-135\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aeap.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{1}{4}; -z\right) = \left(\frac{64\,z^2}{5}+\frac{20\,z}{3}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{135}\sqrt{z}\left(-128\,z^2+1080\,z+135\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aeaq.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{3}{4}; z\right) = \frac{1}{135\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(768\,z^2-520\,z+135\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(64\,z^2+292\,z+15\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+44\,z\left(16\,z-15\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aear.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{3}{4}; -z\right) = \frac{1}{135\sqrt{2}} \left(\sqrt[4]{z}\left(\left(768z^2+520z+135\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(64z^2-292z+15\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 44z\left(16z+15\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aeas.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{5}{4}; z\right) = \left(\frac{64z^2}{135}+\frac{4z}{15}+1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\left(16z-15\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.aeat.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{5}{4}; -z\right) = \left(\frac{64z^2}{135}-\frac{4z}{15}+1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}\sqrt{z}\left(16z+15\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.aeau.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{7}{4}; z\right) = \frac{1}{180\sqrt{2}\,\sqrt[4]{z}} \left(\left(2\sqrt{z}\left(64z^2-80z+135\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(832z^2-480z-135\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(64z^2-168z+135\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aeav.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{7}{4}; -z\right) = \frac{1}{180\sqrt{2}\,\sqrt[4]{z}} \left(\left(2\sqrt{z}\left(64z^2+80z+135\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(832z^2+480z-135\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(64z^2+168z+135\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aeaw.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{9}{4}; z\right) = \left(\frac{28z}{27}+1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{27}\sqrt{z}\left(8z-27\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.aeax.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) = \left(1-\frac{28z}{27}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{27}\sqrt{z}\left(8z+27\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.aeay.01

$$ {}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) = \frac{1}{5760\sqrt{2}\,z^{5/4}} \left(7\left(2\sqrt{z}\left(256z^2+1440z+585\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(2048z^3-5376z^2-5760z-1755\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 18\sqrt{z}\left(224z+195\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aeaz.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) =$$
$$\frac{1}{5760\sqrt{2}\, z^{5/4}}\left(7\left(-2\sqrt{z}\,\left(256z^2-1440z+585\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(2048z^3+5376z^2-5760z+1755\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.18\,(195-224z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeb0.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) = \left(\frac{4z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aeb1.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) = \left(1-\frac{4z}{3}\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aeb2.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) = \frac{1}{184\,320\sqrt{2}\, z^{9/4}}$$
$$\left(77\left(2\sqrt{z}\,\left(4096z^3+25\,344z^2+84\,240z+69\,615\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(53\,248z^3+232\,704z^2+570\,960z+208\,845\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4096z^3+33\,024z^2+125\,424z+208\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeb3.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{15}{4}; -z\right) = -\frac{1}{184\,320\sqrt{2}\, z^{9/4}}$$
$$\left(77\left(2\sqrt{z}\,\left(4096z^3-25\,344z^2+84\,240z-69\,615\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-53\,248z^3+232\,704z^2-570\,960z+208\,845\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-4096z^3+33\,024z^2-125\,424z+208\,845\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeb4.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) = \frac{1}{393\,216\, z^{13/4}}$$
$$\left(13\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-16\,384z^{7/2}-86\,016z^3-291\,840z^{5/2}-802\,560z^2-1\,805\,760z^{3/2}-3\,160\,080z-3\,950\,100\sqrt{z}+\right.\right.\right.$$
$$e^{4\sqrt{z}}\left(16\,384z^{7/2}-86\,016z^3+291\,840z^{5/2}-802\,560z^2+1\,805\,760z^{3/2}-3\,160\,080z+3\,950\,100\sqrt{z}-\right.$$
$$\left.\left.\left.2\,962\,575\right)-2\,962\,575\right)+2\,962\,575\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+2\,962\,575\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aeb5.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) =$$
$$-\frac{1}{98\,304\,z^{13/4}}\left(13\left(2\,962\,575\,\sqrt{\pi}\;C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\;\left(3\left(28\,672\,z^3-267\,520\,z^2+1\,053\,360\,z-987\,525\right)\cos\left(2\sqrt{z}\right)+\right.\right.\right.$$
$$\left.\left.\left.4\sqrt{z}\;\left(4096\,z^3-72\,960\,z^2+451\,440\,z-987\,525\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aeb6.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) = \frac{1}{393\,216\sqrt{2}\;z^{13/4}}\left(77\left(-14\sqrt{z}\;\left(32\,768\,z^3+479\,232\,z^2+2\,545\,920\,z+2\,297\,295\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(131\,072\,z^4+4\,251\,648\,z^3+39\,596\,544\,z^2+126\,977\,760\,z+48\,243\,195\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.6\sqrt{z}\;\left(81\,920\,z^3+1\,317\,888\,z^2+8\,019\,648\,z+16\,081\,065\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeb7.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{19}{4}; -z\right) = -\frac{1}{393\,216\sqrt{2}\;z^{13/4}}\left(77\left(14\sqrt{z}\;\left(32\,768\,z^3-479\,232\,z^2+2\,545\,920\,z-2\,297\,295\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(131\,072\,z^4-4\,251\,648\,z^3+39\,596\,544\,z^2-126\,977\,760\,z+48\,243\,195\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.6\sqrt{z}\;\left(-81\,920\,z^3+1\,317\,888\,z^2-8\,019\,648\,z+16\,081\,065\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeb8.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) = \frac{1}{25\,165\,824\,z^{17/4}}$$
$$\left(221\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\;\left(262\,144\,z^4+2\,490\,368\,z^{7/2}+14\,008\,320\,z^3+58\,368\,000\,z^{5/2}+189\,404\,160\,z^2+476\,720\,640\,z^{3/2}+\right.\right.\right.$$
$$897\,462\,720\,z+1\,181\,079\,900\sqrt{z}+e^{4\sqrt{z}}\left(262\,144\,z^4-2\,490\,368\,z^{7/2}+14\,008\,320\,z^3-58\,368\,000\,z^{5/2}+\right.$$
$$\left.\left.\left.189\,404\,160\,z^2-476\,720\,640\,z^{3/2}+897\,462\,720\,z-1\,181\,079\,900\sqrt{z}+885\,809\,925\right)+885\,809\,925\right)+$$
$$\left.2\,962\,575\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;(16z-299)\,\mathrm{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+2\,962\,575\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;(16z-299)\,\mathrm{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aeb9.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) =$$
$$\frac{1}{6\,291\,456\,z^{17/4}}\left(221\left(2\sqrt[4]{z}\;\left(\left(262\,144\,z^4-14\,008\,320\,z^3+189\,404\,160\,z^2-897\,462\,720\,z+885\,809\,925\right)\cos\left(2\sqrt{z}\right)-76\sqrt{z}\right.\right.\right.$$
$$\left.\left.\left.\left(32\,768\,z^3-768\,000\,z^2+6\,272\,640\,z-15\,540\,525\right)\sin\left(2\sqrt{z}\right)\right)-2\,962\,575\sqrt{\pi}\;(16z+299)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)$$

07.22.03.aeba.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) =$$
$$\frac{1}{12\,582\,912\sqrt{2}\,z^{17/4}}\left(1463\left(2\sqrt{z}\left(262\,144z^4+20\,021\,248z^3+356\,428\,800z^2+2\,168\,646\,480z+2\,010\,133\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(12\,320\,768z^4+407\,666\,688z^3+4\,491\,002\,880z^2+15\,695\,119\,440z+6\,030\,399\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(262\,144z^4+21\,626\,880z^3+413\,457\,408z^2+2\,830\,267\,440z+6\,030\,399\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aebb.01

$${}_1F_2\left(\frac{13}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) = \frac{1}{12\,582\,912\sqrt{2}\,z^{17/4}}$$
$$\left(1463\left(2\sqrt{z}\left(262\,144z^4-20\,021\,248z^3+356\,428\,800z^2-2\,168\,646\,480z+2\,010\,133\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-12\,320\,768z^4+407\,666\,688z^3-4\,491\,002\,880z^2+15\,695\,119\,440z-6\,030\,399\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(262\,144z^4-21\,626\,880z^3+413\,457\,408z^2-2\,830\,267\,440z+6\,030\,399\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{13}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.aebc.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) = \left(-\frac{524\,288z^5}{68\,139\,225}+\frac{65\,536z^4}{504\,735}-\frac{28\,672z^3}{19\,665}-\frac{1024z^2}{1311}+\frac{72z}{23}+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\left(327\,680z^4-1\,622\,016z^3-15\,966\,720z^2+15\,301\,440z+13\,627\,845\right)\sinh\left(2\sqrt{z}\right)}{13\,627\,845}$$

07.22.03.aebd.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) = \left(\frac{524\,288z^5}{68\,139\,225}+\frac{65\,536z^4}{504\,735}+\frac{28\,672z^3}{19\,665}-\frac{1024z^2}{1311}-\frac{72z}{23}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\left(327\,680z^4+1\,622\,016z^3-15\,966\,720z^2-15\,301\,440z+13\,627\,845\right)\sin\left(2\sqrt{z}\right)}{13\,627\,845}$$

07.22.03.aebe.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) =$$
$$-\frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(262\,144z^5-2\,097\,152z^4+31\,641\,600z^3-22\,913\,280z^2-30\,431\,700z-9\,398\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(917\,504z^4-5\,185\,536z^3-16\,093\,440z^2+22\,913\,280z+9\,398\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(65\,536z^4-737\,280z^3+8\,957\,952z^2+613\,440z-9\,398\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aebf.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{21}{4}; -z\right) =$$
$$\frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(262\,144\,z^5+2\,097\,152\,z^4+31\,641\,600\,z^3+22\,913\,280\,z^2-30\,431\,700\,z+9\,398\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(917\,504\,z^4+5\,185\,536\,z^3-16\,093\,440\,z^2-22\,913\,280\,z+9\,398\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4\,z\left(65\,536\,z^4+737\,280\,z^3+8\,957\,952\,z^2-613\,440\,z-9\,398\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aebg.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{19}{4}; z\right) = \left(\frac{65\,536\,z^4}{197\,505}-\frac{16\,384\,z^3}{9405}-\frac{512\,z^2}{285}+\frac{64\,z}{19}+1\right)\cosh\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\left(65\,536\,z^4-245\,760\,z^3+5\,322\,240\,z^2-3\,326\,400\,z-2\,962\,575\right)\sinh\left(2\sqrt{z}\right)}{2\,962\,575}$$

07.22.03.aebh.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{19}{4}; -z\right) = \left(\frac{65\,536\,z^4}{197\,505}+\frac{16\,384\,z^3}{9405}-\frac{512\,z^2}{285}-\frac{64\,z}{19}+1\right)\cos\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\left(65\,536\,z^4+245\,760\,z^3+5\,322\,240\,z^2+3\,326\,400\,z-2\,962\,575\right)\sin\left(2\sqrt{z}\right)}{2\,962\,575}$$

07.22.03.aebi.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{17}{4}; z\right) =$$
$$\frac{1}{447\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(540\,672\,z^4-2\,309\,120\,z^3+1\,010\,880\,z^2+1\,579\,500\,z+447\,525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(32\,768\,z^4+75\,776\,z^3+1\,357\,440\,z^2-1\,221\,480\,z-447\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(126\,976\,z^3-567\,552\,z^2-203\,760\,z+447\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aebj.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{447\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(540\,672\,z^4+2\,309\,120\,z^3+1\,010\,880\,z^2-1\,579\,500\,z+447\,525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(32\,768\,z^4-75\,776\,z^3+1\,357\,440\,z^2+1\,221\,480\,z-447\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(-126\,976\,z^3-567\,552\,z^2+203\,760\,z+447\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aebk.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) =$$

$$\left(-\frac{32\,768\,z^4}{155\,925} - \frac{2048\,z^3}{1485} - \frac{128\,z^2}{33} + \frac{56\,z}{15} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(45\,056\,z^3 - 152\,320\,z^2 + 55\,440\,z + 51\,975\right)\sinh\left(2\sqrt{z}\right)}{51\,975}$$

07.22.03.aebl.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) =$$

$$\left(-\frac{32\,768\,z^4}{155\,925} + \frac{2048\,z^3}{1485} - \frac{128\,z^2}{33} - \frac{56\,z}{15} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(45\,056\,z^3 + 152\,320\,z^2 + 55\,440\,z - 51\,975\right)\sin\left(2\sqrt{z}\right)}{51\,975}$$

07.22.03.aebm.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) =$$

$$-\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^4 + 209\,920\,z^3 - 37\,440\,z^2 - 105\,300\,z - 26\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(69\,632\,z^3 - 157\,440\,z^2 + 84\,240\,z + 26\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(4096\,z^3 + 36\,096\,z^2 + 33\,840\,z - 26\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aebn.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) =$$

$$-\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^4 - 209\,920\,z^3 - 37\,440\,z^2 + 105\,300\,z - 26\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(69\,632\,z^3 + 157\,440\,z^2 + 84\,240\,z - 26\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(4096\,z^3 - 36\,096\,z^2 + 33\,840\,z + 26\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aebo.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) =$$

$$\frac{1}{10\,395}\left(\left(69\,632\,z^3 - 96\,000\,z^2 + 45\,360\,z + 10\,395\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(4096\,z^3 + 52\,992\,z^2 - 8400\,z - 10\,395\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aebp.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{11}{4}; -z\right) =$$

$$\frac{1}{10\,395}\left(2\sqrt{z}\left(4096\,z^3 - 52\,992\,z^2 - 8400\,z + 10\,395\right)\sin\left(2\sqrt{z}\right) - \left(69\,632\,z^3 + 96\,000\,z^2 + 45\,360\,z - 10\,395\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aebq.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{2025\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(7168z^3-1152z^2+1980z+405\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048z^3+30\,720z^2-8280z-2025\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+12z\left(2816z^2-2400z+675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aebr.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{2025\sqrt{2}}\left(\sqrt[4]{z}\left(-5\left(7168z^3+1152z^2+1980z-405\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048z^3-30\,720z^2-8280z+2025\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+12z\left(2816z^2+2400z+675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aebs.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{7}{4}; z\right) = \left(-\frac{2048z^3}{945}-\frac{2048z^2}{63}+\frac{40z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{315}\sqrt{z}\left(2816z^2-160z+315\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aebt.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) = \left(\frac{2048z^3}{945}-\frac{2048z^2}{63}-\frac{40z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{315}\sqrt{z}\left(2816z^2+160z+315\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aebu.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) =$$
$$-\frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^3+17\,280z^2-1620z-225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4096z^2+1440z+225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(256z^2+3360z-225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aebv.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{5}{4}; -z\right) =$$
$$\frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024z^3-17\,280z^2-1620z+225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4096z^2-1440z+225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(-256z^2+3360z+225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aebw.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{3}{4}; z\right) = \frac{1}{9}\cosh\left(2\sqrt{z}\right)(16z+3)^2+\frac{2}{135}\sqrt{z}\left(256z^2+3360z-135\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aebx.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{3}{4}; -z\right) = \frac{1}{9}\cos\left(2\sqrt{z}\right)(3-16z)^2+\frac{2}{135}\sqrt{z}\left(-256z^2+3360z+135\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aeby.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) = \frac{1}{45\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(1856z^2+1260z+45\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(128z^2+1464z-45\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36z(48z+5) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aebz.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) = \frac{1}{45\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(1856z^2-1260z+45\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-128z^2+1464z+45\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36(5-48z) z J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aec0.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) = \left(-\frac{128z^2}{45} - 24z + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{9}\sqrt{z}\,(80z+9)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aec1.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{1}{4}; -z\right) = \left(-\frac{128z^2}{45} + 24z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{9}(9-80z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aec2.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{3}{4}; z\right) =$$
$$-\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^2+460z-45\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(176z-15) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z(16z+75) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aec3.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{3}{4}; -z\right) =$$
$$-\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\left(\left(64z^2-460z-45\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(176z+15) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4(75-16z) z J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aec4.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{5}{4}; z\right) = \left(1 - \frac{16z}{5}\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{45}\sqrt{z}\,(16z+45)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aec5.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{5}{4}; -z\right) = \left(\frac{16z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{45}(45-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aec6.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{7}{4}; z\right) =$$
$$-\frac{1}{30\sqrt{2}\sqrt[4]{z}}\left(\left(40\sqrt{z}\,(3z-1) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(64z^2+40z+15\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(52z-15) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aec7.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{7}{4}; -z\right) =$$
$$\frac{1}{30\sqrt{2}\sqrt[4]{z}}\left(\left(40\sqrt{z}\,(3z+1)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-64z^2+40z-15\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,(52z+15)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aec8.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{9}{4}; z\right) = \left(1-\frac{8z}{9}\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aec9.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{9}{4}; -z\right) = \left(\frac{8z}{9}+1\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aeca.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) = -\frac{1}{960\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\,\left(128z^2-160z-45\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left.\left(512z^2+480z+135\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(128z^2-192z-135\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aecb.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = \frac{1}{960\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\,\left(128z^2+160z-45\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left.\left(512z^2-480z+135\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(128z^2+192z-135\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aecc.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aecd.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aece.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) =$$
$$-\frac{1}{30\,720\sqrt{2}\,z^{9/4}}\left(77\left(-14\sqrt{z}\,\left(256z^2+720z+585\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4096z^3+14\,592z^2+33\,840z+12\,285\right)\right.$$
$$\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\,\left(256z^2+848z+1365\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aecf.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) =$$

$$\frac{1}{30\,720\sqrt{2}\,z^{9/4}}\left(77\left(14\sqrt{z}\,\left(256z^2-720z+585\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4096z^3-14\,592z^2+33\,840z-12\,285\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$

$$\left.\left.18\sqrt{z}\,\left(256z^2-848z+1365\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aecg.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) =$$

$$-\frac{1}{65\,536\,z^{13/4}}\left(13e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4096z^3+15\,360z^{5/2}+42\,240z^2+95\,040z^{3/2}+166\,320z+207\,900\sqrt{z}+\right.\right.\right.$$

$$\left.\left.e^{4\sqrt{z}}\left(4096z^3-15\,360z^{5/2}+42\,240z^2-95\,040z^{3/2}+166\,320z-207\,900\sqrt{z}+155\,925\right)+155\,925\right)-\right.$$

$$\left.155\,925\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-155\,925\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.aech.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) = -\frac{1}{16\,384\,z^{13/4}}\left(13\left(155\,925\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$

$$\left.\left.2\sqrt[4]{z}\left(\left(4096z^3-42\,240z^2+166\,320z-155\,925\right)\cos\left(2\sqrt{z}\right)-60\sqrt{z}\,\left(256z^2-1584z+3465\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aeci.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) = -\frac{1}{65\,536\sqrt{2}\,z^{13/4}}$$

$$\left(77\left(2\sqrt{z}\,\left(8192z^3+152\,064z^2+842\,400z+765\,765\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(180\,224z^3+1\,833\,984z^2+6\,027\,840z+2\,297\,295\right)\right.\right.$$

$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(8192z^3+176\,640z^2+1\,126\,944z+2\,297\,295\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aecj.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) = -\frac{1}{65\,536\sqrt{2}\,z^{13/4}}$$

$$\left(77\left(2\sqrt{z}\,\left(8192z^3-152\,064z^2+842\,400z-765\,765\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-180\,224z^3+1\,833\,984z^2-6\,027\,840z+\right.\right.\right.$$

$$\left.\left.\left.2\,297\,295\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-8192z^3+176\,640z^2-1\,126\,944z+2\,297\,295\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeck.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) =$$
$$-\frac{1}{4\,194\,304\,z^{17/4}}\left(221\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-65\,536\,z^{7/2}-491\,520\,z^3-2\,273\,280\,z^{5/2}-7\,772\,160\,z^2-20\,148\,480\,z^{3/2}-\right.\right.\right.$$
$$\left.38\,586\,240\,z-51\,351\,300\sqrt{z}+e^{4\sqrt{z}}\left(65\,536\,z^{7/2}-491\,520\,z^3+2\,273\,280\,z^{5/2}-7\,772\,160\,z^2+\right.\right.$$
$$\left.\left.20\,148\,480\,z^{3/2}-38\,586\,240\,z+51\,351\,300\sqrt{z}-38\,513\,475\right)-38\,513\,475\right)-$$
$$\left.\left.155\,925\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-247)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-155\,925\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-247)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aecl.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) =$$
$$-\frac{1}{1\,048\,576\,z^{17/4}}\left(221\left(155\,925\sqrt{\pi}\,(16z+247)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(15\left(32\,768\,z^3-518\,144\,z^2+2\,572\,416\,z-2\,567\,565\right)\right.\right.\right.$$
$$\left.\left.\left.\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(16\,384\,z^3-568\,320\,z^2+5\,037\,120\,z-12\,837\,825\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aecm.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) =$$
$$-\frac{1}{2\,097\,152\sqrt{2}\,z^{17/4}}\left(1463\left(-2\sqrt{z}\left(606\,208\,z^3+13\,178\,880\,z^2+85\,765\,680\,z+80\,405\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(262\,144\,z^4+13\,959\,168\,z^3+171\,924\,480\,z^2+624\,864\,240\,z+241\,215\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.78\sqrt{z}\left(16\,384\,z^3+387\,072\,z^2+2\,827\,440\,z+6\,185\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.aecn.01

$${}_1F_2\left(\frac{13}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) =$$
$$-\frac{1}{2\,097\,152\sqrt{2}\,z^{17/4}}\left(1463\left(2\sqrt{z}\left(606\,208\,z^3-13\,178\,880\,z^2+85\,765\,680\,z-80\,405\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(262\,144\,z^4-13\,959\,168\,z^3+171\,924\,480\,z^2-624\,864\,240\,z+241\,215\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.78\sqrt{z}\left(16\,384\,z^3-387\,072\,z^2+2\,827\,440\,z-6\,185\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

For fixed z and $a_1 = \frac{13}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.aeco.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) = \frac{1}{68\,139\,225}\left(9\left(65\,536\,z^4+1\,261\,568\,z^3-13\,601\,280\,z^2-14\,857\,920\,z+7\,571\,025\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.4\sqrt{z}\left(65\,536\,z^4-1\,622\,016\,z^3+5\,322\,240\,z^2+52\,557\,120\,z-9\,948\,015\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aecp.01

$${}_1F_2\left(\frac{13}{4};\frac{1}{2},-\frac{23}{4};-z\right)=\frac{1}{68\,139\,225}\left(9\left(65\,536\,z^4-1\,261\,568\,z^3-13\,601\,280\,z^2+14\,857\,920\,z+7\,571\,025\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(65\,536\,z^4+1\,622\,016\,z^3+5\,322\,240\,z^2-52\,557\,120\,z-9\,948\,015\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aecq.01

$${}_1F_2\left(\frac{13}{4};\frac{1}{2},-\frac{21}{4};z\right)=\frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(458\,752\,z^4+1\,413\,120\,z^3-35\,151\,360\,z^2+7\,160\,400\,z+9\,398\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(65\,536\,z^4-1\,327\,104\,z^3+6\,144\,000\,z^2+20\,635\,200\,z-9\,398\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+48\,z\left(8192\,z^3+58\,624\,z^2-834\,240\,z-484\,155\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aecr.01

$${}_1F_2\left(\frac{13}{4};\frac{1}{2},-\frac{21}{4};-z\right)=-\frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-458\,752\,z^4+1\,413\,120\,z^3+35\,151\,360\,z^2+7\,160\,400\,z-9\,398\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(65\,536\,z^4+1\,327\,104\,z^3+6\,144\,000\,z^2-20\,635\,200\,z-9\,398\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+48\,z\left(8192\,z^3-58\,624\,z^2-834\,240\,z+484\,155\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aecs.01

$${}_1F_2\left(\frac{13}{4};\frac{1}{2},-\frac{19}{4};z\right)=\frac{1}{2\,962\,575}\left(\left(-65\,536\,z^4+1\,032\,192\,z^3-5\,322\,240\,z^2-7\,318\,080\,z+2\,962\,575\right)\cosh\left(2\sqrt{z}\right)-128\sqrt{z}\left(2048\,z^3-83\,160\,z+10\,395\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aect.01

$${}_1F_2\left(\frac{13}{4};\frac{1}{2},-\frac{19}{4};-z\right)=\frac{1}{2\,962\,575}\left(\left(-65\,536\,z^4-1\,032\,192\,z^3-5\,322\,240\,z^2+7\,318\,080\,z+2\,962\,575\right)\cos\left(2\sqrt{z}\right)-128\sqrt{z}\left(2048\,z^3-83\,160\,z-10\,395\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aecu.01

$${}_1F_2\left(\frac{13}{4};\frac{1}{2},-\frac{17}{4};z\right)=-\frac{1}{447\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768\,z^4-317\,440\,z^3+1\,956\,480\,z^2-210\,600\,z-447\,525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(77\,824\,z^3-180\,480\,z^2-1\,214\,640\,z+447\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+8\,z\left(4096\,z^3-48\,384\,z^2+252\,720\,z+176\,445\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aecv.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{1}{2}, -\frac{17}{4}; -z\right) = -\frac{1}{447\,525\sqrt{2}} \left(\sqrt[4]{z}\left(\left(32\,768 z^4 + 317\,440 z^3 + 1\,956\,480 z^2 + 210\,600 z - 447\,525\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(77\,824 z^3 + 180\,480 z^2 - 1\,214\,640 z - 447\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 8 z\left(4096 z^3 + 48\,384 z^2 + 252\,720 z - 176\,445\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aecw.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{1}{2}, -\frac{15}{4}; z\right) = \left(\frac{4096 z^3}{7425} - \frac{256 z^2}{165} - \frac{16 z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{4\sqrt{z}\left(4096 z^3 - 26\,880 z^2 + 166\,320 z - 10\,395\right)\sinh\left(2\sqrt{z}\right)}{155\,925} $$

07.22.03.aecx.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{1}{2}, -\frac{15}{4}; -z\right) = \left(-\frac{4096 z^3}{7425} - \frac{256 z^2}{165} + \frac{16 z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{4\sqrt{z}\left(4096 z^3 + 26\,880 z^2 + 166\,320 z + 10\,395\right)\sin\left(2\sqrt{z}\right)}{155\,925} $$

07.22.03.aecy.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{1}{2}, -\frac{13}{4}; z\right) = \frac{1}{26\,325\sqrt{2}} \left(\sqrt[4]{z}\left(\left(49\,152 z^3 - 135\,424 z^2 + 26\,325\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096 z^3 - 8960 z^2 + 92\,208 z - 26\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 16 z\left(2816 z^2 - 7296 z - 6759\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aecz.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{1}{2}, -\frac{13}{4}; -z\right) = \frac{1}{26\,325\sqrt{2}} \left(\sqrt[4]{z}\left(\left(-49\,152 z^3 - 135\,424 z^2 + 26\,325\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096 z^3 + 8960 z^2 + 92\,208 z + 26\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 16 z\left(2816 z^2 + 7296 z - 6759\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aed0.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{1}{2}, -\frac{11}{4}; z\right) = \frac{1536\,(35 - 16 z)\, z^{3/2}\sinh\left(2\sqrt{z}\right) - \left(4096 z^3 + 3840 z^2 + 45\,360 z - 10\,395\right)\cosh\left(2\sqrt{z}\right)}{10\,395} $$

07.22.03.aed1.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{1}{2}, -\frac{11}{4}; -z\right) = \frac{1536\,(16 z + 35)\sin\left(2\sqrt{z}\right) z^{3/2} + \left(4096 z^3 - 3840 z^2 + 45\,360 z + 10\,395\right)\cos\left(2\sqrt{z}\right)}{10\,395} $$

07.22.03.aed2.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, -\frac{9}{4}; z\right) = -\frac{1}{2025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^3+11\,264z^2+1800z-2025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(6400z^2-9888z+2025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(256z^2+672z+1413\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aed3.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, -\frac{9}{4}; -z\right) = \frac{1}{2025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^3-11\,264z^2+1800z+2025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(6400z^2+9888z+2025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-8z\left(256z^2-672z+1413\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aed4.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, -\frac{7}{4}; z\right) = \frac{1}{945}\left(\left(6400z^2-6240z+945\right)\cosh\left(2\sqrt{z}\right)+4\sqrt{z}\left(256z^2+1440z+105\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aed5.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, -\frac{7}{4}; -z\right) = \frac{1}{945}\left(\left(6400z^2+6240z+945\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2-1440z+105\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aed6.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, -\frac{5}{4}; z\right) = \frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(3328z^2-720z+225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(256z^2+1824z-225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+48z\left(64z-39\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aed7.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, -\frac{5}{4}; -z\right) = \frac{1}{225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(3328z^2+720z+225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-256z^2+1824z+225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-48z\left(64z+39\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aed8.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, -\frac{3}{4}; z\right) = \frac{1}{135}\left(\left(-256z^2-1824z+135\right)\cosh\left(2\sqrt{z}\right)+192\left(1-8z\right)\sqrt{z}\,\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aed9.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, -\frac{3}{4}; -z\right) = \frac{1}{135}\left(\left(-256z^2+1824z+135\right)\cos\left(2\sqrt{z}\right)-192\sqrt{z}\,\left(8z+1\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aeda.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, -\frac{1}{4}; z\right) =$$
$$-\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^2+1080z-45\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(368z+45)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+8z(16z+93)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aedb.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, -\frac{1}{4}; -z\right) =$$
$$-\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\left(\left(128z^2-1080z-45\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(368z-45)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+8(93-16z)\,z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aedc.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{1}{4}; z\right) = \frac{1}{45}\left((336z+45)\cosh\left(2\sqrt{z}\right)+4\sqrt{z}\,(16z+93)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aedd.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{1}{4}; -z\right) = \frac{1}{45}\left((45-336z)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,(16z-93)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aede.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{3}{4}; z\right) = \frac{\sqrt[4]{z}\left(5(32z+9)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(16z+75)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+144z\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{45\sqrt{2}}$$

07.22.03.aedf.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{3}{4}; -z\right) = \frac{\sqrt[4]{z}\left(-5(32z-9)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(16z-75)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+144z\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{45\sqrt{2}}$$

07.22.03.aedg.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{5}{4}; z\right) = \left(\frac{16z}{45}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{64}{45}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aedh.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{5}{4}; -z\right) = \left(1-\frac{16z}{45}\right)\cos\left(2\sqrt{z}\right)-\frac{64}{45}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aedi.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{7}{4}; z\right) = \frac{\left(\sqrt{z}\,(8z+17)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(52z-3)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,(4z+3)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{15\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.aedj.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{7}{4}; -z\right) = -\frac{\left(\sqrt{z}\,(8z-17)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(52z+3)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2(3-4z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{15\sqrt{2}\,\sqrt[4]{z}}$$

07.22.03.aedk.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{9}{4}; z\right) = \cosh\left(2\sqrt{z}\right)+\frac{4}{9}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aedl.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{9}{4}; -z\right) = \cos\left(2\sqrt{z}\right) - \frac{4}{9}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aedm.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{11}{4}; z\right) =$$

$$\frac{1}{480\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\,(48z+5)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(128z^2-64z-15\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(32z+15)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aedn.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{11}{4}; -z\right) =$$

$$-\frac{1}{480\sqrt{2}\,z^{5/4}}\left(7\left(2(5-48z)\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(128z^2+64z-15\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(32z-15)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aedo.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{13}{4}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.aedp.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{13}{4}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.aedq.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{15}{4}; z\right) =$$

$$\frac{1}{15\,360\sqrt{2}\,z^{9/4}}\left(77\left(2\sqrt{z}\,\left(256z^2+400z+315\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 5\left(256z^2+528z+189\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(256z^2+624z+945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aedr.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{15}{4}; -z\right) =$$

$$\frac{1}{15\,360\sqrt{2}\,z^{9/4}}\left(77\left(2\sqrt{z}\,\left(256z^2-400z+315\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 5\left(256z^2-528z+189\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(256z^2-624z+945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeds.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{17}{4}; z\right) = \frac{1}{32\,768\,z^{13/4}}\left(13\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-1024z^{5/2}-2816z^2-6336z^{3/2}-11\,088z - \right.\right.\right.$$

$$\left.\left.\left.13\,860\sqrt{z}\,+e^{4\sqrt{z}}\left(1024z^{5/2}-2816z^2+6336z^{3/2}-11\,088z+13\,860\sqrt{z}\,-10\,395\right)-10\,395\right)+\right.$$

$$\left.10\,395\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+10\,395\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aedt.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{17}{4}; -z\right) = \frac{1}{8192\, z^{13/4}} $$
$$ \left(13\left(2\sqrt[4]{z}\left(11\left(256\,z^2-1008\,z+945\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(256\,z^2-1584\,z+3465\right)\sin\left(2\sqrt{z}\right)\right)-10\,395\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right) $$

07.22.03.aedu.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{19}{4}; z\right) = \frac{1}{32\,768\sqrt{2}\, z^{13/4}} $$
$$ \left(77\left(-2\sqrt{z}\left(8192\,z^2+48\,960\,z+45\,045\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(8192\,z^3+102\,912\,z^2+352\,800\,z+135\,135\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right. $$
$$ \left.\left.18\sqrt{z}\left(1024\,z^2+7168\,z+15\,015\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aedv.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{19}{4}; -z\right) = \frac{1}{32\,768\sqrt{2}\, z^{13/4}} $$
$$ \left(77\left(2\sqrt{z}\left(8192\,z^2-48\,960\,z+45\,045\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(8192\,z^3-102\,912\,z^2+352\,800\,z-135\,135\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right. $$
$$ \left.\left.18\sqrt{z}\left(1024\,z^2-7168\,z+15\,015\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aedw.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{21}{4}; z\right) = \frac{1}{2\,097\,152\, z^{17/4}} $$
$$ \left(221\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16\,384\,z^3+98\,304\,z^{5/2}+371\,712\,z^2+1\,013\,760\,z^{3/2}+1\,995\,840\,z+2\,702\,700\sqrt{z}+e^{4\sqrt{z}}\left(16\,384\,z^3-\right.\right.\right.\right. $$
$$ \left.\left.\left.\left.98\,304\,z^{5/2}+371\,712\,z^2-1\,013\,760\,z^{3/2}+1\,995\,840\,z-2\,702\,700\sqrt{z}+2\,027\,025\right)+2\,027\,025\right)+\right. $$
$$ \left.\left.10\,395\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16\,z-195)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+10\,395\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16\,z-195)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aedx.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{21}{4}; -z\right) = $$
$$ -\frac{1}{524\,288\, z^{17/4}}\left(221\left(10\,395\sqrt{\pi}\,(16\,z+195)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(\left(16\,384\,z^3-371\,712\,z^2+1\,995\,840\,z-2\,027\,025\right)\right.\right.\right. $$
$$ \left.\left.\left.\cos\left(2\sqrt{z}\right)-12\sqrt{z}\left(8192\,z^2-84\,480\,z+225\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aedy.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{23}{4}; z\right) = \frac{1}{1\,048\,576\sqrt{2}\, z^{17/4}}$$
$$\left(1463\left(2\sqrt{z}\,\left(16\,384 z^3 + 552\,960 z^2 + 4\,015\,440 z + 3\,828\,825\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(507\,904 z^3 + 7\,649\,280 z^2 + 29\,549\,520 z + 11\,486\,475\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,384 z^3 + 620\,544 z^2 + 5\,045\,040 z + 11\,486\,475\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aedz.01

$${}_1F_2\left(\frac{13}{4}; \frac{1}{2}, \frac{23}{4}; -z\right) = -\frac{1}{1\,048\,576\sqrt{2}\, z^{17/4}}\left(1463\left(2\sqrt{z}\,\left(16\,384 z^3 - 552\,960 z^2 + 4\,015\,440 z - 3\,828\,825\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-507\,904 z^3 + 7\,649\,280 z^2 - 29\,549\,520 z + 11\,486\,475\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-16\,384 z^3 + 620\,544 z^2 - 5\,045\,040 z + 11\,486\,475\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{13}{4}$, $b_{1.} = \frac{3}{2}$

07.22.03.aee0.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{136\,278\,450\sqrt{z}}\left(4\sqrt{z}\,\left(65\,536 z^4 - 1\,032\,192 z^3 - 14\,031\,360 z^2 + 43\,606\,080 z + 88\,891\,425\right)\cosh\left(2\sqrt{z}\right) - 9\left(65\,536 z^4 - 2\,867\,200 z^3 - 1\,989\,120 z^2 + 43\,928\,640 z + 12\,182\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aee1.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{136\,278\,450\sqrt{z}}\left(4\sqrt{z}\,\left(65\,536 z^4 + 1\,032\,192 z^3 - 14\,031\,360 z^2 - 43\,606\,080 z + 88\,891\,425\right)\cos\left(2\sqrt{z}\right) - 9\left(65\,536 z^4 + 2\,867\,200 z^3 - 1\,989\,120 z^2 - 43\,928\,640 z + 12\,182\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aee2.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(65\,536 z^4 - 1\,105\,920 z^3 - 5\,184\,000 z^2 + 29\,050\,080 z + 9\,398\,025\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 16\sqrt{z}\left(8192 z^3 - 572\,160 z^2 + 576\,960 z + 4\,999\,365\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(65\,536 z^4 - 1\,056\,768 z^3 - 7\,703\,040 z^2 + 28\,375\,200 z + 31\,798\,305\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aee3.01

$${}_1F_2\left(\frac{13}{4};\frac{3}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536\,z^4+1\,105\,920\,z^3-5\,184\,000\,z^2-29\,050\,080\,z+9\,398\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-16\right.\right.$$
$$\sqrt{z}\left(8192\,z^3+572\,160\,z^2+576\,960\,z-4\,999\,365\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-65\,536\,z^4-1\,056\,768\,z^3+7\,703\,040\,z^2+28\,375\,200\,z-31\,798\,305\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aee4.01

$${}_1F_2\left(\frac{13}{4};\frac{3}{2},-\frac{19}{4};z\right)=\frac{1}{5\,925\,150\sqrt{z}}\left(\left(-65\,536\,z^4+1\,032\,192\,z^3+2\,419\,200\,z^2-16\,027\,200\,z-4\,385\,745\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.12\,096\sqrt{z}\left(256\,z^2-480\,z-1215\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aee5.01

$${}_1F_2\left(\frac{13}{4};\frac{3}{2},-\frac{19}{4};-z\right)=\frac{1}{5\,925\,150\sqrt{z}}\left(\left(-65\,536\,z^4-1\,032\,192\,z^3+2\,419\,200\,z^2+16\,027\,200\,z-4\,385\,745\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.12\,096\sqrt{z}\left(256\,z^2+480\,z-1215\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aee6.01

$${}_1F_2\left(\frac{13}{4};\frac{3}{2},-\frac{17}{4};z\right)=$$
$$-\frac{1}{447\,525\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(4096\,z^3+79\,104\,z^2-256\,272\,z-89\,505\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(4096\,z^3-57\,600\,z^2-2640\,z+454\,185\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+3\left(4096\,z^3+170\,240\,z^2-370\,320\,z-460\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aee7.01

$${}_1F_2\left(\frac{13}{4};\frac{3}{2},-\frac{17}{4};-z\right)=-\frac{1}{447\,525\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(-5\left(4096\,z^3-79\,104\,z^2-256\,272\,z+89\,505\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(4096\,z^3+57\,600\,z^2-2640\,z-454\,185\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+3\left(4096\,z^3-170\,240\,z^2-370\,320\,z+460\,845\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aee8.01

$${}_1F_2\left(\frac{13}{4};\frac{3}{2},-\frac{15}{4};z\right)=\frac{1}{311\,850\sqrt{z}}$$
$$\left(4\sqrt{z}\left(4096\,z^3-48\,384\,z^2+45\,360\,z+182\,385\right)\cosh\left(2\sqrt{z}\right)+7\left(4096\,z^3+34\,560\,z^2-110\,160\,z-29\,835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aee9.01

$${}_1F_2\left(\frac{13}{4};\frac{3}{2},-\frac{15}{4};-z\right)=\frac{1}{311\,850\sqrt{z}}$$
$$\left(7\left(-4096\,z^3+34\,560\,z^2+110\,160\,z-29\,835\right)\sin\left(2\sqrt{z}\right)-4\sqrt{z}\left(4096\,z^3+48\,384\,z^2+45\,360\,z-182\,385\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aeea.01

$${}_1F_2\left(\frac{13}{4};\frac{3}{2},-\frac{13}{4};z\right)=\frac{1}{26\,325\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(4096z^3-35\,072z^2+67\,440z+26\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+16\sqrt{z}\left(1280z^2+2496z-12\,645\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^3-39\,168z^2+47\,088z+72\,765\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeeb.01

$${}_1F_2\left(\frac{13}{4};\frac{3}{2},-\frac{13}{4};-z\right)=$$
$$-\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096z^3+35\,072z^2+67\,440z-26\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+16\sqrt{z}\left(1280z^2-2496z-12\,645\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(4096z^3+39\,168z^2+47\,088z-72\,765\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeec.01

$${}_1F_2\left(\frac{13}{4};\frac{3}{2},-\frac{11}{4};z\right)=\frac{-48\sqrt{z}\left(256z^2-945\right)\cosh\left(2\sqrt{z}\right)-\left(4096z^3-26\,880z^2+45\,360z+12\,285\right)\sinh\left(2\sqrt{z}\right)}{20\,790\sqrt{z}}$$

07.22.03.aeed.01

$${}_1F_2\left(\frac{13}{4};\frac{3}{2},-\frac{11}{4};-z\right)=\frac{\left(4096z^3+26\,880z^2+45\,360z-12\,285\right)\sin\left(2\sqrt{z}\right)-48\sqrt{z}\left(256z^2-945\right)\cos\left(2\sqrt{z}\right)}{20\,790\sqrt{z}}$$

07.22.03.aeee.01

$${}_1F_2\left(\frac{13}{4};\frac{3}{2},-\frac{9}{4};z\right)=$$
$$-\frac{1}{2025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(3840z^2-4256z-2025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(256z^2-992z+1821\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(3328z^2-1632z-4851\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeef.01

$${}_1F_2\left(\frac{13}{4};\frac{3}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{2025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-3840z^2-4256z+2025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(256z^2+992z+1821\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(3328z^2+1632z-4851\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeeg.01

$${}_1F_2\left(\frac{13}{4};\frac{3}{2},-\frac{7}{4};z\right)=\frac{4\sqrt{z}\left(256z^2-480z+945\right)\cosh\left(2\sqrt{z}\right)+15\left(256z^2-224z-63\right)\sinh\left(2\sqrt{z}\right)}{1890\sqrt{z}}$$

07.22.03.aeeh.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, -\frac{7}{4}; -z\right) = \frac{4\sqrt{z}\,\left(256\,z^2+480\,z+945\right)\cos\left(2\sqrt{z}\right)+15\left(256\,z^2+224\,z-63\right)\sin\left(2\sqrt{z}\right)}{1890\sqrt{z}}$$

07.22.03.aeei.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, -\frac{5}{4}; z\right) = \frac{1}{225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(\left(256\,z^2+256\,z+225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+16\sqrt{z}\,\left(128\,z-93\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(256\,z^2-192\,z+441\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeej.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, -\frac{5}{4}; -z\right) = \frac{1}{225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(\left(256\,z^2-256\,z+225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+16\sqrt{z}\,\left(128\,z+93\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(256\,z^2+192\,z+441\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeek.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, -\frac{3}{4}; z\right) = \frac{-32\sqrt{z}\,\left(32\,z-15\right)\cosh\left(2\sqrt{z}\right)-\left(256\,z^2+288\,z+105\right)\sinh\left(2\sqrt{z}\right)}{270\sqrt{z}}$$

07.22.03.aeel.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, -\frac{3}{4}; -z\right) = \frac{32\sqrt{z}\,\left(32\,z+15\right)\cos\left(2\sqrt{z}\right)+\left(-256\,z^2+288\,z-105\right)\sin\left(2\sqrt{z}\right)}{270\sqrt{z}}$$

07.22.03.aeem.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, -\frac{1}{4}; z\right) =$$
$$-\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(272\,z-45\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\,\left(16\,z+33\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+3\left(80\,z-21\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeen.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, -\frac{1}{4}; -z\right) =$$
$$-\frac{1}{45\sqrt{2}}\left(\sqrt[4]{z}\,\left(-\left(272\,z+45\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\,\left(16\,z-33\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+3\left(80\,z+21\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeeo.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{1}{4}; z\right) = \frac{4\sqrt{z}\,\left(16\,z+33\right)\cosh\left(2\sqrt{z}\right)+3\left(80\,z-7\right)\sinh\left(2\sqrt{z}\right)}{90\sqrt{z}}$$

07.22.03.aeep.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{1}{4}; -z\right) = \frac{-4\sqrt{z}\,\left(16\,z-33\right)\cos\left(2\sqrt{z}\right)-3\left(80\,z+7\right)\sin\left(2\sqrt{z}\right)}{90\sqrt{z}}$$

07.22.03.aeeq.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{3}{4}; z\right) = \frac{\sqrt[4]{z}\left((16z+45)\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 112\sqrt{z}\; I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + (16z+21)\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{45\sqrt{2}}$$

07.22.03.aeer.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{3}{4}; -z\right) = -\frac{\sqrt[4]{z}\left((16z-45)\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 112\sqrt{z}\; J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + (21-16z)\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{45\sqrt{2}}$$

07.22.03.aees.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{5}{4}; z\right) = \frac{48\sqrt{z}\,\cosh\left(2\sqrt{z}\right) + (16z+21)\sinh\left(2\sqrt{z}\right)}{90\sqrt{z}}$$

07.22.03.aeet.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{5}{4}; -z\right) = \frac{48\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (21-16z)\sin\left(2\sqrt{z}\right)}{90\sqrt{z}}$$

07.22.03.aeeu.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{7}{4}; z\right) = \frac{\left(11\sqrt{z}\; I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2(4z+3)\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 9\sqrt{z}\; I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{15\sqrt{2}\;\sqrt[4]{z}}$$

07.22.03.aeev.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{7}{4}; -z\right) = \frac{\left(11\sqrt{z}\; J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2(3-4z)\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 9\sqrt{z}\; J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{15\sqrt{2}\;\sqrt[4]{z}}$$

07.22.03.aeew.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{9}{4}; z\right) = \frac{2}{9}\cosh\left(2\sqrt{z}\right) + \frac{7\sinh\left(2\sqrt{z}\right)}{18\sqrt{z}}$$

07.22.03.aeex.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{9}{4}; -z\right) = \frac{2}{9}\cos\left(2\sqrt{z}\right) + \frac{7\sin\left(2\sqrt{z}\right)}{18\sqrt{z}}$$

07.22.03.aeey.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{11}{4}; z\right) = \frac{7\left(2\sqrt{z}\;(8z-1)\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (32z+3)\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\;(8z-3)\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{240\sqrt{2}\; z^{5/4}}$$

07.22.03.aeez.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{11}{4}; -z\right) = \frac{7\left(2\sqrt{z}\;(8z+1)\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (32z-3)\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\;(8z+3)\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{240\sqrt{2}\; z^{5/4}}$$

07.22.03.aef0.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{13}{4}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.aef1.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{13}{4}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.aef2.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{15}{4}; z\right) = \frac{1}{7680\sqrt{2}\, z^{9/4}}$$

$$\left(77\left(-2\sqrt{z}\,(48z+35)\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(256z^2+304z+105\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 10\sqrt{z}\,(16z+21)\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aef3.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{15}{4}; -z\right) = \frac{1}{7680\sqrt{2}\, z^{9/4}}$$

$$\left(77\left(2\sqrt{z}\,(48z-35)\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(256z^2-304z+105\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 10\,(21-16z)\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aef4.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{17}{4}; z\right) = \frac{1}{16384\, z^{13/4}}$$

$$\left(13\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(256z^2+576z^{3/2}+1008z+1260\sqrt{z}\right) + e^{4\sqrt{z}}\left(256z^2-576z^{3/2}+1008z-1260\sqrt{z}+945\right)+945\right) - 945\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 945\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aef5.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{17}{4}; -z\right) =$$

$$\frac{1}{4096\, z^{13/4}}\left(13\left(945\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(256z^2-1008z+945\right)\cos\left(2\sqrt{z}\right) + 36\,(35-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aef6.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{19}{4}; z\right) =$$

$$\frac{1}{16384\sqrt{2}\, z^{13/4}}\left(77\left(2\sqrt{z}\,\left(512z^2+3680z+3465\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\left(1024z^2+3840z+1485\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(512z^2+4704z+10395\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aef7.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{19}{4}; -z\right) =$$

$$-\frac{1}{16384\sqrt{2}\, z^{13/4}}\left(77\left(2\sqrt{z}\,\left(512z^2-3680z+3465\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\left(1024z^2-3840z+1485\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(512z^2-4704z+10395\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aef8.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{21}{4}; z\right) =$$
$$\frac{1}{1\,048\,576\, z^{17/4}}\left(221\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-4096\, z^{5/2} - 20\,480\, z^2 - 62\,208\, z^{3/2} - 129\,024\, z - 180\,180\sqrt{z} + e^{4\sqrt{z}}\right.\right.\right.$$
$$\left.\left.\left(4096\, z^{5/2} - 20\,480\, z^2 + 62\,208\, z^{3/2} - 129\,024\, z + 180\,180\sqrt{z} - 135\,135\right) - 135\,135\right) -$$
$$\left.\left.945\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 143)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 945\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 143)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aef9.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{21}{4}; -z\right) = \frac{1}{262\,144\, z^{17/4}}\left(221\left(945\sqrt{\pi}\,(16z + 143)\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) -\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\left(\left(20\,480\, z^2 - 129\,024\, z + 135\,135\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(1024\, z^2 - 15\,552\, z + 45\,045\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aefa.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{23}{4}; z\right) =$$
$$\frac{1}{524\,288\sqrt{2}\, z^{17/4}}\left(1463\left(-10\sqrt{z}\left(5120\, z^2 + 45\,936\, z + 45\,045\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384\, z^3 + 399\,360\, z^2 + 1\,718\,640\, z + 675\,675\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\left(3072\, z^2 + 30\,800\, z + 75\,075\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aefb.01

$${}_1F_2\left(\frac{13}{4}; \frac{3}{2}, \frac{23}{4}; -z\right) =$$
$$-\frac{1}{524\,288\sqrt{2}\, z^{17/4}}\left(1463\left(10\sqrt{z}\left(5120\, z^2 - 45\,936\, z + 45\,045\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384\, z^3 - 399\,360\, z^2 + 1\,718\,640\, z - 675\,675\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\left(3072\, z^2 - 30\,800\, z + 75\,075\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{13}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.aefc.01

$${}_1F_2\left(\frac{13}{4}; \frac{5}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{181\,704\,600\, z^{3/2}}\left(\left(524\,288\, z^5 + 8\,847\,360\, z^4 - 169\,021\,440\, z^3 - 1\,008\,322\,560\, z^2 - 1\,127\,763\,000\, z - 454\,237\,875\right)\sinh\left(2\sqrt{z}\right) -\right.$$
$$\left.2\sqrt{z}\left(1\,900\,544\, z^4 - 8\,110\,080\, z^3 - 271\,434\,240\, z^2 - 612\,964\,800\, z - 454\,237\,875\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aefd.01

$${}_1F_2\left(\frac{13}{4};\frac{5}{2},-\frac{23}{4};-z\right)=$$
$$\frac{1}{181\,704\,600\,z^{3/2}}\left(2\sqrt{z}\,\left(1\,900\,544\,z^4+8\,110\,080\,z^3-271\,434\,240\,z^2+612\,964\,800\,z-454\,237\,875\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(524\,288\,z^5-8\,847\,360\,z^4-169\,021\,440\,z^3+1\,008\,322\,560\,z^2-1\,127\,763\,000\,z+454\,237\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aefe.01

$${}_1F_2\left(\frac{13}{4};\frac{5}{2},-\frac{21}{4};z\right)=\frac{1}{12\,530\,700\sqrt{2}\,z^{3/4}}\left(\left(32\,z\left(-22\,528\,z^3+176\,640\,z^2+2\,056\,200\,z+2\,095\,065\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\,\left(65\,536\,z^4+516\,096\,z^3-15\,075\,840\,z^2-53\,197\,920\,z-40\,883\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.3\left(-262\,144\,z^4+1\,638\,400\,z^3+27\,191\,040\,z^2+48\,454\,560\,z+40\,883\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeff.01

$${}_1F_2\left(\frac{13}{4};\frac{5}{2},-\frac{21}{4};-z\right)=\frac{1}{12\,530\,700\sqrt{2}\,z^{3/4}}\left(\left(32\,z\left(22\,528\,z^3+176\,640\,z^2-2\,056\,200\,z+2\,095\,065\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\,\left(65\,536\,z^4-516\,096\,z^3-15\,075\,840\,z^2+53\,197\,920\,z-40\,883\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.3\left(262\,144\,z^4+1\,638\,400\,z^3-27\,191\,040\,z^2+48\,454\,560\,z-40\,883\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aefg.01

$${}_1F_2\left(\frac{13}{4};\frac{5}{2},-\frac{19}{4};z\right)=\frac{1}{7\,900\,200\,z^{3/2}}\left(9\left(65\,536\,z^4-573\,440\,z^3-4\,354\,560\,z^2-4\,455\,360\,z-1\,740\,375\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\,\left(65\,536\,z^4+147\,456\,z^3-10\,160\,640\,z^2-23\,163\,840\,z-15\,663\,375\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aefh.01

$${}_1F_2\left(\frac{13}{4};\frac{5}{2},-\frac{19}{4};-z\right)=\frac{1}{7\,900\,200\,z^{3/2}}\left(2\sqrt{z}\,\left(65\,536\,z^4-147\,456\,z^3-10\,160\,640\,z^2+23\,163\,840\,z-15\,663\,375\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.9\left(65\,536\,z^4+573\,440\,z^3-4\,354\,560\,z^2+4\,455\,360\,z-1\,740\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aefi.01

$${}_1F_2\left(\frac{13}{4};\frac{5}{2},-\frac{17}{4};z\right)=\frac{1}{596\,700\sqrt{2}\,z^{3/4}}$$
$$\left(\left(8\,z\left(-4096\,z^3+11\,520\,z^2+352\,080\,z+326\,955\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(53\,248\,z^3-556\,800\,z^2-2\,239\,440\,z-1\,514\,205\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-32\,768\,z^4+30\,720\,z^3+3\,350\,400\,z^2+5\,793\,480\,z+4\,542\,615\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aefj.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, -\frac{17}{4}; -z\right) = \frac{1}{596\,700\sqrt{2}\, z^{3/4}} \left(\left(8z\left(4096z^3 + 11\,520z^2 - 352\,080z + 326\,955\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(53\,248z^3 + 556\,800z^2 - 2\,239\,440z + 1\,514\,205\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-32\,768z^4 - 30\,720z^3 + 3\,350\,400z^2 - 5\,793\,480z + 4\,542\,615\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aefk.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, -\frac{15}{4}; z\right) = \frac{1}{415\,800 z^{3/2}} \left(\left(32\,768z^4 - 129\,024z^3 - 1\,814\,400z^2 - 1\,670\,760z - 626\,535\right)\sinh\left(2\sqrt{z}\right) - 18\sqrt{z}\left(4096z^3 - 48\,384z^2 - 115\,920z - 69\,615\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.aefl.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, -\frac{15}{4}; -z\right) = \frac{1}{415\,800 z^{3/2}} \left(\left(-32\,768z^4 - 129\,024z^3 + 1\,814\,400z^2 - 1\,670\,760z + 626\,535\right)\sin\left(2\sqrt{z}\right) - 18\sqrt{z}\left(4096z^3 + 48\,384z^2 - 115\,920z + 69\,615\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.aefm.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, -\frac{13}{4}; z\right) = \frac{1}{35\,100\sqrt{2}\, z^{3/4}} \left(\left(-512z\left(16z^2 - 285z - 240\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096z^3 - 20\,736z^2 - 114\,960z - 65\,835\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(-4096z^3 + 54\,016z^2 + 92\,400z + 65\,835\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aefn.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, -\frac{13}{4}; -z\right) = \frac{1}{35\,100\sqrt{2}\, z^{3/4}} \left(\left(-512z\left(16z^2 + 285z - 240\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4096z^3 + 20\,736z^2 - 114\,960z + 65\,835\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(4096z^3 + 54\,016z^2 - 92\,400z + 65\,835\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aefo.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, -\frac{11}{4}; z\right) = \frac{1}{27\,720 z^{3/2}} \left(\left(4096z^3 - 103\,680z^2 - 84\,240z - 29\,835\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4096z^3 - 20\,736z^2 - 58\,320z - 29\,835\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.aefp.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, -\frac{11}{4}; -z\right) = \frac{1}{27\,720 z^{3/2}} \left(\left(4096z^3 + 103\,680z^2 - 84\,240z + 29\,835\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4096z^3 + 20\,736z^2 - 58\,320z + 29\,835\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.aefq.01

$${}_1F_2\left(\frac{13}{4}; \frac{5}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{2700\sqrt{2}\, z^{3/4}}\left(\left(8z\left(-256z^2+1184z+915\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(256z^2+7584z+3465\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.\left(-2048z^3+9216z^2+16\,632z+10\,395\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aefr.01

$${}_1F_2\left(\frac{13}{4}; \frac{5}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{2700\sqrt{2}\, z^{3/4}}\left(\left(-8z\left(256z^2+1184z-915\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(256z^2-7584z+3465\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.\left(2048z^3+9216z^2-16\,632z+10\,395\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aefs.01

$${}_1F_2\left(\frac{13}{4}; \frac{5}{2}, -\frac{7}{4}; z\right) = \frac{6\sqrt{z}\left(256z^2+1440z+585\right)\cosh\left(2\sqrt{z}\right) + \left(2048z^3-7680z^2-5400z-1755\right)\sinh\left(2\sqrt{z}\right)}{2520\, z^{3/2}}$$

07.22.03.aeft.01

$${}_1F_2\left(\frac{13}{4}; \frac{5}{2}, -\frac{7}{4}; -z\right) = \frac{\left(2048z^3+7680z^2-5400z+1755\right)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\left(256z^2-1440z+585\right)\cos\left(2\sqrt{z}\right)}{2520\, z^{3/2}}$$

07.22.03.aefu.01

$${}_1F_2\left(\frac{13}{4}; \frac{5}{2}, -\frac{5}{4}; z\right) = \frac{1}{300\sqrt{2}\, z^{3/4}}$$
$$\left(\left(32z(24z+19) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(256z^2-704z-231\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(512z^2+1344z+693\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aefv.01

$${}_1F_2\left(\frac{13}{4}; \frac{5}{2}, -\frac{5}{4}; -z\right) = \frac{1}{300\sqrt{2}\, z^{3/4}}$$
$$\left(\left(32(19-24z)z J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(256z^2+704z-231\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(512z^2-1344z+693\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aefw.01

$${}_1F_2\left(\frac{13}{4}; \frac{5}{2}, -\frac{3}{4}; z\right) = \frac{-2\sqrt{z}\left(256z^2-480z-135\right)\cosh\left(2\sqrt{z}\right) - 3\left(256z^2+160z+45\right)\sinh\left(2\sqrt{z}\right)}{360\, z^{3/2}}$$

07.22.03.aefx.01

$${}_1F_2\left(\frac{13}{4}; \frac{5}{2}, -\frac{3}{4}; -z\right) = \frac{2\sqrt{z}\left(256z^2+480z-135\right)\cos\left(2\sqrt{z}\right) + 3\left(256z^2-160z+45\right)\sin\left(2\sqrt{z}\right)}{360\, z^{3/2}}$$

07.22.03.aefy.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, -\frac{1}{4}; z\right) = \frac{1}{60\sqrt{2}\, z^{3/4}}\left(\left(8(11-16z)\, z\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 28\sqrt{z}\,(16z+3)\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-128z^2+168z+63\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aefz.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, -\frac{1}{4}; -z\right) = \frac{1}{60\sqrt{2}\, z^{3/4}}\left(\left(8z(16z+11)\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 28\sqrt{z}\,(16z-3)\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-128z^2-168z+63\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aeg0.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{1}{4}; z\right) = \frac{2\sqrt{z}\,(112z+15)\cosh\left(2\sqrt{z}\right) + \left(128z^2-72z-15\right)\sinh\left(2\sqrt{z}\right)}{120\, z^{3/2}} $$

07.22.03.aeg1.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{1}{4}; -z\right) = \frac{2\sqrt{z}\,(112z-15)\cos\left(2\sqrt{z}\right) + \left(-128z^2-72z+15\right)\sin\left(2\sqrt{z}\right)}{120\, z^{3/2}} $$

07.22.03.aeg2.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{3}{4}; z\right) = \frac{\left(64z\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(16z-3)\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3(16z+3)\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{60\sqrt{2}\, z^{3/4}} $$

07.22.03.aeg3.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{3}{4}; -z\right) = \frac{\left(64z\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(16z+3)\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3(3-16z)\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{60\sqrt{2}\, z^{3/4}} $$

07.22.03.aeg4.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{5}{4}; z\right) = \frac{2\sqrt{z}\,(16z-3)\cosh\left(2\sqrt{z}\right) + 3(16z+1)\sinh\left(2\sqrt{z}\right)}{120\, z^{3/2}} $$

07.22.03.aeg5.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{5}{4}; -z\right) = \frac{2\sqrt{z}\,(16z+3)\cos\left(2\sqrt{z}\right) + 3(16z-1)\sin\left(2\sqrt{z}\right)}{120\, z^{3/2}} $$

07.22.03.aeg6.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{7}{4}; z\right) = \frac{\left(8z\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 20\sqrt{z}\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + (8z-3)\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}\, z^{3/4}} $$

07.22.03.aeg7.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{7}{4}; -z\right) = \frac{\left(8z\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 20\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - (8z+3)\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{20\sqrt{2}\, z^{3/4}} $$

07.22.03.aeg8.01

$${}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{9}{4}; z\right) = \frac{6\sqrt{z}\,\cosh\left(2\sqrt{z}\right) + (8z-3)\sinh\left(2\sqrt{z}\right)}{24\,z^{3/2}}$$

07.22.03.aeg9.01

$${}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{9}{4}; -z\right) = \frac{(8z+3)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cos\left(2\sqrt{z}\right)}{24\,z^{3/2}}$$

07.22.03.aega.01

$${}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{11}{4}; z\right) = \frac{7\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)\left(2\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right) + (8z-3)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)\right)\Gamma\left(\frac{3}{4}\right)^2}{40\sqrt{2}\,z^{5/4}}$$

07.22.03.aegb.01

$${}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{11}{4}; -z\right) = \frac{7\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)\left((8z+3)\,J_{\frac{3}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)\right)\Gamma\left(\frac{3}{4}\right)^2}{40\sqrt{2}\,z^{5/4}}$$

07.22.03.aegc.01

$${}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{13}{4}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.aegd.01

$${}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{13}{4}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.aege.01

$${}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{15}{4}; z\right) =$$

$$\frac{1}{1280\sqrt{2}\,z^{9/4}}\left(77\left(2\sqrt{z}\,(16z+7)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - (80z+21)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(16z+21)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aegf.01

$${}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{15}{4}; -z\right) =$$

$$-\frac{1}{1280\sqrt{2}\,z^{9/4}}\left(77\left(2\sqrt{z}\,(16z-7)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (21-80z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\,(21-16z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aegg.01

$${}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{17}{4}; z\right) =$$

$$\frac{1}{8192\,z^{13/4}}\left(39\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-64\,z^{3/2} - 144z - 180\sqrt{z} + e^{4\sqrt{z}}\left(64\,z^{3/2} - 144z + 180\sqrt{z} - 135\right) - 135\right) + \right.$$

$$\left. 135\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 135\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aegh.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{17}{4}; -z\right) = -\frac{39\left(135\sqrt{\pi}\ C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\ \left(9\,(16z-15)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\ (16z-45)\sin\left(2\sqrt{z}\right)\right)\right)}{2048\,z^{13/4}} $$

07.22.03.aegi.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{19}{4}; z\right) = \frac{1}{8192\sqrt{2}\ z^{13/4}} $$

$$ \left(231\left(-2\sqrt{z}\ (384z+385)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(512z^2+2912z+1155\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 14\sqrt{z}\ (64z+165)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aegj.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{19}{4}; -z\right) = -\frac{1}{8192\sqrt{2}\ z^{13/4}} $$

$$ \left(231\left(2\sqrt{z}\ (384z-385)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(512z^2-2912z+1155\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 14\,(165-64z)\sqrt{z}\ J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aegk.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{21}{4}; z\right) = \frac{1}{524\,288\,z^{17/4}}\left(663\,e^{-2\sqrt{z}}\right. $$

$$ \left(4\sqrt[4]{z}\ \left(1024z^2+4608z^{3/2}+10\,944z+16\,380\sqrt{z}\ + e^{4\sqrt{z}}\ \left(1024z^2-4608z^{3/2}+10\,944z-16\,380\sqrt{z}\ +12\,285\right)+\right.\right. $$

$$ \left.\left.12\,285\right) + 135\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ (16z-91)\,\mathrm{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right) + 135\,e^{2\sqrt{z}}\ \sqrt{2\pi}\ (16z-91)\,\mathrm{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\Big) $$

07.22.03.aegl.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{21}{4}; -z\right) = \frac{1}{131\,072\,z^{17/4}} $$

$$ \left(663\left(2\sqrt[4]{z}\ \left(\left(1024z^2-10\,944z+12\,285\right)\cos\left(2\sqrt{z}\right) + 36\,(455-128z)\sqrt{z}\ \sin\left(2\sqrt{z}\right)\right) - 135\sqrt{\pi}\ (16z+91)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right) $$

07.22.03.aegm.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{23}{4}; z\right) = $$

$$ \frac{1}{262\,144\sqrt{2}\ z^{17/4}}\left(4389\left(2\sqrt{z}\ \left(1024z^2+16\,720z+17\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(23\,552z^2+129\,360z+51\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$

$$ \left.\left.2\sqrt{z}\ \left(1024z^2+18\,480z+51\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aegn.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{5}{2}, \frac{23}{4}; -z\right) = \frac{1}{262\,144\sqrt{2}\ z^{17/4}} $$

$$ \left(4389\left(2\sqrt{z}\ \left(1024z^2-16\,720z+17\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-23\,552z^2+129\,360z-51\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right. $$

$$ \left.\left.2\sqrt{z}\ \left(1024z^2-18\,480z+51\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{13}{4}$, $b_{1.} = \frac{7}{2}$

07.22.03.aego.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{7}{2}, -\frac{23}{4}; z\right) = \frac{1}{145\,363\,680\, z^{5/2}} \left(2\sqrt{z}\left(524\,288\, z^5 + 42\,270\,720\, z^4 + 526\,970\,880\, z^3 + 2\,896\,266\,240\, z^2 + 10\,901\,709\,000\, z + 14\,989\,849\,875\right)\cosh\left(2\sqrt{z}\right) - 3\left(4\,456\,448\, z^5 + 115\,998\,720\, z^4 + 867\,686\,400\, z^3 + 4\,009\,824\,000\, z^2 + 10\,296\,058\,500\, z + 4\,996\,616\,625\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aegp.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{145\,363\,680\, z^{5/2}} \left(3\left(4\,456\,448\, z^5 - 115\,998\,720\, z^4 + 867\,686\,400\, z^3 - 4\,009\,824\,000\, z^2 + 10\,296\,058\,500\, z - 4\,996\,616\,625\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\left(524\,288\, z^5 - 42\,270\,720\, z^4 + 526\,970\,880\, z^3 - 2\,896\,266\,240\, z^2 + 10\,901\,709\,000\, z - 14\,989\,849\,875\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.aegq.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{7}{2}, -\frac{21}{4}; z\right) = \frac{1}{10\,024\,560\sqrt{2}\, z^{7/4}} \left(\left(4z\left(65\,536\, z^4 + 3\,751\,936\, z^3 + 33\,530\,880\, z^2 + 150\,465\,600\, z + 422\,463\,195\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 44\sqrt{z}\left(131\,072\, z^4 + 2\,555\,904\, z^3 + 15\,356\,160\, z^2 + 62\,298\,720\, z + 115\,217\,235\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(262\,144\, z^5 + 16\,515\,072\, z^4 + 166\,993\,920\, z^3 + 830\,649\,600\, z^2 + 2\,780\,080\,380\, z + 3\,802\,168\,755\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aegr.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{7}{2}, -\frac{21}{4}; -z\right) = \frac{1}{10\,024\,560\sqrt{2}\, z^{7/4}} \left(\left(-4z\left(65\,536\, z^4 - 3\,751\,936\, z^3 + 33\,530\,880\, z^2 - 150\,465\,600\, z + 422\,463\,195\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 44\sqrt{z}\left(131\,072\, z^4 - 2\,555\,904\, z^3 + 15\,356\,160\, z^2 - 62\,298\,720\, z + 115\,217\,235\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(262\,144\, z^5 - 16\,515\,072\, z^4 + 166\,993\,920\, z^3 - 830\,649\,600\, z^2 + 2\,780\,080\,380\, z - 3\,802\,168\,755\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aegs.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{7}{2}, -\frac{19}{4}; z\right) = \frac{1}{6\,320\,160\, z^{5/2}} \left(2\sqrt{z}\left(1\,245\,184\, z^4 + 18\,432\,000\, z^3 + 93\,381\,120\, z^2 + 334\,152\,000\, z + 454\,237\,875\right)\cosh\left(2\sqrt{z}\right) - \left(262\,144\, z^5 + 11\,796\,480\, z^4 + 88\,381\,440\, z^3 + 374\,250\,240\, z^2 + 939\,802\,500\, z + 454\,237\,875\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aegt.01

$${}_1F_2\left(\frac{13}{4};\frac{7}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{6\,320\,160\,z^{5/2}}\left(2\sqrt{z}\,\left(1\,245\,184\,z^4-18\,432\,000\,z^3+93\,381\,120\,z^2-334\,152\,000\,z+454\,237\,875\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(262\,144\,z^5-11\,796\,480\,z^4+88\,381\,440\,z^3-374\,250\,240\,z^2+939\,802\,500\,z-454\,237\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aegu.01

$${}_1F_2\left(\frac{13}{4};\frac{7}{2},-\frac{17}{4};z\right)=\frac{1}{477\,360\sqrt{2}\,z^{7/4}}\left(\left(4\,z\left(126\,976\,z^3+1\,263\,360\,z^2+5\,022\,480\,z+13\,627\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\,\left(32\,768\,z^4+1\,050\,624\,z^3+6\,026\,880\,z^2+22\,496\,760\,z+40\,883\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.33\left(16\,384\,z^4+189\,440\,z^3+857\,280\,z^2+2\,753\,100\,z+3\,716\,685\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aegv.01

$${}_1F_2\left(\frac{13}{4};\frac{7}{2},-\frac{17}{4};-z\right)=\frac{1}{477\,360\sqrt{2}\,z^{7/4}}\left(\left(4\,z\left(126\,976\,z^3-1\,263\,360\,z^2+5\,022\,480\,z-13\,627\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\,\left(32\,768\,z^4-1\,050\,624\,z^3+6\,026\,880\,z^2-22\,496\,760\,z+40\,883\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.33\left(16\,384\,z^4-189\,440\,z^3+857\,280\,z^2-2\,753\,100\,z+3\,716\,685\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aegw.01

$${}_1F_2\left(\frac{13}{4};\frac{7}{2},-\frac{15}{4};z\right)=\frac{1}{332\,640\,z^{5/2}}\left(2\sqrt{z}\,\left(32\,768\,z^4+755\,712\,z^3+3\,507\,840\,z^2+11\,695\,320\,z+15\,663\,375\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.9\left(49\,152\,z^4+394\,240\,z^3+1\,485\,120\,z^2+3\,619\,980\,z+1\,740\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aegx.01

$${}_1F_2\left(\frac{13}{4};\frac{7}{2},-\frac{15}{4};-z\right)=\frac{1}{332\,640\,z^{5/2}}\left(2\sqrt{z}\,\left(32\,768\,z^4-755\,712\,z^3+3\,507\,840\,z^2-11\,695\,320\,z+15\,663\,375\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.9\left(49\,152\,z^4-394\,240\,z^3+1\,485\,120\,z^2-3\,619\,980\,z+1\,740\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aegy.01

$${}_1F_2\left(\frac{13}{4};\frac{7}{2},-\frac{13}{4};z\right)=\frac{1}{28\,080\sqrt{2}\,z^{7/4}}$$
$$\left(\left(4\,z\left(4096\,z^3+57\,600\,z^2+195\,120\,z+504\,735\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(45\,056\,z^3+257\,280\,z^2+852\,720\,z+1\,514\,205\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,384\,z^4+279\,552\,z^3+1\,129\,920\,z^2+3\,423\,420\,z+4\,542\,615\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aegz.01

$${}_1F_2\left(\frac{13}{4};\frac{7}{2},-\frac{13}{4};-z\right)=\frac{1}{28\,080\sqrt{2}\,z^{7/4}}$$
$$\left(\left(4z\left(4096z^3-57\,600z^2+195\,120z-504\,735\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(45\,056z^3-257\,280z^2+852\,720z-1\,514\,205\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-16\,384z^4+279\,552z^3-1\,129\,920z^2+3\,423\,420z-4\,542\,615\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeh0.01

$${}_1F_2\left(\frac{13}{4};\frac{7}{2},-\frac{11}{4};z\right)=\frac{1}{22\,176z^{5/2}}\left(18\sqrt{z}\left(4096z^3+17\,664z^2+53\,040z+69\,615\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(16\,384z^4+175\,104z^3+561\,600z^2+1\,312\,740z+626\,535\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aeh1.01

$${}_1F_2\left(\frac{13}{4};\frac{7}{2},-\frac{11}{4};-z\right)=\frac{1}{22\,176z^{5/2}}\left(\left(-16\,384z^4+175\,104z^3-561\,600z^2+1\,312\,740z-626\,535\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.18\sqrt{z}\left(4096z^3-17\,664z^2+53\,040z-69\,615\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aeh2.01

$${}_1F_2\left(\frac{13}{4};\frac{7}{2},-\frac{9}{4};z\right)=\frac{1}{2160\sqrt{2}\,z^{7/4}}$$
$$\left(\left(4z\left(3328z^2+9120z+21\,945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2048z^3+13\,824z^2+38\,280z+65\,835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.3\left(5120z^3+18\,304z^2+50\,820z+65\,835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeh3.01

$${}_1F_2\left(\frac{13}{4};\frac{7}{2},-\frac{9}{4};-z\right)=$$
$$-\frac{1}{2160\sqrt{2}\,z^{7/4}}\left(\left(4z\left(3328z^2-9120z+21\,945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048z^3-13\,824z^2+38\,280z-65\,835\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+3\left(-5120z^3+18\,304z^2-50\,820z+65\,835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeh4.01

$${}_1F_2\left(\frac{13}{4};\frac{7}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{2016z^{5/2}}\left(2\sqrt{z}\left(2048z^3+9216z^2+23\,400z+29\,835\right)\cosh\left(2\sqrt{z}\right)-\left(11\,264z^3+28\,800z^2+63\,180z+29\,835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aeh5.01

$${}_1F_2\left(\frac{13}{4};\frac{7}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{2016z^{5/2}}\left(\left(11\,264z^3-28\,800z^2+63\,180z-29\,835\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(2048z^3-9216z^2+23\,400z-29\,835\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aeh6.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{7}{2}, -\frac{5}{4}; z\right) = \frac{1}{240\sqrt{2}\, z^{7/4}}\left(\left(4z\left(256z^2+544z+1155\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024z^2+2112z+3465\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(1024z^3+3456z^2+8316z+10\,395\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aeh7.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{7}{2}, -\frac{5}{4}; -z\right) = \frac{1}{240\sqrt{2}\, z^{7/4}}\left(\left(-4z\left(256z^2-544z+1155\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1024z^2-2112z+3465\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(1024z^3-3456z^2+8316z-10\,395\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aeh8.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{7}{2}, -\frac{3}{4}; z\right) = \frac{6\sqrt{z}\left(256z^2+480z+585\right)\cosh\left(2\sqrt{z}\right) - \left(1024z^3+1920z^2+3780z+1755\right)\sinh\left(2\sqrt{z}\right)}{288\, z^{5/2}} $$

07.22.03.aeh9.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{7}{2}, -\frac{3}{4}; -z\right) = \frac{6\sqrt{z}\left(256z^2-480z+585\right)\cos\left(2\sqrt{z}\right) + \left(1024z^3-1920z^2+3780z-1755\right)\sin\left(2\sqrt{z}\right)}{288\, z^{5/2}} $$

07.22.03.aeha.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{7}{2}, -\frac{1}{4}; z\right) = \frac{1}{48\sqrt{2}\, z^{7/4}}\left(\left(4z(48z+77) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(128z^2+152z+231\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(320z^2+588z+693\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aehb.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{7}{2}, -\frac{1}{4}; -z\right) = \frac{1}{48\sqrt{2}\, z^{7/4}}\left(\left(4z(48z-77) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(128z^2-152z+231\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-320z^2+588z-693\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aehc.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{1}{4}; z\right) = \frac{2\sqrt{z}\left(128z^2+120z+135\right)\cosh\left(2\sqrt{z}\right) - 3\left(64z^2+100z+45\right)\sinh\left(2\sqrt{z}\right)}{96\, z^{5/2}} $$

07.22.03.aehd.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{1}{4}; -z\right) = \frac{2\sqrt{z}\left(128z^2-120z+135\right)\cos\left(2\sqrt{z}\right) - 3\left(64z^2-100z+45\right)\sin\left(2\sqrt{z}\right)}{96\, z^{5/2}} $$

07.22.03.aehe.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{48\sqrt{2}\, z^{7/4}}\left(\left(4z(16z+7) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(16z+21) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(64z^2+60z+63\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aehf.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{3}{4}; -z\right) =$$
$$\frac{1}{48\sqrt{2}\, z^{7/4}}\left(\left(4z(16z-7) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4(21-16z)\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-64z^2+60z-63\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aehg.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{5}{4}; z\right) = \frac{\left(64z^2+36z+15\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,(16z+15)\cosh\left(2\sqrt{z}\right)}{96\, z^{5/2}}$$

07.22.03.aehh.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{5}{4}; -z\right) = \frac{2\sqrt{z}\,(16z-15)\cos\left(2\sqrt{z}\right) + \left(64z^2-36z+15\right)\sin\left(2\sqrt{z}\right)}{96\, z^{5/2}}$$

07.22.03.aehi.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{7}{4}; z\right) = \frac{\left(-4z I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(8z+3) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 3(4z+3) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{16\sqrt{2}\, z^{7/4}}$$

07.22.03.aehj.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{7}{4}; -z\right) = \frac{\left(4z J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(8z-3) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3(3-4z) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{16\sqrt{2}\, z^{7/4}}$$

07.22.03.aehk.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{9}{4}; z\right) = \frac{5\left(2\sqrt{z}\,(8z+3)\cosh\left(2\sqrt{z}\right) - 3(4z+1)\sinh\left(2\sqrt{z}\right)\right)}{96\, z^{5/2}}$$

07.22.03.aehl.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{9}{4}; -z\right) = \frac{15(4z-1)\sin\left(2\sqrt{z}\right) - 10\sqrt{z}\,(8z-3)\cos\left(2\sqrt{z}\right)}{96\, z^{5/2}}$$

07.22.03.aehm.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{11}{4}; z\right) = \frac{7\left(4z I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 8\sqrt{z}\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + (4z+3) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{16\sqrt{2}\, z^{7/4}}$$

07.22.03.aehn.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{11}{4}; -z\right) = -\frac{7\left(4z J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 8\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + (3-4z) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{16\sqrt{2}\, z^{7/4}}$$

07.22.03.aeho.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{13}{4}; z\right) = \frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.aehp.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{13}{4}; -z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.aehq.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{15}{4}; z\right) = \frac{77\left(-14\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (16z+21)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{128\sqrt{2}\,z^{9/4}}$$

07.22.03.aehr.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{15}{4}; -z\right) = -\frac{77\left(14\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (16z-21)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{128\sqrt{2}\,z^{9/4}}$$

07.22.03.aehs.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{17}{4}; z\right) =$$
$$\frac{1}{4096\,z^{13/4}}\left(195\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(16z+44\sqrt{z}+e^{4\sqrt{z}}\left(16z-44\sqrt{z}+45\right)+45\right) - 45\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 45\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aeht.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{17}{4}; -z\right) = \frac{195\left(45\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left((16z-45)\cos\left(2\sqrt{z}\right) - 44\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)}{1024\,z^{13/4}}$$

07.22.03.aehu.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{19}{4}; z\right) =$$
$$\frac{1}{4096\sqrt{2}\,z^{13/4}}\left(1155\left(2\sqrt{z}\,(32z+77)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\,(64z+33)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(32z+231)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aehv.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{19}{4}; -z\right) =$$
$$\frac{1}{4096\sqrt{2}\,z^{13/4}}\left(1155\left(2\sqrt{z}\,(32z-77)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\,(64z-33)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\,(231-32z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aehw.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{21}{4}; z\right) =$$
$$\frac{1}{262\,144\,z^{17/4}}\left(3315\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-256z^{3/2}-1152z-2340\sqrt{z}+e^{4\sqrt{z}}\left(256z^{3/2}-1152z+2340\sqrt{z}-1755\right)-1755\right) - 45\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-39)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 45\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-39)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aehx.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{21}{4}; -z\right) =$$
$$\frac{1}{65\,536\, z^{17/4}}\left(3315\left(45\sqrt{\pi}\,(16z+39)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(9\,(128z-195)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,(64z-585)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aehy.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{23}{4}; z\right) = \frac{1}{131\,072\sqrt{2}\, z^{17/4}}$$
$$\left(21\,945\left(-22\sqrt{z}\,(144z+175)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1024z^2+13\,552z+5775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-154\sqrt{z}\,(16z+75)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aehz.01

$${}_1F_2\left(\frac{13}{4}; \frac{7}{2}, \frac{23}{4}; -z\right) = \frac{1}{131\,072\sqrt{2}\, z^{17/4}}$$
$$\left(21\,945\left(22\sqrt{z}\,(144z-175)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1024z^2-13\,552z+5775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+154\,(75-16z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{13}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.aei0.01

$${}_1F_2\left(\frac{13}{4}; \frac{9}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{83\,064\,960\, z^{7/2}}\left(\left(2\,097\,152z^6+385\,351\,680z^5+13\,910\,261\,760z^4+224\,550\,144\,000z^3+1\,787\,880\,276\,000z^2+\right.\right.$$
$$\left.\left.5\,516\,264\,754\,000z+2\,773\,122\,226\,875\right)\sinh\left(2\sqrt{z}\right)-30\sqrt{z}\,\left(1\,310\,720z^5+87\,425\,024z^4+\right.\right.$$
$$\left.\left.2\,028\,238\,848z^3+23\,256\,979\,200z^2+121\,251\,230\,100z+184\,874\,815\,125\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aei1.01

$${}_1F_2\left(\frac{13}{4}; \frac{9}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{83\,064\,960\, z^{7/2}}\left(\left(-2\,097\,152z^6+385\,351\,680z^5-13\,910\,261\,760z^4+224\,550\,144\,000z^3-1\,787\,880\,276\,000z^2+\right.\right.$$
$$\left.\left.5\,516\,264\,754\,000z-2\,773\,122\,226\,875\right)\sin\left(2\sqrt{z}\right)-30\sqrt{z}$$
$$\left.\left(1\,310\,720z^5-87\,425\,024z^4+2\,028\,238\,848z^3-23\,256\,979\,200z^2+121\,251\,230\,100z-184\,874\,815\,125\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aei2.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{9}{2}, -\frac{21}{4}; z\right) = \frac{1}{5\,728\,320\sqrt{2}\, z^{11/4}}\left(\left(-44 z \left(196\,608 z^4 + 10\,465\,280 z^3 + 199\,895\,040 z^2 + 1\,843\,475\,760 z + 6\,721\,005\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(262\,144 z^5 + 38\,797\,312 z^4 + 1\,170\,186\,240 z^3 + 15\,993\,780\,480 z^2 + 103\,081\,019\,580 z + 221\,793\,177\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(8\,912\,896 z^5 + 501\,596\,160 z^4 + 10\,108\,753\,920 z^3 + 100\,300\,939\,200 z^2 + 435\,982\,017\,240 z + 665\,379\,532\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aei3.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{9}{2}, -\frac{21}{4}; -z\right) = -\frac{1}{5\,728\,320\sqrt{2}\, z^{11/4}}\left(\left(44 z \left(196\,608 z^4 - 10\,465\,280 z^3 + 199\,895\,040 z^2 - 1\,843\,475\,760 z + 6\,721\,005\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(262\,144 z^5 - 38\,797\,312 z^4 + 1\,170\,186\,240 z^3 - 15\,993\,780\,480 z^2 + 103\,081\,019\,580 z - 221\,793\,177\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-8\,912\,896 z^5 + 501\,596\,160 z^4 - 10\,108\,753\,920 z^3 + 100\,300\,939\,200 z^2 - 435\,982\,017\,240 z + 665\,379\,532\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aei4.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{9}{2}, -\frac{19}{4}; z\right) = \frac{1}{3\,611\,520 z^{7/2}}\left(15\left(524\,288 z^5 + 23\,789\,568 z^4 + 399\,200\,256 z^3 + 3\,207\,859\,200 z^2 + 9\,932\,668\,200 z + 4\,996\,616\,625\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(262\,144 z^5 + 31\,457\,280 z^4 + 802\,068\,480 z^3 + 9\,356\,256\,000 z^2 + 49\,057\,690\,500 z + 74\,949\,249\,375\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.aei5.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{3\,611\,520 z^{7/2}}\left(15\left(524\,288 z^5 - 23\,789\,568 z^4 + 399\,200\,256 z^3 - 3\,207\,859\,200 z^2 + 9\,932\,668\,200 z - 4\,996\,616\,625\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\left(262\,144 z^5 - 31\,457\,280 z^4 + 802\,068\,480 z^3 - 9\,356\,256\,000 z^2 + 49\,057\,690\,500 z - 74\,949\,249\,375\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.aei6.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{9}{2}, -\frac{17}{4}; z\right) = -\frac{1}{1\,909\,440\sqrt{2}\, z^{11/4}}\left(7\left(4 z \left(32\,768 z^4 + 3\,000\,320 z^3 + 61\,676\,160 z^2 + 576\,263\,160 z + 2\,112\,315\,975\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(868\,352 z^4 + 32\,056\,320 z^3 + 451\,823\,040 z^2 + 2\,935\,827\,180 z + 6\,336\,947\,925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(131\,072 z^5 + 12\,902\,400 z^4 + 282\,355\,200 z^3 + 2\,844\,974\,880 z^2 + 12\,428\,594\,640 z + 19\,010\,843\,775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aei7.01

$${}_1F_2\left(\frac{13}{4}; \frac{9}{2}, -\frac{17}{4}; -z\right) =$$
$$-\frac{1}{1\,909\,440\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(32\,768z^4-3\,000\,320z^3+61\,676\,160z^2-576\,263\,160z+2\,112\,315\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(868\,352z^4-32\,056\,320z^3+451\,823\,040z^2-2\,935\,827\,180z+6\,336\,947\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-131\,072z^5+12\,902\,400z^4-282\,355\,200z^3+2\,844\,974\,880z^2-12\,428\,594\,640z+19\,010\,843\,775\right)$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aei8.01

$${}_1F_2\left(\frac{13}{4}; \frac{9}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{190\,080z^{7/2}}\left(\left(131\,072z^5+9\,953\,280z^4+178\,214\,400z^3+1\,450\,219\,680z^2+4\,511\,052\,000z+2\,271\,189\,375\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(770\,048z^4+23\,454\,720z^3+280\,687\,680z^2+1\,482\,799\,500z+2\,271\,189\,375\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aei9.01

$${}_1F_2\left(\frac{13}{4}; \frac{9}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{190\,080z^{7/2}}\left(2\sqrt{z}\left(770\,048z^4-23\,454\,720z^3+280\,687\,680z^2-1\,482\,799\,500z+2\,271\,189\,375\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(131\,072z^5-9\,953\,280z^4+178\,214\,400z^3-1\,450\,219\,680z^2+4\,511\,052\,000z-2\,271\,189\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aeia.01

$${}_1F_2\left(\frac{13}{4}; \frac{9}{2}, -\frac{13}{4}; z\right) = \frac{1}{112\,320\sqrt{2}\,z^{11/4}}\left(7\left(-20z\left(16\,384z^3+387\,840z^2+3\,691\,776z+13\,627\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(16\,384z^4+967\,680z^3+14\,354\,880z^2+94\,313\,340z+204\,417\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.3\left(114\,688z^4+2\,938\,880z^3+30\,296\,640z^2+133\,250\,040z+204\,417\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeib.01

$${}_1F_2\left(\frac{13}{4}; \frac{9}{2}, -\frac{13}{4}; -z\right) = \frac{1}{112\,320\sqrt{2}\,z^{11/4}}\left(7\left(20z\left(16\,384z^3-387\,840z^2+3\,691\,776z-13\,627\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(16\,384z^4-967\,680z^3+14\,354\,880z^2-94\,313\,340z+204\,417\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.3\left(114\,688z^4-2\,938\,880z^3+30\,296\,640z^2-133\,250\,040z+204\,417\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeic.01

$${}_1F_2\left(\frac{13}{4}; \frac{9}{2}, -\frac{11}{4}; z\right) = \frac{1}{12\,672z^{7/2}}\left(9\left(32\,768z^4+665\,600z^3+5\,516\,160z^2+17\,264\,520z+8\,701\,875\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(16\,384z^4+764\,928z^3+9\,547\,200z^2+50\,958\,180z+78\,316\,875\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aeid.01

$${}_1F_2\left(\frac{13}{4};\frac{9}{2},-\frac{11}{4};-z\right)=\frac{1}{12\,672\,z^{7/2}}\left(2\sqrt{z}\,\left(16\,384\,z^4-764\,928\,z^3+9\,547\,200\,z^2-50\,958\,180\,z+78\,316\,875\right)\cos\left(2\sqrt{z}\right)-9\left(32\,768\,z^4-665\,600\,z^3+5\,516\,160\,z^2-17\,264\,520\,z+8\,701\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aeie.01

$${}_1F_2\left(\frac{13}{4};\frac{9}{2},-\frac{9}{4};z\right)=-\frac{1}{8640\sqrt{2}\,z^{11/4}}\left(7\left(4\,z\left(2048\,z^3+69\,120\,z^2+677\,160\,z+2\,523\,675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(31\,744\,z^3+520\,320\,z^2+3\,473\,580\,z+7\,571\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(8192\,z^4+310\,272\,z^3+3\,321\,120\,z^2+14\,747\,040\,z+22\,713\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeif.01

$${}_1F_2\left(\frac{13}{4};\frac{9}{2},-\frac{9}{4};-z\right)=\frac{1}{8640\sqrt{2}\,z^{11/4}}\left(7\left(4\,z\left(2048\,z^3-69\,120\,z^2+677\,160\,z-2\,523\,675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(31\,744\,z^3-520\,320\,z^2+3\,473\,580\,z-7\,571\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-8192\,z^4+310\,272\,z^3-3\,321\,120\,z^2+14\,747\,040\,z-22\,713\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeig.01

$${}_1F_2\left(\frac{13}{4};\frac{9}{2},-\frac{7}{4};z\right)=\frac{1}{1152\,z^{7/2}}\left(\left(8192\,z^4+230\,400\,z^3+1\,965\,600\,z^2+6\,205\,680\,z+3\,132\,675\right)\sinh\left(2\sqrt{z}\right)-18\sqrt{z}\,\left(3072\,z^3+41\,600\,z^2+225\,420\,z+348\,075\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aeih.01

$${}_1F_2\left(\frac{13}{4};\frac{9}{2},-\frac{7}{4};-z\right)=\frac{1}{1152\,z^{7/2}}\left(\left(-8192\,z^4+230\,400\,z^3-1\,965\,600\,z^2+6\,205\,680\,z-3\,132\,675\right)\sin\left(2\sqrt{z}\right)-18\sqrt{z}\,\left(3072\,z^3-41\,600\,z^2+225\,420\,z-348\,075\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aeii.01

$${}_1F_2\left(\frac{13}{4};\frac{9}{2},-\frac{5}{4};z\right)=\frac{1}{960\sqrt{2}\,z^{11/4}}\left(7\left(-44\,z\left(256\,z^2+2640\,z+9975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(1024\,z^3+21\,888\,z^2+149\,820\,z+329\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-3\left(4096\,z^3+47\,168\,z^2+212\,520\,z+329\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeij.01

$${}_1F_2\left(\frac{13}{4}; \frac{9}{2}, -\frac{5}{4}; -z\right) =$$
$$-\frac{1}{960\sqrt{2}\, z^{11/4}}\left(7\left(44 z \left(256 z^2 - 2640 z + 9975\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\, \left(1024 z^3 - 21\,888 z^2 + 149\,820 z - 329\,175\right)\right.\right.$$
$$\left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(-4096 z^3 + 47\,168 z^2 - 212\,520 z + 329\,175\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeik.01

$${}_1F_2\left(\frac{13}{4}; \frac{9}{2}, -\frac{3}{4}; z\right) = -\frac{1}{1152 z^{7/2}}$$
$$\left(7\left(2\sqrt{z}\, \left(1024 z^3 + 17\,280 z^2 + 95\,940 z + 149\,175\right) \cosh\left(2\sqrt{z}\right) - 5\left(2048 z^3 + 18\,432 z^2 + 58\,968 z + 29\,835\right) \sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aeil.01

$${}_1F_2\left(\frac{13}{4}; \frac{9}{2}, -\frac{3}{4}; -z\right) = -\frac{1}{1152 z^{7/2}}$$
$$\left(7\left(2\sqrt{z}\, \left(1024 z^3 - 17\,280 z^2 + 95\,940 z - 149\,175\right) \cos\left(2\sqrt{z}\right) + 5\left(-2048 z^3 + 18\,432 z^2 - 58\,968 z + 29\,835\right) \sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aeim.01

$${}_1F_2\left(\frac{13}{4}; \frac{9}{2}, -\frac{1}{4}; z\right) =$$
$$-\frac{1}{192\sqrt{2}\, z^{11/4}}\left(7\left(4 z \left(128 z^2 + 1496 z + 5775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\, \left(1088 z^2 + 7788 z + 17\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +\right.\right.$$
$$\left.\left. \left(512 z^3 + 7200 z^2 + 33\,264 z + 51\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aein.01

$${}_1F_2\left(\frac{13}{4}; \frac{9}{2}, -\frac{1}{4}; -z\right) =$$
$$-\frac{1}{192\sqrt{2}\, z^{11/4}}\left(7\left(4 z \left(128 z^2 - 1496 z + 5775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\, \left(1088 z^2 - 7788 z + 17\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +\right.\right.$$
$$\left.\left. \left(-512 z^3 + 7200 z^2 - 33\,264 z + 51\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aeio.01

$${}_1F_2\left(\frac{13}{4}; \frac{9}{2}, \frac{1}{4}; z\right) = \frac{7\left(\left(512 z^3 + 5280 z^2 + 17\,280 z + 8775\right) \sinh\left(2\sqrt{z}\right) - 30\sqrt{z}\, \left(64 z^2 + 372 z + 585\right) \cosh\left(2\sqrt{z}\right)\right)}{384 z^{7/2}}$$

07.22.03.aeip.01

$${}_1F_2\left(\frac{13}{4}; \frac{9}{2}, \frac{1}{4}; -z\right) = \frac{7\left(30\sqrt{z}\, \left(64 z^2 - 372 z + 585\right) \cos\left(2\sqrt{z}\right) + \left(512 z^3 - 5280 z^2 + 17\,280 z - 8775\right) \sin\left(2\sqrt{z}\right)\right)}{384 z^{7/2}}$$

07.22.03.aeiq.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{9}{2}, \frac{3}{4}; z\right) = \frac{1}{192\sqrt{2}\, z^{11/4}} \left(7\left(-4z(96z+385) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(64z^2+508z+1155\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 7\left(64z^2+312z+495\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aeir.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{9}{2}, \frac{3}{4}; -z\right) = \frac{1}{192\sqrt{2}\, z^{11/4}} \left(7\left(4z(96z-385) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(64z^2-508z+1155\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 7\left(64z^2-312z+495\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aeis.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{9}{2}, \frac{5}{4}; z\right) = \frac{7(16z+45)\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right) - 3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{384 z^{7/2}} $$

07.22.03.aeit.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{9}{2}, \frac{5}{4}; -z\right) = -\frac{7(16z-45)\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right) + 3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{384 z^{7/2}} $$

07.22.03.aeiu.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{9}{2}, \frac{7}{4}; z\right) = \frac{1}{64\sqrt{2}\, z^{11/4}} \left(7\left(4z(8z+35) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(44z+105) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(32z^2+192z+315\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aeiv.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{9}{2}, \frac{7}{4}; -z\right) = -\frac{1}{64\sqrt{2}\, z^{11/4}} \left(7\left(4z(8z-35) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4(105-44z)\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-32z^2+192z-315\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aeiw.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{9}{2}, \frac{9}{4}; z\right) = \frac{35\left(\left(32z^2+144z+75\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,(44z+75)\cosh\left(2\sqrt{z}\right)\right)}{384 z^{7/2}} $$

07.22.03.aeix.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{9}{2}, \frac{9}{4}; -z\right) = -\frac{35\left(2\sqrt{z}\,(44z-75)\cos\left(2\sqrt{z}\right) + \left(32z^2-144z+75\right)\sin\left(2\sqrt{z}\right)\right)}{384 z^{7/2}} $$

07.22.03.aeiy.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{9}{2}, \frac{11}{4}; z\right) = \frac{49\left(-20z I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(4z+15) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 3(8z+15) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{64\sqrt{2}\, z^{11/4}} $$

07.22.03.aeiz.01

$${}_1F_2\left(\frac{13}{4};\frac{9}{2},\frac{11}{4};-z\right)=-\frac{49\left(20\,z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(4\,z-15)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+3\,(15-8\,z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{64\sqrt{2}\,z^{11/4}}$$

07.22.03.aej0.01

$${}_1F_2\left(\frac{13}{4};\frac{9}{2},\frac{13}{4};z\right)=\frac{105\left(2\sqrt{z}\,(4\,z+15)\cosh\left(2\sqrt{z}\right)-3\,(8\,z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.aej1.01

$${}_1F_2\left(\frac{13}{4};\frac{9}{2},\frac{13}{4};-z\right)=\frac{105\left(2\sqrt{z}\,(4\,z-15)\cos\left(2\sqrt{z}\right)+3\,(5-8\,z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.aej2.01

$${}_1F_2\left(\frac{13}{4};\frac{9}{2},\frac{15}{4};z\right)=\frac{539\left(2\,z\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-13\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+(2\,z+15)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{64\sqrt{2}\,z^{11/4}}$$

07.22.03.aej3.01

$${}_1F_2\left(\frac{13}{4};\frac{9}{2},\frac{15}{4};-z\right)=\frac{539\left(2\,z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-13\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+(15-2\,z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{64\sqrt{2}\,z^{11/4}}$$

07.22.03.aej4.01

$${}_1F_2\left(\frac{13}{4};\frac{9}{2},\frac{17}{4};z\right)=$$

$$\frac{1}{2048\,z^{7/2}}\left(1365\,e^{-2\sqrt{z}}\left(4\left(-4\,z-15\sqrt{z}+e^{4\sqrt{z}}\left(4\,z-15\sqrt{z}+30\right)-30\right)-45\,e^{2\sqrt{z}}\sqrt{2\,\pi}\,\sqrt[4]{z}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-\right.\right.$$
$$\left.\left.45\,e^{2\sqrt{z}}\sqrt{2\,\pi}\,\sqrt[4]{z}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aej5.01

$${}_1F_2\left(\frac{13}{4};\frac{9}{2},\frac{17}{4};-z\right)=\frac{1365\left(30\sqrt{z}\,\cos\left(2\sqrt{z}\right)+45\sqrt{\pi}\,\sqrt[4]{z}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+4\,(2\,z-15)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{7/2}}$$

07.22.03.aej6.01

$${}_1F_2\left(\frac{13}{4};\frac{9}{2},\frac{19}{4};z\right)=\frac{8085\left(-154\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(32\,z+231)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+18\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{2048\sqrt{2}\,z^{13/4}}$$

07.22.03.aej7.01

$${}_1F_2\left(\frac{13}{4};\frac{9}{2},\frac{19}{4};-z\right)=\frac{8085\left(154\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(32\,z-231)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+18\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{2048\sqrt{2}\,z^{13/4}}$$

07.22.03.aej8.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{9}{2}, \frac{21}{4}; z\right) = \frac{1}{131\,072\, z^{17/4}} \left(23\,205\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(64z + 140\sqrt{z} + e^{4\sqrt{z}}\left(64z - 140\sqrt{z} + 585\right) + 585\right) - 45\, e^{2\sqrt{z}}\sqrt{2\pi}\right.\right. $$
$$ \left.\left.(16z + 13)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 45\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z + 13)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aej9.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{9}{2}, \frac{21}{4}; -z\right) = \frac{23\,205\left(45\sqrt{\pi}\,(16z - 13)\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left((585 - 64z)\cos\left(2\sqrt{z}\right) + 140\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)\right)}{32\,768\, z^{17/4}} $$

07.22.03.aeja.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{9}{2}, \frac{23}{4}; z\right) = -\frac{1}{65\,536\sqrt{2}\, z^{17/4}} $$
$$ \left(153\,615\left(22\sqrt{z}\,(16z - 35)\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 77\,(16z + 15)\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,(304z + 1155)\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aejb.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) = \frac{1}{65\,536\sqrt{2}\, z^{17/4}} $$
$$ \left(153\,615\left(22\sqrt{z}\,(16z + 35)\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 77\,(16z - 15)\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(304z - 1155)\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{13}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.aejc.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{36\,917\,760\, z^{9/2}} \left(2\sqrt{z}\,\left(2\,097\,152 z^6 + 703\,070\,208 z^5 + 46\,358\,446\,080 z^4 + 1\,302\,390\,835\,200 z^3 + 17\,556\,112\,173\,600 z^2 + \right.\right. $$
$$ \left.\left.100\,571\,899\,428\,000 z + 159\,177\,215\,822\,625\right)\cosh\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left(105\,906\,176 z^6 + 12\,979\,273\,728 z^5 + 538\,920\,345\,600 z^4 + 10\,512\,154\,598\,400 z^3 + \right.\right. $$
$$ \left.\left.95\,055\,634\,674\,000 z^2 + 312\,808\,187\,191\,500 z + 159\,177\,215\,822\,625\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aejd.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{36\,917\,760\, z^{9/2}} \left(2\sqrt{z}\,\left(2\,097\,152 z^6 - 703\,070\,208 z^5 + 46\,358\,446\,080 z^4 - 1\,302\,390\,835\,200 z^3 + 17\,556\,112\,173\,600 z^2 - \right.\right. $$
$$ \left.\left.100\,571\,899\,428\,000 z + 159\,177\,215\,822\,625\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left(-105\,906\,176 z^6 + 12\,979\,273\,728 z^5 - 538\,920\,345\,600 z^4 + 10\,512\,154\,598\,400 z^3 - \right.\right. $$
$$ \left.\left.95\,055\,634\,674\,000 z^2 + 312\,808\,187\,191\,500 z - 159\,177\,215\,822\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aeje.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, -\frac{21}{4}; z\right) = \frac{1}{2\,545\,920\sqrt{2}\, z^{15/4}} $$
$$ \left(\left(4z\left(262\,144 z^5 + 71\,925\,760 z^4 + 3\,976\,427\,520 z^3 + 93\,402\,771\,840 z^2 + 1\,005\,462\,404\,100 z + 4\,036\,635\,828\,225\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(12\,058\,624 z^5 + 1\,251\,655\,680 z^4 + 44\,583\,229\,440 z^3 + \right. $$
$$ 734\,932\,336\,320 z^2 + 5\,323\,036\,257\,000 z + 12\,109\,907\,484\,675\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(1\,048\,576 z^6 + 300\,023\,808 z^5 + 17\,237\,237\,760 z^4 + 423\,087\,598\,080 z^3 + 4\,887\,054\,239\,760 z^2 + \right. $$
$$ \left.\left.\left. 22\,889\,055\,905\,100 z + 36\,329\,722\,454\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aejf.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, -\frac{21}{4}; -z\right) = \frac{1}{2\,545\,920\sqrt{2}\, z^{15/4}} $$
$$ \left(\left(4z\left(262\,144 z^5 - 71\,925\,760 z^4 + 3\,976\,427\,520 z^3 - 93\,402\,771\,840 z^2 + 1\,005\,462\,404\,100 z - 4\,036\,635\,828\,225\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(12\,058\,624 z^5 - 1\,251\,655\,680 z^4 + 44\,583\,229\,440 z^3 - \right. $$
$$ 734\,932\,336\,320 z^2 + 5\,323\,036\,257\,000 z - 12\,109\,907\,484\,675\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(-1\,048\,576 z^6 + 300\,023\,808 z^5 - 17\,237\,237\,760 z^4 + 423\,087\,598\,080 z^3 - 4\,887\,054\,239\,760 z^2 + \right. $$
$$ \left.\left.\left. 22\,889\,055\,905\,100 z - 36\,329\,722\,454\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aejg.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, -\frac{19}{4}; z\right) = \frac{1}{1\,605\,120 z^{9/2}} $$
$$ \left(6\sqrt{z}\left(3\,670\,016 z^5 + 324\,730\,880 z^4 + 9\,980\,006\,400 z^3 + 139\,541\,875\,200 z^2 + 812\,782\,971\,000 z + 1\,294\,123\,705\,875\right)\right. $$
$$ \cosh\left(2\sqrt{z}\right) - \left(1\,048\,576 z^6 + 246\,939\,648 z^5 + 11\,976\,007\,680 z^4 + 247\,005\,158\,400 z^3 + \right. $$
$$ \left.\left. 2\,289\,358\,890\,000 z^2 + 7\,614\,843\,736\,500 z + 3\,882\,371\,117\,625\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aejh.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, -\frac{19}{4}; -z\right) = $$
$$ \frac{1}{1\,605\,120 z^{9/2}}\left(\left(-1\,048\,576 z^6 + 246\,939\,648 z^5 - 11\,976\,007\,680 z^4 + 247\,005\,158\,400 z^3 - 2\,289\,358\,890\,000 z^2 + \right.\right. $$
$$ 7\,614\,843\,736\,500 z - 3\,882\,371\,117\,625\right)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\left(3\,670\,016 z^5 - 324\,730\,880 z^4 + \right. $$
$$ \left.\left. 9\,980\,006\,400 z^3 - 139\,541\,875\,200 z^2 + 812\,782\,971\,000 z - 1\,294\,123\,705\,875\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.aeji.01

$$ {}_1F_2\left(\frac{13}{4};\frac{11}{2},-\frac{17}{4};z\right)= $$
$$ -\frac{1}{848\,640\sqrt{2}\,z^{15/4}}\left(7\left(-20z\left(245\,760z^4+17\,861\,632z^3+455\,347\,008z^2+5\,069\,558\,340z+20\,700\,696\,555\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ 4\sqrt{z}\left(131\,072z^5+25\,518\,080z^4+1\,050\,478\,080z^3+18\,242\,197\,920z^2+135\,188\,222\,400z+310\,510\,448\,325\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(5\,046\,272z^5+384\,061\,440z^4+10\,264\,815\,360z^3+\right. $$
$$ \left.\left.\left.122\,759\,627\,760z^2+582\,999\,209\,100z+931\,531\,344\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aejj.01

$$ {}_1F_2\left(\frac{13}{4};\frac{11}{2},-\frac{17}{4};-z\right)= $$
$$ -\frac{1}{848\,640\sqrt{2}\,z^{15/4}}\left(7\left(20z\left(245\,760z^4-17\,861\,632z^3+455\,347\,008z^2-5\,069\,558\,340z+20\,700\,696\,555\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right. $$
$$ 4\sqrt{z}\left(131\,072z^5-25\,518\,080z^4+1\,050\,478\,080z^3-18\,242\,197\,920z^2+135\,188\,222\,400z-310\,510\,448\,325\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-5\,046\,272z^5+384\,061\,440z^4-10\,264\,815\,360z^3+\right. $$
$$ \left.\left.\left.122\,759\,627\,760z^2-582\,999\,209\,100z+931\,531\,344\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aejk.01

$$ {}_1F_2\left(\frac{13}{4};\frac{11}{2},-\frac{15}{4};z\right)=\frac{1}{84\,480z^{9/2}} $$
$$ \left(2\sqrt{z}\left(131\,072z^5+21\,258\,240z^4+748\,500\,480z^3+10\,993\,600\,800z^2+65\,410\,254\,000z+104\,928\,949\,125\right)\cosh\left(2\sqrt{z}\right)-\right. $$
$$ \left.3\left(1\,507\,328z^5+95\,047\,680z^4+2\,120\,751\,360z^3+20\,299\,734\,000z^2+68\,438\,506\,500z+34\,976\,316\,375\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aejl.01

$$ {}_1F_2\left(\frac{13}{4};\frac{11}{2},-\frac{15}{4};-z\right)=\frac{1}{84\,480z^{9/2}} $$
$$ \left(3\left(1\,507\,328z^5-95\,047\,680z^4+2\,120\,751\,360z^3-20\,299\,734\,000z^2+68\,438\,506\,500z-34\,976\,316\,375\right)\sin\left(2\sqrt{z}\right)-\right. $$
$$ \left.2\sqrt{z}\left(131\,072z^5-21\,258\,240z^4+748\,500\,480z^3-10\,993\,600\,800z^2+65\,410\,254\,000z-104\,928\,949\,125\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.aejm.01

$$ {}_1F_2\left(\frac{13}{4};\frac{11}{2},-\frac{13}{4};z\right)= $$
$$ \frac{1}{49\,920\sqrt{2}\,z^{15/4}}\left(7\left(4z\left(16\,384z^4+2\,108\,416z^3+60\,830\,400z^2+708\,647\,940z+2\,957\,242\,365\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right. $$
$$ 4\sqrt{z}\left(507\,904z^4+26\,732\,544z^3+499\,648\,320z^2+3\,815\,796\,600z+8\,871\,727\,095\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ \left.\left.\left(65\,536z^5+8\,957\,952z^4+272\,505\,600z^3+3\,416\,046\,480z^2+16\,516\,948\,140z+26\,615\,181\,285\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aejn.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, -\frac{13}{4}; -z\right) = -\frac{1}{49\,920\sqrt{2}\, z^{15/4}}\left(7\left(4z\left(16\,384z^4 - 2\,108\,416z^3 + 60\,830\,400z^2 - 708\,647\,940z + 2\,957\,242\,365\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(507\,904z^4 - 26\,732\,544z^3 + 499\,648\,320z^2 - 3\,815\,796\,600z + 8\,871\,727\,095\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-65\,536z^5 + 8\,957\,952z^4 - 272\,505\,600z^3 + 3\,416\,046\,480z^2 - 16\,516\,948\,140z + 26\,615\,181\,285\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aejo.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, -\frac{11}{4}; z\right) = \frac{1}{5632\, z^{9/2}}\left(2\sqrt{z}\left(458\,752z^4 + 20\,367\,360z^3 + 320\,785\,920z^2 + 1\,963\,143\,000z + 3\,179\,665\,125\right)\cosh\left(2\sqrt{z}\right) - \left(65\,536z^5 + 7\,188\,480z^4 + 180\,760\,320z^3 + 1\,807\,762\,320z^2 + 6\,202\,696\,500z + 3\,179\,665\,125\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aejp.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, -\frac{11}{4}; -z\right) = \frac{1}{5632\, z^{9/2}}\left(2\sqrt{z}\left(458\,752z^4 - 20\,367\,360z^3 + 320\,785\,920z^2 - 1\,963\,143\,000z + 3\,179\,665\,125\right)\cos\left(2\sqrt{z}\right) + \left(65\,536z^5 - 7\,188\,480z^4 + 180\,760\,320z^3 - 1\,807\,762\,320z^2 + 6\,202\,696\,500z - 3\,179\,665\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aejq.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, -\frac{9}{4}; z\right) = -\frac{1}{3840\sqrt{2}\, z^{15/4}}\left(7\left(-28z\left(7168z^3 + 255\,360z^2 + 3\,172\,620z + 13\,627\,845\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8192z^4 + 728\,064z^3 + 15\,221\,280z^2 + 121\,136\,400z + 286\,184\,745\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 3\left(69\,632z^4 + 2\,644\,480z^3 + 35\,463\,120z^2 + 175\,647\,780z + 286\,184\,745\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aejr.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, -\frac{9}{4}; -z\right) = \frac{1}{3840\sqrt{2}\, z^{15/4}}\left(7\left(28z\left(7168z^3 - 255\,360z^2 + 3\,172\,620z - 13\,627\,845\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8192z^4 - 728\,064z^3 + 15\,221\,280z^2 - 121\,136\,400z + 286\,184\,745\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 3\left(69\,632z^4 - 2\,644\,480z^3 + 35\,463\,120z^2 - 175\,647\,780z + 286\,184\,745\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aejs.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, -\frac{7}{4}; z\right) = \frac{1}{512\, z^{9/2}}\left(2\sqrt{z}\left(8192z^4 + 599\,040z^3 + 10\,501\,920z^2 + 66\,830\,400z + 109\,643\,625\right)\cosh\left(2\sqrt{z}\right) - 45\left(4096z^4 + 126\,464z^3 + 1\,347\,216z^2 + 4\,733\,820z + 2\,436\,525\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aejt.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},-\frac{7}{4};-z\right)=\frac{1}{512\,z^{9/2}}\left(2\sqrt{z}\,\left(8192\,z^4-599\,040\,z^3+10\,501\,920\,z^2-66\,830\,400\,z+109\,643\,625\right)\cos\left(2\sqrt{z}\right)-45\left(4096\,z^4-126\,464\,z^3+1\,347\,216\,z^2-4\,733\,820\,z+2\,436\,525\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aeju.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},-\frac{5}{4};z\right)=\frac{1}{1280\sqrt{2}\,z^{15/4}}$$
$$\left(21\left(4\,z\left(1024\,z^3+57\,600\,z^2+790\,020\,z+3\,533\,145\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-20\sqrt{z}\,\left(4096\,z^3+103\,872\,z^2+877\,800\,z+2\,119\,887\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(4096\,z^4+251\,904\,z^3+3\,751\,440\,z^2+19\,223\,820\,z+31\,798\,305\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aejv.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},-\frac{5}{4};-z\right)=\frac{1}{1280\sqrt{2}\,z^{15/4}}$$
$$\left(21\left(4\,z\left(1024\,z^3-57\,600\,z^2+790\,020\,z-3\,533\,145\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-20\sqrt{z}\,\left(4096\,z^3-103\,872\,z^2+877\,800\,z-2\,119\,887\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-4096\,z^4+251\,904\,z^3-3\,751\,440\,z^2+19\,223\,820\,z-31\,798\,305\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aejw.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},-\frac{3}{4};z\right)=-\frac{1}{512\,z^{9/2}}\left(7\left(\left(4096\,z^4+198\,144\,z^3+2\,330\,640\,z^2+8\,473\,140\,z+4\,385\,745\right)\sinh\left(2\sqrt{z}\right)-18\sqrt{z}\,\left(2048\,z^3+43\,264\,z^2+291\,720\,z+487\,305\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aejx.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},-\frac{3}{4};-z\right)=-\frac{1}{512\,z^{9/2}}\left(7\left(18\sqrt{z}\,\left(2048\,z^3-43\,264\,z^2+291\,720\,z-487\,305\right)\cos\left(2\sqrt{z}\right)+\left(4096\,z^4-198\,144\,z^3+2\,330\,640\,z^2-8\,473\,140\,z+4\,385\,745\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aejy.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},-\frac{1}{4};z\right)=$$
$$-\frac{1}{256\sqrt{2}\,z^{15/4}}\left(21\left(-4\,z\left(1984\,z^2+32\,340\,z+153\,615\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(512\,z^3+19\,872\,z^2+184\,800\,z+460\,845\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-33\left(256\,z^3+4592\,z^2+24\,780\,z+41\,895\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aejz.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},-\frac{1}{4};-z\right)=$$
$$-\frac{1}{256\sqrt{2}\,z^{15/4}}\left(21\left(4z\left(1984z^2-32\,340z+153\,615\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(512z^3-19\,872z^2+184\,800z-460\,845\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-33\left(256z^3-4592z^2+24\,780z-41\,895\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aek0.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},\frac{1}{4};z\right)=\frac{1}{512z^{9/2}}\left(21\left(2\sqrt{z}\left(512z^3+16\,416z^2+121\,680z+208\,845\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(7424z^3+104\,400z^2+400\,140z+208\,845\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aek1.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},\frac{1}{4};-z\right)=-\frac{1}{512z^{9/2}}\left(21\left(2\sqrt{z}\left(512z^3-16\,416z^2+121\,680z-208\,845\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-7424z^3+104\,400z^2-400\,140z+208\,845\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aek2.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{256\sqrt{2}\,z^{15/4}}\left(21\left(4z\left(64z^2+1540z+8085\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(832z^2+9240z+24\,255\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(256z^3+7056z^2+41\,580z+72\,765\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aek3.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},\frac{3}{4};-z\right)=$$
$$-\frac{1}{256\sqrt{2}\,z^{15/4}}\left(21\left(4z\left(64z^2-1540z+8085\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(832z^2-9240z+24\,255\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-256z^3+7056z^2-41\,580z+72\,765\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aek4.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{512z^{9/2}}\left(21\left(\left(256z^3+5520z^2+23\,220z+12\,285\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\left(256z^2+2280z+4095\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aek5.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},\frac{5}{4};-z\right)=$$
$$-\frac{1}{512z^{9/2}}\left(21\left(6\sqrt{z}\left(256z^2-2280z+4095\right)\cos\left(2\sqrt{z}\right)+\left(256z^3-5520z^2+23\,220z-12\,285\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aek6.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, \frac{7}{4}; z\right) = \frac{1}{256\sqrt{2}\, z^{15/4}} \left(63\left(-28z(12z+77) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32z^2+560z+1617\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(368z^2+2604z+4851\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aek7.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, \frac{7}{4}; -z\right) = -\frac{1}{256\sqrt{2}\, z^{15/4}} \left(63\left(28z(12z-77) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32z^2-560z+1617\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-368z^2+2604z-4851\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aek8.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, \frac{9}{4}; z\right) = \frac{105\left(2\sqrt{z}\left(32z^2+480z+945\right)\cosh\left(2\sqrt{z}\right) - 3\left(112z^2+580z+315\right)\sinh\left(2\sqrt{z}\right)\right)}{512 z^{9/2}} $$

07.22.03.aek9.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, \frac{9}{4}; -z\right) = \frac{105\left(2\sqrt{z}\left(32z^2-480z+945\right)\cos\left(2\sqrt{z}\right) - 3\left(112z^2-580z+315\right)\sin\left(2\sqrt{z}\right)\right)}{512 z^{9/2}} $$

07.22.03.aeka.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, \frac{11}{4}; z\right) = \frac{1}{256\sqrt{2}\, z^{15/4}} \left(441\left(4z(4z+49) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(40z+147\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(16z^2+204z+441\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aekb.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, \frac{11}{4}; -z\right) = \frac{1}{256\sqrt{2}\, z^{15/4}} \left(441\left(4z(4z-49) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4(147-40z)\sqrt{z}\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-16z^2+204z-441\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.aekc.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, \frac{13}{4}; z\right) = \frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\,(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512 z^{9/2}} $$

07.22.03.aekd.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, \frac{13}{4}; -z\right) = \frac{945\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right) + \left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512 z^{9/2}} $$

07.22.03.aeke.01

$$ {}_1F_2\left(\frac{13}{4}; \frac{11}{2}, \frac{15}{4}; z\right) = \frac{4851\left(-28z I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(2z+21) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 3(4z+21) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{256\sqrt{2}\, z^{15/4}} $$

07.22.03.aekf.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},\frac{15}{4};-z\right)=\frac{4851\left(28\,z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(2\,z-21)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+3\,(21-4\,z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{256\sqrt{2}\,z^{15/4}}$$

07.22.03.aekg.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},\frac{17}{4};z\right)=$$
$$\frac{1}{1024\,z^{9/2}}\left(12\,285\,e^{-2\sqrt{z}}\left(4\,e^{4\sqrt{z}}\,z^{3/2}+4\,z^{3/2}-9\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}-9\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)z^{5/4}-\right.\right.$$
$$\left.\left.12\,e^{4\sqrt{z}}\,z+12\,z+42\,e^{4\sqrt{z}}\,\sqrt{z}+42\sqrt{z}-21\,e^{4\sqrt{z}}+21\right)\right)$$

07.22.03.aekh.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},\frac{17}{4};-z\right)=\frac{12\,285\left(18\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)z^{5/4}-2\,(2\,z-21)\cos\left(2\sqrt{z}\right)\sqrt{z}+3\,(4\,z-7)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.aeki.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},\frac{19}{4};z\right)=-\frac{72\,765\left(14\,z\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+35\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\,(11\,z+42)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{1024\sqrt{2}\,z^{15/4}}$$

07.22.03.aekj.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},\frac{19}{4};-z\right)=\frac{72\,765\left(14\,z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+35\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\,(11\,z-42)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{1024\sqrt{2}\,z^{15/4}}$$

07.22.03.aekk.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},\frac{21}{4};z\right)=$$
$$\frac{1}{65\,536\,z^{9/2}}\left(208\,845\,e^{-2\sqrt{z}}\left(4\left(-52\,z-87\sqrt{z}+e^{4\sqrt{z}}\left(52\,z-87\sqrt{z}+336\right)-336\right)-9\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\right.\right.$$
$$\left.\left.(16\,z+65)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-9\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\sqrt[4]{z}\,(16\,z+65)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aekl.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},\frac{21}{4};-z\right)=-\frac{208\,845\left(2\left(87\sqrt{z}\,\cos\left(2\sqrt{z}\right)+4\,(13\,z-84)\sin\left(2\sqrt{z}\right)\right)-9\sqrt{\pi}\,\sqrt[4]{z}\,(16\,z-65)\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)}{16\,384\,z^{9/2}}$$

07.22.03.aekm.01

$${}_1F_2\left(\frac{13}{4};\frac{11}{2},\frac{23}{4};z\right)=-\frac{1}{32\,768\sqrt{2}\,z^{17/4}}$$
$$\left(1\,382\,535\left(2\sqrt{z}\,(48\,z+385)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-7\,(16\,z+165)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-6\sqrt{z}\,(16\,z+63)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aekn.01

$${}_1F_2\left(\frac{13}{4}; \frac{11}{2}, \frac{23}{4}; -z\right) = \frac{1}{32\,768\sqrt{2}\, z^{17/4}}$$

$$\left(1\,382\,535\left(2\sqrt{z}\,(48z-385)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\,(16z-165)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\,(16z-63)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{15}{4}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = \frac{15}{4}$, $b_{1.} = -\frac{11}{2}$

07.22.03.aeko.01

$${}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{3\,635\,977\,185\,225\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(1\,694\,498\,816\,z^8 + 37\,786\,484\,736\,z^7 + 9\,113\,567\,232\,z^6 + 47\,028\,731\,904\,z^5 + 313\,934\,987\,520\,z^4 + 1\,352\,893\,449\,600\,z^3 + 1\,609\,602\,548\,400\,z^2 - 6\,840\,810\,830\,700\,z + 3\,635\,977\,185\,225\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(33\,554\,432\,z^8 + 6\,207\,569\,920\,z^7 + 1\,271\,660\,544\,z^6 - 12\,239\,732\,736\,z^5 - 90\,369\,861\,120\,z^4 - 545\,050\,598\,400\,z^3 - 1\,970\,941\,896\,000\,z^2 - 1\,992\,841\,250\,400\,z + 3\,635\,977\,185\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(398\,458\,880\,z^7 + 5\,086\,642\,176\,z^6 + 4\,715\,741\,184\,z^5 + 25\,348\,055\,040\,z^4 + 170\,328\,312\,000\,z^3 + 912\,473\,100\,000\,z^2 + 2\,855\,128\,329\,900\,z + 3\,635\,977\,185\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aekp.01

$${}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{3\,635\,977\,185\,225\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(1\,694\,498\,816\,z^8 - 37\,786\,484\,736\,z^7 + 9\,113\,567\,232\,z^6 - 47\,028\,731\,904\,z^5 + 313\,934\,987\,520\,z^4 - 1\,352\,893\,449\,600\,z^3 + 1\,609\,602\,548\,400\,z^2 + 6\,840\,810\,830\,700\,z + 3\,635\,977\,185\,225\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(33\,554\,432\,z^8 - 6\,207\,569\,920\,z^7 + 1\,271\,660\,544\,z^6 + 12\,239\,732\,736\,z^5 - 90\,369\,861\,120\,z^4 + 545\,050\,598\,400\,z^3 - 1\,970\,941\,896\,000\,z^2 + 1\,992\,841\,250\,400\,z + 3\,635\,977\,185\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(398\,458\,880\,z^7 - 5\,086\,642\,176\,z^6 + 4\,715\,741\,184\,z^5 - 25\,348\,055\,040\,z^4 + 170\,328\,312\,000\,z^3 - 912\,473\,100\,000\,z^2 + 2\,855\,128\,329\,900\,z - 3\,635\,977\,185\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aekq.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{21}{4}; z\right) = \frac{1}{501\,488\,012\,025}\left(3\left(130\,023\,424\,z^7 + 1\,695\,547\,392\,z^6 + 1\,112\,702\,976\,z^5 + 5\,833\,175\,040\,z^4 + 35\,178\,010\,560\,z^3 + 157\,556\,599\,200\,z^2 + 356\,034\,779\,100\,z + 167\,162\,670\,675\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(8\,388\,608\,z^7 + 1\,355\,808\,768\,z^6 - 953\,745\,408\,z^5 - 3\,576\,545\,280\,z^4 - 21\,806\,547\,840\,z^3 - 118\,371\,773\,520\,z^2 - 399\,453\,654\,600\,z - 501\,488\,012\,025\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aekr.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{21}{4}; -z\right) = \frac{1}{501\,488\,012\,025}\left(2\sqrt{z}\left(8\,388\,608\,z^7 - 1\,355\,808\,768\,z^6 - 953\,745\,408\,z^5 + 3\,576\,545\,280\,z^4 - 21\,806\,547\,840\,z^3 + 118\,371\,773\,520\,z^2 - 399\,453\,654\,600\,z + 501\,488\,012\,025\right)\sin\left(2\sqrt{z}\right) - 3\left(130\,023\,424\,z^7 - 1\,695\,547\,392\,z^6 + 1\,112\,702\,976\,z^5 - 5\,833\,175\,040\,z^4 + 35\,178\,010\,560\,z^3 - 157\,556\,599\,200\,z^2 + 356\,034\,779\,100\,z - 167\,162\,670\,675\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.aeks.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{19}{4}; z\right) = \frac{1}{158\,085\,964\,575\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,777\,216\,z^8 - 3\,001\,024\,512\,z^7 - 4\,026\,925\,056\,z^6 + 2\,742\,018\,048\,z^5 + 15\,149\,756\,160\,z^4 + 59\,562\,518\,400\,z^3 + 63\,200\,768\,400\,z^2 - 293\,480\,163\,900\,z + 158\,085\,964\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(192\,937\,984\,z^7 + 2\,847\,670\,272\,z^6 + 635\,830\,272\,z^5 + 4\,850\,334\,720\,z^4 + 25\,985\,836\,800\,z^3 + 87\,213\,218\,400\,z^2 + 82\,698\,877\,800\,z - 158\,085\,964\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-4\,194\,304\,z^7 - 608\,698\,368\,z^6 + 688\,816\,128\,z^5 + 1\,738\,598\,400\,z^4 + 9\,104\,356\,800\,z^3 + 43\,414\,509\,600\,z^2 + 128\,082\,408\,300\,z + 158\,085\,964\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aekt.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{19}{4}; -z\right) = \frac{1}{158\,085\,964\,575\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-16\,777\,216\,z^8 + 3\,001\,024\,512\,z^7 - 4\,026\,925\,056\,z^6 - 2\,742\,018\,048\,z^5 + 15\,149\,756\,160\,z^4 - 59\,562\,518\,400\,z^3 + 63\,200\,768\,400\,z^2 + 293\,480\,163\,900\,z + 158\,085\,964\,575\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(192\,937\,984\,z^7 - 2\,847\,670\,272\,z^6 + 635\,830\,272\,z^5 - 4\,850\,334\,720\,z^4 + 25\,985\,836\,800\,z^3 - 87\,213\,218\,400\,z^2 + 82\,698\,877\,800\,z + 158\,085\,964\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4\,194\,304\,z^7 - 608\,698\,368\,z^6 - 688\,816\,128\,z^5 + 1\,738\,598\,400\,z^4 - 9\,104\,356\,800\,z^3 + 43\,414\,509\,600\,z^2 - 128\,082\,408\,300\,z + 158\,085\,964\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeku.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{17}{4}; z\right) = \frac{1}{23\,880\,381\,525}\left(\left(-4\,194\,304\,z^7 - 565\,182\,464\,z^6 + 688\,816\,128\,z^5 + 1\,291\,530\,240\,z^4 + 6\,072\,454\,080\,z^3 + 24\,204\,549\,600\,z^2 + 51\,591\,840\,300\,z + 23\,880\,381\,525\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(45\,088\,768\,z^6 + 423\,886\,848\,z^5 + 331\,161\,600\,z^4 + 1\,380\,234\,240\,z^3 + 6\,360\,243\,120\,z^2 + 19\,751\,331\,600\,z + 23\,880\,381\,525\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aekv.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{17}{4}; -z\right) = \frac{1}{23\,880\,381\,525}\left(\left(4\,194\,304\,z^7 - 565\,182\,464\,z^6 - 688\,816\,128\,z^5 + 1\,291\,530\,240\,z^4 - 6\,072\,454\,080\,z^3 + 24\,204\,549\,600\,z^2 - 51\,591\,840\,300\,z + 23\,880\,381\,525\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(45\,088\,768\,z^6 - 423\,886\,848\,z^5 + 331\,161\,600\,z^4 - 1\,380\,234\,240\,z^3 + 6\,360\,243\,120\,z^2 - 19\,751\,331\,600\,z + 23\,880\,381\,525\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aekw.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{15}{4}; z\right) = \frac{1}{8\,320\,313\,925\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(3\left(30\,408\,704\,z^7 + 418\,709\,504\,z^6 - 86\,102\,016\,z^5 + 311\,351\,040\,z^4 + 1\,053\,360\,000\,z^3 + 937\,213\,200\,z^2 - 5\,042\,614\,500\,z + 2\,773\,437\,975\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(2\,097\,152\,z^7 + 272\,498\,688\,z^6 - 281\,714\,688\,z^5 - 310\,464\,000\,z^4 - 1\,543\,449\,600\,z^3 - 4\,680\,244\,800\,z^2 - 4\,034\,091\,600\,z + 8\,320\,313\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12z\left(7\,077\,888\,z^6 + 41\,795\,584\,z^5 + 74\,511\,360\,z^4 + 222\,868\,800\,z^3 + 873\,180\,000\,z^2 + 2\,353\,220\,100\,z + 2\,773\,437\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aekx.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{15}{4}; -z\right) = \frac{1}{8\,320\,313\,925\,\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(-30\,408\,704\,z^7 + 418\,709\,504\,z^6 + 86\,102\,016\,z^5 + 311\,351\,040\,z^4 - 1\,053\,360\,000\,z^3 + 937\,213\,200\,z^2 + 5\,042\,614\,500\,z + 2\,773\,437\,975\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2\,097\,152\,z^7 - 272\,498\,688\,z^6 - 281\,714\,688\,z^5 + 310\,464\,000\,z^4 - 1\,543\,449\,600\,z^3 + 4\,680\,244\,800\,z^2 - 4\,034\,091\,600\,z - 8\,320\,313\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(7\,077\,888\,z^6 - 41\,795\,584\,z^5 + 74\,511\,360\,z^4 - 222\,868\,800\,z^3 + 873\,180\,000\,z^2 - 2\,353\,220\,100\,z + 2\,773\,437\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeky.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{13}{4}; z\right) = \frac{1}{1\,404\,728\,325}\left(77\left(262\,144\,z^6 + 1\,032\,192\,z^5 + 2\,903\,040\,z^4 + 6\,361\,920\,z^3 + 20\,714\,400\,z^2 + 40\,313\,700\,z + 18\,243\,225\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(524\,288\,z^6 + 52\,985\,856\,z^5 - 115\,906\,560\,z^4 - 133\,499\,520\,z^3 - 452\,889\,360\,z^2 - 1\,231\,183\,800\,z - 1\,404\,728\,325\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aekz.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{13}{4}; -z\right) = \frac{1}{1\,404\,728\,325}\left(77\left(262\,144\,z^6 - 1\,032\,192\,z^5 + 2\,903\,040\,z^4 - 6\,361\,920\,z^3 + 20\,714\,400\,z^2 - 40\,313\,700\,z + 18\,243\,225\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-524\,288\,z^6 + 52\,985\,856\,z^5 + 115\,906\,560\,z^4 - 133\,499\,520\,z^3 + 452\,889\,360\,z^2 - 1\,231\,183\,800\,z + 1\,404\,728\,325\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ael0.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{11}{4}; z\right) = -\frac{1}{554\,687\,595\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,048\,576\,z^7 + 111\,607\,808\,z^6 - 186\,224\,640\,z^5 + 47\,013\,120\,z^4 - 215\,107\,200\,z^3 - 136\,216\,080\,z^2 + 971\,849\,340\,z - 554\,687\,595\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(9\,699\,328\,z^6 + 31\,457\,280\,z^5 + 84\,102\,144\,z^4 + 110\,880\,000\,z^3 + 314\,344\,800\,z^2 + 232\,265\,880\,z - 554\,687\,595\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(262\,144\,z^6 + 20\,824\,064\,z^5 - 55\,329\,792\,z^4 - 89\,369\,280\,z^3 - 221\,205\,600\,z^2 - 507\,317\,580\,z - 554\,687\,595\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ael1.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) = $$

$$ \frac{1}{554\,687\,595\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,048\,576 z^7 - 111\,607\,808 z^6 - 186\,224\,640 z^5 - 47\,013\,120 z^4 - 215\,107\,200 z^3 + \right.\right.\right. $$

$$ \left. 136\,216\,080 z^2 + 971\,849\,340 z + 554\,687\,595\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$

$$ 4\sqrt{z}\left(9\,699\,328 z^6 - 31\,457\,280 z^5 + 84\,102\,144 z^4 - 110\,880\,000 z^3 + 314\,344\,800 z^2 - 232\,265\,880 z - 554\,687\,595\right) $$

$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(262\,144 z^6 - 20\,824\,064 z^5 - 55\,329\,792 z^4 + \right. $$

$$ \left.\left. 89\,369\,280 z^3 - 221\,205\,600 z^2 + 507\,317\,580 z - 554\,687\,595\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.ael2.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{9}{4}; z\right) = \left(-\frac{262\,144 z^6}{108\,056\,025} - \frac{507\,904 z^5}{3\,274\,425} + \frac{13\,312 z^4}{31\,185} + \frac{25\,792 z^3}{31\,185} + \frac{416 z^2}{297} + \frac{76 z}{33} + 1\right)\cosh\left(2\sqrt{z}\right) - $$

$$ \frac{2\sqrt{z}\left(65\,536 z^5 - 143\,360 z^4 + 1\,370\,880 z^3 + 1\,517\,040 z^2 + 3\,175\,200 z + 3\,274\,425\right)\sinh\left(2\sqrt{z}\right)}{3\,274\,425} $$

07.22.03.ael3.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{9}{4}; -z\right) = \left(-\frac{262\,144 z^6}{108\,056\,025} + \frac{507\,904 z^5}{3\,274\,425} + \frac{13\,312 z^4}{31\,185} - \frac{25\,792 z^3}{31\,185} + \frac{416 z^2}{297} - \frac{76 z}{33} + 1\right)\cos\left(2\sqrt{z}\right) - $$

$$ \frac{2\sqrt{z}\left(65\,536 z^5 + 143\,360 z^4 + 1\,370\,880 z^3 - 1\,517\,040 z^2 + 3\,175\,200 z - 3\,274\,425\right)\sin\left(2\sqrt{z}\right)}{3\,274\,425} $$

07.22.03.ael4.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{7}{4}; z\right) = \frac{1}{50\,426\,145\sqrt[4]{z}} $$

$$ \left(\sqrt{2}\left(\left(4\,259\,840 z^6 - 3\,268\,608 z^5 + 60\,496\,128 z^4 - 28\,828\,800 z^3 + 8\,149\,680 z^2 - 81\,205\,740 z + 50\,426\,145\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$

$$ 4\sqrt{z}\left(131\,072 z^6 + 7\,028\,736 z^5 - 19\,600\,896 z^4 - 31\,933\,440 z^3 - 23\,284\,800 z^2 - 13\,970\,880 z + 50\,426\,145\right) $$

$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$

$$ \left.\left. 4z\left(966\,656 z^5 - 5\,376\,000 z^4 + 25\,502\,400 z^3 + 34\,927\,200 z^2 + 53\,263\,980 z + 50\,426\,145\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ael5.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{7}{4}; -z\right) = \frac{1}{50\,426\,145\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(4\,259\,840\,z^6 + 3\,268\,608\,z^5 + 60\,496\,128\,z^4 + 28\,828\,800\,z^3 + 8\,149\,680\,z^2 + 81\,205\,740\,z + 50\,426\,145\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(131\,072\,z^6 - 7\,028\,736\,z^5 - 19\,600\,896\,z^4 + 31\,933\,440\,z^3 - 23\,284\,800\,z^2 + 13\,970\,880\,z + 50\,426\,145\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(966\,656\,z^5 + 5\,376\,000\,z^4 + 25\,502\,400\,z^3 - 34\,927\,200\,z^2 + 53\,263\,980\,z - 50\,426\,145\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ael6.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{5}{4}; z\right) = \left(\frac{868\,352\,z^5}{12\,006\,225} - \frac{38\,912\,z^4}{72\,765} + \frac{19\,904\,z^3}{10\,395} + \frac{32\,z^2}{11} + \frac{28\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{12\,006\,225}\left(2\sqrt{z}\left(32\,768\,z^5 + 901\,120\,z^4 - 147\,840\,z^3 - 19\,792\,080\,z^2 - 14\,553\,000\,z - 12\,006\,225\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ael7.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{5}{4}; -z\right) = \left(-\frac{868\,352\,z^5}{12\,006\,225} - \frac{38\,912\,z^4}{72\,765} - \frac{19\,904\,z^3}{10\,395} + \frac{32\,z^2}{11} - \frac{28\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(32\,768\,z^5 - 901\,120\,z^4 - 147\,840\,z^3 + 19\,792\,080\,z^2 - 14\,553\,000\,z + 12\,006\,225\right)\sin\left(2\sqrt{z}\right)}{12\,006\,225} $$

07.22.03.ael8.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{3}{4}; z\right) = -\frac{1}{7\,203\,735\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(65\,536\,z^6 + 1\,720\,320\,z^5 - 1\,951\,488\,z^4 - 24\,393\,600\,z^3 + 22\,120\,560\,z^2 + 7\,858\,620\,z - 7\,203\,735\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(131\,072\,z^5 - 1\,068\,032\,z^4 + 3\,252\,480\,z^3 + 3\,880\,800\,z^2 - 582\,120\,z - 2\,401\,245\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(16\,384\,z^5 + 147\,456\,z^4 + 1\,995\,840\,z^3 - 11\,642\,400\,z^2 - 11\,351\,340\,z - 7\,203\,735\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ael9.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, -\frac{3}{4}; -z\right) = \frac{1}{7\,203\,735\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-65\,536\,z^6 + 1\,720\,320\,z^5 + 1\,951\,488\,z^4 - 24\,393\,600\,z^3 - 22\,120\,560\,z^2 + 7\,858\,620\,z + 7\,203\,735\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(131\,072\,z^5 + 1\,068\,032\,z^4 + 3\,252\,480\,z^3 - 3\,880\,800\,z^2 - 582\,120\,z + 2\,401\,245\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(16\,384\,z^5 - 147\,456\,z^4 + 1\,995\,840\,z^3 + 11\,642\,400\,z^2 - 11\,351\,340\,z + 7\,203\,735\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aela.01

$${}_1F_2\left(\frac{15}{4};-\frac{11}{2},-\frac{1}{4};z\right)=\left(-\frac{16\,384\,z^5}{2\,401\,245}+\frac{2048\,z^4}{88\,935}-\frac{96\,832\,z^3}{72\,765}+\frac{416\,z^2}{99}+\frac{52\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\,\left(77\,824\,z^4-726\,528\,z^3+77\,616\,z^2+8\,149\,680\,z+2\,401\,245\right)\sinh\left(2\sqrt{z}\right)}{2\,401\,245}$$

07.22.03.aelb.01

$${}_1F_2\left(\frac{15}{4};-\frac{11}{2},-\frac{1}{4};-z\right)=\left(\frac{16\,384\,z^5}{2\,401\,245}+\frac{2048\,z^4}{88\,935}+\frac{96\,832\,z^3}{72\,765}+\frac{416\,z^2}{99}-\frac{52\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\,\left(77\,824\,z^4+726\,528\,z^3+77\,616\,z^2-8\,149\,680\,z+2\,401\,245\right)\sin\left(2\sqrt{z}\right)}{2\,401\,245}$$

07.22.03.aelc.01

$${}_1F_2\left(\frac{15}{4};-\frac{11}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{2\,401\,245\sqrt[4]{z}}\left(\sqrt{2}\left(7\left(20\,480\,z^5-177\,408\,z^4+105\,600\,z^3+1\,441\,440\,z^2-1\,621\,620\,z+343\,035\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\,\left(8192\,z^5-89\,600\,z^4+1\,774\,080\,z^3-3\,880\,800\,z^2-3\,541\,230\,z+2\,401\,245\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.4\,z\left(29\,696\,z^4-221\,760\,z^3-1\,293\,600\,z^2+4\,268\,880\,z+2\,401\,245\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aeld.01

$${}_1F_2\left(\frac{15}{4};-\frac{11}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{2\,401\,245\sqrt[4]{z}}\left(\sqrt{2}\left(-7\left(20\,480\,z^5+177\,408\,z^4+105\,600\,z^3-1\,441\,440\,z^2-1\,621\,620\,z-343\,035\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\,\left(8192\,z^5+89\,600\,z^4+1\,774\,080\,z^3+3\,880\,800\,z^2-3\,541\,230\,z-2\,401\,245\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.4\,z\left(29\,696\,z^4+221\,760\,z^3-1\,293\,600\,z^2-4\,268\,880\,z+2\,401\,245\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aele.01

$${}_1F_2\left(\frac{15}{4};-\frac{11}{2},\frac{3}{4};z\right)=\frac{1}{2\,401\,245}\left(3\left(7168\,z^4-18\,752\,z^3-702\,240\,z^2+873\,180\,z+800\,415\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\,\left(2048\,z^4-47\,232\,z^3+476\,784\,z^2+582\,120\,z-2\,401\,245\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aelf.01

$${}_1F_2\left(\frac{15}{4};-\frac{11}{2},\frac{3}{4};-z\right)=\frac{1}{2\,401\,245}\left(3\left(7168\,z^4+18\,752\,z^3-702\,240\,z^2-873\,180\,z+800\,415\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\,\left(2048\,z^4+47\,232\,z^3+476\,784\,z^2-582\,120\,z-2\,401\,245\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aelg.01

$${}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) =$$
$$\frac{1}{4\,802\,490\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\left(8192 z^5 - 185\,856 z^4 + 1\,478\,400 z^3 + 1\,330\,560 z^2 - 7\,681\,905 z + 4\,802\,490\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\sqrt{z}\left(114\,688 z^4 + 675\,840 z^3 - 17\,740\,800 z^2 + 8\,205\,120 z + 15\,706\,845\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.2 z\left(8192 z^4 - 222\,720 z^3 + 1\,056\,000 z^2 + 8\,648\,640 z - 3\,503\,115\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aelh.01

$${}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) =$$
$$\frac{1}{4\,802\,490\sqrt{2}\,\sqrt[4]{z}}\left(\left(-2\left(8192 z^5 + 185\,856 z^4 + 1\,478\,400 z^3 - 1\,330\,560 z^2 - 7\,681\,905 z - 4\,802\,490\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\sqrt{z}\left(-114\,688 z^4 + 675\,840 z^3 + 17\,740\,800 z^2 + 8\,205\,120 z - 15\,706\,845\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.2 z\left(8192 z^4 + 222\,720 z^3 + 1\,056\,000 z^2 - 8\,648\,640 z - 3\,503\,115\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeli.01

$${}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, \frac{7}{4}; z\right) = \frac{1}{800\,415}\left(\left(1024 z^4 - 25\,792 z^3 - 30\,240 z^2 + 1\,288\,980 z + 800\,415\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(256 z^3 + 41\,328 z^2 - 221\,760 z - 800\,415\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aelj.01

$${}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, \frac{7}{4}; -z\right) = \frac{1}{800\,415}\left(\left(1024 z^4 + 25\,792 z^3 - 30\,240 z^2 - 1\,288\,980 z + 800\,415\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(256 z^3 - 41\,328 z^2 - 221\,760 z + 800\,415\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aelk.01

$${}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, \frac{9}{4}; z\right) =$$
$$\frac{1}{30\,735\,936\sqrt{2}\,z^{3/4}}\left(\left(-6\sqrt{z}\left(16\,384 z^4 - 1\,802\,240 z^3 + 4\,376\,064 z^2 + 18\,749\,808 z - 18\,422\,019\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(262\,144 z^5 - 4\,915\,200 z^4 - 44\,605\,440 z^3 + 213\,244\,416 z^2 + 260\,423\,856 z - 122\,650\,605\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.6\sqrt{z}\left(49\,152 z^4 - 2\,375\,680 z^3 - 3\,024\,384 z^2 + 41\,391\,504 z + 40\,883\,535\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aell.01

$${}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, \frac{9}{4}; -z\right) =$$

$$-\frac{1}{30\,735\,936\sqrt{2}\,z^{3/4}}\left(\left(6\sqrt{z}\left(16\,384z^4+1\,802\,240z^3+4\,376\,064z^2-18\,749\,808z-18\,422\,019\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(262\,144z^5+4\,915\,200z^4-44\,605\,440z^3-213\,244\,416z^2+260\,423\,856z+122\,650\,605\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.6\sqrt{z}\left(49\,152z^4+2\,375\,680z^3-3\,024\,384z^2-41\,391\,504z+40\,883\,535\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aelm.01

$${}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, \frac{11}{4}; z\right) =$$

$$\frac{1}{114\,345}\left(\left(-1216z^3+23\,520z^2+200\,340z+114\,345\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\left(128z^3-336z^2-47\,880z-114\,345\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aeln.01

$${}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, \frac{11}{4}; -z\right) =$$

$$\frac{1}{114\,345}\left(\left(1216z^3+23\,520z^2-200\,340z+114\,345\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(128z^3+336z^2-47\,880z+114\,345\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aelo.01

$${}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) = \frac{1}{109\,283\,328\sqrt{2}\,z^{7/4}}$$
$$\left(\left(2\sqrt{z}\left(524\,288z^5+5\,570\,560z^4-139\,493\,376z^3-617\,202\,432z^2-821\,044\,224z+1\,267\,389\,585\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-14\,680\,064z^5+56\,033\,280z^4+1\,951\,285\,248z^3+6\,223\,650\,048z^2+9\,157\,911\,840z-6\,336\,947\,925\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(524\,288z^5+11\,468\,800z^4-150\,994\,944z^3-\right.$$
$$\left.\left.\left.1\,456\,747\,776z^2-4\,360\,910\,400z-6\,336\,947\,925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aelp.01

$${}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) = \frac{1}{109\,283\,328\sqrt{2}\,z^{7/4}}$$
$$\left(\left(2\sqrt{z}\left(524\,288z^5-5\,570\,560z^4-139\,493\,376z^3+617\,202\,432z^2-821\,044\,224z-1\,267\,389\,585\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-14\,680\,064z^5-56\,033\,280z^4+1\,951\,285\,248z^3-6\,223\,650\,048z^2+9\,157\,911\,840z+6\,336\,947\,925\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-524\,288z^5+11\,468\,800z^4+150\,994\,944z^3-\right.$$
$$\left.\left.\left.1\,456\,747\,776z^2+4\,360\,910\,400z-6\,336\,947\,925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aelq.01

$${}_1F_2\left(\frac{15}{4};-\frac{11}{2},\frac{15}{4};z\right)=\left(\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}+\frac{20\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{495}\sqrt{z}\,\left(16\,z^2+240\,z+495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aelr.01

$${}_1F_2\left(\frac{15}{4};-\frac{11}{2},\frac{15}{4};-z\right)=\left(-\frac{64\,z^3}{10\,395}+\frac{32\,z^2}{99}-\frac{20\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{495}\sqrt{z}\,\left(16\,z^2-240\,z+495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aels.01

$${}_1F_2\left(\frac{15}{4};-\frac{11}{2},\frac{17}{4};z\right)=$$

$$\frac{1}{3\,497\,066\,496\sqrt{2}\,z^{11/4}}\left(13\left(-2\sqrt{z}\,\left(51\,380\,224\,z^5+1\,420\,099\,584\,z^4+15\,898\,595\,328\,z^3+117\,149\,066\,496\,z^2+\right.\right.\right.$$
$$\left.\left.344\,729\,967\,120\,z-399\,227\,719\,275\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$\left(16\,777\,216\,z^6+1\,462\,763\,520\,z^5+25\,358\,303\,232\,z^4+250\,525\,642\,752\,z^3+1\,496\,664\,449\,280\,z^2+\right.$$
$$\left.3\,143\,126\,170\,800\,z-1\,996\,138\,596\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(57\,671\,680\,z^5+2\,012\,676\,096\,z^4+\right.$$
$$\left.\left.\left.27\,012\,870\,144\,z^3+233\,744\,797\,440\,z^2+1\,115\,302\,834\,800\,z+1\,996\,138\,596\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aelt.01

$${}_1F_2\left(\frac{15}{4};-\frac{11}{2},\frac{17}{4};-z\right)=\frac{1}{3\,497\,066\,496\sqrt{2}\,z^{11/4}}\left(13\right.$$
$$\left(2\sqrt{z}\,\left(51\,380\,224\,z^5-1\,420\,099\,584\,z^4+15\,898\,595\,328\,z^3-117\,149\,066\,496\,z^2+344\,729\,967\,120\,z+399\,227\,719\,275\right)\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(16\,777\,216\,z^6-1\,462\,763\,520\,z^5+25\,358\,303\,232\,z^4-250\,525\,642\,752\,z^3+1\,496\,664\,449\,280\,z^2-\right.$$
$$\left.3\,143\,126\,170\,800\,z-1\,996\,138\,596\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-57\,671\,680\,z^5+2\,012\,676\,096\,z^4-\right.$$
$$\left.\left.\left.27\,012\,870\,144\,z^3+233\,744\,797\,440\,z^2-1\,115\,302\,834\,800\,z+1\,996\,138\,596\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aelu.01

$${}_1F_2\left(\frac{15}{4};-\frac{11}{2},\frac{19}{4};z\right)=\frac{1}{5\,813\,305\,344\,z^{15/4}}$$
$$\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-16\,777\,216\,z^6-281\,018\,368\,z^{11/2}-2\,496\,659\,456\,z^5-15\,749\,873\,664\,z^{9/2}-79\,766\,421\,504\,z^4-\right.\right.\right.$$
$$344\,457\,265\,152\,z^{7/2}-1\,294\,439\,731\,200\,z^3-4\,206\,929\,126\,400\,z^{5/2}-11\,569\,055\,097\,600\,z^2-$$
$$26\,030\,373\,969\,600\,z^{3/2}-45\,553\,154\,446\,800\,z-56\,941\,443\,058\,500\sqrt{z}+e^{4\sqrt{z}}\,\left(16\,777\,216\,z^6-\right.$$
$$281\,018\,368\,z^{11/2}+2\,496\,659\,456\,z^5-15\,749\,873\,664\,z^{9/2}+79\,766\,421\,504\,z^4-344\,457\,265\,152\,z^{7/2}+$$
$$1\,294\,439\,731\,200\,z^3-4\,206\,929\,126\,400\,z^{5/2}+11\,569\,055\,097\,600\,z^2-26\,030\,373\,969\,600\,z^{3/2}+$$
$$\left.45\,553\,154\,446\,800\,z-56\,941\,443\,058\,500\sqrt{z}+42\,706\,082\,293\,875\right)-42\,706\,082\,293\,875\Big)+$$
$$\left.42\,706\,082\,293\,875\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-42\,706\,082\,293\,875\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.aelv.01

$${}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) =$$

$$\frac{1}{1\,453\,326\,336\,z^{15/4}}\left(42\,706\,082\,293\,875\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\;\left(4\sqrt{z}\;\left(70\,254\,592\,z^5 - 3\,937\,468\,416\,z^4 + 86\,114\,316\,288\,z^3 - 1\,051\,732\,281\,600\,z^2 + 6\,507\,593\,492\,400\,z - 14\,235\,360\,764\,625\right)\cos\left(2\sqrt{z}\right) + \left(16\,777\,216\,z^6 - 2\,496\,659\,456\,z^5 + 79\,766\,421\,504\,z^4 - 1\,294\,439\,731\,200\,z^3 + 11\,569\,055\,097\,600\,z^2 - 45\,553\,154\,446\,800\,z + 42\,706\,082\,293\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aelw.01

$${}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) =$$

$$\left(221\left(2\sqrt{z}\;\left(33\,554\,432\,z^6 + 6\,348\,079\,104\,z^5 + 264\,794\,406\,912\,z^4 + 5\,295\,779\,241\,984\,z^3 + 52\,561\,180\,869\,120\,z^2 + 183\,112\,447\,240\,800\,z - 202\,408\,453\,672\,425\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(872\,415\,232\,z^6 + 68\,048\,388\,096\,z^5 + 2\,023\,145\,865\,216\,z^4 + 31\,259\,005\,747\,200\,z^3 + 231\,442\,236\,748\,800\,z^2 + 545\,078\,912\,716\,800\,z - 337\,347\,422\,787\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\;\left(33\,554\,432\,z^6 + 7\,354\,712\,064\,z^5 + 347\,001\,716\,736\,z^4 + 7\,845\,198\,520\,320\,z^3 + 94\,091\,002\,790\,400\,z^2 + 523\,786\,767\,688\,800\,z + 1\,012\,042\,268\,362\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(111\,906\,127\,872\sqrt{2}\;z^{15/4}\right)$$

07.22.03.aelx.01

$${}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) =$$

$$-\left(221\left(2\sqrt{z}\;\left(33\,554\,432\,z^6 - 6\,348\,079\,104\,z^5 + 264\,794\,406\,912\,z^4 - 5\,295\,779\,241\,984\,z^3 + 52\,561\,180\,869\,120\,z^2 - 183\,112\,447\,240\,800\,z - 202\,408\,453\,672\,425\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(872\,415\,232\,z^6 - 68\,048\,388\,096\,z^5 + 2\,023\,145\,865\,216\,z^4 - 31\,259\,005\,747\,200\,z^3 + 231\,442\,236\,748\,800\,z^2 - 545\,078\,912\,716\,800\,z - 337\,347\,422\,787\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\;\left(33\,554\,432\,z^6 - 7\,354\,712\,064\,z^5 + 347\,001\,716\,736\,z^4 - 7\,845\,198\,520\,320\,z^3 + 94\,091\,002\,790\,400\,z^2 - 523\,786\,767\,688\,800\,z + 1\,012\,042\,268\,362\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)\Big/\left(111\,906\,127\,872\sqrt{2}\;z^{15/4}\right)$$

07.22.03.aely.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) = \frac{1}{372\,051\,542\,016\,z^{19/4}} \left(19\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(268\,435\,456\,z^{13/2} + 6\,308\,233\,216\,z^6 + 79\,373\,008\,896\,z^{11/2} + 708\,392\,779\,776\,z^5 + 4\,995\,324\,837\,888\,z^{9/2} + 29\,239\,109\,222\,400\,z^4 + 144\,977\,249\,894\,400\,z^{7/2} + 610\,975\,553\,126\,400\,z^3 + 2\,170\,775\,429\,222\,400\,z^{5/2} + 6\,386\,118\,413\,875\,200\,z^2 + 15\,097\,616\,902\,368\,000\,z^{3/2} + 27\,331\,892\,668\,080\,000\,z + 35\,018\,987\,480\,977\,500\sqrt{z} + e^{4\sqrt{z}} \left(268\,435\,456\,z^{13/2} - 6\,308\,233\,216\,z^6 + 79\,373\,008\,896\,z^{11/2} - 708\,392\,779\,776\,z^5 + 4\,995\,324\,837\,888\,z^{9/2} - 29\,239\,109\,222\,400\,z^4 + 144\,977\,249\,894\,400\,z^{7/2} - 610\,975\,553\,126\,400\,z^3 + 2\,170\,775\,429\,222\,400\,z^{5/2} - 6\,386\,118\,413\,875\,200\,z^2 + 15\,097\,616\,902\,368\,000\,z^{3/2} - 27\,331\,892\,668\,080\,000\,z + 35\,018\,987\,480\,977\,500\sqrt{z} - 26\,264\,240\,610\,733\,125\right) + 26\,264\,240\,610\,733\,125\right) + 42\,706\,082\,293\,875\, e^{2\sqrt{z}} \sqrt{2\pi}\,(16z - 615)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 42\,706\,082\,293\,875\, e^{2\sqrt{z}} \sqrt{2\pi}\,(16z - 615)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aelz.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) = \frac{1}{93\,012\,885\,504\,z^{19/4}} \left(19\left(42\,706\,082\,293\,875\sqrt{\pi}\,(16z + 615)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(67\,108\,864\,z^6 - 19\,843\,252\,224\,z^5 + 1\,248\,831\,209\,472\,z^4 - 36\,244\,312\,473\,600\,z^3 + 542\,693\,857\,305\,600\,z^2 - 3\,774\,404\,225\,592\,000\,z + 8\,754\,746\,870\,244\,375\right)\cos\left(2\sqrt{z}\right) + \left(-6\,308\,233\,216\,z^6 + 708\,392\,779\,776\,z^5 - 29\,239\,109\,222\,400\,z^4 + 610\,975\,553\,126\,400\,z^3 - 6\,386\,118\,413\,875\,200\,z^2 + 27\,331\,892\,668\,080\,000\,z - 26\,264\,240\,610\,733\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{15}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.aem0.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) = \frac{1}{330\,543\,380\,475\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-33\,554\,432\,z^8 - 5\,813\,305\,344\,z^7 - 4\,662\,755\,328\,z^6 + 6\,040\,387\,584\,z^5 + 31\,853\,606\,400\,z^4 + 124\,582\,993\,920\,z^3 + 131\,396\,126\,400\,z^2 - 613\,181\,923\,200\,z + 330\,543\,380\,475\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 28\sqrt{z}\left(54\,525\,952\,z^7 + 726\,663\,168\,z^6 + 158\,957\,568\,z^5 + 1\,463\,869\,440\,z^4 + 7\,799\,077\,440\,z^3 + 26\,070\,660\,000\,z^2 + 24\,636\,773\,700\,z - 47\,220\,482\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-8\,388\,608\,z^7 - 1\,173\,356\,544\,z^6 + 1\,801\,519\,104\,z^5 + 3\,775\,242\,240\,z^4 + 19\,289\,128\,320\,z^3 + 91\,247\,310\,000\,z^2 + 268\,267\,091\,400\,z + 330\,543\,380\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aem1.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, -\frac{23}{4}; -z\right) = \frac{1}{330\,543\,380\,475\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-33\,554\,432\,z^8 + 5\,813\,305\,344\,z^7 - 4\,662\,755\,328\,z^6 - 6\,040\,387\,584\,z^5 + 31\,853\,606\,400\,z^4 - 124\,582\,993\,920\,z^3 + 131\,396\,126\,400\,z^2 + 613\,181\,923\,200\,z + 330\,543\,380\,475\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 28\sqrt{z}\,\left(54\,525\,952\,z^7 - 726\,663\,168\,z^6 + 158\,957\,568\,z^5 - 1\,463\,869\,440\,z^4 + 7\,799\,077\,440\,z^3 - 26\,070\,660\,000\,z^2 + 24\,636\,773\,700\,z + 47\,220\,482\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8\,388\,608\,z^7 - 1\,173\,356\,544\,z^6 - 1\,801\,519\,104\,z^5 + 3\,775\,242\,240\,z^4 - 19\,289\,128\,320\,z^3 + 91\,247\,310\,000\,z^2 - 268\,267\,091\,400\,z + 330\,543\,380\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aem2.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, -\frac{21}{4}; z\right) = \frac{1}{45\,589\,819\,275}\left(\left(-8\,388\,608\,z^7 - 1\,173\,356\,544\,z^6 + 953\,745\,408\,z^5 + 2\,384\,363\,520\,z^4 + 11\,460\,113\,280\,z^3 + 46\,021\,575\,600\,z^2 + 98\,416\,117\,800\,z + 45\,589\,819\,275\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(30\,408\,704\,z^6 + 326\,107\,136\,z^5 + 198\,696\,960\,z^4 + 862\,202\,880\,z^3 + 4\,019\,455\,440\,z^2 + 12\,543\,230\,700\,z + 15\,196\,606\,425\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aem3.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{1}{45\,589\,819\,275}\left(\left(8\,388\,608\,z^7 - 1\,173\,356\,544\,z^6 - 953\,745\,408\,z^5 + 2\,384\,363\,520\,z^4 - 11\,460\,113\,280\,z^3 + 46\,021\,575\,600\,z^2 - 98\,416\,117\,800\,z + 45\,589\,819\,275\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(30\,408\,704\,z^6 - 326\,107\,136\,z^5 + 198\,696\,960\,z^4 - 862\,202\,880\,z^3 + 4\,019\,455\,440\,z^2 - 12\,543\,230\,700\,z + 15\,196\,606\,425\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aem4.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, -\frac{19}{4}; z\right) = \frac{1}{14\,371\,451\,325\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(3\left(62\,914\,560\,z^7 + 1\,130\,364\,928\,z^6 + 185\,450\,496\,z^5 + 518\,031\,360\,z^4 + 1\,819\,319\,040\,z^3 + 1\,664\,863\,200\,z^2 - 8\,740\,531\,800\,z + 4\,790\,483\,775\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(4\,194\,304\,z^7 + 608\,698\,368\,z^6 + 158\,957\,568\,z^5 - 546\,416\,640\,z^4 - 2\,621\,868\,480\,z^3 - 8\,068\,183\,200\,z^2 - 7\,059\,660\,300\,z + 14\,371\,451\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 84z\left(2\,097\,152\,z^6 + 20\,185\,088\,z^5 + 14\,192\,640\,z^4 + 51\,448\,320\,z^3 + 210\,394\,800\,z^2 + 576\,298\,800\,z + 684\,354\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aem5.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{14\,371\,451\,325\,\sqrt[4]{z}}\left(\sqrt{2}\left(-3\left(62\,914\,560\,z^7 - 1\,130\,364\,928\,z^6 + 185\,450\,496\,z^5 - 518\,031\,360\,z^4 + 1\,819\,319\,040\,z^3 - 1\,664\,863\,200\,z^2 - 8\,740\,531\,800\,z - 4\,790\,483\,775\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4\,194\,304\,z^7 - 608\,698\,368\,z^6 + 158\,957\,568\,z^5 + 546\,416\,640\,z^4 - 2\,621\,868\,480\,z^3 + 8\,068\,183\,200\,z^2 - 7\,059\,660\,300\,z - 14\,371\,451\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 84\,z\left(2\,097\,152\,z^6 - 20\,185\,088\,z^5 + 14\,192\,640\,z^4 - 51\,448\,320\,z^3 + 210\,394\,800\,z^2 - 576\,298\,800\,z + 684\,354\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aem6.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, -\frac{17}{4}; z\right) = \frac{1}{2\,170\,943\,775}\left(\left(42\,991\,616\,z^6 + 423\,886\,848\,z^5 + 198\,696\,960\,z^4 + 684\,794\,880\,z^3 + 2\,387\,523\,600\,z^2 + 4\,767\,562\,800\,z + 2\,170\,943\,775\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576\,z^6 + 130\,547\,712\,z^5 - 66\,232\,320\,z^4 - 173\,859\,840\,z^3 - 662\,119\,920\,z^2 - 1\,872\,971\,100\,z - 2\,170\,943\,775\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aem7.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, -\frac{17}{4}; -z\right) = \frac{1}{2\,170\,943\,775}\left(\left(42\,991\,616\,z^6 - 423\,886\,848\,z^5 + 198\,696\,960\,z^4 - 684\,794\,880\,z^3 + 2\,387\,523\,600\,z^2 - 4\,767\,562\,800\,z + 2\,170\,943\,775\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-1\,048\,576\,z^6 + 130\,547\,712\,z^5 + 66\,232\,320\,z^4 - 173\,859\,840\,z^3 + 662\,119\,920\,z^2 - 1\,872\,971\,100\,z + 2\,170\,943\,775\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aem8.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, -\frac{15}{4}; z\right) = -\frac{1}{756\,392\,175\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2\,097\,152\,z^7 + 292\,945\,920\,z^6 + 357\,654\,528\,z^5 - 104\,670\,720\,z^4 - 287\,400\,960\,z^3 - 209\,563\,200\,z^2 + 1\,344\,697\,200\,z - 756\,392\,175\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 36\sqrt{z}\left(2\,359\,296\,z^6 + 26\,755\,072\,z^5 + 2\,759\,680\,z^4 + 17\,223\,360\,z^3 + 47\,863\,200\,z^2 + 37\,352\,700\,z - 84\,043\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(524\,288\,z^6 + 57\,704\,448\,z^5 - 49\,674\,240\,z^4 - 85\,599\,360\,z^3 - 273\,596\,400\,z^2 - 672\,348\,600\,z - 756\,392\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aem9.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{756\,392\,175\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2\,097\,152 z^7 - 292\,945\,920 z^6 + 357\,654\,528 z^5 + 104\,670\,720 z^4 - 287\,400\,960 z^3 + 209\,563\,200 z^2 + 1\,344\,697\,200 z + 756\,392\,175\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 36\sqrt{z}\left(2\,359\,296 z^6 - 26\,755\,072 z^5 + 2\,759\,680 z^4 - 17\,223\,360 z^3 + 47\,863\,200 z^2 - 37\,352\,700 z - 84\,043\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(524\,288 z^6 - 57\,704\,448 z^5 - 49\,674\,240 z^4 + 85\,599\,360 z^3 - 273\,596\,400 z^2 + 672\,348\,600 z - 756\,392\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aema.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, -\frac{13}{4}; z\right) = \left(-\frac{524\,288 z^6}{127\,702\,575} - \frac{32\,768 z^5}{78\,975} + \frac{2048 z^4}{5265} + \frac{2432 z^3}{5265} + \frac{3088 z^2}{2457} + \frac{88 z}{39} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{8\,513\,505}\left(2\sqrt{z}\left(327\,680 z^5 + 2\,207\,744 z^4 + 1\,241\,856 z^3 + 3\,248\,784 z^2 + 7\,858\,620 z + 8\,513\,505\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aemb.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, -\frac{13}{4}; -z\right) = \left(-\frac{524\,288 z^6}{127\,702\,575} + \frac{32\,768 z^5}{78\,975} + \frac{2048 z^4}{5265} - \frac{2432 z^3}{5265} + \frac{3088 z^2}{2457} - \frac{88 z}{39} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{8\,513\,505}\left(2\sqrt{z}\left(-327\,680 z^5 + 2\,207\,744 z^4 - 1\,241\,856 z^3 + 3\,248\,784 z^2 - 7\,858\,620 z + 8\,513\,505\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aemc.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, -\frac{11}{4}; z\right) = \frac{1}{50\,426\,145\sqrt[4]{z}}\left(\sqrt{2}\left(\left(9\,961\,472 z^6 + 104\,300\,544 z^5 - 28\,385\,280 z^4 + 20\,401\,920 z^3 + 8\,981\,280 z^2 - 85\,571\,640 z + 50\,426\,145\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(262\,144 z^6 + 25\,411\,584 z^5 - 20\,481\,024 z^4 - 9\,535\,680 z^3 - 28\,274\,400 z^2 - 18\,336\,780 z + 50\,426\,145\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(2\,293\,760 z^5 + 8\,712\,192 z^4 + 13\,305\,600 z^3 + 24\,116\,400 z^2 + 48\,898\,080 z + 50\,426\,145\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aemd.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, -\frac{11}{4}; -z\right) = \frac{1}{50\,426\,145\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(9\,961\,472 z^6 - 104\,300\,544 z^5 - 28\,385\,280 z^4 - 20\,401\,920 z^3 + 8\,981\,280 z^2 + 85\,571\,640 z + 50\,426\,145\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z}\left(262\,144 z^6 - 25\,411\,584 z^5 - 20\,481\,024 z^4 + 9\,535\,680 z^3 - 28\,274\,400 z^2 + 18\,336\,780 z + 50\,426\,145\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(-2\,293\,760 z^5 + 8\,712\,192 z^4 - 13\,305\,600 z^3 + 24\,116\,400 z^2 - 48\,898\,080 z + 50\,426\,145\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeme.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, -\frac{9}{4}; z\right) = \left(\frac{65\,536 z^5}{297\,675} + \frac{4096 z^4}{8505} + \frac{256 z^3}{189} + \frac{304 z^2}{189} + \frac{64 z}{27} + 1\right)\cosh\left(2\sqrt{z}\right) + $$
$$ \frac{1}{9\,823\,275}\left(2\sqrt{z}\left(65\,536 z^5 + 4\,730\,880 z^4 - 7\,983\,360 z^3 - 5\,710\,320 z^2 - 10\,187\,100 z - 9\,823\,275\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aemf.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) = \left(-\frac{65\,536 z^5}{297\,675} + \frac{4096 z^4}{8505} - \frac{256 z^3}{189} + \frac{304 z^2}{189} - \frac{64 z}{27} + 1\right)\cos\left(2\sqrt{z}\right) + $$
$$ \frac{2\sqrt{z}\left(65\,536 z^5 - 4\,730\,880 z^4 - 7\,983\,360 z^3 + 5\,710\,320 z^2 - 10\,187\,100 z + 9\,823\,275\right)\sin\left(2\sqrt{z}\right)}{9\,823\,275} $$

07.22.03.aemg.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) = -\frac{1}{4\,584\,195\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(131\,072 z^6 + 10\,076\,160 z^5 - 13\,579\,776 z^4 + 7\,096\,320 z^3 - 665\,280 z^2 + 6\,985\,440 z - 4\,584\,195\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 12\sqrt{z}\left(344\,064 z^5 + 567\,296 z^4 + 1\,646\,400 z^3 + 554\,400 z^2 + 291\,060 z - 1\,528\,065\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(32\,768 z^5 + 1\,769\,472 z^4 - 3\,427\,200 z^3 - 4\,158\,000 z^2 - 5\,239\,080 z - 4\,584\,195\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aemh.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) = \frac{1}{4\,584\,195\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(-131\,072 z^6 + 10\,076\,160 z^5 + 13\,579\,776 z^4 + 7\,096\,320 z^3 + 665\,280 z^2 + 6\,985\,440 z + 4\,584\,195\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 12\sqrt{z}\left(344\,064 z^5 - 567\,296 z^4 + 1\,646\,400 z^3 - 554\,400 z^2 + 291\,060 z + 1\,528\,065\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(32\,768 z^5 - 1\,769\,472 z^4 - 3\,427\,200 z^3 + 4\,158\,000 z^2 - 5\,239\,080 z + 4\,584\,195\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aemi.01

$${}_1F_2\left(\frac{15}{4};-\frac{9}{2},-\frac{5}{4};z\right)=\left(-\frac{32\,768\,z^5}{1\,091\,475}-\frac{8192\,z^4}{6615}+\frac{2176\,z^3}{945}+\frac{80\,z^2}{21}+\frac{8\,z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(4096\,z^4-10\,752\,z^3+47\,376\,z^2+26\,460\,z+19\,845\right)\sinh\left(2\sqrt{z}\right)}{19\,845}$$

07.22.03.aemj.01

$${}_1F_2\left(\frac{15}{4};-\frac{9}{2},-\frac{5}{4};-z\right)=\left(\frac{32\,768\,z^5}{1\,091\,475}-\frac{8192\,z^4}{6615}-\frac{2176\,z^3}{945}+\frac{80\,z^2}{21}-\frac{8\,z}{3}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(4096\,z^4+10\,752\,z^3+47\,376\,z^2-26\,460\,z+19\,845\right)\sin\left(2\sqrt{z}\right)}{19\,845}$$

07.22.03.aemk.01

$${}_1F_2\left(\frac{15}{4};-\frac{9}{2},-\frac{3}{4};z\right)=\frac{1}{654\,885\sqrt[4]{z}}\left(\sqrt{2}\left(9\left(49\,152\,z^5-71\,680\,z^4+413\,952\,z^3-332\,640\,z^2-64\,680\,z+72\,765\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(16\,384\,z^5+540\,672\,z^4-971\,712\,z^3-1\,441\,440\,z^2+291\,060\,z+654\,885\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(32\,768\,z^4-164\,864\,z^3+425\,040\,z^2+388\,080\,z+218\,295\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeml.01

$${}_1F_2\left(\frac{15}{4};-\frac{9}{2},-\frac{3}{4};-z\right)=\frac{1}{654\,885\sqrt[4]{z}}\left(\sqrt{2}\left(-9\left(49\,152\,z^5+71\,680\,z^4+413\,952\,z^3+332\,640\,z^2-64\,680\,z-72\,765\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(16\,384\,z^5-540\,672\,z^4-971\,712\,z^3+1\,441\,440\,z^2+291\,060\,z-654\,885\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(32\,768\,z^4+164\,864\,z^3+425\,040\,z^2-388\,080\,z+218\,295\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aemm.01

$${}_1F_2\left(\frac{15}{4};-\frac{9}{2},-\frac{1}{4};z\right)=\left(\frac{4096\,z^4}{10\,395}-\frac{15\,872\,z^3}{6615}+\frac{272\,z^2}{63}+\frac{16\,z}{3}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(4096\,z^4+50\,688\,z^3+144\,144\,z^2-873\,180\,z-218\,295\right)\sinh\left(2\sqrt{z}\right)}{218\,295}$$

07.22.03.aemn.01

$${}_1F_2\left(\frac{15}{4};-\frac{9}{2},-\frac{1}{4};-z\right)=\left(\frac{4096\,z^4}{10\,395}+\frac{15\,872\,z^3}{6615}+\frac{272\,z^2}{63}-\frac{16\,z}{3}+1\right)\cos\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(4096\,z^4-50\,688\,z^3+144\,144\,z^2+873\,180\,z-218\,295\right)\sin\left(2\sqrt{z}\right)}{218\,295}$$

07.22.03.aemo.01

$${}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) =$$

$$-\frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192z^5+96\,768z^4+118\,272z^3-1\,219\,680z^2+1\,164\,240z-218\,295\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\right.\right.$$
$$\sqrt{z}\left(37\,888z^4-237\,888z^3+332\,640z^2+388\,080z-218\,295\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4z\left(2048z^4-2688z^3+203\,280z^2-388\,080z-218\,295\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aemp.01

$${}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) =$$

$$\frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192z^5-96\,768z^4+118\,272z^3+1\,219\,680z^2+1\,164\,240z+218\,295\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(37\,888z^4+237\,888z^3+332\,640z^2-388\,080z-218\,295\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4z\left(2048z^4+2688z^3+203\,280z^2+388\,080z-218\,295\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aemq.01

$${}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) =$$

$$\left(-\frac{2048z^4}{218\,295}+\frac{2176z^3}{24\,255}-\frac{496z^2}{441}+\frac{8z}{9}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-2304z^3+12\,848z^2+32\,340z-72\,765\right)\sinh\left(2\sqrt{z}\right)}{72\,765}$$

07.22.03.aemr.01

$${}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) =$$

$$\left(-\frac{2048z^4}{218\,295}-\frac{2176z^3}{24\,255}-\frac{496z^2}{441}-\frac{8z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-2304z^3-12\,848z^2+32\,340z+72\,765\right)\sin\left(2\sqrt{z}\right)}{72\,765}$$

07.22.03.aems.01

$${}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) = \frac{1}{218\,295\sqrt{2}\sqrt[4]{z}}$$
$$\left(\left(-6\left(4096z^4-19\,712z^3-36\,960z^2+128\,205z-72\,765\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\left(-8192z^4+112\,128z^3-887\,040z^2+\right.\right.\right.$$
$$\left.\left.\left.221\,760z+758\,835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+6z\left(-3072z^3+3520z^2+147\,840z-38\,115\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aemt.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{5}{4}; -z\right) = \frac{1}{218\,295\sqrt{2}\,\sqrt[4]{z}} \left(\left(-6\left(4096z^4 + 19\,712z^3 - 36\,960z^2 - 128\,205z - 72\,765\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(8192z^4 + 112\,128z^3 + 887\,040z^2 + 221\,760z - 758\,835\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 6z\left(3072z^3 + 3520z^2 - 147\,840z - 38\,115\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aemu.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{7}{4}; z\right) = \left(-\frac{256z^3}{14\,553} - \frac{272z^2}{1617} + \frac{32z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256z^3 - 4848z^2 + 13\,860z + 72\,765\right)\sinh\left(2\sqrt{z}\right)}{72\,765} $$

07.22.03.aemv.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{7}{4}; -z\right) = \left(\frac{256z^3}{14\,553} - \frac{272z^2}{1617} - \frac{32z}{21} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256z^3 + 4848z^2 + 13\,860z - 72\,765\right)\sin\left(2\sqrt{z}\right)}{72\,765} $$

07.22.03.aemw.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{9}{4}; z\right) = -\frac{1}{1\,397\,088\sqrt{2}\,z^{3/4}} \left(\left(2\sqrt{z}\left(16\,384z^4 - 270\,336z^3 + 354\,816z^2 + 2\,539\,152z - 2\,305\,611\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(16\,384z^4 + 901\,120z^3 - 2\,720\,256z^2 - 3\,514\,896z + 1\,514\,205\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,384z^4 - 276\,480z^3 - 861\,696z^2 + 4\,734\,576z + 4\,542\,615\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aemx.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = \frac{1}{1\,397\,088\sqrt{2}\,z^{3/4}} \left(\left(-2\sqrt{z}\left(16\,384z^4 + 270\,336z^3 + 354\,816z^2 - 2\,539\,152z - 2\,305\,611\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(16\,384z^4 - 901\,120z^3 - 2\,720\,256z^2 + 3\,514\,896z + 1\,514\,205\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,384z^4 + 276\,480z^3 - 861\,696z^2 - 4\,734\,576z + 4\,542\,615\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aemy.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = \left(-\frac{128z^3}{10\,395} + \frac{80z^2}{693} + \frac{56z}{33} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(16z^2 - 420z - 1155\right)\sinh\left(2\sqrt{z}\right)}{1155} $$

07.22.03.aemz.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = \left(\frac{128z^3}{10\,395} + \frac{80z^2}{693} - \frac{56z}{33} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(16z^2 + 420z - 1155\right)\sin\left(2\sqrt{z}\right)}{1155} $$

07.22.03.aen0.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = -\frac{1}{4\,967\,424\sqrt{2}\, z^{7/4}}\left(\left(2\sqrt{z}\left(-458\,752 z^4 + 4\,866\,048 z^3 + 22\,530\,816 z^2 + 24\,105\,312 z - 40\,883\,535\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(524\,288 z^5 + 983\,040 z^4 - 71\,368\,704 z^3 - 211\,647\,744 z^2 - 290\,727\,360 z + 204\,417\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-655\,360 z^4 + 3\,981\,312 z^3 + 51\,879\,168 z^2 + 145\,363\,680 z + 204\,417\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aen1.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = \frac{1}{4\,967\,424\sqrt{2}\, z^{7/4}}\left(\left(-2\sqrt{z}\left(458\,752 z^4 + 4\,866\,048 z^3 - 22\,530\,816 z^2 + 24\,105\,312 z + 40\,883\,535\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-524\,288 z^5 + 983\,040 z^4 + 71\,368\,704 z^3 - 211\,647\,744 z^2 + 290\,727\,360 z + 204\,417\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(655\,360 z^4 + 3\,981\,312 z^3 - 51\,879\,168 z^2 + 145\,363\,680 z - 204\,417\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aen2.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{15}{4}; z\right) = \left(\frac{16 z^2}{63} + \frac{16 z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\left(16 z^2 + 420 z + 945\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.aen3.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{15}{4}; -z\right) = \left(\frac{16 z^2}{63} - \frac{16 z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\left(16 z^2 - 420 z + 945\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.aen4.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{17}{4}; z\right) = -\frac{1}{158\,957\,568\sqrt{2}\, z^{11/4}}\left(13\left(2\sqrt{z}\left(1\,048\,576 z^5 + 45\,023\,232 z^4 + 474\,845\,184 z^3 + 3\,369\,155\,328 z^2 + 9\,812\,048\,400 z - 11\,406\,506\,265\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(13\,631\,488 z^5 + 263\,258\,112 z^4 + 2\,450\,460\,672 z^3 + 14\,342\,549\,760 z^2 + 29\,872\,236\,240 z - 19\,010\,843\,775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 + 61\,145\,088 z^4 + 819\,228\,672 z^3 + 6\,811\,326\,720 z^2 + 32\,052\,691\,440 z + 57\,032\,531\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aen5.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = \frac{1}{158\,957\,568\sqrt{2}\, z^{11/4}} $$
$$ \left(13\left(2\sqrt{z}\left(1\,048\,576 z^5 - 45\,023\,232 z^4 + 474\,845\,184 z^3 - 3\,369\,155\,328 z^2 + 9\,812\,048\,400 z + 11\,406\,506\,265\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 3\left(13\,631\,488 z^5 - 263\,258\,112 z^4 + 2\,450\,460\,672 z^3 - 14\,342\,549\,760 z^2 + 29\,872\,236\,240 z + 19\,010\,843\,775\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(1\,048\,576 z^5 - 61\,145\,088 z^4 + 819\,228\,672 z^3 - \right. $$
$$ \left.\left. 6\,811\,326\,720 z^2 + 32\,052\,691\,440 z - 57\,032\,531\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2 \Bigg) $$

07.22.03.aen6.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{264\,241\,152 z^{15/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(4\,194\,304 z^{11/2} + 55\,574\,528 z^5 + 401\,866\,752 z^{9/2} + 2\,129\,068\,032 z^4 + 9\,296\,265\,216 z^{7/2} + \right.\right.\right. $$
$$ 34\,984\,857\,600 z^3 + 113\,700\,787\,200 z^{5/2} + 312\,677\,164\,800 z^2 + 703\,523\,620\,800 z^{3/2} + 1\,231\,166\,336\,400 z + $$
$$ 1\,538\,957\,920\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} - 55\,574\,528 z^5 + 401\,866\,752 z^{9/2} - 2\,129\,068\,032 z^4 + \right. $$
$$ 9\,296\,265\,216 z^{7/2} - 34\,984\,857\,600 z^3 + 113\,700\,787\,200 z^{5/2} - 312\,677\,164\,800 z^2 + 703\,523\,620\,800 $$
$$ \left. z^{3/2} - 1\,231\,166\,336\,400 z + 1\,538\,957\,920\,500\sqrt{z} - 1\,154\,218\,440\,375\right) + 1\,154\,218\,440\,375\Big) + $$
$$ \left.\left. 1\,154\,218\,440\,375 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 1\,154\,218\,440\,375 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aen7.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) = $$
$$ \frac{1}{66\,060\,288 z^{15/4}}\left(1\,154\,218\,440\,375\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(55\,574\,528 z^5 - 2\,129\,068\,032 z^4 + 34\,984\,857\,600 z^3 - \right.\right.\right. $$
$$ 312\,677\,164\,800 z^2 + 1\,231\,166\,336\,400 z - 1\,154\,218\,440\,375\Big)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\left(1\,048\,576 z^5 - \right. $$
$$ \left.\left.\left. 100\,466\,688 z^4 + 2\,324\,066\,304 z^3 - 28\,425\,196\,800 z^2 + 175\,880\,905\,200 z - 384\,739\,480\,125\right)\cos\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.aen8.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) = $$

$$ -\frac{1}{5\,086\,642\,176\sqrt{2}\, z^{15/4}}\left(221\left(-6\sqrt{z}\,\left(41\,943\,040 z^5 + 2\,133\,327\,872 z^4 + 44\,341\,592\,064 z^3 + 446\,557\,224\,960 z^2 + 1\,568\,183\,379\,840 z - 1\,729\,986\,783\,525\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(33\,554\,432 z^6 + 4\,586\,471\,424 z^5 + 149\,594\,701\,824 z^4 + 2\,369\,234\,165\,760 z^3 + 17\,729\,717\,322\,240 z^2 + 41\,975\,943\,055\,200 z - 25\,949\,801\,752\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\,\left(46\,137\,344 z^5 + 2\,741\,764\,096 z^4 + 65\,190\,051\,840 z^3 + 795\,430\,056\,960 z^2 + 4\,461\,211\,339\,200 z + 8\,649\,933\,917\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aen9.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) = $$

$$ \frac{1}{5\,086\,642\,176\sqrt{2}\, z^{15/4}}\left(221\left(6\sqrt{z}\,\left(41\,943\,040 z^5 - 2\,133\,327\,872 z^4 + 44\,341\,592\,064 z^3 - 446\,557\,224\,960 z^2 + 1\,568\,183\,379\,840 z + 1\,729\,986\,783\,525\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(33\,554\,432 z^6 - 4\,586\,471\,424 z^5 + 149\,594\,701\,824 z^4 - 2\,369\,234\,165\,760 z^3 + 17\,729\,717\,322\,240 z^2 - 41\,975\,943\,055\,200 z - 25\,949\,801\,752\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\,\left(46\,137\,344 z^5 - 2\,741\,764\,096 z^4 + 65\,190\,051\,840 z^3 - 795\,430\,056\,960 z^2 + 4\,461\,211\,339\,200 z - 8\,649\,933\,917\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aena.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) = $$

$$ \frac{1}{16\,911\,433\,728 z^{19/4}}\left(19 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\,\left(-67\,108\,864 z^6 - 1\,308\,622\,848 z^{11/2} - 13\,954\,449\,408 z^5 - 107\,325\,947\,904 z^{9/2} - 658\,538\,496\,000 z^4 - 3\,358\,546\,329\,600 z^{7/2} - 14\,413\,761\,331\,200 z^3 - 51\,847\,558\,963\,200 z^{5/2} - 153\,837\,165\,081\,600 z^2 - 365\,832\,282\,816\,000 z^{3/2} - 664\,829\,821\,656\,000 z - 854\,121\,645\,877\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^6 - 1\,308\,622\,848 z^{11/2} + 13\,954\,449\,408 z^5 - 107\,325\,947\,904 z^{9/2} + 658\,538\,496\,000 z^4 - 3\,358\,546\,329\,600 z^{7/2} + 14\,413\,761\,331\,200 z^3 - 51\,847\,558\,963\,200 z^{5/2} + 153\,837\,165\,081\,600 z^2 - 365\,832\,282\,816\,000 z^{3/2} + 664\,829\,821\,656\,000 z - 854\,121\,645\,877\,500\sqrt{z} + 640\,591\,234\,408\,125\right) - 640\,591\,234\,408\,125\right) + 1\,154\,218\,440\,375 e^{2\sqrt{z}}\sqrt{2\pi}\,(16 z - 555)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 1\,154\,218\,440\,375 e^{2\sqrt{z}}\sqrt{2\pi}\,(16 z - 555)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aenb.01

$${}_1F_2\left(\frac{15}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) =$$

$$\frac{1}{4\,227\,858\,432\,z^{19/4}}\left(19\left(1\,154\,218\,440\,375\sqrt{\pi}\,(16z+555)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(12\sqrt{z}\left(109\,051\,904z^5 - 8\,943\,828\,992z^4 + 279\,878\,860\,800z^3 - 4\,320\,629\,913\,600z^2 + 30\,486\,023\,568\,000z - 71\,176\,803\,823\,125\right)\cos\left(2\sqrt{z}\right) + \left(67\,108\,864z^6 - 13\,954\,449\,408z^5 + 658\,538\,496\,000z^4 - 14\,413\,761\,331\,200z^3 + 153\,837\,165\,081\,600z^2 - 664\,829\,821\,656\,000z + 640\,591\,234\,408\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{15}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.aenc.01

$${}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) =$$

$$\frac{1}{36\,727\,042\,275\sqrt[4]{z}}\left(\sqrt{2}\left(\left(356\,515\,840z^7 + 3\,956\,277\,248z^6 - 1\,006\,731\,264z^5 + 4\,314\,562\,560z^4 + 13\,950\,699\,840z^3 + 12\,166\,308\,000z^2 - 66\,610\,536\,300z + 36\,727\,042\,275\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8\,388\,608z^7 + 1\,007\,681\,536z^6 - 1\,801\,519\,104z^5 - 1\,258\,414\,080z^4 - 6\,884\,760\,960z^3 - 20\,682\,723\,600z^2 - 17\,641\,146\,600z + 36\,727\,042\,275\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(82\,837\,504z^6 + 294\,649\,856z^5 + 1\,258\,414\,080z^4 + 3\,101\,091\,840z^3 + 11\,760\,764\,400z^2 + 31\,328\,243\,100z + 36\,727\,042\,275\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aend.01

$${}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) =$$

$$\frac{1}{36\,727\,042\,275\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-356\,515\,840z^7 + 3\,956\,277\,248z^6 + 1\,006\,731\,264z^5 + 4\,314\,562\,560z^4 - 13\,950\,699\,840z^3 + 12\,166\,308\,000z^2 + 66\,610\,536\,300z + 36\,727\,042\,275\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8\,388\,608z^7 - 1\,007\,681\,536z^6 - 1\,801\,519\,104z^5 + 1\,258\,414\,080z^4 - 6\,884\,760\,960z^3 + 20\,682\,723\,600z^2 - 17\,641\,146\,600z - 36\,727\,042\,275\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(82\,837\,504z^6 - 294\,649\,856z^5 + 1\,258\,414\,080z^4 - 3\,101\,091\,840z^3 + 11\,760\,764\,400z^2 - 31\,328\,243\,100z + 36\,727\,042\,275\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aene.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) = \frac{1}{5\,065\,535\,475} $$
$$ \left(\left(82\,837\,504\,z^6 + 515\,899\,392\,z^5 + 596\,090\,880\,z^4 + 1\,692\,472\,320\,z^3 + 5\,675\,670\,000\,z^2 + 11\,164\,853\,700\,z + 5\,065\,535\,475\right)\right. $$
$$ \cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(2\,097\,152\,z^6 + 231\,211\,008\,z^5 - 367\,411\,200\,z^4 - \right. $$
$$ \left.\left. 447\,068\,160\,z^3 - 1\,595\,674\,080\,z^2 - 4\,410\,806\,400\,z - 5\,065\,535\,475\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aenf.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) = \frac{1}{5\,065\,535\,475} $$
$$ \left(\left(82\,837\,504\,z^6 - 515\,899\,392\,z^5 + 596\,090\,880\,z^4 - 1\,692\,472\,320\,z^3 + 5\,675\,670\,000\,z^2 - 11\,164\,853\,700\,z + 5\,065\,535\,475\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-2\,097\,152\,z^6 + 231\,211\,008\,z^5 + 367\,411\,200\,z^4 - \right. $$
$$ \left.\left. 447\,068\,160\,z^3 + 1\,595\,674\,080\,z^2 - 4\,410\,806\,400\,z + 5\,065\,535\,475\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aeng.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) = $$
$$ -\frac{1}{1\,596\,827\,925\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(4\,194\,304\,z^7 + 565\,182\,464\,z^6 + 423\,886\,848\,z^5 - 241\,274\,880\,z^4 - 606\,957\,120\,z^3 - \right.\right. $$
$$ \left. 435\,425\,760\,z^2 + 2\,833\,469\,100\,z - 1\,596\,827\,925\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ 4\sqrt{z}\,\left(41\,943\,040\,z^6 + 423\,886\,848\,z^5 + 33\,116\,160\,z^4 + 328\,204\,800\,z^3 + 909\,271\,440\,z^2 + \right. $$
$$ 704\,365\,200\,z - 1\,596\,827\,925\Big) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(1\,048\,576\,z^6 + 110\,624\,768\,z^5 - \right. $$
$$ \left.\left. 132\,464\,640\,z^4 - 188\,052\,480\,z^3 - 584\,836\,560\,z^2 - 1\,424\,738\,700\,z - 1\,596\,827\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.aenh.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) = $$
$$ \frac{1}{1\,596\,827\,925\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(4\,194\,304\,z^7 - 565\,182\,464\,z^6 + 423\,886\,848\,z^5 + 241\,274\,880\,z^4 - 606\,957\,120\,z^3 + \right.\right. $$
$$ \left. 435\,425\,760\,z^2 + 2\,833\,469\,100\,z + 1\,596\,827\,925\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z} $$
$$ \left(41\,943\,040\,z^6 - 423\,886\,848\,z^5 + 33\,116\,160\,z^4 - 328\,204\,800\,z^3 + 909\,271\,440\,z^2 - 704\,365\,200\,z - 1\,596\,827\,925\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-1\,048\,576\,z^6 + 110\,624\,768\,z^5 + 132\,464\,640\,z^4 - \right. $$
$$ \left.\left. 188\,052\,480\,z^3 + 584\,836\,560\,z^2 - 1\,424\,738\,700\,z + 1\,596\,827\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.aeni.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) = \frac{1}{241\,215\,975} \left(\left(-1\,048\,576\,z^6 - 110\,624\,768\,z^5 + 66\,232\,320\,z^4 + 107\,627\,520\,z^3 + 300\,207\,600\,z^2 + 543\,242\,700\,z + 241\,215\,975\right) \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(9\,961\,472\,z^5 + 78\,315\,520\,z^4 + 33\,116\,160\,z^3 + 90\,478\,080\,z^2 + 221\,621\,400\,z + 241\,215\,975\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aenj.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{17}{4}; -z\right) = \frac{1}{241\,215\,975} \left(\left(-1\,048\,576\,z^6 + 110\,624\,768\,z^5 + 66\,232\,320\,z^4 - 107\,627\,520\,z^3 + 300\,207\,600\,z^2 - 543\,242\,700\,z + 241\,215\,975\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-9\,961\,472\,z^5 + 78\,315\,520\,z^4 - 33\,116\,160\,z^3 + 90\,478\,080\,z^2 - 221\,621\,400\,z + 241\,215\,975\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aenk.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{15}{4}; z\right) = \frac{1}{84\,043\,575\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(20\,709\,376\,z^6 + 291\,422\,208\,z^5 + 31\,933\,440\,z^4 + 32\,155\,200\,z^3 + 16\,299\,360\,z^2 - 144\,074\,700\,z + 84\,043\,575\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(524\,288\,z^6 + 57\,704\,448\,z^5 + 16\,558\,080\,z^4 - 18\,184\,320\,z^3 - 47\,733\,840\,z^2 - 32\,016\,600\,z + 84\,043\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4\,784\,128\,z^5 + 33\,116\,160\,z^4 + 16\,853\,760\,z^3 + 37\,643\,760\,z^2 + 80\,041\,500\,z + 84\,043\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aenl.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{15}{4}; -z\right) = \frac{1}{84\,043\,575\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(20\,709\,376\,z^6 - 291\,422\,208\,z^5 + 31\,933\,440\,z^4 - 32\,155\,200\,z^3 + 16\,299\,360\,z^2 + 144\,074\,700\,z + 84\,043\,575\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(524\,288\,z^6 - 57\,704\,448\,z^5 + 16\,558\,080\,z^4 - 18\,184\,320\,z^3 - 47\,733\,840\,z^2 + 32\,016\,600\,z + 84\,043\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(4\,784\,128\,z^5 - 33\,116\,160\,z^4 + 16\,853\,760\,z^3 - 37\,643\,760\,z^2 + 80\,041\,500\,z - 84\,043\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aenm.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{13}{4}; z\right) = \left(\frac{4\,653\,056\,z^5}{14\,189\,175} + \frac{4096\,z^4}{1755} + \frac{256\,z^3}{351} + \frac{400\,z^2}{273} + \frac{212\,z}{91} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{14\,189\,175}\left(2\sqrt{z}\left(131\,072\,z^5 + 12\,083\,200\,z^4 - 4\,139\,520\,z^3 - 6\,985\,440\,z^2 - 14\,137\,200\,z - 14\,189\,175\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aenn.01

$${}_1F_2\left(\frac{15}{4};-\frac{7}{2},-\frac{13}{4};-z\right)=\left(-\frac{4\,653\,056\,z^5}{14\,189\,175}+\frac{4096\,z^4}{1755}-\frac{256\,z^3}{351}+\frac{400\,z^2}{273}-\frac{212\,z}{91}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{1}{14\,189\,175}\left(2\sqrt{z}\left(131\,072\,z^5-12\,083\,200\,z^4-4\,139\,520\,z^3+6\,985\,440\,z^2-14\,137\,200\,z+14\,189\,175\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aeno.01

$${}_1F_2\left(\frac{15}{4};-\frac{7}{2},-\frac{11}{4};z\right)=-\frac{1}{5\,602\,905\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(262\,144\,z^6+27\,607\,040\,z^5+29\,568\,000\,z^4-2\,882\,880\,z^3-554\,400\,z^2+9\,022\,860\,z-5\,602\,905\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(2\,293\,760\,z^5+19\,173\,376\,z^4+295\,680\,z^3+2\,938\,320\,z^2+1\,552\,320\,z-5\,602\,905\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(65\,536\,z^5+5\,230\,592\,z^4-3\,252\,480\,z^3-3\,529\,680\,z^2-5\,918\,220\,z-5\,602\,905\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aenp.01

$${}_1F_2\left(\frac{15}{4};-\frac{7}{2},-\frac{11}{4};-z\right)=\frac{1}{5\,602\,905\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-262\,144\,z^6+27\,607\,040\,z^5-29\,568\,000\,z^4-2\,882\,880\,z^3+554\,400\,z^2+9\,022\,860\,z+5\,602\,905\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(2\,293\,760\,z^5-19\,173\,376\,z^4+295\,680\,z^3-2\,938\,320\,z^2+1\,552\,320\,z+5\,602\,905\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(65\,536\,z^5-5\,230\,592\,z^4-3\,252\,480\,z^3+3\,529\,680\,z^2-5\,918\,220\,z+5\,602\,905\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aenq.01

$${}_1F_2\left(\frac{15}{4};-\frac{7}{2},-\frac{9}{4};z\right)=\left(-\frac{65\,536\,z^5}{1\,091\,475}-\frac{4096\,z^4}{945}+\frac{2816\,z^3}{945}+\frac{208\,z^2}{105}+\frac{52\,z}{21}+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\left(524\,288\,z^4+2\,365\,440\,z^3+887\,040\,z^2+1\,247\,400\,z+1\,091\,475\right)\sinh\left(2\sqrt{z}\right)}{1\,091\,475}$$

07.22.03.aenr.01

$${}_1F_2\left(\frac{15}{4};-\frac{7}{2},-\frac{9}{4};-z\right)=\left(\frac{65\,536\,z^5}{1\,091\,475}-\frac{4096\,z^4}{945}-\frac{2816\,z^3}{945}+\frac{208\,z^2}{105}-\frac{52\,z}{21}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\left(524\,288\,z^4-2\,365\,440\,z^3+887\,040\,z^2-1\,247\,400\,z+1\,091\,475\right)\sin\left(2\sqrt{z}\right)}{1\,091\,475}$$

07.22.03.aens.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{7}{4}; z\right) = \frac{1}{509\,355\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,064\,960 z^5 + 8\,103\,936 z^4 - 2\,439\,360 z^3 + 110\,880 z^2 - 706\,860 z + 509\,355\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,768 z^5 + 2\,252\,800 z^4 - 1\,368\,960 z^3 - 55\,440 z^2 - 27\,720 z + 509\,355\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(241\,664 z^4 + 514\,560 z^3 + 683\,760 z^2 + 651\,420 z + 509\,355\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aent.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{1}{509\,355\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1\,064\,960 z^5 + 8\,103\,936 z^4 + 2\,439\,360 z^3 + 110\,880 z^2 + 706\,860 z + 509\,355\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,768 z^5 - 2\,252\,800 z^4 - 1\,368\,960 z^3 + 55\,440 z^2 - 27\,720 z - 509\,355\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(241\,664 z^4 - 514\,560 z^3 + 683\,760 z^2 - 651\,420 z + 509\,355\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aenu.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{5}{4}; z\right) = \frac{1}{121\,275}\left(55\left(4096 z^4 + 3584 z^3 + 12\,432 z^2 + 6300 z + 2205\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(8192 z^4 + 394\,240 z^3 - 480\,480 z^2 - 184\,800 z - 121\,275\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aenv.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{5}{4}; -z\right) = \frac{1}{121\,275}\left(55\left(4096 z^4 - 3584 z^3 + 12\,432 z^2 - 6300 z + 2205\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-8192 z^4 + 394\,240 z^3 + 480\,480 z^2 - 184\,800 z + 121\,275\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aenw.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{3}{4}; z\right) = -\frac{1}{72\,765\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384 z^5 + 854\,016 z^4 - 899\,136 z^3 + 554\,400 z^2 + 41\,580 z - 72\,765\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(106\,496 z^4 + 52\,224 z^3 + 257\,040 z^2 - 55\,440 z - 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^4 + 136\,704 z^3 - 169\,680 z^2 - 152\,460 z - 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aenx.01

$${}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) =$$

$$\frac{1}{72\,765\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384\,z^5 - 854\,016\,z^4 - 899\,136\,z^3 - 554\,400\,z^2 + 41\,580\,z + 72\,765\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right.$$
$$\left(106\,496\,z^4 - 52\,224\,z^3 + 257\,040\,z^2 + 55\,440\,z - 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(-4096\,z^4 + 136\,704\,z^3 + 169\,680\,z^2 - 152\,460\,z + 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeny.01

$${}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) =$$

$$\left(-\frac{4096\,z^4}{24\,255} - \frac{8704\,z^3}{2205} + \frac{80\,z^2}{21} + \frac{44\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(2048\,z^3 - 5376\,z^2 + 10\,920\,z + 2205\right)\sinh\left(2\sqrt{z}\right)}{2205}$$

07.22.03.aenz.01

$${}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) =$$

$$\left(-\frac{4096\,z^4}{24\,255} + \frac{8704\,z^3}{2205} + \frac{80\,z^2}{21} - \frac{44\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(2048\,z^3 + 5376\,z^2 + 10\,920\,z - 2205\right)\sin\left(2\sqrt{z}\right)}{2205}$$

07.22.03.aeo0.01

$${}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) =$$

$$\frac{1}{24\,255\sqrt[4]{z}}\left(\sqrt{2}\left(\left(44\,032\,z^4 - 75\,712\,z^3 + 199\,584\,z^2 - 152\,460\,z + 24\,255\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048\,z^4 + 35\,200\,z^3 -\right.\right.\right.$$
$$\left.\left.\left.27\,216\,z^2 - 55\,440\,z + 24\,255\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(9472\,z^3 - 38\,416\,z^2 + 41\,580\,z + 24\,255\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeo1.01

$${}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) = \frac{1}{24\,255\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(44\,032\,z^4 + 75\,712\,z^3 + 199\,584\,z^2 + 152\,460\,z + 24\,255\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048\,z^4 - 35\,200\,z^3 - 27\,216\,z^2 +\right.\right.\right.$$
$$\left.\left.\left.55\,440\,z + 24\,255\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(9472\,z^3 + 38\,416\,z^2 + 41\,580\,z - 24\,255\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeo2.01

$${}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) = \left(\frac{7936\,z^3}{24\,255} - \frac{208\,z^2}{147} + \frac{4\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(512\,z^3 + 1056\,z^2 + 18\,480\,z - 24\,255\right)\sinh\left(2\sqrt{z}\right)}{24\,255}$$

07.22.03.aeo3.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) = \left(-\frac{7936\,z^3}{24\,255} - \frac{208\,z^2}{147} - \frac{4\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(512\,z^3 - 1056\,z^2 + 18\,480\,z + 24\,255\right)\sin\left(2\sqrt{z}\right)}{24\,255} $$

07.22.03.aeo4.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) = \frac{1}{24\,255\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\,\left(\left(1024\,z^4 + 2240\,z^3 + 22\,176\,z^2 - 48\,510\,z + 24\,255\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 13\sqrt{z}\,\left(1024\,z^3 - 4032\,z^2 + 3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. 2\,z\left(512\,z^3 - 3488\,z^2 + 27\,720\,z - 3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeo5.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = \frac{1}{24\,255\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\,\left(\left(1024\,z^4 - 2240\,z^3 + 22\,176\,z^2 + 48\,510\,z + 24\,255\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 13\sqrt{z}\,\left(1024\,z^3 + 4032\,z^2 - 3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right. $$
$$ \left.\left. 2\,z\left(512\,z^3 + 3488\,z^2 + 27\,720\,z + 3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeo6.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) = \left(\frac{256\,z^3}{8085} - \frac{80\,z^2}{231} + \frac{68\,z}{49} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(512\,z^2 - 440\,z - 8085\right)\sinh\left(2\sqrt{z}\right)}{8085} $$

07.22.03.aeo7.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) = \left(-\frac{256\,z^3}{8085} - \frac{80\,z^2}{231} - \frac{68\,z}{49} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(512\,z^2 + 440\,z - 8085\right)\sin\left(2\sqrt{z}\right)}{8085} $$

07.22.03.aeo8.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) = $$
$$ \frac{1}{77\,616\sqrt{2}\,z^{3/4}}\left(\left(26\sqrt{z}\,\left(1024\,z^3 - 11\,088\,z + 9009\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384\,z^4 - 190\,464\,z^3 + 354\,816\,z^2 + 521\,136\,z - 197\,505\right)\right.\right. $$
$$ \left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(7168\,z^3 + 76\,032\,z^2 - 210\,672\,z - 197\,505\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeo9.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, \frac{9}{4}; -z\right) = $$
$$ \frac{1}{77\,616\sqrt{2}\,z^{3/4}}\left(\left(-26\sqrt{z}\,\left(1024\,z^3 - 11\,088\,z - 9009\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384\,z^4 + 190\,464\,z^3 + 354\,816\,z^2 - 521\,136\,z - 197\,505\right)\right.\right. $$
$$ \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(7168\,z^3 - 76\,032\,z^2 - 210\,672\,z + 197\,505\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeoa.01

$${}_1F_2\left(\frac{15}{4};-\frac{7}{2},\frac{11}{4};z\right)=\frac{\left(-16z^2+1860z+1155\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\left(32z^2-320z-1155\right)\sinh\left(2\sqrt{z}\right)}{1155}$$

07.22.03.aeob.01

$${}_1F_2\left(\frac{15}{4};-\frac{7}{2},\frac{11}{4};-z\right)=\frac{\left(-16z^2-1860z+1155\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\left(32z^2+320z-1155\right)\sin\left(2\sqrt{z}\right)}{1155}$$

07.22.03.aeoc.01

$${}_1F_2\left(\frac{15}{4};-\frac{7}{2},\frac{13}{4};z\right)=\frac{1}{275\,968\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(32\,768z^4-180\,224z^3-1\,005\,312z^2-753\,984z+1\,514\,205\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-262\,144z^4+3\,063\,808z^3+8\,456\,448z^2+10\,533\,600z-7\,571\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\left(32\,768z^4-57\,344z^3-2\,171\,136z^2-5\,617\,920z-7\,571\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aeod.01

$${}_1F_2\left(\frac{15}{4};-\frac{7}{2},\frac{13}{4};-z\right)=\frac{1}{275\,968\sqrt{2}\,z^{7/4}}\left(\left(-2\sqrt{z}\left(32\,768z^4+180\,224z^3-1\,005\,312z^2+753\,984z+1\,514\,205\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(262\,144z^4+3\,063\,808z^3-8\,456\,448z^2+10\,533\,600z+7\,571\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\left(32\,768z^4+57\,344z^3-2\,171\,136z^2+5\,617\,920z-7\,571\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aeoe.01

$${}_1F_2\left(\frac{15}{4};-\frac{7}{2},\frac{15}{4};z\right)=\left(\frac{16z^2}{105}+\frac{12z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\,(8z+21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aeof.01

$${}_1F_2\left(\frac{15}{4};-\frac{7}{2},\frac{15}{4};-z\right)=\left(\frac{16z^2}{105}-\frac{12z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}(21-8z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aeog.01

$${}_1F_2\left(\frac{15}{4};-\frac{7}{2},\frac{17}{4};z\right)=$$
$$\frac{1}{8\,830\,976\sqrt{2}\,z^{11/4}}\left(13\left(-2\sqrt{z}\left(1\,638\,400z^4+16\,355\,328z^3+109\,460\,736z^2+314\,954\,640z-367\,951\,815\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(1\,048\,576z^5+28\,639\,232z^4+245\,870\,592z^3+1\,398\,862\,080z^2+2\,883\,046\,320z-1\,839\,759\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}($$
$$\left.\sqrt{z}\right)-2\sqrt{z}\left(2\,031\,616z^4+28\,667\,904z^3+225\,519\,360z^2+1\,041\,773\,040z+1\,839\,759\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\Bigg)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aeoh.01

$${}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) = -\frac{1}{8\,830\,976\sqrt{2}\, z^{11/4}}$$
$$\left(13\left(2\sqrt{z}\left(1\,638\,400 z^4 - 16\,355\,328 z^3 + 109\,460\,736 z^2 - 314\,954\,640 z - 367\,951\,815\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1\,048\,576 z^5 - 28\,639\,232 z^4 + 245\,870\,592 z^3 - 1\,398\,862\,080 z^2 + 2\,883\,046\,320 z + 1\,839\,759\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(2\,031\,616 z^4 - 28\,667\,904 z^3 + 225\,519\,360 z^2 - 1\,041\,773\,040 z + 1\,839\,759\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeoi.01

$${}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) =$$
$$\frac{1}{14\,680\,064 z^{15/4}}\left(e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1\,048\,576 z^5 - 10\,747\,904 z^{9/2} - 62\,849\,024 z^4 - 280\,870\,912 z^{7/2} - 1\,060\,147\,200 z^3 - 3\,445\,478\,400 z^{5/2} - 9\,475\,065\,600 z^2 - 21\,318\,897\,600 z^{3/2} - 37\,308\,070\,800 z - 46\,635\,088\,500\sqrt{z} + e^{4\sqrt{z}}\left(1\,048\,576 z^5 - 10\,747\,904 z^{9/2} + 62\,849\,024 z^4 - 280\,870\,912 z^{7/2} + 1\,060\,147\,200 z^3 - 3\,445\,478\,400 z^{5/2} + 9\,475\,065\,600 z^2 - 21\,318\,897\,600 z^{3/2} + 37\,308\,070\,800 z - 46\,635\,088\,500\sqrt{z} + 34\,976\,316\,375\right) - 34\,976\,316\,375\right) + 34\,976\,316\,375\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 34\,976\,316\,375\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aeoj.01

$${}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = \frac{1}{3\,670\,016 z^{15/4}}\left(34\,976\,316\,375\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(2\,686\,976 z^4 - 70\,217\,728 z^3 + 861\,369\,600 z^2 - 5\,329\,724\,400 z + 11\,658\,772\,125\right)\cos\left(2\sqrt{z}\right) + \left(1\,048\,576 z^5 - 62\,849\,024 z^4 + 1\,060\,147\,200 z^3 - 9\,475\,065\,600 z^2 + 37\,308\,070\,800 z - 34\,976\,316\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aeok.01

$${}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) = \frac{1}{282\,591\,232\sqrt{2}\, z^{15/4}}$$
$$\left(221\left(2\sqrt{z}\left(2\,097\,152 z^5 + 167\,903\,232 z^4 + 3\,700\,629\,504 z^3 + 37\,988\,375\,040 z^2 + 134\,752\,131\,360 z - 148\,284\,581\,445\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(104\,857\,600 z^5 + 4\,049\,338\,368 z^4 + 66\,413\,445\,120 z^3 + 503\,927\,424\,000 z^2 + 1\,200\,994\,724\,160 z - 741\,422\,907\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(2\,097\,152 z^5 + 208\,797\,696 z^4 + 5\,381\,529\,600 z^3 + 67\,227\,240\,960 z^2 + 380\,707\,477\,920 z + 741\,422\,907\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeol.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) = \frac{1}{282\,591\,232\sqrt{2}\,z^{15/4}} $$
$$ \left(221\left(2\sqrt{z}\,\left(2\,097\,152 z^5 - 167\,903\,232 z^4 + 3\,700\,629\,504 z^3 - 37\,988\,375\,040 z^2 + 134\,752\,131\,360 z + 148\,284\,581\,445\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(104\,857\,600 z^5 - 4\,049\,338\,368 z^4 + 66\,413\,445\,120 z^3 - 503\,927\,424\,000 z^2 + \right. $$
$$ \left. 1\,200\,994\,724\,160 z + 741\,422\,907\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-2\,097\,152 z^5 + 208\,797\,696 z^4 - \right. $$
$$ \left.\left. 5\,381\,529\,600 z^3 + 67\,227\,240\,960 z^2 - 380\,707\,477\,920 z + 741\,422\,907\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.aeom.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = $$
$$ \frac{1}{939\,524\,096 z^{19/4}}\left(19 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(16\,777\,216 z^{11/2} + 268\,435\,456 z^5 + 2\,414\,870\,528 z^{9/2} + 15\,964\,569\,600 z^4 + \right.\right. $$
$$ 84\,811\,776\,000 z^{7/2} + 373\,171\,814\,400 z^3 + 1\,364\,409\,446\,400 z^{5/2} + 4\,093\,228\,339\,200 z^2 + $$
$$ 9\,806\,692\,896\,000 z^{3/2} + 17\,907\,873\,984\,000 z + 23\,084\,368\,807\,500\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(16\,777\,216 z^{11/2} - 268\,435\,456 z^5 + 2\,414\,870\,528 z^{9/2} - 15\,964\,569\,600 z^4 + 84\,811\,776\,000 z^{7/2} - \right. $$
$$ \left. 373\,171\,814\,400 z^3 + 1\,364\,409\,446\,400 z^{5/2} - 4\,093\,228\,339\,200 z^2 + 9\,806\,692\,896\,000 z^{3/2} - \right. $$
$$ \left. 17\,907\,873\,984\,000 z + 23\,084\,368\,807\,500\sqrt{z} - 17\,313\,276\,605\,625\right) + 17\,313\,276\,605\,625\Big) + $$
$$ \left. 34\,976\,316\,375 e^{2\sqrt{z}}\sqrt{2\pi}\,(16 z - 495)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 34\,976\,316\,375 e^{2\sqrt{z}}\sqrt{2\pi}\,(16 z - 495)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.aeon.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) = $$
$$ \frac{1}{234\,881\,024 z^{19/4}}\left(19\left(34\,976\,316\,375\sqrt{\pi}\,(16 z + 495) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(\left(268\,435\,456 z^5 - 15\,964\,569\,600 z^4 + \right.\right.\right. $$
$$ \left.\left. 373\,171\,814\,400 z^3 - 4\,093\,228\,339\,200 z^2 + 17\,907\,873\,984\,000 z - 17\,313\,276\,605\,625\right)\sin\left(2\sqrt{z}\right) - \right. $$
$$ 4\sqrt{z}\,\left(4\,194\,304 z^5 - 603\,717\,632 z^4 + 21\,202\,944\,000 z^3 - 341\,102\,361\,600 z^2 + \right. $$
$$ \left.\left.\left. 2\,451\,673\,224\,000 z - 5\,771\,092\,201\,875\right)\cos\left(2\sqrt{z}\right)\right)\right)\Bigg) $$

For fixed z and $a_1 = \frac{15}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.aeoo.01

$${}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) =$$

$$-\frac{1}{5\,246\,720\,325\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8\,388\,608 z^7 + 781\,189\,120 z^6 - 2\,013\,462\,528 z^5 + 539\,320\,320 z^4 - 2\,132\,000\,640 z^3 - 1\,216\,630\,800 z^2 + 9\,124\,731\,000 z - 5\,246\,720\,325\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(74\,448\,896 z^6 + 12\,582\,912 z^5 + 1\,258\,414\,080 z^4 + 943\,810\,560 z^3 + 2\,954\,674\,800 z^2 + 2\,129\,103\,900 z - 5\,246\,720\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(2\,097\,152 z^6 + 141\,033\,472 z^5 - 413\,122\,560 z^4 - 1\,078\,640\,640 z^3 - 2\,201\,522\,400 z^2 - 4\,866\,523\,200 z - 5\,246\,720\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeop.01

$${}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, -\frac{23}{4}; -z\right) =$$

$$\frac{1}{5\,246\,720\,325\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8\,388\,608 z^7 - 781\,189\,120 z^6 - 2\,013\,462\,528 z^5 - 539\,320\,320 z^4 - 2\,132\,000\,640 z^3 + 1\,216\,630\,800 z^2 + 9\,124\,731\,000 z + 5\,246\,720\,325\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(74\,448\,896 z^6 - 12\,582\,912 z^5 + 1\,258\,414\,080 z^4 - 943\,810\,560 z^3 + 2\,954\,674\,800 z^2 - 2\,129\,103\,900 z - 5\,246\,720\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-2\,097\,152 z^6 + 141\,033\,472 z^5 + 413\,122\,560 z^4 - 1\,078\,640\,640 z^3 + 2\,201\,522\,400 z^2 - 4\,866\,523\,200 z + 5\,246\,720\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeoq.01

$${}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, -\frac{21}{4}; z\right) = \left(-\frac{2\,097\,152 z^6}{723\,647\,925} - \frac{52\,953\,088 z^5}{241\,215\,975} + \frac{81\,920 z^4}{153\,153} + \frac{2048 z^3}{3315} + \frac{160 z^2}{119} + \frac{16 z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{241\,215\,975}\left(2\sqrt{z}\left(6\,029\,312 z^5 + 3\,276\,800 z^4 + 81\,930\,240 z^3 + 103\,783\,680 z^2 + 229\,729\,500 z + 241\,215\,975\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aeor.01

$${}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, -\frac{21}{4}; -z\right) = \left(-\frac{2\,097\,152 z^6}{723\,647\,925} + \frac{52\,953\,088 z^5}{241\,215\,975} + \frac{81\,920 z^4}{153\,153} - \frac{2048 z^3}{3315} + \frac{160 z^2}{119} - \frac{16 z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{241\,215\,975}\left(2\sqrt{z}\left(-6\,029\,312 z^5 + 3\,276\,800 z^4 - 81\,930\,240 z^3 + 103\,783\,680 z^2 - 229\,729\,500 z + 241\,215\,975\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aeos.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, -\frac{19}{4}; z\right) = \frac{1}{228\,118\,275\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(38\,797\,312 z^6 + 317\,915\,136 z^5 - 113\,541\,120 z^4 + 102\,009\,600 z^3 + 38\,419\,920 z^2 - 384\,199\,200 z + 228\,118\,275\right)\right.\right. $$
$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,048\,576 z^6 + 92\,798\,976 z^5 - 132\,464\,640 z^4 - \right. $$
$$ \left. 31\,933\,440 z^3 - 126\,236\,880 z^2 - 80\,041\,500 z + 228\,118\,275\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(8\,912\,896 z^5 + 16\,465\,920 z^4 + 78\,059\,520 z^3 + 114\,649\,920 z^2 + 224\,116\,200 z + 228\,118\,275\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeot.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, -\frac{19}{4}; -z\right) = \frac{1}{228\,118\,275\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(38\,797\,312 z^6 - 317\,915\,136 z^5 - 113\,541\,120 z^4 - 102\,009\,600 z^3 + 38\,419\,920 z^2 + 384\,199\,200 z + 228\,118\,275\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1\,048\,576 z^6 - 92\,798\,976 z^5 - 132\,464\,640 z^4 + \right. $$
$$ \left. 31\,933\,440 z^3 - 126\,236\,880 z^2 + 80\,041\,500 z + 228\,118\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(-8\,912\,896 z^5 + 16\,465\,920 z^4 - 78\,059\,520 z^3 + 114\,649\,920 z^2 - 224\,116\,200 z + 228\,118\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeou.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, -\frac{17}{4}; z\right) = $$
$$ \frac{1}{34\,459\,425}\left(\left(8\,912\,896 z^5 + 36\,372\,480 z^4 + 33\,116\,160 z^3 + 53\,222\,400 z^2 + 81\,081\,000 z + 34\,459\,425\right)\cosh\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\left(262\,144 z^5 + 20\,971\,520 z^4 - 25\,651\,200 z^3 - 18\,627\,840 z^2 - 35\,135\,100 z - 34\,459\,425\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aeov.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, -\frac{17}{4}; -z\right) = $$
$$ \frac{1}{34\,459\,425}\left(\left(-8\,912\,896 z^5 + 36\,372\,480 z^4 - 33\,116\,160 z^3 + 53\,222\,400 z^2 - 81\,081\,000 z + 34\,459\,425\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\left(262\,144 z^5 - 20\,971\,520 z^4 - 25\,651\,200 z^3 + 18\,627\,840 z^2 - 35\,135\,100 z + 34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aeow.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, -\frac{15}{4}; z\right) = \frac{1}{12\,006\,225\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(-524\,288 z^6 - 52\,985\,856 z^5 - 35\,481\,600 z^4 + 7\,539\,840 z^3 + 1\,164\,240 z^2 - 19\,209\,960 z + 12\,006\,225\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 12\sqrt{z}\left(1\,507\,328 z^5 + 11\,038\,720 z^4 - 295\,680 z^3 + 2\,051\,280 z^2 + 1\,067\,220 z - 4\,002\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(-131\,072 z^5 - 9\,953\,280 z^4 + 8\,870\,400 z^3 + 7\,872\,480 z^2 + 12\,806\,640 z + 12\,006\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeox.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, -\frac{15}{4}; -z\right) = \frac{1}{12\,006\,225\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(-524\,288 z^6 + 52\,985\,856 z^5 - 35\,481\,600 z^4 - 7\,539\,840 z^3 + 1\,164\,240 z^2 + 19\,209\,960 z + 12\,006\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 12\sqrt{z}\left(1\,507\,328 z^5 - 11\,038\,720 z^4 - 295\,680 z^3 - 2\,051\,280 z^2 + 1\,067\,220 z + 4\,002\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(131\,072 z^5 - 9\,953\,280 z^4 - 8\,870\,400 z^3 + 7\,872\,480 z^2 - 12\,806\,640 z + 12\,006\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeoy.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, -\frac{13}{4}; z\right) = \left(-\frac{131\,072 z^5}{2\,027\,025} - \frac{24\,576 z^4}{5005} + \frac{3584 z^3}{1755} + \frac{224 z^2}{117} + \frac{32 z}{13} + 1\right)\cosh\left(2\sqrt{z}\right) - $$
$$ \frac{2\sqrt{z}\left(212\,992 z^4 + 1\,158\,144 z^3 + 310\,464 z^2 + 457\,380 z + 405\,405\right)\sinh\left(2\sqrt{z}\right)}{405\,405} $$

07.22.03.aeoz.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, -\frac{13}{4}; -z\right) = \left(\frac{131\,072 z^5}{2\,027\,025} - \frac{24\,576 z^4}{5005} - \frac{3584 z^3}{1755} + \frac{224 z^2}{117} - \frac{32 z}{13} + 1\right)\cos\left(2\sqrt{z}\right) + $$
$$ \frac{2\sqrt{z}\left(212\,992 z^4 - 1\,158\,144 z^3 + 310\,464 z^2 - 457\,380 z + 405\,405\right)\sin\left(2\sqrt{z}\right)}{405\,405} $$

07.22.03.aep0.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, -\frac{11}{4}; z\right) = $$
$$ \frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2\,228\,224 z^5 + 23\,654\,400 z^4 + 1\,774\,080 z^3 + 55\,440 z^2 - 1\,164\,240 z + 800\,415\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(65\,536 z^5 + 5\,230\,592 z^4 + 1\,478\,400 z^3 - 277\,200 z^2 - 97\,020 z + 800\,415\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(507\,904 z^4 + 2\,365\,440 z^3 + 813\,120 z^2 + 970\,200 z + 800\,415\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aep1.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, -\frac{11}{4}; -z\right) = \frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-2\,228\,224 z^5 + 23\,654\,400 z^4 - 1\,774\,080 z^3 + 55\,440 z^2 + 1\,164\,240 z + 800\,415\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(65\,536 z^5 - 5\,230\,592 z^4 + 1\,478\,400 z^3 + 277\,200 z^2 - 97\,020 z - 800\,415\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(507\,904 z^4 - 2\,365\,440 z^3 + 813\,120 z^2 - 970\,200 z + 800\,415\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aep2.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) = \left(\frac{32\,768 z^4}{10\,395} + \frac{2048 z^3}{135} + \frac{128 z^2}{45} + \frac{8 z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(16\,384 z^4 + 1\,059\,840 z^3 - 221\,760 z^2 - 207\,900 z - 155\,925\right)\sinh\left(2\sqrt{z}\right)}{155\,925} $$

07.22.03.aep3.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) = \left(\frac{32\,768 z^4}{10\,395} - \frac{2048 z^3}{135} + \frac{128 z^2}{45} - \frac{8 z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-16\,384 z^4 + 1\,059\,840 z^3 + 221\,760 z^2 - 207\,900 z + 155\,925\right)\sin\left(2\sqrt{z}\right)}{155\,925} $$

07.22.03.aep4.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, -\frac{7}{4}; z\right) = \frac{1}{72\,765\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(32\,768 z^5 + 2\,482\,176 z^4 + 2\,217\,600 z^3 - 55\,440 z^2 + 83\,160 z - 72\,765\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-241\,664 z^4 - 1\,405\,440 z^3 + 55\,440 z^2 + 13\,860 z + 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-8192 z^4 - 445\,440 z^3 + 184\,800 z^2 + 110\,880 z + 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aep5.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, -\frac{7}{4}; -z\right) = \frac{1}{72\,765\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768 z^5 - 2\,482\,176 z^4 + 2\,217\,600 z^3 + 55\,440 z^2 + 83\,160 z + 72\,765\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(241\,664 z^4 - 1\,405\,440 z^3 - 55\,440 z^2 + 13\,860 z - 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-8192 z^4 + 445\,440 z^3 + 184\,800 z^2 - 110\,880 z + 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aep6.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},-\frac{5}{4};z\right)=$$

$$\left(-\frac{8192\,z^4}{17\,325}-\frac{1024\,z^3}{45}+\frac{32\,z^2}{3}+\frac{16\,z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(54\,272\,z^3+147\,840\,z^2+32\,340\,z+17\,325\right)\sinh\left(2\sqrt{z}\right)}{17\,325}$$

07.22.03.aep7.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},-\frac{5}{4};-z\right)=$$

$$\left(-\frac{8192\,z^4}{17\,325}+\frac{1024\,z^3}{45}+\frac{32\,z^2}{3}-\frac{16\,z}{5}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(-54\,272\,z^3+147\,840\,z^2-32\,340\,z+17\,325\right)\sin\left(2\sqrt{z}\right)}{17\,325}$$

07.22.03.aep8.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},-\frac{3}{4};z\right)=\frac{1}{10\,395\,\sqrt[4]{z}}$$

$$\left(\sqrt{2}\,\left(27\left(4096\,z^4+21\,248\,z^3-6160\,z^2+385\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(4096\,z^4+185\,856\,z^3-81\,360\,z^2+13\,860\,z+10\,395\right)\right.\right.$$

$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(8192\,z^3+7360\,z^2+9240\,z+3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aep9.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},-\frac{3}{4};-z\right)=\frac{1}{10\,395\,\sqrt[4]{z}}$$

$$\left(\sqrt{2}\,\left(27\left(4096\,z^4-21\,248\,z^3-6160\,z^2+385\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(-4096\,z^4+185\,856\,z^3+81\,360\,z^2+13\,860\,z-10\,395\right)\right.\right.$$

$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-12\,z\left(8192\,z^3-7360\,z^2+9240\,z-3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aepa.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},-\frac{1}{4};z\right)=\left(\frac{2048\,z^3}{315}+8\,z+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(1024\,z^3+29\,568\,z^2-23\,100\,z-3465\right)\sinh\left(2\sqrt{z}\right)}{3465}$$

07.22.03.aepb.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},-\frac{1}{4};-z\right)=\left(-\frac{2048\,z^3}{315}-8\,z+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(1024\,z^3-29\,568\,z^2-23\,100\,z+3465\right)\sin\left(2\sqrt{z}\right)}{3465}$$

07.22.03.aepc.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},\frac{1}{4};z\right)=-\frac{1}{3465\,\sqrt[4]{z}}$$

$$\left(\sqrt{2}\,\left(\left(2048\,z^4+65\,920\,z^3-51\,408\,z^2+27\,720\,z-3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(10\,496\,z^3-2448\,z^2+11\,340\,z-3465\right)\right.\right.$$

$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(512\,z^3+8992\,z^2-5040\,z-3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aepd.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) = \frac{1}{3465\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-2048z^4 + 65\,920z^3 + 51\,408z^2 + 27\,720z + 3465\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(10\,496z^3 + 2448z^2 + 11\,340z + 3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(512z^3 - 8992z^2 - 5040z + 3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aepe.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, \frac{3}{4}; z\right) = \left(-\frac{512z^3}{3465} - \frac{32z^2}{21} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{105}\sqrt{z}\left(64z^2 - 140z + 105\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.aepf.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) = \left(\frac{512z^3}{3465} - \frac{32z^2}{21} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{105}\sqrt{z}\left(64z^2 + 140z + 105\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.aepg.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, \frac{5}{4}; z\right) = -\frac{1}{3465\sqrt[4]{z}} \left(\sqrt{2}\left(\left(4096z^3 - 6384z^2 + 8316z - 3465\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\sqrt{z}\left(512z^3 + 3168z^2 + 1512z - 3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 416z^2(8z - 21) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeph.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, \frac{5}{4}; -z\right) = \frac{1}{3465\sqrt[4]{z}} \left(\sqrt{2}\left(\left(4096z^3 + 6384z^2 + 8316z + 3465\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(512z^3 - 3168z^2 + 1512z + 3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 416z^2(8z + 21) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aepi.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) = \left(-\frac{128z^2}{231} + \frac{8z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(64z^2 - 220z + 1155\right)\sinh\left(2\sqrt{z}\right)}{1155} $$

07.22.03.aepj.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, \frac{7}{4}; -z\right) = \left(-\frac{128z^2}{231} - \frac{8z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(64z^2 + 220z + 1155\right)\sin\left(2\sqrt{z}\right)}{1155} $$

07.22.03.aepk.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},\frac{9}{4};z\right)=$$

$$-\frac{1}{5544\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(1024z^3-2688z^2+11\,088z-7623\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(5120z^3-5376z^2-11\,088z+3465\right)\right.\right.$$

$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1024z^3-7680z^2+11\,088z+10\,395\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aepl.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},\frac{9}{4};-z\right)=\frac{1}{5544\sqrt{2}\,z^{3/4}}$$

$$\left(\left(2\sqrt{z}\left(1024z^3+2688z^2+11\,088z+7623\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(5120z^3+5376z^2-11\,088z-3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$

$$\left.\left.2\sqrt{z}\left(1024z^3+7680z^2+11\,088z-10\,395\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aepm.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},\frac{11}{4};z\right)=\left(-\frac{32z^2}{165}+\frac{16z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{33}\sqrt{z}\,(4z+33)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aepn.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},\frac{11}{4};-z\right)=\left(-\frac{32z^2}{165}-\frac{16z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{33}(33-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aepo.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},\frac{13}{4};z\right)=-\frac{1}{19\,712\sqrt{2}\,z^{7/4}}$$

$$\left(\left(2\sqrt{z}\left(4096z^3+59\,136z^2+22\,176z-65\,835\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(32\,768z^4-155\,648z^3-413\,952z^2-443\,520z+329\,175\right)\right.\right.$$

$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-8192z^3+109\,824z^2+258\,720z+329\,175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aepp.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},\frac{13}{4};-z\right)=\frac{1}{19\,712\sqrt{2}\,z^{7/4}}$$

$$\left(\left(-2\sqrt{z}\left(4096z^3-59\,136z^2+22\,176z+65\,835\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(32\,768z^4+155\,648z^3-413\,952z^2+443\,520z+329\,175\right)\right.\right.$$

$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(8192z^3+109\,824z^2-258\,720z+329\,175\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aepq.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},\frac{15}{4};z\right)=\left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\,(4z+15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aepr.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},\frac{15}{4};-z\right)=\left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}(15-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aeps.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},\frac{17}{4};z\right)=$$

$$-\frac{1}{630\,784\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(65\,536z^4+675\,840z^3+4\,080\,384z^2+11\,586\,960z-13\,627\,845\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(1\,245\,184z^4+9\,596\,928z^3+52\,335\,360z^2+106\,389\,360z-68\,139\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+1\,191\,936z^3+8\,659\,200z^2+38\,974\,320z+68\,139\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aept.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},\frac{17}{4};-z\right)=$$

$$-\frac{1}{630\,784\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(65\,536z^4-675\,840z^3+4\,080\,384z^2-11\,586\,960z-13\,627\,845\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-1\,245\,184z^4+9\,596\,928z^3-52\,335\,360z^2+106\,389\,360z+68\,139\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-1\,191\,936z^3+8\,659\,200z^2-38\,974\,320z+68\,139\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aepu.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},\frac{19}{4};z\right)=$$

$$\frac{1}{1\,048\,576\,z^{15/4}}\left(e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(262\,144z^{9/2}+2\,031\,616z^4+9\,617\,408z^{7/2}+36\,556\,800z^3+118\,809\,600z^{5/2}+\right.\right.\right.$$
$$326\,726\,400z^2+735\,134\,400z^{3/2}+1\,286\,485\,200z+1\,608\,106\,500\sqrt{z}\,+$$
$$e^{4\sqrt{z}}\left(262\,144z^{9/2}-2\,031\,616z^4+9\,617\,408z^{7/2}-36\,556\,800z^3+118\,809\,600z^{5/2}-326\,726\,400z^2+\right.$$
$$\left.\left.735\,134\,400z^{3/2}-1\,286\,485\,200z+1\,608\,106\,500\sqrt{z}\,-1\,206\,079\,875\right)+1\,206\,079\,875\right)+$$
$$\left.\left.1\,206\,079\,875\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-1\,206\,079\,875\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aepv.01

$${}_1F_2\left(\frac{15}{4};-\frac{5}{2},\frac{19}{4};-z\right)=\frac{1}{262\,144\,z^{15/4}}$$
$$\left(1\,206\,079\,875\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4-2\,404\,352z^3+29\,702\,400z^2-183\,783\,600z+402\,026\,625\right)\right.\right.$$
$$\left.\left.\cos\left(2\sqrt{z}\right)+\left(-2\,031\,616z^4+36\,556\,800z^3-326\,726\,400z^2+1\,286\,485\,200z-1\,206\,079\,875\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aepw.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) = -\frac{1}{20\,185\,088\sqrt{2}\, z^{15/4}} \left(221\left(-18\sqrt{z}\left(524\,288 z^4 + 12\,795\,904 z^3 + 134\,830\,080 z^2 + 484\,545\,600 z - 531\,485\,955\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(2\,097\,152 z^5 + 120\,717\,312 z^4 + 2\,088\,345\,600 z^3 + 16\,145\,902\,080 z^2 + 38\,812\,102\,560 z - 23\,916\,867\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\left(1\,835\,008 z^4 + 54\,886\,400 z^3 + 709\,463\,040 z^2 + 4\,070\,183\,040 z + 7\,972\,289\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aepx.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) = -\frac{1}{20\,185\,088\sqrt{2}\, z^{15/4}} \left(221\left(18\sqrt{z}\left(524\,288 z^4 - 12\,795\,904 z^3 + 134\,830\,080 z^2 - 484\,545\,600 z - 531\,485\,955\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(2\,097\,152 z^5 - 120\,717\,312 z^4 + 2\,088\,345\,600 z^3 - 16\,145\,902\,080 z^2 + 38\,812\,102\,560 z + 23\,916\,867\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\left(1\,835\,008 z^4 - 54\,886\,400 z^3 + 709\,463\,040 z^2 - 4\,070\,183\,040 z + 7\,972\,289\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aepy.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, \frac{23}{4}; z\right) = \frac{1}{67\,108\,864 z^{19/4}} \left(19 e^{-2\sqrt{z}}\left(-4\sqrt[4]{z}\left(-4\,194\,304 z^5 - 54\,525\,952 z^{9/2} - 412\,876\,800 z^4 - 2\,339\,635\,200 z^{7/2} - 10\,674\,585\,600 z^3 - 39\,920\,025\,600 z^{5/2} - 121\,542\,220\,800 z^2 - 294\,053\,760\,000 z^{3/2} - 540\,323\,784\,000 z - 699\,526\,327\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^5 - 54\,525\,952 z^{9/2} + 412\,876\,800 z^4 - 2\,339\,635\,200 z^{7/2} + 10\,674\,585\,600 z^3 - 39\,920\,025\,600 z^{5/2} + 121\,542\,220\,800 z^2 - 294\,053\,760\,000 z^{3/2} + 540\,323\,784\,000 z - 699\,526\,327\,500\sqrt{z} + 524\,644\,745\,625\right) - 524\,644\,745\,625\right) + 1\,206\,079\,875 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 435)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 1\,206\,079\,875 e^{2\sqrt{z}}\sqrt{2\pi}\,(16z - 435)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aepz.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{5}{2}, \frac{23}{4}; -z\right) = \frac{1}{16\,777\,216 z^{19/4}} \left(19\left(1\,206\,079\,875\sqrt{\pi}\,(16z + 435) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(13\,631\,488 z^4 - 584\,908\,800 z^3 + 9\,980\,006\,400 z^2 - 73\,513\,440\,000 z + 174\,881\,581\,875\right)\cos\left(2\sqrt{z}\right) + \left(4\,194\,304 z^5 - 412\,876\,800 z^4 + 10\,674\,585\,600 z^3 - 121\,542\,220\,800 z^2 + 540\,323\,784\,000 z - 524\,644\,745\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{15}{4}$, $b_{1.} = -\frac{3}{2}$

07.22.03.aeq0.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,049\,344\,065\sqrt[4]{z}}\left(\sqrt{2}\left(\left(63\,963\,136\,z^6 - 258\,736\,128\,z^5 + 1\,617\,960\,960\,z^4 - 741\,565\,440\,z^3 + 243\,326\,160\,z^2 - 1\,642\,451\,580\,z + 1\,049\,344\,065\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2\,097\,152\,z^6 + 83\,361\,792\,z^5 - 179\,945\,472\,z^4 - 1\,078\,640\,640\,z^3 - 347\,608\,800\,z^2 - 243\,326\,160\,z + 1\,049\,344\,065\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(14\,417\,920\,z^5 - 116\,588\,544\,z^4 + 449\,648\,640\,z^3 + 926\,956\,800\,z^2 + 1\,155\,799\,260\,z + 1\,049\,344\,065\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeq1.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{23}{4}; -z\right) = \frac{1}{1\,049\,344\,065\sqrt[4]{z}}\left(\sqrt{2}\left(\left(63\,963\,136\,z^6 + 258\,736\,128\,z^5 + 1\,617\,960\,960\,z^4 + 741\,565\,440\,z^3 + 243\,326\,160\,z^2 + 1\,642\,451\,580\,z + 1\,049\,344\,065\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2\,097\,152\,z^6 - 83\,361\,792\,z^5 - 179\,945\,472\,z^4 + 1\,078\,640\,640\,z^3 - 347\,608\,800\,z^2 + 243\,326\,160\,z + 1\,049\,344\,065\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(14\,417\,920\,z^5 + 116\,588\,544\,z^4 + 449\,648\,640\,z^3 - 926\,956\,800\,z^2 + 1\,155\,799\,260\,z - 1\,049\,344\,065\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeq2.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{21}{4}; z\right) = \left(\frac{4\,980\,736\,z^5}{48\,243\,195} - \frac{131\,072\,z^4}{255\,255} + \frac{22\,528\,z^3}{9945} + \frac{256\,z^2}{119} + \frac{52\,z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{144\,729\,585}\left(2\sqrt{z}\left(524\,288\,z^5 + 21\,037\,056\,z^4 - 41\,029\,632\,z^3 - 193\,729\,536\,z^2 - 165\,405\,240\,z - 144\,729\,585\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aeq3.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{21}{4}; -z\right) = \left(-\frac{4\,980\,736\,z^5}{48\,243\,195} - \frac{131\,072\,z^4}{255\,255} - \frac{22\,528\,z^3}{9945} + \frac{256\,z^2}{119} - \frac{52\,z}{21} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{144\,729\,585}\left(2\sqrt{z}\left(524\,288\,z^5 - 21\,037\,056\,z^4 - 41\,029\,632\,z^3 + 193\,729\,536\,z^2 - 165\,405\,240\,z + 144\,729\,585\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aeq4.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{19}{4}; z\right) = \frac{1}{45\,623\,655\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1\,048\,576\,z^6 - 68\,812\,800\,z^5 + 141\,926\,400\,z^4 - 72\,737\,280\,z^3 + 12\,806\,640\,z^2 - 67\,234\,860\,z + 45\,623\,655\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(2\,621\,440\,z^5 - 2\,179\,072\,z^4 + 26\,019\,840\,z^3 + 2\,439\,360\,z^2 + 2\,134\,440\,z - 15\,207\,885\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-262\,144\,z^5 - 11\,501\,568\,z^4 + 22\,579\,200\,z^3 + 53\,665\,920\,z^2 + 54\,428\,220\,z + 45\,623\,655\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeq5.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{19}{4}; -z\right) = \frac{1}{45\,623\,655\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left(\left(-1\,048\,576\,z^6 + 68\,812\,800\,z^5 + 141\,926\,400\,z^4 + 72\,737\,280\,z^3 + 12\,806\,640\,z^2 + 67\,234\,860\,z + 45\,623\,655\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 -\right.$$
$$12\sqrt{z}\left(2\,621\,440\,z^5 + 2\,179\,072\,z^4 + 26\,019\,840\,z^3 - 2\,439\,360\,z^2 + 2\,134\,440\,z + 15\,207\,885\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(262\,144\,z^5 - 11\,501\,568\,z^4 - 22\,579\,200\,z^3 + 53\,665\,920\,z^2 - 54\,428\,220\,z + 45\,623\,655\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeq6.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{17}{4}; z\right) =$$
$$\frac{1}{6\,891\,885}\left(\left(-262\,144\,z^5 - 13\,369\,344\,z^4 + 23\,783\,424\,z^3 + 18\,627\,840\,z^2 + 17\,837\,820\,z + 6\,891\,885\right)\cosh\left(2\sqrt{z}\right) -\right.$$
$$\left.2\sqrt{z}\left(1\,900\,544\,z^4 - 933\,888\,z^3 + 14\,224\,896\,z^2 + 8\,648\,640\,z + 6\,891\,885\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aeq7.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{6\,891\,885}\left(\left(262\,144\,z^5 - 13\,369\,344\,z^4 - 23\,783\,424\,z^3 + 18\,627\,840\,z^2 - 17\,837\,820\,z + 6\,891\,885\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.2\sqrt{z}\left(1\,900\,544\,z^4 + 933\,888\,z^3 + 14\,224\,896\,z^2 - 8\,648\,640\,z + 6\,891\,885\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aeq8.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{2\,401\,245\sqrt[4]{z}}\left(\sqrt{2}\left(21\left(196\,608\,z^5 + 1\,126\,400\,z^4 - 464\,640\,z^3 + 55\,440\,z^2 - 152\,460\,z + 114\,345\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.\right.$$
$$4\sqrt{z}\left(131\,072\,z^5 + 8\,085\,504\,z^4 - 8\,870\,400\,z^3 + 554\,400\,z^2 + 2\,401\,245\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.12\,z\left(311\,296\,z^4 + 179\,200\,z^3 + 1\,404\,480\,z^2 + 1\,067\,220\,z + 800\,415\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeq9.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{2\,401\,245\sqrt[4]{z}}\left(\sqrt{2}\left(-21\left(196\,608\,z^5 - 1\,126\,400\,z^4 - 464\,640\,z^3 - 55\,440\,z^2 - 152\,460\,z - 114\,345\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.\right.$$
$$4\sqrt{z}\left(131\,072\,z^5 - 8\,085\,504\,z^4 - 8\,870\,400\,z^3 - 554\,400\,z^2 - 2\,401\,245\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.12\,z\left(311\,296\,z^4 - 179\,200\,z^3 + 1\,404\,480\,z^2 - 1\,067\,220\,z + 800\,415\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeqa.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{13}{4}; z\right) = \frac{1}{405\,405}\left(3\left(311\,296\,z^4 + 738\,304\,z^3 + 517\,440\,z^2 + 374\,220\,z + 135\,135\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(32\,768\,z^4 + 1\,787\,904\,z^3 - 1\,588\,608\,z^2 - 582\,120\,z - 405\,405\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aeqb.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{13}{4}; -z\right) = \frac{1}{405\,405}\left(3\left(311\,296\,z^4 - 738\,304\,z^3 + 517\,440\,z^2 - 374\,220\,z + 135\,135\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-32\,768\,z^4 + 1\,787\,904\,z^3 + 1\,588\,608\,z^2 - 582\,120\,z + 405\,405\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aeqc.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{11}{4}; z\right) = \frac{1}{160\,083\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(65\,536\,z^5 + 4\,730\,880\,z^4 + 2\,661\,120\,z^3 - 210\,672\,z^2 + 174\,636\,z - 160\,083\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-475\,136\,z^4 - 2\,365\,440\,z^3 + 221\,760\,z^2 + 38\,808\,z + 160\,083\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-16\,384\,z^4 - 838\,656\,z^3 + 517\,440\,z^2 + 252\,252\,z + 160\,083\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeqd.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{11}{4}; -z\right) = \frac{1}{160\,083\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536\,z^5 - 4\,730\,880\,z^4 + 2\,661\,120\,z^3 + 210\,672\,z^2 + 174\,636\,z + 160\,083\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(475\,136\,z^4 - 2\,365\,440\,z^3 - 221\,760\,z^2 + 38\,808\,z - 160\,083\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-16\,384\,z^4 + 838\,656\,z^3 + 517\,440\,z^2 - 252\,252\,z + 160\,083\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeqe.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) = \left(-\frac{16\,384\,z^4}{31\,185} - \frac{13\,312\,z^3}{495} + \frac{64\,z^2}{9} + \frac{28\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(36\,864\,z^3 + 127\,232\,z^2 + 18\,480\,z + 10\,395\right)\sinh\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.aeqf.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{9}{4}; -z\right) = \left(-\frac{16\,384\,z^4}{31\,185} + \frac{13\,312\,z^3}{495} + \frac{64\,z^2}{9} - \frac{28\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-36\,864\,z^3 + 127\,232\,z^2 - 18\,480\,z + 10\,395\right)\sin\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.aeqg.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{7}{4}; z\right) = \frac{1}{14\,553\sqrt[4]{z}} \left(\sqrt{2}\left(3\left(77\,824 z^4 + 591\,360 z^3 + 33\,264 z^2 - 2772 z + 4851\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8192 z^4 + 445\,440 z^3 + 110\,880 z^2 + 11\,088 z + 14\,553\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(17\,408 z^3 + 49\,280 z^2 + 10\,164 z + 4851\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeqh.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{7}{4}; -z\right) = \frac{1}{14\,553\sqrt[4]{z}} \left(\sqrt{2}\left(3\left(77\,824 z^4 - 591\,360 z^3 + 33\,264 z^2 + 2772 z + 4851\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(8192 z^4 - 445\,440 z^3 + 110\,880 z^2 - 11\,088 z + 14\,553\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(-17\,408 z^3 + 49\,280 z^2 - 10\,164 z + 4851\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeqi.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{5}{4}; z\right) = \left(\frac{7168 z^3}{495} + \frac{128 z^2}{3} + 4 z + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048 z^3 + 86\,016 z^2 - 9240 z - 3465\right)\sinh\left(2\sqrt{z}\right)}{3465} $$

07.22.03.aeqj.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{5}{4}; -z\right) = \left(-\frac{7168 z^3}{495} + \frac{128 z^2}{3} - 4 z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048 z^3 - 86\,016 z^2 - 9240 z + 3465\right)\sin\left(2\sqrt{z}\right)}{3465} $$

07.22.03.aeqk.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{3}{4}; z\right) = -\frac{1}{2079\sqrt[4]{z}} \left(\sqrt{2}\left(\left(4096 z^4 + 208\,896 z^3 + 144\,144 z^2 - 2772 z - 2079\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(8192 z^3 + 30\,400 z^2 - 1848 z - 693\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1024 z^3 + 34\,560 z^2 - 8316 z - 2079\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeql.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{3}{4}; -z\right) = -\frac{1}{2079\sqrt[4]{z}} \left(\sqrt{2}\left(\left(4096 z^4 - 208\,896 z^3 + 144\,144 z^2 + 2772 z - 2079\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(8192 z^3 - 30\,400 z^2 - 1848 z + 693\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-1024 z^3 + 34\,560 z^2 + 8316 z - 2079\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeqm.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{1}{4}; z\right) = \left(-\frac{1024 z^3}{693} - \frac{128 z^2}{3} + 12 z + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{33}\sqrt{z}\left(256 z^2 + 352 z + 33\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.aeqn.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, -\frac{1}{4}; -z\right) = \left(\frac{1024\,z^3}{693} - \frac{128\,z^2}{3} - 12\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{33}\sqrt{z}\left(256\,z^2 - 352\,z + 33\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aeqo.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{1}{4}; z\right) =$$

$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(11\,008\,z^3 + 35\,280\,z^2 - 8316\,z + 693\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(512\,z^3 + 13\,728\,z^2 - 4032\,z + 693\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2368\,z^2 + 252\,z + 693\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeqp.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{1}{4}; -z\right) =$$

$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-11\,008\,z^3 + 35\,280\,z^2 + 8316\,z + 693\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(512\,z^3 - 13\,728\,z^2 - 4032\,z - 693\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2368\,z^2 - 252\,z + 693\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeqq.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{3}{4}; z\right) = \left(\frac{64\,z^2}{21} - \frac{4\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{693}\sqrt{z}\left(128\,z^2 + 1848\,z - 693\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aeqr.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{3}{4}; -z\right) = \left(\frac{64\,z^2}{21} + \frac{4\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{693}\sqrt{z}\left(-128\,z^2 + 1848\,z + 693\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aeqs.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{5}{4}; z\right) =$$

$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256\,z^3 + 4368\,z^2 - 2268\,z + 693\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 24\sqrt{z}\left(160\,z^2 - 84\,z + 63\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(64\,z^2 + 420\,z + 63\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeqt.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{5}{4}; -z\right) =$$

$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-256\,z^3 + 4368\,z^2 + 2268\,z + 693\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 24\sqrt{z}\left(160\,z^2 + 84\,z + 63\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(64\,z^2 - 420\,z + 63\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aequ.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{7}{4}; z\right) = \left(\frac{64\,z^2}{231} + \frac{4\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{21}\sqrt{z}\,(16\,z - 21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aeqv.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{7}{4}; -z\right) = \left(\frac{64\,z^2}{231} - \frac{4\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}\sqrt{z}\,(16\,z + 21)\sin\left(2\sqrt{z}\right)$$

07.22.03.aeqw.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{9}{4}; z\right) = \frac{1}{2772\sqrt{2}\,z^{3/4}}$$
$$\left(5\left(42\sqrt{z}\,\left(64\,z^2 - 64\,z + 33\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1024\,z^3 + 3024\,z - 693\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\,\left(320\,z^2 - 224\,z - 231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeqx.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) = -\frac{1}{2772\sqrt{2}\,z^{3/4}}\left(5\left(-42\sqrt{z}\,\left(64\,z^2 + 64\,z + 33\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left.\left(1024\,z^3 + 3024\,z + 693\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\,\left(320\,z^2 + 224\,z - 231\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeqy.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) = \left(\frac{12\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{33}\sqrt{z}\,(8\,z - 33)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aeqz.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) = \left(1 - \frac{12\,z}{11}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{33}\sqrt{z}\,(8\,z + 33)\sin\left(2\sqrt{z}\right)$$

07.22.03.aer0.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) =$$
$$\frac{1}{9856\sqrt{2}\,z^{7/4}}\left(5\left(2\sqrt{z}\,\left(2048\,z^3 - 5376\,z^2 + 3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(8192\,z^3 + 26\,880\,z^2 + 22\,176\,z - 17\,325\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(2048\,z^3 - 6912\,z^2 - 14\,784\,z - 17\,325\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aer1.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) =$$
$$\frac{1}{9856\sqrt{2}\,z^{7/4}}\left(5\left(2\sqrt{z}\,\left(2048\,z^3 + 5376\,z^2 - 3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(8192\,z^3 - 26\,880\,z^2 + 22\,176\,z + 17\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(2048\,z^3 + 6912\,z^2 - 14\,784\,z + 17\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aer2.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) = \left(\frac{4z}{3}+1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aer3.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{15}{4}; -z\right) = \left(1-\frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aer4.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) = \frac{1}{315\,392\sqrt{2}\,z^{11/4}}$$
$$\left(65\left(-18\sqrt{z}\,\left(4096z^3+19\,712z^2+55\,440z-65\,835\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(65\,536z^4+454\,656z^3+2\,306\,304z^2+4\,601\,520z-\right.\right.\right.$$
$$\left.\left.\left.2\,962\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-6\sqrt{z}\,\left(20\,480z^3+132\,352z^2+572\,880z+987\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aer5.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) = \frac{1}{315\,392\sqrt{2}\,z^{11/4}}$$
$$\left(65\left(18\sqrt{z}\,\left(4096z^3-19\,712z^2+55\,440z+65\,835\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(65\,536z^4-454\,656z^3+2\,306\,304z^2-4\,601\,520z-\right.\right.\right.$$
$$\left.\left.\left.2\,962\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\,\left(-20\,480z^3+132\,352z^2-572\,880z+987\,525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aer6.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) =$$
$$\frac{1}{524\,288z^{15/4}}\left(5e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-65\,536z^4-376\,832z^{7/2}-1\,462\,272z^3-4\,752\,384z^{5/2}-13\,069\,056z^2-29\,405\,376z^{3/2}-\right.\right.\right.$$
$$\left.\left.51\,459\,408z-64\,324\,260\sqrt{z}+e^{4\sqrt{z}}\left(65\,536z^4-376\,832z^{7/2}+1\,462\,272z^3-4\,752\,384z^{5/2}+\right.\right.\right.$$
$$\left.\left.\left.13\,069\,056z^2-29\,405\,376z^{3/2}+51\,459\,408z-64\,324\,260\sqrt{z}+48\,243\,195\right)-48\,243\,195\right)+$$
$$\left.48\,243\,195e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-48\,243\,195e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.aer7.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{19}{4}; -z\right) =$$
$$\frac{1}{131\,072z^{15/4}}\left(5\left(48\,243\,195\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(94\,208z^3-1\,188\,096z^2+7\,351\,344z-16\,081\,065\right)\cos\left(2\sqrt{z}\right)+\right.\right.\right.$$
$$\left.\left.\left.\left(65\,536z^4-1\,462\,272z^3+13\,069\,056z^2-51\,459\,408z+48\,243\,195\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aer8.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) =$$
$$\frac{1}{10\,092\,544\sqrt{2}\,z^{15/4}}\left(1105\left(2\sqrt{z}\left(131\,072\,z^4+4\,055\,040\,z^3+44\,352\,000\,z^2+162\,217\,440\,z-177\,161\,985\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(1\,310\,720\,z^4+24\,870\,912\,z^3+197\,514\,240\,z^2+480\,332\,160\,z-295\,269\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(131\,072\,z^4+5\,627\,904\,z^3+76\,792\,320\,z^2+448\,731\,360\,z+885\,809\,925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aer9.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) =$$
$$-\frac{1}{10\,092\,544\sqrt{2}\,z^{15/4}}\left(1105\left(2\sqrt{z}\left(131\,072\,z^4-4\,055\,040\,z^3+44\,352\,000\,z^2-162\,217\,440\,z-177\,161\,985\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$3\left(-1\,310\,720\,z^4+24\,870\,912\,z^3-197\,514\,240\,z^2+480\,332\,160\,z+295\,269\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(131\,072\,z^4-5\,627\,904\,z^3+76\,792\,320\,z^2-448\,731\,360\,z+885\,809\,925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aera.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) =$$
$$\frac{1}{33\,554\,432\,z^{19/4}}\left(95\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1\,048\,576\,z^{9/2}+11\,010\,048\,z^4+70\,189\,056\,z^{7/2}+339\,247\,104\,z^3+1\,311\,657\,984\,z^{5/2}+\right.\right.\right.$$
$$4\,077\,545\,472\,z^2+9\,997\,827\,840\,z^{3/2}+18\,525\,386\,880\,z+24\,121\,597\,500\sqrt{z}+$$
$$e^{4\sqrt{z}}\left(1\,048\,576\,z^{9/2}-11\,010\,048\,z^4+70\,189\,056\,z^{7/2}-339\,247\,104\,z^3+1\,311\,657\,984\,z^{5/2}-4\,077\,545\,472\,z^2+\right.$$
$$\left.\left.\left.9\,997\,827\,840\,z^{3/2}-18\,525\,386\,880\,z+24\,121\,597\,500\sqrt{z}-18\,091\,198\,125\right)+18\,091\,198\,125\right)+$$
$$\left.\left.48\,243\,195\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-375)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-48\,243\,195\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-375)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aerb.01

$${}_1F_2\left(\frac{15}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) = \frac{1}{8\,388\,608\,z^{19/4}}\left(95\left(48\,243\,195\sqrt{\pi}\,(16z+375)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$2\sqrt[4]{z}\left(4\sqrt{z}\left(262\,144\,z^4-17\,547\,264\,z^3+327\,914\,496\,z^2-2\,499\,456\,960\,z+6\,030\,399\,375\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.\left.\left.21\left(524\,288\,z^4-16\,154\,624\,z^3+194\,168\,832\,z^2-882\,161\,280\,z+861\,485\,625\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{15}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.aerc.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) = \frac{1}{349\,781\,355\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\,\left(-\left(2\,097\,152\,z^6 + 26\,214\,400\,z^5 + 155\,664\,384\,z^4 - 1\,483\,130\,880\,z^3 + 1\,135\,522\,080\,z^2 + 243\,326\,160\,z - 349\,781\,355\right)\right.\right. $$
$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(11\,272\,192\,z^5 - 110\,559\,232\,z^4 + 209\,909\,760\,z^3 + 926\,956\,800\,z^2 - 223\,048\,980\,z - 349\,781\,355\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(-524\,288\,z^5 + 1\,507\,328\,z^4 - 119\,869\,440\,z^3 + 430\,924\,800\,z^2 + 689\,424\,120\,z + 349\,781\,355\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aerd.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) = \frac{1}{349\,781\,355\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\,\left(\left(-2\,097\,152\,z^6 + 26\,214\,400\,z^5 - 155\,664\,384\,z^4 - 1\,483\,130\,880\,z^3 - 1\,135\,522\,080\,z^2 + 243\,326\,160\,z + 349\,781\,355\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(11\,272\,192\,z^5 + 110\,559\,232\,z^4 + 209\,909\,760\,z^3 - 926\,956\,800\,z^2 - 223\,048\,980\,z + 349\,781\,355\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(524\,288\,z^5 + 1\,507\,328\,z^4 + 119\,869\,440\,z^3 + 430\,924\,800\,z^2 - 689\,424\,120\,z + 349\,781\,355\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aere.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) = \left(-\frac{524\,288\,z^5}{48\,243\,195} - \frac{65\,536\,z^4}{765\,765} - \frac{77\,824\,z^3}{69\,615} + \frac{2048\,z^2}{357} + \frac{24\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - $$
$$ \frac{2\sqrt{z}\,\left(2\,818\,048\,z^4 - 23\,740\,416\,z^3 + 41\,513\,472\,z^2 + 147\,026\,880\,z + 48\,243\,195\right)\sinh\left(2\sqrt{z}\right)}{48\,243\,195} $$

07.22.03.aerf.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{21}{4}; -z\right) = \left(\frac{524\,288\,z^5}{48\,243\,195} - \frac{65\,536\,z^4}{765\,765} + \frac{77\,824\,z^3}{69\,615} + \frac{2048\,z^2}{357} - \frac{24\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + $$
$$ \frac{2\sqrt{z}\,\left(2\,818\,048\,z^4 + 23\,740\,416\,z^3 + 41\,513\,472\,z^2 - 147\,026\,880\,z + 48\,243\,195\right)\sin\left(2\sqrt{z}\right)}{48\,243\,195} $$

07.22.03.aerg.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{19}{4}; z\right) = \frac{1}{15\,207\,885\sqrt[4]{z}}\left(\sqrt{2}\left(\left(6\,553\,600 z^5 - 25\,853\,952 z^4 + 95\,800\,320 z^3 - 68\,302\,080 z^2 - 6\,403\,320 z + 15\,207\,885\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(262\,144 z^5 + 5\,734\,400 z^4 - 3\,164\,160 z^3 - 53\,665\,920 z^2 + 13\,873\,860 z + 15\,207\,885\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1\,441\,792 z^4 - 9\,707\,520 z^3 + 19\,034\,880 z^2 + 34\,151\,040 z + 15\,207\,885\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aerh.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{19}{4}; -z\right) = \frac{1}{15\,207\,885\sqrt[4]{z}}\left(\sqrt{2}\left(-\left(6\,553\,600 z^5 + 25\,853\,952 z^4 + 95\,800\,320 z^3 + 68\,302\,080 z^2 - 6\,403\,320 z - 15\,207\,885\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(262\,144 z^5 - 5\,734\,400 z^4 - 3\,164\,160 z^3 + 53\,665\,920 z^2 + 13\,873\,860 z - 15\,207\,885\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1\,441\,792 z^4 + 9\,707\,520 z^3 + 19\,034\,880 z^2 - 34\,151\,040 z + 15\,207\,885\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeri.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{17}{4}; z\right) = \frac{1}{2\,297\,295}\left(\left(1\,507\,328 z^4 - 6\,766\,592 z^3 + 15\,966\,720 z^2 + 8\,648\,640 z + 2\,297\,295\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(65\,536 z^4 + 1\,458\,176 z^3 - 870\,912 z^2 - 8\,648\,640 z - 2\,297\,295\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aerj.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) = \frac{1}{2\,297\,295}\left(\left(1\,507\,328 z^4 + 6\,766\,592 z^3 + 15\,966\,720 z^2 - 8\,648\,640 z + 2\,297\,295\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-65\,536 z^4 + 1\,458\,176 z^3 + 870\,912 z^2 - 8\,648\,640 z + 2\,297\,295\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aerk.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) = \frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-131\,072 z^5 - 5\,627\,904 z^4 + 8\,870\,400 z^3 - 5\,433\,120 z^2 + 800\,415\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(802\,816 z^4 - 1\,121\,280 z^3 + 4\,213\,440 z^2 - 1\,067\,220 z - 800\,415\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-32\,768 z^4 - 829\,440 z^3 + 816\,000 z^2 + 2\,134\,440 z + 800\,415\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aerl.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(\left(131\,072\,z^5 - 5\,627\,904\,z^4 - 8\,870\,400\,z^3 - 5\,433\,120\,z^2 + 800\,415\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right.$$
$$\left(802\,816\,z^4 + 1\,121\,280\,z^3 + 4\,213\,440\,z^2 + 1\,067\,220\,z - 800\,415\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(-32\,768\,z^4 + 829\,440\,z^3 + 816\,000\,z^2 - 2\,134\,440\,z + 800\,415\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aerm.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) = \frac{1}{135\,135}\left(\left(-32\,768\,z^4 - 1\,017\,856\,z^3 + 1\,169\,280\,z^2 + 582\,120\,z + 135\,135\right)\cosh\left(2\sqrt{z}\right) -$$
$$2\sqrt{z}\left(192\,512\,z^3 - 209\,664\,z^2 + 680\,400\,z + 135\,135\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aern.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) = \frac{1}{135\,135}\left(\left(-32\,768\,z^4 + 1\,017\,856\,z^3 + 1\,169\,280\,z^2 - 582\,120\,z + 135\,135\right)\cos\left(2\sqrt{z}\right) -$$
$$2\sqrt{z}\left(192\,512\,z^3 + 209\,664\,z^2 + 680\,400\,z - 135\,135\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aero.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) = \frac{1}{53\,361\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(425\,984\,z^4 + 1\,576\,960\,z^3 - 650\,496\,z^2 + 38\,808\,z + 53\,361\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,384\,z^4 + 650\,240\,z^3 - 517\,440\,z^2 +\right.\right.\right.$$
$$\left.\left.\left.109\,956\,z + 53\,361\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(94\,208\,z^3 - 24\,320\,z^2 + 181\,104\,z + 53\,361\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aerp.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{11}{4}; -z\right) = \frac{1}{53\,361\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(425\,984\,z^4 - 1\,576\,960\,z^3 - 650\,496\,z^2 - 38\,808\,z + 53\,361\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384\,z^4 - 650\,240\,z^3 - 517\,440\,z^2 -\right.\right.\right.$$
$$\left.\left.\left.109\,956\,z + 53\,361\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(94\,208\,z^3 + 24\,320\,z^2 + 181\,104\,z - 53\,361\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aerq.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{9}{4}; z\right) =$$
$$\left(\frac{94\,208\,z^3}{10\,395} + \frac{768\,z^2}{77} + \frac{16\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(4096\,z^3 + 139\,008\,z^2 - 81\,360\,z - 10\,395\right)\sinh\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.aerr.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{9}{4}; -z\right) =$$

$$\left(-\frac{94\,208\,z^3}{10\,395} + \frac{768\,z^2}{77} - \frac{16\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(4096\,z^3 - 139\,008\,z^2 - 81\,360\,z + 10\,395\right)\sin\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.aers.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{7}{4}; z\right) = -\frac{1}{4851\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(8192\,z^4 + 394\,240\,z^3 + 170\,016\,z^2 - 11\,088\,z - 4851\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(48\,128\,z^3 + 147\,840\,z^2 - 17\,556\,z - 4851\right)\right.\right.$$

$$\left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2048\,z^3 + 64\,000\,z^2 - 24\,024\,z - 4851\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aert.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) = -\frac{1}{4851\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(8192\,z^4 - 394\,240\,z^3 + 170\,016\,z^2 + 11\,088\,z - 4851\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(48\,128\,z^3 - 147\,840\,z^2 - 17\,556\,z + 4851\right)\right.\right.$$

$$\left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-2048\,z^3 + 64\,000\,z^2 + 24\,024\,z - 4851\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeru.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) = \left(-\frac{2048\,z^3}{1155} - \frac{12\,800\,z^2}{231} + 8\,z + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(11\,008\,z^2 + 20\,960\,z + 1155\right)\sinh\left(2\sqrt{z}\right)}{1155}$$

07.22.03.aerv.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{5}{4}; -z\right) = \left(\frac{2048\,z^3}{1155} - \frac{12\,800\,z^2}{231} - 8\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(11\,008\,z^2 - 20\,960\,z + 1155\right)\sin\left(2\sqrt{z}\right)}{1155}$$

07.22.03.aerw.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{3}{4}; z\right) =$$

$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(23\,552\,z^3 + 118\,272\,z^2 + 5544\,z + 693\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(1024\,z^3 + 34\,560\,z^2 + 6468\,z + 693\right)\right.\right.$$

$$\left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(5120\,z^2 + 7392\,z + 693\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aerx.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-23\,552z^3+118\,272z^2-5544z+693\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024z^3-34\,560z^2+6468z-693\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(5120z^2-7392z+693\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aery.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) = \left(\frac{4864z^2}{231}+32z+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{231}\sqrt{z}\left(256z^2+6176z-231\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aerz.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) = \left(\frac{4864z^2}{231}-32z+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{231}\sqrt{z}\left(-256z^2+6176z+231\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.aes0.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) =$$
$$-\frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512z^3+15\,904z^2+7392z-231\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2368z^2+4844z-231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(128z^2+2296z-231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aes1.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{1}{4}; -z\right) =$$
$$\frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512z^3-15\,904z^2+7392z+231\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2368z^2-4844z-231\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4z\left(-128z^2+2296z+231\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aes2.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{3}{4}; z\right) = \left(-\frac{128z^2}{231}-8z+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{231}\sqrt{z}\left(496z+231\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aes3.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{3}{4}; -z\right) = \left(-\frac{128z^2}{231}+8z+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{231}\left(231-496z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.aes4.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{5}{4}; z\right) = -\frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left.\left(\left(1024z^2+1704z-231\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(64z^2+836z-141\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(208z-51\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aes5.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{5}{4}; -z\right) = \frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left.\left(\left(-1024z^2+1704z+231\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(64z^2-836z-141\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(208z+51\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aes6.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{7}{4}; z\right) = \left(1-\frac{16z}{7}\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{77}\sqrt{z}\left(16z+77\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aes7.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{7}{4}; -z\right) = \left(\frac{16z}{7}+1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{77}\left(77-16z\right)\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.aes8.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{9}{4}; z\right) = -\frac{1}{462\sqrt{2}\,z^{3/4}}\left(5\left(2\sqrt{z}\left(64z^2+432z-105\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left.\left(1216z^2-480z+63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(64z^2+24z+63\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aes9.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{9}{4}; -z\right) = -\frac{1}{462\sqrt{2}\,z^{3/4}}\left(5\left(2\sqrt{z}\left(64z^2-432z-105\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left.\left(1216z^2+480z+63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(64z^2-24z+63\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aesa.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) = \left(1-\frac{8z}{11}\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\sinh\left(2\sqrt{z}\right)$$

07.22.03.aesb.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = \left(\frac{8z}{11}+1\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\sin\left(2\sqrt{z}\right)$$

07.22.03.aesc.01

$$ {}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) =$$
$$-\frac{1}{4928\sqrt{2}\,z^{7/4}}\left(15\left(2\sqrt{z}\left(1280z^2-224z-231\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(2048z^3-2816z^2-1344z+1155\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.2\sqrt{z}\left(512z^2+1120z+1155\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aesd.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) =$$
$$-\frac{1}{4928\sqrt{2}\, z^{7/4}}\left(15\left(-2\sqrt{z}\,\left(1280 z^2+224 z-231\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(2048 z^3+2816 z^2-1344 z-1155\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(512 z^2-1120 z+1155\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aese.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aesf.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aesg.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) =$$
$$-\frac{1}{157\,696\sqrt{2}\, z^{11/4}}\left(195\left(2\sqrt{z}\,\left(4096 z^3+8960 z^2+25\,872 z-31\,185\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-7\left(4096 z^3+17\,664 z^2+34\,320 z-22\,275\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4096 z^3+22\,784 z^2+92\,400 z+155\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aesh.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) =$$
$$\frac{1}{157\,696\sqrt{2}\, z^{11/4}}\left(195\left(2\sqrt{z}\,\left(4096 z^3-8960 z^2+25\,872 z+31\,185\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-7\left(4096 z^3-17\,664 z^2+34\,320 z+22\,275\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-4096 z^3+22\,784 z^2-92\,400 z+155\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aesi.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) =$$
$$-\frac{1}{262\,144 z^{15/4}}\left(15 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(16\,384 z^{7/2}+69\,632 z^3+226\,304 z^{5/2}+622\,336 z^2+1\,400\,256 z^{3/2}+2\,450\,448 z+\right.\right.\right.$$
$$\left.\left.3\,063\,060\sqrt{z}\,+e^{4\sqrt{z}}\left(16\,384 z^{7/2}-69\,632 z^3+226\,304 z^{5/2}-622\,336 z^2+\right.\right.\right.$$
$$\left.\left.1\,400\,256 z^{3/2}-2\,450\,448 z+3\,063\,060\sqrt{z}\,-2\,297\,295\right)+2\,297\,295\right)-$$
$$\left.\left.2\,297\,295 e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+2\,297\,295 e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aesj.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) =$$
$$\frac{1}{65\,536\,z^{15/4}}\left(15\left(2\,297\,295\sqrt{\pi}\;S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\;\left(17\left(4096\,z^3-36\,608\,z^2+144\,144\,z-135\,135\right)\sin\left(2\sqrt{z}\right)-\right.\right.\right.$$
$$\left.\left.\left.4\sqrt{z}\;\left(4096\,z^3-56\,576\,z^2+350\,064\,z-765\,765\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aesk.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) = -\frac{1}{5\,046\,272\sqrt{2}\;z^{15/4}}\left(3315\left(-2\sqrt{z}\;\left(163\,840\,z^3+1\,892\,352\,z^2+7\,096\,320\,z-7\,702\,695\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(131\,072\,z^4+3\,072\,000\,z^3+25\,428\,480\,z^2+62\,868\,960\,z-38\,513\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.2\sqrt{z}\;\left(212\,992\,z^3+3\,210\,240\,z^2+19\,293\,120\,z+38\,513\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aesl.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) = \frac{1}{5\,046\,272\sqrt{2}\;z^{15/4}}\left(3315\left(2\sqrt{z}\;\left(163\,840\,z^3-1\,892\,352\,z^2+7\,096\,320\,z+7\,702\,695\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(131\,072\,z^4-3\,072\,000\,z^3+25\,428\,480\,z^2-62\,868\,960\,z-38\,513\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\;\left(-212\,992\,z^3+3\,210\,240\,z^2-19\,293\,120\,z+38\,513\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aesm.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) = -\frac{1}{16\,777\,216\,z^{19/4}}$$
$$\left(285\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\;\left(-262\,144\,z^4-2\,228\,224\,z^{7/2}-11\,976\,704\,z^3-48\,881\,664\,z^{5/2}-156\,828\,672\,z^2-392\,071\,680\,z^{3/2}-\right.\right.\right.$$
$$\left.\left.735\,134\,400\,z-964\,863\,900\sqrt{z}\;+e^{4\sqrt{z}}\left(262\,144\,z^4-2\,228\,224\,z^{7/2}+11\,976\,704\,z^3-48\,881\,664\,z^{5/2}+\right.\right.\right.$$
$$\left.\left.\left.156\,828\,672\,z^2-392\,071\,680\,z^{3/2}+735\,134\,400\,z-964\,863\,900\sqrt{z}\;+723\,647\,925\right)-723\,647\,925\right)-$$
$$\left.2\,297\,295\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;(16\,z-315)\,\mathrm{erf}\left(\sqrt{2}\;\sqrt[4]{z}\right)+2\,297\,295\,e^{2\sqrt{z}}\;\sqrt{2\pi}\;(16\,z-315)\,\mathrm{erfi}\left(\sqrt{2}\;\sqrt[4]{z}\right)\right)\Bigg)$$

07.22.03.aesn.01

$${}_1F_2\left(\frac{15}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) = \frac{1}{4\,194\,304\,z^{19/4}}$$
$$\left(285\left(2\,297\,295\sqrt{\pi}\;(16\,z+315)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)-2\sqrt[4]{z}\;\left(68\sqrt{z}\;\left(32\,768\,z^3-718\,848\,z^2+5\,765\,760\,z-14\,189\,175\right)\cos\left(2\sqrt{z}\right)+\right.\right.\right.$$
$$\left.\left.\left.\left(262\,144\,z^4-11\,976\,704\,z^3+156\,828\,672\,z^2-735\,134\,400\,z+723\,647\,925\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{15}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.aeso.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) = \frac{1}{349\,781\,355\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(7\,602\,176\,z^5 - 59\,965\,440\,z^4 - 215\,599\,104\,z^3 + 1\,297\,739\,520\,z^2 - 1\,155\,799\,260\,z + 349\,781\,355\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(524\,288\,z^5 - 10\,551\,296\,z^4 + 143\,855\,616\,z^3 - 101\,283\,840\,z^2 - 689\,424\,120\,z + 349\,781\,355\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(1\,507\,328\,z^4 - 5\,996\,544\,z^3 - 164\,820\,480\,z^2 + 265\,648\,320\,z + 349\,781\,355\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aesp.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{23}{4}; -z\right) = \frac{1}{349\,781\,355\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-7\,602\,176\,z^5 - 59\,965\,440\,z^4 + 215\,599\,104\,z^3 + 1\,297\,739\,520\,z^2 + 1\,155\,799\,260\,z + 349\,781\,355\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(524\,288\,z^5 + 10\,551\,296\,z^4 + 143\,855\,616\,z^3 + 101\,283\,840\,z^2 - 689\,424\,120\,z - 349\,781\,355\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(1\,507\,328\,z^4 + 5\,996\,544\,z^3 - 164\,820\,480\,z^2 - 265\,648\,320\,z + 349\,781\,355\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aesq.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{21}{4}; z\right) = \left(\frac{65\,536\,z^4}{1\,786\,785} - \frac{16\,384\,z^3}{69\,615} - \frac{512\,z^2}{357} + \frac{64\,z}{17} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{4\sqrt{z}\left(65\,536\,z^4 - 1\,032\,192\,z^3 + 13\,837\,824\,z^2 - 8\,648\,640\,z - 43\,378\,335\right)\sinh\left(2\sqrt{z}\right)}{48\,243\,195} $$

07.22.03.aesr.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{21}{4}; -z\right) = \left(\frac{65\,536\,z^4}{1\,786\,785} + \frac{16\,384\,z^3}{69\,615} - \frac{512\,z^2}{357} - \frac{64\,z}{17} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{4\sqrt{z}\left(65\,536\,z^4 + 1\,032\,192\,z^3 + 13\,837\,824\,z^2 + 8\,648\,640\,z - 43\,378\,335\right)\sin\left(2\sqrt{z}\right)}{48\,243\,195} $$

07.22.03.aess.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{19}{4}; z\right) = -\frac{1}{15\,207\,885\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(262\,144\,z^5 + 393\,216\,z^4 + 19\,390\,464\,z^3 - 68\,302\,080\,z^2 + 54\,428\,220\,z - 15\,207\,885\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,048\,576\,z^4 - 7\,151\,616\,z^3 - 288\,000\,z^2 + 34\,151\,040\,z - 15\,207\,885\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(65\,536\,z^4 - 638\,976\,z^3 + 9\,661\,440\,z^2 - 9\,397\,440\,z - 15\,207\,885\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aest.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{15\,207\,885\sqrt[4]{z}}\left(\sqrt{2}\left(\left(262\,144 z^5 - 393\,216 z^4 + 19\,390\,464 z^3 + 68\,302\,080 z^2 + 54\,428\,220 z + 15\,207\,885\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(1\,048\,576 z^4 + 7\,151\,616 z^3 - 288\,000 z^2 - 34\,151\,040 z - 15\,207\,885\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4 z\left(65\,536 z^4 + 638\,976 z^3 + 9\,661\,440 z^2 + 9\,397\,440 z - 15\,207\,885\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aesu.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{17}{4}; z\right) = \frac{1}{2\,297\,295}\left(\left(-65\,536 z^4 + 114\,688 z^3 - 5\,322\,240 z^2 + 8\,648\,640 z + 2\,297\,295\right)\cosh\left(2\sqrt{z}\right) -\right.$$
$$\left.64\sqrt{z}\left(8192 z^3 - 48\,384 z^2 + 135\,135\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aesv.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{17}{4}; -z\right) = \frac{1}{2\,297\,295}\left(-\left(65\,536 z^4 + 114\,688 z^3 + 5\,322\,240 z^2 + 8\,648\,640 z - 2\,297\,295\right)\cos\left(2\sqrt{z}\right) -\right.$$
$$\left.64\sqrt{z}\left(8192 z^3 + 48\,384 z^2 - 135\,135\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aesw.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{15}{4}; z\right) = \frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(212\,992 z^4 - 728\,064 z^3 + 1\,552\,320 z^2 - 1\,067\,220 z + 266\,805\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(32\,768 z^4 + 288\,768 z^3 + 512\,640 z^2 - 2\,134\,440 z + 800\,415\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.12 z\left(45\,056 z^3 - 221\,440 z^2 + 100\,560 z + 266\,805\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aesx.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(212\,992 z^4 + 728\,064 z^3 + 1\,552\,320 z^2 + 1\,067\,220 z + 266\,805\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\right.\right.$$
$$\left(32\,768 z^4 - 288\,768 z^3 + 512\,640 z^2 + 2\,134\,440 z + 800\,415\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.12 z\left(45\,056 z^3 + 221\,440 z^2 + 100\,560 z - 266\,805\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aesy.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{13}{4}; z\right) = \frac{1}{135\,135}$$
$$\left(35\left(4096 z^3 - 14\,592 z^2 + 14\,256 z + 3861\right)\cosh\left(2\sqrt{z}\right) + 4\sqrt{z}\left(4096 z^3 + 37\,632 z^2 + 45\,360 z - 135\,135\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aesz.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{13}{4}; -z\right) =$$

$$\frac{1}{135\,135}\left(4\sqrt{z}\,\left(4096 z^3 - 37\,632 z^2 + 45\,360 z + 135\,135\right)\sin\left(2\sqrt{z}\right) - 35\left(4096 z^3 + 14\,592 z^2 + 14\,256 z - 3861\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aet0.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{11}{4}; z\right) =$$

$$-\frac{1}{53\,361\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(16\,384 z^4 + 410\,624 z^3 - 458\,304 z^2 + 252\,252 z - 53\,361\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(77\,824 z^3 - 119\,040 z^2 + 181\,104 z - 53\,361\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^3 + 47\,360 z^2 + 4656 z - 53\,361\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aet1.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{11}{4}; -z\right) =$$

$$\frac{1}{53\,361\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-16\,384 z^4 + 410\,624 z^3 + 458\,304 z^2 + 252\,252 z + 53\,361\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(77\,824 z^3 + 119\,040 z^2 + 181\,104 z + 53\,361\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^3 - 47\,360 z^2 + 4656 z + 53\,361\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aet2.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{9}{4}; z\right) =$$

$$\frac{1}{10\,395}\left(\left(-4096 z^3 - 65\,280 z^2 + 35\,280 z + 10\,395\right)\cosh\left(2\sqrt{z}\right) - 144\sqrt{z}\,\left(256 z^2 - 320 z + 315\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aet3.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{9}{4}; -z\right) = \frac{\left(4096 z^3 - 65\,280 z^2 - 35\,280 z + 10\,395\right)\cos\left(2\sqrt{z}\right) + 144\sqrt{z}\,\left(256 z^2 + 320 z + 315\right)\sin\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.aet4.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{7}{4}; z\right) =$$

$$\frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(41\,984 z^3 + 88\,704 z^2 - 30\,492 z + 4851\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(2048 z^3 + 46\,080 z^2 - 24\,024 z + 4851\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(8960 z^2 - 5856 z + 4851\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aet5.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-41\,984\,z^3+88\,704\,z^2+30\,492\,z+4851\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048\,z^3-46\,080\,z^2-24\,024\,z-4851\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(8960\,z^2+5856\,z+4851\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aet6.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{5}{4}; z\right) = \frac{5\left(1792\,z^2+480\,z+231\right)\cosh\left(2\sqrt{z}\right)+4\sqrt{z}\left(256\,z^2+4640\,z-1455\right)\sinh\left(2\sqrt{z}\right)}{1155}$$

07.22.03.aet7.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{5}{4}; -z\right) = \frac{5\left(1792\,z^2-480\,z+231\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(-256\,z^2+4640\,z+1455\right)\sin\left(2\sqrt{z}\right)}{1155}$$

07.22.03.aet8.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{3}{4}; z\right) =$$
$$-\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024\,z^3+29\,568\,z^2+8316\,z-693\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(1536\,z^2+2464\,z-231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(256\,z^2+4128\,z-693\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aet9.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024\,z^3-29\,568\,z^2+8316\,z+693\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(1536\,z^2-2464\,z-231\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(-256\,z^2+4128\,z+693\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeta.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{1}{4}; z\right) = \frac{1}{231}\left(\left(-256\,z^2-4128\,z+231\right)\cosh\left(2\sqrt{z}\right)-32\sqrt{z}\,\left(64\,z+51\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aetb.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, -\frac{1}{4}; -z\right) = \frac{1}{231}\left(\left(-256\,z^2+4128\,z+231\right)\cos\left(2\sqrt{z}\right)+32\left(51-64\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aetc.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{1}{4}; z\right) = \frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left.\left(7\left(320\,z^2+924\,z+33\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(128\,z^2+2296\,z+231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(464\,z+231\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aetd.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{1}{4}; -z\right) = \frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\right.$$
$$\left.\left(7\left(320z^2 - 924z + 33\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(128z^2 - 2296z + 231\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4(231 - 464z)\, z\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aete.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{3}{4}; z\right) = \frac{1}{231}\left(3(144z + 77)\cosh\left(2\sqrt{z}\right) + 4\sqrt{z}\,(16z + 177)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aetf.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{3}{4}; -z\right) = \frac{1}{231}\left((231 - 432z)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,(16z - 177)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aetg.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{5}{4}; z\right) =$$
$$\frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(64z^2 + 1020z + 231\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(208z + 171)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z(16z + 111)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeth.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{5}{4}; -z\right) =$$
$$\frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(64z^2 - 1020z + 231\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(208z - 171)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4(111 - 16z)\, z\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeti.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{7}{4}; z\right) = \left(\frac{16z}{77} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{80}{77}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aetj.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{7}{4}; -z\right) = \left(1 - \frac{16z}{77}\right)\cos\left(2\sqrt{z}\right) - \frac{80}{77}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aetk.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{9}{4}; z\right) =$$
$$\frac{1}{231\sqrt{2}\, z^{3/4}}\left(5\left(24\sqrt{z}\,(7z + 4)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(64z^2 + 264z - 9\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\,(20z - 3)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aetl.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{9}{4}; -z\right) =$$
$$\frac{1}{231\sqrt{2}\, z^{3/4}}\left(5\left(-24\sqrt{z}\,(7z - 4)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(64z^2 - 264z - 9\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\,(20z + 3)\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aetm.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{11}{4}; z\right) = \cosh\left(2\sqrt{z}\right) + \frac{4}{11}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aetn.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{11}{4}; -z\right) = \cos\left(2\sqrt{z}\right) - \frac{4}{11}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aeto.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{13}{4}; z\right) = \frac{1}{2464\sqrt{2}\,z^{7/4}}$$
$$\left(15\left(2\sqrt{z}\left(128z^2+160z+21\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1024z^2+96z-105\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(128z^2-128z-105\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aetp.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{13}{4}; -z\right) = -\frac{1}{2464\sqrt{2}\,z^{7/4}}\left(15\left(2\sqrt{z}\left(128z^2-160z+21\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.\left(1024z^2-96z-105\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(128z^2+128z-105\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aetq.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{15}{4}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.aetr.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{15}{4}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.aets.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{17}{4}; z\right) =$$
$$\frac{1}{78\,848\sqrt{2}\,z^{11/4}}\left(195\left(-2\sqrt{z}\left(256z^2+1680z-2079\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4096z^3+8448z^2+15\,792z-10\,395\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.14\sqrt{z}\left(256z^2+912z+1485\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aett.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{17}{4}; -z\right) =$$
$$-\frac{1}{78\,848\sqrt{2}\,z^{11/4}}\left(195\left(2\sqrt{z}\left(256z^2-1680z-2079\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4096z^3-8448z^2+15\,792z+10\,395\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-14\sqrt{z}\left(256z^2-912z+1485\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aetu.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{19}{4}; z\right) = \frac{1}{131\,072\, z^{15/4}} \left(15\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(-4096\, z^3 - 13\,312\, z^{5/2} - 36\,608\, z^2 - 82\,368\, z^{3/2} - 144\,144\, z - 180\,180\sqrt{z} + e^{4\sqrt{z}}\left(4096\, z^3 - 13\,312\, z^{5/2} + 36\,608\, z^2 - 82\,368\, z^{3/2} + 144\,144\, z - 180\,180\sqrt{z} + 135\,135\right) - 135\,135\right) + 135\,135\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 135\,135\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aetv.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{19}{4}; -z\right) = \frac{1}{32\,768\, z^{15/4}} \left(15\left(135\,135\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(52\sqrt{z}\left(256\, z^2 - 1584\, z + 3465\right)\cos\left(2\sqrt{z}\right) + \left(4096\, z^3 - 36\,608\, z^2 + 144\,144\, z - 135\,135\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.aetw.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{21}{4}; z\right) = \frac{1}{2\,523\,136\sqrt{2}\, z^{15/4}} \left(3315\left(2\sqrt{z}\left(8192\, z^3 + 96\,768\, z^2 + 376\,992\, z - 405\,405\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(49\,152\, z^3 + 437\,248\, z^2 + 1\,108\,800\, z - 675\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(8192\, z^3 + 158\,208\, z^2 + 997\,920\, z + 2\,027\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aetx.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{21}{4}; -z\right) = \frac{1}{2\,523\,136\sqrt{2}\, z^{15/4}} \left(3315\left(2\sqrt{z}\left(8192\, z^3 - 96\,768\, z^2 + 376\,992\, z + 405\,405\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(49\,152\, z^3 - 437\,248\, z^2 + 1\,108\,800\, z + 675\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-8192\, z^3 + 158\,208\, z^2 - 997\,920\, z + 2\,027\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aety.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{23}{4}; z\right) = \frac{1}{8\,388\,608\, z^{19/4}} \left(285\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(65\,536\, z^{7/2} + 458\,752\, z^3 + 2\,076\,672\, z^{5/2} + 7\,028\,736\, z^2 + 18\,120\,960\, z^{3/2} + 34\,594\,560\, z + 45\,945\,900\sqrt{z} + e^{4\sqrt{z}}\left(65\,536\, z^{7/2} - 458\,752\, z^3 + 2\,076\,672\, z^{5/2} - 7\,028\,736\, z^2 + 18\,120\,960\, z^{3/2} - 34\,594\,560\, z + 45\,945\,900\sqrt{z} - 34\,459\,425\right) + 34\,459\,425\right) + 135\,135\, e^{2\sqrt{z}}\sqrt{2\pi}\left(16\, z - 255\right)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 135\,135\, e^{2\sqrt{z}}\sqrt{2\pi}\left(16\, z - 255\right)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aetz.01

$${}_1F_2\left(\frac{15}{4}; \frac{1}{2}, \frac{23}{4}; -z\right) = \frac{1}{2\,097\,152\, z^{19/4}}$$
$$\left(285\left(135\,135\,\sqrt{\pi}\,(16z+255)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(\left(458\,752\,z^3 - 7\,028\,736\,z^2 + 34\,594\,560\,z - 34\,459\,425\right)\sin\left(2\sqrt{z}\right) - \right.\right.$$
$$\left.\left. 4\sqrt{z}\,\left(16\,384\,z^3 - 519\,168\,z^2 + 4\,530\,240\,z - 11\,486\,475\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

For fixed z and $a_1 = \frac{15}{4}$, $b_{1.} = \frac{3}{2}$

07.22.03.aeu0.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{23}{4}; z\right) = \frac{1}{349\,781\,355\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(\left(524\,288\,z^5 - 13\,959\,168\,z^4 + 67\,350\,528\,z^3 + 417\,392\,640\,z^2 - 851\,641\,560\,z + 349\,781\,355\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\,\left(458\,752\,z^4 + 16\,416\,768\,z^3 - 171\,763\,200\,z^2 - 197\,305\,920\,z + 349\,781\,355\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left. 8z\left(65\,536\,z^4 - 1\,867\,776\,z^3 + 867\,840\,z^2 + 115\,738\,560\,z + 57\,415\,365\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeu1.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{23}{4}; -z\right) = \frac{1}{349\,781\,355\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(\left(-524\,288\,z^5 - 13\,959\,168\,z^4 - 67\,350\,528\,z^3 + 417\,392\,640\,z^2 + 851\,641\,560\,z + 349\,781\,355\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\,\left(458\,752\,z^4 - 16\,416\,768\,z^3 - 171\,763\,200\,z^2 + 197\,305\,920\,z + 349\,781\,355\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left. 8z\left(65\,536\,z^4 + 1\,867\,776\,z^3 + 867\,840\,z^2 - 115\,738\,560\,z + 57\,415\,365\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeu2.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{21}{4}; z\right) = \frac{1}{96\,486\,390\sqrt{z}}\left(4\sqrt{z}\,\left(65\,536\,z^4 - 1\,622\,016\,z^3 + 5\,322\,240\,z^2 + 52\,557\,120\,z - 9\,948\,015\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left. 9\left(65\,536\,z^4 + 1\,261\,568\,z^3 - 13\,601\,280\,z^2 - 14\,857\,920\,z + 7\,571\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aeu3.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{21}{4}; -z\right) =$$
$$\frac{1}{96\,486\,390\sqrt{z}}\left(4\sqrt{z}\,\left(65\,536\,z^4 + 1\,622\,016\,z^3 + 5\,322\,240\,z^2 - 52\,557\,120\,z - 9\,948\,015\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left. 9\left(65\,536\,z^4 - 1\,261\,568\,z^3 - 13\,601\,280\,z^2 + 14\,857\,920\,z + 7\,571\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aeu4.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{19}{4}; z\right) =$$
$$-\frac{1}{15\,207\,885\sqrt[4]{z}}\left(\sqrt{2}\left(9\left(65\,536 z^4 - 126\,976 z^3 - 2\,462\,208 z^2 + 4\,268\,880 z - 1\,689\,765\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right.$$
$$\left(65\,536 z^4 - 1\,228\,800 z^3 + 6\,847\,488 z^2 + 10\,624\,320 z - 15\,207\,885\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.48 z\left(8192 z^3 + 58\,624 z^2 - 834\,240 z - 484\,155\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeu5.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{15\,207\,885\sqrt[4]{z}}\left(\sqrt{2}\left(-9\left(65\,536 z^4 + 126\,976 z^3 - 2\,462\,208 z^2 - 4\,268\,880 z - 1\,689\,765\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\right.\right.$$
$$\sqrt{z}\left(65\,536 z^4 + 1\,228\,800 z^3 + 6\,847\,488 z^2 - 10\,624\,320 z - 15\,207\,885\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.48 z\left(8192 z^3 - 58\,624 z^2 - 834\,240 z + 484\,155\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeu6.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{17}{4}; z\right) = \frac{1}{4\,594\,590\sqrt{z}}\left(\left(-65\,536 z^4 + 1\,032\,192 z^3 - 5\,322\,240 z^2 - 7\,318\,080 z + 2\,962\,575\right)\sinh\left(2\sqrt{z}\right) -\right.$$
$$\left.128\sqrt{z}\left(2048 z^3 - 83\,160 z + 10\,395\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aeu7.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{17}{4}; -z\right) = \frac{1}{4\,594\,590\sqrt{z}}\left(128\sqrt{z}\left(2048 z^3 - 83\,160 z - 10\,395\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.\left(-65\,536 z^4 - 1\,032\,192 z^3 - 5\,322\,240 z^2 + 7\,318\,080 z + 2\,962\,575\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aeu8.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768 z^4 - 153\,600 z^3 + 1\,498\,752 z^2 - 2\,134\,440 z + 800\,415\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(28\,672 z^3 - 92\,416 z^2 -\right.\right.\right.$$
$$\left.\left.\left.236\,400 z + 266\,805\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 8 z\left(4096 z^3 - 48\,384 z^2 + 252\,720 z + 176\,445\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeu9.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{15}{4}; -z\right) =$$

$$\frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768 z^4 + 153\,600 z^3 + 1\,498\,752 z^2 + 2\,134\,440 z + 800\,415\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(28\,672 z^3 + 92\,416 z^2 - 236\,400 z - 266\,805\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 8 z\left(4096 z^3 + 48\,384 z^2 + 252\,720 z - 176\,445\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeua.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{13}{4}; z\right) = \frac{1}{270\,270\sqrt{z}}$$
$$\left(4\sqrt{z}\left(4096 z^3 - 26\,880 z^2 + 166\,320 z - 10\,395\right)\cosh\left(2\sqrt{z}\right) + 21\left(4096 z^3 - 11\,520 z^2 - 23\,760 z + 7425\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aeub.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{13}{4}; -z\right) = \frac{1}{270\,270\sqrt{z}}$$
$$\left(-4\sqrt{z}\left(4096 z^3 + 26\,880 z^2 + 166\,320 z + 10\,395\right)\cos\left(2\sqrt{z}\right) - 21\left(4096 z^3 + 11\,520 z^2 - 23\,760 z - 7425\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aeuc.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{11}{4}; z\right) =$$

$$\frac{1}{53\,361\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-57\,344 z^3 + 142\,080 z^2 - 155\,232 z + 53\,361\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4096 z^3 + 2304 z^2 + 63\,024 z - 53\,361\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 16 z\left(-2816 z^2 + 7296 z + 6759\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeud.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{11}{4}; -z\right) =$$

$$\frac{1}{53\,361\sqrt[4]{z}}\left(\sqrt{2}\left(\left(57\,344 z^3 + 142\,080 z^2 + 155\,232 z + 53\,361\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4096 z^3 - 2304 z^2 + 63\,024 z + 53\,361\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 16 z\left(2816 z^2 + 7296 z - 6759\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeue.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{9}{4}; z\right) = \frac{-1536\left(16 z - 35\right)\cosh\left(2\sqrt{z}\right) z^{3/2} - \left(4096 z^3 + 3840 z^2 + 45\,360 z - 10\,395\right)\sinh\left(2\sqrt{z}\right)}{20\,790\sqrt{z}}$$

07.22.03.aeuf.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{9}{4}; -z\right) = \frac{\left(4096 z^3 - 3840 z^2 + 45\,360 z + 10\,395\right)\sin\left(2\sqrt{z}\right) - 1536 z^{3/2}\left(16 z + 35\right)\cos\left(2\sqrt{z}\right)}{20\,790\sqrt{z}}$$

07.22.03.aeug.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{7}{4}; z\right) = \frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2048z^3+24\,576z^2-16\,632z+4851\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(2304z^2-2848z+1617\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(256z^2+672z+1413\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeuh.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{7}{4}; -z\right) = \frac{1}{4851\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-2048z^3+24\,576z^2+16\,632z+4851\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(2304z^2+2848z+1617\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(256z^2-672z+1413\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeui.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{5}{4}; z\right) = \frac{4\sqrt{z}\left(256z^2+1440z+105\right)\cosh\left(2\sqrt{z}\right)+5\left(1280z^2-1248z+189\right)\sinh\left(2\sqrt{z}\right)}{2310\sqrt{z}} $$

07.22.03.aeuj.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{5}{4}; -z\right) = \frac{4\sqrt{z}\left(256z^2-1440z+105\right)\cos\left(2\sqrt{z}\right)+5\left(1280z^2+1248z+189\right)\sin\left(2\sqrt{z}\right)}{2310\sqrt{z}} $$

07.22.03.aeuk.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{3}{4}; z\right) = -\frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(3840z^2+3696z-693\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(256z^2+2592z-693\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+48z\left(64z-39\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeul.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{3}{4}; -z\right) = \frac{1}{693\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-3840z^2+3696z+693\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(256z^2-2592z-693\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+48z\left(64z+39\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeum.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{1}{4}; z\right) = \frac{\left(-256z^2-1824z+135\right)\sinh\left(2\sqrt{z}\right)-192\sqrt{z}\left(8z-1\right)\cosh\left(2\sqrt{z}\right)}{462\sqrt{z}} $$

07.22.03.aeun.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{3}{2}, -\frac{1}{4}; -z\right) = \frac{192\sqrt{z}\,(8z+1)\cos\left(2\sqrt{z}\right) + \left(-256z^2+1824z+135\right)\sin\left(2\sqrt{z}\right)}{462\sqrt{z}} $$

07.22.03.aeuo.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{1}{4}; z\right) = $$

$$ \frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(128z^2+1848z+231\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(400z+231)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 8z(16z+93)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeup.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{1}{4}; -z\right) = $$

$$ \frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(128z^2-1848z+231\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(400z-231)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 8(93-16z)\, z\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeuq.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{3}{4}; z\right) = \frac{4\sqrt{z}\,(16z+93)\cosh\left(2\sqrt{z}\right) + 3(112z+15)\sinh\left(2\sqrt{z}\right)}{462\sqrt{z}} $$

07.22.03.aeur.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{3}{4}; -z\right) = \frac{3(15-112z)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\,(16z-93)\cos\left(2\sqrt{z}\right)}{462\sqrt{z}} $$

07.22.03.aeus.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{5}{4}; z\right) = \frac{\sqrt{2}\left(3(64z+77)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(16z+111)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 144z\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{231\sqrt[4]{z}} $$

07.22.03.aeut.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{5}{4}; -z\right) = \frac{\sqrt{2}\left(-3(64z-77)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(16z-111)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 144z\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{231\sqrt[4]{z}} $$

07.22.03.aeuu.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{7}{4}; z\right) = \frac{64\sqrt{z}\,\cosh\left(2\sqrt{z}\right) + (16z+45)\sinh\left(2\sqrt{z}\right)}{154\sqrt{z}} $$

07.22.03.aeuv.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{7}{4}; -z\right) = \frac{64\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (45-16z)\sin\left(2\sqrt{z}\right)}{154\sqrt{z}} $$

07.22.03.aeuw.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{9}{4}; z\right) = \frac{5\sqrt{2}\left(\sqrt{z}\,(8z+45)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3(20z+1)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(4z+3)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{231\, z^{3/4}} $$

07.22.03.aeux.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{9}{4}; -z\right) =$$

$$-\frac{1}{231\, z^{3/4}}\left(5\sqrt{2}\left(\sqrt{z}\,(8z-45)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\,(20z-1)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\,(3-4z)\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeuy.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{11}{4}; z\right) = \frac{1}{22}\left(4\cosh\left(2\sqrt{z}\right) + \frac{9\sinh\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.aeuz.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{11}{4}; -z\right) = \frac{1}{22}\left(4\cos\left(2\sqrt{z}\right) + \frac{9\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.aev0.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{13}{4}; z\right) =$$

$$\frac{1}{1232\sqrt{2}\, z^{7/4}}\left(15\left(2\sqrt{z}\,(80z-3)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(128z^2+15\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(32z+15)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aev1.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{13}{4}; -z\right) =$$

$$-\frac{1}{1232\sqrt{2}\, z^{7/4}}\left(15\left(-2\sqrt{z}\,(80z+3)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(128z^2+15\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(32z-15)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aev2.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{15}{4}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.aev3.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{15}{4}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.aev4.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{17}{4}; z\right) =$$

$$\frac{1}{39\,424\sqrt{2}\, z^{11/4}}\left(195\left(2\sqrt{z}\,\left(256z^2+144z-189\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(256z^2+464z-315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(256z^2+624z+945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aev5.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{17}{4}; -z\right) =$$
$$\frac{1}{39\,424\sqrt{2}\,z^{11/4}}\left(195\left(2\sqrt{z}\,\left(256z^2-144z-189\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(-256z^2+464z+315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(256z^2-624z+945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aev6.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{19}{4}; z\right) = \frac{1}{65\,536\,z^{15/4}}\left(15\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(1024z^{5/2}+2816z^2+6336z^{3/2}+11\,088z+\right.\right.\right.$$
$$\left.\left.13\,860\sqrt{z}+e^{4\sqrt{z}}\left(1024z^{5/2}-2816z^2+6336z^{3/2}-11\,088z+13\,860\sqrt{z}-10\,395\right)+10\,395\right)-$$
$$\left.10\,395\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+10\,395\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aev7.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{19}{4}; -z\right) = -\frac{1}{16\,384\,z^{15/4}}$$
$$\left(15\left(10\,395\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(256z^2-1584z+3465\right)\cos\left(2\sqrt{z}\right)-11\left(256z^2-1008z+945\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aev8.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{21}{4}; z\right) = \frac{1}{1\,261\,568\sqrt{2}\,z^{15/4}}$$
$$\left(3315\left(-6\sqrt{z}\,\left(2048z^2+8512z-9009\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(8192z^3+84\,480z^2+223\,776z-135\,135\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.18\sqrt{z}\,\left(1024z^2+7168z+15\,015\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aev9.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{21}{4}; -z\right) = \frac{1}{1\,261\,568\sqrt{2}\,z^{15/4}}$$
$$\left(3315\left(6\sqrt{z}\,\left(2048z^2-8512z-9009\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(8192z^3-84\,480z^2+223\,776z+135\,135\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.18\sqrt{z}\,\left(1024z^2-7168z+15\,015\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeva.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{23}{4}; z\right) = \frac{1}{4\,194\,304\,z^{19/4}}$$
$$\left(285\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-16\,384z^3-98\,304z^{5/2}-371\,712z^2-1\,013\,760z^{3/2}-1\,995\,840z-2\,702\,700\sqrt{z}+e^{4\sqrt{z}}\left(16\,384z^3-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.98\,304z^{5/2}+371\,712z^2-1\,013\,760z^{3/2}+1\,995\,840z-2\,702\,700\sqrt{z}+2\,027\,025\right)-2\,027\,025\right)-\right.$$
$$\left.\left.10\,395\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-195)\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+10\,395\,e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-195)\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aevb.01

$${}_1F_2\left(\frac{15}{4}; \frac{3}{2}, \frac{23}{4}; -z\right) =$$
$$-\frac{1}{1\,048\,576\, z^{19/4}}\left(285\left(10\,395\sqrt{\pi}\,(16z+195)S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(12\sqrt{z}\left(8192z^2-84\,480z+225\,225\right)\cos\left(2\sqrt{z}\right)+\left(16\,384z^3-371\,712z^2+1\,995\,840z-2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{15}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.aevc.01

$${}_1F_2\left(\frac{15}{4}; \frac{5}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{116\,593\,785\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-720\,896z^4+27\,410\,432z^3+40\,803\,840z^2-384\,733\,440z+116\,593\,785\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(65\,536z^4-753\,664z^3-22\,417\,920z^2+16\,470\,720z+134\,003\,205\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1\,114\,112z^4+31\,047\,680z^3+198\,535\,680z^2-306\,351\,360z-757\,063\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aevd.01

$${}_1F_2\left(\frac{15}{4}; \frac{5}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{116\,593\,785\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-720\,896z^4-27\,410\,432z^3+40\,803\,840z^2+384\,733\,440z+116\,593\,785\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-8\sqrt{z}\left(65\,536z^4+753\,664z^3-22\,417\,920z^2-16\,470\,720z+134\,003\,205\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,114\,112z^4+31\,047\,680z^3-198\,535\,680z^2-306\,351\,360z+757\,063\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeve.01

$${}_1F_2\left(\frac{15}{4}; \frac{5}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{128\,648\,520\, z^{3/2}}\left(\left(524\,288z^5-6\,488\,064z^4-127\,733\,760z^3+74\,511\,360z^2+545\,113\,800z+204\,417\,675\right)\sinh\left(2\sqrt{z}\right)-22\sqrt{z}\left(65\,536z^4-2\,211\,840z^3-6\,289\,920z^2+18\,930\,240z+18\,583\,425\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aevf.01

$${}_1F_2\left(\frac{15}{4}; \frac{5}{2}, -\frac{21}{4}; -z\right) =$$
$$\frac{1}{128\,648\,520\, z^{3/2}}\left(22\sqrt{z}\left(65\,536z^4+2\,211\,840z^3-6\,289\,920z^2-18\,930\,240z+18\,583\,425\right)\cos\left(2\sqrt{z}\right)+\left(524\,288z^5+6\,488\,064z^4-127\,733\,760z^3-74\,511\,360z^2+545\,113\,800z-204\,417\,675\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aevg.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, -\frac{19}{4}; z\right) = \frac{1}{5\,069\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-65\,536 z^4 + 1\,024\,000 z^3 + 2\,935\,296 z^2 - 15\,916\,320 z + 5\,069\,295\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 16\right.\right. $$
$$ \sqrt{z}\left(8192 z^3 - 504\,576 z^2 + 100\,800 z + 2\,572\,605\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left.\left(-65\,536 z^4 + 876\,544 z^3 + 9\,607\,680 z^2 - 8\,961\,120 z - 26\,105\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aevh.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, -\frac{19}{4}; -z\right) = \frac{1}{5\,069\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-65\,536 z^4 - 1\,024\,000 z^3 + 2\,935\,296 z^2 + 15\,916\,320 z + 5\,069\,295\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 16\right.\right. $$
$$ \sqrt{z}\left(8192 z^3 + 504\,576 z^2 + 100\,800 z - 2\,572\,605\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left.\left(65\,536 z^4 + 876\,544 z^3 - 9\,607\,680 z^2 - 8\,961\,120 z + 26\,105\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aevi.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, -\frac{17}{4}; z\right) = \frac{1}{6\,126\,120 z^{3/2}}\left(\left(65\,536 z^4 - 6\,307\,840 z^3 + 591\,360 z^2 + 21\,067\,200 z + 7\,571\,025\right)\sinh\left(2\sqrt{z}\right) - \right. $$
$$ \left. 2\sqrt{z}\left(65\,536 z^4 - 901\,120 z^3 - 4\,139\,520 z^2 + 7\,909\,440 z + 7\,571\,025\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.aevj.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, -\frac{17}{4}; -z\right) = \frac{1}{6\,126\,120 z^{3/2}}\left(2\sqrt{z}\left(65\,536 z^4 + 901\,120 z^3 - 4\,139\,520 z^2 - 7\,909\,440 z + 7\,571\,025\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left(65\,536 z^4 + 6\,307\,840 z^3 + 591\,360 z^2 - 21\,067\,200 z + 7\,571\,025\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aevk.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, -\frac{15}{4}; z\right) = \frac{1}{266\,805\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(28\,672 z^3 + 237\,312 z^2 - 807\,408 z + 266\,805\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\left(4096 z^3 - 51\,456 z^2 - 20\,304 z + 237\,825\right)\right.\right. $$
$$ \left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(4096 z^3 + 546\,048 z^2 - 245\,520 z - 1\,044\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aevl.01

$${}_1F_2\left(\frac{15}{4};\frac{5}{2},-\frac{15}{4};-z\right)=\frac{1}{266\,805\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-28\,672z^3+237\,312z^2+807\,408z+266\,805\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(4096z^3+51\,456z^2-20\,304z-237\,825\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(4096z^3-546\,048z^2-245\,520z+1\,044\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aevm.01

$${}_1F_2\left(\frac{15}{4};\frac{5}{2},-\frac{13}{4};z\right)=\frac{1}{360\,360z^{3/2}}\left(10\sqrt{z}\left(4096z^3+59\,136z^2-70\,224z-65\,835\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(32\,768z^4-358\,400z^3-147\,840z^2+970\,200z+329\,175\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aevn.01

$${}_1F_2\left(\frac{15}{4};\frac{5}{2},-\frac{13}{4};-z\right)=\frac{1}{360\,360z^{3/2}}\left(10\sqrt{z}\left(4096z^3-59\,136z^2-70\,224z+65\,835\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(-32\,768z^4-358\,400z^3+147\,840z^2+970\,200z-329\,175\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aevo.01

$${}_1F_2\left(\frac{15}{4};\frac{5}{2},-\frac{11}{4};z\right)=$$
$$-\frac{1}{17\,787\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^3-24\,832z^2+53\,232z-17\,787\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+16\sqrt{z}\left(1280z^2+1984z-6933\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^3-37\,120z^2+1392z+49\,725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aevp.01

$${}_1F_2\left(\frac{15}{4};\frac{5}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{17\,787\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^3+24\,832z^2+53\,232z+17\,787\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+16\sqrt{z}\left(1280z^2-1984z-6933\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(4096z^3+37\,120z^2+1392z-49\,725\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aevq.01

$${}_1F_2\left(\frac{15}{4};\frac{5}{2},-\frac{9}{4};z\right)=\frac{1}{27\,720z^{3/2}}$$
$$\left(5\left(-4096z^3-5376z^2+11\,088z+3465\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(4096z^3-26\,880z^2+18\,480z+17\,325\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aevr.01

$${}_1F_2\left(\frac{15}{4};\frac{5}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{27\,720z^{3/2}}\left(5\left(-4096z^3+5376z^2+11\,088z-3465\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(4096z^3+26\,880z^2+18\,480z-17\,325\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aevs.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, -\frac{7}{4}; z\right) = \frac{1}{1617\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4352z^2-5088z+1617\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\left(256z^2-736z+1101\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(2816z^2+1248z-2925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aevt.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, -\frac{7}{4}; -z\right) = \frac{1}{1617\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4352z^2+5088z+1617\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 8\sqrt{z}\left(256z^2+736z+1101\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-2816z^2+1248z+2925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aevu.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, -\frac{5}{4}; z\right) = \frac{2\sqrt{z}\left(3328z^2-1120z-1155\right)\cosh\left(2\sqrt{z}\right) + \left(2048z^3-5120z^2+4200z+1155\right)\sinh\left(2\sqrt{z}\right)}{3080z^{3/2}} $$

07.22.03.aevv.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, -\frac{5}{4}; -z\right) = \frac{\left(2048z^3+5120z^2+4200z-1155\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\left(3328z^2+1120z-1155\right)\cos\left(2\sqrt{z}\right)}{3080z^{3/2}} $$

07.22.03.aevw.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, -\frac{3}{4}; z\right) = -\frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(256z^2+960z-231\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 16\sqrt{z}\left(128z-69\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(256z^2-384z+225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aevx.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, -\frac{3}{4}; -z\right) = \frac{1}{231\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-256z^2+960z+231\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 16\sqrt{z}\left(128z+69\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(256z^2+384z+225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aevy.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, -\frac{1}{4}; z\right) = \frac{\left(-1792z^2+480z+105\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256z^2+32z+105\right)\cosh\left(2\sqrt{z}\right)}{616z^{3/2}} $$

07.22.03.aevz.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, -\frac{1}{4}; -z\right) = \frac{2\sqrt{z}\left(256z^2-32z+105\right)\cos\left(2\sqrt{z}\right) + \left(1792z^2+480z-105\right)\sin\left(2\sqrt{z}\right)}{616z^{3/2}} $$

07.22.03.aew0.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{1}{4}; z\right) = \frac{\sqrt{2}\left((304\,z+77)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\,(16\,z+41)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + (208\,z-25)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{77\sqrt[4]{z}} $$

07.22.03.aew1.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{1}{4}; -z\right) = \frac{\sqrt{2}\left((77-304\,z)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\,(16\,z-41)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + (208\,z+25)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{77\sqrt[4]{z}} $$

07.22.03.aew2.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{3}{4}; z\right) = \frac{2\sqrt{z}\,(208\,z-15)\cosh\left(2\sqrt{z}\right) + \left(128\,z^2+120\,z+15\right)\sinh\left(2\sqrt{z}\right)}{616\,z^{3/2}} $$

07.22.03.aew3.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{3}{4}; -z\right) = \frac{2\sqrt{z}\,(208\,z+15)\cos\left(2\sqrt{z}\right) + \left(-128\,z^2+120\,z-15\right)\sin\left(2\sqrt{z}\right)}{616\,z^{3/2}} $$

07.22.03.aew4.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{5}{4}; z\right) = \frac{\sqrt{2}\left((16\,z+77)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 112\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + (16\,z+5)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{77\sqrt[4]{z}} $$

07.22.03.aew5.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{5}{4}; -z\right) = \frac{\sqrt{2}\left((77-16\,z)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 112\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + (16\,z-5)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{77\sqrt[4]{z}} $$

07.22.03.aew6.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{7}{4}; z\right) = \frac{3\left(2\sqrt{z}\,(16\,z+5)\cosh\left(2\sqrt{z}\right) + 5\,(16\,z-1)\sinh\left(2\sqrt{z}\right)\right)}{616\,z^{3/2}} $$

07.22.03.aew7.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{7}{4}; -z\right) = \frac{3\left(2\sqrt{z}\,(16\,z-5)\cos\left(2\sqrt{z}\right) + 5\,(16\,z+1)\sin\left(2\sqrt{z}\right)\right)}{616\,z^{3/2}} $$

07.22.03.aew8.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{9}{4}; z\right) = \frac{5\sqrt{2}\left(13\sqrt{z}\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\,(4\,z+3)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 7\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{77\,z^{3/4}} $$

07.22.03.aew9.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{9}{4}; -z\right) = -\frac{5\sqrt{2}\left(-13\sqrt{z}\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\,(4\,z-3)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 7\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{77\,z^{3/4}} $$

07.22.03.aewa.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{11}{4}; z\right) = \frac{3\left(10\sqrt{z}\,\cosh\left(2\sqrt{z}\right) + (8\,z-5)\sinh\left(2\sqrt{z}\right)\right)}{88\,z^{3/2}} $$

07.22.03.aewb.01

$${}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{11}{4}; -z\right) = \frac{3\left((8z+5)\sin\left(2\sqrt{z}\right) - 10\sqrt{z}\cos\left(2\sqrt{z}\right)\right)}{88 z^{3/2}}$$

07.22.03.aewc.01

$${}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{13}{4}; z\right) = \frac{45\left(2\sqrt{z}\,(8z+1) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (32z-5) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(8z-5) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{616\sqrt{2}\, z^{7/4}}$$

07.22.03.aewd.01

$${}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{13}{4}; -z\right) = \frac{45\left(2\sqrt{z}\,(8z-1) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (32z+5) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,(8z+5) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{616\sqrt{2}\, z^{7/4}}$$

07.22.03.aewe.01

$${}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{15}{4}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8 z^{3/2}}$$

07.22.03.aewf.01

$${}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{15}{4}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\cos\left(2\sqrt{z}\right)\right)}{8 z^{3/2}}$$

07.22.03.aewg.01

$${}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{17}{4}; z\right) = \frac{1}{19\,712\sqrt{2}\, z^{11/4}}$$

$$\left(585\left(2(27-16z)\sqrt{z}\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(256z^2+176z-135\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,(112z+135) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aewh.01

$${}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{17}{4}; -z\right) = \frac{1}{19\,712\sqrt{2}\, z^{11/4}}$$

$$\left(585\left(2\sqrt{z}\,(16z+27) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(256z^2-176z-135\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2(135-112z)\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aewi.01

$${}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{19}{4}; z\right) = \frac{1}{32\,768 z^{15/4}}$$

$$\left(45 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-256z^2-704z^{3/2}-1232z-1540\sqrt{z}+e^{4\sqrt{z}}\left(256z^2-704z^{3/2}+1232z-1540\sqrt{z}+1155\right)-1155\right)+\right.\right.$$
$$\left.\left.1155 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 1155 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aewj.01

$${}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{19}{4}; -z\right) =$$

$$\frac{1}{8192 z^{15/4}}\left(45\left(1155\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(44\sqrt{z}\,(16z-35)\cos\left(2\sqrt{z}\right) + \left(256z^2-1232z+1155\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.aewk.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{21}{4}; z\right) = \frac{1}{630\,784\sqrt{2}\, z^{15/4}}\left(9945\left(2\sqrt{z}\,\left(512 z^2+2400 z-2457\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-7168 z^2-20\,736 z+12\,285\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)+ 2\sqrt{z}\,\left(512 z^2+5472 z+12\,285\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aewl.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{21}{4}; -z\right) = -\frac{1}{630\,784\sqrt{2}\, z^{15/4}}\left(9945\left(2\sqrt{z}\,\left(512 z^2-2400 z-2457\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-7168 z^2+20\,736 z+12\,285\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)- 2\sqrt{z}\,\left(512 z^2-5472 z+12\,285\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aewm.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{23}{4}; z\right) = \frac{1}{2\,097\,152 z^{19/4}}\left(855 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4096 z^{5/2}+22\,528 z^2+70\,400 z^{3/2}+147\,840 z+207\,900\sqrt{z}+ e^{4\sqrt{z}}\left(4096 z^{5/2}-22\,528 z^2+70\,400 z^{3/2}-147\,840 z+207\,900\sqrt{z}-155\,925\right)+155\,925\right)+ 1155 e^{2\sqrt{z}}\sqrt{2\pi}\,(16 z-135)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-1155 e^{2\sqrt{z}}\sqrt{2\pi}\,(16 z-135)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.aewn.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{5}{2}, \frac{23}{4}; -z\right) = \frac{1}{524\,288 z^{19/4}}\left(855\left(1155\sqrt{\pi}\,(16 z+135) S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+ 2\sqrt[4]{z}\left(4\sqrt{z}\,\left(1024 z^2-17\,600 z+51\,975\right)\cos\left(2\sqrt{z}\right)-11\left(2048 z^2-13\,440 z+14\,175\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{15}{4}$, $b_{1.} = \frac{7}{2}$

07.22.03.aewo.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{7}{2}, -\frac{23}{4}; z\right) = \frac{1}{46\,637\,514\sqrt{2}\, z^{5/4}}\left(\left(8 z\left(65\,536 z^4+1\,949\,696 z^3-10\,031\,616 z^2-122\,395\,392 z-288\,137\,619\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+ 4\sqrt{z}\,\left(-2\,424\,832 z^4-15\,482\,880 z^3+221\,372\,928 z^2+1\,328\,802\,048 z+2\,997\,969\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)+ \left(524\,288 z^5+23\,265\,280 z^4-15\,224\,832 z^3-1\,635\,153\,408 z^2-7\,510\,066\,200 z-14\,989\,849\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aewp.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{46\,637\,514\sqrt{2}\, z^{5/4}}\left(\left(8z\left(65\,536z^4 - 1\,949\,696z^3 - 10\,031\,616z^2 + 122\,395\,392z - 288\,137\,619\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-2\,424\,832z^4 + 15\,482\,880z^3 + 221\,372\,928z^2 - 1\,328\,802\,048z + 2\,997\,969\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-524\,288z^5 + 23\,265\,280z^4 + 15\,224\,832z^3 - 1\,635\,153\,408z^2 + 7\,510\,066\,200z - 14\,989\,849\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aewq.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{7}{2}, -\frac{21}{4}; z\right) = \frac{1}{102\,918\,816 z^{5/2}}\left(2\sqrt{z}\left(524\,288z^5 + 15\,138\,816z^4 - 49\,876\,992z^3 - 864\,331\,776z^2 - 2\,943\,614\,520z - 3\,802\,168\,755\right)\cosh\left(2\sqrt{z}\right) + 33\left(-262\,144z^5 - 1\,179\,648z^4 + 18\,966\,528z^3 + 105\,719\,040z^2 + 242\,823\,420z + 115\,217\,235\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aewr.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{7}{2}, -\frac{21}{4}; -z\right) = \frac{1}{102\,918\,816 z^{5/2}}\left(33\left(262\,144z^5 - 1\,179\,648z^4 - 18\,966\,528z^3 + 105\,719\,040z^2 - 242\,823\,420z + 115\,217\,235\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\left(524\,288z^5 - 15\,138\,816z^4 - 49\,876\,992z^3 + 864\,331\,776z^2 - 2\,943\,614\,520z + 3\,802\,168\,755\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.aews.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{7}{2}, -\frac{19}{4}; z\right) = -\frac{1}{2\,027\,718\sqrt{2}\, z^{5/4}}\left(\left(-32z\left(22\,528z^3 - 53\,760z^2 - 1\,047\,816z - 2\,144\,457\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(65\,536z^4 + 958\,464z^3 - 6\,806\,016z^2 - 42\,761\,376z - 90\,847\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-917\,504z^4 - 1\,867\,776z^3 + 51\,722\,496z^2 + 233\,906\,400z + 454\,237\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aewt.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{7}{2}, -\frac{19}{4}; -z\right) = -\frac{1}{2\,027\,718\sqrt{2}\, z^{5/4}}\left(\left(32z\left(22\,528z^3 + 53\,760z^2 - 1\,047\,816z + 2\,144\,457\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(65\,536z^4 - 958\,464z^3 - 6\,806\,016z^2 + 42\,761\,376z - 90\,847\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-917\,504z^4 + 1\,867\,776z^3 + 51\,722\,496z^2 - 233\,906\,400z + 454\,237\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aewu.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{7}{2}, -\frac{17}{4}; z\right) = \frac{1}{4\,900\,896 z^{5/2}}\left(22\sqrt{z}\left(65\,536z^4 - 49\,152z^3 - 2\,720\,256z^2 - 8\,809\,920z - 11\,150\,055\right)\cosh\left(2\sqrt{z}\right) + \left(-262\,144z^5 - 2\,883\,584z^4 + 20\,342\,784z^3 + 117\,976\,320z^2 + 260\,443\,260z + 122\,650\,605\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aewv.01

$${}_1F_2\left(\frac{15}{4};\frac{7}{2},-\frac{17}{4};-z\right)=\frac{1}{4\,900\,896\,z^{5/2}}\left(22\sqrt{z}\left(65\,536\,z^4+49\,152\,z^3-2\,720\,256\,z^2+8\,809\,920\,z-11\,150\,055\right)\cos\left(2\sqrt{z}\right)+\left(262\,144\,z^5-2\,883\,584\,z^4-20\,342\,784\,z^3+117\,976\,320\,z^2-260\,443\,260\,z+122\,650\,605\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aeww.01

$${}_1F_2\left(\frac{15}{4};\frac{7}{2},-\frac{15}{4};z\right)=\frac{1}{106\,722\sqrt{2}\,z^{5/4}}$$
$$\left(\left(8z\left(4096z^3+768z^2-172\,368z-286\,587\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(-20\,480z^3+74\,496z^2+535\,248z+1\,044\,225\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(32\,768z^4+215\,040z^3-1\,851\,264z^2-8\,353\,800z-15\,663\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aewx.01

$${}_1F_2\left(\frac{15}{4};\frac{7}{2},-\frac{15}{4};-z\right)=\frac{1}{106\,722\sqrt{2}\,z^{5/4}}$$
$$\left(\left(-8z\left(4096z^3-768z^2-172\,368z+286\,587\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(20\,480z^3+74\,496z^2-535\,248z+1\,044\,225\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(32\,768z^4-215\,040z^3-1\,851\,264z^2+8\,353\,800z-15\,663\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aewy.01

$${}_1F_2\left(\frac{15}{4};\frac{7}{2},-\frac{13}{4};z\right)=\frac{1}{288\,288\,z^{5/2}}\left(2\sqrt{z}\left(32\,768z^4+67\,584z^3-1\,212\,288z^2-3\,686\,760z-4\,542\,615\right)\cosh\left(2\sqrt{z}\right)+\left(-212\,992z^4+709\,632z^3+4\,656\,960z^2+9\,743\,580z+4\,542\,615\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aewz.01

$${}_1F_2\left(\frac{15}{4};\frac{7}{2},-\frac{13}{4};-z\right)=\frac{1}{288\,288\,z^{5/2}}\left(2\sqrt{z}\left(32\,768z^4-67\,584z^3-1\,212\,288z^2+3\,686\,760z-4\,542\,615\right)\cos\left(2\sqrt{z}\right)+\left(-212\,992z^4-709\,632z^3+4\,656\,960z^2-9\,743\,580z+4\,542\,615\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aex0.01

$${}_1F_2\left(\frac{15}{4};\frac{7}{2},-\frac{11}{4};z\right)=$$
$$-\frac{1}{35\,574\sqrt{2}\,z^{5/4}}\left(5\left(-512z\left(16z^2-141z-168\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4096z^3-6400z^2-73\,104z-125\,307\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-20\,480z^3+74\,496z^2+350\,064z+626\,535\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aex1.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{35\,574\sqrt{2}\,z^{5/4}}\left(5\left(512\,z\left(16\,z^2+141\,z-168\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(4096\,z^3+6400\,z^2-73\,104\,z+125\,307\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(20\,480\,z^3+74\,496\,z^2-350\,064\,z+626\,535\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aex2.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, -\frac{9}{4}; z\right) = \frac{1}{22\,176\,z^{5/2}}\left(6\sqrt{z}\,\left(4096\,z^3-19\,712\,z^2-55\,440\,z-65\,835\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(-16\,384\,z^4+21\,504\,z^3+221\,760\,z^2+429\,660\,z+197\,505\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aex3.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, -\frac{9}{4}; -z\right) = \frac{1}{22\,176\,z^{5/2}}\left(\left(-16\,384\,z^4-21\,504\,z^3+221\,760\,z^2-429\,660\,z+197\,505\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.6\sqrt{z}\,\left(4096\,z^3+19\,712\,z^2-55\,440\,z+65\,835\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aex4.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, -\frac{7}{4}; z\right) = \frac{1}{3234\sqrt{2}\,z^{5/4}}\left(5\left(8\,z\left(256\,z^2-672\,z-435\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.4\sqrt{z}\,\left(256\,z^2-4320\,z-5967\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(2048\,z^3-3072\,z^2-17\,784\,z-29\,835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aex5.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{3234\sqrt{2}\,z^{5/4}}\left(5\left(8\,z\left(256\,z^2+672\,z-435\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(256\,z^2+4320\,z-5967\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(2048\,z^3+3072\,z^2-17\,784\,z+29\,835\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aex6.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{2464\,z^{5/2}}\left(2\sqrt{z}\,\left(2048\,z^3-3584\,z^2-9240\,z-10\,395\right)\cosh\left(2\sqrt{z}\right)+\left(-1024\,z^3+13\,440\,z^2+23\,100\,z+10\,395\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aex7.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, -\frac{5}{4}; -z\right) =$$
$$\frac{1}{2464\,z^{5/2}}\left(\left(1024\,z^3+13\,440\,z^2-23\,100\,z+10\,395\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(2048\,z^3+3584\,z^2-9240\,z+10\,395\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aex8.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, -\frac{3}{4}; z\right) =$$

$$-\frac{1}{462\sqrt{2}\, z^{5/4}}\left(5\left(96\, z\,(8\, z+1)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(256\, z^2-384\, z-351\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 9\,(128\, z+195)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aex9.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, -\frac{3}{4}; -z\right) = -\frac{1}{462\sqrt{2}\, z^{5/4}}$$

$$\left(5\left(-96\, z\,(8\, z-1)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(256\, z^2+384\, z-351\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 9\,(195-128\, z)\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aexa.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, -\frac{1}{4}; z\right) = -\frac{5\left(2\sqrt{z}\,\left(256\, z^2+672\, z+693\right)\cosh\left(2\sqrt{z}\right) + \left(1024\, z^3-1152\, z^2-1596\, z-693\right)\sinh\left(2\sqrt{z}\right)\right)}{2464\, z^{5/2}}$$

07.22.03.aexb.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, -\frac{1}{4}; -z\right) = \frac{5\left(\left(1024\, z^3+1152\, z^2-1596\, z+693\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(256\, z^2-672\, z+693\right)\cos\left(2\sqrt{z}\right)\right)}{2464\, z^{5/2}}$$

07.22.03.aexc.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{1}{4}; z\right) =$$

$$\frac{1}{154\sqrt{2}\, z^{5/4}}\left(5\left(8\, z\,(16\, z+5)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(80\, z+27)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(128\, z^2-104\, z-135\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aexd.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{1}{4}; -z\right) =$$

$$\frac{1}{154\sqrt{2}\, z^{5/4}}\left(5\left(-8\, z\,(16\, z-5)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(80\, z-27)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(128\, z^2+104\, z-135\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aexe.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{3}{4}; z\right) = \frac{5\left(2\sqrt{z}\,\left(128\, z^2-72\, z-63\right)\cosh\left(2\sqrt{z}\right) + 3\left(64\, z^2+52\, z+21\right)\sinh\left(2\sqrt{z}\right)\right)}{2464\, z^{5/2}}$$

07.22.03.aexf.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{3}{4}; -z\right) = \frac{5\left(2\sqrt{z}\,\left(128\, z^2+72\, z-63\right)\cos\left(2\sqrt{z}\right) + 3\left(64\, z^2-52\, z+21\right)\sin\left(2\sqrt{z}\right)\right)}{2464\, z^{5/2}}$$

07.22.03.aexg.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{5}{4}; z\right) = \frac{5\left(64\, z\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(16\, z-3)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + (16\, z+15)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{154\sqrt{2}\, z^{5/4}}$$

07.22.03.aexh.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{5}{4}; -z\right) = -\frac{5\left(-64\,z\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(16\,z+3)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + (16\,z-15)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{154\sqrt{2}\,z^{5/4}}$$

07.22.03.aexi.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{7}{4}; z\right) = \frac{15\left(2\sqrt{z}\,(16\,z+9)\cosh\left(2\sqrt{z}\right) + \left(64\,z^2-28\,z-9\right)\sinh\left(2\sqrt{z}\right)\right)}{2464\,z^{5/2}}$$

07.22.03.aexj.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{7}{4}; -z\right) = \frac{15\left(\left(64\,z^2+28\,z-9\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,(16\,z-9)\cos\left(2\sqrt{z}\right)\right)}{2464\,z^{5/2}}$$

07.22.03.aexk.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{9}{4}; z\right) = \frac{25\left(8\,z\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + (8\,z-3)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{154\sqrt{2}\,z^{5/4}}$$

07.22.03.aexl.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{9}{4}; -z\right) = \frac{25\left(8\,z\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - (8\,z+3)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{154\sqrt{2}\,z^{5/4}}$$

07.22.03.aexm.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{11}{4}; z\right) = \frac{15\left(2\sqrt{z}\,(8\,z-3)\cosh\left(2\sqrt{z}\right) + (3-4\,z)\sinh\left(2\sqrt{z}\right)\right)}{352\,z^{5/2}}$$

07.22.03.aexn.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{11}{4}; -z\right) = -\frac{15\left(2\sqrt{z}\,(8\,z+3)\cos\left(2\sqrt{z}\right) - (4\,z+3)\sin\left(2\sqrt{z}\right)\right)}{352\,z^{5/2}}$$

07.22.03.aexo.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{13}{4}; z\right) = \frac{225\left(2\sqrt{z}\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (8\,z-5)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{308\sqrt{2}\,z^{7/4}}$$

07.22.03.aexp.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{13}{4}; -z\right) = \frac{225\left(-2\sqrt{z}\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (8\,z+5)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{308\sqrt{2}\,z^{7/4}}$$

07.22.03.aexq.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{15}{4}; z\right) = \frac{15\left((4\,z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.aexr.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{15}{4}; -z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4\,z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.aexs.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{17}{4}; z\right) =$$

$$\frac{1}{9856\sqrt{2}\, z^{11/4}}\left(2925\left(2\sqrt{z}\,(16z-9)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (45-112z)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(16z+45)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aext.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{17}{4}; -z\right) =$$

$$-\frac{1}{9856\sqrt{2}\, z^{11/4}}\left(2925\left(2\sqrt{z}\,(16z+9)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - (112z+45)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2(45-16z)\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aexu.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{19}{4}; z\right) =$$

$$\frac{1}{16384\, z^{15/4}}\left(225\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(64z^{3/2}+208z+308\sqrt{z}\right) + e^{4\sqrt{z}}\left(64z^{3/2}-208z+308\sqrt{z}-231\right)+231\right) - \right.$$
$$\left. 231\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 231\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)$$

07.22.03.aexv.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{19}{4}; -z\right) = \frac{225\left(2\sqrt[4]{z}\left(4\sqrt{z}\,(16z-77)\cos\left(2\sqrt{z}\right) + (231-208z)\sin\left(2\sqrt{z}\right)\right) - 231\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)}{4096\, z^{15/4}}$$

07.22.03.aexw.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{21}{4}; z\right) = \frac{1}{315392\sqrt{2}\, z^{15/4}}$$

$$\left(49725\left(6(117-128z)\sqrt{z}\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(512z^2+3168z-1755\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\,(64z+195)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aexx.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{21}{4}; -z\right) = -\frac{1}{315392\sqrt{2}\, z^{15/4}}\left(49725\right.$$

$$\left.\left(6\sqrt{z}\,(128z+117)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(512z^2-3168z-1755\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 18(195-64z)\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aexy.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{23}{4}; z\right) = \frac{1}{1048576\, z^{19/4}}\left(4275\, e^{-2\sqrt{z}}\right.$$
$$\left(4\sqrt[4]{z}\left(-1024z^2-5632z^{3/2}-14784z-23100\sqrt{z}\right) + e^{4\sqrt{z}}\left(1024z^2-5632z^{3/2}+14784z-23100\sqrt{z}+17325\right) - \right.$$
$$\left.\left. 17325\right) - 231\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-75)\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 231\, e^{2\sqrt{z}}\sqrt{2\pi}\,(16z-75)\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)$$

07.22.03.aexz.01

$${}_1F_2\left(\frac{15}{4}; \frac{7}{2}, \frac{23}{4}; -z\right) = \frac{1}{262\,144\, z^{19/4}}$$
$$\left(4275\left(2\sqrt[4]{z}\left(44\sqrt{z}\,(128z-525)\cos\left(2\sqrt{z}\right)+\left(1024z^2-14\,784z+17\,325\right)\sin\left(2\sqrt{z}\right)\right)-231\sqrt{\pi}\,(16z+75)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)$$

For fixed z and $a_1 = \frac{15}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.aey0.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{26\,650\,008\sqrt{2}\, z^{9/4}}\left(\left(-4z\left(3\,866\,624z^4+162\,054\,144z^3+2\,673\,151\,488z^2+25\,835\,838\,336z+110\,924\,889\,075\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(524\,288z^5+65\,863\,680z^4+1\,702\,342\,656z^3+23\,079\,200\,256z^2+178\,545\,767\,400z+554\,624\,445\,375\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-13\left(1\,310\,720z^5+66\,060\,288z^4+1\,267\,402\,752z^3+\right.$$
$$\left.\left.14\,311\,987\,200z^2+87\,632\,968\,500z+213\,317\,094\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aey1.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{26\,650\,008\sqrt{2}\, z^{9/4}}\left(\left(4z\left(3\,866\,624z^4-162\,054\,144z^3+2\,673\,151\,488z^2-25\,835\,838\,336z+110\,924\,889\,075\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(524\,288z^5-65\,863\,680z^4+1\,702\,342\,656z^3-23\,079\,200\,256z^2+178\,545\,767\,400z-554\,624\,445\,375\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-13\left(1\,310\,720z^5-66\,060\,288z^4+1\,267\,402\,752z^3-\right.$$
$$\left.\left.14\,311\,987\,200z^2+87\,632\,968\,500z-213\,317\,094\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aey2.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{58\,810\,752\, z^{7/2}}\left(\left(2\,097\,152z^6+224\,919\,552z^5+5\,211\,537\,408z^4+65\,122\,928\,640z^3+459\,203\,865\,120z^2+\right.\right.$$
$$\left.1\,338\,363\,401\,760z+665\,379\,532\,125\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\left(4\,980\,736z^5+200\,409\,088z^4+\right.$$
$$\left.\left.3\,265\,726\,464z^3+31\,398\,554\,880z^2+150\,396\,897\,420z+221\,793\,177\,375\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aey3.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, -\frac{21}{4}; -z\right) =$$
$$\frac{1}{58\,810\,752\, z^{7/2}}\left(\left(-2\,097\,152\, z^6 + 224\,919\,552\, z^5 - 5\,211\,537\,408\, z^4 + 65\,122\,928\,640\, z^3 - 459\,203\,865\,120\, z^2 + 1\,338\,363\,401\,760\, z - 665\,379\,532\,125\right)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(4\,980\,736\, z^5 - 200\,409\,088\, z^4 + 3\,265\,726\,464\, z^3 - 31\,398\,554\,880\, z^2 + 150\,396\,897\,420\, z - 221\,793\,177\,375\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aey4.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, -\frac{19}{4}; z\right) =$$
$$-\frac{1}{1\,158\,696\sqrt{2}\, z^{9/4}}\left(\left(4\, z\left(65\,536\, z^4 + 4\,472\,832\, z^3 + 74\,059\,776\, z^2 + 701\,975\,232\, z + 2\,997\,969\,975\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(524\,288\, z^4 + 15\,826\,944\, z^3 + 211\,002\,624\, z^2 + 1\,615\,068\,000\, z + 4\,996\,616\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(262\,144\, z^5 + 22\,806\,528\, z^4 + 456\,486\,912\, z^3 + 5\,079\,110\,400\, z^2 + 30\,888\,175\,500\, z + 74\,949\,249\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aey5.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{1\,158\,696\sqrt{2}\, z^{9/4}}\left(\left(4\, z\left(65\,536\, z^4 - 4\,472\,832\, z^3 + 74\,059\,776\, z^2 - 701\,975\,232\, z + 2\,997\,969\,975\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(524\,288\, z^4 - 15\,826\,944\, z^3 + 211\,002\,624\, z^2 - 1\,615\,068\,000\, z + 4\,996\,616\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-262\,144\, z^5 + 22\,806\,528\, z^4 - 456\,486\,912\, z^3 + 5\,079\,110\,400\, z^2 - 30\,888\,175\,500\, z + 74\,949\,249\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aey6.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, -\frac{17}{4}; z\right) = \frac{1}{2\,800\,512\, z^{7/2}}$$
$$\left(11\left(524\,288\, z^5 + 13\,959\,168\, z^4 + 171\,601\,920\, z^3 + 1\,198\,149\,120\, z^2 + 3\,478\,817\,160\, z + 1\,728\,258\,525\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(262\,144\, z^5 + 17\,301\,504\, z^4 + 286\,758\,912\, z^3 + 2\,713\,455\,360\, z^2 + 12\,919\,197\,060\, z + 19\,010\,843\,775\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aey7.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, -\frac{17}{4}; -z\right) = \frac{1}{2\,800\,512\, z^{7/2}}$$
$$\left(11\left(524\,288\, z^5 - 13\,959\,168\, z^4 + 171\,601\,920\, z^3 - 1\,198\,149\,120\, z^2 + 3\,478\,817\,160\, z - 1\,728\,258\,525\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(262\,144\, z^5 - 17\,301\,504\, z^4 + 286\,758\,912\, z^3 - 2\,713\,455\,360\, z^2 + 12\,919\,197\,060\, z - 19\,010\,843\,775\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aey8.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{9}{2}, -\frac{15}{4}; z\right) = \frac{1}{60\,984\sqrt{2}\, z^{9/4}}\left(\left(-12 z \left(45\,056 z^3 + 775\,936 z^2 + 7\,136\,976 z + 30\,282\,525\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,768 z^4 + 1\,492\,992 z^3 + 19\,571\,328 z^2 + 147\,583\,800 z + 454\,237\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 3\left(212\,992 z^4 + 4\,760\,576 z^3 + 51\,979\,200 z^2 + 313\,267\,500 z + 757\,063\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aey9.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{60\,984\sqrt{2}\, z^{9/4}}\left(\left(-12 z \left(45\,056 z^3 - 775\,936 z^2 + 7\,136\,976 z - 30\,282\,525\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(32\,768 z^4 - 1\,492\,992 z^3 + 19\,571\,328 z^2 - 147\,583\,800 z + 454\,237\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(212\,992 z^4 - 4\,760\,576 z^3 + 51\,979\,200 z^2 - 313\,267\,500 z + 757\,063\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeya.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{9}{2}, -\frac{13}{4}; z\right) = \frac{1}{164\,736 z^{7/2}}\left(\left(131\,072 z^5 + 5\,136\,384 z^4 + 62\,092\,800 z^3 + 427\,664\,160 z^2 + 1\,235\,591\,280 z + 613\,253\,025\right)\sinh\left(2\sqrt{z}\right) - 66\sqrt{z}\left(16\,384 z^4 + 289\,792 z^3 + 2\,681\,280 z^2 + 12\,664\,260 z + 18\,583\,425\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.aeyb.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{9}{2}, -\frac{13}{4}; -z\right) = \frac{1}{164\,736 z^{7/2}}\left(66\sqrt{z}\left(16\,384 z^4 - 289\,792 z^3 + 2\,681\,280 z^2 - 12\,664\,260 z + 18\,583\,425\right)\cos\left(2\sqrt{z}\right) + \left(131\,072 z^5 - 5\,136\,384 z^4 + 62\,092\,800 z^3 - 427\,664\,160 z^2 + 1\,235\,591\,280 z - 613\,253\,025\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aeyc.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{9}{2}, -\frac{11}{4}; z\right) = -\frac{1}{20\,328\sqrt{2}\, z^{9/4}}\left(5\left(4 z\left(4096 z^3 + 85\,248 z^2 + 744\,240 z + 3\,132\,675\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(53\,248 z^3 + 695\,040 z^2 + 5\,123\,664 z + 15\,663\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(16\,384 z^4 + 513\,024 z^3 + 5\,473\,728 z^2 + 32\,579\,820 z + 78\,316\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeyd.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{9}{2}, -\frac{11}{4}; -z\right) = -\frac{1}{20\,328\sqrt{2}\, z^{9/4}}\left(5\left(4 z\left(4096 z^3 - 85\,248 z^2 + 744\,240 z - 3\,132\,675\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(53\,248 z^3 - 695\,040 z^2 + 5\,123\,664 z - 15\,663\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-16\,384 z^4 + 513\,024 z^3 - 5\,473\,728 z^2 + 32\,579\,820 z - 78\,316\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeye.01

$${}_1F_2\left(\frac{15}{4};\frac{9}{2},-\frac{9}{4};z\right)=\frac{1}{12\,672\,z^{7/2}}\left(3\left(65\,536\,z^4+788\,480\,z^3+5\,322\,240\,z^2+15\,273\,720\,z+7\,571\,025\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(16\,384\,z^4+371\,712\,z^3+3\,326\,400\,z^2+15\,537\,060\,z+22\,713\,075\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aeyf.01

$${}_1F_2\left(\frac{15}{4};\frac{9}{2},-\frac{9}{4};-z\right)=\frac{1}{12\,672\,z^{7/2}}\left(2\sqrt{z}\left(16\,384\,z^4-371\,712\,z^3+3\,326\,400\,z^2-15\,537\,060\,z+22\,713\,075\right)\cos\left(2\sqrt{z}\right)-3\left(65\,536\,z^4-788\,480\,z^3+5\,322\,240\,z^2-15\,273\,720\,z+7\,571\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aeyg.01

$${}_1F_2\left(\frac{15}{4};\frac{9}{2},-\frac{7}{4};z\right)=\frac{1}{1848\sqrt{2}\,z^{9/4}}\left(5\left(-12\,z\left(1280\,z^2+10\,016\,z+41\,769\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048\,z^3+29\,184\,z^2+206\,856\,z+626\,535\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-3\left(7168\,z^3+74\,880\,z^2+437\,580\,z+1\,044\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeyh.01

$${}_1F_2\left(\frac{15}{4};\frac{9}{2},-\frac{7}{4};-z\right)=\frac{1}{1848\sqrt{2}\,z^{9/4}}\left(5\left(12\,z\left(1280\,z^2-10\,016\,z+41\,769\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048\,z^3-29\,184\,z^2+206\,856\,z-626\,535\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+3\left(-7168\,z^3+74\,880\,z^2-437\,580\,z+1\,044\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeyi.01

$${}_1F_2\left(\frac{15}{4};\frac{9}{2},-\frac{5}{4};z\right)=\frac{1}{1408\,z^{7/2}}\left(\left(8192\,z^4+107\,520\,z^3+702\,240\,z^2+1\,995\,840\,z+987\,525\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(17\,408\,z^3+147\,840\,z^2+679\,140\,z+987\,525\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aeyj.01

$${}_1F_2\left(\frac{15}{4};\frac{9}{2},-\frac{5}{4};-z\right)=\frac{1}{1408\,z^{7/2}}\left(\left(-8192\,z^4+107\,520\,z^3-702\,240\,z^2+1\,995\,840\,z-987\,525\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(17\,408\,z^3-147\,840\,z^2+679\,140\,z-987\,525\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aeyk.01

$${}_1F_2\left(\frac{15}{4};\frac{9}{2},-\frac{3}{4};z\right)=-\frac{1}{264\sqrt{2}\,z^{9/4}}\left(5\left(4\,z\left(256\,z^2+1440\,z+5967\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(512\,z^2+3328\,z+9945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(1024\,z^3+11\,136\,z^2+63\,180\,z+149\,175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeyl.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{264\sqrt{2}\, z^{9/4}}\left(5\left(4z\left(256z^2-1440z+5967\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(512z^2-3328z+9945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-1024z^3+11\,136z^2-63\,180z+149\,175\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeym.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, -\frac{1}{4}; z\right) = -\frac{1}{1408\, z^{7/2}}$$
$$\left(5\left(2\sqrt{z}\,\left(1024z^3+8064z^2+36\,036z+51\,975\right)\cosh\left(2\sqrt{z}\right)-3\left(2048z^3+12\,544z^2+35\,112z+17\,325\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aeyn.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, -\frac{1}{4}; -z\right) = -\frac{1}{1408\, z^{7/2}}$$
$$\left(5\left(2\sqrt{z}\,\left(1024z^3-8064z^2+36\,036z-51\,975\right)\cos\left(2\sqrt{z}\right)+3\left(-2048z^3+12\,544z^2-35\,112z+17\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aeyo.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{1}{4}; z\right) = \frac{1}{88\sqrt{2}\, z^{9/4}}$$
$$\left(5\left(-4z\left(80z+351\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(128z^2+600z+1755\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\left(704z^2+3780z+8775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeyp.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{1}{4}; -z\right) = -\frac{1}{88\sqrt{2}\, z^{9/4}}\left(5\left(4z\left(80z-351\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\,\left(128z^2-600z+1755\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-704z^2+3780z-8775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeyq.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{3}{4}; z\right) = \frac{5\left(\left(512z^3+2592z^2+7056z+3465\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,\left(192z^2+812z+1155\right)\cosh\left(2\sqrt{z}\right)\right)}{1408\, z^{7/2}}$$

07.22.03.aeyr.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{3}{4}; -z\right) = \frac{5\left(6\sqrt{z}\,\left(192z^2-812z+1155\right)\cos\left(2\sqrt{z}\right)+\left(512z^3-2592z^2+7056z-3465\right)\sin\left(2\sqrt{z}\right)\right)}{1408\, z^{7/2}}$$

07.22.03.aeys.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{5}{4}; z\right) =$$
$$\frac{1}{88\sqrt{2}\, z^{9/4}}\left(5\left(4z\left(16z+27\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(16z+45\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(64z^2+300z+675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeyt.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{5}{4}; -z\right) = \frac{1}{88\sqrt{2}\, z^{9/4}}\left(5\left(4z(16z-27) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12(45-16z)\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-64z^2+300z-675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aeyu.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{7}{4}; z\right) = \frac{15\left(2\sqrt{z}\left(64z^2+228z+315\right)\cosh\left(2\sqrt{z}\right) - \left(256z^2+648z+315\right)\sinh\left(2\sqrt{z}\right)\right)}{1408\, z^{7/2}} $$

07.22.03.aeyv.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{7}{4}; -z\right) = -\frac{15\left(2\sqrt{z}\left(64z^2-228z+315\right)\cos\left(2\sqrt{z}\right) + \left(-256z^2+648z-315\right)\sin\left(2\sqrt{z}\right)\right)}{1408\, z^{7/2}} $$

07.22.03.aeyw.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{9}{4}; z\right) = \frac{25\left(-12z\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(8z+15) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 3(12z+25) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{88\sqrt{2}\, z^{9/4}} $$

07.22.03.aeyx.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{9}{4}; -z\right) = \frac{25\left(12z\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(8z-15) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 3(25-12z) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{88\sqrt{2}\, z^{9/4}} $$

07.22.03.aeyy.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{11}{4}; z\right) = \frac{105\left(\left(32z^2+96z+45\right)\sinh\left(2\sqrt{z}\right) - 18\sqrt{z}\,(4z+5)\cosh\left(2\sqrt{z}\right)\right)}{1408\, z^{7/2}} $$

07.22.03.aeyz.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{11}{4}; -z\right) = -\frac{105\left(18\sqrt{z}\,(4z-5)\cos\left(2\sqrt{z}\right) + \left(32z^2-96z+45\right)\sin\left(2\sqrt{z}\right)\right)}{1408\, z^{7/2}} $$

07.22.03.aez0.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{13}{4}; z\right) = \frac{225\left(4z\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 16\sqrt{z}\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + (4z+15) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{88\sqrt{2}\, z^{9/4}} $$

07.22.03.aez1.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{13}{4}; -z\right) = -\frac{225\left(4z\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 16\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + (15-4z) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{88\sqrt{2}\, z^{9/4}} $$

07.22.03.aez2.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{15}{4}; z\right) = \frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right) - 3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}} $$

07.22.03.aez3.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{15}{4}; -z\right) = \frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right) + 3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}} $$

07.22.03.aez4.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{17}{4}; z\right) = \frac{2925\left(-18\sqrt{z}\ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (16z+45)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 30\sqrt{z}\ I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{704\sqrt{2}\ z^{11/4}}$$

07.22.03.aez5.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{17}{4}; -z\right) = -\frac{2925\left(18\sqrt{z}\ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (16z-45)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 30\sqrt{z}\ J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{704\sqrt{2}\ z^{11/4}}$$

07.22.03.aez6.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{19}{4}; z\right) =$$

$$\frac{1}{8192\, z^{15/4}}\left(1575\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-16z-68\sqrt{z}+e^{4\sqrt{z}}\left(16z-68\sqrt{z}+111\right)-111\right)+231\, e^{2\sqrt{z}}\ \sqrt{2\pi}\ \operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)-\right.\right.$$

$$\left.\left.231\, e^{2\sqrt{z}}\ \sqrt{2\pi}\ \operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.aez7.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{19}{4}; -z\right) = \frac{1575\left(231\sqrt{\pi}\ S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(68\sqrt{z}\cos\left(2\sqrt{z}\right) + (16z-111)\sin\left(2\sqrt{z}\right)\right)\right)}{2048\, z^{15/4}}$$

07.22.03.aez8.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{21}{4}; z\right) =$$

$$\frac{1}{22\,528\sqrt{2}\ z^{15/4}}\left(49\,725\left(2\sqrt{z}\ (32z-117)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 9\,(64z-65)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\ (32z+585)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aez9.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{21}{4}; -z\right) =$$

$$\frac{1}{22\,528\sqrt{2}\ z^{15/4}}\left(49\,725\left(2\sqrt{z}\ (32z+117)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 9\,(64z+65)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\,(585-32z)\sqrt{z}\ J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aeza.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{23}{4}; z\right) =$$

$$\frac{1}{524\,288\, z^{19/4}}\left(29\,925\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(256z^{3/2}+1536z+4620\sqrt{z}+e^{4\sqrt{z}}\left(256z^{3/2}-1536z+4620\sqrt{z}-3465\right)+3465\right)+\right.\right.$$

$$\left.\left.231\, e^{2\sqrt{z}}\ \sqrt{2\pi}\ (16z-15)\operatorname{erf}\left(\sqrt{2}\ \sqrt[4]{z}\right)-231\, e^{2\sqrt{z}}\ \sqrt{2\pi}\ (16z-15)\operatorname{erfi}\left(\sqrt{2}\ \sqrt[4]{z}\right)\right)\right)$$

07.22.03.aezb.01

$${}_1F_2\left(\frac{15}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) =$$

$$\frac{1}{131\,072\, z^{19/4}}\left(29\,925\left(231\sqrt{\pi}\ (16z+15)\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(3\,(512z-1155)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\ (64z-1155)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{15}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.aezc.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{11\,844\,448\sqrt{2}\, z^{13/4}} $$
$$ \left(\left(4z\left(524\,288 z^5 + 129\,826\,816 z^4 + 6\,901\,665\,792 z^3 + 171\,216\,105\,984 z^2 + 2\,136\,331\,197\,000 z + 10\,611\,814\,388\,175\right)\right.\right. $$
$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(23\,330\,816 z^5 + 2\,335\,965\,184 z^4 + 86\,610\,929\,664 z^3 + \right. $$
$$ \left. 1\,644\,288\,307\,200 z^2 + 15\,398\,017\,935\,300 z + 53\,059\,071\,940\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(2\,097\,152 z^6 + 590\,872\,576 z^5 + 35\,067\,346\,944 z^4 + 972\,154\,982\,400 z^3 + 14\,258\,789\,344\,800 z^2 + \right. $$
$$ \left.\left. 100\,571\,899\,428\,000 z + 265\,295\,359\,704\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.aezd.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{11\,844\,448\sqrt{2}\, z^{13/4}} $$
$$ \left(\left(-4z\left(524\,288 z^5 - 129\,826\,816 z^4 + 6\,901\,665\,792 z^3 - 171\,216\,105\,984 z^2 + 2\,136\,331\,197\,000 z - 10\,611\,814\,388\,175\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(23\,330\,816 z^5 - 2\,335\,965\,184 z^4 + 86\,610\,929\,664 z^3 - \right. $$
$$ \left. 1\,644\,288\,307\,200 z^2 + 15\,398\,017\,935\,300 z - 53\,059\,071\,940\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(2\,097\,152 z^6 - 590\,872\,576 z^5 + 35\,067\,346\,944 z^4 - 972\,154\,982\,400 z^3 + 14\,258\,789\,344\,800 z^2 - \right. $$
$$ \left.\left. 100\,571\,899\,428\,000 z + 265\,295\,359\,704\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.aeze.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{11}{2}, -\frac{21}{4}; z\right) = $$
$$ \frac{1}{26\,138\,112 z^{9/2}}\left(2\sqrt{z}\left(2\,097\,152 z^6 + 486\,014\,976 z^5 + 24\,589\,221\,888 z^4 + 586\,106\,357\,760 z^3 + 7\,178\,494\,609\,440 z^2 + \right.\right. $$
$$ \left. 39\,035\,599\,218\,000 z + 60\,549\,537\,423\,375\right)\cosh\left(2\sqrt{z}\right) - \left(87\,031\,808 z^6 + 7\,751\,073\,792 z^5 + 260\,491\,714\,560 z^4 + \right. $$
$$ \left.\left. 4\,479\,527\,162\,880 z^3 + 37\,697\,235\,816\,240 z^2 + 119\,768\,315\,782\,500 z + 60\,549\,537\,423\,375\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aezf.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{11}{2}, -\frac{21}{4}; -z\right) = $$
$$ \frac{1}{26\,138\,112 z^{9/2}}\left(2\sqrt{z}\left(2\,097\,152 z^6 - 486\,014\,976 z^5 + 24\,589\,221\,888 z^4 - 586\,106\,357\,760 z^3 + 7\,178\,494\,609\,440 z^2 - \right.\right. $$
$$ \left. 39\,035\,599\,218\,000 z + 60\,549\,537\,423\,375\right)\cos\left(2\sqrt{z}\right) + \left(-87\,031\,808 z^6 + 7\,751\,073\,792 z^5 - 260\,491\,714\,560 z^4 + \right. $$
$$ \left.\left. 4\,479\,527\,162\,880 z^3 - 37\,697\,235\,816\,240 z^2 + 119\,768\,315\,782\,500 z - 60\,549\,537\,423\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aezg.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{514\,976\sqrt{2}\,z^{13/4}}\left(\left(28z\left(327\,680z^4+21\,983\,232z^3+577\,004\,544z^2+7\,360\,095\,600z+36\,974\,963\,025\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(262\,144z^5+47\,710\,208z^4+1\,988\,947\,968z^3+39\,159\,187\,200z^2+372\,636\,564\,300z+1\,294\,123\,705\,875\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(9\,961\,472z^5+766\,230\,528z^4+22\,720\,051\,200z^3+\right.$$
$$\left.\left.\left.341\,748\,388\,800z^2+2\,438\,348\,913\,000z+6\,470\,618\,529\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aezh.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{514\,976\sqrt{2}\,z^{13/4}}\left(\left(28z\left(327\,680z^4-21\,983\,232z^3+577\,004\,544z^2-7\,360\,095\,600z+36\,974\,963\,025\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(262\,144z^5-47\,710\,208z^4+1\,988\,947\,968z^3-39\,159\,187\,200z^2+372\,636\,564\,300z-1\,294\,123\,705\,875\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-9\,961\,472z^5+766\,230\,528z^4-22\,720\,051\,200z^3+\right.$$
$$\left.\left.\left.341\,748\,388\,800z^2-2\,438\,348\,913\,000z+6\,470\,618\,529\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aezi.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{17}{4};z\right)=\frac{1}{1\,244\,672\,z^{9/2}}$$
$$\left(2\sqrt{z}\left(8\,912\,896z^5+571\,670\,528z^4+14\,471\,761\,920z^3+181\,413\,872\,640z^2+997\,013\,140\,200z+1\,552\,552\,241\,625\right)\right.$$
$$\cosh\left(2\sqrt{z}\right)-\left(1\,048\,576z^6+167\,247\,872z^5+6\,292\,070\,400z^4+112\,156\,154\,880z^3+\right.$$
$$\left.\left.958\,746\,151\,440z^2+3\,067\,082\,795\,700z+1\,552\,552\,241\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aezj.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{1\,244\,672\,z^{9/2}}\left(\left(-1\,048\,576z^6+167\,247\,872z^5-6\,292\,070\,400z^4+112\,156\,154\,880z^3-958\,746\,151\,440z^2+\right.\right.$$
$$3\,067\,082\,795\,700z-1\,552\,552\,241\,625\left.\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(8\,912\,896z^5-571\,670\,528z^4+\right.$$
$$\left.\left.14\,471\,761\,920z^3-181\,413\,872\,640z^2+997\,013\,140\,200z-1\,552\,552\,241\,625\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aezk.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{27\,104\sqrt{2}\,z^{13/4}}\left(\left(4z\left(32\,768z^4+3\,655\,680z^3+104\,533\,632z^2+1\,372\,807\,800z+6\,995\,263\,275\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(966\,656z^4+49\,523\,712z^3+1\,026\,446\,400z^2+9\,973\,044\,900z+34\,976\,316\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(131\,072z^5+$$
$$\left.\left.17\,620\,992z^4+580\,339\,200z^3+9\,033\,242\,400z^2+65\,410\,254\,000z+174\,881\,581\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aezl.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{27\,104\sqrt{2}\,z^{13/4}}\left(\left(4z\left(32\,768z^4-3\,655\,680z^3+104\,533\,632z^2-1\,372\,807\,800z+6\,995\,263\,275\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(966\,656z^4-49\,523\,712z^3+1\,026\,446\,400z^2-9\,973\,044\,900z+34\,976\,316\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(-131\,072z^5+17\,620\,992z^4-580\,339\,200z^3+9\,033\,242\,400z^2-65\,410\,254\,000z+174\,881\,581\,875\right)$$
$$\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aezm.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{13}{4};z\right)=\frac{1}{73\,216z^{9/2}}$$
$$\left(2\sqrt{z}\left(131\,072z^5+14\,147\,584z^4+393\,254\,400z^3+5\,087\,728\,800z^2+28\,345\,917\,600z+44\,358\,635\,475\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.55\left(65\,536z^5+3\,010\,560z^4+56\,485\,632z^3+492\,915\,024z^2+1\,590\,741\,180z+806\,520\,645\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aezn.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{73\,216z^{9/2}}\left(55\left(65\,536z^5-3\,010\,560z^4+56\,485\,632z^3-492\,915\,024z^2+1\,590\,741\,180z-806\,520\,645\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(131\,072z^5-14\,147\,584z^4+393\,254\,400z^3-5\,087\,728\,800z^2+28\,345\,917\,600z-44\,358\,635\,475\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aezo.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{11}{4};z\right)=-\frac{1}{27\,104\sqrt{2}\,z^{13/4}}\left(15\left(-4z\left(90\,112z^3+2\,987\,264z^2+40\,840\,800z+211\,977\,675\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(16\,384z^4+1\,332\,224z^3+29\,862\,336z^2+298\,416\,300z+1\,059\,888\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(409\,600z^4+16\,259\,072z^3+265\,836\,480z^2+1\,963\,143\,000z+5\,299\,441\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aezp.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{11}{4};-z\right)=-\frac{1}{27\,104\sqrt{2}\,z^{13/4}}\left(15\left(4z\left(90\,112z^3-2\,987\,264z^2+40\,840\,800z-211\,977\,675\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(16\,384z^4-1\,332\,224z^3+29\,862\,336z^2-298\,416\,300z+1\,059\,888\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-409\,600z^4+16\,259\,072z^3-265\,836\,480z^2+1\,963\,143\,000z-5\,299\,441\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aezq.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{9}{4};z\right)=\frac{1}{5632\,z^{9/2}}\left(22\sqrt{z}\left(32\,768z^4+1\,075\,200z^3+14\,555\,520z^2+82\,593\,000z+130\,083\,975\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(65\,536z^5+4\,730\,880z^4+96\,096\,000z^3+862\,701\,840z^2+2\,816\,421\,300z+1\,430\,923\,725\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aezr.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{9}{4};-z\right)=\frac{1}{5632\,z^{9/2}}\left(22\sqrt{z}\left(32\,768z^4-1\,075\,200z^3+14\,555\,520z^2-82\,593\,000z+130\,083\,975\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(65\,536z^5-4\,730\,880z^4+96\,096\,000z^3-862\,701\,840z^2+2\,816\,421\,300z-1\,430\,923\,725\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aezs.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{7}{4};z\right)=\frac{1}{2464\sqrt{2}\,z^{13/4}}$$
$$\left(15\left(4z\left(2048z^3+94\,720z^2+1\,373\,736z+7\,309\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(37\,888z^3+972\,672z^2+10\,117\,380z+36\,547\,875\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(8192z^4+498\,688z^3+8\,804\,640z^2+66\,830\,400z+182\,739\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aezt.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{7}{4};-z\right)=-\frac{1}{2464\sqrt{2}\,z^{13/4}}\left(15\left(4z\left(2048z^3-94\,720z^2+1\,373\,736z-7\,309\,575\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(37\,888z^3-972\,672z^2+10\,117\,380z-36\,547\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-8192z^4+498\,688z^3-8\,804\,640z^2+66\,830\,400z-182\,739\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aezu.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{5}{4};z\right)=\frac{1}{5632\,z^{9/2}}\left(9\left(2\sqrt{z}\left(8192z^4+394\,240z^3+5\,728\,800z^2+33\,356\,400z+52\,997\,175\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.35\left(4096z^4+95\,744z^3+896\,016z^2+2\,971\,980z+1\,514\,205\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aezv.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{5}{4};-z\right)=\frac{1}{5632\,z^{9/2}}\left(9\left(2\sqrt{z}\left(8192z^4-394\,240z^3+5\,728\,800z^2-33\,356\,400z+52\,997\,175\right)\cos\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.35\left(4096z^4-95\,744z^3+896\,016z^2-2\,971\,980z+1\,514\,205\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aezw.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{3}{4};z\right)=$$
$$-\frac{1}{352\sqrt{2}\,z^{13/4}}\left(15\left(-52z\left(256z^2+4080z+22\,491\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024z^3+35\,712z^2+395\,148z+1\,461\,915\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\left(16\,384z^3+331\,968z^2+2\,625\,480z+7\,309\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aezx.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{3}{4};-z\right)=\frac{1}{352\sqrt{2}\,z^{13/4}}$$
$$\left(15\left(52z\left(256z^2-4080z+22\,491\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024z^3-35\,712z^2+395\,148z-1\,461\,915\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-16\,384z^3+331\,968z^2-2\,625\,480z+7\,309\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aezy.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{1}{4};z\right)=-\frac{1}{5632z^{9/2}}\left(45\left(\left(4096z^4+132\,608z^3+1\,326\,864z^2+4\,504\,500z+2\,304\,225\right)\sinh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.14\sqrt{z}\left(2048z^3+33\,792z^2+204\,600z+329\,175\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.aezz.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},-\frac{1}{4};-z\right)=-\frac{1}{5632z^{9/2}}\left(45\left(14\sqrt{z}\left(2048z^3-33\,792z^2+204\,600z-329\,175\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^4-132\,608z^3+1\,326\,864z^2-4\,504\,500z+2\,304\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.af00.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{352\sqrt{2}\,z^{13/4}}\left(45\left(4z\left(128z^2+2392z+13\,923\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1472z^2+18\,148z+69\,615\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(512z^3+14\,368z^2+121\,680z+348\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.af01.01

$${}_1F_2\left(\frac{15}{4};\frac{11}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{352\sqrt{2}\,z^{13/4}}\left(45\left(4z\left(128z^2-2392z+13\,923\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(1472z^2-18\,148z+69\,615\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-512z^3+14\,368z^2-121\,680z+348\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.af02.01

$${}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{3}{4}; z\right) = \frac{1}{5632\, z^{9/2}}$$
$$\left(45\left(2\sqrt{z}\,\left(512\, z^3 + 11\,424\, z^2 + 73\,920\, z + 121\,275\right)\cosh\left(2\sqrt{z}\right) - \left(5888\, z^3 + 66\,864\, z^2 + 235\,620\, z + 121\,275\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.af03.01

$${}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{3}{4}; -z\right) = -\frac{1}{5632\, z^{9/2}}$$
$$\left(45\left(2\sqrt{z}\,\left(512\, z^3 - 11\,424\, z^2 + 73\,920\, z - 121\,275\right)\cos\left(2\sqrt{z}\right) + \left(-5888\, z^3 + 66\,864\, z^2 - 235\,620\, z + 121\,275\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.af04.01

$${}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{352\sqrt{2}\, z^{13/4}}$$
$$\left(45\left(-4\, z\,(128\, z + 819)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(64\, z^2 + 1004\, z + 4095\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - \left(704\, z^2 + 6840\, z + 20\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.af05.01

$${}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{5}{4}; -z\right) = \frac{1}{352\sqrt{2}\, z^{13/4}}$$
$$\left(45\left(4\, z\,(128\, z - 819)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(64\, z^2 - 1004\, z + 4095\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-704\, z^2 + 6840\, z - 20\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.af06.01

$${}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{7}{4}; z\right) = \frac{135\,(16\, z + 77)\left(\left(16\, z^2 + 180\, z + 105\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\,\left(8\, z + 21\right)\cosh\left(2\sqrt{z}\right)\right)}{5632\, z^{9/2}}$$

07.22.03.af07.01

$${}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{7}{4}; -z\right) = -\frac{135\,(16\, z - 77)\left(10\sqrt{z}\,\left(8\, z - 21\right)\cos\left(2\sqrt{z}\right) + \left(16\, z^2 - 180\, z + 105\right)\sin\left(2\sqrt{z}\right)\right)}{5632\, z^{9/2}}$$

07.22.03.af08.01

$${}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{9}{4}; z\right) =$$
$$\frac{1}{352\sqrt{2}\, z^{13/4}}\left(225\left(4\, z\,(8\, z + 63)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(68\, z + 315\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(32\, z^2 + 480\, z + 1575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.af09.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{9}{4}; -z\right) = -\frac{1}{352\sqrt{2}\, z^{13/4}} $$
$$ \left(225\left(4z(8z-63) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,(68z-315) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-32z^2+480z-1575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.af0a.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{11}{4}; z\right) = \frac{945\left(2\sqrt{z}\,\left(32z^2+400z+735\right)\cosh\left(2\sqrt{z}\right) - \left(304z^2+1380z+735\right)\sinh\left(2\sqrt{z}\right)\right)}{5632\, z^{9/2}} $$

07.22.03.af0b.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{11}{4}; -z\right) = \frac{945\left(2\sqrt{z}\,\left(32z^2-400z+735\right)\cos\left(2\sqrt{z}\right) + \left(-304z^2+1380z-735\right)\sin\left(2\sqrt{z}\right)\right)}{5632\, z^{9/2}} $$

07.22.03.af0c.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{13}{4}; z\right) = \frac{2025\left(-28z I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(4z+35) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 5(8z+35) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{352\sqrt{2}\, z^{13/4}} $$

07.22.03.af0d.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{13}{4}; -z\right) = -\frac{2025\left(28z J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(4z-35) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 5(35-8z) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{352\sqrt{2}\, z^{13/4}} $$

07.22.03.af0e.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{15}{4}; z\right) = \frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\,(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}} $$

07.22.03.af0f.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{15}{4}; -z\right) = \frac{945\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right) + \left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\, z^{9/2}} $$

07.22.03.af0g.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{17}{4}; z\right) = \frac{26\,325\left(2z I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 19\sqrt{z}\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + (2z+35) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{352\sqrt{2}\, z^{13/4}} $$

07.22.03.af0h.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{17}{4}; -z\right) = \frac{26\,325\left(2z J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 19\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + (35-2z) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{352\sqrt{2}\, z^{13/4}} $$

07.22.03.af0i.01

$$ {}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{4096\, z^{9/2}}\left(14\,175\, e^{-2\sqrt{z}}\left(4\left(4z^{3/2}+23z+70\sqrt{z}\right) + e^{4\sqrt{z}}\left(4z^{3/2}-23z+70\sqrt{z}-35\right)+35\right) + 77\, e^{2\sqrt{z}}\sqrt{2\pi}\right. $$
$$ \left. z^{3/4}\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 77\, e^{2\sqrt{z}}\sqrt{2\pi}\, z^{3/4}\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right) $$

07.22.03.af0j.01

$${}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{19}{4}; -z\right) = \frac{14\,175\left(-4\sqrt{z}\,(2z-35)\cos\left(2\sqrt{z}\right) + 77\sqrt{\pi}\,z^{3/4}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\,(23z-35)\sin\left(2\sqrt{z}\right)\right)}{1024\,z^{9/2}}$$

07.22.03.af0k.01

$${}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{21}{4}; z\right) = \frac{447\,525\left(-234\sqrt{z}\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (32z+585)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 50\sqrt{z}\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{11\,264\sqrt{2}\,z^{15/4}}$$

07.22.03.af0l.01

$${}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{21}{4}; -z\right) = \frac{447\,525\left(234\sqrt{z}\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + (32z-585)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 50\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{11\,264\sqrt{2}\,z^{15/4}}$$

07.22.03.af0m.01

$${}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{23}{4}; z\right) =$$

$$\frac{1}{262\,144\,z^{19/4}}\left(269\,325\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-64z-140\sqrt{z}+e^{4\sqrt{z}}\left(64z-140\sqrt{z}+1225\right)-1225\right)+77\,e^{2\sqrt{z}}\right.\right.$$
$$\left.\left.\sqrt{2\pi}\,(16z+45)\,\mathrm{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-77\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,(16z+45)\,\mathrm{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.af0n.01

$${}_1F_2\left(\frac{15}{4}; \frac{11}{2}, \frac{23}{4}; -z\right) = -\frac{269\,325\left(2\sqrt[4]{z}\left(140\sqrt{z}\cos\left(2\sqrt{z}\right)+(64z-1225)\sin\left(2\sqrt{z}\right)\right)-77\sqrt{\pi}\,(16z-45)\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)}{65\,536\,z^{19/4}}$$

For fixed z and $a_1 = \frac{17}{4}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = \frac{17}{4}$, $b_{1.} = -\frac{11}{2}$

07.22.03.af0o.01

$${}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{23}{4}; z\right) =$$

$$\frac{1}{9\,207\,994\,170\,375}\left(\left(67\,108\,864\,z^8+19\,063\,111\,680\,z^7+32\,204\,390\,400\,z^6+56\,760\,238\,080\,z^5+324\,371\,174\,400\,z^4+\right.\right.$$
$$\left.1\,971\,500\,731\,200\,z^3+8\,765\,504\,748\,000\,z^2+19\,653\,426\,292\,500\,z+9\,207\,994\,170\,375\right)\cosh\left(2\sqrt{z}\right)+$$
$$2\sqrt{z}\left(989\,855\,744\,z^7+32\,039\,239\,680\,z^6-14\,491\,975\,680\,z^5-64\,911\,974\,400\,z^4-407\,350\,944\,000\,z^3-\right.$$
$$\left.\left.2\,204\,657\,254\,800\,z^2-7\,376\,100\,732\,000\,z-9\,207\,994\,170\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af0p.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{9\,207\,994\,170\,375}\left(\left(67\,108\,864\,z^8 - 19\,063\,111\,680\,z^7 + 32\,204\,390\,400\,z^6 - 56\,760\,238\,080\,z^5 + 324\,371\,174\,400\,z^4 - 1\,971\,500\,731\,200\,z^3 + 8\,765\,504\,748\,000\,z^2 - 19\,653\,426\,292\,500\,z + 9\,207\,994\,170\,375\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(989\,855\,744\,z^7 - 32\,039\,239\,680\,z^6 - 14\,491\,975\,680\,z^5 + 64\,911\,974\,400\,z^4 - 407\,350\,944\,000\,z^3 + 2\,204\,657\,254\,800\,z^2 - 7\,376\,100\,732\,000\,z + 9\,207\,994\,170\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.af0q.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{21}{4}; z\right) = \frac{1}{1\,270\,002\,108\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(33\,554\,432\,z^8 + 9\,294\,577\,664\,z^7 + 22\,543\,073\,280\,z^6 + 19\,725\,189\,120\,z^5 + 102\,758\,423\,040\,z^4 + 543\,732\,134\,400\,z^3 + 1\,923\,512\,572\,800\,z^2 + 2\,726\,930\,934\,000\,z + 1\,270\,002\,108\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(482\,344\,960\,z^7 + 14\,917\,042\,176\,z^6 - 6\,038\,323\,200\,z^5 - 24\,505\,528\,320\,z^4 - 138\,218\,633\,280\,z^3 - 645\,080\,436\,000\,z^2 - 1\,710\,929\,247\,300\,z - 1\,270\,002\,108\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8\,388\,608\,z^7 + 2\,205\,155\,328\,z^6 + 2\,415\,329\,280\,z^5 + 6\,239\,600\,640\,z^4 + 32\,960\,753\,280\,z^3 + 179\,449\,648\,560\,z^2 + 694\,927\,560\,600\,z + 1\,270\,002\,108\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af0r.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{21}{4}; -z\right) = \frac{1}{1\,270\,002\,108\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(33\,554\,432\,z^8 - 9\,294\,577\,664\,z^7 + 22\,543\,073\,280\,z^6 - 19\,725\,189\,120\,z^5 + 102\,758\,423\,040\,z^4 - 543\,732\,134\,400\,z^3 + 1\,923\,512\,572\,800\,z^2 - 2\,726\,930\,934\,000\,z + 1\,270\,002\,108\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(482\,344\,960\,z^7 - 14\,917\,042\,176\,z^6 - 6\,038\,323\,200\,z^5 + 24\,505\,528\,320\,z^4 - 138\,218\,633\,280\,z^3 + 645\,080\,436\,000\,z^2 - 1\,710\,929\,247\,300\,z + 1\,270\,002\,108\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(8\,388\,608\,z^7 - 2\,205\,155\,328\,z^6 + 2\,415\,329\,280\,z^5 - 6\,239\,600\,640\,z^4 + 32\,960\,753\,280\,z^3 - 179\,449\,648\,560\,z^2 + 694\,927\,560\,600\,z - 1\,270\,002\,108\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af0s.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{19}{4}; z\right) = \left(-\frac{155\,189\,248\,z^7}{133\,449\,190\,875} - \frac{1\,048\,576\,z^6}{32\,588\,325} + \frac{32\,768\,z^5}{2\,172\,555} + \frac{4096\,z^4}{80\,465} + \frac{78\,656\,z^3}{310\,365} + \frac{9568\,z^2}{9405} + \frac{452\,z}{209} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{400\,347\,572\,625}\left(2\sqrt{z}\left(8\,388\,608\,z^7 + 2\,091\,909\,120\,z^6 + 2\,415\,329\,280\,z^5 + 4\,830\,658\,560\,z^4 + 22\,714\,473\,600\,z^3 + 106\,929\,622\,800\,z^2 + 332\,026\,695\,000\,z + 400\,347\,572\,625\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.af0t.01

$${}_1F_2\left(\frac{17}{4};-\frac{11}{2},-\frac{19}{4};-z\right)=$$
$$\left(\frac{155\,189\,248\,z^7}{133\,449\,190\,875}-\frac{1\,048\,576\,z^6}{32\,588\,325}-\frac{32\,768\,z^5}{2\,172\,555}+\frac{4096\,z^4}{80\,465}-\frac{78\,656\,z^3}{310\,365}+\frac{9568\,z^2}{9405}-\frac{452\,z}{209}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{1}{400\,347\,572\,625}\left(2\sqrt{z}\left(-8\,388\,608\,z^7+2\,091\,909\,120\,z^6-2\,415\,329\,280\,z^5+4\,830\,658\,560\,z^4-\right.\right.$$
$$\left.\left.22\,714\,473\,600\,z^3+106\,929\,622\,800\,z^2-332\,026\,695\,000\,z+400\,347\,572\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af0u.01

$${}_1F_2\left(\frac{17}{4};-\frac{11}{2},-\frac{17}{4};z\right)=$$
$$-\frac{1}{60\,476\,290\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(226\,492\,416\,z^7+5\,986\,058\,240\,z^6-3\,220\,439\,040\,z^5-7\,057\,290\,240\,z^4-\right.\right.\right.$$
$$\left.\left.30\,207\,340\,800\,z^3-96\,536\,512\,800\,z^2-131\,948\,271\,000\,z-60\,476\,290\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$4\sqrt{z}\left(4\,194\,304\,z^7+963\,641\,344\,z^6+573\,112\,320\,z^5+2\,063\,093\,760\,z^4+8\,433\,996\,480\,z^3+33\,983\,258\,400\,z^2+\right.$$
$$\left.83\,567\,238\,300\,z+60\,476\,290\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(55\,574\,528\,z^6+1\,269\,104\,640\,z^5-\right.$$
$$\left.\left.\left.704\,471\,040\,z^4-2\,298\,965\,760\,z^3-10\,134\,830\,160\,z^2-35\,186\,205\,600\,z-60\,476\,290\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af0v.01

$${}_1F_2\left(\frac{17}{4};-\frac{11}{2},-\frac{17}{4};-z\right)=$$
$$-\frac{1}{60\,476\,290\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-226\,492\,416\,z^7+5\,986\,058\,240\,z^6+3\,220\,439\,040\,z^5-7\,057\,290\,240\,z^4+\right.\right.\right.$$
$$\left.\left.30\,207\,340\,800\,z^3-96\,536\,512\,800\,z^2+131\,948\,271\,000\,z-60\,476\,290\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$4\sqrt{z}\left(4\,194\,304\,z^7-963\,641\,344\,z^6+573\,112\,320\,z^5-2\,063\,093\,760\,z^4+8\,433\,996\,480\,z^3-33\,983\,258\,400\,z^2+\right.$$
$$\left.83\,567\,238\,300\,z-60\,476\,290\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(55\,574\,528\,z^6-1\,269\,104\,640\,z^5-\right.$$
$$\left.\left.\left.704\,471\,040\,z^4+2\,298\,965\,760\,z^3-10\,134\,830\,160\,z^2+35\,186\,205\,600\,z-60\,476\,290\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af0w.01

$${}_1F_2\left(\frac{17}{4};-\frac{11}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{21\,070\,924\,875}\left(\left(4\,194\,304\,z^7+858\,783\,744\,z^6-402\,554\,880\,z^5+2\,063\,093\,760\,z^4+6\,922\,843\,200\,z^3+23\,652\,064\,800\,z^2+\right.\right.$$
$$\left.46\,483\,737\,300\,z+21\,070\,924\,875\right)\cosh\left(2\sqrt{z}\right)+6\sqrt{z}\left(17\,825\,792\,z^6+357\,826\,560\,z^5-\right.$$
$$\left.\left.234\,823\,680\,z^4-591\,252\,480\,z^3-2\,208\,351\,600\,z^2-6\,129\,723\,600\,z-7\,023\,641\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af0x.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{15}{4}; -z\right) = \left(-\frac{4\,194\,304\,z^7}{21\,070\,924\,875} + \frac{1\,048\,576\,z^6}{25\,727\,625} + \frac{32\,768\,z^5}{1\,715\,175} + \frac{167\,936\,z^4}{1\,715\,175} - \frac{37\,568\,z^3}{114\,345} + \frac{6112\,z^2}{5445} - \frac{364\,z}{165} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{7\,023\,641\,625}\left(2\sqrt{z}\left(-17\,825\,792\,z^6 + 357\,826\,560\,z^5 + 234\,823\,680\,z^4 - 591\,252\,480\,z^3 + 2\,208\,351\,600\,z^2 - 6\,129\,723\,600\,z + 7\,023\,641\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.af0y.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{13}{4}; z\right) = \frac{1}{3\,557\,428\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2\,097\,152\,z^7 + 392\,560\,640\,z^6 - 362\,127\,360\,z^5 + 1\,012\,677\,120\,z^4 + 2\,295\,820\,800\,z^3 + 6\,179\,846\,400\,z^2 + 7\,960\,680\,000\,z + 3\,557\,428\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(25\,427\,968\,z^6 + 404\,766\,720\,z^5 - 266\,757\,120\,z^4 - 755\,576\,640\,z^3 - 2\,341\,029\,600\,z^2 - 5\,114\,736\,900\,z - 3\,557\,428\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(524\,288\,z^6 + 91\,914\,240\,z^5 - 170\,956\,800\,z^4 + 262\,604\,160\,z^3 + 778\,967\,280\,z^2 + 2\,268\,793\,800\,z + 3\,557\,428\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af0z.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{13}{4}; -z\right) = -\frac{1}{3\,557\,428\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2\,097\,152\,z^7 - 392\,560\,640\,z^6 - 362\,127\,360\,z^5 - 1\,012\,677\,120\,z^4 + 2\,295\,820\,800\,z^3 - 6\,179\,846\,400\,z^2 + 7\,960\,680\,000\,z - 3\,557\,428\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(25\,427\,968\,z^6 - 404\,766\,720\,z^5 - 266\,757\,120\,z^4 + 755\,576\,640\,z^3 - 2\,341\,029\,600\,z^2 + 5\,114\,736\,900\,z - 3\,557\,428\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(524\,288\,z^6 - 91\,914\,240\,z^5 - 170\,956\,800\,z^4 - 262\,604\,160\,z^3 + 778\,967\,280\,z^2 - 2\,268\,793\,800\,z + 3\,557\,428\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af10.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{11}{4}; z\right) = \frac{1}{1\,404\,728\,325}\left(-91\left(262\,144\,z^6 + 2\,801\,664\,z^5 - 414\,720\,z^4 - 8\,303\,040\,z^3 - 20\,412\,000\,z^2 - 35\,210\,700\,z - 15\,436\,575\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(524\,288\,z^6 + 80\,510\,976\,z^5 - 209\,664\,000\,z^4 + 262\,604\,160\,z^3 + 582\,014\,160\,z^2 + 1\,331\,202\,600\,z + 1\,404\,728\,325\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.af11.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) = \frac{1}{1\,404\,728\,325} $$
$$ \left(2\sqrt{z}\,\left(524\,288\,z^6 - 80\,510\,976\,z^5 - 209\,664\,000\,z^4 - 262\,604\,160\,z^3 + 582\,014\,160\,z^2 - 1\,331\,202\,600\,z + 1\,404\,728\,325\right)\right. $$
$$ \sin\left(2\sqrt{z}\right) - $$
$$ \left. 91\left(262\,144\,z^6 - 2\,801\,664\,z^5 - 414\,720\,z^4 + 8\,303\,040\,z^3 - 20\,412\,000\,z^2 + 35\,210\,700\,z - 15\,436\,575\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.af12.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{9}{4}; z\right) = -\frac{1}{273\,648\,375\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\,\left(\left(11\,272\,192\,z^6 + 83\,558\,400\,z^5 + 42\,255\,360\,z^4 - 361\,670\,400\,z^3 - 560\,196\,000\,z^2 - 641\,277\,000\,z - 273\,648\,375\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(262\,144\,z^6 + 33\,570\,816\,z^5 - 118\,379\,520\,z^4 + 110\,738\,880\,z^3 + \right. $$
$$ \left. 241\,768\,800\,z^2 + 422\,358\,300\,z + 273\,648\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 84\,z\left(131\,072\,z^5 + 626\,688\,z^4 + 1\,958\,400\,z^3 - 4\,689\,360\,z^2 - 9\,687\,600\,z - 13\,030\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af13.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{9}{4}; -z\right) = \frac{1}{273\,648\,375\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\,\left(\left(-11\,272\,192\,z^6 + 83\,558\,400\,z^5 - 42\,255\,360\,z^4 - 361\,670\,400\,z^3 + 560\,196\,000\,z^2 - 641\,277\,000\,z + 273\,648\,375\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(262\,144\,z^6 - 33\,570\,816\,z^5 - 118\,379\,520\,z^4 - 110\,738\,880\,z^3 + \right. $$
$$ \left. 241\,768\,800\,z^2 - 422\,358\,300\,z + 273\,648\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 84\,z\left(131\,072\,z^5 - 626\,688\,z^4 + 1\,958\,400\,z^3 + 4\,689\,360\,z^2 - 9\,687\,600\,z + 13\,030\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af14.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{7}{4}; z\right) = \left(\frac{262\,144\,z^6}{127\,702\,575} + \frac{671\,744\,z^5}{3\,274\,425} - \frac{1024\,z^4}{1155} + \frac{2624\,z^3}{10\,395} + \frac{1312\,z^2}{693} + \frac{188\,z}{77} + 1\right)\cosh\left(2\sqrt{z}\right) + $$
$$ \frac{2\sqrt{z}\,\left(65\,536\,z^5 + 61\,440\,z^4 + 1\,693\,440\,z^3 - 2\,525\,040\,z^2 - 3\,628\,800\,z - 3\,274\,425\right)\sinh\left(2\sqrt{z}\right)}{3\,274\,425} $$

07.22.03.af15.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{7}{4}; -z\right) = \left(\frac{262\,144\,z^6}{127\,702\,575} - \frac{671\,744\,z^5}{3\,274\,425} - \frac{1024\,z^4}{1155} - \frac{2624\,z^3}{10\,395} + \frac{1312\,z^2}{693} - \frac{188\,z}{77} + 1\right)\cos\left(2\sqrt{z}\right) + $$
$$ \frac{2\sqrt{z}\,\left(65\,536\,z^5 - 61\,440\,z^4 + 1\,693\,440\,z^3 + 2\,525\,040\,z^2 - 3\,628\,800\,z + 3\,274\,425\right)\sin\left(2\sqrt{z}\right)}{3\,274\,425} $$

07.22.03.af16.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{5}{4}; z\right) = \frac{1}{30\,405\,375\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(131\,072 z^6 + 10\,371\,072 z^5 - 46\,794\,240 z^4 - 10\,483\,200 z^3 + 117\,936\,000 z^2 + 79\,606\,800 z + 30\,405\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(1\,163\,264 z^5 - 3\,815\,424 z^4 + 46\,226\,880 z^3 - 41\,277\,600 z^2 - 55\,282\,500 z - 30\,405\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(32\,768 z^5 + 2\,310\,144 z^4 - 10\,265\,472 z^3 - 15\,921\,360 z^2 + 30\,958\,200 z + 30\,405\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af17.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{5}{4}; -z\right) = \frac{1}{30\,405\,375\sqrt{2}} $$
$$ \left(\sqrt[4]{z}\left(\left(131\,072 z^6 - 10\,371\,072 z^5 - 46\,794\,240 z^4 + 10\,483\,200 z^3 + 117\,936\,000 z^2 - 79\,606\,800 z + 30\,405\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(1\,163\,264 z^5 + 3\,815\,424 z^4 + 46\,226\,880 z^3 + 41\,277\,600 z^2 - 55\,282\,500 z + 30\,405\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(-32\,768 z^5 + 2\,310\,144 z^4 + 10\,265\,472 z^3 - 15\,921\,360 z^2 - 30\,958\,200 z + 30\,405\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af18.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{3}{4}; z\right) = \left(-\frac{16\,384 z^5}{289\,575} + \frac{38\,912 z^4}{93\,555} - \frac{4288 z^3}{1485} + \frac{32 z^2}{99} + \frac{100 z}{33} + 1\right)\cosh\left(2\sqrt{z}\right) - $$
$$ \frac{1}{18\,243\,225}\left(2\sqrt{z}\left(32\,768 z^5 + 1\,597\,440 z^4 - 5\,616\,000 z^3 - 28\,894\,320 z^2 + 30\,958\,200 z + 18\,243\,225\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.af19.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{3}{4}; -z\right) = \left(\frac{16\,384 z^5}{289\,575} + \frac{38\,912 z^4}{93\,555} + \frac{4288 z^3}{1485} + \frac{32 z^2}{99} - \frac{100 z}{33} + 1\right)\cos\left(2\sqrt{z}\right) + $$
$$ \frac{1}{18\,243\,225}\left(2\sqrt{z}\left(-32\,768 z^5 + 1\,597\,440 z^4 + 5\,616\,000 z^3 - 28\,894\,320 z^2 - 30\,958\,200 z + 18\,243\,225\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.af1a.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{1}{4}; z\right) = $$
$$ -\frac{1}{6\,081\,075\sqrt{2}}\left(\sqrt[4]{z}\left(\left(458\,752 z^5 - 4\,359\,168 z^4 + 23\,212\,800 z^3 + 9\,828\,000 z^2 - 30\,958\,200 z - 6\,081\,075\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(16\,384 z^5 + 436\,224 z^4 + 144\,576 z^3 - 21\,621\,600 z^2 + 11\,056\,500 z + 6\,081\,075\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 36 z\left(12\,288 z^4 - 130\,304 z^3 + 607\,152 z^2 + 982\,800 z - 675\,675\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af1b.01

$${}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{6\,081\,075\sqrt{2}}\left(\sqrt[4]{z}\left(\left(458\,752 z^5 + 4\,359\,168 z^4 + 23\,212\,800 z^3 - 9\,828\,000 z^2 - 30\,958\,200 z + 6\,081\,075\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 -\right.\right.$$
$$4\sqrt{z}\left(16\,384 z^5 - 436\,224 z^4 + 144\,576 z^3 + 21\,621\,600 z^2 + 11\,056\,500 z - 6\,081\,075\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.36 z\left(12\,288 z^4 + 130\,304 z^3 + 607\,152 z^2 - 982\,800 z - 675\,675\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af1c.01

$${}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) = \left(\frac{16\,384 z^5}{6\,081\,075} + \frac{2048 z^4}{135\,135} + \frac{2368 z^3}{4455} - \frac{224 z^2}{55} - \frac{12 z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) +$$
$$\frac{2\sqrt{z}\left(94\,208 z^4 - 1\,098\,240 z^3 + 2\,948\,400 z^2 + 14\,742\,000 z - 6\,081\,075\right)\sinh\left(2\sqrt{z}\right)}{6\,081\,075}$$

07.22.03.af1d.01

$${}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) = \left(-\frac{16\,384 z^5}{6\,081\,075} + \frac{2048 z^4}{135\,135} - \frac{2368 z^3}{4455} - \frac{224 z^2}{55} + \frac{12 z}{11} + 1\right)\cos\left(2\sqrt{z}\right) -$$
$$\frac{2\sqrt{z}\left(94\,208 z^4 + 1\,098\,240 z^3 + 2\,948\,400 z^2 - 14\,742\,000 z - 6\,081\,075\right)\sin\left(2\sqrt{z}\right)}{6\,081\,075}$$

07.22.03.af1e.01

$${}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{6\,081\,075\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192 z^5 - 67\,072 z^4 + 2\,396\,160 z^3 - 9\,828\,000 z^2 - 8\,722\,350 z + 6\,081\,075\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.\right.$$
$$\sqrt{z}\left(151\,552 z^4 - 1\,676\,544 z^3 - 1\,572\,480 z^2 + 39\,312\,000 z - 2\,395\,575\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.2 z\left(4096 z^4 - 51\,456 z^3 + 1\,389\,024 z^2 - 4\,324\,320 z - 9\,766\,575\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af1f.01

$${}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, \frac{3}{4}; -z\right) =$$
$$-\frac{1}{6\,081\,075\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192 z^5 + 67\,072 z^4 + 2\,396\,160 z^3 + 9\,828\,000 z^2 - 8\,722\,350 z - 6\,081\,075\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.\right.$$
$$\sqrt{z}\left(151\,552 z^4 + 1\,676\,544 z^3 - 1\,572\,480 z^2 - 39\,312\,000 z - 2\,395\,575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.2 z\left(4096 z^4 + 51\,456 z^3 + 1\,389\,024 z^2 + 4\,324\,320 z - 9\,766\,575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af1g.01

$${}_1F_2\left(\frac{17}{4};-\frac{11}{2},\frac{5}{4};z\right)=\left(\frac{1024\,z^4}{225\,225}-\frac{1856\,z^3}{57\,915}-\frac{608\,z^2}{1485}+\frac{76\,z}{55}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(2048\,z^4-47\,232\,z^3+720\,720\,z^2-294\,840\,z-6\,081\,075\right)\sinh\left(2\sqrt{z}\right)}{6\,081\,075}$$

07.22.03.af1h.01

$${}_1F_2\left(\frac{17}{4};-\frac{11}{2},\frac{5}{4};-z\right)=\left(\frac{1024\,z^4}{225\,225}+\frac{1856\,z^3}{57\,915}-\frac{608\,z^2}{1485}-\frac{76\,z}{55}+1\right)\cos\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(2048\,z^4+47\,232\,z^3+720\,720\,z^2+294\,840\,z-6\,081\,075\right)\sin\left(2\sqrt{z}\right)}{6\,081\,075}$$

07.22.03.af1i.01

$${}_1F_2\left(\frac{17}{4};-\frac{11}{2},\frac{7}{4};z\right)=\frac{1}{64\,864\,800\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\,\left(147\,456\,z^4+266\,240\,z^3-26\,956\,800\,z^2+21\,902\,400\,z+58\,538\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(131\,072\,z^5-3\,874\,816\,z^4+34\,344\,960\,z^3+139\,276\,800\,z^2-292\,874\,400\,z-78\,316\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(131\,072\,z^4+777\,216\,z^3-30\,850\,560\,z^2-3\,931\,200\,z+78\,316\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af1j.01

$${}_1F_2\left(\frac{17}{4};-\frac{11}{2},\frac{7}{4};-z\right)=-\frac{1}{64\,864\,800\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\,\left(-147\,456\,z^4+266\,240\,z^3+26\,956\,800\,z^2+21\,902\,400\,z-58\,538\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(131\,072\,z^5+3\,874\,816\,z^4+34\,344\,960\,z^3-139\,276\,800\,z^2-292\,874\,400\,z+78\,316\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(131\,072\,z^4-777\,216\,z^3-30\,850\,560\,z^2+3\,931\,200\,z+78\,316\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af1k.01

$${}_1F_2\left(\frac{17}{4};-\frac{11}{2},\frac{9}{4};z\right)=\frac{1}{1\,216\,215}\left(\left(1024\,z^4-30\,912\,z^3+50\,400\,z^2+2\,014\,740\,z+1\,216\,215\right)\cosh\left(2\sqrt{z}\right)+6\sqrt{z}\,\left(256\,z^3+13\,776\,z^2-131\,040\,z-405\,405\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af1l.01

$${}_1F_2\left(\frac{17}{4};-\frac{11}{2},\frac{9}{4};-z\right)=\frac{1}{1\,216\,215}\left(\left(1024\,z^4+30\,912\,z^3+50\,400\,z^2-2\,014\,740\,z+1\,216\,215\right)\cos\left(2\sqrt{z}\right)+6\sqrt{z}\,\left(256\,z^3-13\,776\,z^2-131\,040\,z+405\,405\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af1m.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, \frac{11}{4}; z\right) = \frac{1}{296\,524\,800\sqrt{2}\, z^{5/4}} $$
$$ \left(\left(2\sqrt{z}\left(262\,144 z^5 - 6\,225\,920 z^4 - 49\,520\,640 z^3 + 372\,902\,400 z^2 + 876\,236\,400 z + 454\,237\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 5\left(262\,144 z^5 - 25\,362\,432 z^4 + 23\,961\,600 z^3 + 680\,209\,920 z^2 + 852\,087\,600 z + 272\,542\,725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\left(262\,144 z^5 - 5\,996\,544 z^4 - 66\,723\,840 z^3 + 363\,916\,800 z^2 + 1\,353\,315\,600 z + 1\,362\,713\,625\right) $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af1n.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, \frac{11}{4}; -z\right) = \frac{1}{296\,524\,800\sqrt{2}\, z^{5/4}} $$
$$ \left(\left(2\sqrt{z}\left(262\,144 z^5 + 6\,225\,920 z^4 - 49\,520\,640 z^3 - 372\,902\,400 z^2 + 876\,236\,400 z - 454\,237\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 5\left(262\,144 z^5 + 25\,362\,432 z^4 + 23\,961\,600 z^3 - 680\,209\,920 z^2 + 852\,087\,600 z - 272\,542\,725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\left(-262\,144 z^5 - 5\,996\,544 z^4 + 66\,723\,840 z^3 + 363\,916\,800 z^2 - 1\,353\,315\,600 z + 1\,362\,713\,625\right) $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af1o.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) = $$
$$ \left(-\frac{1088 z^3}{135\,135} + \frac{32 z^2}{143} + \frac{252 z}{143} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(128 z^3 - 1008 z^2 - 57\,960 z - 135\,135\right)\sinh\left(2\sqrt{z}\right)}{135\,135} $$

07.22.03.af1p.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) = \left(\frac{1088 z^3}{135\,135} + \frac{32 z^2}{143} - \frac{252 z}{143} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(128 z^3 + 1008 z^2 - 57\,960 z + 135\,135\right)\sin\left(2\sqrt{z}\right)}{135\,135} $$

07.22.03.af1q.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) = \frac{1}{862\,617\,600\sqrt{2}\, z^{9/4}} $$
$$ \left(\left(2\sqrt{z}\left(-14\,680\,064 z^5 + 91\,422\,720 z^4 + 2\,872\,197\,120 z^3 + 14\,141\,088\,000 z^2 + 43\,606\,836\,000 z + 34\,976\,316\,375\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(8\,388\,608 z^6 + 138\,412\,032 z^5 - 3\,321\,692\,160 z^4 - 31\,150\,080\,000 z^3 - 127\,512\,403\,200 z^2 - \right. $$
$$ 290\,712\,240\,000 z - 104\,928\,949\,125\Big) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 30\sqrt{z}\left(1\,048\,576 z^5 - 4\,653\,056 z^4 - $$
$$ \left.\left. 219\,463\,680 z^3 - 1\,265\,322\,240 z^2 - 4\,457\,587\,680 z - 6\,995\,263\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Big) $$

07.22.03.af1r.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) = \frac{1}{862\,617\,600\sqrt{2}\, z^{9/4}} $$
$$ \left(\left(2\sqrt{z}\,\left(14\,680\,064 z^5 + 91\,422\,720 z^4 - 2\,872\,197\,120 z^3 + 14\,141\,088\,000 z^2 - 43\,606\,836\,000 z + 34\,976\,316\,375\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(8\,388\,608 z^6 - 138\,412\,032 z^5 - 3\,321\,692\,160 z^4 + 31\,150\,080\,000 z^3 - 127\,512\,403\,200 z^2 + \right. $$
$$ \left. 290\,712\,240\,000 z - 104\,928\,949\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 30\sqrt{z}\,\left(1\,048\,576 z^5 + 4\,653\,056 z^4 - \right. $$
$$ \left.\left. \left. 219\,463\,680 z^3 + 1\,265\,322\,240 z^2 - 4\,457\,587\,680 z + 6\,995\,263\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af1s.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) = \left(\frac{64 z^3}{10\,395} + \frac{32 z^2}{99} + \frac{20 z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\,\left(16 z^2 + 240 z + 495\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.af1t.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) = \left(-\frac{64 z^3}{10\,395} + \frac{32 z^2}{99} - \frac{20 z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\,\left(16 z^2 - 240 z + 495\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.af1u.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) = $$
$$ \frac{1}{1\,840\,250\,880\sqrt{2}\, z^{13/4}}\left(\left(2\sqrt{z}\,\left(16\,777\,216 z^6 + 1\,601\,175\,552 z^5 + 33\,375\,191\,040 z^4 + 440\,108\,298\,240 z^3 + \right.\right. $$
$$ \left. 3\,883\,915\,526\,400 z^2 + 16\,548\,794\,262\,000 z + 14\,235\,360\,764\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ \left(922\,746\,880 z^6 + 33\,901\,510\,656 z^5 + 542\,218\,321\,920 z^4 + 6\,149\,109\,657\,600 z^3 + \right. $$
$$ \left. 41\,327\,652\,038\,400 z^2 + 114\,722\,317\,710\,000 z + 42\,706\,082\,293\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\,\left(16\,777\,216 z^6 + 1\,720\,713\,216 z^5 + 38\,091\,816\,960 z^4 + 519\,728\,025\,600 z^3 + \right. $$
$$ \left.\left. 4\,829\,699\,347\,200 z^2 + 23\,616\,008\,816\,400 z + 42\,706\,082\,293\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.af1v.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) = \frac{1}{1\,840\,250\,880\sqrt{2}\, z^{13/4}}\left(\left(-2\sqrt{z}\left(16\,777\,216 z^6 - 1\,601\,175\,552 z^5 + 33\,375\,191\,040 z^4 - 440\,108\,298\,240 z^3 + 3\,883\,915\,526\,400 z^2 - 16\,548\,794\,262\,000 z + 14\,235\,360\,764\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(922\,746\,880 z^6 - 33\,901\,510\,656 z^5 + 542\,218\,321\,920 z^4 - 6\,149\,109\,657\,600 z^3 + 41\,327\,652\,038\,400 z^2 - 114\,722\,317\,710\,000 z + 42\,706\,082\,293\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,777\,216 z^6 - 1\,720\,713\,216 z^5 + 38\,091\,816\,960 z^4 - 519\,728\,025\,600 z^3 + 4\,829\,699\,347\,200 z^2 - 23\,616\,008\,816\,400 z + 42\,706\,082\,293\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af1w.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) = \frac{1}{348\,798\,320\,640 z^{17/4}}\left(17 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-67\,108\,864 z^{13/2} - 1\,157\,627\,904 z^6 - 10\,758\,389\,760 z^{11/2} - 72\,430\,387\,200 z^5 - 400\,077\,619\,200 z^{9/2} - 1\,922\,168\,586\,240 z^4 - 8\,180\,116\,439\,040 z^{7/2} - 30\,675\,436\,646\,400 z^3 - 99\,695\,169\,100\,800 z^{5/2} - 274\,161\,715\,027\,200 z^2 - 616\,863\,858\,811\,200 z^{3/2} - 1\,079\,511\,752\,919\,600 z - 1\,349\,389\,691\,149\,500\sqrt{z} + e^{4\sqrt{z}}\left(67\,108\,864 z^{13/2} - 1\,157\,627\,904 z^6 + 10\,758\,389\,760 z^{11/2} - 72\,430\,387\,200 z^5 + 400\,077\,619\,200 z^{9/2} - 1\,922\,168\,586\,240 z^4 + 8\,180\,116\,439\,040 z^{7/2} - 30\,675\,436\,646\,400 z^3 + 99\,695\,169\,100\,800 z^{5/2} - 274\,161\,715\,027\,200 z^2 + 616\,863\,858\,811\,200 z^{3/2} - 1\,079\,511\,752\,919\,600 z + 1\,349\,389\,691\,149\,500\sqrt{z} - 1\,012\,042\,268\,362\,125\right) - 1\,012\,042\,268\,362\,125\right) + 1\,012\,042\,268\,362\,125 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + 1\,012\,042\,268\,362\,125 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.af1x.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) = -\frac{1}{87\,199\,580\,160 z^{17/4}}\left(17\left(2\sqrt[4]{z}\left(3\left(385\,875\,968 z^6 - 24\,143\,462\,400 z^5 + 640\,722\,862\,080 z^4 - 10\,225\,145\,548\,800 z^3 + 91\,387\,238\,342\,400 z^2 - 359\,837\,250\,973\,200 z + 337\,347\,422\,787\,375\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(16\,777\,216 z^6 - 2\,689\,597\,440 z^5 + 100\,019\,404\,800 z^4 - 2\,045\,029\,109\,760 z^3 + 24\,923\,792\,275\,200 z^2 - 154\,215\,964\,702\,800 z + 337\,347\,422\,787\,375\right)\sin\left(2\sqrt{z}\right)\right) - 1\,012\,042\,268\,362\,125\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right) $$

07.22.03.af1y.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) = \frac{1}{58\,888\,028\,160\sqrt{2}\, z^{17/4}}\left(19\left(-2\sqrt{z}\left(2\,751\,463\,424 z^6 + 247\,883\,366\,400 z^5 + 9\,086\,525\,767\,680 z^4 + 185\,890\,450\,636\,800 z^3 + 2\,051\,730\,705\,024\,000 z^2 + 9\,891\,542\,108\,448\,000 z + 8\,754\,746\,870\,244\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(536\,870\,912 z^7 + 125\,527\,130\,112 z^6 + 6\,769\,323\,540\,480 z^5 + 186\,727\,455\,129\,600 z^4 + 2\,912\,642\,056\,396\,800 z^3 + 23\,098\,599\,171\,648\,000 z^2 + 69\,696\,326\,303\,604\,000 z + 26\,264\,240\,610\,733\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\left(939\,524\,096 z^6 + 88\,101\,355\,520 z^5 + 3\,335\,218\,790\,400 z^4 + 70\,720\,299\,417\,600 z^3 + 827\,514\,329\,241\,600 z^2 + 4\,555\,315\,444\,680\,000 z + 8\,754\,746\,870\,244\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af1z.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) = -\frac{1}{58\,888\,028\,160\sqrt{2}\, z^{17/4}}\left(19\left(2\sqrt{z}\left(2\,751\,463\,424 z^6 - 247\,883\,366\,400 z^5 + 9\,086\,525\,767\,680 z^4 - 185\,890\,450\,636\,800 z^3 + 2\,051\,730\,705\,024\,000 z^2 - 9\,891\,542\,108\,448\,000 z + 8\,754\,746\,870\,244\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(536\,870\,912 z^7 - 125\,527\,130\,112 z^6 + 6\,769\,323\,540\,480 z^5 - 186\,727\,455\,129\,600 z^4 + 2\,912\,642\,056\,396\,800 z^3 - 23\,098\,599\,171\,648\,000 z^2 + 69\,696\,326\,303\,604\,000 z - 26\,264\,240\,610\,733\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\left(939\,524\,096 z^6 - 88\,101\,355\,520 z^5 + 3\,335\,218\,790\,400 z^4 - 70\,720\,299\,417\,600 z^3 + 827\,514\,329\,241\,600 z^2 - 4\,555\,315\,444\,680\,000 z + 8\,754\,746\,870\,244\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{17}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.af20.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) = \frac{1}{837\,090\,379\,125}\left(5\left(-184\,549\,376 z^7 - 4\,778\,360\,832 z^6 + 2\,898\,395\,136 z^5 + 8\,755\,568\,640 z^4 + 42\,862\,659\,840 z^3 + 170\,951\,180\,400 z^2 + 362\,334\,772\,800 z + 167\,418\,075\,825\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(16\,777\,216 z^7 + 4\,073\,717\,760 z^6 + 2\,078\,146\,560 z^5 + 10\,567\,065\,600 z^4 + 48\,259\,411\,200 z^3 + 224\,983\,558\,800 z^2 + 695\,553\,358\,500 z + 837\,090\,379\,125\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.af21.01

$$
{}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{23}{4}; -z\right) =
\frac{1}{837\,090\,379\,125}\left(5\left(184\,549\,376\,z^7 - 4\,778\,360\,832\,z^6 - 2\,898\,395\,136\,z^5 + 8\,755\,568\,640\,z^4 - 42\,862\,659\,840\,z^3 + 170\,951\,180\,400\,z^2 - 362\,334\,772\,800\,z + 167\,418\,075\,825\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-16\,777\,216\,z^7 + 4\,073\,717\,760\,z^6 - 2\,078\,146\,560\,z^5 + 10\,567\,065\,600\,z^4 - 48\,259\,411\,200\,z^3 + 224\,983\,558\,800\,z^2 - 695\,553\,358\,500\,z + 837\,090\,379\,125\right)\sin\left(2\sqrt{z}\right)\right)
$$

07.22.03.af22.01

$$
{}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{21}{4}; z\right) =
-\frac{1}{115\,454\,737\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(457\,179\,136\,z^7 + 12\,881\,756\,160\,z^6 - 4\,696\,473\,600\,z^5 - 13\,116\,579\,840\,z^4 - 57\,139\,992\,000\,z^3 - 183\,750\,184\,800\,z^2 - 251\,679\,109\,500\,z - 115\,454\,737\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8\,388\,608\,z^7 + 1\,980\,760\,064\,z^6 + 2\,415\,329\,280\,z^5 + 3\,757\,178\,880\,z^4 + 15\,852\,170\,880\,z^3 + 64\,508\,043\,600\,z^2 + 159\,315\,319\,800\,z + 115\,454\,737\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(112\,197\,632\,z^6 + 2\,752\,512\,000\,z^5 - 1\,241\,210\,880\,z^4 - 4\,277\,145\,600\,z^3 - 19\,156\,934\,160\,z^2 - 66\,951\,530\,100\,z - 115\,454\,737\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)
$$

07.22.03.af23.01

$$
{}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) =
-\frac{1}{115\,454\,737\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-457\,179\,136\,z^7 + 12\,881\,756\,160\,z^6 + 4\,696\,473\,600\,z^5 - 13\,116\,579\,840\,z^4 + 57\,139\,992\,000\,z^3 - 183\,750\,184\,800\,z^2 + 251\,679\,109\,500\,z - 115\,454\,737\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8\,388\,608\,z^7 - 1\,980\,760\,064\,z^6 + 2\,415\,329\,280\,z^5 - 3\,757\,178\,880\,z^4 + 15\,852\,170\,880\,z^3 - 64\,508\,043\,600\,z^2 + 159\,315\,319\,800\,z - 115\,454\,737\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(112\,197\,632\,z^6 - 2\,752\,512\,000\,z^5 - 1\,241\,210\,880\,z^4 + 4\,277\,145\,600\,z^3 - 19\,156\,934\,160\,z^2 + 66\,951\,530\,100\,z - 115\,454\,737\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)
$$

07.22.03.af24.01

$$
{}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{19}{4}; z\right) =
\left(\frac{8\,388\,608\,z^7}{36\,395\,233\,875} + \frac{17\,825\,792\,z^6}{346\,621\,275} + \frac{65\,536\,z^5}{987\,525} + \frac{16\,384\,z^4}{197\,505} + \frac{2944\,z^3}{9405} + \frac{944\,z^2}{855} + \frac{376\,z}{171} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{346\,621\,275}\left(2\sqrt{z}\left(1\,048\,576\,z^6 + 26\,214\,400\,z^5 - 8\,626\,176\,z^4 - 26\,956\,800\,z^3 - 105\,945\,840\,z^2 - 299\,999\,700\,z - 346\,621\,275\right)\sinh\left(2\sqrt{z}\right)\right)
$$

07.22.03.af25.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{19}{4}; -z\right) =$$
$$\left(-\frac{8\,388\,608\,z^7}{36\,395\,233\,875} + \frac{17\,825\,792\,z^6}{346\,621\,275} - \frac{65\,536\,z^5}{987\,525} + \frac{16\,384\,z^4}{197\,505} - \frac{2944\,z^3}{9405} + \frac{944\,z^2}{855} - \frac{376\,z}{171} + 1\right)\cos\left(2\sqrt{z}\right) -$$
$$\frac{1}{346\,621\,275}\left(2\sqrt{z}\right.$$
$$\left.\left(1\,048\,576\,z^6 - 26\,214\,400\,z^5 - 8\,626\,176\,z^4 + 26\,956\,800\,z^3 - 105\,945\,840\,z^2 + 299\,999\,700\,z - 346\,621\,275\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af26.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{17}{4}; z\right) =$$
$$\frac{1}{5\,497\,844\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4\,194\,304\,z^7 + 909\,639\,680\,z^6 + 1\,744\,404\,480\,z^5 + 998\,000\,640\,z^4 + 3\,274\,689\,600\,z^3 + \right.\right.\right.$$
$$\left.\left.9\,322\,840\,800\,z^2 + 12\,217\,432\,500\,z + 5\,497\,844\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +$$
$$12\sqrt{z}\left(17\,825\,792\,z^6 + 423\,034\,880\,z^5 - 123\,002\,880\,z^4 - 338\,607\,360\,z^3 - 1\,152\,824\,400\,z^2 - \right.$$
$$\left.2\,606\,385\,600\,z - 1\,832\,614\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(1\,048\,576\,z^6 + 214\,302\,720\,z^5 + \right.$$
$$\left.\left.\left.167\,731\,200\,z^4 + 320\,785\,920\,z^3 + 1\,112\,726\,160\,z^2 + 3\,420\,881\,100\,z + 5\,497\,844\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af27.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{17}{4}; -z\right) =$$
$$-\frac{1}{5\,497\,844\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4\,194\,304\,z^7 - 909\,639\,680\,z^6 + 1\,744\,404\,480\,z^5 - 998\,000\,640\,z^4 + 3\,274\,689\,600\,z^3 - \right.\right.\right.$$
$$\left.\left.9\,322\,840\,800\,z^2 + 12\,217\,432\,500\,z - 5\,497\,844\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +$$
$$12\sqrt{z}\left(17\,825\,792\,z^6 - 423\,034\,880\,z^5 - 123\,002\,880\,z^4 + 338\,607\,360\,z^3 - 1\,152\,824\,400\,z^2 + \right.$$
$$\left.2\,606\,385\,600\,z - 1\,832\,614\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(1\,048\,576\,z^6 - 214\,302\,720\,z^5 + \right.$$
$$\left.\left.\left.167\,731\,200\,z^4 - 320\,785\,920\,z^3 + 1\,112\,726\,160\,z^2 - 3\,420\,881\,100\,z + 5\,497\,844\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af28.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{15}{4}; z\right) = \left(-\frac{1\,048\,576\,z^6}{39\,092\,625} - \frac{262\,144\,z^5}{467\,775} + \frac{8192\,z^4}{42\,525} + \frac{13\,312\,z^3}{31\,185} + \frac{368\,z^2}{297} + \frac{304\,z}{135} + 1\right)\cosh\left(2\sqrt{z}\right) -$$
$$\frac{1}{1\,915\,538\,625}\left(2\sqrt{z}\right.\left(1\,048\,576\,z^6 + 201\,850\,880\,z^5 + 167\,731\,200\,z^4 + \right.$$
$$\left.\left.239\,016\,960\,z^3 + 708\,598\,800\,z^2 + 1\,759\,457\,700\,z + 1\,915\,538\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af29.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{15}{4}; -z\right) =$$
$$\left(-\frac{1\,048\,576\,z^6}{39\,092\,625} + \frac{262\,144\,z^5}{467\,775} + \frac{8192\,z^4}{42\,525} - \frac{13\,312\,z^3}{31\,185} + \frac{368\,z^2}{297} - \frac{304\,z}{135} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{1\,915\,538\,625}\left(2\sqrt{z}\,\left(1\,048\,576\,z^6 - 201\,850\,880\,z^5 + 167\,731\,200\,z^4 - 239\,016\,960\,z^3 + 708\,598\,800\,z^2 - 1\,759\,457\,700\,z + 1\,915\,538\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af2a.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{13}{4}; z\right) = -\frac{1}{323\,402\,625\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(5\left(4\,980\,736\,z^6 + 98\,746\,368\,z^5 - 41\,094\,144\,z^4 - 52\,678\,080\,z^3 - 121\,474\,080\,z^2 - 148\,157\,100\,z - 64\,680\,525\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(524\,288\,z^6 + 91\,914\,240\,z^5 + 32\,901\,120\,z^4 + 99\,066\,240\,z^3 + 244\,717\,200\,z^2 + 482\,063\,400\,z + 323\,402\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.12\,z\left(2\,031\,616\,z^5 + 33\,976\,320\,z^4 - 13\,628\,160\,z^3 - 29\,680\,560\,z^2 - 74\,447\,100\,z - 107\,800\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af2b.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{13}{4}; -z\right) = \frac{1}{323\,402\,625\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(-5\left(4\,980\,736\,z^6 - 98\,746\,368\,z^5 - 41\,094\,144\,z^4 + 52\,678\,080\,z^3 - 121\,474\,080\,z^2 + 148\,157\,100\,z - 64\,680\,525\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(524\,288\,z^6 - 91\,914\,240\,z^5 + 32\,901\,120\,z^4 - 99\,066\,240\,z^3 + 244\,717\,200\,z^2 - 482\,063\,400\,z + 323\,402\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.12\,z\left(2\,031\,616\,z^5 - 33\,976\,320\,z^4 - 13\,628\,160\,z^3 + 29\,680\,560\,z^2 - 74\,447\,100\,z + 107\,800\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af2c.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{11}{4}; z\right) = \left(\frac{524\,288\,z^6}{127\,702\,575} + \frac{32\,768\,z^5}{51\,975} - \frac{2048\,z^4}{6237} + \frac{128\,z^3}{165} + \frac{1040\,z^2}{693} + \frac{232\,z}{99} + 1\right)\cosh\left(2\sqrt{z}\right) +$$
$$\frac{1}{127\,702\,575}\left(2\sqrt{z}\,\left(5\,832\,704\,z^5 + 83\,865\,600\,z^4 - 40\,884\,480\,z^3 - 65\,061\,360\,z^2 - 128\,992\,500\,z - 127\,702\,575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af2d.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{11}{4}; -z\right) = \left(\frac{524\,288\,z^6}{127\,702\,575} - \frac{32\,768\,z^5}{51\,975} - \frac{2048\,z^4}{6237} - \frac{128\,z^3}{165} + \frac{1040\,z^2}{693} - \frac{232\,z}{99} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{1}{127\,702\,575}\left(2\sqrt{z}\,\left(5\,832\,704\,z^5 - 83\,865\,600\,z^4 - 40\,884\,480\,z^3 + 65\,061\,360\,z^2 - 128\,992\,500\,z + 127\,702\,575\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af2e.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{9}{4}; z\right) = \frac{1}{24\,877\,125\sqrt{2}} \left(\sqrt[4]{z}\left(\left(262\,144 z^6 + 36\,290\,560 z^5 - 32\,220\,160 z^4 + 51\,105\,600 z^3 + 57\,002\,400 z^2 + 60\,196\,500 z + 24\,877\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 28\sqrt{z}\left(393\,216 z^5 + 4\,280\,320 z^4 - 1\,943\,040 z^3 - 3\,790\,800 z^2 - 5\,756\,400 z - 3\,553\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(65\,536 z^5 + 8\,400\,896 z^4 - 13\,681\,920 z^3 + 11\,990\,160 z^2 + 20\,393\,100 z + 24\,877\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af2f.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) = \frac{1}{24\,877\,125\sqrt{2}} \left(\sqrt[4]{z}\left(\left(262\,144 z^6 - 36\,290\,560 z^5 - 32\,220\,160 z^4 - 51\,105\,600 z^3 + 57\,002\,400 z^2 - 60\,196\,500 z + 24\,877\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 28\sqrt{z}\left(393\,216 z^5 - 4\,280\,320 z^4 - 1\,943\,040 z^3 + 3\,790\,800 z^2 - 5\,756\,400 z + 3\,553\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-65\,536 z^5 + 8\,400\,896 z^4 + 13\,681\,920 z^3 + 11\,990\,160 z^2 - 20\,393\,100 z + 24\,877\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af2g.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) = \left(-\frac{65\,536 z^5}{297\,675} - \frac{4096 z^4}{2835} - \frac{256 z^3}{945} + \frac{16 z^2}{7} + \frac{160 z}{63} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{11\,609\,325}\left(2\sqrt{z}\left(65\,536 z^5 + 7\,188\,480 z^4 - 15\,724\,800 z^3 + 11\,990\,160 z^2 + 14\,004\,900 z + 11\,609\,325\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.af2h.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) = \left(\frac{65\,536 z^5}{297\,675} - \frac{4096 z^4}{2835} + \frac{256 z^3}{945} + \frac{16 z^2}{7} - \frac{160 z}{63} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{11\,609\,325}\left(2\sqrt{z}\left(-65\,536 z^5 + 7\,188\,480 z^4 + 15\,724\,800 z^3 + 11\,990\,160 z^2 - 14\,004\,900 z + 11\,609\,325\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.af2i.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{5}{4}; z\right) = -\frac{1}{2\,764\,125\sqrt{2}} \left(\sqrt[4]{z}\left(\left(1\,196\,032 z^5 + 4\,720\,640 z^4 + 5\,544\,000 z^3 - 13\,759\,200 z^2 - 7\,616\,700 z - 2\,764\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,768 z^5 + 2\,891\,776 z^4 - 8\,158\,080 z^3 + 4\,309\,200 z^2 + 5\,405\,400 z + 2\,764\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(290\,816 z^4 + 526\,848 z^3 + 3\,371\,760 z^2 - 3\,194\,100 z - 2\,764\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af2j.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{5}{4}; -z\right) =$$
$$\frac{1}{2\,764\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,196\,032\,z^5 - 4\,720\,640\,z^4 + 5\,544\,000\,z^3 + 13\,759\,200\,z^2 - 7\,616\,700\,z + 2\,764\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(32\,768\,z^5 - 2\,891\,776\,z^4 - 8\,158\,080\,z^3 - 4\,309\,200\,z^2 + 5\,405\,400\,z - 2\,764\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4\,z\left(290\,816\,z^4 - 526\,848\,z^3 + 3\,371\,760\,z^2 + 3\,194\,100\,z - 2\,764\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af2k.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) = \left(\frac{32\,768\,z^5}{1\,658\,475} + \frac{32\,768\,z^4}{25\,515} - \frac{1664\,z^3}{405} - \frac{16\,z^2}{27} + \frac{88\,z}{27} + 1\right)\cosh\left(2\sqrt{z}\right) +$$
$$\frac{2\sqrt{z}\left(4096\,z^4 - 4608\,z^3 + 71\,568\,z^2 - 49\,140\,z - 25\,515\right)\sinh\left(2\sqrt{z}\right)}{25\,515}$$

07.22.03.af2l.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) = \left(-\frac{32\,768\,z^5}{1\,658\,475} + \frac{32\,768\,z^4}{25\,515} + \frac{1664\,z^3}{405} - \frac{16\,z^2}{27} - \frac{88\,z}{27} + 1\right)\cos\left(2\sqrt{z}\right) -$$
$$\frac{2\sqrt{z}\left(4096\,z^4 + 4608\,z^3 + 71\,568\,z^2 + 49\,140\,z - 25\,515\right)\sin\left(2\sqrt{z}\right)}{25\,515}$$

07.22.03.af2m.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) =$$
$$\frac{1}{552\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^5 + 790\,528\,z^4 - 2\,404\,800\,z^3 - 1\,965\,600\,z^2 + 3\,194\,100\,z + 552\,825\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(118\,784\,z^4 - 496\,896\,z^3 + 2\,797\,200\,z^2 - 982\,800\,z - 552\,825\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(4096\,z^4 + 168\,960\,z^3 - 444\,528\,z^2 - 1\,228\,500\,z + 552\,825\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af2n.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) =$$
$$-\frac{1}{552\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^5 - 790\,528\,z^4 - 2\,404\,800\,z^3 + 1\,965\,600\,z^2 + 3\,194\,100\,z - 552\,825\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(118\,784\,z^4 + 496\,896\,z^3 + 2\,797\,200\,z^2 + 982\,800\,z - 552\,825\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4\,z\left(4096\,z^4 - 168\,960\,z^3 - 444\,528\,z^2 + 1\,228\,500\,z + 552\,825\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af2o.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) = \left(-\frac{4096\,z^4}{22\,113} + \frac{512\,z^3}{405} - \frac{208\,z^2}{45} - \frac{16\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(4096\,z^4 + 99\,840\,z^3 - 65\,520\,z^2 - 1\,719\,900\,z + 552\,825\right)\sinh\left(2\sqrt{z}\right)}{552\,825}$$

07.22.03.af2p.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) = \left(-\frac{4096\,z^4}{22\,113} - \frac{512\,z^3}{405} - \frac{208\,z^2}{45} + \frac{16\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(4096\,z^4 - 99\,840\,z^3 - 65\,520\,z^2 + 1\,719\,900\,z + 552\,825\right)\sin\left(2\sqrt{z}\right)}{552\,825}$$

07.22.03.af2q.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) = -\frac{1}{552\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(44\,032\,z^4 - 342\,720\,z^3 + 842\,400\,z^2 + 982\,800\,z - 552\,825\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\sqrt{z}\,\left(4096\,z^4 + 32\,512\,z^3 + 341\,280\,z^2 - 1\,965\,600\,z + 61\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 16\,z\left(2624\,z^3 - 21\,828\,z^2 + 36\,855\,z + 122\,850\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af2r.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) = \frac{1}{552\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-44\,032\,z^4 - 342\,720\,z^3 - 842\,400\,z^2 + 982\,800\,z + 552\,825\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\sqrt{z}\,\left(4096\,z^4 - 32\,512\,z^3 + 341\,280\,z^2 + 1\,965\,600\,z + 61\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 16\,z\left(2624\,z^3 + 21\,828\,z^2 + 36\,855\,z - 122\,850\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af2s.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) = \left(-\frac{2048\,z^4}{552\,825} + \frac{128\,z^3}{5265} - \frac{16\,z^2}{27} + \frac{56\,z}{45} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(-2816\,z^3 + 21\,840\,z^2 + 16\,380\,z - 184\,275\right)\sinh\left(2\sqrt{z}\right)}{184\,275}$$

07.22.03.af2t.01

$${}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, \frac{5}{4}; -z\right) = \left(-\frac{2048\,z^4}{552\,825} - \frac{128\,z^3}{5265} - \frac{16\,z^2}{27} - \frac{56\,z}{45} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(-2816\,z^3 - 21\,840\,z^2 + 16\,380\,z + 184\,275\right)\sin\left(2\sqrt{z}\right)}{184\,275}$$

07.22.03.af2u.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, \frac{7}{4}; z\right) = \frac{1}{2\,948\,400\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(-8192z^4+120\,320z^3-1\,347\,840z^2+561\,600z+2\,518\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(65\,536z^4-312\,320z^3-2\,695\,680z^2+3\,931\,200z+1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(8192z^4-142\,848z^3+1\,422\,720z^2+786\,240z-3\,132\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af2v.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, \frac{7}{4}; -z\right) = -\frac{1}{2\,948\,400\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(8192z^4+120\,320z^3+1\,347\,840z^2+561\,600z-2\,518\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(65\,536z^4+312\,320z^3-2\,695\,680z^2-3\,931\,200z+1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(8192z^4+142\,848z^3+1\,422\,720z^2-786\,240z-3\,132\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af2w.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, \frac{9}{4}; z\right) = \left(-\frac{256z^3}{15\,795}-\frac{80z^2}{1053}+\frac{128z}{81}+1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256z^3-5488z^2+27\,300z+110\,565\right)\sinh\left(2\sqrt{z}\right)}{110\,565} $$

07.22.03.af2x.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = \left(\frac{256z^3}{15\,795}-\frac{80z^2}{1053}-\frac{128z}{81}+1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256z^3+5488z^2+27\,300z-110\,565\right)\sin\left(2\sqrt{z}\right)}{110\,565} $$

07.22.03.af2y.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = -\frac{1}{13\,478\,400\sqrt{2}\,z^{5/4}}\left(\left(10\sqrt{z}\left(16\,384z^4+638\,976z^3-2\,695\,680z^2-6\,598\,800z-3\,132\,675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(262\,144z^5-5\,406\,720z^4-4\,792\,320z^3+130\,291\,200z^2+150\,368\,400z+46\,990\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(16\,384z^4+1\,290\,240z^3-3\,893\,760z^2-16\,707\,600z-15\,663\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af2z.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = \frac{1}{13\,478\,400\sqrt{2}\,z^{5/4}}\left(\left(10\sqrt{z}\left(16\,384z^4-638\,976z^3-2\,695\,680z^2+6\,598\,800z-3\,132\,675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-262\,144z^5-5\,406\,720z^4+4\,792\,320z^3+130\,291\,200z^2-150\,368\,400z+46\,990\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(-16\,384z^4+1\,290\,240z^3+3\,893\,760z^2-16\,707\,600z+15\,663\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af30.01

$${}_1F_2\left(\frac{17}{4};-\frac{9}{2},\frac{13}{4};z\right)=\left(-\frac{128\,z^3}{12\,285}+\frac{16\,z^2}{117}+\frac{200\,z}{117}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(16\,z^2-660\,z-1755\right)\sinh\left(2\sqrt{z}\right)}{1755}$$

07.22.03.af31.01

$${}_1F_2\left(\frac{17}{4};-\frac{9}{2},\frac{13}{4};-z\right)=\left(\frac{128\,z^3}{12\,285}+\frac{16\,z^2}{117}-\frac{200\,z}{117}+1\right)\cos\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(16\,z^2+660\,z-1755\right)\sin\left(2\sqrt{z}\right)}{1755}$$

07.22.03.af32.01

$${}_1F_2\left(\frac{17}{4};-\frac{9}{2},\frac{15}{4};z\right)=-\frac{1}{431\,308\,800\sqrt{2}\,z^{9/4}}$$
$$\left(11\left(2\sqrt{z}\,\left(524\,288\,z^5+327\,680\,z^4-100\,106\,240\,z^3-460\,512\,000\,z^2-1\,336\,608\,000\,z-1\,059\,888\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-9\,437\,184\,z^5+96\,010\,240\,z^4+1\,070\,284\,800\,z^3+4\,009\,824\,000\,z^2+8\,855\,028\,000\,z+3\,179\,665\,125\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}$$
$$\left.\left.\left(524\,288\,z^5+1\,638\,400\,z^4-111\,083\,520\,z^3-623\,750\,400\,z^2-2\,071\,742\,400\,z-3\,179\,665\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af33.01

$${}_1F_2\left(\frac{17}{4};-\frac{9}{2},\frac{15}{4};-z\right)=\frac{1}{431\,308\,800\sqrt{2}\,z^{9/4}}$$
$$\left(11\left(2\sqrt{z}\,\left(524\,288\,z^5-327\,680\,z^4-100\,106\,240\,z^3+460\,512\,000\,z^2-1\,336\,608\,000\,z+1\,059\,888\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left(9\,437\,184\,z^5+96\,010\,240\,z^4-1\,070\,284\,800\,z^3+4\,009\,824\,000\,z^2-8\,855\,028\,000\,z+3\,179\,665\,125\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}$$
$$\left.\left.\left(-524\,288\,z^5+1\,638\,400\,z^4+111\,083\,520\,z^3-623\,750\,400\,z^2+2\,071\,742\,400\,z-3\,179\,665\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af34.01

$${}_1F_2\left(\frac{17}{4};-\frac{9}{2},\frac{17}{4};z\right)=\left(\frac{16\,z^2}{63}+\frac{16\,z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{945}\sqrt{z}\,\left(16\,z^2+420\,z+945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.af35.01

$${}_1F_2\left(\frac{17}{4};-\frac{9}{2},\frac{17}{4};-z\right)=\left(\frac{16\,z^2}{63}-\frac{16\,z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\,\left(16\,z^2-420\,z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.af36.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) = -\frac{1}{920\,125\,440\sqrt{2}\, z^{13/4}}\left(11\left(-2\sqrt{z}\,\left(42\,991\,616 z^5 + 988\,610\,560 z^4 + 12\,293\,099\,520 z^3 + 106\,126\,675\,200 z^2 + 448\,181\,370\,000 z + 384\,739\,480\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216 z^6 + 999\,292\,928 z^5 + 15\,580\,200\,960 z^4 + 169\,660\,108\,800 z^3 + 1\,124\,621\,971\,200 z^2 + 3\,103\,353\,162\,000 z + 1\,154\,218\,440\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(45\,088\,768 z^5 + 1\,125\,580\,800 z^4 + 14\,586\,163\,200 z^3 + 132\,324\,192\,000 z^2 + 641\,020\,489\,200 z + 1\,154\,218\,440\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af37.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) = \frac{1}{920\,125\,440\sqrt{2}\, z^{13/4}}\left(11\left(2\sqrt{z}\,\left(42\,991\,616 z^5 - 988\,610\,560 z^4 + 12\,293\,099\,520 z^3 - 106\,126\,675\,200 z^2 + 448\,181\,370\,000 z - 384\,739\,480\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216 z^6 - 999\,292\,928 z^5 + 15\,580\,200\,960 z^4 - 169\,660\,108\,800 z^3 + 1\,124\,621\,971\,200 z^2 - 3\,103\,353\,162\,000 z + 1\,154\,218\,440\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-45\,088\,768 z^5 + 1\,125\,580\,800 z^4 - 14\,586\,163\,200 z^3 + 132\,324\,192\,000 z^2 - 641\,020\,489\,200 z + 1\,154\,218\,440\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af38.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) = -\frac{1}{15\,854\,469\,120 z^{17/4}}\left(17 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(16\,777\,216 z^6 + 230\,686\,720 z^{11/2} + 1\,766\,850\,560 z^5 + 10\,156\,769\,280 z^{9/2} + 49\,235\,558\,400 z^4 + 209\,746\,575\,360 z^{7/2} + 786\,549\,657\,600 z^3 + 2\,556\,286\,387\,200 z^{5/2} + 7\,029\,787\,564\,800 z^2 + 15\,817\,022\,020\,800 z^{3/2} + 27\,679\,788\,536\,400 z + 34\,599\,735\,670\,500\sqrt{z} + e^{4\sqrt{z}}\left(16\,777\,216 z^6 - 230\,686\,720 z^{11/2} + 1\,766\,850\,560 z^5 - 10\,156\,769\,280 z^{9/2} + 49\,235\,558\,400 z^4 - 209\,746\,575\,360 z^{7/2} + 786\,549\,657\,600 z^3 - 2\,556\,286\,387\,200 z^{5/2} + 7\,029\,787\,564\,800 z^2 - 15\,817\,022\,020\,800 z^{3/2} + 27\,679\,788\,536\,400 z - 34\,599\,735\,670\,500\sqrt{z} + 25\,949\,801\,752\,875\right) + 25\,949\,801\,752\,875\right) - 25\,949\,801\,752\,875 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 25\,949\,801\,752\,875 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.af39.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) = \frac{1}{3\,963\,617\,280\, z^{17/4}}\left(17\left(25\,949\,801\,752\,875\sqrt{\pi}\; C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(16\,777\,216 z^6 - 1\,766\,850\,560 z^5 + 49\,235\,558\,400 z^4 - 786\,549\,657\,600 z^3 + 7\,029\,787\,564\,800 z^2 - 27\,679\,788\,536\,400 z + 25\,949\,801\,752\,875\right)\cos\left(2\sqrt{z}\right) - 20\sqrt{z}\left(11\,534\,336 z^5 - 507\,838\,464 z^4 + 10\,487\,328\,768 z^3 - 127\,814\,319\,360 z^2 + 790\,851\,101\,040 z - 1\,729\,986\,783\,525\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.af3a.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) = -\frac{1}{29\,444\,014\,080\sqrt{2}\; z^{17/4}}\left(209\left(2\sqrt{z}\left(33\,554\,432 z^6 + 5\,274\,337\,280 z^5 + 212\,027\,965\,440 z^4 + 4\,451\,082\,854\,400 z^3 + 49\,692\,412\,224\,000 z^2 + 240\,956\,840\,124\,000 z + 213\,530\,411\,469\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 17\left(134\,217\,728 z^6 + 8\,996\,782\,080 z^5 + 260\,112\,384\,000 z^4 + 4\,127\,193\,907\,200 z^3 + 32\,997\,549\,312\,000 z^2 + 99\,941\,737\,896\,000 z + 37\,681\,837\,318\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(33\,554\,432 z^6 + 5\,567\,938\,560 z^5 + 232\,656\,076\,800 z^4 + 5\,071\,378\,636\,800 z^3 + 60\,049\,520\,294\,400 z^2 + 332\,414\,910\,828\,000 z + 640\,591\,234\,408\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af3b.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) = -\frac{1}{29\,444\,014\,080\sqrt{2}\; z^{17/4}}\left(209\left(2\sqrt{z}\left(33\,554\,432 z^6 - 5\,274\,337\,280 z^5 + 212\,027\,965\,440 z^4 - 4\,451\,082\,854\,400 z^3 + 49\,692\,412\,224\,000 z^2 - 240\,956\,840\,124\,000 z + 213\,530\,411\,469\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 17\left(134\,217\,728 z^6 - 8\,996\,782\,080 z^5 + 260\,112\,384\,000 z^4 - 4\,127\,193\,907\,200 z^3 + 32\,997\,549\,312\,000 z^2 - 99\,941\,737\,896\,000 z + 37\,681\,837\,318\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(33\,554\,432 z^6 - 5\,567\,938\,560 z^5 + 232\,656\,076\,800 z^4 - 5\,071\,378\,636\,800 z^3 + 60\,049\,520\,294\,400 z^2 - 332\,414\,910\,828\,000 z + 640\,591\,234\,408\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{17}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.af3c.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) = \frac{1}{93\,010\,042\,125}\left(\left(16\,777\,216\,z^7 + 3\,234\,856\,960\,z^6 - 5\,015\,470\,080\,z^5 + 10\,567\,065\,600\,z^4 + 31\,654\,022\,400\,z^3 + 105\,632\,326\,800\,z^2 + 205\,661\,956\,500\,z + 93\,010\,042\,125\right)\cosh\left(2\sqrt{z}\right) + 10\sqrt{z}\left(41\,943\,040\,z^6 + 709\,361\,664\,z^5 - 473\,825\,280\,z^4 - 1\,660\,538\,880\,z^3 - 5\,967\,561\,600\,z^2 - 16\,329\,713\,400\,z - 18\,602\,008\,425\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.af3d.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{93\,010\,042\,125}\left(\left(-16\,777\,216\,z^7 + 3\,234\,856\,960\,z^6 + 5\,015\,470\,080\,z^5 + 10\,567\,065\,600\,z^4 - 31\,654\,022\,400\,z^3 + 105\,632\,326\,800\,z^2 - 205\,661\,956\,500\,z + 93\,010\,042\,125\right)\cos\left(2\sqrt{z}\right) - 10\sqrt{z}\left(41\,943\,040\,z^6 - 709\,361\,664\,z^5 - 473\,825\,280\,z^4 + 1\,660\,538\,880\,z^3 - 5\,967\,561\,600\,z^2 + 16\,329\,713\,400\,z - 18\,602\,008\,425\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.af3e.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) = \frac{1}{12\,828\,304\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8\,388\,608\,z^7 + 1\,668\,284\,416\,z^6 + 268\,369\,920\,z^5 + 2\,851\,430\,400\,z^4 + 8\,000\,553\,600\,z^3 + 22\,061\,192\,400\,z^2 + 28\,623\,699\,000\,z + 12\,828\,304\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(34\,603\,008\,z^6 + 656\,408\,576\,z^5 - 413\,736\,960\,z^4 - 855\,429\,120\,z^3 - 2\,761\,527\,600\,z^2 - 6\,120\,351\,900\,z - 4\,276\,101\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(2\,097\,152\,z^6 + 391\,643\,136\,z^5 - 336\,347\,136\,z^4 + 855\,429\,120\,z^3 + 2\,718\,087\,840\,z^2 + 8\,098\,412\,400\,z + 12\,828\,304\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af3f.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) = -\frac{1}{12\,828\,304\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8\,388\,608\,z^7 - 1\,668\,284\,416\,z^6 + 268\,369\,920\,z^5 - 2\,851\,430\,400\,z^4 + 8\,000\,553\,600\,z^3 - 22\,061\,192\,400\,z^2 + 28\,623\,699\,000\,z - 12\,828\,304\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(34\,603\,008\,z^6 - 656\,408\,576\,z^5 - 413\,736\,960\,z^4 + 855\,429\,120\,z^3 - 2\,761\,527\,600\,z^2 + 6\,120\,351\,900\,z - 4\,276\,101\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(2\,097\,152\,z^6 - 391\,643\,136\,z^5 - 336\,347\,136\,z^4 - 855\,429\,120\,z^3 + 2\,718\,087\,840\,z^2 - 8\,098\,412\,400\,z + 12\,828\,304\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af3g.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) = \frac{1}{4\,043\,914\,875}\left(\left(-101\,711\,872\,z^6 - 1\,969\,225\,728\,z^5 + 905\,748\,480\,z^4 + 1\,773\,757\,440\,z^3 + 5\,052\,967\,920\,z^2 + 9\,121\,612\,500\,z + 4\,043\,914\,875\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(2\,097\,152\,z^6 + 391\,643\,136\,z^5 + 111\,525\,888\,z^4 + 528\,353\,280\,z^3 + 1\,517\,836\,320\,z^2 + 3\,729\,726\,000\,z + 4\,043\,914\,875\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.af3h.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) = \frac{1}{4\,043\,914\,875}\left(\left(-101\,711\,872\,z^6 + 1\,969\,225\,728\,z^5 + 905\,748\,480\,z^4 - 1\,773\,757\,440\,z^3 + 5\,052\,967\,920\,z^2 - 9\,121\,612\,500\,z + 4\,043\,914\,875\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(2\,097\,152\,z^6 - 391\,643\,136\,z^5 + 111\,525\,888\,z^4 - 528\,353\,280\,z^3 + 1\,517\,836\,320\,z^2 - 3\,729\,726\,000\,z + 4\,043\,914\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.af3i.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) = -\frac{1}{610\,871\,625\sqrt{2}}\left(\sqrt[4]{z}\left(3\left(16\,777\,216\,z^6 + 357\,826\,560\,z^5 - 95\,047\,680\,z^4 - 161\,241\,600\,z^3 - 379\,501\,200\,z^2 - 465\,426\,000\,z - 203\,623\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,048\,576\,z^6 + 189\,661\,184\,z^5 + 167\,731\,200\,z^4 + 178\,214\,400\,z^3 + 455\,878\,800\,z^2 + 907\,580\,700\,z + 610\,871\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(12\,320\,768\,z^5 + 223\,936\,512\,z^4 - 71\,285\,760\,z^3 - 164\,211\,840\,z^2 - 418\,883\,400\,z - 610\,871\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af3j.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{17}{4}; -z\right) = \frac{1}{610\,871\,625\sqrt{2}}\left(\sqrt[4]{z}\left(-3\left(16\,777\,216\,z^6 - 357\,826\,560\,z^5 - 95\,047\,680\,z^4 + 161\,241\,600\,z^3 - 379\,501\,200\,z^2 + 465\,426\,000\,z - 203\,623\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,048\,576\,z^6 - 189\,661\,184\,z^5 + 167\,731\,200\,z^4 - 178\,214\,400\,z^3 + 455\,878\,800\,z^2 - 907\,580\,700\,z + 610\,871\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(12\,320\,768\,z^5 - 223\,936\,512\,z^4 - 71\,285\,760\,z^3 + 164\,211\,840\,z^2 - 418\,883\,400\,z + 610\,871\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af3k.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{212\,837\,625}\left(\left(1\,048\,576\,z^6 + 177\,733\,632\,z^5 + 167\,731\,200\,z^4 + 138\,378\,240\,z^3 + 306\,043\,920\,z^2 + 494\,594\,100\,z + 212\,837\,625\right)\right.$$
$$\cosh\left(2\sqrt{z}\right) +$$
$$\left.2\sqrt{z}\left(12\,058\,624\,z^5 + 223\,936\,512\,z^4 - 50\,319\,360\,z^3 - 100\,638\,720\,z^2 - 210\,810\,600\,z - 212\,837\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af3l.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{212\,837\,625}\left(\left(1\,048\,576\,z^6 - 177\,733\,632\,z^5 + 167\,731\,200\,z^4 - 138\,378\,240\,z^3 + 306\,043\,920\,z^2 - 494\,594\,100\,z + 212\,837\,625\right)\right.$$
$$\cos\left(2\sqrt{z}\right) +$$
$$\left.2\sqrt{z}\left(12\,058\,624\,z^5 - 223\,936\,512\,z^4 - 50\,319\,360\,z^3 + 100\,638\,720\,z^2 - 210\,810\,600\,z + 212\,837\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af3m.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{13}{4}; z\right) = \frac{1}{35\,933\,625\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(524\,288\,z^6 + 86\,016\,000\,z^5 + 125\,798\,400\,z^4 + 43\,056\,000\,z^3 + 76\,237\,200\,z^2 + 85\,293\,000\,z + 35\,933\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.\right.$$
$$4\sqrt{z}\left(5\,832\,704\,z^5 + 101\,928\,960\,z^4 - 19\,918\,080\,z^3 - 33\,555\,600\,z^2 - 56\,546\,100\,z - 35\,933\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(131\,072\,z^5 + 20\,078\,592\,z^4 + 10\,483\,200\,z^3 + 13\,871\,520\,z^2 + 27\,799\,200\,z + 35\,933\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af3n.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{13}{4}; -z\right) = \frac{1}{35\,933\,625\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(524\,288\,z^6 - 86\,016\,000\,z^5 + 125\,798\,400\,z^4 - 43\,056\,000\,z^3 + 76\,237\,200\,z^2 - 85\,293\,000\,z + 35\,933\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.\right.$$
$$4\sqrt{z}\left(5\,832\,704\,z^5 - 101\,928\,960\,z^4 - 19\,918\,080\,z^3 + 33\,555\,600\,z^2 - 56\,546\,100\,z + 35\,933\,625\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(-131\,072\,z^5 + 20\,078\,592\,z^4 - 10\,483\,200\,z^3 + 13\,871\,520\,z^2 - 27\,799\,200\,z + 35\,933\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af3o.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{11}{4}; z\right) = \left(-\frac{1\,114\,112\,z^5}{2\,837\,835} - \frac{4096\,z^4}{693} + \frac{4864\,z^3}{3465} + \frac{2096\,z^2}{1155} + \frac{188\,z}{77} + 1\right)\cosh\left(2\sqrt{z}\right) -$$
$$\frac{1}{14\,189\,175}\left(2\sqrt{z}\left(131\,072\,z^5 + 18\,735\,104\,z^4 + 10\,483\,200\,z^3 + 9\,828\,000\,z^2 + 15\,724\,800\,z + 14\,189\,175\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af3p.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{11}{4}; -z\right) = \left(\frac{1\,114\,112\,z^5}{2\,837\,835} - \frac{4096\,z^4}{693} - \frac{4864\,z^3}{3465} + \frac{2096\,z^2}{1155} - \frac{188\,z}{77} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{14\,189\,175}\left(2\sqrt{z}\left(-131\,072\,z^5 + 18\,735\,104\,z^4 - 10\,483\,200\,z^3 + 9\,828\,000\,z^2 - 15\,724\,800\,z + 14\,189\,175\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af3q.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{9}{4}; z\right) = -\frac{1}{2\,764\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2\,686\,976\,z^5 + 38\,047\,744\,z^4 - 11\,831\,040\,z^3 - 7\,553\,520\,z^2 - 7\,020\,000\,z - 2\,764\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(65\,536\,z^5 + 8\,400\,896\,z^4 + 1\,456\,896\,z^3 + 3\,903\,120\,z^2 + 4\,808\,700\,z + 2\,764\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(655\,360\,z^4 + 7\,569\,408\,z^3 - 2\,021\,760\,z^2 - 2\,597\,400\,z - 2\,764\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af3r.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{9}{4}; -z\right) = -\frac{1}{2\,764\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-2\,686\,976\,z^5 + 38\,047\,744\,z^4 + 11\,831\,040\,z^3 - 7\,553\,520\,z^2 + 7\,020\,000\,z - 2\,764\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(65\,536\,z^5 - 8\,400\,896\,z^4 + 1\,456\,896\,z^3 - 3\,903\,120\,z^2 + 4\,808\,700\,z - 2\,764\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(655\,360\,z^4 - 7\,569\,408\,z^3 - 2\,021\,760\,z^2 + 2\,597\,400\,z - 2\,764\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af3s.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{7}{4}; z\right) = \left(\frac{65\,536\,z^5}{1\,289\,925} + \frac{4096\,z^4}{735} - \frac{1280\,z^3}{441} + \frac{2224\,z^2}{735} + \frac{132\,z}{49} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(622\,592\,z^4 + 5\,990\,400\,z^3 - 2\,021\,760\,z^2 - 1\,755\,000\,z - 1\,289\,925\right)\sinh\left(2\sqrt{z}\right)}{1\,289\,925}$$

07.22.03.af3t.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{7}{4}; -z\right) = \left(-\frac{65\,536\,z^5}{1\,289\,925} + \frac{4096\,z^4}{735} + \frac{1280\,z^3}{441} + \frac{2224\,z^2}{735} - \frac{132\,z}{49} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-622\,592\,z^4 + 5\,990\,400\,z^3 + 2\,021\,760\,z^2 - 1\,755\,000\,z + 1\,289\,925\right)\sin\left(2\sqrt{z}\right)}{1\,289\,925}$$

07.22.03.af3u.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{5}{4}; z\right) = \frac{1}{307\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768 z^5 + 3\,178\,496 z^4 - 2\,546\,560 z^3 + 2\,218\,320 z^2 + 912\,600 z + 307\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(290\,816 z^4 + 1\,974\,784 z^3 - 523\,920 z^2 - 666\,900 z - 307\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(8192 z^4 + 723\,968 z^3 - 973\,920 z^2 + 421\,200 z + 307\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af3v.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{5}{4}; -z\right) = -\frac{1}{307\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768 z^5 - 3\,178\,496 z^4 - 2\,546\,560 z^3 - 2\,218\,320 z^2 + 912\,600 z - 307\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(290\,816 z^4 - 1\,974\,784 z^3 - 523\,920 z^2 + 666\,900 z - 307\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(8192 z^4 - 723\,968 z^3 - 973\,920 z^2 - 421\,200 z + 307\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af3w.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{3}{4}; z\right) = \frac{1}{184\,275}\left(-65\left(4096 z^4 + 13\,824 z^3 + 8208 z^2 - 10\,260 z - 2835\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(8192 z^4 + 599\,040 z^3 - 1\,029\,600 z^2 + 421\,200 z + 184\,275\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.af3x.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) = \frac{1}{184\,275}\left(2\sqrt{z}\left(8192 z^4 - 599\,040 z^3 - 1\,029\,600 z^2 - 421\,200 z + 184\,275\right)\sin\left(2\sqrt{z}\right) - 65\left(4096 z^4 - 13\,824 z^3 + 8208 z^2 + 10\,260 z - 2835\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.af3y.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) = -\frac{1}{61\,425\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(24\,576 z^4 + 34\,816 z^3 + 94\,608 z^2 - 84\,240 z - 12\,285\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096 z^4 + 228\,352 z^3 - 470\,640 z^2 + 99\,900 z + 61\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(29\,696 z^3 - 6528 z^2 + 221\,400 z - 61\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af3z.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) = \frac{1}{61\,425\sqrt{2}}\left(\sqrt[4]{z}\left(-5\left(24\,576 z^4 - 34\,816 z^3 + 94\,608 z^2 + 84\,240 z - 12\,285\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096 z^4 - 228\,352 z^3 - 470\,640 z^2 - 99\,900 z + 61\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(29\,696 z^3 + 6528 z^2 + 221\,400 z + 61\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af40.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) =$$

$$\left(\frac{4096\,z^4}{61\,425} + \frac{11\,776\,z^3}{4725} - \frac{2608\,z^2}{525} - \frac{20\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048\,z^3 - 4608\,z^2 + 19\,800\,z - 4725\right)\sinh\left(2\sqrt{z}\right)}{4725}$$

07.22.03.af41.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) =$$

$$\left(\frac{4096\,z^4}{61\,425} - \frac{11\,776\,z^3}{4725} - \frac{2608\,z^2}{525} + \frac{20\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048\,z^3 + 4608\,z^2 + 19\,800\,z + 4725\right)\sin\left(2\sqrt{z}\right)}{4725}$$

07.22.03.af42.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) = \frac{1}{61\,425\sqrt{2}}$$

$$\left(\sqrt[4]{z}\left(\left(2048\,z^4 + 50\,560\,z^3 - 71\,280\,z^2 - 140\,400\,z + 61\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 240\,z^{3/2}\left(192\,z^2 - 796\,z + 2025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(512\,z^3 + 9888\,z^2 - 4320\,z - 61\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af43.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) =$$

$$\frac{1}{61\,425\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048\,z^4 - 50\,560\,z^3 - 71\,280\,z^2 + 140\,400\,z + 61\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 240\,z^{3/2}\left(192\,z^2 + 796\,z + 2025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(512\,z^3 - 9888\,z^2 - 4320\,z + 61\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af44.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) = \left(\frac{9472\,z^3}{61\,425} - \frac{144\,z^2}{175} + \frac{36\,z}{35} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(512\,z^3 + 3744\,z^2 + 18\,720\,z - 61\,425\right)\sinh\left(2\sqrt{z}\right)}{61\,425}$$

07.22.03.af45.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = \left(-\frac{9472\,z^3}{61\,425} - \frac{144\,z^2}{175} - \frac{36\,z}{35} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(512\,z^3 - 3744\,z^2 + 18\,720\,z + 61\,425\right)\sin\left(2\sqrt{z}\right)}{61\,425}$$

07.22.03.af46.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) =$$

$$\frac{1}{163\,800\sqrt{2}\,\sqrt[4]{z}}\left(\left(30\sqrt{z}\left(1024\,z^3 - 5184\,z^2 + 8775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(8192\,z^4 - 28\,160\,z^3 + 570\,240\,z^2 - 561\,600\,z - 149\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(14\,336\,z^3 - 71\,040\,z^2 - 84\,240\,z + 149\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af47.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) =$$
$$\frac{1}{163\,800\sqrt{2}\,\sqrt[4]{z}}\left(\left(-30\sqrt{z}\left(1024z^3+5184z^2-8775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(8192z^4+28\,160z^3+570\,240z^2+561\,600z-149\,175\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(14\,336z^3+71\,040z^2-84\,240z-149\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af48.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) = \left(\frac{256z^3}{12\,285}-\frac{976z^2}{4095}+\frac{92z}{63}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(128z^2-312z-2457\right)\sinh\left(2\sqrt{z}\right)}{2457}$$

07.22.03.af49.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{9}{4}; -z\right) = \frac{-\left(256z^3+2928z^2+17\,940z-12\,285\right)\cos\left(2\sqrt{z}\right)-10\sqrt{z}\left(128z^2+312z-2457\right)\sin\left(2\sqrt{z}\right)}{12\,285}$$

07.22.03.af4a.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{11}{4}; z\right) = \frac{1}{748\,800\sqrt{2}\,z^{5/4}}\left(\left(2\sqrt{z}\left(16\,384z^4-227\,328z^3+539\,136z^2+1\,488\,240z+626\,535\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(180\,224z^4+921\,600z^3-5\,930\,496z^2-6\,205\,680z-1\,879\,605\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(16\,384z^4-245\,760z^3+359\,424z^2+2\,195\,856z+1\,879\,605\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af4b.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{11}{4}; -z\right) = \frac{1}{748\,800\sqrt{2}\,z^{5/4}}\left(\left(-2\sqrt{z}\left(16\,384z^4+227\,328z^3+539\,136z^2-1\,488\,240z+626\,535\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-180\,224z^4+921\,600z^3+5\,930\,496z^2-6\,205\,680z+1\,879\,605\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(16\,384z^4+245\,760z^3+359\,424z^2-2\,195\,856z+1\,879\,605\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af4c.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{13}{4}; z\right) = \frac{\left(16z^2+2220z+1365\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\left(32z^2-400z-1365\right)\sinh\left(2\sqrt{z}\right)}{1365}$$

07.22.03.af4d.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) = \frac{\left(16z^2-2220z+1365\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\left(32z^2+400z-1365\right)\sin\left(2\sqrt{z}\right)}{1365}$$

07.22.03.af4e.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) =$$
$$\frac{1}{23\,961\,600\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\,\left(-262\,144\,z^4+4\,046\,848\,z^3+17\,521\,920\,z^2+46\,781\,280\,z+36\,547\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(524\,288\,z^5-2\,293\,760\,z^4-43\,450\,368\,z^3-145\,117\,440\,z^2-307\,419\,840\,z-109\,643\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\,\left(-327\,680\,z^4+4\,227\,072\,z^3+23\,931\,648\,z^2+73\,513\,440\,z+109\,643\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af4f.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{15}{4}; -z\right) =$$
$$-\frac{1}{23\,961\,600\sqrt{2}\,z^{9/4}}\left(11\left(2\sqrt{z}\,\left(262\,144\,z^4+4\,046\,848\,z^3-17\,521\,920\,z^2+46\,781\,280\,z-36\,547\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(524\,288\,z^5+2\,293\,760\,z^4-43\,450\,368\,z^3+145\,117\,440\,z^2-307\,419\,840\,z+109\,643\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\,\left(327\,680\,z^4+4\,227\,072\,z^3-23\,931\,648\,z^2+73\,513\,440\,z-109\,643\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af4g.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) = \left(\frac{16\,z^2}{105}+\frac{12\,z}{7}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{21}\sqrt{z}\,(8\,z+21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.af4h.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) = \left(\frac{16\,z^2}{105}-\frac{12\,z}{7}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{21}(21-8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.af4i.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) = \frac{1}{51\,118\,080\sqrt{2}\,z^{13/4}}$$
$$\left(11\left(2\sqrt{z}\,\left(1\,048\,576\,z^5+33\,882\,112\,z^4+389\,509\,120\,z^3+3\,261\,323\,520\,z^2+13\,616\,694\,000\,z+11\,658\,772\,125\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(32\,505\,856\,z^5+514\,260\,992\,z^4+5\,281\,935\,360\,z^3+34\,377\,557\,760\,z^2+\right.$$
$$94\,147\,326\,000\,z+34\,976\,316\,375\left.\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(1\,048\,576\,z^5+38\,207\,488\,z^4+\right.$$
$$\left.\left.\left.465\,211\,392\,z^3+4\,081\,109\,760\,z^2+19\,531\,184\,400\,z+34\,976\,316\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af4j.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = \frac{1}{51\,118\,080\sqrt{2}\,z^{13/4}} $$
$$ \left(11\left(2\sqrt{z}\left(1\,048\,576 z^5 - 33\,882\,112 z^4 + 389\,509\,120 z^3 - 3\,261\,323\,520 z^2 + 13\,616\,694\,000 z - 11\,658\,772\,125\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-32\,505\,856 z^5 + 514\,260\,992 z^4 - 5\,281\,935\,360 z^3 + 34\,377\,557\,760 z^2 - \right. $$
$$ 94\,147\,326\,000 z + 34\,976\,316\,375\Big) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-1\,048\,576 z^5 + 38\,207\,488 z^4 - \right. $$
$$ \left.\left.\left. 465\,211\,392 z^3 + 4\,081\,109\,760 z^2 - 19\,531\,184\,400 z + 34\,976\,316\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af4k.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) = $$
$$ \frac{1}{880\,803\,840 z^{17/4}}\left(17 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-4\,194\,304 z^{11/2} - 45\,088\,768 z^5 - 283\,901\,952 z^{9/2} - 1\,403\,584\,512 z^4 - \right.\right.\right. $$
$$ 5\,992\,759\,296 z^{7/2} - 22\,472\,847\,360 z^3 - 73\,036\,753\,920 z^{5/2} - 200\,851\,073\,280 z^2 - 451\,914\,914\,880 z^{3/2} - $$
$$ 790\,851\,101\,040 z - 988\,563\,876\,300\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304 z^{11/2} - 45\,088\,768 z^5 + 283\,901\,952 z^{9/2} - \right. $$
$$ \left.\left. 1\,403\,584\,512 z^4 + 5\,992\,759\,296 z^{7/2} - 22\,472\,847\,360 z^3 + 73\,036\,753\,920 z^{5/2} - 200\,851\,073\,280 z^2 + \right.\right. $$
$$ \left.\left. 451\,914\,914\,880 z^{3/2} - 790\,851\,101\,040 z + 988\,563\,876\,300\sqrt{z} - 741\,422\,907\,225\right) - 741\,422\,907\,225\Big) + $$
$$ \left.\left. 741\,422\,907\,225 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 741\,422\,907\,225 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.af4l.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) = $$
$$ \frac{1}{220\,200\,960 z^{17/4}}\left(17\left(741\,422\,907\,225\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(45\,088\,768 z^5 - 1\,403\,584\,512 z^4 + 22\,472\,847\,360 z^3 - \right.\right.\right. $$
$$ \left.\left. 200\,851\,073\,280 z^2 + 790\,851\,101\,040 z - 741\,422\,907\,225\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(1\,048\,576 z^5 - \right.\right. $$
$$ \left.\left.\left. 70\,975\,488 z^4 + 1\,498\,189\,824 z^3 - 18\,259\,188\,480 z^2 + 112\,978\,728\,720 z - 247\,140\,969\,075\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.af4m.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = $$
$$ \frac{1}{1\,635\,778\,560\sqrt{2}\,z^{17/4}}\left(209\left(-2\sqrt{z}\left(113\,246\,208 z^5 + 5\,393\,612\,800 z^4 + 117\,478\,932\,480 z^3 + 1\,331\,261\,568\,000 z^2 + \right.\right.\right. $$
$$ 6\,502\,263\,768\,000 z + 5\,771\,092\,201\,875\Big) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ \left(33\,554\,432 z^6 + 3\,688\,890\,368 z^5 + 114\,942\,935\,040 z^4 + 1\,866\,546\,339\,840 z^3 + 15\,079\,611\,456\,000 z^2 + \right. $$
$$ 45\,888\,927\,084\,000 z + 17\,313\,276\,605\,625\Big) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(117\,440\,512 z^5 + 5\,885\,657\,088 z^4 + \right. $$
$$ \left.\left.\left. 133\,534\,679\,040 z^3 + 1\,606\,068\,172\,800 z^2 + 8\,953\,936\,992\,000 z + 17\,313\,276\,605\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af4n.01

$${}_1F_2\left(\frac{17}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{1\,635\,778\,560\sqrt{2}\,z^{17/4}}\left(209\left(2\sqrt{z}\,\left(113\,246\,208\,z^5 - 5\,393\,612\,800\,z^4 + 117\,478\,932\,480\,z^3 - 1\,331\,261\,568\,000\,z^2 + 6\,502\,263\,768\,000\,z - 5\,771\,092\,201\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(33\,554\,432\,z^6 - 3\,688\,890\,368\,z^5 + 114\,942\,935\,040\,z^4 - 1\,866\,546\,339\,840\,z^3 + 15\,079\,611\,456\,000\,z^2 - 45\,888\,927\,084\,000\,z + 17\,313\,276\,605\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-117\,440\,512\,z^5 + 5\,885\,657\,088\,z^4 - 133\,534\,679\,040\,z^3 + 1\,606\,068\,172\,800\,z^2 - 8\,953\,936\,992\,000\,z + 17\,313\,276\,605\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{17}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.af4o.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) = \left(-\frac{16\,777\,216\,z^6}{1\,207\,922\,625} - \frac{82\,313\,216\,z^5}{885\,809\,925} - \frac{65\,536\,z^4}{437\,437} + \frac{4096\,z^3}{6555} + \frac{1792\,z^2}{1311} + \frac{264\,z}{115} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{13\,287\,148\,875}\left(2\sqrt{z}\,\left(4\,194\,304\,z^6 + 578\,027\,520\,z^5 - 2\,179\,891\,200\,z^4 + 2\,144\,102\,400\,z^3 + 5\,837\,832\,000\,z^2 + 12\,786\,473\,700\,z + 13\,287\,148\,875\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af4p.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, -\frac{23}{4}; -z\right) = \left(-\frac{16\,777\,216\,z^6}{1\,207\,922\,625} + \frac{82\,313\,216\,z^5}{885\,809\,925} - \frac{65\,536\,z^4}{437\,437} - \frac{4096\,z^3}{6555} + \frac{1792\,z^2}{1311} - \frac{264\,z}{115} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{13\,287\,148\,875}\left(2\sqrt{z}\,\left(4\,194\,304\,z^6 - 578\,027\,520\,z^5 - 2\,179\,891\,200\,z^4 + 2\,144\,102\,400\,z^3 + 5\,837\,832\,000\,z^2 - 12\,786\,473\,700\,z + 13\,287\,148\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af4q.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, -\frac{21}{4}; z\right) =$$
$$-\frac{1}{1\,832\,614\,875\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(93\,323\,264\,z^6 + 1\,056\,964\,608\,z^5 - 570\,286\,080\,z^4 - 1\,894\,164\,480\,z^3 - 3\,630\,322\,800\,z^2 - 4\,258\,647\,900\,z - 1\,832\,614\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(2\,097\,152\,z^6 + 300\,417\,024\,z^5 - 725\,630\,976\,z^4 + 855\,429\,120\,z^3 + 1\,526\,597\,280\,z^2 + 2\,792\,556\,000\,z + 1\,832\,614\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(7\,602\,176\,z^5 + 64\,880\,640\,z^4 + 22\,063\,104\,z^3 - 198\,581\,760\,z^2 - 442\,154\,700\,z - 610\,871\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af4r.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, -\frac{21}{4}; -z\right) = \frac{1}{1\,832\,614\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-93\,323\,264\,z^6 + 1\,056\,964\,608\,z^5 + 570\,286\,080\,z^4 - 1\,894\,164\,480\,z^3 + 3\,630\,322\,800\,z^2 - 4\,258\,647\,900\,z + 1\,832\,614\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2\,097\,152\,z^6 - 300\,417\,024\,z^5 - 725\,630\,976\,z^4 - 855\,429\,120\,z^3 + 1\,526\,597\,280\,z^2 - 2\,792\,556\,000\,z + 1\,832\,614\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(7\,602\,176\,z^5 - 64\,880\,640\,z^4 + 22\,063\,104\,z^3 + 198\,581\,760\,z^2 - 442\,154\,700\,z + 610\,871\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af4s.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, -\frac{19}{4}; z\right) = \frac{1}{577\,702\,125}\left(\left(2\,097\,152\,z^6 + 300\,417\,024\,z^5 - 422\,461\,440\,z^4 + 528\,353\,280\,z^3 + 895\,134\,240\,z^2 + 1\,362\,160\,800\,z + 577\,702\,125\right)\cosh\left(2\sqrt{z}\right) + 6\sqrt{z}\left(7\,602\,176\,z^5 + 88\,997\,888\,z^4 - 40\,273\,920\,z^3 - 103\,783\,680\,z^2 - 197\,297\,100\,z - 192\,567\,375\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.af4t.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, -\frac{19}{4}; -z\right) = \frac{1}{577\,702\,125}\left(\left(2\,097\,152\,z^6 - 300\,417\,024\,z^5 - 422\,461\,440\,z^4 - 528\,353\,280\,z^3 + 895\,134\,240\,z^2 - 1\,362\,160\,800\,z + 577\,702\,125\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(7\,602\,176\,z^5 - 88\,997\,888\,z^4 - 40\,273\,920\,z^3 + 103\,783\,680\,z^2 - 197\,297\,100\,z + 192\,567\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.af4u.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, -\frac{17}{4}; z\right) = \frac{1}{87\,267\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,048\,576\,z^6 + 155\,713\,536\,z^5 + 132\,387\,840\,z^4 + 193\,330\,800\,z^3 + 209\,441\,700\,z^2 + 87\,267\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(11\,272\,192\,z^5 + 151\,584\,768\,z^4 - 71\,285\,760\,z^3 - 87\,834\,240\,z^2 - 139\,627\,800\,z - 87\,267\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(262\,144\,z^5 + 36\,175\,872\,z^4 - 29\,822\,976\,z^3 + 38\,188\,800\,z^2 + 69\,813\,900\,z + 87\,267\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af4v.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, -\frac{17}{4}; -z\right) = \frac{1}{87\,267\,375\sqrt{2}} \left(\sqrt[4]{z}\left(\left(1\,048\,576 z^6 - 155\,713\,536 z^5 - 132\,387\,840 z^3 + 193\,330\,800 z^2 - 209\,441\,700 z + 87\,267\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(11\,272\,192 z^5 - 151\,584\,768 z^4 - 71\,285\,760 z^3 + 87\,834\,240 z^2 - 139\,627\,800 z + 87\,267\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(262\,144 z^5 - 36\,175\,872 z^4 - 29\,822\,976 z^3 - 38\,188\,800 z^2 + 69\,813\,900 z - 87\,267\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af4w.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, -\frac{15}{4}; z\right) = \frac{1}{30\,405\,375}\left(\left(-11\,010\,048 z^5 - 151\,584\,768 z^4 + 50\,319\,360 z^3 + 56\,609\,280 z^2 + 74\,594\,520 z + 30\,405\,375\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(262\,144 z^5 + 36\,175\,872 z^4 + 4\,036\,608 z^3 + 22\,014\,720 z^2 + 34\,054\,020 z + 30\,405\,375\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.af4x.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, -\frac{15}{4}; -z\right) = \frac{1}{30\,405\,375}\left(3\left(3\,670\,016 z^5 - 50\,528\,256 z^4 - 16\,773\,120 z^3 + 18\,869\,760 z^2 - 24\,864\,840 z + 10\,135\,125\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-262\,144 z^5 + 36\,175\,872 z^4 - 4\,036\,608 z^3 + 22\,014\,720 z^2 - 34\,054\,020 z + 30\,405\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.af4y.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, -\frac{13}{4}; z\right) = -\frac{1}{5\,133\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(5\,439\,488 z^5 + 83\,865\,600 z^4 - 15\,425\,280 z^3 - 13\,618\,800 z^2 - 12\,951\,900 z - 5\,133\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072 z^5 + 17\,424\,384 z^4 + 10\,483\,200 z^3 + 6\,907\,680 z^2 + 8\,845\,200 z + 5\,133\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36 z\left(147\,456 z^4 + 1\,881\,088 z^3 - 386\,880 z^2 - 526\,500 z - 570\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af4z.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, -\frac{13}{4}; -z\right) = -\frac{1}{5\,133\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-5\,439\,488 z^5 + 83\,865\,600 z^4 + 15\,425\,280 z^3 - 13\,618\,800 z^2 + 12\,951\,900 z - 5\,133\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072 z^5 - 17\,424\,384 z^4 + 10\,483\,200 z^3 - 6\,907\,680 z^2 + 8\,845\,200 z - 5\,133\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36 z\left(147\,456 z^4 - 1\,881\,088 z^3 - 386\,880 z^2 + 526\,500 z - 570\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af50.01

$${}_1F_2\left(\frac{17}{4};-\frac{5}{2},-\frac{11}{4};z\right)=\left(\frac{131\,072\,z^5}{2\,027\,025}+\frac{598\,016\,z^4}{75\,075}+\frac{512\,z^3}{99}+\frac{416\,z^2}{165}+\frac{144\,z}{55}+1\right)\cosh\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\,\left(1\,294\,336\,z^4+16\,929\,792\,z^3-2\,358\,720\,z^2-2\,604\,420\,z-2\,027\,025\right)\sinh\left(2\sqrt{z}\right)}{2\,027\,025}$$

07.22.03.af51.01

$${}_1F_2\left(\frac{17}{4};-\frac{5}{2},-\frac{11}{4};-z\right)=\left(-\frac{131\,072\,z^5}{2\,027\,025}+\frac{598\,016\,z^4}{75\,075}-\frac{512\,z^3}{99}+\frac{416\,z^2}{165}-\frac{144\,z}{55}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\,\left(-1\,294\,336\,z^4+16\,929\,792\,z^3+2\,358\,720\,z^2-2\,604\,420\,z+2\,027\,025\right)\sin\left(2\sqrt{z}\right)}{2\,027\,025}$$

07.22.03.af52.01

$${}_1F_2\left(\frac{17}{4};-\frac{5}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{394\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536\,z^5+7\,770\,112\,z^4+8\,236\,800\,z^3+1\,488\,240\,z^2+1\,088\,100\,z+394\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\,\left(622\,592\,z^4+7\,569\,408\,z^3-898\,560\,z^2-772\,200\,z-394\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(16\,384\,z^4+1\,790\,976\,z^3+561\,600\,z^2+456\,300\,z+394\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af53.01

$${}_1F_2\left(\frac{17}{4};-\frac{5}{2},-\frac{9}{4};-z\right)=$$
$$-\frac{1}{394\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536\,z^5-7\,770\,112\,z^4+8\,236\,800\,z^3-1\,488\,240\,z^2+1\,088\,100\,z-394\,875\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\,\left(622\,592\,z^4-7\,569\,408\,z^3-898\,560\,z^2+772\,200\,z-394\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4\,z\left(16\,384\,z^4-1\,790\,976\,z^3+561\,600\,z^2-456\,300\,z+394\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af54.01

$${}_1F_2\left(\frac{17}{4};-\frac{5}{2},-\frac{7}{4};z\right)=\left(-\frac{65\,536\,z^4}{20\,475}-\frac{2048\,z^3}{63}+\frac{512\,z^2}{105}+\frac{104\,z}{35}+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\,\left(16\,384\,z^4+1\,649\,664\,z^3+561\,600\,z^2+301\,860\,z+184\,275\right)\sinh\left(2\sqrt{z}\right)}{184\,275}$$

07.22.03.af55.01

$${}_1F_2\left(\frac{17}{4};-\frac{5}{2},-\frac{7}{4};-z\right)=\left(-\frac{65\,536\,z^4}{20\,475}+\frac{2048\,z^3}{63}+\frac{512\,z^2}{105}-\frac{104\,z}{35}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\,\left(16\,384\,z^4-1\,649\,664\,z^3+561\,600\,z^2-301\,860\,z+184\,275\right)\sin\left(2\sqrt{z}\right)}{184\,275}$$

07.22.03.af56.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, -\frac{5}{4}; z\right) = -\frac{1}{43\,875\sqrt{2}} \left(\sqrt[4]{z}\left(\left(282\,624 z^4 + 2\,665\,984 z^3 - 589\,680 z^2 - 147\,420 z - 43\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8192 z^4 + 723\,968 z^3 + 29\,856 z^2 + 112\,320 z + 43\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(68\,608 z^3 + 501\,888 z^2 - 77\,220 z - 43\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af57.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, -\frac{5}{4}; -z\right) = \frac{1}{43\,875\sqrt{2}} \left(\sqrt[4]{z}\left(\left(-282\,624 z^4 + 2\,665\,984 z^3 + 589\,680 z^2 - 147\,420 z + 43\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8192 z^4 - 723\,968 z^3 + 29\,856 z^2 - 112\,320 z + 43\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(68\,608 z^3 - 501\,888 z^2 - 77\,220 z + 43\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af58.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, -\frac{3}{4}; z\right) = \left(\frac{8192 z^4}{26\,325} + \frac{1024 z^3}{45} - \frac{32 z^2}{3} + \frac{64 z}{15} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(7168 z^3 + 41\,600 z^2 - 8580 z - 2925\right)\sinh\left(2\sqrt{z}\right)}{2925} $$

07.22.03.af59.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, -\frac{3}{4}; -z\right) = \left(\frac{8192 z^4}{26\,325} - \frac{1024 z^3}{45} - \frac{32 z^2}{3} - \frac{64 z}{15} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(7168 z^3 - 41\,600 z^2 - 8580 z + 2925\right)\sin\left(2\sqrt{z}\right)}{2925} $$

07.22.03.af5a.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, -\frac{1}{4}; z\right) = \frac{1}{8775\sqrt{2}} \left(\sqrt[4]{z}\left(\left(4096 z^4 + 257\,536 z^3 - 170\,640 z^2 + 77\,220 z + 8775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(29\,696 z^3 + 107\,904 z^2 - 9720 z - 8775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1024 z^3 + 57\,216 z^2 - 57\,780 z + 8775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af5b.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, -\frac{1}{4}; -z\right) = \frac{1}{8775\sqrt{2}} \left(\sqrt[4]{z}\left(\left(4096 z^4 - 257\,536 z^3 - 170\,640 z^2 - 77\,220 z + 8775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(29\,696 z^3 - 107\,904 z^2 - 9720 z + 8775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-1024 z^3 + 57\,216 z^2 + 57\,780 z + 8775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af5c.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{1}{4}; z\right) =$$

$$\frac{1}{8775}\left(-13\left(2048 z^3 + 2304 z^2 + 3240 z - 675\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(1024 z^3 + 44\,928 z^2 - 53\,820 z + 8775\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af5d.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) = \left(\frac{2048 z^3}{675} - \frac{256 z^2}{75} + \frac{24 z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-1024 z^3 + 44\,928 z^2 + 53\,820 z + 8775\right)\sin\left(2\sqrt{z}\right)}{8775}$$

07.22.03.af5e.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{3}{4}; z\right) =$$

$$-\frac{1}{8775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(12\,032 z^3 - 2160 z^2 + 27\,540 z - 8775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(512 z^3 + 15\,648 z^2 - 19\,440 z - 675\right)\right.\right.$$

$$\left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 180 z\left(64 z^2 - 84 z + 225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af5f.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) =$$

$$\frac{1}{8775\sqrt{2}}\left(\sqrt[4]{z}\left(\left(12\,032 z^3 + 2160 z^2 + 27\,540 z + 8775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512 z^3 - 15\,648 z^2 - 19\,440 z + 675\right)\right.\right.$$

$$\left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 180 z\left(64 z^2 + 84 z + 225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af5g.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{5}{4}; z\right) = \left(-\frac{512 z^3}{8775} - \frac{224 z^2}{225} + \frac{16 z}{25} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{225}\sqrt{z}\left(64 z^2 - 156 z + 225\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.af5h.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{5}{4}; -z\right) = \frac{\left(512 z^3 - 8736 z^2 - 5616 z + 8775\right)\cos\left(2\sqrt{z}\right) + 78\sqrt{z}\left(64 z^2 + 156 z + 225\right)\sin\left(2\sqrt{z}\right)}{8775}$$

07.22.03.af5i.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) =$$

$$-\frac{1}{11\,700\sqrt{2}\sqrt[4]{z}}\left(\left(2\sqrt{z}\left(512 z^3 + 4320 z^2 + 3240 z - 8775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384 z^3 - 51\,840 z^2 + 32\,400 z + 8775\right)\right.\right.$$

$$\left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(512 z^3 + 2400 z^2 + 9720 z - 8775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af5j.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{7}{4}; -z\right) = \frac{1}{11\,700\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(512z^3 - 4320z^2 + 3240z + 8775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384z^3 + 51\,840z^2 + 32\,400z - 8775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left.2\sqrt{z}\left(512z^3 - 2400z^2 + 9720z + 8775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af5k.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) = \left(-\frac{256z^2}{585} + \frac{56z}{45} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(64z^2 - 156z + 1755\right)\sinh\left(2\sqrt{z}\right)}{1755}$$

07.22.03.af5l.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{9}{4}; -z\right) = \left(-\frac{256z^2}{585} - \frac{56z}{45} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(64z^2 + 156z + 1755\right)\sin\left(2\sqrt{z}\right)}{1755}$$

07.22.03.af5m.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{11}{4}; z\right) =$$
$$-\frac{1}{374\,400\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\left(17\,408z^3 - 20\,736z^2 - 84\,240z - 29\,835\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384z^4 - 122\,880z^3 + 331\,776z^2 + \right.\right.\right.$$
$$\left.\left.\left.308\,880z + 89\,505\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(5120z^3 - 768z^2 - 39\,312z - 29\,835\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af5n.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{11}{4}; -z\right) =$$
$$\frac{1}{374\,400\sqrt{2}\,z^{5/4}}\left(7\left(-2\sqrt{z}\left(17\,408z^3 + 20\,736z^2 - 84\,240z + 29\,835\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384z^4 + 122\,880z^3 + 331\,776z^2 - \right.\right.\right.$$
$$\left.\left.\left.308\,880z + 89\,505\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(5120z^3 + 768z^2 - 39\,312z + 29\,835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af5o.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{13}{4}; z\right) = \left(-\frac{32z^2}{195} + \frac{96z}{65} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{195}\sqrt{z}\left(28z + 195\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.af5p.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{13}{4}; -z\right) = \left(-\frac{32z^2}{195} - \frac{96z}{65} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{195}\left(195 - 28z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.af5q.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{15}{4}; z\right) =$$
$$-\frac{1}{11\,980\,800\sqrt{2}\,z^{9/4}}\left(77\left(2\sqrt{z}\left(32\,768z^4-188\,416z^3-808\,704z^2-1\,909\,440z-1\,461\,915\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-65\,536z^4+2\,162\,688z^3+6\,200\,064z^2+12\,411\,360z+4\,385\,745\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(32\,768z^4-172\,032z^3-1\,108\,224z^2-3\,055\,104z-4\,385\,745\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af5r.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{15}{4}; -z\right) =$$
$$-\frac{1}{11\,980\,800\sqrt{2}\,z^{9/4}}\left(77\left(2\sqrt{z}\left(32\,768z^4+188\,416z^3-808\,704z^2+1\,909\,440z-1\,461\,915\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(-65\,536z^4-2\,162\,688z^3+6\,200\,064z^2-12\,411\,360z+4\,385\,745\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(32\,768z^4+172\,032z^3-1\,108\,224z^2+3\,055\,104z-4\,385\,745\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af5s.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{17}{4}; z\right) = \left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\,(4z+15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.af5t.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{17}{4}; -z\right) = \left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}(15-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.af5u.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) =$$
$$-\frac{1}{25\,559\,040\sqrt{2}\,z^{13/4}}\left(77\left(-2\sqrt{z}\left(1\,376\,256z^4+14\,323\,712z^3+114\,566\,400z^2+471\,154\,320z+402\,026\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(1\,048\,576z^5+20\,119\,552z^4+188\,977\,152z^3+1\,199\,128\,320z^2+3\,251\,298\,960z+1\,206\,079\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}($$
$$\left.\left.\sqrt{z}\right)-2\sqrt{z}\left(1\,507\,328z^4+17\,264\,640z^3+144\,099\,072z^2+678\,328\,560z+1\,206\,079\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af5v.01

$${}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) =$$
$$-\frac{1}{25\,559\,040\sqrt{2}\,z^{13/4}}\left(77\left(2\sqrt{z}\left(1\,376\,256z^4-14\,323\,712z^3+114\,566\,400z^2-471\,154\,320z+402\,026\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(1\,048\,576z^5-20\,119\,552z^4+188\,977\,152z^3-1\,199\,128\,320z^2+3\,251\,298\,960z-1\,206\,079\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}($$
$$\left.\left.\sqrt{z}\right)-2\sqrt{z}\left(1\,507\,328z^4-17\,264\,640z^3+144\,099\,072z^2-678\,328\,560z+1\,206\,079\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af5w.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) = $$
$$ -\frac{1}{62\,914\,560\, z^{17/4}}\left(17\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(1\,048\,576\, z^5 + 8\,650\,752\, z^{9/2} + 45\,023\,232\, z^4 + 193\,314\,816\, z^{7/2} + 724\,930\,560\, z^3 + \right.\right.\right. $$
$$ 2\,356\,024\,320\, z^{5/2} + 6\,479\,066\,880\, z^2 + 14\,577\,900\,480\, z^{3/2} + 25\,511\,325\,840\, z + 31\,889\,157\,300\sqrt{z} + $$
$$ e^{4\sqrt{z}}\left(1\,048\,576\, z^5 - 8\,650\,752\, z^{9/2} + 45\,023\,232\, z^4 - 193\,314\,816\, z^{7/2} + 724\,930\,560\, z^3 - 2\,356\,024\,320\, z^{5/2} + \right. $$
$$ \left.\left. 6\,479\,066\,880\, z^2 - 14\,577\,900\,480\, z^{3/2} + 25\,511\,325\,840\, z - 31\,889\,157\,300\sqrt{z} + 23\,916\,867\,975\right) + $$
$$ \left.\left. 23\,916\,867\,975\right) - 23\,916\,867\,975\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 23\,916\,867\,975\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.af5x.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) = $$
$$ \frac{1}{15\,728\,640\, z^{17/4}}\left(17\left(23\,916\,867\,975\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(\left(1\,048\,576\, z^5 - 45\,023\,232\, z^4 + 724\,930\,560\, z^3 - \right.\right.\right. $$
$$ \left.\left. 6\,479\,066\,880\, z^2 + 25\,511\,325\,840\, z - 23\,916\,867\,975\right)\cos\left(2\sqrt{z}\right) - \right. $$
$$ \left.\left.\left. 12\sqrt{z}\left(720\,896\, z^4 - 16\,109\,568\, z^3 + 196\,335\,360\, z^2 - 1\,214\,825\,040\, z + 2\,657\,429\,775\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.af5y.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{23}{4}; z\right) = -\frac{1}{817\,889\,280\sqrt{2}\, z^{17/4}} $$
$$ \left(1463\left(2\sqrt{z}\left(2\,097\,152\, z^5 + 149\,553\,152\, z^4 + 3\,448\,872\,960\, z^3 + 39\,884\,382\,720\, z^2 + 196\,648\,452\,000\, z + 174\,881\,581\,875\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(92\,274\,688\, z^5 + 3\,299\,868\,672\, z^4 + 55\,399\,219\,200\, z^3 + 453\,805\,148\,160\, z^2 + \right. $$
$$ \left. 1\,389\,404\,016\,000\, z + 524\,644\,745\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(2\,097\,152\, z^5 + 161\,611\,776\, z^4 + \right. $$
$$ \left.\left. 3\,906\,772\,992\, z^3 + 48\,010\,959\,360\, z^2 + 270\,161\,892\,000\, z + 524\,644\,745\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.af5z.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{5}{2}, \frac{23}{4}; -z\right) = \frac{1}{817\,889\,280\sqrt{2}\, z^{17/4}} $$
$$ \left(1463\left(2\sqrt{z}\left(2\,097\,152\, z^5 - 149\,553\,152\, z^4 + 3\,448\,872\,960\, z^3 - 39\,884\,382\,720\, z^2 + 196\,648\,452\,000\, z - 174\,881\,581\,875\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-92\,274\,688\, z^5 + 3\,299\,868\,672\, z^4 - 55\,399\,219\,200\, z^3 + 453\,805\,148\,160\, z^2 - \right. $$
$$ \left. 1\,389\,404\,016\,000\, z + 524\,644\,745\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-2\,097\,152\, z^5 + 161\,611\,776\, z^4 - \right. $$
$$ \left.\left. 3\,906\,772\,992\, z^3 + 48\,010\,959\,360\, z^2 - 270\,161\,892\,000\, z + 524\,644\,745\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

For fixed z and $a_1 = \frac{17}{4}$, $b_{1.} = -\frac{3}{2}$

07.22.03.af60.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{23}{4}; z\right) = \frac{1}{2\,657\,429\,775} \left(\left(4\,194\,304\,z^6 + 345\,243\,648\,z^5 - 1\,688\,371\,200\,z^4 - 1\,383\,782\,400\,z^3 + 5\,837\,832\,000\,z^2 + 6\,624\,317\,700\,z + 2\,657\,429\,775\right) \cosh\left(2\sqrt{z}\right) + 2\sqrt{z} \left(38\,797\,312\,z^5 - 122\,880\,000\,z^4 + 1\,763\,942\,400\,z^3 - 1\,729\,728\,000\,z^2 - 3\,081\,078\,000\,z - 2\,657\,429\,775\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.af61.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{23}{4}; -z\right) = \frac{1}{2\,657\,429\,775} \left(\left(4\,194\,304\,z^6 - 345\,243\,648\,z^5 - 1\,688\,371\,200\,z^4 + 1\,383\,782\,400\,z^3 + 5\,837\,832\,000\,z^2 - 6\,624\,317\,700\,z + 2\,657\,429\,775\right) \cos\left(2\sqrt{z}\right) + 2\sqrt{z} \left(38\,797\,312\,z^5 + 122\,880\,000\,z^4 + 1\,763\,942\,400\,z^3 + 1\,729\,728\,000\,z^2 - 3\,081\,078\,000\,z + 2\,657\,429\,775\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.af62.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{21}{4}; z\right) = \frac{1}{366\,522\,975\sqrt{2}} \left(\sqrt[4]{z} \left(\left(2\,097\,152\,z^6 + 201\,850\,880\,z^5 - 780\,910\,592\,z^4 + 488\,816\,640\,z^3 + 1\,079\,788\,320\,z^2 + 930\,852\,000\,z + 366\,522\,975\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z} \left(19\,660\,800\,z^5 + 11\,927\,552\,z^4 + 443\,111\,424\,z^3 - 595\,745\,280\,z^2 - 637\,633\,620\,z - 366\,522\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(524\,288\,z^5 + 45\,678\,592\,z^4 - 188\,461\,056\,z^3 - 26\,823\,168\,z^2 + 344\,415\,240\,z + 366\,522\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af63.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{21}{4}; -z\right) = \frac{1}{366\,522\,975\sqrt{2}} \left(\sqrt[4]{z} \left(\left(2\,097\,152\,z^6 - 201\,850\,880\,z^5 - 780\,910\,592\,z^4 - 488\,816\,640\,z^3 + 1\,079\,788\,320\,z^2 - 930\,852\,000\,z + 366\,522\,975\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z} \left(19\,660\,800\,z^5 - 11\,927\,552\,z^4 + 443\,111\,424\,z^3 + 595\,745\,280\,z^2 - 637\,633\,620\,z + 366\,522\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(524\,288\,z^5 - 45\,678\,592\,z^4 - 188\,461\,056\,z^3 + 26\,823\,168\,z^2 + 344\,415\,240\,z - 366\,522\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af64.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{19}{4}; z\right) = \left(-\frac{262\,144\,z^5}{1\,540\,539} - \frac{131\,072\,z^4}{233\,415} - \frac{198\,656\,z^3}{122\,265} + \frac{256\,z^2}{95} + \frac{148\,z}{57} + 1\right)\cosh\left(2\sqrt{z}\right) -$$
$$\frac{1}{115\,540\,425}\left(2\sqrt{z}\left(524\,288\,z^5 + 50\,528\,256\,z^4 - 154\,275\,840\,z^3 + 85\,155\,840\,z^2 + 145\,945\,800\,z + 115\,540\,425\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af65.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{19}{4}; -z\right) = \left(\frac{262\,144\,z^5}{1\,540\,539} - \frac{131\,072\,z^4}{233\,415} + \frac{198\,656\,z^3}{122\,265} + \frac{256\,z^2}{95} - \frac{148\,z}{57} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{1}{115\,540\,425}\left(2\sqrt{z}\left(-524\,288\,z^5 + 50\,528\,256\,z^4 + 154\,275\,840\,z^3 + 85\,155\,840\,z^2 - 145\,945\,800\,z + 115\,540\,425\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af66.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{17}{4}; z\right) =$$
$$-\frac{1}{17\,453\,475\sqrt{2}}\left(\sqrt[4]{z}\left(\left(9\,961\,472\,z^5 + 70\,991\,872\,z^4 - 20\,367\,360\,z^3 - 63\,011\,520\,z^2 - 46\,542\,600\,z - 17\,453\,475\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.$$
$$4\sqrt{z}\left(262\,144\,z^5 + 26\,476\,544\,z^4 - 53\,243\,904\,z^3 + 38\,188\,800\,z^2 + 32\,579\,820\,z + 17\,453\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.4\,z\left(2\,424\,832\,z^4 + 11\,710\,464\,z^3 + 9\,381\,888\,z^2 - 18\,617\,040\,z - 17\,453\,475\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af67.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{17}{4}; -z\right) = -\frac{1}{17\,453\,475\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(-9\,961\,472\,z^5 + 70\,991\,872\,z^4 + 20\,367\,360\,z^3 - 63\,011\,520\,z^2 + 46\,542\,600\,z - 17\,453\,475\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.\right.$$
$$4\sqrt{z}\left(262\,144\,z^5 - 26\,476\,544\,z^4 - 53\,243\,904\,z^3 - 38\,188\,800\,z^2 + 32\,579\,820\,z - 17\,453\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(2\,424\,832\,z^4 - 11\,710\,464\,z^3 + 9\,381\,888\,z^2 + 18\,617\,040\,z - 17\,453\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af68.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{6\,081\,075}\left(\left(262\,144\,z^5 + 26\,476\,544\,z^4 - 32\,040\,960\,z^3 + 22\,014\,720\,z^2 + 16\,756\,740\,z + 6\,081\,075\right)\cosh\left(2\sqrt{z}\right) +\right.$$
$$\left.2\sqrt{z}\left(2\,424\,832\,z^4 + 18\,038\,784\,z^3 - 4\,569\,600\,z^2 - 8\,648\,640\,z - 6\,081\,075\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af69.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{6\,081\,075}\left(\left(-262\,144\,z^5 + 26\,476\,544\,z^4 + 32\,040\,960\,z^3 + 22\,014\,720\,z^2 - 16\,756\,740\,z + 6\,081\,075\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.2\sqrt{z}\left(-2\,424\,832\,z^4 + 18\,038\,784\,z^3 + 4\,569\,600\,z^2 - 8\,648\,640\,z + 6\,081\,075\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af6a.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{13}{4}; z\right) =$$
$$\frac{1}{1\,026\,675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072 z^5 + 13\,819\,904 z^4 - 1\,497\,600 z^3 + 5\,110\,560 z^2 + 2\,948\,400 z + 1\,026\,675\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,196\,032 z^4 + 10\,601\,472 z^3 - 3\,481\,920 z^2 - 2\,127\,060 z - 1\,026\,675\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(32\,768 z^4 + 3\,164\,160 z^3 - 2\,335\,104 z^2 + 1\,305\,720 z + 1\,026\,675\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af6b.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{13}{4}; -z\right) =$$
$$-\frac{1}{1\,026\,675\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072 z^5 - 13\,819\,904 z^4 - 1\,497\,600 z^3 - 5\,110\,560 z^2 + 2\,948\,400 z - 1\,026\,675\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,196\,032 z^4 - 10\,601\,472 z^3 - 3\,481\,920 z^2 + 2\,127\,060 z - 1\,026\,675\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-32\,768 z^4 + 3\,164\,160 z^3 + 2\,335\,104 z^2 + 1\,305\,720 z - 1\,026\,675\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af6c.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{11}{4}; z\right) = \frac{1}{405\,405}\left(\left(-1\,163\,264 z^4 - 10\,601\,472 z^3 + 2\,358\,720 z^2 + 1\,228\,500 z + 405\,405\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(32\,768 z^4 + 3\,164\,160 z^3 - 29\,568 z^2 + 687\,960 z + 405\,405\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af6d.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{11}{4}; -z\right) = \frac{1}{405\,405}\left(\left(-1\,163\,264 z^4 + 10\,601\,472 z^3 + 2\,358\,720 z^2 - 1\,228\,500 z + 405\,405\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(32\,768 z^4 - 3\,164\,160 z^3 - 29\,568 z^2 - 687\,960 z + 405\,405\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af6e.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) = -\frac{1}{78\,975\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(114\,688 z^4 + 1\,198\,080 z^3 - 142\,272 z^2 - 51\,480 z - 15\,795\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,384 z^4 + 1\,512\,448 z^3 + 561\,600 z^2 + 194\,220 z + 78\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(139\,264 z^3 + 1\,152\,768 z^2 - 131\,040 z - 78\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af6f.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{9}{4}; -z\right) = \frac{1}{78\,975\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-573\,440 z^4 + 5\,990\,400 z^3 + 711\,360 z^2 - 257\,400 z + 78\,975\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,384 z^4 - 1\,512\,448 z^3 + 561\,600 z^2 - 194\,220 z + 78\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(139\,264 z^3 - 1\,152\,768 z^2 - 131\,040 z + 78\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af6g.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{7}{4}; z\right) = \frac{1}{36\,855}\left(\left(16\,384\,z^4 + 1\,379\,328\,z^3 + 561\,600\,z^2 + 133\,380\,z + 36\,855\right)\cosh\left(2\sqrt{z}\right) + 6\sqrt{z}\left(45\,056\,z^3 + 384\,256\,z^2 - 28\,080\,z - 12\,285\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af6h.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{7}{4}; -z\right) = \frac{1}{36\,855}\left(\left(16\,384\,z^4 - 1\,379\,328\,z^3 + 561\,600\,z^2 - 133\,380\,z + 36\,855\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(45\,056\,z^3 - 384\,256\,z^2 - 28\,080\,z + 12\,285\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af6i.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{5}{4}; z\right) = \frac{1}{8775\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(8192\,z^4 + 658\,432\,z^3 + 468\,000\,z^2 + 37\,440\,z + 8775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(21\,504\,z^3 + 167\,296\,z^2 - 10\,140\,z - 2925\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2048\,z^3 + 148\,992\,z^2 + 23\,400\,z + 8775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af6j.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{5}{4}; -z\right) = \frac{1}{8775\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(8192\,z^4 - 658\,432\,z^3 + 468\,000\,z^2 - 37\,440\,z + 8775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(21\,504\,z^3 - 167\,296\,z^2 - 10\,140\,z + 2925\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-2048\,z^3 + 148\,992\,z^2 - 23\,400\,z + 8775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af6k.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{3}{4}; z\right) =$$
$$\left(-\frac{60\,416\,z^3}{5265} - \frac{640\,z^2}{9} + \frac{52\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(2048\,z^3 + 134\,656\,z^2 + 23\,400\,z + 5265\right)\sinh\left(2\sqrt{z}\right)}{5265}$$

07.22.03.af6l.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{3}{4}; -z\right) =$$
$$\left(\frac{60\,416\,z^3}{5265} - \frac{640\,z^2}{9} - \frac{52\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-2048\,z^3 + 134\,656\,z^2 - 23\,400\,z + 5265\right)\sin\left(2\sqrt{z}\right)}{5265}$$

07.22.03.af6m.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{1}{4}; z\right) =$$
$$-\frac{1}{1755\sqrt{2}}\left(\sqrt[4]{z}\left(\left(28\,672\,z^3 + 161\,856\,z^2 - 23\,400\,z - 1755\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1024\,z^3 + 57\,216\,z^2 - 2196\,z + 1755\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36\,z\left(768\,z^2 + 3088\,z - 195\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af6n.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, -\frac{1}{4}; -z\right) =$$
$$-\frac{1}{1755\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-28\,672\,z^3+161\,856\,z^2+23\,400\,z-1755\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024\,z^3-57\,216\,z^2-2196\,z-1755\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+36\,z\left(768\,z^2-3088\,z-195\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af6o.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{1}{4}; z\right) = \left(\frac{1024\,z^3}{1755}+\frac{128\,z^2}{5}-\frac{28\,z}{3}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{351}\sqrt{z}\left(1280\,z^2+3744\,z-351\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.af6p.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{1}{4}; -z\right) = \left(-\frac{1024\,z^3}{1755}+\frac{128\,z^2}{5}+\frac{28\,z}{3}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{351}\sqrt{z}\left(-1280\,z^2+3744\,z+351\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.af6q.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{1755\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512\,z^3+18\,464\,z^2-8720\,z+1755\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2880\,z^2+4076\,z+345\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(128\,z^2+3928\,z-2445\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af6r.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{3}{4}; -z\right) =$$
$$-\frac{1}{1755\sqrt{2}}\left(\sqrt[4]{z}\left(\left(512\,z^3-18\,464\,z^2-8720\,z-1755\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2880\,z^2-4076\,z+345\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(-128\,z^2+3928\,z+2445\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af6s.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{5}{4}; z\right) = \frac{1}{45}\left(64\,z^2-12\,z+45\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(128\,z^2+2808\,z-1755\right)\sinh\left(2\sqrt{z}\right)}{1755}$$

07.22.03.af6t.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{5}{4}; -z\right) = \frac{1}{45}\left(64\,z^2+12\,z+45\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-128\,z^2+2808\,z+1755\right)\sin\left(2\sqrt{z}\right)}{1755}$$

07.22.03.af6u.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{7}{4}; z\right) =$$
$$\frac{1}{1170\sqrt{2}\,\sqrt[4]{z}}\left(\left(4\sqrt{z}\,\left(544z^2-460z+405\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(512z^3+6496z^2-2280z-675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1024z^2-1500z+675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af6v.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{7}{4}; -z\right) =$$
$$\frac{1}{1170\sqrt{2}\,\sqrt[4]{z}}\left(\left(4\sqrt{z}\,\left(544z^2+460z+405\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-512z^3+6496z^2+2280z-675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1024z^2+1500z+675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af6w.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{9}{4}; z\right) = \left(\frac{64z^2}{351}+\frac{20z}{27}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{27}\sqrt{z}\,(16z-27)\sinh\left(2\sqrt{z}\right)$$

07.22.03.af6x.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) = \left(\frac{64z^2}{351}-\frac{20z}{27}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{27}\sqrt{z}\,(16z+27)\sin\left(2\sqrt{z}\right)$$

07.22.03.af6y.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) = \frac{1}{37\,440\sqrt{2}\,z^{5/4}}$$
$$\left(7\left(2\sqrt{z}\,\left(1024z^3-512z^2+6480z+1755\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(19\,456z^3-23\,808z^2-19\,440z-5265\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1024z^3-2688z^2+8208z+5265\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af6z.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) = \frac{1}{37\,440\sqrt{2}\,z^{5/4}}$$
$$\left(7\left(2\sqrt{z}\,\left(1024z^3+512z^2+6480z-1755\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(19\,456z^3+23\,808z^2-19\,440z+5265\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1024z^3+2688z^2+8208z-5265\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af70.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) = \left(\frac{44z}{39}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{39}\sqrt{z}\,(8z-39)\sinh\left(2\sqrt{z}\right)$$

07.22.03.af71.01

$${}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) = \left(1-\frac{44z}{39}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{39}\sqrt{z}\,(8z+39)\sin\left(2\sqrt{z}\right)$$

07.22.03.af72.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) = \frac{1}{1\,198\,080\sqrt{2}\,z^{9/4}} \left(77\left(2\sqrt{z}\,\left(8192z^3+48\,384z^2+93\,600z+69\,615\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(32\,768z^4-139\,264z^3-324\,864z^2-599\,040z-208\,845\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4096z^3+65\,280z^2+153\,504z+208\,845\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af73.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{15}{4}; -z\right) = \frac{1}{1\,198\,080\sqrt{2}\,z^{9/4}} \left(77\left(-2\sqrt{z}\,\left(8192z^3-48\,384z^2+93\,600z-69\,615\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(32\,768z^4+139\,264z^3-324\,864z^2+599\,040z-208\,845\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(4096z^3-65\,280z^2+153\,504z-208\,845\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af74.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) = \left(\frac{4z}{3}+1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right) $$

07.22.03.af75.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) = \left(1-\frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.af76.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) = \frac{1}{2\,555\,904\sqrt{2}\,z^{13/4}} \left(77\left(2\sqrt{z}\,\left(65\,536z^4+634\,880z^3+4\,702\,464z^2+18\,935\,280z+16\,081\,065\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(327\,680z^4+2\,658\,304z^3+16\,243\,968z^2+43\,439\,760z+16\,081\,065\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(65\,536z^4+774\,144z^3+5\,960\,448z^2+27\,400\,464z+48\,243\,195\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af77.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{19}{4}; -z\right) = -\frac{1}{2\,555\,904\sqrt{2}\,z^{13/4}} \left(77\left(2\sqrt{z}\,\left(65\,536z^4-634\,880z^3+4\,702\,464z^2-18\,935\,280z+16\,081\,065\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(327\,680z^4-2\,658\,304z^3+16\,243\,968z^2-43\,439\,760z+16\,081\,065\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(65\,536z^4-774\,144z^3+5\,960\,448z^2-27\,400\,464z+48\,243\,195\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af78.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) = \frac{1}{6\,291\,456\, z^{17/4}} \left(17\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(-262\,144\, z^{9/2} - 1\,638\,400\, z^4 - 7\,159\,808\, z^{7/2} - 26\,849\,280\, z^3 - 87\,260\,160\, z^{5/2} - 239\,965\,440\, z^2 - 539\,922\,240\, z^{3/2} - 944\,863\,920\, z - 1\,181\,079\,900\sqrt{z} + e^{4\sqrt{z}}\left(262\,144\, z^{9/2} - 1\,638\,400\, z^4 + 7\,159\,808\, z^{7/2} - 26\,849\,280\, z^3 + 87\,260\,160\, z^{5/2} - 239\,965\,440\, z^2 + 539\,922\,240\, z^{3/2} - 944\,863\,920\, z + 1\,181\,079\,900\sqrt{z} - 885\,809\,925\right) - 885\,809\,925\right) + 885\,809\,925\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 885\,809\,925\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.af79.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) = -\frac{1}{1\,572\,864\, z^{17/4}} \left(17\left(2\sqrt[4]{z}\left(5\left(327\,680\, z^4 - 5\,369\,856\, z^3 + 47\,993\,088\, z^2 - 188\,972\,784\, z + 177\,161\,985\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(65\,536\, z^4 - 1\,789\,952\, z^3 + 21\,815\,040\, z^2 - 134\,980\,560\, z + 295\,269\,975\right)\sin\left(2\sqrt{z}\right)\right) - 885\,809\,925\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right) $$

07.22.03.af7a.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) = \frac{1}{81\,788\,928\sqrt{2}\, z^{17/4}} \left(1463\left(-2\sqrt{z}\left(4\,456\,448\, z^4 + 113\,737\,728\, z^3 + 1\,354\,429\,440\, z^2 + 6\,763\,236\,480\, z + 6\,030\,399\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(2\,097\,152\, z^5 + 104\,988\,672\, z^4 + 1\,856\,544\,768\, z^3 + 15\,504\,652\,800\, z^2 + 47\,857\,249\,440\, z + 18\,091\,198\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\left(524\,288\, z^4 + 14\,237\,696\, z^3 + 180\,590\,592\, z^2 + 1\,029\,188\,160\, z + 2\,010\,133\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af7b.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) = -\frac{1}{81\,788\,928\sqrt{2}\, z^{17/4}} \left(1463\left(2\sqrt{z}\left(4\,456\,448\, z^4 - 113\,737\,728\, z^3 + 1\,354\,429\,440\, z^2 - 6\,763\,236\,480\, z + 6\,030\,399\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(2\,097\,152\, z^5 - 104\,988\,672\, z^4 + 1\,856\,544\,768\, z^3 - 15\,504\,652\,800\, z^2 + 47\,857\,249\,440\, z - 18\,091\,198\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 18\sqrt{z}\left(524\,288\, z^4 - 14\,237\,696\, z^3 + 180\,590\,592\, z^2 - 1\,029\,188\,160\, z + 2\,010\,133\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{17}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.af7c.01

$${}_1F_2\left(\frac{17}{4};-\frac{1}{2},-\frac{23}{4};z\right)=\left(-\frac{30\,408\,704\,z^5}{885\,809\,925}+\frac{7\,143\,424\,z^4}{19\,684\,665}-\frac{8192\,z^3}{3933}-\frac{2560\,z^2}{1311}+\frac{80\,z}{23}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{1}{885\,809\,925}$$
$$\left(2\sqrt{z}\left(1\,048\,576\,z^5+33\,095\,680\,z^4-20\,275\,200\,z^3-1\,729\,728\,000\,z^2+1\,027\,026\,000\,z+885\,809\,925\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af7d.01

$${}_1F_2\left(\frac{17}{4};-\frac{1}{2},-\frac{23}{4};-z\right)=\left(\frac{30\,408\,704\,z^5}{885\,809\,925}+\frac{7\,143\,424\,z^4}{19\,684\,665}+\frac{8192\,z^3}{3933}-\frac{2560\,z^2}{1311}-\frac{80\,z}{23}+1\right)\cos\left(2\sqrt{z}\right)+\frac{1}{885\,809\,925}$$
$$\left(2\sqrt{z}\left(-1\,048\,576\,z^5+33\,095\,680\,z^4+20\,275\,200\,z^3-1\,729\,728\,000\,z^2-1\,027\,026\,000\,z+885\,809\,925\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af7e.01

$${}_1F_2\left(\frac{17}{4};-\frac{1}{2},-\frac{21}{4};z\right)=-\frac{1}{122\,174\,325\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(15\,990\,784\,z^5-102\,301\,696\,z^4+662\,292\,480\,z^3-297\,872\,640\,z^2-442\,154\,700\,z-122\,174\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(524\,288\,z^5+22\,478\,848\,z^4-67\,350\,528\,z^3-374\,515\,200\,z^2+344\,415\,240\,z+122\,174\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)$$
$$\left.\left.I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(3\,866\,624\,z^4-30\,277\,632\,z^3+173\,846\,016\,z^2+57\,481\,920\,z-122\,174\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af7f.01

$${}_1F_2\left(\frac{17}{4};-\frac{1}{2},-\frac{21}{4};-z\right)=\frac{1}{122\,174\,325\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(15\,990\,784\,z^5+102\,301\,696\,z^4+662\,292\,480\,z^3+297\,872\,640\,z^2-442\,154\,700\,z+122\,174\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(524\,288\,z^5-22\,478\,848\,z^4-67\,350\,528\,z^3+374\,515\,200\,z^2+344\,415\,240\,z-122\,174\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)$$
$$\left.\left.J_{-\frac{1}{4}}\left(\sqrt{z}\right)-4\,z\left(3\,866\,624\,z^4+30\,277\,632\,z^3+173\,846\,016\,z^2-57\,481\,920\,z-122\,174\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af7g.01

$${}_1F_2\left(\frac{17}{4};-\frac{1}{2},-\frac{19}{4};z\right)=\left(\frac{524\,288\,z^5}{38\,513\,475}+\frac{65\,536\,z^4}{95\,095}-\frac{274\,432\,z^3}{122\,265}-\frac{1024\,z^2}{285}+\frac{72\,z}{19}+1\right)\cosh\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\left(3\,997\,696\,z^4-16\,957\,440\,z^3+111\,767\,040\,z^2-43\,243\,200\,z-38\,513\,475\right)\sinh\left(2\sqrt{z}\right)}{38\,513\,475}$$

07.22.03.af7h.01

$${}_1F_2\left(\frac{17}{4};-\frac{1}{2},-\frac{19}{4};-z\right)=\left(-\frac{524\,288\,z^5}{38\,513\,475}+\frac{65\,536\,z^4}{95\,095}+\frac{274\,432\,z^3}{122\,265}-\frac{1024\,z^2}{285}-\frac{72\,z}{19}+1\right)\cos\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\left(3\,997\,696\,z^4+16\,957\,440\,z^3+111\,767\,040\,z^2+43\,243\,200\,z-38\,513\,475\right)\sin\left(2\sqrt{z}\right)}{38\,513\,475}$$

07.22.03.af7i.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, -\frac{17}{4}; z\right) = \frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(262\,144 z^5 + 16\,285\,696 z^4 - 46\,868\,480 z^3 + 11\,456\,640 z^2 + 23\,271\,300 z + 5\,817\,825\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2\,031\,616 z^4 - 2\,609\,152 z^3 + 30\,059\,520 z^2 - 18\,617\,040 z - 5\,817\,825\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(65\,536 z^4 + 3\,579\,904 z^3 - 10\,338\,816 z^2 - 6\,314\,400 z + 5\,817\,825\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af7j.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) = -\frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(262\,144 z^5 - 16\,285\,696 z^4 - 46\,868\,480 z^3 - 11\,456\,640 z^2 + 23\,271\,300 z - 5\,817\,825\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2\,031\,616 z^4 + 2\,609\,152 z^3 + 30\,059\,520 z^2 + 18\,617\,040 z - 5\,817\,825\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(65\,536 z^4 - 3\,579\,904 z^3 - 10\,338\,816 z^2 + 6\,314\,400 z + 5\,817\,825\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af7k.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) = \frac{1}{2\,027\,025}\left(\left(-2\,031\,616 z^4 - 1\,720\,320 z^3 - 14\,031\,360 z^2 + 8\,648\,640 z + 2\,027\,025\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(65\,536 z^4 + 4\,079\,616 z^3 - 9\,300\,480 z^2 + 1\,995\,840 z + 2\,027\,025\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.af7l.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) = \frac{1}{2\,027\,025}\left(\left(-2\,031\,616 z^4 + 1\,720\,320 z^3 - 14\,031\,360 z^2 - 8\,648\,640 z + 2\,027\,025\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(65\,536 z^4 - 4\,079\,616 z^3 - 9\,300\,480 z^2 - 1\,995\,840 z + 2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.af7m.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) = -\frac{1}{342\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,032\,192 z^4 + 3\,988\,480 z^3 - 112\,320 z^2 - 1\,579\,500 z - 342\,225\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,768 z^4 + 2\,164\,736 z^3 - 3\,365\,760 z^2 + 1\,305\,720 z + 342\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(249\,856 z^3 + 515\,328 z^2 + 811\,440 z - 342\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af7n.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{342\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-1\,032\,192\,z^4+3\,988\,480\,z^3+112\,320\,z^2-1\,579\,500\,z+342\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\right.\right.$$
$$\sqrt{z}\left(32\,768\,z^4-2\,164\,736\,z^3-3\,365\,760\,z^2-1\,305\,720\,z+342\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(249\,856\,z^3-515\,328\,z^2+811\,440\,z+342\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af7o.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) = \frac{1}{135\,135}\left(\left(32\,768\,z^4+2\,164\,736\,z^3-2\,083\,200\,z^2+687\,960\,z+135\,135\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(249\,856\,z^3+1\,026\,816\,z^2-68\,880\,z-135\,135\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af7p.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, -\frac{11}{4}; -z\right) = \frac{1}{135\,135}\left(\left(32\,768\,z^4-2\,164\,736\,z^3-2\,083\,200\,z^2-687\,960\,z+135\,135\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.2\sqrt{z}\left(249\,856\,z^3-1\,026\,816\,z^2-68\,880\,z+135\,135\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af7q.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, -\frac{9}{4}; z\right) = \frac{1}{26\,325\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(16\,384\,z^4+1\,141\,760\,z^3-187\,200\,z^2+152\,100\,z+26\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+60\sqrt{z}\left(8192\,z^3+42\,752\,z^2-8736\,z-1755\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(4096\,z^3+255\,744\,z^2-153\,360\,z+26\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af7r.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, -\frac{9}{4}; -z\right) = \frac{1}{26\,325\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(16\,384\,z^4-1\,141\,760\,z^3-187\,200\,z^2-152\,100\,z+26\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+60\sqrt{z}\left(8192\,z^3-42\,752\,z^2-8736\,z+1755\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-4096\,z^3+255\,744\,z^2+153\,360\,z+26\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af7s.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, -\frac{7}{4}; z\right) = \frac{1}{12\,285}$$
$$\left(\left(-118\,784\,z^3-641\,280\,z^2+84\,240\,z+12\,285\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\left(4096\,z^3+255\,744\,z^2-19\,920\,z+12\,285\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af7t.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) = \frac{1}{12\,285}$$
$$\left(\left(118\,784\,z^3-641\,280\,z^2-84\,240\,z+12\,285\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\left(-4096\,z^3+255\,744\,z^2+19\,920\,z+12\,285\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af7u.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) =$$
$$-\frac{1}{2925\sqrt{2}}\left(\sqrt[4]{z}\left(3\left(19\,456\,z^3+124\,800\,z^2-8580\,z-975\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048\,z^3+120\,832\,z^2+23\,400\,z+2925\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+20\,z\left(2816\,z^2+13\,344\,z-585\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af7v.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, -\frac{5}{4}; -z\right) =$$
$$\frac{1}{2925\sqrt{2}}\left(\sqrt[4]{z}\left(3\left(19\,456\,z^3-124\,800\,z^2-8580\,z+975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-2048\,z^3+120\,832\,z^2-23\,400\,z+2925\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+20\,z\left(-2816\,z^2+13\,344\,z+585\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af7w.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, -\frac{3}{4}; z\right) = \left(\frac{2048\,z^3}{1755}+\frac{7168\,z^2}{117}+\frac{40\,z}{3}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(13\,568\,z^2+66\,720\,z-1755\right)\sinh\left(2\sqrt{z}\right)}{1755}$$

07.22.03.af7x.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, -\frac{3}{4}; -z\right) = \left(-\frac{2048\,z^3}{1755}+\frac{7168\,z^2}{117}-\frac{40\,z}{3}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\left(-13\,568\,z^2+66\,720\,z+1755\right)\sin\left(2\sqrt{z}\right)}{1755}$$

07.22.03.af7y.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) =$$
$$\frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024\,z^3+50\,688\,z^2+21\,060\,z+585\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(6400\,z^2+27\,792\,z-585\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(256\,z^2+11\,136\,z+585\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af7z.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) =$$
$$-\frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024\,z^3-50\,688\,z^2+21\,060\,z-585\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(6400\,z^2-27\,792\,z-585\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.4\,z\left(256\,z^2-11\,136\,z+585\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af80.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) = \left(-\frac{5888\,z^2}{585}-32\,z+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{585}\sqrt{z}\left(256\,z^2+9760\,z+585\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.af81.01

$${}_1F_2\left(\frac{17}{4};-\frac{1}{2},\frac{1}{4};-z\right)=\left(-\frac{5888\,z^2}{585}+32\,z+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{585}\sqrt{z}\,\left(256\,z^2-9760\,z+585\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.af82.01

$${}_1F_2\left(\frac{17}{4};-\frac{1}{2},\frac{3}{4};z\right)=-\frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(2752\,z^2+7700\,z-585\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\,\left(128\,z^2+3928\,z-255\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\,(656\,z+1095)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af83.01

$${}_1F_2\left(\frac{17}{4};-\frac{1}{2},\frac{3}{4};-z\right)=$$
$$\frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(-2752\,z^2+7700\,z+585\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(128\,z^2-3928\,z-255\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\,(656\,z-1095)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af84.01

$${}_1F_2\left(\frac{17}{4};-\frac{1}{2},\frac{5}{4};z\right)=\left(-\frac{128\,z^2}{585}-\frac{24\,z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{585}\sqrt{z}\,\left(592\,z+585\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.af85.01

$${}_1F_2\left(\frac{17}{4};-\frac{1}{2},\frac{5}{4};-z\right)=\left(-\frac{128\,z^2}{585}+\frac{24\,z}{5}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{585}\left(585-592\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.af86.01

$${}_1F_2\left(\frac{17}{4};-\frac{1}{2},\frac{7}{4};z\right)=-\frac{1}{195\sqrt{2}\,\sqrt[4]{z}}\left(\left(\sqrt{z}\,\left(64\,z^2+1060\,z-245\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.\left(1024\,z^2+140\,z+75\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(32\,z^2+410\,z-75\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af87.01

$${}_1F_2\left(\frac{17}{4};-\frac{1}{2},\frac{7}{4};-z\right)=\frac{1}{195\sqrt{2}\,\sqrt[4]{z}}\left(\left(\sqrt{z}\,\left(-64\,z^2+1060\,z+245\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.\left(-1024\,z^2+140\,z-75\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(32\,z^2-410\,z-75\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af88.01

$${}_1F_2\left(\frac{17}{4};-\frac{1}{2},\frac{9}{4};z\right)=\left(1-\frac{16\,z}{9}\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{117}\sqrt{z}\,\left(16\,z+117\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.af89.01

$${}_1F_2\left(\frac{17}{4};-\frac{1}{2},\frac{9}{4};-z\right)=\left(\frac{16\,z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{117}\left(117-16\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.af8a.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) =$$
$$-\frac{1}{6240\sqrt{2}\, z^{5/4}}\left(7\left(2\sqrt{z}\left(1344 z^2 - 800 z - 135\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1024 z^3 + 2176 z^2 + 1680 z + 405\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 2\sqrt{z}\left(1216 z^2 - 816 z - 405\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af8b.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) =$$
$$-\frac{1}{6240\sqrt{2}\, z^{5/4}}\left(7\left(-2\sqrt{z}\left(1344 z^2 + 800 z - 135\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1024 z^3 - 2176 z^2 + 1680 z - 405\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 2\sqrt{z}\left(1216 z^2 + 816 z - 405\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af8c.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) = \left(1 - \frac{8z}{13}\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.af8d.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) = \left(\frac{8z}{13} + 1\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.af8e.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) =$$
$$-\frac{1}{199\,680\sqrt{2}\, z^{9/4}}\left(77\left(2\sqrt{z}\left(2048 z^3 - 4352 z^2 - 5760 z - 4095\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(4096 z^3 + 7424 z^2 + 12\,000 z + 4095\right)\right.\right.$$
$$\left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(2048 z^3 - 5376 z^2 - 9792 z - 12\,285\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af8f.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) = \frac{1}{199\,680\sqrt{2}\, z^{9/4}}$$
$$\left(77\left(2\sqrt{z}\left(2048 z^3 + 4352 z^2 - 5760 z + 4095\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(4096 z^3 - 7424 z^2 + 12\,000 z - 4095\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left. 2\sqrt{z}\left(2048 z^3 + 5376 z^2 - 9792 z + 12\,285\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af8g.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.af8h.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.af8i.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) = -\frac{1}{425\,984\sqrt{2}\, z^{13/4}} \left(77\left(-18\sqrt{z}\left(4096 z^3 + 25\,856 z^2 + 100\,880 z + 85\,085\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(65\,536 z^4 + 413\,696 z^3 + 2\,375\,424 z^2 + 6\,224\,400 z + 2\,297\,295\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(45\,056 z^3 + 298\,752 z^2 + 1\,323\,504 z + 2\,297\,295\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af8j.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) = \frac{1}{425\,984\sqrt{2}\, z^{13/4}} \left(77\left(18\sqrt{z}\left(4096 z^3 - 25\,856 z^2 + 100\,880 z - 85\,085\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(65\,536 z^4 - 413\,696 z^3 + 2\,375\,424 z^2 - 6\,224\,400 z + 2\,297\,295\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-45\,056 z^3 + 298\,752 z^2 - 1\,323\,504 z + 2\,297\,295\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af8k.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) = -\frac{1}{1\,048\,576 z^{17/4}} \left(17 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(65\,536 z^4 + 311\,296 z^{7/2} + 1\,167\,360 z^3 + 3\,793\,920 z^{5/2} + 10\,433\,280 z^2 + 23\,474\,880 z^{3/2} + 41\,081\,040 z + 51\,351\,300\sqrt{z} + e^{4\sqrt{z}}\left(65\,536 z^4 - 311\,296 z^{7/2} + 1\,167\,360 z^3 - 3\,793\,920 z^{5/2} + 10\,433\,280 z^2 - 23\,474\,880 z^{3/2} + 41\,081\,040 z - 51\,351\,300\sqrt{z} + 38\,513\,475\right) + 38\,513\,475\right) - 38\,513\,475 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 38\,513\,475 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.af8l.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) = \frac{1}{262\,144 z^{17/4}} \left(17\left(38\,513\,475\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) - 2\sqrt[4]{z}\left(\left(65\,536 z^4 - 1\,167\,360 z^3 + 10\,433\,280 z^2 - 41\,081\,040 z + 38\,513\,475\right)\cos\left(2\sqrt{z}\right) - 76\sqrt{z}\left(4096 z^3 - 49\,920 z^2 + 308\,880 z - 675\,675\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.af8m.01

$$ {}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) = -\frac{1}{13\,631\,488\sqrt{2}\, z^{17/4}} \left(1463\left(2\sqrt{z}\left(131\,072 z^4 + 4\,251\,648 z^3 + 53\,015\,040 z^2 + 269\,549\,280 z + 241\,215\,975\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\left(524\,288 z^4 + 10\,174\,464 z^3 + 87\,459\,840 z^2 + 273\,049\,920 z + 103\,378\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(131\,072 z^4 + 4\,743\,168 z^3 + 63\,318\,528 z^2 + 367\,567\,200 z + 723\,647\,925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af8n.01

$${}_1F_2\left(\frac{17}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) =$$
$$-\frac{1}{13\,631\,488\sqrt{2}\,z^{17/4}}\left(1463\left(2\sqrt{z}\left(131\,072z^4-4\,251\,648z^3+53\,015\,040z^2-269\,549\,280z+241\,215\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$7\left(524\,288z^4-10\,174\,464z^3+87\,459\,840z^2-273\,049\,920z+103\,378\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(131\,072z^4-4\,743\,168z^3+63\,318\,528z^2-367\,567\,200z+723\,647\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{17}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.af8o.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{885\,809\,925}\left(\left(1\,048\,576z^5-8\,847\,360z^4+369\,008\,640z^3-1\,729\,728\,000z^2-2\,432\,430\,000z+885\,809\,925\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.160\sqrt{z}\left(65\,536z^4-811\,008z^3+21\,621\,600z-2\,027\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af8p.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{885\,809\,925}\left(-\left(1\,048\,576z^5+8\,847\,360z^4+369\,008\,640z^3+1\,729\,728\,000z^2-2\,432\,430\,000z-885\,809\,925\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.160\sqrt{z}\left(65\,536z^4+811\,008z^3-21\,621\,600z-2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af8q.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{122\,174\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(524\,288z^5+2\,686\,976z^4+84\,480\,000z^3-573\,096\,960z^2+46\,542\,600z+122\,174\,325\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(2\,818\,048z^4-30\,277\,632z^3+59\,973\,120z^2+355\,354\,560z-122\,174\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.8z\left(65\,536z^4+14\,234\,112z^2-74\,468\,160z-52\,971\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af8r.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, -\frac{21}{4}; -z\right) = -\frac{1}{122\,174\,325\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(524\,288z^5-2\,686\,976z^4+84\,480\,000z^3+573\,096\,960z^2+46\,542\,600z-122\,174\,325\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(2\,818\,048z^4+30\,277\,632z^3+59\,973\,120z^2-355\,354\,560z-122\,174\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.8z\left(65\,536z^4+14\,234\,112z^2+74\,468\,160z-52\,971\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af8s.01

$${}_1F_2\left(\frac{17}{4};\frac{1}{2},-\frac{19}{4};z\right)=\left(-\frac{65\,536\,z^4}{855\,855}+\frac{16\,384\,z^3}{24\,453}-\frac{512\,z^2}{285}-\frac{64\,z}{19}+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{4\sqrt{z}\left(65\,536\,z^4+737\,280\,z^3+5\,322\,240\,z^2-43\,243\,200\,z+2\,027\,025\right)\sinh\left(2\sqrt{z}\right)}{38\,513\,475}$$

07.22.03.af8t.01

$${}_1F_2\left(\frac{17}{4};\frac{1}{2},-\frac{19}{4};-z\right)=\left(-\frac{65\,536\,z^4}{855\,855}-\frac{16\,384\,z^3}{24\,453}-\frac{512\,z^2}{285}+\frac{64\,z}{19}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{4\sqrt{z}\left(65\,536\,z^4-737\,280\,z^3+5\,322\,240\,z^2+43\,243\,200\,z+2\,027\,025\right)\sin\left(2\sqrt{z}\right)}{38\,513\,475}$$

07.22.03.af8u.01

$${}_1F_2\left(\frac{17}{4};\frac{1}{2},-\frac{17}{4};z\right)=-\frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,572\,864\,z^4-9\,379\,840\,z^3+31\,368\,960\,z^2-5\,817\,825\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(65\,536\,z^4+1\,318\,912\,z^3+7680\,z^2-20\,662\,560\,z+5\,817\,825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.64\,z\left(23\,552\,z^3-161\,664\,z^2+448\,380\,z+386\,775\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.af8v.01

$${}_1F_2\left(\frac{17}{4};\frac{1}{2},-\frac{17}{4};-z\right)=\frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(-\left(1\,572\,864\,z^4+9\,379\,840\,z^3+31\,368\,960\,z^2-5\,817\,825\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(65\,536\,z^4-1\,318\,912\,z^3+7680\,z^2+20\,662\,560\,z+5\,817\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.64\,z\left(23\,552\,z^3+161\,664\,z^2+448\,380\,z-386\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.af8w.01

$${}_1F_2\left(\frac{17}{4};\frac{1}{2},-\frac{15}{4};z\right)=\frac{1}{2\,027\,025}\left(3072\left(256\,z^2-1120\,z+3465\right)\sinh\left(2\sqrt{z}\right)z^{3/2}+\right.$$
$$\left.\left(65\,536\,z^4+1\,720\,320\,z^3-2\,419\,200\,z^2-8\,648\,640\,z+2\,027\,025\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.af8x.01

$${}_1F_2\left(\frac{17}{4};\frac{1}{2},-\frac{15}{4};-z\right)=\frac{1}{2\,027\,025}\left(3072\left(256\,z^2+1120\,z+3465\right)\sin\left(2\sqrt{z}\right)z^{3/2}+\right.$$
$$\left.\left(65\,536\,z^4-1\,720\,320\,z^3-2\,419\,200\,z^2+8\,648\,640\,z+2\,027\,025\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.af8y.01

$${}_1F_2\left(\frac{17}{4};\frac{1}{2},-\frac{13}{4};z\right)=\frac{1}{342\,225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(32\,768\,z^4+1\,157\,120\,z^3-2\,106\,240\,z^2-210\,600\,z+342\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(200\,704\,z^3-449\,280\,z^2+\right.\right.\right.$$
$$\left.\left.\left.1\,551\,600\,z-342\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+8\,z\left(4096\,z^3+120\,576\,z^2-185\,040\,z-229\,095\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af8z.01

$${}_1F_2\left(\frac{17}{4};\frac{1}{2},-\frac{13}{4};-z\right)=\frac{1}{342\,225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(32\,768z^4-1\,157\,120z^3-2\,106\,240z^2+210\,600z+342\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(200\,704z^3+449\,280z^2+\right.\right.\right.$$
$$\left.\left.\left.1\,551\,600z+342\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(-4096z^3+120\,576z^2+185\,040z-229\,095\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af90.01

$${}_1F_2\left(\frac{17}{4};\frac{1}{2},-\frac{11}{4};z\right)=\frac{1}{135\,135}\left(4\sqrt{z}\left(-4096z^3-145\,152z^2+210\,000z+10\,395\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.7\left(28\,672z^3-19\,200z^2+110\,160z-19\,305\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.af91.01

$${}_1F_2\left(\frac{17}{4};\frac{1}{2},-\frac{11}{4};-z\right)=\frac{1}{135\,135}$$
$$\left(7\left(28\,672z^3+19\,200z^2+110\,160z+19\,305\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(-4096z^3+145\,152z^2+210\,000z-10\,395\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af92.01

$${}_1F_2\left(\frac{17}{4};\frac{1}{2},-\frac{9}{4};z\right)=$$
$$-\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(20\,480z^3+31\,488z^2+9360z-5265\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4096z^3+157\,440z^2-164\,880z+26\,325\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+96z\left(1024z^2+240z+1935\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af93.01

$${}_1F_2\left(\frac{17}{4};\frac{1}{2},-\frac{9}{4};-z\right)=$$
$$\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(20\,480z^3-31\,488z^2+9360z+5265\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-4096z^3+157\,440z^2+164\,880z+26\,325\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-96z\left(1024z^2-240z+1935\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af94.01

$${}_1F_2\left(\frac{17}{4};\frac{1}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{12\,285}\left(\left(4096z^3+157\,440z^2-104\,400z+12\,285\right)\cosh\left(2\sqrt{z}\right)+96\sqrt{z}\left(512z^2+880z+105\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af95.01

$${}_1F_2\left(\frac{17}{4};\frac{1}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{12\,285}\left(\left(-4096z^3+157\,440z^2+104\,400z+12\,285\right)\cos\left(2\sqrt{z}\right)-96\sqrt{z}\left(512z^2-880z+105\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af96.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{2925\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^3+84\,480z^2-14\,040z+2925\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(12\,032z^2+30\,240z-2925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.8z\left(256z^2+9120z-3735\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af97.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, -\frac{5}{4}; -z\right) =$$
$$-\frac{1}{2925\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^3-84\,480z^2-14\,040z-2925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(12\,032z^2-30\,240z-2925\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(-256z^2+9120z+3735\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af98.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, -\frac{3}{4}; z\right) = -\frac{1}{39}\left(256z^2+672z-39\right)\cosh\left(2\sqrt{z}\right)-\frac{4\sqrt{z}\left(256z^2+9120z-855\right)\sinh\left(2\sqrt{z}\right)}{1755}$$

07.22.03.af99.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, -\frac{3}{4}; -z\right) = \frac{1}{39}\left(-256z^2+672z+39\right)\cos\left(2\sqrt{z}\right)+\frac{4\sqrt{z}\left(256z^2-9120z-855\right)\sin\left(2\sqrt{z}\right)}{1755}$$

07.22.03.af9a.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, -\frac{1}{4}; z\right) =$$
$$-\frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\left(\left(5632z^2+18\,720z-585\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(256z^2+8448z+585\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.768z\left(7z+15\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af9b.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, -\frac{1}{4}; -z\right) = \frac{1}{585\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(-5632z^2+18\,720z+585\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(256z^2-8448z+585\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+768z\left(7z-15\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af9c.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{1}{4}; z\right) = \frac{1}{585}\left(\left(256z^2+7200z+585\right)\cosh\left(2\sqrt{z}\right)+640\sqrt{z}\left(4z+9\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.af9d.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{1}{4}; -z\right) = \frac{1}{585}\left(\left(256\,z^2 - 7200\,z + 585\right)\cos\left(2\sqrt{z}\right) + 640\sqrt{z}\,(4\,z - 9)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.af9e.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{3}{4}; z\right) = \frac{1}{585\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(128\,z^2 + 3320\,z + 585\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(592\,z + 1095)\, I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 8\,z\,(16\,z + 345)\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af9f.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{3}{4}; -z\right) = \frac{1}{585\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(128\,z^2 - 3320\,z + 585\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(592\,z - 1095)\, J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 8\,(345 - 16\,z)\,z\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af9g.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{5}{4}; z\right) = \left(\frac{176\,z}{195} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{4}{585}\sqrt{z}\,(16\,z + 285)\sinh\left(2\sqrt{z}\right)$$

07.22.03.af9h.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{5}{4}; -z\right) = \left(1 - \frac{176\,z}{195}\right)\cos\left(2\sqrt{z}\right) + \frac{4}{585}\sqrt{z}\,(16\,z - 285)\sin\left(2\sqrt{z}\right)$$

07.22.03.af9i.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{7}{4}; z\right) =$$
$$\frac{1}{195\sqrt{2}\,\sqrt[4]{z}}\left(\left(5\sqrt{z}\,(48\,z + 43)\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\left(32\,z^2 + 410\,z - 15\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\sqrt{z}\,(56\,z + 15)\, I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af9j.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{7}{4}; -z\right) =$$
$$\frac{1}{195\sqrt{2}\,\sqrt[4]{z}}\left(\left(-5\sqrt{z}\,(48\,z - 43)\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\left(32\,z^2 - 410\,z - 15\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\sqrt{z}\,(56\,z - 15)\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af9k.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{9}{4}; z\right) = \left(\frac{16\,z}{117} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{32}{39}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.af9l.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{9}{4}; -z\right) = \left(1 - \frac{16\,z}{117}\right)\cos\left(2\sqrt{z}\right) - \frac{32}{39}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.af9m.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{11}{4}; z\right) = \frac{1}{3120\sqrt{2}\, z^{5/4}}$$
$$\left(7\left(2\sqrt{z}\,\left(64z^2+280z+15\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1216z^2-240z-45\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(64z^2+144z+45\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af9n.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{11}{4}; -z\right) = -\frac{1}{3120\sqrt{2}\, z^{5/4}}\left(7\left(2\sqrt{z}\,\left(64z^2-280z+15\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left.\left(1216z^2+240z-45\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(64z^2-144z+45\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af9o.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{13}{4}; z\right) = \cosh\left(2\sqrt{z}\right) + \frac{4}{13}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.af9p.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{13}{4}; -z\right) = \cos\left(2\sqrt{z}\right) - \frac{4}{13}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.af9q.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{15}{4}; z\right) =$$
$$\frac{1}{99\,840\sqrt{2}\, z^{9/4}}\left(77\left(2\sqrt{z}\,\left(1024z^2+480z+315\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(2048z^3-2304z^2-2880z-945\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.6\sqrt{z}\,\left(256z^2+288z+315\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af9r.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{15}{4}; -z\right) =$$
$$-\frac{1}{99\,840\sqrt{2}\, z^{9/4}}\left(77\left(-2\sqrt{z}\,\left(1024z^2-480z+315\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(2048z^3+2304z^2-2880z+945\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.6\sqrt{z}\,\left(256z^2-288z+315\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.af9s.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{17}{4}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.af9t.01

$${}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{17}{4}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.af9u.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{19}{4}; z\right) = \frac{1}{212\,992\sqrt{2}\, z^{13/4}}\left(77\left(2\sqrt{z}\left(4096 z^3+14\,592 z^2+54\,000 z+45\,045\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\left(4096 z^3+20\,736 z^2+52\,560 z+19\,305\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4096 z^3+19\,200 z^2+79\,632 z+135\,135\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af9v.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{19}{4}; -z\right) = \frac{1}{212\,992\sqrt{2}\, z^{13/4}}\left(77\left(2\sqrt{z}\left(4096 z^3-14\,592 z^2+54\,000 z-45\,045\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\left(4096 z^3-20\,736 z^2+52\,560 z-19\,305\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-4096 z^3+19\,200 z^2-79\,632 z+135\,135\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af9w.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{21}{4}; z\right) = \frac{1}{524\,288 z^{17/4}}\left(17 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-16\,384 z^{7/2}-61\,440 z^3-199\,680 z^{5/2}-549\,120 z^2-1\,235\,520 z^{3/2}-2\,162\,160 z-2\,702\,700\sqrt{z}+ e^{4\sqrt{z}}\left(16\,384 z^{7/2}-61\,440 z^3+199\,680 z^{5/2}-549\,120 z^2+1\,235\,520 z^{3/2}-2\,162\,160 z+2\,702\,700\sqrt{z}-2\,027\,025\right)-2\,027\,025\right)+2\,027\,025 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+2\,027\,025 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.af9x.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{21}{4}; -z\right) = \frac{1}{131\,072 z^{17/4}}\left(17\left(2\,027\,025\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(15\left(4096 z^3-36\,608 z^2+144\,144 z-135\,135\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(4096 z^3-49\,920 z^2+308\,880 z-675\,675\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

07.22.03.af9y.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{1}{2}, \frac{23}{4}; z\right) = \frac{1}{6\,815\,744\sqrt{2}\, z^{17/4}}\left(1463\left(-2\sqrt{z}\left(180\,224 z^3+2\,442\,240 z^2+12\,767\,040 z+11\,486\,475\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(131\,072 z^4+3\,170\,304 z^3+28\,592\,640 z^2+90\,810\,720 z+34\,459\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\left(65\,536 z^3+964\,608 z^2+5\,765\,760 z+11\,486\,475\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.af9z.01

$${}_1F_2\left(\frac{17}{4};\frac{1}{2},\frac{23}{4};-z\right)=\frac{1}{6\,815\,744\sqrt{2}\,z^{17/4}}\left(1463\left(2\sqrt{z}\left(180\,224z^3-2\,442\,240z^2+12\,767\,040z-11\,486\,475\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(131\,072z^4-3\,170\,304z^3+28\,592\,640z^2-90\,810\,720z+34\,459\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\left(-65\,536z^3+964\,608z^2-5\,765\,760z+11\,486\,475\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1=\frac{17}{4}$, $b_{1.}=\frac{3}{2}$

07.22.03.afa0.01

$${}_1F_2\left(\frac{17}{4};\frac{3}{2},-\frac{23}{4};z\right)=\frac{1}{1\,771\,619\,850\sqrt{z}}\left(80\sqrt{z}\left(65\,536z^4-13\,837\,824z^2+17\,297\,280z+52\,297\,245\right)\cosh\left(2\sqrt{z}\right)+\left(1\,048\,576z^5-32\,440\,320z^4+369\,008\,640z^3+1\,037\,836\,800z^2-4\,508\,103\,600z-1\,206\,079\,875\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afa1.01

$${}_1F_2\left(\frac{17}{4};\frac{3}{2},-\frac{23}{4};-z\right)=\frac{1}{1\,771\,619\,850\sqrt{z}}\left(80\sqrt{z}\left(65\,536z^4-13\,837\,824z^2-17\,297\,280z+52\,297\,245\right)\cos\left(2\sqrt{z}\right)-\left(1\,048\,576z^5+32\,440\,320z^4+369\,008\,640z^3-1\,037\,836\,800z^2-4\,508\,103\,600z+1\,206\,079\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afa2.01

$${}_1F_2\left(\frac{17}{4};\frac{3}{2},-\frac{21}{4};z\right)=\frac{1}{122\,174\,325\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(327\,680z^4-1\,867\,776z^3-25\,465\,344z^2+66\,774\,336z+24\,434\,865\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(65\,536z^4-1\,507\,328z^3+18\,731\,520z^2+7\,942\,080z-119\,384\,055\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,507\,328z^4-5\,996\,544z^3-164\,820\,480z^2+265\,648\,320z+349\,781\,355\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afa3.01

$${}_1F_2\left(\frac{17}{4};\frac{3}{2},-\frac{21}{4};-z\right)=-\frac{1}{122\,174\,325\sqrt{2}}\left(\sqrt[4]{z}\left(-5\left(327\,680z^4+1\,867\,776z^3-25\,465\,344z^2-66\,774\,336z+24\,434\,865\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(65\,536z^4+1\,507\,328z^3+18\,731\,520z^2-7\,942\,080z-119\,384\,055\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,507\,328z^4+5\,996\,544z^3-164\,820\,480z^2-265\,648\,320z+349\,781\,355\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afa4.01

$${}_1F_2\left(\frac{17}{4};\frac{3}{2},-\frac{19}{4};z\right)=\frac{1}{77\,026\,950\sqrt{z}}\left(-4\sqrt{z}\left(65\,536z^4-1\,032\,192z^3+13\,837\,824z^2-8\,648\,640z-43\,378\,335\right)\cosh\left(2\sqrt{z}\right)-9\left(196\,608z^4-1\,261\,568z^3-7\,687\,680z^2+20\,180\,160z+5\,360\,355\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afa5.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{19}{4}; -z\right) = \frac{1}{77\,026\,950\sqrt{z}}\left(-4\sqrt{z}\left(65\,536 z^4 + 1\,032\,192 z^3 + 13\,837\,824 z^2 + 8\,648\,640 z - 43\,378\,335\right)\cos\left(2\sqrt{z}\right) - 9\left(196\,608 z^4 + 1\,261\,568 z^3 - 7\,687\,680 z^2 - 20\,180\,160 z + 5\,360\,355\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afa6.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{17}{4}; z\right) = -\frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536 z^4 - 409\,600 z^3 + 8\,263\,680 z^2 - 14\,516\,160 z - 5\,817\,825\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 960\sqrt{z}\left(1024 z^3 - 6784 z^2 - 10\,364 z + 45\,363\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(65\,536 z^4 - 638\,976 z^3 + 9\,661\,440 z^2 - 9\,397\,440 z - 15\,207\,885\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afa7.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{17}{4}; -z\right) = -\frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536 z^4 + 409\,600 z^3 + 8\,263\,680 z^2 + 14\,516\,160 z - 5\,817\,825\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 960\sqrt{z}\left(1024 z^3 + 6784 z^2 - 10\,364 z - 45\,363\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(65\,536 z^4 + 638\,976 z^3 + 9\,661\,440 z^2 + 9\,397\,440 z - 15\,207\,885\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afa8.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{15}{4}; z\right) = \frac{1}{4\,054\,050\sqrt{z}}\left(64\sqrt{z}\left(8192 z^3 - 48\,384 z^2 + 135\,135\right)\cosh\left(2\sqrt{z}\right) + \left(65\,536 z^4 - 114\,688 z^3 + 5\,322\,240 z^2 - 8\,648\,640 z - 2\,297\,295\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afa9.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{15}{4}; -z\right) = \frac{1}{4\,054\,050\sqrt{z}}\left(\left(65\,536 z^4 + 114\,688 z^3 + 5\,322\,240 z^2 + 8\,648\,640 z - 2\,297\,295\right)\sin\left(2\sqrt{z}\right) - 64\sqrt{z}\left(8192 z^3 + 48\,384 z^2 - 135\,135\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.afaa.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{13}{4}; z\right) = \frac{1}{342\,225\sqrt{2}}\left(\sqrt[4]{z}\left(5\left(28\,672 z^3 - 131\,328 z^2 + 148\,368 z + 68\,445\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\left(4096 z^3 + 19\,200 z^2 + 147\,120 z - 304\,515\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(45\,056 z^3 - 221\,440 z^2 + 100\,560 z + 266\,805\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afab.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{13}{4}; -z\right) = \frac{1}{342\,225\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(-5\left(28\,672 z^3 + 131\,328 z^2 + 148\,368 z - 68\,445\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\left(4096 z^3 - 19\,200 z^2 + 147\,120 z + 304\,515\right)\right.\right.$$
$$\left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(45\,056 z^3 + 221\,440 z^2 + 100\,560 z - 266\,805\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afac.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{11}{4}; z\right) = \frac{1}{270\,270\sqrt{z}}$$
$$\left(-4\sqrt{z}\left(4096 z^3 + 37\,632 z^2 + 45\,360 z - 135\,135\right)\cosh\left(2\sqrt{z}\right) - 35\left(4096 z^3 - 14\,592 z^2 + 14\,256 z + 3861\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afad.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{11}{4}; -z\right) = \frac{1}{270\,270\sqrt{z}}$$
$$\left(4\sqrt{z}\left(4096 z^3 - 37\,632 z^2 + 45\,360 z + 135\,135\right)\cos\left(2\sqrt{z}\right) + 35\left(4096 z^3 + 14\,592 z^2 + 14\,256 z - 3861\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afae.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{9}{4}; z\right) =$$
$$-\frac{1}{26\,325\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096 z^3 + 64\,768 z^2 - 43\,216 z - 26\,325\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 64\sqrt{z}\left(1152 z^2 - 2600 z + 2757\right)\right.\right.$$
$$\left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(4096 z^3 + 47\,360 z^2 + 4656 z - 53\,361\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afaf.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{9}{4}; -z\right) = \frac{1}{26\,325\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(4096 z^3 - 64\,768 z^2 - 43\,216 z + 26\,325\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 64\sqrt{z}\left(1152 z^2 + 2600 z + 2757\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) -\right.\right.$$
$$\left.\left.\left(4096 z^3 - 47\,360 z^2 + 4656 z + 53\,361\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afag.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{24\,570\sqrt{z}}\left(144\sqrt{z}\left(256 z^2 - 320 z + 315\right)\cosh\left(2\sqrt{z}\right) + \left(4096 z^3 + 65\,280 z^2 - 35\,280 z - 10\,395\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afah.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{7}{4}; -z\right) = \frac{144\sqrt{z}\left(256 z^2 + 320 z + 315\right)\cos\left(2\sqrt{z}\right) + \left(-4096 z^3 + 65\,280 z^2 + 35\,280 z - 10\,395\right)\sin\left(2\sqrt{z}\right)}{24\,570\sqrt{z}}$$

07.22.03.afai.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{2925\sqrt{2}}\left(\sqrt[4]{z}\left(\left(9472z^2+1376z+2925\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(256z^2+4640z-2271\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(8960z^2-5856z+4851\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afaj.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{5}{4}; -z\right) =$$
$$-\frac{1}{2925\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-9472z^2+1376z-2925\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(256z^2-4640z-2271\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(8960z^2+5856z+4851\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afak.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{3}{4}; z\right) = \frac{-4\sqrt{z}\left(256z^2+4640z-1455\right)\cosh\left(2\sqrt{z}\right)-5\left(1792z^2+480z+231\right)\sinh\left(2\sqrt{z}\right)}{3510\sqrt{z}}$$

07.22.03.afal.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{3}{4}; -z\right) = \frac{-4\sqrt{z}\left(256z^2-4640z-1455\right)\cos\left(2\sqrt{z}\right)-5\left(1792z^2-480z+231\right)\sin\left(2\sqrt{z}\right)}{3510\sqrt{z}}$$

07.22.03.afam.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{1}{4}; z\right) = -\frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\right.$$
$$\left.\left(\left(256z^2+5152z-585\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+1088\sqrt{z}\left(4z+3\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(256z^2+4128z-693\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afan.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, -\frac{1}{4}; -z\right) = -\frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^2-5152z-585\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.1088\sqrt{z}\left(4z-3\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-256z^2+4128z+693\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afao.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{1}{4}; z\right) = \frac{32\sqrt{z}\left(64z+51\right)\cosh\left(2\sqrt{z}\right)+\left(256z^2+4128z-231\right)\sinh\left(2\sqrt{z}\right)}{1170\sqrt{z}}$$

07.22.03.afap.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{1}{4}; -z\right) = \frac{\left(256z^2-4128z-231\right)\sin\left(2\sqrt{z}\right)-32\sqrt{z}\left(64z-51\right)\cos\left(2\sqrt{z}\right)}{1170\sqrt{z}}$$

07.22.03.afaq.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{3}{4}; z\right) = \frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\left((496z+585)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\,(16z+229)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + (464z+231)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afar.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{3}{4}; -z\right) = \frac{1}{585\sqrt{2}}\left(\sqrt[4]{z}\left((585-496z)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\,(16z-229)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + (464z-231)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afas.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{5}{4}; z\right) = \frac{4\sqrt{z}\,(16z+177)\cosh\left(2\sqrt{z}\right) + 3\,(144z+77)\sinh\left(2\sqrt{z}\right)}{1170\sqrt{z}} $$

07.22.03.afat.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{5}{4}; -z\right) = \frac{3\,(77-144z)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\,(16z-177)\cos\left(2\sqrt{z}\right)}{1170\sqrt{z}} $$

07.22.03.afau.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{7}{4}; z\right) = \frac{1}{195\sqrt{2}\,\sqrt[4]{z}}\left(\left(\sqrt{z}\,(16z+155)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\,(16z+5)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \sqrt{z}\,(16z+111)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afav.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{7}{4}; -z\right) = \frac{1}{195\sqrt{2}\,\sqrt[4]{z}}\left(\left((155-16z)\sqrt{z}\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\,(5-16z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \sqrt{z}\,(16z-111)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afaw.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{9}{4}; z\right) = \frac{80\sqrt{z}\,\cosh\left(2\sqrt{z}\right) + (16z+77)\sinh\left(2\sqrt{z}\right)}{234\sqrt{z}} $$

07.22.03.afax.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{9}{4}; -z\right) = \frac{80\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (77-16z)\sin\left(2\sqrt{z}\right)}{234\sqrt{z}} $$

07.22.03.afay.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{11}{4}; z\right) = \frac{1}{1560\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\,(68z-3)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(64z^2+144z+9\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\,(20z-3)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afaz.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{11}{4}; -z\right) =$$
$$-\frac{1}{1560\sqrt{2}\, z^{5/4}}\left(7\left(-2\sqrt{z}\,(68z+3)\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(64z^2-144z+9\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\,(20z+3)\, J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afb0.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{13}{4}; z\right) = \frac{1}{26}\left(4\cosh\left(2\sqrt{z}\right) + \frac{11\sinh\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.afb1.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{13}{4}; -z\right) = \frac{1}{26}\left(4\cos\left(2\sqrt{z}\right) + \frac{11\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.afb2.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{15}{4}; z\right) = \frac{1}{49\,920\sqrt{2}\, z^{9/4}}\left(77\left(2\sqrt{z}\,\left(128z^2-64z-35\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left.\left(768z^2+352z+105\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(128z^2-128z-105\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afb3.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{15}{4}; -z\right) = \frac{1}{49\,920\sqrt{2}\, z^{9/4}}\left(77\left(2\sqrt{z}\,\left(128z^2+64z-35\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left.\left(768z^2-352z+105\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(128z^2+128z-105\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afb4.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{17}{4}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.afb5.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{17}{4}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.afb6.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{19}{4}; z\right) = \frac{1}{106\,496\sqrt{2}\, z^{13/4}}$$
$$\left(77\left(-10\sqrt{z}\,\left(256z^2+848z+693\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4096z^3+12\,032z^2+28\,560z+10\,395\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left.14\sqrt{z}\,\left(256z^2+912z+1485\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afb7.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{19}{4}; -z\right) = \frac{1}{106\,496\sqrt{2}\,z^{13/4}}$$
$$\left(77\left(10\sqrt{z}\,\left(256z^2-848z+693\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4096z^3-12\,032z^2+28\,560z-10\,395\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.14\sqrt{z}\,\left(256z^2-912z+1485\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afb8.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{21}{4}; z\right) =$$
$$\frac{1}{262\,144\,z^{17/4}}\left(17\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4096z^3+13\,312z^{5/2}+36\,608z^2+82\,368z^{3/2}+144\,144z+180\,180\sqrt{z}+\right.\right.\right.$$
$$\left.\left.\left.e^{4\sqrt{z}}\left(4096z^3-13\,312z^{5/2}+36\,608z^2-82\,368z^{3/2}+144\,144z-180\,180\sqrt{z}+135\,135\right)+135\,135\right)-\right.\right.$$
$$\left.\left.135\,135\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-135\,135\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.afb9.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{21}{4}; -z\right) = -\frac{1}{65\,536\,z^{17/4}}\left(17\left(135\,135\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\left(\left(4096z^3-36\,608z^2+144\,144z-135\,135\right)\cos\left(2\sqrt{z}\right)-52\sqrt{z}\,\left(256z^2-1584z+3465\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

07.22.03.afba.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{23}{4}; z\right) = \frac{1}{3\,407\,872\sqrt{2}\,z^{17/4}}$$
$$\left(1463\left(2\sqrt{z}\,\left(8192z^3+135\,680z^2+744\,480z+675\,675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-5\left(32\,768z^3+325\,632z^2+1\,064\,448z+405\,405\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(8192z^3+158\,208z^2+997\,920z+2\,027\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afbb.01

$${}_1F_2\left(\frac{17}{4}; \frac{3}{2}, \frac{23}{4}; -z\right) = -\frac{1}{3\,407\,872\sqrt{2}\,z^{17/4}}$$
$$\left(1463\left(2\sqrt{z}\,\left(8192z^3-135\,680z^2+744\,480z-675\,675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-5\left(32\,768z^3-325\,632z^2+1\,064\,448z-405\,405\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-8192z^3+158\,208z^2-997\,920z+2\,027\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{17}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.afbc.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{23}{4}; z\right) = \frac{1}{2\,362\,159\,800\,z^{3/2}}$$
$$\left(2\sqrt{z}\,\left(1\,048\,576\,z^5 - 29\,818\,880\,z^4 - 167\,731\,200\,z^3 + 2\,597\,736\,960\,z^2 + 5\,713\,016\,400\,z + 3\,179\,665\,125\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left.\left(1\,048\,576\,z^5 - 268\,369\,920\,z^4 + 1\,039\,933\,440\,z^3 + 10\,221\,120\,000\,z^2 + 8\,771\,490\,000\,z + 3\,179\,665\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afbd.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{23}{4}; -z\right) = \frac{1}{2\,362\,159\,800\,z^{3/2}}$$
$$\left(2\sqrt{z}\,\left(1\,048\,576\,z^5 + 29\,818\,880\,z^4 - 167\,731\,200\,z^3 - 2\,597\,736\,960\,z^2 + 5\,713\,016\,400\,z - 3\,179\,665\,125\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left.\left(1\,048\,576\,z^5 + 268\,369\,920\,z^4 + 1\,039\,933\,440\,z^3 - 10\,221\,120\,000\,z^2 + 8\,771\,490\,000\,z - 3\,179\,665\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afbe.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{162\,899\,100\sqrt{2}\,z^{3/4}}\left(\left(8z\left(65\,536\,z^4 - 1\,736\,704\,z^3 - 238\,080\,z^2 + 86\,623\,680\,z + 68\,059\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$12\sqrt{z}\,\left(65\,536\,z^4 + 7\,307\,264\,z^3 - 41\,331\,200\,z^2 - 177\,455\,040\,z - 95\,394\,915\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.\left(524\,288\,z^5 - 13\,959\,168\,z^4 - 27\,217\,920\,z^3 + 798\,013\,440\,z^2 + 1\,271\,932\,200\,z + 858\,554\,235\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afbf.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{21}{4}; -z\right) =$$
$$\frac{1}{162\,899\,100\sqrt{2}\,z^{3/4}}\left(\left(8z\left(65\,536\,z^4 + 1\,736\,704\,z^3 - 238\,080\,z^2 - 86\,623\,680\,z + 68\,059\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$12\sqrt{z}\,\left(65\,536\,z^4 - 7\,307\,264\,z^3 - 41\,331\,200\,z^2 + 177\,455\,040\,z - 95\,394\,915\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.\left(-524\,288\,z^5 - 13\,959\,168\,z^4 + 27\,217\,920\,z^3 + 798\,013\,440\,z^2 - 1\,271\,932\,200\,z + 858\,554\,235\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afbg.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{102\,702\,600\,z^{3/2}}\left(-14\sqrt{z}\,\left(65\,536\,z^4 + 1\,916\,928\,z^3 - 13\,478\,400\,z^2 - 31\,561\,920\,z - 15\,663\,375\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left.\left(524\,288\,z^5 - 12\,386\,304\,z^4 + 16\,773\,120\,z^3 + 402\,554\,880\,z^2 + 315\,773\,640\,z + 109\,643\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afbh.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{102\,702\,600\,z^{3/2}}\left(14\sqrt{z}\,\left(65\,536\,z^4 - 1\,916\,928\,z^3 - 13\,478\,400\,z^2 + 31\,561\,920\,z - 15\,663\,375\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left.\left(524\,288\,z^5 + 12\,386\,304\,z^4 + 16\,773\,120\,z^3 - 402\,554\,880\,z^2 + 315\,773\,640\,z - 109\,643\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afbi.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{17}{4}; z\right) = -\frac{1}{7\,757\,100\sqrt{2}\, z^{3/4}}\left(\left(48 z \left(8192 z^3 + 52\,480 z^2 - 624\,320 z - 456\,035\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(65\,536 z^4 - 1\,294\,336 z^3 + 3\,855\,360 z^2 + 22\,943\,040 z + 10\,599\,435\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 5\left(65\,536 z^4 + 774\,144 z^3 - 6\,468\,096 z^2 - 10\,322\,928 z - 6\,359\,661\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afbj.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{17}{4}; -z\right) = -\frac{1}{7\,757\,100\sqrt{2}\, z^{3/4}}\left(\left(-48 z \left(8192 z^3 - 52\,480 z^2 - 624\,320 z + 456\,035\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(65\,536 z^4 + 1\,294\,336 z^3 + 3\,855\,360 z^2 - 22\,943\,040 z + 10\,599\,435\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 5\left(65\,536 z^4 - 774\,144 z^3 - 6\,468\,096 z^2 + 10\,322\,928 z - 6\,359\,661\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afbk.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{15}{4}; z\right) = \frac{1}{5\,405\,400 z^{3/2}}\left(2\sqrt{z}\left(65\,536 z^4 - 1\,032\,192 z^3 + 3\,773\,952 z^2 + 10\,221\,120 z + 4\,385\,745\right)\cosh\left(2\sqrt{z}\right) + 7\left(65\,536 z^4 + 147\,456 z^3 - 2\,695\,680 z^2 - 1\,909\,440 z - 626\,535\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afbl.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{15}{4}; -z\right) = \frac{1}{5\,405\,400 z^{3/2}}\left(-2\sqrt{z}\left(65\,536 z^4 + 1\,032\,192 z^3 + 3\,773\,952 z^2 - 10\,221\,120 z + 4\,385\,745\right)\cos\left(2\sqrt{z}\right) - 7\left(65\,536 z^4 - 147\,456 z^3 - 2\,695\,680 z^2 + 1\,909\,440 z - 626\,535\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afbm.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{13}{4}; z\right) = \frac{1}{456\,300\sqrt{2}\, z^{3/4}}\left(\left(8 z \left(4096 z^3 - 42\,240 z^2 + 195\,120 z + 133\,845\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(69\,632 z^3 - 65\,280 z^2 - 1\,209\,360 z - 460\,845\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(32\,768 z^4 - 399\,360 z^3 + 1\,511\,040 z^2 + 2\,522\,520 z + 1\,382\,535\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afbn.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{13}{4}; -z\right) = \frac{1}{456\,300\sqrt{2}\, z^{3/4}}\left(\left(-8 z \left(4096 z^3 + 42\,240 z^2 + 195\,120 z - 133\,845\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(69\,632 z^3 + 65\,280 z^2 - 1\,209\,360 z + 460\,845\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(32\,768 z^4 + 399\,360 z^3 + 1\,511\,040 z^2 - 2\,522\,520 z + 1\,382\,535\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afbo.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{11}{4}; z\right) = \frac{1}{360\,360\, z^{3/2}}\left(-2\sqrt{z}\,\left(77\,824\, z^3 - 145\,152\, z^2 - 589\,680\, z - 208\,845\right)\cosh\left(2\sqrt{z}\right) - \left(32\,768\, z^4 - 243\,712\, z^3 + 1\,088\,640\, z^2 + 687\,960\, z + 208\,845\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afbp.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{11}{4}; -z\right) = \frac{1}{360\,360\, z^{3/2}}\left(\left(32\,768\, z^4 + 243\,712\, z^3 + 1\,088\,640\, z^2 - 687\,960\, z + 208\,845\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(77\,824\, z^3 + 145\,152\, z^2 - 589\,680\, z + 208\,845\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.afbq.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{9}{4}; z\right) = \frac{1}{35\,100\sqrt{2}\, z^{3/4}}$$
$$\left(\left(-16\, z\left(2816\, z^2 - 6272\, z - 4215\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(4096\, z^3 - 14\,080\, z^2 + 82\,224\, z + 24\,255\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-40\,960\, z^3 + 77\,568\, z^2 + 155\,232\, z + 72\,765\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afbr.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{9}{4}; -z\right) = \frac{1}{35\,100\sqrt{2}\, z^{3/4}}$$
$$\left(\left(-16\, z\left(2816\, z^2 + 6272\, z - 4215\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(4096\, z^3 + 14\,080\, z^2 + 82\,224\, z - 24\,255\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(40\,960\, z^3 + 77\,568\, z^2 - 155\,232\, z + 72\,765\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afbs.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{7}{4}; z\right) = \frac{1}{32\,760\, z^{3/2}}$$
$$\left(2\sqrt{z}\,\left(4096\, z^3 - 2304\, z^2 + 45\,360\, z + 12\,285\right)\cosh\left(2\sqrt{z}\right) + \left(45\,056\, z^3 - 80\,640\, z^2 - 45\,360\, z - 12\,285\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afbt.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{32\,760\, z^{3/2}}\left(2\sqrt{z}\,\left(4096\, z^3 + 2304\, z^2 + 45\,360\, z - 12\,285\right)\cos\left(2\sqrt{z}\right) + \left(45\,056\, z^3 + 80\,640\, z^2 - 45\,360\, z + 12\,285\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afbu.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{3900\sqrt{2}\, z^{3/4}}\left(\left(8\, z\left(256\, z^2 + 928\, z + 757\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(5888\, z^2 - 7904\, z - 1617\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(2048\, z^3 + 2048\, z^2 + 12\,936\, z + 4851\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afbv.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{5}{4}; -z\right) =$$
$$\frac{1}{3900\sqrt{2}\, z^{3/4}}\left(\left(8z\left(256z^2-928z+757\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(5888z^2+7904z-1617\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-2048z^3+2048z^2-12\,936z+4851\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afbw.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{3}{4}; z\right) = \frac{-2\sqrt{z}\left(5888z^2-5280z-945\right)\cosh\left(2\sqrt{z}\right)-\left(2048z^3+7680z^2+4200z+945\right)\sinh\left(2\sqrt{z}\right)}{4680\, z^{3/2}}$$

07.22.03.afbx.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{3}{4}; -z\right) = \frac{2\sqrt{z}\left(5888z^2+5280z-945\right)\cos\left(2\sqrt{z}\right)+\left(-2048z^3+7680z^2-4200z+945\right)\sin\left(2\sqrt{z}\right)}{4680\, z^{3/2}}$$

07.22.03.afby.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{1}{4}; z\right) = -\frac{1}{780\sqrt{2}\, z^{3/4}}\left(\left(16z(192z-61)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\left(256z^2+1312z+147\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(2816z^2-1680z-441\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afbz.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, -\frac{1}{4}; -z\right) = \frac{1}{780\sqrt{2}\, z^{3/4}}$$
$$\left(\left(16z(192z+61)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^2-1312z+147\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-2816z^2-1680z+441\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afc0.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{1}{4}; z\right) = \frac{2\sqrt{z}\left(256z^2+1312z+105\right)\cosh\left(2\sqrt{z}\right)+\left(2816z^2-672z-105\right)\sinh\left(2\sqrt{z}\right)}{1560\, z^{3/2}}$$

07.22.03.afc1.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{1}{4}; -z\right) = \frac{\left(-2816z^2-672z+105\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(256z^2-1312z+105\right)\cos\left(2\sqrt{z}\right)}{1560\, z^{3/2}}$$

07.22.03.afc2.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{780\sqrt{2}\, z^{3/4}}\left(\left(8z(16z+101)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+84\sqrt{z}\left(16z-1\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(128z^2+504z+63\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afc3.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{3}{4}; -z\right) =$$

$$\frac{1}{780\sqrt{2}\, z^{3/4}}\left(\left(8\,(101-16\,z)\,z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 84\sqrt{z}\,(16\,z+1)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(128\,z^2-504\,z+63\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afc4.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{5}{4}; z\right) = \frac{2\sqrt{z}\,(304\,z-21)\cosh\left(2\sqrt{z}\right) + \left(128\,z^2+504\,z+21\right)\sinh\left(2\sqrt{z}\right)}{1560\,z^{3/2}}$$

07.22.03.afc5.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{5}{4}; -z\right) = \frac{2\sqrt{z}\,(304\,z+21)\cos\left(2\sqrt{z}\right) + \left(-128\,z^2+504\,z-21\right)\sin\left(2\sqrt{z}\right)}{1560\,z^{3/2}}$$

07.22.03.afc6.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{7}{4}; z\right) = \frac{\left(144\,z\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(16\,z+47)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + (128\,z-21)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{260\sqrt{2}\, z^{3/4}}$$

07.22.03.afc7.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{7}{4}; -z\right) = \frac{\left(144\,z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\,(47-16\,z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - (128\,z+21)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{260\sqrt{2}\, z^{3/4}}$$

07.22.03.afc8.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{9}{4}; z\right) = \frac{2\sqrt{z}\,(16\,z+21)\cosh\left(2\sqrt{z}\right) + 7\,(16\,z-3)\sinh\left(2\sqrt{z}\right)}{312\,z^{3/2}}$$

07.22.03.afc9.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{9}{4}; -z\right) = \frac{2\sqrt{z}\,(16\,z-21)\cos\left(2\sqrt{z}\right) + 7\,(16\,z+3)\sin\left(2\sqrt{z}\right)}{312\,z^{3/2}}$$

07.22.03.afca.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{11}{4}; z\right) = \frac{7\left(2\sqrt{z}\,(4\,z+3)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (44\,z-9)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \sqrt{z}\,(8\,z-3)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{260\sqrt{2}\, z^{5/4}}$$

07.22.03.afcb.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{11}{4}; -z\right) = \frac{7\left(2\sqrt{z}\,(4\,z-3)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + (44\,z+9)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - \sqrt{z}\,(8\,z+3)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{260\sqrt{2}\, z^{5/4}}$$

07.22.03.afcc.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{13}{4}; z\right) = \frac{3\left(14\sqrt{z}\,\cosh\left(2\sqrt{z}\right) + (8\,z-7)\sinh\left(2\sqrt{z}\right)\right)}{104\,z^{3/2}}$$

07.22.03.afcd.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{13}{4}; -z\right) = \frac{3\left((8\,z+7)\sin\left(2\sqrt{z}\right) - 14\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{104\,z^{3/2}}$$

07.22.03.afce.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{15}{4}; z\right) = \frac{1}{8320\sqrt{2}\, z^{9/4}}\left(77\left(2\sqrt{z}\,(32z+7) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(128z^2-128z-21\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(16z+21) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afcf.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{15}{4}; -z\right) = \frac{1}{8320\sqrt{2}\, z^{9/4}}\left(77\left(2(7-32z)\sqrt{z}\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(128z^2+128z-21\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(16z-21) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afcg.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{17}{4}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}} $$

07.22.03.afch.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{17}{4}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}} $$

07.22.03.afci.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{19}{4}; z\right) = \frac{1}{53\,248\sqrt{2}\, z^{13/4}}\left(231\left(2\sqrt{z}\,\left(256z^2+496z+385\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\left(256z^2+464z+165\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(256z^2+784z+1155\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afcj.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{19}{4}; -z\right) = -\frac{1}{53\,248\sqrt{2}\, z^{13/4}}\left(231\left(2\sqrt{z}\,\left(256z^2-496z+385\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7\left(256z^2-464z+165\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(256z^2-784z+1155\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afck.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{21}{4}; z\right) = \frac{1}{131\,072\, z^{17/4}}\left(51\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1024z^{5/2}-3328z^2-7488z^{3/2}-13\,104z - 16\,380\sqrt{z} + e^{4\sqrt{z}}\left(1024z^{5/2}-3328z^2+7488z^{3/2}-13\,104z+16\,380\sqrt{z}-12\,285\right)-12\,285\right) + 12\,285\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 12\,285\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.afcl.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{21}{4}; -z\right) = -\frac{1}{32\,768\, z^{17/4}}$$
$$\left(51\left(2\sqrt[4]{z}\left(13\left(256 z^2 - 1008 z + 945\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(256 z^2 - 1872 z + 4095\right)\sin\left(2\sqrt{z}\right)\right) - 12\,285\sqrt{\pi}\, C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)$$

07.22.03.afcm.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{23}{4}; z\right) = \frac{1}{1\,703\,936\sqrt{2}\, z^{17/4}}$$
$$\left(4389\left(-2\sqrt{z}\left(9216 z^2 + 56\,320 z + 51\,975\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(8192 z^3 + 117\,248 z^2 + 406\,560 z + 155\,925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 10\sqrt{z}\left(2048 z^2 + 14\,784 z + 31\,185\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afcn.01

$${}_1F_2\left(\frac{17}{4}; \frac{5}{2}, \frac{23}{4}; -z\right) =$$
$$-\frac{1}{1\,703\,936\sqrt{2}\, z^{17/4}}\left(4389\left(2\sqrt{z}\left(9216 z^2 - 56\,320 z + 51\,975\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(8192 z^3 - 117\,248 z^2 + 406\,560 z - 155\,925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 10\sqrt{z}\left(2048 z^2 - 14\,784 z + 31\,185\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{17}{4}$, $b_{1.} = \frac{7}{2}$

07.22.03.afco.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{1\,889\,727\,840\, z^{5/2}}\left(\left(4\,194\,304 z^6 + 30\,670\,848 z^5 - 2\,396\,160\,000 z^4 - 15\,875\,758\,080 z^3 - 45\,110\,520\,000 z^2 - 96\,298\,429\,500 z - 44\,969\,549\,625\right)\sinh\left(2\sqrt{z}\right) - 26\sqrt{z}\left(1\,048\,576 z^5 - 14\,745\,600 z^4 - 288\,645\,120 z^3 - 1\,045\,578\,240 z^2 - 2\,795\,310\,000 z - 3\,459\,196\,125\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.afcp.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{1\,889\,727\,840\, z^{5/2}}$$
$$\left(26\sqrt{z}\left(1\,048\,576 z^5 + 14\,745\,600 z^4 - 288\,645\,120 z^3 + 1\,045\,578\,240 z^2 - 2\,795\,310\,000 z + 3\,459\,196\,125\right)\cos\left(2\sqrt{z}\right) + \left(4\,194\,304 z^6 - 30\,670\,848 z^5 - 2\,396\,160\,000 z^4 + 15\,875\,758\,080 z^3 - 45\,110\,520\,000 z^2 + 96\,298\,429\,500 z - 44\,969\,549\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afcq.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{130\,319\,280\sqrt{2}\,z^{7/4}}\left(\left(4z\left(-1\,245\,184z^4+22\,560\,768z^3+232\,189\,440z^2+585\,480\,960z+1\,267\,389\,585\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(524\,288z^5-196\,608z^4-204\,951\,552z^3-932\,336\,640z^2-2\,382\,926\,040z-3\,802\,168\,755\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+3\left(-1\,835\,008z^5+29\,622\,272z^4+384\,522\,240z^3+\right.$$
$$\left.\left.\left.1\,218\,286\,080z^2+3\,107\,148\,660z+3\,802\,168\,755\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afcr.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, -\frac{21}{4}; -z\right) =$$
$$\frac{1}{130\,319\,280\sqrt{2}\,z^{7/4}}\left(\left(4z\left(1\,245\,184z^4+22\,560\,768z^3-232\,189\,440z^2+585\,480\,960z-1\,267\,389\,585\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(524\,288z^5+196\,608z^4-204\,951\,552z^3+932\,336\,640z^2-2\,382\,926\,040z+3\,802\,168\,755\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$3\left(1\,835\,008z^5+29\,622\,272z^4-384\,522\,240z^3+1\,218\,286\,080z^2-3\,107\,148\,660z+3\,802\,168\,755\right)$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afcs.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{82\,162\,080z^{5/2}}\left(15\left(262\,144z^5-5\,111\,808z^4-38\,578\,176z^3-96\,235\,776z^2-196\,314\,300z-90\,847\,575\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(524\,288z^5-2\,555\,904z^4-136\,581\,120z^3-465\,454\,080z^2-1\,127\,763\,000z-1\,362\,713\,625\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.afct.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, -\frac{19}{4}; -z\right) = \frac{1}{82\,162\,080z^{5/2}}$$
$$\left(2\sqrt{z}\left(524\,288z^5+2\,555\,904z^4-136\,581\,120z^3+465\,454\,080z^2-1\,127\,763\,000z+1\,362\,713\,625\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.15\left(262\,144z^5+5\,111\,808z^4-38\,578\,176z^3+96\,235\,776z^2-196\,314\,300z+90\,847\,575\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afcu.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, -\frac{17}{4}; z\right) =$$
$$\frac{1}{6\,205\,680\sqrt{2}\,z^{7/4}}\left(\left(4z\left(-65\,536z^4+565\,248z^3+9\,423\,360z^2+20\,298\,720z+40\,883\,535\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(327\,680z^4-7\,606\,272z^3-35\,996\,160z^2-79\,603\,920z-122\,650\,605\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-262\,144z^5+1\,867\,776z^4+45\,557\,760z^3+131\,218\,560z^2+308\,897\,820z+367\,951\,815\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afcv.01

$${}_1F_2\left(\frac{17}{4};\frac{7}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{6\,205\,680\sqrt{2}\,z^{7/4}}\left(\left(4z\left(65\,536z^4+565\,248z^3-9\,423\,360z^2+20\,298\,720z-40\,883\,535\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(327\,680z^4+7\,606\,272z^3-35\,996\,160z^2+79\,603\,920z-122\,650\,605\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(262\,144z^5+1\,867\,776z^4-45\,557\,760z^3+131\,218\,560z^2-308\,897\,820z+367\,951\,815\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afcw.01

$${}_1F_2\left(\frac{17}{4};\frac{7}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{4\,324\,320z^{5/2}}\left(\left(262\,144z^5-2\,359\,296z^4-25\,159\,680z^3-53\,464\,320z^2-102\,751\,740z-46\,990\,125\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.6\sqrt{z}\left(65\,536z^4-1\,916\,928z^3-6\,289\,920z^2-13\,366\,080z-15\,663\,375\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.afcx.01

$${}_1F_2\left(\frac{17}{4};\frac{7}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{4\,324\,320z^{5/2}}\left(-6\sqrt{z}\left(65\,536z^4+1\,916\,928z^3-6\,289\,920z^2+13\,366\,080z-15\,663\,375\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(262\,144z^5+2\,359\,296z^4-25\,159\,680z^3+53\,464\,320z^2-102\,751\,740z+46\,990\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afcy.01

$${}_1F_2\left(\frac{17}{4};\frac{7}{2},-\frac{13}{4};z\right)=\frac{1}{365\,040\sqrt{2}\,z^{7/4}}\left(\left(4z\left(-4096z^3+464\,640z^2+831\,120z+1\,514\,205\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(32\,768z^4-301\,056z^3-1\,691\,520z^2-3\,084\,840z-4\,542\,615\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.3\left(-16\,384z^4+711\,680z^3+1\,869\,120z^2+3\,950\,100z+4\,542\,615\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afcz.01

$${}_1F_2\left(\frac{17}{4};\frac{7}{2},-\frac{13}{4};-z\right)=-\frac{1}{365\,040\sqrt{2}\,z^{7/4}}\left(\left(4z\left(4096z^3+464\,640z^2-831\,120z+1\,514\,205\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(32\,768z^4+301\,056z^3-1\,691\,520z^2+3\,084\,840z-4\,542\,615\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.3\left(16\,384z^4+711\,680z^3-1\,869\,120z^2+3\,950\,100z-4\,542\,615\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afd0.01

$${}_1F_2\left(\frac{17}{4};\frac{7}{2},-\frac{11}{4};z\right)=\frac{1}{288\,288z^{5/2}}\left(-2\sqrt{z}\left(32\,768z^4-276\,480z^3-943\,488z^2-1\,670\,760z-1\,879\,605\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(16\,384z^4+1\,354\,752z^3+2\,358\,720z^2+4\,176\,900z+1\,879\,605\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afd1.01

$${}_1F_2\left(\frac{17}{4};\frac{7}{2},-\frac{11}{4};-z\right)=\frac{1}{288\,288\,z^{5/2}}\left(\left(-16\,384\,z^4+1\,354\,752\,z^3-2\,358\,720\,z^2+4\,176\,900\,z-1\,879\,605\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(32\,768\,z^4+276\,480\,z^3-943\,488\,z^2+1\,670\,760\,z-1\,879\,605\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.afd2.01

$${}_1F_2\left(\frac{17}{4};\frac{7}{2},-\frac{9}{4};z\right)=\frac{1}{28\,080\sqrt{2}\,z^{7/4}}\left(\left(-4z\left(4096z^3-28\,928z^2-42\,000z-65\,835\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(8192z^3+102\,144z^2+142\,560z+197\,505\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-16\,384z^4+119\,808z^3+297\,792z^2+540\,540z+592\,515\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afd3.01

$${}_1F_2\left(\frac{17}{4};\frac{7}{2},-\frac{9}{4};-z\right)=\frac{1}{28\,080\sqrt{2}\,z^{7/4}}\left(\left(-4z\left(4096z^3+28\,928z^2-42\,000z+65\,835\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-8192z^3+102\,144z^2-142\,560z+197\,505\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,384z^4+119\,808z^3-297\,792z^2+540\,540z-592\,515\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afd4.01

$${}_1F_2\left(\frac{17}{4};\frac{7}{2},-\frac{7}{4};z\right)=\frac{1}{26\,208\,z^{5/2}}\left(6\sqrt{z}\left(4096z^3+20\,736z^2+28\,080z+29\,835\right)\cosh\left(2\sqrt{z}\right)+\left(16\,384z^4-95\,232z^3-129\,600z^2-203\,580z-89\,505\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afd5.01

$${}_1F_2\left(\frac{17}{4};\frac{7}{2},-\frac{7}{4};-z\right)=\frac{1}{26\,208\,z^{5/2}}\left(\left(16\,384z^4+95\,232z^3-129\,600z^2+203\,580z-89\,505\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\left(4096z^3-20\,736z^2+28\,080z-29\,835\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.afd6.01

$${}_1F_2\left(\frac{17}{4};\frac{7}{2},-\frac{5}{4};z\right)=\frac{1}{3120\sqrt{2}\,z^{7/4}}\left(\left(4z\left(2304z^2+2848z+3465\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048z^3-8704z^2-8184z-10\,395\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(7168z^3+21\,120z^2+30\,492z+31\,185\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afd7.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, -\frac{5}{4}; -z\right) =$$
$$\frac{1}{3120\sqrt{2}\, z^{7/4}}\left(\left(-4z\left(2304z^2-2848z+3465\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048z^3+8704z^2-8184z+10\,395\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(7168z^3-21\,120z^2+30\,492z-31\,185\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afd8.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{3744\, z^{5/2}}\left(-2\sqrt{z}\left(2048z^3-6144z^2-5400z-5265\right)\cosh\left(2\sqrt{z}\right)-3\left(3072z^3+3200z^2+4140z+1755\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afd9.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{3744\, z^{5/2}}\left(2\sqrt{z}\left(2048z^3+6144z^2-5400z+5265\right)\cos\left(2\sqrt{z}\right)+3\left(3072z^3-3200z^2+4140z-1755\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afda.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, -\frac{1}{4}; z\right) = \frac{1}{624\sqrt{2}\, z^{7/4}}\left(\left(4z\left(-256z^2+320z+231\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.4\sqrt{z}\left(1280z^2+624z+693\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1024z^3+2304z^2+2268z+2079\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afdb.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{624\sqrt{2}\, z^{7/4}}\left(\left(4z\left(256z^2+320z-231\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1280z^2-624z+693\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(1024z^3+2304z^2-2268z+2079\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afdc.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{1}{4}; z\right) = \frac{10\sqrt{z}\left(256z^2+96z+81\right)\cosh\left(2\sqrt{z}\right)+\left(1024z^3-1152z^2-1020z-405\right)\sinh\left(2\sqrt{z}\right)}{1248\, z^{5/2}}$$

07.22.03.afdd.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{1}{4}; -z\right) = \frac{10\sqrt{z}\left(256z^2-96z+81\right)\cos\left(2\sqrt{z}\right)-\left(1024z^3+1152z^2-1020z+405\right)\sin\left(2\sqrt{z}\right)}{1248\, z^{5/2}}$$

07.22.03.afde.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{3}{4}; z\right) = \frac{1}{624\sqrt{2}\, z^{7/4}}$$
$$\left(\left(4z\left(176z+21\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(128z^2-72z-63\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+9\left(64z^2+28z+21\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afdf.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{3}{4}; -z\right) = -\frac{1}{624\sqrt{2}\, z^{7/4}} \left(\left(4(21-176z)\, z\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(128z^2+72z-63\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 9\left(64z^2-28z+21\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afdg.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{5}{4}; z\right) = \frac{2\sqrt{z}\,\left(128z^2-72z-45\right)\cosh\left(2\sqrt{z}\right) + 3\left(192z^2+44z+15\right)\sinh\left(2\sqrt{z}\right)}{1248\, z^{5/2}} $$

07.22.03.afdh.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{5}{4}; -z\right) = \frac{2\sqrt{z}\,\left(128z^2+72z-45\right)\cos\left(2\sqrt{z}\right) + 3\left(192z^2-44z+15\right)\sin\left(2\sqrt{z}\right)}{1248\, z^{5/2}} $$

07.22.03.afdi.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{7}{4}; z\right) = \frac{1}{208\sqrt{2}\, z^{7/4}} \left(\left(4z(16z-3) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(64z+9) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(64z^2-60z-27\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afdj.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{7}{4}; -z\right) = \frac{1}{208\sqrt{2}\, z^{7/4}} \left(\left(4z(16z+3) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(64z-9) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-64z^2-60z+27\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afdk.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{9}{4}; z\right) = \frac{5\left(6\sqrt{z}\,(16z+3)\cosh\left(2\sqrt{z}\right) + \left(64z^2-60z-9\right)\sinh\left(2\sqrt{z}\right)\right)}{1248\, z^{5/2}} $$

07.22.03.afdl.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{9}{4}; -z\right) = \frac{5\left(\left(64z^2+60z-9\right)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\,(16z-3)\cos\left(2\sqrt{z}\right)\right)}{1248\, z^{5/2}} $$

07.22.03.afdm.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{11}{4}; z\right) = \frac{7\left(20z\, I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(8z-9) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3(4z+3) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{208\sqrt{2}\, z^{7/4}} $$

07.22.03.afdn.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{11}{4}; -z\right) = \frac{7\left(-20z\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,(8z+9) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3(4z-3) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{208\sqrt{2}\, z^{7/4}} $$

07.22.03.afdo.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{13}{4}; z\right) = \frac{15\left(2\sqrt{z}\,(8z-9)\cosh\left(2\sqrt{z}\right) + (4z+9)\sinh\left(2\sqrt{z}\right)\right)}{416\, z^{5/2}} $$

07.22.03.afdp.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{13}{4}; -z\right) = -\frac{15\left(2\sqrt{z}\,(8z+9)\cos\left(2\sqrt{z}\right)+(4z-9)\sin\left(2\sqrt{z}\right)\right)}{416\,z^{5/2}}$$

07.22.03.afdq.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{15}{4}; z\right) = \frac{77\left(2\sqrt{z}\,(8z-7)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+(21-16z)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,(8z-3)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{832\sqrt{2}\,z^{9/4}}$$

07.22.03.afdr.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{15}{4}; -z\right) =$$

$$-\frac{1}{832\sqrt{2}\,z^{9/4}}\left(77\left(2\sqrt{z}\,(8z+7)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-(16z+21)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,(8z+3)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afds.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{17}{4}; z\right) = \frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.afdt.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{17}{4}; -z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.afdu.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{19}{4}; z\right) = \frac{1}{26\,624\sqrt{2}\,z^{13/4}}$$

$$\left(1155\left(-2\sqrt{z}\,(144z+77)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(256z^2+784z+231\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-22\sqrt{z}\,(16z+21)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afdv.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{19}{4}; -z\right) = -\frac{1}{26\,624\sqrt{2}\,z^{13/4}}$$

$$\left(1155\left(2\sqrt{z}\,(144z-77)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(256z^2-784z+231\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+22\,(21-16z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afdw.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{21}{4}; z\right) = \frac{1}{65\,536\,z^{17/4}}$$

$$\left(255\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(256z^2+960z^{3/2}+1872z+2340\sqrt{z}\,+e^{4\sqrt{z}}\left(256z^2-960z^{3/2}+1872z-2340\sqrt{z}\,+1755\right)+1755\right)-\right.\right.$$

$$\left.\left.1755\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-1755\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.afdx.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{21}{4}; -z\right) =$$

$$\frac{1}{16\,384\,z^{17/4}}\left(255\left(2\sqrt[4]{z}\,\left(\left(256z^2-1872z+1755\right)\cos\left(2\sqrt{z}\right)+60\,(39-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)-1755\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)$$

07.22.03.afdy.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{23}{4}; z\right) =$$
$$\frac{1}{851\,968\sqrt{2}\, z^{17/4}}\left(21\,945\left(2\sqrt{z}\left(512z^2+5984z+5775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(10\,240z^2+44\,352z+17\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(512z^2+7392z+17\,325\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afdz.01

$${}_1F_2\left(\frac{17}{4}; \frac{7}{2}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{851\,968\sqrt{2}\, z^{17/4}}\left(21\,945\left(2\sqrt{z}\left(512z^2-5984z+5775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-10\,240z^2+44\,352z-17\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\left(512z^2-7392z+17\,325\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{17}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.afe0.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{1\,079\,844\,480\, z^{7/2}}\left(2\sqrt{z}\left(4\,194\,304z^6+357\,826\,560z^5+5\,527\,142\,400z^4+53\,593\,712\,640z^3+436\,068\,360\,000z^2+\right.\right.$$
$$\left.\left.1\,938\,687\,250\,500z+2\,773\,122\,226\,875\right)\cosh\left(2\sqrt{z}\right)-13\left(8\,388\,608z^6+243\,793\,920z^5+2\,671\,902\,720z^4+\right.\right.$$
$$\left.\left.24\,675\,840\,000z^3+156\,537\,360\,000z^2+433\,552\,581\,000z+213\,317\,094\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afe1.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{1\,079\,844\,480\, z^{7/2}}\left(13\left(8\,388\,608z^6-243\,793\,920z^5+2\,671\,902\,720z^4-24\,675\,840\,000z^3+156\,537\,360\,000z^2-\right.\right.$$
$$\left.\left.433\,552\,581\,000z+213\,317\,094\,375\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(4\,194\,304z^6-357\,826\,560z^5+5\,527\,142\,400z^4-\right.\right.$$
$$\left.\left.53\,593\,712\,640z^3+436\,068\,360\,000z^2-1\,938\,687\,250\,500z+2\,773\,122\,226\,875\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.afe2.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, -\frac{21}{4}; z\right) = \frac{1}{74\,468\,160\sqrt{2}\, z^{11/4}}$$
$$\left(\left(4z\left(524\,288z^5+32\,178\,176z^4+383\,365\,120z^3+3\,402\,570\,240z^2+23\,657\,938\,920z+73\,931\,059\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(11\,796\,480z^5+263\,716\,864z^4+2\,521\,528\,320z^3+21\,476\,067\,840z^2+113\,220\,136\,260z+221\,793\,177\,375\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(2\,097\,152z^6+141\,033\,472z^5+1\,837\,547\,520z^4+16\,753\,950\,720z^3+\right.$$
$$\left.\left.\left.122\,541\,582\,240z^2+466\,399\,367\,280z+665\,379\,532\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afe3.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{1}{74\,468\,160\sqrt{2}\, z^{11/4}} $$
$$ \left(\left(-4z\left(524\,288z^5 - 32\,178\,176z^4 + 383\,365\,120z^3 - 3\,402\,570\,240z^2 + 23\,657\,938\,920z - 73\,931\,059\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(11\,796\,480z^5 - 263\,716\,864z^4 + 2\,521\,528\,320z^3 - 21\,476\,067\,840z^2 + 113\,220\,136\,260z - 221\,793\,177\,375\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(2\,097\,152z^6 - 141\,033\,472z^5 + 1\,837\,547\,520z^4 - 16\,753\,950\,720z^3 + \right. $$
$$ \left.\left.\left. 122\,541\,582\,240z^2 - 466\,399\,367\,280z + 665\,379\,532\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afe4.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{9}{2}, -\frac{19}{4}; z\right) = \frac{1}{46\,949\,760\, z^{7/2}} $$
$$ \left(78\sqrt{z}\left(262\,144z^5 + 4\,587\,520z^4 + 39\,720\,960z^3 + 308\,448\,000z^2 + 1\,351\,066\,500z + 1\,921\,775\,625\right)\cosh\left(2\sqrt{z}\right) - \right. $$
$$ \left(2\,097\,152z^6 + 102\,236\,160z^5 + 1\,063\,895\,040z^4 + 8\,982\,005\,760z^3 + \right. $$
$$ \left.\left. 55\,636\,308\,000z^2 + 152\,623\,926\,000z + 74\,949\,249\,375\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afe5.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{46\,949\,760\, z^{7/2}} $$
$$ \left(78\sqrt{z}\left(262\,144z^5 - 4\,587\,520z^4 + 39\,720\,960z^3 - 308\,448\,000z^2 + 1\,351\,066\,500z - 1\,921\,775\,625\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left(2\,097\,152z^6 - 102\,236\,160z^5 + 1\,063\,895\,040z^4 - 8\,982\,005\,760z^3 + \right. $$
$$ \left.\left. 55\,636\,308\,000z^2 - 152\,623\,926\,000z + 74\,949\,249\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afe6.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{9}{2}, -\frac{17}{4}; z\right) = $$
$$ -\frac{1}{24\,822\,720\sqrt{2}\, z^{11/4}}\left(7\left(-4z\left(1\,048\,576z^4 + 13\,107\,200z^3 + 101\,856\,000z^2 + 685\,285\,920z + 2\,112\,315\,975\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 4\sqrt{z}\left(262\,144z^5 + 9\,273\,344z^4 + 80\,271\,360z^3 + 631\,797\,120z^2 + 3\,262\,895\,460z + 6\,336\,947\,925\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(4\,456\,448z^5 + 62\,914\,560z^4 + 508\,677\,120z^3 + \right. $$
$$ \left.\left.\left. 3\,571\,793\,280z^2 + 13\,409\,799\,480z + 19\,010\,843\,775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afe7.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{9}{2}, -\frac{17}{4}; -z\right) = \frac{1}{24\,822\,720\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(1\,048\,576z^4 - 13\,107\,200z^3 + 101\,856\,000z^2 - 685\,285\,920z + 2\,112\,315\,975\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(262\,144z^5 - 9\,273\,344z^4 + 80\,271\,360z^3 - 631\,797\,120z^2 + 3\,262\,895\,460z - 6\,336\,947\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-4\,456\,448z^5 + 62\,914\,560z^4 - 508\,677\,120z^3 + 3\,571\,793\,280z^2 - 13\,409\,799\,480z + 19\,010\,843\,775\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afe8.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{9}{2}, -\frac{15}{4}; z\right) = \frac{1}{2\,471\,040\,z^{7/2}}\left(2\sqrt{z}\left(262\,144z^5 + 6\,815\,744z^4 + 51\,517\,440z^3 + 374\,250\,240z^2 + 1\,608\,106\,500z + 2\,271\,189\,375\right)\cosh\left(2\sqrt{z}\right) - \left(3\,670\,016z^5 + 38\,338\,560z^4 + 285\,143\,040z^3 + 1\,710\,858\,240z^2 + 4\,636\,359\,000z + 2\,271\,189\,375\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afe9.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{2\,471\,040\,z^{7/2}}\left(2\sqrt{z}\left(262\,144z^5 - 6\,815\,744z^4 + 51\,517\,440z^3 - 374\,250\,240z^2 + 1\,608\,106\,500z - 2\,271\,189\,375\right)\cos\left(2\sqrt{z}\right) + \left(-3\,670\,016z^5 + 38\,338\,560z^4 - 285\,143\,040z^3 + 1\,710\,858\,240z^2 - 4\,636\,359\,000z + 2\,271\,189\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afea.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{9}{2}, -\frac{13}{4}; z\right) = \frac{1}{1\,460\,160\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(32\,768z^4 + 542\,720z^3 + 3\,500\,160z^2 + 22\,496\,760z + 68\,139\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(376\,832z^4 + 3\,025\,920z^3 + 21\,176\,640z^2 + 106\,426\,980z + 204\,417\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(131\,072z^5 + 2\,580\,480z^4 + 17\,856\,000z^3 + 118\,277\,280z^2 + 436\,091\,040z + 613\,253\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afeb.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{9}{2}, -\frac{13}{4}; -z\right) = \frac{1}{1\,460\,160\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(32\,768z^4 - 542\,720z^3 + 3\,500\,160z^2 - 22\,496\,760z + 68\,139\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(376\,832z^4 - 3\,025\,920z^3 + 21\,176\,640z^2 - 106\,426\,980z + 204\,417\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-131\,072z^5 + 2\,580\,480z^4 - 17\,856\,000z^3 + 118\,277\,280z^2 - 436\,091\,040z + 613\,253\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afec.01

$${}_1F_2\left(\frac{17}{4};\frac{9}{2},-\frac{11}{4};z\right)=$$
$$\frac{1}{164\,736\,z^{7/2}}\left(2\sqrt{z}\,\left(311\,296\,z^4+2\,036\,736\,z^3+13\,366\,080\,z^2+55\,970\,460\,z+78\,316\,875\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(131\,072\,z^5+1\,695\,744\,z^4+10\,483\,200\,z^3+60\,147\,360\,z^2+160\,392\,960\,z+78\,316\,875\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afed.01

$${}_1F_2\left(\frac{17}{4};\frac{9}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{164\,736\,z^{7/2}}\left(\left(-131\,072\,z^5+1\,695\,744\,z^4-10\,483\,200\,z^3+60\,147\,360\,z^2-160\,392\,960\,z+78\,316\,875\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\,\left(311\,296\,z^4-2\,036\,736\,z^3+13\,366\,080\,z^2-55\,970\,460\,z+78\,316\,875\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.afee.01

$${}_1F_2\left(\frac{17}{4};\frac{9}{2},-\frac{9}{4};z\right)=-\frac{1}{112\,320\sqrt{2}\,z^{11/4}}\left(7\left(-4\,z\left(28\,672\,z^3+142\,080\,z^2+852\,720\,z+2\,523\,675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\,\left(16\,384\,z^4+142\,336\,z^3+826\,560\,z^2+4\,000\,260\,z+7\,571\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(131\,072\,z^4+749\,568\,z^3+4\,540\,800\,z^2+16\,327\,080\,z+22\,713\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afef.01

$${}_1F_2\left(\frac{17}{4};\frac{9}{2},-\frac{9}{4};-z\right)=-\frac{1}{112\,320\sqrt{2}\,z^{11/4}}\left(7\left(4\,z\left(28\,672\,z^3-142\,080\,z^2+852\,720\,z-2\,523\,675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\,\left(16\,384\,z^4-142\,336\,z^3+826\,560\,z^2-4\,000\,260\,z+7\,571\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-131\,072\,z^4+749\,568\,z^3-4\,540\,800\,z^2+16\,327\,080\,z-22\,713\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afeg.01

$${}_1F_2\left(\frac{17}{4};\frac{9}{2},-\frac{7}{4};z\right)=\frac{1}{14\,976\,z^{7/2}}\left(2\sqrt{z}\,\left(16\,384\,z^4+101\,376\,z^3+561\,600\,z^2+2\,267\,460\,z+3\,132\,675\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.3\left(32\,768\,z^4+153\,600\,z^3+823\,680\,z^2+2\,148\,120\,z+1\,044\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afeh.01

$${}_1F_2\left(\frac{17}{4};\frac{9}{2},-\frac{7}{4};-z\right)=\frac{1}{14\,976\,z^{7/2}}\left(3\left(32\,768\,z^4-153\,600\,z^3+823\,680\,z^2-2\,148\,120\,z+1\,044\,225\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\,\left(16\,384\,z^4-101\,376\,z^3+561\,600\,z^2-2\,267\,460\,z+3\,132\,675\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.afei.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{9}{2}, -\frac{5}{4}; z\right) = \frac{1}{12\,480\sqrt{2}\, z^{11/4}} $$
$$ \left(7\left(4z\left(2048z^3+7168z^2+38\,280z+109\,725\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(3072z^3+12\,928z^2+59\,180z+109\,725\right)\right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(8192z^4+39\,936z^3+208\,032z^2+720\,720z+987\,525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afej.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{9}{2}, -\frac{5}{4}; -z\right) = -\frac{1}{12\,480\sqrt{2}\, z^{11/4}} $$
$$ \left(7\left(4z\left(2048z^3-7168z^2+38\,280z-109\,725\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(3072z^3-12\,928z^2+59\,180z-109\,725\right)\right.\right. $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-8192z^4+39\,936z^3-208\,032z^2+720\,720z-987\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afek.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{9}{2}, -\frac{3}{4}; z\right) = -\frac{1}{14\,976 z^{7/2}}\left(7\left(\left(8192z^4+25\,600z^3+122\,400z^2+308\,880z+149\,175\right)\sinh\left(2\sqrt{z}\right) - \right.\right. $$
$$ \left.\left. 2\sqrt{z}\left(7168z^3+28\,800z^2+109\,980z+149\,175\right)\cosh\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.afel.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{1}{14\,976 z^{7/2}}\left(7\left(2\sqrt{z}\left(7168z^3-28\,800z^2+109\,980z-149\,175\right)\cos\left(2\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. \left(8192z^4-25\,600z^3+122\,400z^2-308\,880z+149\,175\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.afem.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{9}{2}, -\frac{1}{4}; z\right) = $$
$$ -\frac{1}{2496\sqrt{2}\, z^{11/4}}\left(7\left(-4z\left(512z^2+2112z+5775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1024z^3+2304z^2+9636z+17\,325\right)\right.\right. $$
$$ \left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 3\left(1024z^3+3968z^2+12\,936z+17\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afen.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{9}{2}, -\frac{1}{4}; -z\right) = $$
$$ \frac{1}{2496\sqrt{2}\, z^{11/4}}\left(7\left(4z\left(512z^2-2112z+5775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1024z^3-2304z^2+9636z-17\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left. 3\left(-1024z^3+3968z^2-12\,936z+17\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afeo.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{4992\, z^{7/2}}\left(7\left(2\sqrt{z}\,\left(1024\, z^3+1920\, z^2+6660\, z+8775\right)\cosh\left(2\sqrt{z}\right)-\left(2048\, z^3+7680\, z^2+18\,360\, z+8775\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.afep.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{1}{4}; -z\right) =$$
$$\frac{1}{4992\, z^{7/2}}\left(7\left(2\sqrt{z}\,\left(1024\, z^3-1920\, z^2+6660\, z-8775\right)\cos\left(2\sqrt{z}\right)+\left(-2048\, z^3+7680\, z^2-18\,360\, z+8775\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.afeq.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{3}{4}; z\right) = \frac{1}{2496\sqrt{2}\, z^{11/4}}\left(7\left(4\, z\left(128\, z^2+152\, z+385\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.4\sqrt{z}\,\left(192\, z^2+676\, z+1155\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(512\, z^3+928\, z^2+2688\, z+3465\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afer.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{3}{4}; -z\right) =$$
$$\frac{1}{2496\sqrt{2}\, z^{11/4}}\left(7\left(4\, z\left(128\, z^2-152\, z+385\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(192\, z^2-676\, z+1155\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-512\, z^3+928\, z^2-2688\, z+3465\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afes.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{5}{4}; z\right) = \frac{7\left(\left(512\, z^3+672\, z^2+1440\, z+675\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,\left(64\, z^2+180\, z+225\right)\cosh\left(2\sqrt{z}\right)\right)}{4992\, z^{7/2}}$$

07.22.03.afet.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{5}{4}; -z\right) = \frac{7\left(6\sqrt{z}\,\left(64\, z^2-180\, z+225\right)\cos\left(2\sqrt{z}\right)+\left(512\, z^3-672\, z^2+1440\, z-675\right)\sin\left(2\sqrt{z}\right)\right)}{4992\, z^{7/2}}$$

07.22.03.afeu.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{7}{4}; z\right) = \frac{1}{832\sqrt{2}\, z^{11/4}}$$
$$\left(7\left(-4\, z\left(16\, z+35\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(64\, z^2+68\, z+105\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(128\, z^2+264\, z+315\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afev.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{7}{4}; -z\right) = \frac{1}{832\sqrt{2}\, z^{11/4}}$$
$$\left(7\left(4\, z\left(16\, z-35\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(64\, z^2-68\, z+105\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-128\, z^2+264\, z-315\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afew.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{9}{4}; z\right) = \frac{35\left(2\sqrt{z}\,\left(64z^2+68z+75\right)\cosh\left(2\sqrt{z}\right)-\left(128z^2+168z+75\right)\sinh\left(2\sqrt{z}\right)\right)}{4992\,z^{7/2}}$$

07.22.03.afex.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{9}{4}; -z\right) = -\frac{35\left(2\sqrt{z}\,\left(64z^2-68z+75\right)\cos\left(2\sqrt{z}\right)+\left(-128z^2+168z-75\right)\sin\left(2\sqrt{z}\right)\right)}{4992\,z^{7/2}}$$

07.22.03.afey.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{11}{4}; z\right) =$$

$$\frac{1}{832\sqrt{2}\,z^{11/4}}\left(49\left(4z(8z+5)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-20\sqrt{z}\,(4z+3)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(32z^2+48z+45\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afez.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{11}{4}; -z\right) =$$

$$-\frac{1}{832\sqrt{2}\,z^{11/4}}\left(49\left(4z(8z-5)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+20(3-4z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-32z^2+48z-45\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aff0.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{13}{4}; z\right) = \frac{105\left(\left(32z^2+48z+15\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,(28z+15)\cosh\left(2\sqrt{z}\right)\right)}{1664\,z^{7/2}}$$

07.22.03.aff1.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{13}{4}; -z\right) = -\frac{105\left(2\sqrt{z}\,(28z-15)\cos\left(2\sqrt{z}\right)+\left(32z^2-48z+15\right)\sin\left(2\sqrt{z}\right)\right)}{1664\,z^{7/2}}$$

07.22.03.aff2.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{15}{4}; z\right) = \frac{539\left(-16z\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+2\sqrt{z}\,(8z+17)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-5(4z+3)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{832\sqrt{2}\,z^{11/4}}$$

07.22.03.aff3.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{15}{4}; -z\right) = -\frac{539\left(16z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+2\sqrt{z}\,(8z-17)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+5(3-4z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{832\sqrt{2}\,z^{11/4}}$$

07.22.03.aff4.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{17}{4}; z\right) = \frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right)-3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.aff5.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{17}{4}; -z\right) = \frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right)+3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.aff6.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{19}{4}; z\right) =$$
$$\frac{1}{13\,312\sqrt{2}\,z^{13/4}}\left(8085\left(2\sqrt{z}\,(16z+77)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\,(80z+77)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(16z+111)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aff7.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{19}{4}; -z\right) =$$
$$\frac{1}{13\,312\sqrt{2}\,z^{13/4}}\left(8085\left(2\sqrt{z}\,(16z-77)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\,(80z-77)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\,(111-16z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.aff8.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{21}{4}; z\right) =$$
$$\frac{1}{32\,768\,z^{17/4}}\left(1785\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-64z^{3/2}-304z-620\sqrt{z}+e^{4\sqrt{z}}\left(64z^{3/2}-304z+620\sqrt{z}-585\right)-585\right)+\right.\right.$$
$$\left.\left.585\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+585\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aff9.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{21}{4}; -z\right) = \frac{1785\left(585\sqrt{\pi}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left((304z-585)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\,(16z-155)\sin\left(2\sqrt{z}\right)\right)\right)}{8192\,z^{17/4}}$$

07.22.03.affa.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{23}{4}; z\right) = \frac{1}{425\,984\sqrt{2}\,z^{17/4}}\left(153\,615\right.$$
$$\left.\left(-22\sqrt{z}\,(64z+105)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(512z^2+7392z+3465\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-6\sqrt{z}\,(256z+1155)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.affb.01

$${}_1F_2\left(\frac{17}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) = \frac{1}{425\,984\sqrt{2}\,z^{17/4}}\left(153\,615\right.$$
$$\left.\left(22\sqrt{z}\,(64z-105)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(512z^2-7392z+3465\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+6\,(1155-256z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{17}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.affc.01

$${}_1F_2\left(\frac{17}{4}; \frac{11}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{479\,930\,880\,z^{9/2}}\left(\left(16\,777\,216z^7+3\,612\,344\,320z^6+176\,178\,462\,720z^5+4\,491\,002\,880\,000z^4+66\,863\,815\,200\,000z^3+\right.\right.$$
$$\left.519\,408\,291\,402\,000z^2+1\,586\,225\,913\,772\,500z+795\,886\,079\,113\,125\right)\sinh\left(2\sqrt{z}\right)-$$
$$10\sqrt{z}\left(33\,554\,432z^6+2\,801\,270\,784z^5+95\,036\,178\,432z^4+1\,860\,558\,336\,000z^3+\right.$$
$$\left.\left.20\,466\,141\,696\,000z^2+105\,008\,894\,991\,000z+159\,177\,215\,822\,625\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.affd.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{479\,930\,880\, z^{9/2}}\left(\left(-16\,777\,216\, z^7 + 3\,612\,344\,320\, z^6 - 176\,178\,462\,720\, z^5 + 4\,491\,002\,880\,000\, z^4 - 66\,863\,815\,200\,000\, z^3 + 519\,408\,291\,402\,000\, z^2 - 1\,586\,225\,913\,772\,500\, z + 795\,886\,079\,113\,125\right)\sin\left(2\sqrt{z}\right) - 10\sqrt{z}\left(33\,554\,432\, z^6 - 2\,801\,270\,784\, z^5 + 95\,036\,178\,432\, z^4 - 1\,860\,558\,336\,000\, z^3 + 20\,466\,141\,696\,000\, z^2 - 105\,008\,894\,991\,000\, z + 159\,177\,215\,822\,625\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.affe.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{11}{2}, -\frac{21}{4}; z\right) = \frac{1}{33\,096\,960\sqrt{2}\, z^{15/4}}\left(\left(-4\, z\left(18\,612\,224\, z^5 + 1\,280\,573\,440\, z^4 + 37\,472\,901\,120\, z^3 + 629\,239\,726\,080\, z^2 + 5\,618\,760\,493\,500\, z + 20\,183\,179\,141\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2\,097\,152\, z^6 + 370\,671\,616\, z^5 + 15\,619\,768\,320\, z^4 + 350\,866\,391\,040\, z^3 + 4\,499\,309\,838\,240\, z^2 + 28\,389\,526\,704\,000\, z + 60\,549\,537\,423\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(76\,546\,048\, z^6 + 5\,512\,888\,320\, z^5 + 167\,056\,220\,160\, z^4 + 2\,917\,845\,504\,000\, z^3 + 27\,923\,127\,336\,720\, z^2 + 119\,768\,315\,782\,500\, z + 181\,648\,612\,270\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afff.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{11}{2}, -\frac{21}{4}; -z\right) = \frac{1}{33\,096\,960\sqrt{2}\, z^{15/4}}\left(\left(-4\, z\left(18\,612\,224\, z^5 - 1\,280\,573\,440\, z^4 + 37\,472\,901\,120\, z^3 - 629\,239\,726\,080\, z^2 + 5\,618\,760\,493\,500\, z - 20\,183\,179\,141\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2\,097\,152\, z^6 - 370\,671\,616\, z^5 + 15\,619\,768\,320\, z^4 - 350\,866\,391\,040\, z^3 + 4\,499\,309\,838\,240\, z^2 - 28\,389\,526\,704\,000\, z + 60\,549\,537\,423\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(76\,546\,048\, z^6 - 5\,512\,888\,320\, z^5 + 167\,056\,220\,160\, z^4 - 2\,917\,845\,504\,000\, z^3 + 27\,923\,127\,336\,720\, z^2 - 119\,768\,315\,782\,500\, z + 181\,648\,612\,270\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.affg.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{11}{2}, -\frac{19}{4}; z\right) = \frac{1}{20\,866\,560\, z^{9/2}}\left(65\left(1\,048\,576\, z^6 + 62\,914\,560\, z^5 + 1\,658\,216\,448\, z^4 + 24\,922\,598\,400\, z^3 + 194\,441\,763\,600\, z^2 + 594\,981\,733\,500\, z + 298\,643\,932\,125\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(2\,097\,152\, z^6 + 306\,708\,480\, z^5 + 11\,287\,511\,040\, z^4 + 224\,550\,144\,000\, z^3 + 2\,485\,589\,652\,000\, z^2 + 12\,791\,338\,560\,000\, z + 19\,411\,855\,588\,125\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.affh.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{20\,866\,560\,z^{9/2}}\left(65\left(1\,048\,576\,z^6-62\,914\,560\,z^5+1\,658\,216\,448\,z^4-24\,922\,598\,400\,z^3+194\,441\,763\,600\,z^2-\right.\right.$$
$$\left.594\,981\,733\,500\,z+298\,643\,932\,125\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(2\,097\,152\,z^6-306\,708\,480\,z^5+11\,287\,511\,040\,z^4-\right.$$
$$\left.\left.224\,550\,144\,000\,z^3+2\,485\,589\,652\,000\,z^2-12\,791\,338\,560\,000\,z+19\,411\,855\,588\,125\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.affi.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{17}{4};z\right)=-\frac{1}{11\,032\,320\sqrt{2}\,z^{15/4}}$$
$$\left(7\left(4z\left(262\,144\,z^5+30\,146\,560\,z^4+939\,950\,080\,z^3+15\,993\,780\,480\,z^2+143\,637\,486\,300\,z+517\,517\,413\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\,\left(7\,602\,176\,z^5+384\,040\,960\,z^4+8\,866\,974\,720\,z^3+114\,697\,607\,040\,z^2+726\,636\,695\,400\,z+\right.$$
$$\left.1\,552\,552\,241\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,048\,576\,z^6+128\,450\,560\,z^5+4\,179\,148\,800\,z^4+\right.$$
$$\left.\left.\left.74\,083\,875\,840\,z^3+713\,226\,895\,920\,z^2+3\,067\,082\,795\,700\,z+4\,657\,656\,724\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.affj.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{17}{4};-z\right)=-\frac{1}{11\,032\,320\sqrt{2}\,z^{15/4}}$$
$$\left(7\left(4z\left(262\,144\,z^5-30\,146\,560\,z^4+939\,950\,080\,z^3-15\,993\,780\,480\,z^2+143\,637\,486\,300\,z-517\,517\,413\,875\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(7\,602\,176\,z^5-384\,040\,960\,z^4+8\,866\,974\,720\,z^3-114\,697\,607\,040\,z^2+726\,636\,695\,400\,z-\right.$$
$$\left.1\,552\,552\,241\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1\,048\,576\,z^6+128\,450\,560\,z^5-4\,179\,148\,800\,z^4+\right.$$
$$\left.\left.\left.74\,083\,875\,840\,z^3-713\,226\,895\,920\,z^2+3\,067\,082\,795\,700\,z-4\,657\,656\,724\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.affk.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{1\,098\,240\,z^{9/2}}\left(\left(1\,048\,576\,z^6+102\,236\,160\,z^5+2\,851\,430\,400\,z^4+43\,413\,027\,840\,z^3+340\,584\,426\,000\,z^2+\right.\right.$$
$$\left.1\,044\,747\,112\,500\,z+524\,644\,745\,625\right)\sinh\left(2\sqrt{z}\right)-$$
$$\left.26\sqrt{z}\,\left(524\,288\,z^5+22\,609\,920\,z^4+460\,615\,680\,z^3+5\,140\,800\,000\,z^2+26\,555\,445\,000\,z+40\,357\,288\,125\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.affl.01

$$ {}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{15}{4};-z\right)=\frac{1}{1\,098\,240\,z^{9/2}} \left(26\sqrt{z}\,\left(524\,288\,z^5-22\,609\,920\,z^4+460\,615\,680\,z^3-5\,140\,800\,000\,z^2+26\,555\,445\,000\,z-40\,357\,288\,125\right)\cos\left(2\sqrt{z}\right)+ \left(1\,048\,576\,z^6-102\,236\,160\,z^5+2\,851\,430\,400\,z^4-43\,413\,027\,840\,z^3+ 340\,584\,426\,000\,z^2-1\,044\,747\,112\,500\,z+524\,644\,745\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.affm.01

$$ {}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{13}{4};z\right)= \frac{1}{648\,960\sqrt{2}\,z^{15/4}}\left(7\left(-20\,z\left(147\,456\,z^4+5\,211\,136\,z^3+90\,364\,608\,z^2+817\,670\,700\,z+2\,957\,242\,365\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ 4\sqrt{z}\,\left(131\,072\,z^5+10\,280\,960\,z^4+248\,501\,760\,z^3+3\,252\,748\,320\,z^2+20\,714\,324\,400\,z+44\,358\,635\,475\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(3\,080\,192\,z^5+115\,322\,880\,z^4+2\,089\,647\,360\,z^3+ 20\,278\,233\,360\,z^2+87\,490\,764\,900\,z+133\,075\,906\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.affn.01

$$ {}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{13}{4};-z\right)= \frac{1}{648\,960\sqrt{2}\,z^{15/4}}\left(7\left(20\,z\left(147\,456\,z^4-5\,211\,136\,z^3+90\,364\,608\,z^2-817\,670\,700\,z+2\,957\,242\,365\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ 4\sqrt{z}\,\left(131\,072\,z^5-10\,280\,960\,z^4+248\,501\,760\,z^3-3\,252\,748\,320\,z^2+20\,714\,324\,400\,z-44\,358\,635\,475\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-3\,080\,192\,z^5+115\,322\,880\,z^4-2\,089\,647\,360\,z^3+ 20\,278\,233\,360\,z^2-87\,490\,764\,900\,z+133\,075\,906\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.affo.01

$$ {}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{11}{4};z\right)=\frac{1}{73\,216\,z^{9/2}} \left(\left(2\,686\,976\,z^5+83\,865\,600\,z^4+1\,300\,965\,120\,z^3+10\,281\,857\,040\,z^2+31\,640\,017\,500\,z+15\,898\,325\,625\right)\sinh\left(2\sqrt{z}\right)- 2\sqrt{z}\,\left(131\,072\,z^5+8\,413\,184\,z^4+178\,214\,400\,z^3+2\,011\,595\,040\,z^2+10\,442\,250\,000\,z+15\,898\,325\,625\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.affp.01

$$ {}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{11}{4};-z\right)=\frac{1}{73\,216\,z^{9/2}} \left(2\sqrt{z}\,\left(131\,072\,z^5-8\,413\,184\,z^4+178\,214\,400\,z^3-2\,011\,595\,040\,z^2+10\,442\,250\,000\,z-15\,898\,325\,625\right)\cos\left(2\sqrt{z}\right)+ \left(-2\,686\,976\,z^5+83\,865\,600\,z^4-1\,300\,965\,120\,z^3+10\,281\,857\,040\,z^2-31\,640\,017\,500\,z+15\,898\,325\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.affq.01

$$ {}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{9}{4};z\right)= -\frac{1}{49\,920\sqrt{2}\,z^{15/4}}\left(7\left(4z\left(16\,384z^4+803\,840z^3+14\,354\,880z^2+131\,231\,100z+476\,974\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- 12\sqrt{z}\left(98\,304z^4+2\,600\,960z^3+34\,631\,680z^2+222\,083\,400z+476\,974\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ \left(65\,536z^5+3\,526\,656z^4+66\,236\,160z^3+649\,923\,120z^2+2\,816\,421\,300z+4\,292\,771\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.affr.01

$$ {}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{9}{4};-z\right)= \frac{1}{49\,920\sqrt{2}\,z^{15/4}}\left(7\left(4z\left(16\,384z^4-803\,840z^3+14\,354\,880z^2-131\,231\,100z+476\,974\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2- 12\sqrt{z}\left(98\,304z^4-2\,600\,960z^3+34\,631\,680z^2-222\,083\,400z+476\,974\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ \left(-65\,536z^5+3\,526\,656z^4-66\,236\,160z^3+649\,923\,120z^2-2\,816\,421\,300z+4\,292\,771\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.affs.01

$$ {}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{7}{4};z\right)= \frac{1}{6656\,z^{9/2}}\left(\left(65\,536z^5+2\,764\,800z^4+44\,179\,200z^3+352\,769\,040z^2+1\,090\,170\,900z+548\,218\,125\right)\sinh\left(2\sqrt{z}\right)- 2\sqrt{z}\left(262\,144z^4+5\,990\,400z^3+68\,739\,840z^2+359\,213\,400z+548\,218\,125\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.afft.01

$$ {}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{7}{4};-z\right)= \frac{1}{6656\,z^{9/2}}\left(\left(-65\,536z^5+2\,764\,800z^4-44\,179\,200z^3+352\,769\,040z^2-1\,090\,170\,900z+548\,218\,125\right)\sin\left(2\sqrt{z}\right)- 2\sqrt{z}\left(262\,144z^4-5\,990\,400z^3+68\,739\,840z^2-359\,213\,400z+548\,218\,125\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.affu.01

$$ {}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{5}{4};z\right)= \frac{1}{16\,640\sqrt{2}\,z^{15/4}}\left(21\left(-12z\left(9216z^3+173\,440z^2+1\,609\,300z+5\,888\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+ 4\sqrt{z}\left(8192z^4+277\,504z^3+3\,795\,360z^2+24\,578\,400z+52\,997\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)- \left(118\,784z^4+2\,391\,552z^3+23\,857\,680z^2+104\,019\,300z+158\,991\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.affv.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{5}{4};-z\right)=-\frac{1}{16\,640\sqrt{2}\,z^{15/4}}\left(21\left(12\,z\left(9216\,z^3-173\,440\,z^2+1\,609\,300\,z-5\,888\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(8192\,z^4-277\,504\,z^3+3\,795\,360\,z^2-24\,578\,400\,z+52\,997\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-118\,784\,z^4+2\,391\,552\,z^3-23\,857\,680\,z^2+104\,019\,300\,z-158\,991\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.affw.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{3}{4};z\right)=-\frac{1}{6656\,z^{9/2}}\left(7\left(2\sqrt{z}\left(8192\,z^4+230\,400\,z^3+2\,714\,400\,z^2+14\,320\,800\,z+21\,928\,725\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.5\left(20\,480\,z^4+345\,600\,z^3+2\,802\,384\,z^2+8\,711\,820\,z+4\,385\,745\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.affx.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{3}{4};-z\right)=-\frac{1}{6656\,z^{9/2}}\left(7\left(2\sqrt{z}\left(8192\,z^4-230\,400\,z^3+2\,714\,400\,z^2-14\,320\,800\,z+21\,928\,725\right)\cos\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.5\left(20\,480\,z^4-345\,600\,z^3+2\,802\,384\,z^2-8\,711\,820\,z+4\,385\,745\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.affy.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{1}{4};z\right)=-\frac{1}{3328\sqrt{2}\,z^{15/4}}$$
$$\left(21\left(4\,z\left(1024\,z^3+21\,888\,z^2+207\,900\,z+768\,075\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(11\,264\,z^3+161\,664\,z^2+1\,062\,600\,z+2\,304\,225\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(4096\,z^4+99\,840\,z^3+1\,023\,792\,z^2+4\,504\,500\,z+6\,912\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.affz.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},-\frac{1}{4};-z\right)=-\frac{1}{3328\sqrt{2}\,z^{15/4}}$$
$$\left(21\left(4\,z\left(1024\,z^3-21\,888\,z^2+207\,900\,z-768\,075\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-11\,264\,z^3+161\,664\,z^2-1\,062\,600\,z+2\,304\,225\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-4096\,z^4+99\,840\,z^3-1\,023\,792\,z^2+4\,504\,500\,z-6\,912\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afg0.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},\frac{1}{4};z\right)=\frac{1}{6656\,z^{9/2}}\left(21\left(\left(4096\,z^4+79\,360\,z^3+660\,240\,z^2+2\,070\,900\,z+1\,044\,225\right)\sinh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.10\sqrt{z}\left(2048\,z^3+25\,344\,z^2+135\,720\,z+208\,845\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.afg1.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},\frac{1}{4};-z\right)=\frac{1}{6656\,z^{9/2}}\left(21\left(10\sqrt{z}\left(2048\,z^3-25\,344\,z^2+135\,720\,z-208\,845\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096\,z^4-79\,360\,z^3+660\,240\,z^2-2\,070\,900\,z+1\,044\,225\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.afg2.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{11}{2}, \frac{3}{4}; z\right) = \frac{1}{3328\sqrt{2}\, z^{15/4}} \left(21\left(-4z\left(1088z^2+10\,780z+40\,425\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(512z^3+8224z^2+55\,440z+121\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(4864z^3+52\,752z^2+235\,620z+363\,825\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afg3.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{11}{2}, \frac{3}{4}; -z\right) = \frac{1}{3328\sqrt{2}\, z^{15/4}} \left(21\left(4z\left(1088z^2-10\,780z+40\,425\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(512z^3-8224z^2+55\,440z-121\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-4864z^3+52\,752z^2-235\,620z+363\,825\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afg4.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{6656 z^{9/2}} \left(21\left(2\sqrt{z}\left(512z^3+7200z^2+39\,600z+61\,425\right)\cosh\left(2\sqrt{z}\right) - \left(4352z^3+38\,160z^2+121\,500z+61\,425\right)\sinh\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.afg5.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{11}{2}, \frac{5}{4}; -z\right) = -\frac{1}{6656 z^{9/2}} \left(21\left(2\sqrt{z}\left(512z^3-7200z^2+39\,600z-61\,425\right)\cos\left(2\sqrt{z}\right) + \left(-4352z^3+38\,160z^2-121\,500z+61\,425\right)\sin\left(2\sqrt{z}\right)\right)\right) $$

07.22.03.afg6.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{11}{2}, \frac{7}{4}; z\right) = \frac{1}{3328\sqrt{2}\, z^{15/4}} \left(63\left(4z\left(64z^2+700z+2695\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512z^2+3640z+8085\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(256z^3+3376z^2+15\,540z+24\,255\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afg7.01

$$ {}_1F_2\left(\frac{17}{4}; \frac{11}{2}, \frac{7}{4}; -z\right) = -\frac{1}{3328\sqrt{2}\, z^{15/4}} \left(63\left(4z\left(64z^2-700z+2695\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(512z^2-3640z+8085\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-256z^3+3376z^2-15\,540z+24\,255\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afg8.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{6656\,z^{9/2}}\left(105\left(\left(256\,z^3+2832\,z^2+9300\,z+4725\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(512\,z^2+3000\,z+4725\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.afg9.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},\frac{9}{4};-z\right)=$$
$$-\frac{1}{6656\,z^{9/2}}\left(105\left(2\sqrt{z}\,\left(512\,z^2-3000\,z+4725\right)\cos\left(2\sqrt{z}\right)+\left(256\,z^3-2832\,z^2+9300\,z-4725\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.afga.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},\frac{11}{4};z\right)=\frac{1}{3328\sqrt{2}\,z^{15/4}}$$
$$\left(441\left(-20\,z\,(12\,z+49)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(32\,z^2+320\,z+735\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(272\,z^2+1380\,z+2205\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afgb.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},\frac{11}{4};-z\right)=-\frac{1}{3328\sqrt{2}\,z^{15/4}}\left(441\left(20\,z\,(12\,z-49)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\,\left(32\,z^2-320\,z+735\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-272\,z^2+1380\,z-2205\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afgc.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},\frac{13}{4};z\right)=\frac{945\left(2\sqrt{z}\,\left(32\,z^2+320\,z+525\right)\cosh\left(2\sqrt{z}\right)-\left(272\,z^2+1020\,z+525\right)\sinh\left(2\sqrt{z}\right)\right)}{6656\,z^{9/2}}$$

07.22.03.afgd.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},\frac{13}{4};-z\right)=\frac{945\left(2\sqrt{z}\,\left(32\,z^2-320\,z+525\right)\cos\left(2\sqrt{z}\right)+\left(-272\,z^2+1020\,z-525\right)\sin\left(2\sqrt{z}\right)\right)}{6656\,z^{9/2}}$$

07.22.03.afge.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},\frac{15}{4};z\right)=\frac{1}{3328\sqrt{2}\,z^{15/4}}$$
$$\left(4851\left(4\,z\,(4\,z+35)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(12\,z+35\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,z^2+180\,z+315\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afgf.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},\frac{15}{4};-z\right)=\frac{1}{3328\sqrt{2}\,z^{15/4}}$$
$$\left(4851\left(4\,z\,(4\,z-35)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+12\,(35-12\,z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-16\,z^2+180\,z-315\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afgg.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},\frac{17}{4};z\right)=\frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.afgh.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},\frac{17}{4};-z\right)=\frac{945\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.afgi.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},\frac{19}{4};z\right)=\frac{72\,765\left(-42z\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,(16z+203)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\,(23z+105)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{6656\sqrt{2}\,z^{15/4}}$$

07.22.03.afgj.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},\frac{19}{4};-z\right)=\frac{72\,765\left(42z\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\sqrt{z}\,(16z-203)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\,(105-23z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2}{6656\sqrt{2}\,z^{15/4}}$$

07.22.03.afgk.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},\frac{21}{4};z\right)=$$
$$\frac{1}{16\,384\,z^{9/2}}\left(16\,065\,e^{-2\sqrt{z}}\left(4\left(16z^{3/2}+100z+255\sqrt{z}+e^{4\sqrt{z}}\left(16z^{3/2}-100z+255\sqrt{z}-420\right)+420\right)+\right.\right.$$
$$\left.\left.585\,e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+585\,e^{2\sqrt{z}}\sqrt{2\pi}\,\sqrt[4]{z}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.afgl.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},\frac{21}{4};-z\right)=\frac{16\,065\left(-2\sqrt{z}\,(16z-255)\cos\left(2\sqrt{z}\right)+585\sqrt{\pi}\,\sqrt[4]{z}\,C\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+40\,(5z-21)\sin\left(2\sqrt{z}\right)\right)}{4096\,z^{9/2}}$$

07.22.03.afgm.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},\frac{23}{4};z\right)=\frac{1}{212\,992\sqrt{2}\,z^{17/4}}$$
$$\left(1\,382\,535\left(2\sqrt{z}\,(32z+1155)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-7\,(128z+495)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,(32z+105)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afgn.01

$${}_1F_2\left(\frac{17}{4};\frac{11}{2},\frac{23}{4};-z\right)=-\frac{1}{212\,992\sqrt{2}\,z^{17/4}}$$
$$\left(1\,382\,535\left(2\sqrt{z}\,(32z-1155)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+7\,(495-128z)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\,(105-32z)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{19}{4}$, $b_1 \geq -\frac{11}{2}$

For fixed z and $a_1 = \frac{19}{4}$, $b_1 = -\frac{11}{2}$

07.22.03.afgo.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{54\,539\,657\,778\,375\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(268\,435\,456\,z^9 + 129\,302\,003\,712\,z^8 + 1\,634\,992\,128\,000\,z^7 + 257\,511\,260\,160\,z^6 + 923\,046\,727\,680\,z^5 + 5\,371\,579\,825\,920\,z^4 + 20\,760\,587\,971\,200\,z^3 + 21\,078\,128\,610\,000\,z^2 - 100\,887\,588\,301\,500\,z + 54\,539\,657\,778\,375\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,\left(1\,610\,612\,736\,z^8 + 106\,283\,663\,360\,z^7 + 25\,433\,210\,880\,z^6 - 89\,243\,320\,320\,z^5 - 571\,949\,199\,360\,z^4 - 3\,056\,176\,569\,600\,z^3 - 10\,110\,201\,948\,000\,z^2 - 9\,389\,348\,199\,000\,z + 18\,179\,885\,926\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(67\,108\,864\,z^8 + 28\,751\,953\,920\,z^7 + 190\,749\,081\,600\,z^6 + 131\,139\,993\,600\,z^5 + 554\,353\,873\,920\,z^4 + 3\,168\,106\,603\,200\,z^3 + 15\,220\,051\,308\,000\,z^2 + 44\,551\,499\,107\,500\,z + 54\,539\,657\,778\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afgp.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{54\,539\,657\,778\,375\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-268\,435\,456\,z^9 + 129\,302\,003\,712\,z^8 - 1\,634\,992\,128\,000\,z^7 + 257\,511\,260\,160\,z^6 - 923\,046\,727\,680\,z^5 + 5\,371\,579\,825\,920\,z^4 - 20\,760\,587\,971\,200\,z^3 + 21\,078\,128\,610\,000\,z^2 + 100\,887\,588\,301\,500\,z + 54\,539\,657\,778\,375\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,\left(1\,610\,612\,736\,z^8 - 106\,283\,663\,360\,z^7 + 25\,433\,210\,880\,z^6 + 89\,243\,320\,320\,z^5 - 571\,949\,199\,360\,z^4 + 3\,056\,176\,569\,600\,z^3 - 10\,110\,201\,948\,000\,z^2 + 9\,389\,348\,199\,000\,z + 18\,179\,885\,926\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(67\,108\,864\,z^8 - 28\,751\,953\,920\,z^7 + 190\,749\,081\,600\,z^6 - 131\,139\,993\,600\,z^5 + 554\,353\,873\,920\,z^4 - 3\,168\,106\,603\,200\,z^3 + 15\,220\,051\,308\,000\,z^2 - 44\,551\,499\,107\,500\,z + 54\,539\,657\,778\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afgq.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{21}{4}; z\right) = \frac{1}{7\,522\,320\,180\,375}\left(\left(67\,108\,864\,z^8 + 27\,619\,491\,840\,z^7 + 190\,749\,081\,600\,z^6 + 88\,221\,450\,240\,z^5 + 368\,032\,896\,000\,z^4 + 1\,902\,444\,667\,200\,z^3 + 7\,675\,776\,108\,000\,z^2 + 16\,282\,078\,312\,500\,z + 7\,522\,320\,180\,375\right)\cosh\left(2\sqrt{z}\right) + 6\sqrt{z}\,\left(385\,875\,968\,z^7 + 21\,920\,481\,280\,z^6 - 9\,537\,454\,080\,z^5 - 27\,675\,648\,000\,z^4 - 140\,440\,608\,000\,z^3 - 671\,318\,247\,600\,z^2 - 2\,084\,106\,024\,000\,z - 2\,507\,440\,060\,125\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afgr.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{21}{4}; -z\right) = \frac{1}{7\,522\,320\,180\,375}\left(\left(67\,108\,864\,z^8 - 27\,619\,491\,840\,z^7 + 190\,749\,081\,600\,z^6 - 88\,221\,450\,240\,z^5 + 368\,032\,896\,000\,z^4 - 1\,902\,444\,667\,200\,z^3 + 7\,675\,776\,108\,000\,z^2 - 16\,282\,078\,312\,500\,z + 7\,522\,320\,180\,375\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(385\,875\,968\,z^7 - 21\,920\,481\,280\,z^6 - 9\,537\,454\,080\,z^5 + 27\,675\,648\,000\,z^4 - 140\,440\,608\,000\,z^3 + 671\,318\,247\,600\,z^2 - 2\,084\,106\,024\,000\,z + 2\,507\,440\,060\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afgs.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{19}{4}; z\right) = -\frac{1}{2\,371\,289\,468\,625\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2\,332\,033\,024\,z^8 + 151\,825\,416\,192\,z^7 + 162\,136\,719\,360\,z^6 - 57\,167\,953\,920\,z^5 - 261\,755\,746\,560\,z^4 - 910\,482\,249\,600\,z^3 - 792\,026\,650\,800\,z^2 + 4\,311\,435\,397\,500\,z - 2\,371\,289\,468\,625\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(33\,554\,432\,z^8 + 13\,539\,213\,312\,z^7 + 109\,483\,130\,880\,z^6 + 11\,921\,817\,600\,z^5 + 93\,942\,858\,240\,z^4 + 442\,411\,200\,000\,z^3 + 1\,343\,160\,403\,200\,z^2 + 1\,149\,716\,106\,000\,z - 2\,371\,289\,468\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(557\,842\,432\,z^7 + 28\,217\,180\,160\,z^6 - 21\,459\,271\,680\,z^5 - 40\,718\,684\,160\,z^4 - 175\,637\,246\,400\,z^3 - 737\,278\,264\,800\,z^2 - 2\,012\,003\,185\,500\,z - 2\,371\,289\,468\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afgt.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{19}{4}; -z\right) = \frac{1}{2\,371\,289\,468\,625\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-2\,332\,033\,024\,z^8 + 151\,825\,416\,192\,z^7 - 162\,136\,719\,360\,z^6 - 57\,167\,953\,920\,z^5 + 261\,755\,746\,560\,z^4 - 910\,482\,249\,600\,z^3 + 792\,026\,650\,800\,z^2 + 4\,311\,435\,397\,500\,z + 2\,371\,289\,468\,625\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(33\,554\,432\,z^8 - 13\,539\,213\,312\,z^7 + 109\,483\,130\,880\,z^6 - 11\,921\,817\,600\,z^5 + 93\,942\,858\,240\,z^4 - 442\,411\,200\,000\,z^3 + 1\,343\,160\,403\,200\,z^2 - 1\,149\,716\,106\,000\,z - 2\,371\,289\,468\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(557\,842\,432\,z^7 - 28\,217\,180\,160\,z^6 - 21\,459\,271\,680\,z^5 + 40\,718\,684\,160\,z^4 - 175\,637\,246\,400\,z^3 + 737\,278\,264\,800\,z^2 - 2\,012\,003\,185\,500\,z + 2\,371\,289\,468\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afgu.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{17}{4}; z\right) = \frac{1}{358\,205\,722\,875}\left(3\left(-180\,355\,072\,z^7 - 8\,477\,736\,960\,z^6 + 7\,153\,090\,560\,z^5 + 9\,665\,187\,840\,z^4 + 37\,691\,438\,400\,z^3 + 132\,897\,996\,000\,z^2 + 263\,067\,304\,500\,z + 119\,401\,907\,625\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(8\,388\,608\,z^7 + 2\,979\,004\,416\,z^6 + 14\,306\,181\,120\,z^5 + 8\,345\,272\,320\,z^4 + 27\,881\,884\,800\,z^3 + 110\,596\,978\,800\,z^2 + 311\,594\,283\,000\,z + 358\,205\,722\,875\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afgv.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{17}{4}; -z\right) = \frac{1}{358\,205\,722\,875}\left(3\left(180\,355\,072\,z^7 - 8\,477\,736\,960\,z^6 - 7\,153\,090\,560\,z^5 + 9\,665\,187\,840\,z^4 - 37\,691\,438\,400\,z^3 + 132\,897\,996\,000\,z^2 - 263\,067\,304\,500\,z + 119\,401\,907\,625\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-8\,388\,608\,z^7 + 2\,979\,004\,416\,z^6 - 14\,306\,181\,120\,z^5 + 8\,345\,272\,320\,z^4 - 27\,881\,884\,800\,z^3 + 110\,596\,978\,800\,z^2 - 311\,594\,283\,000\,z + 358\,205\,722\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afgw.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{15}{4}; z\right) = \frac{1}{124\,804\,708\,875\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,777\,216\,z^8 + 6\,102\,712\,320\,z^7 + 46\,735\,294\,464\,z^6 - 11\,524\,423\,680\,z^5 + 16\,608\,049\,920\,z^4 + 47\,880\,201\,600\,z^3 + 32\,394\,978\,000\,z^2 - 220\,866\,515\,100\,z + 124\,804\,708\,875\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 36\sqrt{z}\left(29\,360\,128\,z^7 + 1\,345\,847\,296\,z^6 - 993\,607\,680\,z^5 - 633\,937\,920\,z^4 - 2\,943\,494\,400\,z^3 - 7\,990\,567\,200\,z^2 - 6\,051\,137\,400\,z + 13\,867\,189\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4\,194\,304\,z^7 + 1\,330\,642\,944\,z^6 + 3\,574\,333\,440\,z^5 + 5\,861\,560\,320\,z^4 + 13\,628\,260\,800\,z^3 + 45\,649\,850\,400\,z^2 + 111\,946\,041\,900\,z + 124\,804\,708\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afgx.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{15}{4}; -z\right) = \frac{1}{124\,804\,708\,875\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(16\,777\,216\,z^8 - 6\,102\,712\,320\,z^7 + 46\,735\,294\,464\,z^6 + 11\,524\,423\,680\,z^5 + 16\,608\,049\,920\,z^4 - 47\,880\,201\,600\,z^3 + 32\,394\,978\,000\,z^2 + 220\,866\,515\,100\,z + 124\,804\,708\,875\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 36\sqrt{z}\,\left(29\,360\,128\,z^7 - 1\,345\,847\,296\,z^6 - 993\,607\,680\,z^5 + 633\,937\,920\,z^4 - 2\,943\,494\,400\,z^3 + 7\,990\,567\,200\,z^2 - 6\,051\,137\,400\,z - 13\,867\,189\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(4\,194\,304\,z^7 - 1\,330\,642\,944\,z^6 + 3\,574\,333\,440\,z^5 - 5\,861\,560\,320\,z^4 + 13\,628\,260\,800\,z^3 - 45\,649\,850\,400\,z^2 + 111\,946\,041\,900\,z - 124\,804\,708\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afgy.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{13}{4}; z\right) = \frac{1}{21\,070\,924\,875}\left(\left(4\,194\,304\,z^7 + 1\,211\,105\,280\,z^6 + 1\,854\,504\,960\,z^5 + 5\,861\,560\,320\,z^4 + 9\,603\,316\,800\,z^3 + 26\,835\,732\,000\,z^2 + 47\,741\,116\,500\,z + 21\,070\,924\,875\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(61\,865\,984\,z^6 + 2\,119\,434\,240\,z^5 - 3\,377\,848\,320\,z^4 - 2\,891\,750\,400\,z^3 - 8\,132\,216\,400\,z^2 - 19\,646\,550\,000\,z - 21\,070\,924\,875\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afgz.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{13}{4}; -z\right) = \frac{1}{21\,070\,924\,875}\left(\left(-4\,194\,304\,z^7 + 1\,211\,105\,280\,z^6 - 1\,854\,504\,960\,z^5 + 5\,861\,560\,320\,z^4 - 9\,603\,316\,800\,z^3 + 26\,835\,732\,000\,z^2 - 47\,741\,116\,500\,z + 21\,070\,924\,875\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-61\,865\,984\,z^6 + 2\,119\,434\,240\,z^5 + 3\,377\,848\,320\,z^4 - 2\,891\,750\,400\,z^3 + 8\,132\,216\,400\,z^2 - 19\,646\,550\,000\,z + 21\,070\,924\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afh0.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{11}{4}; z\right) = -\frac{1}{8\,320\,313\,925\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(3\left(40\,894\,464\,z^7 + 1\,534\,787\,584\,z^6 - 1\,948\,348\,416\,z^5 + 781\,482\,240\,z^4 - 1\,097\,712\,000\,z^3 - 424\,947\,600\,z^2 + 4\,675\,878\,900\,z - 2\,773\,437\,975\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(2\,097\,152\,z^7 + 563\,478\,528\,z^6 + 662\,003\,712\,z^5 + 2\,212\,600\,320\,z^4 + 1\,782\,950\,400\,z^3 + 4\,750\,099\,200\,z^2 + 2\,933\,884\,800\,z - 8\,320\,313\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(9\,699\,328\,z^6 + 250\,036\,224\,z^5 - 478\,786\,560\,z^4 - 670\,824\,000\,z^3 - 1\,338\,876\,000\,z^2 - 2\,719\,955\,700\,z - 2\,773\,437\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afh1.01

$${}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{8\,320\,313\,925\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(40\,894\,464\,z^7 - 1\,534\,787\,584\,z^6 - 1\,948\,348\,416\,z^5 - 781\,482\,240\,z^4 - 1\,097\,712\,000\,z^3 + 424\,947\,600\,z^2 + 4\,675\,878\,900\,z + 2\,773\,437\,975\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2\,097\,152\,z^7 - 563\,478\,528\,z^6 + 662\,003\,712\,z^5 - 2\,212\,600\,320\,z^4 + 1\,782\,950\,400\,z^3 - 4\,750\,099\,200\,z^2 + 2\,933\,884\,800\,z + 8\,320\,313\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 12\,z\left(9\,699\,328\,z^6 - 250\,036\,224\,z^5 - 478\,786\,560\,z^4 + 670\,824\,000\,z^3 - 1\,338\,876\,000\,z^2 + 2\,719\,955\,700\,z - 2\,773\,437\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afh2.01

$${}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{9}{4}; z\right) =$$
$$\left(-\frac{262\,144\,z^6}{15\,436\,575} - \frac{475\,136\,z^5}{1\,403\,325} + \frac{44\,032\,z^4}{66\,825} + \frac{704\,z^3}{567} + \frac{7264\,z^2}{4455} + \frac{236\,z}{99} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{1\,620\,840\,375}\left(2\sqrt{z}\left(524\,288\,z^6 + 113\,541\,120\,z^5 - 248\,371\,200\,z^4 + 1\,133\,193\,600\,z^3 + 948\,855\,600\,z^2 + 1\,702\,701\,000\,z + 1\,620\,840\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afh3.01

$${}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{9}{4}; -z\right) =$$
$$\left(-\frac{262\,144\,z^6}{15\,436\,575} + \frac{475\,136\,z^5}{1\,403\,325} + \frac{44\,032\,z^4}{66\,825} - \frac{704\,z^3}{567} + \frac{7264\,z^2}{4455} - \frac{236\,z}{99} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{1\,620\,840\,375}\left(2\sqrt{z}\left(524\,288\,z^6 - 113\,541\,120\,z^5 - 248\,371\,200\,z^4 - 1\,133\,193\,600\,z^3 + 948\,855\,600\,z^2 - 1\,702\,701\,000\,z + 1\,620\,840\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afh4.01

$${}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{756\,392\,175\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,048\,576\,z^7 + 222\,363\,648\,z^6 - 271\,208\,448\,z^5 + 1\,619\,912\,448\,z^4 - 964\,656\,000\,z^3 + 75\,675\,600\,z^2 - 1\,139\,499\,900\,z + 756\,392\,175\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(13\,107\,200\,z^6 + 214\,204\,416\,z^5 - 425\,521\,152\,z^4 - 719\,389\,440\,z^3 - 291\,060\,000\,z^2 - 130\,977\,000\,z + 756\,392\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(262\,144\,z^6 + 45\,957\,120\,z^5 - 195\,105\,792\,z^4 + 573\,693\,120\,z^3 + 686\,901\,600\,z^2 + 877\,545\,900\,z + 756\,392\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afh5.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{7}{4}; -z\right) = \frac{1}{756\,392\,175\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1\,048\,576 z^7 + 222\,363\,648 z^6 + 271\,208\,448 z^5 + 1\,619\,912\,448 z^4 + 964\,656\,000 z^3 + 75\,675\,600 z^2 + 1\,139\,499\,900 z + 756\,392\,175\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(13\,107\,200 z^6 - 214\,204\,416 z^5 - 425\,521\,152 z^4 + 719\,389\,440 z^3 - 291\,060\,000 z^2 + 130\,977\,000 z + 756\,392\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(262\,144 z^6 - 45\,957\,120 z^5 - 195\,105\,792 z^4 - 573\,693\,120 z^3 + 686\,901\,600 z^2 - 877\,545\,900 z + 756\,392\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afh6.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{5}{4}; z\right) = \left(\frac{262\,144 z^6}{180\,093\,375} + \frac{278\,528 z^5}{1\,334\,025} - \frac{80\,896 z^4}{72\,765} + \frac{8896 z^3}{3465} + \frac{1888 z^2}{495} + \frac{148 z}{55} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{12\,006\,225}\left(2\sqrt{z}\left(196\,608 z^5 + 1\,126\,400 z^4 + 2\,779\,392 z^3 - 28\,329\,840 z^2 - 16\,299\,360 z - 12\,006\,225\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afh7.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{5}{4}; -z\right) = \left(\frac{262\,144 z^6}{180\,093\,375} - \frac{278\,528 z^5}{1\,334\,025} - \frac{80\,896 z^4}{72\,765} - \frac{8896 z^3}{3465} + \frac{1888 z^2}{495} - \frac{148 z}{55} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{12\,006\,225}\left(2\sqrt{z}\left(196\,608 z^5 - 1\,126\,400 z^4 + 2\,779\,392 z^3 + 28\,329\,840 z^2 - 16\,299\,360 z + 12\,006\,225\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afh8.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{3}{4}; z\right) = -\frac{1}{108\,056\,025\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(1\,900\,544 z^6 + 11\,526\,144 z^5 + 5\,854\,464 z^4 - 188\,496\,000 z^3 + 164\,934\,000 z^2 + 30\,561\,300 z - 36\,018\,675\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072 z^6 + 15\,679\,488 z^5 - 90\,091\,008 z^4 + 182\,730\,240 z^3 + 232\,848\,000 z^2 - 52\,390\,800 z - 108\,056\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(442\,368 z^5 - 710\,656 z^4 + 23\,136\,960 z^3 - 73\,735\,200 z^2 - 65\,488\,500 z - 36\,018\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afh9.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{3}{4}; -z\right) = \frac{1}{108\,056\,025\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(-3\left(1\,900\,544 z^6 - 11\,526\,144 z^5 + 5\,854\,464 z^4 + 188\,496\,000 z^3 + 164\,934\,000 z^2 - 30\,561\,300 z - 36\,018\,675\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072 z^6 - 15\,679\,488 z^5 - 90\,091\,008 z^4 - 182\,730\,240 z^3 + \right. $$
$$ \left. 232\,848\,000 z^2 + 52\,390\,800 z - 108\,056\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 12 z\left(442\,368 z^5 + 710\,656 z^4 + 23\,136\,960 z^3 + 73\,735\,200 z^2 - 65\,488\,500 z + 36\,018\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afha.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{1}{4}; z\right) = \left(-\frac{1\,196\,032 z^5}{36\,018\,675} + \frac{2048 z^4}{9801} - \frac{175\,552 z^3}{72\,765} + \frac{1376 z^2}{297} + \frac{60 z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - $$
$$ \frac{1}{36\,018\,675}\left(2\sqrt{z}\left(32\,768 z^5 + 2\,457\,600 z^4 - 14\,678\,400 z^3 - 18\,239\,760 z^2 + 148\,440\,600 z + 36\,018\,675\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afhb.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) = \left(\frac{1\,196\,032 z^5}{36\,018\,675} + \frac{2048 z^4}{9801} + \frac{175\,552 z^3}{72\,765} + \frac{1376 z^2}{297} - \frac{60 z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + $$
$$ \frac{1}{36\,018\,675}\left(2\sqrt{z}\left(-32\,768 z^5 + 2\,457\,600 z^4 + 14\,678\,400 z^3 - 18\,239\,760 z^2 - 148\,440\,600 z + 36\,018\,675\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afhc.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) = \frac{1}{36\,018\,675\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(65\,536 z^6 + 4\,300\,800 z^5 - 24\,304\,896 z^4 - 11\,088\,000 z^3 + 203\,742\,000 z^2 - 196\,465\,500 z + 36\,018\,675\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 12\sqrt{z}\left(180\,224 z^5 - 1\,605\,632 z^4 + 13\,896\,960 z^3 - 19\,404\,000 z^2 - 21\,829\,500 z + 12\,006\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(16\,384 z^5 + 681\,984 z^4 - 1\,995\,840 z^3 - 34\,927\,200 z^2 + 65\,488\,500 z + 36\,018\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afhd.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) = \frac{1}{36\,018\,675\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(65\,536 z^6 - 4\,300\,800 z^5 - 24\,304\,896 z^4 + 11\,088\,000 z^3 + 203\,742\,000 z^2 + 196\,465\,500 z + 36\,018\,675\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 12\sqrt{z}\left(180\,224 z^5 + 1\,605\,632 z^4 + 13\,896\,960 z^3 + 19\,404\,000 z^2 - 21\,829\,500 z - 12\,006\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 4 z\left(16\,384 z^5 - 681\,984 z^4 - 1\,995\,840 z^3 + 34\,927\,200 z^2 + 65\,488\,500 z - 36\,018\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afhe.01

$${}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{36\,018\,675}\left(\left(16\,384\,z^5 + 288\,768\,z^4 + 2\,295\,360\,z^3 - 43\,797\,600\,z^2 + 30\,561\,300\,z + 36\,018\,675\right)\cosh\left(2\sqrt{z}\right) + 6\sqrt{z}\left(36\,864\,z^4 - 494\,080\,z^3 + 2\,568\,720\,z^2 + 5\,821\,200\,z - 12\,006\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afhf.01

$${}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{3}{4}; -z\right) =$$
$$\frac{1}{36\,018\,675}\left(-\left(16\,384\,z^5 - 288\,768\,z^4 + 2\,295\,360\,z^3 + 43\,797\,600\,z^2 + 30\,561\,300\,z - 36\,018\,675\right)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\left(36\,864\,z^4 + 494\,080\,z^3 + 2\,568\,720\,z^2 - 5\,821\,200\,z - 12\,006\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afhg.01

$${}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) =$$
$$\frac{1}{36\,018\,675\sqrt{2}\,\sqrt[4]{z}}\left(\left(14\left(28\,672\,z^5 - 363\,264\,z^4 + 1\,584\,000\,z^3 + 2\,772\,000\,z^2 - 9\,303\,525\,z + 5\,145\,525\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(65\,536\,z^5 + 86\,016\,z^4 + 18\,923\,520\,z^3 - 155\,232\,000\,z^2 + 29\,106\,000\,z + 129\,157\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(176\,128\,z^4 - 2\,446\,080\,z^3 + 2\,217\,600\,z^2 + 77\,616\,000\,z - 14\,916\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afhh.01

$${}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) =$$
$$\frac{1}{36\,018\,675\sqrt{2}\,\sqrt[4]{z}}\left(\left(-14\left(28\,672\,z^5 + 363\,264\,z^4 + 1\,584\,000\,z^3 - 2\,772\,000\,z^2 - 9\,303\,525\,z - 5\,145\,525\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \sqrt{z}\left(65\,536\,z^5 - 86\,016\,z^4 + 18\,923\,520\,z^3 + 155\,232\,000\,z^2 + 29\,106\,000\,z - 129\,157\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2z\left(176\,128\,z^4 + 2\,446\,080\,z^3 + 2\,217\,600\,z^2 - 77\,616\,000\,z - 14\,916\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afhi.01

$${}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{7}{4}; z\right) = \frac{1}{12\,006\,225}\left(3\left(11\,264\,z^4 - 121\,920\,z^3 - 823\,200\,z^2 + 6\,029\,100\,z + 4\,002\,075\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(2048\,z^4 - 44\,160\,z^3 + 972\,720\,z^2 - 2\,079\,000\,z - 12\,006\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afhj.01

$${}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{7}{4}; -z\right) = \frac{1}{12\,006\,225}\left(3\left(11\,264\,z^4 + 121\,920\,z^3 - 823\,200\,z^2 - 6\,029\,100\,z + 4\,002\,075\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(2048\,z^4 + 44\,160\,z^3 + 972\,720\,z^2 + 2\,079\,000\,z - 12\,006\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afhk.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{9}{4}; z\right) = \frac{1}{230\,519\,520\sqrt{2}\, z^{3/4}} \left(\left(2\sqrt{z}\left(131\,072 z^5 - 3\,219\,456 z^4 + 50\,688\,000 z^3 - 44\,352\,000 z^2 - 404\,157\,600 z + 353\,170\,125\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(1\,048\,576 z^5 - 4\,587\,520 z^4 - 168\,960\,000 z^3 + 399\,168\,000 z^2 + 517\,809\,600 z - 204\,417\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(131\,072 z^5 - 4\,300\,800 z^4 + 52\,531\,200 z^3 + 183\,744\,000 z^2 - 676\,922\,400 z - 613\,253\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afhl.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{9}{4}; -z\right) = -\frac{1}{230\,519\,520\sqrt{2}\, z^{3/4}} \left(\left(2\sqrt{z}\left(131\,072 z^5 + 3\,219\,456 z^4 + 50\,688\,000 z^3 + 44\,352\,000 z^2 - 404\,157\,600 z - 353\,170\,125\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(1\,048\,576 z^5 + 4\,587\,520 z^4 - 168\,960\,000 z^3 - 399\,168\,000 z^2 + 517\,809\,600 z + 204\,417\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(131\,072 z^5 + 4\,300\,800 z^4 + 52\,531\,200 z^3 - 183\,744\,000 z^2 - 676\,922\,400 z + 613\,253\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afhm.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{11}{4}; z\right) = \frac{1}{1\,715\,175}\left(\left(1024 z^4 - 35\,520 z^3 + 157\,920 z^2 + 2\,891\,700 z + 1\,715\,175\right)\cosh\left(2\sqrt{z}\right) + 10\sqrt{z}\left(256 z^3 + 7728 z^2 - 120\,960 z - 343\,035\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afhn.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{11}{4}; -z\right) = \frac{1}{1\,715\,175}\left(\left(1024 z^4 + 35\,520 z^3 + 157\,920 z^2 - 2\,891\,700 z + 1\,715\,175\right)\cos\left(2\sqrt{z}\right) + 10\sqrt{z}\left(256 z^3 - 7728 z^2 - 120\,960 z + 343\,035\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afho.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) = \frac{1}{819\,624\,960\sqrt{2}\, z^{7/4}} \left(\left(6\sqrt{z}\left(262\,144 z^5 + 34\,406\,400 z^4 - 209\,510\,400 z^3 - 917\,199\,360 z^2 - 526\,291\,920 z + 1\,267\,389\,585\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4\,194\,304 z^6 - 122\,683\,392 z^5 - 545\,587\,200 z^4 + 9\,265\,766\,400 z^3 + 22\,837\,731\,840 z^2 + 25\,511\,325\,840 z - 19\,010\,843\,775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\left(262\,144 z^5 - 49\,479\,680 z^4 + 102\,604\,800 z^3 + 2\,119\,011\,840 z^2 + 5\,015\,046\,960 z + 6\,336\,947\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afhp.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) = \frac{1}{819\,624\,960\sqrt{2}\, z^{7/4}} $$
$$ \left(\left(6\sqrt{z}\left(262\,144 z^5 - 34\,406\,400 z^4 - 209\,510\,400 z^3 + 917\,199\,360 z^2 - 526\,291\,920 z - 1\,267\,389\,585\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(-4\,194\,304 z^6 - 122\,683\,392 z^5 + 545\,587\,200 z^4 + 9\,265\,766\,400 z^3 - 22\,837\,731\,840 z^2 + \right. $$
$$ 25\,511\,325\,840 z + 19\,010\,843\,775\Big) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(262\,144 z^5 + 49\,479\,680 z^4 + \right. $$
$$ \left.\left.\left. 102\,604\,800 z^3 - 2\,119\,011\,840 z^2 + 5\,015\,046\,960 z - 6\,336\,947\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afhq.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) = $$
$$ \left(-\frac{64 z^3}{10\,395} + \frac{32 z^2}{135} + \frac{292 z}{165} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(128 z^3 - 1680 z^2 - 68\,040 z - 155\,925\right)\sinh\left(2\sqrt{z}\right)}{155\,925} $$

07.22.03.afhr.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) = \left(\frac{64 z^3}{10\,395} + \frac{32 z^2}{135} - \frac{292 z}{165} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(128 z^3 + 1680 z^2 - 68\,040 z + 155\,925\right)\sin\left(2\sqrt{z}\right)}{155\,925} $$

07.22.03.afhs.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) = \frac{1}{26\,227\,998\,720\sqrt{2}\, z^{11/4}} $$
$$ \left(13\left(2\sqrt{z}\left(8\,388\,608 z^6 + 37\,748\,736 z^5 - 3\,651\,993\,600 z^4 - 25\,773\,834\,240 z^3 - 130\,285\,774\,080 z^2 - 324\,451\,733\,760 z + \right.\right. $$
$$ 399\,227\,719\,275\Big) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-218\,103\,808 z^6 + 2\,359\,296\,000 z^5 + 56\,578\,867\,200 z^4 + \right. $$
$$ 350\,104\,043\,520 z^3 + 1\,643\,191\,038\,720 z^2 + 3\,041\,735\,004\,000 z - 1\,996\,138\,596\,375\Big) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\left(8\,388\,608 z^6 + 125\,829\,120 z^5 - 4\,428\,595\,200 z^4 - 50\,320\,834\,560 z^3 - 303\,519\,363\,840 z^2 - \right. $$
$$ \left.\left.\left. 1\,216\,694\,001\,600 z - 1\,996\,138\,596\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afht.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) = \frac{1}{26\,227\,998\,720\sqrt{2}\, z^{11/4}} $$
$$ \left(13\left(2\sqrt{z}\,\left(8\,388\,608 z^6 - 37\,748\,736 z^5 - 3\,651\,993\,600 z^4 + 25\,773\,834\,240 z^3 - 130\,285\,774\,080 z^2 + 324\,451\,733\,760 z + \right.\right.\right. $$
$$ \left.\left.\left. 399\,227\,719\,275\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(218\,103\,808 z^6 + 2\,359\,296\,000 z^5 - 56\,578\,867\,200 z^4 + \right.\right.\right. $$
$$ \left.\left.\left. 350\,104\,043\,520 z^3 - 1\,643\,191\,038\,720 z^2 + 3\,041\,735\,004\,000 z + 1\,996\,138\,596\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\,\left(-8\,388\,608 z^6 + 125\,829\,120 z^5 + 4\,428\,595\,200 z^4 - 50\,320\,834\,560 z^3 + 303\,519\,363\,840 z^2 - \right.\right. $$
$$ \left.\left. 1\,216\,694\,001\,600 z + 1\,996\,138\,596\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.afhu.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) = \left(\frac{64 z^3}{10\,395} + \frac{32 z^2}{99} + \frac{20 z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\,\left(16 z^2 + 240 z + 495\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.afhv.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) = \left(-\frac{64 z^3}{10\,395} + \frac{32 z^2}{99} - \frac{20 z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\,\left(16 z^2 - 240 z + 495\right)\sin\left(2\sqrt{z}\right) $$

07.22.03.afhw.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) = $$
$$ \left(221\left(-6\sqrt{z}\,\left(285\,212\,672 z^6 + 9\,689\,890\,816 z^5 + 173\,057\,310\,720 z^4 + 2\,390\,054\,768\,640 z^3 + 19\,358\,953\,447\,680 z^2 + \right.\right.\right. $$
$$ \left.\left.\left. 58\,908\,267\,910\,800 z - 67\,469\,484\,557\,475\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(268\,435\,456 z^7 + 26\,021\,462\,016 z^6 + 609\,878\,016\,000 z^5 + 10\,077\,847\,879\,680 z^4 + 117\,723\,648\,430\,080 z^3 + \right. $$
$$ \left. 744\,616\,728\,979\,200 z^2 + 1\,603\,298\,520\,608\,400 z - 1\,012\,042\,268\,362\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ 6\sqrt{z}\,\left(318\,767\,104 z^6 + 13\,185\,843\,200 z^5 + 259\,735\,879\,680 z^4 + 3\,861\,705\,093\,120 z^3 + 37\,311\,949\,382\,400 z^2 + \right. $$
$$ \left.\left. 185\,241\,661\,743\,600 z + 337\,347\,422\,787\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) \Big/ \left(839\,295\,959\,040\sqrt{2}\, z^{15/4}\right) $$

07.22.03.afhx.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) = \left(221\left(6\sqrt{z}\,\left(285\,212\,672\,z^6 - 9\,689\,890\,816\,z^5 + 173\,057\,310\,720\,z^4 - 2\,390\,054\,768\,640\,z^3 + 19\,358\,953\,447\,680\,z^2 - 58\,908\,267\,910\,800\,z - 67\,469\,484\,557\,475\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(268\,435\,456\,z^7 - 26\,021\,462\,016\,z^6 + 609\,878\,016\,000\,z^5 - 10\,077\,847\,879\,680\,z^4 + 117\,723\,648\,430\,080\,z^3 - 744\,616\,728\,979\,200\,z^2 + 1\,603\,298\,520\,608\,400\,z + 1\,012\,042\,268\,362\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\,\left(318\,767\,104\,z^6 - 13\,185\,843\,200\,z^5 + 259\,735\,879\,680\,z^4 - 3\,861\,705\,093\,120\,z^3 + 37\,311\,949\,382\,400\,z^2 - 185\,241\,661\,743\,600\,z + 337\,347\,422\,787\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(839\,295\,959\,040\sqrt{2}\,z^{15/4}\right) $$

07.22.03.afhy.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) = \frac{1}{1\,395\,193\,282\,560\,z^{19/4}}\left(19\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(-268\,435\,456\,z^7 - 4\,764\,729\,344\,z^{13/2} - 46\,254\,784\,512\,z^6 - 331\,370\,987\,520\,z^{11/2} - 1\,984\,655\,523\,840\,z^5 - 10\,506\,641\,080\,320\,z^{9/2} - 49\,950\,144\,921\,600\,z^4 - 212\,288\,115\,916\,800\,z^{7/2} - 796\,080\,434\,688\,000\,z^3 - 2\,587\,261\,412\,736\,000\,z^{5/2} - 7\,114\,968\,885\,024\,000\,z^2 - 16\,008\,679\,991\,304\,000\,z^{3/2} - 28\,015\,189\,984\,782\,000\,z - 35\,018\,987\,480\,977\,500\sqrt{z} + e^{4\sqrt{z}}\left(268\,435\,456\,z^7 - 4\,764\,729\,344\,z^{13/2} + 46\,254\,784\,512\,z^6 - 331\,370\,987\,520\,z^{11/2} + 1\,984\,655\,523\,840\,z^5 - 10\,506\,641\,080\,320\,z^{9/2} + 49\,950\,144\,921\,600\,z^4 - 212\,288\,115\,916\,800\,z^{7/2} + 796\,080\,434\,688\,000\,z^3 - 2\,587\,261\,412\,736\,000\,z^{5/2} + 7\,114\,968\,885\,024\,000\,z^2 - 16\,008\,679\,991\,304\,000\,z^{3/2} + 28\,015\,189\,984\,782\,000\,z - 35\,018\,987\,480\,977\,500\sqrt{z} + 26\,264\,240\,610\,733\,125\right) - 26\,264\,240\,610\,733\,125\right) + 26\,264\,240\,610\,733\,125\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) - 26\,264\,240\,610\,733\,125\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.afhz.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) = -\frac{1}{348\,798\,320\,640\,z^{19/4}}\left(19\left(26\,264\,240\,610\,733\,125\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(1\,191\,182\,336\,z^6 - 82\,842\,746\,880\,z^5 + 2\,626\,660\,270\,080\,z^4 - 53\,072\,028\,979\,200\,z^3 + 646\,815\,353\,184\,000\,z^2 - 4\,002\,169\,997\,826\,000\,z + 8\,754\,746\,870\,244\,375\right)\cos\left(2\sqrt{z}\right) + \left(268\,435\,456\,z^7 - 46\,254\,784\,512\,z^6 + 1\,984\,655\,523\,840\,z^5 - 49\,950\,144\,921\,600\,z^4 + 796\,080\,434\,688\,000\,z^3 - 7\,114\,968\,885\,024\,000\,z^2 + 28\,015\,189\,984\,782\,000\,z - 26\,264\,240\,610\,733\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{19}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.afi0.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) = -\frac{1}{4\,958\,150\,707\,125\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(3\left(1\,543\,503\,872\,z^8 + 96\,888\,422\,400\,z^7 + 63\,583\,027\,200\,z^6 - 43\,145\,625\,600\,z^5 - 183\,571\,153\,920\,z^4 - \right.\right.\right. $$
$$ \left.\left.\left. 634\,594\,625\,280\,z^3 - 547\,483\,860\,000\,z^2 + 3\,002\,036\,499\,000\,z - 1\,652\,716\,902\,375\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 4\sqrt{z}\left(67\,108\,864\,z^8 + 26\,537\,361\,408\,z^7 + 190\,749\,081\,600\,z^6 + 16\,690\,544\,640\,z^5 + 198\,402\,462\,720\,z^4 + \right. $$
$$ \left. 929\,859\,860\,160\,z^3 + 2\,810\,417\,148\,000\,z^2 + 2\,395\,241\,887\,500\,z - 4\,958\,150\,707\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 12\,z\left(369\,098\,752\,z^7 + 17\,862\,492\,160\,z^6 - 19\,074\,908\,160\,z^5 - 29\,662\,617\,600\,z^4 - 124\,347\,041\,280\,z^3 - \right. $$
$$ \left. \left. 517\,068\,090\,000\,z^2 - 1\,405\,208\,574\,000\,z - 1\,652\,716\,902\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.afi1.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{23}{4}; -z\right) = \frac{1}{4\,958\,150\,707\,125\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(-3\left(1\,543\,503\,872\,z^8 - 96\,888\,422\,400\,z^7 + 63\,583\,027\,200\,z^6 + 43\,145\,625\,600\,z^5 - 183\,571\,153\,920\,z^4 + \right.\right.\right. $$
$$ \left.\left.\left. 634\,594\,625\,280\,z^3 - 547\,483\,860\,000\,z^2 - 3\,002\,036\,499\,000\,z - 1\,652\,716\,902\,375\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 4\sqrt{z}\left(67\,108\,864\,z^8 - 26\,537\,361\,408\,z^7 + 190\,749\,081\,600\,z^6 - 16\,690\,544\,640\,z^5 + 198\,402\,462\,720\,z^4 - \right. $$
$$ \left. 929\,859\,860\,160\,z^3 + 2\,810\,417\,148\,000\,z^2 - 2\,395\,241\,887\,500\,z - 4\,958\,150\,707\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 12\,z\left(369\,098\,752\,z^7 - 17\,862\,492\,160\,z^6 - 19\,074\,908\,160\,z^5 + 29\,662\,617\,600\,z^4 - 124\,347\,041\,280\,z^3 + \right. $$
$$ \left. \left. 517\,068\,090\,000\,z^2 - 1\,405\,208\,574\,000\,z + 1\,652\,716\,902\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.afi2.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{21}{4}; z\right) = $$
$$ \frac{1}{683\,847\,289\,125}\left(5\left(-218\,103\,808\,z^7 - 10\,717\,495\,296\,z^6 + 5\,722\,472\,448\,z^5 + 10\,644\,480\,000\,z^4 + 42\,591\,225\,600\,z^3 + \right.\right. $$
$$ \left.\left. 151\,491\,740\,400\,z^2 + 301\,037\,536\,800\,z + 136\,769\,457\,825\right)\cosh\left(2\sqrt{z}\right) - \right. $$
$$ \left. 2\sqrt{z}\left(16\,777\,216\,z^7 + 6\,086\,983\,680\,z^6 + 34\,290\,401\,280\,z^5 + 14\,902\,272\,000\,z^4 + 52\,091\,424\,000\,z^3 + \right.\right. $$
$$ \left.\left. 209\,416\,006\,800\,z^2 + 593\,391\,298\,500\,z + 683\,847\,289\,125\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afi3.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{1}{683\,847\,289\,125}\left(5\left(218\,103\,808\,z^7 - 10\,717\,495\,296\,z^6 - 5\,722\,472\,448\,z^5 + 10\,644\,480\,000\,z^4 - 42\,591\,225\,600\,z^3 + 151\,491\,740\,400\,z^2 - 301\,037\,536\,800\,z + 136\,769\,457\,825\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(16\,777\,216\,z^7 - 6\,086\,983\,680\,z^6 + 34\,290\,401\,280\,z^5 - 14\,902\,272\,000\,z^4 + 52\,091\,424\,000\,z^3 - 209\,416\,006\,800\,z^2 + 593\,391\,298\,500\,z - 683\,847\,289\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afi4.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{19}{4}; z\right) = \frac{1}{215\,571\,769\,875\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(33\,554\,432\,z^8 + 12\,985\,565\,184\,z^7 + 133\,524\,357\,120\,z^6 + 15\,100\,968\,960\,z^5 + 27\,201\,968\,640\,z^4 + 82\,819\,376\,640\,z^3 + 58\,398\,278\,400\,z^2 - 383\,238\,702\,000\,z + 215\,571\,769\,875\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(180\,355\,072\,z^7 + 9\,405\,726\,720\,z^6 + 2\,384\,363\,520\,z^5 - 3\,505\,582\,080\,z^4 - 15\,012\,486\,720\,z^3 - 41\,365\,447\,200\,z^2 - 31\,936\,558\,500\,z + 71\,857\,256\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8\,388\,608\,z^7 + 2\,846\,883\,840\,z^6 + 14\,306\,181\,120\,z^5 + 7\,550\,484\,480\,z^4 + 21\,766\,631\,040\,z^3 + 76\,647\,740\,400\,z^2 + 191\,619\,351\,000\,z + 215\,571\,769\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afi5.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{215\,571\,769\,875\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(33\,554\,432\,z^8 - 12\,985\,565\,184\,z^7 + 133\,524\,357\,120\,z^6 - 15\,100\,968\,960\,z^5 + 27\,201\,968\,640\,z^4 - 82\,819\,376\,640\,z^3 + 58\,398\,278\,400\,z^2 + 383\,238\,702\,000\,z + 215\,571\,769\,875\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(180\,355\,072\,z^7 - 9\,405\,726\,720\,z^6 + 2\,384\,363\,520\,z^5 + 3\,505\,582\,080\,z^4 - 15\,012\,486\,720\,z^3 + 41\,365\,447\,200\,z^2 - 31\,936\,558\,500\,z - 71\,857\,256\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(8\,388\,608\,z^7 - 2\,846\,883\,840\,z^6 + 14\,306\,181\,120\,z^5 - 7\,550\,484\,480\,z^4 + 21\,766\,631\,040\,z^3 - 76\,647\,740\,400\,z^2 + 191\,619\,351\,000\,z - 215\,571\,769\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afi6.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{17}{4}; z\right) = \frac{1}{32\,564\,156\,625}\left(\left(8\,388\,608\,z^7 + 2\,721\,054\,720\,z^6 + 14\,306\,181\,120\,z^5 + 4\,768\,727\,040\,z^4 + 13\,192\,502\,400\,z^3 + 39\,929\,274\,000\,z^2 + 73\,216\,143\,000\,z + 32\,564\,156\,625\right)\cosh\left(2\sqrt{z}\right) + 6\sqrt{z}\left(42\,991\,616\,z^6 + 1\,892\,679\,680\,z^5 - 596\,090\,880\,z^4 - 1\,224\,115\,200\,z^3 - 3\,925\,983\,600\,z^2 - 9\,932\,422\,500\,z - 10\,854\,718\,875\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afi7.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{17}{4}; -z\right) = \frac{1}{32\,564\,156\,625}\left(\left(-8\,388\,608\,z^7 + 2\,721\,054\,720\,z^6 - 14\,306\,181\,120\,z^5 + 4\,768\,727\,040\,z^4 - 13\,192\,502\,400\,z^3 + 39\,929\,274\,000\,z^2 - 73\,216\,143\,000\,z + 32\,564\,156\,625\right)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\left(42\,991\,616\,z^6 - 1\,892\,679\,680\,z^5 - 596\,090\,880\,z^4 + 1\,224\,115\,200\,z^3 - 3\,925\,983\,600\,z^2 + 9\,932\,422\,500\,z - 10\,854\,718\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afi8.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{15}{4}; z\right) = -\frac{1}{11\,345\,882\,625\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(260\,046\,848\,z^7 + 13\,351\,256\,064\,z^6 + 12\,716\,605\,440\,z^5 - 2\,004\,710\,400\,z^4 - 4\,313\,675\,520\,z^3 - 2\,130\,559\,200\,z^2 + 19\,498\,109\,400\,z - 11\,345\,882\,625\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4\,194\,304\,z^7 + 1\,330\,642\,944\,z^6 + 8\,346\,009\,600\,z^5 + 298\,045\,440\,z^4 + 2\,648\,479\,680\,z^3 + 6\,577\,956\,000\,z^2 + 4\,370\,265\,900\,z - 11\,345\,882\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(61\,865\,984\,z^6 + 2\,385\,838\,080\,z^5 - 1\,390\,878\,720\,z^4 - 1\,829\,963\,520\,z^3 - 4\,883\,986\,800\,z^2 - 10\,757\,577\,600\,z - 11\,345\,882\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afi9.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{11\,345\,882\,625\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(260\,046\,848\,z^7 - 13\,351\,256\,064\,z^6 + 12\,716\,605\,440\,z^5 + 2\,004\,710\,400\,z^4 - 4\,313\,675\,520\,z^3 + 2\,130\,559\,200\,z^2 + 19\,498\,109\,400\,z + 11\,345\,882\,625\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4\,194\,304\,z^7 - 1\,330\,642\,944\,z^6 + 8\,346\,009\,600\,z^5 - 298\,045\,440\,z^4 + 2\,648\,479\,680\,z^3 - 6\,577\,956\,000\,z^2 + 4\,370\,265\,900\,z + 11\,345\,882\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-61\,865\,984\,z^6 + 2\,385\,838\,080\,z^5 - 1\,390\,878\,720\,z^4 - 1\,829\,963\,520\,z^3 + 4\,883\,986\,800\,z^2 - 10\,757\,577\,600\,z + 11\,345\,882\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afia.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{13}{4}; z\right) = \frac{1}{1\,915\,538\,625}\left(-3\left(19\,922\,944\,z^6 + 706\,478\,080\,z^5 - 463\,626\,240\,z^4 - 400\,942\,080\,z^3 - 916\,146\,000\,z^2 - 1\,484\,406\,000\,z - 638\,512\,875\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(1\,048\,576\,z^6 + 287\,834\,112\,z^5 + 993\,484\,800\,z^4 + 422\,231\,040\,z^3 + 897\,296\,400\,z^2 + 1\,899\,166\,500\,z + 1\,915\,538\,625\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afib.01

$${}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{13}{4}; -z\right) = \frac{1}{1\,915\,538\,625}$$
$$\left(2\sqrt{z}\,\left(1\,048\,576\,z^6 - 287\,834\,112\,z^5 + 993\,484\,800\,z^4 - 422\,231\,040\,z^3 + 897\,296\,400\,z^2 - 1\,899\,166\,500\,z + 1\,915\,538\,625\right)\right.$$
$$\sin\left(2\sqrt{z}\right) - 3\left(19\,922\,944\,z^6 - 706\,478\,080\,z^5 - 463\,626\,240\,z^4 + \right.$$
$$\left.\left.400\,942\,080\,z^3 - 916\,146\,000\,z^2 + 1\,484\,406\,000\,z - 638\,512\,875\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.afic.01

$${}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{756\,392\,175\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(2\,097\,152\,z^7 + 591\,790\,080\,z^6 + 3\,486\,670\,848\,z^5 - 956\,229\,120\,z^4 + 324\,656\,640\,z^3 + \right.\right.\right.$$
$$\left.\left.59\,875\,200\,z^2 - 1\,222\,452\,000\,z + 756\,392\,175\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\right.$$
$$\left(9\,699\,328\,z^6 + 334\,381\,056\,z^5 - 196\,531\,200\,z^4 - 43\,686\,720\,z^3 - 139\,154\,400\,z^2 - 71\,309\,700\,z + 252\,130\,725\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(524\,288\,z^6 + 126\,517\,248\,z^5 + 211\,691\,520\,z^4 + \right.$$
$$\left.\left.\left.313\,568\,640\,z^3 + 449\,895\,600\,z^2 + 794\,593\,800\,z + 756\,392\,175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afid.01

$${}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{756\,392\,175\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-2\,097\,152\,z^7 + 591\,790\,080\,z^6 - 3\,486\,670\,848\,z^5 - 956\,229\,120\,z^4 - 324\,656\,640\,z^3 + \right.\right.\right.$$
$$\left.\left.59\,875\,200\,z^2 + 1\,222\,452\,000\,z + 756\,392\,175\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\right.$$
$$\left(9\,699\,328\,z^6 - 334\,381\,056\,z^5 - 196\,531\,200\,z^4 + 43\,686\,720\,z^3 - 139\,154\,400\,z^2 + 71\,309\,700\,z + 252\,130\,725\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(524\,288\,z^6 - 126\,517\,248\,z^5 + 211\,691\,520\,z^4 - \right.$$
$$\left.\left.\left.313\,568\,640\,z^3 + 449\,895\,600\,z^2 - 794\,593\,800\,z + 756\,392\,175\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afie.01

$${}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{9}{4}; z\right) = \left(\frac{524\,288\,z^6}{147\,349\,125} + \frac{32\,768\,z^5}{42\,525} + \frac{2048\,z^4}{3645} + \frac{12\,928\,z^3}{6075} + \frac{1808\,z^2}{945} + \frac{200\,z}{81} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{147\,349\,125}$$
$$\left(2\sqrt{z}\,\left(6\,750\,208\,z^5 + 165\,580\,800\,z^4 - 204\,906\,240\,z^3 - 111\,157\,200\,z^2 - 167\,359\,500\,z - 147\,349\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afif.01

$${}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) = \left(\frac{524\,288\,z^6}{147\,349\,125} - \frac{32\,768\,z^5}{42\,525} + \frac{2048\,z^4}{3645} - \frac{12\,928\,z^3}{6075} + \frac{1808\,z^2}{945} - \frac{200\,z}{81} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{147\,349\,125}$$
$$\left(2\sqrt{z}\,\left(6\,750\,208\,z^5 - 165\,580\,800\,z^4 - 204\,906\,240\,z^3 + 111\,157\,200\,z^2 - 167\,359\,500\,z + 147\,349\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afig.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) = -\frac{1}{68\,762\,925\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(3\left(4\,456\,448\,z^6 + 122\,093\,568\,z^5 - 127\,153\,152\,z^4 + 68\,302\,080\,z^3 - 2\,772\,000\,z^2 + 32\,016\,600\,z - 22\,920\,975\right)\right.\right. $$
$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(262\,144\,z^6 + 52\,248\,576\,z^5 + 23\,768\,064\,z^4 + \right. $$
$$ \left. 118\,883\,520\,z^3 + 14\,968\,800\,z^2 + 4\,365\,900\,z - 68\,762\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 12\,z\left(1\,048\,576\,z^5 + 18\,239\,488\,z^4 - 25\,267\,200\,z^3 - 27\,997\,200\,z^2 - 29\,106\,000\,z - 22\,920\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afih.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) = \frac{1}{68\,762\,925\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(-13\,369\,344\,z^6 + 366\,280\,704\,z^5 + 381\,459\,456\,z^4 + 204\,906\,240\,z^3 + 8\,316\,000\,z^2 + 96\,049\,800\,z + 68\,762\,925\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(262\,144\,z^6 - 52\,248\,576\,z^5 + 23\,768\,064\,z^4 - \right. $$
$$ \left. 118\,883\,520\,z^3 + 14\,968\,800\,z^2 - 4\,365\,900\,z - 68\,762\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 12\,z\left(1\,048\,576\,z^5 - 18\,239\,488\,z^4 - 25\,267\,200\,z^3 + 27\,997\,200\,z^2 - 29\,106\,000\,z + 22\,920\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afii.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{5}{4}; z\right) = \left(-\frac{65\,536\,z^5}{363\,825} - \frac{45\,056\,z^4}{19\,845} + \frac{13\,568\,z^3}{4725} + \frac{1616\,z^2}{315} + \frac{128\,z}{45} + 1\right)\cosh\left(2\sqrt{z}\right) - $$
$$ \frac{1}{16\,372\,125}\left(2\sqrt{z}\left(65\,536\,z^5 + 10\,137\,600\,z^4 - 22\,176\,000\,z^3 + 56\,826\,000\,z^2 + 24\,740\,100\,z + 16\,372\,125\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afij.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{5}{4}; -z\right) = \left(\frac{65\,536\,z^5}{363\,825} - \frac{45\,056\,z^4}{19\,845} - \frac{13\,568\,z^3}{4725} + \frac{1616\,z^2}{315} - \frac{128\,z}{45} + 1\right)\cos\left(2\sqrt{z}\right) + $$
$$ \frac{1}{16\,372\,125}\left(2\sqrt{z}\left(-65\,536\,z^5 + 10\,137\,600\,z^4 + 22\,176\,000\,z^3 + 56\,826\,000\,z^2 - 24\,740\,100\,z + 16\,372\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afik.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) = \frac{1}{9\,823\,275\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(131\,072\,z^6 + 19\,808\,256\,z^5 - 27\,772\,416\,z^4 + 89\,058\,816\,z^3 - 66\,528\,000\,z^2 - 5\,821\,200\,z + 9\,823\,275\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(1\,392\,640\,z^5 + 13\,596\,672\,z^4 - 16\,438\,464\,z^3 - 30\,048\,480\,z^2 + 7\,276\,500\,z + 9\,823\,275\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(32\,768\,z^5 + 3\,932\,160\,z^4 - 14\,308\,224\,z^3 + 23\,894\,640\,z^2 + 20\,374\,200\,z + 9\,823\,275\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afil.01

$${}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{1}{9\,823\,275\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(131\,072 z^6 - 19\,808\,256 z^5 - 27\,772\,416 z^4 - 89\,058\,816 z^3 - 66\,528\,000 z^2 + 5\,821\,200 z + 9\,823\,275\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(1\,392\,640 z^5 - 13\,596\,672 z^4 - 16\,438\,464 z^3 + 30\,048\,480 z^2 + 7\,276\,500 z - 9\,823\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(-32\,768 z^5 + 3\,932\,160 z^4 + 14\,308\,224 z^3 + 23\,894\,640 z^2 - 20\,374\,200 z + 9\,823\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afim.01

$${}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) = \left(\frac{32\,768 z^5}{3\,274\,425} + \frac{40\,960 z^4}{43\,659} - \frac{5248 z^3}{1323} + \frac{848 z^2}{189} + \frac{56 z}{9} + 1\right) \cosh\left(2\sqrt{z}\right) +$$
$$\frac{2\sqrt{z}\left(20\,480 z^4 + 28\,160 z^3 + 365\,904 z^2 - 1\,067\,220 z - 218\,295\right) \sinh\left(2\sqrt{z}\right)}{218\,295}$$

07.22.03.afin.01

$${}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) = \left(-\frac{32\,768 z^5}{3\,274\,425} + \frac{40\,960 z^4}{43\,659} + \frac{5248 z^3}{1323} + \frac{848 z^2}{189} - \frac{56 z}{9} + 1\right) \cos\left(2\sqrt{z}\right) -$$
$$\frac{2\sqrt{z}\left(20\,480 z^4 - 28\,160 z^3 + 365\,904 z^2 + 1\,067\,220 z - 218\,295\right) \sin\left(2\sqrt{z}\right)}{218\,295}$$

07.22.03.afio.01

$${}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) =$$
$$-\frac{1}{3\,274\,425\sqrt[4]{z}}\left(\sqrt{2}\left(9\left(65\,536 z^5 + 121\,856 z^4 + 650\,496 z^3 - 2\,772\,000 z^2 + 2\,263\,800 z - 363\,825\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(16\,384 z^5 + 1\,222\,656 z^4 - 5\,253\,696 z^3 + 4\,546\,080 z^2 + 7\,276\,500 z - 3\,274\,425\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.12 z\left(45\,056 z^4 - 180\,992 z^3 + 1\,644\,720 z^2 - 1\,940\,400 z - 1\,091\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afip.01

$${}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) =$$
$$\frac{1}{3\,274\,425\sqrt[4]{z}}\left(\sqrt{2}\left(9\left(65\,536 z^5 - 121\,856 z^4 + 650\,496 z^3 + 2\,772\,000 z^2 + 2\,263\,800 z + 363\,825\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(16\,384 z^5 - 1\,222\,656 z^4 - 5\,253\,696 z^3 - 4\,546\,080 z^2 + 7\,276\,500 z + 3\,274\,425\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.12 z\left(45\,056 z^4 + 180\,992 z^3 + 1\,644\,720 z^2 + 1\,940\,400 z - 1\,091\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afiq.01

$${}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) = \frac{1}{3\,274\,425}\left(\left(-118\,784\,z^4 + 837\,120\,z^3 - 4\,870\,800\,z^2 + 1\,940\,400\,z + 3\,274\,425\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4096\,z^4 + 161\,280\,z^3 - 472\,560\,z^2 - 2\,425\,500\,z + 3\,274\,425\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afir.01

$${}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) = \frac{1}{3\,274\,425}\left(2\sqrt{z}\left(4096\,z^4 - 161\,280\,z^3 - 472\,560\,z^2 + 2\,425\,500\,z + 3\,274\,425\right)\sin\left(2\sqrt{z}\right) - \left(118\,784\,z^4 + 837\,120\,z^3 + 4\,870\,800\,z^2 + 1\,940\,400\,z - 3\,274\,425\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.afis.01

$${}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) =$$

$$-\frac{1}{3\,274\,425\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192\,z^5 + 268\,800\,z^4 - 709\,632\,z^3 - 2\,772\,000\,z^2 + 6\,548\,850\,z - 3\,274\,425\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 51\sqrt{z}\left(4096\,z^4 - 34\,048\,z^3 + 147\,840\,z^2 - 121\,275\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\,z\left(4096\,z^4 + 59\,136\,z^3 + 332\,640\,z^2 - 3\,880\,800\,z + 363\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afit.01

$${}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, \frac{5}{4}; -z\right) =$$

$$\frac{1}{3\,274\,425\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192\,z^5 - 268\,800\,z^4 - 709\,632\,z^3 + 2\,772\,000\,z^2 + 6\,548\,850\,z + 3\,274\,425\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 51\sqrt{z}\left(4096\,z^4 + 34\,048\,z^3 + 147\,840\,z^2 - 121\,275\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\,z\left(4096\,z^4 - 59\,136\,z^3 + 332\,640\,z^2 + 3\,880\,800\,z + 363\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afiu.01

$${}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, \frac{7}{4}; z\right) =$$

$$\left(-\frac{2048\,z^4}{1\,091\,475} + \frac{128\,z^3}{33\,075} - \frac{1744\,z^2}{4851} + \frac{88\,z}{63} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(3328\,z^3 - 32\,240\,z^2 + 23\,100\,z + 363\,825\right)\sinh\left(2\sqrt{z}\right)}{363\,825}$$

07.22.03.afiv.01

$${}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, \frac{7}{4}; -z\right) = \frac{1}{1\,091\,475}\left(-\left(2048\,z^4 + 4224\,z^3 + 392\,400\,z^2 + 1\,524\,600\,z - 1\,091\,475\right)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\left(3328\,z^3 + 32\,240\,z^2 + 23\,100\,z - 363\,825\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afiw.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, \frac{9}{4}; z\right) = -\frac{1}{10\,478\,160\sqrt{2}\,z^{3/4}}\left(\left(34\sqrt{z}\left(16\,384z^4 - 135\,168z^3 + 1\,108\,800z - 883\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(131\,072z^5 - 1\,548\,288z^4 + 27\,709\,440z^3 - 44\,352\,000z^2 - 64\,864\,800z + 22\,713\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left.2\sqrt{z}\left(229\,376z^4 - 1\,551\,360z^3 - 11\,404\,800z^2 + 25\,502\,400z + 22\,713\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afix.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = \frac{1}{10\,478\,160\sqrt{2}\,z^{3/4}}\left(\left(-34\sqrt{z}\left(16\,384z^4 + 135\,168z^3 - 1\,108\,800z - 883\,575\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(131\,072z^5 + 1\,548\,288z^4 + 27\,709\,440z^3 + 44\,352\,000z^2 - 64\,864\,800z - 22\,713\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left.2\sqrt{z}\left(229\,376z^4 + 1\,551\,360z^3 - 11\,404\,800z^2 - 25\,502\,400z + 22\,713\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afiy.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = \left(-\frac{256z^3}{17\,325} - \frac{16z^2}{945} + \frac{160z}{99} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256z^3 - 6000z^2 + 44\,100z + 155\,925\right)\sinh\left(2\sqrt{z}\right)}{155\,925} $$

07.22.03.afiz.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = \left(\frac{256z^3}{17\,325} - \frac{16z^2}{945} - \frac{160z}{99} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256z^3 + 6000z^2 + 44\,100z - 155\,925\right)\sin\left(2\sqrt{z}\right)}{155\,925} $$

07.22.03.afj0.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = -\frac{1}{37\,255\,680\sqrt{2}\,z^{7/4}} $$
$$ \left(\left(2\sqrt{z}\left(262\,144z^5 - 5\,701\,632z^4 + 20\,275\,200z^3 + 108\,218\,880z^2 + 35\,426\,160z - 122\,650\,605\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 3\left(786\,432z^5 + 15\,400\,960z^4 - 114\,892\,800z^3 - 267\,886\,080z^2 - 266\,500\,080z + 204\,417\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left.2\sqrt{z}\left(262\,144z^5 - 6\,389\,760z^4 - 1\,843\,200z^3 + 231\,390\,720z^2 + 508\,772\,880z + 613\,253\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afj1.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = -\frac{1}{37\,255\,680\sqrt{2}\,z^{7/4}} $$
$$ \left(\left(2\sqrt{z}\left(262\,144z^5 + 5\,701\,632z^4 + 20\,275\,200z^3 - 108\,218\,880z^2 + 35\,426\,160z + 122\,650\,605\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 3\left(786\,432z^5 - 15\,400\,960z^4 - 114\,892\,800z^3 + 267\,886\,080z^2 - 266\,500\,080z - 204\,417\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\left(-262\,144z^5 - 6\,389\,760z^4 + 1\,843\,200z^3 + 231\,390\,720z^2 - 508\,772\,880z + 613\,253\,025\right) $$
$$ \left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afj2.01

$${}_1F_2\left(\frac{19}{4};-\frac{9}{2},\frac{15}{4};z\right)=\left(-\frac{128\,z^3}{14\,175}+\frac{16\,z^2}{105}+\frac{232\,z}{135}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(16\,z^2-1092\,z-2835\right)\sinh\left(2\sqrt{z}\right)}{2835}$$

07.22.03.afj3.01

$${}_1F_2\left(\frac{19}{4};-\frac{9}{2},\frac{15}{4};-z\right)=\left(\frac{128\,z^3}{14\,175}+\frac{16\,z^2}{105}-\frac{232\,z}{135}+1\right)\cos\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(16\,z^2+1092\,z-2835\right)\sin\left(2\sqrt{z}\right)}{2835}$$

07.22.03.afj4.01

$${}_1F_2\left(\frac{19}{4};-\frac{9}{2},\frac{17}{4};z\right)=-\frac{1}{1\,192\,181\,760\sqrt{2}\,z^{11/4}}$$
$$\left(13\left(-6\sqrt{z}\,\left(2\,097\,152\,z^5-40\,960\,000\,z^4-278\,446\,080\,z^3-1\,251\,613\,440\,z^2-3\,052\,637\,280\,z+3\,802\,168\,755\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(8\,388\,608\,z^6-25\,165\,824\,z^5-1\,931\,673\,600\,z^4-10\,737\,745\,920\,z^3-47\,679\,287\,040\,z^2-\right.$$
$$\left.86\,346\,025\,920\,z+57\,032\,531\,325\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\,\left(-3\,145\,728\,z^5+41\,615\,360\,z^4+\right.$$
$$\left.\left.\left.549\,765\,120\,z^3+3\,045\,715\,200\,z^2+11\,774\,458\,080\,z+19\,010\,843\,775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afj5.01

$${}_1F_2\left(\frac{19}{4};-\frac{9}{2},\frac{17}{4};-z\right)=-\frac{1}{1\,192\,181\,760\sqrt{2}\,z^{11/4}}$$
$$\left(13\left(6\sqrt{z}\,\left(2\,097\,152\,z^5+40\,960\,000\,z^4-278\,446\,080\,z^3+1\,251\,613\,440\,z^2-3\,052\,637\,280\,z-3\,802\,168\,755\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(8\,388\,608\,z^6+25\,165\,824\,z^5-1\,931\,673\,600\,z^4+10\,737\,745\,920\,z^3-47\,679\,287\,040\,z^2+\right.$$
$$\left.86\,346\,025\,920\,z+57\,032\,531\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-6\sqrt{z}\,\left(3\,145\,728\,z^5+41\,615\,360\,z^4-\right.$$
$$\left.\left.\left.549\,765\,120\,z^3+3\,045\,715\,200\,z^2-11\,774\,458\,080\,z+19\,010\,843\,775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afj6.01

$${}_1F_2\left(\frac{19}{4};-\frac{9}{2},\frac{19}{4};z\right)=\left(\frac{16\,z^2}{63}+\frac{16\,z}{9}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{945}\sqrt{z}\,\left(16\,z^2+420\,z+945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.afj7.01

$${}_1F_2\left(\frac{19}{4};-\frac{9}{2},\frac{19}{4};-z\right)=\left(\frac{16\,z^2}{63}-\frac{16\,z}{9}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{945}\sqrt{z}\,\left(16\,z^2-420\,z+945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.afj8.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) = $$
$$ -\frac{1}{38\,149\,816\,320\sqrt{2}\, z^{15/4}}\left(221\left(2\sqrt{z}\,\left(16\,777\,216 z^6 + 846\,200\,832 z^5 + 13\,997\,506\,560 z^4 + 186\,931\,261\,440 z^3 + \right.\right.\right. $$
$$ \left.\left.\left. 1\,496\,664\,449\,280 z^2 + 4\,522\,046\,039\,280 z - 5\,189\,960\,350\,575\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ \left(687\,865\,856 z^6 + 17\,222\,860\,800 z^5 + 267\,216\,814\,080 z^4 + 3\,057\,676\,554\,240 z^3 + \right. $$
$$ \left. 19\,163\,584\,661\,760 z^2 + 41\,063\,422\,554\,000 z - 25\,949\,801\,752\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\,\left(16\,777\,216 z^6 + 1\,116\,733\,440 z^5 + 21\,332\,951\,040 z^4 + 304\,551\,383\,040 z^3 + \right. $$
$$ \left.\left. 2\,899\,133\,233\,920 z^2 + 14\,296\,154\,518\,800 z + 25\,949\,801\,752\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.afj9.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) = $$
$$ \frac{1}{38\,149\,816\,320\sqrt{2}\, z^{15/4}}\left(221\left(2\sqrt{z}\,\left(16\,777\,216 z^6 - 846\,200\,832 z^5 + 13\,997\,506\,560 z^4 - 186\,931\,261\,440 z^3 + \right.\right.\right. $$
$$ \left.\left.\left. 1\,496\,664\,449\,280 z^2 - 4\,522\,046\,039\,280 z - 5\,189\,960\,350\,575\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(-687\,865\,856 z^6 + 17\,222\,860\,800 z^5 - 267\,216\,814\,080 z^4 + 3\,057\,676\,554\,240 z^3 - \right. $$
$$ \left. 19\,163\,584\,661\,760 z^2 + 41\,063\,422\,554\,000 z + 25\,949\,801\,752\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ 2\sqrt{z}\,\left(16\,777\,216 z^6 - 1\,116\,733\,440 z^5 + 21\,332\,951\,040 z^4 - 304\,551\,383\,040 z^3 + \right. $$
$$ \left.\left. 2\,899\,133\,233\,920 z^2 - 14\,296\,154\,518\,800 z + 25\,949\,801\,752\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.afja.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) = $$
$$ -\frac{1}{63\,417\,876\,480 z^{19/4}}\left(19 e^{-2\sqrt{z}}\,\left(4\sqrt[4]{z}\,\left(67\,108\,864 z^{13/2} + 956\,301\,312 z^6 + 7\,738\,490\,880 z^{11/2} + 48\,019\,537\,920 z^5 + \right.\right.\right. $$
$$ 256\,066\,191\,360 z^{9/2} + 1\,218\,296\,217\,600 z^4 + 5\,177\,758\,924\,800 z^{7/2} + 19\,416\,595\,968\,000 z^3 + $$
$$ 63\,103\,936\,896\,000 z^{5/2} + 173\,535\,826\,464\,000 z^2 + 390\,455\,609\,544\,000 z^{3/2} + 683\,297\,316\,702\,000 z + $$
$$ 854\,121\,645\,877\,500\sqrt{z} + e^{4\sqrt{z}}\,\left(67\,108\,864 z^{13/2} - 956\,301\,312 z^6 + 7\,738\,490\,880 z^{11/2} - \right. $$
$$ 48\,019\,537\,920 z^5 + 256\,066\,191\,360 z^{9/2} - 1\,218\,296\,217\,600 z^4 + 5\,177\,758\,924\,800 z^{7/2} - $$
$$ 19\,416\,595\,968\,000 z^3 + 63\,103\,936\,896\,000 z^{5/2} - 173\,535\,826\,464\,000 z^2 + 390\,455\,609\,544\,000 z^{3/2} - $$
$$ \left.\left.\left. 683\,297\,316\,702\,000 z + 854\,121\,645\,877\,500\sqrt{z} - 640\,591\,234\,408\,125\right) + 640\,591\,234\,408\,125\right) - $$
$$ \left.\left. 640\,591\,234\,408\,125 e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + 640\,591\,234\,408\,125 e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.afjb.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) = -\frac{1}{15\,854\,469\,120\,z^{19/4}} \left(19\left(640\,591\,234\,408\,125\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(4\sqrt{z}\left(16\,777\,216\,z^6 - 1\,934\,622\,720\,z^5 + 64\,016\,547\,840\,z^4 - 1\,294\,439\,731\,200\,z^3 + 15\,775\,984\,224\,000\,z^2 - 97\,613\,902\,386\,000\,z + 213\,530\,411\,469\,375\right)\cos\left(2\sqrt{z}\right) - 3\left(318\,767\,104\,z^6 - 16\,006\,512\,640\,z^5 + 406\,098\,739\,200\,z^4 - 6\,472\,198\,656\,000\,z^3 + 57\,845\,275\,488\,000\,z^2 - 227\,765\,772\,234\,000\,z + 213\,530\,411\,469\,375\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{19}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.afjc.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) = \frac{1}{550\,905\,634\,125\sqrt[4]{z}}\left(\sqrt{2}\left(\left(67\,108\,864\,z^8 + 23\,391\,633\,408\,z^7 + 139\,882\,659\,840\,z^6 - 45\,302\,906\,880\,z^5 + 78\,673\,351\,680\,z^4 + 211\,207\,106\,880\,z^3 + 138\,695\,911\,200\,z^2 - 971\,783\,851\,500\,z + 550\,905\,634\,125\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,040\,187\,392\,z^7 + 43\,426\,775\,040\,z^6 - 57\,224\,724\,480\,z^5 - 21\,033\,492\,480\,z^4 - 118\,010\,027\,520\,z^3 - 317\,540\,638\,800\,z^2 - 237\,243\,006\,000\,z + 550\,905\,634\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(16\,777\,216\,z^7 + 5\,080\,350\,720\,z^6 + 6\,120\,407\,040\,z^5 + 33\,977\,180\,160\,z^4 + 63\,757\,774\,080\,z^3 + 205\,610\,605\,200\,z^2 + 497\,297\,839\,500\,z + 550\,905\,634\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afjd.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{550\,905\,634\,125\sqrt[4]{z}}\left(\sqrt{2}\left(\left(67\,108\,864\,z^8 - 23\,391\,633\,408\,z^7 + 139\,882\,659\,840\,z^6 + 45\,302\,906\,880\,z^5 + 78\,673\,351\,680\,z^4 - 211\,207\,106\,880\,z^3 + 138\,695\,911\,200\,z^2 + 971\,783\,851\,500\,z + 550\,905\,634\,125\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,040\,187\,392\,z^7 - 43\,426\,775\,040\,z^6 - 57\,224\,724\,480\,z^5 + 21\,033\,492\,480\,z^4 - 118\,010\,027\,520\,z^3 + 317\,540\,638\,800\,z^2 - 237\,243\,006\,000\,z - 550\,905\,634\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(16\,777\,216\,z^7 - 5\,080\,350\,720\,z^6 + 6\,120\,407\,040\,z^5 - 33\,977\,180\,160\,z^4 + 63\,757\,774\,080\,z^3 - 205\,610\,605\,200\,z^2 + 497\,297\,839\,500\,z - 550\,905\,634\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afje.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) = \frac{1}{75\,983\,032\,125}\left(\left(16\,777\,216\,z^7 + 5\,080\,350\,720\,z^6 + 15\,117\,189\,120\,z^5 + 14\,902\,272\,000\,z^4 + 32\,931\,360\,000\,z^3 + 95\,253\,958\,800\,z^2 + 171\,607\,936\,500\,z + 75\,983\,032\,125\right)\cosh\left(2\sqrt{z}\right) + 30\sqrt{z}\left(16\,777\,216\,z^6 + 639\,107\,072\,z^5 - 728\,825\,856\,z^4 - 638\,668\,800\,z^3 - 1\,902\,700\,800\,z^2 - 4\,686\,481\,800\,z - 5\,065\,535\,475\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afjf.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) = \frac{1}{75\,983\,032\,125}\left(\left(-16\,777\,216\,z^7 + 5\,080\,350\,720\,z^6 - 15\,117\,189\,120\,z^5 + 14\,902\,272\,000\,z^4 - 32\,931\,360\,000\,z^3 + 95\,253\,958\,800\,z^2 - 171\,607\,936\,500\,z + 75\,983\,032\,125\right)\cos\left(2\sqrt{z}\right) - 30\sqrt{z}\left(16\,777\,216\,z^6 - 639\,107\,072\,z^5 - 728\,825\,856\,z^4 + 638\,668\,800\,z^3 - 1\,902\,700\,800\,z^2 + 4\,686\,481\,800\,z - 5\,065\,535\,475\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afjg.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) = -\frac{1}{23\,952\,418\,875\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(171\,966\,464\,z^7 + 8\,477\,736\,960\,z^6 + 5\,033\,656\,320\,z^5 - 1\,617\,960\,960\,z^4 - 3\,037\,890\,240\,z^3 - 1\,459\,956\,960\,z^2 + 13\,687\,096\,500\,z - 7\,984\,139\,625\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8\,388\,608\,z^7 + 2\,601\,517\,056\,z^6 + 14\,306\,181\,120\,z^5 + 5\,587\,021\,440\,z^3 + 13\,869\,591\,120\,z^2 + 9\,124\,731\,000\,z - 23\,952\,418\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(40\,894\,464\,z^6 + 1\,499\,463\,680\,z^5 - 1\,258\,414\,080\,z^4 - 1\,348\,300\,800\,z^3 - 3\,487\,674\,960\,z^2 - 7\,603\,942\,500\,z - 7\,984\,139\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afjh.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) = \frac{1}{23\,952\,418\,875\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(171\,966\,464\,z^7 - 8\,477\,736\,960\,z^6 + 5\,033\,656\,320\,z^5 + 1\,617\,960\,960\,z^4 - 3\,037\,890\,240\,z^3 + 1\,459\,956\,960\,z^2 + 13\,687\,096\,500\,z + 7\,984\,139\,625\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(8\,388\,608\,z^7 - 2\,601\,517\,056\,z^6 + 14\,306\,181\,120\,z^5 + 5\,587\,021\,440\,z^3 - 13\,869\,591\,120\,z^2 + 9\,124\,731\,000\,z + 23\,952\,418\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 12\,z\left(40\,894\,464\,z^6 - 1\,499\,463\,680\,z^5 - 1\,258\,414\,080\,z^4 + 1\,348\,300\,800\,z^3 - 3\,487\,674\,960\,z^2 + 7\,603\,942\,500\,z - 7\,984\,139\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afji.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) = \left(-\frac{24\,117\,248\,z^6}{723\,647\,925} - \frac{2\,097\,152\,z^5}{1\,686\,825} + \frac{8192\,z^4}{16\,575} + \frac{41\,984\,z^3}{69\,615} + \frac{1936\,z^2}{1365} + \frac{276\,z}{119} + 1\right)\cosh\left(2\sqrt{z}\right) -$$
$$\frac{1}{3\,618\,239\,625}\left(2\sqrt{z}\,\left(2\,097\,152\,z^6 + 589\,824\,000\,z^5 + 2\,451\,947\,520\,z^4 + \right.\right.$$
$$\left.\left.745\,113\,600\,z^3 + 1\,661\,536\,800\,z^2 + 3\,567\,564\,000\,z + 3\,618\,239\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afjj.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{17}{4}; -z\right) = \left(-\frac{24\,117\,248\,z^6}{723\,647\,925} + \frac{2\,097\,152\,z^5}{1\,686\,825} + \frac{8192\,z^4}{16\,575} - \frac{41\,984\,z^3}{69\,615} + \frac{1936\,z^2}{1365} - \frac{276\,z}{119} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{1}{3\,618\,239\,625}\left(2\sqrt{z}\,\left(2\,097\,152\,z^6 - 589\,824\,000\,z^5 + 2\,451\,947\,520\,z^4 - \right.\right.$$
$$\left.\left.745\,113\,600\,z^3 + 1\,661\,536\,800\,z^2 - 3\,567\,564\,000\,z + 3\,618\,239\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afjk.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{1\,260\,653\,625\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(4\,194\,304\,z^7 + 1\,269\,301\,248\,z^6 + 10\,332\,241\,920\,z^5 + 844\,462\,080\,z^4 + 486\,319\,680\,z^3 + \right.\right.\right.$$
$$\left.\left.\left.118\,752\,480\,z^2 - 2\,065\,070\,700\,z + 1\,260\,653\,625\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\right.\right.$$
$$\left(19\,922\,944\,z^6 + 795\,279\,360\,z^5 + 198\,696\,960\,z^4 - 96\,687\,360\,z^3 - 237\,893\,040\,z^2 - 128\,066\,400\,z + 420\,217\,875\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(1\,048\,576\,z^6 + 273\,285\,120\,z^5 + 993\,484\,800\,z^4 + \right.$$
$$\left.\left.\left.384\,975\,360\,z^3 + 695\,051\,280\,z^2 + 1\,296\,672\,300\,z + 1\,260\,653\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afjl.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{1\,260\,653\,625\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-4\,194\,304\,z^7 + 1\,269\,301\,248\,z^6 - 10\,332\,241\,920\,z^5 + 844\,462\,080\,z^4 - 486\,319\,680\,z^3 + \right.\right.\right.$$
$$\left.\left.\left.118\,752\,480\,z^2 + 2\,065\,070\,700\,z + 1\,260\,653\,625\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\right.\right.$$
$$\left(19\,922\,944\,z^6 - 795\,279\,360\,z^5 + 198\,696\,960\,z^4 + 96\,687\,360\,z^3 - 237\,893\,040\,z^2 + 128\,066\,400\,z + 420\,217\,875\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(1\,048\,576\,z^6 - 273\,285\,120\,z^5 + 993\,484\,800\,z^4 - \right.$$
$$\left.\left.\left.384\,975\,360\,z^3 + 695\,051\,280\,z^2 - 1\,296\,672\,300\,z + 1\,260\,653\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afjm.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{13}{4}; z\right) = \left(\frac{1\,048\,576\,z^6}{212\,837\,625} + \frac{524\,288\,z^5}{429\,975} + \frac{8192\,z^4}{1755} + \frac{1024\,z^3}{975} + \frac{7024\,z^2}{4095} + \frac{220\,z}{91} + 1\right)\cosh\left(2\sqrt{z}\right) +$$
$$\frac{1}{70\,945\,875}\left(2\sqrt{z}\,\left(4\,718\,592\,z^5 + 154\,992\,640\,z^4 - 33\,116\,160\,z^3 - 44\,352\,000\,z^2 - 76\,923\,000\,z - 70\,945\,875\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afjn.01

$${}_1F_2\left(\frac{19}{4};-\frac{7}{2},-\frac{13}{4};-z\right)=\left(\frac{1\,048\,576\,z^6}{212\,837\,625}-\frac{524\,288\,z^5}{429\,975}+\frac{8192\,z^4}{1755}-\frac{1024\,z^3}{975}+\frac{7024\,z^2}{4095}-\frac{220\,z}{91}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{1}{70\,945\,875}\left(2\sqrt{z}\left(4\,718\,592\,z^5-154\,992\,640\,z^4-33\,116\,160\,z^3+44\,352\,000\,z^2-76\,923\,000\,z+70\,945\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afjo.01

$${}_1F_2\left(\frac{19}{4};-\frac{7}{2},-\frac{11}{4};z\right)=-\frac{1}{84\,043\,575\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(28\,573\,696\,z^6+1\,119\,633\,408\,z^5+918\,973\,440\,z^4-54\,331\,200\,z^3-332\,640\,z^2+126\,611\,100\,z-84\,043\,575\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(524\,288\,z^6+126\,517\,248\,z^5+591\,759\,360\,z^4-\right.$$
$$\left.9\,313\,920\,z^3+40\,415\,760\,z^2+14\,553\,000\,z-84\,043\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(6\,750\,208\,z^5+190\,033\,920\,z^4-80\,720\,640\,z^3-68\,246\,640\,z^2-97\,505\,100\,z-84\,043\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afjp.01

$${}_1F_2\left(\frac{19}{4};-\frac{7}{2},-\frac{11}{4};-z\right)=\frac{1}{84\,043\,575\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-28\,573\,696\,z^6+1\,119\,633\,408\,z^5-918\,973\,440\,z^4-54\,331\,200\,z^3+332\,640\,z^2+126\,611\,100\,z+84\,043\,575\right)\right.\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(524\,288\,z^6-126\,517\,248\,z^5+591\,759\,360\,z^4+\right.$$
$$\left.9\,313\,920\,z^3+40\,415\,760\,z^2-14\,553\,000\,z-84\,043\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(6\,750\,208\,z^5-190\,033\,920\,z^4-80\,720\,640\,z^3+68\,246\,640\,z^2-97\,505\,100\,z+84\,043\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afjq.01

$${}_1F_2\left(\frac{19}{4};-\frac{7}{2},-\frac{9}{4};z\right)=\left(-\frac{65\,536\,z^5}{165\,375}-\frac{4096\,z^4}{405}+\frac{3328\,z^3}{675}+\frac{3824\,z^2}{1575}+\frac{164\,z}{63}+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{1}{16\,372\,125}\left(2\sqrt{z}\left(131\,072\,z^5+26\,763\,264\,z^4+62\,092\,800\,z^3+17\,851\,680\,z^2+20\,790\,000\,z+16\,372\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afjr.01

$${}_1F_2\left(\frac{19}{4};-\frac{7}{2},-\frac{9}{4};-z\right)=\left(\frac{65\,536\,z^5}{165\,375}-\frac{4096\,z^4}{405}-\frac{3328\,z^3}{675}+\frac{3824\,z^2}{1575}-\frac{164\,z}{63}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{1}{16\,372\,125}\left(2\sqrt{z}\left(-131\,072\,z^5+26\,763\,264\,z^4-62\,092\,800\,z^3+17\,851\,680\,z^2-20\,790\,000\,z+16\,372\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afjs.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{7}{4}; z\right) = \frac{1}{7\,640\,325\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(262\,144\,z^6 + 55\,296\,000\,z^5 + 240\,270\,336\,z^4 - 66\,306\,240\,z^3 + 2\,328\,480\,z^2 - 9\,355\,500\,z + 7\,640\,325\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(1\,048\,576\,z^5 + 25\,915\,392\,z^4 - 11\,765\,760\,z^3 + 498\,960\,z^2 + 277\,200\,z + 2\,546\,775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(65\,536\,z^5 + 11\,513\,856\,z^4 + 10\,126\,080\,z^3 + 14\,248\,080\,z^2 + 11\,018\,700\,z + 7\,640\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afjt.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{1}{7\,640\,325\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(262\,144\,z^6 - 55\,296\,000\,z^5 + 240\,270\,336\,z^4 + 66\,306\,240\,z^3 + 2\,328\,480\,z^2 + 9\,355\,500\,z + 7\,640\,325\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(1\,048\,576\,z^5 - 25\,915\,392\,z^4 - 11\,765\,760\,z^3 - 498\,960\,z^2 + 277\,200\,z - 2\,546\,775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-65\,536\,z^5 + 11\,513\,856\,z^4 - 10\,126\,080\,z^3 + 14\,248\,080\,z^2 - 11\,018\,700\,z + 7\,640\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afju.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{5}{4}; z\right) = \left(\frac{65\,536\,z^5}{1\,819\,125} + \frac{4096\,z^4}{735} + \frac{256\,z^3}{315} + \frac{4112\,z^2}{525} + \frac{108\,z}{35} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(65\,536\,z^4 + 1\,075\,200\,z^3 - 967\,680\,z^2 - 289\,800\,z - 165\,375\right)\sinh\left(2\sqrt{z}\right)}{165\,375} $$

07.22.03.afjv.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{5}{4}; -z\right) = \left(-\frac{65\,536\,z^5}{1\,819\,125} + \frac{4096\,z^4}{735} - \frac{256\,z^3}{315} + \frac{4112\,z^2}{525} - \frac{108\,z}{35} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-65\,536\,z^4 + 1\,075\,200\,z^3 + 967\,680\,z^2 - 289\,800\,z + 165\,375\right)\sin\left(2\sqrt{z}\right)}{165\,375} $$

07.22.03.afjw.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{3}{4}; z\right) = -\frac{1}{1\,091\,475\,\sqrt[4]{z}} \left(\sqrt{2}\left(3\left(475\,136\,z^5 + 8\,964\,096\,z^4 - 7\,406\,784\,z^3 + 4\,102\,560\,z^2 + 69\,300\,z - 363\,825\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,768\,z^5 + 4\,595\,712\,z^4 - 220\,032\,z^3 + 5\,599\,440\,z^2 - 1\,247\,400\,z - 1\,091\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(110\,592\,z^4 + 1\,174\,016\,z^3 - 1\,016\,400\,z^2 - 900\,900\,z - 363\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afjx.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{1\,091\,475\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(475\,136\,z^5 - 8\,964\,096\,z^4 - 7\,406\,784\,z^3 - 4\,102\,560\,z^2 + 69\,300\,z + 363\,825\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(-32\,768\,z^5 + 4\,595\,712\,z^4 + 220\,032\,z^3 + 5\,599\,440\,z^2 + 1\,247\,400\,z - 1\,091\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.12\,z\left(110\,592\,z^4 - 1\,174\,016\,z^3 - 1\,016\,400\,z^2 + 900\,900\,z - 363\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afjy.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) = \left(-\frac{4096\,z^4}{4851} - \frac{2560\,z^3}{441} + \frac{16\,z^2}{5} + \frac{52\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) -$$
$$\frac{2\sqrt{z}\left(8192\,z^4 + 844\,800\,z^3 - 1\,663\,200\,z^2 + 2\,217\,600\,z + 363\,825\right)\sinh\left(2\sqrt{z}\right)}{363\,825}$$

07.22.03.afjz.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) = \left(-\frac{4096\,z^4}{4851} + \frac{2560\,z^3}{441} + \frac{16\,z^2}{5} - \frac{52\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{2\sqrt{z}\left(8192\,z^4 - 844\,800\,z^3 - 1\,663\,200\,z^2 - 2\,217\,600\,z + 363\,825\right)\sin\left(2\sqrt{z}\right)}{363\,825}$$

07.22.03.afk0.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{363\,825\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384\,z^5 + 1\,646\,592\,z^4 - 2\,261\,952\,z^3 + 4\,146\,912\,z^2 - 2\,702\,700\,z + 363\,825\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(143\,360\,z^4 + 685\,824\,z^3 - 232\,848\,z^2 - 1\,053\,360\,z + 363\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(4096\,z^4 + 307\,200\,z^3 - 861\,168\,z^2 + 595\,980\,z + 363\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afk1.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) =$$
$$\frac{1}{363\,825\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,384\,z^5 + 1\,646\,592\,z^4 + 2\,261\,952\,z^3 + 4\,146\,912\,z^2 + 2\,702\,700\,z + 363\,825\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(143\,360\,z^4 - 685\,824\,z^3 - 232\,848\,z^2 + 1\,053\,360\,z + 363\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(4096\,z^4 - 307\,200\,z^3 - 861\,168\,z^2 - 595\,980\,z + 363\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afk2.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) =$$

$$\left(\frac{4096\,z^4}{363\,825} + \frac{14\,848\,z^3}{24\,255} - \frac{432\,z^2}{245} + \frac{4\,z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048\,z^3 - 2816\,z^2 + 27\,720\,z - 24\,255\right)\sinh\left(2\sqrt{z}\right)}{24\,255}$$

07.22.03.afk3.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) =$$

$$\left(\frac{4096\,z^4}{363\,825} - \frac{14\,848\,z^3}{24\,255} - \frac{432\,z^2}{245} - \frac{4\,z}{21} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048\,z^3 + 2816\,z^2 + 27\,720\,z + 24\,255\right)\sin\left(2\sqrt{z}\right)}{24\,255}$$

07.22.03.afk4.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) =$$

$$\frac{1}{363\,825\sqrt[4]{z}}\left(\sqrt{2}\left(\left(58\,368\,z^4 - 44\,352\,z^3 + 510\,048\,z^2 - 831\,600\,z + 363\,825\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\sqrt{z}\left(4096\,z^4 + 163\,584\,z^3 - 421\,344\,z^2 - 110\,880\,z + 363\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 816\,z^2\left(64\,z^2 - 308\,z + 1155\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afk5.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) =$$

$$\frac{1}{363\,825\sqrt[4]{z}}\left(\sqrt{2}\left(\left(58\,368\,z^4 + 44\,352\,z^3 + 510\,048\,z^2 + 831\,600\,z + 363\,825\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 2\sqrt{z}\left(4096\,z^4 - 163\,584\,z^3 - 421\,344\,z^2 + 110\,880\,z + 363\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 816\,z^2\left(64\,z^2 + 308\,z + 1155\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afk6.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) =$$

$$\left(\frac{11\,008\,z^3}{121\,275} - \frac{4528\,z^2}{8085} + \frac{60\,z}{49} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(512\,z^3 + 7200\,z^2 + 13\,200\,z - 121\,275\right)\sinh\left(2\sqrt{z}\right)}{121\,275}$$

07.22.03.afk7.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) =$$

$$\left(-\frac{11\,008\,z^3}{121\,275} - \frac{4528\,z^2}{8085} - \frac{60\,z}{49} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(512\,z^3 - 7200\,z^2 + 13\,200\,z + 121\,275\right)\sin\left(2\sqrt{z}\right)}{121\,275}$$

07.22.03.afk8.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) = \frac{1}{582\,120\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(8192z^4+84\,480z^3+177\,408z^2-1\,108\,800z+779\,625\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$3\left(98\,304z^4-596\,992z^3+591\,360z^2+1\,108\,800z-329\,175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(8192z^4-19\,968z^3+823\,680z^2-1\,108\,800z-987\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afk9.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{9}{4}; -z\right) = \frac{1}{582\,120\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(8192z^4-84\,480z^3+177\,408z^2+1\,108\,800z+779\,625\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$3\left(98\,304z^4+596\,992z^3+591\,360z^2-1\,108\,800z-329\,175\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(8192z^4+19\,968z^3+823\,680z^2+1\,108\,800z-987\,525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afka.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{11}{4}; z\right) = \frac{\left(256z^3-2928z^2+26\,100z+17\,325\right)\cosh\left(2\sqrt{z}\right)+6\sqrt{z}\left(256z^2-1000z-5775\right)\sinh\left(2\sqrt{z}\right)}{17\,325}$$

07.22.03.afkb.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{11}{4}; -z\right) = \frac{-\left(256z^3+2928z^2+26\,100z-17\,325\right)\cos\left(2\sqrt{z}\right)-6\sqrt{z}\left(256z^2+1000z-5775\right)\sin\left(2\sqrt{z}\right)}{17\,325}$$

07.22.03.afkc.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{13}{4}; z\right) = \frac{1}{2\,069\,760\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(311\,296z^4-540\,672z^3-5\,322\,240z^2-388\,080z+4\,542\,615\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(262\,144z^5-3\,833\,856z^4+14\,868\,480z^3+33\,707\,520z^2+28\,440\,720z-22\,713\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(212\,992z^4+1\,044\,480z^3-9\,884\,160z^2-20\,013\,840z-22\,713\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afkd.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) =$$
$$\frac{1}{2\,069\,760\sqrt{2}\,z^{7/4}}\left(\left(-2\sqrt{z}\left(311\,296z^4+540\,672z^3-5\,322\,240z^2+388\,080z+4\,542\,615\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(262\,144z^5+3\,833\,856z^4+14\,868\,480z^3-33\,707\,520z^2+28\,440\,720z+22\,713\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(212\,992z^4-1\,044\,480z^3-9\,884\,160z^2+20\,013\,840z-22\,713\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afke.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) = \frac{3\left(16z^2+860z+525\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\left(32z^2-480z-1575\right)\sinh\left(2\sqrt{z}\right)}{1575}$$

07.22.03.afkf.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{15}{4}; -z\right) = \frac{3\left(16\,z^2 - 860\,z + 525\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(32\,z^2 + 480\,z - 1575\right)\sin\left(2\sqrt{z}\right)}{1575}$$

07.22.03.afkg.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) = \frac{1}{66\,232\,320\sqrt{2}\,z^{11/4}}$$

$$\left(13\left(2\sqrt{z}\,\left(524\,288\,z^5 - 4\,521\,984\,z^4 - 32\,440\,320\,z^3 - 121\,524\,480\,z^2 - 290\,727\,360\,z + 367\,951\,815\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-1\,048\,576\,z^5 + 25\,886\,720\,z^4 + 127\,057\,920\,z^3 + 522\,466\,560\,z^2 + 920\,636\,640\,z - 613\,253\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(524\,288\,z^5 - 2\,949\,120\,z^4 - 63\,406\,080\,z^3 - 315\,406\,080\,z^2 - 1\,162\,909\,440\,z - 1\,839\,759\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afkh.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) = -\frac{1}{66\,232\,320\sqrt{2}\,z^{11/4}}$$

$$\left(13\left(2\sqrt{z}\,\left(524\,288\,z^5 + 4\,521\,984\,z^4 - 32\,440\,320\,z^3 + 121\,524\,480\,z^2 - 290\,727\,360\,z - 367\,951\,815\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(1\,048\,576\,z^5 + 25\,886\,720\,z^4 - 127\,057\,920\,z^3 + 522\,466\,560\,z^2 - 920\,636\,640\,z - 613\,253\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(524\,288\,z^5 + 2\,949\,120\,z^4 - 63\,406\,080\,z^3 + 315\,406\,080\,z^2 - 1\,162\,909\,440\,z + 1\,839\,759\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afki.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) = \left(\frac{16\,z^2}{105} + \frac{12\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,(8\,z + 21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.afkj.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = \left(\frac{16\,z^2}{105} - \frac{12\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}(21 - 8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.afkk.01

$${}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) = \frac{1}{2\,119\,434\,240\sqrt{2}\,z^{15/4}}$$

$$\left(221\left(-6\sqrt{z}\,\left(9\,437\,184\,z^5 + 143\,196\,160\,z^4 + 1\,817\,333\,760\,z^3 + 14\,342\,549\,760\,z^2 + 42\,954\,967\,440\,z - 49\,428\,193\,815\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216\,z^6 + 563\,085\,312\,z^5 + 7\,983\,267\,840\,z^4 + 88\,795\,238\,400\,z^3 + 550\,056\,165\,120\,z^2 + 1\,171\,558\,578\,960\,z - 741\,422\,907\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\,\left(11\,534\,336\,z^5 + 222\,494\,720\,z^4 + 2\,996\,613\,120\,z^3 + 27\,965\,203\,200\,z^2 + 136\,714\,541\,040\,z + 247\,140\,969\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afkl.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) = -\frac{1}{2\,119\,434\,240\sqrt{2}\, z^{15/4}} $$
$$ \left(221\left(6\sqrt{z}\left(9\,437\,184 z^5 - 143\,196\,160 z^4 + 1\,817\,333\,760 z^3 - 14\,342\,549\,760 z^2 + 42\,954\,967\,440 z + 49\,428\,193\,815\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216 z^6 - 563\,085\,312 z^5 + 7\,983\,267\,840 z^4 - 88\,795\,238\,400 z^3 + 550\,056\,165\,120 z^2 - \right. $$
$$ \left. 1\,171\,558\,578\,960 z - 741\,422\,907\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\left(11\,534\,336 z^5 - 222\,494\,720 z^4 + \right. $$
$$ \left.\left. 2\,996\,613\,120 z^3 - 27\,965\,203\,200 z^2 + 136\,714\,541\,040 z - 247\,140\,969\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.afkm.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = $$
$$ \frac{1}{3\,523\,215\,360 z^{19/4}}\left(19 e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-16\,777\,216 z^6 - 188\,743\,680 z^{11/2} - 1\,274\,019\,840 z^5 - 6\,908\,805\,120 z^{9/2} - \right.\right.\right. $$
$$ 32\,926\,924\,800 z^4 - 139\,939\,430\,400 z^{7/2} - 524\,772\,864\,000 z^3 - 1\,705\,511\,808\,000 z^{5/2} - 4\,690\,157\,472\,000 z^2 - $$
$$ 10\,552\,854\,312\,000 z^{3/2} - 18\,467\,495\,046\,000 z - 23\,084\,368\,807\,500\sqrt{z} + e^{4\sqrt{z}}\left(16\,777\,216 z^6 - \right. $$
$$ 188\,743\,680 z^{11/2} + 1\,274\,019\,840 z^5 - 6\,908\,805\,120 z^{9/2} + 32\,926\,924\,800 z^4 - 139\,939\,430\,400 z^{7/2} + $$
$$ 524\,772\,864\,000 z^3 - 1\,705\,511\,808\,000 z^{5/2} + 4\,690\,157\,472\,000 z^2 - 10\,552\,854\,312\,000 z^{3/2} + $$
$$ \left.\left. 18\,467\,495\,046\,000 z - 23\,084\,368\,807\,500\sqrt{z} + 17\,313\,276\,605\,625\right) - 17\,313\,276\,605\,625\right) + $$
$$ \left.\left. 17\,313\,276\,605\,625 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 17\,313\,276\,605\,625 e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.afkn.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) = $$
$$ \frac{1}{880\,803\,840 z^{19/4}}\left(19\left(2\sqrt[4]{z}\left(60\sqrt{z}\left(3\,145\,728 z^5 - 115\,146\,752 z^4 + 2\,332\,323\,840 z^3 - 28\,425\,196\,800 z^2 + \right.\right.\right. $$
$$ \left.\left. 175\,880\,905\,200 z - 384\,739\,480\,125\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left(16\,777\,216 z^6 - 1\,274\,019\,840 z^5 + 32\,926\,924\,800 z^4 - 524\,772\,864\,000 z^3 + 4\,690\,157\,472\,000 z^2 - \right. $$
$$ \left.\left.\left. 18\,467\,495\,046\,000 z + 17\,313\,276\,605\,625\right)\sin\left(2\sqrt{z}\right)\right) - 17\,313\,276\,605\,625\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\Bigg) $$

For fixed z and $a_1 = \frac{19}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.afko.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) = $$
$$ -\frac{1}{78\,700\,804\,875\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(318\,767\,104\,z^7 + 10\,189\,012\,992\,z^6 - 20\,134\,625\,280\,z^5 + 8\,089\,804\,800\,z^4 - \right.\right.\right. $$
$$ \left.\left.\left. 11\,308\,872\,960\,z^3 - 3\,649\,892\,400\,z^2 + 43\,798\,708\,800\,z - 26\,233\,601\,625\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 4\sqrt{z}\left(16\,777\,216\,z^7 + 4\,174\,381\,056\,z^6 - 3\,238\,133\,760\,z^5 + 33\,977\,180\,160\,z^4 + 13\,600\,984\,320\,z^3 + \right. $$
$$ \left. 44\,320\,122\,000\,z^2 + 26\,461\,719\,900\,z - 78\,700\,804\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 12\,z\left(75\,497\,472\,z^6 + 1\,559\,756\,800\,z^5 - 3\,154\,575\,360\,z^4 - 8\,359\,464\,960\,z^3 - 13\,440\,873\,600\,z^2 - \right. $$
$$ \left.\left. 26\,157\,562\,200\,z - 26\,233\,601\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.afkp.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{23}{4}; -z\right) = $$
$$ \frac{1}{78\,700\,804\,875\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(318\,767\,104\,z^7 - 10\,189\,012\,992\,z^6 - 20\,134\,625\,280\,z^5 - 8\,089\,804\,800\,z^4 - \right.\right.\right. $$
$$ \left.\left.\left. 11\,308\,872\,960\,z^3 + 3\,649\,892\,400\,z^2 + 43\,798\,708\,800\,z + 26\,233\,601\,625\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 4\sqrt{z}\left(16\,777\,216\,z^7 - 4\,174\,381\,056\,z^6 - 3\,238\,133\,760\,z^5 - 33\,977\,180\,160\,z^4 + 13\,600\,984\,320\,z^3 - \right. $$
$$ \left. 44\,320\,122\,000\,z^2 + 26\,461\,719\,900\,z + 78\,700\,804\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ 12\,z\left(75\,497\,472\,z^6 - 1\,559\,756\,800\,z^5 - 3\,154\,575\,360\,z^4 + 8\,359\,464\,960\,z^3 - 13\,440\,873\,600\,z^2 + \right. $$
$$ \left.\left. 26\,157\,562\,200\,z - 26\,233\,601\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.afkq.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{21}{4}; z\right) = $$
$$ \frac{1}{10\,854\,718\,875}\left(-9\left(25\,165\,824\,z^6 + 626\,524\,160\,z^5 - 1\,114\,767\,360\,z^4 - 1\,064\,448\,000\,z^3 - 1\,873\,872\,000\,z^2 - \right.\right. $$
$$ \left. 2\,848\,645\,800\,z - 1\,206\,079\,875\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4\,194\,304\,z^6 + 986\,972\,160\,z^5 - \right. $$
$$ \left.\left. 449\,740\,800\,z^4 + 6\,233\,794\,560\,z^3 + 5\,837\,832\,000\,z^2 + 11\,164\,853\,700\,z + 10\,854\,718\,875\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afkr.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{21}{4}; -z\right) = $$
$$ \frac{1}{10\,854\,718\,875}\left(2\sqrt{z}\left(4\,194\,304\,z^6 - 986\,972\,160\,z^5 - 449\,740\,800\,z^4 - 6\,233\,794\,560\,z^3 + 5\,837\,832\,000\,z^2 - \right.\right. $$
$$ \left. 11\,164\,853\,700\,z + 10\,854\,718\,875\right)\sin\left(2\sqrt{z}\right) - 9\left(25\,165\,824\,z^6 - 626\,524\,160\,z^5 - \right. $$
$$ \left.\left. 1\,114\,767\,360\,z^4 + 1\,064\,448\,000\,z^3 - 1\,873\,872\,000\,z^2 + 2\,848\,645\,800\,z - 1\,206\,079\,875\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.afks.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{19}{4}; z\right) = \frac{1}{3\,421\,774\,125\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8\,388\,608 z^7 + 2\,255\,486\,976 z^6 + 10\,067\,312\,640 z^5 - 3\,775\,242\,240 z^4 + 1\,744\,364\,160 z^3 + 243\,326\,160 z^2 - 5\,474\,838\,600 z + 3\,421\,774\,125\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(114\,294\,784 z^6 + 3\,538\,944\,000 z^5 - 3\,775\,242\,240 z^4 - 269\,660\,160 z^3 - 1\,842\,326\,640 z^2 - 912\,473\,100 z + 3\,421\,774\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(2\,097\,152 z^6 + 479\,723\,520 z^5 + 212\,582\,400 z^4 + 1\,887\,621\,120 z^3 + 2\,155\,174\,560 z^2 + 3\,649\,892\,400 z + 3\,421\,774\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afkt.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{19}{4}; -z\right) = \frac{1}{3\,421\,774\,125\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-8\,388\,608 z^7 + 2\,255\,486\,976 z^6 - 10\,067\,312\,640 z^5 - 3\,775\,242\,240 z^4 - 1\,744\,364\,160 z^3 + 243\,326\,160 z^2 + 5\,474\,838\,600 z + 3\,421\,774\,125\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(114\,294\,784 z^6 - 3\,538\,944\,000 z^5 - 3\,775\,242\,240 z^4 + 269\,660\,160 z^3 - 1\,842\,326\,640 z^2 + 912\,473\,100 z + 3\,421\,774\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(2\,097\,152 z^6 - 479\,723\,520 z^5 + 212\,582\,400 z^4 - 1\,887\,621\,120 z^3 + 2\,155\,174\,560 z^2 - 3\,649\,892\,400 z + 3\,421\,774\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afku.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{17}{4}; z\right) = \frac{1}{516\,891\,375}\left(\left(2\,097\,152 z^6 + 479\,723\,520 z^5 + 922\,337\,280 z^4 + 745\,113\,600 z^3 + 943\,034\,400 z^2 + 1\,264\,863\,600 z + 516\,891\,375\right)\cosh\left(2\sqrt{z}\right) + 30\sqrt{z}\left(1\,835\,008 z^5 + 50\,987\,008 z^4 - 45\,176\,832 z^3 - 23\,950\,080 z^2 - 38\,378\,340 z - 34\,459\,425\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afkv.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{17}{4}; -z\right) = \frac{1}{516\,891\,375}\left(\left(2\,097\,152 z^6 - 479\,723\,520 z^5 + 922\,337\,280 z^4 - 745\,113\,600 z^3 + 943\,034\,400 z^2 - 1\,264\,863\,600 z + 516\,891\,375\right)\cos\left(2\sqrt{z}\right) + 30\sqrt{z}\left(1\,835\,008 z^5 - 50\,987\,008 z^4 - 45\,176\,832 z^3 + 23\,950\,080 z^2 - 38\,378\,340 z + 34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afkw.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{15}{4}; z\right) = -\frac{1}{180\,093\,375\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(3\left(18\,874\,368 z^6 + 706\,478\,080 z^5 + 364\,277\,760 z^4 - 51\,448\,320 z^3 - 388\,080 z^2 + 89\,646\,480 z - 60\,031\,125\right)\right.\right. $$
$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,048\,576 z^6 + 246\,546\,432 z^5 + 993\,484\,800 z^4 - \right. $$
$$ \left. 62\,092\,800 z^3 + 82\,993\,680 z^2 + 28\,814\,940 z - 180\,093\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 12 z\left(4\,456\,448 z^5 + 118\,292\,480 z^4 - 74\,511\,360 z^3 - 51\,004\,800 z^2 - 70\,436\,520 z - 60\,031\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afkx.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{15}{4}; -z\right) = \frac{1}{180\,093\,375\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(-3\left(18\,874\,368 z^6 - 706\,478\,080 z^5 + 364\,277\,760 z^4 + 51\,448\,320 z^3 - 388\,080 z^2 - 89\,646\,480 z - 60\,031\,125\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,048\,576 z^6 - 246\,546\,432 z^5 + 993\,484\,800 z^4 + \right. $$
$$ \left. 62\,092\,800 z^3 + 82\,993\,680 z^2 - 28\,814\,940 z - 180\,093\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 12 z\left(4\,456\,448 z^5 - 118\,292\,480 z^4 - 74\,511\,360 z^3 + 51\,004\,800 z^2 - 70\,436\,520 z + 60\,031\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afky.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{13}{4}; z\right) = $$
$$ \frac{1}{30\,405\,375}\left(5\left(-2\,621\,440 z^5 - 70\,975\,488 z^4 + 19\,869\,696 z^3 + 14\,192\,640 z^2 + 15\,717\,240 z + 6\,081\,075\right)\cosh\left(2\sqrt{z}\right) - \right. $$
$$ \left. 2\sqrt{z}\left(262\,144 z^5 + 55\,050\,240 z^4 + 159\,651\,840 z^3 + 31\,046\,400 z^2 + 38\,045\,700 z + 30\,405\,375\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afkz.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{13}{4}; -z\right) = $$
$$ \frac{1}{30\,405\,375}\left(5\left(2\,621\,440 z^5 - 70\,975\,488 z^4 - 19\,869\,696 z^3 + 14\,192\,640 z^2 - 15\,717\,240 z + 6\,081\,075\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\left(-262\,144 z^5 + 55\,050\,240 z^4 - 159\,651\,840 z^3 + 31\,046\,400 z^2 - 38\,045\,700 z + 30\,405\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afl0.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{11}{4}; z\right) = \frac{1}{12\,006\,225\sqrt[4]{z}} \left(\sqrt{2}\left(\left(524\,288 z^6 + 119\,832\,576 z^5 + 745\,113\,600 z^4 + 45\,682\,560 z^3 + 498\,960 z^2 - 15\,717\,240 z + 12\,006\,225\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 36\sqrt{z}\left(720\,896 z^5 + 21\,114\,880 z^4 + 4\,829\,440 z^3 - 240\,240 z^2 + 32\,340 z + 1\,334\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(131\,072 z^5 + 25\,190\,400 z^4 + 62\,092\,800 z^3 + 16\,521\,120 z^2 + 16\,299\,360 z + 12\,006\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afl1.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{11}{4}; -z\right) = \frac{1}{12\,006\,225\sqrt[4]{z}} \left(\sqrt{2}\left(\left(524\,288 z^6 - 119\,832\,576 z^5 + 745\,113\,600 z^4 - 45\,682\,560 z^3 + 498\,960 z^2 + 15\,717\,240 z + 12\,006\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 36\sqrt{z}\left(720\,896 z^5 - 21\,114\,880 z^4 + 4\,829\,440 z^3 + 240\,240 z^2 + 32\,340 z - 1\,334\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-131\,072 z^5 + 25\,190\,400 z^4 - 62\,092\,800 z^3 + 16\,521\,120 z^2 - 16\,299\,360 z + 12\,006\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afl2.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) = \frac{1}{2\,338\,875}\left(\left(131\,072 z^5 + 23\,715\,840 z^4 + 62\,092\,800 z^3 + 8\,537\,760 z^2 + 6\,652\,800 z + 2\,338\,875\right)\cosh\left(2\sqrt{z}\right) + 6\sqrt{z}\left(507\,904 z^4 + 11\,822\,080 z^3 - 1\,552\,320 z^2 - 1\,178\,100 z - 779\,625\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afl3.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) = \frac{1}{2\,338\,875}\left(\left(-131\,072 z^5 + 23\,715\,840 z^4 - 62\,092\,800 z^3 + 8\,537\,760 z^2 - 6\,652\,800 z + 2\,338\,875\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(-507\,904 z^4 + 11\,822\,080 z^3 + 1\,552\,320 z^2 - 1\,178\,100 z + 779\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afl4.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{7}{4}; z\right) = -\frac{1}{1\,091\,475\sqrt[4]{z}} \left(\sqrt{2}\left(\left(3\,080\,192 z^5 + 88\,190\,976 z^4 + 59\,431\,680 z^3 - 1\,386\,000 z^2 + 997\,920 z - 1\,091\,475\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(65\,536 z^5 + 11\,513\,856 z^4 + 38\,019\,840 z^3 - 1\,718\,640 z^2 - 457\,380 z - 1\,091\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(720\,896 z^4 + 13\,946\,880 z^3 - 3\,991\,680 z^2 - 1\,912\,680 z - 1\,091\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afl5.01

$${}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{1\,091\,475\sqrt[4]{z}}\left(\sqrt{2}\left(\left(3\,080\,192 z^5 - 88\,190\,976 z^4 + 59\,431\,680 z^3 + 1\,386\,000 z^2 + 997\,920 z + 1\,091\,475\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right.$$
$$4\sqrt{z}\left(65\,536 z^5 - 11\,513\,856 z^4 + 38\,019\,840 z^3 + 1\,718\,640 z^2 - 457\,380 z + 1\,091\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(-720\,896 z^4 + 13\,946\,880 z^3 + 3\,991\,680 z^2 - 1\,912\,680 z + 1\,091\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afl6.01

$${}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{5}{4}; z\right) = \left(-\frac{32\,768 z^4}{12\,375} - \frac{2048 z^3}{45} + \frac{384 z^2}{25} + \frac{88 z}{25} + 1\right)\cosh\left(2\sqrt{z}\right) -$$
$$\frac{2\sqrt{z}\left(16\,384 z^4 + 2\,362\,368 z^3 + 3\,326\,400 z^2 + 568\,260 z + 259\,875\right)\sinh\left(2\sqrt{z}\right)}{259\,875}$$

07.22.03.afl7.01

$${}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{5}{4}; -z\right) = \left(-\frac{32\,768 z^4}{12\,375} + \frac{2048 z^3}{45} + \frac{384 z^2}{25} - \frac{88 z}{25} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{2\sqrt{z}\left(16\,384 z^4 - 2\,362\,368 z^3 + 3\,326\,400 z^2 - 568\,260 z + 259\,875\right)\sin\left(2\sqrt{z}\right)}{259\,875}$$

07.22.03.afl8.01

$${}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{155\,925\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768 z^5 + 4\,915\,200 z^4 + 14\,838\,912 z^3 - 3\,714\,480 z^2 + 83\,160 z + 155\,925\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$12\sqrt{z}\left(110\,592 z^4 + 1\,831\,424 z^3 - 615\,120 z^2 + 97\,020 z + 51\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(8192 z^4 + 986\,112 z^3 + 300\,960 z^2 + 498\,960 z + 155\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afl9.01

$${}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{3}{4}; -z\right) =$$
$$-\frac{1}{155\,925\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768 z^5 - 4\,915\,200 z^4 + 14\,838\,912 z^3 + 3\,714\,480 z^2 + 83\,160 z - 155\,925\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$12\sqrt{z}\left(110\,592 z^4 - 1\,831\,424 z^3 - 615\,120 z^2 - 97\,020 z + 51\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4 z\left(8192 z^4 - 986\,112 z^3 + 300\,960 z^2 - 498\,960 z + 155\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afla.01

$${}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{1}{4}; z\right) =$$

$$\left(\frac{8192\,z^4}{51\,975} + \frac{1024\,z^3}{63} - \frac{32\,z^2}{9} + \frac{48\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(74\,752\,z^3 + 739\,200\,z^2 - 429\,660\,z - 51\,975\right)\sinh\left(2\sqrt{z}\right)}{51\,975}$$

07.22.03.aflb.01

$${}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, -\frac{1}{4}; -z\right) =$$

$$\left(\frac{8192\,z^4}{51\,975} - \frac{1024\,z^3}{63} - \frac{32\,z^2}{9} - \frac{48\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(74\,752\,z^3 - 739\,200\,z^2 - 429\,660\,z + 51\,975\right)\sin\left(2\sqrt{z}\right)}{51\,975}$$

07.22.03.aflc.01

$${}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, \frac{1}{4}; z\right) = -\frac{1}{51\,975\,\sqrt[4]{z}}$$

$$\left(\sqrt{2}\,\left(9\left(16\,384\,z^4 + 195\,584\,z^3 - 121\,296\,z^2 + 55\,440\,z - 5775\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(4096\,z^4 + 374\,784\,z^3 - 125\,424\,z^2 + 217\,980\,z - 51\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(11\,264\,z^3 + 61\,312\,z^2 - 21\,000\,z - 17\,325\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afld.01

$${}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) = \frac{1}{51\,975\,\sqrt[4]{z}}$$

$$\left(\sqrt{2}\,\left(-9\left(16\,384\,z^4 - 195\,584\,z^3 - 121\,296\,z^2 - 55\,440\,z - 5775\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(4096\,z^4 - 374\,784\,z^3 - 125\,424\,z^2 - 217\,980\,z - 51\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(11\,264\,z^3 - 61\,312\,z^2 - 21\,000\,z + 17\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afle.01

$${}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, \frac{3}{4}; z\right) =$$

$$\frac{1}{51\,975}\left(-15\left(2048\,z^3 + 5632\,z^2 + 1848\,z - 3465\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(1024\,z^3 + 63\,360\,z^2 - 97\,020\,z + 51\,975\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aflf.01

$${}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) = \left(\frac{2048\,z^3}{3465} - \frac{512\,z^2}{315} + \frac{8\,z}{15} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(-1024\,z^3 + 63\,360\,z^2 + 97\,020\,z + 51\,975\right)\sin\left(2\sqrt{z}\right)}{51\,975}$$

07.22.03.aflg.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, \frac{5}{4}; z\right) = -\frac{1}{51\,975\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(2048\,z^4 + 123\,264\,z^3 - 140\,784\,z^2 + 144\,144\,z - 51\,975\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 16\sqrt{z}\left(3520\,z^3 + 4932\,z^2 + 5481\,z - 6930\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(512\,z^3 + 20\,640\,z^2 - 35\,616\,z - 3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aflh.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, \frac{5}{4}; -z\right) = \frac{1}{51\,975\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-2048\,z^4 + 123\,264\,z^3 + 140\,784\,z^2 + 144\,144\,z + 51\,975\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 16\sqrt{z}\left(3520\,z^3 - 4932\,z^2 + 5481\,z + 6930\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(512\,z^3 - 20\,640\,z^2 - 35\,616\,z + 3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afli.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) = \left(-\frac{512\,z^3}{17\,325} - \frac{288\,z^2}{385} + \frac{32\,z}{35} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(192\,z^2 - 484\,z + 1155\right)\sinh\left(2\sqrt{z}\right)}{1155} $$

07.22.03.aflj.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, \frac{7}{4}; -z\right) = \left(\frac{512\,z^3}{17\,325} - \frac{288\,z^2}{385} - \frac{32\,z}{35} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(192\,z^2 + 484\,z + 1155\right)\sin\left(2\sqrt{z}\right)}{1155} $$

07.22.03.aflk.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) = -\frac{1}{41\,580\,\sqrt{2}\,z^{3/4}} \left(\left(42\sqrt{z}\left(1024\,z^3 - 1856\,z^2 + 4224\,z - 2475\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(8192\,z^4 + 127\,488\,z^3 - 56\,448\,z^2 - 221\,760\,z + 51\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(6144\,z^3 - 24\,448\,z^2 + 18\,480\,z + 17\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afll.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, \frac{9}{4}; -z\right) = \frac{1}{41\,580\,\sqrt{2}\,z^{3/4}} \left(\left(42\sqrt{z}\left(1024\,z^3 + 1856\,z^2 + 4224\,z + 2475\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-8192\,z^4 + 127\,488\,z^3 + 56\,448\,z^2 - 221\,760\,z - 51\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\left(6144\,z^3 + 24\,448\,z^2 + 18\,480\,z - 17\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aflm.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, \frac{11}{4}; z\right) = \left(-\frac{896\,z^2}{2475} + \frac{72\,z}{55} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(64\,z^2 - 60\,z + 2475\right)\sinh\left(2\sqrt{z}\right)}{2475} $$

07.22.03.afln.01

$${}_1F_2\left(\frac{19}{4};-\frac{5}{2},\frac{11}{4};-z\right)=\left(-\frac{896\,z^2}{2475}-\frac{72\,z}{55}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(64\,z^2+60\,z+2475\right)\sin\left(2\sqrt{z}\right)}{2475}$$

07.22.03.aflo.01

$${}_1F_2\left(\frac{19}{4};-\frac{5}{2},\frac{13}{4};z\right)=\frac{1}{147\,840\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\,\left(-16\,384\,z^4+30\,720\,z^3-354\,816\,z^2+55\,440\,z+197\,505\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$3\left(-114\,688\,z^4+241\,664\,z^3+591\,360\,z^2+388\,080\,z-329\,175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.2\sqrt{z}\,\left(16\,384\,z^4-147\,456\,z^3+506\,880\,z^2+942\,480\,z+987\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aflp.01

$${}_1F_2\left(\frac{19}{4};-\frac{5}{2},\frac{13}{4};-z\right)=\frac{1}{147\,840\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\,\left(16\,384\,z^4+30\,720\,z^3+354\,816\,z^2+55\,440\,z-197\,505\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$3\left(114\,688\,z^4+241\,664\,z^3-591\,360\,z^2+388\,080\,z+329\,175\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.2\sqrt{z}\,\left(16\,384\,z^4+147\,456\,z^3+506\,880\,z^2-942\,480\,z+987\,525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aflq.01

$${}_1F_2\left(\frac{19}{4};-\frac{5}{2},\frac{15}{4};z\right)=\left(-\frac{32\,z^2}{225}+\frac{112\,z}{75}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{25}\sqrt{z}\,\left(4\,z+25\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aflr.01

$${}_1F_2\left(\frac{19}{4};-\frac{5}{2},\frac{15}{4};-z\right)=\frac{2}{25}\left(25-4\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)-\frac{1}{225}\left(32\,z^2+336\,z-225\right)\cos\left(2\sqrt{z}\right)$$

07.22.03.afls.01

$${}_1F_2\left(\frac{19}{4};-\frac{5}{2},\frac{17}{4};z\right)=$$
$$-\frac{1}{4\,730\,880\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\,\left(131\,072\,z^4+1\,622\,016\,z^3+4\,435\,200\,z^2+10\,533\,600\,z-13\,627\,845\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(524\,288\,z^5-3\,735\,552\,z^4-16\,220\,160\,z^3-59\,431\,680\,z^2-101\,122\,560\,z+68\,139\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\,\left(-65\,536\,z^4+2\,949\,120\,z^3+12\,798\,720\,z^2+44\,241\,120\,z+68\,139\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aflt.01

$${}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, \frac{17}{4}; -z\right) =$$

$$\frac{1}{4\,730\,880\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\,\left(-131\,072\,z^4+1\,622\,016\,z^3-4\,435\,200\,z^2+10\,533\,600\,z+13\,627\,845\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(524\,288\,z^5+3\,735\,552\,z^4-16\,220\,160\,z^3+59\,431\,680\,z^2-101\,122\,560\,z-68\,139\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\,\left(65\,536\,z^4+2\,949\,120\,z^3-12\,798\,720\,z^2+44\,241\,120\,z-68\,139\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aflu.01

$${}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) = \left(\frac{8z}{5}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{15}\sqrt{z}\,(4z+15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aflv.01

$${}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) = \left(1-\frac{8z}{5}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{15}(15-4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aflw.01

$${}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) = -\frac{1}{151\,388\,160\sqrt{2}\,z^{15/4}}$$
$$\left(221\left(2\sqrt{z}\,\left(1\,048\,576\,z^5+15\,532\,032\,z^4+180\,449\,280\,z^3+1\,398\,862\,080\,z^2+4\,142\,864\,880\,z-4\,783\,373\,595\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$3\left(7\,340\,032\,z^5+91\,422\,720\,z^4+975\,237\,120\,z^3+5\,949\,377\,280\,z^2+12\,573\,958\,320\,z-7\,972\,289\,325\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(1\,048\,576\,z^5+24\,576\,000\,z^4+303\,206\,400\,z^3+\right.$$
$$\left.\left.\left.2\,751\,978\,240\,z^2+13\,300\,776\,720\,z+23\,916\,867\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aflx.01

$${}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) = -\frac{1}{151\,388\,160\sqrt{2}\,z^{15/4}}\left(221\right.$$
$$\left(2\sqrt{z}\,\left(1\,048\,576\,z^5-15\,532\,032\,z^4+180\,449\,280\,z^3-1\,398\,862\,080\,z^2+4\,142\,864\,880\,z+4\,783\,373\,595\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$3\left(7\,340\,032\,z^5-91\,422\,720\,z^4+975\,237\,120\,z^3-5\,949\,377\,280\,z^2+12\,573\,958\,320\,z+7\,972\,289\,325\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-1\,048\,576\,z^5+24\,576\,000\,z^4-303\,206\,400\,z^3+\right.$$
$$\left.\left.\left.2\,751\,978\,240\,z^2-13\,300\,776\,720\,z+23\,916\,867\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afly.01

$${}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, \frac{23}{4}; z\right) =$$

$$-\frac{1}{251\,658\,240\, z^{19/4}}\left(19\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(4\,194\,304\, z^{11/2} + 36\,700\,160\, z^5 + 208\,404\,480\, z^{9/2} + 997\,785\,600\, z^4 + 4\,240\,588\,800\, z^{7/2} + 15\,902\,208\,000\, z^3 + 51\,682\,176\,000\, z^{5/2} + 142\,125\,984\,000\, z^2 + 319\,783\,464\,000\, z^{3/2} + 559\,621\,062\,000\, z + 699\,526\,327\,500\sqrt{z} + e^{4\sqrt{z}}\left(4\,194\,304\, z^{11/2} - 36\,700\,160\, z^5 + 208\,404\,480\, z^{9/2} - 997\,785\,600\, z^4 + 4\,240\,588\,800\, z^{7/2} - 15\,902\,208\,000\, z^3 + 51\,682\,176\,000\, z^{5/2} - 142\,125\,984\,000\, z^2 + 319\,783\,464\,000\, z^{3/2} - 559\,621\,062\,000\, z + 699\,526\,327\,500\sqrt{z} - 524\,644\,745\,625\right) + 524\,644\,745\,625\right) - 524\,644\,745\,625\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right) + 524\,644\,745\,625\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.aflz.01

$${}_1F_2\left(\frac{19}{4}; -\frac{5}{2}, \frac{23}{4}; -z\right) = \frac{1}{62\,914\,560\, z^{19/4}}$$

$$\left(19\left(2\sqrt[4]{z}\left(4\sqrt{z}\left(1\,048\,576\, z^5 - 52\,101\,120\, z^4 + 1\,060\,147\,200\, z^3 - 12\,920\,544\,000\, z^2 + 79\,945\,866\,000\, z - 174\,881\,581\,875\right)\cos\left(2\sqrt{z}\right) - 35\left(1\,048\,576\, z^5 - 28\,508\,160\, z^4 + 454\,348\,800\, z^3 - 4\,060\,742\,400\, z^2 + 15\,989\,173\,200\, z - 14\,989\,849\,875\right)\sin\left(2\sqrt{z}\right)\right) - 524\,644\,745\,625\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)$$

For fixed z and $a_1 = \frac{19}{4}$, $b_{1.} = -\frac{3}{2}$

07.22.03.afm0.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{23}{4}; z\right) =$$

$$\frac{1}{15\,740\,160\,975\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,777\,216\, z^7 + 3\,161\,456\,640\, z^6 - 10\,495\,328\,256\, z^5 + 41\,527\,664\,640\, z^4 - 22\,803\,137\,280\, z^3 + 3\,649\,892\,400\, z^2 - 22\,811\,827\,500\, z + 15\,740\,160\,975\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(67\,108\,864\, z^6 + 703\,070\,208\, z^5 - 660\,602\,880\, z^4 - 8\,359\,464\,960\, z^3 - 926\,956\,800\, z^2 - 608\,315\,400\, z + 5\,246\,720\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4\,194\,304\, z^6 + 642\,514\,944\, z^5 - 3\,740\,958\,720\, z^4 + 9\,083\,934\,720\, z^3 + 18\,770\,875\,200\, z^2 + 19\,161\,935\,100\, z + 15\,740\,160\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afm1.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{15\,740\,160\,975\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,777\,216\,z^7+3\,161\,456\,640\,z^6+10\,495\,328\,256\,z^5+41\,527\,664\,640\,z^4+\right.\right.\right.$$
$$\left.\left.22\,803\,137\,280\,z^3+3\,649\,892\,400\,z^2+22\,811\,827\,500\,z+15\,740\,160\,975\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-$$
$$12\sqrt{z}\left(67\,108\,864\,z^6-703\,070\,208\,z^5-660\,602\,880\,z^4+8\,359\,464\,960\,z^3-926\,956\,800\,z^2+\right.$$
$$\left.608\,315\,400\,z+5\,246\,720\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(4\,194\,304\,z^6-642\,514\,944\,z^5-3\,740\,958\,720\,z^4-\right.$$
$$\left.\left.\left.9\,083\,934\,720\,z^3+18\,770\,875\,200\,z^2-19\,161\,935\,100\,z+15\,740\,160\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afm2.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{21}{4}; z\right) =$$
$$\left(\frac{4\,194\,304\,z^6}{2\,170\,943\,775}+\frac{76\,808\,192\,z^5}{241\,215\,975}-\frac{32\,768\,z^4}{27\,027}+\frac{100\,352\,z^3}{29\,835}+\frac{320\,z^2}{119}+\frac{164\,z}{63}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{1}{2\,170\,943\,775}$$
$$\left(2\sqrt{z}\left(49\,283\,072\,z^5+545\,587\,200\,z^4-534\,159\,360\,z^3-4\,220\,536\,320\,z^2-2\,756\,754\,000\,z-2\,170\,943\,775\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afm3.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{21}{4}; -z\right) =$$
$$\left(\frac{4\,194\,304\,z^6}{2\,170\,943\,775}-\frac{76\,808\,192\,z^5}{241\,215\,975}-\frac{32\,768\,z^4}{27\,027}-\frac{100\,352\,z^3}{29\,835}+\frac{320\,z^2}{119}-\frac{164\,z}{63}+1\right)\cos\left(2\sqrt{z}\right)+\frac{1}{2\,170\,943\,775}$$
$$\left(2\sqrt{z}\left(49\,283\,072\,z^5-545\,587\,200\,z^4-534\,159\,360\,z^3+4\,220\,536\,320\,z^2-2\,756\,754\,000\,z+2\,170\,943\,775\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afm4.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{19}{4}; z\right) = \frac{1}{684\,354\,825\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(-3\left(34\,603\,008\,z^6+785\,383\,424\,z^5-1\,258\,414\,080\,z^4+674\,150\,400\,z^3-81\,108\,720\,z^2+304\,157\,700\,z-228\,118\,275\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2\,097\,152\,z^6+382\,205\,952\,z^5-428\,359\,680\,z^4+1\,887\,621\,120\,z^3-69\,521\,760\,z^2-684\,354\,825\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(-8\,126\,464\,z^5-106\,823\,680\,z^4+136\,120\,320\,z^3+\right.$$
$$\left.\left.\left.370\,782\,720\,z^2+304\,157\,700\,z+228\,118\,275\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afm5.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{19}{4}; -z\right) = \frac{1}{684\,354\,825\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(3\left(-34\,603\,008 z^6 + 785\,383\,424 z^5 + 1\,258\,414\,080 z^4 + 674\,150\,400 z^3 + 81\,108\,720 z^2 + 304\,157\,700 z + 228\,118\,275\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2\,097\,152 z^6 - 382\,205\,952 z^5 - 428\,359\,680 z^4 - \right. $$
$$ \left. 1\,887\,621\,120 z^3 - 69\,521\,760 z^2 - 684\,354\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12 z $$
$$ \left.\left.\left(8\,126\,464 z^5 - 106\,823\,680 z^4 - 136\,120\,320 z^3 + 370\,782\,720 z^2 - 304\,157\,700 z + 228\,118\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afm6.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{17}{4}; z\right) = \left(-\frac{8\,126\,464 z^5}{34\,459\,425} - \frac{3\,014\,656 z^4}{765\,765} + \frac{14\,336 z^3}{2805} + \frac{768 z^2}{221} + \frac{140 z}{51} + 1\right)\cosh\left(2\sqrt{z}\right) - $$
$$ \frac{1}{103\,378\,275}\left(2\sqrt{z}\left(524\,288 z^5 + 89\,456\,640 z^4 - 74\,649\,600 z^3 + 318\,366\,720 z^2 + 145\,945\,800 z + 103\,378\,275\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afm7.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{17}{4}; -z\right) = \left(\frac{8\,126\,464 z^5}{34\,459\,425} - \frac{3\,014\,656 z^4}{765\,765} - \frac{14\,336 z^3}{2805} + \frac{768 z^2}{221} - \frac{140 z}{51} + 1\right)\cos\left(2\sqrt{z}\right) + $$
$$ \frac{1}{103\,378\,275}\left(2\sqrt{z}\left(-524\,288 z^5 + 89\,456\,640 z^4 + 74\,649\,600 z^3 + 318\,366\,720 z^2 - 145\,945\,800 z + 103\,378\,275\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afm8.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{15}{4}; z\right) = \frac{1}{36\,018\,675\sqrt[4]{z}}\left(\sqrt{2}\right. $$
$$ \left(\left(1\,048\,576 z^6 + 209\,190\,912 z^5 + 662\,323\,200 z^4 - 259\,015\,680 z^3 + 26\,777\,520 z^2 - 41\,621\,580 z + 36\,018\,675\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 4\sqrt{z}\left(12\,320\,768 z^5 + 268\,369\,920 z^4 - 223\,534\,080 z^3 + 26\,167\,680 z^2 + 6\,403\,320 z + 36\,018\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z\left(262\,144 z^5 + 43\,253\,760 z^4 - 4\,300\,800 z^3 + 89\,591\,040 z^2 + 54\,428\,220 z + 36\,018\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afm9.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{15}{4}; -z\right) = \frac{1}{36\,018\,675\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(1\,048\,576 z^6 - 209\,190\,912 z^5 + 662\,323\,200 z^4 + 259\,015\,680 z^3 + 26\,777\,520 z^2 + 41\,621\,580 z + 36\,018\,675\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(12\,320\,768 z^5 - 268\,369\,920 z^4 - 223\,534\,080 z^3 - 26\,167\,680 z^2 + 6\,403\,320 z - 36\,018\,675\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 4 z\left(262\,144 z^5 - 43\,253\,760 z^4 - 4\,300\,800 z^3 - 89\,591\,040 z^2 + 54\,428\,220 z - 36\,018\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afma.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{13}{4}; z\right) =$$
$$\frac{1}{6\,081\,075}\left(\left(262\,144\,z^5 + 43\,253\,760\,z^4 + 47\,093\,760\,z^3 + 31\,046\,400\,z^2 + 18\,087\,300\,z + 6\,081\,075\right)\cosh\left(2\sqrt{z}\right) + 30\sqrt{z}\left(196\,608\,z^4 + 3\,751\,936\,z^3 - 2\,440\,704\,z^2 - 665\,280\,z - 405\,405\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afmb.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{6\,081\,075}\left(\left(-262\,144\,z^5 + 43\,253\,760\,z^4 - 47\,093\,760\,z^3 + 31\,046\,400\,z^2 - 18\,087\,300\,z + 6\,081\,075\right)\cos\left(2\sqrt{z}\right) - 30\sqrt{z}\left(196\,608\,z^4 - 3\,751\,936\,z^3 - 2\,440\,704\,z^2 + 665\,280\,z - 405\,405\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afmc.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{11}{4}; z\right) =$$
$$-\frac{1}{2\,401\,245\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(2\,031\,616\,z^5 + 55\,193\,600\,z^4 + 23\,358\,720\,z^3 - 1\,718\,640\,z^2 + 679\,140\,z - 800\,415\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072\,z^5 + 22\,339\,584\,z^4 + 62\,092\,800\,z^3 - 6\,098\,400\,z^2 - 1\,164\,240\,z - 2\,401\,245\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(475\,136\,z^4 + 8\,565\,760\,z^3 - 3\,769\,920\,z^2 - 1\,455\,300\,z - 800\,415\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afmd.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{2\,401\,245\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(2\,031\,616\,z^5 - 55\,193\,600\,z^4 + 23\,358\,720\,z^3 + 1\,718\,640\,z^2 + 679\,140\,z + 800\,415\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(131\,072\,z^5 - 22\,339\,584\,z^4 + 62\,092\,800\,z^3 + 6\,098\,400\,z^2 - 1\,164\,240\,z + 2\,401\,245\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 12\,z\left(475\,136\,z^4 - 8\,565\,760\,z^3 - 3\,769\,920\,z^2 + 1\,455\,300\,z - 800\,415\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afme.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) = \left(-\frac{278\,528\,z^4}{93\,555} - \frac{244\,736\,z^3}{4455} + \frac{448\,z^2}{45} + \frac{92\,z}{27} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(32\,768\,z^4 + 4\,884\,480\,z^3 + 9\,098\,880\,z^2 + 970\,200\,z + 467\,775\right)\sinh\left(2\sqrt{z}\right)}{467\,775}$$

07.22.03.afmf.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{9}{4}; -z\right) = \left(-\frac{278\,528\,z^4}{93\,555} + \frac{244\,736\,z^3}{4455} + \frac{448\,z^2}{45} - \frac{92\,z}{27} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(32\,768\,z^4 - 4\,884\,480\,z^3 + 9\,098\,880\,z^2 - 970\,200\,z + 467\,775\right)\sin\left(2\sqrt{z}\right)}{467\,775}$$

07.22.03.afmg.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{7}{4}; z\right) =$$
$$\frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536 z^5 + 10\,801\,152 z^4 + 48\,787\,200 z^3 + 2\,383\,920 z^2 - 41\,580 z + 218\,295\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(229\,376 z^4 + 4\,648\,960 z^3 + 887\,040 z^2 + 83\,160 z + 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(16\,384 z^4 + 2\,196\,480 z^3 + 3\,326\,400 z^2 + 540\,540 z + 218\,295\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afmh.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{218\,295\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-65\,536 z^5 + 10\,801\,152 z^4 - 48\,787\,200 z^3 + 2\,383\,920 z^2 + 41\,580 z + 218\,295\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(229\,376 z^4 - 4\,648\,960 z^3 + 887\,040 z^2 - 83\,160 z + 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(16\,384 z^4 - 2\,196\,480 z^3 + 3\,326\,400 z^2 - 540\,540 z + 218\,295\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afmi.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{5}{4}; z\right) =$$
$$\left(\frac{16\,384 z^4}{51\,975} + \frac{19\,456 z^3}{495} + 64 z^2 + \frac{68 z}{15} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(53\,248 z^3 + 815\,360 z^2 - 55\,440 z - 17\,325\right)\sinh\left(2\sqrt{z}\right)}{17\,325}$$

07.22.03.afmj.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{5}{4}; -z\right) =$$
$$\left(\frac{16\,384 z^4}{51\,975} - \frac{19\,456 z^3}{495} + 64 z^2 - \frac{68 z}{15} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(53\,248 z^3 - 815\,360 z^2 - 55\,440 z + 17\,325\right)\sin\left(2\sqrt{z}\right)}{17\,325}$$

07.22.03.afmk.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{3}{4}; z\right) = -\frac{1}{31\,185\sqrt[4]{z}}\left(\sqrt{2}\left(\left(323\,584 z^4 + 6\,369\,792 z^3 + 3\,270\,960 z^2 - 69\,300 z - 31\,185\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8192 z^4 + 986\,112 z^3 + 2\,117\,280 z^2 - 110\,880 z - 31\,185\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(74\,752 z^3 + 908\,160 z^2 - 152\,460 z - 31\,185\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afml.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{3}{4}; -z\right) = \frac{1}{31\,185\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-323\,584\,z^4 + 6\,369\,792\,z^3 - 3\,270\,960\,z^2 - 69\,300\,z + 31\,185\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8192\,z^4 - 986\,112\,z^3 + 2\,117\,280\,z^2 + 110\,880\,z - 31\,185\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(74\,752\,z^3 - 908\,160\,z^2 - 152\,460\,z + 31\,185\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afmm.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{1}{4}; z\right) = \left(-\frac{23\,552\,z^3}{3465} - \frac{640\,z^2}{9} + \frac{44\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(2048\,z^3 + 193\,536\,z^2 + 138\,600\,z + 10\,395\right)\sinh\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.afmn.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, -\frac{1}{4}; -z\right) = \left(\frac{23\,552\,z^3}{3465} - \frac{640\,z^2}{9} - \frac{44\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-2048\,z^3 + 193\,536\,z^2 - 138\,600\,z + 10\,395\right)\sin\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.afmo.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{1}{4}; z\right) = \frac{1}{10\,395\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096\,z^4 + 407\,040\,z^3 + 779\,184\,z^2 - 152\,460\,z + 10\,395\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(11\,264\,z^3 + 112\,768\,z^2 - 26\,040\,z + 3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(1024\,z^3 + 77\,184\,z^2 - 3780\,z + 10\,395\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afmp.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{1}{4}; -z\right) = \frac{1}{10\,395\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096\,z^4 - 407\,040\,z^3 + 779\,184\,z^2 + 152\,460\,z + 10\,395\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(11\,264\,z^3 - 112\,768\,z^2 - 26\,040\,z - 3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-1024\,z^3 + 77\,184\,z^2 + 3780\,z + 10\,395\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afmq.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{3}{4}; z\right) = \left(\frac{1024\,z^3}{10\,395} + \frac{128\,z^2}{21} - \frac{20\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(7424\,z^2 + 36\,960\,z - 10\,395\right)\sinh\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.afmr.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{3}{4}; -z\right) = \left(-\frac{1024\,z^3}{10\,395} + \frac{128\,z^2}{21} + \frac{20\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-7424\,z^2 + 36\,960\,z + 10\,395\right)\sin\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.afms.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{5}{4}; z\right) = \frac{1}{10\,395\,\sqrt[4]{z}} \left(\sqrt{2}\left(3\left(4864\,z^3 + 32\,144\,z^2 - 13\,356\,z + 3465\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(512\,z^3 + 27\,168\,z^2 - 11\,088\,z + 5985\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(1088\,z^2 + 2044\,z + 525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afmt.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{5}{4}; -z\right) = \frac{1}{10\,395\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-14\,592\,z^3 + 96\,432\,z^2 + 40\,068\,z + 10\,395\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(512\,z^3 - 27\,168\,z^2 - 11\,088\,z - 5985\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(1088\,z^2 - 2044\,z + 525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afmu.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{7}{4}; z\right) = \left(\frac{64\,z^2}{77} + \frac{4\,z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(128\,z^2 + 3960\,z - 3465\right)\sinh\left(2\sqrt{z}\right)}{3465} $$

07.22.03.afmv.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{7}{4}; -z\right) = \left(\frac{64\,z^2}{77} - \frac{4\,z}{21} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-128\,z^2 + 3960\,z + 3465\right)\sin\left(2\sqrt{z}\right)}{3465} $$

07.22.03.afmw.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{9}{4}; z\right) = \frac{1}{4158\sqrt{2}\,z^{3/4}} \left(\left(2\sqrt{z}\left(512\,z^3 + 15\,456\,z^2 - 11\,256\,z + 4851\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(20\,480\,z^3 - 8064\,z^2 + 21\,168\,z - 3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(512\,z^3 + 8160\,z^2 - 2856\,z - 3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afmx.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) = -\frac{1}{4158\sqrt{2}\,z^{3/4}} \left(\left(2\sqrt{z}\left(512\,z^3 - 15\,456\,z^2 - 11\,256\,z - 4851\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(20\,480\,z^3 + 8064\,z^2 + 21\,168\,z + 3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-512\,z^3 + 8160\,z^2 + 2856\,z - 3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afmy.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) = \left(\frac{64\,z^2}{495} + \frac{28\,z}{33} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{33}\sqrt{z}\,(16\,z - 33)\sinh\left(2\sqrt{z}\right) $$

07.22.03.afmz.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) = \left(\frac{64\,z^2}{495} - \frac{28\,z}{33} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{33}\sqrt{z}\,(16\,z+33)\sin\left(2\sqrt{z}\right)$$

07.22.03.afn0.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) = \frac{1}{14\,784\sqrt{2}\,z^{7/4}}$$

$$\left(\left(6\sqrt{z}\,\left(9216\,z^3 - 12\,544\,z^2 + 3696\,z + 3465\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384\,z^4 + 24\,576\,z^3 + 129\,024\,z^2 + 55\,440\,z - 51\,975\right)\right.\right.$$

$$\left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\,\left(7168\,z^3 - 10\,496\,z^2 - 18\,480\,z - 17\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afn1.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) = \frac{1}{14\,784\sqrt{2}\,z^{7/4}}$$

$$\left(\left(6\sqrt{z}\,\left(9216\,z^3 + 12\,544\,z^2 + 3696\,z - 3465\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-16\,384\,z^4 + 24\,576\,z^3 - 129\,024\,z^2 + 55\,440\,z + 51\,975\right)\right.\right.$$

$$\left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 6\sqrt{z}\,\left(7168\,z^3 + 10\,496\,z^2 - 18\,480\,z + 17\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afn2.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) = \left(\frac{52\,z}{45} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{45}\sqrt{z}\,(8\,z-45)\sinh\left(2\sqrt{z}\right)$$

07.22.03.afn3.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{15}{4}; -z\right) = \left(1 - \frac{52\,z}{45}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{45}\sqrt{z}\,(8\,z+45)\sin\left(2\sqrt{z}\right)$$

07.22.03.afn4.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) = \frac{1}{473\,088\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\,\left(32\,768\,z^4 - 122\,880\,z^3 - 177\,408\,z^2 - 443\,520\,z + 592\,515\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$

$$3\left(65\,536\,z^4 + 294\,912\,z^3 + 887\,040\,z^2 + 1\,441\,440\,z - 987\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$

$$\left.\left. 2\sqrt{z}\,\left(32\,768\,z^4 - 172\,032\,z^3 - 633\,600\,z^2 - 1\,995\,840\,z - 2\,962\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afn5.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) = \frac{1}{473\,088\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\,\left(32\,768\,z^4 + 122\,880\,z^3 - 177\,408\,z^2 + 443\,520\,z + 592\,515\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$

$$3\left(65\,536\,z^4 - 294\,912\,z^3 + 887\,040\,z^2 - 1\,441\,440\,z - 987\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$

$$\left.\left. 2\sqrt{z}\,\left(32\,768\,z^4 + 172\,032\,z^3 - 633\,600\,z^2 + 1\,995\,840\,z - 2\,962\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afn6.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) = \left(\frac{4\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.afn7.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{19}{4}; -z\right) = \left(1 - \frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.afn8.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) =$$
$$\frac{1}{15\,138\,816\sqrt{2}\,z^{15/4}}\left(221\left(-22\sqrt{z}\left(65\,536z^4 + 626\,688z^3 + 4\,757\,760z^2 + 13\,885\,200z - 16\,105\,635\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(1\,048\,576z^5 + 11\,206\,656z^4 + 111\,513\,600z^3 + 666\,167\,040z^2 + 1\,393\,595\,280z - 885\,809\,925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.2\sqrt{z}\left(1\,114\,112z^4 + 11\,980\,800z^3 + 104\,290\,560z^2 + 496\,132\,560z + 885\,809\,925\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afn9.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) =$$
$$\frac{1}{15\,138\,816\sqrt{2}\,z^{15/4}}\left(221\left(22\sqrt{z}\left(65\,536z^4 - 626\,688z^3 + 4\,757\,760z^2 - 13\,885\,200z - 16\,105\,635\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(1\,048\,576z^5 - 11\,206\,656z^4 + 111\,513\,600z^3 - 666\,167\,040z^2 + 1\,393\,595\,280z + 885\,809\,925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.2\sqrt{z}\left(1\,114\,112z^4 - 11\,980\,800z^3 + 104\,290\,560z^2 - 496\,132\,560z + 885\,809\,925\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afna.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) = \frac{1}{25\,165\,824\,z^{19/4}}$$
$$\left(19\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-1\,048\,576z^5 - 7\,077\,888z^{9/2} - 34\,406\,400z^4 - 146\,227\,200z^{7/2} - 548\,352\,000z^3 - 1\,782\,144\,000z^{5/2} - \right.\right.\right.$$
$$4\,900\,896\,000z^2 - 11\,027\,016\,000z^{3/2} - 19\,297\,278\,000z - 24\,121\,597\,500\sqrt{z} + e^{4\sqrt{z}}\left(1\,048\,576z^5 - \right.$$
$$\left.7\,077\,888z^{9/2} + 34\,406\,400z^4 - 146\,227\,200z^{7/2} + 548\,352\,000z^3 - 1\,782\,144\,000z^{5/2} + 4\,900\,896\,000z^2 - \right.$$
$$\left.11\,027\,016\,000z^{3/2} + 19\,297\,278\,000z - 24\,121\,597\,500\sqrt{z} + 18\,091\,198\,125\right) - 18\,091\,198\,125\Big) +$$
$$\left.18\,091\,198\,125\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) - 18\,091\,198\,125\,e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.afnb.01

$${}_1F_2\left(\frac{19}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) =$$
$$-\frac{1}{6\,291\,456\,z^{19/4}}\left(19\left(18\,091\,198\,125\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(12\sqrt{z}\left(589\,824z^4 - 12\,185\,600z^3 + 148\,512\,000z^2 - \right.\right.\right.\right.$$
$$\left.\left.\left.\left.918\,918\,000z + 2\,010\,133\,125\right)\cos\left(2\sqrt{z}\right) + \left(1\,048\,576z^5 - 34\,406\,400z^4 + \right.\right.\right.\right.$$
$$\left.\left.\left.\left.548\,352\,000z^3 - 4\,900\,896\,000z^2 + 19\,297\,278\,000z - 18\,091\,198\,125\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{19}{4}$, $b_{1.} = -\frac{1}{2}$

07.22.03.afnc.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) =$$
$$-\frac{1}{5\,246\,720\,325\sqrt[4]{z}}\left(\sqrt{2}\left(\left(171\,966\,464\,z^6+33\,030\,144\,z^5+6\,504\,873\,984\,z^4-32\,628\,879\,360\,z^3+24\,332\,616\,000\,z^2+\right.\right.\right.$$
$$\left.\left.\left.1\,824\,946\,200\,z-5\,246\,720\,325\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4\,194\,304\,z^6+403\,439\,616\,z^5-2\,681\,634\,816\,z^4+\right.\right.\right.$$
$$\left.\left.\left.2\,250\,823\,680\,z^3+18\,770\,875\,200\,z^2-5\,170\,680\,900\,z-5\,246\,720\,325\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(39\,845\,888\,z^5-\right.\right.\right.$$
$$\left.\left.\left.264\,830\,976\,z^4+3\,416\,555\,520\,z^3-7\,195\,507\,200\,z^2-12\,166\,308\,000\,z-5\,246\,720\,325\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afnd.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{5\,246\,720\,325\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-171\,966\,464\,z^6+33\,030\,144\,z^5-6\,504\,873\,984\,z^4-32\,628\,879\,360\,z^3-24\,332\,616\,000\,z^2+\right.\right.\right.$$
$$\left.\left.\left.1\,824\,946\,200\,z+5\,246\,720\,325\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4\,194\,304\,z^6-403\,439\,616\,z^5-2\,681\,634\,816\,z^4-\right.\right.\right.$$
$$\left.\left.\left.2\,250\,823\,680\,z^3+18\,770\,875\,200\,z^2+5\,170\,680\,900\,z-5\,246\,720\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(39\,845\,888\,z^5+\right.\right.\right.$$
$$\left.\left.\left.264\,830\,976\,z^4+3\,416\,555\,520\,z^3+7\,195\,507\,200\,z^2-12\,166\,308\,000\,z+5\,246\,720\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afne.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) = \left(-\frac{1\,048\,576\,z^5}{18\,555\,075}+\frac{65\,536\,z^4}{765\,765}-\frac{8192\,z^3}{3315}+\frac{2560\,z^2}{357}+\frac{80\,z}{21}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{1}{723\,647\,925}$$
$$\left(2\sqrt{z}\left(1\,048\,576\,z^5+101\,253\,120\,z^4-580\,608\,000\,z^3+484\,323\,840\,z^2+2\,756\,754\,000\,z+723\,647\,925\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afnf.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{21}{4}; -z\right) = \left(\frac{1\,048\,576\,z^5}{18\,555\,075}+\frac{65\,536\,z^4}{765\,765}+\frac{8192\,z^3}{3315}+\frac{2560\,z^2}{357}-\frac{80\,z}{21}+1\right)\cos\left(2\sqrt{z}\right)+\frac{1}{723\,647\,925}$$
$$\left(2\sqrt{z}\left(-1\,048\,576\,z^5+101\,253\,120\,z^4+580\,608\,000\,z^3+484\,323\,840\,z^2-2\,756\,754\,000\,z+723\,647\,925\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afng.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{19}{4}; z\right) = \frac{1}{228\,118\,275\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(2\,097\,152\,z^6+275\,251\,200\,z^5-826\,785\,792\,z^4+2\,157\,281\,280\,z^3-1\,459\,956\,960\,z^2+228\,118\,275\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$36\sqrt{z}\left(2\,359\,296\,z^5+11\,927\,552\,z^4+9\,963\,520\,z^3-123\,594\,240\,z^2+33\,795\,300\,z+25\,346\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(524\,288\,z^5+53\,280\,768\,z^4-249\,016\,320\,z^3+292\,400\,640\,z^2+608\,315\,400\,z+228\,118\,275\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afnh.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{19}{4}; -z\right) = \frac{1}{228\,118\,275\sqrt[4]{z}} \left(\sqrt{2}\left(\left(2\,097\,152 z^6 - 275\,251\,200 z^5 - 826\,785\,792 z^4 - 2\,157\,281\,280 z^3 - 1\,459\,956\,960 z^2 + 228\,118\,275\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 36\sqrt{z}\left(2\,359\,296 z^5 - 11\,927\,552 z^4 + 9\,963\,520 z^3 + 123\,594\,240 z^2 + 33\,795\,300 z - 25\,346\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-524\,288 z^5 + 53\,280\,768 z^4 + 249\,016\,320 z^3 + 292\,400\,640 z^2 - 608\,315\,400 z + 228\,118\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afni.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{17}{4}; z\right) = \left(\frac{524\,288 z^5}{34\,459\,425} + \frac{65\,536 z^4}{38\,675} - \frac{200\,704 z^3}{36\,465} + \frac{28\,672 z^2}{3315} + \frac{72 z}{17} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(5\,177\,344 z^4 + 28\,753\,920 z^3 + 10\,160\,640 z^2 - 164\,324\,160 z - 34\,459\,425\right)\sinh\left(2\sqrt{z}\right)}{34\,459\,425} $$

07.22.03.afnj.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) = \left(-\frac{524\,288 z^5}{34\,459\,425} + \frac{65\,536 z^4}{38\,675} + \frac{200\,704 z^3}{36\,465} + \frac{28\,672 z^2}{3315} - \frac{72 z}{17} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(5\,177\,344 z^4 - 28\,753\,920 z^3 + 10\,160\,640 z^2 + 164\,324\,160 z - 34\,459\,425\right)\sin\left(2\sqrt{z}\right)}{34\,459\,425} $$

07.22.03.afnk.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) = -\frac{1}{12\,006\,225\sqrt[4]{z}}\left(\sqrt{2}\left(21\left(524\,288 z^5 + 7\,880\,704 z^4 - 9\,799\,680 z^3 + 5\,544\,000 z^2 - 304\,920 z - 571\,725\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(262\,144 z^5 + 33\,030\,144 z^4 - 41\,287\,680 z^3 + 89\,591\,040 z^2 - 22\,411\,620 z - 12\,006\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12z\left(851\,968 z^4 + 6\,164\,480 z^3 - 2\,903\,040 z^2 - 12\,806\,640 z - 4\,002\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afnl.01

$$ {}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) = \frac{1}{12\,006\,225\sqrt[4]{z}}\left(\sqrt{2}\left(21\left(524\,288 z^5 - 7\,880\,704 z^4 - 9\,799\,680 z^3 - 5\,544\,000 z^2 - 304\,920 z + 571\,725\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(262\,144 z^5 - 33\,030\,144 z^4 - 41\,287\,680 z^3 - 89\,591\,040 z^2 - 22\,411\,620 z + 12\,006\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 12z\left(851\,968 z^4 - 6\,164\,480 z^3 - 2\,903\,040 z^2 + 12\,806\,640 z - 4\,002\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afnm.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) = \frac{1}{2\,027\,025}\left(-3\left(851\,968\,z^4 + 8\,601\,600\,z^3 - 7\,150\,080\,z^2 - 3\,326\,400\,z - 675\,675\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(65\,536\,z^4 + 7\,618\,560\,z^3 - 7\,580\,160\,z^2 + 13\,124\,160\,z + 2\,027\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afnn.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) = \frac{1}{2\,027\,025}\left(2\sqrt{z}\left(65\,536\,z^4 - 7\,618\,560\,z^3 - 7\,580\,160\,z^2 - 13\,124\,160\,z + 2\,027\,025\right)\sin\left(2\sqrt{z}\right) - 3\left(851\,968\,z^4 - 8\,601\,600\,z^3 - 7\,150\,080\,z^2 + 3\,326\,400\,z - 675\,675\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.afno.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) = \frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(\left(131\,072\,z^5 + 18\,407\,424\,z^4 + 38\,438\,400\,z^3 - 14\,081\,760\,z^2 + 1\,164\,240\,z + 800\,415\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,294\,336\,z^4 + 18\,385\,920\,z^3 - 11\,309\,760\,z^2 + 2\,231\,460\,z + 800\,415\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(32\,768\,z^4 + 3\,655\,680\,z^3 - 1\,545\,600\,z^2 + 3\,298\,680\,z + 800\,415\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afnp.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{11}{4}; -z\right) = -\frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(\left(131\,072\,z^5 - 18\,407\,424\,z^4 + 38\,438\,400\,z^3 + 14\,081\,760\,z^2 + 1\,164\,240\,z - 800\,415\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,294\,336\,z^4 - 18\,385\,920\,z^3 - 11\,309\,760\,z^2 - 2\,231\,460\,z + 800\,415\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-32\,768\,z^4 + 3\,655\,680\,z^3 + 1\,545\,600\,z^2 + 3\,298\,680\,z - 800\,415\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afnq.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{9}{4}; z\right) = \left(\frac{32\,768\,z^4}{155\,925} + \frac{34\,816\,z^3}{1485} + \frac{5504\,z^2}{495} + \frac{56\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(20\,480\,z^3 + 245\,504\,z^2 - 106\,512\,z - 10\,395\right)\sinh\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.afnr.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{9}{4}; -z\right) = \left(\frac{32\,768\,z^4}{155\,925} - \frac{34\,816\,z^3}{1485} + \frac{5504\,z^2}{495} - \frac{56\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(20\,480\,z^3 - 245\,504\,z^2 - 106\,512\,z + 10\,395\right)\sin\left(2\sqrt{z}\right)}{10\,395}$$

07.22.03.afns.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{7}{4}; z\right) = -\frac{1}{72\,765\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(212\,992\,z^4 + 3\,942\,400\,z^3 + 1\,256\,640\,z^2 - 83\,160\,z - 24\,255\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,384\,z^4 + 1\,901\,568\,z^3 + 3\,326\,400\,z^2 - 346\,500\,z - 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(49\,152\,z^3 + 546\,560\,z^2 - 147\,840\,z - 24\,255\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afnt.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) = \frac{1}{72\,765\sqrt[4]{z}}\left(\sqrt{2}\left(-3\left(212\,992\,z^4 - 3\,942\,400\,z^3 + 1\,256\,640\,z^2 + 83\,160\,z - 24\,255\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,384\,z^4 - 1\,901\,568\,z^3 + 3\,326\,400\,z^2 + 346\,500\,z - 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(49\,152\,z^3 - 546\,560\,z^2 - 147\,840\,z + 24\,255\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afnu.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) = \frac{1}{17\,325}\left(-35\left(4096\,z^3 + 46\,848\,z^2 - 4752\,z - 495\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4096\,z^3 + 403\,200\,z^2 + 421\,680\,z + 17\,325\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afnv.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{5}{4}; -z\right) = \frac{1}{17\,325}\left(35\left(4096\,z^3 - 46\,848\,z^2 - 4752\,z + 495\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-4096\,z^3 + 403\,200\,z^2 - 421\,680\,z + 17\,325\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afnw.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{3}{4}; z\right) = \frac{1}{10\,395\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192\,z^4 + 912\,384\,z^3 + 2\,772\,000\,z^2 + 110\,880\,z + 10\,395\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(23\,552\,z^3 + 302\,720\,z^2 + 41\,580\,z + 3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2048\,z^3 + 176\,640\,z^2 + 138\,600\,z + 10\,395\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afnx.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{3}{4}; -z\right) = \frac{1}{10\,395\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8192\,z^4 - 912\,384\,z^3 + 2\,772\,000\,z^2 - 110\,880\,z + 10\,395\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(23\,552\,z^3 - 302\,720\,z^2 + 41\,580\,z - 3465\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-2048\,z^3 + 176\,640\,z^2 - 138\,600\,z + 10\,395\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afny.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) = \left(\frac{2048\,z^3}{3465} + \frac{512\,z^2}{11} + 40\,z + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{165}\sqrt{z}\left(768\,z^2 + 6880\,z - 165\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.afnz.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) = \left(-\frac{2048\,z^3}{3465} + \frac{512\,z^2}{11} - 40\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{165}\sqrt{z}\left(-768\,z^2 + 6880\,z + 165\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.afo0.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) =$$

$$-\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768\,z^3 + 404\,544\,z^2 + 138\,600\,z - 3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1024\,z^3 + 77\,184\,z^2 + 93\,660\,z - 3465\right)\right.\right.$$

$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(7424\,z^2 + 48\,720\,z - 3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afo1.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{1}{4}; -z\right) =$$

$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768\,z^3 - 404\,544\,z^2 + 138\,600\,z + 3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024\,z^3 - 77\,184\,z^2 + 93\,660\,z + 3465\right)\right.\right.$$

$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-7424\,z^2 + 48\,720\,z + 3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afo2.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{3}{4}; z\right) = \left(-\frac{768\,z^2}{385} - \frac{32\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256\,z^2 + 14\,112\,z + 3465\right)\sinh\left(2\sqrt{z}\right)}{3465}$$

07.22.03.afo3.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{3}{4}; -z\right) = \left(-\frac{768\,z^2}{385} + \frac{32\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(256\,z^2 - 14\,112\,z + 3465\right)\sin\left(2\sqrt{z}\right)}{3465}$$

07.22.03.afo4.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{5}{4}; z\right) =$$

$$-\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512\,z^3 + 30\,240\,z^2 + 31\,248\,z - 3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(1088\,z^2 + 5516\,z - 735\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$

$$\left.\left.4\,z\left(128\,z^2 + 5208\,z - 945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afo5.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{5}{4}; -z\right) =$$
$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(512z^3 - 30\,240z^2 + 31\,248z + 3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(1088z^2 - 5516z - 735\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-128z^2 + 5208z + 945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afo6.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{7}{4}; z\right) = \left(-\frac{128z^2}{1155} - \frac{24z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,(688z + 1155)\sinh\left(2\sqrt{z}\right)}{1155}$$

07.22.03.afo7.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{7}{4}; -z\right) = \left(-\frac{128z^2}{1155} + \frac{24z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2(1155 - 688z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)}{1155}$$

07.22.03.afo8.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{9}{4}; z\right) =$$
$$-\frac{1}{693\sqrt{2}\,z^{3/4}}\left(\left(168\sqrt{z}\left(16z^2 + 46z - 9\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(512z^3 + 12\,768z^2 - 3528z + 315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(384z^2 - 28z + 105\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afo9.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{9}{4}; -z\right) =$$
$$\frac{1}{693\sqrt{2}\,z^{3/4}}\left(\left(-168\sqrt{z}\left(16z^2 - 46z - 9\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(512z^3 - 12\,768z^2 - 3528z - 315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(384z^2 + 28z + 105\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afoa.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) = \left(1 - \frac{16z}{11}\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{165}\sqrt{z}\,(16z + 165)\sinh\left(2\sqrt{z}\right)$$

07.22.03.afob.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = \left(\frac{16z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{165}(165 - 16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.afoc.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) =$$
$$-\frac{1}{2464\sqrt{2}\, z^{7/4}}\left(\left(2\sqrt{z}\left(1024z^3+10\,752z^2-2352z-693\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(25\,600z^3-16\,128z^2-3024z+3465\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(1024z^3+1920z^2+4368z+3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afod.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) = \frac{1}{2464\sqrt{2}\, z^{7/4}}$$
$$\left(\left(2\sqrt{z}\left(-1024z^3+10\,752z^2+2352z-693\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-25\,600z^3-16\,128z^2+3024z+3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(1024z^3-1920z^2+4368z-3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afoe.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) = \left(1-\frac{8z}{15}\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.afof.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) = \left(\frac{8z}{15}+1\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.afog.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) = -\frac{1}{78\,848\sqrt{2}\, z^{11/4}}$$
$$\left(13\left(6\sqrt{z}\left(8192z^3+1792z^2+7392z-10\,395\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(32\,768z^4-73\,728z^3-145\,152z^2-221\,760z+155\,925\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\left(4096z^3+13\,568z^2+36\,960z+51\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afoh.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) = -\frac{1}{78\,848\sqrt{2}\, z^{11/4}}$$
$$\left(13\left(-6\sqrt{z}\left(8192z^3-1792z^2+7392z+10\,395\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(32\,768z^4+73\,728z^3-145\,152z^2+221\,760z+155\,925\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\left(4096z^3-13\,568z^2+36\,960z-51\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afoi.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) = \cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.afoj.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.afok.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) =$$
$$-\frac{1}{2\,523\,136\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(65\,536z^4+307\,200z^3+2\,306\,304z^2+6\,597\,360z-7\,702\,695\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$9\left(65\,536z^4+561\,152z^3+3\,252\,480z^2+6\,708\,240z-4\,279\,275\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+577\,536z^3+4\,688\,640z^2+21\,787\,920z+38\,513\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afol.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) =$$
$$\frac{1}{2\,523\,136\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(65\,536z^4-307\,200z^3+2\,306\,304z^2-6\,597\,360z-7\,702\,695\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$9\left(65\,536z^4-561\,152z^3+3\,252\,480z^2-6\,708\,240z-4\,279\,275\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4-577\,536z^3+4\,688\,640z^2-21\,787\,920z+38\,513\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afom.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) =$$
$$-\frac{1}{4\,194\,304z^{19/4}}\left(19e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(262\,144z^{9/2}+1\,376\,256z^4+5\,849\,088z^{7/2}+21\,934\,080z^3+71\,285\,760z^{5/2}+\right.\right.\right.$$
$$196\,035\,840z^2+441\,080\,640z^{3/2}+771\,891\,120z+964\,863\,900\sqrt{z}\,+$$
$$e^{4\sqrt{z}}\left(262\,144z^{9/2}-1\,376\,256z^4+5\,849\,088z^{7/2}-21\,934\,080z^3+71\,285\,760z^{5/2}-196\,035\,840z^2+\right.$$
$$\left.\left.441\,080\,640z^{3/2}-771\,891\,120z+964\,863\,900\sqrt{z}-723\,647\,925\right)+723\,647\,925\right)-$$
$$\left.\left.723\,647\,925e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)+723\,647\,925e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.afon.01

$${}_1F_2\left(\frac{19}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) = -\frac{1}{1\,048\,576z^{19/4}}$$
$$\left(19\left(723\,647\,925\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(4\sqrt{z}\left(65\,536z^4-1\,462\,272z^3+17\,821\,440z^2-110\,270\,160z+241\,215\,975\right)\right.\right.\right.$$
$$\left.\left.\left.\cos\left(2\sqrt{z}\right)-21\left(65\,536z^4-1\,044\,480z^3+9\,335\,040z^2-36\,756\,720z+34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{19}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.afoo.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) = \frac{1}{5\,246\,720\,325\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4\,194\,304 z^6 + 181\,665\,792 z^5 - 708\,083\,712 z^4 - 6\,631\,446\,528 z^3 + 24\,332\,616\,000 z^2 - 19\,161\,935\,100 z + 5\,246\,720\,325\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(10\,485\,760 z^5 - 133\,496\,832 z^4 + 955\,121\,664 z^3 + 44\,029\,440 z^2 - 4\,055\,436\,000 z + 1\,748\,906\,775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(1\,048\,576 z^5 + 22\,609\,920 z^4 + 137\,797\,632 z^3 - 3\,663\,797\,760 z^2 + 3\,137\,173\,200 z + 5\,246\,720\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afop.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, -\frac{23}{4}; -z\right) = \frac{1}{5\,246\,720\,325\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4\,194\,304 z^6 - 181\,665\,792 z^5 - 708\,083\,712 z^4 + 6\,631\,446\,528 z^3 + 24\,332\,616\,000 z^2 + 19\,161\,935\,100 z + 5\,246\,720\,325\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(10\,485\,760 z^5 + 133\,496\,832 z^4 + 955\,121\,664 z^3 - 44\,029\,440 z^2 - 4\,055\,436\,000 z - 1\,748\,906\,775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(1\,048\,576 z^5 - 22\,609\,920 z^4 + 137\,797\,632 z^3 - 3\,663\,797\,760 z^2 + 3\,137\,173\,200 z - 5\,246\,720\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afoq.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, -\frac{21}{4}; z\right) = \left(\frac{1\,048\,576 z^5}{723\,647\,925} + \frac{65\,536 z^4}{1\,237\,005} - \frac{8192 z^3}{69\,615} - \frac{2560 z^2}{1071} + \frac{80 z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{16\sqrt{z}\left(65\,536 z^4 - 688\,128 z^3 + 4\,612\,608 z^2 - 11\,486\,475\right)\sinh\left(2\sqrt{z}\right)}{48\,243\,195} $$

07.22.03.afor.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, -\frac{21}{4}; -z\right) = \left(-\frac{1\,048\,576 z^5}{723\,647\,925} + \frac{65\,536 z^4}{1\,237\,005} + \frac{8192 z^3}{69\,615} - \frac{2560 z^2}{1071} - \frac{80 z}{21} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{16\sqrt{z}\left(65\,536 z^4 + 688\,128 z^3 + 4\,612\,608 z^2 - 11\,486\,475\right)\sin\left(2\sqrt{z}\right)}{48\,243\,195} $$

07.22.03.afos.01

$${}_1F_2\left(\frac{19}{4};\frac{1}{2},-\frac{19}{4};z\right)=\frac{1}{228\,118\,275\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-17\,563\,648\,z^5+45\,023\,232\,z^4-521\,238\,528\,z^3+1\,297\,739\,520\,z^2-912\,473\,100\,z+228\,118\,275\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(524\,288\,z^5+29\,294\,592\,z^4-127\,905\,792\,z^3-112\,227\,840\,z^2+608\,315\,400\,z-228\,118\,275\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)$$
$$\left.\left.I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-3\,997\,696\,z^4+30\,277\,632\,z^3-202\,314\,240\,z^2+91\,454\,400\,z+228\,118\,275\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afot.01

$${}_1F_2\left(\frac{19}{4};\frac{1}{2},-\frac{19}{4};-z\right)=\frac{1}{228\,118\,275\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(17\,563\,648\,z^5+45\,023\,232\,z^4+521\,238\,528\,z^3+1\,297\,739\,520\,z^2+912\,473\,100\,z+228\,118\,275\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(524\,288\,z^5-29\,294\,592\,z^4-127\,905\,792\,z^3+112\,227\,840\,z^2+608\,315\,400\,z+228\,118\,275\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)$$
$$\left.\left.J_{\frac{1}{4}}\left(\sqrt{z}\right)-4\,z\left(3\,997\,696\,z^4+30\,277\,632\,z^3+202\,314\,240\,z^2+91\,454\,400\,z-228\,118\,275\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afou.01

$${}_1F_2\left(\frac{19}{4};\frac{1}{2},-\frac{17}{4};z\right)=\left(-\frac{65\,536\,z^4}{546\,975}+\frac{16\,384\,z^3}{36\,465}-\frac{11\,776\,z^2}{3315}+\frac{64\,z}{17}+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{4\sqrt{z}\left(65\,536\,z^4+3\,686\,400\,z^3-14\,031\,360\,z^2-8\,648\,640\,z+34\,459\,425\right)\sinh\left(2\sqrt{z}\right)}{34\,459\,425}$$

07.22.03.afov.01

$${}_1F_2\left(\frac{19}{4};\frac{1}{2},-\frac{17}{4};-z\right)=\frac{1}{34\,459\,425}\left(4\sqrt{z}\left(65\,536\,z^4-3\,686\,400\,z^3-14\,031\,360\,z^2+8\,648\,640\,z+34\,459\,425\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.63\left(65\,536\,z^4+245\,760\,z^3+1\,943\,040\,z^2+2\,059\,200\,z-546\,975\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.afow.01

$${}_1F_2\left(\frac{19}{4};\frac{1}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{12\,006\,225\sqrt[4]{z}}\left(\sqrt{2}\left(\left(262\,144\,z^5+22\,118\,400\,z^4-54\,872\,064\,z^3+90\,034\,560\,z^2-54\,428\,220\,z+12\,006\,225\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$12\sqrt{z}\left(720\,896\,z^4+888\,832\,z^3+5\,713\,920\,z^2-12\,806\,640\,z+4\,002\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(65\,536\,z^4+3\,956\,736\,z^3-12\,925\,440\,z^2+859\,680\,z+12\,006\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afox.01

$${}_1F_2\left(\frac{19}{4};\frac{1}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{12\,006\,225\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-262\,144\,z^5+22\,118\,400\,z^4+54\,872\,064\,z^3+90\,034\,560\,z^2+54\,428\,220\,z+12\,006\,225\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(720\,896\,z^4-888\,832\,z^3+5\,713\,920\,z^2+12\,806\,640\,z+4\,002\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(65\,536\,z^4-3\,956\,736\,z^3-12\,925\,440\,z^2-859\,680\,z+12\,006\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afoy.01

$${}_1F_2\left(\frac{19}{4};\frac{1}{2},-\frac{13}{4};z\right)=\frac{1}{2\,027\,025}\left(\left(65\,536\,z^4+4\,472\,832\,z^3-11\,020\,800\,z^2+7\,318\,080\,z+2\,027\,025\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.64\sqrt{z}\left(16\,384\,z^3+26\,880\,z^2+90\,720\,z-135\,135\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afoz.01

$${}_1F_2\left(\frac{19}{4};\frac{1}{2},-\frac{13}{4};-z\right)=\frac{1}{2\,027\,025}\left(\left(65\,536\,z^4-4\,472\,832\,z^3-11\,020\,800\,z^2-7\,318\,080\,z+2\,027\,025\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.64\sqrt{z}\left(16\,384\,z^3-26\,880\,z^2+90\,720\,z+135\,135\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afp0.01

$${}_1F_2\left(\frac{19}{4};\frac{1}{2},-\frac{11}{4};z\right)=$$
$$-\frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(376\,832\,z^4+3\,378\,176\,z^3-3\,030\,720\,z^2+1\,455\,300\,z-266\,805\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(32\,768\,z^4+2\,623\,488\,z^3-3\,058\,560\,z^2+3\,298\,680\,z-800\,415\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.12\,z\left(86\,016\,z^3+252\,160\,z^2+147\,120\,z-266\,805\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afp1.01

$${}_1F_2\left(\frac{19}{4};\frac{1}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1\,130\,496\,z^4+10\,134\,528\,z^3+9\,092\,160\,z^2+4\,365\,900\,z+800\,415\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\right.\right.$$
$$\sqrt{z}\left(32\,768\,z^4-2\,623\,488\,z^3-3\,058\,560\,z^2-3\,298\,680\,z-800\,415\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.12\,z\left(86\,016\,z^3-252\,160\,z^2+147\,120\,z+266\,805\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afp2.01

$${}_1F_2\left(\frac{19}{4};\frac{1}{2},-\frac{9}{4};z\right)=\frac{1}{155\,925}$$
$$\left(-21\left(12\,288\,z^3+62\,720\,z^2-23\,280\,z-7425\right)\cosh\left(2\sqrt{z}\right)-4\sqrt{z}\left(4096\,z^3+295\,680\,z^2-277\,200\,z+182\,385\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afp3.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, -\frac{9}{4}; -z\right) = \frac{1}{155\,925} \left(21\left(12\,288 z^3 - 62\,720 z^2 - 23\,280 z + 7425\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(-4096 z^3 + 295\,680 z^2 + 277\,200 z + 182\,385\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afp4.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, -\frac{7}{4}; z\right) = \frac{1}{72\,765\sqrt[4]{z}} \left(\sqrt{2}\left(\left(16\,384 z^4 + 1\,502\,208 z^3 + 1\,848\,000 z^2 - 540\,540 z + 72\,765\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072 z^3 + 1\,079\,040 z^2 - 443\,520 z + 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^3 + 280\,320 z^2 - 147\,600 z + 72\,765\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afp5.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, -\frac{7}{4}; -z\right) = \frac{1}{72\,765\sqrt[4]{z}} \left(\sqrt{2}\left(\left(16\,384 z^4 - 1\,502\,208 z^3 + 1\,848\,000 z^2 + 540\,540 z + 72\,765\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072 z^3 - 1\,079\,040 z^2 - 443\,520 z - 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-4096 z^3 + 280\,320 z^2 + 147\,600 z + 72\,765\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afp6.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, -\frac{5}{4}; z\right) = \frac{1}{17\,325}\left(\left(4096 z^3 + 280\,320 z^2 + 22\,320 z + 17\,325\right)\cosh\left(2\sqrt{z}\right) + 240\sqrt{z}\left(256 z^2 + 1664 z - 393\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afp7.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, -\frac{5}{4}; -z\right) = \frac{1}{17\,325}\left(\left(-4096 z^3 + 280\,320 z^2 - 22\,320 z + 17\,325\right)\cos\left(2\sqrt{z}\right) + 240\sqrt{z}\left(-256 z^2 + 1664 z + 393\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afp8.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, -\frac{3}{4}; z\right) = -\frac{1}{10\,395\sqrt[4]{z}} \left(\sqrt{2}\left(21\left(3072 z^3 + 35\,200 z^2 + 7260 z - 495\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048 z^3 + 147\,456 z^2 + 138\,600 z - 10\,395\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(4864 z^2 + 28\,320 z - 3465\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afp9.01

$${}_1F_2\left(\frac{19}{4}; \frac{1}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{10\,395\sqrt[4]{z}}\left(\sqrt{2}\left(21\left(3072z^3 - 35\,200z^2 + 7260z + 495\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048z^3 - 147\,456z^2 + 138\,600z + 10\,395\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12z\left(-4864z^2 + 28\,320z + 3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afpa.01

$${}_1F_2\left(\frac{19}{4}; \frac{1}{2}, -\frac{1}{4}; z\right) = \frac{-5\left(2816z^2 + 16\,992z - 693\right)\cosh\left(2\sqrt{z}\right) - 4\sqrt{z}\left(256z^2 + 14\,880z + 6705\right)\sinh\left(2\sqrt{z}\right)}{3465}$$

07.22.03.afpb.01

$${}_1F_2\left(\frac{19}{4}; \frac{1}{2}, -\frac{1}{4}; -z\right) = \frac{\left(-14\,080z^2 + 84\,960z + 3465\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(256z^2 - 14\,880z + 6705\right)\sin\left(2\sqrt{z}\right)}{3465}$$

07.22.03.afpc.01

$${}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1024z^3 + 69\,888z^2 + 124\,740z + 3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(2304z^2 + 16\,240z + 1155\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.4z\left(256z^2 + 12\,480z + 3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afpd.01

$${}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{1}{4}; -z\right) =$$
$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1024z^3 + 69\,888z^2 - 124\,740z + 3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(2304z^2 - 16\,240z + 1155\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.4z\left(256z^2 - 12\,480z + 3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afpe.01

$${}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{3}{4}; z\right) = \frac{\left(256z^2 + 11\,040z + 3465\right)\cosh\left(2\sqrt{z}\right) + 96\sqrt{z}\left(32z + 135\right)\sinh\left(2\sqrt{z}\right)}{3465}$$

07.22.03.afpf.01

$${}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{3}{4}; -z\right) = \frac{\left(256z^2 - 11\,040z + 3465\right)\cos\left(2\sqrt{z}\right) + 96\sqrt{z}\left(32z - 135\right)\sin\left(2\sqrt{z}\right)}{3465}$$

07.22.03.afpg.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{5}{4}; z\right) = \frac{1}{3465\sqrt[4]{z}} \left(\sqrt{2}\left(7\left(448z^2+2964z+495\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(128z^2+5208z+2625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(688z+1785\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afph.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{5}{4}; -z\right) = \frac{1}{3465\sqrt[4]{z}} \left(\sqrt{2}\left(7\left(448z^2-2964z+495\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(128z^2-5208z+2625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\left(1785-688z\right) z\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afpi.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{7}{4}; z\right) = \frac{3\left(208z+385\right)\cosh\left(2\sqrt{z}\right) + 4\sqrt{z}\left(16z+417\right)\sinh\left(2\sqrt{z}\right)}{1155} $$

07.22.03.afpj.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{7}{4}; -z\right) = \frac{\left(1155-624z\right)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\left(16z-417\right)\sin\left(2\sqrt{z}\right)}{1155} $$

07.22.03.afpk.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{9}{4}; z\right) = \frac{1}{693z^{3/4}} \left(\sqrt{2}\left(\sqrt{z}\left(64z^2+1860z+711\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(384z^2+668z-15\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(32z^2+522z-45\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afpl.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{9}{4}; -z\right) = \frac{1}{693z^{3/4}} \left(\sqrt{2}\left(\sqrt{z}\left(64z^2-1860z+711\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(384z^2-668z-15\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-32z^2+522z+45\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afpm.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{11}{4}; z\right) = \left(\frac{16z}{165}+1\right)\cosh\left(2\sqrt{z}\right) + \frac{112}{165}\sqrt{z}\,\sinh\left(2\sqrt{z}\right) $$

07.22.03.afpn.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{11}{4}; -z\right) = \left(1-\frac{16z}{165}\right)\cos\left(2\sqrt{z}\right) - \frac{112}{165}\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.afpo.01

$${}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{13}{4}; z\right) =$$
$$\frac{1}{1232\sqrt{2}\, z^{7/4}}\left(\left(6\sqrt{z}\left(576z^2+416z+21\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1024z^3+7296z^2+144z-315\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.6\sqrt{z}\left(448z^2-176z-105\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afpp.01

$${}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{13}{4}; -z\right) =$$
$$\frac{1}{1232\sqrt{2}\, z^{7/4}}\left(\left(-6\sqrt{z}\left(576z^2-416z+21\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1024z^3-7296z^2+144z+315\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.6\sqrt{z}\left(448z^2+176z-105\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afpq.01

$${}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{15}{4}; z\right) = \cosh\left(2\sqrt{z}\right)+\frac{4}{15}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.afpr.01

$${}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{15}{4}; -z\right) = \cos\left(2\sqrt{z}\right)-\frac{4}{15}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.afps.01

$${}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{17}{4}; z\right) = \frac{1}{39\,424\sqrt{2}\, z^{11/4}}$$
$$\left(13\left(2\sqrt{z}\left(2048z^3+2304z^2-1344z+2079\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(20\,480z^3+9984z^2+14\,112z-10\,395\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(2048z^3-3840z^2-8064z-10\,395\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afpt.01

$${}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{17}{4}; -z\right) =$$
$$-\frac{1}{39\,424\sqrt{2}\, z^{11/4}}\left(13\left(2\sqrt{z}\left(2048z^3-2304z^2-1344z-2079\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(20\,480z^3-9984z^2+14\,112z+10\,395\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(2048z^3+3840z^2-8064z+10\,395\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afpu.01

$${}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{19}{4}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.afpv.01

$${}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{19}{4}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.afpw.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{21}{4}; z\right) = \frac{1}{1\,261\,568\sqrt{2}\, z^{15/4}} $$
$$ \left(221\left(-6\sqrt{z}\left(4096z^3+41\,216z^2+114\,576z-135\,135\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(65\,536z^4+282\,624z^3+1\,564\,416z^2+3\,160\,080z-\right.\right.\right. $$
$$ \left.\left.\left.2\,027\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-18\sqrt{z}\left(4096z^3+28\,928z^2+129\,360z+225\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afpx.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{21}{4}; -z\right) = -\frac{1}{1\,261\,568\sqrt{2}\, z^{15/4}} $$
$$ \left(221\left(6\sqrt{z}\left(4096z^3-41\,216z^2+114\,576z+135\,135\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(65\,536z^4-282\,624z^3+1\,564\,416z^2-3\,160\,080z-\right.\right.\right. $$
$$ \left.\left.\left.2\,027\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+18\sqrt{z}\left(-4096z^3+28\,928z^2-129\,360z+225\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afpy.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{23}{4}; z\right) = $$
$$ \frac{1}{2\,097\,152\, z^{19/4}}\left(19e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-65\,536z^4-278\,528z^{7/2}-1\,044\,480z^3-3\,394\,560z^{5/2}-9\,335\,040z^2-21\,003\,840z^{3/2}-\right.\right.\right. $$
$$ \left.\left.36\,756\,720z-45\,945\,900\sqrt{z}\right)+e^{4\sqrt{z}}\left(65\,536z^4-278\,528z^{7/2}+1\,044\,480z^3-3\,394\,560z^{5/2}+\right.\right. $$
$$ \left.\left.\left.9\,335\,040z^2-21\,003\,840z^{3/2}+36\,756\,720z-45\,945\,900\sqrt{z}+34\,459\,425\right)-34\,459\,425\right)+ $$
$$ \left.34\,459\,425e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right)-34\,459\,425e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\Big) $$

07.22.03.afpz.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{1}{2}, \frac{23}{4}; -z\right) = $$
$$ \frac{1}{524\,288\, z^{19/4}}\left(19\left(2\sqrt[4]{z}\left(68\sqrt{z}\left(4096z^3-49\,920z^2+308\,880z-675\,675\right)\cos\left(2\sqrt{z}\right)+\left(65\,536z^4-1\,044\,480z^3+\right.\right.\right.\right. $$
$$ \left.\left.\left.\left.9\,335\,040z^2-36\,756\,720z+34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right)-34\,459\,425\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right) $$

For fixed z and $a_1 = \frac{19}{4}$, $b_{1.} = \frac{3}{2}$

07.22.03.afq0.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{3}{2}, -\frac{23}{4}; z\right) = \frac{1}{5\,246\,720\,325\,\sqrt[4]{z}} \left(\sqrt{2}\left(21\left(1\,048\,576\,z^5 - 14\,352\,384\,z^4 + 21\,159\,936\,z^3 + 381\,980\,160\,z^2 - 637\,282\,800\,z + 249\,843\,825\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,048\,576\,z^5 - 15\,138\,816\,z^4 + 501\,129\,216\,z^3 - 2\,435\,489\,280\,z^2 - 3\,943\,825\,200\,z + 5\,246\,720\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 96\,z\left(196\,608\,z^4 - 2\,523\,136\,z^3 - 12\,794\,880\,z^2 + 147\,520\,800\,z + 91\,348\,425\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afq1.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{3}{2}, -\frac{23}{4}; -z\right) = \frac{1}{5\,246\,720\,325\,\sqrt[4]{z}} \left(\sqrt{2}\left(-21\left(1\,048\,576\,z^5 + 14\,352\,384\,z^4 + 21\,159\,936\,z^3 - 381\,980\,160\,z^2 - 637\,282\,800\,z - 249\,843\,825\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,048\,576\,z^5 + 15\,138\,816\,z^4 + 501\,129\,216\,z^3 + 2\,435\,489\,280\,z^2 - 3\,943\,825\,200\,z - 5\,246\,720\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 96\,z\left(196\,608\,z^4 + 2\,523\,136\,z^3 - 12\,794\,880\,z^2 - 147\,520\,800\,z + 91\,348\,425\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afq2.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{3}{2}, -\frac{21}{4}; z\right) = \frac{1}{1\,447\,295\,850\,\sqrt{z}} \left(160\sqrt{z}\left(65\,536\,z^4 - 811\,008\,z^3 + 21\,621\,600\,z - 2\,027\,025\right)\cosh\left(2\sqrt{z}\right) + \left(1\,048\,576\,z^5 - 8\,847\,360\,z^4 + 369\,008\,640\,z^3 - 1\,729\,728\,000\,z^2 + 2\,432\,430\,000\,z - 885\,809\,925\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afq3.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{3}{2}, -\frac{21}{4}; -z\right) = \frac{1}{1\,447\,295\,850\,\sqrt{z}} \left(160\sqrt{z}\left(65\,536\,z^4 + 811\,008\,z^3 - 21\,621\,600\,z - 2\,027\,025\right)\cos\left(2\sqrt{z}\right) - \left(1\,048\,576\,z^5 + 8\,847\,360\,z^4 + 369\,008\,640\,z^3 + 1\,729\,728\,000\,z^2 - 2\,432\,430\,000\,z - 885\,809\,925\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afq4.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{3}{2}, -\frac{19}{4}; z\right) = -\frac{1}{228\,118\,275\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(524\,288\,z^5 + 8\,454\,144\,z^4 + 23\,924\,736\,z^3 - 424\,682\,496\,z^2 + 608\,315\,400\,z - 228\,118\,275\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(983\,040\,z^4 - 10\,092\,544\,z^3 + 29\,480\,448\,z^2 + 68\,806\,080\,z - 76\,039\,425\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 8\,z\left(65\,536\,z^4 + 14\,234\,112\,z^2 - 74\,468\,160\,z - 52\,971\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afq5.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{3}{2}, -\frac{19}{4}; -z\right) = \frac{1}{228\,118\,275\sqrt[4]{z}}\left(\sqrt{2}\left(\left(524\,288 z^5 - 8\,454\,144 z^4 + 23\,924\,736 z^3 + 424\,682\,496 z^2 + 608\,315\,400 z + 228\,118\,275\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(983\,040 z^4 + 10\,092\,544 z^3 + 29\,480\,448 z^2 - 68\,806\,080 z - 76\,039\,425\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 8 z\left(65\,536 z^4 + 14\,234\,112 z^2 + 74\,468\,160 z - 52\,971\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afq6.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{3}{2}, -\frac{17}{4}; z\right) = \frac{1}{68\,918\,850\sqrt{z}}\left(-4\sqrt{z}\left(65\,536 z^4 + 737\,280 z^3 + 5\,322\,240 z^2 - 43\,243\,200 z + 2\,027\,025\right)\cosh\left(2\sqrt{z}\right) - 45\left(65\,536 z^4 - 573\,440 z^3 + 1\,537\,536 z^2 + 2\,882\,880 z - 855\,855\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afq7.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{3}{2}, -\frac{17}{4}; -z\right) = \frac{1}{68\,918\,850\sqrt{z}}\left(-4\sqrt{z}\left(65\,536 z^4 - 737\,280 z^3 + 5\,322\,240 z^2 + 43\,243\,200 z + 2\,027\,025\right)\cos\left(2\sqrt{z}\right) - 45\left(65\,536 z^4 + 573\,440 z^3 + 1\,537\,536 z^2 - 2\,882\,880 z - 855\,855\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afq8.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{3}{2}, -\frac{15}{4}; z\right) = \frac{1}{12\,006\,225\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,703\,936 z^4 - 6\,365\,184 z^3 + 28\,797\,696 z^2 - 34\,151\,040 z + 12\,006\,225\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(65\,536 z^4 + 1\,695\,744 z^3 - 2\,578\,944 z^2 - 13\,488\,480 z + 12\,006\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 64 z\left(23\,552 z^3 - 161\,664 z^2 + 448\,380 z + 386\,775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afq9.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{3}{2}, -\frac{15}{4}; -z\right) = \frac{1}{12\,006\,225\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,703\,936 z^4 + 6\,365\,184 z^3 + 28\,797\,696 z^2 + 34\,151\,040 z + 12\,006\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(65\,536 z^4 - 1\,695\,744 z^3 - 2\,578\,944 z^2 + 13\,488\,480 z + 12\,006\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 64 z\left(23\,552 z^3 + 161\,664 z^2 + 448\,380 z - 386\,775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afqa.01

$${}_1F_2\left(\frac{19}{4};\frac{3}{2},-\frac{13}{4};z\right)=\frac{1}{4\,054\,050\sqrt{z}}\left(3072\left(256z^2-1120z+3465\right)\cosh\left(2\sqrt{z}\right)z^{3/2}+\left(65\,536z^4+1\,720\,320z^3-2\,419\,200z^2-8\,648\,640z+2\,027\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afqb.01

$${}_1F_2\left(\frac{19}{4};\frac{3}{2},-\frac{13}{4};-z\right)=\frac{1}{4\,054\,050\sqrt{z}}\left(\left(65\,536z^4-1\,720\,320z^3-2\,419\,200z^2+8\,648\,640z+2\,027\,025\right)\sin\left(2\sqrt{z}\right)-3072z^{3/2}\left(256z^2+1120z+3465\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.afqc.01

$${}_1F_2\left(\frac{19}{4};\frac{3}{2},-\frac{11}{4};z\right)=-\frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768z^4+1\,566\,720z^3-2\,763\,648z^2+2\,522\,520z-800\,415\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(69\,632z^3-69\,376z^2+393\,840z-266\,805\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(4096z^3+120\,576z^2-185\,040z-229\,095\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afqd.01

$${}_1F_2\left(\frac{19}{4};\frac{3}{2},-\frac{11}{4};-z\right)=\frac{1}{800\,415\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-32\,768z^4+1\,566\,720z^3+2\,763\,648z^2+2\,522\,520z+800\,415\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(69\,632z^3+69\,376z^2+393\,840z+266\,805\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(4096z^3-120\,576z^2-185\,040z+229\,095\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afqe.01

$${}_1F_2\left(\frac{19}{4};\frac{3}{2},-\frac{9}{4};z\right)=\frac{1}{311\,850\sqrt{z}}\left(7\left(-28\,672z^3+19\,200z^2-110\,160z+19\,305\right)\sinh\left(2\sqrt{z}\right)-4\sqrt{z}\left(4096z^3+145\,152z^2-210\,000z-10\,395\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.afqf.01

$${}_1F_2\left(\frac{19}{4};\frac{3}{2},-\frac{9}{4};-z\right)=\frac{1}{311\,850\sqrt{z}}\left(4\sqrt{z}\left(4096z^3-145\,152z^2-210\,000z+10\,395\right)\cos\left(2\sqrt{z}\right)+7\left(28\,672z^3+19\,200z^2+110\,160z+19\,305\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afqg.01

$${}_1F_2\left(\frac{19}{4};\frac{3}{2},-\frac{7}{4};z\right)=\frac{1}{72\,765\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(36\,864z^3+165\,632z^2-92\,400z+24\,255\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4096z^3+182\,016z^2-159\,120z+72\,765\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+96z\left(1024z^2+240z+1935\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afqh.01

$${}_1F_2\left(\frac{19}{4};\frac{3}{2},-\frac{7}{4};-z\right)=\frac{1}{72\,765\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-110\,592\,z^3+496\,896\,z^2+277\,200\,z+72\,765\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\left(4096\,z^3-182\,016\,z^2-159\,120\,z-72\,765\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+96\,z\left(1024\,z^2-240\,z+1935\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afqi.01

$${}_1F_2\left(\frac{19}{4};\frac{3}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{34\,650\sqrt{z}}\left(96\sqrt{z}\left(512\,z^2+880\,z+105\right)\cosh\left(2\sqrt{z}\right)+\left(4096\,z^3+157\,440\,z^2-104\,400\,z+12\,285\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afqj.01

$${}_1F_2\left(\frac{19}{4};\frac{3}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{34\,650\sqrt{z}}\left(96\sqrt{z}\left(512\,z^2-880\,z+105\right)\cos\left(2\sqrt{z}\right)+\left(-4096\,z^3+157\,440\,z^2+104\,400\,z+12\,285\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afqk.01

$${}_1F_2\left(\frac{19}{4};\frac{3}{2},-\frac{3}{4};z\right)=$$
$$-\frac{1}{10\,395\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2048\,z^3+109\,056\,z^2+64\,680\,z-10\,395\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(12\,544\,z^2+48\,480\,z-10\,395\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+8\,z\left(256\,z^2+9120\,z-3735\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afql.01

$${}_1F_2\left(\frac{19}{4};\frac{3}{2},-\frac{3}{4};-z\right)=\frac{1}{10\,395\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(2048\,z^3-109\,056\,z^2+64\,680\,z+10\,395\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(12\,544\,z^2-48\,480\,z-10\,395\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.8\,z\left(-256\,z^2+9120\,z+3735\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afqm.01

$${}_1F_2\left(\frac{19}{4};\frac{3}{2},-\frac{1}{4};z\right)=\frac{-4\sqrt{z}\left(256\,z^2+9120\,z-855\right)\cosh\left(2\sqrt{z}\right)-45\left(256\,z^2+672\,z-39\right)\sinh\left(2\sqrt{z}\right)}{6930\sqrt{z}}$$

07.22.03.afqn.01

$${}_1F_2\left(\frac{19}{4};\frac{3}{2},-\frac{1}{4};-z\right)=\frac{-4\sqrt{z}\left(256\,z^2-9120\,z-855\right)\cos\left(2\sqrt{z}\right)-45\left(256\,z^2-672\,z-39\right)\sin\left(2\sqrt{z}\right)}{6930\sqrt{z}}$$

07.22.03.afqo.01

$${}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{1}{4}; z\right) = \frac{1}{3465\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(6144z^2+36\,960z+3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(256z^2+9792z+3465\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+768z(7z+15)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afqp.01

$${}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{1}{4}; -z\right) = \frac{1}{3465\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(6144z^2-36\,960z+3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^2-9792z+3465\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-768z(7z-15)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afqq.01

$${}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{3}{4}; z\right) = \frac{640\sqrt{z}\,(4z+9)\cosh\left(2\sqrt{z}\right)+\left(256z^2+7200z+585\right)\sinh\left(2\sqrt{z}\right)}{6930\sqrt{z}}$$

07.22.03.afqr.01

$${}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{3}{4}; -z\right) = \frac{\left(256z^2-7200z+585\right)\sin\left(2\sqrt{z}\right)-640\sqrt{z}\,(4z-9)\cos\left(2\sqrt{z}\right)}{6930\sqrt{z}}$$

07.22.03.afqs.01

$${}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{5}{4}; z\right) = \frac{1}{3465\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(128z^2+4536z+3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,(208z+595)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+8z(16z+345)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afqt.01

$${}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{5}{4}; -z\right) = \frac{1}{3465\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(128z^2-4536z+3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\,(208z-595)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+8(345-16z)zJ_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afqu.01

$${}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{7}{4}; z\right) = \frac{4\sqrt{z}\,(16z+285)\cosh\left(2\sqrt{z}\right)+3(176z+195)\sinh\left(2\sqrt{z}\right)}{2310\sqrt{z}}$$

07.22.03.afqv.01

$${}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{7}{4}; -z\right) = \frac{3(195-176z)\sin\left(2\sqrt{z}\right)-4\sqrt{z}\,(16z-285)\cos\left(2\sqrt{z}\right)}{2310\sqrt{z}}$$

07.22.03.afqw.01

$${}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{9}{4}; z\right) =$$

$$\frac{1}{693\, z^{3/4}}\left(\sqrt{2}\left(\sqrt{z}\,(272\,z+681)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\left(32\,z^2+522\,z+15\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\sqrt{z}\,(56\,z+15)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afqx.01

$${}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{9}{4}; -z\right) =$$

$$\frac{1}{693\, z^{3/4}}\left(\sqrt{2}\left((681-272\,z)\sqrt{z}\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\left(32\,z^2-522\,z+15\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\sqrt{z}\,(56\,z-15)\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afqy.01

$${}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{11}{4}; z\right) = \frac{96\sqrt{z}\,\cosh\left(2\sqrt{z}\right) + (16\,z+117)\sinh\left(2\sqrt{z}\right)}{330\sqrt{z}}$$

07.22.03.afqz.01

$${}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{11}{4}; -z\right) = \frac{96\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (117-16\,z)\sin\left(2\sqrt{z}\right)}{330\sqrt{z}}$$

07.22.03.afr0.01

$${}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{13}{4}; z\right) = \frac{1}{616\sqrt{2}\, z^{7/4}}$$

$$\left(\left(2\sqrt{z}\,\left(64\,z^2+600\,z-9\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(448\,z^2+16\,z+15\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(64\,z^2+144\,z+45\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afr1.01

$${}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{13}{4}; -z\right) = \frac{1}{616\sqrt{2}\, z^{7/4}}$$

$$\left(\left(-2\sqrt{z}\,\left(64\,z^2-600\,z-9\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(448\,z^2-16\,z+15\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(64\,z^2-144\,z+45\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$

$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afr2.01

$${}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{15}{4}; z\right) = \frac{1}{30}\left(4\cosh\left(2\sqrt{z}\right) + \frac{13\sinh\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.afr3.01

$${}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{15}{4}; -z\right) = \frac{1}{30}\left(4\cos\left(2\sqrt{z}\right) + \frac{13\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.afr4.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{17}{4}; z\right) = \frac{1}{19\,712\sqrt{2}\,z^{11/4}}\left(13\left(6\sqrt{z}\left(512z^2+32z-63\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(2048z^3-768z^2-1152z+945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\left(256z^2+288z+315\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afr5.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{17}{4}; -z\right) = -\frac{1}{19\,712\sqrt{2}\,z^{11/4}}\left(13\left(-6\sqrt{z}\left(512z^2-32z-63\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(2048z^3+768z^2-1152z-945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\left(256z^2-288z+315\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afr6.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{19}{4}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}} $$

07.22.03.afr7.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{19}{4}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}} $$

07.22.03.afr8.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{21}{4}; z\right) = \frac{1}{630\,784\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(4096z^3+8448z^2+22\,512z-27\,027\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(20\,480z^3+106\,752z^2+208\,656z-135\,135\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(4096z^3+19\,200z^2+79\,632z+135\,135\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afr9.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{21}{4}; -z\right) = \frac{1}{630\,784\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(4096z^3-8448z^2+22\,512z+27\,027\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(20\,480z^3-106\,752z^2+208\,656z+135\,135\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-4096z^3+19\,200z^2-79\,632z+135\,135\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afra.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{23}{4}; z\right) = \frac{1}{1\,048\,576\, z^{19/4}} \left(19\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(16\,384\, z^{7/2} + 61\,440\, z^3 + 199\,680\, z^{5/2} + 549\,120\, z^2 + 1\,235\,520\, z^{3/2} + 2\,162\,160\, z + 2\,702\,700\sqrt{z} + e^{4\sqrt{z}}\left(16\,384\, z^{7/2} - 61\,440\, z^3 + 199\,680\, z^{5/2} - 549\,120\, z^2 + 1\,235\,520\, z^{3/2} - 2\,162\,160\, z + 2\,702\,700\sqrt{z} - 2\,027\,025\right) + 2\,027\,025\right) - 2\,027\,025\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 2\,027\,025\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right)$$

07.22.03.afrb.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{3}{2}, \frac{23}{4}; -z\right) = \frac{1}{262\,144\, z^{19/4}} \left(19\left(2\,027\,025\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(15\left(4096\, z^3 - 36\,608\, z^2 + 144\,144\, z - 135\,135\right)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\left(4096\, z^3 - 49\,920\, z^2 + 308\,880\, z - 675\,675\right)\cos\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{19}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.afrc.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{23}{4}; z\right) = \frac{1}{1\,748\,906\,775\sqrt[4]{z}} \left(\sqrt{2}\left(\left(1\,048\,576\, z^5 - 34\,406\,400\, z^4 + 381\,394\,944\, z^3 + 1\,202\,019\,840\, z^2 - 5\,165\,884\,080\, z + 1\,748\,906\,775\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 64\sqrt{z}\left(131\,072\, z^4 + 1\,204\,224\, z^3 - 46\,690\,560\, z^2 - 6\,133\,680\, z + 194\,476\,275\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(1\,048\,576\, z^5 - 39\,911\,424\, z^4 + 293\,314\,560\, z^3 + 3\,638\,638\,080\, z^2 - 1\,838\,516\,400\, z - 6\,813\,568\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afrd.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{23}{4}; -z\right) = \frac{1}{1\,748\,906\,775\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-1\,048\,576\, z^5 - 34\,406\,400\, z^4 - 381\,394\,944\, z^3 + 1\,202\,019\,840\, z^2 + 5\,165\,884\,080\, z + 1\,748\,906\,775\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 64\sqrt{z}\left(131\,072\, z^4 - 1\,204\,224\, z^3 - 46\,690\,560\, z^2 + 6\,133\,680\, z + 194\,476\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(1\,048\,576\, z^5 + 39\,911\,424\, z^4 + 293\,314\,560\, z^3 - 3\,638\,638\,080\, z^2 - 1\,838\,516\,400\, z + 6\,813\,568\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afre.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{21}{4}; z\right) = \frac{1}{1\,929\,727\,800\, z^{3/2}} \left(2\sqrt{z}\left(1\,048\,576\, z^5 - 32\,440\,320\, z^4 + 304\,128\,000\, z^3 + 1\,463\,616\,000\, z^2 - 2\,033\,262\,000\, z - 1\,839\,759\,075\right)\cosh\left(2\sqrt{z}\right) + 9\left(1\,048\,576\, z^5 + 3\,604\,480\, z^4 - 236\,544\,000\, z^3 - 44\,352\,000\, z^2 + 605\,682\,000\, z + 204\,417\,675\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afrf.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{21}{4}; -z\right) = \frac{1}{1\,929\,727\,800\, z^{3/2}}$$
$$\left(2\sqrt{z}\,\left(1\,048\,576\, z^5 + 32\,440\,320\, z^4 + 304\,128\,000\, z^3 - 1\,463\,616\,000\, z^2 - 2\,033\,262\,000\, z + 1\,839\,759\,075\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left. 9\left(1\,048\,576\, z^5 - 3\,604\,480\, z^4 - 236\,544\,000\, z^3 + 44\,352\,000\, z^2 + 605\,682\,000\, z - 204\,417\,675\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afrg.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{19}{4}; z\right) =$$
$$-\frac{1}{76\,039\,425\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(27\left(65\,536\, z^4 - 425\,984\, z^3 - 2\,619\,904\, z^2 + 8\,151\,360\, z - 2\,816\,275\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\right.\right.$$
$$\sqrt{z}\,\left(65\,536\, z^4 - 1\,376\,256\, z^3 + 15\,929\,856\, z^2 + 8\,809\,920\, z - 61\,514\,775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left. 3\left(458\,752\, z^4 - 753\,664\, z^3 - 55\,518\,720\, z^2 + 11\,390\,400\, z + 78\,316\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afrh.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{76\,039\,425\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(-27\left(65\,536\, z^4 + 425\,984\, z^3 - 2\,619\,904\, z^2 - 8\,151\,360\, z - 2\,816\,275\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$8\sqrt{z}\,\left(65\,536\, z^4 + 1\,376\,256\, z^3 + 15\,929\,856\, z^2 - 8\,809\,920\, z - 61\,514\,775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left. 3\left(458\,752\, z^4 + 753\,664\, z^3 - 55\,518\,720\, z^2 - 11\,390\,400\, z + 78\,316\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afri.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{17}{4}; z\right) =$$
$$\frac{1}{91\,891\,800\, z^{3/2}}\left(\left(-524\,288\, z^5 + 8\,847\,360\, z^4 - 99\,348\,480\, z^3 - 53\,222\,400\, z^2 + 213\,305\,400\, z + 68\,139\,225\right)\sinh\left(2\sqrt{z}\right) - \right.$$
$$\left. 10\sqrt{z}\,\left(327\,680\, z^4 - 1\,622\,016\, z^3 - 15\,966\,720\, z^2 + 15\,301\,440\, z + 13\,627\,845\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.afrj.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{91\,891\,800\, z^{3/2}}\left(10\sqrt{z}\,\left(327\,680\, z^4 + 1\,622\,016\, z^3 - 15\,966\,720\, z^2 - 15\,301\,440\, z + 13\,627\,845\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left.\left(524\,288\, z^5 + 8\,847\,360\, z^4 + 99\,348\,480\, z^3 - 53\,222\,400\, z^2 - 213\,305\,400\, z + 68\,139\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afrk.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{4\,002\,075\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536 z^4 - 49\,152 z^3 + 5\,133\,312 z^2 - 11\,535\,552 z + 4\,002\,075\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 192\sqrt{z}\right.\right.$$
$$\left(5120 z^3 - 30\,848 z^2 - 37\,164 z + 122\,535\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.\left(65\,536 z^4 - 737\,280 z^3 + 8\,957\,952 z^2 + 613\,440 z - 9\,398\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afrl.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{4\,002\,075\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536 z^4 + 49\,152 z^3 + 5\,133\,312 z^2 + 11\,535\,552 z + 4\,002\,075\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 192\sqrt{z}\right.\right.$$
$$\left(5120 z^3 + 30\,848 z^2 - 37\,164 z - 122\,535\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.\left(-65\,536 z^4 - 737\,280 z^3 - 8\,957\,952 z^2 + 613\,440 z + 9\,398\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afrm.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{13}{4}; z\right) = \frac{1}{5\,405\,400 z^{3/2}}\left(2\sqrt{z}\left(65\,536 z^4 - 245\,760 z^3 + 5\,322\,240 z^2 - 3\,326\,400 z - 2\,962\,575\right)\cosh\left(2\sqrt{z}\right) +\right.$$
$$\left.15\left(65\,536 z^4 - 344\,064 z^3 - 354\,816 z^2 + 665\,280 z + 197\,505\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afrn.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{13}{4}; -z\right) = \frac{1}{5\,405\,400 z^{3/2}}\left(-2\sqrt{z}\left(65\,536 z^4 + 245\,760 z^3 + 5\,322\,240 z^2 + 3\,326\,400 z - 2\,962\,575\right)\cos\left(2\sqrt{z}\right) -\right.$$
$$\left.15\left(65\,536 z^4 + 344\,064 z^3 - 354\,816 z^2 - 665\,280 z + 197\,505\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afro.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{11}{4}; z\right) = -\frac{1}{266\,805\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(151\,552 z^3 - 507\,648 z^2 + 789\,552 z - 266\,805\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\left(4096 z^3 + 25\,344 z^2 + 98\,736 z - 178\,155\right)\right.\right.$$
$$\left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(126\,976 z^3 - 567\,552 z^2 - 203\,760 z + 447\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afrp.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{11}{4}; -z\right) = \frac{1}{266\,805\sqrt[4]{z}} \left(\sqrt{2}\left(\left(151\,552 z^3 + 507\,648 z^2 + 789\,552 z + 266\,805\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 8\sqrt{z}\left(4096 z^3 - 25\,344 z^2 + 98\,736 z + 178\,155\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-126\,976 z^3 - 567\,552 z^2 + 203\,760 z + 447\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afrq.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{9}{4}; z\right) = \frac{1}{415\,800 z^{3/2}}\left(\left(-32\,768 z^4 - 215\,040 z^3 - 604\,800 z^2 + 582\,120 z + 155\,925\right)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(45\,056 z^3 - 152\,320 z^2 + 55\,440 z + 51\,975\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.afrr.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{9}{4}; -z\right) = \frac{1}{415\,800 z^{3/2}}\left(\left(32\,768 z^4 - 215\,040 z^3 + 604\,800 z^2 + 582\,120 z - 155\,925\right)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\left(45\,056 z^3 + 152\,320 z^2 + 55\,440 z - 51\,975\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.afrs.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{7}{4}; z\right) = \frac{1}{24\,255\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096 z^3 + 88\,320 z^2 - 79\,056 z + 24\,255\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 192\sqrt{z}\left(384 z^2 - 632 z + 615\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(4096 z^3 + 36\,096 z^2 + 33\,840 z - 26\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afrt.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{7}{4}; -z\right) = \frac{1}{24\,255\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4096 z^3 + 88\,320 z^2 + 79\,056 z + 24\,255\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 192\sqrt{z}\left(384 z^2 + 632 z + 615\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(4096 z^3 - 36\,096 z^2 + 33\,840 z + 26\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afru.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{5}{4}; z\right) = \frac{1}{46\,200 z^{3/2}}\left(2\sqrt{z}\left(4096 z^3 + 52\,992 z^2 - 8400 z - 10\,395\right)\cosh\left(2\sqrt{z}\right) + \left(69\,632 z^3 - 96\,000 z^2 + 45\,360 z + 10\,395\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afrv.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{5}{4}; -z\right) = \frac{1}{46\,200 z^{3/2}}\left(2\sqrt{z}\left(4096 z^3 - 52\,992 z^2 - 8400 z + 10\,395\right)\cos\left(2\sqrt{z}\right) + \left(69\,632 z^3 + 96\,000 z^2 + 45\,360 z - 10\,395\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afrw.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{3}{4}; z\right) =$$

$$-\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(3328z^2+5344z-1155\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(256z^2+4896z-1935\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.3\left(2816z^2-2400z+675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afrx.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{3}{4}; -z\right) =$$

$$\frac{1}{3465\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-9984z^2+16032z+3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(256z^2-4896z-1935\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$

$$\left.\left.3\left(2816z^2+2400z+675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afry.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{1}{4}; z\right) = \frac{\left(-2048z^3-30720z^2+5400z+945\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\left(2816z^2-160z+315\right)\cosh\left(2\sqrt{z}\right)}{9240z^{3/2}}$$

07.22.03.afrz.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, -\frac{1}{4}; -z\right) = \frac{6\sqrt{z}\left(2816z^2+160z+315\right)\cos\left(2\sqrt{z}\right)+\left(-2048z^3+30720z^2+5400z-945\right)\sin\left(2\sqrt{z}\right)}{9240z^{3/2}}$$

07.22.03.afs0.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{1}{4}; z\right) = \frac{1}{1155\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(256z^2+6432z+1155\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+64\sqrt{z}\left(68z+75\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(256z^2+3360z-225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afs1.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{1}{4}; -z\right) = \frac{1}{1155\sqrt[4]{z}}\left(\sqrt{2}\right.$$

$$\left.\left(\left(256z^2-6432z+1155\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+64\sqrt{z}\left(68z-75\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-256z^2+3360z+225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afs2.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{3}{4}; z\right) = \frac{15\sinh\left(2\sqrt{z}\right)(16z+3)^2+2\sqrt{z}\left(256z^2+3360z-135\right)\cosh\left(2\sqrt{z}\right)}{9240z^{3/2}}$$

07.22.03.afs3.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{3}{4}; -z\right) = \frac{-15\sin\left(2\sqrt{z}\right)(3-16z)^2-2\sqrt{z}\left(256z^2-3360z-135\right)\cos\left(2\sqrt{z}\right)}{9240z^{3/2}}$$

07.22.03.afs4.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{5}{4}; z\right) =$$

$$\frac{1}{1155\sqrt[4]{z}}\left(\sqrt{2}\left(33\,(16\,z+35)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\,(16\,z+237)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+9\,(48\,z+5)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afs5.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{5}{4}; -z\right) =$$

$$\frac{1}{1155\sqrt[4]{z}}\left(\sqrt{2}\left(-33\,(16\,z-35)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\,(16\,z-237)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+9\,(48\,z-5)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afs6.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{7}{4}; z\right) = \frac{10\sqrt{z}\,(80\,z+9)\cosh\left(2\sqrt{z}\right)+\left(128\,z^2+1080\,z-45\right)\sinh\left(2\sqrt{z}\right)}{3080\,z^{3/2}}$$

07.22.03.afs7.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{7}{4}; -z\right) = \frac{10\sqrt{z}\,(80\,z-9)\cos\left(2\sqrt{z}\right)+\left(-128\,z^2+1080\,z+45\right)\sin\left(2\sqrt{z}\right)}{3080\,z^{3/2}}$$

07.22.03.afs8.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{9}{4}; z\right) =$$

$$\frac{1}{231\,z^{3/4}}\left(\sqrt{2}\left(\sqrt{z}\,(16\,z+207)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\,(16\,z+5)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\sqrt{z}\,(16\,z+75)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afs9.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{9}{4}; -z\right) =$$

$$\frac{1}{231\,z^{3/4}}\left(\sqrt{2}\left((207-16\,z)\sqrt{z}\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\,(5-16\,z)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\sqrt{z}\,(16\,z-75)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afsa.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{11}{4}; z\right) = \frac{2\sqrt{z}\,(16\,z+45)\cosh\left(2\sqrt{z}\right)+9\,(16\,z-5)\sinh\left(2\sqrt{z}\right)}{440\,z^{3/2}}$$

07.22.03.afsb.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{11}{4}; -z\right) = \frac{2\sqrt{z}\,(16\,z-45)\cos\left(2\sqrt{z}\right)+9\,(16\,z+5)\sin\left(2\sqrt{z}\right)}{440\,z^{3/2}}$$

07.22.03.afsc.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{13}{4}; z\right) =$$

$$\frac{1}{308\sqrt{2}\,z^{7/4}}\left(3\left(2\sqrt{z}\,(76\,z+3)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(64\,z^2+144\,z-15\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,(52\,z-15)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afsd.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{13}{4}; -z\right) =$$

$$-\frac{1}{308\sqrt{2}\, z^{7/4}}\left(3\left(2\,(3-76\,z)\sqrt{z}\; J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(64\,z^2-144\,z-15\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\;(52\,z+15)\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afse.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{15}{4}; z\right) = \frac{18\sqrt{z}\,\cosh\left(2\sqrt{z}\right) + (8\,z-9)\sinh\left(2\sqrt{z}\right)}{40\,z^{3/2}}$$

07.22.03.afsf.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{15}{4}; -z\right) = \frac{(8\,z+9)\sin\left(2\sqrt{z}\right) - 18\sqrt{z}\,\cos\left(2\sqrt{z}\right)}{40\,z^{3/2}}$$

07.22.03.afsg.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{17}{4}; z\right) = \frac{1}{9856\sqrt{2}\, z^{11/4}}$$

$$\left(39\left(2\sqrt{z}\,\left(128\,z^2+27\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(256\,z^2+32\,z-45\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(128\,z^2-192\,z-135\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afsh.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{17}{4}; -z\right) = \frac{1}{9856\sqrt{2}\, z^{11/4}}$$

$$\left(39\left(2\sqrt{z}\,\left(128\,z^2+27\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(256\,z^2-32\,z-45\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(128\,z^2+192\,z-135\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afsi.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{19}{4}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4\,z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.afsj.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{19}{4}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

07.22.03.afsk.01

$${}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{21}{4}; z\right) =$$

$$\frac{1}{315\,392\sqrt{2}\, z^{15/4}}\left(663\left(-6\sqrt{z}\,\left(256\,z^2+656\,z-819\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4096\,z^3+9984\,z^2+18\,576\,z-12\,285\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - \right.$$

$$\left.18\sqrt{z}\,\left(256\,z^2+848\,z+1365\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.afsl.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{21}{4}; -z\right) = \frac{1}{315\,392\sqrt{2}\, z^{15/4}}\left(663\left(6\sqrt{z}\,\left(256z^2-656z-819\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(4096z^3-9984z^2+18\,576z+12\,285\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-18\sqrt{z}\,\left(256z^2-848z+1365\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afsm.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{23}{4}; z\right) = \frac{1}{524\,288\, z^{19/4}}\left(57\, e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\left(-4096z^3-15\,360z^{5/2}-42\,240z^2-95\,040z^{3/2}-166\,320z-207\,900\sqrt{z}+e^{4\sqrt{z}}\left(4096z^3-15\,360z^{5/2}+42\,240z^2-95\,040z^{3/2}+166\,320z-207\,900\sqrt{z}+155\,925\right)-155\,925\right)+155\,925\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-155\,925\, e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right) $$

07.22.03.afsn.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{5}{2}, \frac{23}{4}; -z\right) = -\frac{1}{131\,072\, z^{19/4}}\left(57\left(155\,925\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+2\sqrt[4]{z}\left(60\sqrt{z}\,\left(256z^2-1584z+3465\right)\cos\left(2\sqrt{z}\right)+\left(4096z^3-42\,240z^2+166\,320z-155\,925\right)\sin\left(2\sqrt{z}\right)\right)\right)\right) $$

For fixed z and $a_1 = \frac{19}{4}$, $b_{1.} = \frac{7}{2}$

07.22.03.afso.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{23}{4}; z\right) = \frac{1}{699\,562\,710\sqrt{2}\, z^{5/4}}\left(\left(-48z\left(65\,536z^4-6\,193\,152z^3+1\,559\,040z^2+166\,118\,400z+220\,682\,385\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(1\,048\,576z^5-24\,182\,784z^4-436\,101\,120z^3+1\,370\,396\,160z^2+8\,788\,061\,520z+14\,989\,849\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-3\left(2\,097\,152z^5-121\,569\,280z^4-504\,053\,760z^3+3\,542\,192\,640z^2+14\,535\,612\,000z+24\,983\,083\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afsp.01

$${}_1F_2\left(\frac{19}{4};\frac{7}{2},-\frac{23}{4};-z\right)=$$
$$-\frac{1}{699\,562\,710\sqrt{2}\,z^{5/4}}\left(\left(48z\left(65\,536z^4+6\,193\,152z^3+1\,559\,040z^2-166\,118\,400z+220\,682\,385\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(1\,048\,576z^5+24\,182\,784z^4-436\,101\,120z^3-1\,370\,396\,160z^2+8\,788\,061\,520z-14\,989\,849\,875\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+3\left(-2\,097\,152z^5-121\,569\,280z^4+504\,053\,760z^3+\right.$$
$$\left.\left.3\,542\,192\,640z^2-14\,535\,612\,000z+24\,983\,083\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.afsq.01

$${}_1F_2\left(\frac{19}{4};\frac{7}{2},-\frac{21}{4};z\right)=\frac{1}{1\,543\,782\,240\,z^{5/2}}$$
$$\left(\left(4\,194\,304z^6-95\,158\,272z^5-1\,216\,512\,000z^4+3\,725\,568\,000z^3+21\,804\,552\,000z^2+41\,701\,205\,700z+19\,010\,843\,775\right)\right.$$
$$\sinh\left(2\sqrt{z}\right)-$$
$$\left.6\sqrt{z}\left(1\,048\,576z^5-90\,112\,000z^4-101\,376\,000z^3+1\,995\,840\,000z^2+5\,451\,138\,000z+6\,336\,947\,925\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.afsr.01

$${}_1F_2\left(\frac{19}{4};\frac{7}{2},-\frac{21}{4};-z\right)=\frac{1}{1\,543\,782\,240\,z^{5/2}}$$
$$\left(6\sqrt{z}\left(1\,048\,576z^5+90\,112\,000z^4-101\,376\,000z^3-1\,995\,840\,000z^2+5\,451\,138\,000z-6\,336\,947\,925\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left(4\,194\,304z^6+95\,158\,272z^5-1\,216\,512\,000z^4-3\,725\,568\,000z^3+\right.$$
$$\left.\left.21\,804\,552\,000z^2-41\,701\,205\,700z+19\,010\,843\,775\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afss.01

$${}_1F_2\left(\frac{19}{4};\frac{7}{2},-\frac{19}{4};z\right)=$$
$$-\frac{1}{30\,415\,770\sqrt{2}\,z^{5/4}}\left(\left(8z\left(65\,536z^4-1\,474\,560z^3-1\,860\,096z^2+36\,872\,640z+37\,819\,845\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(65\,536z^4+20\,938\,752z^3-37\,255\,680z^2-296\,130\,240z-454\,237\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(524\,288z^5-11\,599\,872z^4-86\,200\,320z^3+330\,301\,440z^2+1\,378\,377\,000z+2\,271\,189\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afst.01

$${}_1F_2\left(\frac{19}{4};\frac{7}{2},-\frac{19}{4};-z\right)=$$
$$-\frac{1}{30\,415\,770\sqrt{2}\,z^{5/4}}\left(\left(8z\left(65\,536z^4+1\,474\,560z^3-1\,860\,096z^2-36\,872\,640z+37\,819\,845\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(65\,536z^4-20\,938\,752z^3-37\,255\,680z^2+296\,130\,240z-454\,237\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-524\,288z^5-11\,599\,872z^4+86\,200\,320z^3+330\,301\,440z^2-1\,378\,377\,000z+2\,271\,189\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afsu.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{17}{4}; z\right) =$$
$$\frac{1}{73\,513\,440\, z^{5/2}}\left(3\left(-262\,144\, z^5 - 21\,626\,880\, z^4 + 35\,481\,600\, z^3 + 252\,806\,400\, z^2 + 454\,261\,500\, z + 204\,417\,675\right)\sinh\left(2\sqrt{z}\right) - \right.$$
$$\left. 2\sqrt{z}\left(524\,288\, z^5 - 10\,813\,440\, z^4 - 30\,412\,800\, z^3 + 212\,889\,600\, z^2 + 545\,113\,800\, z + 613\,253\,025\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.afsv.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{17}{4}; -z\right) = \frac{1}{73\,513\,440\, z^{5/2}}$$
$$\left(2\sqrt{z}\left(524\,288\, z^5 + 10\,813\,440\, z^4 - 30\,412\,800\, z^3 - 212\,889\,600\, z^2 + 545\,113\,800\, z - 613\,253\,025\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left. 3\left(262\,144\, z^5 - 21\,626\,880\, z^4 - 35\,481\,600\, z^3 + 252\,806\,400\, z^2 - 454\,261\,500\, z + 204\,417\,675\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afsw.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{15}{4}; z\right) = \frac{1}{1\,600\,830\sqrt{2}\, z^{5/4}}\left(\left(48\, z\left(8192\, z^3 + 40\,192\, z^2 - 278\,208\, z - 194\,355\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(65\,536\, z^4 - 1\,130\,496\, z^3 + 792\,576\, z^2 + 11\,833\,920\, z + 15\,663\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left. 3\left(65\,536\, z^4 + 1\,814\,528\, z^3 - 3\,740\,160\, z^2 - 16\,707\,600\, z - 26\,105\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afsx.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{15}{4}; -z\right) = \frac{1}{1\,600\,830\sqrt{2}\, z^{5/4}}\left(\left(-48\, z\left(8192\, z^3 - 40\,192\, z^2 - 278\,208\, z + 194\,355\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(65\,536\, z^4 + 1\,130\,496\, z^3 + 792\,576\, z^2 - 11\,833\,920\, z + 15\,663\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left. 3\left(65\,536\, z^4 - 1\,814\,528\, z^3 - 3\,740\,160\, z^2 + 16\,707\,600\, z - 26\,105\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afsy.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{13}{4}; z\right) = \frac{1}{4\,324\,320\, z^{5/2}}\left(10\sqrt{z}\left(65\,536\, z^4 + 540\,672\, z^3 - 1\,774\,080\, z^2 - 4\,213\,440\, z - 4\,542\,615\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left.\left(262\,144\, z^5 - 3\,932\,160\, z^4 + 2\,365\,440\, z^3 + 31\,046\,400\, z^2 + 51\,351\,300\, z + 22\,713\,075\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afsz.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{13}{4}; -z\right) = \frac{1}{4\,324\,320\, z^{5/2}}\left(10\sqrt{z}\left(65\,536\, z^4 - 540\,672\, z^3 - 1\,774\,080\, z^2 + 4\,213\,440\, z - 4\,542\,615\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left.\left(262\,144\, z^5 + 3\,932\,160\, z^4 + 2\,365\,440\, z^3 - 31\,046\,400\, z^2 + 51\,351\,300\, z - 22\,713\,075\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aft0.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{11}{4}; z\right) = -\frac{1}{106\,722\sqrt{2}\, z^{5/4}} \left(\left(8z\left(4096z^3 - 29\,952z^2 + 98\,352z + 35\,973\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(20\,480z^3 + 10\,496z^2 - 195\,792z - 208\,845\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(32\,768z^4 - 399\,360z^3 + 383\,616z^2 + 2\,148\,120z + 3\,132\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aft1.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{11}{4}; -z\right) = \frac{1}{106\,722\sqrt{2}\, z^{5/4}} \left(\left(8z\left(4096z^3 + 29\,952z^2 + 98\,352z - 35\,973\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(20\,480z^3 - 10\,496z^2 - 195\,792z + 208\,845\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - \left(32\,768z^4 + 399\,360z^3 + 383\,616z^2 - 2\,148\,120z + 3\,132\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aft2.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{9}{4}; z\right) = \frac{1}{332\,640\, z^{5/2}} \left(-2\sqrt{z}\left(32\,768z^4 - 276\,480z^3 + 443\,520z^2 + 970\,200z + 987\,525\right)\cosh\left(2\sqrt{z}\right) - 15\left(16\,384z^4 + 7168z^3 - 103\,488z^2 - 152\,460z - 65\,835\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aft3.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{9}{4}; -z\right) = \frac{1}{332\,640\, z^{5/2}} \left(-2\sqrt{z}\left(32\,768z^4 + 276\,480z^3 + 443\,520z^2 - 970\,200z + 987\,525\right)\cos\left(2\sqrt{z}\right) - 15\left(16\,384z^4 - 7168z^3 - 103\,488z^2 + 152\,460z - 65\,835\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aft4.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{7}{4}; z\right) = \frac{1}{9702\sqrt{2}\, z^{5/4}} \left(\left(16z\left(2816z^2 - 4224z - 279\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096z^3 - 13\,056z^2 + 39\,216z + 29\,835\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(32\,768z^3 - 5376z^2 - 112\,320z - 149\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aft5.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{7}{4}; -z\right) = -\frac{1}{9702\sqrt{2}\, z^{5/4}} \left(\left(-16z\left(2816z^2 + 4224z - 279\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096z^3 + 13\,056z^2 + 39\,216z - 29\,835\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(32\,768z^3 + 5376z^2 - 112\,320z + 149\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aft6.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{5}{4}; z\right) = \frac{1}{36\,960\, z^{5/2}}\left(6\sqrt{z}\,\left(12\,288\, z^3 - 8960\, z^2 - 18\,480\, z - 17\,325\right)\cosh\left(2\sqrt{z}\right) + \left(16\,384\, z^4 - 46\,080\, z^3 + 100\,800\, z^2 + 124\,740\, z + 51\,975\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aft7.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{5}{4}; -z\right) = \frac{1}{36\,960\, z^{5/2}}\left(\left(16\,384\, z^4 + 46\,080\, z^3 + 100\,800\, z^2 - 124\,740\, z + 51\,975\right)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(12\,288\, z^3 + 8960\, z^2 - 18\,480\, z + 17\,325\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.aft8.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{3}{4}; z\right) = -\frac{1}{1386\sqrt{2}\, z^{5/4}}\left(\left(8\, z\left(256\, z^2 + 1440\, z - 171\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,\left(1792\, z^2 - 1376\, z - 585\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(2048\, z^3 - 3072\, z^2 + 7560\, z + 8775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aft9.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{3}{4}; -z\right) = \frac{1}{1386\sqrt{2}\, z^{5/4}}\left(\left(-8\, z\left(256\, z^2 - 1440\, z - 171\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\,\left(1792\, z^2 + 1376\, z - 585\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(2048\, z^3 + 3072\, z^2 + 7560\, z - 8775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afta.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{1}{4}; z\right) = \frac{1}{7392\, z^{5/2}}\left(\left(-19\,456\, z^3 + 9600\, z^2 + 8820\, z + 3465\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(2048\, z^3 + 1536\, z^2 + 4200\, z + 3465\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aftb.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, -\frac{1}{4}; -z\right) = \frac{1}{7392\, z^{5/2}}\left(2\sqrt{z}\,\left(2048\, z^3 - 1536\, z^2 + 4200\, z - 3465\right)\cos\left(2\sqrt{z}\right) + \left(19\,456\, z^3 + 9600\, z^2 - 8820\, z + 3465\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aftc.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{1}{4}; z\right) = \frac{1}{462\sqrt{2}\, z^{5/4}}\left(\left(48\, z\,(64\, z + 17)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(256\, z^2 + 1056\, z + 135\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 9\left(256\, z^2 - 80\, z - 75\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aftd.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{1}{4}; -z\right) = \frac{1}{462\sqrt{2}\, z^{5/4}} \left(\left(-48 z (64 z-17) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\, \left(256 z^2-1056 z+135\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 9\left(256 z^2+80 z-75\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afte.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{3}{4}; z\right) = \frac{6\sqrt{z}\, \left(768 z^2-160 z-105\right) \cosh\left(2\sqrt{z}\right) + \left(1024 z^3+1920 z^2+900 z+315\right) \sinh\left(2\sqrt{z}\right)}{7392 z^{5/2}} $$

07.22.03.aftf.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{3}{4}; -z\right) = \frac{6\sqrt{z}\, \left(768 z^2+160 z-105\right) \cos\left(2\sqrt{z}\right) + \left(-1024 z^3+1920 z^2-900 z+315\right) \sin\left(2\sqrt{z}\right)}{7392 z^{5/2}} $$

07.22.03.aftg.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{5}{4}; z\right) = \frac{1}{462\sqrt{2}\, z^{5/4}} \left(\left(8 z (16 z+117) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\, (304 z-15) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(128 z^2+120 z+75\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afth.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{5}{4}; -z\right) = \frac{1}{462\sqrt{2}\, z^{5/4}} \left(\left(8 (117-16 z) z J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\, (304 z+15) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(128 z^2-120 z+75\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afti.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{7}{4}; z\right) = \frac{2\sqrt{z}\, \left(128 z^2+120 z+45\right) \cosh\left(2\sqrt{z}\right) + 15\left(64 z^2-12 z-3\right) \sinh\left(2\sqrt{z}\right)}{2464 z^{5/2}} $$

07.22.03.aftj.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{7}{4}; -z\right) = \frac{2\sqrt{z}\, \left(128 z^2-120 z+45\right) \cos\left(2\sqrt{z}\right) + 15\left(64 z^2+12 z-3\right) \sin\left(2\sqrt{z}\right)}{2464 z^{5/2}} $$

07.22.03.aftk.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{9}{4}; z\right) = \frac{5\left(144 z I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\, (16 z+27) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 3 (32 z-5) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2}{462\sqrt{2}\, z^{5/4}} $$

07.22.03.aftl.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{9}{4}; -z\right) = -\frac{5\left(-144 z J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\, (16 z-27) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 3 (32 z+5) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2}{462\sqrt{2}\, z^{5/4}} $$

07.22.03.aftm.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{11}{4}; z\right) = \frac{10\sqrt{z}\, (16 z-3) \cosh\left(2\sqrt{z}\right) + \left(64 z^2-60 z+15\right) \sinh\left(2\sqrt{z}\right)}{352 z^{5/2}} $$

07.22.03.aftn.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{11}{4}; z\right) = \frac{\left(64 z^2 + 60 z + 15\right) \sin\left(2 \sqrt{z}\right) - 10 \sqrt{z}\ (16 z + 3) \cos\left(2 \sqrt{z}\right)}{352 z^{5/2}}$$

07.22.03.afto.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{13}{4}; z\right) = \frac{15 \left(2 \sqrt{z}\ (4 z + 3) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3 (12 z - 5) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \sqrt{z}\ (8 z - 15) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2}{154 \sqrt{2}\ z^{7/4}}$$

07.22.03.aftp.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{13}{4}; z\right) = \frac{15 \left(2 \sqrt{z}\ (4 z - 3) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3 (12 z + 5) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - \sqrt{z}\ (8 z + 15) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2}{154 \sqrt{2}\ z^{7/4}}$$

07.22.03.aftq.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{15}{4}; z\right) = \frac{2 \sqrt{z}\ (8 z - 15) \cosh\left(2 \sqrt{z}\right) + 3 (4 z + 5) \sinh\left(2 \sqrt{z}\right)}{32 z^{5/2}}$$

07.22.03.aftr.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{15}{4}; z\right) = \frac{3 (5 - 4 z) \sin\left(2 \sqrt{z}\right) - 2 \sqrt{z}\ (8 z + 15) \cos\left(2 \sqrt{z}\right)}{32 z^{5/2}}$$

07.22.03.afts.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{17}{4}; z\right) =$$

$$\frac{1}{4928 \sqrt{2}\ z^{11/4}} \left(195 \left(2 \sqrt{z}\ (32 z - 9) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(128 z^2 - 192 z + 45\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2 (45 - 16 z) \sqrt{z}\ I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aftt.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{17}{4}; z\right) = \frac{1}{4928 \sqrt{2}\ z^{11/4}}$$

$$\left(195 \left(-2 \sqrt{z}\ (32 z + 9) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(128 z^2 + 192 z + 45\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2 \sqrt{z}\ (16 z + 45) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aftu.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{19}{4}; z\right) = \frac{15 \left((4 z + 3) \sinh\left(2 \sqrt{z}\right) - 6 \sqrt{z}\ \cosh\left(2 \sqrt{z}\right)\right)}{32 z^{5/2}}$$

07.22.03.aftv.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{19}{4}; z\right) = -\frac{15 \left(6 \sqrt{z}\ \cos\left(2 \sqrt{z}\right) + (4 z - 3) \sin\left(2 \sqrt{z}\right)\right)}{32 z^{5/2}}$$

07.22.03.aftw.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{21}{4}; z\right) =$$
$$\frac{1}{157\,696\sqrt{2}\,z^{15/4}}\left(3315\left(2\sqrt{z}\,\left(256z^2+240z-351\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-9\left(256z^2+272z-195\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(256z^2+1296z+1755\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aftx.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{21}{4}; -z\right) =$$
$$-\frac{1}{157\,696\sqrt{2}\,z^{15/4}}\left(3315\left(2\sqrt{z}\,\left(256z^2-240z-351\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-9\left(256z^2-272z-195\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(256z^2-1296z+1755\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afty.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{23}{4}; z\right) = \frac{1}{262\,144\,z^{19/4}}\left(285\,e^{-2\sqrt{z}}\left(4\sqrt[4]{z}\,\left(1024z^{5/2}+4352z^2+10\,560z^{3/2}+18\,480z+23\,100\sqrt{z}\,+\right.\right.\right.$$
$$\left.\left.e^{4\sqrt{z}}\left(1024z^{5/2}-4352z^2+10\,560z^{3/2}-18\,480z+23\,100\sqrt{z}\,-17\,325\right)+17\,325\right)-$$
$$\left.17\,325\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)+17\,325\,e^{2\sqrt{z}}\,\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\Big)$$

07.22.03.aftz.01

$${}_1F_2\left(\frac{19}{4}; \frac{7}{2}, \frac{23}{4}; -z\right) = \frac{1}{65\,536\,z^{19/4}}\left(285\left(17\,325\sqrt{\pi}\,S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)+\right.\right.$$
$$\left.\left.2\sqrt[4]{z}\,\left(4\sqrt{z}\,\left(256z^2-2640z+5775\right)\cos\left(2\sqrt{z}\right)+\left(-4352z^2+18\,480z-17\,325\right)\sin\left(2\sqrt{z}\right)\right)\right)\right)$$

For fixed z and $a_1 = \frac{19}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.afu0.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{23}{4}; z\right) = \frac{1}{399\,750\,120\sqrt{2}\,z^{9/4}}$$
$$\left(\left(4z\left(1\,048\,576z^5+27\,328\,512z^4-322\,560\,000z^3-4\,631\,477\,760z^2-30\,446\,040\,240z-110\,924\,889\,075\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\,\left(6\,291\,456z^5+19\,333\,120z^4-1\,157\,775\,360z^3-11\,236\,538\,880z^2-67\,509\,842\,400z-184\,874\,815\,125\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(4\,194\,304z^6+169\,082\,880z^5-980\,582\,400z^4-29\,557\,463\,040z^3-\right.$$
$$\left.\left.\left.246\,136\,363\,200z^2-1\,259\,147\,389\,500z-2\,773\,122\,226\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afu1.01

$${}_1F_2\left(\frac{19}{4};\frac{9}{2},-\frac{23}{4};-z\right)=\frac{1}{399\,750\,120\sqrt{2}\,z^{9/4}}$$
$$\left(\left(4z\left(1\,048\,576z^5-27\,328\,512z^4-322\,560\,000z^3+4\,631\,477\,760z^2-30\,446\,040\,240z+110\,924\,889\,075\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(6\,291\,456z^5-19\,333\,120z^4-1\,157\,775\,360z^3+11\,236\,538\,880z^2-67\,509\,842\,400z+184\,874\,815\,125\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-4\,194\,304z^6+169\,082\,880z^5+980\,582\,400z^4-29\,557\,463\,040z^3+\right.$$
$$\left.\left.246\,136\,363\,200z^2-1\,259\,147\,389\,500z+2\,773\,122\,226\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.afu2.01

$${}_1F_2\left(\frac{19}{4};\frac{9}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{882\,161\,280z^{7/2}}\left(2\sqrt{z}\left(4\,194\,304z^6+106\,168\,320z^5-1\,000\,243\,200z^4-16\,711\,833\,600z^3-117\,744\,580\,800z^2-\right.\right.$$
$$\left.481\,608\,042\,300z-665\,379\,532\,125\right)\cosh\left(2\sqrt{z}\right)+\left(-67\,108\,864z^6-86\,507\,520z^5+10\,218\,700\,800z^4+\right.$$
$$\left.\left.93\,032\,755\,200z^3+523\,309\,248\,000z^2+1\,368\,780\,751\,800z+665\,379\,532\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afu3.01

$${}_1F_2\left(\frac{19}{4};\frac{9}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{882\,161\,280z^{7/2}}\left(\left(67\,108\,864z^6-86\,507\,520z^5-10\,218\,700\,800z^4+93\,032\,755\,200z^3-523\,309\,248\,000z^2+\right.\right.$$
$$1\,368\,780\,751\,800z-665\,379\,532\,125\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(4\,194\,304z^6-106\,168\,320z^5-$$
$$\left.\left.1\,000\,243\,200z^4+16\,711\,833\,600z^3-117\,744\,580\,800z^2+481\,608\,042\,300z-665\,379\,532\,125\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.afu4.01

$${}_1F_2\left(\frac{19}{4};\frac{9}{2},-\frac{19}{4};z\right)=$$
$$-\frac{1}{17\,380\,440\sqrt{2}\,z^{9/4}}\left(\left(-84z\left(65\,536z^4-376\,832z^3-6\,720\,000z^2-39\,962\,880z-142\,760\,475\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(524\,288z^5+6\,094\,848z^4-101\,928\,960z^3-975\,098\,880z^2-5\,571\,984\,600z-14\,989\,849\,875\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+3\left(-2\,359\,296z^5+2\,621\,440z^4+290\,088\,960z^3+\right.$$
$$\left.\left.2\,316\,787\,200z^2+11\,507\,359\,500z+24\,983\,083\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.afu5.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{17\,380\,440\sqrt{2}\, z^{9/4}}\left(\left(-84 z \left(65\,536 z^4 + 376\,832 z^3 - 6\,720\,000 z^2 + 39\,962\,880 z - 142\,760\,475\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\right.\right. \left(524\,288 z^5 - 6\,094\,848 z^4 - 101\,928\,960 z^3 + 975\,098\,880 z^2 - 5\,571\,984\,600 z + 14\,989\,849\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(2\,359\,296 z^5 + 2\,621\,440 z^4 - 290\,088\,960 z^3 + 2\,316\,787\,200 z^2 - 11\,507\,359\,500 z + 24\,983\,083\,125\right) \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afu6.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{17}{4}; z\right) = \frac{1}{42\,007\,680 z^{7/2}} \left(6\sqrt{z}\left(1\,835\,008 z^5 - 7\,208\,960 z^4 - 175\,380\,480 z^3 - 1\,162\,909\,440 z^2 - 4\,633\,467\,300 z - 6\,336\,947\,925\right)\cosh\left(2\sqrt{z}\right) + \left(-2\,097\,152 z^6 - 17\,301\,504 z^5 + 316\,293\,120 z^4 + 2\,831\,431\,680 z^3 + 15\,263\,186\,400 z^2 + 39\,248\,193\,600 z + 19\,010\,843\,775\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afu7.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{17}{4}; -z\right) = \frac{1}{42\,007\,680 z^{7/2}} \left(6\sqrt{z}\left(1\,835\,008 z^5 + 7\,208\,960 z^4 - 175\,380\,480 z^3 + 1\,162\,909\,440 z^2 - 4\,633\,467\,300 z + 6\,336\,947\,925\right)\cos\left(2\sqrt{z}\right) + \left(2\,097\,152 z^6 - 17\,301\,504 z^5 - 316\,293\,120 z^4 + 2\,831\,431\,680 z^3 - 15\,263\,186\,400 z^2 + 39\,248\,193\,600 z - 19\,010\,843\,775\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afu8.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{15}{4}; z\right) = \frac{1}{914\,760\sqrt{2}\, z^{9/4}}\left(\left(4 z \left(65\,536 z^4 - 122\,880 z^3 - 5\,085\,696 z^2 - 25\,996\,320 z - 90\,847\,575\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right. \left(-458\,752 z^4 + 3\,280\,896 z^3 + 32\,417\,280 z^2 + 172\,645\,200 z + 454\,237\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left.\left.\left(262\,144 z^5 + 1\,081\,344 z^4 - 29\,091\,840 z^3 - 222\,768\,000 z^2 - 1\,065\,109\,500 z - 2\,271\,189\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afu9.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{914\,760\sqrt{2}\, z^{9/4}}\left(\left(-4 z \left(65\,536 z^4 + 122\,880 z^3 - 5\,085\,696 z^2 + 25\,996\,320 z - 90\,847\,575\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\right.\right. \sqrt{z}\left(458\,752 z^4 + 3\,280\,896 z^3 - 32\,417\,280 z^2 + 172\,645\,200 z - 454\,237\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left.\left.\left(262\,144 z^5 - 1\,081\,344 z^4 - 29\,091\,840 z^3 + 222\,768\,000 z^2 - 1\,065\,109\,500 z + 2\,271\,189\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afua.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{13}{4}; z\right) =$$
$$\frac{1}{2\,471\,040\, z^{7/2}}\left(2\sqrt{z}\,\left(262\,144\, z^5 - 19\,261\,440\, z^3 - 117\,976\,320\, z^2 - 454\,261\,500\, z - 613\,253\,025\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left. 3\left(-524\,288\, z^5 + 3\,604\,480\, z^4 + 33\,116\,160\, z^3 + 168\,537\,600\, z^2 + 423\,977\,400\, z + 204\,417\,675\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afub.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{2\,471\,040\, z^{7/2}}\left(2\sqrt{z}\,\left(262\,144\, z^5 - 19\,261\,440\, z^3 + 117\,976\,320\, z^2 - 454\,261\,500\, z + 613\,253\,025\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left. 3\left(524\,288\, z^5 + 3\,604\,480\, z^4 - 33\,116\,160\, z^3 + 168\,537\,600\, z^2 - 423\,977\,400\, z + 204\,417\,675\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afuc.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{11}{4}; z\right) = -\frac{1}{60\,984\sqrt{2}\, z^{9/4}}\left(\left(12\, z\left(-4096\, z^3 + 76\,544\, z^2 + 305\,424\, z + 1\,044\,225\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.$$
$$4\sqrt{z}\,\left(32\,768\, z^4 - 104\,448\, z^3 - 1\,279\,872\, z^2 - 6\,126\,120\, z - 15\,663\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left. 3\left(-49\,152\, z^4 + 369\,664\, z^3 + 2\,758\,080\, z^2 + 12\,530\,700\, z + 26\,105\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.afud.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{11}{4}; -z\right) = \frac{1}{60\,984\sqrt{2}\, z^{9/4}}\left(\left(12\, z\left(4096\, z^3 + 76\,544\, z^2 - 305\,424\, z + 1\,044\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.$$
$$4\sqrt{z}\,\left(32\,768\, z^4 + 104\,448\, z^3 - 1\,279\,872\, z^2 + 6\,126\,120\, z - 15\,663\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left. 3\left(49\,152\, z^4 + 369\,664\, z^3 - 2\,758\,080\, z^2 + 12\,530\,700\, z - 26\,105\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.afue.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{9}{4}; z\right) = \frac{1}{190\,080\, z^{7/2}}\left(10\sqrt{z}\,\left(16\,384\, z^4 - 168\,960\, z^3 - 931\,392\, z^2 - 3\,423\,420\, z - 4\,542\,615\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left.\left(-131\,072\, z^5 + 368\,640\, z^4 + 4\,139\,520\, z^3 + 19\,404\,000\, z^2 + 47\,401\,200\, z + 22\,713\,075\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afuf.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{9}{4}; -z\right) = \frac{1}{190\,080\, z^{7/2}}\left(-10\sqrt{z}\,\left(16\,384\, z^4 + 168\,960\, z^3 - 931\,392\, z^2 + 3\,423\,420\, z - 4\,542\,615\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left.\left(131\,072\, z^5 + 368\,640\, z^4 - 4\,139\,520\, z^3 + 19\,404\,000\, z^2 - 47\,401\,200\, z + 22\,713\,075\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afug.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{7}{4}; z\right) = \frac{1}{5544\sqrt{2}\, z^{9/4}}$$
$$\left(\left(4z\left(4096z^3 - 14\,592z^2 - 37\,008z - 125\,307\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(21\,248z^2 + 84\,864z + 208\,845\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.\left(16\,384z^4 - 46\,080z^3 - 366\,912z^2 - 1\,551\,420z - 3\,132\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afuh.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{7}{4}; -z\right) = \frac{1}{5544\sqrt{2}\, z^{9/4}}$$
$$\left(\left(4z\left(4096z^3 + 14\,592z^2 - 37\,008z + 125\,307\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(21\,248z^2 - 84\,864z + 208\,845\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.\left(-16\,384z^4 - 46\,080z^3 + 366\,912z^2 - 1\,551\,420z + 3\,132\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afui.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{5}{4}; z\right) = \frac{1}{21\,120\, z^{7/2}}\left(2\sqrt{z}\left(16\,384z^4 - 46\,080z^3 - 221\,760z^2 - 762\,300z - 987\,525\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left.105\left(2048z^3 + 8448z^2 + 19\,800z + 9405\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afuj.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{5}{4}; -z\right) = \frac{1}{21\,120\, z^{7/2}}\left(105\left(2048z^3 - 8448z^2 + 19\,800z - 9405\right)\sin\left(2\sqrt{z}\right) - \right.$$
$$\left.2\sqrt{z}\left(16\,384z^4 + 46\,080z^3 - 221\,760z^2 + 762\,300z - 987\,525\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.afuk.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{3}{4}; z\right) =$$
$$-\frac{1}{792\sqrt{2}\, z^{9/4}}\left(\left(4z\left(1792z^2 + 1632z + 5967\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048z^3 - 4608z^2 - 12\,792z - 29\,835\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.\left(1024z^3 + 20\,352z^2 + 77\,220z + 149\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aful.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{792\sqrt{2}\, z^{9/4}}\left(\left(4z\left(1792z^2 - 1632z + 5967\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2048z^3 + 4608z^2 - 12\,792z + 29\,835\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.\left(-1024z^3 + 20\,352z^2 - 77\,220z + 149\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afum.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{1}{4}; z\right) = \frac{1}{4224\, z^{7/2}} \left(\left(-8192\, z^4 + 15\,360\, z^3 + 50\,400\, z^2 + 110\,880\, z + 51\,975\right) \sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\, \left(1024\, z^3 + 4480\, z^2 + 13\,860\, z + 17\,325\right) \cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.afun.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, -\frac{1}{4}; -z\right) = \frac{1}{4224\, z^{7/2}} \left(\left(8192\, z^4 + 15\,360\, z^3 - 50\,400\, z^2 + 110\,880\, z - 51\,975\right) \sin\left(2\sqrt{z}\right) - 6\sqrt{z}\, \left(1024\, z^3 - 4480\, z^2 + 13\,860\, z - 17\,325\right) \cos\left(2\sqrt{z}\right)\right)$$

07.22.03.afuo.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{1}{4}; z\right) = \frac{1}{264\sqrt{2}\, z^{9/4}} \left(\left(4\, z \left(256\, z^2 - 351\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\, \left(256\, z^2 + 272\, z + 585\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(1024\, z^3 - 1536\, z^2 - 4860\, z - 8775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afup.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{1}{4}; -z\right) = \frac{1}{264\sqrt{2}\, z^{9/4}} \left(\left(-4\, z \left(256\, z^2 - 351\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\, \left(256\, z^2 - 272\, z + 585\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(1024\, z^3 + 1536\, z^2 - 4860\, z + 8775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afuq.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{3}{4}; z\right) = \frac{1}{4224\, z^{7/2}} \left(2\sqrt{z}\, \left(1024\, z^3 - 1152\, z^2 - 2940\, z - 3465\right) \cosh\left(2\sqrt{z}\right) + \left(2048\, z^3 + 3840\, z^2 + 7560\, z + 3465\right) \sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afur.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{3}{4}; -z\right) = \frac{1}{4224\, z^{7/2}} \left(2\sqrt{z}\, \left(1024\, z^3 + 1152\, z^2 - 2940\, z + 3465\right) \cos\left(2\sqrt{z}\right) + \left(2048\, z^3 - 3840\, z^2 + 7560\, z - 3465\right) \sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afus.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{5}{4}; z\right) = \frac{1}{264\sqrt{2}\, z^{9/4}} \left(\left(36\, z\, (16\, z + 3)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\, \left(128\, z^2 - 72\, z - 135\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(64\, z^2 + 140\, z + 225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afut.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{5}{4}; -z\right) = -\frac{1}{264\sqrt{2}\, z^{9/4}} \left(\left(-36\, z\, (16\, z - 3)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\, \left(128\, z^2 + 72\, z - 135\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(64\, z^2 - 140\, z + 225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afuu.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{7}{4}; z\right) = \frac{6\sqrt{z}\,\left(64z^2+100z+105\right)\cosh\left(2\sqrt{z}\right)+\left(512z^3-480z^2-720z-315\right)\sinh\left(2\sqrt{z}\right)}{1408\,z^{7/2}}$$

07.22.03.afuv.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{7}{4}; -z\right) = \frac{\left(512z^3+480z^2-720z+315\right)\sin\left(2\sqrt{z}\right)-6\sqrt{z}\,\left(64z^2-100z+105\right)\cos\left(2\sqrt{z}\right)}{1408\,z^{7/2}}$$

07.22.03.afuw.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{9}{4}; z\right) =$$

$$\frac{1}{264\sqrt{2}\,z^{9/4}}\left(5\left(4z(16z-3)\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(32z+15)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(64z^2-60z-75\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afux.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{9}{4}; -z\right) =$$

$$\frac{1}{264\sqrt{2}\,z^{9/4}}\left(5\left(4z(16z+3)\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(32z-15)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-64z^2-60z+75\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afuy.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{11}{4}; z\right) = \frac{7\left(2\sqrt{z}\,\left(64z^2-60z-45\right)\cosh\left(2\sqrt{z}\right)+15\,(8z+3)\sinh\left(2\sqrt{z}\right)\right)}{1408\,z^{7/2}}$$

07.22.03.afuz.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{11}{4}; -z\right) = -\frac{7\left(2\sqrt{z}\,\left(64z^2+60z-45\right)\cos\left(2\sqrt{z}\right)+15\,(3-8z)\sin\left(2\sqrt{z}\right)\right)}{1408\,z^{7/2}}$$

07.22.03.afv0.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{13}{4}; z\right) = \frac{15\left(12z\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(8z-9)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+3\,(5-4z)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{88\sqrt{2}\,z^{9/4}}$$

07.22.03.afv1.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{13}{4}; -z\right) = \frac{15\left(-12z\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,(8z+9)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-3\,(4z+5)\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{88\sqrt{2}\,z^{9/4}}$$

07.22.03.afv2.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{15}{4}; z\right) = \frac{7\left(\left(32z^2-15\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,(4z-3)\cosh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.afv3.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{15}{4}; -z\right) = -\frac{7\left(10\sqrt{z}\,(4z+3)\cos\left(2\sqrt{z}\right)+\left(32z^2-15\right)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.afv4.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{17}{4}; z\right) =$$

$$\frac{1}{352\sqrt{2}\, z^{11/4}}\left(195\left(2\sqrt{z}\,(8z-9)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3(15-16z)\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,(8z+15)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afv5.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{17}{4}; -z\right) =$$

$$-\frac{1}{352\sqrt{2}\, z^{11/4}}\left(195\left(2\sqrt{z}\,(8z+9)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3(16z+15)\, J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2(15-8z)\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afv6.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{19}{4}; z\right) = \frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right) - 3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.afv7.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{19}{4}; -z\right) = \frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right) + 3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\, z^{7/2}}$$

07.22.03.afv8.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{21}{4}; z\right) = \frac{1}{11\,264\sqrt{2}\, z^{15/4}}$$

$$\left(3315\left(2(117-176z)\sqrt{z}\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(256z^2+1296z-585\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,(272z+585)\, I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afv9.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{21}{4}; -z\right) = -\frac{1}{11\,264\sqrt{2}\, z^{15/4}}$$

$$\left(3315\left(2\sqrt{z}\,(176z+117)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(256z^2-1296z-585\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2(585-272z)\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afva.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{23}{4}; z\right) = \frac{1}{131\,072\, z^{19/4}}\left(1995\, e^{-2\sqrt{z}}\right.$$

$$\left(4\sqrt[4]{z}\left(-256z^2-1344z^{3/2}-3312z-4620\sqrt{z}+e^{4\sqrt{z}}\left(256z^2-1344z^{3/2}+3312z-4620\sqrt{z}+3465\right)-3465\right)+\right.$$

$$\left.\left.3465\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\,\sqrt[4]{z}\right)-3465\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\,\sqrt[4]{z}\right)\right)\right)$$

07.22.03.afvb.01

$${}_1F_2\left(\frac{19}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) =$$

$$\frac{1}{32\,768\, z^{19/4}}\left(1995\left(2\sqrt[4]{z}\left(84\sqrt{z}\,(16z-55)\cos\left(2\sqrt{z}\right)+\left(256z^2-3312z+3465\right)\sin\left(2\sqrt{z}\right)\right)-3465\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right)\right)\right)$$

For fixed z and $a_1 = \frac{19}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.afvc.01

$$ {}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{23}{4};z\right)=\frac{1}{177\,666\,720\sqrt{2}\,z^{13/4}}$$
$$\left(\left(-4z\left(32\,505\,856z^5+1\,685\,913\,600z^4+42\,090\,209\,280z^3+720\,335\,024\,640z^2+7\,296\,392\,703\,600z+\right.\right.\right.$$
$$\left.\left.\left.31\,835\,443\,164\,525\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4\,194\,304z^6+596\,901\,888z^5+20\,626\,636\,800z^4+\right.\right.\right.$$
$$\left.\left.\left.444\,466\,391\,040z^3+6\,361\,231\,060\,800z^2+50\,631\,049\,368\,900z+159\,177\,215\,822\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.$$
$$\left.\left(142\,606\,336z^6+8\,642\,887\,680z^5+237\,011\,927\,040z^4+4\,404\,911\,616\,000z^3+51\,890\,196\,758\,400z^2+\right.\right.$$
$$\left.\left.323\,900\,676\,099\,000z+795\,886\,079\,113\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.afvd.01

$$ {}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{23}{4};-z\right)=\frac{1}{177\,666\,720\sqrt{2}\,z^{13/4}}$$
$$\left(\left(4z\left(32\,505\,856z^5-1\,685\,913\,600z^4+42\,090\,209\,280z^3-720\,335\,024\,640z^2+7\,296\,392\,703\,600z-31\,835\,443\,164\,525\right)\right.\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4\,194\,304z^6-596\,901\,888z^5+20\,626\,636\,800z^4-444\,466\,391\,040z^3+\right.$$
$$\left.\left.6\,361\,231\,060\,800z^2-50\,631\,049\,368\,900z+159\,177\,215\,822\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.$$
$$\left.\left(-142\,606\,336z^6+8\,642\,887\,680z^5-237\,011\,927\,040z^4+4\,404\,911\,616\,000z^3-\right.\right.$$
$$\left.\left.51\,890\,196\,758\,400z^2+323\,900\,676\,099\,000z-795\,886\,079\,113\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.afve.01

$$ {}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{21}{4};z\right)=$$
$$\frac{1}{392\,071\,680z^{9/2}}\left(\left(16\,777\,216z^7+2\,060\,451\,840z^6+64\,945\,520\,640z^5+1\,302\,458\,572\,800z^4+17\,112\,212\,409\,600z^3+\right.\right.$$
$$\left.\left.123\,798\,614\,662\,800z^2+364\,627\,983\,604\,500z+181\,648\,612\,270\,125\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.30\sqrt{z}\left(8\,388\,608z^6+417\,857\,536z^5+10\,143\,006\,720z^4+167\,458\,959\,360z^3+\right.\right.$$
$$\left.\left.1\,676\,333\,957\,760z^2+8\,161\,988\,927\,400z+12\,109\,907\,484\,675\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.afvf.01

$$ {}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{21}{4};-z\right)=$$
$$\frac{1}{392\,071\,680z^{9/2}}\left(\left(-16\,777\,216z^7+2\,060\,451\,840z^6-64\,945\,520\,640z^5+1\,302\,458\,572\,800z^4-17\,112\,212\,409\,600z^3+\right.\right.$$
$$\left.\left.123\,798\,614\,662\,800z^2-364\,627\,983\,604\,500z+181\,648\,612\,270\,125\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.30\sqrt{z}\left(8\,388\,608z^6-417\,857\,536z^5+10\,143\,006\,720z^4-167\,458\,959\,360z^3+\right.\right.$$
$$\left.\left.1\,676\,333\,957\,760z^2-8\,161\,988\,927\,400z+12\,109\,907\,484\,675\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.afvg.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{19}{4};z\right)=-\frac{1}{7\,724\,640\sqrt{2}\,z^{13/4}}$$
$$\left(\left(4z\left(524\,288z^5+42\,663\,936z^4+1\,054\,126\,080z^3+17\,732\,897\,280z^2+178\,545\,767\,400z+776\,474\,223\,525\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(4\,456\,448z^5+174\,325\,760z^4+3\,676\,968\,960z^3+52\,079\,731\,200z^2+412\,609\,497\,300z+\right.$$
$$1\,294\,123\,705\,875\Big)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(2\,097\,152z^6+212\,336\,640z^5+5\,950\,586\,880z^4+\right.$$
$$\left.\left.\left.108\,793\,036\,800z^3+1\,272\,350\,570\,400z^2+7\,914\,640\,734\,000z+19\,411\,855\,588\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afvh.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{19}{4};-z\right)=\frac{1}{7\,724\,640\sqrt{2}\,z^{13/4}}$$
$$\left(\left(4z\left(524\,288z^5-42\,663\,936z^4+1\,054\,126\,080z^3-17\,732\,897\,280z^2+178\,545\,767\,400z-776\,474\,223\,525\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(4\,456\,448z^5-174\,325\,760z^4+3\,676\,968\,960z^3-52\,079\,731\,200z^2+412\,609\,497\,300z-\right.$$
$$1\,294\,123\,705\,875\Big)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-2\,097\,152z^6+212\,336\,640z^5-5\,950\,586\,880z^4+\right.$$
$$\left.\left.\left.108\,793\,036\,800z^3-1\,272\,350\,570\,400z^2+7\,914\,640\,734\,000z-19\,411\,855\,588\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afvi.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{18\,670\,080z^{9/2}}\left(\left(49\,283\,072z^6+1\,730\,150\,400z^5+33\,977\,180\,160z^4+441\,905\,587\,200z^3+3\,182\,374\,364\,400z^2+\right.\right.$$
$$\left.9\,353\,335\,137\,300z+4\,657\,656\,724\,875\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(2\,097\,152z^6+165\,150\,720z^5+4\,009\,082\,880z^4+\right.$$
$$\left.\left.65\,122\,928\,640z^3+647\,595\,194\,400z^2+3\,143\,126\,170\,800z+4\,657\,656\,724\,875\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.afvj.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{18\,670\,080z^{9/2}}\left(\left(49\,283\,072z^6-1\,730\,150\,400z^5+33\,977\,180\,160z^4-441\,905\,587\,200z^3+3\,182\,374\,364\,400z^2-\right.\right.$$
$$\left.9\,353\,335\,137\,300z+4\,657\,656\,724\,875\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(2\,097\,152z^6-165\,150\,720z^5+4\,009\,082\,880z^4-\right.$$
$$\left.\left.65\,122\,928\,640z^3+647\,595\,194\,400z^2-3\,143\,126\,170\,800z+4\,657\,656\,724\,875\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.afvk.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{406\,560\sqrt{2}\,z^{13/4}}\left(\left(-12z\left(393\,216z^4+9\,863\,168z^3+161\,629\,440z^2+1\,615\,068\,000z+6\,995\,263\,275\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(262\,144z^5+14\,843\,904z^4+305\,141\,760z^3+4\,260\,009\,600z^2+33\,553\,037\,700z+104\,928\,949\,125\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-3\left(1\,835\,008z^5+55\,705\,600z^4+996\,172\,800z^3+\right.$$
$$\left.\left.11\,539\,382\,400z^2+71\,466\,759\,000z+174\,881\,581\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.afvl.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{15}{4};-z\right)=$$
$$-\frac{1}{406\,560\sqrt{2}\,z^{13/4}}\left(\left(12z\left(393\,216z^4-9\,863\,168z^3+161\,629\,440z^2-1\,615\,068\,000z+6\,995\,263\,275\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(262\,144z^5-14\,843\,904z^4+305\,141\,760z^3-4\,260\,009\,600z^2+33\,553\,037\,700z-104\,928\,949\,125\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+3\left(-1\,835\,008z^5+55\,705\,600z^4-996\,172\,800z^3+\right.$$
$$\left.\left.11\,539\,382\,400z^2-71\,466\,759\,000z+174\,881\,581\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.afvm.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{1\,098\,240\,z^{9/2}}\left(\left(1\,048\,576z^6+51\,904\,512z^5+993\,484\,800z^4+12\,741\,442\,560z^3+91\,215\,709\,200z^2+267\,378\,318\,900z+\right.\right.$$
$$\left.133\,075\,906\,425\right)\sinh\left(2\sqrt{z}\right)-$$
$$\left.6\sqrt{z}\left(1\,572\,864z^5+39\,649\,280z^4+629\,207\,040z^3+6\,202\,183\,680z^2+29\,981\,259\,000z+44\,358\,635\,475\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.afvn.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{13}{4};-z\right)=\frac{1}{1\,098\,240\,z^{9/2}}$$
$$\left(6\sqrt{z}\left(1\,572\,864z^5-39\,649\,280z^4+629\,207\,040z^3-6\,202\,183\,680z^2+29\,981\,259\,000z-44\,358\,635\,475\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left(1\,048\,576z^6-51\,904\,512z^5+993\,484\,800z^4-12\,741\,442\,560z^3+\right.$$
$$\left.\left.91\,215\,709\,200z^2-267\,378\,318\,900z+133\,075\,906\,425\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afvo.01

$$ {}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{11}{4};z\right)= -\frac{1}{27\,104\sqrt{2}\,z^{13/4}}\left(\left(4z\left(32\,768z^4+952\,320z^3+14\,915\,712z^2+147\,583\,800z+635\,933\,025\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 4\sqrt{z}\left(475\,136z^4+9\,556\,992z^3+130\,576\,320z^2+1\,020\,555\,900z+3\,179\,665\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ \left(131\,072z^5+5\,332\,992z^4+92\,567\,040z^3+1\,058\,148\,000z^2+6\,515\,964\,000z+15\,898\,325\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afvp.01

$$ {}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{11}{4};-z\right)= \frac{1}{27\,104\sqrt{2}\,z^{13/4}}\left(\left(-4z\left(32\,768z^4-952\,320z^3+14\,915\,712z^2-147\,583\,800z+635\,933\,025\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+ 4\sqrt{z}\left(475\,136z^4-9\,556\,992z^3+130\,576\,320z^2-1\,020\,555\,900z+3\,179\,665\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+ \left(131\,072z^5-5\,332\,992z^4+92\,567\,040z^3-1\,058\,148\,000z^2+6\,515\,964\,000z-15\,898\,325\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afvq.01

$$ {}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{9}{4};z\right)= \frac{1}{84\,480z^{9/2}}\left(3\left(589\,824z^5+11\,038\,720z^4+138\,673\,920z^3+984\,891\,600z^2+2\,876\,989\,500z+1\,430\,923\,725\right)\sinh\left(2\sqrt{z}\right)- 2\sqrt{z}\left(131\,072z^5+4\,055\,040z^4+62\,092\,800z^3+604\,628\,640z^2+2\,907\,273\,600z+4\,292\,771\,175\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.afvr.01

$$ {}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{9}{4};-z\right)= \frac{1}{84\,480z^{9/2}}\left(2\sqrt{z}\left(131\,072z^5-4\,055\,040z^4+62\,092\,800z^3-604\,628\,640z^2+2\,907\,273\,600z-4\,292\,771\,175\right)\cos\left(2\sqrt{z}\right)+ 3\left(-589\,824z^5+11\,038\,720z^4-138\,673\,920z^3+984\,891\,600z^2-2\,876\,989\,500z+1\,430\,923\,725\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afvs.01

$$ {}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{7}{4};z\right)= \frac{1}{2464\sqrt{2}\,z^{13/4}}\left(\left(-12z\left(12\,288z^3+174\,848z^2+1\,707\,888z+7\,309\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+ 4\sqrt{z}\left(16\,384z^4+347\,136z^3+4\,572\,864z^2+35\,364\,420z+109\,643\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)- 3\left(65\,536z^4+1\,097\,728z^3+12\,305\,280z^2+75\,184\,200z+182\,739\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.afvt.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{7}{4};-z\right)=\frac{1}{2464\sqrt{2}\,z^{13/4}}\left(\left(12z\left(12\,288z^3-174\,848z^2+1\,707\,888z-7\,309\,575\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(16\,384z^4-347\,136z^3+4\,572\,864z^2-35\,364\,420z+109\,643\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.3\left(65\,536z^4-1\,097\,728z^3+12\,305\,280z^2-75\,184\,200z+182\,739\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afvu.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{28\,160z^{9/2}}\left(3\left(\left(65\,536z^5+1\,290\,240z^4+15\,671\,040z^3+110\,048\,400z^2+319\,958\,100z+158\,991\,525\right)\sinh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.10\sqrt{z}\left(32\,768z^4+473\,088z^3+4\,523\,904z^2+21\,593\,880z+31\,798\,305\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.afvv.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{5}{4};-z\right)=$$
$$-\frac{1}{28\,160z^{9/2}}\left(3\left(10\sqrt{z}\left(32\,768z^4-473\,088z^3+4\,523\,904z^2-21\,593\,880z+31\,798\,305\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(65\,536z^5-1\,290\,240z^4+15\,671\,040z^3-110\,048\,400z^2+319\,958\,100z-158\,991\,525\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.afvw.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{3}{4};z\right)=-\frac{1}{352\sqrt{2}\,z^{13/4}}$$
$$\left(\left(4z\left(2048z^3+21\,504z^2+206\,856z+877\,149\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(5120z^3+62\,336z^2+474\,708z+1\,461\,915\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(8192z^4+138\,240z^3+1\,501\,344z^2+9\,069\,840z+21\,928\,725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afvx.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{3}{4};-z\right)=\frac{1}{352\sqrt{2}\,z^{13/4}}$$
$$\left(\left(4z\left(2048z^3-21\,504z^2+206\,856z-877\,149\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(5120z^3-62\,336z^2+474\,708z-1\,461\,915\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-8192z^4+138\,240z^3-1\,501\,344z^2+9\,069\,840z-21\,928\,725\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afvy.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{1}{4};z\right)=-\frac{1}{5632z^{9/2}}\left(3\left(2\sqrt{z}\left(8192z^4+107\,520z^3+997\,920z^2+4\,712\,400z+6\,912\,675\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.15\left(4096z^4+46\,592z^3+321\,552z^2+928\,620z+460\,845\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.afvz.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},-\frac{1}{4};-z\right)=-\frac{1}{5632\,z^{9/2}}\left(3\left(2\sqrt{z}\,\left(8192\,z^4-107\,520\,z^3+997\,920\,z^2-4\,712\,400\,z+6\,912\,675\right)\cos\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.15\left(4096\,z^4-46\,592\,z^3+321\,552\,z^2-928\,620\,z+460\,845\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.afw0.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},\frac{1}{4};z\right)=\frac{1}{352\sqrt{2}\,z^{13/4}}$$
$$\left(3\left(-4\,z\left(1024\,z^2+9984\,z+41\,769\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(1024\,z^3+9216\,z^2+68\,484\,z+208\,845\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(7168\,z^3+73\,344\,z^2+435\,240\,z+1\,044\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afw1.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},\frac{1}{4};-z\right)=$$
$$-\frac{1}{352\sqrt{2}\,z^{13/4}}\left(3\left(4\,z\left(1024\,z^2-9984\,z+41\,769\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(1024\,z^3-9216\,z^2+68\,484\,z-208\,845\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-7168\,z^3+73\,344\,z^2-435\,240\,z+1\,044\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afw2.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},\frac{3}{4};z\right)=\frac{1}{5632\,z^{9/2}}\left(3\left(\left(4096\,z^4+38\,400\,z^3+257\,040\,z^2+734\,580\,z+363\,825\right)\sinh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.6\sqrt{z}\,\left(2048\,z^3+17\,920\,z^2+83\,160\,z+121\,275\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.afw3.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},\frac{3}{4};-z\right)=\frac{1}{5632\,z^{9/2}}\left(3\left(6\sqrt{z}\,\left(2048\,z^3-17\,920\,z^2+83\,160\,z-121\,275\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096\,z^4-38\,400\,z^3+257\,040\,z^2-734\,580\,z+363\,825\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.afw4.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{352\sqrt{2}\,z^{13/4}}\left(3\left(4\,z\left(128\,z^2+600\,z+2457\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\,\left(192\,z^2+1364\,z+4095\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(512\,z^3+4512\,z^2+25\,920\,z+61\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afw5.01

$${}_1F_2\left(\frac{19}{4}; \frac{11}{2}, \frac{5}{4}; -z\right) =$$
$$\frac{1}{352\sqrt{2}\, z^{13/4}}\left(3\left(4z\left(128z^2-600z+2457\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-12\sqrt{z}\left(192z^2-1364z+4095\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-512z^3+4512z^2-25\,920z+61\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afw6.01

$${}_1F_2\left(\frac{19}{4}; \frac{11}{2}, \frac{7}{4}; z\right) = \frac{1}{5632\, z^{9/2}}$$
$$\left(9\left(2\sqrt{z}\left(512z^3+3744z^2+16\,800z+24\,255\right)\cosh\left(2\sqrt{z}\right)-\left(2816z^3+17\,520z^2+49\,140z+24\,255\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.afw7.01

$${}_1F_2\left(\frac{19}{4}; \frac{11}{2}, \frac{7}{4}; -z\right) = -\frac{1}{5632\, z^{9/2}}$$
$$\left(9\left(2\sqrt{z}\left(512z^3-3744z^2+16\,800z-24\,255\right)\cos\left(2\sqrt{z}\right)+\left(-2816z^3+17\,520z^2-49\,140z+24\,255\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.afw8.01

$${}_1F_2\left(\frac{19}{4}; \frac{11}{2}, \frac{9}{4}; z\right) = \frac{1}{352\sqrt{2}\, z^{13/4}}$$
$$\left(15\left(-12z(16z+63)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(64z^2+324z+945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-3\left(128z^2+680z+1575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afw9.01

$${}_1F_2\left(\frac{19}{4}; \frac{11}{2}, \frac{9}{4}; -z\right) = \frac{1}{352\sqrt{2}\, z^{13/4}}$$
$$\left(15\left(12z(16z-63)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(64z^2-324z+945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-3\left(128z^2-680z+1575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afwa.01

$${}_1F_2\left(\frac{19}{4}; \frac{11}{2}, \frac{11}{4}; z\right) = \frac{63\left(\left(256z^3+1680z^2+4500z+2205\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\left(128z^2+520z+735\right)\cosh\left(2\sqrt{z}\right)\right)}{5632\, z^{9/2}}$$

07.22.03.afwb.01

$${}_1F_2\left(\frac{19}{4}; \frac{11}{2}, \frac{11}{4}; -z\right) = -\frac{63\left(6\sqrt{z}\left(128z^2-520z+735\right)\cos\left(2\sqrt{z}\right)+\left(256z^3-1680z^2+4500z-2205\right)\sin\left(2\sqrt{z}\right)\right)}{5632\, z^{9/2}}$$

07.22.03.afwc.01

$${}_1F_2\left(\frac{19}{4}; \frac{11}{2}, \frac{13}{4}; z\right) =$$
$$\frac{1}{352\sqrt{2}\, z^{13/4}}\left(135\left(4z(8z+21)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,(44z+105)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(32z^2+240z+525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afwd.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},\frac{13}{4};-z\right)=$$
$$-\frac{1}{352\sqrt{2}\,z^{13/4}}\left(135\left(4z(8z-21)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4(105-44z)\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-32z^2+240z-525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afwe.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},\frac{15}{4};z\right)=\frac{63\left(2\sqrt{z}\left(32z^2+240z+315\right)\cosh\left(2\sqrt{z}\right)-15\left(16z^2+44z+21\right)\sinh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.afwf.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},\frac{15}{4};-z\right)=\frac{63\left(2\sqrt{z}\left(32z^2-240z+315\right)\cos\left(2\sqrt{z}\right)-15\left(16z^2-44z+21\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.afwg.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},\frac{17}{4};z\right)=\frac{1755\left(-24z\,I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+2\sqrt{z}\,(8z+51)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-3(12z+35)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{352\sqrt{2}\,z^{13/4}}$$

07.22.03.afwh.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},\frac{17}{4};-z\right)=-\frac{1755\left(24z\,J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+2\sqrt{z}\,(8z-51)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+3(35-12z)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2}{352\sqrt{2}\,z^{13/4}}$$

07.22.03.afwi.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},\frac{19}{4};z\right)=\frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,(8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.afwj.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},\frac{19}{4};-z\right)=\frac{945\left(10\sqrt{z}\,(8z-21)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.afwk.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},\frac{21}{4};z\right)=$$
$$\frac{1}{5632\sqrt{2}\,z^{15/4}}\left(29\,835\left(2\sqrt{z}\,(16z+117)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2-3(112z+195)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,(16z+255)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afwl.01

$${}_1F_2\left(\frac{19}{4};\frac{11}{2},\frac{21}{4};-z\right)=\frac{1}{5632\sqrt{2}\,z^{15/4}}$$
$$\left(29\,835\left(2\sqrt{z}\,(16z-117)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3(195-112z)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2(255-16z)\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.afwm.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{11}{2}, \frac{23}{4}; z\right) = \frac{1}{65\,536\, z^{19/4}} \left(17\,955\, e^{-2\sqrt{z}} \left(4\sqrt[4]{z}\left(64 z^{3/2} + 432 z + 1260\sqrt{z} + e^{4\sqrt{z}}\left(64 z^{3/2} - 432 z + 1260\sqrt{z} - 1785\right) + 1785\right) - 3465\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erf}\left(\sqrt{2}\sqrt[4]{z}\right) + 3465\, e^{2\sqrt{z}}\sqrt{2\pi}\,\operatorname{erfi}\left(\sqrt{2}\sqrt[4]{z}\right)\right)\right) $$

07.22.03.afwn.01

$$ {}_1F_2\left(\frac{19}{4}; \frac{11}{2}, \frac{23}{4}; -z\right) = \frac{17\,955\left(3465\sqrt{\pi}\, S\left(\frac{2\sqrt[4]{z}}{\sqrt{\pi}}\right) + 2\sqrt[4]{z}\left(3(144 z - 595)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\,(16 z - 315)\cos\left(2\sqrt{z}\right)\right)\right)}{16\,384\, z^{19/4}} $$

For fixed z and $a_1 = \frac{21}{4}$, $b_{1.} \geq -\frac{11}{2}$

For fixed z and $a_1 = \frac{21}{4}$, $b_{1.} = -\frac{11}{2}$

07.22.03.afwo.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{156\,535\,900\,896\,375} \left(\left(11\,207\,180\,288 z^8 + 1\,114\,153\,943\,040 z^7 + 1\,204\,444\,200\,960 z^6 + 1\,580\,833\,013\,760 z^5 + 7\,445\,441\,203\,200 z^4 + 39\,536\,263\,166\,400 z^3 + 160\,128\,812\,844\,000 z^2 + 339\,057\,998\,779\,500 z + 156\,535\,900\,896\,375\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(134\,217\,728 z^8 + 84\,649\,443\,328 z^7 + 1\,442\,096\,087\,040 z^6 - 451\,666\,575\,360 z^5 - 1\,623\,176\,755\,200 z^4 - 8\,684\,877\,801\,600 z^3 - 41\,994\,736\,383\,600 z^2 - 130\,343\,464\,251\,000 z - 156\,535\,900\,896\,375\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afwp.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{156\,535\,900\,896\,375} \left(\left(11\,207\,180\,288 z^8 - 1\,114\,153\,943\,040 z^7 + 1\,204\,444\,200\,960 z^6 - 1\,580\,833\,013\,760 z^5 + 7\,445\,441\,203\,200 z^4 - 39\,536\,263\,166\,400 z^3 + 160\,128\,812\,844\,000 z^2 - 339\,057\,998\,779\,500 z + 156\,535\,900\,896\,375\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(134\,217\,728 z^8 - 84\,649\,443\,328 z^7 + 1\,442\,096\,087\,040 z^6 + 451\,666\,575\,360 z^5 - 1\,623\,176\,755\,200 z^4 + 8\,684\,877\,801\,600 z^3 - 41\,994\,736\,383\,600 z^2 + 130\,343\,464\,251\,000 z - 156\,535\,900\,896\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afwq.01

$${}_1F_2\left(\frac{21}{4};-\frac{11}{2},-\frac{21}{4};z\right)=\frac{1}{21\,590\,035\,842\,375\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(5\,502\,926\,848\,z^8+537\,592\,332\,288\,z^7+875\,959\,418\,880\,z^6+533\,787\,770\,880\,z^5+2\,285\,278\,894\,080\,z^4+\right.\right.\right.$$
$$\left.\left.\left.10\,607\,588\,409\,600\,z^3+34\,400\,380\,341\,600\,z^2+47\,105\,532\,747\,000\,z+21\,590\,035\,842\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(67\,108\,864\,z^8+40\,303\,067\,136\,z^7+658\,720\,161\,792\,z^6-184\,772\,689\,920\,z^5-598\,586\,526\,720\,z^4-\right.$$
$$\left.2\,885\,028\,269\,760\,z^3-12\,068\,868\,520\,800\,z^2-29\,833\,504\,073\,100\,z-21\,590\,035\,842\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$108\,z\left(50\,331\,648\,z^7+4\,616\,880\,128\,z^6+3\,041\,525\,760\,z^5+6\,273\,146\,880\,z^4+27\,605\,410\,560\,z^3+\right.$$
$$\left.\left.131\,665\,912\,560\,z^2+465\,239\,829\,600\,z+799\,630\,957\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.afwr.01

$${}_1F_2\left(\frac{21}{4};-\frac{11}{2},-\frac{21}{4};-z\right)=\frac{1}{21\,590\,035\,842\,375\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(5\,502\,926\,848\,z^8-537\,592\,332\,288\,z^7+875\,959\,418\,880\,z^6-533\,787\,770\,880\,z^5+2\,285\,278\,894\,080\,z^4-\right.\right.\right.$$
$$\left.\left.\left.10\,607\,588\,409\,600\,z^3+34\,400\,380\,341\,600\,z^2-47\,105\,532\,747\,000\,z+21\,590\,035\,842\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\left(67\,108\,864\,z^8-40\,303\,067\,136\,z^7+658\,720\,161\,792\,z^6+184\,772\,689\,920\,z^5-598\,586\,526\,720\,z^4+\right.$$
$$\left.2\,885\,028\,269\,760\,z^3-12\,068\,868\,520\,800\,z^2+29\,833\,504\,073\,100\,z-21\,590\,035\,842\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$108\,z\left(50\,331\,648\,z^7-4\,616\,880\,128\,z^6+3\,041\,525\,760\,z^5-6\,273\,146\,880\,z^4+27\,605\,410\,560\,z^3-\right.$$
$$\left.\left.131\,665\,912\,560\,z^2+465\,239\,829\,600\,z-799\,630\,957\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.afws.01

$${}_1F_2\left(\frac{21}{4};-\frac{11}{2},-\frac{19}{4};z\right)=$$
$$\left(-\frac{67\,108\,864\,z^8}{6\,805\,908\,734\,625}-\frac{2\,512\,388\,096\,z^7}{453\,727\,248\,975}-\frac{524\,288\,z^6}{6\,517\,665}+\frac{32\,768\,z^5}{1\,206\,975}+\frac{17\,408\,z^4}{241\,395}+\frac{95\,168\,z^3}{310\,365}+\frac{2080\,z^2}{1881}+\frac{460\,z}{209}+1\right)$$
$$\cosh\left(2\sqrt{z}\right)-\frac{1}{6\,805\,908\,734\,625}\left(2\sqrt{z}\left(1\,325\,400\,064\,z^7+115\,715\,604\,480\,z^6+82\,121\,195\,520\,z^5+128\,314\,368\,000\,z^4+\right.\right.$$
$$\left.\left.501\,228\,000\,000\,z^3+2\,072\,527\,657\,200\,z^2+5\,904\,967\,068\,000\,z+6\,805\,908\,734\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afwt.01

$${}_1F_2\left(\frac{21}{4};-\frac{11}{2},-\frac{19}{4};-z\right)=$$
$$\left(-\frac{67\,108\,864\,z^8}{6\,805\,908\,734\,625}+\frac{2\,512\,388\,096\,z^7}{453\,727\,248\,975}-\frac{524\,288\,z^6}{6\,517\,665}-\frac{32\,768\,z^5}{1\,206\,975}+\frac{17\,408\,z^4}{241\,395}-\frac{95\,168\,z^3}{310\,365}+\frac{2080\,z^2}{1881}-\frac{460\,z}{209}+1\right)$$
$$\cos\left(2\sqrt{z}\right)+\frac{1}{6\,805\,908\,734\,625}\left(2\sqrt{z}\left(-1\,325\,400\,064\,z^7+115\,715\,604\,480\,z^6-82\,121\,195\,520\,z^5+128\,314\,368\,000\,z^4-\right.\right.$$
$$\left.\left.501\,228\,000\,000\,z^3+2\,072\,527\,657\,200\,z^2-5\,904\,967\,068\,000\,z+6\,805\,908\,734\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afwu.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{17}{4}; z\right) = -\frac{1}{1\,028\,096\,944\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(33\,554\,432\,z^8 + 17\,901\,289\,472\,z^7 + 250\,013\,286\,400\,z^6 - 102\,651\,494\,400\,z^5 - 165\,418\,606\,080\,z^4 - 604\,146\,816\,000\,z^3 - 1\,744\,874\,913\,600\,z^2 - 2\,287\,103\,364\,000\,z - 1\,028\,096\,944\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(641\,728\,512\,z^7 + 51\,535\,413\,248\,z^6 + 15\,739\,944\,960\,z^5 + 53\,892\,034\,560\,z^4 + 182\,273\,232\,960\,z^3 + 646\,283\,383\,200\,z^2 + 1\,464\,625\,808\,100\,z + 1\,028\,096\,944\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8\,388\,608\,z^7 + 4\,316\,987\,392\,z^6 + 50\,641\,305\,600\,z^5 - 20\,530\,298\,880\,z^4 - 54\,399\,945\,600\,z^3 - 205\,673\,897\,520\,z^2 - 642\,148\,252\,200\,z - 1\,028\,096\,944\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afwv.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{17}{4}; -z\right) = -\frac{1}{1\,028\,096\,944\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(33\,554\,432\,z^8 - 17\,901\,289\,472\,z^7 + 250\,013\,286\,400\,z^6 + 102\,651\,494\,400\,z^5 - 165\,418\,606\,080\,z^4 + 604\,146\,816\,000\,z^3 - 1\,744\,874\,913\,600\,z^2 + 2\,287\,103\,364\,000\,z - 1\,028\,096\,944\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(641\,728\,512\,z^7 - 51\,535\,413\,248\,z^6 + 15\,739\,944\,960\,z^5 - 53\,892\,034\,560\,z^4 + 182\,273\,232\,960\,z^3 - 646\,283\,383\,200\,z^2 + 1\,464\,625\,808\,100\,z - 1\,028\,096\,944\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(8\,388\,608\,z^7 - 4\,316\,987\,392\,z^6 + 50\,641\,305\,600\,z^5 + 20\,530\,298\,880\,z^4 - 54\,399\,945\,600\,z^3 + 205\,673\,897\,520\,z^2 - 642\,148\,252\,200\,z + 1\,028\,096\,944\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afww.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{15}{4}; z\right) = \left(\frac{4\,194\,304\,z^7}{2\,436\,773\,625} + \frac{1\,048\,576\,z^6}{8\,575\,875} - \frac{32\,768\,z^5}{571\,725} + \frac{4096\,z^4}{27\,225} + \frac{4288\,z^3}{10\,395} + \frac{6752\,z^2}{5445} + \frac{124\,z}{55} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{358\,205\,722\,875}\left(2\sqrt{z}\left(8\,388\,608\,z^7 + 4\,017\,094\,656\,z^6 + 41\,060\,597\,760\,z^5 - 20\,530\,298\,880\,z^4 - 41\,140\,794\,240\,z^3 - 131\,572\,350\,000\,z^2 - 329\,983\,453\,800\,z - 358\,205\,722\,875\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afwx.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{15}{4}; -z\right) = \left(-\frac{4\,194\,304\,z^7}{2\,436\,773\,625} + \frac{1\,048\,576\,z^6}{8\,575\,875} + \frac{32\,768\,z^5}{571\,725} + \frac{4096\,z^4}{27\,225} - \frac{4288\,z^3}{10\,395} + \frac{6752\,z^2}{5445} - \frac{124\,z}{55} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{358\,205\,722\,875}\left(2\sqrt{z}\left(8\,388\,608\,z^7 - 4\,017\,094\,656\,z^6 + 41\,060\,597\,760\,z^5 + 20\,530\,298\,880\,z^4 - 41\,140\,794\,240\,z^3 + 131\,572\,350\,000\,z^2 - 329\,983\,453\,800\,z + 358\,205\,722\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afwy.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{13}{4}; z\right) = \frac{1}{60\,476\,290\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(297\,795\,584\,z^7 + 19\,333\,120\,000\,z^6 - 15\,532\,769\,280\,z^5 + 27\,373\,731\,840\,z^4 + 47\,850\,566\,400\,z^3 + 113\,578\,264\,800\,z^2 + 138\,714\,849\,000\,z + 60\,476\,290\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4\,194\,304\,z^7 + 1\,828\,192\,256\,z^6 + 14\,335\,180\,800\,z^5 - 7\,006\,648\,320\,z^4 - 17\,255\,609\,280\,z^3 - 45\,611\,748\,000\,z^2 - 90\,333\,816\,300\,z - 60\,476\,290\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 20\,z\left(14\,680\,064\,z^6 + 878\,837\,760\,z^5 - 1\,303\,400\,448\,z^4 + 1\,325\,915\,136\,z^3 + 3\,270\,011\,472\,z^2 + 8\,390\,556\,720\,z + 12\,095\,258\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afwz.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{13}{4}; -z\right) = \frac{1}{60\,476\,290\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-297\,795\,584\,z^7 + 19\,333\,120\,000\,z^6 + 15\,532\,769\,280\,z^5 + 27\,373\,731\,840\,z^4 - 47\,850\,566\,400\,z^3 + 113\,578\,264\,800\,z^2 - 138\,714\,849\,000\,z + 60\,476\,290\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4\,194\,304\,z^7 - 1\,828\,192\,256\,z^6 + 14\,335\,180\,800\,z^5 + 7\,006\,648\,320\,z^4 - 17\,255\,609\,280\,z^3 + 45\,611\,748\,000\,z^2 - 90\,333\,816\,300\,z + 60\,476\,290\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 20\,z\left(14\,680\,064\,z^6 - 878\,837\,760\,z^5 - 1\,303\,400\,448\,z^4 - 1\,325\,915\,136\,z^3 + 3\,270\,011\,472\,z^2 - 8\,390\,556\,720\,z + 12\,095\,258\,175\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afx0.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{11}{4}; z\right) = \left(-\frac{4\,194\,304\,z^7}{23\,880\,381\,525} - \frac{1\,048\,576\,z^6}{15\,436\,575} - \frac{557\,056\,z^5}{1\,715\,175} - \frac{4096\,z^4}{114\,345} + \frac{82\,624\,z^3}{114\,345} + \frac{544\,z^2}{363} + \frac{284\,z}{121} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{23\,880\,381\,525}\left(2\sqrt{z}\left(70\,254\,592\,z^6 + 3\,649\,830\,912\,z^5 - 7\,413\,719\,040\,z^4 + 6\,629\,575\,680\,z^3 + 11\,999\,398\,320\,z^2 + 24\,209\,312\,400\,z + 23\,880\,381\,525\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afx1.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) = \left(\frac{4\,194\,304\,z^7}{23\,880\,381\,525} - \frac{1\,048\,576\,z^6}{15\,436\,575} + \frac{557\,056\,z^5}{1\,715\,175} - \frac{4096\,z^4}{114\,345} - \frac{82\,624\,z^3}{114\,345} + \frac{544\,z^2}{363} - \frac{284\,z}{121} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{23\,880\,381\,525}\left(2\sqrt{z}\left(70\,254\,592\,z^6 - 3\,649\,830\,912\,z^5 - 7\,413\,719\,040\,z^4 - 6\,629\,575\,680\,z^3 + 11\,999\,398\,320\,z^2 - 24\,209\,312\,400\,z + 23\,880\,381\,525\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afx2.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{9}{4}; z\right) =$$
$$-\frac{1}{4\,652\,022\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2\,097\,152\,z^7+730\,726\,400\,z^6+2\,144\,624\,640\,z^5+2\,280\,337\,920\,z^4-8\,554\,291\,200\,z^3-\right.\right.\right.$$
$$\left.10\,626\,033\,600\,z^2-11\,277\,630\,000\,z-4\,652\,022\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$4\sqrt{z}\left(33\,292\,288\,z^6+1\,411\,891\,200\,z^5-3\,818\,142\,720\,z^4+2\,566\,589\,760\,z^3+4\,912\,034\,400\,z^2+\right.$$
$$7\,556\,012\,100\,z+4\,652\,022\,375\Big)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(524\,288\,z^6+174\,489\,600\,z^5+223\,856\,640\,z^4+$$
$$\left.\left.1\,496\,396\,160\,z^3+2\,175\,329\,520\,z^2-3\,834\,394\,200\,z-4\,652\,022\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.afx3.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{4\,652\,022\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2\,097\,152\,z^7-730\,726\,400\,z^6+2\,144\,624\,640\,z^5-2\,280\,337\,920\,z^4-8\,554\,291\,200\,z^3+\right.\right.\right.$$
$$\left.10\,626\,033\,600\,z^2-11\,277\,630\,000\,z+4\,652\,022\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$4\sqrt{z}\left(33\,292\,288\,z^6-1\,411\,891\,200\,z^5-3\,818\,142\,720\,z^4-2\,566\,589\,760\,z^3+4\,912\,034\,400\,z^2-\right.$$
$$7\,556\,012\,100\,z+4\,652\,022\,375\Big)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(-524\,288\,z^6+174\,489\,600\,z^5-\right.$$
$$\left.\left.223\,856\,640\,z^4+1\,496\,396\,160\,z^3+2\,175\,329\,520\,z^2-3\,834\,394\,200\,z+4\,652\,022\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.afx4.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{7}{4}; z\right) = \left(\frac{262\,144\,z^6}{18\,243\,225}+\frac{212\,992\,z^5}{467\,775}-\frac{1024\,z^4}{693}+\frac{64\,z^3}{945}+\frac{224\,z^2}{99}+\frac{28\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)+$$
$$\frac{1}{2\,170\,943\,775}\left(2\sqrt{z}\left(524\,288\,z^6+152\,076\,288\,z^5+142\,571\,520\,z^4+\right.\right.$$
$$\left.\left.2\,111\,840\,640\,z^3+2\,175\,329\,520\,z^2+2\,631\,447\,000\,z+2\,170\,943\,775\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afx5.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{7}{4}; -z\right) =$$
$$\left(\frac{262\,144\,z^6}{18\,243\,225}-\frac{212\,992\,z^5}{467\,775}-\frac{1024\,z^4}{693}-\frac{64\,z^3}{945}+\frac{224\,z^2}{99}-\frac{28\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{1}{2\,170\,943\,775}\left(2\sqrt{z}\left(-524\,288\,z^6+\right.\right.$$
$$\left.\left.152\,076\,288\,z^5+142\,571\,520\,z^4+2\,111\,840\,640\,z^3+2\,175\,329\,520\,z^2-2\,631\,447\,000\,z+2\,170\,943\,775\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afx6.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{5}{4}; z\right) = \frac{1}{516\,891\,375\,\sqrt{2}}\left(\sqrt[4]{z}\left(\left(14\,680\,064\,z^6 + 353\,206\,272\,z^5 - 1\,174\,394\,880\,z^4 - 634\,233\,600\,z^3 + 2\,506\,140\,000\,z^2 + 1\,428\,499\,800\,z + 516\,891\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(262\,144\,z^6 + 63\,815\,680\,z^5 - 217\,580\,544\,z^4 + 1\,312\,637\,760\,z^3 - 831\,448\,800\,z^2 - 1\,014\,986\,700\,z - 516\,891\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(3\,604\,480\,z^5 + 73\,224\,192\,z^4 - 225\,775\,872\,z^3 - 512\,431\,920\,z^2 + 601\,473\,600\,z + 516\,891\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afx7.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{5}{4}; -z\right) = \frac{1}{516\,891\,375\,\sqrt{2}}\left(\sqrt[4]{z}\left(\left(14\,680\,064\,z^6 - 353\,206\,272\,z^5 - 1\,174\,394\,880\,z^4 + 634\,233\,600\,z^3 + 2\,506\,140\,000\,z^2 - 1\,428\,499\,800\,z + 516\,891\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-262\,144\,z^6 + 63\,815\,680\,z^5 + 217\,580\,544\,z^4 + 1\,312\,637\,760\,z^3 + 831\,448\,800\,z^2 - 1\,014\,986\,700\,z + 516\,891\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(3\,604\,480\,z^5 - 73\,224\,192\,z^4 - 225\,775\,872\,z^3 + 512\,431\,920\,z^2 + 601\,473\,600\,z - 516\,891\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afx8.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{3}{4}; z\right) = \left(-\frac{262\,144\,z^6}{310\,134\,825} - \frac{999\,424\,z^5}{6\,081\,075} + \frac{29\,696\,z^4}{31\,185} - \frac{6208\,z^3}{1485} - \frac{32\,z^2}{99} + \frac{36\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{6\,081\,075}\left(2\sqrt{z}\left(65\,536\,z^5 + 798\,720\,z^4 - 1\,347\,840\,z^3 - 15\,528\,240\,z^2 + 11\,793\,600\,z + 6\,081\,075\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afx9.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{3}{4}; -z\right) = \left(-\frac{262\,144\,z^6}{310\,134\,825} + \frac{999\,424\,z^5}{6\,081\,075} + \frac{29\,696\,z^4}{31\,185} + \frac{6208\,z^3}{1485} - \frac{32\,z^2}{99} - \frac{36\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{6\,081\,075}\left(2\sqrt{z}\left(-65\,536\,z^5 + 798\,720\,z^4 + 1\,347\,840\,z^3 - 15\,528\,240\,z^2 - 11\,793\,600\,z + 6\,081\,075\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afxa.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{1}{4}; z\right) = -\frac{1}{103\,378\,275\,\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072\,z^6 + 20\,463\,616\,z^5 - 142\,695\,936\,z^4 + 500\,198\,400\,z^3 + 334\,152\,000\,z^2 - 601\,473\,600\,z - 103\,378\,275\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(507\,904\,z^5 + 1\,927\,168\,z^4 + 16\,469\,184\,z^3 - 172\,317\,600\,z^2 + 62\,653\,500\,z + 34\,459\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(32\,768\,z^5 + 4\,743\,168\,z^4 - 36\,065\,664\,z^3 + 104\,294\,736\,z^2 + 225\,552\,600\,z - 103\,378\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afxb.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) =$$
$$-\frac{1}{103\,378\,275\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072\,z^6 - 20\,463\,616\,z^5 - 142\,695\,936\,z^4 - 500\,198\,400\,z^3 + 334\,152\,000\,z^2 + 601\,473\,600\,z - 103\,378\,275\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(507\,904\,z^5 - 1\,927\,168\,z^4 + 16\,469\,184\,z^3 + 172\,317\,600\,z^2 + 62\,653\,500\,z - 34\,459\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-32\,768\,z^5 + 4\,743\,168\,z^4 + 36\,065\,664\,z^3 + 104\,294\,736\,z^2 - 225\,552\,600\,z - 103\,378\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afxc.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) = \left(\frac{1\,359\,872\,z^5}{103\,378\,275} - \frac{2048\,z^4}{36\,855} + \frac{5056\,z^3}{4455} - \frac{160\,z^2}{33} - \frac{20\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) +$$
$$\frac{1}{103\,378\,275}\left(2\sqrt{z}\left(32\,768\,z^5 + 3\,481\,600\,z^4 - 27\,580\,800\,z^3 + 30\,073\,680\,z^2 + 325\,798\,200\,z - 103\,378\,275\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afxd.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) = \left(-\frac{1\,359\,872\,z^5}{103\,378\,275} - \frac{2048\,z^4}{36\,855} - \frac{5056\,z^3}{4455} - \frac{160\,z^2}{33} + \frac{20\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{1}{103\,378\,275}\left(2\sqrt{z}\left(32\,768\,z^5 - 3\,481\,600\,z^4 - 27\,580\,800\,z^3 - 30\,073\,680\,z^2 + 325\,798\,200\,z + 103\,378\,275\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afxe.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) = \frac{1}{103\,378\,275\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(606\,208\,z^5 - 5\,566\,464\,z^4 + 66\,343\,680\,z^3 - 167\,076\,000\,z^2 - 187\,960\,500\,z + 103\,378\,275\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\sqrt{z}\left(32\,768\,z^5 + 2\,236\,416\,z^4 - 14\,799\,744\,z^3 - 57\,395\,520\,z^2 + 375\,921\,000\,z - 9\,398\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 72z\left(8192\,z^4 - 90\,880\,z^3 + 998\,088\,z^2 - 1\,670\,760\,z - 5\,221\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afxf.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{3}{4}; -z\right) = \frac{1}{103\,378\,275\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(-\left(606\,208\,z^5 + 5\,566\,464\,z^4 + 66\,343\,680\,z^3 + 167\,076\,000\,z^2 - 187\,960\,500\,z - 103\,378\,275\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\sqrt{z}\left(32\,768\,z^5 - 2\,236\,416\,z^4 - 14\,799\,744\,z^3 + 57\,395\,520\,z^2 + 375\,921\,000\,z + 9\,398\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 72z\left(8192\,z^4 + 90\,880\,z^3 + 998\,088\,z^2 + 1\,670\,760\,z - 5\,221\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afxg.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) =$$
$$\frac{1}{103\,378\,275}\left(\left(16\,384\,z^5 + 534\,528\,z^4 + 114\,240\,z^3 - 64\,602\,720\,z^2 + 127\,813\,140\,z + 103\,378\,275\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(126\,976\,z^4 - 1\,853\,952\,z^3 + 14\,479\,920\,z^2 + 10\,024\,560\,z - 103\,378\,275\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afxh.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) =$$
$$\frac{1}{103\,378\,275}\left(-\left(16\,384\,z^5 - 534\,528\,z^4 + 114\,240\,z^3 + 64\,602\,720\,z^2 + 127\,813\,140\,z - 103\,378\,275\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(126\,976\,z^4 + 1\,853\,952\,z^3 + 14\,479\,920\,z^2 - 10\,024\,560\,z - 103\,378\,275\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afxi.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{7}{4}; z\right) = \frac{1}{551\,350\,800\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(65\,536\,z^5 + 495\,616\,z^4 + 21\,032\,960\,z^3 - 267\,321\,600\,z^2 + 83\,538\,000\,z + 458\,414\,775\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(3\,342\,336\,z^5 - 53\,948\,416\,z^4 + 215\,255\,040\,z^3 + 1\,603\,929\,600\,z^2 - 2\,088\,450\,000\,z - 548\,218\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(65\,536\,z^5 + 94\,208\,z^4 + 27\,664\,896\,z^3 - 285\,143\,040\,z^2 - 183\,783\,600\,z + 548\,218\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afxj.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{7}{4}; -z\right) = -\frac{1}{551\,350\,800\sqrt{2}\,\sqrt[4]{z}}$$
$$\left(\left(2\sqrt{z}\left(65\,536\,z^5 - 495\,616\,z^4 + 21\,032\,960\,z^3 + 267\,321\,600\,z^2 + 83\,538\,000\,z - 458\,414\,775\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(3\,342\,336\,z^5 + 53\,948\,416\,z^4 + 215\,255\,040\,z^3 - 1\,603\,929\,600\,z^2 - 2\,088\,450\,000\,z + 548\,218\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-65\,536\,z^5 + 94\,208\,z^4 - 27\,664\,896\,z^3 - 285\,143\,040\,z^2 + 183\,783\,600\,z + 548\,218\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afxk.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{9}{4}; z\right) = \left(\frac{1024\,z^4}{530\,145} - \frac{26\,944\,z^3}{984\,555} - \frac{32\,z^2}{351} + \frac{52\,z}{33} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048\,z^4 - 38\,016\,z^3 + 1\,216\,656\,z^2 - 5\,012\,280\,z - 20\,675\,655\right)\sinh\left(2\sqrt{z}\right)}{20\,675\,655}$$

07.22.03.afxl.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{9}{4}; -z\right) = \left(\frac{1024\,z^4}{530\,145} + \frac{26\,944\,z^3}{984\,555} - \frac{32\,z^2}{351} - \frac{52\,z}{33} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(2048\,z^4 + 38\,016\,z^3 + 1\,216\,656\,z^2 + 5\,012\,280\,z - 20\,675\,655\right)\sin\left(2\sqrt{z}\right)}{20\,675\,655}$$

07.22.03.afxm.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{11}{4}; z\right) = \frac{1}{2\,520\,460\,800\sqrt{2}\, z^{5/4}}$$
$$\left(\left(2\sqrt{z}\left(3\,670\,016 z^5 - 26\,869\,760 z^4 - 678\,912\,000 z^3 + 2\,214\,950\,400 z^2 + 5\,317\,790\,400 z + 2\,271\,189\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(2\,097\,152 z^6 - 68\,550\,656 z^5 + 1\,183\,580\,160 z^4 + 1\,629\,388\,800 z^3 - 21\,691\,238\,400 z^2 - \right.$$
$$22\,555\,260\,000 z - 6\,813\,568\,125\Big) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(3\,407\,872 z^5 - 17\,547\,264 z^4 - \right.$$
$$\left.\left.\left.827\,228\,160 z^3 + 1\,756\,684\,800 z^2 + 8\,019\,648\,000 z + 6\,813\,568\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afxn.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{11}{4}; -z\right) = \frac{1}{2\,520\,460\,800\sqrt{2}\, z^{5/4}}$$
$$\left(\left(2\sqrt{z}\left(3\,670\,016 z^5 + 26\,869\,760 z^4 - 678\,912\,000 z^3 - 2\,214\,950\,400 z^2 + 5\,317\,790\,400 z - 2\,271\,189\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(-2\,097\,152 z^6 - 68\,550\,656 z^5 - 1\,183\,580\,160 z^4 + 1\,629\,388\,800 z^3 + 21\,691\,238\,400 z^2 - \right.$$
$$22\,555\,260\,000 z + 6\,813\,568\,125\Big) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-3\,407\,872 z^5 - 17\,547\,264 z^4 + \right.$$
$$\left.\left.\left.827\,228\,160 z^3 + 1\,756\,684\,800 z^2 - 8\,019\,648\,000 z + 6\,813\,568\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afxo.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) = \frac{1}{2\,297\,295}\left(\left(1024 z^4 - 39\,616 z^3 + 292\,320 z^2 + 3\,919\,860 z + 2\,297\,295\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left.14\sqrt{z}\left(256 z^3 + 4752 z^2 - 122\,400 z - 328\,185\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afxp.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) = \frac{1}{2\,297\,295}\left(\left(1024 z^4 + 39\,616 z^3 + 292\,320 z^2 - 3\,919\,860 z + 2\,297\,295\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left.14\sqrt{z}\left(256 z^3 - 4752 z^2 - 122\,400 z + 328\,185\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afxq.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) =$$
$$\frac{1}{7\,332\,249\,600\sqrt{2}\, z^{9/4}}\left(\left(2\sqrt{z}\left(4\,194\,304 z^6 - 143\,654\,912 z^5 - 518\,062\,080 z^4 + 14\,583\,029\,760 z^3 + 56\,443\,046\,400 z^2 + \right.\right.\right.$$
$$138\,088\,314\,000 z + 104\,928\,949\,125\Big) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4\,194\,304 z^6 + 2\,444\,230\,656 z^5 - 11\,882\,004\,480 z^4 - \right.$$
$$147\,867\,033\,600 z^3 - 450\,704\,217\,600 z^2 - 893\,940\,138\,000 z - 314\,786\,847\,375\Big) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$2\sqrt{z}\left(4\,194\,304 z^6 - 143\,130\,624 z^5 - 858\,193\,920 z^4 + 15\,698\,534\,400 z^3 + 78\,592\,550\,400 z^2 + \right.$$
$$\left.\left.\left.222\,394\,863\,600 z + 314\,786\,847\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afxr.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) = \frac{1}{7\,332\,249\,600\sqrt{2}\, z^{9/4}}\left(\left(2\sqrt{z}\left(4\,194\,304 z^6 + 143\,654\,912 z^5 - 518\,062\,080 z^4 - 14\,583\,029\,760 z^3 + 56\,443\,046\,400 z^2 - 138\,088\,314\,000 z + 104\,928\,949\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4\,194\,304 z^6 - 2\,444\,230\,656 z^5 - 11\,882\,004\,480 z^4 + 147\,867\,033\,600 z^3 - 450\,704\,217\,600 z^2 + 893\,940\,138\,000 z - 314\,786\,847\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(4\,194\,304 z^6 + 143\,130\,624 z^5 - 858\,193\,920 z^4 - 15\,698\,534\,400 z^3 + 78\,592\,550\,400 z^2 - 222\,394\,863\,600 z + 314\,786\,847\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afxs.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) = \frac{1}{176\,715}\left(\left(-832 z^3 + 43\,680 z^2 + 313\,740 z + 176\,715\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(128 z^3 - 2352 z^2 - 78\,120 z - 176\,715\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afxt.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) = \frac{1}{176\,715}\left(\left(832 z^3 + 43\,680 z^2 - 313\,740 z + 176\,715\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(128 z^3 + 2352 z^2 - 78\,120 z + 176\,715\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afxu.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) = \frac{1}{15\,642\,132\,480\sqrt{2}\, z^{13/4}}\left(\left(2\sqrt{z}\left(-218\,103\,808 z^6 + 3\,063\,939\,072 z^5 + 79\,330\,344\,960 z^4 + 666\,365\,706\,240 z^3 + 4\,581\,624\,902\,400 z^2 + 17\,108\,415\,324\,000 z + 14\,235\,360\,764\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(134\,217\,728 z^7 + 1\,291\,845\,632 z^6 - 87\,048\,585\,216 z^5 - 1\,040\,619\,601\,920 z^4 - 8\,189\,308\,108\,800 z^3 - 45\,979\,047\,878\,400 z^2 - 116\,401\,180\,896\,000 z - 42\,706\,082\,293\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-234\,881\,024 z^6 + 2\,837\,446\,656 z^5 + 90\,763\,100\,160 z^4 + 823\,405\,363\,200 z^3 + 5\,899\,520\,390\,400 z^2 + 25\,294\,872\,002\,400 z + 42\,706\,082\,293\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afxv.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) =$$
$$\frac{1}{15\,642\,132\,480\sqrt{2}\,z^{13/4}}\left(\left(2\sqrt{z}\left(218\,103\,808\,z^6 + 3\,063\,939\,072\,z^5 - 79\,330\,344\,960\,z^4 + 666\,365\,706\,240\,z^3 - 4\,581\,624\,902\,400\,z^2 + 17\,108\,415\,324\,000\,z - 14\,235\,360\,764\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(134\,217\,728\,z^7 - 1\,291\,845\,632\,z^6 - 87\,048\,585\,216\,z^5 + 1\,040\,619\,601\,920\,z^4 - 8\,189\,308\,108\,800\,z^3 + 45\,979\,047\,878\,400\,z^2 - 116\,401\,180\,896\,000\,z + 42\,706\,082\,293\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(234\,881\,024\,z^6 + 2\,837\,446\,656\,z^5 - 90\,763\,100\,160\,z^4 + 823\,405\,363\,200\,z^3 - 5\,899\,520\,390\,400\,z^2 + 25\,294\,872\,002\,400\,z - 42\,706\,082\,293\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afxw.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) = \left(\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} + \frac{20\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\left(16\,z^2 + 240\,z + 495\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.afxx.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) = \left(-\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} - \frac{20\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\left(16\,z^2 - 240\,z + 495\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.afxy.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) =$$
$$\left(19\left(2\sqrt{z}\left(268\,435\,456\,z^7 + 28\,370\,272\,256\,z^6 + 781\,886\,423\,040\,z^5 + 16\,128\,258\,539\,520\,z^4 + 248\,033\,099\,059\,200\,z^3 + 2\,316\,511\,413\,216\,000\,z^2 + 10\,119\,307\,880\,682\,000\,z + 8\,754\,746\,870\,244\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(5\,100\,273\,664\,z^7 + 222\,650\,433\,536\,z^6 + 5\,148\,272\,230\,400\,z^5 + 95\,037\,736\,550\,400\,z^4 + 1\,191\,294\,829\,670\,400\,z^3 + 8\,311\,385\,418\,336\,000\,z^2 + 23\,459\,874\,540\,102\,000\,z + 8\,754\,746\,870\,244\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(268\,435\,456\,z^7 + 30\,349\,983\,744\,z^6 + 873\,773\,137\,920\,z^5 + 18\,321\,304\,780\,800\,z^4 + 289\,436\,087\,808\,000\,z^3 + 2\,860\,399\,128\,787\,200\,z^2 + 14\,349\,243\,650\,742\,000\,z + 26\,264\,240\,610\,733\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(500\,548\,239\,360\sqrt{2}\,z^{17/4}\right)$$

07.22.03.afxz.01

$${}_1F_2\left(\frac{21}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) =$$

$$-\left(19\left(2\sqrt{z}\,\left(268\,435\,456\,z^7 - 28\,370\,272\,256\,z^6 + 781\,886\,423\,040\,z^5 - 16\,128\,258\,539\,520\,z^4 + 248\,033\,099\,059\,200\,z^3 - 2\,316\,511\,413\,216\,000\,z^2 + 10\,119\,307\,880\,682\,000\,z - 8\,754\,746\,870\,244\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(5\,100\,273\,664\,z^7 - 222\,650\,433\,536\,z^6 + 5\,148\,272\,230\,400\,z^5 - 95\,037\,736\,550\,400\,z^4 + 1\,191\,294\,829\,670\,400\,z^3 - 8\,311\,385\,418\,336\,000\,z^2 + 23\,459\,874\,540\,102\,000\,z - 8\,754\,746\,870\,244\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-268\,435\,456\,z^7 + 30\,349\,983\,744\,z^6 - 873\,773\,137\,920\,z^5 + 18\,321\,304\,780\,800\,z^4 - 289\,436\,087\,808\,000\,z^3 + 2\,860\,399\,128\,787\,200\,z^2 - 14\,349\,243\,650\,742\,000\,z + 26\,264\,240\,610\,733\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(500\,548\,239\,360\,\sqrt{2}\,z^{17/4}\right)$$

For fixed z and $a_1 = \frac{21}{4}$, $b_{1.} = -\frac{9}{2}$

07.22.03.afy0.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) =$$

$$\left(-\frac{134\,217\,728\,z^8}{14\,230\,536\,445\,125} - \frac{260\,046\,848\,z^7}{49\,931\,706\,825} - \frac{243\,269\,632\,z^6}{3\,475\,100\,475} + \frac{65\,536\,z^5}{2\,064\,825} + \frac{2048\,z^4}{27\,531} + \frac{18\,304\,z^3}{58\,995} + \frac{1456\,z^2}{1311} + \frac{152\,z}{69} + 1\right)$$

$$\cosh\left(2\sqrt{z}\right) - \frac{1}{14\,230\,536\,445\,125}$$

$$\left(2\sqrt{z}\,\left(2\,634\,022\,912\,z^7 + 222\,953\,472\,000\,z^6 + 52\,063\,764\,480\,z^5 + 282\,291\,609\,600\,z^4 + 1\,067\,415\,148\,800\,z^3 + 4\,365\,044\,283\,600\,z^2 + 12\,374\,379\,517\,500\,z + 14\,230\,536\,445\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afy1.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{23}{4}; -z\right) =$$

$$\left(-\frac{134\,217\,728\,z^8}{14\,230\,536\,445\,125} + \frac{260\,046\,848\,z^7}{49\,931\,706\,825} - \frac{243\,269\,632\,z^6}{3\,475\,100\,475} - \frac{65\,536\,z^5}{2\,064\,825} + \frac{2048\,z^4}{27\,531} - \frac{18\,304\,z^3}{58\,995} + \frac{1456\,z^2}{1311} - \frac{152\,z}{69} + 1\right)$$

$$\cos\left(2\sqrt{z}\right) + \frac{1}{14\,230\,536\,445\,125}$$

$$\left(2\sqrt{z}\,\left(-2\,634\,022\,912\,z^7 + 222\,953\,472\,000\,z^6 - 52\,063\,764\,480\,z^5 + 282\,291\,609\,600\,z^4 - 1\,067\,415\,148\,800\,z^3 + 4\,365\,044\,283\,600\,z^2 - 12\,374\,379\,517\,500\,z + 14\,230\,536\,445\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afy2.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{21}{4}; z\right) = -\frac{1}{1\,962\,730\,531\,125\sqrt{2}}\left(\sqrt[4]{z}\left((67\,108\,864 z^8 + 36\,419\,141\,632 z^7 + 547\,474\,636\,800 z^6 - 143\,712\,092\,160 z^5 - 306\,029\,767\,680 z^4 - 1\,140\,995\,419\,200 z^3 - 3\,319\,232\,061\,600 z^2 - 4\,361\,623\,402\,500 z - 1\,962\,730\,531\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 28\sqrt{z}\left(184\,549\,376 z^7 + 15\,297\,675\,264 z^6 + 11\,731\,599\,360 z^5 + 13\,931\,274\,240 z^4 + 48\,828\,199\,680 z^3 + 175\,093\,261\,200 z^2 + 398\,776\,996\,800 z + 280\,390\,075\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(16\,777\,216 z^7 + 8\,786\,018\,304 z^6 + 112\,178\,626\,560 z^5 - 35\,928\,023\,040 z^4 - 100\,887\,171\,840 z^3 - 388\,221\,135\,120 z^2 - 1\,221\,254\,552\,700 z - 1\,962\,730\,531\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afy3.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) = -\frac{1}{1\,962\,730\,531\,125\sqrt{2}}\left(\sqrt[4]{z}\left((67\,108\,864 z^8 - 36\,419\,141\,632 z^7 + 547\,474\,636\,800 z^6 + 143\,712\,092\,160 z^5 - 306\,029\,767\,680 z^4 + 1\,140\,995\,419\,200 z^3 - 3\,319\,232\,061\,600 z^2 + 4\,361\,623\,402\,500 z - 1\,962\,730\,531\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 28\sqrt{z}\left(184\,549\,376 z^7 - 15\,297\,675\,264 z^6 + 11\,731\,599\,360 z^5 - 13\,931\,274\,240 z^4 + 48\,828\,199\,680 z^3 - 175\,093\,261\,200 z^2 + 398\,776\,996\,800 z - 280\,390\,075\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(16\,777\,216 z^7 - 8\,786\,018\,304 z^6 + 112\,178\,626\,560 z^5 + 35\,928\,023\,040 z^4 - 100\,887\,171\,840 z^3 + 388\,221\,135\,120 z^2 - 1\,221\,254\,552\,700 z + 1\,962\,730\,531\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afy4.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{19}{4}; z\right) = \left(\frac{16\,777\,216 z^7}{8\,249\,586\,345} + \frac{24\,117\,248 z^6}{151\,091\,325} + \frac{131\,072 z^5}{987\,525} + \frac{8192 z^4}{65\,835} + \frac{11\,008 z^3}{28\,215} + \frac{208 z^2}{171} + \frac{128 z}{57} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{618\,718\,975\,875}\left(2\sqrt{z}\left(16\,777\,216 z^7 + 8\,477\,736\,960 z^6 + 112\,178\,626\,560 z^5 - 25\,662\,873\,600 z^4 - 64\,959\,148\,800 z^3 - 219\,988\,969\,200 z^2 - 564\,445\,381\,500 z - 618\,718\,975\,875\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afy5.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{19}{4}; -z\right) = \left(-\frac{16\,777\,216 z^7}{8\,249\,586\,345} + \frac{24\,117\,248 z^6}{151\,091\,325} - \frac{131\,072 z^5}{987\,525} + \frac{8192 z^4}{65\,835} - \frac{11\,008 z^3}{28\,215} + \frac{208 z^2}{171} - \frac{128 z}{57} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{618\,718\,975\,875}\left(2\sqrt{z}\left(16\,777\,216 z^7 - 8\,477\,736\,960 z^6 + 112\,178\,626\,560 z^5 + 25\,662\,873\,600 z^4 - 64\,959\,148\,800 z^3 + 219\,988\,969\,200 z^2 - 564\,445\,381\,500 z + 618\,718\,975\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afy6.01

$$
{}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{17}{4}; z\right) =
$$

$$
\frac{1}{93\,463\,358\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(616\,562\,688\,z^7 + 47\,448\,064\,000\,z^6 + 61\,590\,896\,640\,z^5 + 24\,807\,444\,480\,z^4 + \right.\right.\right.
$$

$$
\left.\left.\left. 67\,298\,212\,800\,z^3 + 170\,517\,765\,600\,z^2 + 212\,583\,325\,500\,z + 93\,463\,358\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.
$$

$$
4\sqrt{z}\left(8\,388\,608\,z^7 + 4\,012\,900\,352\,z^6 + 50\,641\,305\,600\,z^5 - 10\,265\,149\,440\,z^4 - 22\,749\,068\,160\,z^3 - \right.
$$

$$
\left. 66\,913\,938\,000\,z^2 - 137\,812\,638\,600\,z - 93\,463\,358\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +
$$

$$
20\,z\left(30\,408\,704\,z^6 + 2\,179\,203\,072\,z^5 + 1\,026\,514\,944\,z^4 + 1\,582\,543\,872\,z^3 + 4\,625\,331\,984\,z^2 + \right.
$$

$$
\left.\left. 12\,608\,390\,340\,z + 18\,692\,671\,725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)
$$

07.22.03.afy7.01

$$
{}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{17}{4}; -z\right) =
$$

$$
\frac{1}{93\,463\,358\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-616\,562\,688\,z^7 + 47\,448\,064\,000\,z^6 - 61\,590\,896\,640\,z^5 + 24\,807\,444\,480\,z^4 - \right.\right.\right.
$$

$$
\left.\left.\left. 67\,298\,212\,800\,z^3 + 170\,517\,765\,600\,z^2 - 212\,583\,325\,500\,z + 93\,463\,358\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.
$$

$$
4\sqrt{z}\left(8\,388\,608\,z^7 - 4\,012\,900\,352\,z^6 + 50\,641\,305\,600\,z^5 + 10\,265\,149\,440\,z^4 - 22\,749\,068\,160\,z^3 + \right.
$$

$$
\left. 66\,913\,938\,000\,z^2 - 137\,812\,638\,600\,z + 93\,463\,358\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +
$$

$$
20\,z\left(30\,408\,704\,z^6 - 2\,179\,203\,072\,z^5 + 1\,026\,514\,944\,z^4 - 1\,582\,543\,872\,z^3 + 4\,625\,331\,984\,z^2 - \right.
$$

$$
\left.\left. 12\,608\,390\,340\,z + 18\,692\,671\,725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)
$$

07.22.03.afy8.01

$$
{}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{15}{4}; z\right) =
$$

$$
\left(-\frac{8\,388\,608\,z^7}{32\,564\,156\,625} - \frac{13\,631\,488\,z^6}{119\,282\,625} - \frac{65\,536\,z^5}{51\,975} + \frac{16\,384\,z^4}{51\,975} + \frac{128\,z^3}{231} + \frac{688\,z^2}{495} + \frac{104\,z}{45} + 1\right)\cosh\left(2\sqrt{z}\right) -
$$

$$
\frac{1}{10\,854\,718\,875}\left(2\sqrt{z}\left(49\,283\,072\,z^6 + 3\,339\,714\,560\,z^5 + 1\,710\,858\,240\,z^4 + \right.\right.
$$

$$
\left.\left. 1\,924\,715\,520\,z^3 + 4\,795\,081\,200\,z^2 + 10\,613\,502\,900\,z + 10\,854\,718\,875\right)\sinh\left(2\sqrt{z}\right)\right)
$$

07.22.03.afy9.01

$$
{}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{15}{4}; -z\right) =
$$

$$
\left(\frac{8\,388\,608\,z^7}{32\,564\,156\,625} - \frac{13\,631\,488\,z^6}{119\,282\,625} + \frac{65\,536\,z^5}{51\,975} + \frac{16\,384\,z^4}{51\,975} - \frac{128\,z^3}{231} + \frac{688\,z^2}{495} - \frac{104\,z}{45} + 1\right)\cos\left(2\sqrt{z}\right) +
$$

$$
\frac{1}{10\,854\,718\,875}\left(2\sqrt{z}\left(49\,283\,072\,z^6 - 3\,339\,714\,560\,z^5 + 1\,710\,858\,240\,z^4 - \right.\right.
$$

$$
\left.\left. 1\,924\,715\,520\,z^3 + 4\,795\,081\,200\,z^2 - 10\,613\,502\,900\,z + 10\,854\,718\,875\right)\sin\left(2\sqrt{z}\right)\right)
$$

07.22.03.afya.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{13}{4}; z\right) = -\frac{1}{5\,497\,844\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4\,194\,304 z^7 + 1\,756\,364\,800 z^6 + 18\,531\,287\,040 z^5 - 5\,988\,003\,840 z^4 - 5\,680\,584\,000 z^3 - 11\,327\,752\,800 z^2 - 12\,969\,274\,500 z - 5\,497\,844\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(71\,303\,168 z^6 + 4\,394\,188\,800 z^5 + 749\,629\,440 z^4 + 2\,352\,430\,080 z^3 + 4\,861\,911\,600 z^2 + 8\,570\,998\,800 z + 5\,497\,844\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1\,048\,576 z^6 + 421\,527\,552 z^5 + 3\,633\,315\,840 z^4 - 1\,069\,286\,400 z^3 - 1\,914\,690\,960 z^2 - 4\,172\,723\,100 z - 5\,497\,844\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afyb.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{13}{4}; -z\right) = \frac{1}{5\,497\,844\,625\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4\,194\,304 z^7 - 1\,756\,364\,800 z^6 + 18\,531\,287\,040 z^5 + 5\,988\,003\,840 z^4 - 5\,680\,584\,000 z^3 + 11\,327\,752\,800 z^2 - 12\,969\,274\,500 z + 5\,497\,844\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(71\,303\,168 z^6 - 4\,394\,188\,800 z^5 + 749\,629\,440 z^4 - 2\,352\,430\,080 z^3 + 4\,861\,911\,600 z^2 - 8\,570\,998\,800 z + 5\,497\,844\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(1\,048\,576 z^6 - 421\,527\,552 z^5 + 3\,633\,315\,840 z^4 + 1\,069\,286\,400 z^3 - 1\,914\,690\,960 z^2 + 4\,172\,723\,100 z - 5\,497\,844\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afyc.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{11}{4}; z\right) = \left(\frac{1\,048\,576 z^6}{33\,399\,135} + \frac{262\,144 z^5}{155\,925} - \frac{8192 z^4}{10\,395} + \frac{1024 z^3}{945} + \frac{400 z^2}{231} + \frac{80 z}{33} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{2\,170\,943\,775}\left(2\sqrt{z}\left(1\,048\,576 z^6 + 388\,497\,408 z^5 + 2\,851\,430\,400 z^4 - 1\,069\,286\,400 z^3 - 1\,373\,364\,720 z^2 - 2\,368\,302\,300 z - 2\,170\,943\,775\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afyd.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{11}{4}; -z\right) = \left(\frac{1\,048\,576 z^6}{33\,399\,135} - \frac{262\,144 z^5}{155\,925} - \frac{8192 z^4}{10\,395} - \frac{1024 z^3}{945} + \frac{400 z^2}{231} - \frac{80 z}{33} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{1}{2\,170\,943\,775}\left(2\sqrt{z}\left(1\,048\,576 z^6 - 388\,497\,408 z^5 + 2\,851\,430\,400 z^4 - 1\,069\,286\,400 z^3 - 1\,373\,364\,720 z^2 + 2\,368\,302\,300 z - 2\,170\,943\,775\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afye.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{9}{4}; z\right) = \frac{1}{422\,911\,125\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(5\left(6\,553\,600 z^6 + 316\,489\,728 z^5 - 234\,415\,104 z^4 + 253\,955\,520 z^3 + 220\,540\,320 z^2 + 213\,021\,900 z + 84\,582\,225\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(524\,288 z^6 + 174\,489\,600 z^5 + 931\,768\,320 z^4 - 308\,972\,160 z^3 -\right.$$
$$\left.551\,350\,800 z^2 - 726\,780\,600 z - 422\,911\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.12 z\left(2\,686\,976 z^5 + 117\,985\,280 z^4 - 150\,447\,360 z^3 + 90\,221\,040 z^2 + 129\,483\,900 z + 140\,970\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afyf.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) = \frac{1}{422\,911\,125\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(5\left(6\,553\,600 z^6 - 316\,489\,728 z^5 - 234\,415\,104 z^4 - 253\,955\,520 z^3 + 220\,540\,320 z^2 - 213\,021\,900 z + 84\,582\,225\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(524\,288 z^6 - 174\,489\,600 z^5 + 931\,768\,320 z^4 + 308\,972\,160 z^3 -\right.$$
$$\left.551\,350\,800 z^2 + 726\,780\,600 z - 422\,911\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.12 z\left(2\,686\,976 z^5 - 117\,985\,280 z^4 - 150\,447\,360 z^3 - 90\,221\,040 z^2 + 129\,483\,900 z - 140\,970\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afyg.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) = \left(-\frac{524\,288 z^6}{197\,358\,525} - \frac{32\,768 z^5}{42\,525} - \frac{2048 z^4}{945} - \frac{128 z^3}{135} + \frac{176 z^2}{63} + \frac{8 z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) -$$
$$\frac{2\sqrt{z}\left(65\,536 z^5 + 2\,437\,120 z^4 - 4\,112\,640 z^3 + 2\,313\,360 z^2 + 2\,249\,100 z + 1\,686\,825\right)\sinh\left(2\sqrt{z}\right)}{1\,686\,825}$$

07.22.03.afyh.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) = \left(-\frac{524\,288 z^6}{197\,358\,525} + \frac{32\,768 z^5}{42\,525} - \frac{2048 z^4}{945} + \frac{128 z^3}{135} + \frac{176 z^2}{63} - \frac{8 z}{3} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{2\sqrt{z}\left(-65\,536 z^5 + 2\,437\,120 z^4 + 4\,112\,640 z^3 + 2\,313\,360 z^2 - 2\,249\,100 z + 1\,686\,825\right)\sin\left(2\sqrt{z}\right)}{1\,686\,825}$$

07.22.03.afyi.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{5}{4}; z\right) = -\frac{1}{46\,990\,125\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(262\,144\,z^6 + 67\,387\,392\,z^5 + 90\,516\,480\,z^4 + 195\,249\,600\,z^3 - 300\,736\,800\,z^2 - 137\,837\,700\,z - 46\,990\,125\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(3\,604\,480\,z^5 + 105\,148\,416\,z^4 - 225\,711\,360\,z^3 + 85\,503\,600\,z^2 + 100\,245\,600\,z + 46\,990\,125\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(65\,536\,z^5 + 15\,962\,112\,z^4 + 16\,128\,z^3 + 99\,655\,920\,z^2 - 62\,653\,500\,z - 46\,990\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afyj.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{5}{4}; -z\right) = -\frac{1}{46\,990\,125\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(262\,144\,z^6 - 67\,387\,392\,z^5 + 90\,516\,480\,z^4 - 195\,249\,600\,z^3 - 300\,736\,800\,z^2 + 137\,837\,700\,z - 46\,990\,125\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(3\,604\,480\,z^5 - 105\,148\,416\,z^4 - 225\,711\,360\,z^3 - 85\,503\,600\,z^2 + 100\,245\,600\,z - 46\,990\,125\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4\,z\left(65\,536\,z^5 - 15\,962\,112\,z^4 + 16\,128\,z^3 - 99\,655\,920\,z^2 - 62\,653\,500\,z + 46\,990\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afyk.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) = \left(\frac{65\,536\,z^5}{552\,825} + \frac{4096\,z^4}{1701} - \frac{256\,z^3}{45} - \frac{16\,z^2}{9} + \frac{32\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) +$$
$$\frac{1}{28\,194\,075}\left(2\sqrt{z}\left(65\,536\,z^5 + 13\,578\,240\,z^4 - 22\,913\,280\,z^3 + 123\,636\,240\,z^2 - 62\,653\,500\,z - 28\,194\,075\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afyl.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) = \left(-\frac{65\,536\,z^5}{552\,825} + \frac{4096\,z^4}{1701} + \frac{256\,z^3}{45} - \frac{16\,z^2}{9} - \frac{32\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{1}{28\,194\,075}\left(2\sqrt{z}\left(65\,536\,z^5 - 13\,578\,240\,z^4 - 22\,913\,280\,z^3 - 123\,636\,240\,z^2 - 62\,653\,500\,z + 28\,194\,075\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afym.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) =$$
$$\frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,556\,480\,z^5 + 22\,112\,256\,z^4 - 47\,361\,600\,z^3 - 57\,002\,400\,z^2 + 62\,653\,500\,z + 9\,398\,025\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.\right.$$
$$4\sqrt{z}\left(32\,768\,z^5 + 5\,505\,024\,z^4 - 19\,089\,792\,z^3 + 65\,847\,600\,z^2 - 16\,216\,200\,z - 9\,398\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.12\,z\left(126\,976\,z^4 + 1\,414\,656\,z^3 - 2\,135\,952\,z^2 - 10\,073\,700\,z + 3\,132\,675\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afyn.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-1\,556\,480\,z^5+22\,112\,256\,z^4+47\,361\,600\,z^3-57\,002\,400\,z^2-62\,653\,500\,z+9\,398\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(32\,768\,z^5-5\,505\,024\,z^4-19\,089\,792\,z^3-65\,847\,600\,z^2-16\,216\,200\,z+9\,398\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.12\,z\left(126\,976\,z^4-1\,414\,656\,z^3-2\,135\,952\,z^2+10\,073\,700\,z+3\,132\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afyo.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) = \left(-\frac{32\,768\,z^5}{9\,398\,025}-\frac{16\,384\,z^4}{36\,855}+\frac{896\,z^3}{405}-\frac{16\,z^2}{3}-\frac{8\,z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\left(4096\,z^4+19\,968\,z^3+39\,312\,z^2-442\,260\,z+110\,565\right)\sinh\left(2\sqrt{z}\right)}{110\,565}$$

07.22.03.afyp.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) = \left(\frac{32\,768\,z^5}{9\,398\,025}-\frac{16\,384\,z^4}{36\,855}-\frac{896\,z^3}{405}-\frac{16\,z^2}{3}+\frac{8\,z}{3}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\left(4096\,z^4-19\,968\,z^3+39\,312\,z^2+442\,260\,z+110\,565\right)\sin\left(2\sqrt{z}\right)}{110\,565}$$

07.22.03.afyq.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) =$$
$$-\frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^5+1\,583\,104\,z^4-8\,573\,760\,z^3+13\,197\,600\,z^2+20\,884\,500\,z-9\,398\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$1216\,z^{3/2}\left(512\,z^3-672\,z^2+19\,305\,z-61\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(4096\,z^4+357\,888\,z^3-2\,016\,144\,z^2+1\,425\,060\,z+9\,398\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afyr.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) =$$
$$\frac{1}{9\,398\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^5-1\,583\,104\,z^4-8\,573\,760\,z^3-13\,197\,600\,z^2+20\,884\,500\,z+9\,398\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$1216\,z^{3/2}\left(512\,z^3+672\,z^2+19\,305\,z+61\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(-4096\,z^4+357\,888\,z^3+2\,016\,144\,z^2+1\,425\,060\,z-9\,398\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afys.01

$${}_1F_2\left(\frac{21}{4};-\frac{9}{2},\frac{5}{4};z\right)=\left(-\frac{45\,056\,z^4}{3\,132\,675}+\frac{512\,z^3}{5265}-\frac{112\,z^2}{135}+\frac{16\,z}{15}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(4096\,z^4+235\,008\,z^3-1\,113\,840\,z^2-2\,506\,140\,z+9\,398\,025\right)\sinh\left(2\sqrt{z}\right)}{9\,398\,025}$$

07.22.03.afyt.01

$${}_1F_2\left(\frac{21}{4};-\frac{9}{2},\frac{5}{4};-z\right)=\left(-\frac{45\,056\,z^4}{3\,132\,675}-\frac{512\,z^3}{5265}-\frac{112\,z^2}{135}-\frac{16\,z}{15}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(4096\,z^4-235\,008\,z^3-1\,113\,840\,z^2+2\,506\,140\,z+9\,398\,025\right)\sin\left(2\sqrt{z}\right)}{9\,398\,025}$$

07.22.03.afyu.01

$${}_1F_2\left(\frac{21}{4};-\frac{9}{2},\frac{7}{4};z\right)=-\frac{1}{25\,061\,400\,\sqrt{2}\,\sqrt[4]{z}}\left(\left(38\sqrt{z}\,\left(12\,288\,z^4-116\,480\,z^3+673\,920\,z^2-1\,044\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(65\,536\,z^5+1\,896\,448\,z^4-1\,098\,240\,z^3-88\,058\,880\,z^2+83\,538\,000\,z+21\,928\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(225\,280\,z^4-2\,396\,928\,z^3+12\,317\,760\,z^2+13\,366\,080\,z-21\,928\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afyv.01

$${}_1F_2\left(\frac{21}{4};-\frac{9}{2},\frac{7}{4};-z\right)=\frac{1}{25\,061\,400\,\sqrt{2}\,\sqrt[4]{z}}\left(\left(-38\sqrt{z}\,\left(12\,288\,z^4+116\,480\,z^3+673\,920\,z^2-1\,044\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(65\,536\,z^5-1\,896\,448\,z^4-1\,098\,240\,z^3+88\,058\,880\,z^2+83\,538\,000\,z-21\,928\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(225\,280\,z^4+2\,396\,928\,z^3+12\,317\,760\,z^2-13\,366\,080\,z-21\,928\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afyw.01

$${}_1F_2\left(\frac{21}{4};-\frac{9}{2},\frac{9}{4};z\right)=\left(-\frac{2048\,z^4}{1\,879\,605}-\frac{128\,z^3}{29\,835}-\frac{80\,z^2}{351}+\frac{40\,z}{27}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(3840\,z^3-43\,792\,z^2+92\,820\,z+626\,535\right)\sinh\left(2\sqrt{z}\right)}{626\,535}$$

07.22.03.afyx.01

$${}_1F_2\left(\frac{21}{4};-\frac{9}{2},\frac{9}{4};-z\right)=\left(-\frac{2048\,z^4}{1\,879\,605}+\frac{128\,z^3}{29\,835}-\frac{80\,z^2}{351}-\frac{40\,z}{27}+1\right)\cos\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(3840\,z^3+43\,792\,z^2+92\,820\,z-626\,535\right)\sin\left(2\sqrt{z}\right)}{626\,535}$$

07.22.03.afyy.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = \frac{1}{114\,566\,400\sqrt{2}\, z^{5/4}} \left(\left(2\sqrt{z}\left(-131\,072 z^5 + 1\,515\,520 z^4 - 37\,539\,840 z^3 + 76\,377\,600 z^2 + 205\,264\,800 z + 78\,316\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(4\,456\,448 z^5 - 42\,024\,960 z^4 - 153\,354\,240 z^3 + 840\,153\,600 z^2 + 801\,964\,800 z + 234\,950\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-131\,072 z^5 + 2\,039\,808 z^4 - 42\,117\,120 z^3 + 45\,826\,560 z^2 + 300\,736\,800 z + 234\,950\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afyz.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = \frac{1}{114\,566\,400\sqrt{2}\, z^{5/4}} \left(\left(-2\sqrt{z}\left(131\,072 z^5 + 1\,515\,520 z^4 + 37\,539\,840 z^3 + 76\,377\,600 z^2 - 205\,264\,800 z + 78\,316\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4\,456\,448 z^5 - 42\,024\,960 z^4 + 153\,354\,240 z^3 + 840\,153\,600 z^2 - 801\,964\,800 z + 234\,950\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(131\,072 z^5 + 2\,039\,808 z^4 + 42\,117\,120 z^3 + 45\,826\,560 z^2 - 300\,736\,800 z + 234\,950\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afz0.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = \left(-\frac{2816 z^3}{208\,845} + \frac{16 z^2}{663} + \frac{64 z}{39} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256 z^3 - 6384 z^2 + 64\,260 z + 208\,845\right)\sinh\left(2\sqrt{z}\right)}{208\,845} $$

07.22.03.afz1.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = \left(\frac{2816 z^3}{208\,845} + \frac{16 z^2}{663} - \frac{64 z}{39} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256 z^3 + 6384 z^2 + 64\,260 z - 208\,845\right)\sin\left(2\sqrt{z}\right)}{208\,845} $$

07.22.03.afz2.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, \frac{15}{4}; z\right) = -\frac{1}{3\,666\,124\,800\sqrt{2}\, z^{9/4}} \left(11\left(2\sqrt{z}\left(2\,883\,584 z^5 + 52\,101\,120 z^4 - 515\,973\,120 z^3 - 1\,909\,440\,000 z^2 - 4\,260\,438\,000 z - 3\,179\,665\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4\,194\,304 z^6 - 114\,819\,072 z^5 + 211\,353\,600 z^4 + 5\,295\,513\,600 z^3 + 14\,435\,366\,400 z^2 + 27\,316\,926\,000 z + 9\,538\,995\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(786\,432 z^5 + 22\,282\,240 z^4 - 173\,383\,680 z^3 - 891\,072\,000 z^2 - 2\,322\,356\,400 z - 3\,179\,665\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afz3.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, \frac{15}{4}; -z\right) = -\frac{1}{3\,666\,124\,800\sqrt{2}\,z^{9/4}} $$
$$ \left(11\left(-2\sqrt{z}\,\left(2\,883\,584\,z^5 - 52\,101\,120\,z^4 - 515\,973\,120\,z^3 + 1\,909\,440\,000\,z^2 - 4\,260\,438\,000\,z + 3\,179\,665\,125\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4\,194\,304\,z^6 + 114\,819\,072\,z^5 + 211\,353\,600\,z^4 - 5\,295\,513\,600\,z^3 + 14\,435\,366\,400\,z^2 - \right. $$
$$ \left. 27\,316\,926\,000\,z + 9\,538\,995\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\,\left(786\,432\,z^5 - 22\,282\,240\,z^4 - \right. $$
$$ \left.\left. 173\,383\,680\,z^3 + 891\,072\,000\,z^2 - 2\,322\,356\,400\,z + 3\,179\,665\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.afz4.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, \frac{17}{4}; z\right) = \left(-\frac{128\,z^3}{16\,065} + \frac{176\,z^2}{1071} + \frac{88\,z}{51} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(16\,z^2 - 2100\,z - 5355\right)\sinh\left(2\sqrt{z}\right)}{5355} $$

07.22.03.afz5.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = \left(\frac{128\,z^3}{16\,065} + \frac{176\,z^2}{1071} - \frac{88\,z}{51} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(16\,z^2 + 2100\,z - 5355\right)\sin\left(2\sqrt{z}\right)}{5355} $$

07.22.03.afz6.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) = $$
$$ -\frac{1}{7\,821\,066\,240\sqrt{2}\,z^{13/4}}\left(11\left(2\sqrt{z}\,\left(8\,388\,608\,z^6 - 37\,748\,736\,z^5 - 2\,590\,310\,400\,z^4 - 19\,661\,291\,520\,z^3 - \right.\right.\right. $$
$$ \left. 127\,512\,403\,200\,z^2 - 465\,139\,584\,000\,z - 384\,739\,480\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-134\,217\,728\,z^6 + 2\,535\,456\,768\,z^5 + \right. $$
$$ \left. 32\,704\,757\,760\,z^4 + 233\,817\,292\,800\,z^3 + 1\,266\,302\,419\,200\,z^2 + 3\,154\,227\,804\,000\,z + 1\,154\,218\,440\,375\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(8\,388\,608\,z^6 - 18\,874\,368\,z^5 - 2\,902\,917\,120\,z^4 - 24\,566\,169\,600\,z^3 - \right. $$
$$ \left.\left.\left. 165\,472\,070\,400\,z^2 - 691\,895\,131\,200\,z - 1\,154\,218\,440\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.afz7.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) = $$
$$ \frac{1}{7\,821\,066\,240\sqrt{2}\,z^{13/4}}\left(11\left(2\sqrt{z}\,\left(8\,388\,608\,z^6 + 37\,748\,736\,z^5 - 2\,590\,310\,400\,z^4 + 19\,661\,291\,520\,z^3 - 127\,512\,403\,200\,z^2 + \right.\right.\right. $$
$$ 465\,139\,584\,000\,z - 384\,739\,480\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-134\,217\,728\,z^6 - 2\,535\,456\,768\,z^5 + 32\,704\,757\,760\,z^4 - \right. $$
$$ \left. 233\,817\,292\,800\,z^3 + 1\,266\,302\,419\,200\,z^2 - 3\,154\,227\,804\,000\,z + 1\,154\,218\,440\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ 2\sqrt{z}\,\left(8\,388\,608\,z^6 + 18\,874\,368\,z^5 - 2\,902\,917\,120\,z^4 + 24\,566\,169\,600\,z^3 - 165\,472\,070\,400\,z^2 + \right. $$
$$ \left.\left.\left. 691\,895\,131\,200\,z - 1\,154\,218\,440\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.afz8.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) = \left(\frac{16\,z^2}{63} + \frac{16\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\,\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.afz9.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) = \left(\frac{16\,z^2}{63} - \frac{16\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\,\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.afza.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) =$$

$$-\left(209\left(-2\sqrt{z}\,\left(721\,420\,288\,z^6 + 21\,092\,106\,240\,z^5 + 408\,717\,557\,760\,z^4 + 6\,149\,109\,657\,600\,z^3 + 56\,863\,314\,144\,000\,z^2 + 247\,112\,671\,806\,000\,z + 213\,530\,411\,469\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(268\,435\,456\,z^7 + 18\,270\,388\,224\,z^6 + 402\,228\,510\,720\,z^5 + 7\,136\,472\,268\,800\,z^4 + 88\,156\,247\,961\,600\,z^3 + 610\,611\,988\,896\,000\,z^2 + 1\,717\,477\,039\,278\,000\,z + 640\,591\,234\,408\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 30\sqrt{z}\,\left(50\,331\,648\,z^6 + 1\,571\,815\,424\,z^5 + 31\,068\,979\,200\,z^4 + 479\,237\,713\,920\,z^3 + 4\,687\,056\,541\,440\,z^2 + 23\,392\,160\,391\,600\,z + 42\,706\,082\,293\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(250\,274\,119\,680\sqrt{2}\,z^{17/4}\right)$$

07.22.03.afzb.01

$${}_1F_2\left(\frac{21}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) =$$

$$\left(209\left(2\sqrt{z}\,\left(721\,420\,288\,z^6 - 21\,092\,106\,240\,z^5 + 408\,717\,557\,760\,z^4 - 6\,149\,109\,657\,600\,z^3 + 56\,863\,314\,144\,000\,z^2 - 247\,112\,671\,806\,000\,z + 213\,530\,411\,469\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(268\,435\,456\,z^7 - 18\,270\,388\,224\,z^6 + 402\,228\,510\,720\,z^5 - 7\,136\,472\,268\,800\,z^4 + 88\,156\,247\,961\,600\,z^3 - 610\,611\,988\,896\,000\,z^2 + 1\,717\,477\,039\,278\,000\,z - 640\,591\,234\,408\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 30\sqrt{z}\,\left(50\,331\,648\,z^6 - 1\,571\,815\,424\,z^5 + 31\,068\,979\,200\,z^4 - 479\,237\,713\,920\,z^3 + 4\,687\,056\,541\,440\,z^2 - 23\,392\,160\,391\,600\,z + 42\,706\,082\,293\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) \Big/ \left(250\,274\,119\,680\sqrt{2}\,z^{17/4}\right)$$

For fixed z and $a_1 = \frac{21}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.afzc.01

$${}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) =$$

$$\left(\frac{486\,539\,264\,z^7}{316\,234\,143\,225} + \frac{4\,600\,102\,912\,z^6}{45\,176\,306\,175} - \frac{25\,296\,896\,z^5}{195\,568\,425} + \frac{8192\,z^4}{45\,885} + \frac{2816\,z^3}{6555} + \frac{1648\,z^2}{1311} + \frac{52\,z}{23} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{1\,581\,170\,716\,125}\left(2\sqrt{z}\,\left(33\,554\,432\,z^7 + 15\,487\,467\,520\,z^6 + 128\,294\,584\,320\,z^5 - 61\,785\,292\,800\,z^4 - 194\,075\,481\,600\,z^3 - 594\,356\,162\,400\,z^2 - 1\,466\,593\,128\,000\,z - 1\,581\,170\,716\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afzd.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) = \left(-\frac{486\,539\,264\,z^7}{316\,234\,143\,225} + \frac{4\,600\,102\,912\,z^6}{45\,176\,306\,175} + \frac{25\,296\,896\,z^5}{195\,568\,425} + \frac{8192\,z^4}{45\,885} - \frac{2816\,z^3}{6555} + \frac{1648\,z^2}{1311} - \frac{52\,z}{23} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{1\,581\,170\,716\,125}\left(2\sqrt{z}\left(33\,554\,432\,z^7 - 15\,487\,467\,520\,z^6 + 128\,294\,584\,320\,z^5 + 61\,785\,292\,800\,z^4 - 194\,075\,481\,600\,z^3 + 594\,356\,162\,400\,z^2 - 1\,466\,593\,128\,000\,z + 1\,581\,170\,716\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.afze.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) = \frac{1}{218\,081\,170\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,207\,959\,552\,z^7 + 84\,153\,466\,880\,z^6 + 73\,566\,904\,320\,z^4 + 165\,739\,392\,000\,z^3 + 404\,641\,364\,400\,z^2 + 498\,471\,246\,000\,z + 218\,081\,170\,125\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,777\,216\,z^7 + 7\,594\,835\,968\,z^6 + 73\,753\,559\,040\,z^5 - 35\,928\,023\,040\,z^4 - 58\,115\,715\,840\,z^3 - 160\,944\,310\,800\,z^2 - 324\,006\,309\,900\,z - 218\,081\,170\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(297\,795\,584\,z^6 + 19\,212\,533\,760\,z^5 - 14\,254\,571\,520\,z^4 + 21\,385\,728\,000\,z^3 + 56\,819\,206\,080\,z^2 + 149\,541\,373\,800\,z + 218\,081\,170\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afzf.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) = \frac{1}{218\,081\,170\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-1\,207\,959\,552\,z^7 + 84\,153\,466\,880\,z^6 + 73\,566\,904\,320\,z^4 - 165\,739\,392\,000\,z^3 + 404\,641\,364\,400\,z^2 - 498\,471\,246\,000\,z + 218\,081\,170\,125\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,777\,216\,z^7 - 7\,594\,835\,968\,z^6 + 73\,753\,559\,040\,z^5 + 35\,928\,023\,040\,z^4 - 58\,115\,715\,840\,z^3 + 160\,944\,310\,800\,z^2 - 324\,006\,309\,900\,z + 218\,081\,170\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(297\,795\,584\,z^6 - 19\,212\,533\,760\,z^5 - 14\,254\,571\,520\,z^4 - 21\,385\,728\,000\,z^3 + 56\,819\,206\,080\,z^2 - 149\,541\,373\,800\,z + 218\,081\,170\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.afzg.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) = \left(-\frac{16\,777\,216\,z^7}{68\,746\,552\,875} - \frac{208\,666\,624\,z^6}{1\,964\,187\,225} - \frac{702\,414\,848\,z^5}{654\,729\,075} + \frac{8192\,z^4}{21\,945} + \frac{1792\,z^3}{3135} + \frac{80\,z^2}{57} + \frac{44\,z}{19} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{1\,964\,187\,225}\left(2\sqrt{z}\left(8\,388\,608\,z^6 + 548\,929\,536\,z^5 + 59\,768\,832\,z^4 + 366\,612\,480\,z^3 + 882\,161\,280\,z^2 + 1\,929\,727\,800\,z + 1\,964\,187\,225\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.afzh.01

$${}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) =$$
$$\left(\frac{16\,777\,216\,z^7}{68\,746\,552\,875} - \frac{208\,666\,624\,z^6}{1\,964\,187\,225} + \frac{702\,414\,848\,z^5}{654\,729\,075} + \frac{8192\,z^4}{21\,945} - \frac{1792\,z^3}{3135} + \frac{80\,z^2}{57} - \frac{44\,z}{19} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{1}{1\,964\,187\,225}\left(2\sqrt{z}\,\left(8\,388\,608\,z^6 - 548\,929\,536\,z^5 + 59\,768\,832\,z^4 - \right.\right.$$
$$\left.\left.366\,612\,480\,z^3 + 882\,161\,280\,z^2 - 1\,929\,727\,800\,z + 1\,964\,187\,225\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afzi.01

$${}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) =$$
$$-\frac{1}{10\,384\,817\,625\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(8\,388\,608\,z^7 + 3\,580\,887\,040\,z^6 + 41\,060\,597\,760\,z^5 - 7\,984\,005\,120\,z^4 - 10\,380\,988\,800\,z^3 - \right.\right.\right.$$
$$\left.\left.21\,201\,944\,400\,z^2 - 24\,434\,865\,000\,z - 10\,384\,817\,625\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +$$
$$4\sqrt{z}\,\left(143\,654\,912\,z^6 + 9\,176\,350\,720\,z^5 + 5\,132\,574\,720\,z^4 + 4\,205\,859\,840\,z^3 + 9\,038\,811\,600\,z^2 + \right.$$
$$\left.16\,127\,010\,900\,z + 10\,384\,817\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2\,097\,152\,z^6 + 859\,832\,320\,z^5 + \right.$$
$$\left.\left.\left.8\,173\,240\,320\,z^4 - 1\,853\,429\,760\,z^3 - 3\,521\,962\,080\,z^2 - 7\,819\,156\,800\,z - 10\,384\,817\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afzj.01

$${}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{10\,384\,817\,625\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(8\,388\,608\,z^7 - 3\,580\,887\,040\,z^6 + 41\,060\,597\,760\,z^5 + 7\,984\,005\,120\,z^4 - 10\,380\,988\,800\,z^3 + \right.\right.\right.$$
$$\left.\left.21\,201\,944\,400\,z^2 - 24\,434\,865\,000\,z + 10\,384\,817\,625\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +$$
$$4\sqrt{z}\,\left(143\,654\,912\,z^6 - 9\,176\,350\,720\,z^5 + 5\,132\,574\,720\,z^4 - 4\,205\,859\,840\,z^3 + 9\,038\,811\,600\,z^2 - \right.$$
$$\left.16\,127\,010\,900\,z + 10\,384\,817\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(2\,097\,152\,z^6 - 859\,832\,320\,z^5 + \right.$$
$$\left.\left.\left.8\,173\,240\,320\,z^4 + 1\,853\,429\,760\,z^3 - 3\,521\,962\,080\,z^2 + 7\,819\,156\,800\,z - 10\,384\,817\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afzk.01

$${}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, -\frac{15}{4}; z\right) = \left(\frac{19\,922\,944\,z^6}{516\,891\,375} + \frac{79\,691\,776\,z^5}{34\,459\,425} + \frac{8192\,z^4}{5775} + \frac{1024\,z^3}{1155} + \frac{272\,z^2}{165} + \frac{12\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) +$$
$$\frac{1}{3\,618\,239\,625}\left(2\sqrt{z}\,\left(2\,097\,152\,z^6 + 825\,753\,600\,z^5 + 8\,173\,240\,320\,z^4 - \right.\right.$$
$$\left.\left.1\,283\,143\,680\,z^3 - 2\,105\,157\,600\,z^2 - 3\,859\,455\,600\,z - 3\,618\,239\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afzl.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},-\frac{15}{4};-z\right)=\left(\frac{19\,922\,944\,z^6}{516\,891\,375}-\frac{79\,691\,776\,z^5}{34\,459\,425}+\frac{8192\,z^4}{5775}-\frac{1024\,z^3}{1155}+\frac{272\,z^2}{165}-\frac{12\,z}{5}+1\right)\cos\left(2\sqrt{z}\right)-$$
$$\frac{1}{3\,618\,239\,625}\left(2\sqrt{z}\,\left(2\,097\,152\,z^6-825\,753\,600\,z^5+8\,173\,240\,320\,z^4+\right.\right.$$
$$\left.\left.1\,283\,143\,680\,z^3-2\,105\,157\,600\,z^2+3\,859\,455\,600\,z-3\,618\,239\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afzm.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},-\frac{13}{4};z\right)=\frac{1}{610\,871\,625\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(5\left(13\,631\,488\,z^6+799\,604\,736\,z^5+798\,400\,512\,z^4+196\,035\,840\,z^3+290\,712\,240\,z^2+300\,736\,800\,z+122\,174\,325\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(1\,048\,576\,z^6+387\,973\,120\,z^5+3\,633\,315\,840\,z^4-499\,000\,320\,z^3-\right.$$
$$\left.685\,011\,600\,z^2-1\,014\,986\,700\,z-610\,871\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+4\,z$$
$$\left.\left.\left(16\,777\,216\,z^5+906\,608\,640\,z^4+285\,143\,040\,z^3+307\,419\,840\,z^2+526\,289\,400\,z+610\,871\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afzn.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},-\frac{13}{4};-z\right)=\frac{1}{610\,871\,625\sqrt{2}}$$
$$\left(\sqrt[4]{z}\,\left(5\left(13\,631\,488\,z^6-799\,604\,736\,z^5+798\,400\,512\,z^4-196\,035\,840\,z^3+290\,712\,240\,z^2-300\,736\,800\,z+122\,174\,325\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(1\,048\,576\,z^6-387\,973\,120\,z^5+3\,633\,315\,840\,z^4+499\,000\,320\,z^3-\right.$$
$$\left.685\,011\,600\,z^2+1\,014\,986\,700\,z-610\,871\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-4\,z$$
$$\left.\left.\left(16\,777\,216\,z^5-906\,608\,640\,z^4+285\,143\,040\,z^3-307\,419\,840\,z^2+526\,289\,400\,z-610\,871\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afzo.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},-\frac{11}{4};z\right)=$$
$$\left(-\frac{1\,048\,576\,z^6}{241\,215\,975}-\frac{50\,855\,936\,z^5}{34\,459\,425}-\frac{8192\,z^4}{693}+\frac{1024\,z^3}{495}+\frac{496\,z^2}{231}+\frac{28\,z}{11}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{1}{241\,215\,975}$$
$$\left(2\sqrt{z}\,\left(16\,252\,928\,z^5+823\,459\,840\,z^4+285\,143\,040\,z^3+213\,857\,280\,z^2+292\,383\,000\,z+241\,215\,975\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afzp.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},-\frac{11}{4};-z\right)=$$
$$\left(-\frac{1\,048\,576\,z^6}{241\,215\,975}+\frac{50\,855\,936\,z^5}{34\,459\,425}-\frac{8192\,z^4}{693}-\frac{1024\,z^3}{495}+\frac{496\,z^2}{231}-\frac{28\,z}{11}+1\right)\cos\left(2\sqrt{z}\right)+\frac{1}{241\,215\,975}$$
$$\left(2\sqrt{z}\,\left(-16\,252\,928\,z^5+823\,459\,840\,z^4-285\,143\,040\,z^3+213\,857\,280\,z^2-292\,383\,000\,z+241\,215\,975\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afzq.01

$${}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, -\frac{9}{4}; z\right) =$$
$$-\frac{1}{46\,990\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(524\,288\,z^6+166\,625\,280\,z^5+1\,267\,230\,720\,z^4-311\,875\,200\,z^3-150\,368\,400\,z^2-\right.\right.\right.$$
$$\left.125\,307\,000\,z-46\,990\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$28\sqrt{z}\left(1\,114\,112\,z^5+50\,565\,120\,z^4+3\,398\,400\,z^3+11\,934\,000\,z^2+12\,530\,700\,z+6\,712\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(131\,072\,z^5+39\,739\,392\,z^4+237\,565\,440\,z^3-46\,781\,280\,z^2-50\,122\,800\,z-46\,990\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afzr.01

$${}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, -\frac{9}{4}; -z\right) =$$
$$-\frac{1}{46\,990\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(524\,288\,z^6-166\,625\,280\,z^5+1\,267\,230\,720\,z^4+311\,875\,200\,z^3-150\,368\,400\,z^2+\right.\right.\right.$$
$$\left.125\,307\,000\,z-46\,990\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+$$
$$28\sqrt{z}\left(1\,114\,112\,z^5-50\,565\,120\,z^4+3\,398\,400\,z^3-11\,934\,000\,z^2+12\,530\,700\,z-6\,712\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.4\,z\left(131\,072\,z^5-39\,739\,392\,z^4+237\,565\,440\,z^3+46\,781\,280\,z^2-50\,122\,800\,z+46\,990\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afzs.01

$${}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, -\frac{7}{4}; z\right) = \left(\frac{7\,405\,568\,z^5}{21\,928\,725}+\frac{4096\,z^4}{315}-\frac{256\,z^3}{45}+\frac{80\,z^2}{21}+\frac{20\,z}{7}+1\right)\cosh\left(2\sqrt{z}\right)+$$
$$\frac{1}{21\,928\,725}\left(2\sqrt{z}\left(131\,072\,z^5+36\,167\,680\,z^4+178\,214\,400\,z^3-46\,781\,280\,z^2-33\,415\,200\,z-21\,928\,725\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.afzt.01

$${}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, -\frac{7}{4}; -z\right) = \left(-\frac{7\,405\,568\,z^5}{21\,928\,725}+\frac{4096\,z^4}{315}+\frac{256\,z^3}{45}+\frac{80\,z^2}{21}-\frac{20\,z}{7}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{1}{21\,928\,725}\left(2\sqrt{z}\left(131\,072\,z^5-36\,167\,680\,z^4+178\,214\,400\,z^3+46\,781\,280\,z^2-33\,415\,200\,z+21\,928\,725\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.afzu.01

$${}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, -\frac{5}{4}; z\right) =$$
$$\frac{1}{5\,221\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(3\,538\,944\,z^5+120\,688\,640\,z^4-78\,041\,600\,z^3+50\,122\,800\,z^2+16\,707\,600\,z+5\,221\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(65\,536\,z^5+15\,962\,112\,z^4+52\,801\,280\,z^3-9\,718\,800\,z^2-12\,530\,700\,z-5\,221\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(868\,352\,z^4+26\,392\,576\,z^3-27\,343\,680\,z^2+8\,353\,800\,z+5\,221\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afzv.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{5\,221\,125\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-3\,538\,944\,z^5+120\,688\,640\,z^4+78\,041\,600\,z^3+50\,122\,800\,z^2-16\,707\,600\,z+5\,221\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(65\,536\,z^5-15\,962\,112\,z^4+52\,801\,280\,z^3+9\,718\,800\,z^2-12\,530\,700\,z+5\,221\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(868\,352\,z^4-26\,392\,576\,z^3-27\,343\,680\,z^2-8\,353\,800\,z+5\,221\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afzw.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},-\frac{3}{4};z\right)=\left(-\frac{65\,536\,z^5}{3\,132\,675}-\frac{4096\,z^4}{945}-\frac{256\,z^3}{45}-\frac{16\,z^2}{3}+4\,z+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\left(163\,840\,z^4+4\,073\,472\,z^3-5\,346\,432\,z^2+1\,670\,760\,z+626\,535\right)\sinh\left(2\sqrt{z}\right)}{626\,535}$$

07.22.03.afzx.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},-\frac{3}{4};-z\right)=\left(\frac{65\,536\,z^5}{3\,132\,675}-\frac{4096\,z^4}{945}+\frac{256\,z^3}{45}-\frac{16\,z^2}{3}-4\,z+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\left(163\,840\,z^4-4\,073\,472\,z^3-5\,346\,432\,z^2-1\,670\,760\,z+626\,535\right)\sin\left(2\sqrt{z}\right)}{626\,535}$$

07.22.03.afzy.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},-\frac{1}{4};z\right)=$$
$$-\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768\,z^5+5\,881\,856\,z^4+1\,283\,200\,z^3+12\,625\,200\,z^2-8\,353\,800\,z-1\,044\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(380\,928\,z^4+6\,998\,528\,z^3-10\,878\,000\,z^2+1\,530\,900\,z+1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(8192\,z^4+1\,377\,280\,z^3-1\,117\,536\,z^2+5\,292\,000\,z-1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.afzz.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},-\frac{1}{4};-z\right)=$$
$$\frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768\,z^5-5\,881\,856\,z^4+1\,283\,200\,z^3-12\,625\,200\,z^2-8\,353\,800\,z+1\,044\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(380\,928\,z^4-6\,998\,528\,z^3-10\,878\,000\,z^2-1\,530\,900\,z+1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.4\,z\left(-8192\,z^4+1\,377\,280\,z^3+1\,117\,536\,z^2+5\,292\,000\,z+1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag00.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) = \left(\frac{4096\,z^4}{12\,285} + \frac{512\,z^3}{135} - \frac{16\,z^2}{3} - 4\,z + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(8192\,z^4 + 1\,131\,520\,z^3 - 2\,227\,680\,z^2 + 5\,569\,200\,z - 1\,044\,225\right)\sinh\left(2\sqrt{z}\right)}{1\,044\,225} $$

07.22.03.ag01.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) = \left(\frac{4096\,z^4}{12\,285} - \frac{512\,z^3}{135} - \frac{16\,z^2}{3} + 4\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(-8192\,z^4 + 1\,131\,520\,z^3 + 2\,227\,680\,z^2 + 5\,569\,200\,z + 1\,044\,225\right)\sin\left(2\sqrt{z}\right)}{1\,044\,225} $$

07.22.03.ag02.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) = \frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(159\,744\,z^4 + 1\,084\,160\,z^3 - 810\,000\,z^2 - 2\,948\,400\,z + 1\,044\,225\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096\,z^4 + 435\,712\,z^3 - 1\,330\,320\,z^2 + 2\,286\,900\,z + 61\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 76\,z\left(2048\,z^3 + 9024\,z^2 + 7560\,z - 61\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag03.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) = \frac{1}{1\,044\,225\sqrt{2}}\left(\sqrt[4]{z}\left(\left(159\,744\,z^4 - 1\,084\,160\,z^3 - 810\,000\,z^2 + 2\,948\,400\,z + 1\,044\,225\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4096\,z^4 - 435\,712\,z^3 - 1\,330\,320\,z^2 - 2\,286\,900\,z + 61\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 76\,z\left(2048\,z^3 - 9024\,z^2 + 7560\,z + 61\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag04.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) = \left(\frac{4096\,z^4}{1\,044\,225} + \frac{512\,z^3}{1755} - \frac{16\,z^2}{15} + \frac{4\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(2048\,z^3 + 32\,760\,z - 61\,425\right)\sinh\left(2\sqrt{z}\right)}{61\,425} $$

07.22.03.ag05.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = \left(\frac{4096\,z^4}{1\,044\,225} - \frac{512\,z^3}{1755} - \frac{16\,z^2}{15} - \frac{4\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(2048\,z^3 + 32\,760\,z + 61\,425\right)\sin\left(2\sqrt{z}\right)}{61\,425} $$

07.22.03.ag06.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},\frac{7}{4};z\right)=\frac{1}{1\,392\,300\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\,\left(4096z^4+208\,640z^3-686\,880z^2-280\,800z+1\,044\,225\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(241\,664z^4-961\,280z^3+5\,935\,680z^2-3\,931\,200z-1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4096z^4+179\,456z^3-531\,840z^2-1\,081\,080z+1\,044\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag07.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},\frac{7}{4};-z\right)=\frac{1}{1\,392\,300\sqrt{2}\,\sqrt[4]{z}}\left(\left(2\sqrt{z}\,\left(4096z^4-208\,640z^3-686\,880z^2+280\,800z+1\,044\,225\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(241\,664z^4+961\,280z^3+5\,935\,680z^2+3\,931\,200z-1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,\left(4096z^4-179\,456z^3-531\,840z^2+1\,081\,080z+1\,044\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag08.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},\frac{9}{4};z\right)=\left(\frac{1792z^3}{29\,835}-\frac{16z^2}{39}+\frac{4z}{3}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(512z^3+11\,424z^2-208\,845\right)\sinh\left(2\sqrt{z}\right)}{208\,845}$$

07.22.03.ag09.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},\frac{9}{4};-z\right)=\left(-\frac{1792z^3}{29\,835}-\frac{16z^2}{39}-\frac{4z}{3}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(512z^3-11\,424z^2+208\,845\right)\sin\left(2\sqrt{z}\right)}{208\,845}$$

07.22.03.ag0a.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},\frac{11}{4};z\right)=\frac{1}{6\,364\,800\sqrt{2}\,z^{5/4}}\left(\left(10\sqrt{z}\,\left(65\,536z^4-476\,160z^3+539\,136z^2+1\,909\,440z+626\,535\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(131\,072z^5+450\,560z^4+13\,731\,840z^3-38\,638\,080z^2-33\,415\,200z-9\,398\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(311\,296z^4-2\,365\,440z^3+449\,280z^2+13\,366\,080z+9\,398\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag0b.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},\frac{11}{4};-z\right)=\frac{1}{6\,364\,800\sqrt{2}\,z^{5/4}}\left(\left(-10\sqrt{z}\,\left(65\,536z^4+476\,160z^3+539\,136z^2-1\,909\,440z+626\,535\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(131\,072z^5-450\,560z^4+13\,731\,840z^3+38\,638\,080z^2-33\,415\,200z+9\,398\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(311\,296z^4+2\,365\,440z^3+449\,280z^2-13\,366\,080z+9\,398\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag0c.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},\frac{13}{4};z\right)=\left(\frac{256z^3}{23\,205}-\frac{80z^2}{663}+\frac{20z}{13}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(128z^2-680z-3315\right)\sinh\left(2\sqrt{z}\right)}{3315}$$

07.22.03.ag0d.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},\frac{13}{4};-z\right)=\left(-\frac{256\,z^3}{23\,205}-\frac{80\,z^2}{663}-\frac{20\,z}{13}+1\right)\cos\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(128\,z^2+680\,z-3315\right)\sin\left(2\sqrt{z}\right)}{3315}$$

07.22.03.ag0e.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},\frac{15}{4};z\right)=\frac{1}{203\,673\,600\sqrt{2}\,z^{9/4}}$$

$$\left(11\left(2\sqrt{z}\,\left(262\,144\,z^5-4\,423\,680\,z^4+20\,766\,720\,z^3+76\,377\,600\,z^2+150\,368\,400\,z+109\,643\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$

$$\left(4\,456\,448\,z^5+7\,864\,320\,z^4-225\,239\,040\,z^3-534\,643\,200\,z^2-952\,333\,200\,z-328\,930\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$

$$\left.\left.2\sqrt{z}\,\left(262\,144\,z^5-4\,915\,200\,z^4+18\,432\,000\,z^3+106\,928\,640\,z^2+250\,614\,000\,z+328\,930\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag0f.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},\frac{15}{4};-z\right)=-\frac{1}{203\,673\,600\sqrt{2}\,z^{9/4}}$$

$$\left(11\left(2\sqrt{z}\,\left(262\,144\,z^5+4\,423\,680\,z^4+20\,766\,720\,z^3-76\,377\,600\,z^2+150\,368\,400\,z-109\,643\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$

$$\left(4\,456\,448\,z^5-7\,864\,320\,z^4-225\,239\,040\,z^3+534\,643\,200\,z^2-952\,333\,200\,z+328\,930\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$

$$\left.\left.2\sqrt{z}\,\left(262\,144\,z^5+4\,915\,200\,z^4+18\,432\,000\,z^3-106\,928\,640\,z^2+250\,614\,000\,z-328\,930\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag0g.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},\frac{17}{4};z\right)=\left(\frac{16\,z^2}{357}+\frac{28\,z}{17}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(32\,z^2-560\,z-1785\right)\sinh\left(2\sqrt{z}\right)}{1785}$$

07.22.03.ag0h.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},\frac{17}{4};-z\right)=\left(\frac{16\,z^2}{357}-\frac{28\,z}{17}+1\right)\cos\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(32\,z^2+560\,z-1785\right)\sin\left(2\sqrt{z}\right)}{1785}$$

07.22.03.ag0i.01

$${}_1F_2\left(\frac{21}{4};-\frac{7}{2},\frac{19}{4};z\right)=\frac{1}{434\,503\,680\sqrt{2}\,z^{13/4}}$$

$$\left(11\left(2\sqrt{z}\,\left(-3\,145\,728\,z^5+98\,631\,680\,z^4+669\,859\,840\,z^3+4\,009\,824\,000\,z^2+14\,201\,460\,000\,z+11\,658\,772\,125\right)\right.\right.$$

$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(8\,388\,608\,z^6-69\,206\,016\,z^5-1\,209\,466\,880\,z^4-7\,603\,814\,400\,z^3-39\,296\,275\,200\,z^2-\right.$$

$$95\,901\,624\,000\,z-34\,976\,316\,375\Big)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-4\,194\,304\,z^5+105\,840\,640\,z^4+\right.$$

$$\left.\left.\left.848\,117\,760\,z^3+5\,257\,324\,800\,z^2+21\,285\,482\,400\,z+34\,976\,316\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag0j.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = -\frac{1}{434\,503\,680\sqrt{2}\, z^{13/4}} $$
$$ \left(11\left(2\sqrt{z}\left(3\,145\,728 z^5 + 98\,631\,680 z^4 - 669\,859\,840 z^3 + 4\,009\,824\,000 z^2 - 14\,201\,460\,000 z + 11\,658\,772\,125\right)\right.\right. $$
$$ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(8\,388\,608 z^6 + 69\,206\,016 z^5 - 1\,209\,466\,880 z^4 + 7\,603\,814\,400 z^3 - 39\,296\,275\,200 z^2 + \right. $$
$$ \left. 95\,901\,624\,000 z - 34\,976\,316\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(4\,194\,304 z^5 + 105\,840\,640 z^4 - \right. $$
$$ \left.\left. 848\,117\,760 z^3 + 5\,257\,324\,800 z^2 - 21\,285\,482\,400 z + 34\,976\,316\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.ag0k.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) = \left(\frac{16 z^2}{105} + \frac{12 z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,(8 z + 21)\sinh\left(2\sqrt{z}\right) $$

07.22.03.ag0l.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) = \left(\frac{16 z^2}{105} - \frac{12 z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}(21 - 8 z)\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

07.22.03.ag0m.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = $$
$$ \frac{1}{13\,904\,117\,760\sqrt{2}\, z^{17/4}}\left(209\left(2\sqrt{z}\left(16\,777\,216 z^6 + 655\,360\,000 z^5 + 11\,625\,758\,720 z^4 + 169\,660\,108\,800 z^3 + \right.\right.\right. $$
$$ \left. 1\,549\,128\,672\,000 z^2 + 6\,688\,804\,122\,000 z + 5\,771\,092\,201\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - $$
$$ \left(553\,648\,128 z^6 + 11\,917\,066\,240 z^5 + 199\,453\,900\,800 z^4 + 2\,416\,587\,264\,000 z^3 + \right. $$
$$ \left. 16\,585\,968\,672\,000 z^2 + 46\,448\,548\,146\,000 z + 17\,313\,276\,605\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 2\sqrt{z}\left(16\,777\,216 z^6 + 728\,760\,320 z^5 + 13\,329\,039\,360 z^4 + 198\,832\,435\,200 z^3 + \right. $$
$$ \left.\left.\left. 1\,918\,567\,123\,200 z^2 + 9\,513\,558\,054\,000 z + 17\,313\,276\,605\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag0n.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) = $$
$$ \frac{1}{13\,904\,117\,760\sqrt{2}\, z^{17/4}}\left(209\left(2\sqrt{z}\left(16\,777\,216 z^6 - 655\,360\,000 z^5 + 11\,625\,758\,720 z^4 - 169\,660\,108\,800 z^3 + \right.\right.\right. $$
$$ \left. 1\,549\,128\,672\,000 z^2 - 6\,688\,804\,122\,000 z + 5\,771\,092\,201\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ \left(-553\,648\,128 z^6 + 11\,917\,066\,240 z^5 - 199\,453\,900\,800 z^4 + 2\,416\,587\,264\,000 z^3 - \right. $$
$$ \left. 16\,585\,968\,672\,000 z^2 + 46\,448\,548\,146\,000 z - 17\,313\,276\,605\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ 2\sqrt{z}\left(16\,777\,216 z^6 - 728\,760\,320 z^5 + 13\,329\,039\,360 z^4 - 198\,832\,435\,200 z^3 + \right. $$
$$ \left.\left.\left. 1\,918\,567\,123\,200 z^2 - 9\,513\,558\,054\,000 z + 17\,313\,276\,605\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{21}{4}$, $b_1 = -\frac{5}{2}$

07.22.03.ag0o.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) = \frac{1}{225\,881\,530\,875}\left(\left(-33\,554\,432\,z^7 - 12\,190\,744\,576\,z^6 - 28\,244\,705\,280\,z^5 - 82\,844\,467\,200\,z^4 + 194\,075\,481\,600\,z^3 + 351\,761\,810\,400\,z^2 + 534\,258\,925\,200\,z + 225\,881\,530\,875\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(549\,453\,824\,z^6 + 25\,012\,469\,760\,z^5 - 72\,314\,880\,000\,z^4 + 49\,861\,785\,600\,z^3 + 121\,297\,176\,000\,z^2 + 233\,083\,550\,700\,z + 225\,881\,530\,875\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ag0p.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{23}{4}; -z\right) = \frac{1}{225\,881\,530\,875}\left(\left(33\,554\,432\,z^7 - 12\,190\,744\,576\,z^6 + 28\,244\,705\,280\,z^5 - 82\,844\,467\,200\,z^4 - 194\,075\,481\,600\,z^3 + 351\,761\,810\,400\,z^2 - 534\,258\,925\,200\,z + 225\,881\,530\,875\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(549\,453\,824\,z^6 - 25\,012\,469\,760\,z^5 - 72\,314\,880\,000\,z^4 - 49\,861\,785\,600\,z^3 + 121\,297\,176\,000\,z^2 - 233\,083\,550\,700\,z + 225\,881\,530\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ag0q.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{21}{4}; z\right) = -\frac{1}{31\,154\,452\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,777\,216\,z^7 + 6\,229\,590\,016\,z^6 + 33\,302\,642\,688\,z^5 - 11\,976\,007\,680\,z^4 - 42\,717\,991\,680\,z^3 - 68\,417\,622\,000\,z^2 - 74\,770\,686\,900\,z - 31\,154\,452\,875\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(272\,629\,760\,z^6 + 13\,251\,379\,200\,z^5 - 24\,976\,982\,016\,z^4 + 21\,385\,728\,000\,z^3 + 30\,755\,350\,080\,z^2 + 49\,847\,124\,600\,z + 31\,154\,452\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4\,194\,304\,z^6 + 1\,490\,288\,640\,z^5 + 5\,361\,205\,248\,z^4 + 3\,762\,726\,912\,z^3 - 13\,031\,928\,000\,z^2 - 24\,923\,562\,300\,z - 31\,154\,452\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag0r.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{21}{4}; -z\right) = \frac{1}{31\,154\,452\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,777\,216\,z^7 - 6\,229\,590\,016\,z^6 + 33\,302\,642\,688\,z^5 + 11\,976\,007\,680\,z^4 - 42\,717\,991\,680\,z^3 + 68\,417\,622\,000\,z^2 - 74\,770\,686\,900\,z + 31\,154\,452\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(272\,629\,760\,z^6 - 13\,251\,379\,200\,z^5 - 24\,976\,982\,016\,z^4 - 21\,385\,728\,000\,z^3 + 30\,755\,350\,080\,z^2 - 49\,847\,124\,600\,z + 31\,154\,452\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-4\,194\,304\,z^6 + 1\,490\,288\,640\,z^5 - 5\,361\,205\,248\,z^4 + 3\,762\,726\,912\,z^3 + 13\,031\,928\,000\,z^2 - 24\,923\,562\,300\,z + 31\,154\,452\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag0s.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{19}{4}; z\right) = \frac{1}{9\,820\,936\,125}\left(\left(268\,435\,456\,z^6 + 13\,251\,379\,200\,z^5 - 14\,907\,801\,600\,z^4 + 12\,831\,436\,800\,z^3 + 17\,643\,225\,600\,z^2 + 23\,983\,759\,800\,z + 9\,820\,936\,125\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(4\,194\,304\,z^6 + 1\,490\,288\,640\,z^5 + 8\,499\,855\,360\,z^4 - 2\,688\,768\,000\,z^3 - 6\,616\,209\,600\,z^2 - 10\,889\,178\,300\,z - 9\,820\,936\,125\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ag0t.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{19}{4}; -z\right) = \frac{1}{9\,820\,936\,125}\left(\left(268\,435\,456\,z^6 - 13\,251\,379\,200\,z^5 - 14\,907\,801\,600\,z^4 - 12\,831\,436\,800\,z^3 + 17\,643\,225\,600\,z^2 - 23\,983\,759\,800\,z + 9\,820\,936\,125\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4\,194\,304\,z^6 - 1\,490\,288\,640\,z^5 + 8\,499\,855\,360\,z^4 + 2\,688\,768\,000\,z^3 - 6\,616\,209\,600\,z^2 + 10\,889\,178\,300\,z - 9\,820\,936\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ag0u.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{17}{4}; z\right) = \frac{1}{1\,483\,545\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(133\,169\,152\,z^6 + 6\,974\,078\,976\,z^5 - 570\,286\,080\,z^4 + 3\,136\,573\,440\,z^3 + 3\,716\,247\,600\,z^2 + 3\,700\,136\,700\,z + 1\,483\,545\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2\,097\,152\,z^6 + 728\,760\,320\,z^5 + 5\,034\,590\,208\,z^4 - 1\,853\,429\,760\,z^3 - 1\,811\,103\,840\,z^2 - 2\,513\,300\,400\,z - 1\,483\,545\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(32\,768\,000\,z^5 + 1\,569\,325\,056\,z^4 - 1\,067\,083\,776\,z^3 + 855\,429\,120\,z^2 + 1\,326\,464\,100\,z + 1\,483\,545\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag0v.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{17}{4}; -z\right) = $$
$$ -\frac{1}{1\,483\,545\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-133\,169\,152\,z^6 + 6\,974\,078\,976\,z^5 + 570\,286\,080\,z^4 + 3\,136\,573\,440\,z^3 - 3\,716\,247\,600\,z^2 + \right.\right.\right. $$
$$ \left.\left.\left. 3\,700\,136\,700\,z - 1\,483\,545\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2\,097\,152\,z^6 - 728\,760\,320\,z^5 + 5\,034\,590\,208\,z^4 + \right.\right. $$
$$ \left.\left. 1\,853\,429\,760\,z^3 - 1\,811\,103\,840\,z^2 + 2\,513\,300\,400\,z - 1\,483\,545\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 4z\left(32\,768\,000\,z^5 - 1\,569\,325\,056\,z^4 - 1\,067\,083\,776\,z^3 - 855\,429\,120\,z^2 + 1\,326\,464\,100\,z - 1\,483\,545\,375\right) $$
$$ \left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag0w.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{15}{4}; z\right) = \frac{1}{516\,891\,375} $$
$$ \left(\left(-2\,097\,152\,z^6 - 696\,778\,752\,z^5 - 5\,034\,590\,208\,z^4 + 1\,283\,143\,680\,z^3 + 1\,142\,799\,840\,z^2 + 1\,323\,241\,920\,z + 516\,891\,375\right)\right. $$
$$ \cosh\left(2\sqrt{z}\right) - $$
$$ \left.6\sqrt{z}\left(10\,747\,904\,z^5 + 523\,108\,352\,z^4 + 8\,165\,376\,z^3 + 160\,392\,960\,z^2 + 211\,351\,140\,z + 172\,297\,125\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ag0x.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{15}{4}; -z\right) = \frac{1}{516\,891\,375} $$
$$ \left(\left(-2\,097\,152\,z^6 + 696\,778\,752\,z^5 - 5\,034\,590\,208\,z^4 - 1\,283\,143\,680\,z^3 + 1\,142\,799\,840\,z^2 - 1\,323\,241\,920\,z + 516\,891\,375\right)\right. $$
$$ \cos\left(2\sqrt{z}\right) - $$
$$ \left.6\sqrt{z}\left(10\,747\,904\,z^5 - 523\,108\,352\,z^4 + 8\,165\,376\,z^3 - 160\,392\,960\,z^2 + 211\,351\,140\,z - 172\,297\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ag0y.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{13}{4}; z\right) = $$
$$ -\frac{1}{87\,267\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,048\,576\,z^6 + 340\,656\,128\,z^5 + 2\,851\,430\,400\,z^4 - 392\,071\,680\,z^3 - 269\,708\,400\,z^2 - \right.\right.\right. $$
$$ \left.\left.\left. 230\,922\,900\,z - 87\,267\,375\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\right. $$
$$ \left.\left(5\,242\,880\,z^5 + 248\,004\,608\,z^4 + 95\,047\,680\,z^3 + 49\,008\,960\,z^2 + 53\,703\,000\,z + 29\,089\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right. $$
$$ \left.\left. 4z\left(262\,144\,z^5 + 81\,297\,408\,z^4 + 545\,789\,952\,z^3 - 80\,196\,480\,z^2 - 91\,295\,100\,z - 87\,267\,375\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag0z.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{13}{4}; -z\right) =$$
$$-\frac{1}{87\,267\,375\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,048\,576\,z^6 - 340\,656\,128\,z^5 + 2\,851\,430\,400\,z^4 + 392\,071\,680\,z^3 - 269\,708\,400\,z^2 + 230\,922\,900\,z - 87\,267\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(5\,242\,880\,z^5 - 248\,004\,608\,z^4 + 95\,047\,680\,z^3 - 49\,008\,960\,z^2 + 53\,703\,000\,z - 29\,089\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(262\,144\,z^5 - 81\,297\,408\,z^4 + 545\,789\,952\,z^3 + 80\,196\,480\,z^2 - 91\,295\,100\,z + 87\,267\,375\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag10.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{34\,459\,425}\left(\left(15\,204\,352\,z^5 + 668\,270\,592\,z^4 + 285\,143\,040\,z^3 + 106\,928\,640\,z^2 + 95\,233\,320\,z + 34\,459\,425\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(262\,144\,z^5 + 77\,594\,624\,z^4 + 545\,789\,952\,z^3 - 53\,464\,320\,z^2 - 49\,287\,420\,z - 34\,459\,425\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag11.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{34\,459\,425}\left(\left(-15\,204\,352\,z^5 + 668\,270\,592\,z^4 - 285\,143\,040\,z^3 + 106\,928\,640\,z^2 - 95\,233\,320\,z + 34\,459\,425\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(262\,144\,z^5 - 77\,594\,624\,z^4 + 545\,789\,952\,z^3 + 53\,464\,320\,z^2 - 49\,287\,420\,z + 34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag12.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{6\,712\,875\sqrt{2}}\left(\sqrt[4]{z}\left(\left(7\,405\,568\,z^5 + 316\,968\,960\,z^4 + 231\,678\,720\,z^3 + 31\,028\,400\,z^2 + 19\,691\,100\,z + 6\,712\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072\,z^5 + 36\,102\,144\,z^4 + 237\,565\,440\,z^3 - 20\,049\,120\,z^2 - 14\,320\,800\,z - 6\,712\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(606\,208\,z^4 + 23\,553\,024\,z^3 + 4\,455\,360\,z^2 + 2\,983\,500\,z + 2\,237\,625\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag13.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{9}{4}; -z\right) = \frac{1}{6\,712\,875\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(-7\,405\,568\,z^5 + 316\,968\,960\,z^4 - 231\,678\,720\,z^3 + 31\,028\,400\,z^2 - 19\,691\,100\,z + 6\,712\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072\,z^5 - 36\,102\,144\,z^4 + 237\,565\,440\,z^3 + 20\,049\,120\,z^2 - 14\,320\,800\,z + 6\,712\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(606\,208\,z^4 - 23\,553\,024\,z^3 + 4\,455\,360\,z^2 - 2\,983\,500\,z + 2\,237\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag14.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{7}{4}; z\right) = \left(-\frac{131\,072\,z^5}{3\,132\,675} - \frac{3\,629\,056\,z^4}{348\,075} - \frac{512\,z^3}{9} + \frac{32\,z^2}{5} + \frac{16\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(1\,753\,088\,z^4 + 63\,120\,384\,z^3 + 13\,366\,080\,z^2 + 5\,847\,660\,z + 3\,132\,675\right)\sinh\left(2\sqrt{z}\right)}{3\,132\,675} $$

07.22.03.ag15.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{7}{4}; -z\right) = \left(\frac{131\,072\,z^5}{3\,132\,675} - \frac{3\,629\,056\,z^4}{348\,075} + \frac{512\,z^3}{9} + \frac{32\,z^2}{5} - \frac{16\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(1\,753\,088\,z^4 - 63\,120\,384\,z^3 + 13\,366\,080\,z^2 - 5\,847\,660\,z + 3\,132\,675\right)\sin\left(2\sqrt{z}\right)}{3\,132\,675} $$

07.22.03.ag16.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{5}{4}; z\right) = -\frac{1}{745\,875\,\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536\,z^5 + 15\,118\,336\,z^4 + 77\,552\,384\,z^3 - 13\,843\,440\,z^2 - 2\,744\,820\,z - 745\,875\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(835\,584\,z^4 + 26\,392\,576\,z^3 - 122\,304\,z^2 + 2\,148\,120\,z + 745\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(16\,384\,z^4 + 3\,574\,784\,z^3 + 13\,610\,688\,z^2 - 1\,551\,420\,z - 745\,875\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag17.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{5}{4}; -z\right) = \frac{1}{745\,875\,\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536\,z^5 - 15\,118\,336\,z^4 + 77\,552\,384\,z^3 + 13\,843\,440\,z^2 - 2\,744\,820\,z + 745\,875\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(835\,584\,z^4 - 26\,392\,576\,z^3 - 122\,304\,z^2 - 2\,148\,120\,z + 745\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(16\,384\,z^4 - 3\,574\,784\,z^3 + 13\,610\,688\,z^2 + 1\,551\,420\,z - 745\,875\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag18.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{3}{4}; z\right) = \left(\frac{262\,144\,z^4}{149\,175} + \frac{2048\,z^3}{45} - \frac{256\,z^2}{15} + \frac{24\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(16\,384\,z^4 + 3\,197\,952\,z^3 + 9\,547\,200\,z^2 - 1\,551\,420\,z - 447\,525\right)\sinh\left(2\sqrt{z}\right)}{447\,525} $$

07.22.03.ag19.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{3}{4}; -z\right) = \left(\frac{262\,144\,z^4}{149\,175} - \frac{2048\,z^3}{45} - \frac{256\,z^2}{15} - \frac{24\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(16\,384\,z^4 - 3\,197\,952\,z^3 + 9\,547\,200\,z^2 + 1\,551\,420\,z - 447\,525\right)\sin\left(2\sqrt{z}\right)}{447\,525} $$

07.22.03.ag1a.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{1}{4}; z\right) =$$
$$\frac{1}{149\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(372\,736 z^4 + 8\,331\,776 z^3 - 4\,343\,760 z^2 + 1\,551\,420 z + 149\,175\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right.$$
$$\left(8192 z^4 + 1\,377\,280 z^3 + 2\,403\,744 z^2 - 101\,520 z - 149\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(91\,136 z^3 + 1\,760\,640 z^2 - 1\,348\,380 z + 149\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag1b.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, -\frac{1}{4}; -z\right) =$$
$$-\frac{1}{149\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-372\,736 z^4 + 8\,331\,776 z^3 + 4\,343\,760 z^2 + 1\,551\,420 z - 149\,175\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\right.\right.$$
$$\sqrt{z}\left(8192 z^4 - 1\,377\,280 z^3 + 2\,403\,744 z^2 + 101\,520 z - 149\,175\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(91\,136 z^3 - 1\,760\,640 z^2 - 1\,348\,380 z - 149\,175\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag1c.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{1}{4}; z\right) =$$
$$\left(-\frac{8192 z^4}{149\,175} - \frac{1024 z^3}{135} - \frac{32 z^2}{15} - \frac{32 z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(84\,992 z^3 + 1\,272\,960 z^2 - 1\,153\,620 z + 149\,175\right)\sinh\left(2\sqrt{z}\right)}{149\,175}$$

07.22.03.ag1d.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) =$$
$$\left(-\frac{8192 z^4}{149\,175} + \frac{1024 z^3}{135} - \frac{32 z^2}{15} + \frac{32 z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-84\,992 z^3 + 1\,272\,960 z^2 + 1\,153\,620 z + 149\,175\right)\sin\left(2\sqrt{z}\right)}{149\,175}$$

07.22.03.ag1e.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{3}{4}; z\right) =$$
$$-\frac{1}{149\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096 z^4 + 474\,112 z^3 - 209\,520 z^2 + 572\,940 z - 149\,175\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(38\,912 z^3 + 389\,568 z^2 - \right.\right.\right.$$
$$\left.\left.\left.359\,640 z - 20\,925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1024 z^3 + 109\,056 z^2 - 125\,820 z + 191\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag1f.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) =$$

$$-\frac{1}{149\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4096z^4 - 474\,112z^3 - 209\,520z^2 - 572\,940z - 149\,175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(38\,912z^3 - 389\,568z^2 - 359\,640z + 20\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-1024z^3 + 109\,056z^2 + 125\,820z + 191\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag1g.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{5}{4}; z\right) =$$

$$\left(-\frac{2048z^3}{8775} - \frac{256z^2}{225} + \frac{8z}{25} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(1024z^3 + 84\,864z^2 - 151\,164z + 149\,175\right)\sinh\left(2\sqrt{z}\right)}{149\,175}$$

07.22.03.ag1h.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{5}{4}; -z\right) =$$

$$\left(\frac{2048z^3}{8775} - \frac{256z^2}{225} - \frac{8z}{25} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-1024z^3 + 84\,864z^2 + 151\,164z + 149\,175\right)\sin\left(2\sqrt{z}\right)}{149\,175}$$

07.22.03.ag1i.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) = -\frac{1}{99\,450\sqrt{2}\,\sqrt[4]{z}}$$

$$\left(\left(8\sqrt{z}\left(3904z^3 + 7020z^2 + 12\,555z - 17\,550\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4096z^4 + 239\,872z^3 - 518\,400z^2 + 221\,400z + 61\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(15\,104z^3 + 1680z^2 + 108\,540z - 61\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag1j.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{7}{4}; -z\right) = \frac{1}{99\,450\sqrt{2}\,\sqrt[4]{z}}$$

$$\left(\left(8\sqrt{z}\left(3904z^3 - 7020z^2 + 12\,555z + 17\,550\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-4096z^4 + 239\,872z^3 + 518\,400z^2 + 221\,400z - 61\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(15\,104z^3 - 1680z^2 + 108\,540z + 61\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag1k.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{9}{4}; z\right) = \left(-\frac{512z^3}{29\,835} - \frac{352z^2}{585} + \frac{16z}{15} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{585}\sqrt{z}\left(64z^2 - 156z + 585\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ag1l.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{9}{4}; -z\right) = \left(\frac{512z^3}{29\,835} - \frac{352z^2}{585} - \frac{16z}{15} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{585}\sqrt{z}\left(64z^2 + 156z + 585\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.ag1m.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{11}{4}; z\right) = -\frac{1}{3\,182\,400\sqrt{2}\, z^{5/4}}\left(7\left(2\sqrt{z}\left(8192 z^4 + 156\,160 z^3 - 51\,840 z^2 - 561\,600 z - 149\,175\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(114\,688 z^4 - 481\,280 z^3 + 725\,760 z^2 + 561\,600 z + 149\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(8192 z^4 + 115\,200 z^3 + 144\,000 z^2 - 730\,080 z - 447\,525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag1n.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{11}{4}; -z\right) = \frac{1}{3\,182\,400\sqrt{2}\, z^{5/4}}\left(7\left(2\sqrt{z}\left(8192 z^4 - 156\,160 z^3 - 51\,840 z^2 + 561\,600 z - 149\,175\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(114\,688 z^4 + 481\,280 z^3 + 725\,760 z^2 - 561\,600 z + 149\,175\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(8192 z^4 - 115\,200 z^3 + 144\,000 z^2 + 730\,080 z - 447\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag1o.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{13}{4}; z\right) = \left(-\frac{1024 z^2}{3315} + \frac{88 z}{65} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(64 z^2 + 68 z + 3315\right)\sinh\left(2\sqrt{z}\right)}{3315} $$

07.22.03.ag1p.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{13}{4}; -z\right) = \left(-\frac{1024 z^2}{3315} - \frac{88 z}{65} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(64 z^2 - 68 z + 3315\right)\sin\left(2\sqrt{z}\right)}{3315} $$

07.22.03.ag1q.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{15}{4}; z\right) = -\frac{1}{101\,836\,800\sqrt{2}\, z^{9/4}}\left(77\left(2\sqrt{z}\left(376\,832 z^4 - 897\,024 z^3 - 3\,773\,952 z^2 - 6\,205\,680 z - 4\,385\,745\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(262\,144 z^5 - 2\,162\,688 z^4 + 11\,796\,480 z^3 + 23\,542\,272 z^2 + 38\,666\,160 z + 13\,157\,235\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(114\,688 z^4 - 184\,320 z^3 - 1\,737\,216 z^2 - 3\,532\,464 z - 4\,385\,745\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag1r.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{15}{4}; -z\right) = \frac{1}{101\,836\,800\sqrt{2}\, z^{9/4}}\left(77\left(-2\sqrt{z}\left(376\,832 z^4 + 897\,024 z^3 - 3\,773\,952 z^2 + 6\,205\,680 z - 4\,385\,745\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(262\,144 z^5 + 2\,162\,688 z^4 + 11\,796\,480 z^3 - 23\,542\,272 z^2 + 38\,666\,160 z - 13\,157\,235\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(114\,688 z^4 + 184\,320 z^3 - 1\,737\,216 z^2 + 3\,532\,464 z - 4\,385\,745\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag1s.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{17}{4}; z\right) = \left(-\frac{32 z^2}{255} + \frac{128 z}{85} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{255}\sqrt{z}\,(44 z + 255)\sinh\left(2\sqrt{z}\right) $$

07.22.03.ag1t.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{17}{4}; -z\right) = \frac{1}{255}\left(\left(-32\,z^2 - 384\,z + 255\right)\cos\left(2\sqrt{z}\right) + 2\,(255 - 44\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag1u.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) = -\frac{1}{217\,251\,840\sqrt{2}\,z^{13/4}}$$
$$\left(77\left(2\sqrt{z}\left(524\,288\,z^5 - 4\,390\,912\,z^4 - 27\,262\,976\,z^3 - 145\,117\,440\,z^2 - 494\,544\,960\,z - 402\,026\,625\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(54\,722\,560\,z^4 + 288\,178\,176\,z^3 + 1\,397\,710\,080\,z^2 + 3\,321\,470\,880\,z + 1\,206\,079\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}$$
$$\left.\left.\left(524\,288\,z^5 - 4\,259\,840\,z^4 - 34\,996\,224\,z^3 - 192\,980\,736\,z^2 - 748\,500\,480\,z - 1\,206\,079\,875\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag1v.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) = -\frac{1}{217\,251\,840\sqrt{2}\,z^{13/4}}$$
$$\left(77\left(2\sqrt{z}\left(524\,288\,z^5 + 4\,390\,912\,z^4 - 27\,262\,976\,z^3 + 145\,117\,440\,z^2 - 494\,544\,960\,z + 402\,026\,625\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(-54\,722\,560\,z^4 + 288\,178\,176\,z^3 - 1\,397\,710\,080\,z^2 + 3\,321\,470\,880\,z - 1\,206\,079\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}$$
$$\left.\left.\left(524\,288\,z^5 + 4\,259\,840\,z^4 - 34\,996\,224\,z^3 + 192\,980\,736\,z^2 - 748\,500\,480\,z + 1\,206\,079\,875\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag1w.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) = \left(\frac{8\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,(4\,z + 15)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ag1x.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) = \left(1 - \frac{8\,z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}(15 - 4\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ag1y.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{23}{4}; z\right) = -\frac{1}{6\,952\,058\,880\sqrt{2}\,z^{17/4}}\left(1463\right.$$
$$\left(-2\sqrt{z}\left(24\,117\,248\,z^5 + 378\,732\,544\,z^4 + 5\,281\,935\,360\,z^3 + 47\,422\,851\,840\,z^2 + 203\,080\,878\,000\,z + 174\,881\,581\,875\right)\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216\,z^6 + 414\,187\,520\,z^5 + 6\,323\,503\,104\,z^4 + 74\,585\,272\,320\,z^3 + 505\,825\,931\,520\,z^2 + \right.$$
$$1\,408\,701\,294\,000\,z + 524\,644\,745\,625\left.\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(26\,214\,400\,z^5 + 437\,846\,016\,z^4 + \right.$$
$$\left.\left.\left.6\,212\,358\,144\,z^3 + 58\,864\,216\,320\,z^2 + 289\,459\,170\,000\,z + 524\,644\,745\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag1z.01

$${}_1F_2\left(\frac{21}{4}; -\frac{5}{2}, \frac{23}{4}; -z\right) = -\frac{1}{6\,952\,058\,880\sqrt{2}\,z^{17/4}}\left(1463\right.$$
$$\left(2\sqrt{z}\,\left(24\,117\,248 z^5 - 378\,732\,544 z^4 + 5\,281\,935\,360 z^3 - 47\,422\,851\,840 z^2 + 203\,080\,878\,000 z - 174\,881\,581\,875\right)\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,777\,216 z^6 - 414\,187\,520 z^5 + 6\,323\,503\,104 z^4 - 74\,585\,272\,320 z^3 + 505\,825\,931\,520 z^2 -\right.$$
$$1\,408\,701\,294\,000 z + 524\,644\,745\,625\Big) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-26\,214\,400 z^5 + 437\,846\,016 z^4 -\right.$$
$$\left.\left.\left.6\,212\,358\,144 z^3 + 58\,864\,216\,320 z^2 - 289\,459\,170\,000 z + 524\,644\,745\,625\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{21}{4}$, $b_1 = -\frac{3}{2}$

07.22.03.ag20.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{23}{4}; z\right) = \left(\frac{4\,194\,304 z^6}{392\,837\,445} + \frac{357\,302\,272 z^5}{1\,368\,978\,975} - \frac{32\,768 z^4}{35\,581} - \frac{26\,624 z^3}{22\,287} + \frac{3520 z^2}{1311} + \frac{60 z}{23} + 1\right)\cosh\left(2\sqrt{z}\right) +$$
$$\frac{1}{45\,176\,306\,175}\left(2\sqrt{z}\,\left(8\,388\,608 z^6 + 2\,203\,582\,464 z^5 - 7\,677\,542\,400 z^4 +\right.\right.$$
$$\left.\left.51\,914\,649\,600 z^3 - 35\,026\,992\,000 z^2 - 57\,616\,158\,600 z - 45\,176\,306\,175\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag21.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{23}{4}; -z\right) = \left(\frac{4\,194\,304 z^6}{392\,837\,445} - \frac{357\,302\,272 z^5}{1\,368\,978\,975} - \frac{32\,768 z^4}{35\,581} + \frac{26\,624 z^3}{22\,287} + \frac{3520 z^2}{1311} - \frac{60 z}{23} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{1}{45\,176\,306\,175}\left(2\sqrt{z}\,\left(-8\,388\,608 z^6 + 2\,203\,582\,464 z^5 + 7\,677\,542\,400 z^4 +\right.\right.$$
$$\left.\left.51\,914\,649\,600 z^3 + 35\,026\,992\,000 z^2 - 57\,616\,158\,600 z + 45\,176\,306\,175\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag22.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{6\,230\,890\,575\sqrt{2}}\left(\sqrt[4]{z}\,\left(\left(243\,269\,632 z^6 + 7\,563\,902\,976 z^5 - 22\,225\,158\,144 z^4 + 9\,409\,720\,320 z^3 + 21\,893\,639\,040 z^2 +\right.\right.\right.$$
$$16\,615\,708\,200 z + 6\,230\,890\,575\Big) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(4\,194\,304 z^6 + 1\,131\,675\,648 z^5 - 1\,129\,218\,048 z^4 +\right.$$
$$13\,674\,866\,688 z^3 - 13\,031\,928\,000 z^2 - 11\,630\,995\,740 z - 6\,230\,890\,575\Big) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$12 z\left(19\,922\,944 z^5 + 540\,868\,608 z^4 - 1\,652\,023\,296 z^3 - 638\,572\,032 z^2 + 2\,215\,427\,760 z + 2\,076\,963\,525\right)$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag23.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{21}{4}; -z\right) = -\frac{1}{6\,230\,890\,575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-243\,269\,632\,z^6 + 7\,563\,902\,976\,z^5 + 22\,225\,158\,144\,z^4 + 9\,409\,720\,320\,z^3 - 21\,893\,639\,040\,z^2 + 16\,615\,708\,200\,z - 6\,230\,890\,575\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4\,194\,304\,z^6 - 1\,131\,675\,648\,z^5 - 1\,129\,218\,048\,z^4 - 13\,674\,866\,688\,z^3 - 13\,031\,928\,000\,z^2 + 11\,630\,995\,740\,z - 6\,230\,890\,575\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(19\,922\,944\,z^5 - 540\,868\,608\,z^4 - 1\,652\,023\,296\,z^3 + 638\,572\,032\,z^2 + 2\,215\,427\,760\,z - 2\,076\,963\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag24.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{19}{4}; z\right) = \frac{1}{1\,964\,187\,225}\left(\left(-4\,194\,304\,z^6 - 1\,131\,675\,648\,z^5 - 906\,854\,400\,z^4 - 6\,125\,414\,400\,z^3 + 6\,616\,209\,600\,z^2 + 5\,375\,670\,300\,z + 1\,964\,187\,225\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(19\,922\,944\,z^5 + 632\,750\,080\,z^4 - 1\,469\,030\,400\,z^3 + 558\,835\,200\,z^2 + 918\,918\,000\,z + 654\,729\,075\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ag25.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{19}{4}; -z\right) = \frac{1}{1\,964\,187\,225}\left(\left(-4\,194\,304\,z^6 + 1\,131\,675\,648\,z^5 - 906\,854\,400\,z^4 + 6\,125\,414\,400\,z^3 + 6\,616\,209\,600\,z^2 - 5\,375\,670\,300\,z + 1\,964\,187\,225\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(-19\,922\,944\,z^5 + 632\,750\,080\,z^4 + 1\,469\,030\,400\,z^3 + 558\,835\,200\,z^2 - 918\,918\,000\,z + 654\,729\,075\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ag26.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{17}{4}; z\right) = -\frac{1}{296\,709\,075\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2\,097\,152\,z^6 + 580\,386\,816\,z^5 + 1\,916\,780\,544\,z^4 - 285\,143\,040\,z^3 - 1\,314\,649\,440\,z^2 - 837\,766\,800\,z - 296\,709\,075\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(29\,622\,272\,z^5 + 1\,018\,036\,224\,z^4 - 1\,580\,156\,928\,z^3 + 855\,429\,120\,z^2 + 600\,399\,540\,z + 296\,709\,075\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(524\,288\,z^5 + 137\,822\,208\,z^4 + 256\,536\,576\,z^3 + 329\,688\,576\,z^2 - 363\,032\,280\,z - 296\,709\,075\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag27.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{17}{4}; -z\right) = -\frac{1}{296\,709\,075\sqrt{2}} \left(\sqrt[4]{z}\left(\left(2\,097\,152 z^6 - 580\,386\,816 z^5 + 1\,916\,780\,544 z^4 + 285\,143\,040 z^3 - 1\,314\,649\,440 z^2 + 837\,766\,800 z - 296\,709\,075\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(29\,622\,272 z^5 - 1\,018\,036\,224 z^4 - 1\,580\,156\,928 z^3 - 855\,429\,120 z^2 + 600\,399\,540 z - 296\,709\,075\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4z \left(524\,288 z^5 - 137\,822\,208 z^4 + 256\,536\,576 z^3 - 329\,688\,576 z^2 - 363\,032\,280 z + 296\,709\,075\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag28.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{15}{4}; z\right) = \frac{1}{103\,378\,275}\left(3\left(9\,699\,328 z^5 + 339\,345\,408 z^4 - 321\,914\,880 z^3 + 160\,392\,960 z^2 + 101\,080\,980 z + 34\,459\,425\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(524\,288 z^5 + 137\,822\,208 z^4 + 495\,120\,384 z^3 - 79\,349\,760 z^2 - 165\,405\,240 z - 103\,378\,275\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ag29.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{15}{4}; -z\right) = \frac{1}{103\,378\,275}\left(3\left(-9\,699\,328 z^5 + 339\,345\,408 z^4 + 321\,914\,880 z^3 + 160\,392\,960 z^2 - 101\,080\,980 z + 34\,459\,425\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(524\,288 z^5 - 137\,822\,208 z^4 + 495\,120\,384 z^3 + 79\,349\,760 z^2 - 165\,405\,240 z + 103\,378\,275\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ag2a.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{13}{4}; z\right) = \frac{1}{17\,453\,475\sqrt{2}} \left(\sqrt[4]{z}\left(\left(14\,417\,920 z^5 + 540\,868\,608 z^4 - 71\,285\,760 z^3 + 110\,747\,520 z^2 + 53\,703\,000 z + 17\,453\,475\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(262\,144 z^5 + 67\,141\,632 z^4 + 307\,206\,144 z^3 - 80\,196\,480 z^2 - 39\,740\,220 z - 17\,453\,475\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36 z\left(393\,216 z^4 + 13\,254\,656 z^3 - 7\,779\,072 z^2 + 2\,864\,160 z + 1\,939\,275\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag2b.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{13}{4}; -z\right) = \frac{1}{17\,453\,475\sqrt{2}} \left(\sqrt[4]{z}\left(\left(-14\,417\,920 z^5 + 540\,868\,608 z^4 + 71\,285\,760 z^3 + 110\,747\,520 z^2 - 53\,703\,000 z + 17\,453\,475\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(262\,144 z^5 - 67\,141\,632 z^4 + 307\,206\,144 z^3 + 80\,196\,480 z^2 - 39\,740\,220 z + 17\,453\,475\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36 z\left(393\,216 z^4 - 13\,254\,656 z^3 - 7\,779\,072 z^2 - 2\,864\,160 z + 1\,939\,275\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag2c.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{6\,891\,885}\left(\left(-262\,144\,z^5 - 63\,700\,992\,z^4 - 307\,206\,144\,z^3 + 53\,464\,320\,z^2 + 22\,555\,260\,z + 6\,891\,885\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(3\,473\,408\,z^4 + 119\,291\,904\,z^3 - 5\,515\,776\,z^2 + 13\,366\,080\,z + 6\,891\,885\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag2d.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{6\,891\,885}\left(\left(262\,144\,z^5 - 63\,700\,992\,z^4 + 307\,206\,144\,z^3 + 53\,464\,320\,z^2 - 22\,555\,260\,z + 6\,891\,885\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(3\,473\,408\,z^4 - 119\,291\,904\,z^3 - 5\,515\,776\,z^2 - 13\,366\,080\,z + 6\,891\,885\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag2e.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) =$$
$$-\frac{1}{1\,342\,575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072\,z^5 + 31\,023\,104\,z^4 + 178\,214\,400\,z^3 - 16\,230\,240\,z^2 - 4\,773\,600\,z - 1\,342\,575\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,687\,552\,z^4 + 55\,974\,912\,z^3 + 13\,366\,080\,z^2 + 3\,699\,540\,z + 1\,342\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(32\,768\,z^4 + 7\,342\,080\,z^3 + 32\,247\,936\,z^2 - 2\,625\,480\,z - 1\,342\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag2f.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{1\,342\,575\sqrt{2}}\left(\sqrt[4]{z}\left(\left(131\,072\,z^5 - 31\,023\,104\,z^4 + 178\,214\,400\,z^3 + 16\,230\,240\,z^2 - 4\,773\,600\,z + 1\,342\,575\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,687\,552\,z^4 - 55\,974\,912\,z^3 + 13\,366\,080\,z^2 - 3\,699\,540\,z + 1\,342\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(32\,768\,z^4 - 7\,342\,080\,z^3 + 32\,247\,936\,z^2 + 2\,625\,480\,z - 1\,342\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag2g.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{7}{4}; z\right) = \left(\frac{180\,224\,z^4}{69\,615} + \frac{781\,312\,z^3}{9945} + \frac{64\,z^2}{3} + 4z + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(32\,768\,z^4 + 6\,948\,864\,z^3 + 32\,247\,936\,z^2 - 1\,670\,760\,z - 626\,535\right)\sinh\left(2\sqrt{z}\right)}{626\,535}$$

07.22.03.ag2h.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{7}{4}; -z\right) = \left(\frac{180\,224\,z^4}{69\,615} - \frac{781\,312\,z^3}{9945} + \frac{64\,z^2}{3} - 4z + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(32\,768\,z^4 - 6\,948\,864\,z^3 + 32\,247\,936\,z^2 + 1\,670\,760\,z - 626\,535\right)\sin\left(2\sqrt{z}\right)}{626\,535}$$

07.22.03.ag2i.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{5}{4}; z\right) = \frac{1}{149\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(786\,432 z^4 + 23\,109\,632 z^3 + 11\,456\,640 z^2 + 716\,040 z + 149\,175\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,384 z^4 + 3\,189\,760 z^3 + 13\,610\,688 z^2 - 596\,700 z - 149\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(192\,512 z^3 + 5\,026\,560 z^2 + 477\,360 z + 149\,175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag2j.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{5}{4}; -z\right) = \frac{1}{149\,175\sqrt{2}}\left(\sqrt[4]{z}\left(\left(786\,432 z^4 - 23\,109\,632 z^3 + 11\,456\,640 z^2 - 716\,040 z + 149\,175\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(16\,384 z^4 - 3\,189\,760 z^3 + 13\,610\,688 z^2 + 596\,700 z - 149\,175\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-192\,512 z^3 + 5\,026\,560 z^2 - 477\,360 z + 149\,175\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag2k.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{3}{4}; z\right) = \left(-\frac{16\,384 z^4}{89\,505} - \frac{314\,368 z^3}{9945} - \frac{320 z^2}{3} + \frac{20 z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(20\,480 z^3 + 487\,168 z^2 + 53\,040 z + 9945\right)\sinh\left(2\sqrt{z}\right)}{9945} $$

07.22.03.ag2l.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{3}{4}; -z\right) = \left(-\frac{16\,384 z^4}{89\,505} + \frac{314\,368 z^3}{9945} - \frac{320 z^2}{3} - \frac{20 z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-20\,480 z^3 + 487\,168 z^2 - 53\,040 z + 9945\right)\sin\left(2\sqrt{z}\right)}{9945} $$

07.22.03.ag2m.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{1}{4}; z\right) = -\frac{1}{29\,835\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192 z^4 + 1\,289\,216 z^3 + 4\,028\,832 z^2 - 477\,360 z - 29\,835\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(87\,040 z^3 + 1\,760\,640 z^2 - 78\,732 z + 29\,835\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(2048 z^3 + 301\,056 z^2 + 634\,824 z - 29\,835\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag2n.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, -\frac{1}{4}; -z\right) =$$
$$-\frac{1}{29\,835\sqrt{2}}\left(\sqrt[4]{z}\left(\left(8192z^4 - 1\,289\,216z^3 + 4\,028\,832z^2 + 477\,360z - 29\,835\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(87\,040z^3 - 1\,760\,640z^2 - 78\,732z - 29\,835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(2048z^3 - 301\,056z^2 + 634\,824z + 29\,835\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag2o.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, \frac{1}{4}; z\right) =$$
$$\left(\frac{80\,896z^3}{29\,835} + \frac{128z^2}{3} - 12z + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048z^3 + 262\,656z^2 + 397\,800z - 29\,835\right)\sinh\left(2\sqrt{z}\right)}{29\,835}$$

07.22.03.ag2p.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, \frac{1}{4}; -z\right) =$$
$$\left(-\frac{80\,896z^3}{29\,835} + \frac{128z^2}{3} + 12z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048z^3 - 262\,656z^2 + 397\,800z + 29\,835\right)\sin\left(2\sqrt{z}\right)}{29\,835}$$

07.22.03.ag2q.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{29\,835\sqrt{2}}\left(\sqrt[4]{z}\left(\left(37\,888z^3 + 494\,208z^2 - 180\,360z + 29\,835\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1024z^3 + 109\,056z^2 + 71\,172z + 7965\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36z\left(1024z^2 + 10\,944z - 5085\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag2r.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, \frac{3}{4}; -z\right) =$$
$$\frac{1}{29\,835\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-37\,888z^3 + 494\,208z^2 + 180\,360z + 29\,835\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1024z^3 - 109\,056z^2 + 71\,172z - 7965\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 36z\left(1024z^2 - 10\,944z - 5085\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag2s.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, \frac{5}{4}; z\right) = \left(\frac{1024z^3}{29\,835} + \frac{128z^2}{45} - \frac{4z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2816z^2 + 21\,216z - 9945\right)\sinh\left(2\sqrt{z}\right)}{9945}$$

07.22.03.ag2t.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, \frac{5}{4}; -z\right) = \left(-\frac{1024z^3}{29\,835} + \frac{128z^2}{45} + \frac{4z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-2816z^2 + 21\,216z + 9945\right)\sin\left(2\sqrt{z}\right)}{9945}$$

07.22.03.ag2u.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, \frac{7}{4}; z\right) = \frac{1}{9945\sqrt{2}\,\sqrt[4]{z}} \left(\left(\sqrt{z}\left(512z^3+33\,696z^2-21\,600z+13\,095\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(15\,104z^3+61\,776z^2-14\,580z-4725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(256z^3+15\,024z^2-15\,390z+4725\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag2v.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, \frac{7}{4}; -z\right) = \frac{1}{9945\sqrt{2}\,\sqrt[4]{z}} \left(\left(\sqrt{z}\left(-512z^3+33\,696z^2+21\,600z+13\,095\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-15\,104z^3+61\,776z^2+14\,580z-4725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(256z^3-15\,024z^2-15\,390z-4725\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag2w.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, \frac{9}{4}; z\right) = \left(\frac{64z^2}{117}+\frac{4z}{9}+1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(128z^2+5304z-5967\right)\sinh\left(2\sqrt{z}\right)}{5967} $$

07.22.03.ag2x.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) = \left(\frac{64z^2}{117}-\frac{4z}{9}+1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-128z^2+5304z+5967\right)\sin\left(2\sqrt{z}\right)}{5967} $$

07.22.03.ag2y.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) = \frac{1}{318\,240\sqrt{2}\,z^{5/4}} \left(7\left(2\sqrt{z}\left(22\,528z^3-17\,280z^2+45\,360z+8775\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(8192z^4+201\,216z^3-155\,520z^2-108\,000z-26\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(7168z^3-12\,480z^2+17\,280z+8775\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag2z.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) = -\frac{1}{318\,240\sqrt{2}\,z^{5/4}} \left(7\left(-2\sqrt{z}\left(22\,528z^3+17\,280z^2+45\,360z-8775\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(8192z^4-201\,216z^3-155\,520z^2+108\,000z-26\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(7168z^3+12\,480z^2+17\,280z-8775\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag30.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) = \left(\frac{64z^2}{663}+\frac{12z}{13}+1\right)\cosh\left(2\sqrt{z}\right) + \frac{2}{39}\sqrt{z}\,(16z-39)\sinh\left(2\sqrt{z}\right) $$

07.22.03.ag31.01

$${}_1F_2\left(\frac{21}{4};-\frac{3}{2},\frac{13}{4};-z\right)=\left(\frac{64\,z^2}{663}-\frac{12\,z}{13}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{39}\sqrt{z}\,(16\,z+39)\sin\left(2\sqrt{z}\right)$$

07.22.03.ag32.01

$${}_1F_2\left(\frac{21}{4};-\frac{3}{2},\frac{15}{4};z\right)=\frac{1}{10\,183\,680\sqrt{2}\,z^{9/4}}\left(77\left(2\sqrt{z}\,\left(16\,384\,z^4+16\,384\,z^3+248\,832\,z^2+308\,880\,z+208\,845\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(409\,600\,z^4-798\,720\,z^3-1\,285\,632\,z^2-1\,881\,360\,z-626\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\,\left(16\,384\,z^4-30\,720\,z^3+327\,168\,z^2+544\,752\,z+626\,535\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.ag33.01

$${}_1F_2\left(\frac{21}{4};-\frac{3}{2},\frac{15}{4};-z\right)=\frac{1}{10\,183\,680\sqrt{2}\,z^{9/4}}\left(77\left(2\sqrt{z}\,\left(16\,384\,z^4-16\,384\,z^3+248\,832\,z^2-308\,880\,z+208\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(409\,600\,z^4+798\,720\,z^3-1\,285\,632\,z^2+1\,881\,360\,z-626\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.2\sqrt{z}\,\left(16\,384\,z^4+30\,720\,z^3+327\,168\,z^2-544\,752\,z+626\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.ag34.01

$${}_1F_2\left(\frac{21}{4};-\frac{3}{2},\frac{17}{4};z\right)=\left(\frac{20\,z}{17}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{51}\sqrt{z}\,(8\,z-51)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ag35.01

$${}_1F_2\left(\frac{21}{4};-\frac{3}{2},\frac{17}{4};-z\right)=\left(1-\frac{20\,z}{17}\right)\cos\left(2\sqrt{z}\right)+\frac{2}{51}\sqrt{z}\,(8\,z+51)\sin\left(2\sqrt{z}\right)$$

07.22.03.ag36.01

$${}_1F_2\left(\frac{21}{4};-\frac{3}{2},\frac{19}{4};z\right)=$$
$$\frac{1}{21\,725\,184\sqrt{2}\,z^{13/4}}\left(77\left(2\sqrt{z}\,\left(196\,608\,z^4+1\,409\,024\,z^3+6\,200\,064\,z^2+20\,049\,120\,z+16\,081\,065\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(524\,288\,z^5-3\,211\,264\,z^4-13\,172\,736\,z^3-58\,316\,544\,z^2-133\,660\,800\,z-48\,243\,195\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\,\left(131\,072\,z^4+1\,818\,624\,z^3+8\,416\,512\,z^2+30\,741\,984\,z+48\,243\,195\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.ag37.01

$${}_1F_2\left(\frac{21}{4};-\frac{3}{2},\frac{19}{4};-z\right)=$$
$$\frac{1}{21\,725\,184\sqrt{2}\,z^{13/4}}\left(77\left(-2\sqrt{z}\,\left(196\,608\,z^4-1\,409\,024\,z^3+6\,200\,064\,z^2-20\,049\,120\,z+16\,081\,065\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(524\,288\,z^5+3\,211\,264\,z^4-13\,172\,736\,z^3+58\,316\,544\,z^2-133\,660\,800\,z+48\,243\,195\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\,\left(131\,072\,z^4-1\,818\,624\,z^3+8\,416\,512\,z^2-30\,741\,984\,z+48\,243\,195\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.ag38.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) = \left(\frac{4z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ag39.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) = \left(1 - \frac{4z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ag3a.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) = \frac{1}{695\,205\,888\sqrt{2}\,z^{17/4}}\left(1463\right.$$
$$\left(2\sqrt{z}\left(1\,048\,576z^5 + 14\,614\,528z^4 + 188\,977\,152z^3 + 1\,657\,393\,920z^2 + 7\,020\,533\,520z + 6\,030\,399\,375\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 -\right.$$
$$\left(17\,825\,792z^5 + 232\,587\,264z^4 + 2\,636\,255\,232z^3 + 17\,589\,761\,280z^2 + 48\,629\,140\,560z + 18\,091\,198\,125\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576z^5 + 17\,104\,896z^4 + 223\,506\,432z^3 +\right.$$
$$\left.\left.\left.2\,063\,722\,752z^2 + 10\,034\,584\,560z + 18\,091\,198\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag3b.01

$${}_1F_2\left(\frac{21}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) = -\frac{1}{695\,205\,888\sqrt{2}\,z^{17/4}}\left(1463\right.$$
$$\left(2\sqrt{z}\left(1\,048\,576z^5 - 14\,614\,528z^4 + 188\,977\,152z^3 - 1\,657\,393\,920z^2 + 7\,020\,533\,520z - 6\,030\,399\,375\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 +\right.$$
$$\left(-17\,825\,792z^5 + 232\,587\,264z^4 - 2\,636\,255\,232z^3 + 17\,589\,761\,280z^2 - 48\,629\,140\,560z + 18\,091\,198\,125\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-1\,048\,576z^5 + 17\,104\,896z^4 - 223\,506\,432z^3 +\right.$$
$$\left.\left.\left.2\,063\,722\,752z^2 - 10\,034\,584\,560z + 18\,091\,198\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{21}{4}$, $b_1 = -\frac{1}{2}$

07.22.03.ag3c.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{15\,058\,768\,725}\left(\left(-8\,388\,608z^6 - 1\,389\,887\,488z^5 + 10\,770\,186\,240z^4 - 39\,668\,428\,800z^3 - 51\,459\,408\,000z^2 +\right.\right.$$
$$57\,616\,158\,600z + 15\,058\,768\,725\left.\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(101\,711\,872z^5 + 515\,440\,640z^4 +\right.$$
$$\left.\left.3\,061\,555\,200z^3 - 43\,243\,200\,000z^2 + 17\,459\,442\,000z + 15\,058\,768\,725\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag3d.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{15\,058\,768\,725}\left(\left(-8\,388\,608z^6 + 1\,389\,887\,488z^5 + 10\,770\,186\,240z^4 + 39\,668\,428\,800z^3 - 51\,459\,408\,000z^2 -\right.\right.$$
$$57\,616\,158\,600z + 15\,058\,768\,725\left.\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(101\,711\,872z^5 - 515\,440\,640z^4 +\right.$$
$$\left.\left.3\,061\,555\,200z^3 + 43\,243\,200\,000z^2 + 17\,459\,442\,000z - 15\,058\,768\,725\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag3e.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) = -\frac{1}{2\,076\,963\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4\,194\,304 z^6 + 771\,489\,792 z^5 - 3\,914\,760\,192 z^4 + 16\,210\,360\,320 z^3 - 4\,691\,494\,080 z^2 - 8\,307\,854\,100 z - 2\,076\,963\,525\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 28\sqrt{z}\left(7\,340\,032 z^5 + 77\,266\,944 z^4 - 94\,691\,328 z^3 - 1\,400\,762\,880 z^2 + 949\,469\,040 z + 296\,709\,075\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1\,048\,576 z^5 + 180\,289\,536 z^4 - 1\,073\,307\,648 z^3 + 3\,944\,812\,032 z^2 + 2\,010\,914\,640 z - 2\,076\,963\,525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag3f.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{21}{4}; -z\right) = -\frac{1}{2\,076\,963\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4\,194\,304 z^6 - 771\,489\,792 z^5 - 3\,914\,760\,192 z^4 - 16\,210\,360\,320 z^3 - 4\,691\,494\,080 z^2 + 8\,307\,854\,100 z - 2\,076\,963\,525\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 28\sqrt{z}\left(7\,340\,032 z^5 - 77\,266\,944 z^4 - 94\,691\,328 z^3 + 1\,400\,762\,880 z^2 + 949\,469\,040 z - 296\,709\,075\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-1\,048\,576 z^5 + 180\,289\,536 z^4 + 1\,073\,307\,648 z^3 + 3\,944\,812\,032 z^2 - 2\,010\,914\,640 z - 2\,076\,963\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag3g.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{19}{4}; z\right) = \frac{1}{654\,729\,075}\left(\left(51\,380\,224 z^5 + 740\,229\,120 z^4 - 1\,612\,800\,000 z^3 - 3\,805\,401\,600 z^2 + 2\,756\,754\,000 z + 654\,729\,075\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 + 193\,003\,520 z^4 - 698\,572\,800 z^3 + 2\,740\,953\,600 z^2 - 702\,702\,000 z - 654\,729\,075\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ag3h.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{19}{4}; -z\right) = \frac{1}{654\,729\,075}\left(\left(-51\,380\,224 z^5 + 740\,229\,120 z^4 + 1\,612\,800\,000 z^3 - 3\,805\,401\,600 z^2 - 2\,756\,754\,000 z + 654\,729\,075\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576 z^5 - 193\,003\,520 z^4 - 698\,572\,800 z^3 - 2\,740\,953\,600 z^2 - 702\,702\,000 z + 654\,729\,075\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ag3i.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{17}{4}; z\right) = \frac{1}{98\,903\,025\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(25\,952\,256 z^5 + 516\,554\,752 z^4 - 1\,118\,709\,760 z^3 + 137\,479\,680 z^2 + 442\,154\,700 z + 98\,903\,025\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(524\,288 z^5 + 99\,680\,256 z^4 - 166\,498\,304 z^3 + 767\,746\,560 z^2 - 363\,032\,280 z - 98\,903\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)$$
$$\left.\left. I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(6\,356\,992 z^4 + 105\,758\,720 z^3 - 219\,028\,992 z^2 - 182\,465\,280 z + 98\,903\,025\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag3j.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) = \frac{1}{98\,903\,025\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(-25\,952\,256 z^5 + 516\,554\,752 z^4 + 1\,118\,709\,760 z^3 + 137\,479\,680 z^2 - 442\,154\,700 z + 98\,903\,025\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(524\,288 z^5 - 99\,680\,256 z^4 - 166\,498\,304 z^3 - 767\,746\,560 z^2 - 363\,032\,280 z + 98\,903\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)$$
$$\left.\left. J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(6\,356\,992 z^4 - 105\,758\,720 z^3 - 219\,028\,992 z^2 + 182\,465\,280 z + 98\,903\,025\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag3k.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) =$$
$$\frac{1}{34\,459\,425}\left(\left(-524\,288 z^5 - 99\,680\,256 z^4 + 24\,514\,560 z^3 - 366\,750\,720 z^2 + 165\,405\,240 z + 34\,459\,425\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left. 2\sqrt{z}\left(6\,356\,992 z^4 + 129\,908\,736 z^3 - 223\,050\,240 z^2 + 28\,607\,040 z + 34\,459\,425\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag3l.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) =$$
$$\frac{1}{34\,459\,425}\left(\left(524\,288 z^5 - 99\,680\,256 z^4 - 24\,514\,560 z^3 - 366\,750\,720 z^2 - 165\,405\,240 z + 34\,459\,425\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left. 2\sqrt{z}\left(6\,356\,992 z^4 - 129\,908\,736 z^3 - 223\,050\,240 z^2 - 28\,607\,040 z + 34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag3m.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) =$$
$$-\frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(262\,144 z^5 + 51\,380\,224 z^4 + 88\,739\,840 z^3 + 7\,637\,760 z^2 - 30\,431\,700 z - 5\,817\,825\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(3\,145\,728 z^4 + 70\,991\,872 z^3 - 84\,376\,320 z^2 + 25\,777\,440 z + 5\,817\,825\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left. 4z\left(65\,536 z^4 + 12\,075\,008 z^3 + 7\,182\,336 z^2 + 21\,274\,560 z - 5\,817\,825\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag3n.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) =$$
$$\frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(262\,144 z^5 - 51\,380\,224 z^4 + 88\,739\,840 z^3 - 7\,637\,760 z^2 - 30\,431\,700 z + 5\,817\,825\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(3\,145\,728 z^4 - 70\,991\,872 z^3 - 84\,376\,320 z^2 - 25\,777\,440 z + 5\,817\,825\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(-65\,536 z^4 + 12\,075\,008 z^3 - 7\,182\,336 z^2 + 21\,274\,560 z + 5\,817\,825\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag3o.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) = \frac{1}{2\,297\,295}\left(\left(3\,080\,192 z^4 + 70\,991\,872 z^3 - 52\,631\,040 z^2 + 13\,366\,080 z + 2\,297\,295\right)\cosh\left(2\sqrt{z}\right) + \right.$$
$$\left.2\sqrt{z}\left(65\,536 z^4 + 12\,075\,008 z^3 + 23\,557\,632 z^2 - 208\,320 z - 2\,297\,295\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag3p.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{11}{4}; -z\right) = \frac{1}{2\,297\,295}\left(\left(3\,080\,192 z^4 - 70\,991\,872 z^3 - 52\,631\,040 z^2 - 13\,366\,080 z + 2\,297\,295\right)\cos\left(2\sqrt{z}\right) - \right.$$
$$\left.2\sqrt{z}\left(65\,536 z^4 - 12\,075\,008 z^3 + 23\,557\,632 z^2 + 208\,320 z - 2\,297\,295\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag3q.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{447\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,523\,712 z^4 + 38\,241\,280 z^3 - 5\,728\,320 z^2 + 2\,983\,500 z + 447\,525\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right.$$
$$\left(32\,768 z^4 + 5\,851\,136 z^3 + 15\,872\,640 z^2 - 2\,625\,480 z - 447\,525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(372\,736 z^3 + 8\,187\,648 z^2 - 3\,789\,360 z + 447\,525\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag3r.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{9}{4}; -z\right) =$$
$$-\frac{1}{447\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-1\,523\,712 z^4 + 38\,241\,280 z^3 + 5\,728\,320 z^2 + 2\,983\,500 z - 447\,525\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(32\,768 z^4 - 5\,851\,136 z^3 + 15\,872\,640 z^2 + 2\,625\,480 z - 447\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(372\,736 z^3 - 8\,187\,648 z^2 - 3\,789\,360 z - 447\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag3s.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{7}{4}; z\right) = \frac{1}{208\,845}\left(\left(-32\,768 z^4 - 5\,490\,688 z^3 - 15\,872\,640 z^2 + 1\,670\,760 z + 208\,845\right)\cosh\left(2\sqrt{z}\right) - \right.$$
$$\left.2\sqrt{z}\left(364\,544 z^3 + 8\,187\,648 z^2 - 626\,640 z + 208\,845\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag3t.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) = \frac{1}{208\,845}\left(\left(-32\,768\,z^4 + 5\,490\,688\,z^3 - 15\,872\,640\,z^2 - 1\,670\,760\,z + 208\,845\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-364\,544\,z^3 + 8\,187\,648\,z^2 + 626\,640\,z + 208\,845\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag3u.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) = -\frac{1}{49\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^4 + 2\,659\,328\,z^3 + 9\,547\,200\,z^2 - 517\,140\,z - 49\,725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(176\,128\,z^3 + 3\,782\,912\,z^2 + 477\,360\,z + 49\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(4096\,z^3 + 621\,824\,z^2 + 1\,581\,360\,z - 49\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag3v.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{5}{4}; -z\right) = -\frac{1}{49\,725\sqrt{2}}\left(\sqrt[4]{z}\left(\left(16\,384\,z^4 - 2\,659\,328\,z^3 + 9\,547\,200\,z^2 + 517\,140\,z - 49\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(176\,128\,z^3 - 3\,782\,912\,z^2 + 477\,360\,z - 49\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(4096\,z^3 - 621\,824\,z^2 + 1\,581\,360\,z + 49\,725\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag3w.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{3}{4}; z\right) = \frac{1}{29\,835}\left(\left(167\,936\,z^3 + 3\,221\,760\,z^2 + 477\,360\,z + 29\,835\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(4096\,z^3 + 581\,376\,z^2 + 1\,581\,360\,z - 29\,835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag3x.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{3}{4}; -z\right) = \frac{1}{29\,835}\left(\left(-167\,936\,z^3 + 3\,221\,760\,z^2 - 477\,360\,z + 29\,835\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(4096\,z^3 - 581\,376\,z^2 + 1\,581\,360\,z + 29\,835\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag3y.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) = \frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(80\,896\,z^3 + 1\,489\,536\,z^2 + 437\,580\,z + 9945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048\,z^3 + 261\,632\,z^2 + 634\,824\,z - 9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(19\,712\,z^2 + 311\,712\,z + 9945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag3z.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) = \frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-80\,896\,z^3 + 1\,489\,536\,z^2 - 437\,580\,z + 9945\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048\,z^3 - 261\,632\,z^2 + 634\,824\,z + 9945\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(19\,712\,z^2 - 311\,712\,z + 9945\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag40.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) = \left(-\frac{2048\,z^3}{9945} - \frac{45\,056\,z^2}{1989} - 40\,z + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(18\,688\,z^2 + 261\,920\,z + 9945\right)\sinh\left(2\sqrt{z}\right)}{9945} $$

07.22.03.ag41.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{1}{4}; -z\right) = \left(\frac{2048\,z^3}{9945} - \frac{45\,056\,z^2}{1989} + 40\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(18\,688\,z^2 - 261\,920\,z + 9945\right)\sin\left(2\sqrt{z}\right)}{9945} $$

07.22.03.ag42.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{3}{4}; z\right) = -\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024\,z^3 + 100\,224\,z^2 + 159\,660\,z - 9945\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8704\,z^2 + 98\,496\,z - 5175\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(256\,z^2 + 22\,944\,z + 20\,295\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag43.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{3}{4}; -z\right) = \frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1024\,z^3 - 100\,224\,z^2 + 159\,660\,z + 9945\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8704\,z^2 - 98\,496\,z - 5175\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(256\,z^2 - 22\,944\,z + 20\,295\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag44.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{5}{4}; z\right) = \left(-\frac{7936\,z^2}{9945} - \frac{32\,z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256\,z^2 + 19\,232\,z + 9945\right)\sinh\left(2\sqrt{z}\right)}{9945} $$

07.22.03.ag45.01

$$ {}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{5}{4}; -z\right) = \left(-\frac{7936\,z^2}{9945} + \frac{32\,z}{5} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(256\,z^2 - 19\,232\,z + 9945\right)\sin\left(2\sqrt{z}\right)}{9945} $$

07.22.03.ag46.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{7}{4}; z\right) = -\frac{1}{3315\sqrt{2}\,\sqrt[4]{z}}\left(\left(\sqrt{z}\left(3648z^2+22\,540z-4015\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+2\left(256z^3+15\,024z^2+470z+525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+20\sqrt{z}\left(176z^2+793z-105\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag47.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{7}{4}; -z\right) = \frac{1}{3315\sqrt{2}\,\sqrt[4]{z}}\left(\left(\sqrt{z}\left(-3648z^2+22\,540z+4015\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+2\left(256z^3-15\,024z^2+470z-525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+20\sqrt{z}\left(176z^2-793z-105\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag48.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{9}{4}; z\right) = \left(-\frac{128z^2}{1989}-\frac{8z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,(784z+1989)\sinh\left(2\sqrt{z}\right)}{1989}$$

07.22.03.ag49.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{9}{4}; -z\right) = \left(-\frac{128z^2}{1989}+\frac{8z}{3}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2(1989-784z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)}{1989}$$

07.22.03.ag4a.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) = -\frac{1}{53\,040\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\left(512z^3+15\,200z^2-5960z-675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(21\,504z^3+13\,120z^2+9600z+2025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(512z^3+12\,640z^2-5280z-2025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag4b.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = -\frac{1}{53\,040\sqrt{2}\,z^{5/4}}\left(7\left(2\sqrt{z}\left(512z^3-15\,200z^2-5960z+675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(21\,504z^3-13\,120z^2+9600z-2025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-512z^3+12\,640z^2+5280z-2025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag4c.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) = \left(1-\frac{16z}{13}\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{221}\sqrt{z}\,(16z+221)\sinh\left(2\sqrt{z}\right)$$

07.22.03.ag4d.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) = \left(\frac{16z}{13}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{221}(221-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ag4e.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) = -\frac{1}{1\,697\,280\sqrt{2}\,z^{9/4}}$$
$$\left(77\left(2\sqrt{z}\left(27\,648z^3 - 25\,856z^2 - 19\,440z - 12\,285\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384z^4 + 71\,680z^3 + 93\,696z^2 + 114\,480z + 36\,855\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(25\,600z^3 - 29\,184z^2 - 35\,856z - 36\,855\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag4f.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) =$$
$$-\frac{1}{1\,697\,280\sqrt{2}\,z^{9/4}}\left(77\left(-2\sqrt{z}\left(27\,648z^3 + 25\,856z^2 - 19\,440z + 12\,285\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384z^4 - 71\,680z^3 + 93\,696z^2 - \right.\right.\right.$$
$$\left.\left.\left.114\,480z + 36\,855\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(25\,600z^3 + 29\,184z^2 - 35\,856z + 36\,855\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag4g.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) = \left(1 - \frac{8z}{17}\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ag4h.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) = \left(\frac{8z}{17} + 1\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ag4i.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) = -\frac{1}{3\,620\,864\sqrt{2}\,z^{13/4}}\left(77\left(2\sqrt{z}\left(32\,768z^4 - 106\,496z^3 - 324\,864z^2 - 973\,440z - 765\,765\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(262\,144z^4 + 770\,048z^3 + 2\,951\,424z^2 + 6\,420\,960z + 2\,297\,295\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.2\sqrt{z}\left(32\,768z^4 - 131\,072z^3 - 455\,424z^2 - 1\,520\,064z - 2\,297\,295\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag4j.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) =$$
$$\frac{1}{3\,620\,864\sqrt{2}\,z^{13/4}}\left(77\left(2\sqrt{z}\left(32\,768z^4 + 106\,496z^3 - 324\,864z^2 + 973\,440z - 765\,765\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(262\,144z^4 - 770\,048z^3 + 2\,951\,424z^2 - 6\,420\,960z + 2\,297\,295\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.2\sqrt{z}\left(32\,768z^4 + 131\,072z^3 - 455\,424z^2 + 1\,520\,064z - 2\,297\,295\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag4k.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ag4l.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ag4m.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) =$$
$$-\frac{1}{115\,867\,648\sqrt{2}\,z^{17/4}}\left(1463\left(-22\sqrt{z}\left(65\,536z^4+724\,992z^3+6\,140\,160z^2+25\,618\,320z+21\,928\,725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(1\,048\,576z^5+10\,289\,152z^4+109\,228\,032z^3+711\,809\,280z^2+1\,948\,106\,160z+723\,647\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)$$
$$\left.\left.I_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\left(851\,968z^4+9\,523\,200z^3+84\,494\,592z^2+404\,323\,920z+723\,647\,925\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag4n.01

$${}_1F_2\left(\frac{21}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) =$$
$$\frac{1}{115\,867\,648\sqrt{2}\,z^{17/4}}\left(1463\left(22\sqrt{z}\left(65\,536z^4-724\,992z^3+6\,140\,160z^2-25\,618\,320z+21\,928\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(1\,048\,576z^5-10\,289\,152z^4+109\,228\,032z^3-711\,809\,280z^2+1\,948\,106\,160z-723\,647\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(851\,968z^4-9\,523\,200z^3+84\,494\,592z^2-404\,323\,920z+723\,647\,925\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{21}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.ag4o.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) = \left(\frac{1\,048\,576z^5}{195\,568\,425}-\frac{327\,680z^4}{6\,084\,351}+\frac{237\,568z^3}{334\,305}-\frac{2560z^2}{1311}-\frac{80z}{23}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{1}{15\,058\,768\,725}$$
$$\left(4\sqrt{z}\left(1\,048\,576z^5+82\,903\,040z^4-636\,641\,280z^3-1\,729\,728\,000z^2+17\,459\,442\,000z-654\,729\,075\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag4p.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, -\frac{23}{4}; -z\right) = \left(-\frac{1\,048\,576z^5}{195\,568\,425}-\frac{327\,680z^4}{6\,084\,351}-\frac{237\,568z^3}{334\,305}-\frac{2560z^2}{1311}+\frac{80z}{23}+1\right)\cos\left(2\sqrt{z}\right)+\frac{1}{15\,058\,768\,725}$$
$$\left(4\sqrt{z}\left(1\,048\,576z^5-82\,903\,040z^4-636\,641\,280z^3+1\,729\,728\,000z^2+17\,459\,442\,000z+654\,729\,075\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag4q.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{2\,076\,963\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(41\,943\,040z^5-153\,550\,848z^4+2\,929\,704\,960z^3-11\,484\,587\,520z^2+2\,076\,963\,525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(1\,048\,576z^5+98\,500\,608z^4-709\,976\,064z^3+390\,458\,880z^2+7\,440\,567\,120z-2\,076\,963\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)$$
$$\left.\left.I_{-\frac{1}{4}}\left(\sqrt{z}\right)+48z\left(851\,968z^4-5\,046\,272z^3+74\,049\,024z^2-226\,235\,520z-188\,106\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag4r.01

$$ {}_1F_2\left(\frac{21}{4};\frac{1}{2},-\frac{21}{4};-z\right)=\frac{1}{2\,076\,963\,525\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(-\left(41\,943\,040\,z^5+153\,550\,848\,z^4+2\,929\,704\,960\,z^3+11\,484\,587\,520\,z^2-2\,076\,963\,525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(1\,048\,576\,z^5-98\,500\,608\,z^4-709\,976\,064\,z^3-390\,458\,880\,z^2+7\,440\,567\,120\,z+2\,076\,963\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)$$
$$\left.\left.J_{-\frac{1}{4}}\left(\sqrt{z}\right)+48\,z\left(851\,968\,z^4+5\,046\,272\,z^3+74\,049\,024\,z^2+226\,235\,520\,z-188\,106\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag4s.01

$$ {}_1F_2\left(\frac{21}{4};\frac{1}{2},-\frac{19}{4};z\right)=\frac{1}{654\,729\,075}\left(-5120\left(4096\,z^3-2304\,z^2+166\,320\,z-675\,675\right)\sinh\left(2\sqrt{z}\right)z^{3/2}-\right.$$
$$\left.\left(1\,048\,576\,z^5+109\,117\,440\,z^4-663\,183\,360\,z^3+1\,037\,836\,800\,z^2+2\,756\,754\,000\,z-654\,729\,075\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag4t.01

$$ {}_1F_2\left(\frac{21}{4};\frac{1}{2},-\frac{19}{4};-z\right)=\frac{1}{654\,729\,075}\left(5120\left(4096\,z^3+2304\,z^2+166\,320\,z+675\,675\right)\sin\left(2\sqrt{z}\right)z^{3/2}+\right.$$
$$\left.\left(1\,048\,576\,z^5-109\,117\,440\,z^4-663\,183\,360\,z^3-1\,037\,836\,800\,z^2+2\,756\,754\,000\,z+654\,729\,075\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ag4u.01

$$ {}_1F_2\left(\frac{21}{4};\frac{1}{2},-\frac{17}{4};z\right)=-\frac{1}{98\,903\,025\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(524\,288\,z^5+62\,455\,808\,z^4-271\,953\,920\,z^3+618\,923\,520\,z^2+46\,542\,600\,z-98\,903\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(5\,308\,416\,z^4+19\,841\,024\,z^3+60\,264\,960\,z^2-429\,822\,720\,z+98\,903\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.8\,z\left(65\,536\,z^4+7\,159\,808\,z^3-34\,911\,744\,z^2+61\,839\,360\,z+64\,607\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag4v.01

$$ {}_1F_2\left(\frac{21}{4};\frac{1}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{98\,903\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(524\,288\,z^5-62\,455\,808\,z^4-271\,953\,920\,z^3-618\,923\,520\,z^2+46\,542\,600\,z+98\,903\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(5\,308\,416\,z^4-19\,841\,024\,z^3+60\,264\,960\,z^2+429\,822\,720\,z+98\,903\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.8\,z\left(65\,536\,z^4-7\,159\,808\,z^3-34\,911\,744\,z^2-61\,839\,360\,z+64\,607\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag4w.01

$$ {}_1F_2\left(\frac{21}{4};\frac{1}{2},-\frac{15}{4};z\right)=\frac{1}{34\,459\,425}\left(9\left(589\,824\,z^4+4\,014\,080\,z^3-1\,989\,120\,z^2-20\,180\,160\,z+3\,828\,825\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.4\sqrt{z}\left(65\,536\,z^4+7\,815\,168\,z^3-25\,643\,520\,z^2+52\,557\,120\,z+2\,027\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag4x.01

$${}_1F_2\left(\frac{21}{4};\frac{1}{2},-\frac{15}{4};-z\right)=\frac{1}{34\,459\,425}\left(9\left(589\,824\,z^4-4\,014\,080\,z^3-1\,989\,120\,z^2+20\,180\,160\,z+3\,828\,825\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(-65\,536\,z^4+7\,815\,168\,z^3+25\,643\,520\,z^2+52\,557\,120\,z-2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag4y.01

$${}_1F_2\left(\frac{21}{4};\frac{1}{2},-\frac{13}{4};z\right)=\frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2\,686\,976\,z^4+29\,962\,240\,z^3-40\,243\,200\,z^2-7\,160\,400\,z+5\,817\,825\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(65\,536\,z^4+8\,142\,848\,z^3-15\,267\,840\,z^2+32\,091\,840\,z-5\,817\,825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+16\,z\left(163\,840\,z^3+1\,403\,136\,z^2-1\,352\,160\,z-2\,347\,515\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag4z.01

$${}_1F_2\left(\frac{21}{4};\frac{1}{2},-\frac{13}{4};-z\right)=\frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2\,686\,976\,z^4-29\,962\,240\,z^3-40\,243\,200\,z^2+7\,160\,400\,z+5\,817\,825\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-65\,536\,z^4+8\,142\,848\,z^3+15\,267\,840\,z^2+32\,091\,840\,z+5\,817\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+16\,z\left(-163\,840\,z^3+1\,403\,136\,z^2+1\,352\,160\,z-2\,347\,515\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag50.01

$${}_1F_2\left(\frac{21}{4};\frac{1}{2},-\frac{11}{4};z\right)=\frac{1}{2\,297\,295}\left(\left(-65\,536\,z^4-8\,142\,848\,z^3+6\,720\,000\,z^2-16\,027\,200\,z+2\,297\,295\right)\cosh\left(2\sqrt{z}\right)-128\sqrt{z}\left(10\,240\,z^3+118\,272\,z^2-126\,840\,z-10\,395\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag51.01

$${}_1F_2\left(\frac{21}{4};\frac{1}{2},-\frac{11}{4};-z\right)=\frac{1}{2\,297\,295}\left(\left(-65\,536\,z^4+8\,142\,848\,z^3+6\,720\,000\,z^2+16\,027\,200\,z+2\,297\,295\right)\cos\left(2\sqrt{z}\right)-128\sqrt{z}\left(10\,240\,z^3-118\,272\,z^2-126\,840\,z+10\,395\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag52.01

$${}_1F_2\left(\frac{21}{4};\frac{1}{2},-\frac{9}{4};z\right)=-\frac{1}{447\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768\,z^4+4\,229\,120\,z^3+2\,616\,960\,z^2+1\,193\,400\,z-447\,525\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(323\,584\,z^3+4\,273\,920\,z^2-3\,394\,800\,z+447\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+8\,z\left(4096\,z^3+489\,216\,z^2-98\,640\,z+467\,505\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag53.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, -\frac{9}{4}; -z\right) =$$
$$-\frac{1}{447\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(32\,768 z^4 - 4\,229\,120 z^3 + 2\,616\,960 z^2 - 1\,193\,400 z - 447\,525\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right.$$
$$\left(323\,584 z^3 - 4\,273\,920 z^2 - 3\,394\,800 z - 447\,525\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.8 z\left(-4096 z^3 + 489\,216 z^2 + 98\,640 z + 467\,505\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag54.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, -\frac{7}{4}; z\right) = \frac{1}{208\,845}$$
$$\left(7\left(45\,056 z^3 + 610\,560 z^2 - 307\,440 z + 29\,835\right)\cosh\left(2\sqrt{z}\right) + 4\sqrt{z}\left(4096 z^3 + 489\,216 z^2 + 381\,360 z + 60\,165\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag55.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, -\frac{7}{4}; -z\right) = \frac{1}{208\,845}$$
$$\left(4\sqrt{z}\left(4096 z^3 - 489\,216 z^2 + 381\,360 z - 60\,165\right)\sin\left(2\sqrt{z}\right) - 7\left(45\,056 z^3 - 610\,560 z^2 - 307\,440 z - 29\,835\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ag56.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, -\frac{5}{4}; z\right) = \frac{1}{49\,725\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(155\,648 z^3 + 2\,353\,920 z^2 - 318\,240 z + 49\,725\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096 z^3 + 470\,272 z^2 + 621\,360 z - 49\,725\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 16 z\left(9472 z^2 + 120\,000 z - 36\,945\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag57.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, -\frac{5}{4}; -z\right) = \frac{1}{49\,725\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(-155\,648 z^3 + 2\,353\,920 z^2 + 318\,240 z + 49\,725\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096 z^3 - 470\,272 z^2 + 621\,360 z + 49\,725\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 16 z\left(9472 z^2 - 120\,000 z - 36\,945\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag58.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{29\,835}\left(-\left(4096 z^3 + 433\,920 z^2 + 621\,360 z - 29\,835\right)\cosh\left(2\sqrt{z}\right) - 192\sqrt{z}\left(384 z^2 + 5000 z - 375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag59.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{29\,835}\left(\left(4096 z^3 - 433\,920 z^2 + 621\,360 z + 29\,835\right)\cos\left(2\sqrt{z}\right) + 192\sqrt{z}\left(384 z^2 - 5000 z - 375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag5a.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, -\frac{1}{4}; z\right) =$$
$$-\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(2048z^3+208\,384z^2+397\,800z-9945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(5888z^2+72\,032z+3315\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+8z\left(256z^2+23\,904z+27\,945\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag5b.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, -\frac{1}{4}; -z\right) = \frac{1}{9945\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(2048z^3-208\,384z^2+397\,800z+9945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(5888z^2-72\,032z+3315\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.8z\left(256z^2-23\,904z+27\,945\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag5c.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, \frac{1}{4}; z\right) = \frac{5\left(3328z^2+34\,848z+1989\right)\cosh\left(2\sqrt{z}\right)+4\sqrt{z}\left(256z^2+21\,920z+27\,945\right)\sinh\left(2\sqrt{z}\right)}{9945}$$

07.22.03.ag5d.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, \frac{1}{4}; -z\right) = \frac{5\left(3328z^2-34\,848z+1989\right)\cos\left(2\sqrt{z}\right)-4\sqrt{z}\left(256z^2-21\,920z+27\,945\right)\sin\left(2\sqrt{z}\right)}{9945}$$

07.22.03.ag5e.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(7936z^2+78\,480z+9945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(256z^2+19\,104z+20\,295\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.240z\left(32z+255\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag5f.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, \frac{3}{4}; -z\right) =$$
$$\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(7936z^2-78\,480z+9945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(256z^2-19\,104z+20\,295\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.240\left(255-32z\right)zJ_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag5g.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, \frac{5}{4}; z\right) = \frac{\left(256z^2+15\,648z+9945\right)\cosh\left(2\sqrt{z}\right)+64\sqrt{z}\left(56z+375\right)\sinh\left(2\sqrt{z}\right)}{9945}$$

07.22.03.ag5h.01

$${}_1F_2\left(\frac{21}{4};\frac{1}{2},\frac{5}{4};-z\right)=\frac{\left(256\,z^2-15\,648\,z+9945\right)\cos\left(2\sqrt{z}\right)+64\sqrt{z}\,\left(56\,z-375\right)\sin\left(2\sqrt{z}\right)}{9945}$$

07.22.03.ag5i.01

$${}_1F_2\left(\frac{21}{4};\frac{1}{2},\frac{7}{4};z\right)=\frac{1}{3315\sqrt{2}\,\sqrt[4]{z}}\left(\left(\sqrt{z}\,\left(128\,z^2+6680\,z+3595\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\left(816\,z^2+3965\,z-105\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+8\sqrt{z}\,\left(16\,z^2+737\,z+105\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag5j.01

$${}_1F_2\left(\frac{21}{4};\frac{1}{2},\frac{7}{4};-z\right)=\frac{1}{3315\sqrt{2}\,\sqrt[4]{z}}\left(\left(\sqrt{z}\,\left(128\,z^2-6680\,z+3595\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\left(816\,z^2-3965\,z-105\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-8\sqrt{z}\,\left(16\,z^2-737\,z+105\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag5k.01

$${}_1F_2\left(\frac{21}{4};\frac{1}{2},\frac{9}{4};z\right)=\left(\frac{80\,z}{221}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{4\sqrt{z}\,\left(16\,z+573\right)\sinh\left(2\sqrt{z}\right)}{1989}$$

07.22.03.ag5l.01

$${}_1F_2\left(\frac{21}{4};\frac{1}{2},\frac{9}{4};-z\right)=\left(1-\frac{80\,z}{221}\right)\cos\left(2\sqrt{z}\right)+\frac{4\sqrt{z}\,\left(16\,z-573\right)\sin\left(2\sqrt{z}\right)}{1989}$$

07.22.03.ag5m.01

$${}_1F_2\left(\frac{21}{4};\frac{1}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{26\,520\sqrt{2}\,z^{5/4}}\left(7\left(10\sqrt{z}\,\left(256\,z^2+452\,z+15\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(512\,z^3+12\,640\,z^2-1440\,z-225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1216\,z^2+960\,z+225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag5n.01

$${}_1F_2\left(\frac{21}{4};\frac{1}{2},\frac{11}{4};-z\right)=$$
$$\frac{1}{26\,520\sqrt{2}\,z^{5/4}}\left(7\left(-10\sqrt{z}\,\left(256\,z^2-452\,z+15\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(512\,z^3-12\,640\,z^2-1440\,z+225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1216\,z^2-960\,z+225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag5o.01

$${}_1F_2\left(\frac{21}{4};\frac{1}{2},\frac{13}{4};z\right)=\left(\frac{16\,z}{221}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{128}{221}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ag5p.01

$${}_1F_2\left(\frac{21}{4};\frac{1}{2},\frac{13}{4};-z\right)=\left(1-\frac{16\,z}{221}\right)\cos\left(2\sqrt{z}\right)-\frac{128}{221}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ag5q.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, \frac{15}{4}; z\right) = \frac{1}{848\,640\sqrt{2}\, z^{9/4}}$$
$$\left(77\left(2\sqrt{z}\,\left(1024 z^3 + 7552 z^2 + 1680 z + 945\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(25\,600 z^3 - 10\,752 z^2 - 9360 z - 2835\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 2\sqrt{z}\,\left(1024 z^3 + 4608 z^2 + 3312 z + 2835\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag5r.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, \frac{15}{4}; -z\right) =$$
$$-\frac{1}{848\,640\sqrt{2}\, z^{9/4}}\left(77\left(2\sqrt{z}\,\left(1024 z^3 - 7552 z^2 + 1680 z - 945\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(25\,600 z^3 + 10\,752 z^2 - 9360 z + 2835\right)\right.\right.$$
$$\left.\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-1024 z^3 + 4608 z^2 - 3312 z + 2835\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag5s.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, \frac{17}{4}; z\right) = \cosh\left(2\sqrt{z}\right) + \frac{4}{17}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.ag5t.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, \frac{17}{4}; -z\right) = \cos\left(2\sqrt{z}\right) - \frac{4}{17}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.ag5u.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, \frac{19}{4}; z\right) = \frac{1}{1\,810\,432\sqrt{2}\, z^{13/4}}$$
$$\left(77\left(2\sqrt{z}\,\left(20\,480 z^3 + 22\,272 z^2 + 59\,040 z + 45\,045\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(32\,768 z^4 - 65\,536 z^3 - 191\,232 z^2 - 383\,040 z - 135\,135\right)\right.\right.$$
$$\left.\left. I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,384 z^3 + 33\,024 z^2 + 94\,752 z + 135\,135\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag5v.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, \frac{19}{4}; -z\right) = -\frac{1}{1\,810\,432\sqrt{2}\, z^{13/4}}$$
$$\left(77\left(2\sqrt{z}\,\left(-20\,480 z^3 + 22\,272 z^2 - 59\,040 z + 45\,045\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(32\,768 z^4 + 65\,536 z^3 - 191\,232 z^2 + 383\,040 z - \right.\right.\right.$$
$$\left.\left.\left. 135\,135\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(16\,384 z^3 - 33\,024 z^2 + 94\,752 z - 135\,135\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag5w.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, \frac{21}{4}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.ag5x.01

$${}_1F_2\left(\frac{21}{4}; \frac{1}{2}, \frac{21}{4}; -z\right) = \cos\left(2\sqrt{z}\right)$$

07.22.03.ag5y.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{1}{2}, \frac{23}{4}; z\right) = \frac{1}{57\,933\,824\sqrt{2}\, z^{17/4}}\left(1463\left(2\sqrt{z}\left(65\,536 z^4 + 413\,696 z^3 + 3\,306\,240 z^2 + 13\,487\,760 z + 11\,486\,475\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 9\left(65\,536 z^4 + 610\,304 z^3 + 3\,831\,040 z^2 + 10\,330\,320 z + 3\,828\,825\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(65\,536 z^4 + 503\,808 z^3 + 4\,167\,936 z^2 + 19\,459\,440 z + 34\,459\,425\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag5z.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{1}{2}, \frac{23}{4}; -z\right) = \frac{1}{57\,933\,824\sqrt{2}\, z^{17/4}}\left(1463\left(2\sqrt{z}\left(65\,536 z^4 - 413\,696 z^3 + 3\,306\,240 z^2 - 13\,487\,760 z + 11\,486\,475\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 9\left(65\,536 z^4 - 610\,304 z^3 + 3\,831\,040 z^2 - 10\,330\,320 z + 3\,828\,825\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(65\,536 z^4 - 503\,808 z^3 + 4\,167\,936 z^2 - 19\,459\,440 z + 34\,459\,425\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{21}{4}$, $b_{1.} = \frac{3}{2}$

07.22.03.ag60.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{23}{4}; z\right) = \frac{1}{30\,117\,537\,450\sqrt{z}}\left(4\sqrt{z}\left(1\,048\,576 z^5 + 10\,813\,440 z^4 + 369\,008\,640 z^3 - 5\,881\,075\,200 z^2 + 2\,756\,754\,000 z + 16\,574\,983\,425\right)\cosh\left(2\sqrt{z}\right) + 55\left(1\,048\,576 z^5 - 18\,284\,544 z^4 + 100\,638\,720 z^3 + 534\,643\,200 z^2 - 1\,253\,070\,000 z - 328\,930\,875\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ag61.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{23}{4}; -z\right) = \frac{1}{30\,117\,537\,450\sqrt{z}}\left(-4\sqrt{z}\left(1\,048\,576 z^5 - 10\,813\,440 z^4 + 369\,008\,640 z^3 + 5\,881\,075\,200 z^2 + 2\,756\,754\,000 z - 16\,574\,983\,425\right)\cos\left(2\sqrt{z}\right) - 55\left(1\,048\,576 z^5 + 18\,284\,544 z^4 + 100\,638\,720 z^3 - 534\,643\,200 z^2 - 1\,253\,070\,000 z + 328\,930\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ag62.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{21}{4}; z\right) = \frac{1}{2\,076\,963\,525\sqrt{2}}\left(\sqrt[4]{z}\left(\left(1\,048\,576 z^5 + 29\,949\,952 z^4 + 28\,876\,800 z^3 - 3\,056\,094\,720 z^2 + 5\,101\,160\,400 z + 2\,076\,963\,525\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 16\sqrt{z}\left(1\,900\,544 z^4 - 26\,443\,776 z^3 + 170\,472\,960 z^2 + 237\,242\,880 z - 956\,467\,575\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(1\,048\,576 z^5 + 22\,609\,920 z^4 + 137\,797\,632 z^3 - 3\,663\,797\,760 z^2 + 3\,137\,173\,200 z + 5\,246\,720\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag63.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},-\frac{21}{4};-z\right)=-\frac{1}{2\,076\,963\,525\sqrt{2}}$$
$$\left(\sqrt[4]{z}\left(\left(1\,048\,576\,z^5-29\,949\,952\,z^4+28\,876\,800\,z^3+3\,056\,094\,720\,z^2+5\,101\,160\,400\,z-2\,076\,963\,525\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$16\sqrt{z}\left(1\,900\,544\,z^4+26\,443\,776\,z^3+170\,472\,960\,z^2-237\,242\,880\,z-956\,467\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left(1\,048\,576\,z^5-22\,609\,920\,z^4+137\,797\,632\,z^3+3\,663\,797\,760\,z^2+3\,137\,173\,200\,z-5\,246\,720\,325\right)$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag64.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},-\frac{19}{4};z\right)=\frac{1}{1\,309\,458\,150\sqrt{z}}\left(-240\sqrt{z}\left(65\,536\,z^4-688\,128\,z^3+4\,612\,608\,z^2-11\,486\,475\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(1\,048\,576\,z^5+38\,338\,560\,z^4-85\,155\,840\,z^3-1\,729\,728\,000\,z^2+2\,756\,754\,000\,z+723\,647\,925\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag65.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},-\frac{19}{4};-z\right)=\frac{1}{1\,309\,458\,150\sqrt{z}}$$
$$\left(\left(1\,048\,576\,z^5-38\,338\,560\,z^4-85\,155\,840\,z^3+1\,729\,728\,000\,z^2+2\,756\,754\,000\,z-723\,647\,925\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.240\sqrt{z}\left(65\,536\,z^4+688\,128\,z^3+4\,612\,608\,z^2-11\,486\,475\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ag66.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},-\frac{17}{4};z\right)=$$
$$-\frac{1}{98\,903\,025\sqrt{2}}\left(\sqrt[4]{z}\left(\left(4\,128\,768\,z^4-24\,903\,680\,z^3+186\,693\,120\,z^2-217\,742\,400\,z-98\,903\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$8\sqrt{z}\left(65\,536\,z^4+3\,162\,112\,z^3-12\,203\,520\,z^2-39\,317\,760\,z+87\,471\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left(3\,997\,696\,z^4-30\,277\,632\,z^3+202\,314\,240\,z^2-91\,454\,400\,z-228\,118\,275\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.ag67.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{98\,903\,025\sqrt{2}}\left(\sqrt[4]{z}\left(-\left(4\,128\,768\,z^4+24\,903\,680\,z^3+186\,693\,120\,z^2+217\,742\,400\,z-98\,903\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$8\sqrt{z}\left(65\,536\,z^4-3\,162\,112\,z^3-12\,203\,520\,z^2+39\,317\,760\,z+87\,471\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left(3\,997\,696\,z^4+30\,277\,632\,z^3+202\,314\,240\,z^2+91\,454\,400\,z-228\,118\,275\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.ag68.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{15}{4}; z\right) = \frac{1}{68\,918\,850\sqrt{z}}\left(4\sqrt{z}\left(65\,536 z^4 + 3\,686\,400 z^3 - 14\,031\,360 z^2 - 8\,648\,640 z + 34\,459\,425\right)\cosh\left(2\sqrt{z}\right) + 63\left(65\,536 z^4 - 245\,760 z^3 + 1\,943\,040 z^2 - 2\,059\,200 z - 546\,975\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ag69.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{15}{4}; -z\right) = \frac{1}{68\,918\,850\sqrt{z}}\left(4\sqrt{z}\left(65\,536 z^4 - 3\,686\,400 z^3 - 14\,031\,360 z^2 + 8\,648\,640 z + 34\,459\,425\right)\cos\left(2\sqrt{z}\right) + 63\left(65\,536 z^4 + 245\,760 z^3 + 1\,943\,040 z^2 + 2\,059\,200 z - 546\,975\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ag6a.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{13}{4}; z\right) = \frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536 z^4 + 4\,464\,640 z^3 - 14\,062\,080 z^2 + 10\,706\,400 z + 5\,817\,825\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 16\sqrt{z}\left(131\,072 z^3 - 80\,640 z^2 + 1\,879\,200 z - 2\,454\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(65\,536 z^4 + 3\,956\,736 z^3 - 12\,925\,440 z^2 + 859\,680 z + 12\,006\,225\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag6b.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{13}{4}; -z\right) = \frac{1}{5\,817\,825\sqrt{2}}\left(\sqrt[4]{z}\left(\left(65\,536 z^4 - 4\,464\,640 z^3 - 14\,062\,080 z^2 - 10\,706\,400 z + 5\,817\,825\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 16\sqrt{z}\left(131\,072 z^3 + 80\,640 z^2 + 1\,879\,200 z + 2\,454\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-65\,536 z^4 + 3\,956\,736 z^3 + 12\,925\,440 z^2 + 859\,680 z - 12\,006\,225\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag6c.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{11}{4}; z\right) = \frac{1}{4\,594\,590\sqrt{z}}\left(-64\sqrt{z}\left(16\,384 z^3 + 26\,880 z^2 + 90\,720 z - 135\,135\right)\cosh\left(2\sqrt{z}\right) - \left(65\,536 z^4 + 4\,472\,832 z^3 - 11\,020\,800 z^2 + 7\,318\,080 z + 2\,027\,025\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ag6d.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{11}{4}; -z\right) = \frac{1}{4\,594\,590\sqrt{z}}\left(64\sqrt{z}\left(16\,384 z^3 - 26\,880 z^2 + 90\,720 z + 135\,135\right)\cos\left(2\sqrt{z}\right) + \left(-65\,536 z^4 + 4\,472\,832 z^3 + 11\,020\,800 z^2 + 7\,318\,080 z - 2\,027\,025\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ag6e.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{9}{4}; z\right) = -\frac{1}{447\,525\sqrt{2}} \left(\sqrt[4]{z}\left(5\left(53\,248 z^3 + 257\,280 z^2 - 110\,928 z - 89\,505\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\left(4096 z^3 + 295\,680 z^2 - 476\,880 z + 357\,165\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(86\,016 z^3 + 252\,160 z^2 + 147\,120 z - 266\,805\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag6f.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{9}{4}; -z\right) = -\frac{1}{447\,525\sqrt{2}} \left(\sqrt[4]{z}\left(-5\left(53\,248 z^3 - 257\,280 z^2 - 110\,928 z + 89\,505\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\left(4096 z^3 - 295\,680 z^2 - 476\,880 z - 357\,165\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(86\,016 z^3 - 252\,160 z^2 + 147\,120 z + 266\,805\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag6g.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{7}{4}; z\right) = \frac{1}{417\,690\sqrt{z}} \left(4\sqrt{z}\left(4096 z^3 + 295\,680 z^2 - 277\,200 z + 182\,385\right)\cosh\left(2\sqrt{z}\right) + 21\left(12\,288 z^3 + 62\,720 z^2 - 23\,280 z - 7425\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ag6h.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{7}{4}; -z\right) = \frac{1}{417\,690\sqrt{z}} \left(-4\sqrt{z}\left(4096 z^3 - 295\,680 z^2 - 277\,200 z - 182\,385\right)\cos\left(2\sqrt{z}\right) - 21\left(12\,288 z^3 - 62\,720 z^2 - 23\,280 z + 7425\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ag6i.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{5}{4}; z\right) = \frac{1}{49\,725\sqrt{2}} \left(\sqrt[4]{z}\left(\left(4096 z^3 + 311\,040 z^2 - 7440 z + 49\,725\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 16\sqrt{z}\left(7936 z^2 + 49\,920 z - 18\,495\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(4096 z^3 + 280\,320 z^2 - 147\,600 z + 72\,765\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag6j.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{5}{4}; -z\right) = -\frac{1}{49\,725\sqrt{2}} \left(\sqrt[4]{z}\left(\left(4096 z^3 - 311\,040 z^2 - 7440 z - 49\,725\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 16\sqrt{z}\left(7936 z^2 - 49\,920 z - 18\,495\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-4096 z^3 + 280\,320 z^2 + 147\,600 z + 72\,765\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag6k.01

$${}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{59\,670\sqrt{z}}\left(-240\sqrt{z}\left(256z^2+1664z-393\right)\cosh\left(2\sqrt{z}\right)-\left(4096z^3+280\,320z^2+22\,320z+17\,325\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag6l.01

$${}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{3}{4}; -z\right) = \frac{\left(4096z^3-280\,320z^2+22\,320z-17\,325\right)\sin\left(2\sqrt{z}\right)-240\sqrt{z}\left(256z^2-1664z-393\right)\cos\left(2\sqrt{z}\right)}{59\,670\sqrt{z}}$$

07.22.03.ag6m.01

$${}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{1}{4}; z\right) =$$
$$-\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(15\,104z^2+114\,720z-9945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(256z^2+16\,608z+6705\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.3\left(4864z^2+28\,320z-3465\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag6n.01

$${}_1F_2\left(\frac{21}{4}; \frac{3}{2}, -\frac{1}{4}; -z\right) =$$
$$\frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(-15\,104z^2+114\,720z+9945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\sqrt{z}\left(256z^2-16\,608z+6705\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.3\left(4864z^2-28\,320z-3465\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag6o.01

$${}_1F_2\left(\frac{21}{4}; \frac{3}{2}, \frac{1}{4}; z\right) = \frac{4\sqrt{z}\left(256z^2+14\,880z+6705\right)\cosh\left(2\sqrt{z}\right)+5\left(2816z^2+16\,992z-693\right)\sinh\left(2\sqrt{z}\right)}{19\,890\sqrt{z}}$$

07.22.03.ag6p.01

$${}_1F_2\left(\frac{21}{4}; \frac{3}{2}, \frac{1}{4}; -z\right) = \frac{4\sqrt{z}\left(256z^2-14\,880z+6705\right)\cos\left(2\sqrt{z}\right)+5\left(2816z^2-16\,992z-693\right)\sin\left(2\sqrt{z}\right)}{19\,890\sqrt{z}}$$

07.22.03.ag6q.01

$${}_1F_2\left(\frac{21}{4}; \frac{3}{2}, \frac{3}{4}; z\right) = \frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^2+14\,080z+9945\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.16\sqrt{z}\left(416z+2265\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(256z^2+12\,480z+3465\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag6r.01

$${}_1F_2\left(\frac{21}{4}; \frac{3}{2}, \frac{3}{4}; -z\right) = \frac{1}{9945\sqrt{2}}\left(\sqrt[4]{z}\left(\left(256z^2-14\,080z+9945\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.16\sqrt{z}\left(416z-2265\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-256z^2+12\,480z-3465\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag6s.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},\frac{5}{4};z\right)=\frac{96\sqrt{z}\ (32z+135)\cosh\left(2\sqrt{z}\right)+\left(256z^2+11\,040z+3465\right)\sinh\left(2\sqrt{z}\right)}{19\,890\sqrt{z}}$$

07.22.03.ag6t.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},\frac{5}{4};-z\right)=\frac{\left(256z^2-11\,040z+3465\right)\sin\left(2\sqrt{z}\right)-96\sqrt{z}\ (32z-135)\cos\left(2\sqrt{z}\right)}{19\,890\sqrt{z}}$$

07.22.03.ag6u.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},\frac{7}{4};z\right)=\frac{1}{3315\sqrt{2}\ \sqrt[4]{z}}$$
$$\left(\left(5\sqrt{z}\ (144z+551)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\left(16z^2+565z+105\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\sqrt{z}\ (688z+1785)\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag6v.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},\frac{7}{4};-z\right)=\frac{1}{3315\sqrt{2}\ \sqrt[4]{z}}$$
$$\left(\left(5(551-144z)\sqrt{z}\ J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+8\left(16z^2-565z+105\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\sqrt{z}\ (688z-1785)\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag6w.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},\frac{9}{4};z\right)=\frac{4\sqrt{z}\ (16z+417)\cosh\left(2\sqrt{z}\right)+3\,(208z+385)\sinh\left(2\sqrt{z}\right)}{3978\sqrt{z}}$$

07.22.03.ag6x.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},\frac{9}{4};-z\right)=\frac{3\,(385-208z)\sin\left(2\sqrt{z}\right)-4\sqrt{z}\ (16z-417)\cos\left(2\sqrt{z}\right)}{3978\sqrt{z}}$$

07.22.03.ag6y.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},\frac{11}{4};z\right)=\frac{1}{13\,260\sqrt{2}\ z^{5/4}}$$
$$\left(7\left(2\sqrt{z}\ \left(32z^2+650z-15\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1088z^2+960z+45\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\ \left(32z^2+522z-45\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag6z.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},\frac{11}{4};-z\right)=-\frac{1}{13\,260\sqrt{2}\ z^{5/4}}\left(7\left(2\sqrt{z}\ \left(32z^2-650z-15\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.\left(1088z^2-960z+45\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\ \left(-32z^2+522z+45\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag70.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},\frac{13}{4};z\right)=\frac{112\sqrt{z}\ \cosh\left(2\sqrt{z}\right)+(16z+165)\sinh\left(2\sqrt{z}\right)}{442\sqrt{z}}$$

07.22.03.ag71.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},\frac{13}{4};-z\right)=\frac{112\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(165-16z)\sin\left(2\sqrt{z}\right)}{442\sqrt{z}}$$

07.22.03.ag72.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},\frac{15}{4};z\right)=$$
$$\frac{1}{424\,320\sqrt{2}\,z^{9/4}}\left(77\left(2\sqrt{z}\,\left(1472z^2-240z-105\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1024z^3+4608z^2+1200z+315\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.6\sqrt{z}\,\left(448z^2-176z-105\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag73.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},\frac{15}{4};-z\right)=$$
$$-\frac{1}{424\,320\sqrt{2}\,z^{9/4}}\left(77\left(-2\sqrt{z}\,\left(1472z^2+240z-105\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(1024z^3-4608z^2+1200z-315\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.6\sqrt{z}\,\left(448z^2+176z-105\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag74.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},\frac{17}{4};z\right)=\frac{1}{34}\left(4\cosh\left(2\sqrt{z}\right)+\frac{15\sinh\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.ag75.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},\frac{17}{4};-z\right)=\frac{1}{34}\left(4\cos\left(2\sqrt{z}\right)+\frac{15\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.ag76.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},\frac{19}{4};z\right)=\frac{1}{905\,216\sqrt{2}\,z^{13/4}}$$
$$\left(77\left(2\sqrt{z}\,\left(2048z^3-2304z^2-4800z-3465\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(16\,384z^3+17\,664z^2+30\,240z+10\,395\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(2048z^3-3840z^2-8064z-10\,395\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag77.01

$${}_1F_2\left(\frac{21}{4};\frac{3}{2},\frac{19}{4};-z\right)=\frac{1}{905\,216\sqrt{2}\,z^{13/4}}$$
$$\left(77\left(2\sqrt{z}\,\left(2048z^3+2304z^2-4800z+3465\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(16\,384z^3-17\,664z^2+30\,240z-10\,395\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(2048z^3+3840z^2-8064z+10\,395\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag78.01

$${}_1F_2\left(\frac{21}{4}; \frac{3}{2}, \frac{21}{4}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.ag79.01

$${}_1F_2\left(\frac{21}{4}; \frac{3}{2}, \frac{21}{4}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}}$$

07.22.03.ag7a.01

$${}_1F_2\left(\frac{21}{4}; \frac{3}{2}, \frac{23}{4}; z\right) = \frac{1}{28\,966\,912\sqrt{2}\,z^{17/4}}\left(1463\left(-2\sqrt{z}\left(28\,672\,z^3 + 203\,520\,z^2 + 799\,920\,z + 675\,675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(65\,536\,z^4 + 356\,352\,z^3 + 2\,085\,120\,z^2 + 5\,488\,560\,z + 2\,027\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.18\sqrt{z}\left(4096\,z^3 + 28\,928\,z^2 + 129\,360\,z + 225\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag7b.01

$${}_1F_2\left(\frac{21}{4}; \frac{3}{2}, \frac{23}{4}; -z\right) = \frac{1}{28\,966\,912\sqrt{2}\,z^{17/4}}\left(1463\left(2\sqrt{z}\left(28\,672\,z^3 - 203\,520\,z^2 + 799\,920\,z - 675\,675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(65\,536\,z^4 - 356\,352\,z^3 + 2\,085\,120\,z^2 - 5\,488\,560\,z + 2\,027\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.18\sqrt{z}\left(-4096\,z^3 + 28\,928\,z^2 - 129\,360\,z + 225\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1 = \frac{21}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.ag7c.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, -\frac{23}{4}; z\right) = \frac{1}{40\,156\,716\,600\,z^{3/2}}$$
$$\left(2\sqrt{z}\left(32\,505\,856\,z^5 - 328\,007\,680\,z^4 - 6\,273\,146\,880\,z^3 + 34\,110\,236\,160\,z^2 + 79\,578\,298\,800\,z + 34\,976\,316\,375\right)\right.$$
$$\cosh\left(2\sqrt{z}\right) + \left(8\,388\,608\,z^6 - 271\,056\,896\,z^5 + 5\,904\,138\,240\,z^4 - 3\,136\,573\,440\,z^3 - \right.$$
$$\left.\left.148\,497\,148\,800\,z^2 - 106\,135\,029\,000\,z - 34\,976\,316\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag7d.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, -\frac{23}{4}; -z\right) = \frac{1}{40\,156\,716\,600\,z^{3/2}}$$
$$\left(2\sqrt{z}\left(32\,505\,856\,z^5 + 328\,007\,680\,z^4 - 6\,273\,146\,880\,z^3 - 34\,110\,236\,160\,z^2 + 79\,578\,298\,800\,z - 34\,976\,316\,375\right)\right.$$
$$\cos\left(2\sqrt{z}\right) - \left(8\,388\,608\,z^6 + 271\,056\,896\,z^5 + 5\,904\,138\,240\,z^4 + 3\,136\,573\,440\,z^3 - \right.$$
$$\left.\left.148\,497\,148\,800\,z^2 + 106\,135\,029\,000\,z - 34\,976\,316\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag7e.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{5}{2}, -\frac{21}{4}; z\right) = \frac{1}{2\,769\,284\,700\sqrt{2}\, z^{3/4}}\left(\left(32 z \left(589\,824 z^4 - 7\,110\,656 z^3 - 32\,486\,400 z^2 + 321\,683\,040 z + 217\,708\,155\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,048\,576 z^5 - 21\,954\,560 z^4 + 540\,844\,032 z^3 - 1\,236\,856\,320 z^2 - 7\,766\,161\,200 z - 3\,148\,032\,195\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(17\,825\,792 z^5 - 201\,523\,200 z^4 - 1\,617\,960\,960 z^3 + 10\,903\,334\,400 z^2 + 16\,789\,505\,040 z + 9\,444\,096\,585\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag7f.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{5}{2}, -\frac{21}{4}; -z\right) = -\frac{1}{2\,769\,284\,700\sqrt{2}\, z^{3/4}}\left(\left(-32 z \left(589\,824 z^4 + 7\,110\,656 z^3 - 32\,486\,400 z^2 - 321\,683\,040 z + 217\,708\,155\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,048\,576 z^5 + 21\,954\,560 z^4 + 540\,844\,032 z^3 + 1\,236\,856\,320 z^2 - 7\,766\,161\,200 z + 3\,148\,032\,195\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(17\,825\,792 z^5 + 201\,523\,200 z^4 - 1\,617\,960\,960 z^3 - 10\,903\,334\,400 z^2 + 16\,789\,505\,040 z - 9\,444\,096\,585\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag7g.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{5}{2}, -\frac{19}{4}; z\right) = \frac{1}{1\,745\,944\,200 z^{3/2}}\left(-2\sqrt{z}\left(1\,048\,576 z^5 - 11\,468\,800 z^4 + 369\,008\,640 z^3 - 1\,176\,215\,040 z^2 - 3\,124\,321\,200 z - 1\,206\,079\,875\right)\cosh\left(2\sqrt{z}\right) - \left(19\,922\,944 z^5 - 227\,082\,240 z^4 - 369\,008\,640 z^3 + 5\,881\,075\,200 z^2 + 3\,859\,455\,600 z + 1\,206\,079\,875\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ag7h.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{5}{2}, -\frac{19}{4}; -z\right) = \frac{1}{1\,745\,944\,200 z^{3/2}}\left(\left(-19\,922\,944 z^5 - 227\,082\,240 z^4 + 369\,008\,640 z^3 + 5\,881\,075\,200 z^2 - 3\,859\,455\,600 z + 1\,206\,079\,875\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\left(1\,048\,576 z^5 + 11\,468\,800 z^4 + 369\,008\,640 z^3 + 1\,176\,215\,040 z^2 - 3\,124\,321\,200 z + 1\,206\,079\,875\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.ag7i.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{5}{2}, -\frac{17}{4}; z\right) = -\frac{1}{131\,870\,700\sqrt{2}\, z^{3/4}}\left(\left(8 z \left(65\,536 z^4 + 131\,072 z^3 + 11\,727\,360 z^2 - 55\,721\,280 z - 35\,916\,135\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2\,686\,976 z^4 - 27\,262\,976 z^3 + 22\,510\,080 z^2 + 339\,470\,400 z + 116\,593\,785\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(524\,288 z^5 - 1\,507\,328 z^4 + 119\,869\,440 z^3 - 430\,924\,800 z^2 - 689\,424\,120 z - 349\,781\,355\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag7j.01

$${}_1F_2\left(\frac{21}{4};\frac{5}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{131\,870\,700\sqrt{2}\,z^{3/4}}\left(\left(-8z\left(65\,536z^4-131\,072z^3+11\,727\,360z^2+55\,721\,280z-35\,916\,135\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(2\,686\,976z^4+27\,262\,976z^3+22\,510\,080z^2-339\,470\,400z+116\,593\,785\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(524\,288z^5+1\,507\,328z^4+119\,869\,440z^3+430\,924\,800z^2-689\,424\,120z+349\,781\,355\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag7k.01

$${}_1F_2\left(\frac{21}{4};\frac{5}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{91\,891\,800z^{3/2}}\left(2\sqrt{z}\left(2\,818\,048z^4-23\,740\,416z^3+41\,513\,472z^2+147\,026\,880z+48\,243\,195\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(524\,288z^5+4\,128\,768z^4+53\,932\,032z^3-276\,756\,480z^2-165\,405\,240z-48\,243\,195\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag7l.01

$${}_1F_2\left(\frac{21}{4};\frac{5}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{91\,891\,800z^{3/2}}\left(\left(524\,288z^5-4\,128\,768z^4+53\,932\,032z^3+276\,756\,480z^2-165\,405\,240z+48\,243\,195\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(2\,818\,048z^4+23\,740\,416z^3+41\,513\,472z^2-147\,026\,880z+48\,243\,195\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ag7m.01

$${}_1F_2\left(\frac{21}{4};\frac{5}{2},-\frac{13}{4};z\right)=\frac{1}{7\,757\,100\sqrt{2}\,z^{3/4}}\left(\left(64z\left(23\,552z^3-140\,160z^2+361\,020z+226\,815\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(65\,536z^4+1\,073\,152z^3+1\,635\,840z^2-18\,175\,200z-5\,069\,295\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(1\,441\,792z^4-9\,707\,520z^3+19\,034\,880z^2+34\,151\,040z+15\,207\,885\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag7n.01

$${}_1F_2\left(\frac{21}{4};\frac{5}{2},-\frac{13}{4};-z\right)=\frac{1}{7\,757\,100\sqrt{2}\,z^{3/4}}\left(\left(-64z\left(23\,552z^3+140\,160z^2+361\,020z-226\,815\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(65\,536z^4-1\,073\,152z^3+1\,635\,840z^2+18\,175\,200z-5\,069\,295\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(1\,441\,792z^4+9\,707\,520z^3+19\,034\,880z^2-34\,151\,040z+15\,207\,885\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag7o.01

$${}_1F_2\left(\frac{21}{4};\frac{5}{2},-\frac{11}{4};z\right)=\frac{1}{6\,126\,120z^{3/2}}\left(-2\sqrt{z}\left(65\,536z^4+1\,458\,176z^3-870\,912z^2-8\,648\,640z-2\,297\,295\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(1\,507\,328z^4-6\,766\,592z^3+15\,966\,720z^2+8\,648\,640z+2\,297\,295\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag7p.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, -\frac{11}{4}; -z\right) = \frac{1}{6\,126\,120\,z^{3/2}}\left(2\sqrt{z}\,\left(65\,536\,z^4 - 1\,458\,176\,z^3 - 870\,912\,z^2 + 8\,648\,640\,z - 2\,297\,295\right)\cos\left(2\sqrt{z}\right) + \left(1\,507\,328\,z^4 + 6\,766\,592\,z^3 + 15\,966\,720\,z^2 - 8\,648\,640\,z + 2\,297\,295\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag7q.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, -\frac{9}{4}; z\right) = \frac{1}{596\,700\sqrt{2}\,z^{3/4}}$$
$$\left(\left(-8\,z\left(4096\,z^3 + 126\,720\,z^2 - 181\,200\,z - 119\,055\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(192\,512\,z^3 - 487\,680\,z^2 + 1\,257\,360\,z + 266\,805\right)\right.$$
$$\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-32\,768\,z^4 - 829\,440\,z^3 + 816\,000\,z^2 + 2\,134\,440\,z + 800\,415\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag7r.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, -\frac{9}{4}; -z\right) = \frac{1}{596\,700\sqrt{2}\,z^{3/4}}$$
$$\left(\left(8\,z\left(4096\,z^3 - 126\,720\,z^2 - 181\,200\,z + 119\,055\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(192\,512\,z^3 + 487\,680\,z^2 + 1\,257\,360\,z - 266\,805\right)\right.$$
$$\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-32\,768\,z^4 + 829\,440\,z^3 + 816\,000\,z^2 - 2\,134\,440\,z + 800\,415\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag7s.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, -\frac{7}{4}; z\right) = \frac{1}{556\,920\,z^{3/2}}\left(2\sqrt{z}\,\left(192\,512\,z^3 - 209\,664\,z^2 + 680\,400\,z + 135\,135\right)\cosh\left(2\sqrt{z}\right) + \left(32\,768\,z^4 + 1\,017\,856\,z^3 - 1\,169\,280\,z^2 - 582\,120\,z - 135\,135\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag7t.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, -\frac{7}{4}; -z\right) = \frac{1}{556\,920\,z^{3/2}}\left(2\sqrt{z}\,\left(192\,512\,z^3 + 209\,664\,z^2 + 680\,400\,z - 135\,135\right)\cos\left(2\sqrt{z}\right) + \left(-32\,768\,z^4 + 1\,017\,856\,z^3 + 1\,169\,280\,z^2 - 582\,120\,z + 135\,135\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag7u.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, -\frac{5}{4}; z\right) = \frac{1}{66\,300\sqrt{2}\,z^{3/4}}$$
$$\left(\left(32\,z\left(3072\,z^2 + 2896\,z + 2813\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(4096\,z^3 + 139\,008\,z^2 - 123\,280\,z - 17\,787\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \right.$$
$$\left.\left(94\,208\,z^3 - 24\,320\,z^2 + 181\,104\,z + 53\,361\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag7v.01

$${}_1F_2\left(\frac{21}{4};\frac{5}{2},-\frac{5}{4};-z\right)=\frac{1}{66\,300\sqrt{2}\,z^{3/4}}$$
$$\left(\left(32z\left(3072z^2-2896z+2813\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-4096z^3+139\,008z^2+123\,280z-17\,787\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(94\,208z^3+24\,320z^2+181\,104z-53\,361\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag7w.01

$${}_1F_2\left(\frac{21}{4};\frac{5}{2},-\frac{3}{4};z\right)=\frac{1}{79\,560z^{3/2}}$$
$$\left(-2\sqrt{z}\left(4096z^3+139\,008z^2-81\,360z-10\,395\right)\cosh\left(2\sqrt{z}\right)-\left(94\,208z^3+103\,680z^2+55\,440z+10\,395\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag7x.01

$${}_1F_2\left(\frac{21}{4};\frac{5}{2},-\frac{3}{4};-z\right)=\frac{1}{79\,560z^{3/2}}$$
$$\left(\left(-94\,208z^3+103\,680z^2-55\,440z+10\,395\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(4096z^3-139\,008z^2-81\,360z+10\,395\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ag7y.01

$${}_1F_2\left(\frac{21}{4};\frac{5}{2},-\frac{1}{4};z\right)=$$
$$-\frac{1}{13\,260\sqrt{2}\,z^{3/4}}\left(\left(8z\left(256z^2+9376z-1927\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(11\,520z^2+20\,960z+1617\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(2048z^3+64\,000z^2-24\,024z-4851\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag7z.01

$${}_1F_2\left(\frac{21}{4};\frac{5}{2},-\frac{1}{4};-z\right)=$$
$$-\frac{1}{13\,260\sqrt{2}\,z^{3/4}}\left(\left(8z\left(256z^2-9376z-1927\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(11\,520z^2-20\,960z+1617\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-2048z^3+64\,000z^2+24\,024z-4851\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag80.01

$${}_1F_2\left(\frac{21}{4};\frac{5}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{26\,520z^{3/2}}\left(2\sqrt{z}\left(11\,008z^2+20\,960z+1155\right)\cosh\left(2\sqrt{z}\right)+\left(2048z^3+64\,000z^2-9240z-1155\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag81.01

$${}_1F_2\left(\frac{21}{4};\frac{5}{2},\frac{1}{4};-z\right)=\frac{\left(2048z^3-64\,000z^2-9240z+1155\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(11\,008z^2-20\,960z+1155\right)\cos\left(2\sqrt{z}\right)}{26\,520z^{3/2}}$$

07.22.03.ag82.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{3}{4}; z\right) = \frac{1}{13\,260\sqrt{2}\, z^{3/4}}$$
$$\left(\left(256 z (21 z + 53) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(256 z^2 + 7360 z - 231\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(5120 z^2 + 7392 z + 693\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag83.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{3}{4}; -z\right) = \frac{1}{13\,260\sqrt{2}\, z^{3/4}}$$
$$\left(\left(-256 z (21 z - 53) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(256 z^2 - 7360 z - 231\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(5120 z^2 - 7392 z + 693\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag84.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{5}{4}; z\right) = \frac{2\sqrt{z}\left(256 z^2 + 6176 z - 231\right)\cosh\left(2\sqrt{z}\right) + \left(4864 z^2 + 7392 z + 231\right)\sinh\left(2\sqrt{z}\right)}{26\,520 z^{3/2}}$$

07.22.03.ag85.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{5}{4}; -z\right) = \frac{\left(-4864 z^2 + 7392 z - 231\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256 z^2 - 6176 z - 231\right)\cos\left(2\sqrt{z}\right)}{26\,520 z^{3/2}}$$

07.22.03.ag86.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{7}{4}; z\right) =$$
$$\frac{1}{4420\sqrt{2}\, z^{3/4}}\left(\left(8 z (16 z + 353) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 28\sqrt{z}\,(80 z + 91) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(128 z^2 + 2296 z - 231\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag87.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{7}{4}; -z\right) = -\frac{1}{4420\sqrt{2}\, z^{3/4}}$$
$$\left(\left(8 z (16 z - 353) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 28\sqrt{z}\,(80 z - 91) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-128 z^2 + 2296 z + 231\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag88.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{9}{4}; z\right) = \frac{2\sqrt{z}\,(496 z + 231)\cosh\left(2\sqrt{z}\right) + \left(128 z^2 + 1848 z - 231\right)\sinh\left(2\sqrt{z}\right)}{5304 z^{3/2}}$$

07.22.03.ag89.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{9}{4}; -z\right) = \frac{2\sqrt{z}\,(496 z - 231)\cos\left(2\sqrt{z}\right) + \left(-128 z^2 + 1848 z + 231\right)\sin\left(2\sqrt{z}\right)}{5304 z^{3/2}}$$

07.22.03.ag8a.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{11}{4}; z\right) =$$

$$\frac{1}{4420\sqrt{2}\, z^{5/4}}\left(7\left(4\sqrt{z}\,(56z+15) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\left(32z^2+314z-45\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \sqrt{z}\,(208z-51) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag8b.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{11}{4}; -z\right) = -\frac{1}{4420\sqrt{2}\, z^{5/4}}$$

$$\left(7\left(4(15-56z)\sqrt{z}\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\left(32z^2-314z-45\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \sqrt{z}\,(208z+51) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag8c.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{13}{4}; z\right) = \frac{6\sqrt{z}\,(16z+77)\cosh\left(2\sqrt{z}\right) + 33(16z-7)\sinh\left(2\sqrt{z}\right)}{1768\, z^{3/2}}$$

07.22.03.ag8d.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{13}{4}; -z\right) = \frac{6\sqrt{z}\,(16z-77)\cos\left(2\sqrt{z}\right) + 33(16z+7)\sin\left(2\sqrt{z}\right)}{1768\, z^{3/2}}$$

07.22.03.ag8e.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{15}{4}; z\right) = \frac{1}{70\,720\sqrt{2}\, z^{9/4}}$$

$$\left(77\left(2\sqrt{z}\,\left(64z^2+144z+21\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1088z^2-528z-63\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(64z^2+24z+63\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$

$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag8f.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{15}{4}; -z\right) = \frac{1}{70\,720\sqrt{2}\, z^{9/4}}$$

$$\left(77\left(2\sqrt{z}\,\left(64z^2-144z+21\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1088z^2+528z-63\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(64z^2-24z+63\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$

$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag8g.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{17}{4}; z\right) = \frac{66\sqrt{z}\,\cosh\left(2\sqrt{z}\right) + 3(8z-11)\sinh\left(2\sqrt{z}\right)}{136\, z^{3/2}}$$

07.22.03.ag8h.01

$${}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{17}{4}; -z\right) = \frac{3(8z+11)\sin\left(2\sqrt{z}\right) - 66\sqrt{z}\,\cos\left(2\sqrt{z}\right)}{136\, z^{3/2}}$$

07.22.03.ag8i.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{19}{4}; z\right) = \frac{1}{452\,608\sqrt{2}\, z^{13/4}}\left(231\left(2\sqrt{z}\,\left(768z^2+608z+385\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(2048z^3-3840z^2-3584z-1155\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ 2\sqrt{z}\,\left(512z^2+1120z+1155\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag8j.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{19}{4}; -z\right) = \frac{1}{452\,608\sqrt{2}\, z^{13/4}}\left(231\left(-2\sqrt{z}\,\left(768z^2-608z+385\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(2048z^3+3840z^2-3584z+1155\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)+ 2\sqrt{z}\,\left(512z^2-1120z+1155\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag8k.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{21}{4}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8z^{3/2}} $$

07.22.03.ag8l.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{21}{4}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right)-2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8z^{3/2}} $$

07.22.03.ag8m.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{23}{4}; z\right) = \frac{1}{14\,483\,456\sqrt{2}\, z^{17/4}}\left(4389\left(2\sqrt{z}\,\left(4096z^3+17\,152z^2+62\,480z+51\,975\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(36\,864z^3+169\,216z^2+425\,040z+155\,925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(4096z^3+22\,784z^2+92\,400z+155\,925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag8n.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{5}{2}, \frac{23}{4}; -z\right) = -\frac{1}{14\,483\,456\sqrt{2}\, z^{17/4}}\left(4389\left(2\sqrt{z}\,\left(4096z^3-17\,152z^2+62\,480z-51\,975\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-36\,864z^3+169\,216z^2-425\,040z+155\,925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\,\left(-4096z^3+22\,784z^2-92\,400z+155\,925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{21}{4}$, $b_{1.} = \frac{7}{2}$

07.22.03.ag8o.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{7}{2}, -\frac{23}{4}; z\right) = \frac{1}{32\,125\,373\,280\,z^{5/2}} \left(2\sqrt{z}\,\left(8\,388\,608\,z^6 - 333\,971\,456\,z^5 + 47\,048\,601\,600\,z^3 + 140\,851\,751\,040\,z^2 + 279\,810\,531\,000\,z + 314\,786\,847\,375\right) \cosh\left(2\sqrt{z}\right) + \left(20\,971\,520\,z^6 + 2\,361\,655\,296\,z^5 - 25\,092\,587\,520\,z^4 - 192\,899\,266\,560\,z^3 - 385\,945\,560\,000\,z^2 - 699\,526\,327\,500\,z - 314\,786\,847\,375\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ag8p.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{32\,125\,373\,280\,z^{5/2}} \left(2\sqrt{z}\,\left(8\,388\,608\,z^6 + 333\,971\,456\,z^5 - 47\,048\,601\,600\,z^3 + 140\,851\,751\,040\,z^2 - 279\,810\,531\,000\,z + 314\,786\,847\,375\right) \cos\left(2\sqrt{z}\right) + \left(20\,971\,520\,z^6 - 2\,361\,655\,296\,z^5 - 25\,092\,587\,520\,z^4 + 192\,899\,266\,560\,z^3 - 385\,945\,560\,000\,z^2 + 699\,526\,327\,500\,z - 314\,786\,847\,375\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ag8q.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{7}{2}, -\frac{21}{4}; z\right) = \frac{1}{2\,215\,427\,760\sqrt{2}\,z^{7/4}} \left(\left(4z\left(1\,048\,576\,z^5 - 36\,503\,552\,z^4 + 154\,116\,096\,z^3 + 3\,011\,304\,960\,z^2 + 5\,187\,324\,240\,z + 8\,871\,727\,095\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(5\,242\,880\,z^5 + 173\,998\,080\,z^4 - 2\,426\,609\,664\,z^3 - 10\,785\,277\,440\,z^2 - 18\,969\,960\,240\,z - 26\,615\,181\,285\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(4\,194\,304\,z^6 - 150\,208\,512\,z^5 + 404\,324\,352\,z^4 + 14\,459\,074\,560\,z^3 + 35\,759\,465\,280\,z^2 + 72\,118\,555\,740\,z + 79\,845\,543\,855\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag8r.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{7}{2}, -\frac{21}{4}; -z\right) = \frac{1}{2\,215\,427\,760\sqrt{2}\,z^{7/4}} \left(\left(4z\left(1\,048\,576\,z^5 + 36\,503\,552\,z^4 + 154\,116\,096\,z^3 - 3\,011\,304\,960\,z^2 + 5\,187\,324\,240\,z - 8\,871\,727\,095\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(5\,242\,880\,z^5 - 173\,998\,080\,z^4 - 2\,426\,609\,664\,z^3 + 10\,785\,277\,440\,z^2 - 18\,969\,960\,240\,z + 26\,615\,181\,285\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(4\,194\,304\,z^6 + 150\,208\,512\,z^5 + 404\,324\,352\,z^4 - 14\,459\,074\,560\,z^3 + 35\,759\,465\,280\,z^2 - 72\,118\,555\,740\,z + 79\,845\,543\,855\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag8s.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{7}{2}, -\frac{19}{4}; z\right) = \frac{1}{1\,396\,755\,360\,z^{5/2}} \left(-14\sqrt{z}\,\left(1\,048\,576\,z^5 + 12\,779\,520\,z^4 - 244\,408\,320\,z^3 - 717\,949\,440\,z^2 - 1\,253\,070\,000\,z - 1\,362\,713\,625\right) \cosh\left(2\sqrt{z}\right) - \left(4\,194\,304\,z^6 - 126\,615\,552\,z^5 + 670\,924\,800\,z^4 + 7\,271\,147\,520\,z^3 + 12\,630\,945\,600\,z^2 + 21\,490\,150\,500\,z + 9\,538\,995\,375\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ag8t.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{7}{2}, -\frac{19}{4}; -z\right) = \frac{1}{1\,396\,755\,360\,z^{5/2}} \left(14\sqrt{z}\,\left(1\,048\,576\,z^5 - 12\,779\,520\,z^4 - 244\,408\,320\,z^3 + 717\,949\,440\,z^2 - 1\,253\,070\,000\,z + 1\,362\,713\,625\right)\cos\left(2\sqrt{z}\right) - \left(4\,194\,304\,z^6 + 126\,615\,552\,z^5 + 670\,924\,800\,z^4 - 7\,271\,147\,520\,z^3 + 12\,630\,945\,600\,z^2 - 21\,490\,150\,500\,z + 9\,538\,995\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ag8u.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{7}{2}, -\frac{17}{4}; z\right) = \frac{1}{105\,496\,560\,\sqrt{2}\,z^{7/4}} \left(\left(4\,z\left(-1\,245\,184\,z^4 - 1\,081\,344\,z^3 + 125\,898\,240\,z^2 + 185\,870\,400\,z + 286\,184\,745\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(524\,288\,z^5 - 12\,648\,448\,z^4 + 84\,086\,784\,z^3 + 435\,517\,440\,z^2 + 642\,022\,920\,z + 858\,554\,235\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-4\,456\,448\,z^5 - 17\,891\,328\,z^4 + 577\,628\,160\,z^3 + 1\,331\,447\,040\,z^2 + 2\,416\,671\,180\,z + 2\,575\,662\,705\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag8v.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{7}{2}, -\frac{17}{4}; -z\right) = -\frac{1}{105\,496\,560\,\sqrt{2}\,z^{7/4}} \left(\left(4\,z\left(-1\,245\,184\,z^4 + 1\,081\,344\,z^3 + 125\,898\,240\,z^2 - 185\,870\,400\,z + 286\,184\,745\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(524\,288\,z^5 + 12\,648\,448\,z^4 + 84\,086\,784\,z^3 - 435\,517\,440\,z^2 + 642\,022\,920\,z - 858\,554\,235\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(4\,456\,448\,z^5 - 17\,891\,328\,z^4 - 577\,628\,160\,z^3 + 1\,331\,447\,040\,z^2 - 2\,416\,671\,180\,z + 2\,575\,662\,705\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag8w.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{7}{2}, -\frac{15}{4}; z\right) = \frac{1}{73\,513\,440\,z^{5/2}} \left(2\sqrt{z}\,\left(524\,288\,z^5 - 9\,633\,792\,z^4 + 70\,447\,104\,z^3 + 213\,857\,280\,z^2 + 315\,773\,640\,z + 328\,930\,875\right)\cosh\left(2\sqrt{z}\right) + 21\left(262\,144\,z^5 - 393\,216\,z^4 - 15\,575\,040\,z^3 - 22\,913\,280\,z^2 - 35\,921\,340\,z - 15\,663\,375\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ag8x.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{7}{2}, -\frac{15}{4}; -z\right) = \frac{1}{73\,513\,440\,z^{5/2}} \left(-2\sqrt{z}\,\left(524\,288\,z^5 + 9\,633\,792\,z^4 + 70\,447\,104\,z^3 - 213\,857\,280\,z^2 + 315\,773\,640\,z - 328\,930\,875\right)\cos\left(2\sqrt{z}\right) - 21\left(262\,144\,z^5 + 393\,216\,z^4 - 15\,575\,040\,z^3 + 22\,913\,280\,z^2 - 35\,921\,340\,z + 15\,663\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.ag8y.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{7}{2}, -\frac{13}{4}; z\right) = \frac{1}{6\,205\,680\sqrt{2}\, z^{7/4}}\left(\left(4z\left(65\,536z^4 - 704\,512z^3 + 6\,374\,400z^2 + 7\,959\,360z + 10\,599\,435\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(262\,144z^4 - 876\,544z^3 - 7\,171\,840z^2 - 8\,426\,880z - 10\,599\,435\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(262\,144z^5 - 3\,538\,944z^4 + 27\,033\,600z^3 + 59\,431\,680z^2 + 94\,012\,380z + 95\,394\,915\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag8z.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{7}{2}, -\frac{13}{4}; -z\right) = -\frac{1}{6\,205\,680\sqrt{2}\, z^{7/4}}\left(\left(4z\left(65\,536z^4 + 704\,512z^3 + 6\,374\,400z^2 - 7\,959\,360z + 10\,599\,435\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(262\,144z^4 + 876\,544z^3 - 7\,171\,840z^2 + 8\,426\,880z - 10\,599\,435\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - \left(262\,144z^5 + 3\,538\,944z^4 + 27\,033\,600z^3 - 59\,431\,680z^2 + 94\,012\,380z - 95\,394\,915\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag90.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{7}{2}, -\frac{11}{4}; z\right) = \frac{1}{4\,900\,896 z^{5/2}}\left(-2\sqrt{z}\left(851\,968z^4 - 3\,096\,576z^3 - 11\,321\,856z^2 - 13\,366\,080z - 13\,157\,235\right)\cosh\left(2\sqrt{z}\right) - \left(262\,144z^5 - 1\,835\,008z^4 + 18\,192\,384z^3 + 22\,014\,720z^2 + 30\,909\,060z + 13\,157\,235\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ag91.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{7}{2}, -\frac{11}{4}; -z\right) = \frac{1}{4\,900\,896 z^{5/2}}\left(\left(262\,144z^5 + 1\,835\,008z^4 + 18\,192\,384z^3 - 22\,014\,720z^2 + 30\,909\,060z - 13\,157\,235\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\left(851\,968z^4 + 3\,096\,576z^3 - 11\,321\,856z^2 + 13\,366\,080z - 13\,157\,235\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.ag92.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{7}{2}, -\frac{9}{4}; z\right) = \frac{1}{477\,360\sqrt{2}\, z^{7/4}}\left(\left(4z\left(-118\,784z^3 + 403\,200z^2 + 428\,880z + 460\,845\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(32\,768z^4 - 55\,296z^3 + 1\,372\,800z^2 + 1\,191\,960z + 1\,382\,535\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(-147\,456z^4 + 486\,400z^3 + 1\,108\,800z^2 + 1\,455\,300z + 1\,382\,535\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.ag93.01

$${}_1F_2\left(\frac{21}{4};\frac{7}{2},-\frac{9}{4};-z\right)=\frac{1}{477\,360\sqrt{2}\,z^{7/4}}\left(\left(-4z\left(118\,784z^3+403\,200z^2-428\,880z+460\,845\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(32\,768z^4+55\,296z^3+1\,372\,800z^2-1\,191\,960z+1\,382\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.3\left(147\,456z^4+486\,400z^3-1\,108\,800z^2+1\,455\,300z-1\,382\,535\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag94.01

$${}_1F_2\left(\frac{21}{4};\frac{7}{2},-\frac{7}{4};z\right)=\frac{1}{445\,536z^{5/2}}\left(2\sqrt{z}\left(32\,768z^4+67\,584z^3+798\,336z^2+687\,960z+626\,535\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(475\,136z^4-1\,311\,744z^3-1\,270\,080z^2-1\,523\,340z-626\,535\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag95.01

$${}_1F_2\left(\frac{21}{4};\frac{7}{2},-\frac{7}{4};-z\right)=\frac{1}{445\,536z^{5/2}}\left(2\sqrt{z}\left(32\,768z^4-67\,584z^3+798\,336z^2-687\,960z+626\,535\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(475\,136z^4+1\,311\,744z^3-1\,270\,080z^2+1\,523\,340z-626\,535\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag96.01

$${}_1F_2\left(\frac{21}{4};\frac{7}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{53\,040\sqrt{2}\,z^{7/4}}\left(\left(4z\left(4096z^3+30\,976z^2+32\,048z+24\,255\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(61\,440z^3-124\,160z^2-70\,224z-72\,765\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(16\,384z^4+66\,560z^3+251\,328z^2+252\,252z+218\,295\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag97.01

$${}_1F_2\left(\frac{21}{4};\frac{7}{2},-\frac{5}{4};-z\right)=$$
$$\frac{1}{53\,040\sqrt{2}\,z^{7/4}}\left(\left(4z\left(4096z^3-30\,976z^2+32\,048z-24\,255\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(61\,440z^3+124\,160z^2-70\,224z+72\,765\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-16\,384z^4+66\,560z^3-251\,328z^2+252\,252z-218\,295\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag98.01

$${}_1F_2\left(\frac{21}{4};\frac{7}{2},-\frac{3}{4};z\right)=\frac{1}{63\,648z^{5/2}}\left(-6\sqrt{z}\left(20\,480z^3-28\,416z^2-15\,120z-12\,285\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(16\,384z^4+125\,952z^3+100\,800z^2+94\,500z+36\,855\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag99.01

$${}_1F_2\left(\frac{21}{4};\frac{7}{2},-\frac{3}{4};-z\right)=\frac{1}{63\,648z^{5/2}}\left(6\sqrt{z}\left(20\,480z^3+28\,416z^2-15\,120z+12\,285\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(-16\,384z^4+125\,952z^3-100\,800z^2+94\,500z-36\,855\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag9a.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, -\frac{1}{4}; z\right) =$$
$$\frac{1}{10\,608\sqrt{2}\,z^{7/4}}\left(\left(4z\left(-7936z^2+4192z+1617\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2048z^3+19\,456z^2+5544z+4851\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-29\,696z^3+29\,568z^2+19\,404z+14\,553\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag9b.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, -\frac{1}{4}; -z\right) =$$
$$-\frac{1}{10\,608\sqrt{2}\,z^{7/4}}\left(\left(-4z\left(7936z^2+4192z-1617\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2048z^3-19\,456z^2+5544z-4851\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(29\,696z^3+29\,568z^2-19\,404z+14\,553\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag9c.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{21\,216z^{5/2}}\left(2\sqrt{z}\left(2048z^3+19\,456z^2+4200z+2835\right)\cosh\left(2\sqrt{z}\right)+\left(29\,696z^3-13\,440z^2-7980z-2835\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ag9d.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{1}{4}; -z\right) =$$
$$\frac{1}{21\,216z^{5/2}}\left(-2\sqrt{z}\left(2048z^3-19\,456z^2+4200z-2835\right)\cos\left(2\sqrt{z}\right)-\left(29\,696z^3+13\,440z^2-7980z+2835\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ag9e.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{3}{4}; z\right) = \frac{1}{10\,608\sqrt{2}\,z^{7/4}}\left(\left(4z\left(256z^2+2848z+147\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.28\sqrt{z}\left(512z^2-96z-63\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(1024z^3+8064z^2+2268z+1323\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag9f.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{3}{4}; -z\right) =$$
$$-\frac{1}{10\,608\sqrt{2}\,z^{7/4}}\left(\left(4z\left(256z^2-2848z+147\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+28\sqrt{z}\left(512z^2+96z-63\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-1024z^3+8064z^2-2268z+1323\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag9g.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{5}{4}; z\right) = \frac{2\sqrt{z}\left(3328z^2-672z-315\right)\cosh\left(2\sqrt{z}\right)+\left(1024z^3+8064z^2+1092z+315\right)\sinh\left(2\sqrt{z}\right)}{21\,216z^{5/2}}$$

07.22.03.ag9h.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{5}{4}; -z\right) = \frac{2\sqrt{z}\,\left(3328 z^2 + 672 z - 315\right)\cos\left(2\sqrt{z}\right) + \left(-1024 z^3 + 8064 z^2 - 1092 z + 315\right)\sin\left(2\sqrt{z}\right)}{21\,216\, z^{5/2}}$$

07.22.03.ag9i.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{7}{4}; z\right) = \frac{1}{3536\sqrt{2}\, z^{7/4}}$$
$$\left(\left(4 z (400 z - 21) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(128 z^2 + 824 z + 63\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(1472 z^2 - 588 z - 189\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag9j.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{7}{4}; -z\right) = \frac{1}{3536\sqrt{2}\, z^{7/4}}$$
$$\left(\left(4 z (400 z + 21) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(128 z^2 - 824 z + 63\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-1472 z^2 - 588 z + 189\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag9k.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{9}{4}; z\right) = \frac{5\left(2\sqrt{z}\,\left(128 z^2 + 504 z + 63\right)\cosh\left(2\sqrt{z}\right) + 21\left(64 z^2 - 28 z - 3\right)\sinh\left(2\sqrt{z}\right)\right)}{21\,216\, z^{5/2}}$$

07.22.03.ag9l.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{9}{4}; -z\right) = \frac{5\left(2\sqrt{z}\,\left(128 z^2 - 504 z + 63\right)\cos\left(2\sqrt{z}\right) + 21\left(64 z^2 + 28 z - 3\right)\sin\left(2\sqrt{z}\right)\right)}{21\,216\, z^{5/2}}$$

07.22.03.ag9m.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{11}{4}; z\right) =$$
$$\frac{1}{3536\sqrt{2}\, z^{7/4}}\left(7\left(4 z (16 z + 47) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 36\sqrt{z}\,(16 z - 9) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(64 z^2 + 60 z + 63\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag9n.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{11}{4}; -z\right) =$$
$$\frac{1}{3536\sqrt{2}\, z^{7/4}}\left(7\left(4 z (16 z - 47) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 36\sqrt{z}\,(16 z + 9) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-64 z^2 + 60 z - 63\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag9o.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{13}{4}; z\right) = \frac{15\left(14\sqrt{z}\,(16 z - 9)\cosh\left(2\sqrt{z}\right) + \left(64 z^2 - 28 z + 63\right)\sinh\left(2\sqrt{z}\right)\right)}{7072\, z^{5/2}}$$

07.22.03.ag9p.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{13}{4}; -z\right) = \frac{15\left(\left(64 z^2 + 28 z + 63\right)\sin\left(2\sqrt{z}\right) - 14\sqrt{z}\,(16 z + 9)\cos\left(2\sqrt{z}\right)\right)}{7072\, z^{5/2}}$$

07.22.03.ag9q.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{15}{4}; z\right) =$$

$$\frac{1}{7072\sqrt{2}\, z^{9/4}}\left(77\left(2\sqrt{z}\,(44z-21) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(64z^2-120z+63\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 72 z^{3/2} I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag9r.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{15}{4}; -z\right) =$$

$$\frac{1}{7072\sqrt{2}\, z^{9/4}}\left(77\left(-2\sqrt{z}\,(44z+21) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(64z^2+120z+63\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 72 z^{3/2} J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag9s.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{17}{4}; z\right) = \frac{15\left(2\sqrt{z}\,(8z-21)\cosh\left(2\sqrt{z}\right) + (20z+21)\sinh\left(2\sqrt{z}\right)\right)}{544 z^{5/2}}$$

07.22.03.ag9t.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{17}{4}; -z\right) = -\frac{15\left(2\sqrt{z}\,(8z+21)\cos\left(2\sqrt{z}\right) + (20z-21)\sin\left(2\sqrt{z}\right)\right)}{544 z^{5/2}}$$

07.22.03.ag9u.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{19}{4}; z\right) = \frac{1}{226\,304\sqrt{2}\, z^{13/4}}$$
$$\left(1155\left(2\sqrt{z}\,\left(128z^2-256z-77\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 7(160z+33) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(128z^2-224z-231\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag9v.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{19}{4}; -z\right) = -\frac{1}{226\,304\sqrt{2}\, z^{13/4}}$$
$$\left(1155\left(2\sqrt{z}\,\left(128z^2+256z-77\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - 7(160z-33) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(128z^2+224z-231\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.ag9w.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{21}{4}; z\right) = \frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right) - 6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32 z^{5/2}}$$

07.22.03.ag9x.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{21}{4}; -z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right) + (4z-3)\sin\left(2\sqrt{z}\right)\right)}{32 z^{5/2}}$$

07.22.03.ag9y.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{23}{4}; z\right) = \frac{1}{7\,241\,728\sqrt{2}\, z^{17/4}}$$
$$\left(21\,945\left(-22\sqrt{z}\,\left(256z^2+656z+525\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4096z^3+22\,784z^2+48\,048z+17\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.$$
$$\left. 2\sqrt{z}\,\left(3328z^2+11\,088z+17\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.ag9z.01

$${}_1F_2\left(\frac{21}{4}; \frac{7}{2}, \frac{23}{4}; -z\right) =$$
$$-\frac{1}{7\,241\,728\sqrt{2}\, z^{17/4}}\left(21\,945\left(22\sqrt{z}\,\left(256z^2-656z+525\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4096z^3-22\,784z^2+48\,048z-17\,325\right)\right.$$
$$\left. J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(3328z^2-11\,088z+17\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

For fixed z and $a_1 = \frac{21}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.aga0.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{18\,357\,356\,160\, z^{7/2}}\left(\left(33\,554\,432z^7-81\,788\,928z^6-28\,677\,242\,880z^5-231\,210\,270\,720z^4-1\,323\,241\,920\,000z^3-\right.\right.$$
$$\left.6\,875\,344\,476\,000z^2-17\,268\,307\,056\,000z-8\,319\,366\,680\,625\right)\sinh\left(2\sqrt{z}\right)-$$
$$2\sqrt{z}\,\left(96\,468\,992z^6-2\,607\,022\,080z^5-46\,600\,519\,680z^4-269\,521\,274\,880z^3-\right.$$
$$\left.\left.1\,598\,917\,320\,000z^2-6\,175\,818\,148\,500z-8\,319\,366\,680\,625\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.aga1.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{18\,357\,356\,160\, z^{7/2}}\left(2\sqrt{z}\,\left(96\,468\,992z^6+2\,607\,022\,080z^5-46\,600\,519\,680z^4+269\,521\,274\,880z^3-1\,598\,917\,320\,000z^2+\right.\right.$$
$$\left.6\,175\,818\,148\,500z-8\,319\,366\,680\,625\right)\cos\left(2\sqrt{z}\right)+$$
$$\left(33\,554\,432z^7+81\,788\,928z^6-28\,677\,242\,880z^5+231\,210\,270\,720z^4-1\,323\,241\,920\,000z^3+\right.$$
$$\left.\left.6\,875\,344\,476\,000z^2-17\,268\,307\,056\,000z+8\,319\,366\,680\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aga2.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{9}{2}, -\frac{21}{4}; z\right) = \frac{1}{1\,265\,958\,720\sqrt{2}\, z^{11/4}} $$
$$ \left(\left(4z\left(-8\,388\,608 z^5 + 277\,020\,672 z^4 + 3\,007\,610\,880 z^3 + 14\,891\,558\,400 z^2 + 81\,112\,933\,440 z + 221\,793\,177\,375\right)\right.\right. $$
$$ I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(4\,194\,304 z^6 - 36\,962\,304 z^5 - 2\,430\,763\,008 z^4 - 15\,023\,278\,080 z^3 - \right. $$
$$ \left. 83\,491\,611\,840 z^2 - 370\,077\,758\,820 z - 665\,379\,532\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 3\left(-12\,582\,912 z^6 + 378\,011\,648 z^5 + 4\,913\,725\,440 z^4 + 26\,500\,239\,360 z^3 + 147\,398\,771\,520 z^2 + \right. $$
$$ \left.\left. 496\,816\,717\,320 z + 665\,379\,532\,125\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.aga3.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{1}{1\,265\,958\,720\sqrt{2}\, z^{11/4}} $$
$$ \left(\left(4z\left(8\,388\,608 z^5 + 277\,020\,672 z^4 - 3\,007\,610\,880 z^3 + 14\,891\,558\,400 z^2 - 81\,112\,933\,440 z + 221\,793\,177\,375\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\,\left(4\,194\,304 z^6 + 36\,962\,304 z^5 - 2\,430\,763\,008 z^4 + 15\,023\,278\,080 z^3 - 83\,491\,611\,840 z^2 + 370\,077\,758\,820 z - \right. $$
$$ 665\,379\,532\,125\left) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - 3\left(12\,582\,912 z^6 + 378\,011\,648 z^5 - 4\,913\,725\,440 z^4 + \right.\right. $$
$$ \left.\left. 26\,500\,239\,360 z^3 - 147\,398\,771\,520 z^2 + 496\,816\,717\,320 z - 665\,379\,532\,125\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.aga4.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{9}{2}, -\frac{19}{4}; z\right) = $$
$$ \frac{1}{798\,145\,920 z^{7/2}}\left(3\left(8\,388\,608 z^6 - 306\,708\,480 z^5 - 2\,607\,022\,080 z^4 - 12\,831\,436\,800 z^3 - 63\,488\,880\,000 z^2 - \right.\right. $$
$$ 156\,257\,829\,000 z - 74\,949\,249\,375\left)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(4\,194\,304 z^6 - 51\,118\,080 z^5 - 1\,629\,388\,800 z^4 - \right.\right. $$
$$ \left.\left. 8\,370\,984\,960 z^3 - 45\,110\,520\,000 z^2 - 168\,976\,489\,500 z - 224\,847\,748\,125\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.aga5.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{9}{2}, -\frac{19}{4}; -z\right) = $$
$$ \frac{1}{798\,145\,920 z^{7/2}}\left(2\sqrt{z}\,\left(4\,194\,304 z^6 + 51\,118\,080 z^5 - 1\,629\,388\,800 z^4 + 8\,370\,984\,960 z^3 - 45\,110\,520\,000 z^2 + \right.\right. $$
$$ 168\,976\,489\,500 z - 224\,847\,748\,125\left)\cos\left(2\sqrt{z}\right) - 3\left(8\,388\,608 z^6 + 306\,708\,480 z^5 - 2\,607\,022\,080 z^4 + \right.\right. $$
$$ \left.\left. 12\,831\,436\,800 z^3 - 63\,488\,880\,000 z^2 + 156\,257\,829\,000 z - 74\,949\,249\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aga6.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{9}{2}, -\frac{17}{4}; z\right) = -\frac{1}{421\,986\,240\sqrt{2}\, z^{11/4}} $$
$$ \left(7\left(4z\left(524\,288z^5 - 7\,667\,712z^4 - 114\,708\,480z^3 - 467\,957\,760z^2 - 2\,382\,926\,040z - 6\,336\,947\,925\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(-1\,835\,008z^5 + 88\,670\,208z^4 + 528\,783\,360z^3 + 2\,532\,222\,720z^2 + 10\,769\,891\,220z + 19\,010\,843\,775\right) $$
$$ I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(2\,097\,152z^6 - 28\,311\,552z^5 - 553\,205\,760z^4 - 2\,575\,779\,840z^3 - \right. $$
$$ \left.\left. 13\,186\,562\,400z^2 - 43\,173\,012\,960z - 57\,032\,531\,325\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.aga7.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{9}{2}, -\frac{17}{4}; -z\right) = \frac{1}{421\,986\,240\sqrt{2}\, z^{11/4}} $$
$$ \left(7\left(4z\left(524\,288z^5 + 7\,667\,712z^4 - 114\,708\,480z^3 + 467\,957\,760z^2 - 2\,382\,926\,040z + 6\,336\,947\,925\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 4\sqrt{z}\left(1\,835\,008z^5 + 88\,670\,208z^4 - 528\,783\,360z^3 + 2\,532\,222\,720z^2 - 10\,769\,891\,220z + 19\,010\,843\,775\right) $$
$$ J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-2\,097\,152z^6 - 28\,311\,552z^5 + 553\,205\,760z^4 - 2\,575\,779\,840z^3 + \right. $$
$$ \left.\left. 13\,186\,562\,400z^2 - 43\,173\,012\,960z + 57\,032\,531\,325\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg) $$

07.22.03.aga8.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{9}{2}, -\frac{15}{4}; z\right) = \frac{1}{42\,007\,680\, z^{7/2}} $$
$$ \left(\left(2\,097\,152z^6 - 29\,884\,416z^5 - 316\,293\,120z^4 - 1\,283\,143\,680z^3 - 5\,954\,588\,640z^2 - 14\,284\,998\,000z - 6\,813\,568\,125\right)\right. $$
$$ \sinh\left(2\sqrt{z}\right) - $$
$$ \left. 6\sqrt{z}\left(262\,144z^5 - 22\,151\,168z^4 - 101\,836\,800z^3 - 481\,178\,880z^2 - 1\,733\,413\,500z - 2\,271\,189\,375\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.aga9.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{42\,007\,680\, z^{7/2}} $$
$$ \left(\left(-2\,097\,152z^6 - 29\,884\,416z^5 + 316\,293\,120z^4 - 1\,283\,143\,680z^3 + 5\,954\,588\,640z^2 - 14\,284\,998\,000z + 6\,813\,568\,125\right)\right. $$
$$ \sin\left(2\sqrt{z}\right) - $$
$$ \left. 6\sqrt{z}\left(262\,144z^5 + 22\,151\,168z^4 - 101\,836\,800z^3 + 481\,178\,880z^2 - 1\,733\,413\,500z + 2\,271\,189\,375\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.agaa.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, -\frac{13}{4}; z\right) =$$
$$\frac{1}{24\,822\,720\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(65\,536z^4+5\,345\,280z^3+17\,149\,440z^2+79\,603\,920z+204\,417\,675\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(262\,144z^5-3\,538\,944z^4-22\,609\,920z^3-88\,208\,640z^2-355\,621\,860z-613\,253\,025\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.15\left(1\,654\,784z^4+6\,561\,792z^3+29\,975\,616z^2+94\,486\,392z+122\,650\,605\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agab.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, -\frac{13}{4}; -z\right) =$$
$$-\frac{1}{24\,822\,720\sqrt{2}\,z^{11/4}}\left(7\left(-4z\left(65\,536z^4-5\,345\,280z^3+17\,149\,440z^2-79\,603\,920z+204\,417\,675\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(262\,144z^5+3\,538\,944z^4-22\,609\,920z^3+88\,208\,640z^2-355\,621\,860z+613\,253\,025\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)$$
$$\left.\left.J_{-\frac{1}{4}}\left(\sqrt{z}\right)-15\left(1\,654\,784z^4-6\,561\,792z^3+29\,975\,616z^2-94\,486\,392z+122\,650\,605\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agac.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, -\frac{11}{4}; z\right) =$$
$$\frac{1}{2\,800\,512z^{7/2}}\left(-2\sqrt{z}\left(262\,144z^5-3\,145\,728z^4-13\,658\,112z^3-53\,464\,320z^2-182\,948\,220z-234\,950\,625\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(524\,288z^5+15\,925\,248z^4+50\,319\,360z^3+213\,857\,280z^2+496\,215\,720z+234\,950\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agad.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{2\,800\,512z^{7/2}}\left(\left(-524\,288z^5+15\,925\,248z^4-50\,319\,360z^3+213\,857\,280z^2-496\,215\,720z+234\,950\,625\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(262\,144z^5+3\,145\,728z^4-13\,658\,112z^3+53\,464\,320z^2-182\,948\,220z+234\,950\,625\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.agae.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, -\frac{9}{4}; z\right) =$$
$$-\frac{1}{1\,909\,440\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(32\,768z^4-317\,440z^3-762\,240z^2-3\,084\,840z-7\,571\,025\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(114\,688z^4+1\,244\,160z^3+3\,620\,160z^2+13\,580\,820z+22\,713\,075\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(131\,072z^5-1\,351\,680z^4-4\,631\,040z^3-17\,946\,720z^2-53\,721\,360z-68\,139\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agaf.01

$${}_1F_2\left(\frac{21}{4};\frac{9}{2},-\frac{9}{4};-z\right)=$$
$$-\frac{1}{1\,909\,440\sqrt{2}\,z^{11/4}}\left(7\left(4z\left(32\,768z^4+317\,440z^3-762\,240z^2+3\,084\,840z-7\,571\,025\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\right.\right.$$
$$\sqrt{z}\left(114\,688z^4-1\,244\,160z^3+3\,620\,160z^2-13\,580\,820z+22\,713\,075\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(131\,072z^5+1\,351\,680z^4-4\,631\,040z^3+17\,946\,720z^2-53\,721\,360z+68\,139\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agag.01

$${}_1F_2\left(\frac{21}{4};\frac{9}{2},-\frac{7}{4};z\right)=\frac{1}{254\,592z^{7/2}}\left(18\sqrt{z}\left(16\,384z^4+89\,088z^3+262\,080z^2+835\,380z+1\,044\,225\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(131\,072z^5-1\,056\,768z^4-2\,419\,200z^3-9\,041\,760z^2-20\,049\,120z-9\,398\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agah.01

$${}_1F_2\left(\frac{21}{4};\frac{9}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{254\,592z^{7/2}}\left(\left(131\,072z^5+1\,056\,768z^4-2\,419\,200z^3+9\,041\,760z^2-20\,049\,120z+9\,398\,025\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.18\sqrt{z}\left(16\,384z^4-89\,088z^3+262\,080z^2-835\,380z+1\,044\,225\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.agai.01

$${}_1F_2\left(\frac{21}{4};\frac{9}{2},-\frac{5}{4};z\right)=\frac{1}{212\,160\sqrt{2}\,z^{11/4}}$$
$$\left(7\left(4z\left(24\,576z^3+44\,288z^2+142\,560z+329\,175\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(16\,384z^4-97\,280z^3-181\,824z^2-615\,780z-\right.\right.\right.$$
$$\left.\left.\left.987\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(81\,920z^4+288\,768z^3+868\,032z^2+2\,411\,640z+2\,962\,575\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agaj.01

$${}_1F_2\left(\frac{21}{4};\frac{9}{2},-\frac{5}{4};-z\right)=\frac{1}{212\,160\sqrt{2}\,z^{11/4}}$$
$$\left(7\left(-4z\left(24\,576z^3-44\,288z^2+142\,560z-329\,175\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(16\,384z^4+97\,280z^3-181\,824z^2+615\,780z-\right.\right.\right.$$
$$\left.\left.\left.987\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(81\,920z^4-288\,768z^3+868\,032z^2-2\,411\,640z+2\,962\,575\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agak.01

$${}_1F_2\left(\frac{21}{4};\frac{9}{2},-\frac{3}{4};z\right)=-\frac{1}{254\,592z^{7/2}}\left(7\left(2\sqrt{z}\left(16\,384z^4-70\,656z^3-129\,600z^2-372\,060z-447\,525\right)\cosh\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.3\left(32\,768z^4+51\,200z^3+155\,520z^2+322\,920z+149\,175\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agal.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{1}{254\,592\, z^{7/2}}\left(7\left(2\sqrt{z}\,\left(16\,384\, z^4 + 70\,656\, z^3 - 129\,600\, z^2 + 372\,060\, z - 447\,525\right)\cos\left(2\sqrt{z}\right) + 3\left(32\,768\, z^4 - 51\,200\, z^3 + 155\,520\, z^2 - 322\,920\, z + 149\,175\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agam.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, -\frac{1}{4}; z\right) = -\frac{1}{42\,432\sqrt{2}\, z^{11/4}}\left(7\left(4z\left(2048\, z^3 - 4096\, z^2 - 8184\, z - 17\,325\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(13\,312\, z^3 + 11\,904\, z^2 + 34\,452\, z + 51\,975\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(8192\, z^4 - 27\,648\, z^3 - 53\,856\, z^2 - 133\,056\, z - 155\,925\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agan.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, -\frac{1}{4}; -z\right) = \frac{1}{42\,432\sqrt{2}\, z^{11/4}}\left(7\left(4z\left(2048\, z^3 + 4096\, z^2 - 8184\, z + 17\,325\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(13\,312\, z^3 - 11\,904\, z^2 + 34\,452\, z - 51\,975\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(-8192\, z^4 - 27\,648\, z^3 + 53\,856\, z^2 - 133\,056\, z + 155\,925\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agao.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{1}{4}; z\right) = \frac{1}{84\,864\, z^{7/2}}\left(7\left(2\sqrt{z}\,\left(13\,312\, z^3 + 9600\, z^2 + 23\,220\, z + 26\,325\right)\cosh\left(2\sqrt{z}\right) + \left(8192\, z^4 - 15\,360\, z^3 - 31\,200\, z^2 - 58\,320\, z - 26\,325\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agap.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{1}{4}; -z\right) = -\frac{1}{84\,864\, z^{7/2}}\left(7\left(\left(8192\, z^4 + 15\,360\, z^3 - 31\,200\, z^2 + 58\,320\, z - 26\,325\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(13\,312\, z^3 - 9600\, z^2 + 23\,220\, z - 26\,325\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agaq.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{3}{4}; z\right) = \frac{1}{42\,432\sqrt{2}\, z^{11/4}}\left(7\left(4z\left(1792\, z^2 + 624\, z + 1155\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(1024\, z^3 - 1152\, z^2 - 2532\, z - 3465\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(2048\, z^3 + 1600\, z^2 + 3192\, z + 3465\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agar.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{3}{4}; -z\right) = -\frac{1}{42\,432\sqrt{2}\, z^{11/4}}\left(7\left(-4z\left(1792\, z^2 - 624\, z + 1155\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(1024\, z^3 + 1152\, z^2 - 2532\, z + 3465\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(2048\, z^3 - 1600\, z^2 + 3192\, z - 3465\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agas.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{5}{4}; z\right) =$$

$$\frac{1}{84\,864\, z^{7/2}}\left(7\left(2\sqrt{z}\,\left(1024 z^3 - 1152 z^2 - 1980 z - 2025\right)\cosh\left(2\sqrt{z}\right) + 3\left(2048 z^3 + 1024 z^2 + 1560 z + 675\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agat.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{5}{4}; -z\right) =$$

$$\frac{1}{84\,864\, z^{7/2}}\left(7\left(2\sqrt{z}\,\left(1024 z^3 + 1152 z^2 - 1980 z + 2025\right)\cos\left(2\sqrt{z}\right) + 3\left(2048 z^3 - 1024 z^2 + 1560 z - 675\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agau.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{7}{4}; z\right) = \frac{1}{14\,144\sqrt{2}\, z^{11/4}}\left(7\left(4 z\left(128 z^2 - 72 z - 105\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$

$$\left.\left.4\sqrt{z}\,\left(704 z^2 + 276 z + 315\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + \left(512 z^3 - 864 z^2 - 1008 z - 945\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agav.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{7}{4}; -z\right) =$$

$$\frac{1}{14\,144\sqrt{2}\, z^{11/4}}\left(7\left(4 z\left(128 z^2 + 72 z - 105\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(704 z^2 - 276 z + 315\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$

$$\left.\left.\left(512 z^3 + 864 z^2 - 1008 z + 945\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agaw.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{9}{4}; z\right) = \frac{35\left(6\sqrt{z}\,\left(192 z^2 + 92 z + 75\right)\cosh\left(2\sqrt{z}\right) + \left(512 z^3 - 864 z^2 - 576 z - 225\right)\sinh\left(2\sqrt{z}\right)\right)}{84\,864\, z^{7/2}}$$

07.22.03.agax.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{9}{4}; -z\right) = \frac{35\left(\left(512 z^3 + 864 z^2 - 576 z + 225\right)\sin\left(2\sqrt{z}\right) - 6\sqrt{z}\,\left(192 z^2 - 92 z + 75\right)\cos\left(2\sqrt{z}\right)\right)}{84\,864\, z^{7/2}}$$

07.22.03.agay.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{11}{4}; z\right) = \frac{1}{14\,144\sqrt{2}\, z^{11/4}}$$

$$\left(49\left(4 z\left(64 z + 15\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(64 z^2 - 132 z - 45\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(64 z^2 + 72 z + 45\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agaz.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{11}{4}; -z\right) = \frac{1}{14\,144\sqrt{2}\, z^{11/4}}$$

$$\left(49\left(4\left(15 - 64 z\right) z\, J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(64 z^2 + 132 z - 45\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(64 z^2 - 72 z + 45\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agb0.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{13}{4}; z\right) = \frac{105\left(2\sqrt{z}\,\left(64z^2-156z-45\right)\cosh\left(2\sqrt{z}\right)+\left(128z^2+216z+45\right)\sinh\left(2\sqrt{z}\right)\right)}{28\,288\,z^{7/2}}$$

07.22.03.agb1.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{13}{4}; -z\right) = -\frac{105\left(2\sqrt{z}\,\left(64z^2+156z-45\right)\cos\left(2\sqrt{z}\right)+\left(128z^2-216z+45\right)\sin\left(2\sqrt{z}\right)\right)}{28\,288\,z^{7/2}}$$

07.22.03.agb2.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{15}{4}; z\right) =$$

$$\frac{1}{14\,144\sqrt{2}\,z^{11/4}}\left(539\left(4z(8z-19)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+16\sqrt{z}\,(z+9)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(32z^2-72z-45\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agb3.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{15}{4}; -z\right) =$$

$$-\frac{1}{14\,144\sqrt{2}\,z^{11/4}}\left(539\left(4z(8z+19)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+16(z-9)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-32z^2-72z+45\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agb4.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{17}{4}; z\right) = \frac{105\left(\left(32z^2-48z-45\right)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,(4z-15)\cosh\left(2\sqrt{z}\right)\right)}{2176\,z^{7/2}}$$

07.22.03.agb5.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{17}{4}; -z\right) = -\frac{105\left(6\sqrt{z}\,(4z+15)\cos\left(2\sqrt{z}\right)+\left(32z^2+48z-45\right)\sin\left(2\sqrt{z}\right)\right)}{2176\,z^{7/2}}$$

07.22.03.agb6.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{19}{4}; z\right) = \frac{1}{113\,152\sqrt{2}\,z^{13/4}}$$

$$\left(8085\left(2(77-48z)\sqrt{z}\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(128z^2+32z-231\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+2(51-64z)\sqrt{z}\,I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agb7.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{19}{4}; -z\right) = -\frac{1}{113\,152\sqrt{2}\,z^{13/4}}$$

$$\left(8085\left(2\sqrt{z}\,(48z+77)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(128z^2-32z-231\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-2\sqrt{z}\,(64z+51)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agb8.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{21}{4}; z\right) = \frac{105\left(2\sqrt{z}\,(4z+15)\cosh\left(2\sqrt{z}\right)-3(8z+5)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.agb9.01

$${}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{21}{4}; -z\right) = \frac{105\left(2\sqrt{z}\,(4z-15)\cos\left(2\sqrt{z}\right)+3(5-8z)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.agba.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{23}{4}; z\right) = \frac{1}{3\,620\,864\sqrt{2}\, z^{17/4}}\left(153\,615\left(2\sqrt{z}\left(256 z^2+1936 z+1155\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\left(4352 z^2+11\,088 z+3465\right) I_{\frac{3}{4}}\left(\sqrt{z}\right) I_{-\frac{1}{4}}\left(\sqrt{z}\right)+ 2\sqrt{z}\left(256 z^2+2544 z+3465\right) I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

07.22.03.agbb.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) = \frac{1}{3\,620\,864\sqrt{2}\, z^{17/4}}\left(153\,615\left(2\sqrt{z}\left(256 z^2-1936 z+1155\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-4352 z^2+11\,088 z-3465\right) J_{\frac{3}{4}}\left(\sqrt{z}\right) J_{-\frac{1}{4}}\left(\sqrt{z}\right)- 2\sqrt{z}\left(256 z^2-2544 z+3465\right) J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right) $$

For fixed z and $a_1 = \frac{21}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.agbc.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{8\,158\,824\,960 z^{9/2}}\left(2\sqrt{z}\left(33\,554\,432 z^7+3\,030\,384\,640 z^6+58\,223\,493\,120 z^5+903\,930\,593\,280 z^4+12\,791\,338\,560\,000 z^3+ 117\,840\,206\,484\,000 z^2+547\,229\,452\,770\,000 z+795\,886\,079\,113\,125\right)\cosh\left(2\sqrt{z}\right)- \left(889\,192\,448 z^7+28\,966\,912\,000 z^6+454\,056\,345\,600 z^5+7\,057\,290\,240\,000 z^4+83\,143\,700\,640\,000 z^3+ 564\,497\,759\,826\,000 z^2+1\,608\,410\,891\,587\,500 z+795\,886\,079\,113\,125\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agbd.01

$$ {}_1F_2\left(\frac{21}{4}; \frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{8\,158\,824\,960 z^{9/2}}\left(\left(889\,192\,448 z^7-28\,966\,912\,000 z^6+454\,056\,345\,600 z^5-7\,057\,290\,240\,000 z^4+83\,143\,700\,640\,000 z^3- 564\,497\,759\,826\,000 z^2+1\,608\,410\,891\,587\,500 z-795\,886\,079\,113\,125\right)\sin\left(2\sqrt{z}\right)- 2\sqrt{z}\left(33\,554\,432 z^7-3\,030\,384\,640 z^6+58\,223\,493\,120 z^5-903\,930\,593\,280 z^4+12\,791\,338\,560\,000 z^3- 117\,840\,206\,484\,000 z^2+547\,229\,452\,770\,000 z-795\,886\,079\,113\,125\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.agbe.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{21}{4};z\right)=\frac{1}{562\,648\,320\sqrt{2}\,z^{15/4}}$$
$$\left(\left(4z\left(4\,194\,304z^6+276\,037\,632z^5+4\,347\,494\,400z^4+64\,693\,463\,040z^3+818\,503\,237\,440z^2+6\,210\,208\,966\,500z+\right.\right.\right.$$
$$\left.\left.20\,183\,179\,141\,125\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(96\,468\,992z^6+2\,480\,406\,528z^5+35\,791\,994\,880z^4+\right.\right.$$
$$\left.\left.522\,674\,933\,760z^3+5\,405\,070\,928\,320z^2+30\,163\,872\,123\,000z+60\,549\,537\,423\,375\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(16\,777\,216z^7+1\,204\,813\,824z^6+20\,213\,268\,480z^5+301\,087\,825\,920z^4+3\,898\,178\,161\,920z^3+\right.$$
$$\left.\left.31\,654\,322\,274\,960z^2+125\,091\,352\,039\,500z+181\,648\,612\,270\,125\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.agbf.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{21}{4};-z\right)=\frac{1}{562\,648\,320\sqrt{2}\,z^{15/4}}$$
$$\left(\left(-4z\left(4\,194\,304z^6-276\,037\,632z^5+4\,347\,494\,400z^4-64\,693\,463\,040z^3+818\,503\,237\,440z^2-6\,210\,208\,966\,500z+\right.\right.\right.$$
$$\left.\left.20\,183\,179\,141\,125\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(96\,468\,992z^6-2\,480\,406\,528z^5+35\,791\,994\,880z^4-\right.\right.$$
$$\left.\left.522\,674\,933\,760z^3+5\,405\,070\,928\,320z^2-30\,163\,872\,123\,000z+60\,549\,537\,423\,375\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(16\,777\,216z^7-1\,204\,813\,824z^6+20\,213\,268\,480z^5-301\,087\,825\,920z^4+3\,898\,178\,161\,920z^3-\right.$$
$$\left.\left.31\,654\,322\,274\,960z^2+125\,091\,352\,039\,500z-181\,648\,612\,270\,125\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.agbg.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{19}{4};z\right)=$$
$$\frac{1}{354\,731\,520z^{9/2}}\left(10\sqrt{z}\left(16\,777\,216z^6+347\,602\,944z^5+4\,736\,090\,112z^4+64\,157\,184\,000z^3+581\,424\,480\,000z^2+\right.\right.$$
$$\left.\left.2\,678\,186\,511\,000z+3\,882\,371\,117\,625\right)\cosh\left(2\sqrt{z}\right)-$$
$$\left(16\,777\,216z^7+886\,046\,720z^6+12\,600\,606\,720z^5+179\,640\,115\,200z^4+2\,065\,059\,360\,000z^3+\right.$$
$$\left.\left.13\,859\,706\,042\,000z^2+39\,273\,406\,672\,500z+19\,411\,855\,588\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agbh.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{354\,731\,520z^{9/2}}\left(10\sqrt{z}\left(16\,777\,216z^6-347\,602\,944z^5+4\,736\,090\,112z^4-64\,157\,184\,000z^3+581\,424\,480\,000z^2-\right.\right.$$
$$\left.\left.2\,678\,186\,511\,000z+3\,882\,371\,117\,625\right)\cos\left(2\sqrt{z}\right)+$$
$$\left(16\,777\,216z^7-886\,046\,720z^6+12\,600\,606\,720z^5-179\,640\,115\,200z^4+2\,065\,059\,360\,000z^3-\right.$$
$$\left.\left.13\,859\,706\,042\,000z^2+39\,273\,406\,672\,500z-19\,411\,855\,588\,125\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agbi.01

$$ {}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{17}{4};z\right)=-\frac{1}{187\,549\,440\sqrt{2}\,z^{15/4}}$$
$$\left(7\left(-4z\left(8\,650\,752z^5+135\,004\,160z^4+1\,754\,798\,080z^3+21\,476\,067\,840z^2+160\,536\,014\,100z+517\,517\,413\,875\right)\right.\right.$$
$$I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2\,097\,152z^6+81\,788\,928z^5+1\,026\,211\,840z^4+13\,921\,351\,680z^3+\right.$$
$$\left.140\,800\,770\,720z^2+777\,332\,278\,800z+1\,552\,552\,241\,625\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$5\left(7\,340\,032z^6+126\,353\,408z^5+1\,649\,713\,152z^4+20\,531\,644\,416z^3+164\,101\,058\,352z^2+\right.$$
$$\left.\left.\left.643\,833\,909\,180z+931\,531\,344\,975\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agbj.01

$$ {}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{17}{4};-z\right)=\frac{1}{187\,549\,440\sqrt{2}\,z^{15/4}}$$
$$\left(7\left(4z\left(8\,650\,752z^5-135\,004\,160z^4+1\,754\,798\,080z^3-21\,476\,067\,840z^2+160\,536\,014\,100z-517\,517\,413\,875\right)\right.\right.$$
$$J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(2\,097\,152z^6-81\,788\,928z^5+1\,026\,211\,840z^4-13\,921\,351\,680z^3+\right.$$
$$\left.140\,800\,770\,720z^2-777\,332\,278\,800z+1\,552\,552\,241\,625\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$5\left(7\,340\,032z^6-126\,353\,408z^5+1\,649\,713\,152z^4-20\,531\,644\,416z^3+164\,101\,058\,352z^2-\right.$$
$$\left.\left.\left.643\,833\,909\,180z+931\,531\,344\,975\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agbk.01

$$ {}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{18\,670\,080z^{9/2}}\left(2\sqrt{z}\left(2\,097\,152z^6+61\,341\,696z^5+706\,068\,480z^4+8\,982\,005\,760z^3+79\,695\,252\,000z^2+\right.\right.$$
$$\left.363\,390\,300\,000z+524\,644\,745\,625\right)\cosh\left(2\sqrt{z}\right)-\left(30\,408\,704z^6+408\,944\,640z^5+5\,132\,574\,720z^4+\right.$$
$$\left.\left.57\,099\,893\,760z^3+377\,675\,298\,000z^2+1\,062\,916\,627\,500z+524\,644\,745\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agbl.01

$$ {}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{18\,670\,080z^{9/2}}\left(2\sqrt{z}\left(2\,097\,152z^6-61\,341\,696z^5+706\,068\,480z^4-8\,982\,005\,760z^3+79\,695\,252\,000z^2-\right.\right.$$
$$\left.363\,390\,300\,000z+524\,644\,745\,625\right)\cos\left(2\sqrt{z}\right)+\left(-30\,408\,704z^6+408\,944\,640z^5-5\,132\,574\,720z^4+\right.$$
$$\left.\left.57\,099\,893\,760z^3-377\,675\,298\,000z^2+1\,062\,916\,627\,500z-524\,644\,745\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agbm.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{13}{4};z\right)=\frac{1}{11\,032\,320\sqrt{2}\,z^{15/4}}$$
$$\left(7\left(4z\left(262\,144z^5+5\,079\,040z^4+54\,056\,960z^3+631\,797\,120z^2+4\,633\,467\,300z+14\,786\,211\,825\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(3\,145\,728z^5+34\,488\,320z^4+417\,914\,880z^3+4\,104\,164\,160z^2+22\,349\,665\,800z+44\,358\,635\,475\right)$$
$$I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(1\,048\,576z^6+23\,724\,032z^5+258\,170\,880z^4+3\,035\,865\,600z^3+\right.$$
$$\left.\left.\left.23\,766\,961\,680z^2+92\,396\,789\,100z+133\,075\,906\,425\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agbn.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{13}{4};-z\right)=\frac{1}{11\,032\,320\sqrt{2}\,z^{15/4}}$$
$$\left(7\left(4z\left(262\,144z^5-5\,079\,040z^4+54\,056\,960z^3-631\,797\,120z^2+4\,633\,467\,300z-14\,786\,211\,825\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(3\,145\,728z^5-34\,488\,320z^4+417\,914\,880z^3-4\,104\,164\,160z^2+22\,349\,665\,800z-44\,358\,635\,475\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1\,048\,576z^6+23\,724\,032z^5-258\,170\,880z^4+3\,035\,865\,600z^3-\right.$$
$$\left.\left.\left.23\,766\,961\,680z^2+92\,396\,789\,100z-133\,075\,906\,425\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agbo.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{11}{4};z\right)=\frac{1}{1\,244\,672\,z^{9/2}}$$
$$\left(2\sqrt{z}\left(2\,621\,440z^5+24\,707\,072z^4+285\,143\,040z^3+2\,459\,358\,720z^2+11\,068\,785\,000z+15\,898\,325\,625\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left(1\,048\,576z^6+16\,252\,928z^5+167\,731\,200z^4+1\,782\,144\,000z^3+\right.$$
$$\left.\left.11\,565\,000\,720z^2+32\,266\,552\,500z+15\,898\,325\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agbp.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{11}{4};-z\right)=$$
$$\frac{1}{1\,244\,672\,z^{9/2}}\left(\left(-1\,048\,576z^6+16\,252\,928z^5-167\,731\,200z^4+1\,782\,144\,000z^3-11\,565\,000\,720z^2+\right.\right.$$
$$\left.32\,266\,552\,500z-15\,898\,325\,625\right)\sin\left(2\sqrt{z}\right)-$$
$$\left.2\sqrt{z}\left(2\,621\,440z^5-24\,707\,072z^4+285\,143\,040z^3-2\,459\,358\,720z^2+11\,068\,785\,000z-15\,898\,325\,625\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.agbq.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{9}{4};z\right)=$$
$$-\frac{1}{848\,640\sqrt{2}\,z^{15/4}}\left(7\left(-20z\left(49\,152z^4+388\,096z^3+4\,235\,328z^2+30\,284\,100z+95\,394\,915\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(131\,072z^5+1\,433\,600z^4+14\,415\,360z^3+135\,897\,120z^2+726\,818\,400z+1\,430\,923\,725\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(1\,114\,112z^5+9\,523\,200z^4+102\,562\,560z^3+780\,539\,760z^2+2\,998\,125\,900z+4\,292\,771\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agbr.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{9}{4};-z\right)=$$
$$-\frac{1}{848\,640\sqrt{2}\,z^{15/4}}\left(7\left(20z\left(49\,152z^4-388\,096z^3+4\,235\,328z^2-30\,284\,100z+95\,394\,915\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(131\,072z^5-1\,433\,600z^4+14\,415\,360z^3-135\,897\,120z^2+726\,818\,400z-1\,430\,923\,725\right)$$
$$J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1\,114\,112z^5+9\,523\,200z^4-102\,562\,560z^3+\right.$$
$$\left.\left.780\,539\,760z^2-2\,998\,125\,900z+4\,292\,771\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\Bigg)$$

07.22.03.agbs.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{7}{4};z\right)=$$
$$\frac{1}{113\,152z^{9/2}}\left(2\sqrt{z}\left(131\,072z^5+1\,073\,152z^4+10\,483\,200z^3+86\,879\,520z^2+384\,274\,800z+548\,218\,125\right)\cosh\left(2\sqrt{z}\right)-\right.$$
$$\left.\left(851\,968z^5+6\,451\,200z^4+63\,947\,520z^3+404\,323\,920z^2+1\,115\,232\,300z+548\,218\,125\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agbt.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{113\,152z^{9/2}}\left(\left(851\,968z^5-6\,451\,200z^4+63\,947\,520z^3-404\,323\,920z^2+1\,115\,232\,300z-548\,218\,125\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(131\,072z^5-1\,073\,152z^4+10\,483\,200z^3-86\,879\,520z^2+384\,274\,800z-548\,218\,125\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.agbu.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{282\,880\sqrt{2}\,z^{15/4}}\left(21\left(4z\left(16\,384z^4+84\,992z^3+826\,560z^2+5\,705\,700z+17\,665\,725\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\right.\right.$$
$$\left(81\,920z^4+587\,776z^3+5\,215\,680z^2+27\,211\,800z+52\,997\,175\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(65\,536z^5+438\,272z^4+4\,055\,808z^3+29\,623\,440z^2+111\,919\,500z+158\,991\,525\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agbv.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{5}{4};-z\right)=$$
$$-\frac{1}{282\,880\sqrt{2}\,z^{15/4}}\left(21\left(4z\left(16\,384z^4-84\,992z^3+826\,560z^2-5\,705\,700z+17\,665\,725\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$4\sqrt{z}\left(81\,920z^4-587\,776z^3+5\,215\,680z^2-27\,211\,800z+52\,997\,175\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-65\,536z^5+438\,272z^4-4\,055\,808z^3+29\,623\,440z^2-111\,919\,500z+158\,991\,525\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agbw.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{3}{4};z\right)=$$
$$-\frac{1}{113\,152\,z^{9/2}}\left(7\left(\left(65\,536z^5+307\,200z^4+2\,707\,200z^3+16\,482\,960z^2+44\,752\,500z+21\,928\,725\right)\sinh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\left(65\,536z^4+460\,800z^3+3\,594\,240z^2+15\,514\,200z+21\,928\,725\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agbx.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{3}{4};-z\right)=\frac{1}{113\,152\,z^{9/2}}\left(7\left(2\sqrt{z}\left(65\,536z^4-460\,800z^3+3\,594\,240z^2-15\,514\,200z+21\,928\,725\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(65\,536z^5-307\,200z^4+2\,707\,200z^3-16\,482\,960z^2+44\,752\,500z-21\,928\,725\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agby.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{1}{4};z\right)=-\frac{1}{56\,576\sqrt{2}\,z^{15/4}}\left(21\left(-4z\left(5120z^3+38\,784z^2+254\,100z+768\,075\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(8192z^4+29\,696z^3+238\,752z^2+1\,201\,200z+2\,304\,225\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(28\,672z^4+195\,072z^3+1\,334\,256z^2+4\,920\,300z+6\,912\,675\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agbz.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},-\frac{1}{4};-z\right)=\frac{1}{56\,576\sqrt{2}\,z^{15/4}}\left(21\left(4z\left(5120z^3-38\,784z^2+254\,100z-768\,075\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(8192z^4-29\,696z^3+238\,752z^2-1\,201\,200z+2\,304\,225\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(-28\,672z^4+195\,072z^3-1\,334\,256z^2+4\,920\,300z-6\,912\,675\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agc0.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},\frac{1}{4};z\right)=\frac{1}{113\,152\,z^{9/2}}\left(21\left(2\sqrt{z}\left(8192z^4+25\,600z^3+180\,000z^2+748\,800z+1\,044\,225\right)\cosh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.5\left(4096z^4+28\,160z^3+161\,424z^2+428\,220z+208\,845\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agc1.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},\frac{1}{4};-z\right)=\frac{1}{113\,152\,z^{9/2}}\left(21\left(2\sqrt{z}\left(8192z^4-25\,600z^3+180\,000z^2-748\,800z+1\,044\,225\right)\cos\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.5\left(4096z^4-28\,160z^3+161\,424z^2-428\,220z+208\,845\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agc2.01

$${}_1F_2\left(\frac{21}{4}; \frac{11}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{56\,576\sqrt{2}\,z^{15/4}}\left(21\left(4z\left(1024z^3+2304z^2+13\,860z+40\,425\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(2048z^3+13\,632z^2+64\,680z+121\,275\right)\right.\right.$$
$$\left.\left.I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(4096z^4+12\,288z^3+74\,256z^2+263\,340z+363\,825\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agc3.01

$${}_1F_2\left(\frac{21}{4}; \frac{11}{2}, \frac{3}{4}; -z\right) = \frac{1}{56\,576\sqrt{2}\,z^{15/4}}$$
$$\left(21\left(4z\left(1024z^3-2304z^2+13\,860z-40\,425\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-2048z^3+13\,632z^2-64\,680z+121\,275\right)\right.\right.$$
$$\left.\left.J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-4096z^4+12\,288z^3-74\,256z^2+263\,340z-363\,825\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agc4.01

$${}_1F_2\left(\frac{21}{4}; \frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{113\,152\,z^{9/2}}\left(21\left(\left(4096z^4+9728z^3+49\,680z^2+126\,900z+61\,425\right)\sinh\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\left(2048z^3+11\,520z^2+45\,000z+61\,425\right)\cosh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agc5.01

$${}_1F_2\left(\frac{21}{4}; \frac{11}{2}, \frac{5}{4}; -z\right) = \frac{1}{113\,152\,z^{9/2}}\left(21\left(2\sqrt{z}\left(2048z^3-11\,520z^2+45\,000z-61\,425\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^4-9728z^3+49\,680z^2-126\,900z+61\,425\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agc6.01

$${}_1F_2\left(\frac{21}{4}; \frac{11}{2}, \frac{7}{4}; z\right) =$$
$$\frac{1}{56\,576\sqrt{2}\,z^{15/4}}\left(63\left(-4z\left(192z^2+980z+2695\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(512z^3+1056z^2+4480z+8085\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\right.\right.$$
$$\left.\left.\left(1280z^3+5488z^2+18\,060z+24\,255\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agc7.01

$${}_1F_2\left(\frac{21}{4}; \frac{11}{2}, \frac{7}{4}; -z\right) =$$
$$\frac{1}{56\,576\sqrt{2}\,z^{15/4}}\left(63\left(4z\left(192z^2-980z+2695\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(512z^3-1056z^2+4480z-8085\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-1280z^3+5488z^2-18\,060z+24\,255\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agc8.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},\frac{9}{4};z\right)=$$
$$\frac{1}{113\,152\,z^{9/2}}\left(105\left(2\sqrt{z}\,\left(512\,z^3+1056\,z^2+3600\,z+4725\right)\cosh\left(2\sqrt{z}\right)-\left(1280\,z^3+4176\,z^2+9900\,z+4725\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agc9.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},\frac{9}{4};-z\right)=$$
$$-\frac{1}{113\,152\,z^{9/2}}\left(105\left(2\sqrt{z}\,\left(512\,z^3-1056\,z^2+3600\,z-4725\right)\cos\left(2\sqrt{z}\right)+\left(-1280\,z^3+4176\,z^2-9900\,z+4725\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agca.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},\frac{11}{4};z\right)=$$
$$\frac{1}{56\,576\sqrt{2}\,z^{15/4}}\left(441\left(4\,z\left(64\,z^2+100\,z+245\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(192\,z^2+440\,z+735\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(256\,z^3+656\,z^2+1740\,z+2205\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agcb.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},\frac{11}{4};-z\right)=$$
$$-\frac{1}{56\,576\sqrt{2}\,z^{15/4}}\left(441\left(4\,z\left(64\,z^2-100\,z+245\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\,\left(192\,z^2-440\,z+735\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-256\,z^3+656\,z^2-1740\,z+2205\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agcc.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},\frac{13}{4};z\right)=\frac{945\left(\left(256\,z^3+656\,z^2+1140\,z+525\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(256\,z^2+440\,z+525\right)\cosh\left(2\sqrt{z}\right)\right)}{113\,152\,z^{9/2}}$$

07.22.03.agcd.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},\frac{13}{4};-z\right)=-\frac{945\left(2\sqrt{z}\,\left(256\,z^2-440\,z+525\right)\cos\left(2\sqrt{z}\right)+\left(256\,z^3-656\,z^2+1140\,z-525\right)\sin\left(2\sqrt{z}\right)\right)}{113\,152\,z^{9/2}}$$

07.22.03.agce.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},\frac{15}{4};z\right)=\frac{1}{56\,576\sqrt{2}\,z^{15/4}}$$
$$\left(4851\left(-4\,z\,(36\,z+35)\,I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(32\,z^2+104\,z+105\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-\left(176\,z^2+300\,z+315\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agcf.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},\frac{15}{4};-z\right)=-\frac{1}{56\,576\sqrt{2}\,z^{15/4}}\left(4851\right.$$
$$\left.\left(4\,z\,(36\,z-35)\,J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(32\,z^2-104\,z+105\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-176\,z^2+300\,z-315\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agcg.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},\frac{17}{4};z\right)=\frac{945\left(2\sqrt{z}\,\left(32z^2+160z+105\right)\cosh\left(2\sqrt{z}\right)-\left(208z^2+300z+105\right)\sinh\left(2\sqrt{z}\right)\right)}{8704\,z^{9/2}}$$

07.22.03.agch.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},\frac{17}{4};-z\right)=\frac{945\left(2\sqrt{z}\,\left(32z^2-160z+105\right)\cos\left(2\sqrt{z}\right)+\left(-208z^2+300z-105\right)\sin\left(2\sqrt{z}\right)\right)}{8704\,z^{9/2}}$$

07.22.03.agci.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},\frac{19}{4};z\right)=\frac{1}{56\,576\sqrt{2}\,z^{15/4}}$$
$$\left(72\,765\left(2z\left(8z+49\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2-\sqrt{z}\,\left(128z+217\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(16z^2+134z+105\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agcj.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},\frac{19}{4};-z\right)=\frac{1}{56\,576\sqrt{2}\,z^{15/4}}$$
$$\left(72\,765\left(2z\left(8z-49\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(217-128z\right)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+\left(-16z^2+134z-105\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agck.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},\frac{21}{4};z\right)=\frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right)-10\sqrt{z}\,\left(8z+21\right)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.agcl.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},\frac{21}{4};-z\right)=\frac{945\left(10\sqrt{z}\,\left(8z-21\right)\cos\left(2\sqrt{z}\right)+\left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.agcm.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},\frac{23}{4};z\right)=\frac{1}{1\,810\,432\sqrt{2}\,z^{17/4}}\left(1\,382\,535\right.$$
$$\left.\left(-2\sqrt{z}\,\left(368z+1155\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(256z^2+4144z+3465\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)I_{-\frac{1}{4}}\left(\sqrt{z}\right)-10\sqrt{z}\,\left(80z+357\right)I_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

07.22.03.agcn.01

$${}_1F_2\left(\frac{21}{4};\frac{11}{2},\frac{23}{4};-z\right)=\frac{1}{1\,810\,432\sqrt{2}\,z^{17/4}}\left(1\,382\,535\right.$$
$$\left.\left(2\sqrt{z}\,\left(368z-1155\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(256z^2-4144z+3465\right)J_{\frac{3}{4}}\left(\sqrt{z}\right)J_{-\frac{1}{4}}\left(\sqrt{z}\right)+10\left(357-80z\right)\sqrt{z}\,J_{\frac{3}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{3}{4}\right)^2\right)$$

For fixed z and $a_1=\frac{23}{4}$, $b_{1.}\geq-\frac{11}{2}$

For fixed z and $a_1=\frac{23}{4}$, $b_{1.}=-\frac{11}{2}$

07.22.03.agco.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{23}{4}; z\right) = $$

$$ \left(\sqrt{2}\,\left(\left(53\,418\,655\,744\,z^9 + 9\,145\,210\,109\,952\,z^8 + 77\,455\,027\,077\,120\,z^7 + 8\,931\,144\,499\,200\,z^6 + 22\,272\,041\,594\,880\,z^5 + 114\,657\,056\,236\,800\,z^4 + 400\,933\,380\,355\,200\,z^3 + 343\,765\,115\,694\,000\,z^2 - 1\,884\,097\,268\,707\,500\,z + 1\,036\,253\,497\,789\,125\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(536\,870\,912\,z^9 + 485\,901\,729\,792\,z^8 + 17\,065\,133\,998\,080\,z^7 + 3\,986\,655\,805\,440\,z^6 - 7\,033\,276\,293\,120\,z^5 - 40\,294\,812\,096\,000\,z^4 - 193\,415\,098\,060\,800\,z^3 - 589\,311\,626\,904\,000\,z^2 - 502\,425\,938\,322\,000\,z + 1\,036\,253\,497\,789\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(12\,952\,010\,752\,z^8 + 1\,931\,539\,906\,560\,z^7 + 7\,973\,311\,610\,880\,z^6 + 4\,316\,719\,841\,280\,z^5 + 14\,861\,982\,643\,200\,z^4 + 73\,538\,032\,075\,200\,z^3 + 319\,840\,071\,012\,000\,z^2 + 879\,245\,392\,063\,500\,z + 1\,036\,253\,497\,789\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(1\,036\,253\,497\,789\,125\,\sqrt[4]{z}\right) $$

07.22.03.agcp.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{23}{4}; -z\right) = $$

$$ \left(\sqrt{2}\,\left(\left(-53\,418\,655\,744\,z^9 + 9\,145\,210\,109\,952\,z^8 - 77\,455\,027\,077\,120\,z^7 + 8\,931\,144\,499\,200\,z^6 - 22\,272\,041\,594\,880\,z^5 + 114\,657\,056\,236\,800\,z^4 - 400\,933\,380\,355\,200\,z^3 + 343\,765\,115\,694\,000\,z^2 + 1\,884\,097\,268\,707\,500\,z + 1\,036\,253\,497\,789\,125\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(536\,870\,912\,z^9 - 485\,901\,729\,792\,z^8 + 17\,065\,133\,998\,080\,z^7 - 3\,986\,655\,805\,440\,z^6 + 7\,033\,276\,293\,120\,z^5 + 40\,294\,812\,096\,000\,z^4 - 193\,415\,098\,060\,800\,z^3 + 589\,311\,626\,904\,000\,z^2 - 502\,425\,938\,322\,000\,z - 1\,036\,253\,497\,789\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(12\,952\,010\,752\,z^8 - 1\,931\,539\,906\,560\,z^7 + 7\,973\,311\,610\,880\,z^6 - 4\,316\,719\,841\,280\,z^5 + 14\,861\,982\,643\,200\,z^4 - 73\,538\,032\,075\,200\,z^3 + 319\,840\,071\,012\,000\,z^2 - 879\,245\,392\,063\,500\,z + 1\,036\,253\,497\,789\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(1\,036\,253\,497\,789\,125\,\sqrt[4]{z}\right) $$

07.22.03.agcq.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{21}{4}; z\right) = $$

$$ \left(\frac{67\,108\,864\,z^8}{756\,212\,081\,625} + \frac{8\,107\,589\,632\,z^7}{635\,218\,148\,565} + \frac{524\,288\,z^6}{9\,398\,025} + \frac{32\,768\,z^5}{1\,686\,825} + \frac{19\,456\,z^4}{292\,383} + \frac{178\,624\,z^3}{595\,595} + \frac{1440\,z^2}{1309} + \frac{508\,z}{231} + 1\right) \cosh\left(2\sqrt{z}\right) + \frac{1}{142\,924\,083\,427\,125} \left(2\sqrt{z}\,\left(134\,217\,728\,z^8 + 111\,962\,750\,976\,z^7 + 3\,340\,763\,136\,000\,z^6 - 996\,663\,951\,360\,z^5 - 2\,335\,931\,136\,000\,z^4 - 10\,098\,730\,857\,600\,z^3 - 43\,053\,135\,325\,200\,z^2 - 123\,743\,795\,175\,000\,z - 142\,924\,083\,427\,125\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agcr.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{21}{4}; -z\right) = \left(\frac{67\,108\,864\,z^8}{756\,212\,081\,625} - \frac{8\,107\,589\,632\,z^7}{635\,218\,148\,565} + \frac{524\,288\,z^6}{9\,398\,025} - \frac{32\,768\,z^5}{1\,686\,825} + \frac{19\,456\,z^4}{292\,383} - \frac{178\,624\,z^3}{595\,595} + \frac{1440\,z^2}{1309} - \frac{508\,z}{231} + 1\right) \cos\left(2\sqrt{z}\right) - \frac{1}{142\,924\,083\,427\,125} \left(2\sqrt{z}\left(134\,217\,728\,z^8 - 111\,962\,750\,976\,z^7 + 3\,340\,763\,136\,000\,z^6 + 996\,663\,951\,360\,z^5 - 2\,335\,931\,136\,000\,z^4 + 10\,098\,730\,857\,600\,z^3 - 43\,053\,135\,325\,200\,z^2 + 123\,743\,795\,175\,000\,z - 142\,924\,083\,427\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agcs.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{19}{4}; z\right) = -\frac{1}{45\,054\,499\,903\,875\sqrt[4]{z}} \left(\sqrt{2}\left(\left(268\,435\,456\,z^9 + 227\,247\,390\,720\,z^8 + 8\,011\,659\,608\,064\,z^7 + 7\,067\,253\,473\,280\,z^6 - 1\,478\,007\,336\,960\,z^5 - 5\,622\,161\,529\,600\,z^4 - 17\,479\,666\,512\,000\,z^3 - 12\,186\,990\,723\,600\,z^2 + 80\,192\,698\,393\,500\,z - 45\,054\,499\,903\,875\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(2\,080\,374\,784\,z^8 + 295\,832\,649\,728\,z^7 + 1\,558\,197\,043\,200\,z^6 + 77\,662\,126\,080\,z^5 + 743\,250\,816\,000\,z^4 + 3\,137\,580\,230\,400\,z^3 + 8\,694\,043\,696\,800\,z^2 + 6\,706\,677\,285\,000\,z - 15\,018\,166\,634\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(67\,108\,864\,z^8 + 52\,181\,336\,064\,z^7 + 1\,375\,870\,648\,320\,z^6 - 770\,149\,416\,960\,z^5 - 1\,155\,830\,860\,800\,z^4 - 4\,208\,657\,745\,600\,z^3 - 15\,745\,635\,813\,600\,z^2 - 39\,952\,634\,683\,500\,z - 45\,054\,499\,903\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agct.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{19}{4}; -z\right) = \frac{1}{45\,054\,499\,903\,875\sqrt[4]{z}} \left(\sqrt{2}\left(\left(268\,435\,456\,z^9 - 227\,247\,390\,720\,z^8 + 8\,011\,659\,608\,064\,z^7 - 7\,067\,253\,473\,280\,z^6 - 1\,478\,007\,336\,960\,z^5 + 5\,622\,161\,529\,600\,z^4 - 17\,479\,666\,512\,000\,z^3 + 12\,186\,990\,723\,600\,z^2 + 80\,192\,698\,393\,500\,z + 45\,054\,499\,903\,875\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(2\,080\,374\,784\,z^8 - 295\,832\,649\,728\,z^7 + 1\,558\,197\,043\,200\,z^6 - 77\,662\,126\,080\,z^5 + 743\,250\,816\,000\,z^4 - 3\,137\,580\,230\,400\,z^3 + 8\,694\,043\,696\,800\,z^2 - 6\,706\,677\,285\,000\,z - 15\,018\,166\,634\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4z\left(67\,108\,864\,z^8 - 52\,181\,336\,064\,z^7 + 1\,375\,870\,648\,320\,z^6 + 770\,149\,416\,960\,z^5 - 1\,155\,830\,860\,800\,z^4 + 4\,208\,657\,745\,600\,z^3 - 15\,745\,635\,813\,600\,z^2 + 39\,952\,634\,683\,500\,z - 45\,054\,499\,903\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agcu.01

$${}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{17}{4}; z\right) =$$

$$\left(-\frac{67\,108\,864\,z^8}{6\,805\,908\,734\,625} - \frac{121\,634\,816\,z^7}{16\,804\,712\,925} - \frac{524\,288\,z^6}{2\,953\,665} + \frac{32\,768\,z^5}{289\,575} + \frac{29\,696\,z^4}{255\,255} + \frac{17\,344\,z^3}{45\,045} + \frac{8864\,z^2}{7293} + \frac{420\,z}{187} + 1\right)$$

$$\cosh\left(2\sqrt{z}\right) - \frac{1}{6\,805\,908\,734\,625}$$

$$\left(2\sqrt{z}\,\left(1\,493\,172\,224\,z^7 + 184\,921\,620\,480\,z^6 + 543\,634\,882\,560\,z^5 + 250\,783\,948\,800\,z^4 + 693\,953\,568\,000\,z^3 + 2\,409\,924\,409\,200\,z^2 + 6\,211\,453\,248\,000\,z + 6\,805\,908\,734\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agcv.01

$${}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{17}{4}; -z\right) =$$

$$\left(-\frac{67\,108\,864\,z^8}{6\,805\,908\,734\,625} + \frac{121\,634\,816\,z^7}{16\,804\,712\,925} - \frac{524\,288\,z^6}{2\,953\,665} - \frac{32\,768\,z^5}{289\,575} + \frac{29\,696\,z^4}{255\,255} - \frac{17\,344\,z^3}{45\,045} + \frac{8864\,z^2}{7293} - \frac{420\,z}{187} + 1\right)$$

$$\cos\left(2\sqrt{z}\right) + \frac{1}{6\,805\,908\,734\,625}$$

$$\left(2\sqrt{z}\,\left(-1\,493\,172\,224\,z^7 + 184\,921\,620\,480\,z^6 - 543\,634\,882\,560\,z^5 + 250\,783\,948\,800\,z^4 - 693\,953\,568\,000\,z^3 + 2\,409\,924\,409\,200\,z^2 - 6\,211\,453\,248\,000\,z + 6\,805\,908\,734\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agcw.01

$${}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{15}{4}; z\right) = \frac{1}{2\,371\,289\,468\,625\,\sqrt[4]{z}}$$

$$\left(\sqrt{2}\,\left(3\left(989\,855\,744\,z^8 + 127\,909\,494\,784\,z^7 + 646\,025\,969\,664\,z^6 - 165\,032\,017\,920\,z^5 + 123\,116\,716\,800\,z^4 + 302\,988\,470\,400\,z^3 + 146\,327\,504\,400\,z^2 - 1\,360\,497\,392\,100\,z + 790\,429\,822\,875\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(33\,554\,432\,z^8 + 23\,580\,377\,088\,z^7 + 569\,762\,906\,112\,z^6 - 327\,892\,008\,960\,z^5 - 122\,863\,910\,400\,z^4 - 564\,263\,884\,800\,z^3 - 1\,389\,613\,579\,200\,z^2 - 919\,772\,884\,800\,z + 2\,371\,289\,468\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 36\,z\left(79\,691\,776\,z^7 + 8\,753\,512\,448\,z^6 + 12\,707\,266\,560\,z^5 + 20\,224\,512\,000\,z^4 + 38\,026\,296\,000\,z^3 + 110\,824\,005\,600\,z^2 + 249\,105\,156\,300\,z + 263\,476\,607\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agcx.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{15}{4}; -z\right) = \frac{1}{2\,371\,289\,468\,625\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\,\left(3\left(989\,855\,744\,z^8 - 127\,909\,494\,784\,z^7 + 646\,025\,969\,664\,z^6 + 165\,032\,017\,920\,z^5 + 123\,116\,716\,800\,z^4 - \right.\right.\right. $$
$$ \left.\left.\left. 302\,988\,470\,400\,z^3 + 146\,327\,504\,400\,z^2 + 1\,360\,497\,392\,100\,z + 790\,429\,822\,875\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ \left. 4\sqrt{z}\,\left(33\,554\,432\,z^8 - 23\,580\,377\,088\,z^7 + 569\,762\,906\,112\,z^6 + 327\,892\,008\,960\,z^5 - 122\,863\,910\,400\,z^4 + \right.\right. $$
$$ \left.\left. 564\,263\,884\,800\,z^3 - 1\,389\,613\,579\,200\,z^2 + 919\,772\,884\,800\,z + 2\,371\,289\,468\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - \right. $$
$$ \left. 36\,z\left(79\,691\,776\,z^7 - 8\,753\,512\,448\,z^6 + 12\,707\,266\,560\,z^5 - 20\,224\,512\,000\,z^4 + 38\,026\,296\,000\,z^3 - \right.\right. $$
$$ \left.\left. 110\,824\,005\,600\,z^2 + 249\,105\,156\,300\,z - 263\,476\,607\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.agcy.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{13}{4}; z\right) = $$
$$ \left(\frac{4\,194\,304\,z^7}{2\,426\,348\,925} + \frac{1\,048\,576\,z^6}{6\,081\,075} + \frac{32\,768\,z^5}{289\,575} + \frac{4096\,z^4}{9009} + \frac{26\,176\,z^3}{45\,045} + \frac{608\,z^2}{429} + \frac{332\,z}{143} + 1\right)\cosh\left(2\sqrt{z}\right) + $$
$$ \frac{1}{400\,347\,572\,625}\left(2\sqrt{z}\,\left(8\,388\,608\,z^7 + 5\,206\,179\,840\,z^6 + 90\,605\,813\,760\,z^5 - 113\,257\,267\,200\,z^4 - \right.\right. $$
$$ \left.\left. 76\,221\,129\,600\,z^3 - 182\,162\,811\,600\,z^2 - 395\,681\,517\,000\,z - 400\,347\,572\,625\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agcz.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{13}{4}; -z\right) = $$
$$ \left(-\frac{4\,194\,304\,z^7}{2\,426\,348\,925} + \frac{1\,048\,576\,z^6}{6\,081\,075} - \frac{32\,768\,z^5}{289\,575} + \frac{4096\,z^4}{9009} - \frac{26\,176\,z^3}{45\,045} + \frac{608\,z^2}{429} - \frac{332\,z}{143} + 1\right)\cos\left(2\sqrt{z}\right) + $$
$$ \frac{1}{400\,347\,572\,625}\left(2\sqrt{z}\,\left(8\,388\,608\,z^7 - 5\,206\,179\,840\,z^6 + 90\,605\,813\,760\,z^5 + 113\,257\,267\,200\,z^4 - \right.\right. $$
$$ \left.\left. 76\,221\,129\,600\,z^3 + 182\,162\,811\,600\,z^2 - 395\,681\,517\,000\,z + 400\,347\,572\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agd0.01

$${}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{11}{4}; z\right) =$$
$$-\frac{1}{158\,085\,964\,575\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(16\,777\,216\,z^8+10\,273\,947\,648\,z^7+203\,283\,628\,032\,z^6-210\,255\,962\,112\,z^5+\right.\right.\right.$$
$$\left.\left.\left.96\,319\,238\,400\,z^4-64\,086\,422\,400\,z^3-10\,949\,677\,200\,z^2+256\,073\,132\,700\,z-158\,085\,964\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\,\left(335\,544\,320\,z^7+31\,270\,895\,616\,z^6+13\,565\,657\,088\,z^5+69\,522\,969\,600\,z^4+34\,128\,864\,000\,z^3+\right.$$
$$\left.89\,588\,268\,000\,z^2+45\,291\,846\,600\,z-158\,085\,964\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$4\,z\left(4\,194\,304\,z^7+2\,319\,974\,400\,z^6+29\,078\,028\,288\,z^5-42\,974\,668\,800\,z^4-54\,795\,787\,200\,z^3-\right.$$
$$\left.\left.90\,915\,501\,600\,z^2-165\,489\,439\,500\,z-158\,085\,964\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.agd1.01

$${}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{158\,085\,964\,575\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-16\,777\,216\,z^8+10\,273\,947\,648\,z^7-203\,283\,628\,032\,z^6-210\,255\,962\,112\,z^5-\right.\right.\right.$$
$$\left.\left.\left.96\,319\,238\,400\,z^4-64\,086\,422\,400\,z^3+10\,949\,677\,200\,z^2+256\,073\,132\,700\,z+158\,085\,964\,575\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$4\sqrt{z}\,\left(335\,544\,320\,z^7-31\,270\,895\,616\,z^6+13\,565\,657\,088\,z^5-69\,522\,969\,600\,z^4+34\,128\,864\,000\,z^3-\right.$$
$$\left.89\,588\,268\,000\,z^2+45\,291\,846\,600\,z+158\,085\,964\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$4\,z\left(4\,194\,304\,z^7-2\,319\,974\,400\,z^6+29\,078\,028\,288\,z^5+42\,974\,668\,800\,z^4-54\,795\,787\,200\,z^3+\right.$$
$$\left.\left.90\,915\,501\,600\,z^2-165\,489\,439\,500\,z+158\,085\,964\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.agd2.01

$${}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{9}{4}; z\right) =$$
$$\left(-\frac{4\,194\,304\,z^7}{30\,795\,967\,125}-\frac{1\,048\,576\,z^6}{15\,436\,575}-\frac{32\,768\,z^5}{51\,975}+\frac{4096\,z^4}{4455}+\frac{18\,496\,z^3}{10\,395}+\frac{928\,z^2}{495}+\frac{244\,z}{99}+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{1}{2\,053\,064\,475}\left(2\sqrt{z}\,\left(5\,242\,880\,z^6+383\,516\,672\,z^5-755\,048\,448\,z^4+\right.\right.$$
$$\left.\left.2\,224\,696\,320\,z^3+1\,482\,077\,520\,z^2+2\,322\,658\,800\,z+2\,053\,064\,475\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agd3.01

$${}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{9}{4}; -z\right) =$$
$$\left(\frac{4\,194\,304\,z^7}{30\,795\,967\,125}-\frac{1\,048\,576\,z^6}{15\,436\,575}+\frac{32\,768\,z^5}{51\,975}+\frac{4096\,z^4}{4455}-\frac{18\,496\,z^3}{10\,395}+\frac{928\,z^2}{495}-\frac{244\,z}{99}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{1}{2\,053\,064\,475}\left(2\sqrt{z}\,\left(5\,242\,880\,z^6-383\,516\,672\,z^5-755\,048\,448\,z^4-\right.\right.$$
$$\left.\left.2\,224\,696\,320\,z^3+1\,482\,077\,520\,z^2-2\,322\,658\,800\,z+2\,053\,064\,475\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agd4.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{7}{4}; z\right) = \frac{1}{14\,371\,451\,325\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(51\,380\,224\,z^7 + 3\,758\,424\,064\,z^6 - 4\,660\,432\,896\,z^5 + 16\,980\,606\,720\,z^4 - 10\,744\,272\,000\,z^3 + 331\,808\,400\,z^2 - 6\,719\,120\,100\,z + 4\,790\,483\,775\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2\,097\,152\,z^7 + 956\,694\,528\,z^6 + 7\,088\,136\,192\,z^5 - 10\,553\,034\,240\,z^4 - 19\,798\,732\,800\,z^3 - 3\,981\,700\,800\,z^2 - 995\,425\,200\,z + 14\,371\,451\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(12\,320\,768\,z^6 + 709\,607\,424\,z^5 - 2\,429\,844\,480\,z^4 + 5\,066\,107\,200\,z^3 + 5\,530\,140\,000\,z^2 + 6\,055\,503\,300\,z + 4\,790\,483\,775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agd5.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{7}{4}; -z\right) = \frac{1}{14\,371\,451\,325\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(-51\,380\,224\,z^7 + 3\,758\,424\,064\,z^6 + 4\,660\,432\,896\,z^5 + 16\,980\,606\,720\,z^4 + 10\,744\,272\,000\,z^3 + 331\,808\,400\,z^2 + 6\,719\,120\,100\,z + 4\,790\,483\,775\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2\,097\,152\,z^7 - 956\,694\,528\,z^6 + 7\,088\,136\,192\,z^5 + 10\,553\,034\,240\,z^4 - 19\,798\,732\,800\,z^3 + 3\,981\,700\,800\,z^2 - 995\,425\,200\,z - 14\,371\,451\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(12\,320\,768\,z^6 - 709\,607\,424\,z^5 - 2\,429\,844\,480\,z^4 - 5\,066\,107\,200\,z^3 + 5\,530\,140\,000\,z^2 - 6\,055\,503\,300\,z + 4\,790\,483\,775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agd6.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{5}{4}; z\right) = \left(\frac{262\,144\,z^6}{25\,727\,625} + \frac{114\,688\,z^5}{245\,025} - \frac{1024\,z^4}{525} + \frac{11\,072\,z^3}{3465} + \frac{160\,z^2}{33} + \frac{156\,z}{55} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{3\,421\,774\,125}\left(2\sqrt{z}\left(524\,288\,z^6 + 196\,116\,480\,z^5 + 224\,716\,800\,z^4 + 2\,300\,538\,240\,z^3 - 10\,949\,677\,200\,z^2 - 5\,143\,030\,200\,z - 3\,421\,774\,125\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agd7.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{5}{4}; -z\right) = \left(\frac{262\,144\,z^6}{25\,727\,625} - \frac{114\,688\,z^5}{245\,025} - \frac{1024\,z^4}{525} - \frac{11\,072\,z^3}{3465} + \frac{160\,z^2}{33} - \frac{156\,z}{55} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{3\,421\,774\,125}\left(2\sqrt{z}\left(-524\,288\,z^6 + 196\,116\,480\,z^5 - 224\,716\,800\,z^4 + 2\,300\,538\,240\,z^3 + 10\,949\,677\,200\,z^2 - 5\,143\,030\,200\,z + 3\,421\,774\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agd8.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{3}{4}; z\right) = -\frac{1}{2\,053\,064\,475\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,048\,576 z^7 + 370\,606\,080 z^6 + 627\,830\,784 z^5 + 2\,076\,560\,640 z^4 - 15\,667\,344\,000 z^3 + 12\,940\,527\,600 z^2 + 1\,244\,281\,500 z - 2\,053\,064\,475\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(5\,505\,024 z^6 + 207\,290\,368 z^5 - 922\,629\,120 z^4 + 1\,343\,865\,600 z^3 + 1\,920\,996\,000 z^2 - 497\,712\,600 z - 684\,354\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(262\,144 z^6 + 80\,461\,824 z^5 - 250\,536\,960 z^4 + 2\,378\,376\,000 z^3 - 5\,064\,444\,000 z^2 - 4\,230\,557\,100 z - 2\,053\,064\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agd9.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{3}{4}; -z\right) = \frac{1}{2\,053\,064\,475\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,048\,576 z^7 - 370\,606\,080 z^6 + 627\,830\,784 z^5 - 2\,076\,560\,640 z^4 - 15\,667\,344\,000 z^3 + 12\,940\,527\,600 z^2 + 1\,244\,281\,500 z + 2\,053\,064\,475\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(5\,505\,024 z^6 - 207\,290\,368 z^5 - 922\,629\,120 z^4 - 1\,343\,865\,600 z^3 + 1\,920\,996\,000 z^2 + 497\,712\,600 z - 684\,354\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-262\,144 z^6 + 80\,461\,824 z^5 + 250\,536\,960 z^4 + 2\,378\,376\,000 z^3 + 5\,064\,444\,000 z^2 - 4\,230\,557\,100 z + 2\,053\,064\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agda.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{1}{4}; z\right) = \left(-\frac{262\,144 z^6}{684\,354\,825} - \frac{1\,163\,264 z^5}{12\,006\,225} + \frac{29\,696 z^4}{53\,361} - \frac{90\,304 z^3}{24\,255} + \frac{160 z^2}{33} + \frac{68 z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{12\,006\,225}\left(2\sqrt{z}\left(65\,536 z^5 + 1\,331\,200 z^4 - 5\,448\,960 z^3 - 15\,135\,120 z^2 + 58\,212\,000 z + 12\,006\,225\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agdb.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, -\frac{1}{4}; -z\right) = \left(-\frac{262\,144 z^6}{684\,354\,825} + \frac{1\,163\,264 z^5}{12\,006\,225} + \frac{29\,696 z^4}{53\,361} + \frac{90\,304 z^3}{24\,255} + \frac{160 z^2}{33} - \frac{68 z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{12\,006\,225}\left(2\sqrt{z}\left(-65\,536 z^5 + 1\,331\,200 z^4 + 5\,448\,960 z^3 - 15\,135\,120 z^2 - 58\,212\,000 z + 12\,006\,225\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agdc.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{1}{4}; z\right) = \frac{1}{684\,354\,825\sqrt[4]{z}} \left(\sqrt{2}\left(\left(7\,143\,424 z^6 + 129\,196\,032 z^5 - 517\,144\,320 z^4 - 809\,424\,000 z^3 + 4\,977\,126\,000 z^2 - 4\,230\,557\,100 z + 684\,354\,825\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(131\,072 z^6 + 27\,574\,272 z^5 - 196\,062\,720 z^4 + 1\,099\,929\,600 z^3 - 1\,047\,816\,000 z^2 - 1\,493\,137\,800 z + 684\,354\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1\,687\,552 z^5 + 12\,871\,680 z^4 + 25\,502\,400 z^3 - 989\,604\,000 z^2 + 1\,244\,281\,500 z + 684\,354\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agdd.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{1}{4}; -z\right) = \frac{1}{684\,354\,825\sqrt[4]{z}} \left(\sqrt{2}\left(\left(7\,143\,424 z^6 - 129\,196\,032 z^5 - 517\,144\,320 z^4 + 809\,424\,000 z^3 + 4\,977\,126\,000 z^2 + 4\,230\,557\,100 z + 684\,354\,825\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-131\,072 z^6 + 27\,574\,272 z^5 + 196\,062\,720 z^4 + 1\,099\,929\,600 z^3 + 1\,047\,816\,000 z^2 - 1\,493\,137\,800 z - 684\,354\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(1\,687\,552 z^5 - 12\,871\,680 z^4 + 25\,502\,400 z^3 + 989\,604\,000 z^2 + 1\,244\,281\,500 z - 684\,354\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agde.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{3}{4}; z\right) = \left(\frac{507\,904 z^5}{228\,118\,275} - \frac{2048 z^4}{800\,415} + \frac{51\,776 z^3}{266\,805} - \frac{32 z^2}{21} + \frac{20 z}{33} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{684\,354\,825}\left(2\sqrt{z}\left(32\,768 z^5 + 4\,669\,440 z^4 - 44\,323\,200 z^3 + 135\,883\,440 z^2 + 497\,712\,600 z - 684\,354\,825\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agdf.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{3}{4}; -z\right) = \left(-\frac{507\,904 z^5}{228\,118\,275} - \frac{2048 z^4}{800\,415} - \frac{51\,776 z^3}{266\,805} - \frac{32 z^2}{21} - \frac{20 z}{33} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{684\,354\,825}\left(2\sqrt{z}\left(32\,768 z^5 - 4\,669\,440 z^4 - 44\,323\,200 z^3 - 135\,883\,440 z^2 + 497\,712\,600 z + 684\,354\,825\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agdg.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{5}{4}; z\right) = \frac{1}{684\,354\,825\sqrt[4]{z}} \left(\sqrt{2}\left(\left(65\,536 z^6 + 7\,913\,472 z^5 - 70\,076\,160 z^4 + 188\,496\,000 z^3 + 553\,014\,000 z^2 - 1\,368\,709\,650 z + 684\,354\,825\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 21\sqrt{z}\left(131\,072 z^5 - 880\,640 z^4 + 16\,051\,200 z^3 - 77\,616\,000 z^2 + 62\,214\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2 z\left(32\,768 z^5 + 2\,949\,120 z^4 - 26\,006\,400 z^3 - 49\,896\,000 z^2 + 829\,521\,000 z - 62\,214\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agdh.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{5}{4}; -z\right) = \frac{1}{684\,354\,825\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(65\,536\,z^6 - 7\,913\,472\,z^5 - 70\,076\,160\,z^4 - 188\,496\,000\,z^3 + 553\,014\,000\,z^2 + 1\,368\,709\,650\,z + 684\,354\,825\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 21\sqrt{z}\left(131\,072\,z^5 + 880\,640\,z^4 + 16\,051\,200\,z^3 + 77\,616\,000\,z^2 - 62\,214\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2z\left(32\,768\,z^5 - 2\,949\,120\,z^4 - 26\,006\,400\,z^3 + 49\,896\,000\,z^2 + 829\,521\,000\,z + 62\,214\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agdi.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{7}{4}; z\right) = \left(\frac{16\,384\,z^5}{228\,118\,275} + \frac{2048\,z^4}{563\,255} - \frac{832\,z^3}{53\,361} - \frac{928\,z^2}{2541} + \frac{108\,z}{77} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(28\,672\,z^4 - 437\,760\,z^3 + 4\,653\,936\,z^2 - 3\,160\,080\,z - 45\,623\,655\right)\sinh\left(2\sqrt{z}\right)}{45\,623\,655} $$

07.22.03.agdj.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{7}{4}; -z\right) = \left(-\frac{16\,384\,z^5}{228\,118\,275} + \frac{2048\,z^4}{563\,255} + \frac{832\,z^3}{53\,361} - \frac{928\,z^2}{2541} - \frac{108\,z}{77} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(28\,672\,z^4 + 437\,760\,z^3 + 4\,653\,936\,z^2 + 3\,160\,080\,z - 45\,623\,655\right)\sin\left(2\sqrt{z}\right)}{45\,623\,655} $$

07.22.03.agdk.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{9}{4}; z\right) = \frac{1}{2\,189\,935\,440\,\sqrt{2}\,z^{3/4}} \left(\left(126\sqrt{z}\left(65\,536\,z^5 - 1\,003\,520\,z^4 + 8\,448\,000\,z^3 - 61\,446\,000\,z + 48\,388\,725\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1\,048\,576\,z^6 + 23\,396\,352\,z^5 + 206\,438\,400\,z^4 - 6\,031\,872\,000\,z^3 + 8\,848\,224\,000\,z^2 + 12\,940\,527\,600\,z - 4\,292\,771\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(1\,245\,184\,z^5 - 23\,080\,960\,z^4 + 134\,400\,000\,z^3 + 842\,688\,000\,z^2 - 1\,659\,042\,000\,z - 1\,430\,923\,725\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agdl.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{9}{4}; -z\right) = \frac{1}{2\,189\,935\,440\,\sqrt{2}\,z^{3/4}} \left(\left(-126\sqrt{z}\left(65\,536\,z^5 + 1\,003\,520\,z^4 + 8\,448\,000\,z^3 - 61\,446\,000\,z - 48\,388\,725\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1\,048\,576\,z^6 - 23\,396\,352\,z^5 + 206\,438\,400\,z^4 + 6\,031\,872\,000\,z^3 + 8\,848\,224\,000\,z^2 - 12\,940\,527\,600\,z - 4\,292\,771\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(1\,245\,184\,z^5 + 23\,080\,960\,z^4 + 134\,400\,000\,z^3 - 842\,688\,000\,z^2 - 1\,659\,042\,000\,z + 1\,430\,923\,725\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agdm.01

$${}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{11}{4}; z\right) = \frac{1}{32\,588\,325}\left(45\left(1024\,z^4 - 17\,600\,z^3 - 12\,768\,z^2 + 1\,173\,060\,z + 724\,185\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(2048\,z^4 - 28\,800\,z^3 + 1\,436\,400\,z^2 - 9\,336\,600\,z - 32\,588\,325\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agdn.01

$${}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{11}{4}; -z\right) = \frac{1}{32\,588\,325}\left(45\left(1024\,z^4 + 17\,600\,z^3 - 12\,768\,z^2 - 1\,173\,060\,z + 724\,185\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(2048\,z^4 + 28\,800\,z^3 + 1\,436\,400\,z^2 + 9\,336\,600\,z - 32\,588\,325\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agdo.01

$${}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{13}{4}; z\right) = \frac{1}{7\,786\,437\,120\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(2\,097\,152\,z^6 - 47\,579\,136\,z^5 + 1\,327\,104\,000\,z^4 - 3\,852\,288\,000\,z^3 - 20\,224\,512\,000\,z^2 - 2\,243\,656\,800\,z + 19\,010\,843\,775\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(71\,303\,168\,z^6 - 833\,617\,920\,z^5 - 10\,838\,016\,000\,z^4 + 65\,488\,896\,000\,z^3 + 139\,043\,520\,000\,z^2 + 117\,744\,580\,800\,z - 95\,054\,218\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(2\,097\,152\,z^6 - 72\,744\,960\,z^5 + 1\,582\,694\,400\,z^4 + 1\,400\,832\,000\,z^3 - 42\,615\,936\,000\,z^2 - 85\,037\,752\,800\,z - 95\,054\,218\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agdp.01

$${}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{13}{4}; -z\right) = -\frac{1}{7\,786\,437\,120\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(2\,097\,152\,z^6 + 47\,579\,136\,z^5 + 1\,327\,104\,000\,z^4 + 3\,852\,288\,000\,z^3 - 20\,224\,512\,000\,z^2 + 2\,243\,656\,800\,z + 19\,010\,843\,775\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(71\,303\,168\,z^6 + 833\,617\,920\,z^5 - 10\,838\,016\,000\,z^4 - 65\,488\,896\,000\,z^3 + 139\,043\,520\,000\,z^2 - 117\,744\,580\,800\,z - 95\,054\,218\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(2\,097\,152\,z^6 + 72\,744\,960\,z^5 + 1\,582\,694\,400\,z^4 - 1\,400\,832\,000\,z^3 - 42\,615\,936\,000\,z^2 + 85\,037\,752\,800\,z - 95\,054\,218\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agdq.01

$${}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{15}{4}; z\right) = \left(\frac{1024\,z^4}{2\,962\,575} - \frac{64\,z^3}{4389} + \frac{32\,z^2}{209} + \frac{284\,z}{165} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(256\,z^3 + 2800\,z^2 - 127\,680\,z - 329\,175\right)\sinh\left(2\sqrt{z}\right)}{329\,175}$$

07.22.03.agdr.01

$${}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{15}{4}; -z\right) =$$

$$\left(\frac{1024\,z^4}{2\,962\,575} + \frac{64\,z^3}{4389} + \frac{32\,z^2}{209} - \frac{284\,z}{165} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(256\,z^3 - 2800\,z^2 - 127\,680\,z + 329\,175\right)\sin\left(2\sqrt{z}\right)}{329\,175}$$

07.22.03.agds.01

$${}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{17}{4}; z\right) =$$

$$\left(13\left(18\sqrt{z}\,\left(4\,194\,304\,z^6 + 196\,083\,712\,z^5 - 2\,334\,720\,000\,z^4 - 13\,483\,008\,000\,z^3 - 46\,235\,481\,600\,z^2 - 101\,391\,166\,800\,z + 133\,075\,906\,425\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(67\,108\,864\,z^7 - 2\,617\,245\,696\,z^6 - 1\,651\,507\,200\,z^5 + 317\,988\,864\,000\,z^4 + 1\,415\,715\,840\,000\,z^3 + 5\,337\,754\,329\,600\,z^2 + 8\,821\,031\,511\,600\,z - 5\,988\,415\,789\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\,\left(4\,194\,304\,z^6 + 917\,504\,000\,z^5 - 6\,070\,272\,000\,z^4 - 84\,225\,024\,000\,z^3 - 383\,760\,115\,200\,z^2 - 1\,318\,085\,168\,400\,z - 1\,996\,138\,596\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(249\,165\,987\,840\sqrt{2}\;z^{11/4}\right)$$

07.22.03.agdt.01

$${}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{17}{4}; -z\right) =$$

$$-\left(13\left(-18\sqrt{z}\,\left(4\,194\,304\,z^6 - 196\,083\,712\,z^5 - 2\,334\,720\,000\,z^4 + 13\,483\,008\,000\,z^3 - 46\,235\,481\,600\,z^2 + 101\,391\,166\,800\,z + 133\,075\,906\,425\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(67\,108\,864\,z^7 + 2\,617\,245\,696\,z^6 - 1\,651\,507\,200\,z^5 - 317\,988\,864\,000\,z^4 + 1\,415\,715\,840\,000\,z^3 - 5\,337\,754\,329\,600\,z^2 + 8\,821\,031\,511\,600\,z + 5\,988\,415\,789\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\,\left(4\,194\,304\,z^6 - 917\,504\,000\,z^5 - 6\,070\,272\,000\,z^4 + 84\,225\,024\,000\,z^3 - 383\,760\,115\,200\,z^2 + 1\,318\,085\,168\,400\,z - 1\,996\,138\,596\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(249\,165\,987\,840\sqrt{2}\;z^{11/4}\right)$$

07.22.03.agdu.01

$${}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{19}{4}; z\right) =$$

$$\left(-\frac{64\,z^3}{17\,955} + \frac{160\,z^2}{627} + \frac{372\,z}{209} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(128\,z^3 - 3024\,z^2 - 88\,200\,z - 197\,505\right)\sinh\left(2\sqrt{z}\right)}{197\,505}$$

07.22.03.agdv.01

$${}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{19}{4}; -z\right) = \left(\frac{64\,z^3}{17\,955} + \frac{160\,z^2}{627} - \frac{372\,z}{209} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(128\,z^3 + 3024\,z^2 - 88\,200\,z + 197\,505\right)\sin\left(2\sqrt{z}\right)}{197\,505}$$

07.22.03.agdw.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{21}{4}; z\right) = $$

$$ \left(221\left(2\sqrt{z}\,\left(134\,217\,728\,z^7 - 251\,658\,240\,z^6 - 87\,501\,570\,048\,z^5 - 931\,553\,280\,000\,z^4 - 9\,254\,736\,691\,200\,z^3 - 63\,268\,088\,083\,200\,z^2 - 170\,337\,160\,224\,000\,z + 202\,408\,453\,672\,425\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(-1\,073\,741\,824\,z^7 + 21\,256\,732\,672\,z^6 + 505\,046\,630\,400\,z^5 + 5\,226\,504\,192\,000\,z^4 + 48\,004\,901\,683\,200\,z^3 + 264\,428\,163\,014\,400\,z^2 + 523\,786\,767\,688\,800\,z - 337\,347\,422\,787\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(134\,217\,728\,z^7 + 1\,056\,964\,608\,z^6 - 110\,415\,052\,800\,z^5 - 1\,584\,340\,992\,000\,z^4 - 16\,441\,425\,100\,800\,z^3 - 131\,402\,952\,172\,800\,z^2 - 587\,663\,202\,772\,800\,z - 1\,012\,042\,268\,362\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(7\,973\,311\,610\,880\,\sqrt{2}\;z^{15/4}\right) $$

07.22.03.agdx.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{21}{4}; -z\right) = $$

$$ \left(221\left(2\sqrt{z}\,\left(134\,217\,728\,z^7 + 251\,658\,240\,z^6 - 87\,501\,570\,048\,z^5 + 931\,553\,280\,000\,z^4 - 9\,254\,736\,691\,200\,z^3 + 63\,268\,088\,083\,200\,z^2 - 170\,337\,160\,224\,000\,z - 202\,408\,453\,672\,425\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 3\left(1\,073\,741\,824\,z^7 + 21\,256\,732\,672\,z^6 - 505\,046\,630\,400\,z^5 + 5\,226\,504\,192\,000\,z^4 - 48\,004\,901\,683\,200\,z^3 + 264\,428\,163\,014\,400\,z^2 - 523\,786\,767\,688\,800\,z - 337\,347\,422\,787\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-134\,217\,728\,z^7 + 1\,056\,964\,608\,z^6 + 110\,415\,052\,800\,z^5 - 1\,584\,340\,992\,000\,z^4 + 16\,441\,425\,100\,800\,z^3 - 131\,402\,952\,172\,800\,z^2 + 587\,663\,202\,772\,800\,z - 1\,012\,042\,268\,362\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(7\,973\,311\,610\,880\,\sqrt{2}\;z^{15/4}\right) $$

07.22.03.agdy.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{23}{4}; z\right) = \left(\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} + \frac{20\,z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{495}\sqrt{z}\,\left(16\,z^2 + 240\,z + 495\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.agdz.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{11}{2}, \frac{23}{4}; -z\right) = \left(-\frac{64\,z^3}{10\,395} + \frac{32\,z^2}{99} - \frac{20\,z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{495}\sqrt{z}\,\left(16\,z^2 - 240\,z + 495\right)\sin\left(2\sqrt{z}\right) $$

For fixed z and $a_1 = \frac{23}{4}$, $b_1 = -\frac{9}{2}$

07.22.03.age0.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{23}{4}; z\right) = $$
$$ -\frac{1}{94\,204\,863\,435\,375\sqrt[4]{z}}\left(\sqrt{2}\left(\left(536\,870\,912\,z^9 + 448\,454\,983\,680\,z^8 + 15\,187\,260\,211\,200\,z^7 + 8\,335\,734\,865\,920\,z^6 - \right.\right.\right. $$
$$ 3\,460\,818\,493\,440\,z^5 - 11\,836\,092\,280\,320\,z^4 - 36\,533\,962\,967\,040\,z^3 - 25\,184\,257\,560\,000\,z^2 + $$
$$ 167\,475\,312\,774\,000\,z - 94\,204\,863\,435\,375\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(12\,415\,139\,840\,z^8 + 1\,725\,733\,797\,888\,z^7 + \right. $$
$$ 7\,973\,311\,610\,880\,z^6 + 148\,852\,408\,320\,z^5 + 4\,702\,805\,775\,360\,z^4 + 19\,787\,194\,848\,960\,z^3 + $$
$$ \left. 54\,565\,891\,380\,000\,z^2 + 41\,868\,828\,193\,500\,z - 94\,204\,863\,435\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 4z\left(134\,217\,728\,z^8 + 102\,903\,054\,336\,z^7 + 2\,578\,584\,698\,880\,z^6 - 2\,083\,933\,716\,480\,z^5 - 2\,539\,794\,216\,960\,z^4 - \right. $$
$$ \left.\left. 8\,958\,472\,871\,040\,z^3 - 33\,159\,272\,454\,000\,z^2 - 83\,737\,656\,387\,000\,z - 94\,204\,863\,435\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.age1.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{23}{4}; -z\right) = $$
$$ \frac{1}{94\,204\,863\,435\,375\sqrt[4]{z}}\left(\sqrt{2}\left(\left(536\,870\,912\,z^9 - 448\,454\,983\,680\,z^8 + 15\,187\,260\,211\,200\,z^7 - 8\,335\,734\,865\,920\,z^6 - \right.\right.\right. $$
$$ 3\,460\,818\,493\,440\,z^5 + 11\,836\,092\,280\,320\,z^4 - 36\,533\,962\,967\,040\,z^3 + $$
$$ 25\,184\,257\,560\,000\,z^2 + 167\,475\,312\,774\,000\,z + 94\,204\,863\,435\,375\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ 4\sqrt{z}\left(12\,415\,139\,840\,z^8 - 1\,725\,733\,797\,888\,z^7 + 7\,973\,311\,610\,880\,z^6 - 148\,852\,408\,320\,z^5 + 4\,702\,805\,775\,360\,z^4 - \right. $$
$$ \left. 19\,787\,194\,848\,960\,z^3 + 54\,565\,891\,380\,000\,z^2 - 41\,868\,828\,193\,500\,z - 94\,204\,863\,435\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ 4z\left(134\,217\,728\,z^8 - 102\,903\,054\,336\,z^7 + 2\,578\,584\,698\,880\,z^6 + 2\,083\,933\,716\,480\,z^5 - 2\,539\,794\,216\,960\,z^4 + \right. $$
$$ \left.\left. 8\,958\,472\,871\,040\,z^3 - 33\,159\,272\,454\,000\,z^2 + 83\,737\,656\,387\,000\,z - 94\,204\,863\,435\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.age2.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{21}{4}; z\right) = $$
$$ \frac{1}{12\,993\,098\,493\,375}\left(\left(-134\,217\,728\,z^8 - 99\,950\,264\,320\,z^7 - 2\,578\,584\,698\,880\,z^6 + 996\,663\,951\,360\,z^5 + 1\,446\,052\,608\,000\,z^4 + \right.\right. $$
$$ \left. 4\,926\,311\,913\,600\,z^3 + 15\,704\,254\,566\,000\,z^2 + 29\,148\,538\,419\,000\,z + 12\,993\,098\,493\,375\right)\cosh\left(2\sqrt{z}\right) - $$
$$ 2\sqrt{z}\left(3\,003\,121\,664\,z^7 + 381\,089\,218\,560\,z^6 + 1\,348\,681\,728\,000\,z^5 + 444\,939\,264\,000\,z^4 + \right. $$
$$ \left.\left. 1\,293\,104\,736\,000\,z^3 + 4\,558\,146\,793\,200\,z^2 + 11\,824\,407\,094\,500\,z + 12\,993\,098\,493\,375\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.age3.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{1}{12\,993\,098\,493\,375}\left(\left(-134\,217\,728\,z^8 + 99\,950\,264\,320\,z^7 - 2\,578\,584\,698\,880\,z^6 - 996\,663\,951\,360\,z^5 + 1\,446\,052\,608\,000\,z^4 - 4\,926\,311\,913\,600\,z^3 + 15\,704\,254\,566\,000\,z^2 - 29\,148\,538\,419\,000\,z + 12\,993\,098\,493\,375\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(-3\,003\,121\,664\,z^7 + 381\,089\,218\,560\,z^6 - 1\,348\,681\,728\,000\,z^5 + 444\,939\,264\,000\,z^4 - 1\,293\,104\,736\,000\,z^3 + 4\,558\,146\,793\,200\,z^2 - 11\,824\,407\,094\,500\,z + 12\,993\,098\,493\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.age4.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{19}{4}; z\right) = \frac{1}{4\,095\,863\,627\,625\sqrt[4]{z}}\left(\sqrt{2}\left(9\left(671\,088\,640\,z^8 + 92\,895\,444\,992\,z^7 + 644\,308\,008\,960\,z^6 + 56\,089\,313\,280\,z^5 + 65\,752\,135\,680\,z^4 + 174\,958\,882\,560\,z^3 + 90\,030\,679\,200\,z^2 - 787\,768\,443\,000\,z + 455\,095\,958\,625\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(67\,108\,864\,z^8 + 49\,262\,100\,480\,z^7 + 1\,375\,870\,648\,320\,z^6 + 317\,120\,348\,160\,z^5 - 243\,300\,879\,360\,z^4 - 961\,713\,466\,560\,z^3 - 2\,401\,629\,199\,200\,z^2 - 1\,628\,764\,483\,500\,z + 4\,095\,863\,627\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(486\,539\,264\,z^7 + 57\,718\,865\,920\,z^6 + 181\,211\,627\,520\,z^5 + 76\,044\,165\,120\,z^4 + 180\,385\,793\,280\,z^3 + 556\,000\,275\,600\,z^2 + 1\,277\,462\,340\,000\,z + 1\,365\,287\,875\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.age5.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{19}{4}; -z\right) = \frac{1}{4\,095\,863\,627\,625\sqrt[4]{z}}\left(\sqrt{2}\left(9\left(671\,088\,640\,z^8 - 92\,895\,444\,992\,z^7 + 644\,308\,008\,960\,z^6 - 56\,089\,313\,280\,z^5 + 65\,752\,135\,680\,z^4 - 174\,958\,882\,560\,z^3 + 90\,030\,679\,200\,z^2 + 787\,768\,443\,000\,z + 455\,095\,958\,625\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(67\,108\,864\,z^8 - 49\,262\,100\,480\,z^7 + 1\,375\,870\,648\,320\,z^6 - 317\,120\,348\,160\,z^5 - 243\,300\,879\,360\,z^4 + 961\,713\,466\,560\,z^3 - 2\,401\,629\,199\,200\,z^2 + 1\,628\,764\,483\,500\,z + 4\,095\,863\,627\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 12\,z\left(486\,539\,264\,z^7 - 57\,718\,865\,920\,z^6 + 181\,211\,627\,520\,z^5 - 76\,044\,165\,120\,z^4 + 180\,385\,793\,280\,z^3 - 556\,000\,275\,600\,z^2 + 1\,277\,462\,340\,000\,z - 1\,365\,287\,875\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.age6.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{17}{4}; z\right) = \left(\frac{16\,777\,216\,z^7}{7\,279\,046\,775} + \frac{10\,828\,644\,352\,z^6}{41\,247\,931\,725} + \frac{131\,072\,z^5}{149\,175} + \frac{8192\,z^4}{36\,855} + \frac{21\,248\,z^3}{41\,769} + \frac{18\,896\,z^2}{13\,923} + \frac{352\,z}{153} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{618\,718\,975\,875}\left(2\sqrt{z}\,\left(16\,777\,216\,z^7 + 11\,245\,977\,600\,z^6 + 261\,411\,962\,880\,z^5 - 56\,628\,633\,600\,z^4 - 94\,802\,400\,000\,z^3 - 261\,702\,025\,200\,z^2 - 598\,499\,401\,500\,z - 618\,718\,975\,875\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.age7.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{17}{4}; -z\right) = \left(-\frac{16\,777\,216\,z^7}{7\,279\,046\,775} + \frac{10\,828\,644\,352\,z^6}{41\,247\,931\,725} - \frac{131\,072\,z^5}{149\,175} + \frac{8192\,z^4}{36\,855} - \frac{21\,248\,z^3}{41\,769} + \frac{18\,896\,z^2}{13\,923} - \frac{352\,z}{153} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{618\,718\,975\,875}\left(2\sqrt{z}\,\left(16\,777\,216\,z^7 - 11\,245\,977\,600\,z^6 + 261\,411\,962\,880\,z^5 + 56\,628\,633\,600\,z^4 - 94\,802\,400\,000\,z^3 + 261\,702\,025\,200\,z^2 - 598\,499\,401\,500\,z + 618\,718\,975\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.age8.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{15}{4}; z\right) = -\frac{1}{215\,571\,769\,875\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(33\,554\,432\,z^8 + 22\,867\,345\,408\,z^7 + 640\,872\,087\,552\,z^6 + 498\,331\,975\,680\,z^5 - 48\,977\,026\,560\,z^4 - 81\,100\,293\,120\,z^3 - 22\,562\,971\,200\,z^2 + 357\,689\,455\,200\,z - 215\,571\,769\,875\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(700\,448\,768\,z^7 + 78\,781\,612\,032\,z^6 + 324\,301\,455\,360\,z^5 + 808\,980\,480\,z^4 + 55\,604\,767\,680\,z^3 + 125\,865\,986\,400\,z^2 + 70\,260\,428\,700\,z - 215\,571\,769\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8\,388\,608\,z^7 + 5\,197\,791\,232\,z^6 + 104\,968\,028\,160\,z^5 - 45\,302\,906\,880\,z^4 - 47\,771\,982\,720\,z^3 - 108\,943\,758\,000\,z^2 - 217\,168\,597\,800\,z - 215\,571\,769\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.age9.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{215\,571\,769\,875\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-33\,554\,432 z^8 + 22\,867\,345\,408 z^7 - 640\,872\,087\,552 z^6 + 498\,331\,975\,680 z^5 + 48\,977\,026\,560 z^4 - 81\,100\,293\,120 z^3 + 22\,562\,971\,200 z^2 + 357\,689\,455\,200 z + 215\,571\,769\,875\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(700\,448\,768 z^7 - 78\,781\,612\,032 z^6 + 324\,301\,455\,360 z^5 - 808\,980\,480 z^4 + 55\,604\,767\,680 z^3 - 125\,865\,986\,400 z^2 + 70\,260\,428\,700 z + 215\,571\,769\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8\,388\,608 z^7 - 5\,197\,791\,232 z^6 + 104\,968\,028\,160 z^5 + 45\,302\,906\,880 z^4 - 47\,771\,982\,720 z^3 + 108\,943\,758\,000 z^2 - 217\,168\,597\,800 z + 215\,571\,769\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agea.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{13}{4}; z\right) = \frac{1}{36\,395\,233\,875}\left(\left(-8\,388\,608 z^7 - 4\,872\,732\,672 z^6 - 90\,605\,813\,760 z^5 + 45\,302\,906\,880 z^4 + 30\,109\,242\,240 z^3 + 59\,014\,494\,000 z^2 + 87\,099\,705\,000 z + 36\,395\,233\,875\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(55\,574\,528 z^6 + 5\,346\,689\,024 z^5 + 11\,325\,726\,720 z^4 + 3\,842\,657\,280 z^3 + 6\,841\,573\,200 z^2 + 12\,857\,575\,500 z + 12\,131\,744\,625\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.ageb.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{13}{4}; -z\right) = \frac{1}{36\,395\,233\,875}\left(\left(8\,388\,608 z^7 - 4\,872\,732\,672 z^6 + 90\,605\,813\,760 z^5 + 45\,302\,906\,880 z^4 - 30\,109\,242\,240 z^3 + 59\,014\,494\,000 z^2 - 87\,099\,705\,000 z + 36\,395\,233\,875\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(55\,574\,528 z^6 - 5\,346\,689\,024 z^5 + 11\,325\,726\,720 z^4 - 3\,842\,657\,280 z^3 + 6\,841\,573\,200 z^2 - 12\,857\,575\,500 z + 12\,131\,744\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agec.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{11}{4}; z\right) = \frac{1}{14\,371\,451\,325\sqrt[4]{z}}\left(\sqrt{2}\left(\left(331\,350\,016 z^7 + 33\,472\,118\,784 z^6 + 131\,263\,414\,272 z^5 - 34\,516\,500\,480 z^4 + 6\,724\,650\,240 z^3 - 94\,802\,400 z^2 - 22\,065\,258\,600 z + 14\,371\,451\,325\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4\,194\,304 z^7 + 2\,319\,974\,400 z^6 + 42\,452\,877\,312 z^5 - 19\,748\,136\,960 z^4 - 1\,807\,565\,760 z^3 - 7\,615\,792\,800 z^2 - 2\,903\,323\,500 z + 14\,371\,451\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(79\,691\,776 z^6 + 6\,687\,424\,512 z^5 + 5\,806\,632\,960 z^4 + 8\,831\,370\,240 z^3 + 10\,412\,463\,600 z^2 + 16\,258\,611\,600 z + 14\,371\,451\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aged.01

$${}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{14\,371\,451\,325\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(-\left(331\,350\,016\,z^7 - 33\,472\,118\,784\,z^6 + 131\,263\,414\,272\,z^5 + 34\,516\,500\,480\,z^4 + 6\,724\,650\,240\,z^3 + 94\,802\,400\,z^2 - 22\,065\,258\,600\,z - 14\,371\,451\,325\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(4\,194\,304\,z^7 - 2\,319\,974\,400\,z^6 + 42\,452\,877\,312\,z^5 + 19\,748\,136\,960\,z^4 - 1\,807\,565\,760\,z^3 + 7\,615\,792\,800\,z^2 - 2\,903\,323\,500\,z - 14\,371\,451\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(79\,691\,776\,z^6 - 6\,687\,424\,512\,z^5 + 5\,806\,632\,960\,z^4 - 8\,831\,370\,240\,z^3 + 10\,412\,463\,600\,z^2 - 16\,258\,611\,600\,z + 14\,371\,451\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agee.01

$${}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{9}{4}; z\right) = \left(\frac{76\,546\,048\,z^6}{2\,799\,633\,375} + \frac{262\,144\,z^5}{127\,575} + \frac{8192\,z^4}{18\,225} + \frac{134\,144\,z^3}{42\,525} + \frac{6352\,z^2}{2835} + \frac{208\,z}{81} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{2\,799\,633\,375}\left(2\sqrt{z}\,\left(1\,048\,576\,z^6 + 503\,840\,768\,z^5 + 6\,292\,070\,400\,z^4 + 6\,134\,768\,640\,z^3 - 2\,659\,734\,000\,z^2 - 3\,456\,337\,500\,z - 2\,799\,633\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agef.01

$${}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{9}{4}; -z\right) = \left(\frac{76\,546\,048\,z^6}{2\,799\,633\,375} - \frac{262\,144\,z^5}{127\,575} + \frac{8192\,z^4}{18\,225} - \frac{134\,144\,z^3}{42\,525} + \frac{6352\,z^2}{2835} - \frac{208\,z}{81} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{1}{2\,799\,633\,375}\left(2\sqrt{z}\,\left(1\,048\,576\,z^6 - 503\,840\,768\,z^5 + 6\,292\,070\,400\,z^4 + 6\,134\,768\,640\,z^3 - 2\,659\,734\,000\,z^2 + 3\,456\,337\,500\,z - 2\,799\,633\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ageg.01

$${}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{7}{4}; z\right) =$$
$$-\frac{1}{1\,306\,495\,575\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(2\,097\,152\,z^7 + 992\,870\,400\,z^6 + 14\,475\,091\,968\,z^5 - 12\,400\,012\,800\,z^4 + 6\,471\,843\,840\,z^3 - 189\,604\,800\,z^2 + 1\,659\,042\,000\,z - 1\,306\,495\,575\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,\left(12\,320\,768\,z^6 + 856\,866\,816\,z^5 + 41\,149\,440\,z^4 + 1\,145\,148\,480\,z^3 + 10\,533\,600\,z^2 - 27\,650\,700\,z - 435\,498\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(524\,288\,z^6 + 220\,889\,088\,z^5 + 1\,853\,245\,440\,z^4 + 1\,960\,479\,360\,z^3 + 2\,069\,852\,400\,z^2 - 1\,824\,946\,200\,z - 1\,306\,495\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ageh.01

$${}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{1\,306\,495\,575\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2\,097\,152\,z^7 - 992\,870\,400\,z^6 + 14\,475\,091\,968\,z^5 + 12\,400\,012\,800\,z^4 + 6\,471\,843\,840\,z^3 + 189\,604\,800\,z^2 + 1\,659\,042\,000\,z + 1\,306\,495\,575\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(12\,320\,768\,z^6 - 856\,866\,816\,z^5 + 41\,149\,440\,z^4 - 1\,145\,148\,480\,z^3 + 10\,533\,600\,z^2 + 27\,650\,700\,z - 435\,498\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(524\,288\,z^6 - 220\,889\,088\,z^5 + 1\,853\,245\,440\,z^4 + 1\,960\,479\,360\,z^3 - 2\,069\,852\,400\,z^2 + 1\,824\,946\,200\,z - 1\,306\,495\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agei.01

$${}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{5}{4}; z\right) = \left(-\frac{524\,288\,z^6}{311\,070\,375} - \frac{32\,768\,z^5}{51\,975} - \frac{2048\,z^4}{567} + \frac{2176\,z^3}{675} + \frac{2096\,z^2}{315} + \frac{136\,z}{45} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{311\,070\,375}\left(2\sqrt{z}\left(8\,585\,216\,z^5 + 449\,433\,600\,z^4 - 825\,834\,240\,z^3 + 1\,479\,970\,800\,z^2 + 525\,363\,300\,z + 311\,070\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agej.01

$${}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{5}{4}; -z\right) = \left(-\frac{524\,288\,z^6}{311\,070\,375} + \frac{32\,768\,z^5}{51\,975} - \frac{2048\,z^4}{567} - \frac{2176\,z^3}{675} + \frac{2096\,z^2}{315} - \frac{136\,z}{45} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{311\,070\,375}\left(2\sqrt{z}\left(-8\,585\,216\,z^5 + 449\,433\,600\,z^4 + 825\,834\,240\,z^3 + 1\,479\,970\,800\,z^2 - 525\,363\,300\,z + 311\,070\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agek.01

$${}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{3}{4}; z\right) = \frac{1}{186\,642\,225\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,777\,216\,z^6 + 881\,295\,360\,z^5 - 1\,103\,542\,272\,z^4 + 2\,520\,435\,456\,z^3 - 1\,738\,044\,000\,z^2 - 55\,301\,400\,z + 186\,642\,225\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(262\,144\,z^6 + 88\,457\,216\,z^5 + 377\,281\,536\,z^4 - 308\,516\,544\,z^3 - 766\,291\,680\,z^2 + 193\,554\,900\,z + 186\,642\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(3\,997\,696\,z^5 + 156\,954\,624\,z^4 - 447\,815\,424\,z^3 + 537\,269\,040\,z^2 + 442\,411\,200\,z + 186\,642\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agel.01

$${}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{1}{186\,642\,225\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(16\,777\,216 z^6 - 881\,295\,360 z^5 - 1\,103\,542\,272 z^4 - 2\,520\,435\,456 z^3 - 1\,738\,044\,000 z^2 + 55\,301\,400 z + 186\,642\,225\right)\right.\right.$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(262\,144 z^6 - 88\,457\,216 z^5 + 377\,281\,536 z^4 + 308\,516\,544 z^3 - 766\,291\,680 z^2 -\right.$$
$$\left.193\,554\,900 z + 186\,642\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-3\,997\,696 z^5 + 156\,954\,624 z^4 +\right.$$
$$\left.\left.\left.447\,815\,424 z^3 + 537\,269\,040 z^2 - 442\,411\,200 z + 186\,642\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agem.01

$${}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{1}{4}; z\right) = \left(\frac{65\,536 z^5}{1\,091\,475} + \frac{77\,824 z^4}{43\,659} - \frac{38\,144 z^3}{6615} + \frac{272 z^2}{63} + \frac{64 z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) +$$
$$\frac{1}{62\,214\,075}\left(2\sqrt{z}\left(65\,536 z^5 + 17\,510\,400 z^4 - 12\,038\,400 z^3 + 188\,551\,440 z^2 - 359\,459\,100 z - 62\,214\,075\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agen.01

$${}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, -\frac{1}{4}; -z\right) = \left(-\frac{65\,536 z^5}{1\,091\,475} + \frac{77\,824 z^4}{43\,659} + \frac{38\,144 z^3}{6615} + \frac{272 z^2}{63} - \frac{64 z}{9} + 1\right)\cos\left(2\sqrt{z}\right) +$$
$$\frac{1}{62\,214\,075}\left(2\sqrt{z}\left(65\,536 z^5 - 17\,510\,400 z^4 - 12\,038\,400 z^3 - 188\,551\,440 z^2 - 359\,459\,100 z + 62\,214\,075\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.ageo.01

$${}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{1}{4}; z\right) = -\frac{1}{62\,214\,075\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(131\,072 z^6 + 32\,784\,384 z^5 - 3\,644\,928 z^4 + 217\,857\,024 z^3 - 615\,384\,000 z^2 + 442\,411\,200 z - 62\,214\,075\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,753\,088 z^5 + 40\,495\,104 z^4 - 132\,019\,776 z^3 + 69\,965\,280 z^2 + 167\,359\,500 z - 62\,214\,075\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4z\left(32\,768 z^5 + 6\,905\,856 z^4 - 26\,253\,696 z^3 + 132\,446\,160 z^2 - 107\,692\,200 z - 62\,214\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agep.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{1}{4}; -z\right) = \frac{1}{62\,214\,075\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(-131\,072\,z^6 + 32\,784\,384\,z^5 + 3\,644\,928\,z^4 + 217\,857\,024\,z^3 + 615\,384\,000\,z^2 + 442\,411\,200\,z + 62\,214\,075\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1\,753\,088\,z^5 - 40\,495\,104\,z^4 - 132\,019\,776\,z^3 - 69\,965\,280\,z^2 + 167\,359\,500\,z + 62\,214\,075\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(32\,768\,z^5 - 6\,905\,856\,z^4 - 26\,253\,696\,z^3 - 132\,446\,160\,z^2 - 107\,692\,200\,z + 62\,214\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ageq.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{3}{4}; z\right) = \left(-\frac{32\,768\,z^5}{62\,214\,075} - \frac{8192\,z^4}{93\,555} + \frac{20\,864\,z^3}{43\,659} - \frac{2384\,z^2}{1323} + \frac{8\,z}{27} + 1\right)\cosh\left(2\sqrt{z}\right) - $$
$$ \frac{2\sqrt{z}\left(4096\,z^4 + 38\,400\,z^3 - 41\,712\,z^2 - 679\,140\,z + 654\,885\right)\sinh\left(2\sqrt{z}\right)}{654\,885} $$

07.22.03.ager.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{3}{4}; -z\right) = \left(\frac{32\,768\,z^5}{62\,214\,075} - \frac{8192\,z^4}{93\,555} - \frac{20\,864\,z^3}{43\,659} - \frac{2384\,z^2}{1323} - \frac{8\,z}{27} + 1\right)\cos\left(2\sqrt{z}\right) + $$
$$ \frac{2\sqrt{z}\left(4096\,z^4 - 38\,400\,z^3 - 41\,712\,z^2 + 679\,140\,z + 654\,885\right)\sin\left(2\sqrt{z}\right)}{654\,885} $$

07.22.03.ages.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{5}{4}; z\right) = $$
$$ -\frac{1}{62\,214\,075\,\sqrt[4]{z}}\left(\sqrt{2}\left(9\left(81\,920\,z^5 + 659\,456\,z^4 - 768\,768\,z^3 - 8\,316\,000\,z^2 + 15\,361\,500\,z - 6\,912\,675\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 2\sqrt{z}\left(32\,768\,z^5 + 4\,325\,376\,z^4 - 26\,135\,424\,z^3 + 76\,950\,720\,z^2 + 14\,553\,000\,z - 62\,214\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 1344\,z^2\left(512\,z^3 - 32\,z^2 + 23\,595\,z - 121\,275\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aget.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{5}{4}; -z\right) = $$
$$ \frac{1}{62\,214\,075\,\sqrt[4]{z}}\left(\sqrt{2}\left(9\left(81\,920\,z^5 - 659\,456\,z^4 - 768\,768\,z^3 + 8\,316\,000\,z^2 + 15\,361\,500\,z + 6\,912\,675\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right.\right. $$
$$ 2\sqrt{z}\left(32\,768\,z^5 - 4\,325\,376\,z^4 - 26\,135\,424\,z^3 - 76\,950\,720\,z^2 + 14\,553\,000\,z + 62\,214\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left.\left. 1344\,z^2\left(512\,z^3 + 32\,z^2 + 23\,595\,z + 121\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ageu.01

$${}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{7}{4}; z\right) = \frac{1}{20\,738\,025}\left(\left(-151\,552\,z^4 + 904\,704\,z^3 - 11\,149\,200\,z^2 + 26\,334\,000\,z + 20\,738\,025\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(4096\,z^4 + 321\,024\,z^3 - 2\,020\,080\,z^2 - 1\,316\,700\,z + 20\,738\,025\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agev.01

$${}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{7}{4}; -z\right) = \frac{1}{20\,738\,025}\left(2\sqrt{z}\left(4096\,z^4 - 321\,024\,z^3 - 2\,020\,080\,z^2 + 1\,316\,700\,z + 20\,738\,025\right)\sin\left(2\sqrt{z}\right) - \left(151\,552\,z^4 + 904\,704\,z^3 + 11\,149\,200\,z^2 + 26\,334\,000\,z - 20\,738\,025\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.agew.01

$${}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{9}{4}; z\right) = -\frac{1}{99\,542\,520\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(65\,536\,z^5 + 4\,100\,096\,z^4 - 21\,762\,048\,z^3 - 22\,176\,000\,z^2 + 184\,338\,000\,z - 131\,340\,825\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4\,259\,840\,z^5 - 38\,621\,184\,z^4 + 314\,603\,520\,z^3 - 310\,464\,000\,z^2 - 553\,014\,000\,z + 158\,991\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(65\,536\,z^5 + 2\,551\,808\,z^4 - 5\,537\,280\,z^3 - 141\,926\,400\,z^2 + 184\,338\,000\,z + 158\,991\,525\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agex.01

$${}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{9}{4}; -z\right) = \frac{1}{99\,542\,520\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\left(65\,536\,z^5 - 4\,100\,096\,z^4 - 21\,762\,048\,z^3 + 22\,176\,000\,z^2 + 184\,338\,000\,z + 131\,340\,825\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4\,259\,840\,z^5 + 38\,621\,184\,z^4 + 314\,603\,520\,z^3 + 310\,464\,000\,z^2 - 553\,014\,000\,z - 158\,991\,525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(-65\,536\,z^5 + 2\,551\,808\,z^4 + 5\,537\,280\,z^3 - 141\,926\,400\,z^2 - 184\,338\,000\,z + 158\,991\,525\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agey.01

$${}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{11}{4}; z\right) = \frac{1}{2\,962\,575}\left(\left(-2048\,z^4 - 23\,424\,z^3 - 424\,080\,z^2 + 4\,548\,600\,z + 2\,962\,575\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(4352\,z^3 - 56\,240\,z^2 + 199\,500\,z + 987\,525\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agez.01

$${}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{11}{4}; -z\right) = \frac{1}{2\,962\,575}\left(\left(-2048\,z^4 + 23\,424\,z^3 - 424\,080\,z^2 - 4\,548\,600\,z + 2\,962\,575\right)\cos\left(2\sqrt{z}\right) - 6\sqrt{z}\left(4352\,z^3 + 56\,240\,z^2 + 199\,500\,z - 987\,525\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agf0.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{13}{4}; z\right) = \frac{1}{353\,928\,960\sqrt{2}\, z^{7/4}} $$
$$ \left(\left(-2\sqrt{z}\left(5\,767\,168 z^5 - 65\,273\,856 z^4 + 101\,376\,000 z^3 + 842\,688\,000 z^2 - 63\,201\,600 z - 613\,253\,025\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(-2\,097\,152 z^6 + 12\,976\,128 z^5 - 674\,365\,440 z^4 + 2\,433\,024\,000 z^3 + 5\,056\,128\,000 z^2 + \right. $$
$$ 3\,634\,092\,000 z - 3\,066\,265\,125\Big) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(4\,980\,736 z^5 - 56\,770\,560 z^4 - \right. $$
$$ \left.\left.\left. 191\,692\,800 z^3 + 1\,564\,992\,000 z^2 + 2\,907\,273\,600 z + 3\,066\,265\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agf1.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{13}{4}; -z\right) = \frac{1}{353\,928\,960\sqrt{2}\, z^{7/4}} $$
$$ \left(\left(-2\sqrt{z}\left(5\,767\,168 z^5 + 65\,273\,856 z^4 + 101\,376\,000 z^3 - 842\,688\,000 z^2 - 63\,201\,600 z + 613\,253\,025\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ \left(2\,097\,152 z^6 + 12\,976\,128 z^5 + 674\,365\,440 z^4 + 2\,433\,024\,000 z^3 - 5\,056\,128\,000 z^2 + \right. $$
$$ 3\,634\,092\,000 z + 3\,066\,265\,125\Big) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4\,980\,736 z^5 + 56\,770\,560 z^4 - \right. $$
$$ \left.\left.\left. 191\,692\,800 z^3 - 1\,564\,992\,000 z^2 + 2\,907\,273\,600 z - 3\,066\,265\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agf2.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{15}{4}; z\right) = \frac{1}{269\,325} $$
$$ \left(\left(-3328 z^3 + 14\,640 z^2 + 446\,880 z + 269\,325\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256 z^3 - 6640 z^2 + 87\,780 z + 269\,325\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agf3.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{15}{4}; -z\right) = $$
$$ \frac{1}{269\,325}\left(\left(3328 z^3 + 14\,640 z^2 - 446\,880 z + 269\,325\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(256 z^3 + 6640 z^2 + 87\,780 z - 269\,325\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agf4.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{17}{4}; z\right) = $$
$$ -\frac{1}{11\,325\,726\,720\sqrt{2}\, z^{11/4}}\left(13\left(2\sqrt{z}\left(4\,194\,304 z^6 - 110\,100\,480 z^5 + 693\,043\,200 z^4 + 4\,237\,516\,800 z^3 + \right.\right.\right. $$
$$ \left.\left.\left. 11\,831\,339\,520 z^2 + 25\,511\,325\,840 z - 34\,219\,518\,795\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 3\left(20\,971\,520 z^6 + 221\,249\,536 z^5 - 3\,769\,958\,400 z^4 - 15\,023\,923\,200 z^3 - 51\,943\,288\,320 z^2 - \right. $$
$$ 83\,075\,343\,120 z + 57\,032\,531\,325\Big) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4\,194\,304 z^6 - 130\,547\,712 z^5 + 345\,047\,040 z^4 + \right. $$
$$ \left.\left.\left. 8\,650\,137\,600 z^3 + 35\,551\,802\,880 z^2 + 115\,782\,171\,120 z + 171\,097\,593\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agf5.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{17}{4}; -z\right) = $$
$$ -\frac{1}{11\,325\,726\,720\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\,\left(4\,194\,304\,z^6+110\,100\,480\,z^5+693\,043\,200\,z^4-4\,237\,516\,800\,z^3+11\,831\,339\,520\,z^2-\right.\right.\right. $$
$$ \left.\left.\left.25\,511\,325\,840\,z-34\,219\,518\,795\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(20\,971\,520\,z^6-221\,249\,536\,z^5-3\,769\,958\,400\,z^4+\right.\right.\right. $$
$$ \left.\left.\left.15\,023\,923\,200\,z^3-51\,943\,288\,320\,z^2+83\,075\,343\,120\,z+57\,032\,531\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\right. $$
$$ \left.2\sqrt{z}\,\left(4\,194\,304\,z^6+130\,547\,712\,z^5+345\,047\,040\,z^4-8\,650\,137\,600\,z^3+35\,551\,802\,880\,z^2-\right.\right. $$
$$ \left.\left.115\,782\,171\,120\,z+171\,097\,593\,975\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.agf6.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{19}{4}; z\right) = \frac{\left(-128\,z^3+3120\,z^2+31\,080\,z+17\,955\right)\cosh\left(2\sqrt{z}\right)+2\sqrt{z}\,\left(16\,z^2-7140\,z-17\,955\right)\sinh\left(2\sqrt{z}\right)}{17\,955} $$

07.22.03.agf7.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{19}{4}; -z\right) = \frac{\left(128\,z^3+3120\,z^2-31\,080\,z+17\,955\right)\cos\left(2\sqrt{z}\right)-2\sqrt{z}\,\left(16\,z^2+7140\,z-17\,955\right)\sin\left(2\sqrt{z}\right)}{17\,955} $$

07.22.03.agf8.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{21}{4}; z\right) = $$
$$ -\Bigg(221\left(2\sqrt{z}\,\left(-83\,886\,080\,z^6+2\,812\,280\,832\,z^5+27\,362\,918\,400\,z^4+247\,008\,706\,560\,z^3+1\,643\,191\,038\,720\,z^2+\right.\right. $$
$$ \left.\left.4\,339\,541\,939\,040\,z-5\,189\,960\,350\,575\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right. $$
$$ \left(134\,217\,728\,z^7-1\,090\,519\,040\,z^6-48\,129\,638\,400\,z^5-439\,020\,748\,800\,z^4-3\,820\,545\,146\,880\,z^3-\right. $$
$$ \left.20\,545\,121\,076\,480\,z^2-40\,150\,902\,052\,800\,z+25\,949\,801\,752\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+ $$
$$ 2\sqrt{z}\,\left(-134\,217\,728\,z^6+3\,114\,270\,720\,z^5+47\,721\,676\,800\,z^4+450\,745\,712\,640\,z^3+3\,464\,307\,221\,760\,z^2+\right. $$
$$ \left.\left.15\,208\,675\,020\,000\,z+25\,949\,801\,752\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)\Big/\left(362\,423\,255\,040\sqrt{2}\,z^{15/4}\right) $$

07.22.03.agf9.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{21}{4}; -z\right) = $$

$$ -\left(221\left(2\sqrt{z}\,\left(83\,886\,080\,z^6 + 2\,812\,280\,832\,z^5 - 27\,362\,918\,400\,z^4 + 247\,008\,706\,560\,z^3 - 1\,643\,191\,038\,720\,z^2 + 4\,339\,541\,939\,040\,z + 5\,189\,960\,350\,575\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(134\,217\,728\,z^7 + 1\,090\,519\,040\,z^6 - 48\,129\,638\,400\,z^5 + 439\,020\,748\,800\,z^4 - 3\,820\,545\,146\,880\,z^3 + 20\,545\,121\,076\,480\,z^2 - 40\,150\,902\,052\,800\,z - 25\,949\,801\,752\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(134\,217\,728\,z^6 + 3\,114\,270\,720\,z^5 - 47\,721\,676\,800\,z^4 + 450\,745\,712\,640\,z^3 - 3\,464\,307\,221\,760\,z^2 + 15\,208\,675\,020\,000\,z - 25\,949\,801\,752\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) \Big/ \left(362\,423\,255\,040\,\sqrt{2}\,z^{15/4}\right) $$

07.22.03.agfa.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{23}{4}; z\right) = \left(\frac{16\,z^2}{63} + \frac{16\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{945}\sqrt{z}\,\left(16\,z^2 + 420\,z + 945\right)\sinh\left(2\sqrt{z}\right) $$

07.22.03.agfb.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{9}{2}, \frac{23}{4}; -z\right) = \left(\frac{16\,z^2}{63} - \frac{16\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{945}\sqrt{z}\,\left(16\,z^2 - 420\,z + 945\right)\sin\left(2\sqrt{z}\right) $$

For fixed z and $a_1 = \frac{23}{4}$, $b_{1.} = -\frac{7}{2}$

07.22.03.agfc.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{23}{4}; z\right) = \frac{1}{10\,467\,207\,048\,375\,\sqrt[4]{z}} $$

$$ \left(\sqrt{2}\,\left(\left(11\,744\,051\,200\,z^8 + 1\,446\,820\,970\,496\,z^7 + 5\,557\,156\,577\,280\,z^6 - 1\,935\,081\,308\,160\,z^5 + 1\,809\,487\,088\,640\,z^4 + 4\,007\,095\,202\,880\,z^3 + 1\,846\,845\,554\,400\,z^2 - 17\,943\,783\,511\,500\,z + 10\,467\,207\,048\,375\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(134\,217\,728\,z^8 + 91\,561\,656\,320\,z^7 + 1\,988\,288\,839\,680\,z^6 - 2\,083\,933\,716\,480\,z^5 - 381\,434\,296\,320\,z^4 - 2\,506\,651\,297\,920\,z^3 - 6\,128\,169\,339\,600\,z^2 - 3\,987\,507\,447\,000\,z + 10\,467\,207\,048\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2\,835\,349\,504\,z^7 + 295\,147\,929\,600\,z^6 + 112\,005\,611\,520\,z^5 + 1\,079\,179\,960\,320\,z^4 + 1\,612\,955\,393\,280\,z^3 + 4\,505\,183\,852\,400\,z^2 + 9\,968\,768\,617\,500\,z + 10\,467\,207\,048\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agfd.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{23}{4}; -z\right) = \frac{1}{10\,467\,207\,048\,375\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(11\,744\,051\,200 z^8 - 1\,446\,820\,970\,496 z^7 + 5\,557\,156\,577\,280 z^6 + 1\,935\,081\,308\,160 z^5 + 1\,809\,487\,088\,640 z^4 - \right.\right.\right. $$
$$ \left.\left.\left. 4\,007\,095\,202\,880 z^3 + 1\,846\,845\,554\,400 z^2 + 17\,943\,783\,511\,500 z + 10\,467\,207\,048\,375\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \right. $$
$$ 4\sqrt{z}\left(134\,217\,728 z^8 - 91\,561\,656\,320 z^7 + 1\,988\,288\,839\,680 z^6 + 2\,083\,933\,716\,480 z^5 - 381\,434\,296\,320 z^4 + \right. $$
$$ \left. 2\,506\,651\,297\,920 z^3 - 6\,128\,169\,339\,600 z^2 + 3\,987\,507\,447\,000 z + 10\,467\,207\,048\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ 4 z\left(2\,835\,349\,504 z^7 - 295\,147\,929\,600 z^6 + 112\,005\,611\,520 z^5 - 1\,079\,179\,960\,320 z^4 + 1\,612\,955\,393\,280 z^3 - \right. $$
$$ \left.\left. 4\,505\,183\,852\,400 z^2 + 9\,968\,768\,617\,500 z - 10\,467\,207\,048\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.agfe.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{21}{4}; z\right) = $$
$$ \frac{1}{1\,443\,677\,610\,375}\left(\left(2\,801\,795\,072 z^7 + 295\,147\,929\,600 z^6 + 502\,111\,272\,960 z^5 + 444\,939\,264\,000 z^4 + 792\,548\,064\,000 z^3 + \right.\right. $$
$$ \left.\left. 2\,009\,479\,071\,600 z^2 + 3\,339\,118\,282\,500 z + 1\,443\,677\,610\,375\right) \cosh\left(2\sqrt{z}\right) + $$
$$ 2\sqrt{z}\left(33\,554\,432 z^7 + 21\,485\,322\,240 z^6 + 423\,285\,227\,520 z^5 - 374\,693\,806\,080 z^4 - 250\,278\,336\,000 z^3 - \right. $$
$$ \left. 637\,166\,930\,400 z^2 - 1\,414\,214\,802\,000 z - 1\,443\,677\,610\,375\right) \sinh\left(2\sqrt{z}\right)\Bigg) $$

07.22.03.agff.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{21}{4}; -z\right) = $$
$$ \frac{1}{1\,443\,677\,610\,375}\left(\left(-2\,801\,795\,072 z^7 + 295\,147\,929\,600 z^6 - 502\,111\,272\,960 z^5 + 444\,939\,264\,000 z^4 - \right.\right. $$
$$ \left.\left. 792\,548\,064\,000 z^3 + 2\,009\,479\,071\,600 z^2 - 3\,339\,118\,282\,500 z + 1\,443\,677\,610\,375\right) \cos\left(2\sqrt{z}\right) + $$
$$ 2\sqrt{z}\left(33\,554\,432 z^7 - 21\,485\,322\,240 z^6 + 423\,285\,227\,520 z^5 + 374\,693\,806\,080 z^4 - 250\,278\,336\,000 z^3 + \right. $$
$$ \left. 637\,166\,930\,400 z^2 - 1\,414\,214\,802\,000 z + 1\,443\,677\,610\,375\right) \sin\left(2\sqrt{z}\right)\Bigg) $$

07.22.03.agfg.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{19}{4}; z\right) =$$
$$-\frac{1}{455\,095\,958\,625\sqrt[4]{z}}\left(\sqrt{2}\left(\left(67\,108\,864 z^8 + 45\,059\,407\,872 z^7 + 1\,208\,077\,516\,800 z^6 + 588\,937\,789\,440 z^5 - 125\,189\,729\,280 z^4 - 171\,567\,063\,360 z^3 - 45\,258\,665\,760 z^2 + 752\,790\,307\,500 z - 455\,095\,958\,625\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,392\,508\,928 z^7 + 152\,690\,491\,392 z^6 + 543\,634\,882\,560 z^5 - 21\,033\,492\,480 z^4 + 116\,644\,872\,960 z^3 + 264\,982\,188\,240 z^2 + 145\,995\,696\,000 z - 455\,095\,958\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(16\,777\,216 z^7 + 10\,233\,053\,184 z^6 + 195\,052\,830\,720 z^5 - 124\,582\,993\,920 z^4 - 106\,128\,126\,720 z^3 - 233\,836\,439\,760 z^2 - 460\,798\,915\,500 z - 455\,095\,958\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agfh.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{455\,095\,958\,625\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-67\,108\,864 z^8 + 45\,059\,407\,872 z^7 - 1\,208\,077\,516\,800 z^6 + 588\,937\,789\,440 z^5 + 125\,189\,729\,280 z^4 - 171\,567\,063\,360 z^3 + 45\,258\,665\,760 z^2 + 752\,790\,307\,500 z + 455\,095\,958\,625\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1\,392\,508\,928 z^7 - 152\,690\,491\,392 z^6 + 543\,634\,882\,560 z^5 + 21\,033\,492\,480 z^4 + 116\,644\,872\,960 z^3 - 264\,982\,188\,240 z^2 + 145\,995\,696\,000 z + 455\,095\,958\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(16\,777\,216 z^7 - 10\,233\,053\,184 z^6 + 195\,052\,830\,720 z^5 + 124\,582\,993\,920 z^4 - 106\,128\,126\,720 z^3 + 233\,836\,439\,760 z^2 - 460\,798\,915\,500 z + 455\,095\,958\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agfi.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{17}{4}; z\right) =$$
$$\frac{1}{68\,746\,552\,875}\left(\left(-16\,777\,216 z^7 - 9\,903\,800\,320 z^6 - 195\,052\,830\,720 z^5 + 56\,628\,633\,600 z^4 + 54\,353\,376\,000 z^3 + 110\,018\,185\,200 z^2 + 164\,067\,403\,500 z + 68\,746\,552\,875\right)\cosh\left(2\sqrt{z}\right) - 10\sqrt{z}\left(67\,108\,864 z^6 + 6\,635\,913\,216 z^5 + 17\,429\,102\,592 z^4 + 4\,044\,902\,400 z^3 + 7\,584\,192\,000 z^2 + 14\,481\,066\,600 z + 13\,749\,310\,575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agfj.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{17}{4}; -z\right) =$$
$$\frac{1}{68\,746\,552\,875}\left(\left(16\,777\,216 z^7 - 9\,903\,800\,320 z^6 + 195\,052\,830\,720 z^5 + 56\,628\,633\,600 z^4 - 54\,353\,376\,000 z^3 + 110\,018\,185\,200 z^2 - 164\,067\,403\,500 z + 68\,746\,552\,875\right)\cos\left(2\sqrt{z}\right) + 10\sqrt{z}\left(67\,108\,864 z^6 - 6\,635\,913\,216 z^5 + 17\,429\,102\,592 z^4 - 4\,044\,902\,400 z^3 + 7\,584\,192\,000 z^2 - 14\,481\,066\,600 z + 13\,749\,310\,575\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agfk.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{15}{4}; z\right) = \frac{1}{23\,952\,418\,875\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(\left(675\,282\,944\,z^7 + 73\,666\,658\,304\,z^6 + 407\,726\,161\,920\,z^5 + 27\,235\,676\,160\,z^4 + 9\,366\,477\,120\,z^3 + 132\,723\,360\,z^2 - 37\,411\,397\,100\,z + 23\,952\,418\,875\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(8\,388\,608\,z^7 + 4\,872\,732\,672\,z^6 + 104\,968\,028\,160\,z^5 + 22\,651\,453\,440\,z^4 - 5\,435\,337\,600\,z^3 - 13\,250\,215\,440\,z^2 - 5\,474\,838\,600\,z + 23\,952\,418\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 20\,z\left(32\,505\,856\,z^6 + 2\,976\,645\,120\,z^5 + 6\,795\,436\,032\,z^4 + 2\,116\,832\,256\,z^3 + 3\,189\,784\,752\,z^2 + 5\,292\,343\,980\,z + 4\,790\,483\,775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agfl.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{15}{4}; -z\right) = \frac{1}{23\,952\,418\,875\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(\left(-675\,282\,944\,z^7 + 73\,666\,658\,304\,z^6 - 407\,726\,161\,920\,z^5 + 27\,235\,676\,160\,z^4 - 9\,366\,477\,120\,z^3 + 132\,723\,360\,z^2 + 37\,411\,397\,100\,z + 23\,952\,418\,875\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(8\,388\,608\,z^7 - 4\,872\,732\,672\,z^6 + 104\,968\,028\,160\,z^5 - 22\,651\,453\,440\,z^4 - 5\,435\,337\,600\,z^3 + 13\,250\,215\,440\,z^2 - 5\,474\,838\,600\,z - 23\,952\,418\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 20\,z\left(32\,505\,856\,z^6 - 2\,976\,645\,120\,z^5 + 6\,795\,436\,032\,z^4 - 2\,116\,832\,256\,z^3 + 3\,189\,784\,752\,z^2 - 5\,292\,343\,980\,z + 4\,790\,483\,775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agfm.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{13}{4}; z\right) = \left(\frac{158\,334\,976\,z^6}{4\,043\,914\,875} + \frac{16\,777\,216\,z^5}{4\,901\,715} + \frac{8192\,z^4}{975} + \frac{29\,696\,z^3}{20\,475} + \frac{208\,z^2}{105} + \frac{228\,z}{91} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{4\,043\,914\,875}\left(2\sqrt{z}\,\left(2\,097\,152\,z^6 + 1\,099\,431\,936\,z^5 + 19\,191\,152\,640\,z^4 - 2\,831\,431\,680\,z^3 - 3\,128\,479\,200\,z^2 - 4\,740\,120\,000\,z - 4\,043\,914\,875\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agfn.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{13}{4}; -z\right) = \left(\frac{158\,334\,976\,z^6}{4\,043\,914\,875} - \frac{16\,777\,216\,z^5}{4\,901\,715} + \frac{8192\,z^4}{975} - \frac{29\,696\,z^3}{20\,475} + \frac{208\,z^2}{105} - \frac{228\,z}{91} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{1}{4\,043\,914\,875}\left(2\sqrt{z}\,\left(2\,097\,152\,z^6 - 1\,099\,431\,936\,z^5 + 19\,191\,152\,640\,z^4 + 2\,831\,431\,680\,z^3 - 3\,128\,479\,200\,z^2 + 4\,740\,120\,000\,z - 4\,043\,914\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agfo.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{11}{4}; z\right) =$$
$$-\frac{1}{1\,596\,827\,925\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4\,194\,304 z^7 + 2\,240\,806\,912 z^6 + 48\,399\,777\,792 z^5 + 32\,089\,559\,040 z^4 - 1\,360\,941\,120 z^3 + 107\,442\,720 z^2 + 2\,239\,706\,700 z - 1\,596\,827\,925\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(77\,594\,624 z^6 + 6\,687\,424\,512 z^5 + 20\,715\,909\,120 z^4 - 606\,735\,360 z^3 + 660\,456\,720 z^2 + 110\,602\,800 z - 1\,596\,827\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(1\,048\,576 z^6 + 502\,792\,192 z^5 + 7\,454\,638\,080 z^4 - 2\,359\,526\,400 z^3 - 1\,625\,334\,480 z^2 - 2\,018\,501\,100 z - 1\,596\,827\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agfp.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{11}{4}; -z\right) =$$
$$\frac{1}{1\,596\,827\,925\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4\,194\,304 z^7 - 2\,240\,806\,912 z^6 + 48\,399\,777\,792 z^5 - 32\,089\,559\,040 z^4 - 1\,360\,941\,120 z^3 - 107\,442\,720 z^2 + 2\,239\,706\,700 z + 1\,596\,827\,925\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(77\,594\,624 z^6 - 6\,687\,424\,512 z^5 + 20\,715\,909\,120 z^4 + 606\,735\,360 z^3 + 660\,456\,720 z^2 - 110\,602\,800 z - 1\,596\,827\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(1\,048\,576 z^6 - 502\,792\,192 z^5 + 7\,454\,638\,080 z^4 - 2\,359\,526\,400 z^3 + 1\,625\,334\,480 z^2 + 2\,018\,501\,100 z - 1\,596\,827\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agfq.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{9}{4}; z\right) = \left(-\frac{1\,048\,576 z^6}{311\,070\,375} - \frac{524\,288 z^5}{349\,125} - \frac{8192 z^4}{405} + \frac{1024 z^3}{135} + \frac{656 z^2}{225} + \frac{172 z}{63} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{311\,070\,375}\left(2\sqrt{z}\left(18\,350\,080 z^5 + 1\,321\,402\,368 z^4 + 1\,887\,621\,120 z^3 + 438\,197\,760 z^2 + 434\,511\,000 z + 311\,070\,375\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agfr.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{9}{4}; -z\right) = \left(-\frac{1\,048\,576 z^6}{311\,070\,375} + \frac{524\,288 z^5}{349\,125} - \frac{8192 z^4}{405} - \frac{1024 z^3}{135} + \frac{656 z^2}{225} - \frac{172 z}{63} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{311\,070\,375}\left(2\sqrt{z}\left(-18\,350\,080 z^5 + 1\,321\,402\,368 z^4 - 1\,887\,621\,120 z^3 + 438\,197\,760 z^2 - 434\,511\,000 z + 311\,070\,375\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agfs.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{7}{4}; z\right) = \frac{1}{145\,166\,175\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(36\,438\,016\,z^6 + 2\,778\,513\,408\,z^5 + 8\,127\,083\,520\,z^4 - 2\,043\,518\,400\,z^3 + 69\,521\,760\,z^2 - 154\,053\,900\,z + 145\,166\,175\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(524\,288\,z^6 + 220\,889\,088\,z^5 + 2\,924\,144\,640\,z^4 - 1\,068\,232\,320\,z^3 + 85\,322\,160\,z^2 + 39\,501\,000\,z + 145\,166\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(8\,716\,288\,z^5 + 535\,449\,600\,z^4 + 223\,061\,760\,z^3 + 359\,195\,760\,z^2 + 233\,055\,900\,z + 145\,166\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agft.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{1}{145\,166\,175\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(36\,438\,016\,z^6 - 2\,778\,513\,408\,z^5 + 8\,127\,083\,520\,z^4 + 2\,043\,518\,400\,z^3 + 69\,521\,760\,z^2 + 154\,053\,900\,z + 145\,166\,175\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(524\,288\,z^6 - 220\,889\,088\,z^5 + 2\,924\,144\,640\,z^4 + 1\,068\,232\,320\,z^3 + 85\,322\,160\,z^2 - 39\,501\,000\,z + 145\,166\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-8\,716\,288\,z^5 + 535\,449\,600\,z^4 - 223\,061\,760\,z^3 + 359\,195\,760\,z^2 - 233\,055\,900\,z + 145\,166\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agfu.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{5}{4}; z\right) = \left(\frac{8\,323\,072\,z^5}{34\,563\,375} + \frac{4096\,z^4}{315} - \frac{256\,z^3}{225} + \frac{5456\,z^2}{525} + \frac{116\,z}{35} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{34\,563\,375}\left(2\sqrt{z}\left(131\,072\,z^5 + 46\,948\,352\,z^4 + 393\,254\,400\,z^3 - 280\,193\,760\,z^2 - 68\,468\,400\,z - 34\,563\,375\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agfv.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{5}{4}; -z\right) = \left(-\frac{8\,323\,072\,z^5}{34\,563\,375} + \frac{4096\,z^4}{315} + \frac{256\,z^3}{225} + \frac{5456\,z^2}{525} - \frac{116\,z}{35} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{34\,563\,375}\left(2\sqrt{z}\left(131\,072\,z^5 - 46\,948\,352\,z^4 + 393\,254\,400\,z^3 + 280\,193\,760\,z^2 - 68\,468\,400\,z + 34\,563\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agfw.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{3}{4}; z\right) = $$
$$ -\frac{1}{20\,738\,025\sqrt[4]{z}}\left(\sqrt{2}\left(\left(262\,144 z^6 + 92\,356\,608 z^5 + 939\,469\,824 z^4 - 644\,035\,392 z^3 + 322\,328\,160 z^2 - \right.\right.\right. $$
$$ \left.\left.\left. 3\,950\,100 z - 20\,738\,025\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z} \right. $$
$$ \left.\left(3\,997\,696 z^5 + 197\,234\,688 z^4 - 41\,018\,112 z^3 + 147\,082\,320 z^2 - 31\,600\,800 z - 20\,738\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right. $$
$$ \left. 4 z \left(65\,536 z^5 + 20\,140\,032 z^4 + 101\,699\,328 z^3 - 65\,031\,120 z^2 - 59\,251\,500 z - 20\,738\,025\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.agfx.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{3}{4}; -z\right) = \frac{1}{20\,738\,025\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(-\left(262\,144 z^6 - 92\,356\,608 z^5 + 939\,469\,824 z^4 + 644\,035\,392 z^3 + 322\,328\,160 z^2 + 3\,950\,100 z - 20\,738\,025\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-3\,997\,696 z^5 + 197\,234\,688 z^4 + 41\,018\,112 z^3 + 147\,082\,320 z^2 + 31\,600\,800 z - 20\,738\,025\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4 z \left(65\,536 z^5 - 20\,140\,032 z^4 + 101\,699\,328 z^3 + 65\,031\,120 z^2 - 59\,251\,500 z + 20\,738\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agfy.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{1}{4}; z\right) = \left(-\frac{65\,536 z^5}{6\,912\,675} - \frac{4096 z^4}{1617} - \frac{3328 z^3}{441} + \frac{208 z^2}{105} + \frac{60 z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - $$
$$ \frac{2\sqrt{z}\left(917\,504 z^4 + 32\,102\,400 z^3 - 50\,561\,280 z^2 + 50\,034\,600 z + 6\,912\,675\right)\sinh\left(2\sqrt{z}\right)}{6\,912\,675} $$

07.22.03.agfz.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, -\frac{1}{4}; -z\right) = \left(\frac{65\,536 z^5}{6\,912\,675} - \frac{4096 z^4}{1617} + \frac{3328 z^3}{441} + \frac{208 z^2}{105} - \frac{60 z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + $$
$$ \frac{2\sqrt{z}\left(917\,504 z^4 - 32\,102\,400 z^3 - 50\,561\,280 z^2 - 50\,034\,600 z + 6\,912\,675\right)\sin\left(2\sqrt{z}\right)}{6\,912\,675} $$

07.22.03.agg0.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{1}{4}; z\right) = \frac{1}{6\,912\,675\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,785\,856 z^5 + 63\,117\,312 z^4 - 71\,983\,296 z^3 + 103\,539\,744 z^2 - 59\,251\,500 z + 6\,912\,675\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,768 z^5 + 7\,749\,632 z^4 + 14\,868\,096 z^3 + 476\,784 z^2 - 24\,421\,320 z + 6\,912\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(421\,888 z^4 + 10\,280\,448 z^3 - 21\,994\,896 z^2 + 10\,408\,860 z + 6\,912\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agg1.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{1}{4}; -z\right) = \frac{1}{6\,912\,675\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-1\,785\,856 z^5 + 63\,117\,312 z^4 + 71\,983\,296 z^3 + 103\,539\,744 z^2 + 59\,251\,500 z + 6\,912\,675\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,768 z^5 - 7\,749\,632 z^4 + 14\,868\,096 z^3 - 476\,784 z^2 - 24\,421\,320 z - 6\,912\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(421\,888 z^4 - 10\,280\,448 z^3 - 21\,994\,896 z^2 - 10\,408\,860 z + 6\,912\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agg2.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{3}{4}; z\right) = \left(\frac{4096 z^4}{72\,765} + \frac{512 z^3}{539} - \frac{496 z^2}{245} - \frac{4 z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(8192 z^4 + 1\,459\,200 z^3 - 2\,508\,000 z^2 + 10\,533\,600 z - 6\,912\,675\right)\sinh\left(2\sqrt{z}\right)}{6\,912\,675} $$

07.22.03.agg3.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{3}{4}; -z\right) = \left(\frac{4096 z^4}{72\,765} - \frac{512 z^3}{539} - \frac{496 z^2}{245} + \frac{4 z}{21} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-8192 z^4 + 1\,459\,200 z^3 + 2\,508\,000 z^2 + 10\,533\,600 z + 6\,912\,675\right)\sin\left(2\sqrt{z}\right)}{6\,912\,675} $$

07.22.03.agg4.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{5}{4}; z\right) = \frac{1}{6\,912\,675\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384 z^5 + 2\,697\,216 z^4 - 3\,060\,288 z^3 + 13\,327\,776 z^2 - 17\,671\,500 z + 6\,912\,675\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\left(90\,112 z^4 + 1\,079\,040 z^3 - 2\,012\,472 z^2 - 1\,025\,640 z + 1\,819\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(4096 z^4 + 542\,208 z^3 - 1\,992\,144 z^2 + 4\,837\,140 z + 363\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agg5.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{5}{4}; -z\right) = \frac{1}{6\,912\,675\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-16\,384 z^5 + 2\,697\,216 z^4 + 3\,060\,288 z^3 + 13\,327\,776 z^2 + 17\,671\,500 z + 6\,912\,675\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 8\sqrt{z}\left(90\,112 z^4 - 1\,079\,040 z^3 - 2\,012\,472 z^2 + 1\,025\,640 z + 1\,819\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4096 z^4 - 542\,208 z^3 - 1\,992\,144 z^2 - 4\,837\,140 z + 363\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agg6.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{7}{4}; z\right) = \left(\frac{4096 z^4}{2\,304\,225} + \frac{20\,992 z^3}{121\,275} - \frac{6064 z^2}{8085} + \frac{52 z}{49} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048 z^3 + 3840 z^2 + 33\,000 z - 121\,275\right)\sinh\left(2\sqrt{z}\right)}{121\,275} $$

07.22.03.agg7.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{7}{4}; -z\right) = \left(\frac{4096 z^4}{2\,304\,225} - \frac{20\,992 z^3}{121\,275} - \frac{6064 z^2}{8085} - \frac{52 z}{49} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048 z^3 - 3840 z^2 + 33\,000 z + 121\,275\right)\sin\left(2\sqrt{z}\right)}{121\,275} $$

07.22.03.agg8.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{9}{4}; z\right) = \frac{1}{5\,530\,140\sqrt{2}\, z^{3/4}}\left(\left(2\sqrt{z}\left(290\,816 z^4 + 413\,952 z^3 + 3\,282\,048 z^2 - 11\,088\,000 z + 6\,912\,675\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(65\,536 z^5 + 4\,681\,728 z^4 - 19\,278\,336 z^3 + 10\,644\,480 z^2 + 29\,106\,000 z - 6\,912\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(266\,240 z^4 - 1\,145\,088 z^3 + 9\,535\,680 z^2 - 7\,761\,600 z - 6\,912\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agg9.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{9}{4}; -z\right) = \frac{1}{5\,530\,140\sqrt{2}\, z^{3/4}}\left(\left(2\sqrt{z}\left(290\,816 z^4 - 413\,952 z^3 + 3\,282\,048 z^2 + 11\,088\,000 z + 6\,912\,675\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-65\,536 z^5 + 4\,681\,728 z^4 + 19\,278\,336 z^3 + 10\,644\,480 z^2 - 29\,106\,000 z - 6\,912\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(266\,240 z^4 + 1\,145\,088 z^3 + 9\,535\,680 z^2 + 7\,761\,600 z - 6\,912\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agga.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{11}{4}; z\right) = \left(\frac{256 z^3}{5985} - \frac{1808 z^2}{5775} + \frac{108 z}{77} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(512 z^3 + 16\,416 z^2 - 22\,800 z - 329\,175\right)\sinh\left(2\sqrt{z}\right)}{329\,175} $$

07.22.03.aggb.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{11}{4}; -z\right) =$$

$$\left(-\frac{256\,z^3}{5985} - \frac{1808\,z^2}{5775} - \frac{108\,z}{77} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(512\,z^3 - 16\,416\,z^2 - 22\,800\,z + 329\,175\right)\sin\left(2\sqrt{z}\right)}{329\,175}$$

07.22.03.aggc.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{13}{4}; z\right) =$$

$$\frac{1}{19\,662\,720\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(131\,072\,z^5 + 2\,908\,160\,z^4 + 135\,168\,z^3 - 44\,352\,000\,z^2 + 10\,533\,600\,z + 22\,713\,075\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(6\,029\,312\,z^5 - 47\,824\,896\,z^4 + 102\,727\,680\,z^3 + 221\,760\,000\,z^2 + 126\,403\,200\,z - 113\,565\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.2\sqrt{z}\left(131\,072\,z^5 + 745\,472\,z^4 + 18\,401\,280\,z^3 - 67\,161\,600\,z^2 - 115\,869\,600\,z - 113\,565\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aggd.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{13}{4}; -z\right) =$$

$$\frac{1}{19\,662\,720\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(131\,072\,z^5 - 2\,908\,160\,z^4 + 135\,168\,z^3 + 44\,352\,000\,z^2 + 10\,533\,600\,z - 22\,713\,075\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(6\,029\,312\,z^5 + 47\,824\,896\,z^4 + 102\,727\,680\,z^3 - 221\,760\,000\,z^2 + 126\,403\,200\,z + 113\,565\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.2\sqrt{z}\left(131\,072\,z^5 - 745\,472\,z^4 + 18\,401\,280\,z^3 + 67\,161\,600\,z^2 - 115\,869\,600\,z + 113\,565\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agge.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{15}{4}; z\right) =$$

$$\frac{1}{29\,925}\left(\left(256\,z^3 - 2544\,z^2 + 46\,740\,z + 29\,925\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1024\,z^2 - 6840\,z - 29\,925\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aggf.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{15}{4}; -z\right) = \frac{-\left(256\,z^3 + 2544\,z^2 + 46\,740\,z - 29\,925\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(1024\,z^2 + 6840\,z - 29\,925\right)\sin\left(2\sqrt{z}\right)}{29\,925}$$

07.22.03.aggg.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{17}{4}; z\right) = \frac{1}{629\,207\,040\sqrt{2}\,z^{11/4}}$$
$$\left(13\left(2\sqrt{z}\left(6\,553\,600\,z^5 - 22\,216\,704\,z^4 - 182\,476\,800\,z^3 - 370\,782\,720\,z^2 - 799\,500\,240\,z + 1\,103\,855\,445\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(4\,194\,304\,z^6 - 70\,778\,880\,z^5 + 470\,876\,160\,z^4 + 1\,682\,841\,600\,z^3 + 5\,157\,250\,560\,z^2 + \right.$$
$$\left.7\,922\,320\,560\,z - 5\,519\,277\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4\,980\,736\,z^5 + 7\,864\,320\,z^4 - \right.$$
$$\left.\left.\left.348\,364\,800\,z^3 - 1\,266\,439\,680\,z^2 - 3\,852\,137\,520\,z - 5\,519\,277\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aggh.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{17}{4}; -z\right) = \frac{1}{629\,207\,040\sqrt{2}\, z^{11/4}}$$
$$\left(13\left(-2\sqrt{z}\left(6\,553\,600 z^5 + 22\,216\,704 z^4 - 182\,476\,800 z^3 + 370\,782\,720 z^2 - 799\,500\,240 z - 1\,103\,855\,445\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(4\,194\,304 z^6 + 70\,778\,880 z^5 + 470\,876\,160 z^4 - 1\,682\,841\,600 z^3 + 5\,157\,250\,560 z^2 - \right.$$
$$7\,922\,320\,560 z - 5\,519\,277\,225\Big) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(4\,980\,736 z^5 - 7\,864\,320 z^4 - \right.$$
$$\left.\left.348\,364\,800 z^3 + 1\,266\,439\,680 z^2 - 3\,852\,137\,520 z + 5\,519\,277\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aggi.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{19}{4}; z\right) = \left(\frac{16 z^2}{285} + \frac{220 z}{133} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(32 z^2 - 640 z - 1995\right)\sinh\left(2\sqrt{z}\right)}{1995}$$

07.22.03.aggj.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{19}{4}; -z\right) = \left(\frac{16 z^2}{285} - \frac{220 z}{133} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(32 z^2 + 640 z - 1995\right)\sin\left(2\sqrt{z}\right)}{1995}$$

07.22.03.aggk.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{21}{4}; z\right) =$$
$$\frac{1}{20\,134\,625\,280\sqrt{2}\, z^{15/4}}\left(221\left(2\sqrt{z}\left(8\,388\,608 z^6 - 100\,663\,296 z^5 - 948\,633\,600 z^4 - 7\,396\,392\,960 z^3 - 47\,679\,287\,040 z^2 - \right.\right.\right.$$
$$122\,977\,673\,280 z + 148\,284\,581\,445\Big) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-33\,554\,432 z^6 + 1\,805\,647\,872 z^5 + 14\,082\,048\,000 z^4 + \right.$$
$$\left.113\,873\,633\,280 z^3 + 594\,246\,723\,840 z^2 + 1\,142\,122\,433\,760 z - 741\,422\,907\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$2\sqrt{z}\left(8\,388\,608 z^6 - 81\,788\,928 z^5 - 1\,681\,981\,440 z^4 - 14\,036\,336\,640 z^3 - 102\,502\,160\,640 z^2 - \right.$$
$$\left.\left.\left.439\,579\,768\,320 z - 741\,422\,907\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aggl.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{21}{4}; -z\right) =$$
$$-\frac{1}{20\,134\,625\,280\sqrt{2}\, z^{15/4}}\left(221\left(2\sqrt{z}\left(8\,388\,608 z^6 + 100\,663\,296 z^5 - 948\,633\,600 z^4 + 7\,396\,392\,960 z^3 - \right.\right.\right.$$
$$47\,679\,287\,040 z^2 + 122\,977\,673\,280 z + 148\,284\,581\,445\Big) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(33\,554\,432 z^6 + 1\,805\,647\,872 z^5 - \right.$$
$$\left.14\,082\,048\,000 z^4 + 113\,873\,633\,280 z^3 - 594\,246\,723\,840 z^2 + 1\,142\,122\,433\,760 z + 741\,422\,907\,225\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(8\,388\,608 z^6 + 81\,788\,928 z^5 - 1\,681\,981\,440 z^4 + 14\,036\,336\,640 z^3 - \right.$$
$$\left.\left.\left.102\,502\,160\,640 z^2 + 439\,579\,768\,320 z - 741\,422\,907\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aggm.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{23}{4}; z\right) = \left(\frac{16\,z^2}{105} + \frac{12\,z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{21}\sqrt{z}\,(8\,z + 21)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aggn.01

$${}_1F_2\left(\frac{23}{4}; -\frac{7}{2}, \frac{23}{4}; -z\right) = \left(\frac{16\,z^2}{105} - \frac{12\,z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{21}(21 - 8\,z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

For fixed z and $a_1 = \frac{23}{4}$, $b_{1.} = -\frac{5}{2}$

07.22.03.aggo.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{23}{4}; z\right) = -\frac{1}{1\,495\,315\,292\,625\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(134\,217\,728\,z^8 + 78\,341\,210\,112\,z^7 + 1\,288\,477\,605\,888\,z^6 - 2\,083\,933\,716\,480\,z^5 + 958\,237\,378\,560\,z^4 - 697\,164\,209\,280\,z^3 - 83\,947\,525\,200\,z^2 + 2\,392\,504\,468\,200\,z - 1\,495\,315\,292\,625\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2\,634\,022\,912\,z^7 + 224\,608\,124\,928\,z^6 - 221\,307\,863\,040\,z^5 + 1\,079\,179\,960\,320\,z^4 + 212\,812\,427\,520\,z^3 + 827\,482\,748\,400\,z^2 + 398\,750\,744\,700\,z - 1\,495\,315\,292\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(33\,554\,432\,z^7 + 17\,634\,951\,168\,z^6 + 166\,656\,737\,280\,z^5 - 244\,348\,600\,320\,z^4 - 700\,071\,482\,880\,z^3 - 919\,425\,276\,000\,z^2 - 1\,595\,002\,978\,800\,z - 1\,495\,315\,292\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aggp.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{23}{4}; -z\right) = \frac{1}{1\,495\,315\,292\,625\sqrt[4]{z}}$$

$$\left(\sqrt{2}\left(\left(-134\,217\,728\,z^8 + 78\,341\,210\,112\,z^7 - 1\,288\,477\,605\,888\,z^6 - 2\,083\,933\,716\,480\,z^5 - 958\,237\,378\,560\,z^4 - 697\,164\,209\,280\,z^3 + 83\,947\,525\,200\,z^2 + 2\,392\,504\,468\,200\,z + 1\,495\,315\,292\,625\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2\,634\,022\,912\,z^7 - 224\,608\,124\,928\,z^6 - 221\,307\,863\,040\,z^5 - 1\,079\,179\,960\,320\,z^4 + 212\,812\,427\,520\,z^3 - 827\,482\,748\,400\,z^2 + 398\,750\,744\,700\,z + 1\,495\,315\,292\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(33\,554\,432\,z^7 - 17\,634\,951\,168\,z^6 + 166\,656\,737\,280\,z^5 + 244\,348\,600\,320\,z^4 - 700\,071\,482\,880\,z^3 + 919\,425\,276\,000\,z^2 - 1\,595\,002\,978\,800\,z + 1\,495\,315\,292\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aggq.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{21}{4}; z\right) =$$
$$\frac{1}{206\,239\,658\,625}\left(\left(-33\,554\,432\,z^7 - 17\,634\,951\,168\,z^6 - 216\,312\,053\,760\,z^5 + 301\,281\,361\,920\,z^4 + 250\,278\,336\,000\,z^3 + 366\,032\,066\,400\,z^2 + 502\,831\,929\,600\,z + 206\,239\,658\,625\right)\cosh\left(2\sqrt{z}\right) - 6\sqrt{z}\left(213\,909\,504\,z^6 + 17\,247\,764\,480\,z^5 - 12\,235\,407\,360\,z^4 + 62\,185\,052\,160\,z^3 + 45\,189\,144\,000\,z^2 + 75\,948\,572\,700\,z + 68\,746\,552\,875\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.aggr.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{21}{4}; -z\right) = \frac{1}{206\,239\,658\,625}$$
$$\left(\left(33\,554\,432\,z^7 - 17\,634\,951\,168\,z^6 + 216\,312\,053\,760\,z^5 + 301\,281\,361\,920\,z^4 - 250\,278\,336\,000\,z^3 + 366\,032\,066\,400\,z^2 - 502\,831\,929\,600\,z + 206\,239\,658\,625\right)\cos\left(2\sqrt{z}\right) + 6\sqrt{z}\left(213\,909\,504\,z^6 - 17\,247\,764\,480\,z^5 - 12\,235\,407\,360\,z^4 - 62\,185\,052\,160\,z^3 + 45\,189\,144\,000\,z^2 - 75\,948\,572\,700\,z + 68\,746\,552\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aggs.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{19}{4}; z\right) =$$
$$\frac{1}{65\,013\,708\,375\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(436\,207\,616\,z^7 + 41\,765\,830\,656\,z^6 + 120\,807\,751\,680\,z^5 - 44\,763\,586\,560\,z^4 + 13\,112\,225\,280\,z^3 - 243\,326\,160\,z^2 - 32\,849\,031\,600\,z + 21\,671\,236\,125\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,777\,216\,z^7 + 8\,974\,761\,984\,z^6 + 145\,397\,514\,240\,z^5 - 124\,582\,993\,920\,z^4 + 2\,275\,257\,600\,z^3 - 33\,057\,596\,880\,z^2 - 11\,862\,150\,300\,z + 65\,013\,708\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 60\,z\left(20\,971\,520\,z^6 + 1\,655\,177\,216\,z^5 - 35\,684\,352\,z^4 + 3\,613\,446\,144\,z^3 + 3\,346\,314\,048\,z^2 + 4\,988\,186\,280\,z + 4\,334\,247\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aggt.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{19}{4}; -z\right) =$$
$$\frac{1}{65\,013\,708\,375\sqrt[4]{z}}\left(\sqrt{2}\left(-3\left(436\,207\,616\,z^7 - 41\,765\,830\,656\,z^6 + 120\,807\,751\,680\,z^5 + 44\,763\,586\,560\,z^4 + 13\,112\,225\,280\,z^3 + 243\,326\,160\,z^2 - 32\,849\,031\,600\,z - 21\,671\,236\,125\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,777\,216\,z^7 - 8\,974\,761\,984\,z^6 + 145\,397\,514\,240\,z^5 + 124\,582\,993\,920\,z^4 + 2\,275\,257\,600\,z^3 + 33\,057\,596\,880\,z^2 - 11\,862\,150\,300\,z - 65\,013\,708\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 60\,z\left(20\,971\,520\,z^6 - 1\,655\,177\,216\,z^5 - 35\,684\,352\,z^4 - 3\,613\,446\,144\,z^3 + 3\,346\,314\,048\,z^2 - 4\,988\,186\,280\,z + 4\,334\,247\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aggu.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{17}{4}; z\right) = \left(\frac{310\,378\,496\,z^6}{9\,820\,936\,125} + \frac{21\,495\,808\,z^5}{8\,502\,975} + \frac{6\,029\,312\,z^4}{2\,204\,475} + \frac{4096\,z^3}{1989} + \frac{1408\,z^2}{663} + \frac{216\,z}{85} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{1}{9\,820\,936\,125}\left(2\sqrt{z}\,\left(4\,194\,304\,z^6 + 2\,087\,976\,960\,z^5 + 30\,142\,464\,000\,z^4 - 20\,872\,304\,640\,z^3 - 8\,532\,216\,000\,z^2 - 11\,862\,150\,300\,z - 9\,820\,936\,125\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aggv.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{17}{4}; -z\right) = \left(\frac{310\,378\,496\,z^6}{9\,820\,936\,125} - \frac{21\,495\,808\,z^5}{8\,502\,975} + \frac{6\,029\,312\,z^4}{2\,204\,475} - \frac{4096\,z^3}{1989} + \frac{1408\,z^2}{663} - \frac{216\,z}{85} + 1\right)\cos\left(2\sqrt{z}\right) - \frac{1}{9\,820\,936\,125}\left(2\sqrt{z}\,\left(4\,194\,304\,z^6 - 2\,087\,976\,960\,z^5 + 30\,142\,464\,000\,z^4 + 20\,872\,304\,640\,z^3 - 8\,532\,216\,000\,z^2 + 11\,862\,150\,300\,z - 9\,820\,936\,125\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aggw.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{15}{4}; z\right) = -\frac{1}{3\,421\,774\,125\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(8\,388\,608\,z^7 + 4\,407\,164\,928\,z^6 + 90\,605\,813\,760\,z^5 + 37\,752\,422\,400\,z^4 - 4\,120\,744\,320\,z^3 + 199\,085\,040\,z^2 + 4\,744\,860\,120\,z - 3\,421\,774\,125\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,\left(51\,380\,224\,z^6 + 4\,302\,569\,472\,z^5 + 11\,325\,726\,720\,z^4 - 876\,395\,520\,z^3 + 437\,144\,400\,z^2 + 60\,831\,540\,z - 1\,140\,591\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2\,097\,152\,z^6 + 987\,758\,592\,z^5 + 13\,697\,925\,120\,z^4 - 6\,606\,673\,920\,z^3 - 3\,659\,372\,640\,z^2 - 4\,379\,870\,880\,z - 3\,421\,774\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aggx.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{15}{4}; -z\right) = \frac{1}{3\,421\,774\,125\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(8\,388\,608\,z^7 - 4\,407\,164\,928\,z^6 + 90\,605\,813\,760\,z^5 - 37\,752\,422\,400\,z^4 - 4\,120\,744\,320\,z^3 + 199\,085\,040\,z^2 + 4\,744\,860\,120\,z + 3\,421\,774\,125\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,\left(51\,380\,224\,z^6 - 4\,302\,569\,472\,z^5 + 11\,325\,726\,720\,z^4 + 876\,395\,520\,z^3 + 437\,144\,400\,z^2 - 60\,831\,540\,z - 1\,140\,591\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(2\,097\,152\,z^6 - 987\,758\,592\,z^5 + 13\,697\,925\,120\,z^4 + 6\,606\,673\,920\,z^3 - 3\,659\,372\,640\,z^2 + 4\,379\,870\,880\,z - 3\,421\,774\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.aggy.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{13}{4}; z\right) = \left(-\frac{2\,097\,152\,z^6}{577\,702\,125} - \frac{5\,767\,168\,z^5}{3\,501\,225} - \frac{9\,224\,192\,z^4}{389\,025} + \frac{14\,336\,z^3}{2925} + \frac{544\,z^2}{195} + \frac{176\,z}{65} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{192\,567\,375}\left(2\sqrt{z}\,\left(12\,320\,768\,z^5 + 915\,537\,920\,z^4 + 1\,689\,937\,920\,z^3 + 252\,806\,400\,z^2 + 264\,656\,700\,z + 192\,567\,375\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aggz.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{13}{4}; -z\right) = \left(-\frac{2\,097\,152\,z^6}{577\,702\,125} + \frac{5\,767\,168\,z^5}{3\,501\,225} - \frac{9\,224\,192\,z^4}{389\,025} - \frac{14\,336\,z^3}{2925} + \frac{544\,z^2}{195} - \frac{176\,z}{65} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{192\,567\,375}\left(2\sqrt{z}\,\left(-12\,320\,768\,z^5 + 915\,537\,920\,z^4 - 1\,689\,937\,920\,z^3 + 252\,806\,400\,z^2 - 264\,656\,700\,z + 192\,567\,375\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agh0.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{11}{4}; z\right) = \frac{1}{228\,118\,275\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(74\,448\,896\,z^6 + 6\,193\,741\,824\,z^5 + 26\,426\,695\,680\,z^4 + 1\,398\,862\,080\,z^3 + 15\,800\,400\,z^2 - 265\,446\,720\,z + 228\,118\,275\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(1\,048\,576\,z^6 + 467\,140\,608\,z^5 + 7\,454\,638\,080\,z^4 + 1\,415\,715\,840\,z^3 + 9\,480\,240\,z^2 + 38\,710\,980\,z + 228\,118\,275\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(17\,825\,792\,z^5 + 1\,211\,351\,040\,z^4 + 1\,887\,621\,120\,z^3 + 408\,703\,680\,z^2 + 342\,868\,680\,z + 228\,118\,275\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agh1.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{11}{4}; -z\right) = \frac{1}{228\,118\,275\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(74\,448\,896\,z^6 - 6\,193\,741\,824\,z^5 + 26\,426\,695\,680\,z^4 - 1\,398\,862\,080\,z^3 + 15\,800\,400\,z^2 + 265\,446\,720\,z + 228\,118\,275\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(1\,048\,576\,z^6 - 467\,140\,608\,z^5 + 7\,454\,638\,080\,z^4 - 1\,415\,715\,840\,z^3 + 9\,480\,240\,z^2 - 38\,710\,980\,z + 228\,118\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(-17\,825\,792\,z^5 + 1\,211\,351\,040\,z^4 - 1\,887\,621\,120\,z^3 + 408\,703\,680\,z^2 - 342\,868\,680\,z + 228\,118\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agh2.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{9}{4}; z\right) = \frac{1}{44\,438\,625}\left(33\left(524\,288\,z^5 + 33\,751\,040\,z^4 + 57\,200\,640\,z^3 + 6\,128\,640\,z^2 + 4\,069\,800\,z + 1\,346\,625\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(262\,144\,z^5 + 103\,809\,024\,z^4 + 1\,294\,571\,520\,z^3 - 117\,976\,320\,z^2 - 75\,051\,900\,z - 44\,438\,625\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agh3.01

$${}_1F_2\left(\frac{23}{4};-\frac{5}{2},-\frac{9}{4};-z\right)=\left(-\frac{524\,288\,z^5}{1\,346\,625}+\frac{6\,750\,208\,z^4}{269\,325}-\frac{28\,672\,z^3}{675}+\frac{1024\,z^2}{225}-\frac{136\,z}{45}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{1}{44\,438\,625}\left(2\sqrt{z}\,\left(262\,144\,z^5-103\,809\,024\,z^4+1\,294\,571\,520\,z^3+117\,976\,320\,z^2-75\,051\,900\,z+44\,438\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agh4.01

$${}_1F_2\left(\frac{23}{4};-\frac{5}{2},-\frac{7}{4};z\right)=$$
$$-\frac{1}{20\,738\,025\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(524\,288\,z^6+212\,238\,336\,z^5+3\,390\,842\,880\,z^4+1\,828\,632\,960\,z^3-41\,081\,040\,z^2+\right.\right.\right.$$
$$\left.\left.\left.14\,220\,360\,z-20\,738\,025\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\right.\right.$$
$$\left.\left.\left(2\,818\,048\,z^5+178\,483\,200\,z^4+394\,686\,720\,z^3-17\,907\,120\,z^2-4\,476\,780\,z-6\,912\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(131\,072\,z^5+46\,817\,280\,z^4+480\,499\,200\,z^3-103\,229\,280\,z^2-41\,081\,040\,z-20\,738\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agh5.01

$${}_1F_2\left(\frac{23}{4};-\frac{5}{2},-\frac{7}{4};-z\right)=\frac{1}{20\,738\,025\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\,\left(\left(-524\,288\,z^6+212\,238\,336\,z^5-3\,390\,842\,880\,z^4+1\,828\,632\,960\,z^3+41\,081\,040\,z^2+14\,220\,360\,z+20\,738\,025\right)\right.\right.$$
$$\left.\left.J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$\left.\left.12\sqrt{z}\,\left(2\,818\,048\,z^5-178\,483\,200\,z^4+394\,686\,720\,z^3+17\,907\,120\,z^2-4\,476\,780\,z+6\,912\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.4\,z\left(131\,072\,z^5-46\,817\,280\,z^4+480\,499\,200\,z^3+103\,229\,280\,z^2-41\,081\,040\,z+20\,738\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agh6.01

$${}_1F_2\left(\frac{23}{4};-\frac{5}{2},-\frac{5}{4};z\right)=\left(-\frac{131\,072\,z^5}{4\,937\,625}-\frac{434\,176\,z^4}{49\,875}-\frac{3584\,z^3}{45}+\frac{1568\,z^2}{75}+\frac{96\,z}{25}+1\right)\cosh\left(2\sqrt{z}\right)-$$
$$\frac{2\sqrt{z}\,\left(180\,224\,z^4+9\,237\,504\,z^3+8\,043\,840\,z^2+1\,125\,180\,z+448\,875\right)\sinh\left(2\sqrt{z}\right)}{448\,875}$$

07.22.03.agh7.01

$${}_1F_2\left(\frac{23}{4};-\frac{5}{2},-\frac{5}{4};-z\right)=\left(\frac{131\,072\,z^5}{4\,937\,625}-\frac{434\,176\,z^4}{49\,875}+\frac{3584\,z^3}{45}+\frac{1568\,z^2}{75}-\frac{96\,z}{25}+1\right)\cos\left(2\sqrt{z}\right)+$$
$$\frac{2\sqrt{z}\,\left(180\,224\,z^4-9\,237\,504\,z^3+8\,043\,840\,z^2-1\,125\,180\,z+448\,875\right)\sin\left(2\sqrt{z}\right)}{448\,875}$$

07.22.03.agh8.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{3}{4}; z\right) =$$

$$\frac{1}{2\,962\,575\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(1\,310\,720 z^5 + 71\,995\,392 z^4 + 148\,414\,464 z^3 - 32\,654\,160 z^2 + 1\,053\,360 z + 987\,525\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(65\,536 z^5 + 20\,140\,032 z^4 + 180\,870\,912 z^3 - 49\,698\,000 z^2 + 7\,110\,180 z + 2\,962\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.12 z\left(311\,296 z^4 + 13\,195\,264 z^3 + 1\,277\,760 z^2 + 3\,686\,760 z + 987\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agh9.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{3}{4}; -z\right) =$$

$$\frac{1}{2\,962\,575\sqrt[4]{z}}\left(\sqrt{2}\left(-3\left(1\,310\,720 z^5 - 71\,995\,392 z^4 + 148\,414\,464 z^3 + 32\,654\,160 z^2 + 1\,053\,360 z - 987\,525\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(65\,536 z^5 - 20\,140\,032 z^4 + 180\,870\,912 z^3 + 49\,698\,000 z^2 + 7\,110\,180 z - 2\,962\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.12 z\left(311\,296 z^4 - 13\,195\,264 z^3 + 1\,277\,760 z^2 - 3\,686\,760 z + 987\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agha.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{1}{4}; z\right) = \left(\frac{32\,768 z^4}{36\,575} + \frac{2048 z^3}{63} - \frac{128 z^2}{15} + \frac{56 z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) +$$
$$\frac{2\sqrt{z}\left(16\,384 z^4 + 4\,156\,416 z^3 + 21\,067\,200 z^2 - 9\,743\,580 z - 987\,525\right)\sinh\left(2\sqrt{z}\right)}{987\,525}$$

07.22.03.aghb.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, -\frac{1}{4}; -z\right) = \left(\frac{32\,768 z^4}{36\,575} - \frac{2048 z^3}{63} - \frac{128 z^2}{15} - \frac{56 z}{5} + 1\right)\cos\left(2\sqrt{z}\right) -$$
$$\frac{2\sqrt{z}\left(16\,384 z^4 - 4\,156\,416 z^3 + 21\,067\,200 z^2 + 9\,743\,580 z - 987\,525\right)\sin\left(2\sqrt{z}\right)}{987\,525}$$

07.22.03.aghc.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, \frac{1}{4}; z\right) =$$

$$-\frac{1}{987\,525\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768 z^5 + 8\,159\,232 z^4 + 53\,564\,544 z^3 - 27\,731\,088 z^2 + 11\,060\,280 z - 987\,525\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(421\,888 z^4 + 13\,739\,520 z^3 - 4\,604\,688 z^2 + 5\,086\,620 z - 987\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4 z\left(8192 z^4 + 1\,729\,536 z^3 + 4\,347\,552 z^2 - 887\,040 z - 987\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aghd.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, \frac{1}{4}; -z\right) =$$

$$\frac{1}{987\,525\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768 z^5 - 8\,159\,232 z^4 + 53\,564\,544 z^3 + 27\,731\,088 z^2 + 11\,060\,280 z + 987\,525\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(421\,888 z^4 - 13\,739\,520 z^3 - 4\,604\,688 z^2 - 5\,086\,620 z - 987\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(8192 z^4 - 1\,729\,536 z^3 + 4\,347\,552 z^2 + 887\,040 z - 987\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aghe.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, \frac{3}{4}; z\right) =$$

$$\left(-\frac{8192 z^4}{987\,525} - \frac{1024 z^3}{693} - \frac{32 z^2}{21} - \frac{16 z}{15} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(31\,744 z^3 + 668\,800 z^2 - 790\,020 z + 329\,175\right)\sinh\left(2\sqrt{z}\right)}{329\,175}$$

07.22.03.aghf.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, \frac{3}{4}; -z\right) =$$

$$\left(-\frac{8192 z^4}{987\,525} + \frac{1024 z^3}{693} - \frac{32 z^2}{21} + \frac{16 z}{15} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-31\,744 z^3 + 668\,800 z^2 + 790\,020 z + 329\,175\right)\sin\left(2\sqrt{z}\right)}{329\,175}$$

07.22.03.aghg.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, \frac{5}{4}; z\right) = -\frac{1}{987\,525\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(9\left(20\,480 z^4 + 442\,112 z^3 - 402\,864 z^2 + 343\,728 z - 109\,725\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096 z^4 + 628\,224 z^3 + 229\,680 z^2 + 612\,612 z - 550\,935\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(14\,336 z^3 + 185\,152 z^2 - 234\,696 z - 38\,115\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aghh.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, \frac{5}{4}; -z\right) = \frac{1}{987\,525\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(9\left(-20\,480 z^4 + 442\,112 z^3 + 402\,864 z^2 + 343\,728 z + 109\,725\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096 z^4 - 628\,224 z^3 + 229\,680 z^2 - 612\,612 z - 550\,935\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12 z\left(14\,336 z^3 - 185\,152 z^2 - 234\,696 z + 38\,115\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aghi.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, \frac{7}{4}; z\right) =$$

$$\left(-\frac{2048 z^3}{17\,325} - \frac{1024 z^2}{1155} + \frac{24 z}{35} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(1024 z^3 + 109\,440 z^2 - 213\,180 z + 329\,175\right)\sinh\left(2\sqrt{z}\right)}{329\,175}$$

07.22.03.aghj.01

$${}_1F_2\left(\frac{23}{4};-\frac{5}{2},\frac{7}{4};-z\right)=$$

$$\left(\frac{2048\,z^3}{17\,325}-\frac{1024\,z^2}{1155}-\frac{24\,z}{35}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(-1024\,z^3+109\,440\,z^2+213\,180\,z+329\,175\right)\sin\left(2\sqrt{z}\right)}{329\,175}$$

07.22.03.aghk.01

$${}_1F_2\left(\frac{23}{4};-\frac{5}{2},\frac{9}{4};z\right)=-\frac{1}{395\,010\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\,\left(4096\,z^4+397\,056\,z^3-554\,400\,z^2+909\,216\,z-467\,775\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$3\left(94\,208\,z^4+402\,688\,z^3-14\,784\,z^2-665\,280\,z+121\,275\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\,\left(4096\,z^4+294\,144\,z^3-798\,336\,z^2+360\,360\,z+363\,825\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aghl.01

$${}_1F_2\left(\frac{23}{4};-\frac{5}{2},\frac{9}{4};-z\right)=\frac{1}{395\,010\sqrt{2}\,z^{3/4}}\left(\left(2\sqrt{z}\,\left(-4096\,z^4+397\,056\,z^3+554\,400\,z^2+909\,216\,z+467\,775\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.$$
$$3\left(94\,208\,z^4-402\,688\,z^3-14\,784\,z^2+665\,280\,z+121\,275\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\,\left(4096\,z^4-294\,144\,z^3-798\,336\,z^2-360\,360\,z+363\,825\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aghm.01

$${}_1F_2\left(\frac{23}{4};-\frac{5}{2},\frac{11}{4};z\right)=\left(-\frac{512\,z^3}{47\,025}-\frac{416\,z^2}{825}+\frac{64\,z}{55}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{825}\sqrt{z}\,\left(64\,z^2-140\,z+825\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aghn.01

$${}_1F_2\left(\frac{23}{4};-\frac{5}{2},\frac{11}{4};-z\right)=\left(\frac{512\,z^3}{47\,025}-\frac{416\,z^2}{825}-\frac{64\,z}{55}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{825}\sqrt{z}\,\left(64\,z^2+140\,z+825\right)\sin\left(2\sqrt{z}\right)$$

07.22.03.agho.01

$${}_1F_2\left(\frac{23}{4};-\frac{5}{2},\frac{13}{4};z\right)=-\frac{1}{1\,404\,480\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\,\left(425\,984\,z^4-777\,216\,z^3+3\,193\,344\,z^2-1\,108\,800\,z-987\,525\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(131\,072\,z^5+3\,760\,128\,z^4-4\,528\,128\,z^3-12\,418\,560\,z^2-4\,989\,600\,z+4\,937\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.2\sqrt{z}\,\left(376\,832\,z^4-1\,910\,784\,z^3+3\,421\,440\,z^2+5\,544\,000\,z+4\,937\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aghp.01

$${}_1F_2\left(\frac{23}{4};-\frac{5}{2},\frac{13}{4};-z\right)=\frac{1}{1\,404\,480\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\,\left(425\,984\,z^4+777\,216\,z^3+3\,193\,344\,z^2+1\,108\,800\,z-987\,525\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$\left(-131\,072\,z^5+3\,760\,128\,z^4+4\,528\,128\,z^3-12\,418\,560\,z^2+4\,989\,600\,z+4\,937\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.2\sqrt{z}\,\left(376\,832\,z^4+1\,910\,784\,z^3+3\,421\,440\,z^2-5\,544\,000\,z+4\,937\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.aghq.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, \frac{15}{4}; z\right) = \left(-\frac{128\,z^2}{475} + \frac{104\,z}{75} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(64\,z^2 + 228\,z + 4275\right)\sinh\left(2\sqrt{z}\right)}{4275}$$

07.22.03.aghr.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, \frac{15}{4}; -z\right) = \left(-\frac{128\,z^2}{475} - \frac{104\,z}{75} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(64\,z^2 - 228\,z + 4275\right)\sin\left(2\sqrt{z}\right)}{4275}$$

07.22.03.aghs.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, \frac{17}{4}; z\right) = -\frac{1}{44\,943\,360\sqrt{2}\,z^{11/4}}$$
$$\left(13\left(2\sqrt{z}\,\left(262\,144\,z^5 - 98\,304\,z^4 + 10\,543\,104\,z^3 + 12\,418\,560\,z^2 + 28\,440\,720\,z - 40\,883\,535\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$3\left(2\,359\,296\,z^5 - 7\,602\,176\,z^4 - 25\,681\,920\,z^3 - 65\,640\,960\,z^2 - 95\,855\,760\,z + 68\,139\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.2\sqrt{z}\,\left(262\,144\,z^5 - 2\,555\,904\,z^4 + 16\,957\,440\,z^3 + 53\,475\,840\,z^2 + 148\,523\,760\,z + 204\,417\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aght.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, \frac{17}{4}; -z\right) = \frac{1}{44\,943\,360\sqrt{2}\,z^{11/4}}$$
$$\left(13\left(2\sqrt{z}\,\left(262\,144\,z^5 + 98\,304\,z^4 + 10\,543\,104\,z^3 - 12\,418\,560\,z^2 + 28\,440\,720\,z + 40\,883\,535\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$3\left(2\,359\,296\,z^5 + 7\,602\,176\,z^4 - 25\,681\,920\,z^3 + 65\,640\,960\,z^2 - 95\,855\,760\,z - 68\,139\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.2\sqrt{z}\,\left(262\,144\,z^5 + 2\,555\,904\,z^4 + 16\,957\,440\,z^3 - 53\,475\,840\,z^2 + 148\,523\,760\,z - 204\,417\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aghu.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, \frac{19}{4}; z\right) = \left(-\frac{32\,z^2}{285} + \frac{144\,z}{95} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{285}\sqrt{z}\,\left(52\,z + 285\right)\sinh\left(2\sqrt{z}\right)$$

07.22.03.aghv.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, \frac{19}{4}; -z\right) = \frac{1}{285}\left(\left(-32\,z^2 - 432\,z + 285\right)\cos\left(2\sqrt{z}\right) + 2\left(285 - 52\,z\right)\sqrt{z}\,\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.aghw.01

$${}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, \frac{21}{4}; z\right) = -\frac{1}{1\,438\,187\,520\sqrt{2}\,z^{15/4}}$$
$$\left(221\left(6\sqrt{z}\,\left(1\,048\,576\,z^5 + 13\,828\,096\,z^4 + 83\,804\,160\,z^3 + 522\,466\,560\,z^2 + 1\,308\,273\,120\,z - 1\,594\,457\,865\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left(8\,388\,608\,z^6 - 81\,788\,928\,z^5 - 533\,790\,720\,z^4 - 3\,876\,618\,240\,z^3 - \right.$$
$$\left.19\,466\,092\,800\,z^2 - 36\,631\,647\,360\,z + 23\,916\,867\,975\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.30\sqrt{z}\,\left(4\,784\,128\,z^4 + 33\,865\,728\,z^3 + 230\,655\,744\,z^2 + 959\,400\,288\,z + 1\,594\,457\,865\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aghx.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, \frac{21}{4}; -z\right) = \frac{1}{1\,438\,187\,520\sqrt{2}\,z^{15/4}} $$
$$ \left(221\left(-6\sqrt{z}\,\left(1\,048\,576 z^5 - 13\,828\,096 z^4 + 83\,804\,160 z^3 - 522\,466\,560 z^2 + 1\,308\,273\,120 z + 1\,594\,457\,865\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ \left(8\,388\,608 z^6 + 81\,788\,928 z^5 - 533\,790\,720 z^4 + 3\,876\,618\,240 z^3 - \right. $$
$$ \left. 19\,466\,092\,800 z^2 + 36\,631\,647\,360 z + 23\,916\,867\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - $$
$$ \left. 30\sqrt{z}\,\left(4\,784\,128 z^4 - 33\,865\,728 z^3 + 230\,655\,744 z^2 - 959\,400\,288 z + 1\,594\,457\,865\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.aghy.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, \frac{23}{4}; z\right) = \left(\frac{8z}{5} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{15}\sqrt{z}\,(4z + 15)\sinh\left(2\sqrt{z}\right) $$

07.22.03.aghz.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{5}{2}, \frac{23}{4}; -z\right) = \left(1 - \frac{8z}{5}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{15}(15 - 4z)\sqrt{z}\,\sin\left(2\sqrt{z}\right) $$

For fixed z and $a_1 = \frac{23}{4}$, $b_{1.} = -\frac{3}{2}$

07.22.03.agi0.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, -\frac{23}{4}; z\right) = $$
$$ \frac{1}{299\,063\,058\,525\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(2\,399\,141\,888 z^7 + 152\,816\,320\,512 z^6 - 425\,172\,271\,104 z^5 + 1\,252\,841\,103\,360 z^4 - \right.\right. $$
$$ \left. 729\,144\,218\,880 z^3 + 83\,947\,525\,200 z^2 - 398\,750\,744\,700 z + 299\,063\,058\,525\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + $$
$$ 4\sqrt{z}\,\left(33\,554\,432 z^7 + 14\,187\,233\,280 z^6 + 54\,690\,840\,576 z^5 + 10\,481\,909\,760 z^4 - \right. $$
$$ \left. 700\,071\,482\,880 z^3 + 7\,995\,002\,400 z^2 + 299\,063\,058\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ 4z\left(574\,619\,648 z^6 + 27\,991\,474\,176 z^5 - 127\,415\,255\,040 z^4 + 213\,277\,317\,120 z^3 + \right. $$
$$ \left.\left. 463\,710\,139\,200 z^2 + 398\,750\,744\,700 z + 299\,063\,058\,525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.agi1.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, -\frac{23}{4}; -z\right) = \frac{1}{299\,063\,058\,525\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-2\,399\,141\,888\,z^7 + 152\,816\,320\,512\,z^6 + 425\,172\,271\,104\,z^5 + 1\,252\,841\,103\,360\,z^4 + 729\,144\,218\,880\,z^3 + 83\,947\,525\,200\,z^2 + 398\,750\,744\,700\,z + 299\,063\,058\,525\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(33\,554\,432\,z^7 - 14\,187\,233\,280\,z^6 + 54\,690\,840\,576\,z^5 - 10\,481\,909\,760\,z^4 - 700\,071\,482\,880\,z^3 - 7\,995\,002\,400\,z^2 - 299\,063\,058\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(574\,619\,648\,z^6 - 27\,991\,474\,176\,z^5 - 127\,415\,255\,040\,z^4 - 213\,277\,317\,120\,z^3 + 463\,710\,139\,200\,z^2 - 398\,750\,744\,700\,z + 299\,063\,058\,525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agi2.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, -\frac{21}{4}; z\right) = \frac{1}{41\,247\,931\,725}\left(\left(574\,619\,648\,z^6 + 31\,324\,372\,992\,z^5 - 96\,396\,410\,880\,z^4 + 192\,601\,221\,120\,z^3 + 135\,567\,432\,000\,z^2 + 112\,613\,400\,900\,z + 41\,247\,931\,725\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(8\,388\,608\,z^6 + 3\,403\,153\,408\,z^5 + 14\,922\,547\,200\,z^4 - 3\,023\,032\,320\,z^3 - 110\,719\,889\,280\,z^2 - 57\,616\,158\,600\,z - 41\,247\,931\,725\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agi3.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, -\frac{21}{4}; -z\right) = \frac{1}{41\,247\,931\,725}\left(\left(574\,619\,648\,z^6 - 31\,324\,372\,992\,z^5 - 96\,396\,410\,880\,z^4 - 192\,601\,221\,120\,z^3 + 135\,567\,432\,000\,z^2 - 112\,613\,400\,900\,z + 41\,247\,931\,725\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(8\,388\,608\,z^6 - 3\,403\,153\,408\,z^5 + 14\,922\,547\,200\,z^4 + 3\,023\,032\,320\,z^3 - 110\,719\,889\,280\,z^2 + 57\,616\,158\,600\,z - 41\,247\,931\,725\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agi4.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, -\frac{19}{4}; z\right) = -\frac{1}{13\,002\,741\,675\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(16\,777\,216\,z^7 + 7\,521\,435\,648\,z^6 + 88\,462\,983\,168\,z^5 - 117\,032\,509\,440\,z^4 + 62\,139\,813\,120\,z^3 - 6\,569\,806\,320\,z^2 + 15\,512\,042\,700\,z - 13\,002\,741\,675\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,\left(96\,468\,992\,z^6 + 6\,053\,953\,536\,z^5 - 6\,657\,638\,400\,z^4 + 18\,067\,230\,720\,z^3 - 1\,900\,261\,440\,z^2 - 608\,315\,400\,z - 4\,334\,247\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(4\,194\,304\,z^6 + 1\,666\,449\,408\,z^5 + 9\,718\,824\,960\,z^4 - 8\,067\,225\,600\,z^3 - 27\,947\,747\,520\,z^2 - 19\,161\,935\,100\,z - 13\,002\,741\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agi5.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, -\frac{19}{4}; -z\right) = \frac{1}{13\,002\,741\,675\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(16\,777\,216\,z^7 - 7\,521\,435\,648\,z^6 + 88\,462\,983\,168\,z^5 + 117\,032\,509\,440\,z^4 + 62\,139\,813\,120\,z^3 + 6\,569\,806\,320\,z^2 + 15\,512\,042\,700\,z + 13\,002\,741\,675\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,\left(96\,468\,992\,z^6 - 6\,053\,953\,536\,z^5 - 6\,657\,638\,400\,z^4 - 18\,067\,230\,720\,z^3 - 1\,900\,261\,440\,z^2 + 608\,315\,400\,z - 4\,334\,247\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4\,z\left(4\,194\,304\,z^6 - 1\,666\,449\,408\,z^5 + 9\,718\,824\,960\,z^4 + 8\,067\,225\,600\,z^3 - 27\,947\,747\,520\,z^2 + 19\,161\,935\,100\,z - 13\,002\,741\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agi6.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, -\frac{17}{4}; z\right) = \frac{1}{1\,964\,187\,225}\left(\left(-4\,194\,304\,z^6 - 1\,666\,449\,408\,z^5 - 13\,647\,052\,800\,z^4 + 13\,832\,017\,920\,z^3 + 8\,532\,216\,000\,z^2 + 5\,699\,994\,300\,z + 1\,964\,187\,225\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(70\,254\,592\,z^5 + 4\,123\,852\,800\,z^4 - 3\,520\,143\,360\,z^3 + 8\,514\,132\,480\,z^2 + 3\,081\,078\,000\,z + 1\,964\,187\,225\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agi7.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, -\frac{17}{4}; -z\right) = \frac{1}{1\,964\,187\,225}\left(\left(-4\,194\,304\,z^6 + 1\,666\,449\,408\,z^5 - 13\,647\,052\,800\,z^4 - 13\,832\,017\,920\,z^3 + 8\,532\,216\,000\,z^2 - 5\,699\,994\,300\,z + 1\,964\,187\,225\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\left(-70\,254\,592\,z^5 + 4\,123\,852\,800\,z^4 + 3\,520\,143\,360\,z^3 + 8\,514\,132\,480\,z^2 - 3\,081\,078\,000\,z + 1\,964\,187\,225\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agi8.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, -\frac{15}{4}; z\right) = \frac{1}{684\,354\,825\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(143\,654\,912\,z^6 + 10\,305\,404\,928\,z^5 + 21\,393\,039\,360\,z^4 - 7\,820\,144\,640\,z^3 + 774\,219\,600\,z^2 - 669\,146\,940\,z + 684\,354\,825\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(2\,097\,152\,z^6 + 850\,395\,136\,z^5 + 9\,769\,697\,280\,z^4 - 6\,606\,673\,920\,z^3 + 924\,850\,080\,z^2 + 243\,326\,160\,z + 684\,354\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(34\,340\,864\,z^5 + 1\,964\,113\,920\,z^4 - 571\,791\,360\,z^3 + 2\,292\,111\,360\,z^2 + 1\,155\,799\,260\,z + 684\,354\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agi9.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, -\frac{15}{4}; -z\right) = \frac{1}{684\,354\,825\sqrt[4]{z}}\left(\sqrt{2}\left(\left(143\,654\,912 z^6 - 10\,305\,404\,928 z^5 + 21\,393\,039\,360 z^4 + 7\,820\,144\,640 z^3 + 774\,219\,600 z^2 + 669\,146\,940 z + 684\,354\,825\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(2\,097\,152 z^6 - 850\,395\,136 z^5 + 9\,769\,697\,280 z^4 + 6\,606\,673\,920 z^3 + 924\,850\,080 z^2 - 243\,326\,160 z + 684\,354\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-34\,340\,864 z^5 + 1\,964\,113\,920 z^4 + 571\,791\,360 z^3 + 2\,292\,111\,360 z^2 - 1\,155\,799\,260 z + 684\,354\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agia.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, -\frac{13}{4}; z\right) = \frac{1}{115\,540\,425}\left(3\left(11\,272\,192 z^5 + 654\,704\,640 z^4 + 389\,007\,360 z^3 + 252\,806\,400 z^2 + 122\,453\,100 z + 38\,513\,475\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(524\,288 z^5 + 195\,624\,960 z^4 + 1\,951\,395\,840 z^3 - 999\,613\,440 z^2 - 213\,305\,400 z - 115\,540\,425\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agib.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, -\frac{13}{4}; -z\right) = \frac{1}{115\,540\,425}\left(2\sqrt{z}\left(524\,288 z^5 - 195\,624\,960 z^4 + 1\,951\,395\,840 z^3 + 999\,613\,440 z^2 - 213\,305\,400 z + 115\,540\,425\right)\sin\left(2\sqrt{z}\right) - 3\left(11\,272\,192 z^5 - 654\,704\,640 z^4 + 389\,007\,360 z^3 - 252\,806\,400 z^2 + 122\,453\,100 z - 38\,513\,475\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.agic.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, -\frac{11}{4}; z\right) = -\frac{1}{45\,623\,655\sqrt[4]{z}}\left(\sqrt{2}\left(\left(1\,048\,576 z^6 + 416\,415\,744 z^5 + 6\,292\,070\,400 z^4 + 2\,123\,573\,760 z^3 - 148\,523\,760 z^2 + 27\,650\,700 z - 45\,623\,655\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(16\,777\,216 z^5 + 1\,027\,915\,776 z^4 + 1\,887\,621\,120 z^3 - 181\,177\,920 z^2 - 33\,180\,840 z - 45\,623\,655\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(262\,144 z^5 + 91\,717\,632 z^4 + 869\,406\,720 z^3 - 294\,940\,800 z^2 - 94\,012\,380 z - 45\,623\,655\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agid.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, -\frac{11}{4}; -z\right) = \frac{1}{45\,623\,655\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\,\left(\left(-1\,048\,576\,z^6 + 416\,415\,744\,z^5 - 6\,292\,070\,400\,z^4 + 2\,123\,573\,760\,z^3 + 148\,523\,760\,z^2 + 27\,650\,700\,z + 45\,623\,655\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(16\,777\,216\,z^5 - 1\,027\,915\,776\,z^4 + 1\,887\,621\,120\,z^3 + \right. $$
$$ \left. 181\,177\,920\,z^2 - 33\,180\,840\,z + 45\,623\,655\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 4\,z\left(262\,144\,z^5 - 91\,717\,632\,z^4 + 869\,406\,720\,z^3 + 294\,940\,800\,z^2 - 94\,012\,380\,z + 45\,623\,655\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agie.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, -\frac{9}{4}; z\right) = $$
$$ \frac{1}{8\,887\,725}\left(\left(-262\,144\,z^5 - 87\,818\,240\,z^4 - 869\,406\,720\,z^3 + 117\,976\,320\,z^2 + 32\,917\,500\,z + 8\,887\,725\right)\cosh\left(2\sqrt{z}\right) - \right. $$
$$ \left. 2\sqrt{z}\,\left(3\,997\,696\,z^4 + 212\,582\,400\,z^3 + 254\,553\,600\,z^2 + 21\,067\,200\,z + 8\,887\,725\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agif.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, -\frac{9}{4}; -z\right) = $$
$$ \frac{1}{8\,887\,725}\left(\left(262\,144\,z^5 - 87\,818\,240\,z^4 + 869\,406\,720\,z^3 + 117\,976\,320\,z^2 - 32\,917\,500\,z + 8\,887\,725\right)\cos\left(2\sqrt{z}\right) + \right. $$
$$ \left. 2\sqrt{z}\,\left(3\,997\,696\,z^4 - 212\,582\,400\,z^3 + 254\,553\,600\,z^2 - 21\,067\,200\,z + 8\,887\,725\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agig.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, -\frac{7}{4}; z\right) = $$
$$ \frac{1}{4\,147\,605\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(3\left(2\,686\,976\,z^5 + 163\,205\,120\,z^4 + 511\,230\,720\,z^3 + 22\,120\,560\,z^2 + 263\,340\,z + 1\,382\,535\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 4\sqrt{z}\,\left(131\,072\,z^5 + 42\,983\,424\,z^4 + 480\,499\,200\,z^3 + 73\,735\,200\,z^2 + 6\,320\,160\,z + 4\,147\,605\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 12\,z\left(638\,976\,z^4 + 30\,530\,560\,z^3 + 29\,494\,080\,z^2 + 3\,950\,100\,z + 1\,382\,535\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agih.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, -\frac{7}{4}; -z\right) = $$
$$ \frac{1}{4\,147\,605\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-8\,060\,928\,z^5 + 489\,615\,360\,z^4 - 1\,533\,692\,160\,z^3 + 66\,361\,680\,z^2 - 790\,020\,z + 4\,147\,605\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right. $$
$$ 4\sqrt{z}\,\left(131\,072\,z^5 - 42\,983\,424\,z^4 + 480\,499\,200\,z^3 - 73\,735\,200\,z^2 + 6\,320\,160\,z - 4\,147\,605\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left.\left. 12\,z\left(638\,976\,z^4 - 30\,530\,560\,z^3 + 29\,494\,080\,z^2 - 3\,950\,100\,z + 1\,382\,535\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agii.01

$${}_1F_2\left(\frac{23}{4};-\frac{3}{2},-\frac{5}{4};z\right)=\left(\frac{1\,851\,392\,z^4}{987\,525}+\frac{263\,168\,z^3}{3135}+\frac{448\,z^2}{5}+\frac{76\,z}{15}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(32\,768\,z^4+9\,357\,312\,z^3+77\,589\,120\,z^2-3\,686\,760\,z-987\,525\right)\sinh\left(2\sqrt{z}\right)}{987\,525}$$

07.22.03.agij.01

$${}_1F_2\left(\frac{23}{4};-\frac{3}{2},-\frac{5}{4};-z\right)=\left(\frac{1\,851\,392\,z^4}{987\,525}-\frac{263\,168\,z^3}{3135}+\frac{448\,z^2}{5}-\frac{76\,z}{15}+1\right)\cos\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(32\,768\,z^4-9\,357\,312\,z^3+77\,589\,120\,z^2+3\,686\,760\,z-987\,525\right)\sin\left(2\sqrt{z}\right)}{987\,525}$$

07.22.03.agik.01

$${}_1F_2\left(\frac{23}{4};-\frac{3}{2},-\frac{3}{4};z\right)=-\frac{1}{592\,515\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536\,z^5+19\,214\,336\,z^4+214\,401\,792\,z^3+87\,428\,880\,z^2-1\,843\,380\,z-592\,515\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(901\,120\,z^4+39\,585\,792\,z^3+57\,710\,400\,z^2-2\,633\,400\,z-592\,515\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(16\,384\,z^4+4\,140\,032\,z^3+26\,938\,560\,z^2-3\,423\,420\,z-592\,515\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agil.01

$${}_1F_2\left(\frac{23}{4};-\frac{3}{2},-\frac{3}{4};-z\right)=\frac{1}{592\,515\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(65\,536\,z^5-19\,214\,336\,z^4+214\,401\,792\,z^3-87\,428\,880\,z^2-1\,843\,380\,z+592\,515\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(901\,120\,z^4-39\,585\,792\,z^3+57\,710\,400\,z^2+2\,633\,400\,z-592\,515\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-4\,z\left(16\,384\,z^4-4\,140\,032\,z^3+26\,938\,560\,z^2+3\,423\,420\,z-592\,515\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agim.01

$${}_1F_2\left(\frac{23}{4};-\frac{3}{2},-\frac{1}{4};z\right)=\left(-\frac{16\,384\,z^4}{197\,505}-\frac{1\,246\,208\,z^3}{65\,835}-\frac{320\,z^2}{3}+\frac{52\,z}{3}+1\right)\cosh\left(2\sqrt{z}\right)-\frac{2\sqrt{z}\,\left(69\,632\,z^3+2\,363\,648\,z^2+1\,053\,360\,z+65\,835\right)\sinh\left(2\sqrt{z}\right)}{65\,835}$$

07.22.03.agin.01

$${}_1F_2\left(\frac{23}{4};-\frac{3}{2},-\frac{1}{4};-z\right)=\left(-\frac{16\,384\,z^4}{197\,505}+\frac{1\,246\,208\,z^3}{65\,835}-\frac{320\,z^2}{3}-\frac{52\,z}{3}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2\sqrt{z}\,\left(-69\,632\,z^3+2\,363\,648\,z^2-1\,053\,360\,z+65\,835\right)\sin\left(2\sqrt{z}\right)}{65\,835}$$

07.22.03.agio.01

$${}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{1}{4}; z\right) =$$

$$\frac{1}{197\,505\sqrt[4]{z}}\left(\sqrt{2}\left(\left(413\,696\,z^4 + 15\,324\,672\,z^3 + 20\,413\,008\,z^2 - 3\,423\,420\,z + 197\,505\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right.$$
$$\left(8192\,z^4 + 1\,729\,536\,z^3 + 9\,559\,968\,z^2 - 1\,829\,520\,z + 197\,505\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(97\,280\,z^3 + 2\,606\,208\,z^2 - 235\,620\,z + 197\,505\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agip.01

$${}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{1}{4}; -z\right) =$$

$$\frac{1}{197\,505\sqrt[4]{z}}\left(\sqrt{2}\left(\left(413\,696\,z^4 - 15\,324\,672\,z^3 + 20\,413\,008\,z^2 + 3\,423\,420\,z + 197\,505\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\right.\right.$$
$$\left(8192\,z^4 - 1\,729\,536\,z^3 + 9\,559\,968\,z^2 + 1\,829\,520\,z + 197\,505\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(-97\,280\,z^3 + 2\,606\,208\,z^2 + 235\,620\,z + 197\,505\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agiq.01

$${}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{3}{4}; z\right) =$$

$$\left(\frac{91\,136\,z^3}{197\,505} + \frac{640\,z^2}{63} - \frac{28\,z}{9} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048\,z^3 + 342\,016\,z^2 + 877\,800\,z - 197\,505\right)\sinh\left(2\sqrt{z}\right)}{197\,505}$$

07.22.03.agir.01

$${}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{3}{4}; -z\right) =$$

$$\left(-\frac{91\,136\,z^3}{197\,505} + \frac{640\,z^2}{63} + \frac{28\,z}{9} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(2048\,z^3 - 342\,016\,z^2 + 877\,800\,z + 197\,505\right)\sin\left(2\sqrt{z}\right)}{197\,505}$$

07.22.03.agis.01

$${}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{5}{4}; z\right) =$$

$$\frac{1}{197\,505\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096\,z^4 + 669\,696\,z^3 + 2\,514\,960\,z^2 - 873\,684\,z + 197\,505\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(14\,336\,z^3 + 275\,776\,z^2 - \right.\right.\right.$$
$$\left.\left.\left.92\,568\,z + 39\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(1024\,z^3 + 135\,936\,z^2 + 106\,596\,z + 38\,745\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agit.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{5}{4}; -z\right) = \frac{1}{197\,505\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096z^4 - 669\,696z^3 + 2\,514\,960z^2 + 873\,684z + 197\,505\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(14\,336z^3 - 275\,776z^2 - 92\,568z - 39\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-1024z^3 + 135\,936z^2 - 106\,596z + 38\,745\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agiu.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{7}{4}; z\right) = \left(\frac{1024z^3}{65\,835} + \frac{128z^2}{77} - \frac{4z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(9472z^2 + 100\,320z - 65\,835\right)\sinh\left(2\sqrt{z}\right)}{65\,835} $$

07.22.03.agiv.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{7}{4}; -z\right) = \left(-\frac{1024z^3}{65\,835} + \frac{128z^2}{77} + \frac{4z}{21} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-9472z^2 + 100\,320z + 65\,835\right)\sin\left(2\sqrt{z}\right)}{65\,835} $$

07.22.03.agiw.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{9}{4}; z\right) = \frac{1}{39\,501\sqrt{2}\,z^{3/4}}\left(\left(8\sqrt{z}\left(4544z^3 + 51\,156z^2 - 29\,715z + 11\,088\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4096z^4 + 360\,704z^3 - 145\,152z^2 + 196\,056z - 24\,255\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,640z^3 + 81\,648z^2 - 13\,692z - 24\,255\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agix.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{9}{4}; -z\right) = \frac{1}{39\,501\sqrt{2}\,z^{3/4}}\left(\left(8\sqrt{z}\left(-4544z^3 + 51\,156z^2 + 29\,715z + 11\,088\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(4096z^4 - 360\,704z^3 - 145\,152z^2 - 196\,056z - 24\,255\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,640z^3 - 81\,648z^2 - 13\,692z + 24\,255\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agiy.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{11}{4}; z\right) = \left(\frac{64z^2}{165} + \frac{20z}{33} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(128z^2 + 6840z - 9405\right)\sinh\left(2\sqrt{z}\right)}{9405} $$

07.22.03.agiz.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{11}{4}; -z\right) = \left(\frac{64z^2}{165} - \frac{20z}{33} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(-128z^2 + 6840z + 9405\right)\sin\left(2\sqrt{z}\right)}{9405} $$

07.22.03.agj0.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{13}{4}; z\right) = \frac{1}{140\,448\sqrt{2}\,z^{7/4}} \left(\left(2\sqrt{z}\left(8192z^4+385\,536z^3-368\,256z^2+133\,056z+51\,975\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(409\,600z^4-6144z^3+983\,808z^2+221\,760z-259\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(8192z^4+238\,080z^3-203\,136z^2-332\,640z-259\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agj1.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{13}{4}; -z\right) = \frac{1}{140\,448\sqrt{2}\,z^{7/4}} \left(\left(2\sqrt{z}\left(-8192z^4+385\,536z^3+368\,256z^2+133\,056z-51\,975\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(-409\,600z^4-6144z^3-983\,808z^2+221\,760z+259\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(8192z^4-238\,080z^3-203\,136z^2+332\,640z-259\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agj2.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{15}{4}; z\right) = \left(\frac{64z^2}{855}+\frac{44z}{45}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{45}\sqrt{z}\,(16z-45)\sinh\left(2\sqrt{z}\right) $$

07.22.03.agj3.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{15}{4}; -z\right) = \left(\frac{64z^2}{855}-\frac{44z}{45}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{45}\sqrt{z}\,(16z+45)\sin\left(2\sqrt{z}\right) $$

07.22.03.agj4.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{17}{4}; z\right) = \frac{1}{4\,494\,336\sqrt{2}\,z^{11/4}} \left(13\left(6\sqrt{z}\left(180\,224z^4-323\,584z^3-118\,272z^2-388\,080z+592\,515\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(262\,144z^5+983\,040z^4+4\,718\,592z^3+8\,870\,400z^2+12\,141\,360z-8\,887\,725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\left(147\,456z^4-339\,968z^3-929\,280z^2-2\,273\,040z-2\,962\,575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agj5.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{17}{4}; -z\right) = -\frac{1}{4\,494\,336\sqrt{2}\,z^{11/4}} \left(13\left(-6\sqrt{z}\left(180\,224z^4+323\,584z^3-118\,272z^2+388\,080z+592\,515\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(262\,144z^5-983\,040z^4+4\,718\,592z^3-8\,870\,400z^2+12\,141\,360z+8\,887\,725\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+6\sqrt{z}\left(147\,456z^4+339\,968z^3-929\,280z^2+2\,273\,040z-2\,962\,575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agj6.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{19}{4}; z\right) = \left(\frac{68z}{57}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{2}{57}\sqrt{z}\,(8z-57)\sinh\left(2\sqrt{z}\right) $$

07.22.03.agj7.01

$${}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{19}{4}; -z\right) = \left(1 - \frac{68\,z}{57}\right)\cos\left(2\sqrt{z}\right) + \frac{2}{57}\sqrt{z}\,(8\,z + 57)\sin\left(2\sqrt{z}\right)$$

07.22.03.agj8.01

$${}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{21}{4}; z\right) = \frac{1}{143\,818\,752\sqrt{2}\,z^{15/4}}$$
$$\left(221\left(2\sqrt{z}\,\left(524\,288\,z^5 - 2\,686\,976\,z^4 - 9\,732\,096\,z^3 - 59\,431\,680\,z^2 - 143\,256\,960\,z + 177\,161\,985\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.$$
$$\left(4\,194\,304\,z^5 + 25\,362\,432\,z^4 + 154\,091\,520\,z^3 + 735\,356\,160\,z^2 + 1\,346\,194\,080\,z - 885\,809\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.2\sqrt{z}\,\left(524\,288\,z^5 - 3\,866\,624\,z^4 - 22\,118\,400\,z^3 - 136\,224\,000\,z^2 - 543\,533\,760\,z - 885\,809\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.agj9.01

$${}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{21}{4}; -z\right) = \frac{1}{143\,818\,752\sqrt{2}\,z^{15/4}}$$
$$\left(221\left(2\sqrt{z}\,\left(524\,288\,z^5 + 2\,686\,976\,z^4 - 9\,732\,096\,z^3 + 59\,431\,680\,z^2 - 143\,256\,960\,z - 177\,161\,985\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.$$
$$\left(4\,194\,304\,z^5 - 25\,362\,432\,z^4 + 154\,091\,520\,z^3 - 735\,356\,160\,z^2 + 1\,346\,194\,080\,z + 885\,809\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.2\sqrt{z}\,\left(524\,288\,z^5 + 3\,866\,624\,z^4 - 22\,118\,400\,z^3 + 136\,224\,000\,z^2 - 543\,533\,760\,z + 885\,809\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.agja.01

$${}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{23}{4}; z\right) = \left(\frac{4\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.agjb.01

$${}_1F_2\left(\frac{23}{4}; -\frac{3}{2}, \frac{23}{4}; -z\right) = \left(1 - \frac{4\,z}{3}\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

For fixed z and $a_1 = \frac{23}{4}$, $b_1 = -\frac{1}{2}$

07.22.03.agjc.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{99\,687\,686\,175\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(-33\,554\,432\,z^7 - 10\,622\,074\,880\,z^6 + 20\,164\,902\,912\,z^5 - 245\,677\,178\,880\,z^4 + 861\,328\,258\,560\,z^3 - 615\,615\,184\,800\,z^2 + 99\,687\,686\,175\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(507\,510\,784\,z^6 + 14\,304\,411\,648\,z^5 - 71\,004\,487\,680\,z^4 + 6\,113\,802\,240\,z^3 + 463\,710\,139\,200\,z^2 - 132\,916\,914\,900\,z - 99\,687\,686\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-8\,388\,608\,z^6 - 2\,281\,177\,088\,z^5 + 14\,102\,691\,840\,z^4 - 103\,581\,757\,440\,z^3 + 142\,345\,929\,600\,z^2 + 265\,833\,829\,800\,z + 99\,687\,686\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agjd.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{23}{4}; -z\right) =$$
$$\frac{1}{99\,687\,686\,175\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(33\,554\,432\,z^7 - 10\,622\,074\,880\,z^6 - 20\,164\,902\,912\,z^5 - 245\,677\,178\,880\,z^4 - 861\,328\,258\,560\,z^3 - 615\,615\,184\,800\,z^2 + 99\,687\,686\,175\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(507\,510\,784\,z^6 - 14\,304\,411\,648\,z^5 - 71\,004\,487\,680\,z^4 - 6\,113\,802\,240\,z^3 + 463\,710\,139\,200\,z^2 + 132\,916\,914\,900\,z - 99\,687\,686\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-8\,388\,608\,z^6 + 2\,281\,177\,088\,z^5 + 14\,102\,691\,840\,z^4 + 103\,581\,757\,440\,z^3 + 142\,345\,929\,600\,z^2 - 265\,833\,829\,800\,z + 99\,687\,686\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agje.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{21}{4}; z\right) =$$
$$\left(-\frac{8\,388\,608\,z^6}{13\,749\,310\,575} - \frac{72\,876\,032\,z^5}{416\,645\,775} + \frac{131\,072\,z^4}{264\,537} - \frac{815\,104\,z^3}{188\,955} + \frac{8320\,z^2}{969} + \frac{88\,z}{21} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{1}{13\,749\,310\,575}\left(2\sqrt{z}\,\left(124\,780\,544\,z^5 + 3\,622\,502\,400\,z^4 - 15\,583\,518\,720\,z^3 + 3\,667\,023\,360\,z^2 + 63\,405\,342\,000\,z + 13\,749\,310\,575\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agjf.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{21}{4}; -z\right) =$$
$$\left(-\frac{8\,388\,608\,z^6}{13\,749\,310\,575} + \frac{72\,876\,032\,z^5}{416\,645\,775} + \frac{131\,072\,z^4}{264\,537} + \frac{815\,104\,z^3}{188\,955} + \frac{8320\,z^2}{969} - \frac{88\,z}{21} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{1}{13\,749\,310\,575}\left(2\sqrt{z}\,\left(-124\,780\,544\,z^5 + 3\,622\,502\,400\,z^4 + 15\,583\,518\,720\,z^3 + 3\,667\,023\,360\,z^2 - 63\,405\,342\,000\,z + 13\,749\,310\,575\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agjg.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{19}{4}; z\right) = \frac{1}{4\,334\,247\,225\sqrt[4]{z}}\left(\sqrt{2}\left(\left(260\,046\,848\,z^6 + 11\,593\,580\,544\,z^5 - 28\,220\,129\,280\,z^4 + 57\,976\,934\,400\,z^3 - 36\,985\,576\,320\,z^2 + 1\,824\,946\,200\,z + 4\,334\,247\,225\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4\,194\,304\,z^6 + 1\,295\,253\,504\,z^5 + 1\,826\,979\,840\,z^4 + 6\,017\,034\,240\,z^3 - 27\,947\,747\,520\,z^2 + 7\,603\,942\,500\,z + 4\,334\,247\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(61\,865\,984\,z^5 + 1\,972\,961\,280\,z^4 - 7\,042\,129\,920\,z^3 + 5\,085\,319\,680\,z^2 + 13\,382\,938\,800\,z + 4\,334\,247\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agjh.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{19}{4}; -z\right) = \frac{1}{4\,334\,247\,225\sqrt[4]{z}}\left(\sqrt{2}\left(\left(260\,046\,848\,z^6 - 11\,593\,580\,544\,z^5 - 28\,220\,129\,280\,z^4 - 57\,976\,934\,400\,z^3 - 36\,985\,576\,320\,z^2 - 1\,824\,946\,200\,z + 4\,334\,247\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4\,194\,304\,z^6 - 1\,295\,253\,504\,z^5 + 1\,826\,979\,840\,z^4 - 6\,017\,034\,240\,z^3 - 27\,947\,747\,520\,z^2 - 7\,603\,942\,500\,z + 4\,334\,247\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(-61\,865\,984\,z^5 + 1\,972\,961\,280\,z^4 + 7\,042\,129\,920\,z^3 + 5\,085\,319\,680\,z^2 - 13\,382\,938\,800\,z + 4\,334\,247\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agji.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{17}{4}; z\right) = \frac{1}{654\,729\,075}\left(\left(61\,865\,984\,z^5 + 2\,273\,771\,520\,z^4 - 5\,798\,338\,560\,z^3 + 6\,732\,633\,600\,z^2 + 3\,081\,078\,000\,z + 654\,729\,075\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576\,z^5 + 308\,346\,880\,z^4 + 569\,548\,800\,z^3 + 890\,749\,440\,z^2 - 3\,816\,212\,400\,z - 654\,729\,075\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agjj.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{17}{4}; -z\right) = \frac{1}{654\,729\,075}\left(\left(-61\,865\,984\,z^5 + 2\,273\,771\,520\,z^4 + 5\,798\,338\,560\,z^3 + 6\,732\,633\,600\,z^2 - 3\,081\,078\,000\,z + 654\,729\,075\right)\cos\left(2\sqrt{z}\right) + 2\sqrt{z}\left(1\,048\,576\,z^5 - 308\,346\,880\,z^4 + 569\,548\,800\,z^3 - 890\,749\,440\,z^2 - 3\,816\,212\,400\,z + 654\,729\,075\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agjk.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{15}{4}; z\right) = -\frac{1}{228\,118\,275\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2\,097\,152 z^6 + 693\,633\,024 z^5 + 5\,462\,016\,000 z^4 - 5\,662\,863\,360 z^3 + 2\,964\,155\,040 z^2 - 243\,326\,160 z - 228\,118\,275\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 28\sqrt{z}\left(4\,456\,448 z^5 + 194\,641\,920 z^4 - 211\,322\,880 z^3 + 327\,444\,480 z^2 - 78\,211\,980 z - 32\,588\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(524\,288 z^5 + 150\,405\,120 z^4 + 453\,734\,400 z^3 - 38\,545\,920 z^2 - 851\,641\,560 z - 228\,118\,275\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agjl.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{15}{4}; -z\right) = -\frac{1}{228\,118\,275\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2\,097\,152 z^6 - 693\,633\,024 z^5 + 5\,462\,016\,000 z^4 + 5\,662\,863\,360 z^3 + 2\,964\,155\,040 z^2 + 243\,326\,160 z - 228\,118\,275\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 28\sqrt{z}\left(4\,456\,448 z^5 - 194\,641\,920 z^4 - 211\,322\,880 z^3 - 327\,444\,480 z^2 - 78\,211\,980 z + 32\,588\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 4 z\left(524\,288 z^5 - 150\,405\,120 z^4 + 453\,734\,400 z^3 + 38\,545\,920 z^2 - 851\,641\,560 z + 228\,118\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agjm.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{13}{4}; z\right) = \frac{1}{38\,513\,475}\left(\left(-524\,288 z^5 - 150\,405\,120 z^4 - 739\,307\,520 z^3 + 474\,163\,200 z^2 + 213\,305\,400 z + 38\,513\,475\right)\cosh\left(2\sqrt{z}\right) - 10\sqrt{z}\left(1\,507\,328 z^4 + 60\,604\,416 z^3 - 52\,545\,024 z^2 + 61\,629\,120 z + 7\,702\,695\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agjn.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{13}{4}; -z\right) = \frac{1}{38\,513\,475}\left(\left(524\,288 z^5 - 150\,405\,120 z^4 + 739\,307\,520 z^3 + 474\,163\,200 z^2 - 213\,305\,400 z + 38\,513\,475\right)\cos\left(2\sqrt{z}\right) + 10\sqrt{z}\left(1\,507\,328 z^4 - 60\,604\,416 z^3 - 52\,545\,024 z^2 - 61\,629\,120 z + 7\,702\,695\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agjo.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{11}{4}; z\right) = \frac{1}{15\,207\,885\sqrt[4]{z}} \left(\sqrt{2}\left(\left(15\,466\,496 z^5 + 791\,347\,200 z^4 + 1\,101\,112\,320 z^3 - 362\,355\,840 z^2 + 33\,180\,840 z + 15\,207\,885\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(262\,144 z^5 + 77\,037\,568 z^4 + 583\,833\,600 z^3 - 294\,940\,800 z^2 + 53\,458\,020 z + 15\,207\,885\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 28 z\left(524\,288 z^4 + 20\,398\,080 z^3 - 8\,751\,360 z^2 + 10\,533\,600 z + 2\,172\,555\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agjp.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{11}{4}; -z\right) = \frac{1}{15\,207\,885\sqrt[4]{z}} \left(\sqrt{2}\left(-\left(15\,466\,496 z^5 - 791\,347\,200 z^4 + 1\,101\,112\,320 z^3 - 362\,355\,840 z^2 + 33\,180\,840 z - 15\,207\,885\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(262\,144 z^5 - 77\,037\,568 z^4 + 583\,833\,600 z^3 + 294\,940\,800 z^2 + 53\,458\,020 z - 15\,207\,885\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 28 z\left(524\,288 z^4 - 20\,398\,080 z^3 - 8\,751\,360 z^2 - 10\,533\,600 z + 2\,172\,555\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agjq.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{9}{4}; z\right) = \frac{1}{2\,962\,575}\left(5\left(720\,896 z^4 + 28\,557\,312 z^3 + 6\,806\,016 z^2 + 4\,213\,440 z + 592\,515\right)\cosh\left(2\sqrt{z}\right) + 2\sqrt{z}\left(65\,536 z^4 + 17\,448\,960 z^3 + 110\,261\,760 z^2 - 38\,001\,600 z - 2\,962\,575\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agjr.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{9}{4}; -z\right) = \frac{1}{2\,962\,575}\left(5\left(720\,896 z^4 - 28\,557\,312 z^3 + 6\,806\,016 z^2 - 4\,213\,440 z + 592\,515\right)\cos\left(2\sqrt{z}\right) - 2\sqrt{z}\left(65\,536 z^4 - 17\,448\,960 z^3 + 110\,261\,760 z^2 + 38\,001\,600 z - 2\,962\,575\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agjs.01

$$ {}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{7}{4}; z\right) = -\frac{1}{1\,382\,535\sqrt[4]{z}}\left(\sqrt{2}\left(\left(131\,072 z^5 + 37\,576\,704 z^4 + 393\,254\,400 z^3 + 99\,015\,840 z^2 - 6\,320\,160 z - 1\,382\,535\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,785\,856 z^4 + 75\,432\,960 z^3 + 88\,482\,240 z^2 - 8\,163\,540 z - 1\,382\,535\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(32\,768 z^4 + 8\,079\,360 z^3 + 47\,644\,800 z^2 - 10\,006\,920 z - 1\,382\,535\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agjt.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{7}{4}; -z\right) =$$
$$\frac{1}{1\,382\,535\sqrt[4]{z}}\left(\sqrt{2}\left(\left(131\,072\,z^5 - 37\,576\,704\,z^4 + 393\,254\,400\,z^3 - 99\,015\,840\,z^2 - 6\,320\,160\,z + 1\,382\,535\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\left(1\,785\,856\,z^4 - 75\,432\,960\,z^3 + 88\,482\,240\,z^2 + 8\,163\,540\,z - 1\,382\,535\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) -$$
$$\left.\left.4\,z\left(32\,768\,z^4 - 8\,079\,360\,z^3 + 47\,644\,800\,z^2 + 10\,006\,920\,z - 1\,382\,535\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agju.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{5}{4}; z\right) = \frac{1}{329\,175}\left(\left(-32\,768\,z^4 - 7\,669\,760\,z^3 - 47\,644\,800\,z^2 + 3\,686\,760\,z + 329\,175\right)\cosh\left(2\sqrt{z}\right) -\right.$$
$$\left.2\sqrt{z}\left(421\,888\,z^3 + 14\,972\,160\,z^2 + 10\,209\,360\,z + 329\,175\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agjv.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{5}{4}; -z\right) = \frac{1}{329\,175}\left(\left(-32\,768\,z^4 + 7\,669\,760\,z^3 - 47\,644\,800\,z^2 - 3\,686\,760\,z + 329\,175\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.2\sqrt{z}\left(-421\,888\,z^3 + 14\,972\,160\,z^2 - 10\,209\,360\,z + 329\,175\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agjw.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{3}{4}; z\right) =$$
$$\frac{1}{197\,505\sqrt[4]{z}}\left(\sqrt{2}\left(\left(851\,968\,z^4 + 35\,549\,184\,z^3 + 75\,841\,920\,z^2 + 2\,633\,400\,z + 197\,505\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right.$$
$$\left(16\,384\,z^4 + 3\,738\,624\,z^3 + 26\,938\,560\,z^2 + 2\,896\,740\,z + 197\,505\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(200\,704\,z^3 + 6\,232\,320\,z^2 + 3\,160\,080\,z + 197\,505\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agjx.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{3}{4}; -z\right) =$$
$$\frac{1}{197\,505\sqrt[4]{z}}\left(\sqrt{2}\left(\left(851\,968\,z^4 - 35\,549\,184\,z^3 + 75\,841\,920\,z^2 - 2\,633\,400\,z + 197\,505\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\right.\right.$$
$$\left(16\,384\,z^4 - 3\,738\,624\,z^3 + 26\,938\,560\,z^2 - 2\,896\,740\,z + 197\,505\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +$$
$$\left.\left.4\,z\left(-200\,704\,z^3 + 6\,232\,320\,z^2 - 3\,160\,080\,z + 197\,505\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agjy.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{1}{4}; z\right) =$$
$$\left(\frac{192\,512\,z^3}{65\,835} + \frac{52\,480\,z^2}{627} + 48\,z + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(4096\,z^3 + 790\,272\,z^2 + 3\,889\,200\,z - 65\,835\right)\sinh\left(2\sqrt{z}\right)}{65\,835}$$

07.22.03.agjz.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, -\frac{1}{4}; -z\right) =$$

$$\left(-\frac{192\,512\,z^3}{65\,835} + \frac{52\,480\,z^2}{627} - 48\,z + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(4096\,z^3 - 790\,272\,z^2 + 3\,889\,200\,z + 65\,835\right)\sin\left(2\sqrt{z}\right)}{65\,835}$$

07.22.03.agk0.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{1}{4}; z\right) = -\frac{1}{65\,835\,\sqrt[4]{z}}$$

$$\left(\sqrt{2}\,\left(\left(8192\,z^4 + 1\,633\,280\,z^3 + 11\,671\,968\,z^2 + 3\,160\,080\,z - 65\,835\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(93\,184\,z^3 + 2\,606\,208\,z^2 + 2\,185\,260\,z - 65\,835\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2048\,z^3 + 339\,968\,z^2 + 1\,210\,440\,z - 65\,835\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agk1.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{1}{4}; -z\right) = \frac{1}{65\,835\,\sqrt[4]{z}}$$

$$\left(\sqrt{2}\,\left(\left(-8192\,z^4 + 1\,633\,280\,z^3 - 11\,671\,968\,z^2 + 3\,160\,080\,z + 65\,835\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\,\left(93\,184\,z^3 - 2\,606\,208\,z^2 + 2\,185\,260\,z + 65\,835\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(2048\,z^3 - 339\,968\,z^2 + 1\,210\,440\,z + 65\,835\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agk2.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{3}{4}; z\right) = \left(-\frac{2048\,z^3}{65\,835} - \frac{6656\,z^2}{1463} - \frac{40\,z}{3} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\,\left(21\,248\,z^2 + 426\,720\,z + 65\,835\right)\sinh\left(2\sqrt{z}\right)}{65\,835}$$

07.22.03.agk3.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{3}{4}; -z\right) = \left(\frac{2048\,z^3}{65\,835} - \frac{6656\,z^2}{1463} + \frac{40\,z}{3} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\,\left(21\,248\,z^2 - 426\,720\,z + 65\,835\right)\sin\left(2\sqrt{z}\right)}{65\,835}$$

07.22.03.agk4.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{5}{4}; z\right) = -\frac{1}{65\,835\,\sqrt[4]{z}}$$

$$\left(\sqrt{2}\,\left(\left(41\,984\,z^3 + 948\,864\,z^2 + 701\,064\,z - 65\,835\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(1024\,z^3 + 135\,936\,z^2 + 391\,524\,z - 43\,155\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(9728\,z^2 + 142\,464\,z - 20\,475\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agk5.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{5}{4}; -z\right) =$$

$$\frac{1}{65\,835\sqrt[4]{z}}\left(\sqrt{2}\left(\left(41\,984 z^3 - 948\,864 z^2 + 701\,064 z + 65\,835\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1024 z^3 - 135\,936 z^2 + 391\,524 z + 43\,155\right)\right.\right.$$

$$\left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4 z\left(-9728 z^2 + 142\,464 z + 20\,475\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agk6.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{7}{4}; z\right) = \left(-\frac{256 z^2}{627} - \frac{32 z}{7} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2\sqrt{z}\left(256 z^2 + 25\,120 z + 21\,945\right)\sinh\left(2\sqrt{z}\right)}{21\,945}$$

07.22.03.agk7.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{7}{4}; -z\right) = \left(-\frac{256 z^2}{627} + \frac{32 z}{7} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2\sqrt{z}\left(256 z^2 - 25\,120 z + 21\,945\right)\sin\left(2\sqrt{z}\right)}{21\,945}$$

07.22.03.agk8.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{9}{4}; z\right) =$$

$$-\frac{1}{13\,167 z^{3/4}}\left(\sqrt{2}\left(\sqrt{z}\left(512 z^3 + 49\,056 z^2 + 85\,344 z - 14\,049\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,640 z^3 + 155\,568 z^2 - 33\,516 z + 2205\right)\right.\right.$$

$$\left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(256 z^3 + 18\,480 z^2 - 2478 z + 2205\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agk9.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{9}{4}; -z\right) = \frac{1}{13\,167 z^{3/4}}$$

$$\left(\sqrt{2}\left(\sqrt{z}\left(512 z^3 - 49\,056 z^2 + 85\,344 z + 14\,049\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,640 z^3 - 155\,568 z^2 - 33\,516 z - 2205\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$

$$\left.\left. 2\sqrt{z}\left(-256 z^3 + 18\,480 z^2 + 2478 z + 2205\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agka.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{11}{4}; z\right) = \left(-\frac{128 z^2}{3135} - \frac{24 z}{11} + 1\right)\cosh\left(2\sqrt{z}\right) - \frac{2}{57}\sqrt{z}\,(16 z + 57)\sinh\left(2\sqrt{z}\right)$$

07.22.03.agkb.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{11}{4}; -z\right) = \left(-\frac{128 z^2}{3135} + \frac{24 z}{11} + 1\right)\cos\left(2\sqrt{z}\right) + \frac{2}{57}(57 - 16 z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.agkc.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{13}{4}; z\right) = -\frac{1}{23\,408\sqrt{2}\,z^{7/4}}$$
$$\left(\left(2\sqrt{z}\left(26\,624z^3+115\,584z^2-23\,856z-3465\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(8192z^4+332\,288z^3-137\,088z^2-10\,080z+17\,325\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(23\,552z^3+8256z^2+26\,880z+17\,325\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agkd.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{13}{4}; -z\right) = \frac{1}{23\,408\sqrt{2}\,z^{7/4}}$$
$$\left(\left(2\sqrt{z}\left(-26\,624z^3+115\,584z^2+23\,856z-3465\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(8192z^4-332\,288z^3-137\,088z^2+10\,080z+17\,325\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(23\,552z^3-8256z^2+26\,880z-17\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agke.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{15}{4}; z\right) = \left(1-\frac{16z}{15}\right)\cosh\left(2\sqrt{z}\right)-\frac{2}{285}\sqrt{z}\,(16z+285)\sinh\left(2\sqrt{z}\right)$$

07.22.03.agkf.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{15}{4}; -z\right) = \left(\frac{16z}{15}+1\right)\cos\left(2\sqrt{z}\right)+\frac{2}{285}(285-16z)\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.agkg.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{17}{4}; z\right) = -\frac{1}{749\,056\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(16\,384z^4+245\,760z^3-21\,504z^2+55\,440z-93\,555\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(507\,904z^4-479\,232z^3-483\,840z^2-609\,840z+467\,775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(16\,384z^4+67\,584z^3+192\,000z^2+388\,080z+467\,775\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agkh.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{17}{4}; -z\right) = -\frac{1}{749\,056\sqrt{2}\,z^{11/4}}\left(13\left(2\sqrt{z}\left(16\,384z^4-245\,760z^3-21\,504z^2-55\,440z-93\,555\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(507\,904z^4+479\,232z^3-483\,840z^2+609\,840z+467\,775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.2\sqrt{z}\left(16\,384z^4-67\,584z^3+192\,000z^2-388\,080z+467\,775\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agki.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{19}{4}; z\right) = \left(1-\frac{8z}{19}\right)\cosh\left(2\sqrt{z}\right)-2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.agkj.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{19}{4}; -z\right) = \left(\frac{8z}{19}+1\right)\cos\left(2\sqrt{z}\right)+2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.agkk.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{21}{4}; z\right) =$$
$$-\frac{1}{23\,969\,792\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(458\,752z^4+393\,216z^3+2\,661\,120z^2+6\,098\,400z-7\,702\,695\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(524\,288z^5-1\,769\,472z^4-7\,372\,800z^3-32\,820\,480z^2-57\,879\,360z+38\,513\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(262\,144z^4+1\,228\,800z^3+6\,462\,720z^2+24\,282\,720z+38\,513\,475\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agkl.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{21}{4}; -z\right) =$$
$$-\frac{1}{23\,969\,792\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(-458\,752z^4+393\,216z^3-2\,661\,120z^2+6\,098\,400z+7\,702\,695\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left(524\,288z^5+1\,769\,472z^4-7\,372\,800z^3+32\,820\,480z^2-57\,879\,360z-38\,513\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.2\sqrt{z}\left(262\,144z^4-1\,228\,800z^3+6\,462\,720z^2-24\,282\,720z+38\,513\,475\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agkm.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{23}{4}; z\right) = \cosh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.agkn.01

$${}_1F_2\left(\frac{23}{4}; -\frac{1}{2}, \frac{23}{4}; -z\right) = \cos\left(2\sqrt{z}\right) + 2\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

For fixed z and $a_1 = \frac{23}{4}$, $b_{1.} = \frac{1}{2}$

07.22.03.agko.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, -\frac{23}{4}; z\right) =$$
$$\frac{1}{99\,687\,686\,175\sqrt[4]{z}}\left(\sqrt{2}\left(\left(432\,013\,312z^6+3\,881\,041\,920z^5-1\,860\,009\,984z^4-204\,518\,135\,808z^3+559\,650\,168\,000z^2-\right.\right.\right.$$
$$\left.398\,750\,744\,700z+99\,687\,686\,175\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(8\,388\,608z^6+1\,467\,482\,112z^5-13\,773\,570\,048z^4+\right.$$
$$\left.64\,674\,312\,192z^3+40\,315\,605\,120z^2-265\,833\,829\,800z+99\,687\,686\,175\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$4z\left(101\,711\,872z^5-54\,853\,632z^4+9\,726\,861\,312z^3-91\,330\,767\,360z^2+41\,548\,021\,200z+99\,687\,686\,175\right)$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agkp.01

$$ {}_1F_2\left(\frac{23}{4};\frac{1}{2},-\frac{23}{4};-z\right)= \frac{1}{99\,687\,686\,175\sqrt[4]{z}}\left(\sqrt{2}\left(\left(432\,013\,312\,z^6-3\,881\,041\,920\,z^5-1\,860\,009\,984\,z^4+204\,518\,135\,808\,z^3+ 559\,650\,168\,000\,z^2+398\,750\,744\,700\,z+99\,687\,686\,175\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2- 4\sqrt{z}\left(8\,388\,608\,z^6-1\,467\,482\,112\,z^5-13\,773\,570\,048\,z^4-64\,674\,312\,192\,z^3+40\,315\,605\,120\,z^2+ 265\,833\,829\,800\,z+99\,687\,686\,175\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-4z\left(101\,711\,872\,z^5+54\,853\,632\,z^4+ 9\,726\,861\,312\,z^3+91\,330\,767\,360\,z^2+41\,548\,021\,200\,z-99\,687\,686\,175\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agkq.01

$$ {}_1F_2\left(\frac{23}{4};\frac{1}{2},-\frac{21}{4};z\right)=\left(\frac{1\,048\,576\,z^5}{138\,881\,925}+\frac{65\,536\,z^4}{1\,322\,685}+\frac{8192\,z^3}{62\,985}-\frac{7680\,z^2}{2261}+\frac{80\,z}{21}+1\right)\cosh\left(2\sqrt{z}\right)+\frac{1}{13\,749\,310\,575}\left(4\sqrt{z}\left(1\,048\,576\,z^5+183\,828\,480\,z^4-1\,447\,649\,280\,z^3+6\,296\,209\,920\,z^2+2\,756\,754\,000\,z-13\,749\,310\,575\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agkr.01

$$ {}_1F_2\left(\frac{23}{4};\frac{1}{2},-\frac{21}{4};-z\right)=\left(-\frac{1\,048\,576\,z^5}{138\,881\,925}+\frac{65\,536\,z^4}{1\,322\,685}-\frac{8192\,z^3}{62\,985}-\frac{7680\,z^2}{2261}-\frac{80\,z}{21}+1\right)\cos\left(2\sqrt{z}\right)+\frac{1}{13\,749\,310\,575}\left(4\sqrt{z}\left(1\,048\,576\,z^5-183\,828\,480\,z^4-1\,447\,649\,280\,z^3-6\,296\,209\,920\,z^2+2\,756\,754\,000\,z+13\,749\,310\,575\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agks.01

$$ {}_1F_2\left(\frac{23}{4};\frac{1}{2},-\frac{19}{4};z\right)= -\frac{1}{4\,334\,247\,225\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4\,194\,304\,z^6+919\,339\,008\,z^5-2\,599\,059\,456\,z^4+15\,260\,571\,648\,z^3-30\,172\,443\,840\,z^2+ 19\,161\,935\,100\,z-4\,334\,247\,225\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+ 12\sqrt{z}\left(17\,825\,792\,z^5+276\,627\,456\,z^4-835\,559\,424\,z^3-1\,527\,160\,320\,z^2+4\,460\,979\,600\,z-1\,444\,749\,075\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(1\,048\,576\,z^5+190\,513\,152\,z^4-1\,133\,862\,912\,z^3+ 4\,833\,400\,320\,z^2-703\,911\,600\,z-4\,334\,247\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agkt.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{1}{2}, -\frac{19}{4}; -z\right) = \frac{1}{4\,334\,247\,225\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-4\,194\,304\,z^6 + 919\,339\,008\,z^5 + 2\,599\,059\,456\,z^4 + 15\,260\,571\,648\,z^3 + 30\,172\,443\,840\,z^2 + 19\,161\,935\,100\,z + 4\,334\,247\,225\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(17\,825\,792\,z^5 - 276\,627\,456\,z^4 - 835\,559\,424\,z^3 + 1\,527\,160\,320\,z^2 + 4\,460\,979\,600\,z + 1\,444\,749\,075\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(1\,048\,576\,z^5 - 190\,513\,152\,z^4 - 1\,133\,862\,912\,z^3 - 4\,833\,400\,320\,z^2 - 703\,911\,600\,z + 4\,334\,247\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agku.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{1}{2}, -\frac{17}{4}; z\right) = \frac{1}{654\,729\,075}\left(\left(-1\,048\,576\,z^5 - 203\,489\,280\,z^4 + 704\,471\,040\,z^3 - 3\,166\,732\,800\,z^2 + 2\,432\,430\,000\,z + 654\,729\,075\right)\cosh\left(2\sqrt{z}\right) - 80\sqrt{z}\left(327\,680\,z^4 + 5\,308\,416\,z^3 - 14\,224\,896\,z^2 - 17\,297\,280\,z + 34\,459\,425\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agkv.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{1}{2}, -\frac{17}{4}; -z\right) = \frac{1}{654\,729\,075}\left(\left(1\,048\,576\,z^5 - 203\,489\,280\,z^4 - 704\,471\,040\,z^3 - 3\,166\,732\,800\,z^2 - 2\,432\,430\,000\,z + 654\,729\,075\right)\cos\left(2\sqrt{z}\right) + 80\sqrt{z}\left(327\,680\,z^4 - 5\,308\,416\,z^3 - 14\,224\,896\,z^2 + 17\,297\,280\,z + 34\,459\,425\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agkw.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{1}{2}, -\frac{15}{4}; z\right) = \frac{1}{228\,118\,275\sqrt[4]{z}}\left(\sqrt{2}\left(21\left(1\,310\,720\,z^5 + 37\,879\,808\,z^4 - 74\,471\,424\,z^3 + 101\,122\,560\,z^2 - 55\,038\,060\,z + 10\,862\,775\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(524\,288\,z^5 + 111\,476\,736\,z^4 - 26\,578\,944\,z^3 + 539\,159\,040\,z^2 - 851\,641\,560\,z + 228\,118\,275\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\,z\left(2\,162\,688\,z^4 + 40\,026\,112\,z^3 - 96\,284\,160\,z^2 - 19\,595\,520\,z + 76\,039\,425\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agkx.01

$$ {}_1F_2\left(\frac{23}{4};\frac{1}{2},-\frac{15}{4};-z\right)=\frac{1}{228\,118\,275\sqrt[4]{z}}\left(\sqrt{2}\left(-21\left(1\,310\,720z^5-37\,879\,808z^4-74\,471\,424z^3-101\,122\,560z^2-55\,038\,060z-10\,862\,775\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(524\,288z^5-111\,476\,736z^4-26\,578\,944z^3-539\,159\,040z^2-851\,641\,560z-228\,118\,275\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+12z\left(2\,162\,688z^4-40\,026\,112z^3-96\,284\,160z^2+19\,595\,520z+76\,039\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agky.01

$$ {}_1F_2\left(\frac{23}{4};\frac{1}{2},-\frac{13}{4};z\right)=\frac{1}{38\,513\,475}\left(9\left(720\,896z^4+16\,171\,008z^3-30\,481\,920z^2+14\,857\,920z+4\,279\,275\right)\cosh\left(2\sqrt{z}\right)+4\sqrt{z}\left(65\,536z^4+13\,123\,584z^3+1\,451\,520z^2+43\,606\,080z-43\,378\,335\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agkz.01

$$ {}_1F_2\left(\frac{23}{4};\frac{1}{2},-\frac{13}{4};-z\right)=\frac{1}{38\,513\,475}\left(9\left(720\,896z^4-16\,171\,008z^3-30\,481\,920z^2-14\,857\,920z+4\,279\,275\right)\cos\left(2\sqrt{z}\right)+4\sqrt{z}\left(-65\,536z^4+13\,123\,584z^3-1\,451\,520z^2+43\,606\,080z+43\,378\,335\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agl0.01

$$ {}_1F_2\left(\frac{23}{4};\frac{1}{2},-\frac{11}{4};z\right)=-\frac{1}{15\,207\,885\sqrt[4]{z}}\left(\sqrt{2}\left(\left(262\,144z^5+60\,555\,264z^4+289\,701\,888z^3-219\,098\,880z^2+94\,012\,380z-15\,207\,885\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(3\,276\,800z^4+91\,865\,088z^3-86\,849\,280z^2+73\,735\,200z-15\,207\,885\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(65\,536z^4+12\,730\,368z^3+12\,794\,880z^2+15\,865\,920z-15\,207\,885\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agl1.01

$$ {}_1F_2\left(\frac{23}{4};\frac{1}{2},-\frac{11}{4};-z\right)=\frac{1}{15\,207\,885\sqrt[4]{z}}\left(\sqrt{2}\left(\left(262\,144z^5-60\,555\,264z^4+289\,701\,888z^3+219\,098\,880z^2+94\,012\,380z+15\,207\,885\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(3\,276\,800z^4-91\,865\,088z^3-86\,849\,280z^2-73\,735\,200z-15\,207\,885\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+4z\left(-65\,536z^4+12\,730\,368z^3-12\,794\,880z^2+15\,865\,920z+15\,207\,885\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agl2.01

$$ {}_1F_2\left(\frac{23}{4};\frac{1}{2},-\frac{9}{4};z\right)=\frac{1}{2\,962\,575}\left(\left(-65\,536z^4-12\,730\,368z^3-31\,127\,040z^2+8\,326\,080z+2\,962\,575\right)\cosh\left(2\sqrt{z}\right)-192\sqrt{z}\left(8192z^3+206\,080z^2-154\,560z+76\,545\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agl3.01

$${}_1F_2\left(\frac{23}{4};\frac{1}{2},-\frac{9}{4};-z\right)=\frac{1}{2\,962\,575}\left(\left(-65\,536\,z^4+12\,730\,368\,z^3-31\,127\,040\,z^2-8\,326\,080\,z+2\,962\,575\right)\cos\left(2\sqrt{z}\right)-192\sqrt{z}\left(8192\,z^3-206\,080\,z^2-154\,560\,z-76\,545\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agl4.01

$${}_1F_2\left(\frac{23}{4};\frac{1}{2},-\frac{7}{4};z\right)=\frac{1}{1\,382\,535\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(540\,672\,z^4+18\,400\,256\,z^3+15\,449\,280\,z^2-3\,950\,100\,z+460\,845\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(32\,768\,z^4+6\,555\,648\,z^3+29\,312\,640\,z^2-10\,006\,920\,z+1\,382\,535\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(126\,976\,z^3+3\,055\,360\,z^2-1\,328\,880\,z+460\,845\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agl5.01

$${}_1F_2\left(\frac{23}{4};\frac{1}{2},-\frac{7}{4};-z\right)=\frac{1}{1\,382\,535\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(540\,672\,z^4-18\,400\,256\,z^3+15\,449\,280\,z^2+3\,950\,100\,z+460\,845\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(32\,768\,z^4-6\,555\,648\,z^3+29\,312\,640\,z^2+10\,006\,920\,z+1\,382\,535\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+12\,z\left(-126\,976\,z^3+3\,055\,360\,z^2+1\,328\,880\,z+460\,845\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agl6.01

$${}_1F_2\left(\frac{23}{4};\frac{1}{2},-\frac{5}{4};z\right)=\frac{1}{329\,175}\left(7\left(53\,248\,z^3+1\,309\,440\,z^2+19\,440\,z+47\,025\right)\cosh\left(2\sqrt{z}\right)+4\sqrt{z}\left(4096\,z^3+725\,760\,z^2+2\,518\,320\,z-477\,855\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agl7.01

$${}_1F_2\left(\frac{23}{4};\frac{1}{2},-\frac{5}{4};-z\right)=\frac{1}{329\,175}\left(4\sqrt{z}\left(4096\,z^3-725\,760\,z^2+2\,518\,320\,z+477\,855\right)\sin\left(2\sqrt{z}\right)-7\left(53\,248\,z^3-1\,309\,440\,z^2+19\,440\,z-47\,025\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.agl8.01

$${}_1F_2\left(\frac{23}{4};\frac{1}{2},-\frac{3}{4};z\right)=-\frac{1}{197\,505\sqrt[4]{z}}\left(\sqrt{2}\left(\left(16\,384\,z^4+3\,179\,520\,z^3+21\,067\,200\,z^2+3\,423\,420\,z-197\,505\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\sqrt{z}\left(61\,440\,z^3+1\,637\,632\,z^2+1\,053\,360\,z-65\,835\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+4\,z\left(4096\,z^3+659\,712\,z^2+2\,061\,360\,z-197\,505\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agl9.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{1}{2}, -\frac{3}{4}; -z\right) = \frac{1}{197\,505\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-16\,384\,z^4 + 3\,179\,520\,z^3 - 21\,067\,200\,z^2 + 3\,423\,420\,z + 197\,505\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(61\,440\,z^3 - 1\,637\,632\,z^2 + 1\,053\,360\,z + 65\,835\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(4096\,z^3 - 659\,712\,z^2 + 2\,061\,360\,z + 197\,505\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agla.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{1}{2}, -\frac{1}{4}; z\right) = \frac{1}{65\,835}\left(-\left(4096\,z^3 + 618\,240\,z^2 + 2\,061\,360\,z - 65\,835\right)\cosh\left(2\sqrt{z}\right) - 336\sqrt{z}\left(256\,z^2 + 5440\,z + 1635\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.aglb.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{1}{2}, -\frac{1}{4}; -z\right) = \frac{1}{65\,835}\left(\left(4096\,z^3 - 618\,240\,z^2 + 2\,061\,360\,z + 65\,835\right)\cos\left(2\sqrt{z}\right) + 336\sqrt{z}\left(256\,z^2 - 5440\,z + 1635\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.aglc.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{1}{4}; z\right) = \frac{1}{65\,835\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(87\,040\,z^3 + 2\,276\,736\,z^2 + 2\,896\,740\,z + 65\,835\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048\,z^3 + 299\,520\,z^2 + 1\,210\,440\,z + 65\,835\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(20\,224\,z^2 + 359\,520\,z + 65\,835\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agld.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{1}{4}; -z\right) = \frac{1}{65\,835\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(-87\,040\,z^3 + 2\,276\,736\,z^2 - 2\,896\,740\,z + 65\,835\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048\,z^3 - 299\,520\,z^2 + 1\,210\,440\,z - 65\,835\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4\,z\left(20\,224\,z^2 - 359\,520\,z + 65\,835\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agle.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{3}{4}; z\right) = \frac{15\left(1280\,z^2 + 20\,384\,z + 4389\right)\cosh\left(2\sqrt{z}\right) + 4\sqrt{z}\left(256\,z^2 + 30\,240\,z + 71\,505\right)\sinh\left(2\sqrt{z}\right)}{65\,835} $$

07.22.03.aglf.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{3}{4}; -z\right) = \frac{15\left(1280\,z^2 - 20\,384\,z + 4389\right)\cos\left(2\sqrt{z}\right) - 4\sqrt{z}\left(256\,z^2 - 30\,240\,z + 71\,505\right)\sin\left(2\sqrt{z}\right)}{65\,835} $$

07.22.03.aglg.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{5}{4}; z\right) = \frac{1}{65\,835\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(1024z^3 + 126\,336z^2 + 498\,204z + 65\,835\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(3072z^2 + 47\,488z + 16\,905\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(256z^2 + 24\,864z + 35\,595\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aglh.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{5}{4}; -z\right) = \frac{1}{65\,835\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-1024z^3 + 126\,336z^2 - 498\,204z + 65\,835\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\left(3072z^2 - 47\,488z + 16\,905\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 4z\left(256z^2 - 24\,864z + 35\,595\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agli.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{7}{4}; z\right) = \frac{\left(256z^2 + 21\,024z + 21\,945\right)\cosh\left(2\sqrt{z}\right) + 32\sqrt{z}\,(128z + 1239)\sinh\left(2\sqrt{z}\right)}{21\,945}$$

07.22.03.aglj.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{7}{4}; -z\right) = \frac{\left(256z^2 - 21\,024z + 21\,945\right)\cos\left(2\sqrt{z}\right) + 32\sqrt{z}\,(128z - 1239)\sin\left(2\sqrt{z}\right)}{21\,945}$$

07.22.03.aglk.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{9}{4}; z\right) =$$
$$\frac{1}{13\,167z^{3/4}}\left(\sqrt{2}\left(21\sqrt{z}\left(192z^2 + 2228z + 639\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\left(256z^3 + 18\,480z^2 + 19\,278z - 315\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\sqrt{z}\left(304z^2 + 1813z - 105\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agll.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{9}{4}; -z\right) =$$
$$\frac{1}{13\,167z^{3/4}}\left(\sqrt{2}\left(21\sqrt{z}\left(192z^2 - 2228z + 639\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 2\left(256z^3 - 18\,480z^2 + 19\,278z + 315\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 12\sqrt{z}\left(-304z^2 + 1813z + 105\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aglm.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{11}{4}; z\right) = \frac{(816z + 3135)\cosh\left(2\sqrt{z}\right) + 4\sqrt{z}\,(16z + 753)\sinh\left(2\sqrt{z}\right)}{3135}$$

07.22.03.agln.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{11}{4}; -z\right) = \frac{(3135 - 816\,z)\cos\left(2\sqrt{z}\right) + 4\sqrt{z}\,(16\,z - 753)\sin\left(2\sqrt{z}\right)}{3135}$$

07.22.03.aglo.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{13}{4}; z\right) =$$

$$\frac{1}{11\,704\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(512\,z^3 + 23\,520\,z^2 + 11\,928\,z + 315\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(23\,552\,z^3 + 68\,544\,z^2 - 1575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$

$$\left.\left.2\sqrt{z}\left(512\,z^3 + 15\,072\,z^2 - 3360\,z - 1575\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aglp.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{13}{4}; -z\right) =$$

$$\frac{1}{11\,704\sqrt{2}\,z^{7/4}}\left(\left(2\sqrt{z}\left(512\,z^3 - 23\,520\,z^2 + 11\,928\,z - 315\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(23\,552\,z^3 - 68\,544\,z^2 + 1575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$

$$\left.\left.2\sqrt{z}\left(-512\,z^3 + 15\,072\,z^2 + 3360\,z - 1575\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aglq.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{15}{4}; z\right) = \left(\frac{16\,z}{285} + 1\right)\cosh\left(2\sqrt{z}\right) + \frac{48}{95}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aglr.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{15}{4}; -z\right) = \left(1 - \frac{16\,z}{285}\right)\cos\left(2\sqrt{z}\right) - \frac{48}{95}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.agls.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{17}{4}; z\right) = \frac{1}{374\,528\sqrt{2}\,z^{11/4}}$$

$$\left(13\left(6\sqrt{z}\left(11\,264\,z^3 + 8960\,z^2 - 1008\,z + 2079\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384\,z^4 + 178\,176\,z^3 + 32\,256\,z^2 + 37\,296\,z - 31\,185\right)\right.\right.$$

$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(9216\,z^3 - 6656\,z^2 - 9744\,z - 10\,395\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aglt.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{17}{4}; -z\right) = \frac{1}{374\,528\sqrt{2}\,z^{11/4}}$$

$$\left(13\left(6\sqrt{z}\left(-11\,264\,z^3 + 8960\,z^2 + 1008\,z + 2079\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384\,z^4 - 178\,176\,z^3 + 32\,256\,z^2 - 37\,296\,z - 31\,185\right)\right.\right.$$

$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) + 6\sqrt{z}\left(9216\,z^3 + 6656\,z^2 - 9744\,z + 10\,395\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aglu.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{19}{4}; z\right) = \cosh\left(2\sqrt{z}\right) + \frac{4}{19}\sqrt{z}\,\sinh\left(2\sqrt{z}\right)$$

07.22.03.aglv.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{19}{4}; -z\right) = \cos\left(2\sqrt{z}\right) - \frac{4}{19}\sqrt{z}\,\sin\left(2\sqrt{z}\right)$$

07.22.03.aglw.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{21}{4}; z\right) = \frac{1}{11\,984\,896\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(32\,768z^4 + 24\,576z^3 - 145\,152z^2 - 310\,464z + 405\,405\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(131\,072z^4 + 147\,456z^3 + 596\,736z^2 + 997\,920z - 675\,675\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(32\,768z^4 - 98\,304z^3 - 389\,376z^2 - 1\,330\,560z - 2\,027\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.aglx.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{21}{4}; -z\right) = -\frac{1}{11\,984\,896\sqrt{2}\,z^{15/4}}\left(221\left(2\sqrt{z}\left(32\,768z^4 - 24\,576z^3 - 145\,152z^2 + 310\,464z + 405\,405\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(131\,072z^4 - 147\,456z^3 + 596\,736z^2 - 997\,920z - 675\,675\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\left(32\,768z^4 + 98\,304z^3 - 389\,376z^2 + 1\,330\,560z - 2\,027\,025\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agly.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{23}{4}; z\right) = \cosh\left(2\sqrt{z}\right)$$

07.22.03.aglz.01

$${}_1F_2\left(\frac{23}{4}; \frac{1}{2}, \frac{23}{4}; -z\right) = \cos\left(2\sqrt{z}\right)$$

For fixed z and $a_1 = \frac{23}{4}$, $b_{1.} = \frac{3}{2}$

07.22.03.agm0.01

$${}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{23}{4}; z\right) = \frac{1}{99\,687\,686\,175\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8\,388\,608z^6 + 737\,673\,216z^5 - 6\,539\,968\,512z^4 - 5\,708\,795\,904z^3 + 185\,032\,149\,120z^2 - 265\,833\,829\,800z + 99\,687\,686\,175\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 28\sqrt{z}\left(11\,534\,336z^5 - 151\,191\,552z^4 + 2\,035\,703\,808z^3 - 5\,877\,020\,160z^2 - 13\,053\,949\,200z + 14\,241\,098\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + 8z\left(1\,048\,576z^5 + 62\,717\,952z^4 - 376\,922\,112z^3 - 6\,273\,953\,280z^2 + 33\,231\,416\,400z + 23\,881\,799\,025\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agm1.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{23}{4}; -z\right) = \frac{1}{99\,687\,686\,175\sqrt[4]{z}}\left(\sqrt{2}\left(\left(8\,388\,608 z^6 - 737\,673\,216 z^5 - 6\,539\,968\,512 z^4 + 5\,708\,795\,904 z^3 + 185\,032\,149\,120 z^2 + 265\,833\,829\,800 z + 99\,687\,686\,175\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 28\sqrt{z}\left(11\,534\,336 z^5 + 151\,191\,552 z^4 + 2\,035\,703\,808 z^3 + 5\,877\,020\,160 z^2 - 13\,053\,949\,200 z - 14\,241\,098\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 8 z\left(1\,048\,576 z^5 - 62\,717\,952 z^4 - 376\,922\,112 z^3 + 6\,273\,953\,280 z^2 + 33\,231\,416\,400 z - 23\,881\,799\,025\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agm2.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{21}{4}; z\right) = \frac{1}{27\,498\,621\,150\sqrt{z}}\left(4\sqrt{z}\left(1\,048\,576 z^5 + 82\,903\,040 z^4 - 636\,641\,280 z^3 - 1\,729\,728\,000 z^2 + 17\,459\,442\,000 z - 654\,729\,075\right)\cosh\left(2\sqrt{z}\right) + 11\left(7\,340\,032 z^5 - 73\,728\,000 z^4 + 972\,840\,960 z^3 - 2\,673\,216\,000 z^2 - 4\,761\,666\,000 z + 1\,368\,978\,975\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agm3.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{21}{4}; -z\right) = \frac{1}{27\,498\,621\,150\sqrt{z}}\left(-4\sqrt{z}\left(1\,048\,576 z^5 - 82\,903\,040 z^4 - 636\,641\,280 z^3 + 1\,729\,728\,000 z^2 + 17\,459\,442\,000 z + 654\,729\,075\right)\cos\left(2\sqrt{z}\right) - 11\left(7\,340\,032 z^5 + 73\,728\,000 z^4 + 972\,840\,960 z^3 + 2\,673\,216\,000 z^2 - 4\,761\,666\,000 z - 1\,368\,978\,975\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agm4.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{19}{4}; z\right) = -\frac{1}{4\,334\,247\,225\sqrt[4]{z}}\left(\sqrt{2}\left(21\left(2\,097\,152 z^5 + 2\,555\,904 z^4 + 69\,009\,408 z^3 + 467\,384\,832 z^2 + 579\,348\,000 z - 206\,392\,725\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(1\,048\,576 z^5 + 108\,724\,224 z^4 - 770\,531\,328 z^3 + 1\,279\,047\,168 z^2 + 4\,725\,740\,880 z - 4\,334\,247\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 48 z\left(851\,968 z^4 - 5\,046\,272 z^3 + 74\,049\,024 z^2 - 226\,235\,520 z - 188\,106\,975\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agm5.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{19}{4}; -z\right) = \frac{1}{4\,334\,247\,225\sqrt[4]{z}}\left(\sqrt{2}\left(21\left(2\,097\,152 z^5 - 2\,555\,904 z^4 + 69\,009\,408 z^3 + 467\,384\,832 z^2 + 579\,348\,000 z + 206\,392\,725\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(1\,048\,576 z^5 - 108\,724\,224 z^4 - 770\,531\,328 z^3 - 1\,279\,047\,168 z^2 + 4\,725\,740\,880 z + 4\,334\,247\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 48 z\left(851\,968 z^4 + 5\,046\,272 z^3 + 74\,049\,024 z^2 + 226\,235\,520 z - 188\,106\,975\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agm6.01

$${}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{17}{4}; z\right) = \frac{1}{1\,309\,458\,150\,\sqrt{z}}\left(-5120\left(4096\,z^3 - 2304\,z^2 + 166\,320\,z - 675\,675\right)\cosh\left(2\sqrt{z}\right) z^{3/2} - \left(1\,048\,576\,z^5 + 109\,117\,440\,z^4 - 663\,183\,360\,z^3 + 1\,037\,836\,800\,z^2 + 2\,756\,754\,000\,z - 654\,729\,075\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agm7.01

$${}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{17}{4}; -z\right) = \frac{1}{1\,309\,458\,150\,\sqrt{z}}\left(\left(1\,048\,576\,z^5 - 109\,117\,440\,z^4 - 663\,183\,360\,z^3 - 1\,037\,836\,800\,z^2 + 2\,756\,754\,000\,z + 654\,729\,075\right)\sin\left(2\sqrt{z}\right) - 5120\,z^{3/2}\left(4096\,z^3 + 2304\,z^2 + 166\,320\,z + 675\,675\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.agm8.01

$${}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{15}{4}; z\right) = \frac{1}{228\,118\,275\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(524\,288\,z^5 + 73\,203\,712\,z^4 - 217\,952\,256\,z^3 + 669\,629\,952\,z^2 - 689\,424\,120\,z + 228\,118\,275\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(5\,439\,488\,z^4 + 34\,160\,640\,z^3 - 9\,558\,528\,z^2 - 306\,144\,000\,z + 228\,118\,275\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 8\,z\left(65\,536\,z^4 + 7\,159\,808\,z^3 - 34\,911\,744\,z^2 + 61\,839\,360\,z + 64\,607\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agm9.01

$${}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{15}{4}; -z\right) = \frac{1}{228\,118\,275\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-524\,288\,z^5 + 73\,203\,712\,z^4 + 217\,952\,256\,z^3 + 669\,629\,952\,z^2 + 689\,424\,120\,z + 228\,118\,275\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(5\,439\,488\,z^4 - 34\,160\,640\,z^3 - 9\,558\,528\,z^2 + 306\,144\,000\,z + 228\,118\,275\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 8\,z\left(65\,536\,z^4 - 7\,159\,808\,z^3 - 34\,911\,744\,z^2 - 61\,839\,360\,z + 64\,607\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agma.01

$${}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{13}{4}; z\right) = \frac{1}{77\,026\,950\,\sqrt{z}}\left(4\sqrt{z}\left(65\,536\,z^4 + 7\,815\,168\,z^3 - 25\,643\,520\,z^2 + 52\,557\,120\,z + 2\,027\,025\right)\cosh\left(2\sqrt{z}\right) + 9\left(589\,824\,z^4 + 4\,014\,080\,z^3 - 1\,989\,120\,z^2 - 20\,180\,160\,z + 3\,828\,825\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agmb.01

$${}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{13}{4}; -z\right) = \frac{1}{77\,026\,950\,\sqrt{z}}\left(4\sqrt{z}\left(65\,536\,z^4 - 7\,815\,168\,z^3 - 25\,643\,520\,z^2 - 52\,557\,120\,z + 2\,027\,025\right)\cos\left(2\sqrt{z}\right) + 9\left(589\,824\,z^4 - 4\,014\,080\,z^3 - 1\,989\,120\,z^2 + 20\,180\,160\,z + 3\,828\,825\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agmc.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{11}{4}; z\right) = -\frac{1}{15\,207\,885\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2\,818\,048 z^4 + 46\,903\,296 z^3 - 65\,166\,336 z^2 + 51\,614\,640 z - 15\,207\,885\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(65\,536 z^4 + 8\,798\,208 z^3 - 9\,655\,296 z^2 + 26\,683\,200 z - 15\,207\,885\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 16 z\left(163\,840 z^3 + 1\,403\,136 z^2 - 1\,352\,160 z - 2\,347\,515\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agmd.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{11}{4}; -z\right) = \frac{1}{15\,207\,885\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-2\,818\,048 z^4 + 46\,903\,296 z^3 + 65\,166\,336 z^2 + 51\,614\,640 z + 15\,207\,885\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(65\,536 z^4 - 8\,798\,208 z^3 - 9\,655\,296 z^2 - 26\,683\,200 z - 15\,207\,885\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 16 z\left(163\,840 z^3 - 1\,403\,136 z^2 - 1\,352\,160 z + 2\,347\,515\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agme.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{9}{4}; z\right) = \frac{1}{5\,925\,150\sqrt{z}}\left(\left(-65\,536 z^4 - 8\,142\,848 z^3 + 6\,720\,000 z^2 - 16\,027\,200 z + 2\,297\,295\right)\sinh\left(2\sqrt{z}\right) - 128\sqrt{z}\left(10\,240 z^3 + 118\,272 z^2 - 126\,840 z - 10\,395\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.agmf.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{9}{4}; -z\right) = \frac{1}{5\,925\,150\sqrt{z}}\left(128\sqrt{z}\left(10\,240 z^3 - 118\,272 z^2 - 126\,840 z + 10\,395\right)\cos\left(2\sqrt{z}\right) + \left(-65\,536 z^4 + 8\,142\,848 z^3 + 6\,720\,000 z^2 + 16\,027\,200 z + 2\,297\,295\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agmg.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{7}{4}; z\right) = \frac{1}{1\,382\,535\sqrt[4]{z}}\left(\sqrt{2}\left(\left(32\,768 z^4 + 4\,884\,480 z^3 + 12\,143\,232 z^2 - 5\,793\,480 z + 1\,382\,535\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(110\,592 z^3 + 1\,750\,784 z^2 - 1\,197\,360 z + 460\,845\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 8 z\left(4096 z^3 + 489\,216 z^2 - 98\,640 z + 467\,505\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agmh.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{7}{4}; -z\right) = \frac{1}{1\,382\,535\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(32\,768\,z^4 - 4\,884\,480\,z^3 + 12\,143\,232\,z^2 + 5\,793\,480\,z + 1\,382\,535\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\left(110\,592\,z^3 - 1\,750\,784\,z^2 - \right.\right.\right. $$
$$ \left.\left.\left. 1\,197\,360\,z - 460\,845\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 8\,z\left(-4096\,z^3 + 489\,216\,z^2 + 98\,640\,z + 467\,505\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agmi.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{5}{4}; z\right) = \frac{1}{658\,350\,\sqrt{z}} $$
$$ \left(4\sqrt{z}\left(4096\,z^3 + 489\,216\,z^2 + 381\,360\,z + 60\,165\right)\cosh\left(2\sqrt{z}\right) + 7\left(45\,056\,z^3 + 610\,560\,z^2 - 307\,440\,z + 29\,835\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agmj.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{5}{4}; -z\right) = \frac{1}{658\,350\,\sqrt{z}} $$
$$ \left(7\left(-45\,056\,z^3 + 610\,560\,z^2 + 307\,440\,z + 29\,835\right)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\left(4096\,z^3 - 489\,216\,z^2 + 381\,360\,z - 60\,165\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.agmk.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{3}{4}; z\right) = -\frac{1}{197\,505\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(163\,840\,z^3 + 3\,332\,352\,z^2 + 1\,404\,480\,z - 197\,505\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4096\,z^3 + 508\,160\,z^2 + 1\,101\,360\,z - 197\,505\right)\right.\right. $$
$$ \left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 16\,z\left(9472\,z^2 + 120\,000\,z - 36\,945\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agml.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{3}{4}; -z\right) = \frac{1}{197\,505\,\sqrt[4]{z}} $$
$$ \left(\sqrt{2}\left(\left(163\,840\,z^3 - 3\,332\,352\,z^2 + 1\,404\,480\,z + 197\,505\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4096\,z^3 - 508\,160\,z^2 + 1\,101\,360\,z + 197\,505\right)\right.\right. $$
$$ \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 16\,z\left(-9472\,z^2 + 120\,000\,z + 36\,945\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agmm.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{1}{4}; z\right) = $$
$$ \frac{1}{131\,670\,\sqrt{z}}\left(-192\sqrt{z}\left(384\,z^2 + 5000\,z - 375\right)\cosh\left(2\sqrt{z}\right) - \left(4096\,z^3 + 433\,920\,z^2 + 621\,360\,z - 29\,835\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agmn.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, -\frac{1}{4}; -z\right) = \frac{1}{131\,670\sqrt{z}}\left(\left(4096 z^3 - 433\,920 z^2 + 621\,360 z + 29\,835\right)\sin\left(2\sqrt{z}\right) - 192\sqrt{z}\left(384 z^2 - 5000 z - 375\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.agmo.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{1}{4}; z\right) = \frac{1}{65\,835\sqrt[4]{z}}\left(\sqrt{2}\left(\left(2048 z^3 + 244\,224 z^2 + 877\,800 z + 65\,835\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(18\,176 z^2 + 263\,904 z + 65\,835\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 8 z\left(256 z^2 + 23\,904 z + 27\,945\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agmp.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{1}{4}; -z\right) = \frac{1}{65\,835\sqrt[4]{z}}\left(\sqrt{2}\left(\left(-2048 z^3 + 244\,224 z^2 - 877\,800 z + 65\,835\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(18\,176 z^2 - 263\,904 z + 65\,835\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 8 z\left(256 z^2 - 23\,904 z + 27\,945\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agmq.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{3}{4}; z\right) = \frac{4\sqrt{z}\left(256 z^2 + 21\,920 z + 27\,945\right)\cosh\left(2\sqrt{z}\right) + 5\left(3328 z^2 + 34\,848 z + 1989\right)\sinh\left(2\sqrt{z}\right)}{131\,670\sqrt{z}} $$

07.22.03.agmr.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{3}{4}; -z\right) = \frac{4\sqrt{z}\left(256 z^2 - 21\,920 z + 27\,945\right)\cos\left(2\sqrt{z}\right) + 5\left(3328 z^2 - 34\,848 z + 1989\right)\sin\left(2\sqrt{z}\right)}{131\,670\sqrt{z}} $$

07.22.03.agms.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{5}{4}; z\right) = \frac{1}{65\,835\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(2816 z^2 + 39\,536 z + 21\,945\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(256 z^2 + 21\,024 z + 35\,595\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 240 z\left(32 z + 255\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agmt.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{5}{4}; -z\right) = \frac{1}{65\,835\sqrt[4]{z}}\left(\sqrt{2}\left(3\left(2816 z^2 - 39\,536 z + 21\,945\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(256 z^2 - 21\,024 z + 35\,595\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 240\,(255 - 32 z)\, z\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agmu.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{7}{4}; z\right) = \frac{64\sqrt{z}\,(56 z + 375)\cosh\left(2\sqrt{z}\right) + \left(256 z^2 + 15\,648 z + 9945\right)\sinh\left(2\sqrt{z}\right)}{43\,890\sqrt{z}} $$

07.22.03.agmv.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{7}{4}; -z\right) = \frac{\left(256 z^2 - 15\,648 z + 9945\right)\sin\left(2\sqrt{z}\right) - 64\sqrt{z}\,(56 z - 375)\cos\left(2\sqrt{z}\right)}{43\,890\sqrt{z}} $$

07.22.03.agmw.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{9}{4}; z\right) = \frac{1}{13\,167 z^{3/4}}\left(\sqrt{2}\left(\sqrt{z}\left(128 z^2 + 8344 z + 12\,999\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\left(848 z^2 + 5439 z + 105\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 8\sqrt{z}\left(16 z^2 + 737 z + 105\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agmx.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{9}{4}; -z\right) = \frac{1}{13\,167 z^{3/4}}\left(\sqrt{2}\left(\sqrt{z}\left(128 z^2 - 8344 z + 12\,999\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\left(848 z^2 - 5439 z + 105\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 8\sqrt{z}\left(16 z^2 - 737 z + 105\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agmy.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{11}{4}; z\right) = \frac{4\sqrt{z}\,(16 z + 573)\cosh\left(2\sqrt{z}\right) + 9\,(80 z + 221)\sinh\left(2\sqrt{z}\right)}{6270\sqrt{z}} $$

07.22.03.agmz.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{11}{4}; -z\right) = \frac{9\,(221 - 80 z)\sin\left(2\sqrt{z}\right) - 4\sqrt{z}\,(16 z - 573)\cos\left(2\sqrt{z}\right)}{6270\sqrt{z}} $$

07.22.03.agn0.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{13}{4}; z\right) = \frac{1}{5852\sqrt{2}\, z^{7/4}}\left(\left(2\sqrt{z}\left(1408 z^2 + 5724 z - 45\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(512 z^3 + 15\,072 z^2 + 480 z + 225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(1216 z^2 + 960 z + 225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agn1.01

$${}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{13}{4}; -z\right) =$$
$$\frac{1}{5852\sqrt{2}\, z^{7/4}}\left(\left(2\sqrt{z}\left(-1408 z^2+5724 z+45\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(512 z^3-15072 z^2+480 z-225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(1216 z^2-960 z+225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agn2.01

$${}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{15}{4}; z\right) = \frac{128\sqrt{z}\,\cosh\left(2\sqrt{z}\right)+(16 z+221)\sinh\left(2\sqrt{z}\right)}{570\sqrt{z}}$$

07.22.03.agn3.01

$${}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{15}{4}; -z\right) = \frac{128\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(221-16 z)\sin\left(2\sqrt{z}\right)}{570\sqrt{z}}$$

07.22.03.agn4.01

$${}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{17}{4}; z\right) = \frac{1}{187264\sqrt{2}\, z^{11/4}}$$
$$\left(13\left(2\sqrt{z}\left(1024 z^3+14208 z^2+144 z-567\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(9216 z^3-512 z^2-912 z+945\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.2\sqrt{z}\left(1024 z^3+4608 z^2+3312 z+2835\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agn5.01

$${}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{17}{4}; -z\right) =$$
$$-\frac{1}{187264\sqrt{2}\, z^{11/4}}\left(13\left(2\sqrt{z}\left(1024 z^3-14208 z^2+144 z+567\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+3\left(9216 z^3+512 z^2-912 z-945\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)+2\sqrt{z}\left(-1024 z^3+4608 z^2-3312 z+2835\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agn6.01

$${}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{19}{4}; z\right) = \frac{1}{38}\left(4\cosh\left(2\sqrt{z}\right)+\frac{17\sinh\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.agn7.01

$${}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{19}{4}; -z\right) = \frac{1}{38}\left(4\cos\left(2\sqrt{z}\right)+\frac{17\sin\left(2\sqrt{z}\right)}{\sqrt{z}}\right)$$

07.22.03.agn8.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{21}{4}; z\right) = \frac{1}{5\,992\,448\sqrt{2}\, z^{15/4}} \left(221\left(2\sqrt{z}\left(28\,672 z^3 + 9984 z^2 + 19\,488 z - 27\,027\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(32\,768 z^4 - 32\,768 z^3 - 125\,184 z^2 - 193\,536 z + 135\,135\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,384 z^3 + 33\,024 z^2 + 94\,752 z + 135\,135\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agn9.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{21}{4}; -z\right) = -\frac{1}{5\,992\,448\sqrt{2}\, z^{15/4}} \left(221\left(-2\sqrt{z}\left(28\,672 z^3 - 9984 z^2 + 19\,488 z + 27\,027\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(32\,768 z^4 + 32\,768 z^3 - 125\,184 z^2 + 193\,536 z + 135\,135\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\left(16\,384 z^3 - 33\,024 z^2 + 94\,752 z - 135\,135\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agna.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{23}{4}; z\right) = \frac{\sinh\left(2\sqrt{z}\right)}{2\sqrt{z}} $$

07.22.03.agnb.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{3}{2}, \frac{23}{4}; -z\right) = \frac{\sin\left(2\sqrt{z}\right)}{2\sqrt{z}} $$

For fixed z and $a_1 = \frac{23}{4}$, $b_{1.} = \frac{5}{2}$

07.22.03.agnc.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{23}{4}; z\right) = \frac{1}{33\,229\,228\,725\sqrt[4]{z}} \left(\sqrt{2}\left(\left(57\,671\,680 z^5 - 1\,050\,083\,328 z^4 + 5\,846\,851\,584 z^3 + 31\,669\,424\,640 z^2 - 93\,922\,370\,640 z + 33\,229\,228\,725\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\left(1\,048\,576 z^5 - 1\,507\,328 z^4 + 626\,368\,512 z^3 - 7\,291\,307\,520 z^2 - 4\,581\,727\,920 z + 25\,472\,252\,925\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 7\left(7\,340\,032 z^5 - 143\,327\,232 z^4 + 193\,781\,760 z^3 + 10\,803\,755\,520 z^2 - 908\,830\,800 z - 12\,653\,769\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agnd.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{23}{4}; -z\right) = \frac{1}{33\,229\,228\,725\,\sqrt[4]{z}} \left(\sqrt{2}\,\left(\left(-57\,671\,680\,z^5 - 1\,050\,083\,328\,z^4 - 5\,846\,851\,584\,z^3 + 31\,669\,424\,640\,z^2 + 93\,922\,370\,640\,z + 33\,229\,228\,725\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\,\left(1\,048\,576\,z^5 + 1\,507\,328\,z^4 + 626\,368\,512\,z^3 + 7\,291\,307\,520\,z^2 - 4\,581\,727\,920\,z - 25\,472\,252\,925\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 7\left(7\,340\,032\,z^5 + 143\,327\,232\,z^4 + 193\,781\,760\,z^3 - 10\,803\,755\,520\,z^2 - 908\,830\,800\,z + 12\,653\,769\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agne.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{21}{4}; z\right) = \frac{1}{36\,664\,828\,200\,z^{3/2}} \left(2\sqrt{z}\,\left(55\,574\,528\,z^5 - 940\,769\,280\,z^4 + 3\,953\,664\,000\,z^3 + 32\,864\,832\,000\,z^2 - 27\,729\,702\,000\,z - 23\,916\,867\,975\right) \cosh\left(2\sqrt{z}\right) + \left(8\,388\,608\,z^6 + 51\,904\,512\,z^5 + 3\,373\,793\,280\,z^4 - 41\,513\,472\,000\,z^3 - 24\,648\,624\,000\,z^2 + 77\,951\,273\,400\,z + 23\,916\,867\,975\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agnf.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{21}{4}; -z\right) = \frac{1}{36\,664\,828\,200\,z^{3/2}} \left(2\sqrt{z}\,\left(55\,574\,528\,z^5 + 940\,769\,280\,z^4 + 3\,953\,664\,000\,z^3 - 32\,864\,832\,000\,z^2 - 27\,729\,702\,000\,z + 23\,916\,867\,975\right) \cos\left(2\sqrt{z}\right) + \left(-8\,388\,608\,z^6 + 51\,904\,512\,z^5 - 3\,373\,793\,280\,z^4 - 41\,513\,472\,000\,z^3 + 24\,648\,624\,000\,z^2 + 77\,951\,273\,400\,z - 23\,916\,867\,975\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agng.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{19}{4}; z\right) = -\frac{1}{1\,444\,749\,075\,\sqrt[4]{z}} \left(\sqrt{2}\,\left(\left(1\,048\,576\,z^5 + 39\,911\,424\,z^4 - 101\,670\,912\,z^3 - 1\,768\,951\,296\,z^2 + 4\,077\,758\,160\,z - 1\,444\,749\,075\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 16\sqrt{z}\,\left(1\,900\,544\,z^4 - 24\,084\,480\,z^3 + 147\,764\,736\,z^2 + 160\,473\,600\,z - 513\,905\,175\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(1\,048\,576\,z^5 + 17\,891\,328\,z^4 + 198\,352\,896\,z^3 - 3\,356\,720\,640\,z^2 - 403\,326\,000\,z + 3\,054\,358\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agnh.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{19}{4}; -z\right) = \frac{1}{1\,444\,749\,075\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(1\,048\,576\,z^5 - 39\,911\,424\,z^4 - 101\,670\,912\,z^3 + 1\,768\,951\,296\,z^2 + 4\,077\,758\,160\,z + 1\,444\,749\,075\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 16\sqrt{z}\left(1\,900\,544\,z^4 + 24\,084\,480\,z^3 + 147\,764\,736\,z^2 - 160\,473\,600\,z - 513\,905\,175\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-1\,048\,576\,z^5 + 17\,891\,328\,z^4 - 198\,352\,896\,z^3 - 3\,356\,720\,640\,z^2 + 403\,326\,000\,z + 3\,054\,358\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agni.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{17}{4}; z\right) = \frac{1}{1\,745\,944\,200\,z^{3/2}} \left(\left(-30\,408\,704\,z^5 + 321\,454\,080\,z^4 - 1\,845\,043\,200\,z^3 - 1\,729\,728\,000\,z^2 + 3\,081\,078\,000\,z + 885\,809\,925\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(1\,048\,576\,z^5 + 33\,095\,680\,z^4 - 20\,275\,200\,z^3 - 1\,729\,728\,000\,z^2 + 1\,027\,026\,000\,z + 885\,809\,925\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.agnj.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{17}{4}; -z\right) = \frac{1}{1\,745\,944\,200\,z^{3/2}} \left(-2\sqrt{z}\left(1\,048\,576\,z^5 - 33\,095\,680\,z^4 - 20\,275\,200\,z^3 + 1\,729\,728\,000\,z^2 + 1\,027\,026\,000\,z - 885\,809\,925\right)\cos\left(2\sqrt{z}\right) - \left(30\,408\,704\,z^5 + 321\,454\,080\,z^4 + 1\,845\,043\,200\,z^3 - 1\,729\,728\,000\,z^2 - 3\,081\,078\,000\,z + 885\,809\,925\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agnk.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{15}{4}; z\right) = \frac{1}{76\,039\,425\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(4\,259\,840\,z^4 - 13\,369\,344\,z^3 + 124\,328\,448\,z^2 - 218\,264\,256\,z + 76\,039\,425\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\left(65\,536\,z^4 + 3\,293\,184\,z^3 - 12\,203\,520\,z^2 - 25\,083\,648\,z + 50\,237\,145\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(3\,866\,624\,z^4 - 30\,277\,632\,z^3 + 173\,846\,016\,z^2 + 57\,481\,920\,z - 122\,174\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agnl.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{15}{4}; -z\right) = \frac{1}{76\,039\,425\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(4\,259\,840\,z^4 + 13\,369\,344\,z^3 + 124\,328\,448\,z^2 + 218\,264\,256\,z + 76\,039\,425\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 8\sqrt{z}\left(65\,536\,z^4 - 3\,293\,184\,z^3 - 12\,203\,520\,z^2 + 25\,083\,648\,z + 50\,237\,145\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-3\,866\,624\,z^4 - 30\,277\,632\,z^3 - 173\,846\,016\,z^2 + 57\,481\,920\,z + 122\,174\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agnm.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{13}{4}; z\right) = \frac{1}{102\,702\,600\, z^{3/2}} \left(2\sqrt{z}\, \left(3\,997\,696\, z^4 - 16\,957\,440\, z^3 + 111\,767\,040\, z^2 - 43\,243\,200\, z - 38\,513\,475\right) \cosh\left(2\sqrt{z}\right) + \left(524\,288\, z^5 + 26\,542\,080\, z^4 - 86\,446\,080\, z^3 - 138\,378\,240\, z^2 + 145\,945\,800\, z + 38\,513\,475\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agnn.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{13}{4}; -z\right) = \frac{1}{102\,702\,600\, z^{3/2}} \left(\left(524\,288\, z^5 - 26\,542\,080\, z^4 - 86\,446\,080\, z^3 + 138\,378\,240\, z^2 + 145\,945\,800\, z - 38\,513\,475\right) \sin\left(2\sqrt{z}\right) - 2\sqrt{z}\, \left(3\,997\,696\, z^4 + 16\,957\,440\, z^3 + 111\,767\,040\, z^2 + 43\,243\,200\, z - 38\,513\,475\right) \cos\left(2\sqrt{z}\right)\right) $$

07.22.03.agno.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{11}{4}; z\right) = -\frac{1}{5\,069\,295\, \sqrt[4]{z}} \left(\sqrt{2}\, \left(\left(65\,536\, z^4 + 5\,103\,616\, z^3 - 12\,126\,720\, z^2 + 15\,309\,216\, z - 5\,069\,295\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 16\sqrt{z}\, \left(131\,072\, z^3 + 60\,672\, z^2 + 1\,232\,544\, z - 1\,558\,215\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(65\,536\, z^4 + 3\,579\,904\, z^3 - 10\,338\,816\, z^2 - 6\,314\,400\, z + 5\,817\,825\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agnp.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{11}{4}; -z\right) = \frac{1}{5\,069\,295\, \sqrt[4]{z}} \left(\sqrt{2}\, \left(\left(-65\,536\, z^4 + 5\,103\,616\, z^3 + 12\,126\,720\, z^2 + 15\,309\,216\, z + 5\,069\,295\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 16\sqrt{z}\, \left(131\,072\, z^3 - 60\,672\, z^2 + 1\,232\,544\, z + 1\,558\,215\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(65\,536\, z^4 - 3\,579\,904\, z^3 - 10\,338\,816\, z^2 + 6\,314\,400\, z + 5\,817\,825\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agnq.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{9}{4}; z\right) = \frac{1}{7\,900\,200\, z^{3/2}} \left(\left(-2\,031\,616\, z^4 - 1\,720\,320\, z^3 - 14\,031\,360\, z^2 + 8\,648\,640\, z + 2\,027\,025\right) \sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\, \left(65\,536\, z^4 + 4\,079\,616\, z^3 - 9\,300\,480\, z^2 + 1\,995\,840\, z + 2\,027\,025\right) \cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.agnr.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{9}{4}; -z\right) = \frac{1}{7\,900\,200\, z^{3/2}} \left(2\sqrt{z}\, \left(65\,536\, z^4 - 4\,079\,616\, z^3 - 9\,300\,480\, z^2 - 1\,995\,840\, z + 2\,027\,025\right) \cos\left(2\sqrt{z}\right) + \left(2\,031\,616\, z^4 - 1\,720\,320\, z^3 + 14\,031\,360\, z^2 + 8\,648\,640\, z - 2\,027\,025\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agns.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{7}{4}; z\right) = \frac{1}{460\,845\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(274\,432\,z^3 + 2\,141\,952\,z^2 - 1\,582\,128\,z + 460\,845\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\left(4096\,z^3 + 301\,824\,z^2 - 356\,304\,z + 264\,645\right)\right.\right.$$
$$\left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(249\,856\,z^3 + 515\,328\,z^2 + 811\,440\,z - 342\,225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agnt.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{7}{4}; -z\right) = \frac{1}{460\,845\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(-274\,432\,z^3 + 2\,141\,952\,z^2 + 1\,582\,128\,z + 460\,845\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\left(4096\,z^3 - 301\,824\,z^2 - 356\,304\,z - 264\,645\right)\right.\right.$$
$$\left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(249\,856\,z^3 - 515\,328\,z^2 + 811\,440\,z + 342\,225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agnu.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{5}{4}; z\right) = \frac{1}{877\,800\,z^{3/2}}\left(2\sqrt{z}\left(249\,856\,z^3 + 1\,026\,816\,z^2 - 68\,880\,z - 135\,135\right)\cosh\left(2\sqrt{z}\right) +\right.$$
$$\left.\left(32\,768\,z^4 + 2\,164\,736\,z^3 - 2\,083\,200\,z^2 + 687\,960\,z + 135\,135\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agnv.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{5}{4}; -z\right) = \frac{1}{877\,800\,z^{3/2}}\left(2\sqrt{z}\left(249\,856\,z^3 - 1\,026\,816\,z^2 - 68\,880\,z + 135\,135\right)\cos\left(2\sqrt{z}\right) +\right.$$
$$\left.\left(-32\,768\,z^4 + 2\,164\,736\,z^3 + 2\,083\,200\,z^2 + 687\,960\,z - 135\,135\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agnw.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{3}{4}; z\right) =$$
$$-\frac{1}{65\,835\,\sqrt[4]{z}}\left(\sqrt{2}\left(\left(4096\,z^3 + 347\,904\,z^2 + 337\,776\,z - 65\,835\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 16\sqrt{z}\left(7936\,z^2 + 56\,064\,z - 17\,775\right)\right.\right.$$
$$\left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(4096\,z^3 + 255\,744\,z^2 - 153\,360\,z + 26\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agnx.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{3}{4}; -z\right) = \frac{1}{65\,835\,\sqrt[4]{z}}$$
$$\left(\sqrt{2}\left(\left(4096\,z^3 - 347\,904\,z^2 + 337\,776\,z + 65\,835\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 16\sqrt{z}\left(7936\,z^2 - 56\,064\,z - 17\,775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) +\right.\right.$$
$$\left.\left.\left(-4096\,z^3 + 255\,744\,z^2 + 153\,360\,z + 26\,325\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agny.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{1}{4}; z\right) = \frac{1}{175\,560\, z^{3/2}}$$
$$\left(\left(-118\,784\, z^3 - 641\,280\, z^2 + 84\,240\, z + 12\,285\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(4096\, z^3 + 255\,744\, z^2 - 19\,920\, z + 12\,285\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.agnz.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, -\frac{1}{4}; -z\right) = \frac{1}{175\,560\, z^{3/2}}$$
$$\left(\left(-118\,784\, z^3 + 641\,280\, z^2 + 84\,240\, z - 12\,285\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(4096\, z^3 - 255\,744\, z^2 - 19\,920\, z - 12\,285\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ago0.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{1}{4}; z\right) =$$
$$\frac{1}{21\,945\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(15\,616\, z^2 + 157\,536\, z + 21\,945\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\sqrt{z}\,\left(256\, z^2 + 16\,864\, z + 11\,265\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 5\left(2816\, z^2 + 13\,344\, z - 585\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ago1.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{1}{4}; -z\right) =$$
$$\frac{1}{21\,945\,\sqrt[4]{z}}\left(\sqrt{2}\,\left(\left(15\,616\, z^2 - 157\,536\, z + 21\,945\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 8\sqrt{z}\,\left(256\, z^2 - 16\,864\, z + 11\,265\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 5\left(-2816\, z^2 + 13\,344\, z + 585\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ago2.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{3}{4}; z\right) =$$
$$\frac{1}{175\,560\, z^{3/2}}\left(2\sqrt{z}\,\left(13\,568\, z^2 + 66\,720\, z - 1755\right)\cosh\left(2\sqrt{z}\right) + \left(2048\, z^3 + 107\,520\, z^2 + 23\,400\, z + 1755\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.ago3.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{3}{4}; -z\right) =$$
$$\frac{1}{175\,560\, z^{3/2}}\left(\left(2048\, z^3 - 107\,520\, z^2 + 23\,400\, z - 1755\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(13\,568\, z^2 - 66\,720\, z - 1755\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.ago4.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{5}{4}; z\right) = \frac{1}{21\,945\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(256 z^2 + 15\,936 z + 21\,945\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 16\sqrt{z}\,\left(416 z + 2433\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(256 z^2 + 11\,136 z + 585\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ago5.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{5}{4}; -z\right) = \frac{1}{21\,945\,\sqrt[4]{z}} \left(\sqrt{2}\left(\left(256 z^2 - 15\,936 z + 21\,945\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 16\sqrt{z}\,\left(416 z - 2433\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-256 z^2 + 11\,136 z - 585\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ago6.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{7}{4}; z\right) = \frac{2\sqrt{z}\,\left(256 z^2 + 9760 z + 585\right)\cosh\left(2\sqrt{z}\right) + \left(5888 z^2 + 18\,720 z - 585\right)\sinh\left(2\sqrt{z}\right)}{58\,520\, z^{3/2}} $$

07.22.03.ago7.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{7}{4}; -z\right) = \frac{\left(-5888 z^2 + 18\,720 z + 585\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(256 z^2 - 9760 z + 585\right)\cos\left(2\sqrt{z}\right)}{58\,520\, z^{3/2}} $$

07.22.03.ago8.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{9}{4}; z\right) = \frac{1}{4389\, z^{3/4}} \left(\sqrt{2}\left(\sqrt{z}\,\left(752 z + 4053\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\left(16 z^2 + 573 z + 105\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \sqrt{z}\,\left(656 z + 1095\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.ago9.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{9}{4}; -z\right) = \frac{1}{4389\, z^{3/4}} \left(\sqrt{2}\left(\left(4053 - 752 z\right)\sqrt{z}\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 8\left(16 z^2 - 573 z + 105\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \sqrt{z}\,\left(656 z - 1095\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agoa.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{11}{4}; z\right) = \frac{2\sqrt{z}\,\left(592 z + 585\right)\cosh\left(2\sqrt{z}\right) + \left(128 z^2 + 2808 z - 585\right)\sinh\left(2\sqrt{z}\right)}{8360\, z^{3/2}} $$

07.22.03.agob.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{11}{4}; -z\right) = \frac{2\sqrt{z}\,\left(592 z - 585\right)\cos\left(2\sqrt{z}\right) + \left(-128 z^2 + 2808 z + 585\right)\sin\left(2\sqrt{z}\right)}{8360\, z^{3/2}} $$

07.22.03.agoc.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{13}{4}; z\right) = \frac{1}{2926\sqrt{2}\, z^{7/4}}$$
$$\left(3\left(2\sqrt{z}\,\left(32z^2+794z+15\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1088z^2+960z-75\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(32z^2+410z-75\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\right.$$
$$\left.\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agod.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{13}{4}; -z\right) = -\frac{1}{2926\sqrt{2}\, z^{7/4}}\left(3\left(2\sqrt{z}\,\left(32z^2-794z+15\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$\left.\left.\left(1088z^2-960z-75\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(-32z^2+410z+75\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agoe.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{15}{4}; z\right) = \frac{2\sqrt{z}\,(16z+117)\cosh\left(2\sqrt{z}\right) + 13\,(16z-9)\sinh\left(2\sqrt{z}\right)}{760\, z^{3/2}}$$

07.22.03.agof.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{15}{4}; -z\right) = \frac{2\sqrt{z}\,(16z-117)\cos\left(2\sqrt{z}\right) + 13\,(16z+9)\sin\left(2\sqrt{z}\right)}{760\, z^{3/2}}$$

07.22.03.agog.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{17}{4}; z\right) =$$
$$\frac{1}{93\,632\sqrt{2}\, z^{11/4}}\left(39\left(2\sqrt{z}\,\left(1600z^2+48z+81\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1024z^3+4608z^2+48z-405\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1216z^2-816z-405\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agoh.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{17}{4}; -z\right) =$$
$$-\frac{1}{93\,632\sqrt{2}\, z^{11/4}}\left(39\left(-2\sqrt{z}\,\left(1600z^2-48z+81\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(1024z^3-4608z^2+48z+405\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(1216z^2+816z-405\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agoi.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{19}{4}; z\right) = \frac{78\sqrt{z}\,\cosh\left(2\sqrt{z}\right) + 3\,(8z-13)\sinh\left(2\sqrt{z}\right)}{152\, z^{3/2}}$$

07.22.03.agoj.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{19}{4}; -z\right) = \frac{3\,(8\,z+13)\sin\left(2\sqrt{z}\right) - 78\sqrt{z}\,\cos\left(2\sqrt{z}\right)}{152\,z^{3/2}}$$

07.22.03.agok.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{21}{4}; z\right) = \frac{1}{2\,996\,224\sqrt{2}\,z^{15/4}}$$
$$\left(663\left(2\sqrt{z}\,\left(2048\,z^3 - 768\,z^2 - 1536\,z + 2457\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384\,z^3 + 11\,520\,z^2 + 16\,416\,z - 12\,285\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. 2\sqrt{z}\,\left(2048\,z^3 - 5376\,z^2 - 9792\,z - 12\,285\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agol.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{21}{4}; -z\right) = \frac{1}{2\,996\,224\sqrt{2}\,z^{15/4}}$$
$$\left(663\left(2\sqrt{z}\,\left(2048\,z^3 + 768\,z^2 - 1536\,z - 2457\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(16\,384\,z^3 - 11\,520\,z^2 + 16\,416\,z + 12\,285\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$
$$\left.\left. 2\sqrt{z}\,\left(2048\,z^3 + 5376\,z^2 - 9792\,z + 12\,285\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agom.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{23}{4}; z\right) = \frac{3\cosh\left(2\sqrt{z}\right)}{4\,z} - \frac{3\sinh\left(2\sqrt{z}\right)}{8\,z^{3/2}}$$

07.22.03.agon.01

$${}_1F_2\left(\frac{23}{4}; \frac{5}{2}, \frac{23}{4}; -z\right) = \frac{3\left(\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\,\cos\left(2\sqrt{z}\right)\right)}{8\,z^{3/2}}$$

For fixed z and $a_1 = \frac{23}{4}$, $b_{1.} = \frac{7}{2}$

07.22.03.agoo.01

$${}_1F_2\left(\frac{23}{4}; \frac{7}{2}, -\frac{23}{4}; z\right) = \frac{1}{13\,291\,691\,490\sqrt{2}\,z^{5/4}}$$
$$\left(\left(8\,z\left(1\,048\,576\,z^5 - 37\,945\,344\,z^4 + 715\,825\,152\,z^3 + 1\,117\,831\,680\,z^2 - 14\,136\,277\,680\,z - 10\,167\,942\,015\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right.$$
$$4\sqrt{z}\,\left(26\,214\,400\,z^5 - 63\,504\,384\,z^4 - 9\,901\,301\,760\,z^3 + 11\,548\,454\,400\,z^2 + 103\,985\,516\,880\,z + 134\,908\,648\,875\right)$$
$$I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(8\,388\,608\,z^6 - 375\,914\,496\,z^5 + 5\,628\,887\,040\,z^4 + 42\,718\,556\,160\,z^3 - \right.$$
$$\left.\left.\left. 110\,347\,332\,480\,z^2 - 446\,970\,069\,000\,z - 674\,543\,244\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agop.01

$$ {}_1F_2\left(\frac{23}{4};\frac{7}{2},-\frac{23}{4};-z\right)=\frac{1}{13\,291\,691\,490\sqrt{2}\,z^{5/4}}\left(\left(-8z\left(1\,048\,576z^5+37\,945\,344z^4+715\,825\,152z^3-1\,117\,831\,680z^2-14\,136\,277\,680z+10\,167\,942\,015\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-4\sqrt{z}\left(26\,214\,400z^5+63\,504\,384z^4-9\,901\,301\,760z^3-11\,548\,454\,400z^2+103\,985\,516\,880z-134\,908\,648\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(8\,388\,608z^6+375\,914\,496z^5+5\,628\,887\,040z^4-42\,718\,556\,160z^3-110\,347\,332\,480z^2+446\,970\,069\,000z-674\,543\,244\,375\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agoq.01

$$ {}_1F_2\left(\frac{23}{4};\frac{7}{2},-\frac{21}{4};z\right)=\frac{1}{29\,331\,862\,560z^{5/2}}\left(2\sqrt{z}\left(8\,388\,608z^6-287\,834\,112z^5+4\,866\,048\,000z^4+14\,446\,080\,000z^3-70\,153\,776\,000z^2-161\,898\,798\,600z-171\,097\,593\,975\right)\cosh\left(2\sqrt{z}\right)+9\left(12\,582\,912z^6-66\,322\,432z^5-3\,108\,864\,000z^4+3\,370\,752\,000z^3+26\,650\,008\,000z^2+43\,336\,547\,100z+19\,010\,843\,775\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agor.01

$$ {}_1F_2\left(\frac{23}{4};\frac{7}{2},-\frac{21}{4};-z\right)=\frac{1}{29\,331\,862\,560z^{5/2}}\left(2\sqrt{z}\left(8\,388\,608z^6+287\,834\,112z^5+4\,866\,048\,000z^4-14\,446\,080\,000z^3-70\,153\,776\,000z^2+161\,898\,798\,600z-171\,097\,593\,975\right)\cos\left(2\sqrt{z}\right)+9\left(12\,582\,912z^6+66\,322\,432z^5-3\,108\,864\,000z^4-3\,370\,752\,000z^3+26\,650\,008\,000z^2-43\,336\,547\,100z+19\,010\,843\,775\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agos.01

$$ {}_1F_2\left(\frac{23}{4};\frac{7}{2},-\frac{19}{4};z\right)=\frac{1}{577\,899\,630\sqrt{2}\,z^{5/4}}\left(\left(-288z\left(65\,536z^4-688\,128z^3-2\,429\,952z^2+15\,331\,680z+7\,342\,755\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(-1\,048\,576z^5+21\,430\,272z^4-443\,326\,464z^3+194\,342\,400z^2+3\,649\,408\,560z+4\,088\,140\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-3\left(5\,242\,880z^5-40\,828\,928z^4-702\,750\,720z^3+1\,082\,027\,520z^2+4\,761\,666\,000z+6\,813\,568\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agot.01

$${}_1F_2\left(\frac{23}{4};\frac{7}{2},-\frac{19}{4};-z\right)=$$
$$\frac{1}{577\,899\,630\sqrt{2}\,z^{5/4}}\left(\left(-288\,z\left(65\,536\,z^4+688\,128\,z^3-2\,429\,952\,z^2-15\,331\,680\,z+7\,342\,755\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.$$
$$4\sqrt{z}\left(1\,048\,576\,z^5+21\,430\,272\,z^4+443\,326\,464\,z^3+194\,342\,400\,z^2-3\,649\,408\,560\,z+4\,088\,140\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)$$
$$J_{\frac{1}{4}}\left(\sqrt{z}\right)+3\left(5\,242\,880\,z^5+40\,828\,928\,z^4-702\,750\,720\,z^3-1\,082\,027\,520\,z^2+4\,761\,666\,000\,z-6\,813\,568\,125\right)$$
$$\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.agou.01

$${}_1F_2\left(\frac{23}{4};\frac{7}{2},-\frac{17}{4};z\right)=\frac{1}{1\,396\,755\,360\,z^{5/2}}$$
$$\left(\left(-4\,194\,304\,z^6+63\,700\,992\,z^5-1\,378\,713\,600\,z^4+532\,224\,000\,z^3+8\,532\,216\,000\,z^2+12\,810\,174\,300\,z+5\,519\,277\,225\right)\right.$$
$$\sinh\left(2\sqrt{z}\right)-$$
$$\left.2\sqrt{z}\left(17\,825\,792\,z^5-162\,201\,600\,z^4-912\,384\,000\,z^3+2\,528\,064\,000\,z^2+5\,451\,138\,000\,z+5\,519\,277\,225\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.agov.01

$${}_1F_2\left(\frac{23}{4};\frac{7}{2},-\frac{17}{4};-z\right)=\frac{1}{1\,396\,755\,360\,z^{5/2}}$$
$$\left(2\sqrt{z}\left(17\,825\,792\,z^5+162\,201\,600\,z^4-912\,384\,000\,z^3-2\,528\,064\,000\,z^2+5\,451\,138\,000\,z-5\,519\,277\,225\right)\cos\left(2\sqrt{z}\right)-\right.$$
$$\left(4\,194\,304\,z^6+63\,700\,992\,z^5+1\,378\,713\,600\,z^4+532\,224\,000\,z^3-8\,532\,216\,000\,z^2+12\,810\,174\,300\,z-5\,519\,277\,225\right)$$
$$\left.\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agow.01

$${}_1F_2\left(\frac{23}{4};\frac{7}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{30\,415\,770\sqrt{2}\,z^{5/4}}\left(\left(8\,z\left(65\,536\,z^4+393\,216\,z^3+7\,303\,680\,z^2-26\,558\,784\,z-6\,493\,095\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\right.$$
$$\sqrt{z}\left(851\,968\,z^4-7\,340\,032\,z^3-2\,379\,264\,z^2+51\,186\,240\,z+46\,990\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left(524\,288\,z^5-4\,128\,768\,z^4+120\,655\,872\,z^3-96\,076\,800\,z^2-526\,289\,400\,z-704\,851\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.agox.01

$${}_1F_2\left(\frac{23}{4};\frac{7}{2},-\frac{15}{4};-z\right)=$$
$$\frac{1}{30\,415\,770\sqrt{2}\,z^{5/4}}\left(\left(8z\left(65\,536z^4-393\,216z^3+7\,303\,680z^2+26\,558\,784z-6\,493\,095\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+12\right.\right.$$
$$\sqrt{z}\left(851\,968z^4+7\,340\,032z^3-2\,379\,264z^2-51\,186\,240z+46\,990\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(524\,288z^5+4\,128\,768z^4+120\,655\,872z^3+96\,076\,800z^2-526\,289\,400z+704\,851\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agoy.01

$${}_1F_2\left(\frac{23}{4};\frac{7}{2},-\frac{13}{4};z\right)=$$
$$\frac{1}{82\,162\,080z^{5/2}}\left(2\sqrt{z}\left(524\,288z^5+983\,040z^4+66\,908\,160z^3-106\,444\,800z^2-213\,305\,400z-204\,417\,675\right)\cosh\left(2\sqrt{z}\right)+\right.$$
$$\left.3\left(3\,407\,872z^5-25\,559\,040z^4-7\,096\,320z^3+119\,750\,400z^2+161\,954\,100z+68\,139\,225\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agoz.01

$${}_1F_2\left(\frac{23}{4};\frac{7}{2},-\frac{13}{4};-z\right)=$$
$$\frac{1}{82\,162\,080z^{5/2}}\left(3\left(-3\,407\,872z^5-25\,559\,040z^4+7\,096\,320z^3+119\,750\,400z^2-161\,954\,100z+68\,139\,225\right)\sin\left(2\sqrt{z}\right)-\right.$$
$$\left.2\sqrt{z}\left(524\,288z^5-983\,040z^4+66\,908\,160z^3+106\,444\,800z^2-213\,305\,400z+204\,417\,675\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.agp0.01

$${}_1F_2\left(\frac{23}{4};\frac{7}{2},-\frac{11}{4};z\right)=-\frac{1}{2\,027\,718\sqrt{2}\,z^{5/4}}\left(\left(64z\left(23\,552z^3-97\,152z^2+209\,340z+7119\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(65\,536z^4+958\,464z^3+1\,863\,168z^2-8\,136\,864z-5\,638\,815\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(1\,310\,720z^4-8\,134\,656z^3+1\,822\,464z^2+22\,913\,280z+28\,194\,075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agp1.01

$${}_1F_2\left(\frac{23}{4};\frac{7}{2},-\frac{11}{4};-z\right)=-\frac{1}{2\,027\,718\sqrt{2}\,z^{5/4}}\left(\left(-64z\left(23\,552z^3+97\,152z^2+209\,340z-7119\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\left(65\,536z^4-958\,464z^3+1\,863\,168z^2+8\,136\,864z-5\,638\,815\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(1\,310\,720z^4+8\,134\,656z^3+1\,822\,464z^2-22\,913\,280z+28\,194\,075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agp2.01

$${}_1F_2\left(\frac{23}{4};\frac{7}{2},-\frac{9}{4};z\right)=$$
$$\frac{1}{6\,320\,160z^{5/2}}\left(\left(-262\,144z^5-3\,932\,160z^4-5\,806\,080z^3+18\,627\,840z^2+21\,829\,500z+8\,887\,725\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.6\sqrt{z}\left(458\,752z^4-2\,048\,000z^3+1\,774\,080z^2+3\,326\,400z+2\,962\,575\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.agp3.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, -\frac{9}{4}; -z\right) = \frac{1}{6\,320\,160\, z^{5/2}} \left(\left(262\,144\, z^5 - 3\,932\,160\, z^4 + 5\,806\,080\, z^3 + 18\,627\,840\, z^2 - 21\,829\,500\, z + 8\,887\,725\right) \sin\left(2\sqrt{z}\right) - 6\sqrt{z}\, \left(458\,752\, z^4 + 2\,048\,000\, z^3 + 1\,774\,080\, z^2 - 3\,326\,400\, z + 2\,962\,575\right) \cos\left(2\sqrt{z}\right)\right) $$

07.22.03.agp4.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, -\frac{7}{4}; z\right) = \frac{1}{184\,338\sqrt{2}\, z^{5/4}} \left(\left(8\, z \left(4096\, z^3 + 139\,008\, z^2 - 155\,088\, z + 19\,233\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\, \left(61\,440\, z^3 - 120\,064\, z^2 + 196\,368\, z + 89\,505\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(32\,768\, z^4 + 583\,680\, z^3 + 222\,336\, z^2 - 1\,221\,480\, z - 1\,342\,575\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agp5.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, -\frac{7}{4}; -z\right) = \frac{1}{184\,338\sqrt{2}\, z^{5/4}} \left(\left(-8\, z \left(4096\, z^3 - 139\,008\, z^2 - 155\,088\, z - 19\,233\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 12\sqrt{z}\, \left(61\,440\, z^3 + 120\,064\, z^2 + 196\,368\, z - 89\,505\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(32\,768\, z^4 - 583\,680\, z^3 + 222\,336\, z^2 + 1\,221\,480\, z - 1\,342\,575\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agp6.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, -\frac{5}{4}; z\right) = \frac{1}{702\,240\, z^{5/2}} \left(2\sqrt{z}\, \left(32\,768\, z^4 + 755\,712\, z^3 - 309\,120\, z^2 - 582\,120\, z - 467\,775\right) \cosh\left(2\sqrt{z}\right) + \left(704\,512\, z^4 - 1\,182\,720\, z^3 + 1\,270\,080\, z^2 + 1\,205\,820\, z + 467\,775\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agp7.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, -\frac{5}{4}; -z\right) = \frac{1}{702\,240\, z^{5/2}} \left(2\sqrt{z}\, \left(32\,768\, z^4 - 755\,712\, z^3 - 309\,120\, z^2 + 582\,120\, z - 467\,775\right) \cos\left(2\sqrt{z}\right) + \left(704\,512\, z^4 + 1\,182\,720\, z^3 + 1\,270\,080\, z^2 - 1\,205\,820\, z + 467\,775\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agp8.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, -\frac{3}{4}; z\right) = -\frac{1}{26\,334\sqrt{2}\, z^{5/4}} \left(\left(96\, z \left(1024\, z^2 + 2416\, z - 417\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\, \left(4096\, z^3 + 126\,720\, z^2 - 68\,112\, z - 15\,795\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(28\,672\, z^3 - 28\,416\, z^2 + 28\,080\, z + 26\,325\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agp9.01

$${}_1F_2\left(\frac{23}{4};\frac{7}{2},-\frac{3}{4};-z\right)=\frac{1}{26\,334\sqrt{2}\,z^{5/4}}$$
$$\left(\left(-96z\left(1024z^2-2416z-417\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(4096z^3-126\,720z^2-68\,112z+15\,795\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.3\left(28\,672z^3+28\,416z^2+28\,080z-26\,325\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agpa.01

$${}_1F_2\left(\frac{23}{4};\frac{7}{2},-\frac{1}{4};z\right)=\frac{1}{140\,448z^{5/2}}\left(\left(-16\,384z^4-420\,864z^3+129\,600z^2+86\,940z+31\,185\right)\sinh\left(2\sqrt{z}\right)-\right.$$
$$\left.6\sqrt{z}\left(28\,672z^3+3328z^2+15\,120z+10\,395\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.agpb.01

$${}_1F_2\left(\frac{23}{4};\frac{7}{2},-\frac{1}{4};-z\right)=\frac{1}{140\,448z^{5/2}}\left(6\sqrt{z}\left(28\,672z^3-3328z^2+15\,120z-10\,395\right)\cos\left(2\sqrt{z}\right)+\right.$$
$$\left.\left(-16\,384z^4+420\,864z^3+129\,600z^2-86\,940z+31\,185\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agpc.01

$${}_1F_2\left(\frac{23}{4};\frac{7}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{8778\sqrt{2}\,z^{5/4}}\left(\left(8z\left(256z^2+9888z+2073\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(11\,008z^2+19\,104z+1215\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(2048z^3+47\,616z^2-8280z-6075\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agpd.01

$${}_1F_2\left(\frac{23}{4};\frac{7}{2},\frac{1}{4};-z\right)=$$
$$\frac{1}{8778\sqrt{2}\,z^{5/4}}\left(\left(8z\left(256z^2-9888z+2073\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(11\,008z^2-19\,104z+1215\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(-2048z^3+47\,616z^2+8280z-6075\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agpe.01

$${}_1F_2\left(\frac{23}{4};\frac{7}{2},\frac{3}{4};z\right)=$$
$$\frac{1}{140\,448z^{5/2}}\left(2\sqrt{z}\left(2048z^3+47\,616z^2-5400z-2835\right)\cosh\left(2\sqrt{z}\right)+3\left(13\,312z^3+9600z^2+3060z+945\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agpf.01

$${}_1F_2\left(\frac{23}{4};\frac{7}{2},\frac{3}{4};-z\right)=$$
$$\frac{1}{140\,448z^{5/2}}\left(3\left(-13\,312z^3+9600z^2-3060z+945\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(2048z^3-47\,616z^2-5400z+2835\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.agpg.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{5}{4}; z\right) = \frac{1}{8778\sqrt{2}\, z^{5/4}} \left(\left(768 z (7z+23) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(256 z^2 + 6528 z - 135\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 9\left(512 z^2 + 160 z + 75\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agph.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{5}{4}; -z\right) = \frac{1}{8778\sqrt{2}\, z^{5/4}} \left(\left(-768 z (7z-23) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(256 z^2 - 6528 z - 135\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 9\left(512 z^2 - 160 z + 75\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agpi.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{7}{4}; z\right) = \frac{2\sqrt{z}\left(4352 z^2 + 1440 z + 405\right)\cosh\left(2\sqrt{z}\right) + \left(1024 z^3 + 17280 z^2 - 1980 z - 405\right)\sinh\left(2\sqrt{z}\right)}{46816 z^{5/2}} $$

07.22.03.agpj.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{7}{4}; -z\right) = \frac{2\sqrt{z}\left(4352 z^2 - 1440 z + 405\right)\cos\left(2\sqrt{z}\right) + \left(-1024 z^3 + 17280 z^2 + 1980 z - 405\right)\sin\left(2\sqrt{z}\right)}{46816 z^{5/2}} $$

07.22.03.agpk.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{9}{4}; z\right) = \frac{1}{8778\sqrt{2}\, z^{5/4}} \left(5\left(8 z (16z+369) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 132\sqrt{z}\,(16z+11) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(128 z^2 + 1464 z - 135\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agpl.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{9}{4}; -z\right) = -\frac{1}{8778\sqrt{2}\, z^{5/4}} \left(5\left(8 z (16z-369) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 132\sqrt{z}\,(16z-11) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-128 z^2 + 1464 z + 135\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agpm.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{11}{4}; z\right) = \frac{2\sqrt{z}\left(128 z^2 + 1080 z - 135\right)\cosh\left(2\sqrt{z}\right) + 9\left(192 z^2 - 100 z + 15\right)\sinh\left(2\sqrt{z}\right)}{6688 z^{5/2}} $$

07.22.03.agpn.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{11}{4}; -z\right) = \frac{2\sqrt{z}\left(128 z^2 - 1080 z - 135\right)\cos\left(2\sqrt{z}\right) + 9\left(192 z^2 + 100 z + 15\right)\sin\left(2\sqrt{z}\right)}{6688 z^{5/2}} $$

07.22.03.agpo.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{13}{4}; z\right) = \frac{1}{2926\sqrt{2}\, z^{7/4}} \left(15\left(4\sqrt{z}\,(56z+15) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\left(32 z^2 + 234 z - 75\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 11\sqrt{z}\,(16z-15) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agpp.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{13}{4}; -z\right) = -\frac{1}{2926\sqrt{2}\, z^{7/4}} \left(15\left(4(15-56z)\sqrt{z}\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 2\left(32z^2-234z-75\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 11\sqrt{z}\,(16z+15)\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agpq.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{15}{4}; z\right) = \frac{18\sqrt{z}\,(16z-15)\cosh\left(2\sqrt{z}\right) + \left(64z^2+36z+135\right)\sinh\left(2\sqrt{z}\right)}{608\, z^{5/2}} $$

07.22.03.agpr.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{15}{4}; -z\right) = \frac{\left(64z^2-36z+135\right)\sin\left(2\sqrt{z}\right) - 18\sqrt{z}\,(16z+15)\cos\left(2\sqrt{z}\right)}{608\, z^{5/2}} $$

07.22.03.agps.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{17}{4}; z\right) = \frac{1}{46\,816\sqrt{2}\, z^{11/4}} \left(195\left(2\sqrt{z}\,\left(64z^2+144z-27\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(320z^2-272z+45\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\sqrt{z}\,\left(64z^2-168z+135\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agpt.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{17}{4}; -z\right) = \frac{1}{46\,816\sqrt{2}\, z^{11/4}} \left(195\left(2\sqrt{z}\,\left(64z^2-144z-27\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 3\left(320z^2+272z+45\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,\left(64z^2+168z+135\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agpu.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{19}{4}; z\right) = \frac{15\left(2\sqrt{z}\,(8z-27)\cosh\left(2\sqrt{z}\right) + (28z+27)\sinh\left(2\sqrt{z}\right)\right)}{608\, z^{5/2}} $$

07.22.03.agpv.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{19}{4}; -z\right) = -\frac{15\left(2\sqrt{z}\,(8z+27)\cos\left(2\sqrt{z}\right) + (28z-27)\sin\left(2\sqrt{z}\right)\right)}{608\, z^{5/2}} $$

07.22.03.agpw.01

$${}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{21}{4}; z\right) =$$
$$\frac{1}{1\,498\,112\sqrt{2}\,z^{15/4}}\left(3315\left(6\sqrt{z}\,\left(256z^2+32z-117\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(2048z^3-5376z^2-1728z+1755\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.18\sqrt{z}\,(224z+195)\,I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agpx.01

$${}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{21}{4}; -z\right) =$$
$$\frac{1}{1\,498\,112\sqrt{2}\,z^{15/4}}\left(3315\left(6\sqrt{z}\,\left(-256z^2+32z+117\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\left(2048z^3+5376z^2-1728z-1755\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.18\,(195-224z)\sqrt{z}\,J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agpy.01

$${}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{23}{4}; z\right) = \frac{15\left((4z+3)\sinh\left(2\sqrt{z}\right)-6\sqrt{z}\,\cosh\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

07.22.03.agpz.01

$${}_1F_2\left(\frac{23}{4}; \frac{7}{2}, \frac{23}{4}; -z\right) = -\frac{15\left(6\sqrt{z}\,\cos\left(2\sqrt{z}\right)+(4z-3)\sin\left(2\sqrt{z}\right)\right)}{32\,z^{5/2}}$$

For fixed z and $a_1 = \frac{23}{4}$, $b_{1.} = \frac{9}{2}$

07.22.03.agq0.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{23}{4}; z\right) = \frac{1}{7\,595\,252\,280\sqrt{2}\,z^{9/4}}$$
$$\left(\left(-4z\left(1\,048\,576z^5-731\,185\,152z^4+1\,762\,467\,840z^3+39\,104\,755\,200z^2+173\,415\,710\,160z+554\,624\,445\,375\right)\right.\right.$$
$$I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(8\,388\,608z^6-287\,834\,112z^5-3\,778\,805\,760z^4+28\,329\,799\,680z^3+\right.$$
$$\left.238\,852\,575\,360z^2+1\,132\,566\,435\,000z+2\,773\,122\,226\,875\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left(29\,360\,128z^6-3\,763\,077\,120z^5-7\,194\,378\,240z^4+232\,799\,938\,560z^3+1\,579\,536\,504\,000z^2+\right.$$
$$\left.\left.\left.6\,895\,330\,942\,500z+13\,865\,611\,134\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agq1.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{23}{4}; -z\right) = -\frac{1}{7\,595\,252\,280\sqrt{2}\, z^{9/4}} $$
$$ \left(\left(4z\left(1\,048\,576z^5 + 731\,185\,152z^4 + 1\,762\,467\,840z^3 - 39\,104\,755\,200z^2 + 173\,415\,710\,160z - 554\,624\,445\,375\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(8\,388\,608z^6 + 287\,834\,112z^5 - 3\,778\,805\,760z^4 - 28\,329\,799\,680z^3 + \right. $$
$$ \left. 238\,852\,575\,360z^2 - 1\,132\,566\,435\,000z + 2\,773\,122\,226\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(-29\,360\,128z^6 - 3\,763\,077\,120z^5 + 7\,194\,378\,240z^4 + 232\,799\,938\,560z^3 - 1\,579\,536\,504\,000z^2 + \right. $$
$$ \left.\left. 6\,895\,330\,942\,500z - 13\,865\,611\,134\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.agq2.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{21}{4}; z\right) = $$
$$ \frac{1}{16\,761\,064\,320\, z^{7/2}}\left(\left(33\,554\,432z^7 - 1\,096\,810\,496z^6 - 10\,164\,633\,600z^5 + 80\,898\,048\,000z^4 + 639\,600\,192\,000z^3 + \right.\right. $$
$$ 2\,950\,155\,885\,600z^2 + 6\,995\,990\,509\,200z + 3\,326\,897\,660\,625\Big)\sinh\left(2\sqrt{z}\right) - $$
$$ 2\sqrt{z}\left(4\,194\,304z^6 - 2\,693\,529\,600z^5 + 2\,568\,192\,000z^4 + 131\,459\,328\,000z^3 + 719\,550\,216\,000z^2 + \right. $$
$$ \left.\left. 2\,560\,126\,961\,700z + 3\,326\,897\,660\,625\right)\cosh\left(2\sqrt{z}\right)\right) $$

07.22.03.agq3.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{21}{4}; -z\right) = \frac{1}{16\,761\,064\,320\, z^{7/2}} $$
$$ \left(2\sqrt{z}\left(4\,194\,304z^6 + 2\,693\,529\,600z^5 + 2\,568\,192\,000z^4 - 131\,459\,328\,000z^3 + 719\,550\,216\,000z^2 - 2\,560\,126\,961\,700z + \right.\right. $$
$$ 3\,326\,897\,660\,625\Big)\cos\left(2\sqrt{z}\right) + \left(33\,554\,432z^7 + 1\,096\,810\,496z^6 - 10\,164\,633\,600z^5 - 80\,898\,048\,000z^4 + \right. $$
$$ \left.\left. 639\,600\,192\,000z^3 - 2\,950\,155\,885\,600z^2 + 6\,995\,990\,509\,200z - 3\,326\,897\,660\,625\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agq4.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{19}{4}; z\right) = -\frac{1}{330\,228\,360\sqrt{2}\, z^{9/4}} $$
$$ \left(\left(4z\left(1\,048\,576z^5 - 30\,474\,240z^4 + 9\,805\,824z^3 + 1\,295\,562\,240z^2 + 4\,801\,219\,920z + 14\,989\,849\,875\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 12\sqrt{z}\left(1\,048\,576z^5 + 65\,994\,752z^4 - 269\,230\,080z^3 - 2\,414\,845\,440z^2 - 10\,497\,942\,000z - 24\,983\,083\,125\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(4\,194\,304z^6 - 128\,188\,416z^5 - 650\,280\,960z^4 + 6\,993\,745\,920z^3 + \right. $$
$$ \left.\left. 45\,778\,824\,000z^2 + 190\,779\,907\,500z + 374\,746\,246\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.agq5.01

$$ {}_1F_2\left(\frac{23}{4};\frac{9}{2},-\frac{19}{4};-z\right)=\frac{1}{330\,228\,360\sqrt{2}\,z^{9/4}}$$
$$\left(\left(-4z\left(1\,048\,576z^5+30\,474\,240z^4+9\,805\,824z^3-1\,295\,562\,240z^2+4\,801\,219\,920z-14\,989\,849\,875\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2-\right.\right.$$
$$12\sqrt{z}\left(1\,048\,576z^5-65\,994\,752z^4-269\,230\,080z^3+2\,414\,845\,440z^2-10\,497\,942\,000z+24\,983\,083\,125\right)$$
$$J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(4\,194\,304z^6+128\,188\,416z^5-650\,280\,960z^4-6\,993\,745\,920z^3+\right.$$
$$\left.\left.45\,778\,824\,000z^2-190\,779\,907\,500z+374\,746\,246\,875\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg)$$

07.22.03.agq6.01

$$ {}_1F_2\left(\frac{23}{4};\frac{9}{2},-\frac{17}{4};z\right)=$$
$$\frac{1}{798\,145\,920z^{7/2}}\left(\left(-16\,777\,216z^6-605\,552\,640z^5+2\,433\,024\,000z^4+20\,224\,512\,000z^3+87\,218\,208\,000z^2+\right.\right.$$
$$\left.201\,146\,992\,200z+95\,054\,218\,875\right)\sinh\left(2\sqrt{z}\right)-2\sqrt{z}\left(4\,194\,304z^6-114\,032\,640z^5-\right.$$
$$\left.\left.135\,168\,000z^4+4\,333\,824\,000z^3+21\,804\,552\,000z^2+74\,408\,033\,700z+95\,054\,218\,875\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.agq7.01

$$ {}_1F_2\left(\frac{23}{4};\frac{9}{2},-\frac{17}{4};-z\right)=$$
$$\frac{1}{798\,145\,920z^{7/2}}\left(2\sqrt{z}\left(4\,194\,304z^6+114\,032\,640z^5-135\,168\,000z^4-4\,333\,824\,000z^3+21\,804\,552\,000z^2-\right.\right.$$
$$\left.74\,408\,033\,700z+95\,054\,218\,875\right)\cos\left(2\sqrt{z}\right)+\left(16\,777\,216z^6-605\,552\,640z^5-2\,433\,024\,000z^4+\right.$$
$$\left.\left.20\,224\,512\,000z^3-87\,218\,208\,000z^2+201\,146\,992\,200z-95\,054\,218\,875\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agq8.01

$$ {}_1F_2\left(\frac{23}{4};\frac{9}{2},-\frac{15}{4};z\right)=$$
$$\frac{1}{17\,380\,440\sqrt{2}\,z^{9/4}}\left(\left(4z\left(1\,114\,112z^4+3\,244\,032z^3-52\,136\,448z^2-148\,639\,680z-454\,237\,875\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(524\,288z^5-11\,337\,728z^4+22\,745\,088z^3+256\,757\,760z^2+988\,533\,000z+2\,271\,189\,375\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left(2\,883\,584z^5+48\,955\,392z^4-235\,223\,040z^3-1\,514\,822\,400z^2-5\,952\,082\,500z-11\,355\,946\,875\right)$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agq9.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{15}{4}; -z\right) = \frac{1}{17\,380\,440\sqrt{2}\, z^{9/4}}\left(\left(-4z\left(1\,114\,112 z^4 - 3\,244\,032 z^3 - 52\,136\,448 z^2 + 148\,639\,680 z - 454\,237\,875\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\right.\right. \left(524\,288 z^5 + 11\,337\,728 z^4 + 22\,745\,088 z^3 - 256\,757\,760 z^2 + 988\,533\,000 z - 2\,271\,189\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(2\,883\,584 z^5 - 48\,955\,392 z^4 - 235\,223\,040 z^3 + 1\,514\,822\,400 z^2 - 5\,952\,082\,500 z + 11\,355\,946\,875\right) \left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agqa.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{13}{4}; z\right) = \frac{1}{46\,949\,760 z^{7/2}}\left(30\sqrt{z}\left(262\,144 z^5 + 1\,441\,792 z^4 - 11\,151\,360 z^3 - 50\,561\,280 z^2 - 163\,534\,140 z - 204\,417\,675\right)\cosh\left(2\sqrt{z}\right) + \left(2\,097\,152 z^6 - 39\,321\,600 z^5 + 72\,990\,720 z^4 + 745\,113\,600 z^3 + 2\,938\,874\,400 z^2 + 6\,541\,365\,600 z + 3\,066\,265\,125\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agqb.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{13}{4}; -z\right) = \frac{1}{46\,949\,760 z^{7/2}}\left(30\sqrt{z}\left(262\,144 z^5 - 1\,441\,792 z^4 - 11\,151\,360 z^3 + 50\,561\,280 z^2 - 163\,534\,140 z + 204\,417\,675\right)\cos\left(2\sqrt{z}\right) - \left(2\,097\,152 z^6 + 39\,321\,600 z^5 + 72\,990\,720 z^4 - 745\,113\,600 z^3 + 2\,938\,874\,400 z^2 - 6\,541\,365\,600 z + 3\,066\,265\,125\right) \sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agqc.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{11}{4}; z\right) = -\frac{1}{1\,158\,696\sqrt{2}\, z^{9/4}}\left(\left(4z\left(65\,536 z^4 - 540\,672 z^3 + 2\,721\,792 z^2 + 5\,156\,928 z + 15\,663\,375\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\right.\right. \sqrt{z}\left(655\,360 z^4 - 270\,336 z^3 - 11\,098\,368 z^2 - 35\,642\,880 z - 78\,316\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left.\left(262\,144 z^5 - 3\,932\,160 z^4 + 8\,613\,888 z^3 + 58\,556\,160 z^2 + 213\,021\,900 z + 391\,584\,375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agqd.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{11}{4}; -z\right) = \frac{1}{1\,158\,696\sqrt{2}\, z^{9/4}}\left(\left(4z\left(65\,536 z^4 + 540\,672 z^3 + 2\,721\,792 z^2 - 5\,156\,928 z + 15\,663\,375\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\right.\right. \sqrt{z}\left(655\,360 z^4 + 270\,336 z^3 - 11\,098\,368 z^2 + 35\,642\,880 z - 78\,316\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - \left.\left(262\,144 z^5 + 3\,932\,160 z^4 + 8\,613\,888 z^3 - 58\,556\,160 z^2 + 213\,021\,900 z - 391\,584\,375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agqe.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{9}{4}; z\right) =$$
$$\frac{1}{3\,611\,520\, z^{7/2}}\left(5\left(-524\,288\, z^5 + 196\,608\, z^4 + 6\,623\,232\, z^3 + 23\,063\,040\, z^2 + 48\,981\,240\, z + 22\,713\,075\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(262\,144\, z^5 - 2\,621\,440\, z^4 + 7\,772\,160\, z^3 + 31\,046\,400\, z^2 + 93\,485\,700\, z + 113\,565\,375\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.agqf.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{9}{4}; -z\right) =$$
$$\frac{1}{3\,611\,520\, z^{7/2}}\left(-2\sqrt{z}\left(262\,144\, z^5 + 2\,621\,440\, z^4 + 7\,772\,160\, z^3 - 31\,046\,400\, z^2 + 93\,485\,700\, z - 113\,565\,375\right)\cos\left(2\sqrt{z}\right) - 5\left(524\,288\, z^5 + 196\,608\, z^4 - 6\,623\,232\, z^3 + 23\,063\,040\, z^2 - 48\,981\,240\, z + 22\,713\,075\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agqg.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{7}{4}; z\right) = \frac{1}{105\,336\sqrt{2}\, z^{9/4}}\left(\left(12\, z\left(36\,864\, z^3 - 69\,376\, z^2 - 64\,656\, z - 208\,845\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,768\, z^4 - 104\,448\, z^3 + 632\,448\, z^2 + 1\,511\,640\, z + 3\,132\,675\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(114\,688\, z^4 - 91\,136\, z^3 - 911\,040\, z^2 - 2\,983\,500\, z - 5\,221\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agqh.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{7}{4}; -z\right) = -\frac{1}{105\,336\sqrt{2}\, z^{9/4}}\left(\left(-12\, z\left(36\,864\, z^3 + 69\,376\, z^2 - 64\,656\, z + 208\,845\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(32\,768\, z^4 + 104\,448\, z^3 + 632\,448\, z^2 - 1\,511\,640\, z + 3\,132\,675\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 3\left(114\,688\, z^4 + 91\,136\, z^3 - 911\,040\, z^2 + 2\,983\,500\, z - 5\,221\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agqi.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{5}{4}; z\right) = \frac{1}{401\,280\, z^{7/2}}\left(2\sqrt{z}\left(376\,832\, z^4 - 445\,440\, z^3 - 1\,552\,320\, z^2 - 4\,227\,300\, z - 4\,937\,625\right)\cosh\left(2\sqrt{z}\right) + \left(131\,072\, z^5 - 368\,640\, z^4 + 1\,881\,600\, z^3 + 5\,433\,120\, z^2 + 10\,810\,800\, z + 4\,937\,625\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agqj.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{5}{4}; -z\right) =$$
$$\frac{1}{401\,280\, z^{7/2}}\left(\left(131\,072\, z^5 + 368\,640\, z^4 + 1\,881\,600\, z^3 - 5\,433\,120\, z^2 + 10\,810\,800\, z - 4\,937\,625\right)\sin\left(2\sqrt{z}\right) - 2\sqrt{z}\left(376\,832\, z^4 + 445\,440\, z^3 - 1\,552\,320\, z^2 + 4\,227\,300\, z - 4\,937\,625\right)\cos\left(2\sqrt{z}\right)\right)$$

07.22.03.agqk.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{3}{4}; z\right) = -\frac{1}{15\,048\sqrt{2}\, z^{9/4}}\left(\left(4z\left(4096z^3+32\,000z^2+5424z+29\,835\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(53\,248z^3-56\,064z^2-78\,000z-149\,175\right)\right.\right.$$
$$\left.\left. I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(16\,384z^4-19\,456z^3+162\,240z^2+456\,300z+745\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agql.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{3}{4}; -z\right) = \frac{1}{15\,048\sqrt{2}\, z^{9/4}}\left(\left(-4z\left(4096z^3-32\,000z^2+5424z-29\,835\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(53\,248z^3+56\,064z^2-78\,000z+149\,175\right)\right.\right.$$
$$\left.\left. J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(16\,384z^4+19\,456z^3+162\,240z^2-456\,300z+745\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agqm.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{1}{4}; z\right) = \frac{1}{80\,256\, z^{7/2}}\left(3\left(-65\,536z^4+51\,200z^3+107\,520z^2+194\,040z+86\,625\right)\sinh\left(2\sqrt{z}\right) - \right.$$
$$\left. 2\sqrt{z}\left(16\,384z^4+27\,648z^3+100\,800z^2+235\,620z+259\,875\right)\cosh\left(2\sqrt{z}\right)\right)$$

07.22.03.agqn.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, -\frac{1}{4}; -z\right) = \frac{1}{80\,256\, z^{7/2}}\left(2\sqrt{z}\left(16\,384z^4-27\,648z^3+100\,800z^2-235\,620z+259\,875\right)\cos\left(2\sqrt{z}\right) + \right.$$
$$\left. 3\left(65\,536z^4+51\,200z^3-107\,520z^2+194\,040z-86\,625\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agqo.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{1}{4}; z\right) = \frac{1}{5016\sqrt{2}\, z^{9/4}}\left(\left(4z\left(7424z^2+1632z-1755\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048z^3+12\,288z^2+5160z+8775\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. \left(23\,552z^3-13\,440z^2-29\,700z-43\,875\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agqp.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{1}{4}; -z\right) = \frac{1}{5016\sqrt{2}\, z^{9/4}}\left(\left(4z\left(-7424z^2+1632z+1755\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(2048z^3-12\,288z^2+5160z-8775\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$
$$\left.\left. \left(23\,552z^3+13\,440z^2-29\,700z+43\,875\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agqq.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{3}{4}; z\right) = \frac{1}{80\,256\, z^{7/2}}\left(2\sqrt{z}\,\left(23\,552\, z^3 - 9600\, z^2 - 17\,220\, z - 17\,325\right)\cosh\left(2\sqrt{z}\right) + \left(8192\, z^4 + 25\,600\, z^3 + 26\,400\, z^2 + 40\,320\, z + 17\,325\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agqr.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{3}{4}; -z\right) = \frac{1}{80\,256\, z^{7/2}}\left(2\sqrt{z}\,\left(23\,552\, z^3 + 9600\, z^2 - 17\,220\, z + 17\,325\right)\cos\left(2\sqrt{z}\right) + \left(-8192\, z^4 + 25\,600\, z^3 - 26\,400\, z^2 + 40\,320\, z - 17\,325\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agqs.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{5}{4}; z\right) = \frac{1}{5016\sqrt{2}\, z^{9/4}}\left(\left(4\, z\left(256\, z^2 + 2592\, z + 135\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,\left(1024\, z^2 - 160\, z - 225\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(1024\, z^3 + 1920\, z^2 + 2700\, z + 3375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agqt.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{5}{4}; -z\right) = -\frac{1}{5016\sqrt{2}\, z^{9/4}}\left(\left(4\, z\left(256\, z^2 - 2592\, z + 135\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 12\sqrt{z}\,\left(1024\, z^2 + 160\, z - 225\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-1024\, z^3 + 1920\, z^2 - 2700\, z + 3375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agqu.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{7}{4}; z\right) = \frac{1}{26\,752\, z^{7/2}}\left(2\sqrt{z}\,\left(1024\, z^3 + 1920\, z^2 + 1860\, z + 1575\right)\cosh\left(2\sqrt{z}\right) + 5\left(2048\, z^3 - 768\, z^2 - 792\, z - 315\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.03.agqv.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{7}{4}; -z\right) = \frac{1}{26\,752\, z^{7/2}}\left(2\sqrt{z}\,\left(1024\, z^3 - 1920\, z^2 + 1860\, z - 1575\right)\cos\left(2\sqrt{z}\right) + 5\left(2048\, z^3 + 768\, z^2 - 792\, z + 315\right)\sin\left(2\sqrt{z}\right)\right)$$

07.22.03.agqw.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{9}{4}; z\right) = \frac{1}{5016\sqrt{2}\, z^{9/4}}\left(5\left(4\, z\,(368\, z - 15)\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\,\left(128\, z^2 + 376\, z + 75\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(1088\, z^2 - 420\, z - 375\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agqx.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{9}{4}; -z\right) = -\frac{1}{5016\sqrt{2}\, z^{9/4}} $$
$$ \left(5\left(-4z(368z+15) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(128z^2-376z+75\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(1088z^2+420z-375\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agqy.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{11}{4}; z\right) = \frac{7\left(30\sqrt{z}\left(64z^2-28z-15\right)\cosh\left(2\sqrt{z}\right) + \left(512z^3-480z^2+720z+225\right)\sinh\left(2\sqrt{z}\right)\right)}{26\,752\, z^{7/2}} $$

07.22.03.agqz.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{11}{4}; -z\right) = \frac{7\left(\left(512z^3+480z^2+720z-225\right)\sin\left(2\sqrt{z}\right) - 30\sqrt{z}\left(64z^2+28z-15\right)\cos\left(2\sqrt{z}\right)\right)}{26\,752\, z^{7/2}} $$

07.22.03.agr0.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{13}{4}; z\right) = $$
$$ \frac{1}{1672\sqrt{2}\, z^{9/4}}\left(15\left(4z(16z+27) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(112z-75\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(64z^2-180z+75\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agr1.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{13}{4}; -z\right) = $$
$$ \frac{1}{1672\sqrt{2}\, z^{9/4}}\left(15\left(4z(16z-27) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(112z+75\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) - \left(64z^2+180z+75\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agr2.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{15}{4}; z\right) = \frac{7\left(2\sqrt{z}\left(64z^2-220z+75\right)\cosh\left(2\sqrt{z}\right) + \left(256z^2+120z-75\right)\sinh\left(2\sqrt{z}\right)\right)}{2432\, z^{7/2}} $$

07.22.03.agr3.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{15}{4}; -z\right) = -\frac{7\left(2\sqrt{z}\left(64z^2+220z+75\right)\cos\left(2\sqrt{z}\right) + \left(256z^2-120z-75\right)\sin\left(2\sqrt{z}\right)\right)}{2432\, z^{7/2}} $$

07.22.03.agr4.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{17}{4}; z\right) = $$
$$ \frac{1}{3344\sqrt{2}\, z^{11/4}}\left(195\left(18\sqrt{z}\left(4z-3\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(64z^2-216z+135\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + 24\sqrt{z}\left(z+5\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agr5.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{17}{4}; -z\right) = $$
$$ \frac{1}{3344\sqrt{2}\, z^{11/4}}\left(195\left(-18\sqrt{z}\left(4z+3\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(64z^2+216z+135\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 24\left(z-5\right)\sqrt{z}\, J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agr6.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{19}{4}; z\right) = \frac{105\left(\left(32\,z^2 - 96\,z - 75\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\,\left(4\,z - 75\right)\cosh\left(2\sqrt{z}\right)\right)}{2432\,z^{7/2}}$$

07.22.03.agr7.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{19}{4}; -z\right) = -\frac{105\left(2\sqrt{z}\,\left(4\,z + 75\right)\cos\left(2\sqrt{z}\right) + \left(32\,z^2 + 96\,z - 75\right)\sin\left(2\sqrt{z}\right)\right)}{2432\,z^{7/2}}$$

07.22.03.agr8.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{21}{4}; z\right) =$$

$$\frac{1}{107\,008\sqrt{2}\,z^{15/4}}\left(3315\left(2\sqrt{z}\,\left(128\,z^2 - 320\,z + 117\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(-512\,z^2 + 2016\,z - 585\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(128\,z^2 - 32\,z - 585\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agr9.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{21}{4}; -z\right) =$$

$$-\frac{1}{107\,008\sqrt{2}\,z^{15/4}}\left(3315\left(2\sqrt{z}\,\left(128\,z^2 + 320\,z + 117\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - \left(512\,z^2 + 2016\,z + 585\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right) - \right.\right.$$

$$\left.\left.2\sqrt{z}\,\left(128\,z^2 + 32\,z - 585\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agra.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{23}{4}; z\right) = \frac{105\left(2\sqrt{z}\,\left(4\,z + 15\right)\cosh\left(2\sqrt{z}\right) - 3\left(8\,z + 5\right)\sinh\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

07.22.03.agrb.01

$${}_1F_2\left(\frac{23}{4}; \frac{9}{2}, \frac{23}{4}; -z\right) = \frac{105\left(2\sqrt{z}\,\left(4\,z - 15\right)\cos\left(2\sqrt{z}\right) + 3\left(5 - 8\,z\right)\sin\left(2\sqrt{z}\right)\right)}{128\,z^{7/2}}$$

For fixed z and $a_1 = \frac{23}{4}$, $b_{1.} = \frac{11}{2}$

07.22.03.agrc.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{11}{2}, -\frac{23}{4}; z\right) = \frac{1}{3\,375\,667\,680\sqrt{2}\, z^{13/4}} $$
$$ \left(\left(4z\left(8\,388\,608 z^6 + 186\,122\,240 z^5 - 4\,266\,393\,600 z^4 - 79\,142\,031\,360 z^3 - 963\,903\,346\,560 z^2 - 8\,183\,791\,816\,200 z - \right.\right.\right. $$
$$ \left.\left.\left. 31\,835\,443\,164\,525\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(-146\,800\,640 z^6 + 132\,907\,008 z^5 + 48\,413\,245\,440 z^4 + \right.\right.\right. $$
$$ \left.\left.\left. 714\,143\,324\,160 z^3 + 7\,981\,467\,278\,400 z^2 + 55\,068\,044\,931\,900 z + 159\,177\,215\,822\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left(33\,554\,432 z^7 + 1\,210\,056\,704 z^6 - 16\,487\,546\,880 z^5 - 473\,471\,631\,360 z^4 - 6\,374\,002\,521\,600 z^3 - \right.\right. $$
$$ \left.\left. 61\,963\,375\,874\,400 z^2 - 346\,085\,653\,914\,000 z - 795\,886\,079\,113\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.agrd.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{11}{2}, -\frac{23}{4}; -z\right) = \frac{1}{3\,375\,667\,680\sqrt{2}\, z^{13/4}} $$
$$ \left(\left(4z\left(8\,388\,608 z^6 - 186\,122\,240 z^5 - 4\,266\,393\,600 z^4 + 79\,142\,031\,360 z^3 - 963\,903\,346\,560 z^2 + 8\,183\,791\,816\,200 z - \right.\right.\right. $$
$$ \left.\left.\left. 31\,835\,443\,164\,525\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(146\,800\,640 z^6 + 132\,907\,008 z^5 - 48\,413\,245\,440 z^4 + \right.\right.\right. $$
$$ \left.\left.\left. 714\,143\,324\,160 z^3 - 7\,981\,467\,278\,400 z^2 + 55\,068\,044\,931\,900 z - 159\,177\,215\,822\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \right.\right. $$
$$ \left.\left(-33\,554\,432 z^7 + 1\,210\,056\,704 z^6 + 16\,487\,546\,880 z^5 - 473\,471\,631\,360 z^4 + 6\,374\,002\,521\,600 z^3 - \right.\right. $$
$$ \left.\left. 61\,963\,375\,874\,400 z^2 + 346\,085\,653\,914\,000 z - 795\,886\,079\,113\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.agre.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{11}{2}, -\frac{21}{4}; z\right) = $$
$$ \frac{1}{7\,449\,361\,920 z^{9/2}}\left(2\sqrt{z}\left(33\,554\,432 z^7 + 723\,517\,440 z^6 - 14\,269\,808\,640 z^5 - 285\,839\,769\,600 z^4 - 3\,453\,841\,036\,800 z^3 - \right.\right. $$
$$ \left.\left. 28\,997\,873\,704\,800 z^2 - 127\,752\,870\,168\,000 z - 181\,648\,612\,270\,125\right) \cosh\left(2\sqrt{z}\right) + \right. $$
$$ \left.\left(-520\,093\,696 z^7 + 1\,368\,391\,680 z^6 + 146\,695\,127\,040 z^5 + 2\,046\,720\,614\,400 z^4 + 21\,298\,686\,393\,600 z^3 + \right.\right. $$
$$ \left.\left. 134\,748\,860\,677\,200 z^2 + 369\,951\,019\,861\,500 z + 181\,648\,612\,270\,125\right) \sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agrf.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{11}{2}, -\frac{21}{4}; -z\right) = $$
$$ \frac{1}{7\,449\,361\,920 z^{9/2}}\left(\left(520\,093\,696 z^7 + 1\,368\,391\,680 z^6 - 146\,695\,127\,040 z^5 + 2\,046\,720\,614\,400 z^4 - 21\,298\,686\,393\,600 z^3 + \right.\right. $$
$$ \left.\left. 134\,748\,860\,677\,200 z^2 - 369\,951\,019\,861\,500 z + 181\,648\,612\,270\,125\right) \sin\left(2\sqrt{z}\right) - \right. $$
$$ \left.2\sqrt{z}\left(33\,554\,432 z^7 - 723\,517\,440 z^6 - 14\,269\,808\,640 z^5 + 285\,839\,769\,600 z^4 - 3\,453\,841\,036\,800 z^3 + \right.\right. $$
$$ \left.\left. 28\,997\,873\,704\,800 z^2 - 127\,752\,870\,168\,000 z + 181\,648\,612\,270\,125\right) \cos\left(2\sqrt{z}\right)\right) $$

07.22.03.agrg.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{11}{2}, -\frac{19}{4}; z\right) = -\frac{1}{146\,768\,160\sqrt{2}\, z^{13/4}} $$
$$ \left(\left(4z\left(-10\,485\,760 z^5 + 105\,971\,712 z^4 + 2\,183\,086\,080 z^3 + 24\,446\,661\,120 z^2 + 202\,529\,527\,200 z + 776\,474\,223\,525\right)\right.\right. $$
$$ I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(4\,194\,304 z^6 + 35\,389\,440 z^5 - 1\,338\,408\,960 z^4 - 18\,831\,697\,920 z^3 - \right. $$
$$ 200\,815\,070\,400 z^2 - 1\,357\,747\,290\,900 z - 3\,882\,371\,117\,625\Big) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(-54\,525\,952 z^6 + 275\,251\,200 z^5 + 12\,912\,721\,920 z^4 + 164\,395\,929\,600 z^3 + 1\,548\,527\,198\,400 z^2 + \right. $$
$$ \left.\left. 8\,514\,234\,729\,000 z + 19\,411\,855\,588\,125\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.agrh.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{11}{2}, -\frac{19}{4}; -z\right) = \frac{1}{146\,768\,160\sqrt{2}\, z^{13/4}} $$
$$ \left(\left(-4z\left(10\,485\,760 z^5 + 105\,971\,712 z^4 - 2\,183\,086\,080 z^3 + 24\,446\,661\,120 z^2 - 202\,529\,527\,200 z + 776\,474\,223\,525\right)\right.\right. $$
$$ J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 4\sqrt{z}\left(4\,194\,304 z^6 - 35\,389\,440 z^5 - 1\,338\,408\,960 z^4 + 18\,831\,697\,920 z^3 - \right. $$
$$ 200\,815\,070\,400 z^2 + 1\,357\,747\,290\,900 z - 3\,882\,371\,117\,625\Big) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + $$
$$ \left(54\,525\,952 z^6 + 275\,251\,200 z^5 - 12\,912\,721\,920 z^4 + 164\,395\,929\,600 z^3 - 1\,548\,527\,198\,400 z^2 + \right. $$
$$ \left.\left. 8\,514\,234\,729\,000 z - 19\,411\,855\,588\,125\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\Bigg) $$

07.22.03.agri.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{11}{2}, -\frac{17}{4}; z\right) = \frac{1}{354\,731\,520 z^{9/2}} $$
$$ \left(10\sqrt{z}\left(8\,388\,608 z^6 - 67\,633\,152 z^5 - 1\,643\,642\,880 z^4 - 18\,606\,551\,040 z^3 - 151\,759\,681\,920 z^2 - 659\,042\,584\,200 z - \right.\right. $$
$$ 931\,531\,344\,975\Big)\cosh\left(2\sqrt{z}\right) + \left(-16\,777\,216 z^7 - 89\,128\,960 z^6 + 4\,260\,495\,360 z^5 + 56\,628\,633\,600 z^4 + \right. $$
$$ \left.\left. 564\,011\,078\,400 z^3 + 3\,496\,359\,913\,200 z^2 + 9\,505\,421\,887\,500 z + 4\,657\,656\,724\,875\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agrj.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{11}{2}, -\frac{17}{4}; -z\right) = \frac{1}{354\,731\,520 z^{9/2}} $$
$$ \left(10\sqrt{z}\left(8\,388\,608 z^6 + 67\,633\,152 z^5 - 1\,643\,642\,880 z^4 + 18\,606\,551\,040 z^3 - 151\,759\,681\,920 z^2 + 659\,042\,584\,200 z - \right.\right. $$
$$ 931\,531\,344\,975\Big)\cos\left(2\sqrt{z}\right) + \left(16\,777\,216 z^7 - 89\,128\,960 z^6 - 4\,260\,495\,360 z^5 + 56\,628\,633\,600 z^4 - \right. $$
$$ \left.\left. 564\,011\,078\,400 z^3 + 3\,496\,359\,913\,200 z^2 - 9\,505\,421\,887\,500 z + 4\,657\,656\,724\,875\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agrk.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{11}{2}, -\frac{15}{4}; z\right) = \frac{1}{7\,724\,640\sqrt{2}\, z^{13/4}} $$
$$ \left(\left(4z\left(524\,288z^5 - 2\,162\,688z^4 - 70\,275\,072z^3 - 692\,858\,880z^2 - 5\,571\,984\,600z - 20\,985\,789\,825\right) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(-3\,407\,872z^5 + 41\,091\,072z^4 + 564\,480\,000z^3 + 5\,641\,171\,200z^2 + 37\,186\,940\,700z + 104\,928\,949\,125\right) $$
$$ I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(2\,097\,152z^6 + 3\,145\,728z^5 - 399\,851\,520z^4 - 4\,770\,662\,400z^3 - \right. $$
$$ \left.\left. \left. 43\,139\,023\,200z^2 - 232\,569\,792\,000z - 524\,644\,745\,625\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agrl.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{11}{2}, -\frac{15}{4}; -z\right) = \frac{1}{7\,724\,640\sqrt{2}\, z^{13/4}} $$
$$ \left(\left(-4z\left(524\,288z^5 + 2\,162\,688z^4 - 70\,275\,072z^3 + 692\,858\,880z^2 - 5\,571\,984\,600z + 20\,985\,789\,825\right) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \right.\right. $$
$$ 4\sqrt{z}\left(3\,407\,872z^5 + 41\,091\,072z^4 - 564\,480\,000z^3 + 5\,641\,171\,200z^2 - 37\,186\,940\,700z + 104\,928\,949\,125\right) $$
$$ J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(2\,097\,152z^6 - 3\,145\,728z^5 - 399\,851\,520z^4 + 4\,770\,662\,400z^3 - \right. $$
$$ \left.\left. \left. 43\,139\,023\,200z^2 + 232\,569\,792\,000z - 524\,644\,745\,625\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right) \Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agrm.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{11}{2}, -\frac{13}{4}; z\right) = $$
$$ \frac{1}{20\,866\,560 z^{9/2}}\left(2\sqrt{z}\left(2\,097\,152z^6 - 4\,718\,592z^5 - 273\,039\,360z^4 - 2\,831\,431\,680z^3 - 22\,240\,643\,040z^2 - \right.\right. $$
$$ 94\,849\,801\,200z - 133\,075\,906\,425\right)\cosh\left(2\sqrt{z}\right) + 11\left(-1\,048\,576z^6 + 12\,582\,912z^5 + $$
$$ \left.\left. 162\,570\,240z^4 + 1\,526\,031\,360z^3 + 9\,217\,378\,800z^2 + 24\,753\,122\,100z + 12\,097\,809\,675\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agrn.01

$$ {}_1F_2\left(\frac{23}{4}; \frac{11}{2}, -\frac{13}{4}; -z\right) = $$
$$ \frac{1}{20\,866\,560 z^{9/2}}\left(2\sqrt{z}\left(2\,097\,152z^6 + 4\,718\,592z^5 - 273\,039\,360z^4 + 2\,831\,431\,680z^3 - 22\,240\,643\,040z^2 + \right.\right. $$
$$ 94\,849\,801\,200z - 133\,075\,906\,425\right)\cos\left(2\sqrt{z}\right) - 11\left(1\,048\,576z^6 + 12\,582\,912z^5 - 162\,570\,240z^4 + $$
$$ \left.\left. 1\,526\,031\,360z^3 - 9\,217\,378\,800z^2 + 24\,753\,122\,100z - 12\,097\,809\,675\right)\sin\left(2\sqrt{z}\right)\right) $$

07.22.03.agro.01

$$ {}_1F_2\left(\frac{23}{4};\frac{11}{2},-\frac{11}{4};z\right)= -\frac{1}{514\,976\sqrt{2}\,z^{13/4}}\left(\left(4z\left(-65\,536z^4+2\,789\,376z^3+22\,245\,888z^2+172\,645\,200z+635\,933\,025\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(262\,144z^5-1\,310\,720z^4-19\,795\,968z^3-179\,585\,280z^2-1\,145\,862\,900z-3\,179\,665\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-1\,048\,576z^5+14\,204\,928z^4+158\,760\,960z^3+1\,358\,884\,800z^2+7\,142\,499\,000z+15\,898\,325\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agrp.01

$$ {}_1F_2\left(\frac{23}{4};\frac{11}{2},-\frac{11}{4};-z\right)= \frac{1}{514\,976\sqrt{2}\,z^{13/4}}\left(\left(4z\left(65\,536z^4+2\,789\,376z^3-22\,245\,888z^2+172\,645\,200z-635\,933\,025\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(262\,144z^5+1\,310\,720z^4-19\,795\,968z^3+179\,585\,280z^2-1\,145\,862\,900z+3\,179\,665\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\left(1\,048\,576z^5+14\,204\,928z^4-158\,760\,960z^3+1\,358\,884\,800z^2-7\,142\,499\,000z+15\,898\,325\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agrq.01

$$ {}_1F_2\left(\frac{23}{4};\frac{11}{2},-\frac{9}{4};z\right)= \frac{1}{1\,605\,120\,z^{9/2}}\left(2\sqrt{z}\left(524\,288z^5-10\,813\,440z^4-99\,348\,480z^3-741\,565\,440z^2-3\,088\,978\,200z-4\,292\,771\,175\right)\cosh\left(2\sqrt{z}\right)+\left(-1\,048\,576z^6+4\,718\,592z^5+66\,232\,320z^4+571\,253\,760z^3+3\,333\,884\,400z^2+8\,812\,673\,100z+4\,292\,771\,175\right)\sinh\left(2\sqrt{z}\right)\right) $$

07.22.03.agrr.01

$$ {}_1F_2\left(\frac{23}{4};\frac{11}{2},-\frac{9}{4};-z\right)= \frac{1}{1\,605\,120\,z^{9/2}}\left(\left(-1\,048\,576z^6-4\,718\,592z^5+66\,232\,320z^4-571\,253\,760z^3+3\,333\,884\,400z^2-8\,812\,673\,100z+4\,292\,771\,175\right)\sin\left(2\sqrt{z}\right)-2\sqrt{z}\left(524\,288z^5+10\,813\,440z^4-99\,348\,480z^3+741\,565\,440z^2-3\,088\,978\,200z+4\,292\,771\,175\right)\cos\left(2\sqrt{z}\right)\right) $$

07.22.03.agrs.01

$$ {}_1F_2\left(\frac{23}{4};\frac{11}{2},-\frac{7}{4};z\right)= \frac{1}{46\,816\sqrt{2}\,z^{13/4}}\left(\left(4z\left(32\,768z^4-153\,600z^3-820\,608z^2-6\,126\,120z-21\,928\,725\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(16\,384z^4+857\,088z^3+6\,609\,600z^2+40\,376\,700z+109\,643\,625\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(131\,072z^5-565\,248z^4-6\,228\,480z^3-49\,327\,200z^2-250\,614\,000z-548\,218\,125\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right) $$

07.22.03.agrt.01

$${}_1F_2\left(\frac{23}{4};\frac{11}{2},-\frac{7}{4};-z\right)=$$
$$\frac{1}{46\,816\sqrt{2}\,z^{13/4}}\left(\left(4z\left(32\,768z^4+153\,600z^3-820\,608z^2+6\,126\,120z-21\,928\,725\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\right.\right.$$
$$\left(16\,384z^4-857\,088z^3+6\,609\,600z^2-40\,376\,700z+109\,643\,625\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-$$
$$\left.\left.\left(131\,072z^5+565\,248z^4-6\,228\,480z^3+49\,327\,200z^2-250\,614\,000z+548\,218\,125\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agru.01

$${}_1F_2\left(\frac{23}{4};\frac{11}{2},-\frac{5}{4};z\right)=$$
$$\frac{1}{535\,040z^{9/2}}\left(3\left(2\sqrt{z}\,\left(131\,072z^5-532\,480z^4-4\,139\,520z^3-28\,717\,920z^2-115\,869\,600z-158\,991\,525\right)\cosh\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(65\,536z^5+3\,010\,560z^4+22\,767\,360z^3+126\,680\,400z^2+327\,858\,300z+158\,991\,525\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agrv.01

$${}_1F_2\left(\frac{23}{4};\frac{11}{2},-\frac{5}{4};-z\right)=$$
$$-\frac{1}{535\,040z^{9/2}}\left(3\left(2\sqrt{z}\,\left(131\,072z^5+532\,480z^4-4\,139\,520z^3+28\,717\,920z^2-115\,869\,600z+158\,991\,525\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(65\,536z^5-3\,010\,560z^4+22\,767\,360z^3-126\,680\,400z^2+327\,858\,300z-158\,991\,525\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agrw.01

$${}_1F_2\left(\frac{23}{4};\frac{11}{2},-\frac{3}{4};z\right)=-\frac{1}{6688\sqrt{2}\,z^{13/4}}\left(\left(4z\left(16\,384z^3+34\,560z^2+254\,592z+877\,149\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\,\left(16\,384z^4-52\,224z^3-289\,344z^2-1\,662\,804z-4\,385\,745\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(16\,384z^4+301\,056z^3+2\,119\,104z^2+10\,263\,240z+21\,928\,725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agrx.01

$${}_1F_2\left(\frac{23}{4};\frac{11}{2},-\frac{3}{4};-z\right)=-\frac{1}{6688\sqrt{2}\,z^{13/4}}\left(\left(-4z\left(16\,384z^3-34\,560z^2+254\,592z-877\,149\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$4\sqrt{z}\,\left(16\,384z^4+52\,224z^3-289\,344z^2+1\,662\,804z-4\,385\,745\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+$$
$$\left.\left.\left(16\,384z^4-301\,056z^3+2\,119\,104z^2-10\,263\,240z+21\,928\,725\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agry.01

$${}_1F_2\left(\frac{23}{4};\frac{11}{2},-\frac{1}{4};z\right)=-\frac{1}{107\,008z^{9/2}}\left(3\left(2\sqrt{z}\,\left(32\,768z^4+215\,040z^3+1\,330\,560z^2+5\,128\,200z+6\,912\,675\right)\cosh\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(65\,536z^5-184\,320z^4-1\,102\,080z^3-5\,710\,320z^2-14\,345\,100z-6\,912\,675\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agrz.01

$${}_1F_2\left(\frac{23}{4};\frac{11}{2},-\frac{1}{4};-z\right)=$$
$$\frac{1}{107\,008\,z^{9/2}}\left(3\left(\left(65\,536\,z^5+184\,320\,z^4-1\,102\,080\,z^3+5\,710\,320\,z^2-14\,345\,100\,z+6\,912\,675\right)\sin\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\,\left(32\,768\,z^4-215\,040\,z^3+1\,330\,560\,z^2-5\,128\,200\,z+6\,912\,675\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ags0.01

$${}_1F_2\left(\frac{23}{4};\frac{11}{2},\frac{1}{4};z\right)=$$
$$\frac{1}{6688\sqrt{2}\,z^{13/4}}\left(3\left(4z\left(2048\,z^3-1024\,z^2-12\,792\,z-41\,769\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(7168\,z^3+15\,744\,z^2+82\,524\,z+208\,845\right)\right.\right.$$
$$\left.\left.I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(8192\,z^4-19\,456\,z^3-112\,224\,z^2-505\,440\,z-1\,044\,225\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ags1.01

$${}_1F_2\left(\frac{23}{4};\frac{11}{2},\frac{1}{4};-z\right)=$$
$$-\frac{1}{6688\sqrt{2}\,z^{13/4}}\left(3\left(4z\left(2048\,z^3+1024\,z^2-12\,792\,z+41\,769\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(7168\,z^3-15\,744\,z^2+82\,524\,z-208\,845\right)\right.\right.$$
$$\left.\left.J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(-8192\,z^4-19\,456\,z^3+112\,224\,z^2-505\,440\,z+1\,044\,225\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ags2.01

$${}_1F_2\left(\frac{23}{4};\frac{11}{2},\frac{3}{4};z\right)=\frac{1}{107\,008\,z^{9/2}}\left(3\left(2\sqrt{z}\,\left(8192\,z^4-15\,360\,z^3-77\,280\,z^2-277\,200\,z-363\,825\right)\cosh\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.5\left(4096\,z^4+13\,824\,z^3+63\,504\,z^2+152\,460\,z+72\,765\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ags3.01

$${}_1F_2\left(\frac{23}{4};\frac{11}{2},\frac{3}{4};-z\right)=\frac{1}{107\,008\,z^{9/2}}\left(3\left(2\sqrt{z}\,\left(8192\,z^4+15\,360\,z^3-77\,280\,z^2+277\,200\,z-363\,825\right)\cos\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.5\left(4096\,z^4-13\,824\,z^3+63\,504\,z^2-152\,460\,z+72\,765\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ags4.01

$${}_1F_2\left(\frac{23}{4};\frac{11}{2},\frac{5}{4};z\right)=$$
$$\frac{1}{6688\sqrt{2}\,z^{13/4}}\left(3\left(4z\left(1280\,z^2+816\,z+2457\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\,\left(1024\,z^3-1152\,z^2-5172\,z-12\,285\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(2048\,z^3+7872\,z^2+31\,320\,z+61\,425\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ags5.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{5}{4}; -z\right) =$$
$$-\frac{1}{6688\sqrt{2}\, z^{13/4}}\left(3\left(-4z\left(1280z^2-816z+2457\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+4\sqrt{z}\left(1024z^3+1152z^2-5172z+12\,285\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(2048z^3-7872z^2+31\,320z-61\,425\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ags6.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{7}{4}; z\right) = \frac{1}{107\,008\, z^{9/2}}\left(9\left(2\sqrt{z}\left(2048z^3+6144z^2+19\,320z+24\,255\right)\cosh\left(2\sqrt{z}\right)+\right.\right.$$
$$\left.\left.\left(4096z^4-6656z^3-23\,280z^2-51\,660z-24\,255\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ags7.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{7}{4}; -z\right) = \frac{1}{107\,008\, z^{9/2}}\left(9\left(\left(4096z^4+6656z^3-23\,280z^2+51\,660z-24\,255\right)\sin\left(2\sqrt{z}\right)-\right.\right.$$
$$\left.\left.2\sqrt{z}\left(2048z^3-6144z^2+19\,320z-24\,255\right)\cos\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.ags8.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{9}{4}; z\right) = \frac{1}{6688\sqrt{2}\, z^{13/4}}\left(15\left(4z\left(128z^2-72z-189\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\left(320z^2+444z+945\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)I_{\frac{1}{4}}\left(\sqrt{z}\right)+\left(512z^3-864z^2-2640z-4725\right)I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.ags9.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{9}{4}; -z\right) = \frac{1}{6688\sqrt{2}\, z^{13/4}}\left(15\left(4z\left(128z^2+72z-189\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)^2+\right.\right.$$
$$\left.\left.4\sqrt{z}\left(320z^2-444z+945\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)J_{\frac{1}{4}}\left(\sqrt{z}\right)-\left(512z^3+864z^2-2640z+4725\right)J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agsa.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{11}{4}; z\right) =$$
$$\frac{1}{107\,008\, z^{9/2}}\left(63\left(2\sqrt{z}\left(512z^3-864z^2-1920z-2205\right)\cosh\left(2\sqrt{z}\right)+\left(256z^3+2640z^2+4860z+2205\right)\sinh\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agsb.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{11}{4}; -z\right) =$$
$$-\frac{1}{107\,008\, z^{9/2}}\left(63\left(2\sqrt{z}\left(512z^3+864z^2-1920z+2205\right)\cos\left(2\sqrt{z}\right)+\left(256z^3-2640z^2+4860z-2205\right)\sin\left(2\sqrt{z}\right)\right)\right)$$

07.22.03.agsc.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{13}{4}; z\right) = \frac{1}{6688\sqrt{2}\, z^{13/4}}$$
$$\left(135\left(4z(32z+21) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(64z^2-116z-105\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-64z^2+360z+525\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agsd.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{13}{4}; -z\right) = \frac{1}{6688\sqrt{2}\, z^{13/4}}$$
$$\left(135\left(4(21-32z)z J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 4\sqrt{z}\left(64z^2+116z-105\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-64z^2-360z+525\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agse.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{15}{4}; z\right) = \frac{63\left(\left(256z^3-240z^2-780z-315\right)\sinh\left(2\sqrt{z}\right) - 2\sqrt{z}\left(128z^2-360z-315\right)\cosh\left(2\sqrt{z}\right)\right)}{9728 z^{9/2}}$$

07.22.03.agsf.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{15}{4}; -z\right) = -\frac{63\left(2\sqrt{z}\left(128z^2+360z-315\right)\cos\left(2\sqrt{z}\right) + \left(256z^3+240z^2-780z+315\right)\sin\left(2\sqrt{z}\right)\right)}{9728 z^{9/2}}$$

07.22.03.agsg.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{17}{4}; z\right) =$$
$$\frac{1}{6688\sqrt{2}\, z^{13/4}}\left(1755\left(4z(8z-15) I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + 16(12-5z)\sqrt{z}\, I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(32z^2+24z-105\right) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agsh.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{17}{4}; -z\right) =$$
$$-\frac{1}{6688\sqrt{2}\, z^{13/4}}\left(1755\left(4z(8z+15) J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 - 16\sqrt{z}\,(5z+12) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + \left(-32z^2+24z+105\right) J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agsi.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{19}{4}; z\right) = \frac{945\left(2\sqrt{z}\left(32z^2+80z-105\right)\cosh\left(2\sqrt{z}\right) + \left(-176z^2+60z+105\right)\sinh\left(2\sqrt{z}\right)\right)}{9728 z^{9/2}}$$

07.22.03.agsj.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{19}{4}; -z\right) = \frac{945\left(2\sqrt{z}\left(32z^2-80z-105\right)\cos\left(2\sqrt{z}\right) + \left(-176z^2-60z+105\right)\sin\left(2\sqrt{z}\right)\right)}{9728 z^{9/2}}$$

07.22.03.agsk.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{21}{4}; z\right) = \frac{1}{53504\sqrt{2}\, z^{15/4}}$$
$$\left(29835\left(2(117-80z)\sqrt{z}\, I_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(128z^2+480z-585\right) I_{\frac{5}{4}}\left(\sqrt{z}\right) I_{\frac{1}{4}}\left(\sqrt{z}\right) - 2\sqrt{z}\,(128z+165) I_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agsl.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{21}{4}; -z\right) = -\frac{1}{53\,504\sqrt{2}\ z^{15/4}}$$
$$\left(29\,835\left(2\sqrt{z}\ (80z+117)\, J_{\frac{1}{4}}\left(\sqrt{z}\right)^2 + \left(128z^2-480z-585\right) J_{\frac{5}{4}}\left(\sqrt{z}\right) J_{\frac{1}{4}}\left(\sqrt{z}\right) + 2\,(165-128z)\sqrt{z}\ J_{\frac{5}{4}}\left(\sqrt{z}\right)^2\right)\Gamma\left(\frac{5}{4}\right)^2\right)$$

07.22.03.agsm.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{23}{4}; z\right) = \frac{945\left(\left(16z^2+180z+105\right)\sinh\left(2\sqrt{z}\right) - 10\sqrt{z}\ (8z+21)\cosh\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

07.22.03.agsn.01

$${}_1F_2\left(\frac{23}{4}; \frac{11}{2}, \frac{23}{4}; -z\right) = \frac{945\left(10\sqrt{z}\ (8z-21)\cos\left(2\sqrt{z}\right) + \left(16z^2-180z+105\right)\sin\left(2\sqrt{z}\right)\right)}{512\,z^{9/2}}$$

General characteristics

Domain and analyticity

${}_1F_2(a_1; b_1, b_2; z)$ is an analytical function of a_1, b_1, $b_2$and z which is defined in $\mathbb{C}^4$. For fixed a_1, b_1, b_2, it is an entire function of z. For fixed b_1, b_2, z, it is an entire function of a_1. For negative integer a_1, ${}_1F_2(a_1; b_1, b_2; z)$ degenerates to a polynomial in z of order $-a_1$.

07.22.04.0001.01

$$(\{a_1\} * \{b_1 * b_1\} * z) \longrightarrow {}_1F_2(a_1; b_1, b_2; z) :: (\{\mathbb{C}\} \otimes \{\mathbb{C} \otimes \mathbb{C}\} \otimes \mathbb{C}) \longrightarrow \mathbb{C}$$

Symmetries and periodicities

Mirror symmetry

07.22.04.0002.01

$${}_1F_2\left(\overline{a_1}; \overline{b_1}, \overline{b_2}; \overline{z}\right) == \overline{{}_1F_2(a_1; b_1, b_2; z)}$$

Permutation symmetry

07.22.04.0003.01

$${}_1F_2(a_1; b_1, b_2; z) == {}_1F_2(a_1; b_2, b_1; z)$$

Periodicity

No periodicity

Poles and essential singularities

With respect to z

For fixed a_1 /; $-a_1 \notin \mathbb{N}$, b_1, b_2, the function ${}_1F_2(a_1; b_1, b_2; z)$ has only one singular point at $z = \tilde{\infty}$. It is an essential singular point.

07.22.04.0004.01

$$Sing_z({}_1F_2(a_1; b_1, b_2; z)) == \{\{\tilde{\infty}, \infty\}\} /; -a_1 \notin \mathbb{N}$$

For negative integer a_1 and fixed b_1, b_2, the function ${}_1F_2(a_1; b_1, b_2; z)$ is a polynomial and has pole of order $-a_1$ at $z = \tilde{\infty}$.

07.22.04.0005.01

$$Sing_z({}_1F_2(a_1; b_1, b_2; z)) == \{\{\tilde{\infty}, -a_1\}\} /; -a_1 \in \mathbb{N}^+$$

With respect to a_1

For fixed b_1, b_2, z, the function ${}_1F_2(a_1; b_1, b_2; z)$ has only one singular point at $a_1 = \tilde{\infty}$. It is an essential singular point.

07.22.04.0006.01

$$Sing_{a_1}({}_1F_2(a_1; b_1, b_2; z)) == \{\{\tilde{\infty}, \infty\}\}$$

With respect to b_j

The function ${}_1F_2(a_1; b_1, b_2; z)$ as a function of b_2 has an infinite set of singular points:

a) $b_2 == -k /; k \in \mathbb{N}$, are the simple poles with residues $\frac{(-1)^k}{k!}\,{}_1\tilde{F}_2(a_1; -k, b_2; z)$;

b) $b_2 == \tilde{\infty}$ is the point of convergence of poles, which is an essential singular point.

The function ${}_1F_2(a_1; b_1, b_2; z)$ as a function of b_1 has an infinite set of singular points:

a) $b_1 == -k /; k \in \mathbb{N}$, are the simple poles with residues $\frac{(-1)^k}{k!}\,{}_1\tilde{F}_2(a_1; -k, b_2; z)$;

b) $b_1 == \tilde{\infty}$ is the point of convergence of poles, which is an essential singular point.

07.22.04.0007.01

$$Sing_{b_j}({}_1F_2(a_1; b_1, b_2; z)) == \{\{\{-k, 1\} /; k \in \mathbb{N}\}, \{\tilde{\infty}, \infty\}\} /; j \in \{1, 2\}$$

07.22.04.0008.01

$$\text{res}_{b_2}({}_1F_2(a_1; b_1, b_2; z))(-k) == \frac{(-1)^k}{k!}\,{}_1\tilde{F}_2(a_1; b_1, -k; z) /; k \in \mathbb{N}$$

07.22.04.0009.01

$$\text{res}_{b_1}({}_1F_2(a_1; b_1, b_2; z))(-k) == \frac{(-1)^k}{k!}\,{}_1\tilde{F}_2(a_1; -k, b_2; z) /; k \in \mathbb{N}$$

Branch points

With respect to z

The function ${}_1F_2(a_1; b_1, b_2; z)$ does not have branch points with respect to z.

07.22.04.0010.01

$$\mathcal{BP}_z({}_1F_2(a_1; b_1, b_2; z)) == \{\}$$

With respect to a_1

The function ${}_1F_2(a_1; b_1, b_2; z)$ does not have branch points with respect to a_1.

07.22.04.0011.01

$$\mathcal{BP}_{a_1}({}_1F_2(a_1; b_1, b_2; z)) == \{\}$$

With respect to b_k

The function ${}_1F_2(a_1; b_1, b_2; z)$ does not have branch points with respect to b_k.

07.22.04.0012.01

$$\mathcal{BP}_{b_k}({}_1F_2(a_1; b_1, b_2; z)) == \{\} /; k \in \{1, 2\}$$

Branch cuts

With respect to z

The function ${}_1F_2(a_1; b_1, b_2; z)$ does not have branch cuts with respect to z.

07.22.04.0013.01

$$\mathcal{BC}_z({}_1F_2(a_1; b_1, b_2; z)) == \{\}$$

With respect to a_1

The function ${}_1F_2(a_1; b_1, b_2; z)$ does not have branch cuts with respect to a_1.

07.22.04.0014.01

$$\mathcal{BC}_{a_1}({}_1F_2(a_1; b_1, b_2; z)) == \{\}$$

With respect to b_k

The function ${}_1F_2(a_1; b_1, b_2; z)$ does not have branch cuts with respect to b_k.

07.22.04.0015.01

$$\mathcal{BC}_{b_k}({}_1F_2(a_1; b_1, b_2; z)) == \{\} /; k \in \{1, 2\}$$

Series representations

Generalized power series

Expansions at generic point $z == z_0$

For the function itself

07.22.06.0014.01

$${}_1F_2(a_1; b_1, b_2; z) \propto {}_1F_2(a_1; b_1, b_2; z_0) + \frac{a_1}{b_1\, b_2}\, {}_1F_2(a_1 + 1; b_1 + 1, b_2 + 1; z_0)\ (z - z_0) + \frac{a_1\,(a_1 + 1)}{2\, b_1\,(b_1 + 1)\, b_2\,(b_2 + 1)}\, {}_1F_2(a_1 + 2; b_1 + 2, b_2 + 2; z_0)\ (z - z_0)^2 + \ldots /; (z \to z_0)$$

07.22.06.0015.01

$${}_1F_2(a_1; b_1, b_2; z) \propto {}_1F_2(a_1; b_1, b_2; z_0) + \frac{a_1}{b_1\, b_2}\, {}_1F_2(a_1 + 1; b_1 + 1, b_2 + 1; z_0)\ (z - z_0) + \frac{a_1\,(a_1 + 1)}{2\, b_1\,(b_1 + 1)\, b_2\,(b_2 + 1)}\, {}_1F_2(a_1 + 2; b_1 + 2, b_2 + 2; z_0)\ (z - z_0)^2 + O\left((z - z_0)^3\right)$$

07.22.06.0016.01

$${}_1F_2(a_1; b_1, b_2; z) == \sum_{k=0}^{\infty} \frac{(a_1)_k}{k!\left((b_1)_k\,(b_2)_k\right)}\, {}_1F_2(k + a_1; k + b_1, k + b_2; z_0)\,(z - z_0)^k$$

07.22.06.0017.01

$${}_1F_2(a_1; b_1, b_2; z) = F^{1\times 0\times 0}_{2\times 0\times 0}\left(\begin{matrix} a_1;;; \\ b_1,\ b_2;;; \end{matrix}\ z_0,\ z - z_0\right)$$

07.22.06.0018.01

$${}_1F_2(a_1;\, b_1,\, b_2;\, z) \propto {}_1F_2(a_1;\, b_1,\, b_2;\, z_0)\,(1 + O(z - z_0))$$

Expansions at $z == 0$

For the function itself

General case

07.22.06.0001.02

$${}_1F_2(a_1;\, b_1,\, b_2;\, z) \propto 1 + \frac{a_1\, z}{b_1\, b_2} + \frac{a_1\,(1 + a_1)\, z^2}{2\, b_1\,(1 + b_1)\, b_2\,(1 + b_2)} + \ldots\ /;\ (z \to 0)$$

07.22.06.0019.01

$${}_1F_2(a_1;\, b_1,\, b_2;\, z) \propto 1 + \frac{a_1\, z}{b_1\, b_2} + \frac{a_1\,(1 + a_1)\, z^2}{2\, b_1\,(1 + b_1)\, b_2\,(1 + b_2)} + O\left(z^3\right)$$

07.22.06.0002.01

$${}_1F_2(a_1;\, b_1,\, b_2;\, z) == \sum_{k=0}^{\infty} \frac{(a_1)_k\, z^k}{(b_1)_k\,(b_2)_k\, k!}$$

07.22.06.0003.02

$${}_1F_2(a_1;\, b_1,\, b_2;\, z) \propto 1 + O(z)$$

07.22.06.0020.01

$${}_1F_2(a_1;\, b_1,\, b_2;\, z) == F_\infty(z,\, a_1,\, b_1,\, b_2)\ /;$$
$$\left(\left(F_n(z,\, a_1,\, b_1,\, b_2) == \sum_{k=0}^{n} \frac{(a_1)_k\, z^k}{(b_1)_k\,(b_2)_k\, k!} == {}_1F_2(a_1;\, b_1,\, b_2;\, z) - \frac{z^{n+1}\,\Gamma(n + a_1 + 1)\,\Gamma(b_1)\,\Gamma(b_2)}{\Gamma(a_1)\,\Gamma(n + b_1 + 1)\,\Gamma(n + b_2 + 1)\,(n+1)!}\right.\right.$$
$$\left.\left.{}_2F_3(1,\, n + a_1 + 1;\, n + 2,\, n + b_1 + 1,\, n + b_2 + 1;\, z)\right) \bigwedge n \in \mathbb{N}\right)$$

Summed form of the truncated series expansion.

Expansions at $z == \infty$ for polynomial cases

07.22.06.0004.01

$${}_1F_2(-n;\, b_1,\, b_2;\, z) == \frac{(-z)^n}{(b_1)_n\,(b_2)_n}\, {}_3F_0\left(-n,\, -n - b_1 + 1,\, -n - b_2 + 1;\, ;\, \frac{1}{z}\right)\ /;\ n \in \mathbb{N}^+$$

Asymptotic series expansions

Expansions for $|\mathrm{Arg}(z)| < \pi$

07.22.06.0005.01

$${}_1F_2(a_1;\, b_1,\, b_2;\, z) \propto \frac{\Gamma(b_1)\,\Gamma(b_2)}{2\sqrt{\pi}\ \Gamma(a_1)}\, z^{\frac{1}{2}\left(a_1 - b_1 - b_2 + \frac{1}{2}\right)}\, e^{2\sqrt{z}} \left(1 + O\left(\frac{1}{\sqrt{z}}\right)\right)\ /;\ |\arg(z)| < \pi \bigwedge (|z| \to \infty)$$

The general formulas

07.22.06.0006.01

$${}_1F_2(a_1;\, b_1,\, b_2;\, z) \propto \Gamma(b_1)\,\Gamma(b_2)\,\mathcal{A}_{\tilde{F}}\left(\begin{matrix} a_1; \\ b_1,\, b_2; \end{matrix}\ \{z,\, \tilde{\infty},\, \infty\}\right) /;\ (|z| \to \infty)$$

07.22.06.0007.01

$${}_1F_2(a_1;\, b_1,\, b_2;\, z) \propto \Gamma(b_1)\,\Gamma(b_2)\left(\mathcal{A}^{(\text{power})}_{\tilde{F}}\left(\begin{matrix} a_1; \\ b_1,\, b_2; \end{matrix}\ \{z,\, \tilde{\infty},\, \infty\}\right) + \mathcal{A}^{(\text{trig})}_{\tilde{F}}\left(\begin{matrix} a_1; \\ b_1,\, b_2; \end{matrix}\ \{z,\, \tilde{\infty},\, \infty\}\right)\right) /;\ (|z| \to \infty)$$

Expansions for any z in exponential form

07.22.06.0008.01

$${}_1F_2(a_1;\, b_1,\, b_2;\, z) \propto \frac{\Gamma(b_1)\,\Gamma(b_2)}{\Gamma(b_1-a_1)\,\Gamma(b_2-a_1)}\,(-z)^{-a_1}\left(1+\frac{a_1\,(a_1-b_1+1)\,(a_1-b_2+1)}{z}+\right.$$
$$\left.\frac{1}{2\,z^2}\,(a_1\,(a_1+1)\,(a_1-b_1+1)\,(a_1-b_1+2)\,(a_1-b_2+2)\,(a_1-b_2+1))+\ldots\right)+\frac{\Gamma(b_1)\,\Gamma(b_2)}{2\,\sqrt{\pi}\;\Gamma(a_1)}\,(-z)^{\frac{1}{2}\left(a_1-b_1-b_2+\frac{1}{2}\right)}$$
$$\left(e^{-i\left(\frac{1}{2}\pi\left(a_1-b_1-b_2+\frac{1}{2}\right)+2\sqrt{-z}\right)}\left(1+\frac{d_1}{\sqrt{-z}}+\frac{d_2}{z}+\ldots\right)+e^{i\left(\frac{1}{2}\pi\left(a_1-b_1-b_2+\frac{1}{2}\right)+2\sqrt{-z}\right)}\left(1-\frac{d_1}{\sqrt{-z}}+\frac{d_2}{z}+\ldots\right)\right) /;$$
$$(|z| \to \infty) \bigwedge d_1 == \frac{1}{16}\left(i\left(-3+12\,a_1^2-4\,b_1^2+8\,b_2-4\,b_2^2+8\,b_1\,(1+b_2)-8\,a_1\,(1+b_1+b_2)\right)\right) \bigwedge$$
$$d_2 == \frac{1}{512}\left(-15+144\,a_1^4+16\,b_1^4+16\,b_2+56\,b_2^2-64\,b_2^3+16\,b_2^4-64\,b_1^3\,(1+b_2)-64\,a_1^3\,(7+3\,b_1+3\,b_2)+\right.$$
$$8\,b_1^2\left(7+8\,b_2+12\,b_2^2\right)+16\,b_1\left(1+25\,b_2+4\,b_2^2-4\,b_2^3\right)-8\,a_1^2\left(-43+4\,b_1^2-72\,b_2+4\,b_2^2-8\,b_1\,(9+5\,b_2)\right)+$$
$$\left.16\,a_1\left(-1+4\,b_1^3-25\,b_2-4\,b_2^2+4\,b_2^3-4\,b_1^2\,(1+b_2)-b_1\left(25+40\,b_2+4\,b_2^2\right)\right)\right)$$

07.22.06.0009.01

$${}_1F_2(a_1;\, b_1,\, b_2;\, z) \propto \frac{\Gamma(b_1)\,\Gamma(b_2)}{2\,\sqrt{\pi}\;\Gamma(a_1)}\,(-z)^{\chi}\left(e^{i\left(\pi\,\chi+2\sqrt{-z}\right)}\sum_{k=0}^{\infty}(-i)^k\,2^{-k}\,c_k\,(-z)^{-\frac{k}{2}}+e^{-i\left(\pi\,\chi+2\sqrt{-z}\right)}\sum_{k=0}^{\infty}i^k\,2^{-k}\,c_k\,(-z)^{-\frac{k}{2}}\right)+$$
$$\frac{\Gamma(b_1)\,\Gamma(b_2)}{\Gamma(b_1-a_1)\,\Gamma(b_2-a_1)}\,(-z)^{-a_1}\,{}_3F_0\left(a_1,\, a_1-b_1+1,\, a_1-b_2+1;\, ;\, \frac{1}{z}\right) /;$$
$$\chi == \frac{1}{2}\left(a_1-b_1-b_2+\frac{1}{2}\right) \bigwedge c_0 == 1 \bigwedge c_1 == 2\left(\frac{1}{4}\,(3\,a_1+b_1+b_2-2)\,(a_1-b_1-b_2)+b_1\,b_2-\frac{3}{16}\right) \bigwedge$$
$$c_2 == 2\left(b_1\,b_2+\frac{1}{4}\,(a_1-b_1-b_2)\,(3\,a_1+b_1+b_2-2)-\frac{3}{16}\right)^2+$$
$$\frac{1}{16}\left(-16\,(2\,a_1-3)\,b_1\,b_2+4\,(a_1-b_1-b_2)\left(-8\,a_1^2+11\,a_1+b_1+b_2-2\right)-3\right) \bigwedge$$
$$c_k == \frac{1}{2\,k}\left(\left(3\,k^2+(-6\,a_1+2\,b_1+2\,b_2-4)\,k+3\,a_1^2-(b_1-b_2)^2-2\,a_1\,(b_1+b_2-2)+\frac{1}{4}\right)c_{k-1}-\right.$$
$$\left.\left(k-a_1+b_1-b_2-\frac{1}{2}\right)\left(k-a_1-b_1+b_2-\frac{1}{2}\right)\left(k-a_1+b_1+b_2-\frac{5}{2}\right)c_{k-2}\right) \bigwedge (|z| \to \infty)$$

07.22.06.0010.01

$${}_1F_2(a_1;\, b_1,\, b_2;\, z) \propto \frac{\Gamma(b_1)\,\Gamma(b_2)}{2\,\sqrt{\pi}\;\Gamma(a_1)}\,(-z)^{\chi}\left(e^{-i\left(\pi\,\chi+2\sqrt{-z}\right)}\left(1+O\left(\frac{1}{\sqrt{-z}}\right)\right)+e^{i\left(\pi\,\chi+2\sqrt{-z}\right)}\left(1+O\left(\frac{1}{\sqrt{-z}}\right)\right)\right)+$$
$$\frac{\Gamma(b_1)\,\Gamma(b_2)}{\Gamma(b_1-a_1)\,\Gamma(b_2-a_1)}\,(-z)^{-a_1}\left(1+O\left(\frac{1}{z}\right)\right) /;\ \chi == \frac{1}{2}\left(a_1-b_1-b_2+\frac{1}{2}\right) \bigwedge (|z| \to \infty)$$

Expansions for any z in trigonometric form

07.22.06.0011.01

$$
{}_1F_2(a_1;\, b_1,\, b_2;\, z) \propto
\frac{\Gamma(b_1)\,\Gamma(b_2)}{\sqrt{\pi}\;\Gamma(a_1)}\,(-z)^{\frac{1}{2}\left(a_1-b_1-b_2+\frac{1}{2}\right)}\left(\left(1+\frac{1}{512\,z}\left(144\,a_1^4-64\,(3\,b_1+3\,b_2+7)\,a_1^3-8\left(4\,b_1^2-8\,(5\,b_2+9)\,b_1+4\,b_2^2-72\,b_2-43\right)a_1^2+\right.\right.\right.
$$
$$
16\left(4\,b_1^3-4\,(b_2+1)\,b_1^2-\left(4\,b_2^2+40\,b_2+25\right)b_1+4\,b_2^3-4\,b_2^2-25\,b_2-1\right)a_1+16\,b_1^4+16\,b_2^4-64\,b_2^3+
$$
$$
\left.\left.\left.56\,b_2^2+16\,b_2-64\,b_1^3\,(b_2+1)+8\,b_1^2\left(12\,b_2^2+8\,b_2+7\right)+16\,b_1\left(-4\,b_2^3+4\,b_2^2+25\,b_2+1\right)-15\right)+\ldots\right)
$$
$$
\cos\left(\frac{\pi}{2}\left(a_1-b_1-b_2+\frac{1}{2}\right)+2\sqrt{-z}\right)+\frac{1}{8\sqrt{-z}}\left(-3+12\,a_1^2-4\,b_1^2+8\,b_2-4\,b_2^2+8\,b_1\,(1+b_2)-8\,a_1\,(1+b_1+b_2)+\right.
$$
$$
\frac{1}{1536\,z}\left(1728\,a_1^6-1152\,(3\,b_1+3\,b_2+11)\,a_1^5+48\left(12\,b_1^2+8\,(21\,b_2+61)\,b_1+12\,b_2^2+488\,b_2+693\right)a_1^4+\right.
$$
$$
64\left(28\,b_1^3-12\,(5\,b_2+9)\,b_1^2-\left(60\,b_2^2+696\,b_2+853\right)b_1+28\,b_2^3-108\,b_2^2-853\,b_2-585\right)a_1^3-
$$
$$
12\left(16\,b_1^4+64\,(3\,b_2+7)\,b_1^3-8\left(52\,b_2^2+184\,b_2+179\right)b_1^2+16\left(12\,b_2^3-92\,b_2^2-449\,b_2-269\right)b_1+16\,b_2^4+\right.
$$
$$
448\,b_2^3-1432\,b_2^2-4304\,b_2-1323\Big)a_1^2-8\left(48\,b_1^5-144\,(b_2+1)\,b_1^4+8\left(12\,b_2^2-72\,b_2-71\right)b_1^3+\right.
$$
$$
24\left(4\,b_2^3+60\,b_2^2+141\,b_2+69\right)b_1^2+\left(-144\,b_2^4-576\,b_2^3+3384\,b_2^2+8112\,b_2+2155\right)b_1+
$$
$$
48\,b_2^5-144\,b_2^4-568\,b_2^3+1656\,b_2^2+2155\,b_2+27\Big)a_1-64\,b_1^6-64\,b_2^6+384\,b_2^5-
$$
$$
400\,b_2^4-960\,b_2^3+1364\,b_2^2+216\,b_2+384\,b_1^5\,(b_2+1)-16\,b_1^4\left(60\,b_2^2+72\,b_2+25\right)+
$$
$$
64\,b_1^3\left(20\,b_2^3+12\,b_2^2-71\,b_2-15\right)+b_1^2\left(-960\,b_2^4+768\,b_2^3+9888\,b_2^2+13\,248\,b_2+1364\right)+
$$
$$
\left.\left.8\,b_1\left(48\,b_2^5-144\,b_2^4-568\,b_2^3+1656\,b_2^2+2155\,b_2+27\right)-315\right)+
$$
$$
\left.\left.\ldots\right)\sin\left(\frac{\pi}{2}\left(a_1-b_1-b_2+\frac{1}{2}\right)+2\sqrt{-z}\right)\right)/;\,(|z|\to\infty)
$$

07.22.06.0012.01

$$
{}_1F_2(a_1;\, b_1,\, b_2;\, z) \propto \Gamma(b_1)\,\Gamma(b_2)
$$
$$
\left(\frac{(-z)^{-a_1}}{\Gamma(b_1-a_1)\,\Gamma(b_2-a_1)}\left(1+O\left(\frac{1}{z}\right)\right)+\frac{1}{\sqrt{\pi}\;\Gamma(a_1)}\,(-z)^{\frac{1}{2}\left(a_1-b_1-b_2+\frac{1}{2}\right)}\left(\cos\left(\frac{\pi}{2}\left(a_1-b_1-b_2+\frac{1}{2}\right)+2\sqrt{-z}\right)\left(1+O\left(\frac{1}{z}\right)\right)+\right.\right.
$$
$$
\frac{1}{16\sqrt{-z}}\left(\left(12\,a_1^2-8\,(b_1+b_2+1)\,a_1-4\,b_1^2-4\,b_2^2+8\,(b_2+1)\,b_1+8\,b_2-3\right)\right.
$$
$$
\left.\left.\left.\sin\left(\frac{\pi}{2}\left(a_1-b_1-b_2+\frac{1}{2}\right)+2\sqrt{-z}\right)\left(1+O\left(\frac{1}{z}\right)\right)\right)\right)\right)/;\,(|z|\to\infty)
$$

Residue representations

07.22.06.0013.01

$$
{}_1F_2(a_1;\, b_1,\, b_2;\, z) == \frac{\Gamma(b_1)\,\Gamma(b_2)}{\Gamma(a_1)}\sum_{j=0}^{\infty}\operatorname{res}_s\left(\frac{\Gamma(a_1-s)\,(-z)^{-s}}{\Gamma(b_1-s)\,\Gamma(b_2-s)}\,\Gamma(s)\right)(-j)
$$

Limit representations

07.22.09.0001.01

$$
{}_1F_2(a_1;\, b_1,\, b_2;\, z) == \lim_{p\to\infty}{}_2F_2\left(a_1,\, p;\, b_1,\, b_2;\, \frac{z}{p}\right)
$$

07.22.09.0002.01

$${}_1F_2(a_1;\, b_1,\, b_2;\, z) == \lim_{q\to\infty} \lim_{p\to\infty} {}_3F_2\left(a_1,\, p,\, q;\, b_1,\, b_2;\, \frac{z}{p\,q}\right)$$

Continued fraction representations

07.22.10.0001.01

$${}_1F_2(a_1;\, b_1,\, b_2;\, z) == 1 + \frac{a_1\, z}{b_1\, b_2} \Bigg/ \left(1 + -\frac{z\,(1+a_1)}{2\,(1+b_1)\,(1+b_2)} \Bigg/ \left(1 + \frac{z\,(1+a_1)}{2\,(1+b_1)\,(1+b_2)} + \frac{-\frac{z\,(2+a_1)}{3\,(2+b_1)\,(2+b_2)}}{1 + \frac{z\,(2+a_1)}{3\,(2+b_1)\,(2+b_2)} + \frac{-\frac{z\,(3+a_1)}{4\,(3+b_1)\,(3+b_2)}}{1+\frac{z\,(3+a_1)}{4\,(3+b_1)\,(3+b_2)}+\ldots}}\right)\right)$$

07.22.10.0002.01

$${}_1F_2(a_1;\, b_1,\, b_2;\, z) == 1 + \frac{a_1\, z}{b_1\, b_2\left(1 + \mathrm{K}_k\left(-\frac{(k+a_1)\,z}{(k+1)\,(k+b_1)\,(k+b_2)},\, \frac{(k+a_1)\,z}{(k+1)\,(k+b_1)\,(k+b_2)} + 1\right)_1^\infty\right)}$$

Differential equations

Ordinary linear differential equations and wronskians

For the direct function itself

07.22.13.0002.01

$$w^{(3)}(z)\, z^2 + (b_1 + b_2 + 1)\, w''(z)\, z - a_1\, w(z) + (b_1\, b_2 - z)\, w'(z) = 0\ /;$$
$$w(z) = c_1\, {}_1\tilde{F}_2(a_1;\, b_1,\, b_2;\, z) + c_2\left(G^{2,1}_{1,3}\left(z \,\middle|\, \begin{matrix} 1-a_1 \\ 0,\, 1-b_1,\, 1-b_2 \end{matrix}\right) + G^{2,1}_{1,3}\left(z \,\middle|\, \begin{matrix} 1-a_1 \\ 0,\, 1-b_2,\, 1-b_1 \end{matrix}\right)\right) + c_3\, G^{3,1}_{1,3}\left(-z \,\middle|\, \begin{matrix} 1-a_1 \\ 0,\, 1-b_1,\, 1-b_2 \end{matrix}\right)$$

07.22.13.0003.01

$$W_z\left({}_1\tilde{F}_2(a_1;\, b_1,\, b_2;\, z),\, G^{2,1}_{1,3}\left(z \,\middle|\, \begin{matrix} 1-a_1 \\ 0,\, 1-b_1,\, 1-b_2 \end{matrix}\right) + G^{2,1}_{1,3}\left(z \,\middle|\, \begin{matrix} 1-a_1 \\ 0,\, 1-b_2,\, 1-b_1 \end{matrix}\right),\, G^{3,1}_{1,3}\left(-z \,\middle|\, \begin{matrix} 1-a_1 \\ 0,\, 1-b_1,\, 1-b_2 \end{matrix}\right)\right) =$$
$$(-z)^{-b_1-b_2}\, z^{-b_1-b_2-1}\left(z^{b_2}\,(-z)^{b_1} + z^{b_1}\,(-z)^{b_2}\right)\Gamma(a_1 - b_1 + 1)\,\Gamma(a_1 - b_2 + 1)$$

07.22.13.0004.01

$$z^2\, w^{(3)}(z) + (b_1 + b_2 + 1)\, w''(z)\, z - a_1\, w(z) + (b_1\, b_2 - z)\, w'(z) == 0\ /;$$
$$w(z) == c_1\, {}_1\tilde{F}_2(a_1;\, b_1,\, b_2;\, z) + c_2\, z^{1-b_1}\, {}_1\tilde{F}_2(a_1 - b_1 + 1;\, 2 - b_1,\, 1 - b_1 + b_2;\, z) +$$
$$c_3\, z^{1-b_2}\, {}_1\tilde{F}_2(a_1 - b_2 + 1;\, 2 - b_2,\, b_1 - b_2 + 1;\, z) \bigwedge b_1 \notin \mathbb{Z} \bigwedge b_2 \notin \mathbb{Z} \bigwedge b_1 - b_2 \notin \mathbb{Z}$$

07.22.13.0005.01

$$W_z\left({}_1\tilde{F}_2(a_1;\, b_1,\, b_2;\, z),\, z^{1-b_1}\, {}_1\tilde{F}_2(a_1 - b_1 + 1;\, 2 - b_1,\, -b_1 + b_2 + 1;\, z),\, z^{1-b_2}\, {}_1\tilde{F}_2(a_1 - b_2 + 1;\, 2 - b_2,\, b_1 - b_2 + 1;\, z)\right) =$$
$$\frac{\sin(\pi\, b_1)\,\sin(\pi\, b_2)\,\sin(\pi\,(b_1 - b_2))}{\pi^3}\, z^{-b_1-b_2-1}$$

07.22.13.0001.01

$$z^2\, w^{(3)}(z) + (b_1 + b_2 + 1)\, w''(z)\, z - a_1\, w(z) + (b_1\, b_2 - z)\, w'(z) == 0\ /;$$
$$w(z) == c_1\, {}_1F_2(a_1;\, b_1,\, b_2;\, z) + c_2\, z^{1-b_1}\, {}_1F_2(a_1 - b_1 + 1;\, 2 - b_1,\, -b_1 + b_2 + 1;\, z) +$$
$$c_3\, z^{1-b_2}\, {}_1F_2(a_1 - b_2 + 1;\, 2 - b_2,\, b_1 - b_2 + 1;\, z) \bigwedge b_1 \notin \mathbb{Z} \bigwedge b_2 \notin \mathbb{Z} \bigwedge b_1 - b_2 \notin \mathbb{Z}$$

07.22.13.0006.01

$$W_z\left({}_1F_2(a_1;\, b_1,\, b_2;\, z),\, z^{1-b_1}\, {}_1F_2(a_1-b_1+1;\, 2-b_1,\, -b_1+b_2+1;\, z),\, z^{1-b_2}\, {}_1F_2(a_1-b_2+1;\, 2-b_2,\, b_1-b_2+1;\, z)\right) =$$
$$(b_1-1)\,(b_2-1)\,(b_1-b_2)\,z^{-b_1-b_2-1}$$

07.22.13.0007.01

$$w^{(3)}(z)+\left(\frac{(b_1+b_2+1)\,g'(z)}{g(z)}-\frac{3\,g''(z)}{g'(z)}\right)w''(z)-\frac{a_1\,g'(z)^3}{g(z)^2}\,w(z)+$$
$$\left(\frac{b_1\,b_2\,g'(z)^2}{g(z)^2}+\frac{3\,g''(z)^2-g'(z)\,g^{(3)}(z)}{g'(z)^2}-\frac{g'(z)^2+(b_1+b_2+1)\,g''(z)}{g(z)}\right)w'(z)=0\;/;\; w(z)=c_1\,{}_1\tilde{F}_2(a_1;\, b_1,\, b_2;\, g(z))\;+$$
$$c_2\left(G^{2,1}_{1,3}\left(g(z)\,\middle|\,\begin{matrix}1-a_1\\ 0,\, 1-b_1,\, 1-b_2\end{matrix}\right)+G^{2,1}_{1,3}\left(g(z)\,\middle|\,\begin{matrix}1-a_1\\ 0,\, 1-b_2,\, 1-b_1\end{matrix}\right)\right)+c_3\,G^{3,1}_{1,3}\left(-g(z)\,\middle|\,\begin{matrix}1-a_1\\ 0,\, 1-b_1,\, 1-b_2\end{matrix}\right)$$

07.22.13.0008.01

$$W_z\left({}_1\tilde{F}_2(a_1;\, b_1,\, b_2;\, g(z)),\, G^{2,1}_{1,3}\left(g(z)\,\middle|\,\begin{matrix}1-a_1\\ 0,\, 1-b_1,\, 1-b_2\end{matrix}\right)+G^{2,1}_{1,3}\left(g(z)\,\middle|\,\begin{matrix}1-a_1\\ 0,\, 1-b_2,\, 1-b_1\end{matrix}\right),\, G^{3,1}_{1,3}\left(-g(z)\,\middle|\,\begin{matrix}1-a_1\\ 0,\, 1-b_1,\, 1-b_2\end{matrix}\right)\right)==$$
$$(-g(z))^{-b_1-b_2}\,g(z)^{-b_1-b_2-1}\left(g(z)^{b_2}\,(-g(z))^{b_1}+g(z)^{b_1}\,(-g(z))^{b_2}\right)\Gamma(a_1-b_1+1)\,\Gamma(a_1-b_2+1)\,g'(z)^3$$

07.22.13.0009.01

$$w^{(3)}(z)+\left(\frac{(b_1+b_2+1)\,g'(z)}{g(z)}-\frac{3\,h'(z)}{h(z)}-\frac{3\,g''(z)}{g'(z)}\right)w''(z)+$$
$$\left(\frac{b_1\,b_2\,g'(z)^2}{g(z)^2}-\frac{2\,(b_1+b_2+1)\,h'(z)\,g'(z)}{g(z)\,h(z)}+\frac{6\,h'(z)^2}{h(z)^2}+\frac{6\,h'(z)\,g''(z)}{h(z)\,g'(z)}+\frac{3\,g''(z)^2-g'(z)\,g^{(3)}(z)}{g'(z)^2}-\right.$$
$$\left.\frac{g'(z)^2+(b_1+b_2+1)\,g''(z)}{g(z)}-\frac{3\,h''(z)}{h(z)}\right)w'(z)+\left(-\frac{a_1\,g'(z)^3}{g(z)^2}-\frac{b_1\,b_2\,h'(z)\,g'(z)^2}{g(z)^2\,h(z)}+\frac{2\,(b_1+b_2+1)\,h'(z)^2\,g'(z)}{g(z)\,h(z)^2}+\right.$$
$$\frac{6\,h'(z)\,h''(z)}{h(z)^2}+\frac{h'(z)\,g'(z)^2-(b_1+b_2+1)\,h''(z)\,g'(z)+(b_1+b_2+1)\,h'(z)\,g''(z)}{g(z)\,h(z)}+$$
$$\left.\frac{3\,g''(z)\,h''(z)+h'(z)\,g^{(3)}(z)}{h(z)\,g'(z)}-\frac{h^{(3)}(z)}{h(z)}-\frac{6\,h'(z)^3}{h(z)^3}-\frac{6\,h'(z)^2\,g''(z)}{h(z)^2\,g'(z)}-\frac{3\,h'(z)\,g''(z)^2}{h(z)\,g'(z)^2}\right)w(z)=0\;/;$$
$$w(z)=c_1\,h(z)\,{}_1\tilde{F}_2(a_1;\, b_1,\, b_2;\, g(z))\;+c_2\,h(z)\left(G^{2,1}_{1,3}\left(g(z)\,\middle|\,\begin{matrix}1-a_1\\ 0,\, 1-b_1,\, 1-b_2\end{matrix}\right)+G^{2,1}_{1,3}\left(g(z)\,\middle|\,\begin{matrix}1-a_1\\ 0,\, 1-b_2,\, 1-b_1\end{matrix}\right)\right)+$$
$$c_3\,h(z)\,G^{3,1}_{1,3}\left(-g(z)\,\middle|\,\begin{matrix}1-a_1\\ 0,\, 1-b_1,\, 1-b_2\end{matrix}\right)$$

07.22.13.0010.01

$$W_z\left(h(z)\,{}_1\tilde{F}_2(a_1;\, b_1,\, b_2;\, g(z)),\right.$$
$$\left.h(z)\left(G^{2,1}_{1,3}\left(g(z)\,\middle|\,\begin{matrix}1-a_1\\ 0,\, 1-b_1,\, 1-b_2\end{matrix}\right)+G^{2,1}_{1,3}\left(g(z)\,\middle|\,\begin{matrix}1-a_1\\ 0,\, 1-b_2,\, 1-b_1\end{matrix}\right)\right),\, h(z)\,G^{3,1}_{1,3}\left(-g(z)\,\middle|\,\begin{matrix}1-a_1\\ 0,\, 1-b_1,\, 1-b_2\end{matrix}\right)\right)==$$
$$(-g(z))^{-b_1-b_2}\,g(z)^{-b_1-b_2-1}\left(g(z)^{b_2}\,(-g(z))^{b_1}+g(z)^{b_1}\,(-g(z))^{b_2}\right)\Gamma(a_1-b_1+1)\,\Gamma(a_1-b_2+1)\,g'(z)^3\,h(z)^3$$

07.22.13.0011.01

$$z^3\,w^{(3)}(z)\;+((b_1+b_2)\,r-2\,r-3\,s+3)\,z^2\,w''(z)\;+$$
$$\left((1-a\,z^r)\,r^2+(4\,s-2)\,r-(r+2\,s-1)\,b_2\,r+b_1\,(b_2\,r-r-2\,s+1)\,r+3\,(s-1)\,s+1\right)z\,w'(z)+$$
$$\left(-a\,r^2\,(r\,a_1-s)\,z^r-s\,(-b_1\,r+r+s)\,(-b_2\,r+r+s)\right)w(z)=0\;/;\; w(z)=c_1\,z^s\,{}_1\tilde{F}_2(a_1;\, b_1,\, b_2;\, a\,z^r)\;+$$
$$c_2\,z^s\left(G^{2,1}_{1,3}\left(a\,z^r\,\middle|\,\begin{matrix}1-a_1\\ 0,\, 1-b_1,\, 1-b_2\end{matrix}\right)+G^{2,1}_{1,3}\left(a\,z^r\,\middle|\,\begin{matrix}1-a_1\\ 0,\, 1-b_2,\, 1-b_1\end{matrix}\right)\right)+c_3\,z^s\,G^{3,1}_{1,3}\left(-a\,z^r\,\middle|\,\begin{matrix}1-a_1\\ 0,\, 1-b_1,\, 1-b_2\end{matrix}\right)$$

07.22.13.0012.01

$$W_z\left(z^s\ {}_1\tilde{F}_2(a_1;\ b_1,\ b_2;\ a\,z^r),\right.$$
$$\left. z^s\left(G^{2,1}_{1,3}\left(a\,z^r\ \middle|\ \begin{matrix}1-a_1\\ 0,\ 1-b_1,\ 1-b_2\end{matrix}\right)+G^{2,1}_{1,3}\left(a\,z^r\ \middle|\ \begin{matrix}1-a_1\\ 0,\ 1-b_2,\ 1-b_1\end{matrix}\right)\right),\ z^s\ G^{3,1}_{1,3}\left(-a\,z^r\ \middle|\ \begin{matrix}1-a_1\\ 0,\ 1-b_1,\ 1-b_2\end{matrix}\right)\right)==$$
$$a^3\,r^3\,z^{3\,r+3\,s-3}\,(-a\,z^r)^{-b_1-b_2}\,(a\,z^r)^{-b_1-b_2-1}\left((a\,z^r)^{b_2}\,(-a\,z^r)^{b_1}+(a\,z^r)^{b_1}\,(-a\,z^r)^{b_2}\right)\Gamma(a_1-b_1+1)\,\Gamma(a_1-b_2+1)$$

07.22.13.0013.01

$$w^{(3)}(z)+((b_1+b_2+1)\log(r)-3\log(r)-3\log(s))\,w''(z)+$$
$$\left((1-a\,r^z)\log^2(r)+4\log(s)\log(r)-(\log(r)+2\log(s))\,b_2\log(r)+b_1\,(b_2\log(r)-\log(r)-2\log(s))\log(r)+3\log^2(s)\right)w'(z)+$$
$$\left(-a\log^2(r)\,(\log(r)\,a_1-\log(s))\,r^z-\log(s)\,(-b_1\log(r)+\log(r)+\log(s))\,(-b_2\log(r)+\log(r)+\log(s))\right)w(z)=0\ /;$$
$$w(z)=c_1\,s^z\ {}_1\tilde{F}_2(a_1;\ b_1,\ b_2;\ a\,r^z)\ +c_2\,s^z\left(G^{2,1}_{1,3}\left(a\,r^z\ \middle|\ \begin{matrix}1-a_1\\ 0,\ 1-b_1,\ 1-b_2\end{matrix}\right)+G^{2,1}_{1,3}\left(a\,r^z\ \middle|\ \begin{matrix}1-a_1\\ 0,\ 1-b_2,\ 1-b_1\end{matrix}\right)\right)+$$
$$c_3\,s^z\,G^{3,1}_{1,3}\left(-a\,r^z\ \middle|\ \begin{matrix}1-a_1\\ 0,\ 1-b_1,\ 1-b_2\end{matrix}\right)$$

07.22.13.0014.01

$$W_z\left(s^z\ {}_1\tilde{F}_2(a_1;\ b_1,\ b_2;\ a\,r^z),\right.$$
$$\left. s^z\left(G^{2,1}_{1,3}\left(a\,r^z\ \middle|\ \begin{matrix}1-a_1\\ 0,\ 1-b_1,\ 1-b_2\end{matrix}\right)+G^{2,1}_{1,3}\left(a\,r^z\ \middle|\ \begin{matrix}1-a_1\\ 0,\ 1-b_2,\ 1-b_1\end{matrix}\right)\right),\ s^z\ G^{3,1}_{1,3}\left(-a\,r^z\ \middle|\ \begin{matrix}1-a_1\\ 0,\ 1-b_1,\ 1-b_2\end{matrix}\right)\right)==$$
$$a^3\,r^{3\,z}\,(-a\,r^z)^{-b_1-b_2}\,(a\,r^z)^{-b_1-b_2-1}\left((a\,r^z)^{b_2}\,(-a\,r^z)^{b_1}+(a\,r^z)^{b_1}\,(-a\,r^z)^{b_2}\right)s^{3\,z}\,\Gamma(a_1-b_1+1)\,\Gamma(a_1-b_2+1)\log^3(r)$$

Transformations

Products, sums, and powers of the direct function

Products of the direct function

07.22.16.0001.01

$${}_1F_2(a_1;\ b_1,\ b_2;\ c\,z)\ {}_1F_2(\alpha_1;\ \beta_1,\ \beta_2;\ d\,z)==\sum_{k=0}^{\infty}c_k\,z^k\ /;$$

$$c_k==\frac{d^k\,(\alpha_1)_k}{k!\,(\beta_1)_k\,(\beta_2)_k}\ {}_4F_3\left(-k,\ 1-k-\beta_1,\ 1-k-\beta_2,\ a_1;\ 1-k-\alpha_1,\ b_1,\ b_2;\ \frac{c}{d}\right)\bigvee$$

$$c_k==\frac{c^k\,(a_1)_k}{k!\,(b_1)_k\,(b_2)_k}\ {}_4F_3\left(-k,\ 1-k-b_1,\ 1-k-b_2,\ \alpha_1;\ 1-k-a_1,\ \beta_1,\ \beta_2;\ \frac{d}{c}\right)$$

07.22.16.0002.01

$${}_1F_2(a_1;\ b_1,\ b_2;\ c\,z)\ {}_1F_2(\alpha_1;\ \beta_1,\ \beta_2;\ d\,z)==\sum_{k=0}^{\infty}\sum_{m=0}^{k}\frac{(a_1)_m\,(\alpha_1)_{k-m}\,c^m\,d^{k-m}\,z^k}{(b_1)_m\,(b_2)_m\,m!\,(\beta_1)_{k-m}\,(\beta_2)_{k-m}\,(k-m)!}$$

07.22.16.0003.01

$${}_1F_2(a_1;\ b_1,\ b_2;\ c\,z)\ {}_1F_2(\alpha_1;\ \beta_1,\ \beta_2;\ d\,z)==F^{0:1;1}_{0:2;2}\left(\begin{matrix}:\ a_1;\ \alpha_1;\\ :\ b_1,\ b_2;\ \beta_1,\ \beta_2;\end{matrix}\ c\,z,\ d\,z\right)$$

Identities

Recurrence identities

Consecutive neighbors

07.22.17.0001.01

$${}_1F_2(a; b_1, b_2; z) == (B_1 + C_1 z)\,{}_1F_2(a+1; b_1, b_2; z) + B_2\,{}_1F_2(a+2; b_1, b_2; z) + B_3\,{}_1F_2(a+3; b_1, b_2; z) \;/;$$

$$B_1 == \frac{b_1 b_2 + (a+1)(3a - 2b_1 - 2b_2 + 4)}{(a - b_1 + 1)(a - b_2 + 1)} \bigwedge C_1 == -\frac{1}{(a - b_1 + 1)(a - b_2 + 1)} \bigwedge$$

$$B_2 == \frac{(a+1)(-3a + b_1 + b_2 - 5)}{(a - b_1 + 1)(a - b_2 + 1)} \bigwedge B_3 == \frac{(a+1)(a+2)}{(a - b_1 + 1)(a - b_2 + 1)}$$

07.22.17.0002.01

$${}_1F_2(a; b_1, b_2; z) == B_1\,{}_1F_2(a-1; b_1, b_2; z) + (B_2 + C_2 z)\,{}_1F_2(a-2; b_1, b_2; z) + B_3\,{}_1F_2(a-3; b_1, b_2; z) \;/;$$

$$B_1 == \frac{b_1 + b_2 - 3a + 4}{1 - a} \bigwedge B_2 == \frac{(a-2)(2b_1 + 2b_2 - 3a + 5) - b_1 b_2}{(a-1)(a-2)} \bigwedge$$

$$C_2 == \frac{1}{(a-1)(a-2)} \bigwedge B_3 == \frac{(a - b_1 - 2)(a - b_2 - 2)}{(a-1)(a-2)}$$

07.22.17.0003.01

$${}_1F_2(a_1; b, b_2; z) == {}_1F_2(a_1; b+1, b_2; z)\,B_1 + (B_2 + C_2 z)\,{}_1F_2(a_1; b+2, b_2; z) + C_3 z\,{}_1F_2(a_1; b+3, b_2; z) \;/;$$

$$B_1 == \frac{2b - b_2 + 2}{b} \bigwedge B_2 == \frac{b_2 - b - 2}{b} \bigwedge C_2 == \frac{1}{b(b+1)} \bigwedge C_3 == \frac{a_1 - b - 2}{b(b+1)(b+2)}$$

07.22.17.0004.01

$${}_1F_2(a_1; b, b_2; z) == \frac{B_1 + z C_1}{z}\,{}_1F_2(a_1; b-1, b_2; z) + \frac{B_2}{z}\,{}_1F_2(a_1; b-2, b_2; z) + \frac{B_3}{z}\,{}_1F_2(a_1; b-3, b_2; z) \;/;$$

$$B_1 == \frac{(b-1)(b-2)(b_2 - b + 1)}{b - a_1 - 1} \bigwedge C_1 == \frac{b-1}{b - a_1 - 1} \bigwedge B_2 == \frac{(b-1)(b-2)(2b - b_2 - 4)}{b - a_1 - 1} \bigwedge B_3 == -\frac{(b-1)(b-2)(b-3)}{b - a_1 - 1}$$

Functional identities

Relations between contiguous functions

07.22.17.0005.01

$$b\,{}_1F_2(a; b, b_2; z) - a\,{}_1F_2(a+1; b+1, b_2; z) + (a - b)\,{}_1F_2(a; b+1, b_2; z) == 0$$

07.22.17.0006.01

$$(b - c)\,{}_1F_2(a_1; b+1, c+1; z) + c\,{}_1F_2(a_1; b+1, c; z) - b\,{}_1F_2(a_1; b, c+1; z) == 0$$

07.22.17.0007.01

$$a(b - c)\,{}_1F_2(a+1; b+1, c+1; z) - c(b - a)\,{}_1F_2(a; b+1, c; z) + (c - a) b\,{}_1F_2(a; b, c+1; z) == 0$$

07.22.17.0008.01

$$z\,{}_1F_2(a+1; b+1, c+1; z) + b c\,({}_1F_2(a; b, c; z) - {}_1F_2(a+1; b, c; z)) == 0$$

07.22.17.0009.01

$$b(b+1) c\,({}_1F_2(a; b, c; z) - {}_1F_2(a; b+1, c; z)) - a z\,{}_1F_2(a+1; b+2, c+1; z) == 0$$

07.22.17.0010.01

$$(b+1) b c\,({}_1F_2(a; b, c; z) - {}_1F_2(a+1; b+1, c; z)) + (b - a) z\,{}_1F_2(a+1; b+2, c+1; z) == 0$$

Relations of special kind

07.22.17.0011.01

$${}_1F_2(a_1; -c, c+1; z) + {}_1F_2(a_1; c, 1-c; z) == 2\,{}_1F_2(a_1; c+1, 1-c; z)$$

07.22.17.0012.01

$${}_1F_2(a;\,-a,\,a+1;\,z)-2\,{}_1F_2(a;\,1-a,\,a+1;\,z)==-{}_0F_1(;\,1-a;\,z)$$

07.22.17.0013.01

$${}_1F_2(-a;\,1-a,\,b_2;\,z)+{}_1F_2(a;\,a+1,\,b_2;\,z)==2\,{}_2F_3(a,\,-a;\,a+1,\,1-a,\,b_2;\,z)$$

Division on even and odd parts and generalization

07.22.17.0014.01

$${}_1F_2(a_1;\,b_1,\,b_2;\,z)==A^+(z)+A^-(z)\;/;$$
$$A^+(z)==\frac{1}{2}\left({}_1F_2(a_1;\,b_1,\,b_2;\,z)+{}_1F_2(a_1;\,b_1,\,b_2;\,-z)\right)\bigwedge A^-(z)==\frac{1}{2}\left({}_1F_2(a_1;\,b_1,\,b_2;\,z)-{}_1F_2(a_1;\,b_1,\,b_2;\,-z)\right)$$

07.22.17.0015.01

$${}_1F_2(a_1;\,b_1,\,b_2;\,z)==A^+(z)+A^-(z)\;/;\;A^+(z)==\,{}_2F_5\left(\frac{a_1}{2},\,\frac{a_1+1}{2};\,\frac{1}{2},\,\frac{b_1}{2},\,\frac{b_2}{2},\,\frac{b_1+1}{2},\,\frac{b_2+1}{2};\,\frac{z^2}{16}\right)\bigwedge$$
$$A^-(z)==\frac{z\,a_1}{b_1\,b_2}\,{}_2F_5\left(\frac{a_1+1}{2},\,\frac{a_1+2}{2};\,\frac{3}{2},\,\frac{b_1+1}{2},\,\frac{b_2+1}{2},\,\frac{b_1+2}{2},\,\frac{b_2+2}{2};\,\frac{z^2}{16}\right)$$

07.22.17.0016.01

$${}_1F_2(a_1;\,b_1,\,b_2;\,z)==\sum_{k=0}^{n-1}\frac{z^k\,(a_1)_k}{k!\,(b_1)_k\,(b_2)_k}$$
$${}_{n\,p+1}F_{n\,q+n}\left(1,\,\frac{a_1+k}{n},\,\ldots,\,\frac{a_1+k+n-1}{n};\,\frac{k+1}{n},\,\ldots,\,\frac{k+n}{n},\,\frac{b_1+k}{n},\,\ldots,\,\frac{b_1+k+n-1}{n},\,\frac{b_2+k}{n},\,\ldots,\,\frac{b_2+k+n-1}{n};\,n^{-2\,n}\,z^n\right)$$

Differentiation

Low-order differentiation

With respect to a_1

07.22.20.0001.01

$${}_1\,F_2^{([1],\{0,0\},0)}(\{a_1\},\,\{b_1,\,b_2\},\,z)==\sum_{k=0}^{\infty}\frac{(a_1)_k\,\psi(k+a_1)\,z^k}{(b_1)_k\,(b_2)_k\,k!}-\psi(a_1)\,{}_1F_2(a_1;\,b_1,\,b_2;\,z)$$

07.22.20.0002.01

$${}_1\,F_2^{([1],\{0,0\},0)}(\{a_1\},\,\{b_1,\,b_2\},\,z)==\frac{z}{b_1\,b_2}\,F_{3\times0\times1}^{1\times1\times2}\left(\begin{matrix}a_1+1;\,1;\,1,\,a_1;\\ 2,\,b_1+1,\,b_2+1;;\,a_1+1;\end{matrix}\,z,\,z\right)$$

With respect to b_1

07.22.20.0003.01

$${}_1\,F_2^{([0],\{1,0\},0)}(\{a_1\},\,\{b_1,\,b_2\},\,z)==\psi(b_1)\,{}_1F_2(a_1;\,b_1,\,b_2;\,z)-\sum_{k=0}^{\infty}\frac{(a_1)_k\,\psi(k+b_1)\,z^k}{(b_1)_k\,(b_2)_k\,k!}$$

07.22.20.0004.01

$${}_1\,F_2^{([0],\{1,0\},0)}(\{a_1\},\,\{b_1,\,b_2\},\,z)==-\frac{z\,a_1}{b_1^2\,b_2}\,F_{3\times0\times1}^{1\times1\times2}\left(\begin{matrix}a_1+1;\,1;\,1,\,b_1;\\ 2,\,b_1+1,\,b_2+1;;\,b_1+1;\end{matrix}\,z,\,z\right)$$

With respect to b_2

07.22.20.0005.01

$${}_1F_2^{(\{0\},\{0,1\},0)}(\{a_1\},\{b_1,b_2\},z) == \psi(b_2)\,{}_1F_2(a_1;b_1,b_2;z) - \sum_{k=0}^{\infty}\frac{(a_1)_k\,\psi(k+b_2)\,z^k}{(b_1)_k\,(b_2)_k\,k!}$$

07.22.20.0006.01

$${}_1F_2^{(\{0\},\{0,1\},0)}(\{a_1\},\{b_1,b_2\},z) == -\frac{z\,a_1}{b_2^2\,b_1}\,F_{3\times 0\times 1}^{1\times 1\times 2}\left(\begin{matrix}a_1+1;\,1;\,1,\,b_2;\\ 2,\,b_1+1,\,b_2+1;;\,b_2+1;\end{matrix}\,z,\,z\right)$$

With respect to element of parameters ||| With respect to element of parameters

07.22.20.0007.01

$$\frac{\partial_1 F_2(a;a+1,b_2;z)}{\partial a} == \frac{z}{b_2\,(a+1)^2}\,{}_2F_3(a+1,a+1;a+2,a+2,b_2+1;z)$$

07.22.20.0008.01

$$\frac{\partial_1 F_2(a+1;a,b_2;z)}{\partial a} == -\frac{z}{b_2\,a^2}\,{}_0F_1(;b_2+1;z)$$

07.22.20.0009.01

$$\frac{\partial_1 F_2\left(1;b,b+\frac{1}{2};z\right)}{\partial b}\Big|_{b=1} == \frac{1}{\sqrt{z}}\left(\mathrm{Chi}\left(2\sqrt{z}\right)\sinh\left(2\sqrt{z}\right)-\cosh\left(2\sqrt{z}\right)\mathrm{Shi}\left(2\sqrt{z}\right)-\left(\log(2)+\frac{\log(z)}{2}+\gamma-1\right)\sinh\left(2\sqrt{z}\right)\right)$$

07.22.20.0010.01

$$\frac{\partial_1 F_2\left(1;b,b-\frac{1}{2};z\right)}{\partial b}\Big|_{b=1} == 2\cosh\left(2\sqrt{z}\right)\mathrm{Chi}\left(2\sqrt{z}\right)-2\sinh\left(2\sqrt{z}\right)\mathrm{Shi}\left(2\sqrt{z}\right)-\cosh\left(2\sqrt{z}\right)(2\log(2)+\log(z)+2\gamma)$$

07.22.20.0011.01

$$\frac{\partial_1 F_2(1;b,b+n;z)}{\partial b}\Big|_{b=1} ==$$

$$(n-1)!\,z^{-\frac{n}{2}}\left(I_n\left(2\sqrt{z}\right)(1-\log(z)\,n+\psi(n)\,n-\gamma\,n)+(-1)^{n-1}\,n\left(2\,K_n\left(2\sqrt{z}\right)-\sum_{k=0}^{n-1}\frac{(-1)^k\,(n-k-1)!\,z^{k-\frac{n}{2}}}{k!}\right)\right)/;\,n\in\mathbb{N}^+$$

With respect to z

07.22.20.0012.01

$$\frac{\partial_1 F_2(a_1;b_1,b_2;z)}{\partial z} == \frac{a_1}{b_1\,b_2}\,{}_1F_2(a_1+1;b_1+1,b_2+1;z)$$

07.22.20.0013.01

$$\frac{\partial^n\,{}_1F_2(a_1;b_1,b_2;z)}{\partial z^n} == \frac{(a_1)_n}{\prod_{j=1}^{2}(b_j)_n}\,{}_1F_2(n+a_1;n+b_1,n+b_2;z)\,/;\,n\in\mathbb{N}^+$$

Symbolic differentiation

With respect to a_1

07.22.20.0014.02

$${}_1F_2^{(\{n\},\{0,0\},0)}(\{a_1\},\{b_1,b_2\},z) == \sum_{k=0}^{\infty}\frac{1}{k!\,(b_1)_k\,(b_2)_k}\,\frac{\partial^n(a_1)_k}{\partial a_1^n}\,z^k\,/;\,n\in\mathbb{N}$$

With respect to b_1

07.22.20.0015.02

$${}_1F_2^{(\{0\},\{n,0\},0)}(\{a_1\},\{b_1,b_2\},z) == \sum_{k=0}^{\infty} \frac{(a_1)_k}{(b_2)_k\, k!} \frac{\partial^n \frac{1}{(b_1)_k}}{\partial b_1^n} z^k \;/;\; n \in \mathbb{N}$$

With respect to b_2

07.22.20.0016.02

$${}_1F_2^{(\{0\},\{0,n\},0)}(\{a_1\},\{b_1,b_2\},z) == \sum_{k=0}^{\infty} \frac{(a_1)_k}{(b_1)_k\, k!} \frac{\partial^n \frac{1}{(b_2)_k}}{\partial b_2^n} z^k \;/;\; n \in \mathbb{N}$$

With respect to element of parameters ||| With respect to element of parameters

07.22.20.0026.02

$$\frac{\partial^n {}_1F_2(a;a+1,b_2;z)}{\partial a^n} == \frac{(-1)^{n-1}\, n!\, z}{(a+1)^{n+1}\, b_2} {}_{n+1}F_{n+2}(a+1,\ldots,a+1;a+2,\ldots,a+2,b_2+1;z) \;/;\; n \in \mathbb{N}$$

07.22.20.0027.02

$$\frac{\partial^n {}_1F_2(a+1;a,b_2;z)}{\partial a^n} == \frac{(-1)^n\, n!}{a^{n+1}} \left(\frac{z}{b_2}\, {}_0F_1(;b_2+1;z) + a\, {}_0F_1(;b_2;z)\right) + \frac{(-1)^{n-1}\, n!}{a^n}\, {}_0F_1(;b_2;z) \;/;\; n \in \mathbb{N}$$

With respect to z

07.22.20.0017.02

$$\frac{\partial^n {}_1F_2(a_1;b_1,b_2;z)}{\partial z^n} == \frac{(a_1)_n}{\prod_{j=1}^{2} (b_j)_n}\, {}_1F_2(n+a_1;n+b_1,n+b_2;z) \;/;\; n \in \mathbb{N}$$

07.22.20.0018.02

$$\frac{\partial^n (z^\alpha\, {}_1F_2(a_1;b_1,b_2;z))}{\partial z^n} == (-1)^n\, (-\alpha)_n\, z^{\alpha-n}\, {}_2F_3(\alpha+1,a_1;1-n+\alpha,b_1,b_2;z) \;/;\; n \in \mathbb{N}$$

07.22.20.0019.02

$$\frac{\partial^n \left(z^{a+n-1}\, {}_1F_2(a;b_1,b_2;z)\right)}{\partial z^n} == (a)_n\, z^{a-1}\, {}_1F_2(a+n;b_1,b_2;z) \;/;\; n \in \mathbb{N}$$

07.22.20.0020.02

$$\frac{\partial^n \left(z^{c-1}\, {}_1F_2(a_1;c,b_2;z)\right)}{\partial z^n} == (c-n)_n\, z^{c-n-1}\, {}_1F_2(a_1;c-n,b_2;z) \;/;\; n \in \mathbb{N}$$

07.22.20.0021.02

$$\frac{\partial^n \left(z^n\, {}_1F_2\left(-n;\frac{1}{2},b_2;z\right)\right)}{\partial z^n} == n!\, {}_2F_3\left(-n,n+1;\frac{1}{2},1,b_2;z\right) \;/;\; n \in \mathbb{N}$$

07.22.20.0022.02

$$\frac{\partial^n (z^\alpha\, {}_1F_2(-n;b_1,b_2;z))}{\partial z^n} == (-1)^n\, (-\alpha)_n\, z^{\alpha-n}\, {}_2F_3(-n,\alpha+1;1-n+\alpha,b_1,b_2;z) \;/;\; n \in \mathbb{N}$$

07.22.20.0023.02

$$\frac{\partial^n (z^\alpha\, {}_1F_2(-n;b_1,b_2;z^m))}{\partial z^n} ==$$

$$(-1)^n\, (-\alpha)_n\, z^{\alpha-n}\, {}_{m+1}F_{m+2}\left(-n,\frac{\alpha+1}{m},\frac{\alpha+2}{m},\ldots,\frac{\alpha+m}{m};\frac{\alpha-n+1}{m},\frac{\alpha-n+2}{m},\ldots,\frac{\alpha-n+m}{m},b_1,b_2;z^m\right) \;/;\; m \in \mathbb{N}^+ \bigwedge n \in \mathbb{N}$$

07.22.20.0024.02

$$\frac{\partial^n \left(e^{-z}\, {}_1F_2(-n;\, b_1,\, b_2;\, z)\right)}{\partial z^n} == (-1)^n\, e^{-z} \sum_{k=0}^{n} \frac{(-n)_k\, z^k}{k!\, (b_1)_k\, (b_2)_k}\, {}_2F_2(-n,\, k-n;\, k+b_1,\, k+b_2;\, z) \;/;\; n \in \mathbb{N}$$

Fractional integro-differentiation

With respect to z

07.22.20.0025.01

$$\frac{\partial^\alpha\, {}_1F_2(a_1;\, b_1,\, b_2;\, z)}{\partial z^\alpha} == z^{-\alpha} \prod_{j=1}^{2} \Gamma\left(b_j\right)\, {}_2\tilde{F}_3(1,\, a_1;\, 1-\alpha,\, b_1,\, b_2;\, z)$$

Integration

Indefinite integration

Involving only one direct function

07.22.21.0001.01

$$\int {}_1F_2(a_1;\, b_1,\, b_2;\, z)\, dz == \frac{(b_1-1)\,(b_2-1)}{a_1-1}\, {}_1F_2(a_1-1;\, b_1-1,\, b_2-1;\, z)$$

Involving one direct function and elementary functions

Involving power function

07.22.21.0002.01

$$\int z^{\alpha-1}\, {}_1F_2(a_1;\, b_1,\, b_2;\, z)\, dz == \frac{z^\alpha}{\alpha}\, {}_2F_3(\alpha,\, a_1;\, \alpha+1,\, b_1,\, b_2;\, z)$$

Definite integration

For the direct function itself

07.22.21.0003.01

$$\int_0^\infty t^{\alpha-1}\, {}_1F_2(a_1;\, b_1,\, b_2;\, -t)\, dt == \frac{\Gamma(\alpha)\,\Gamma(a_1-\alpha)\,\Gamma(b_1)\,\Gamma(b_2)}{\Gamma(a_1)\,\Gamma(b_1-\alpha)\,\Gamma(b_2-\alpha)} \;/;\; 0 < \operatorname{Re}(\alpha) < \min\left(\frac{1}{2}\operatorname{Re}(b_1+b_1-a_1)+\frac{1}{4},\, \operatorname{Re}(a_1)\right)$$

Involving the direct function

07.22.21.0004.01

$$\int_0^\infty t^{\alpha-1}\, e^{-c\,t}\, {}_1F_2(a_1;\, b_1,\, b_2;\, -t)\, dt == c^{-\alpha}\, \Gamma(\alpha)\, {}_2F_2\left(\alpha,\, a_1;\, b_1,\, b_2;\, -\frac{1}{c}\right) \;/;\; \operatorname{Re}(\alpha) > 0 \wedge \operatorname{Re}(c) > 0$$

Integral transforms

Laplace transforms

07.22.22.0001.01

$$\mathcal{L}_t[{}_1F_2(a_1;\, b_1,\, b_2;\, -t)]\,(z) == \frac{1}{z}\, {}_2F_2\left(1,\, a_1;\, b_1,\, b_2;\, -\frac{1}{z}\right) \;/;\; \operatorname{Re}(z) > 0$$

Operations

Limit operation

07.22.25.0001.01

$$\lim_{b_1 \to -n} \frac{{}_1F_2(a_1; b_1, b_2; z)}{\Gamma(b_1)} == z^{n+1} (a_1)_{n+1} \, {}_1\tilde{F}_2(n + a_1 + 1; n + 2, n + b_2 + 1; z) \; /; \; n \in \mathbb{N}$$

07.22.25.0002.01

$$\lim_{a \to \infty} {}_1F_2\left(a; b_1, b_2; \frac{z}{a}\right) == {}_0F_2(; b_1, b_2; z)$$

07.22.25.0003.01

$$\lim_{b \to \infty} {}_1F_2(a_1; b, b_2; b\, z) == {}_1F_1(a_1; b_2; z)$$

Representations through more general functions

Through hypergeometric functions

Involving ${}_p\tilde{F}_q$

07.22.26.0001.01

$${}_1F_2(a_1; b_1, b_2; z) == \Gamma(b_1)\, \Gamma(b_2)\, {}_1\tilde{F}_2(a_1; b_1, b_2; z)$$

Involving ${}_pF_q$

07.22.26.0002.01

$${}_1F_2(a_1; b_1, b_2; z) == {}_pF_q\left(a_1, \ldots, a_p; b_1, \ldots, b_q; z\right) \; /; \; p == 1 \bigwedge q == 2$$

07.22.26.0003.01

$${}_1F_2(a_1; b_1, b_2; z) == {}_2F_3(a_1, a_2; b_1, b_2, a_2; z)$$

Through Meijer *G*

Classical cases for the direct function itself

07.22.26.0004.01

$${}_1F_2(a_1; b_1, b_2; z) == \frac{\Gamma(b_1)\, \Gamma(b_2)}{\Gamma(a_1)} G^{1,1}_{1,3}\left(-z \,\middle|\, \begin{matrix} 1 - a_1 \\ 0, 1 - b_1, 1 - b_2 \end{matrix}\right)$$

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